UNIVERSITY OF WISCONSIN WHITEWATER

Comprehensive Campus Master Plan

DFD PROJECT NO. 12I1D

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WHITEWATER
Office of the Chancellor

The 2014 Campus Master Plan provides an ambitious framework for the University's physical campus over the next twenty years. Establishing the foundation for campus's growth and development has been an important undertaking. Our physical campus is one of our great assets. This plan ensures we are responsible stewards of our campus, enhancing the collegiate experience for future generations. The plan recognizes the critical importance of shaping a community through the development of spaces for our students to live, work, and learn.

As described on the following pages, the plan envisions:

- Identifying facility renewal and growth necessary to provide the high quality teaching and learning spaces necessary to support our University mission.
- Providing opportunities for residential growth, creating new living and gathering spaces that enhance student quality of life and reinforce a strong sense of community.
- Making our campus more welcoming and accessible by enhancing connections between buildings and grounds and establishing clear campus gateways.
- Establishing a new entry sequence for first time visitors with the addition of consolidated student services in a new facility centrally located along a primary pedestrian mall.
- Enhancing and preserving the natural features unique to campus, promoting efficient use of resources, and connecting people with each other and with their environment.

The plan balances new development with facility renewal and the preservation of abundant green space that is a defining characteristic of campus. The long-term strategy takes into account needed new infrastructure, utilities, and open spaces while establishing architectural and landscape design guidelines to help define a coherent sense of place. This integrated approach defines a more efficient campus for years to come.

I look forward to our continued work together as we continue to realize the aspirations of the plan.

Sincerely,

Richard J. Telfer, Chancellor

Hyer Hall, Suite 420 | 800 West Main Street | Whitewater, WI 53190 | www.uww.edu | p 262-472-1918 | f 262-472-1518

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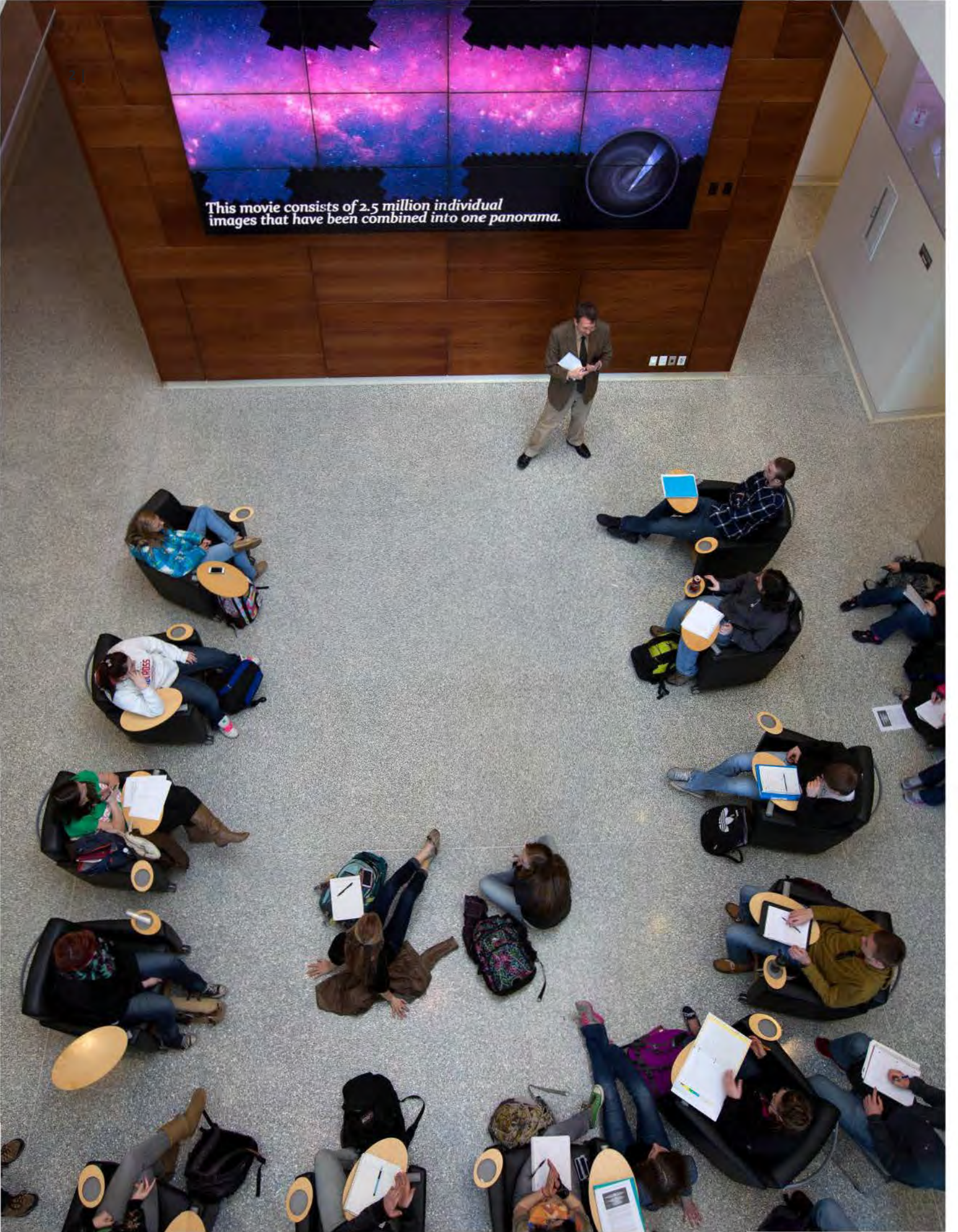
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images that have been combined into one panorama.

Executive Summary

The Comprehensive Campus Master Plan establishes a framework for the next 20 years of development at the University of Wisconsin-Whitewater. It outlines an approach for buildings and land use, open space, pedestrian and vehicular circulation, parking and service, utilities infrastructure, stormwater management, campus sustainability, and space needs for a growing student body. The plan also includes guidelines for the design of future buildings and landscapes. Proposals integrate conclusions drawn from previous planning efforts for Residence Life, Dining and Athletics into a cohesive whole. Projects are prioritized within a 20 year horizon comprising three six year increments.

In alignment with the Campus' Strategic Plan and Enrollment Management Plan, the University of Wisconsin-Whitewater student body is anticipated to grow from 12,030 students to 13,875 students over this time. The Comprehensive Campus Master Plan aligns the physical campus with the University's mission by providing the space to support teaching, learning, scholarly activities, and extracurricular activities. Plan proposals reinforce a discrete and inviting campus environment, particularly for students with disabilities, while enhancing student experience with residence life and student spaces that promote community.

ANALYSIS OF EXISTING CONDITIONS

Campus Profile

The University of Wisconsin-Whitewater was founded in 1868 as a primary school, Whitewater Normal School, with 48 students attending classes in one building. Today, it is one of 26 campuses in the University of Wisconsin System and consists of 40 buildings on 404 acres. In Fall 2012 there were 12,034 students and 383 members of the faculty. 89.3% of the students were undergraduates, and 85.6% of students were from the state of Wisconsin. The total number of staff on campus was 786.

FIGURE 1: UNIVERSITY OF WISCONSIN SYSTEM

- 4 YEAR UNIVERSITY OF WISCONSIN SYSTEM CAMPUS
- 2 YEAR UNIVERSITY OF WISCONSIN SYSTEM CAMPUS
- UNIVERSITY OF WISCONSIN-WHITEWATER CAMPUS

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Natural Systems

Prairie landscapes and glacial drumlins, geologic formations accompanied by significant changes in topography formed by the movement of glacial ice across the underlying ground, distinguish the UW-Whitewater campus and reflect the regional character of southeastern Wisconsin. The landscape character is evident in both the sixty-acre nature preserve and the more developed areas, including the drumlin and the arboretum.

In addition to the natural landscapes, defined open spaces support campus life. Spaces for active and passive recreation are organized along the axes of the Carter and Wyman pedestrian malls, but the campus has limited flat open lawn area for gathering. While the athletic field facilities clustered largely in the northwestern portion of campus are of high quality, the network of open spaces is not continuous and thus the residence halls and other uses at the campus edge can feel disconnected.

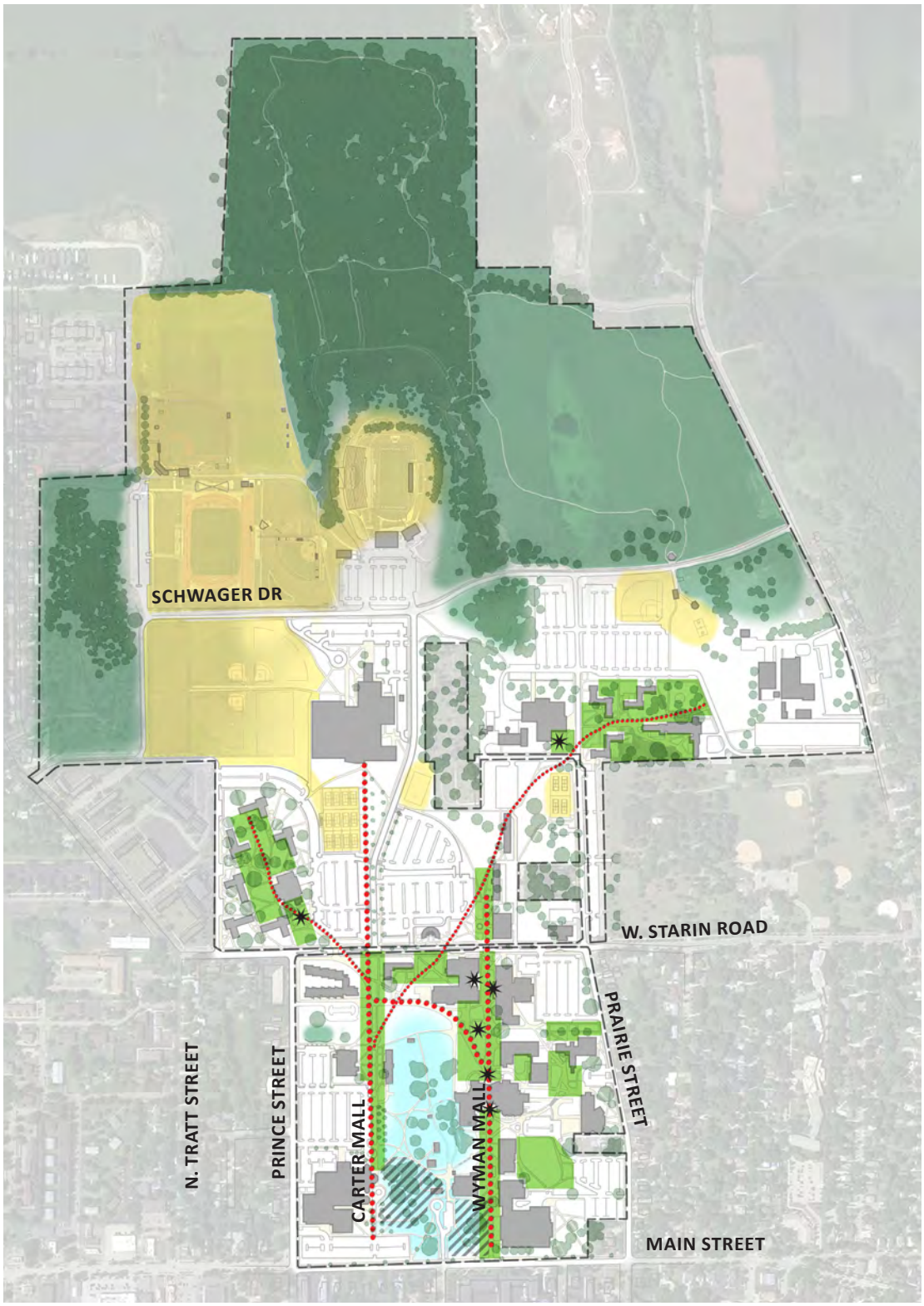

FIGURE 2: NATURAL SYSTEMS

- NATURAL AREAS
- ATHLETIC FIELDS
- DRUMLIN
- DEFINED CAMPUS GREENS
- PLAZA
- ARBORETUM
- AXIS

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Built Systems

The existing campus core has a compact mix of academic and administrative uses situated within a distance that can be navigated comfortably in five minutes. The pedestrian malls create linkages between the southern academic core and the northern student life district of campus. The Wyman Mall area has been developed more robustly than the Carter Mall area, which feels more isolated. The drumlin, a geologic formation accompanied by a significant change in topography formed by the movement of glacial ice across the underlying ground, exaggerates the separation of these two malls by acting as a vertical barrier between the two areas. Starin Road is a major organizing element on campus, serving as the boundary between the academic core to the south and the athletic and residential districts to the north.

Due to limited alternative transportation options and long-standing patterns of behavior, automobile circulation is the dominant mode of vehicular transportation to campus, impacting the University's carbon footprint and requiring a significant amount of land dedicated to parking. No single route dominates as a main entry to campus, and the majority of vehicular circulation is at the edges. Although this layout preserves the pedestrian environment within the campus core, it fosters increased conflicts between automobiles and pedestrians where Starin Road passes through campus. Indeed Starin Road is an important thoroughfare in the City circulation network as one of only a few east-west routes.

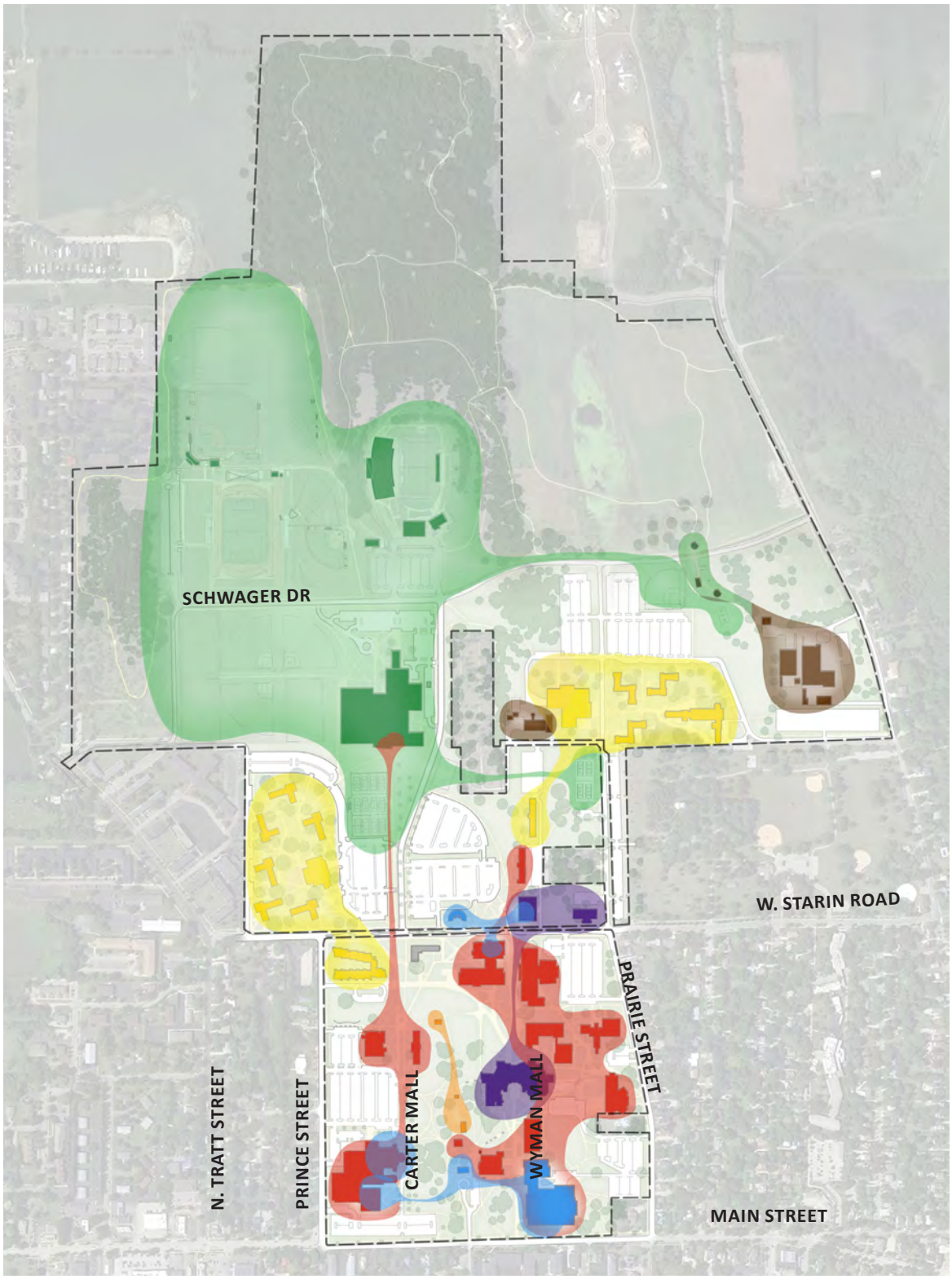

FIGURE 3: BUILDING USE

- ACADEMIC
- LIBRARY AND PUBLIC INTERFACE
- STUDENT LIFE
- RESIDENCE HALL
- ATHLETIC
- SUPPORT / OTHER
- HISTORIC LOG CABIN AND SCHOOL HOUSE

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The extensive network of pedestrian paths in the core becomes less robust at the edges. Recreational trails through the nature preserve are an amenity but not intuitively integrated, and some paths around and across the drumlin are not accessible for those with limited mobility. Particularly for those with vision impairments, it can be difficult to differentiate the main circulation routes from secondary paths.

Finding and navigating the campus can prove challenging for visitors due to inadequate interior and exterior signage. City signage directs visitors to routes that are not intuitive or direct. Directional signage on Main Street directs visitors to turn on North Tratt Street, a residential street with no University presence. The Visitors Center is undersized, difficult to locate initially, and does not project a collegiate sense of welcome or campus identity.

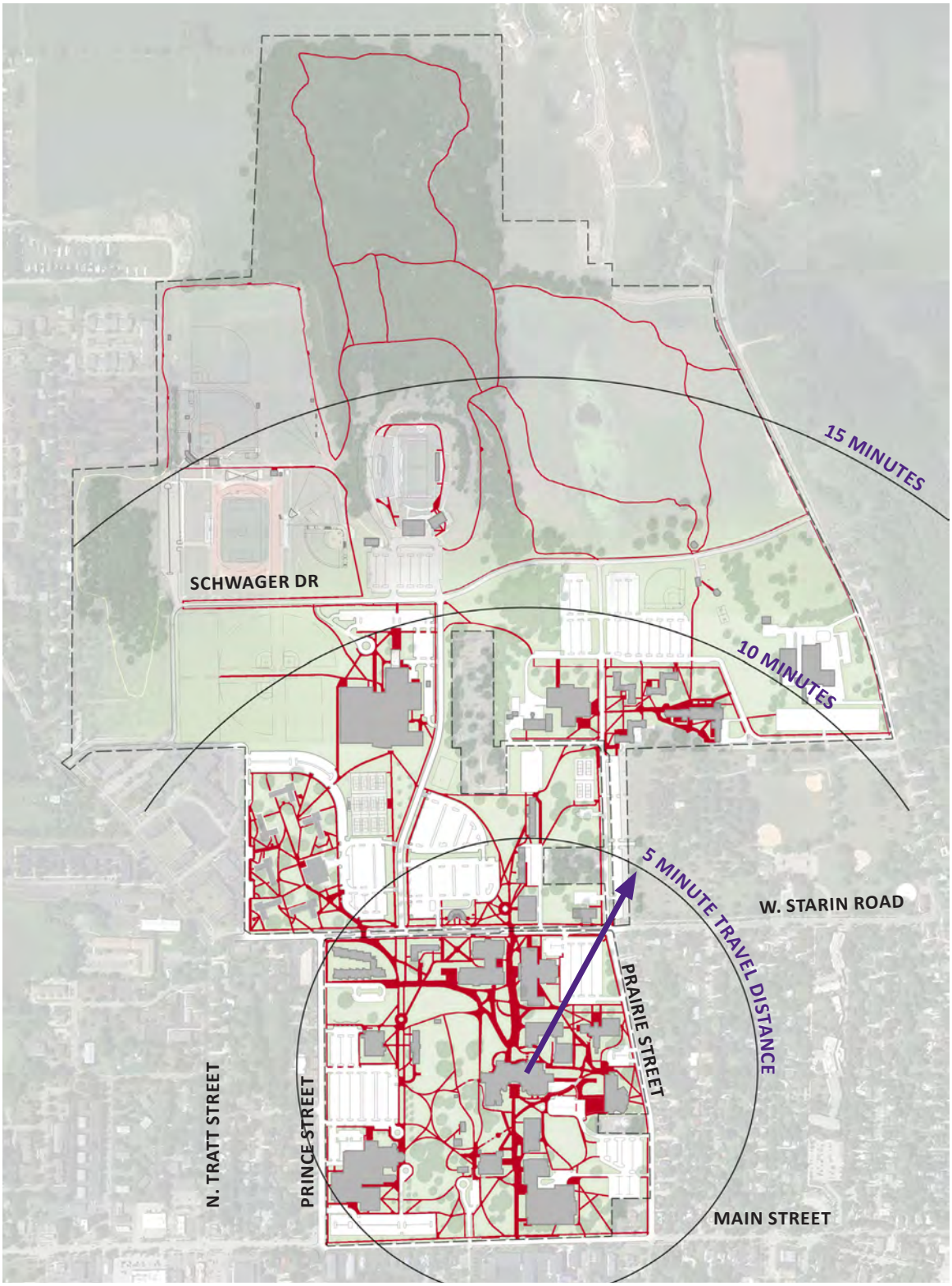

FIGURE 4: PEDESTRIAN CIRCULATION

PEDESTRIAN PATH

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Classroom Utilization and Space Needs Summary

As part of this campus master planning effort, the planning team conducted a space needs assessment. The assessment quantifies the amount of space the University currently has including how much space the University will have after current construction and renovations are completed. The assessment then compares how much space UW-Whitewater has now to how much will be needed at the planned enrollment level. The space overage (surplus) or space need (deficit) was generated from this comparison. The resulting assessment report is prepared by space category and then distributed by primary unit. The space needs assessment is quantitative; while space quality is addressed in the rest of the master planning process.

The data used in the assessment were provided by the University using Fall 2012 as the snapshot in time. All data were reviewed for accuracy by not only the planning team but by the deans of the colleges, vice chancellors, and the Provost.

Assumptions

- Enrollments are expected to increase by 15% from 12,030 student head-count to 13,875 student head-counts representing a 13% growth in Undergraduate students and a 33% growth in Graduate students.
- No change in student faculty ratio is expected. Therefore, the number of employees are expected to grow as follows: 15% increase in faculty and an 8% increase in staff.

FIGURE 5: CAMPUS CLASSROOM

- A very conservative growth in library holdings is expected at about 0.75% per year.
- The future amount of space includes: (1) the expansion and renovation of Laurentide Hall; (2) White Hall and McCutchan Halls eventually coming off-line; and (3) the reallocation of space in Winther, Heide, and McCutchan Halls. (For details of this space reallocation, refer to the section on Study Assumptions). White and McCutchan Halls will be used as swing space for renovations until such time as they are permanently taken off-line.

Overview of Outcomes

Classroom and Class Laboratory Utilization

- On average, the University schedules its 124 classrooms for 31 hours per week at a 60% seat fill rate. This equates to about 18.4 weekly seat hours. Currently the University of Wisconsin System classroom utilization targets are 35 hours per week with a 70% seat fill rate which is 24.5 weekly seat hours. UW-Whitewater schedules its classrooms 25% less than the existing UW System target.
- Class laboratories are scheduled an average of 20 hours per week with a 76% seat fill rate for a 14.8 weekly seat hour average. UW-Whitewater's existing utilization rate is 23% less than the current UW System utilization targets, which is 24 hours per week with a seat fill rate as close to capacity as possible.
- The Classroom Demand analysis shows that currently there is a 14 to 15 classroom surplus in the capacity range of 61 to 75.
- Peak times on campus are from 9:30 AM through 3:00 PM, Monday through Thursday.

Space Needs Assessment

- For Fall 2012, the space needs assessment shows an 8% deficit of space. This deficit could be interpreted that UW-Whitewater is in relative balance for space.
- The largest needs for space are in athletics and recreation, physical plant, and other academic space.
- At the future scenario of 13,875 students, the assessment shows an increased space deficit of 18.5%. All space categories have a demonstrated deficit.
- The initial identified need for Athletics/Recreation/PE indoor space will be met by a new indoor tennis facility. As this assessment was concluding, it was brought to the attention of the consultant team that there were additional athletic and recreation facility needs that require further study.
- Physical Plant is short about 33% space. Needed are additional shop and central storage space along with covered parking for its vehicles.
- Using current UW System utilization targets, classroom space shows an overage for Fall 2012 of about 8,500 Net Assignable Square Feet (NASF) which turns into a deficit for the future enrollment level of about 10,800 NASF.
- Currently, class laboratories are in relative balance with an overage of about 1,100 NASF. For the future scenario, this overage turns into a need of about 11,000 NASF. The guideline NASF was calculated using the UW System's existing utilization targets.
- While there is a current overage of class laboratories, the following units have needs: Communication, Management Computer Systems (L&S), and the College of Education. In particular the Management Computer Systems program has need of some dedicated computer labs. Currently they are using general/open access computer labs.
- Most of the sciences show an overage of class laboratory space for Fall 2012. An overage is also shown for the future scenario with the exception of Biological Sciences, which shows a small deficit.
- A need currently exists for more research laboratory space as well as in the future scenario. The majority of this need is in the sciences and can be offset by the overage of class laboratory space in the sciences. The reality is that many of these labs are currently dual purpose labs and are used for both instruction and research.
- Both academic and administrative offices are in balance with small overages. As the employee base grows reflective of the student growth, there will be a need for more office space.
- Library and Study space is in relative balance for Fall 2012. The current and future needs are for additional study or collaborative learning spaces dispersed across the campus rather than study space contained within the main library.
- The auxiliary spaces show that they are in relative balance for Fall 2012. At the future scenario, space deficits exist for both student center space and health care facilities as the guideline NASF is reflective of the increase in students.
- The major units requiring the most space correspond with the top two space category needs. The majority of the need for athletics/recreation/PE space can be found under the College of Education and Professional Studies and the need for physical plant space can be found under the Vice Chancellor for Administrative Affairs.
- The College of Letters and Sciences shows a demand resulting from the need for both instructional and research laboratory space.
- The Provost and Vice Chancellor for Academic Affairs non-college units show a space deficit resulting from needs in Information Technology and Andersen Library, and resulting from the NASF guideline being allocated to the Provost for expansion of academic programs such as the Intensive English Institute.
- The Vice Chancellor for Student Affairs shows an increased need for space at the future scenario reflecting the deficit of student center space.

Opportunities for Greater Space Efficiency and Recommendations

- While there are space needs at UW-Whitewater, the University has opportunities to solve some of the issues within their existing space portfolio immediately by strategically re-purposing space to satisfy urgent needs. For example, some study and collaborative space needs can be met by creating innovative corridor spaces.
- A review of scheduling practices and policies should also be conducted by the University. In particular, the practice of departmentally scheduled classrooms should be reviewed. A more common practice is to provide departments with initial priority of scheduling preferred classrooms (but only if they have an appropriate course section size) and then at a certain point in the scheduling cycle, those rooms are open to others for optimum scheduling. Other policies to be considered, if they are not already, include: a limit as to the number of courses a department can schedule during prime times; course enrollment size must be within an acceptable range of the room's capacity; and course conformity to a common scheduling time grid.
- Classroom capacities should be reviewed and right-sized. Some spaces could benefit by removing extra seats (right-sizing) and upgrading the furniture styles and arrangements which would create more flexible learning environments and support desired pedagogies.
- Examine existing office environments to determine if space organization and types could be provided more efficiently and support administrative and academic needs.
- Implement and enforce basic space management policies. This can be accomplished with a space management committee. Issues that are typically addressed are: vacating spaces for new space; allocating research space based on funding rather than seniority; and allocation of office space.
- As the University grows, a deficit of instructional spaces may exist if higher utilization rates are not achieved and no changes to the current instructional paradigm occur. For Fall 2012, about 40% of the overall space need for the University can be met by achieving higher utilization rates and then re-purposing the excess instructional space to other areas of need.
- The Andersen Library building is awkward to navigate. In many cases one cannot get from one part of the building to another without going outside or taking a circuitous path. The Library should be reinvented to achieve greater modernity.
- Student services are fragmented. A one-stop center would go a long way to making these services more accessible, efficient, and convenient to students.
- Additional athletic and recreation facility needs should be identified in a more detailed fashion through an athletics master plan.

Building Renovation Assessment Summary

The renovation potential of six buildings identified by Campus was assessed including Andersen Library, Greenhill Center for the Arts, Heide Hall, Williams Center, Winther Hall, and Roseman Building. They are in good condition but have obsolete mechanical, electrical, and plumbing (MEP) systems, as well as internal circulation challenges, severe lack of daylight, outdated classroom technologies, worn finishes averaging 40 years of age, and poor accessibility. Improvement to the quality of existing space regardless of re-purposing goals is needed in all cases.

Neither Greenhill Center for the Arts, Williams Athletic Center, nor the Winther Hall office tower are good candidates for re-purposing due to basement and/or internal rooms with no opportunity for daylight, concrete block partitions that are very costly to modify, and multiple level changes that impede accessibility. The Winther Hall classroom wing has potential for future modern classrooms with technology upgrades and improvements to accessibility. Heide Hall and Anderson Library have building superstructures and building footprint shapes that would accommodate a variety of re-purposing uses.

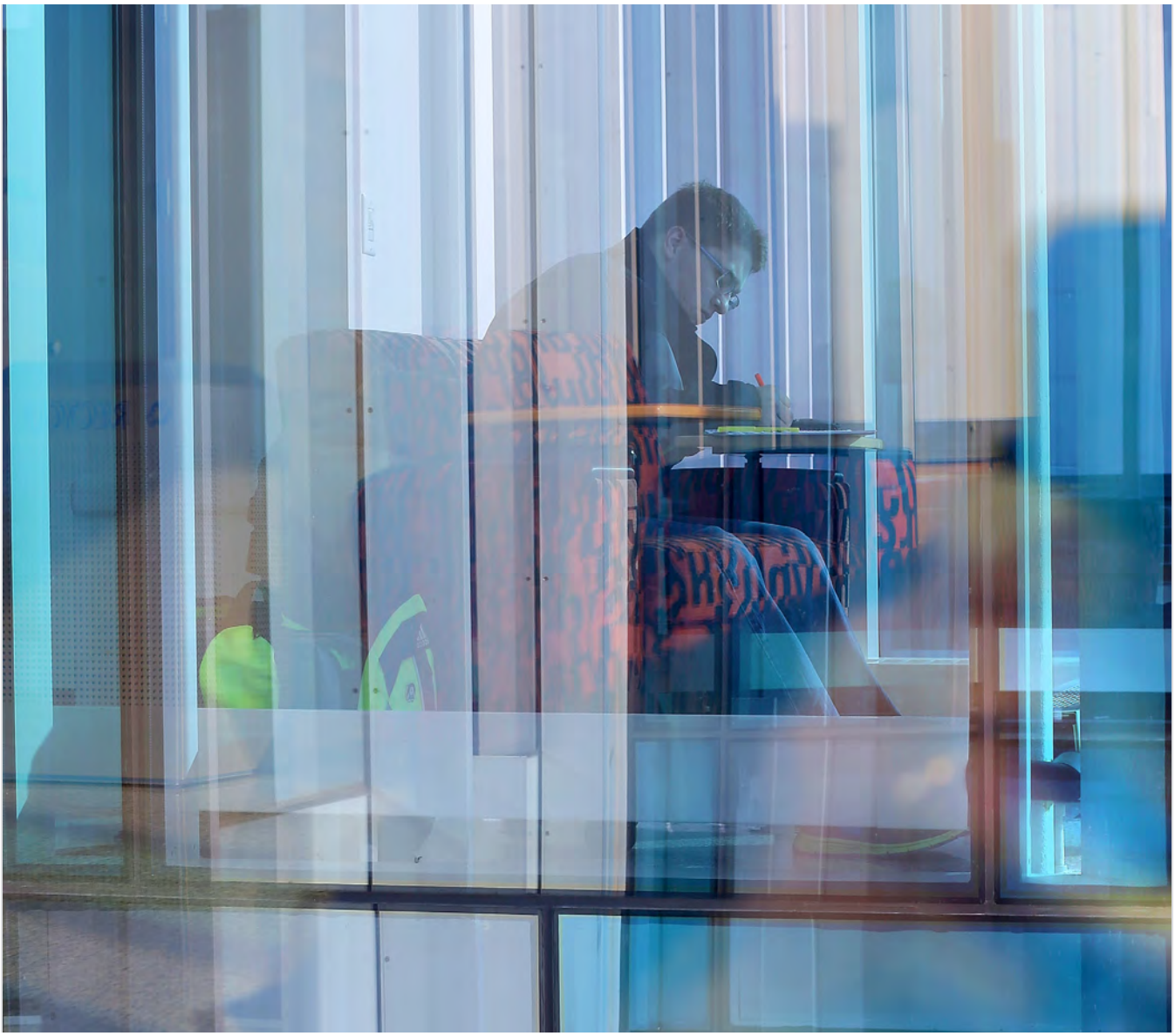

FIGURE 6: STUDYING IN THE HYLAND ALCOVE

Residence Life Strategy

Approximately 3,730 students currently live on campus in two districts in the northwest and northeast. The University has explored several options via studies with Architectural and Engineering teams to address insufficient quantity of housing and dining space to meet demand and quality issues related to universal accessibility and modernization. These recent studies concluded that Wells Hall and Esker Dining Hall should be replaced due to the significant costs required to renovate the facilities appropriately. The University plans to build a total of five new residence halls and a replacement dining hall while continuing to renovate the remaining halls over time. The first of the proposed new residence halls allows campus to meet its current demand for housing. The second proposed residence hall provides an opportunity for an increased percentage of students to be housed on campus. The last three of the proposed residence halls provide the 1200 beds needed to replace Wells Hall.

CAMPUS MASTER PLAN

University Mission Statement

The mission of the University of Wisconsin-Whitewater is to:

Provide a range of undergraduate programs and degrees, including interdisciplinary programs, in letters, sciences, and the arts as well as programs and degrees leading to professional specialization.

Offer graduate education built clearly upon its undergraduate emphases and strengths with particular emphasis in the fields of business, education, communication, and human services.

Engage in scholarly activity, including research, scholarship and creative endeavor that supports its programs at the associate and baccalaureate degree level, its graduate programs, and its select mission.

Create and maintain a positive and inviting environment for multicultural students, students with disabilities, and nontraditional students, and provide support services and programs for them.
Serve as a regional cultural and economic resource center through its service initiatives.

Provide continuing education and outreach programs as integrated institutional activities.

Provide a variety of co-curricular activities to enhance out-of-class learning opportunities.

Encourage and maintain a high level of personal and professional integrity in all University life and activities.

Approved by the UW System Board of Regents, February 11, 2005

FIGURE 7: UNIVERSITY CENTER

Guiding Principles

Resonant themes from listening sessions with the campus community were adapted into guiding principles.

- **Support Strategic Plan:** Align the physical campus with the University's mission and values and support the objectives outlined in the Academic Strategic Plan.
- **Optimize Space:** Address existing and projected space deficits and ensure consistently high quality space campus-wide.
- **Strengthen Identity:** Build on existing strengths to further distinguish the University of Wisconsin-Whitewater through its physical campus; define campus edges and a clear arrival experience to welcome and encourage engagement with the community.
- **Engage with Community:** Develop a compact, residential campus with amenities for students, faculty, and staff that promote interaction, enhance quality of life, and accommodate activity seven days a week.
- **Make Robust Connections:** Create a dynamic campus with well-defined and accessible pathways that flow naturally between buildings and grounds.
- **Embrace Sustainability and Stewardship:** Further sustainable practices and lay the groundwork for additional sustainable initiatives by highlighting natural features unique to Whitewater, promoting efficient use of resources, and connecting people with each other and with their environment.

FIGURE 8: FALL FOLIAGE ON THE DRUMLIN

Key Recommendations

The Comprehensive Campus Master Plan leverages new and renovated facilities in support of the University's mission. Individual projects executed over the twenty year planning horizon resolve independent project needs and also contribute to campus wide initiatives that have a greater positive impact to the campus as a whole. New buildings and open spaces expand the network of interconnected open spaces that define the University of Wisconsin-Whitewater's campus, reinforce the Wyman and Carter Malls, extend the pedestrian network north of Starin Road and create cross connections between pedestrian malls. Thus disparate parts of the campus are pulled together.

Three new academic facilities in the core campus will meet the projected need for new academic space, while five new 400-bed residence halls and a new dining facility transform the residential precinct. Expansion of existing athletic facilities, the addition of an indoor tennis facility and a replacement of the Roseman gymnasium ensure continued excellence in this area.

Many existing buildings require renovation to facilitate modern pedagogy and universal accessibility. Other aging buildings in the core have short-term value as swing space to facilitate renovation but will ultimately be removed and returned to open space in the future.

The Comprehensive Campus Master Plan clusters new development close to the core campus to preserve sensitive natural features. This strategy displaces surface parking to accommodate new buildings in many instances. A new 600-car parking structure in the core replaces some of the lost parking capacity. Additional operational strategies will be needed to address the balance of this parking deficit over time.

FIGURE 9: COMPREHENSIVE CAMPUS MASTER PLAN

EXISTING BUILDINGS
RENOVATED BUILDINGS
PROPOSED NEW CONSTRUCTION
LONG TERM DEMOLITION

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Many near term solutions can provide some immediate space relief by more efficiently using the existing space. Scheduling existing space earlier in the morning, later in the afternoon, and at other off-times provides additional meeting capacity without the addition of new space.

FIGURE 10: COMPREHENSIVE CAMPUS MASTER PLAN DETAIL

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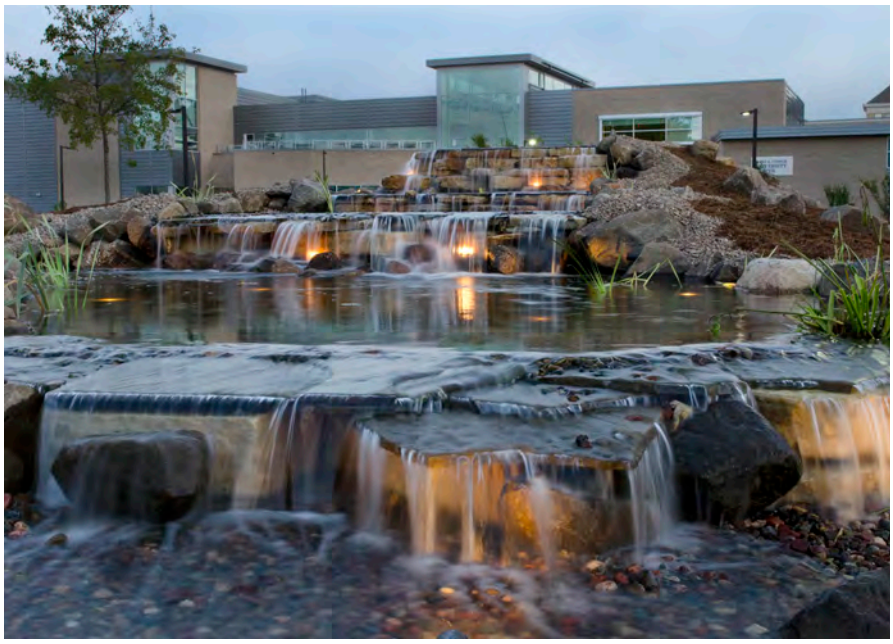


FIGURE 11: MINNEISKA SPRINGS AT WYMAN MALL

Campus Systems

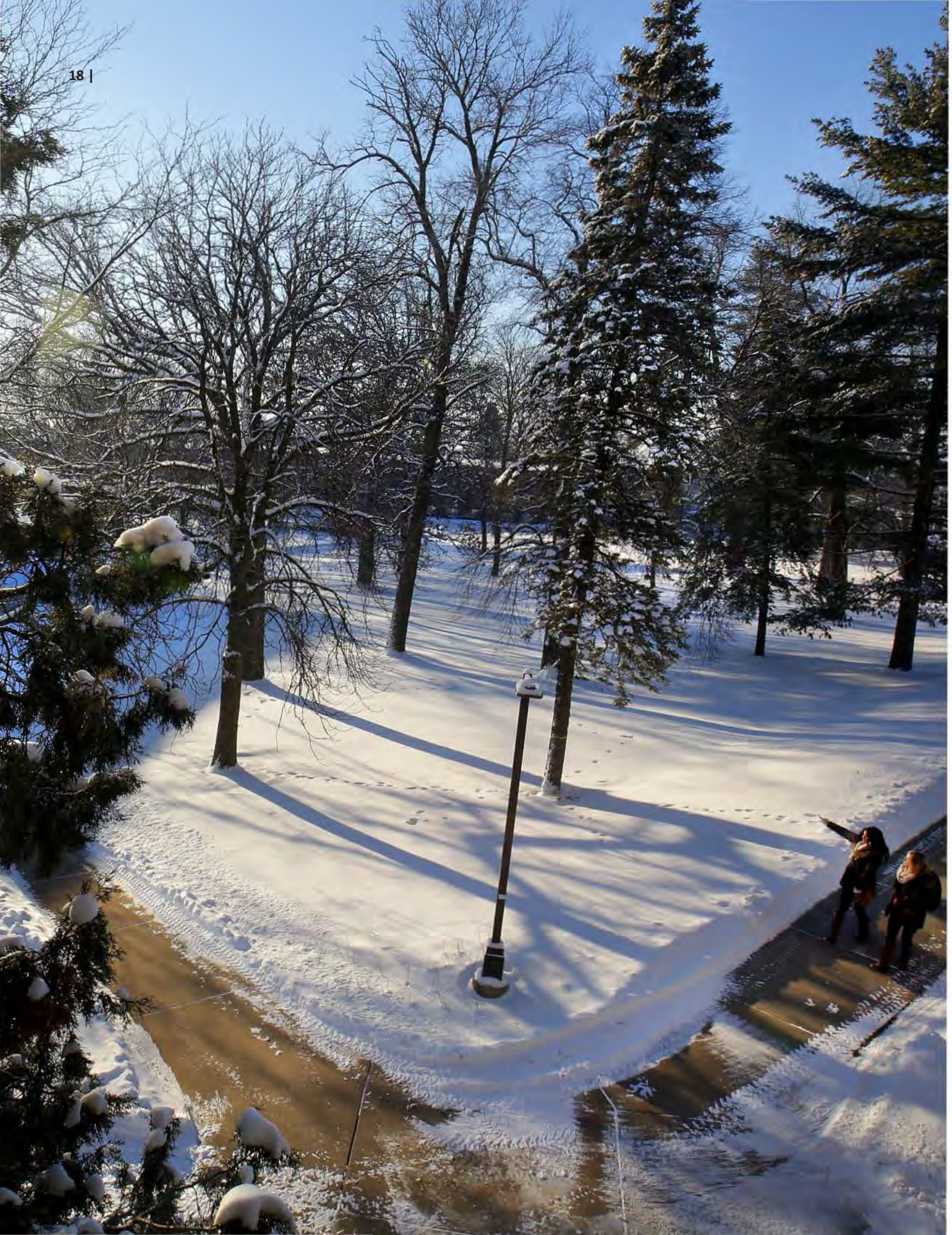
Building and Land Use
The Comprehensive Campus Master Plan reinforces the compact campus framework of an academic core south of Starin Road, residence life facilities north of Starin Road, and athletics, recreation, and natural landscape at the northernmost edge. Within the academic core, new buildings activate portions of campus that previously felt isolated. North of Starin Road, new residence halls and student life facilities connect two distinct residential communities into one cohesive district. Consolidating new athletic facilities alongside the existing athletic complex facilitates efficient operations and convenience.

Open Space
Consistent use of native plants and naturalistic planting design reinforce the regional landscape character of the natural areas in more developed areas of campus. The open space network establishes a series of interconnected open spaces comprising a variety of scales and types, including quadrangles and plazas.

The Wyman and Carter pedestrian malls serve as major organizing elements that extend north, connecting the core campus to the residential and athletic precincts and the nature preserve. The pedestrian network will be simplified and clarified to emphasize major paths and prioritize accessible routes, particularly around the drumlin where a new academic building will provide an upper-level connection.

Sustainability
The University's commitment to sustainability plays out across many aspects of its operations, including the Comprehensive Campus Master Plan. The plan focuses new construction in previously developed areas, and increases pervious surface through redevelopment of surface parking into open space. It accommodates new bicycle infrastructure and transportation demand management (TDM) measures to decrease dependence on automobiles. New building orientation is optimized to minimize energy usage and existing buildings are reused to reduce waste and resource consumption.

FIGURE 12: FALL SCENE ON CAMPUS



Analysis of Existing Conditions

CAMPUS PROFILE

University of Wisconsin System Context

The University of Wisconsin-Whitewater is one of 26 campuses in the University of Wisconsin system, one of the 13 comprehensive campuses offering both undergraduate and master's degree programs, and the only comprehensive campus to offer a doctoral program in business. The campus provides a smaller, more individualized academic setting of a four year university.

FIGURE 13: UNIVERSITY OF WISCONSIN SYSTEM

- 4 YEAR UNIVERSITY OF WISCONSIN SYSTEM CAMPUS
- 2 YEAR UNIVERSITY OF WISCONSIN SYSTEM CAMPUS
- UNIVERSITY OF WISCONSIN-WHITEWATER CAMPUS

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NOT TO SCALE

University Mission Statement

The mission of the University of Wisconsin-Whitewater is to:

Provide a range of undergraduate programs and degrees, including interdisciplinary programs, in letters, sciences, and the arts as well as programs and degrees leading to professional specialization.

Offer graduate education built clearly upon its undergraduate emphases and strengths with particular emphasis in the fields of business, education, communication, and human services.

Engage in scholarly activity, including research, scholarship and creative endeavor that supports its programs at the associate and baccalaureate degree level, its graduate programs, and its select mission.

Create and maintain a positive and inviting environment for multicultural students, students with disabilities, and nontraditional students, and provide support services and programs for them.

Serve as a regional cultural and economic resource center through its service initiatives.

Provide continuing education and outreach programs as integrated institutional activities.

Provide a variety of co-curricular activities to enhance out-of-class learning opportunities.

Encourage and maintain a high level of personal and professional integrity in all University life and activities.

Approved by the UW System Board of Regents, February 11, 2005

The University Mission Statement guides all its undertakings.

The University of Wisconsin-Whitewater is committed to the development of the individual, the growth of personal and professional integrity and respect for diversity and global perspectives. These are met by providing academic and co-curricular programs that emphasize the pursuit of knowledge and understanding and a commitment to service within a safe and secure environment.

Planning Context

The Comprehensive Campus Master Plan aligns the physical campus with the University's mission by providing the spaces to support scholarly and extracurricular activities, making the campus a more positive and inviting environment, particularly for students with disabilities, and enhancing student experience with residence life and student spaces that promote community.

The University last completed a Comprehensive Campus Master Plan in 1994. This plan guided the campus through significant development in the academic core, including an addition to the University Center, construction of Hyland Academic and Starin Residence Halls, and the Carlson/Laurentide Hall office renovation. Higher education has changed considerably since completion of the 1994 plan, and modern pedagogy, technology, and financial realities require an updated approach to campus development.

The University's Strategic Plan informs the Comprehensive Campus Master Plan, emphasizing the pursuit of sustainable excellence in the areas of:

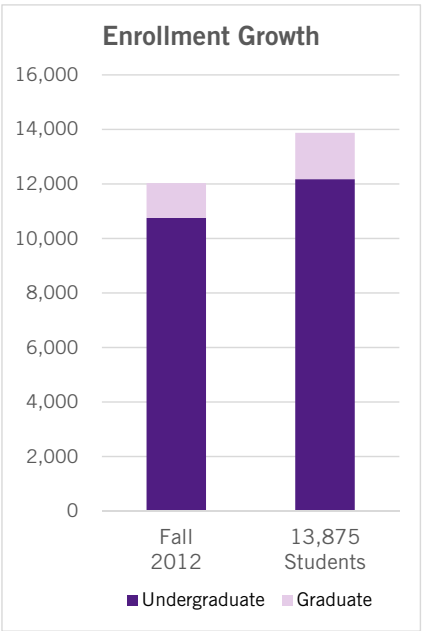
- Programs and Learning,
- The Educator-Scholar Community,
- Diversity and Global Perspectives,
- Regional Engagement, and
- Professional and Personal Integrity.

Academic program review and the development of an Academic Plan were in process as this master plan was completed.

Enrollment Growth Projections

In the fall semester of 2012, 12,034 students were enrolled at the University. In accordance with the Campus' Strategic Plan and Enrollment Management Plan to have more graduates, the University established enrollment projections in October 2010 that anticipate growth to a student body of 13,875 students by 2025. Student enrollment has kept pace with these projections through fall of 2013 as the milestone of 12,555 student enrollment in 2015-2016 approaches. While the growth projections do not indicate equal growth across all programs or differentiate which programs are expected to grow more quickly, it is documented that the Biology, Computer Science, and Media Arts and Game Development (MAGD) programs have experienced rapid enrollment growth in recent years.

The Comprehensive Campus Master Plan addresses improvements that will be made during a twenty year period from 2015 through 2035. Plan proposals accommodate enrollment growth to the 13,875 student target in 2025, and assumes that enrollment will remain steady at 13,875 students after 2025.



Enrollments

Headcount	Fall 2012	13,875 Students	Percent Change
TOTAL	**12,030**	**13,875**	**15%**
Undergraduate	10,751	12,175	13%
Graduate	1,279	1,700	33%

Full-Time Equivalents	Fall 2012	13,875 Students	Percent Change
TOTAL	**10,423**	**11,937**	**15%**
Undergraduate	9,743	11,033	13%
Graduate	680	904	33%

FIGURE 14: ENROLLMENT GROWTH PROJECTIONS

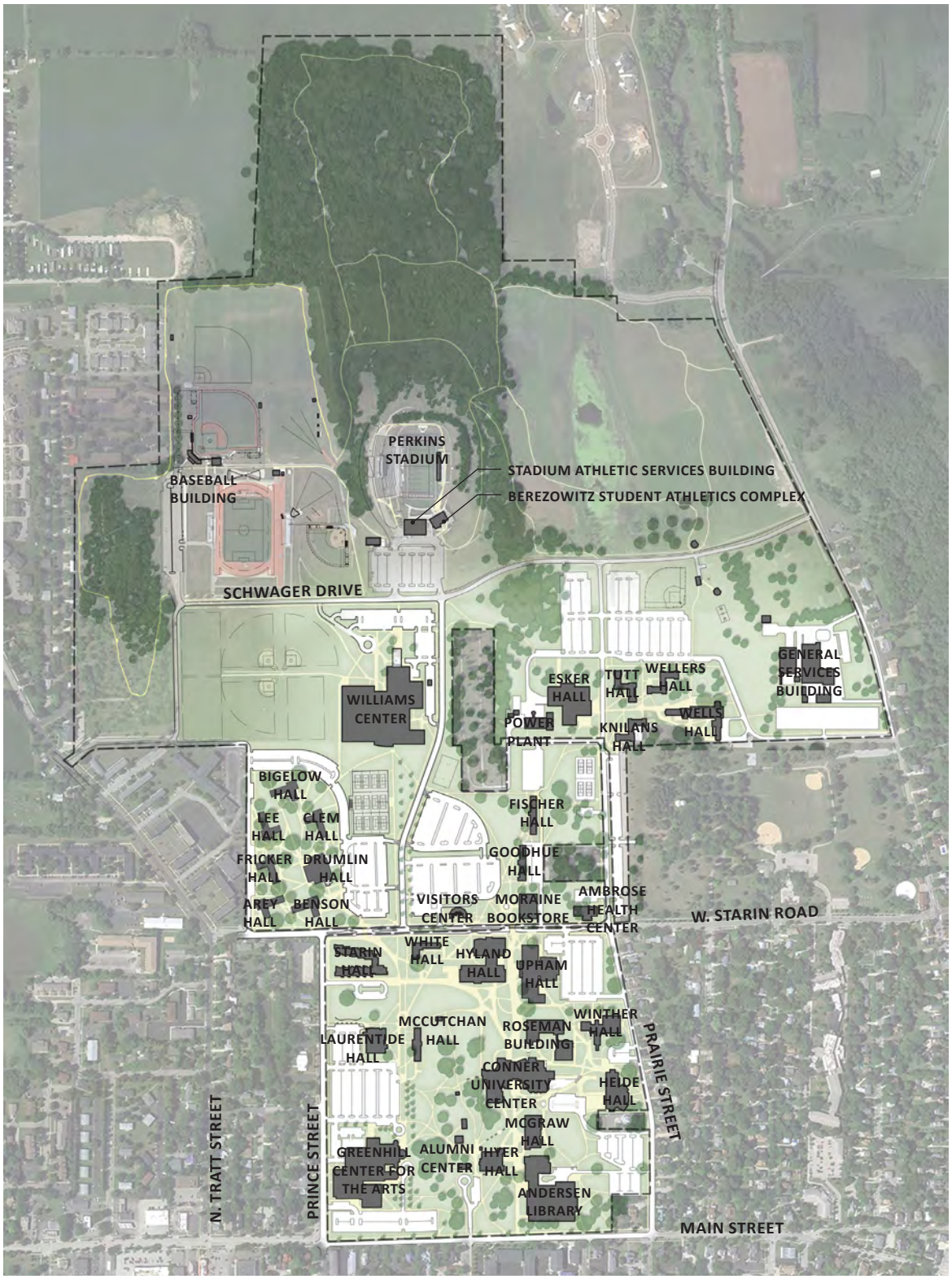


FIGURE 15: CAMPUS MAP

EXISTING BUILDINGS
PROPERTY LINES

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NOT TO SCALE

Context and History

The University is located in the City of Whitewater, Wisconsin, a town of 14,500 residents located between Milwaukee and Madison in southern Wisconsin. The University is located immediately adjacent to downtown Whitewater. The downtown area surrounding Main Street was established as the Main Street Historic District in 1989, with many of its contributing properties also listed with the National Register of Historic Places (NRHP). The majority of the town's historic landmarks are located in this area. The district includes the Bassett House, located on Main Street immediately adjacent to the University's Andersen Library, the Bassett House was designated as a historic property and added to the NRHP in 1985.

The University of Wisconsin-Whitewater was founded in 1868 as a primary school, Whitewater Normal School, with 48 students attending classes in one building. Old Main Hall was added as the institution continued to grow. With the addition of liberal arts in 1951, the school transitioned from a primary or "normal" school to the Whitewater State Teachers College and then to the Wisconsin State College - Whitewater. It became designated as a university in 1964 and was integrated into the University of Wisconsin system in 1971.

On February 7, 1970, the central, north, and west towers as well as the bell tower of Old Main Hall burned down. The only surviving wing, now called Hyer Hall, remains on campus today and was renovated in the late 1990s; the other original wings were never rebuilt.

The campus experienced a significant building boom between 1960 and 1971 that established the framework of the campus that can be seen today: two thirds of the total gross square footage on today's campus was originally constructed during this time. Development in this era included many of the academic buildings along Wyman Mall, the two student residence hall communities, and the athletics district. Maintaining and modernizing these buildings to accommodate contemporary teaching pedagogy and universal accessibility presents a significant challenge as many of these buildings need significant reinvestment due to their age.

FIGURE 16: OLD MAIN HALL WITH NORTH WING ADDITION CIRCA 1876

FIGURE 17: HISTORIC IMAGE OF OLD MAIN HALL, DATE UNKNOWN

While the Carter and Wyman Malls are strong defining elements of today's pedestrian-oriented campus, these north-south pedestrian spines were originally city streets (Case Street and Graham Street respectively) with vehicular access. The City of Whitewater vacated North Case Street to allow the University to create Wyman Mall. Later the University and City undertook the same process for Carter Mall, transforming the western portion of the academic core into a pedestrian environment. During this process, the University also removed a surface parking lot that had been located on top of the drumlin, restoring a more naturalized setting for this landform.

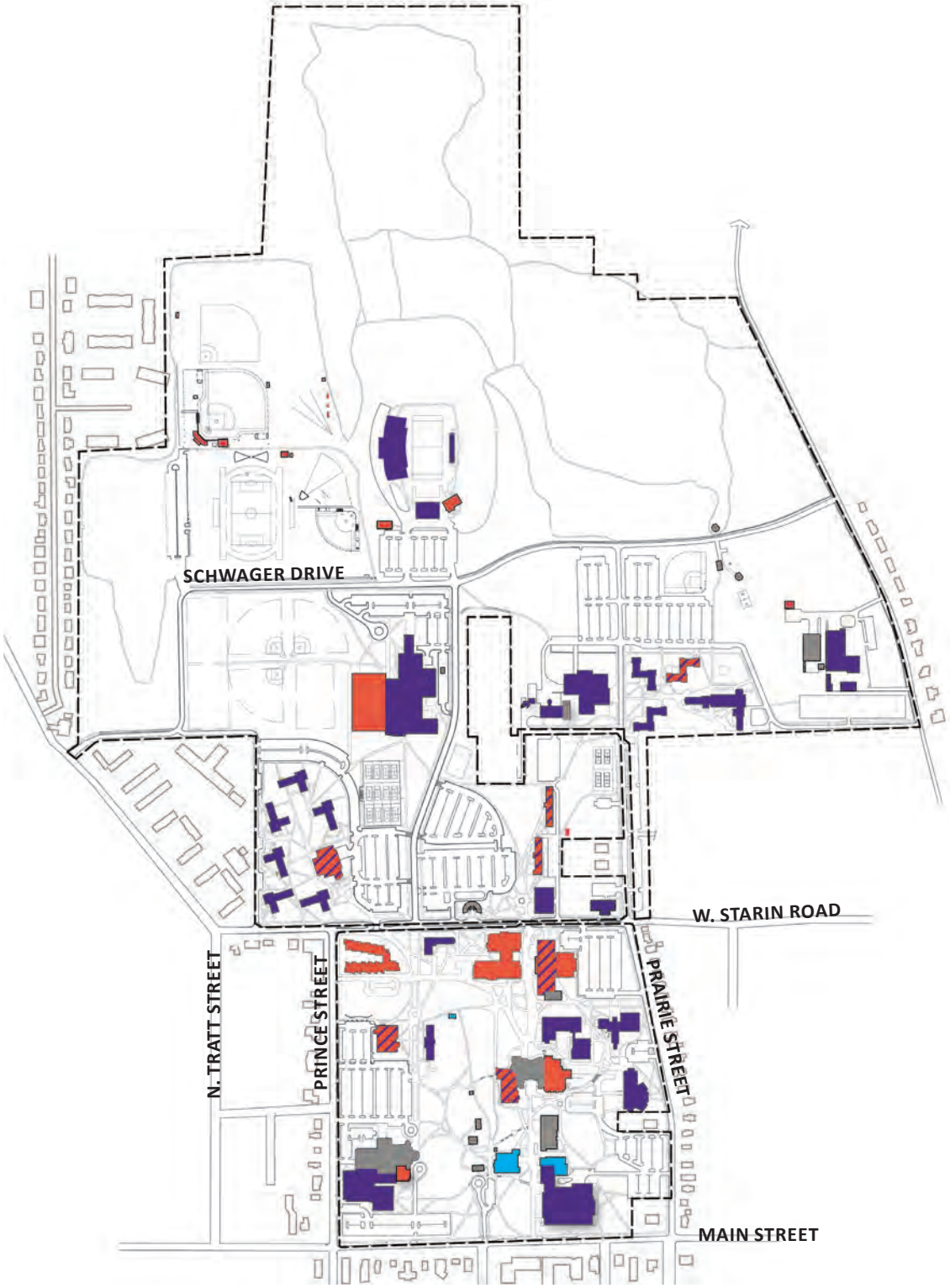

FIGURE 18: BUILDING AGE

- BUILT PRIOR TO 1960
- BUILT BETWEEN 1960 AND 1971
- BUILT BETWEEN 1972 AND 2000
- BUILT AFTER 2000
- ORIGINALLY BUILT BETWEEN 1960 AND 1971, COMPREHENSIVELY RENOVATED SINCE 2000

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NATURAL SYSTEMS

Natural Features and Topography

Natural features distinguish the UW-Whitewater campus and reflect the regional character of southeastern Wisconsin. Glacial drumlins and prairie landscapes characterize the region and the campus. The campus has a unique topography of drumlins. Drumlins are geologic formations accompanied by significant changes in topography formed by the movement of glacial ice across the underlying ground. These unique features help define the campus experience. The nearby Kettle Moraine State Park and the sixty acres of nature preserve in the northeastern portion of the campus provide an opportunity to experience this landscape in both a native and restored state.

Many of the natural areas identified in Figure 19 are protected under the Land and Water Conservation Fund Act (LAWCON). LAWCON funds are federal monies that can be used for the planning, acquisition, and development of land and water outdoor recreation facilities. Congress intended this investment of public funds to be permanent. Section 6(f) of the Act requires all funded lands to be retained and used solely for outdoor recreation in perpetuity. Any conversion of these lands to uses other than outdoor recreation must be approved by the National Park Service. The Park Service will only consider approval if all alternatives to the conversion have been evaluated and rejected on a sound basis. If approved, the state must acquire replacement lands of at least equal fair market value and recreational usefulness. This designation applies to some areas of the UW-Whitewater campus, including some land that is not contiguous with the nature preserve and do not have the same high quality of native landscape. In the past, the University has successfully transferred LAWCON designation between some of these less ecologically sensitive areas and other state-owned land in order to establish some desirable development sites. While this legal process takes years to complete, it is an option to allow the University to consider future development on current LAWCON designated land. See Figure 61 on page 73 for LAWNCON boundaries.

Developed areas of campus reflect the glacial landscape as well. The most prominent instance is the drumlin, a geologic formation accompanied by a significant change in topography formed by the movement of glacial ice across the underlying ground, located in the middle of the academic core. While its presence highlights these regional landforms as a prominent campus feature and provides educational opportunities, the significant topography creates challenges for visual and pedestrian connectivity, especially for those members of the community with disabilities.

A palette of prairie species has been incorporated into some areas of the campus landscapes. Students, faculty, and staff often cite these areas of the grounds as a source of pride and identity for the University.

Along Main Street in the historic core of the campus, a collection of significant trees, many of mature size and age, has been designated as an arboretum. This landscape contributes to the character of campus and reflects the history of the site and the institution. Current campus policies provide a re-planting strategy of 2 to 1 as trees are removed purposely or by attrition. Plan proposals appropriately continue to preserve this area as campus arboretum.

FIGURE 19: TOPOGRAPHY

EXISTING BUILDINGS
HIGHEST ELEVATION
LOWEST ELEVATION
PROPERTY LINES

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NOT TO SCALE

Open Space

In addition to the natural landscapes on campus, the University has defined open spaces for both active and passive recreation to support campus life. The Carter and Wyman Malls are significant pedestrian axes that define the open space network. Most of the spaces available for passive recreation are organized along these axes. In some places, this network of open spaces is not continuous, making the residence halls and other areas feel disconnected. Overall, the campus lacks a flat open lawn area for large gatherings. The campus has very high quality athletic field facilities, which are clustered largely in the northwestern portion of campus and are a resource for athletic programs, recreation programs, and physical education.

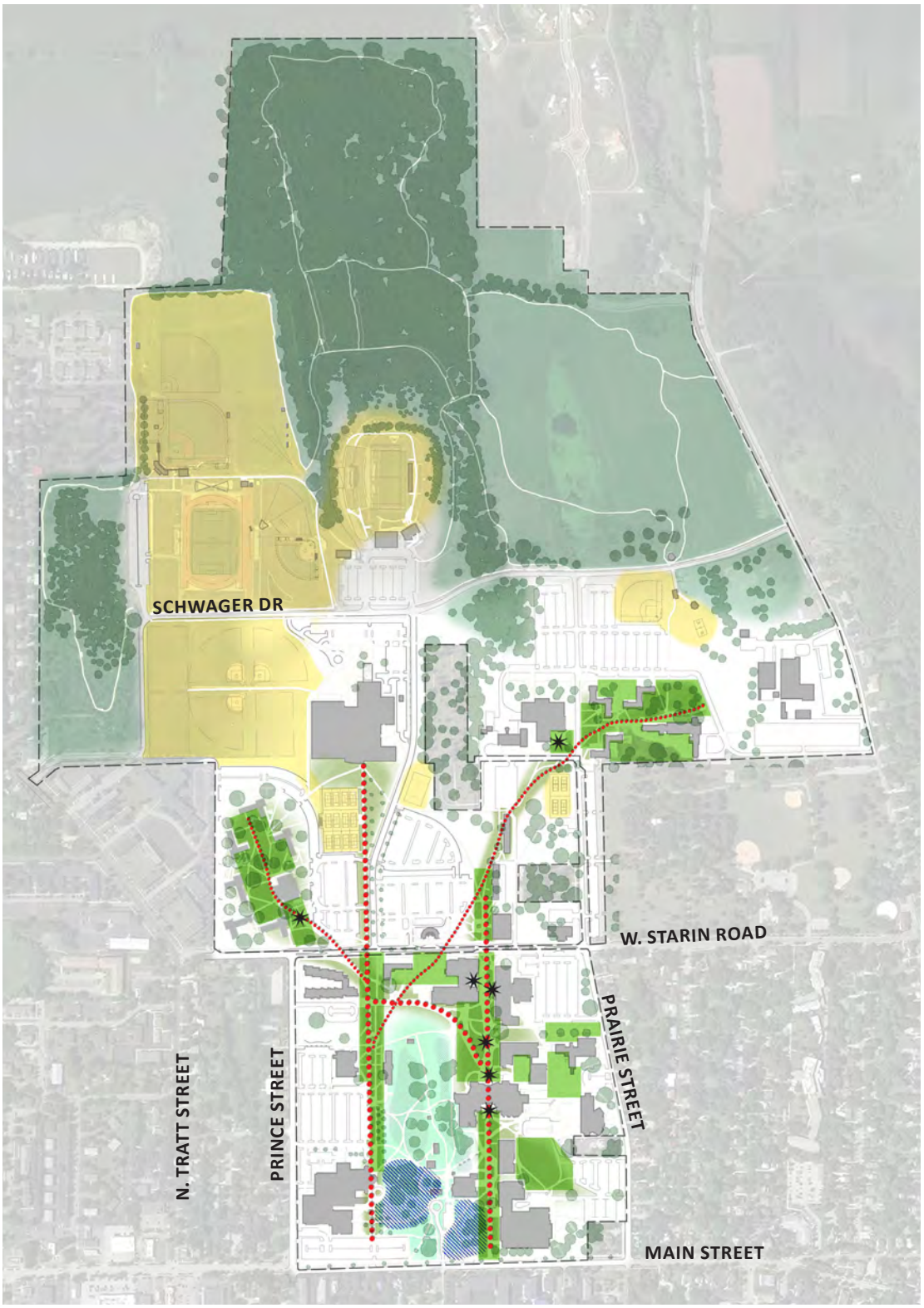

FIGURE 20: OPEN SPACE

- NATURAL AREAS
- ATHLETIC FIELDS
- DRUMLIN
- DEFINED CAMPUS GREENS
- PLAZA
- ARBORETUM
- AXIS / MAJOR PEDESTRIAN ROUTES

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NOT TO SCALE

BUILT SYSTEMS

Building and Land Use

The campus core has a compact mix of academic and administrative uses situated within a ¼ mile travel radius, a distance that can typically be navigated comfortably in five minutes. Wyman Mall and the eastern half of the core have been developed more robustly, while fewer buildings sited along Carter Mall and the western areas of the campus result in less activity, and a perception that those areas of campus are more isolated. While these two areas of campus are physically close to one another, the drumlin acts as both a visual and physical barrier between them, making them feel like two distinct districts.

Starin Road is a major organizing element on campus, dividing the academic core from the athletic and residential districts to the north. While the campus historically had residence halls located north of Starin Road, the recently constructed Starin Hall is located just south of Starin Road and indeed is the only residence hall in the southern portion of the campus. The University's other residence halls are sited in two clusters to the north, and their locations at the eastern and western edges of campus make them feel isolated from each other and the academic core. Dining and gathering spaces are spread across the campus, serving both the academic core and the residential areas.

Indoor and outdoor athletics and recreation facilities are consolidated in the northern portion of the campus. While the extension of Carter Mall north of Starin Road connects this district to the core campus, it can still feel removed, especially considering the classes in the Health, Physical Education, Recreation, and Coaching (HPERC) program that take place in the Williams Center.

Surface parking is also a significant campus land use: if all the surface parking on campus was consolidated together, it would cover an area nearly the size of the academic core or nearly fifty acres. An assessment of the parking system is provided in Parking and Service, page 70.

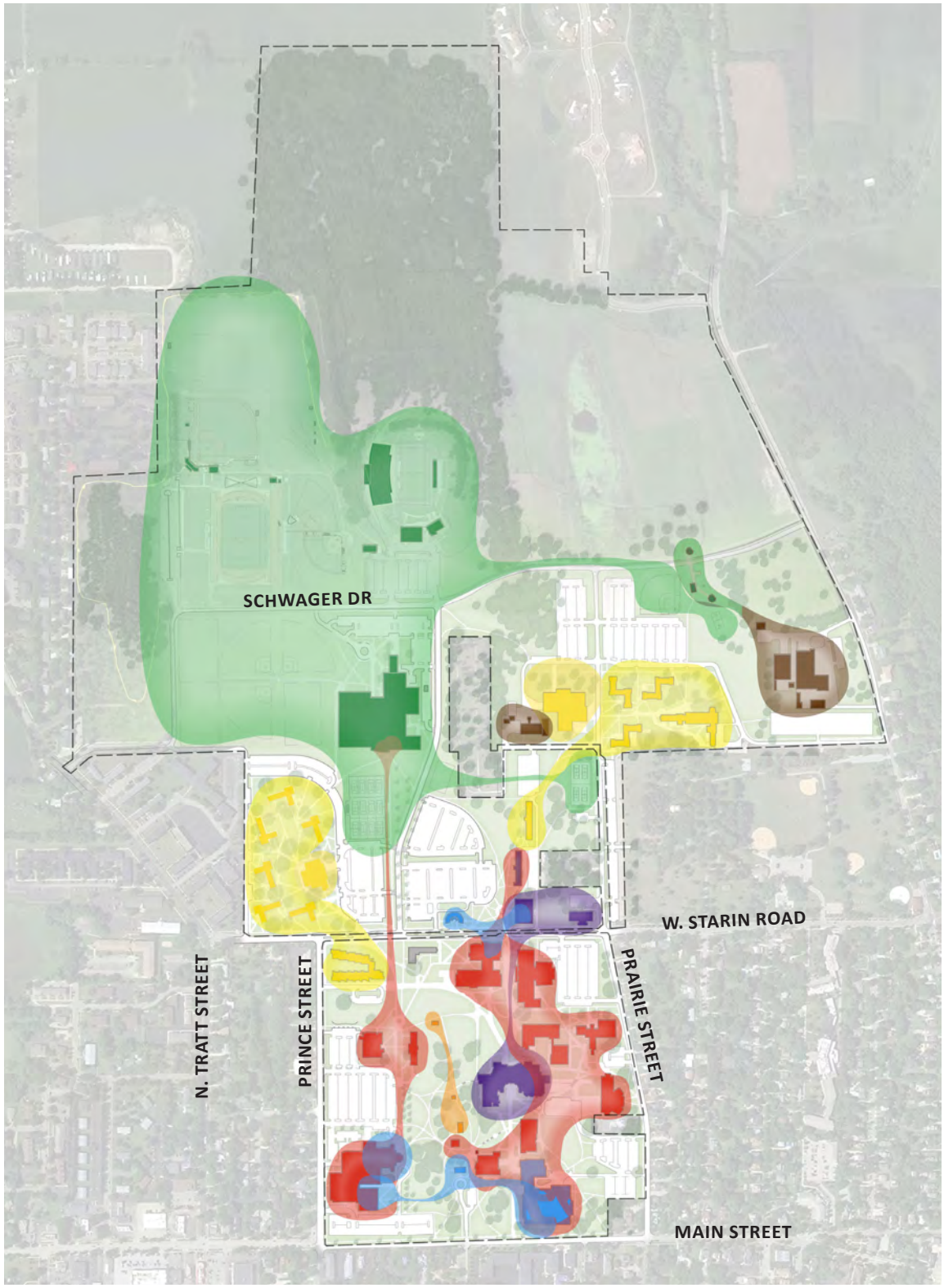

FIGURE 21: BUILDING AND LAND USE

- ACADEMIC AND ADMINISTRATIVE
- PUBLIC INTERFACE
- STUDENT SERVICES
- RESIDENCE HALL
- ATHLETICS AND RECREATION
- SUPPORT / OTHER
- HISTORIC STRUCTURES

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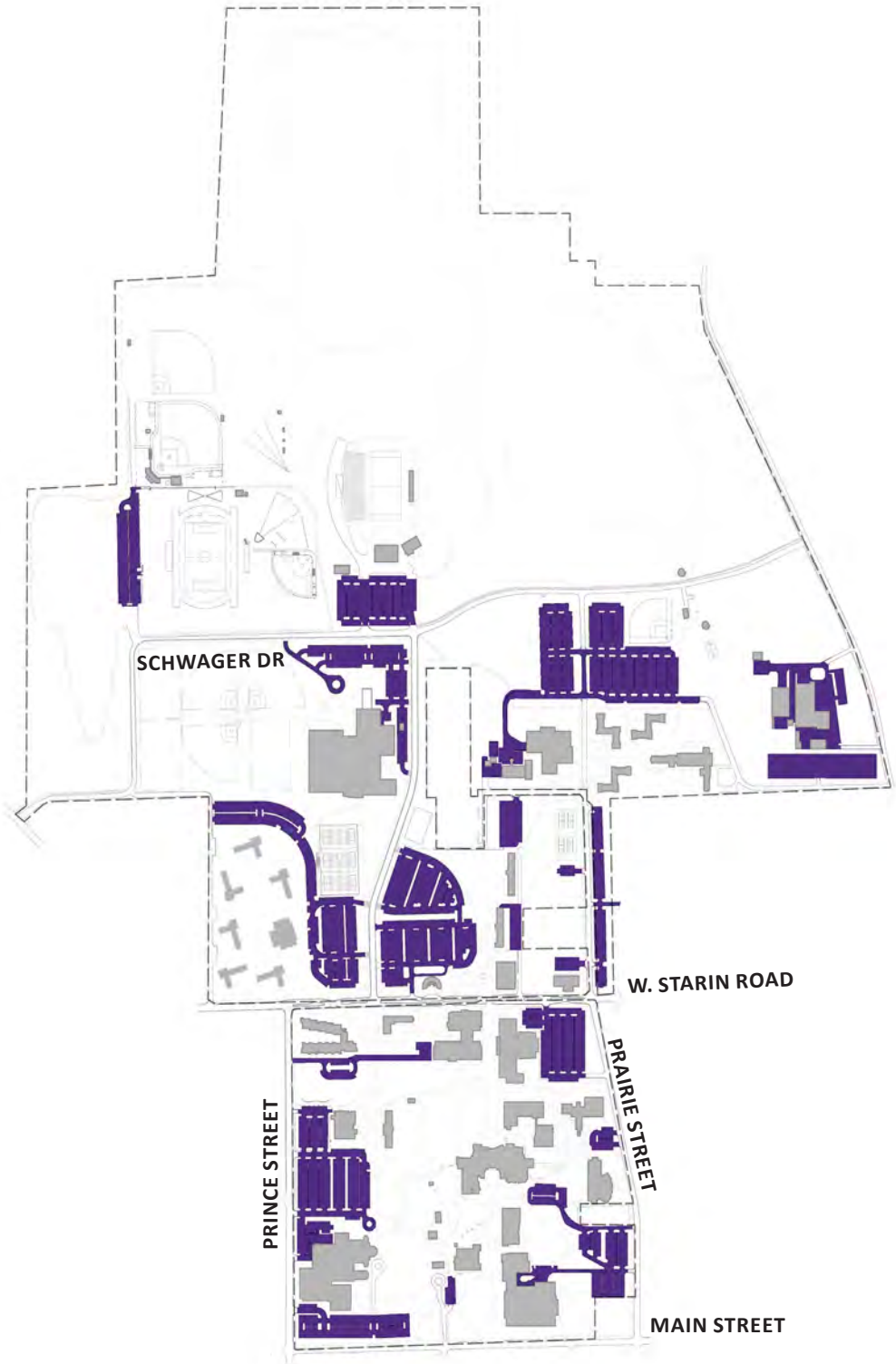

FIGURE 22: PARKING

SURFACE PARKING LOTS AND SERVICE

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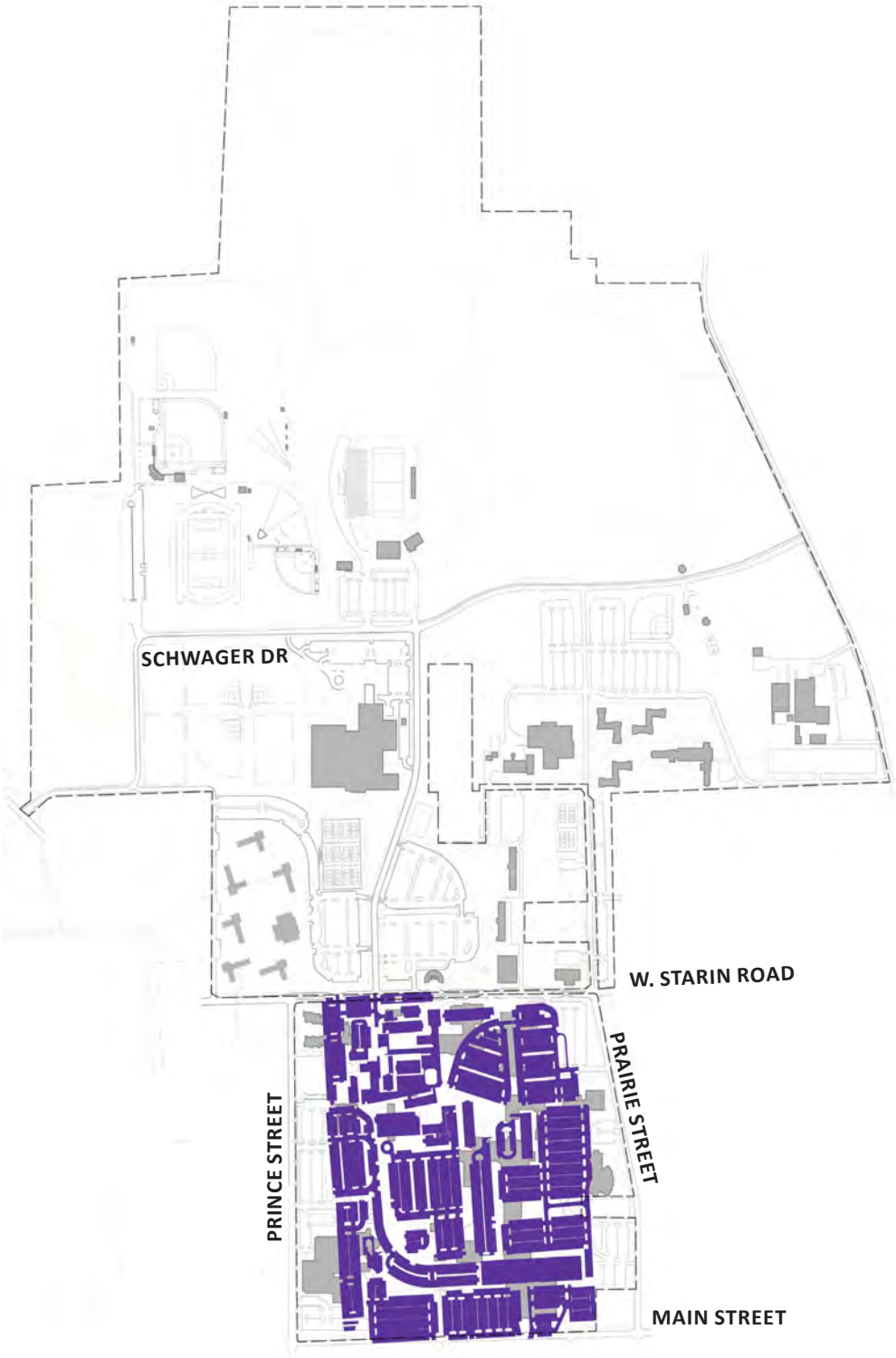

FIGURE 23: AGGREGATED PARKING- APPROXIMATELY 50 ACRES

SURFACE PARKING LOTS AND SERVICE
(APPROX. 50 ACRES)

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Vehicular and Bicycle Circulation

Automobile circulation is the dominant mode of vehicular circulation to campus due to limited alternative transportation options. Recent transportation additions have been successful, including the Janesville-Milton-Whitewater "Innovation Express" (JMW) which makes a stop on campus at the Visitor Center. The route provides access to several destinations in Janesville and Milton, including the Van Galder Bus Depot, where passengers can transfer to buses to Madison, South Beloit, Rockford, O'Hare International Airport, and Chicago. The JMW makes three trips on weekdays and runs one route on Sundays to facilitate student weekend trips to surrounding areas. There is also a USA Coach route that runs from Waukesha to Whitewater on Friday and Sunday. Although these routes have been successful, they are the only bus routes serving the campus; no public transportation exists for local Whitewater destinations.

A large portion of the University community travels longer distances to get to campus. Limited transportation options suggests many arrive by car. Campus is approached from all four directions; no single route is prevalent. The majority of vehicular circulation is at the edges, preserving the pedestrian environment within the campus. Starin Road, Warhawk Drive, Schwager Drive, Prairie Street, and Prince Street are the primary vehicular circulation routes through the campus. Of these, Warhawk and Schwager Drives primarily accommodate campus traffic while Starin Road is one of only a few east-west routes across the City of Whitewater so it provides a significant role in local circulation. While the majority of the traffic on Starin Road passing through campus is indeed related to the University, it is important to note that the greater Starin Road connection plays an important role in the overall City circulation.

This predominance of automobile use impacts the University's carbon footprint and requires a significant amount of land dedicated to parking. Members of the campus community living within a short distance of campus have the option to walk or ride their bikes to campus. Off-street bicycle trails on Schwager Drive and Fremont Road facilitate access from the north and connect the campus to regional recreational trails and natural amenities. Bicycle lanes are marked on campus along Warhawk Drive and Starin Road. Once on campus, pedestrian paths are not intended for bicycle use, and cyclists are expected to park their bikes and walk to their destination. Bicycle parking areas, particularly in covered locations, are often full. The City of Whitewater released a Pedestrian and Bicycle Plan in December 2013 that proposes a more extensive and connected network of bicycle amenities around the campus. This would include bicycle lanes along Main Street, Prairie Street, and Tratt Street and a neighborhood greenway along Prince Street, where pedestrians and cyclists would be given priority. A shared-use path west of the athletics district along Walton Drive would connect to Meadowstreet Park.

FIGURE 24: HYER HALL

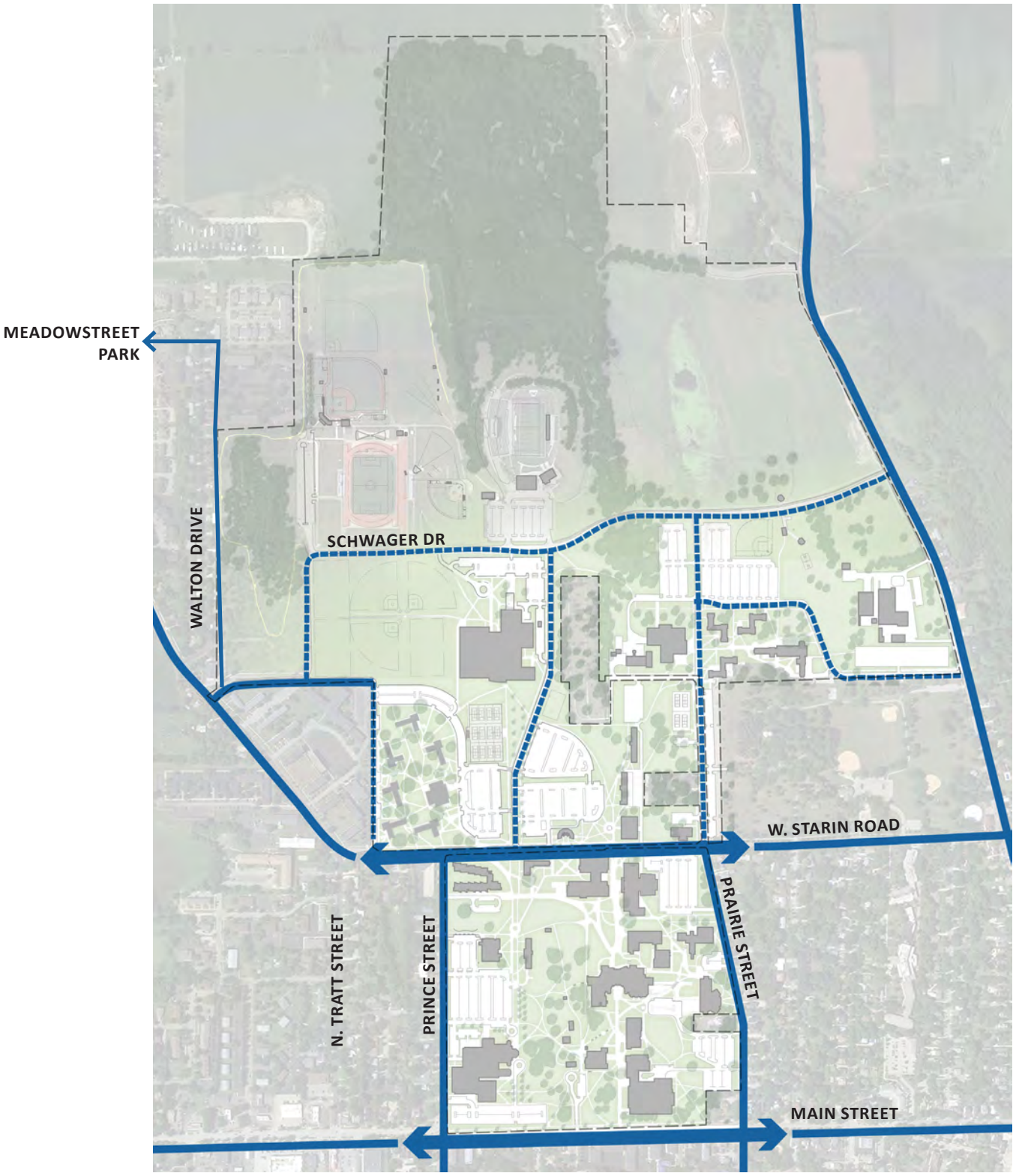

FIGURE 25: VEHICULAR AND BICYCLE CIRCULATION

CITY STREETS
CAMPUS STREETS

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NOT TO SCALE

Pedestrian Circulation

Two parallel north-south pedestrian malls on either side of the drumlin, Wyman Mall and Carter Mall, form the backbone for pedestrian circulation on campus. The existing network of walkways is extensive in the core, becoming less robust at the edges. Recreational trails through the natural preserve areas are an amenity but not intuitively integrated into the circulation network to encourage students, faculty, staff, and visitors to take advantage of the resource.

While the extensive walk network facilitates a pedestrian environment, it can be difficult to differentiate and follow the main route, particularly for those with vision impairments. Slope is another accessibility consideration: the maximum accessible slope without a ramp is 1:20 or 5%. While most campus walks meet this criterion, some around and particularly across the main drumlin exceed the maximum slope, making those routes unavailable or challenging to those with limited mobility.

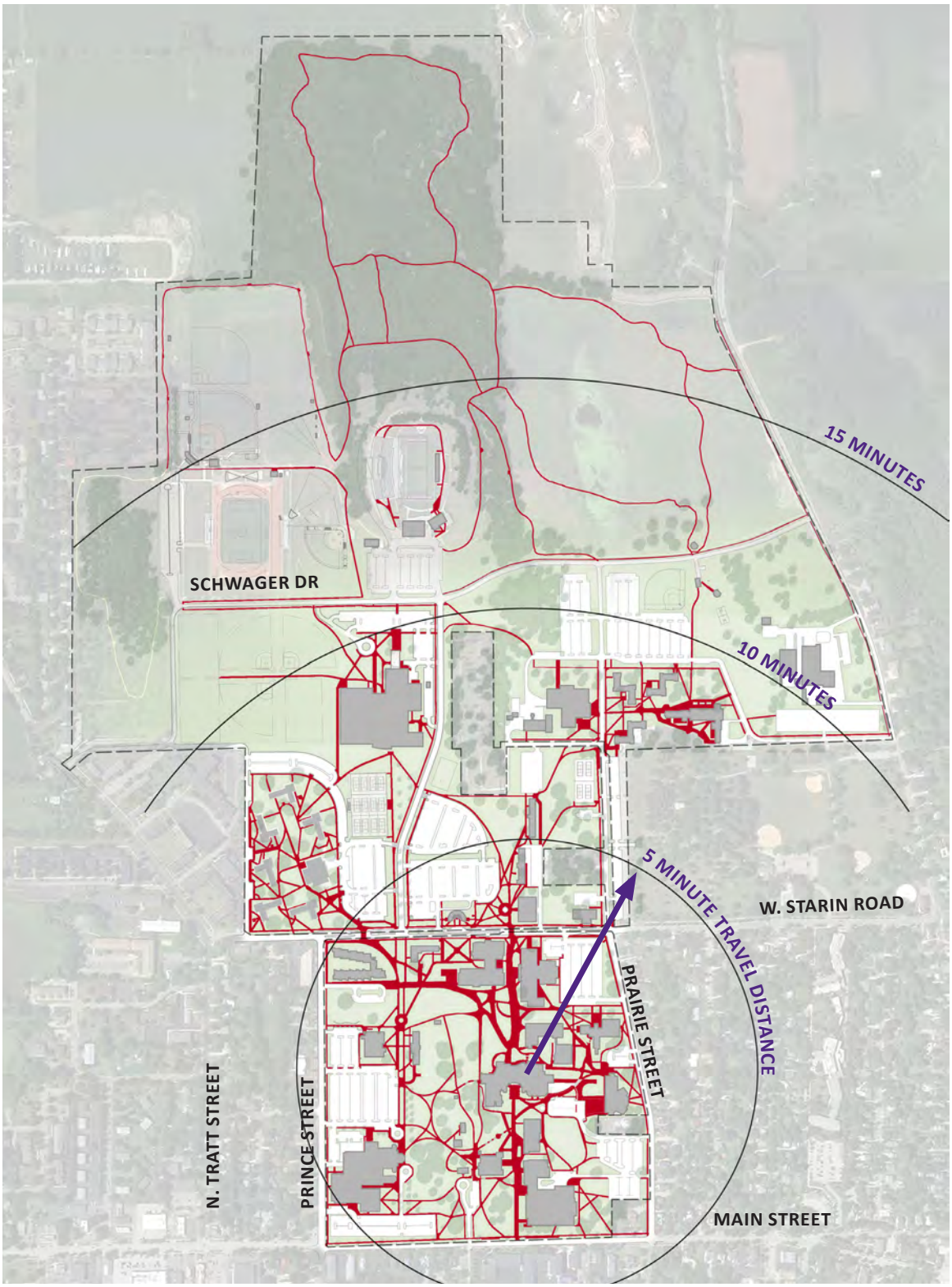

FIGURE 26: PEDESTRIAN CIRCULATION

PEDESTRIAN PATH

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NOT TO SCALE

Concentrated volumes of pedestrians crossing Starin Road, Prince Street, Prairie Street, and Main Street create safety concerns for pedestrians and delays for motorists. Along Main Street and Starin Road, site features such as stone pillars and plantings exacerbate safety concerns by blocking drivers' views of pedestrians, particularly those using wheelchairs. Starin Road has two intuitive main crossing points, but the location of building entries does not reinforce these crossings. While the implementation of traffic calming and crossing guards has improved functionality of Starin Road, the campus community still cites it as a concern.

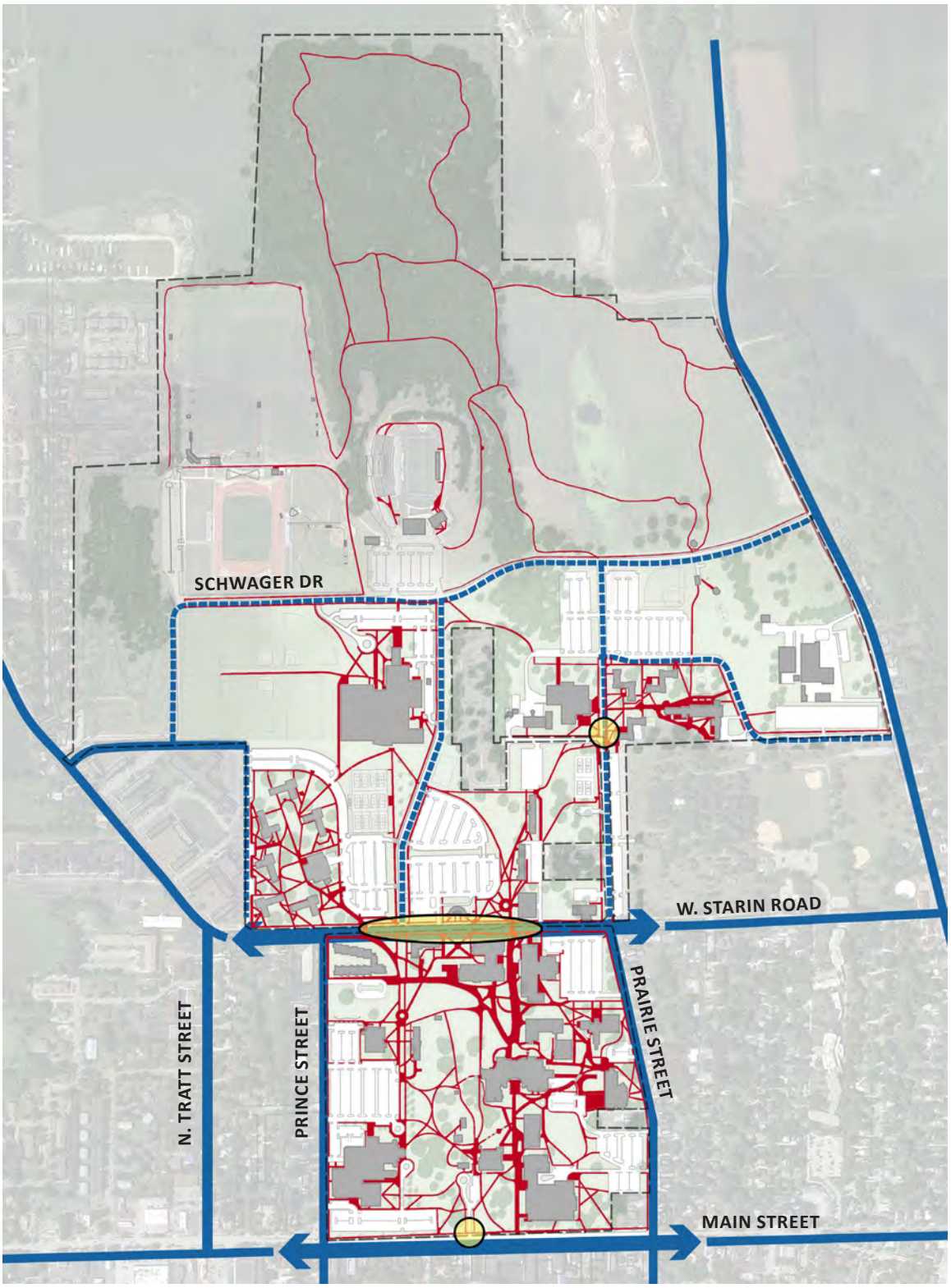

FIGURE 27: PEDESTRIAN AND VEHICULAR CIRCULATION CONFLICT AREAS

- VEHICULAR CIRCULATION
- PEDESTRIAN PATH
- CONFLICT AREAS

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NOT TO SCALE

Entry and Arrival

Finding the campus can be a challenge for visitors. Similar to the challenges facing daily campus users, campus visitors have limited alternative transportation options outside of driving to campus. When arriving by car, visitors rely on the existing City and State directional signage. The current signage around the City of Whitewater directs visitors to routes that are neither intuitive nor direct. As a result, repeat visitors to campus alter their route as they become familiar with the area. Directional signage on Main Street is particularly problematic as it directs visitors to turn on Tratt Street, which is linked to better traffic signal timing from Main Street. However, this directs visitors down a residential street with no University presence, which can be disorienting. Since this is a residential street, the University has no influence on the experience of the campus approach.

NOT TO SCALE

FIGURE 28: ENTRY AND ARRIVAL

EXISTING ARRIVAL SEQUENCE
EXISTING ENTRY GATES / SIGNS

The columns located at the intersection of Starin Road and Prairie Street and on Main Street in front of the Alumni Center are good examples of how to mark the transition from the City of Whitewater onto the campus, but are located at a historic entrance, rather than the current destination of the Visitor Center. This causes additional challenges for visitors.

Most visitors to campus are directed to stop at the Visitor Center in order to get a parking permit before proceeding to their final destination. The Visitor's Center also provides directions and information about the University and serves as a gathering point for prospective student tours. Its location is convenient to parking but not intuitive for those unfamiliar with the campus. Many visitors mistakenly arrive at the Alumni Center, which is the terminus of the historic gates and entry road (S Whiton) off Main Street. The University's address, 800 W. Main Street, furthers this confusion. Even for those who find it with ease, the Visitor Center does not communicate a collegiate sense of welcome and is undersized to accommodate tour groups and other gatherings.

Finding specific destinations on campus can also prove challenging. Exterior and interior signage is inconsistent from building to building, and signs are often placed in locations that are not highly visible.

FIGURE 29: WILLIAMS CENTER

Residence Life Strategy

Approximately 3,730 students currently live on campus. Thirteen residence halls are clustered into two districts in the northwest and northeast areas of campus. These two communities house relatively equal numbers of students, and a dining hall serves each community. With the exception of Starin Hall, all residence halls on campus have a traditional, hall-style layout with one shared bathroom on each floor. Starin Hall's rooms are arranged "suite style" with shared bathrooms, kitchen, and living area for each unit. In addition to these on-campus facilities, another 450 students live in housing the University leases off-campus to meet demand. In the leased housing, the University provides programming similar to that provided in on-campus residence halls.

The University completed a Residence Life Master Plan in 2011 that explored options for both renovation and new construction of residence halls to address an insufficient quantity of housing to meet demand and quality issues related to universal accessibility and modernization. In February 2013, the University completed a feasibility study exploring several concepts to renovate or replace Esker Dining Hall. Since completing these studies, further assessment has concluded that both Wells Hall and Esker Dining Hall should be replaced due to the significant costs required to renovate the facilities to meet the University's programmatic needs.

As a result, the University plans to build a total of five new residence halls and a replacement dining hall while continuing to renovate the remaining halls over time. As residence halls are renovated, there will be a slight loss of capacity. The first new residence hall will make up for this lost capacity, build capacity to meet current demand. The second proposed residence hall provides opportunity for an increased percentage of students to be housed on campus. The last three of the proposed residence halls provide the 1200 beds needed to replace Wells Hall, allowing for its ultimate demolition when new construction and renovations are complete. Each new hall will accommodate 400 beds. It is anticipated that each will be developed in an efficient layout: semi-suite units will have shared bathrooms between adjacent rooms with shared informal gathering areas located outside the unit.

The Comprehensive Campus Master Plan integrates these new facilities into the campus framework to create community, activate key locations, and ensure adequate dining capacity.

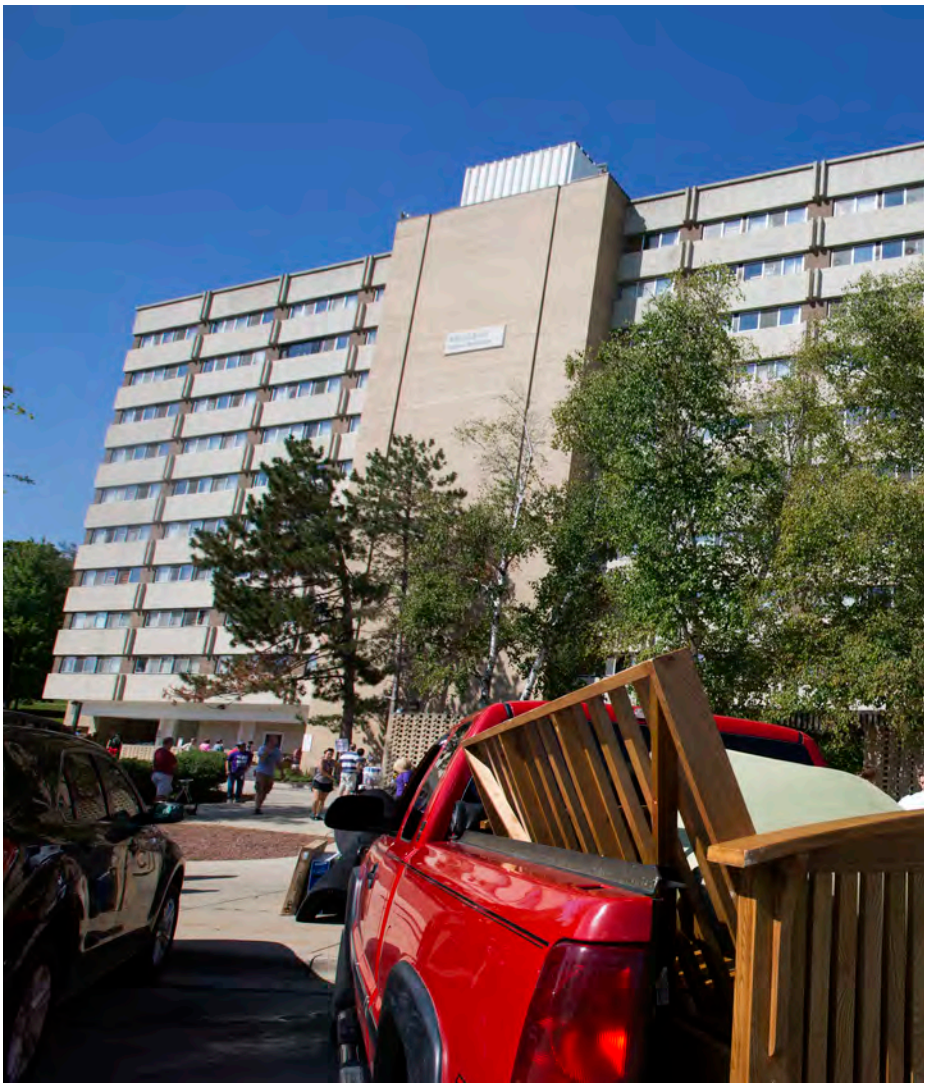

FIGURE 30: WELLS RESIDENCE HALLS

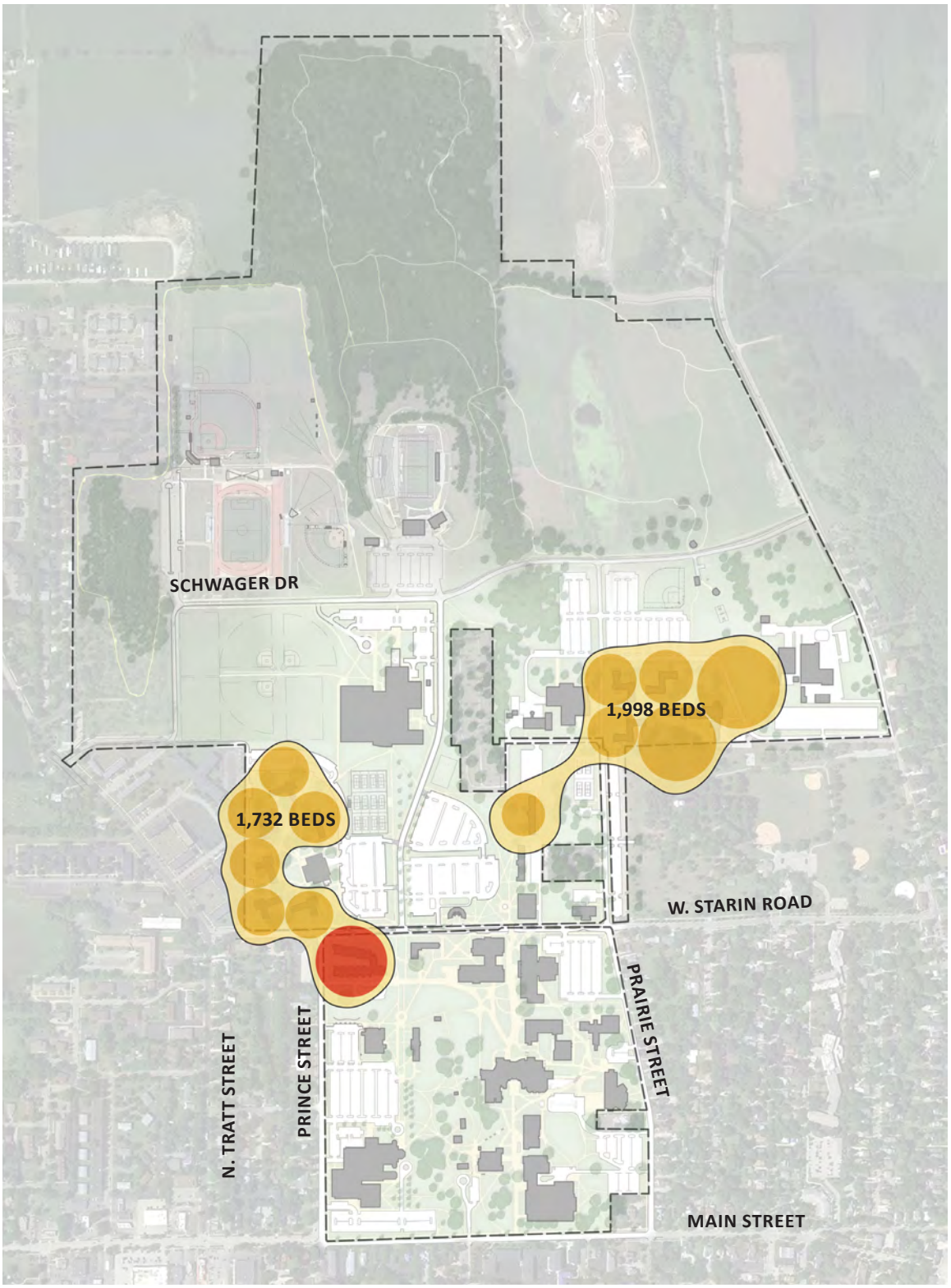

FIGURE 31: RESIDENCE LIFE STRATEGY

- HALL STYLE RESIDENCE HALL
- APARTMENT STYLE RESIDENCE HALL
- RESIDENTIAL COMMUNITY

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Master Plan Proposals

GUIDING PRINCIPLES

The Master Plan process began with a series of listening sessions with a broad cross-section of the campus community. Several resonant themes emerged throughout these sessions. These themes were adapted into principles that guided the process of developing the Master Plan.

Support Strategic Plan

The mission to develop individuals with integrity, respect for diversity, and a global perspective through its academic and co-curricular programs underlies all undertakings of the University of Wisconsin-Whitewater. The Master Plan will align the physical campus with the University's mission and values and support the objectives outlined in the Strategic Plan.

Optimize Space

The mix of old and new buildings on campus successfully reflects the University's long history and its commitment to progress. High quality spaces created through comprehensive building renovations and new construction are an asset to the campus but also exaggerate the lack of quality furnishings, accessibility considerations, sustainability features, and technology in older buildings by comparison. The Master Plan will address existing and projected space deficits on campus and promote consistently high quality space campus-wide.

Strengthen Identity

Many strengths distinguish the University of Wisconsin-Whitewater campus: consideration for accessibility to all students, excellent athletic and recreation programs, and the beauty of the campus landscape, among others, have been articulated by the campus community. However, these individual strengths do not add up to a legible or unified identity. This is especially apparent in the visitor experience, which does not communicate a collegiate sense of welcome or easily facilitate wayfinding through signage. The Master Plan will build on existing strengths to further distinguish the University of Wisconsin-Whitewater through its physical campus; it will define campus edges and a clear arrival experience to welcome and encourage engagement with the community.

FIGURE 32: HYER HALL CLASS

Engage with Community

As the University matures, there is increasing demand to live on campus and participate in community activities throughout the week and weekend. Whether supporting the school's national championship teams or participating in intramural, athletics and recreation programs are a critical component of the UW-Whitewater community. Campus' performing arts programs also create important community connections through events at the Young Auditorium. The Master Plan will develop a compact, residential campus with amenities for students, faculty, and staff that promote interaction, enhance quality of life, and accommodate activity seven days a week.

Make Robust Connections

The compact campus envisioned to support community requires robust network of connectivity for all modes. Overall, the campus is navigable, but some concentrated pedestrian paths conflict with automobile and service vehicle traffic and steep topography inhibits accessibility in some locations. Bicycle ridership is an underutilized opportunity. While a substantial quantity of parking exists, some high demand locations have limited capacity at peak times. The Master Plan will create a dynamic campus with well-defined and accessible pathways that flow naturally between buildings and grounds.

Embrace Sustainability

Topography, native planting, views, and sustainable building features enrich the campus in some locations, but have not been embraced campus wide. The Master Plan will further embrace sustainable practices by highlighting natural features unique to Whitewater, promoting efficient use of resources, and connecting people with each other and with their environment.

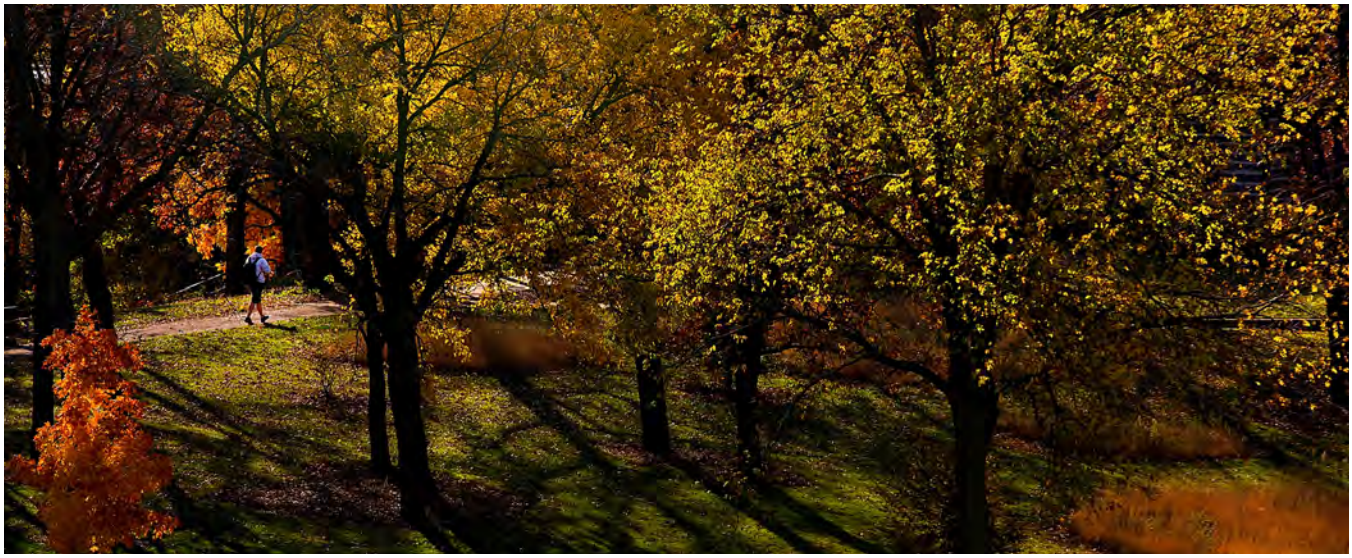

FIGURE 33: CAMPUS FALL SCENE

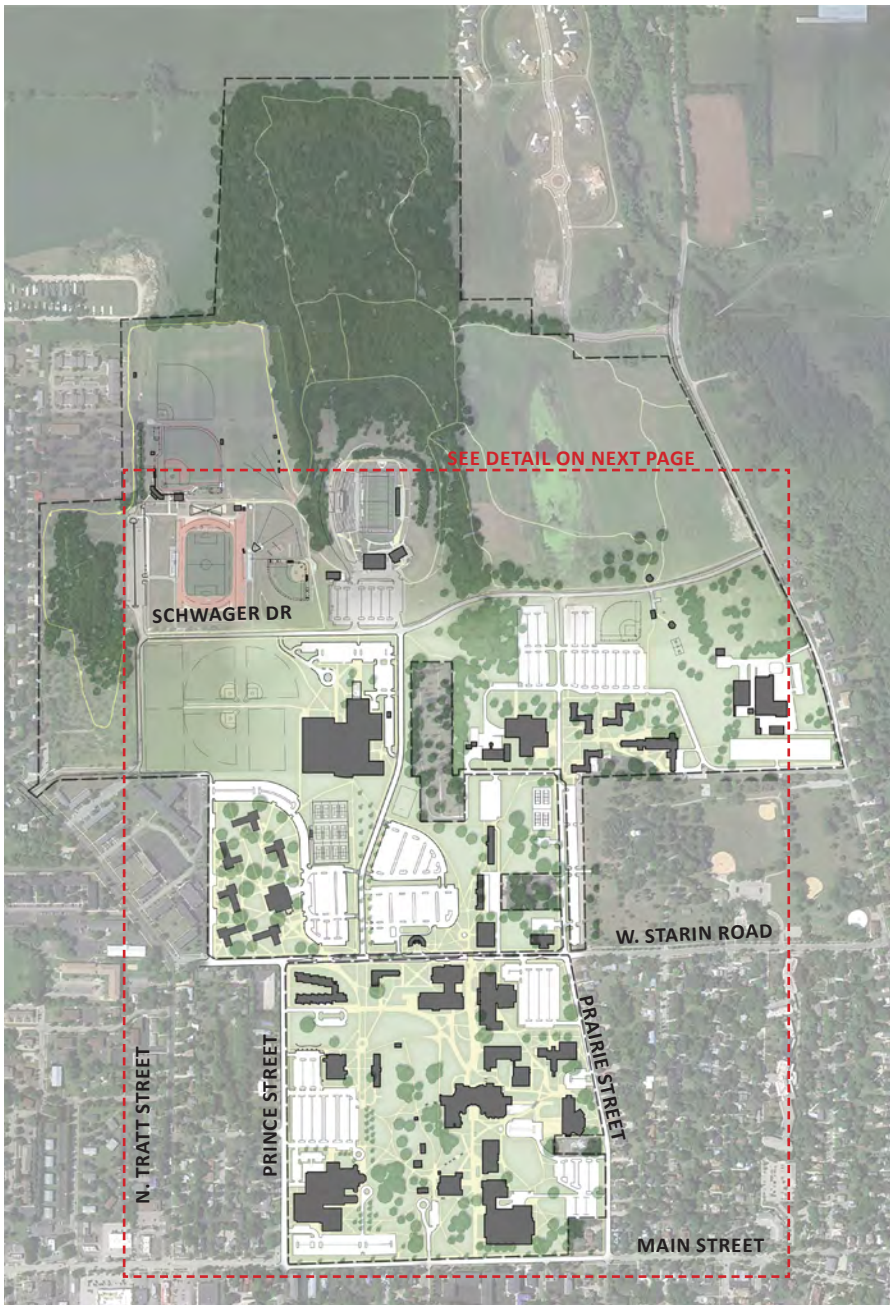

FIGURE 34: EXISTING CONDITIONS

EXISTING BUILDINGS

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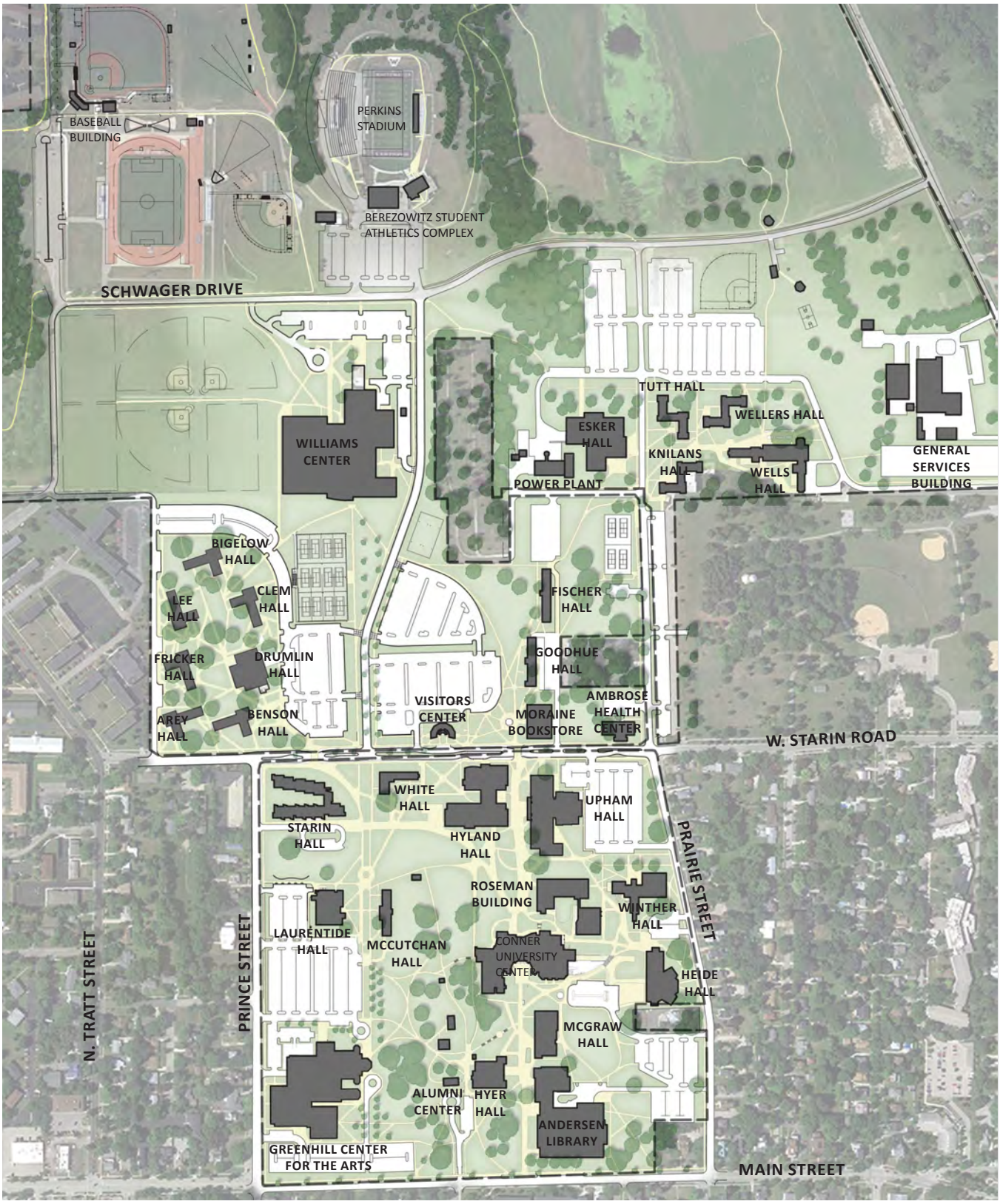

FIGURE 35: EXISTING CONDITIONS DETAIL

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KEY RECOMMENDATIONS

The Comprehensive Campus Master Plan leverages new and renovated facilities in support of the University's mission to ensure that individual projects executed over the twenty year planning horizon reinforce a common vision, resulting in a positive impact on the whole campus. New building sites strategically reinforce advantageous programmatic adjacencies between facilities. Building locations integrate and expand the network of interconnected open spaces that define the University of Wisconsin-Whitewater's campus. New buildings and open spaces reinforce the Wyman and Carter Malls, extending these strong pedestrian experiences north of Starin Road.

New academic buildings strengthen the core campus by adding activity to Carter Mall and Starin Road. Residence halls establish a strong sense of community and a vibrant university presence north of Starin Road. Residence life plays a defining role in the next phase of development. New residence halls and student life facilities connect the existing west and east campus residential communities to each other and to the core campus. The redevelopment of north campus further integrates the athletic complex into the campus framework, while new and renovated athletic and recreation facilities support the continued growth of this aspect of university life.

FIGURE 36: COMPREHENSIVE CAMPUS MASTER PLAN

- EXISTING BUILDINGS
- RENOVATED BUILDINGS
- PROPOSED NEW CONSTRUCTION
- LONG TERM DEMOLITION

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FIGURE 37: COMPREHENSIVE CAMPUS MASTER PLAN DETAIL

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FIGURE 38: AERIAL VIEW OF PROPOSED PLAN LOOKING NORTHWEST

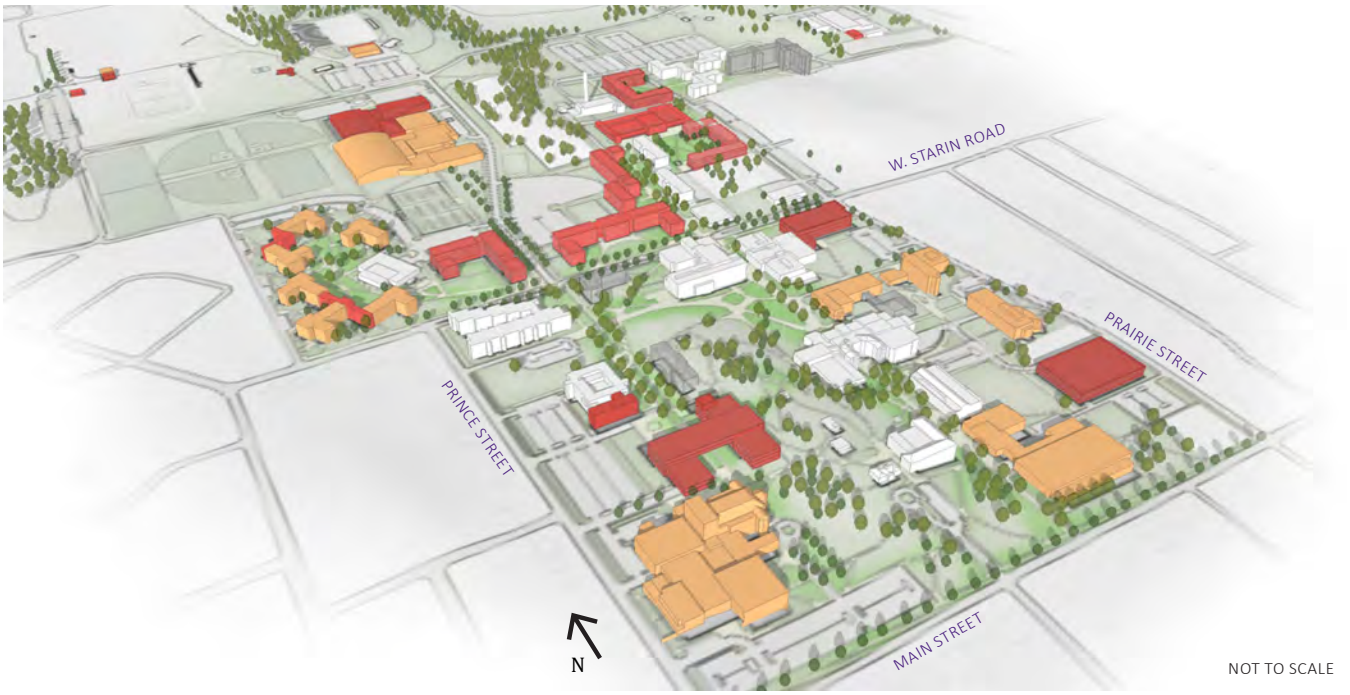

FIGURE 39: AERIAL VIEW OF PROPOSED PLAN LOOKING NORTHEAST

- EXISTING BUILDINGS
- RENOVATED BUILDINGS
- PROPOSED NEW CONSTRUCTION

FIGURE 40: HOMECOMING AT PERKINS STADIUM

Academic Facilities

A campus' academic facilities provide the physical space necessary to carry out the University's primary mission. Space needs projections identify a need for additional academic space over the twenty year planning horizon.
The Comprehensive Campus Master Plan identifies three new academic buildings to meet this projected need.

A. Student Success Center
The Student Success Center will be a three-story addition to Laurentide Hall scheduled for completion in Fall 2015. The approximately 18,000 gross square foot facility houses Campus Tutorial Services, including computer labs and areas for collaboration between groups of students and tutors.

B. Academic Building 1 – Starin Road
A new academic building located along Starin Road adjacent to Upham Hall will accommodate space needs related to growth in the sciences, business, and health services. The four-story building will ensure classroom and lab facilities keep pace with modern standards.

C. Academic Building 2 – Carter Mall
A new academic building located along the Carter Mall will accommodate the future academic needs of a growing student body and will provide a location for a consolidated student services center, or "one-stop-shop," and a new visitor's center. The building's location will activate Carter Mall by complementing the concentration of faculty office space in Laurentide and the specialized facilities in the Greenhill Center for the Arts. The stepping, two to four-story building will also provide a unique opportunity for an upper-level pedestrian connection onto the drumlin to help facilitate accessible routes across the major topographic changes in the center of the core. Similar to the way the University Center accesses the drumlin at the second level, the new building will provide upper level access to the drumlin, minimizing the vertical elevation necessary to navigate campus at this location.

These three facilities will satisfy the academic needs identified through the space needs assessment. While there are no pressing needs for a fourth academic building at this time, an addition west of Hyer Hall on the site formerly occupied by Old Main Hall (D) is suggested to be reserved as a long-term opportunity. The Alumni Center building currently located on the site today does not carry the substantial presence desired at this significant location on campus. This site offers the campus additional future capacity beyond the identified need and planning horizon.

Several existing buildings are assets that will continue to serve the University but need facility renewal to address the condition of building systems, to facilitate modern pedagogy and accommodate universal accessibility. In the academic core, Winther Hall, Heide Hall, Greenhill Center of the Arts, Andersen Library, and Roseman Building have long term value but need reinvestment.

Other aging buildings in the core, including White Hall, McCutchan Hall, and the Roseman gymnasium, have short-term value as swing space to facilitate renovation and migration but are not appropriate for significant investment or long-term use in the campus development framework. These facilities are identified for demolition, to be returned to open space when no longer needed as University swing space.

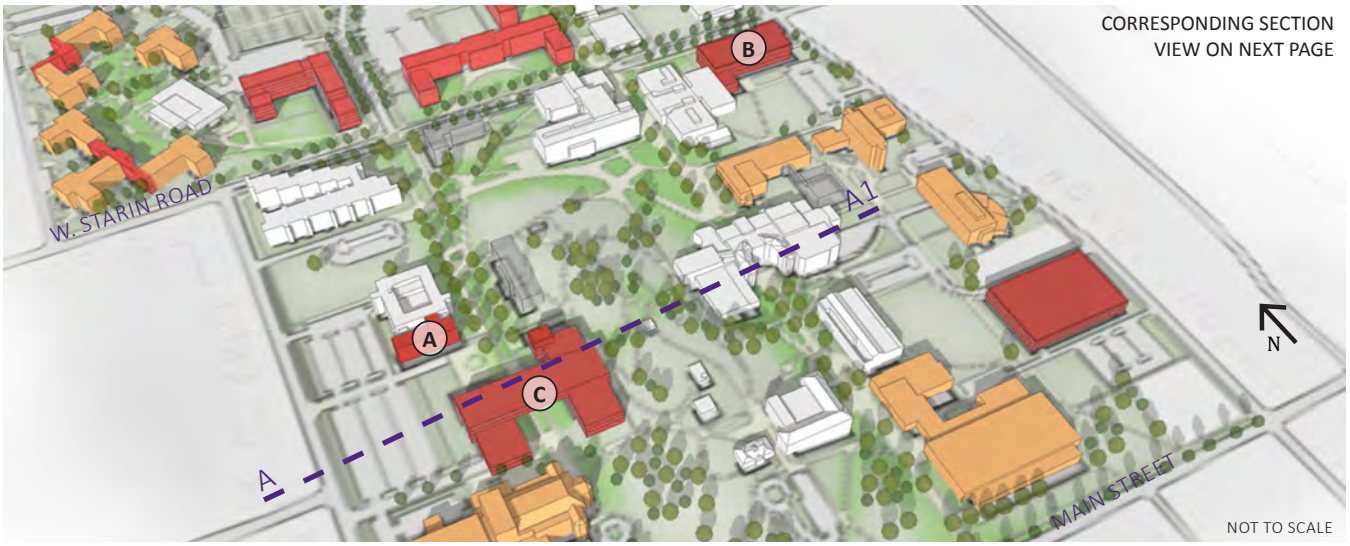

FIGURE 41: AERIAL VIEW OF PROPOSED PLAN LOOKING NORTHEAST

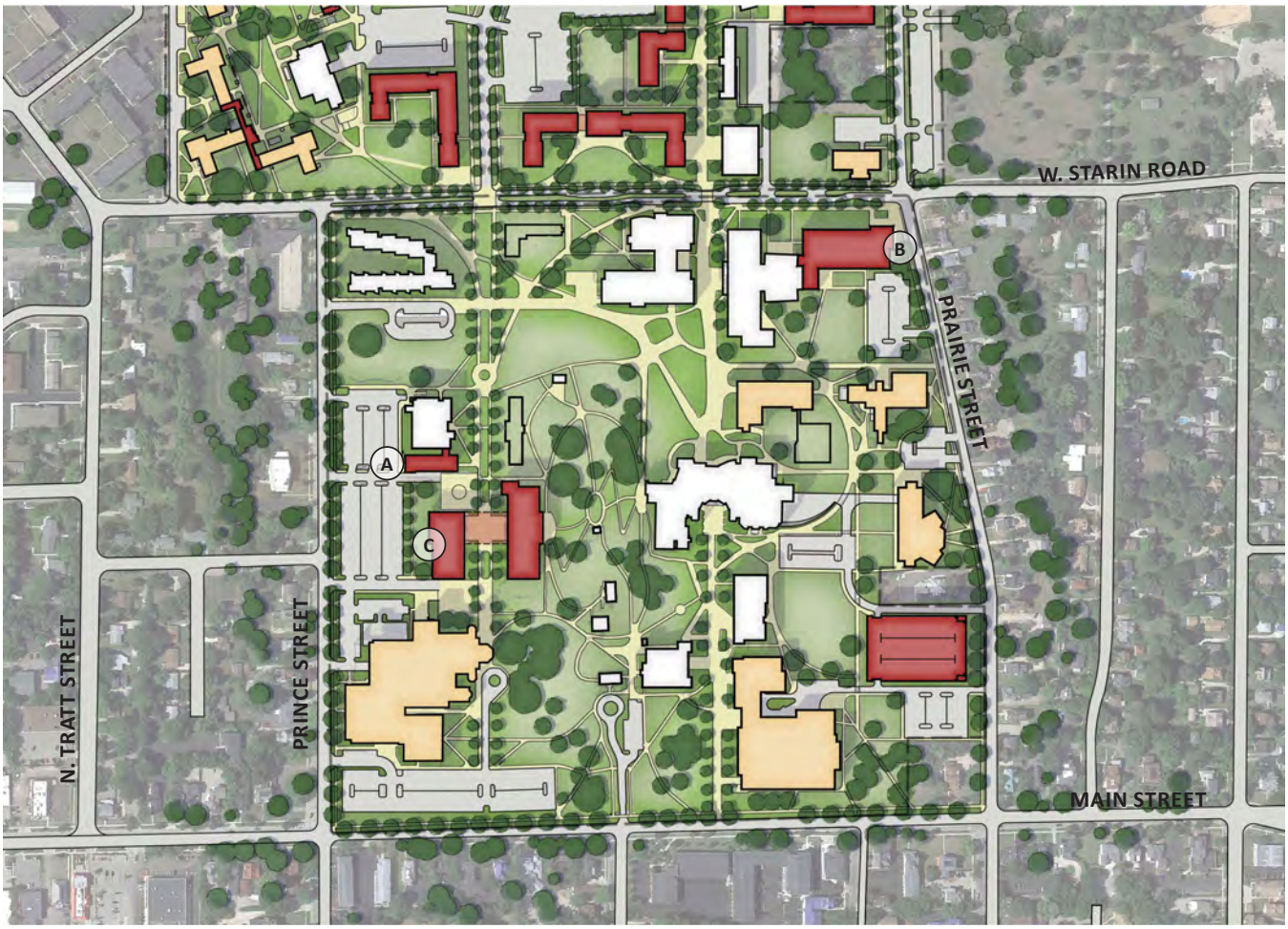

FIGURE 42: PROPOSED NEW ACADEMIC FACILITIES

- EXISTING BUILDINGS
- RENOVATED BUILDINGS
- PROPOSED NEW CONSTRUCTION
- LONG TERM DEMOLITION

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CORRESPONDING PLAN AERIAL
VIEW ON PREVIOUS PAGE

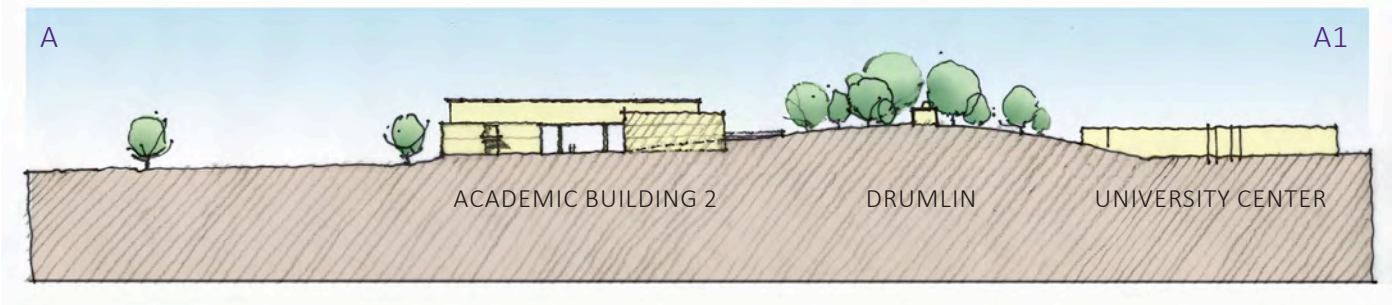

FIGURE 43: PROPOSED ACADEMIC BUILDING 2
PROVIDES VERTICAL CIRCULATION TO THE DRUMLIN SIMILAR TO THE UNIVERSITY CENTER

Athletic Facilities

The athletic facilities accommodate academic courses, competition and practice for the University's varsity athletes, club and intramural sports, and recreation. Development projects identified in this area ensure that excellent athletic facilities continue to distinguish UW-Whitewater.

A. Baseball Building Addition and Renovation

The Baseball Building will be renovated and expanded to accommodate locker rooms, an accessible upper level, team meeting room, offices, restrooms, an expanded press box, concessions, and other support functions.

B. Athletic Grounds Building

The 1,400 gross square foot building will include an office, an accessible restroom, and support functions, including vehicle storage and maintenance.

C. Softball Stadium Building

The project will provide support facilities for the softball stadium. It has been enumerated.

D. Stadium Athletic Services Building Renovation

Expansion will accommodate expanded locker rooms, team meeting rooms, expanded physical therapy and training space, a ticket office, and equipment storage.

E. Indoor Tennis Facility

The new tennis facility will allow the men's and women's varsity tennis programs and community tennis programs to operate throughout the year. It will house four indoor tennis courts designed for competitive tennis and associated support space. Its suggested site north of the Kachel Fieldhouse will offer an opportunity to connect the facility to the existing internal circulation spine of the Williams Center. The addition will provide an additional front door facing the playing fields complex to the north.

F. Accessible Gymnasium

The gymnasium in Roseman Hall is accessible but does not adequately serve the needs of the wheelchair athletics programs at the University. A fully accessible replacement gymnasium connected to the internal circulation spine of the Williams Center will allow users to take full advantage of the other resources available in the center, including the opportunity for much needed accessible locker rooms.

FIGURE 44: AERIAL VIEW OF PROPOSED PLAN LOOKING SOUTHWEST

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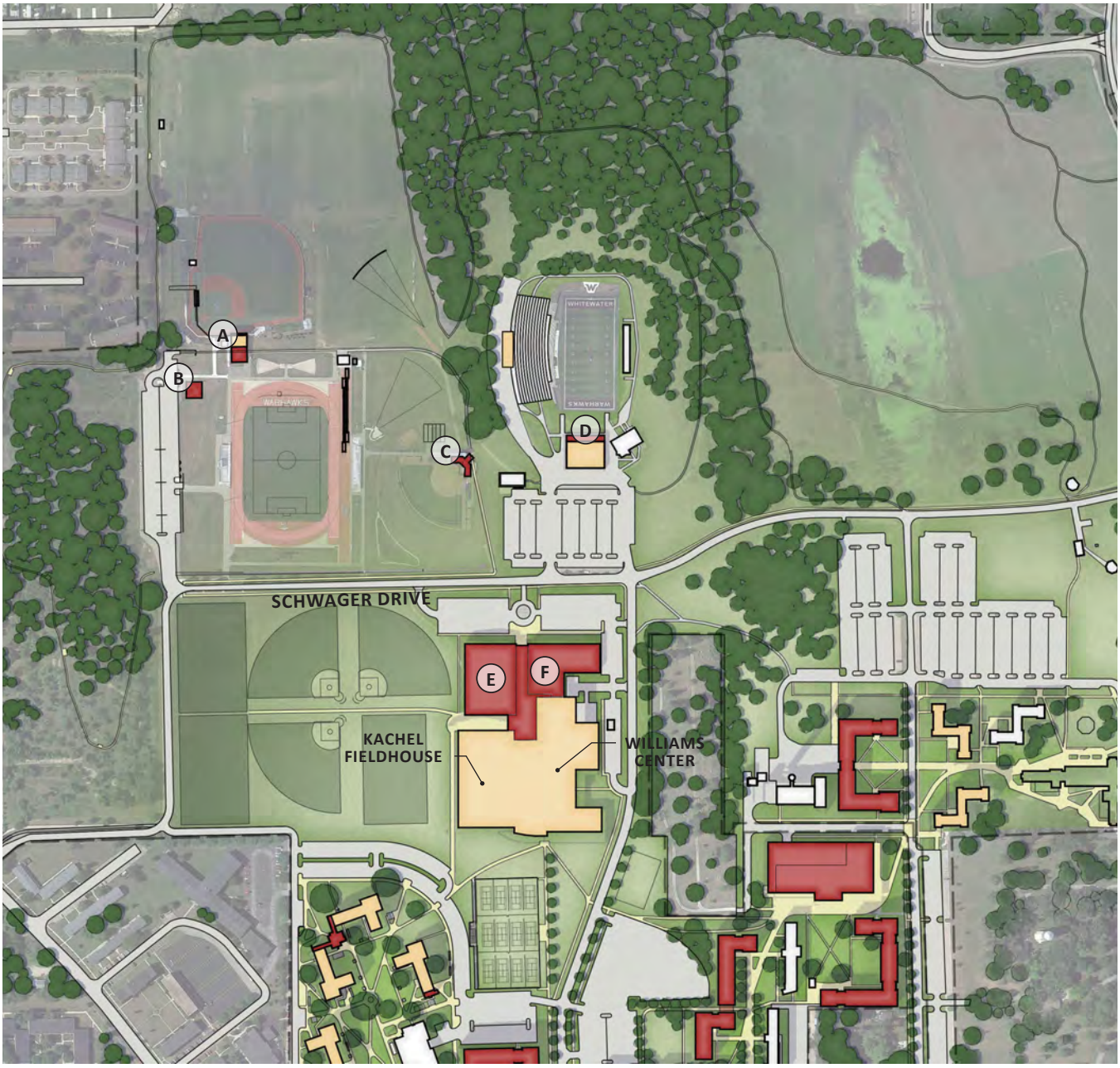

FIGURE 45: PROPOSED ATHLETIC FACILITIES

- EXISTING BUILDINGS
- RENOVATED BUILDINGS
- PROPOSED NEW CONSTRUCTION
- LONG TERM DEMOLITION

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Residence Halls

The Comprehensive Campus Master Plan shows significant investment in residence life that transforms the structure of the campus. Residence halls have been sited to better connect the two existing residential communities currently separated from the academic core and one another. New residence halls will develop one continuous residential precinct with interconnected open spaces and clear pedestrian circulation.

A. Five New Residence Halls

The Comprehensive Campus Master Plan includes five new residence halls that increase both the quantity and quality of housing options available to UW-Whitewater students. Each hall will accommodate 400 beds in an efficient semi-suite configuration with two rooms sharing an adjoining bath and community space outside the unit on each floor. The buildings will range from four to six stories in height and will create outdoor quadrangles for passive recreation.

B. West Campus Renovations

All six of the west campus residence halls are to be renovated and expanded to include an elevator core and accessible restroom facilities. Two of these cores will be shared between more than one building and create a common entry point. The first phase of these projects creates a link between Fricker and Arey Halls. This project is underway and scheduled for completion in Fall 2015.

Three of the five new residence halls will provide capacity to replace the 1,200 beds currently accommodated in the two towers of Wells Hall. The extensive renovations required to modernize Wells Hall into a fully accessible residence hall were studied during the 2011 Residence Life Master Plan and subsequently determined to be cost prohibitive. After the beds in Wells have been replaced, the University will have the option of using this structure for temporary swing space until it is demolished and before the site is repurposed for other uses, including a future residence hall, parking, or recreation space.

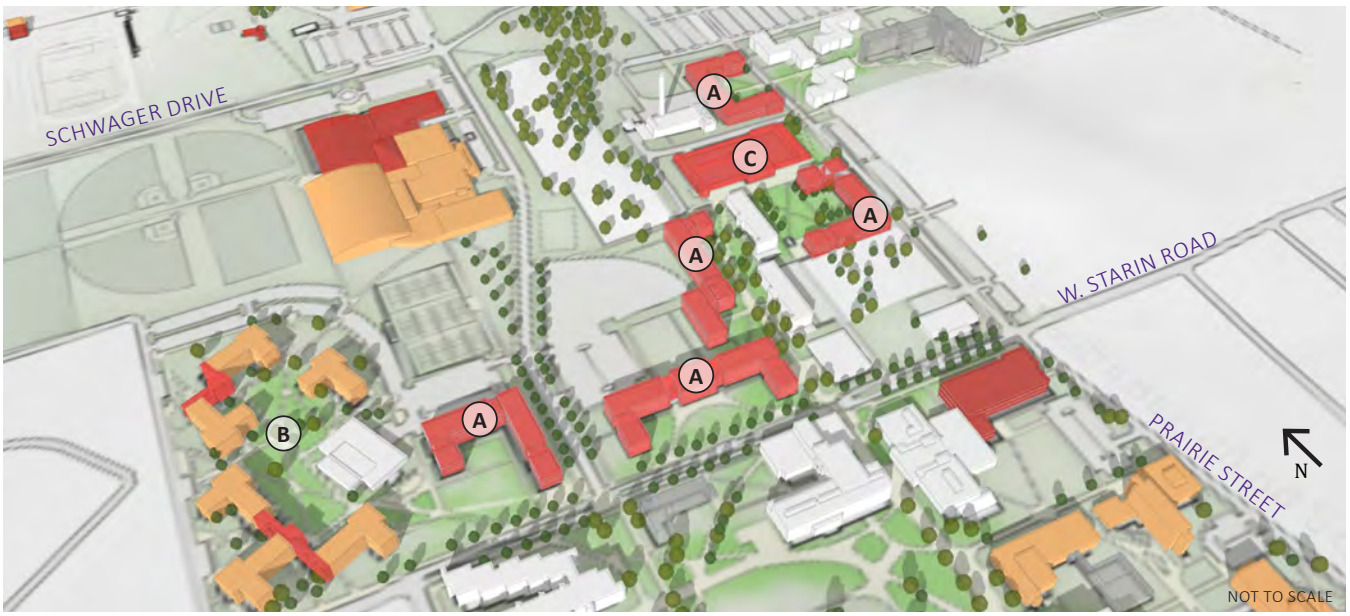

FIGURE 46: AERIAL VIEW OF PROPOSED PLAN LOOKING NORTHEAST

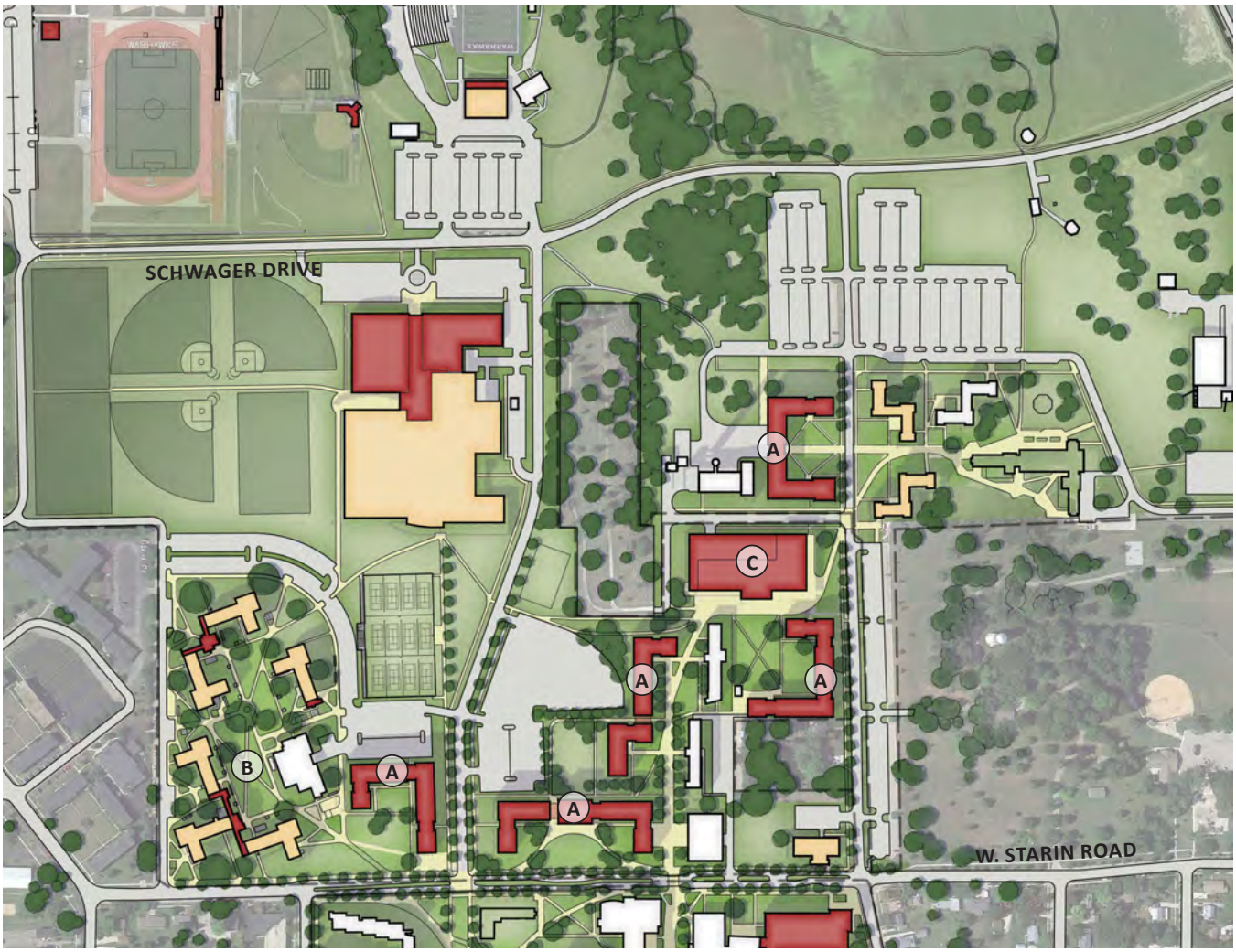

FIGURE 47: PROPOSED RESIDENCE HALLS & STUDENT LIFE FACILITIES

EXISTING BUILDINGS
RENOVATED BUILDINGS
PROPOSED NEW CONSTRUCTION
LONG TERM DEMOLITION

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NOT TO SCALE

Student Life Facilities

A new dining facility (C) replaces Esker Hall and serves residents of the eastern portion of campus. The new dining facility will be located in a central location to support the new residence halls and the existing east campus residence halls. The facility will also include a large event space to supplement the Hamilton Room, currently located in the University Center. This new facility will provide a slightly larger capacity than the existing Hamilton Room.

In order to implement this approach to residence life and student life facilities, land acquired using funds from the Land and Water Conservation Fund Act (LAWCON) must undergo a reclassification with the designation being applied to other lands; this would occur in partnership with the National Parks Service. LAWCON designation has been given to both the Nature Preserve and the tennis courts site along North Prairie Street. The Comprehensive Campus Master Plan recognizes the value of developing the tennis court site to create a connected residential campus. As a result, this plan recommends transferring the LAWCON designation from this area to other University property.

Facilities Reinvestment

Ensuring consistent quality of space campus-wide requires reinvestment in existing campus facilities.

The Comprehensive Campus Master Plan calls out the need for significant renovations to the following buildings:

- Greenhill Center for the Arts (A)
- Andersen Library (Phase 1) (B)
- Winther Hall (C)
- Heide Hall (D)
- Roseman Building (Phase 1) (E)
- Williams Center and DLK Kachel Fieldhouse (F)
- Stadium Athletic Services Building (with addition) (G)
- Baseball Building (with addition) (H)
- Ambrose Health Center (I)
- West Campus Residence Halls (J)
- Tutt Hall (K)
- Knilans Hall (L)

Renovations to these facilities will be phased over time. The Facilities Condition Assessment and the Phasing and Implementation sections include more detailed descriptions of renovation potential and phasing.

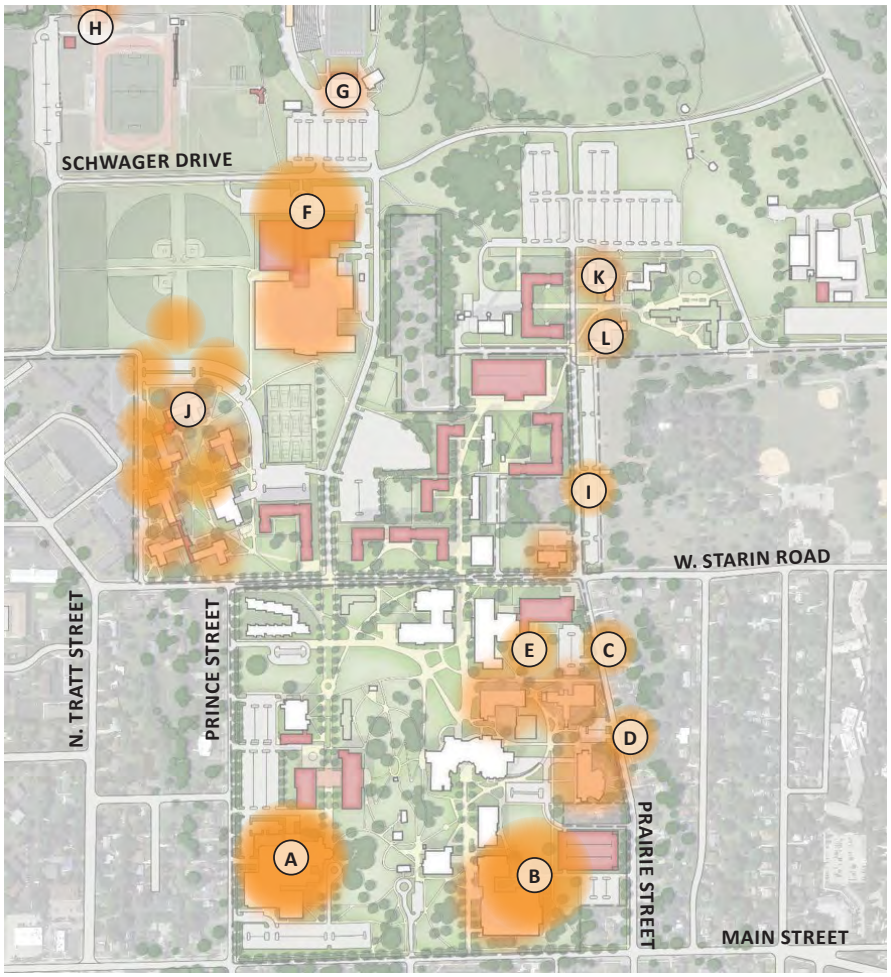

FIGURE 48: FACILITIES REINVESTMENT

EXISTING BUILDINGS
RENOVATED BUILDINGS
PROPOSED NEW CONSTRUCTION
IDENTIFIED RENOVATION NEEDS

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NOT TO SCALE

Parking

The Comprehensive Campus Master Plan clusters new development close to the academic core to preserve sensitive natural features. This strategy results in displacement of surface parking as lots are reconfigured to accommodate new buildings. Siting new buildings in gray fields, or parking lots, is a sustainable practice recommended.

Plan proposals include a new 600-car parking structure (A) to replace some of the lost capacity particularly in the academic core of campus, where there is significant demand. The structure will be three stories in height and accommodate queuing on both the north and south sides of the structure to minimize impacts on N. Prairie Street.

The surface parking lot southeast of the Williams Center (B) could accommodate a second future parking structure, providing capacity that would be especially beneficial due to its proximity to athletic venues.

The Parking and Service section describes the campus parking system in more detail. Additional study of parking strategies is a recommendation of this Master Plan.

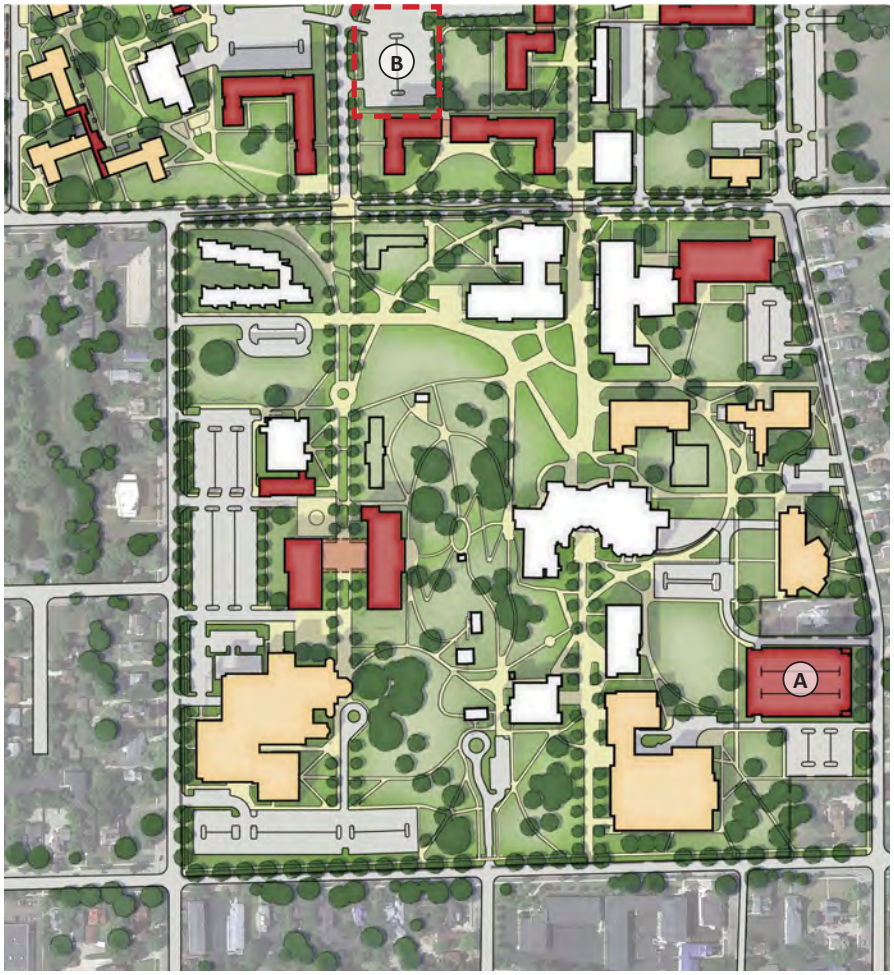

FIGURE 49: PROPOSED PARKING

- EXISTING BUILDINGS
- RENOVATED BUILDINGS
- PROPOSED NEW CONSTRUCTION
- LONG TERM DEMOLITION

CAMPUS SYSTEMS

Building and Land Use

The Comprehensive Campus Master Plan reinforces the compact campus framework of an academic core south of Starin Road, residence life facilities north of Starin Road, and athletics, recreation, and natural landscape at the northernmost edge.

New facilities are sited in developed areas of the campus, ensuring the nature preserve remain undisturbed as natural habitat and an amenity for the campus community. The new buildings also benefit from proximity to existing facilities in the districts to which they are added. In the academic core, the Student Success Center (A) and Academic Building 2 (B) will activate Carter Mall. Academic Building 1 (C), located at the intersection of Starin Road and North Prairie Street, will create an appropriate campus streetscape at this major intersection and reinforce the gateway onto the campus from the east.

North of Starin Road, new residence halls (D) and student life facilities will connect two distinct residential communities into one contiguous district. The redevelopment of the surface parking lots, which today line the streets and corridors just north of Starin Road, will bring the residential district adjacent to the academic core and create a more welcoming street environment on Starin Road. Consolidating new athletic facilities alongside the athletic complex currently established at the northern edge of the campus will facilitate efficient operations.

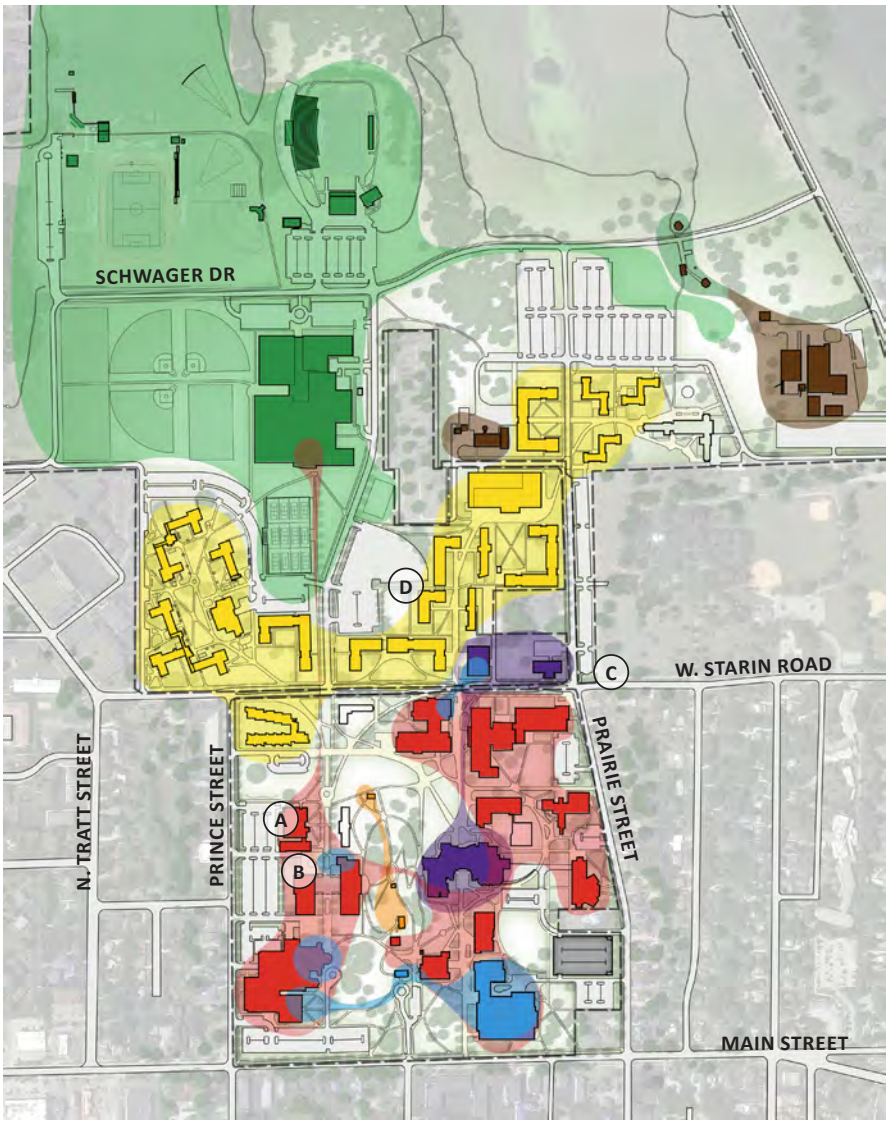

FIGURE 50: PROPOSED PLAN WITH HIGHLIGHTED BUILDING USE

- ACADEMIC AND ADMINISTRATIVE
- PUBLIC INTERFACE
- STUDENT SERVICES
- RESIDENCE HALL
- ATHLETICS AND RECREATION
- SUPPORT / OTHER
- HISTORIC STRUCTURES

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Open Space

The open space network establishes a series of interconnected open spaces of a variety of scales and types. Hardscape plazas and primary pedestrian paths adjacent to the central drumlin will accommodate significant pedestrian activity in the academic core. The Comprehensive Campus Master Plan introduces a significant new quadrangle (A) between Starin and Hyland Halls to serve as a central gathering area within the academic core.

The native landscape of glacial drumlin and prairie present in the nature preserve play a critical role in the open space system. The plan recommends the continued use of a consistent native plant palette for planting design to reinforce the regional landscape character in developed areas of campus.

The Wyman and Carter pedestrian malls will serve as major organizing elements of campus. These malls will extend north/south, connecting the core campus to the residential and athletic precincts and the nature preserve. New residence halls shape a series of quadrangles that offer passive recreation opportunities for residents.

The Design Guidelines, page 85, include more detail about open space character and landscape approach.

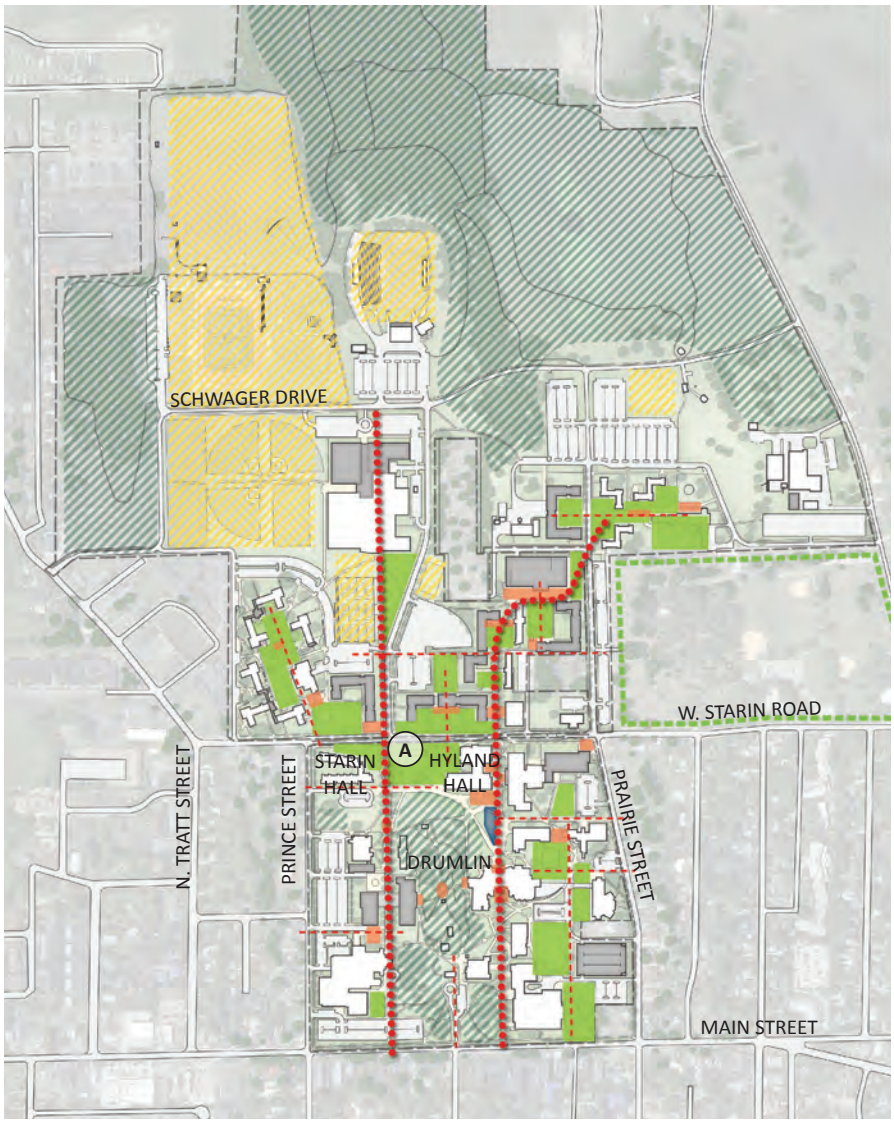

FIGURE 51: PROPOSED OPEN SPACE

- NATURAL AREAS
- QUADRANGLES
- PLAZAS
- ATHLETIC / RECREATIONAL FIELDS
- FOUNTAIN
- CITY PARK
- PEDESTRIAN MALL
- AXIS

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Pedestrian Circulation

While the campus has an extensive network of pedestrian paths in the core, it can be difficult to navigate and does not seamlessly extend to the edges of campus. The Comprehensive Campus Master Plan proposes a system of coherent pathways throughout the developed areas. This system will make clear connections to trails in the nature preserve and will accommodate the proposed bike infrastructure outlined in the City of Whitewater Bicycle and Pedestrian Plan.

The pedestrian network will be simplified and clarified to emphasize major paths. The improved legibility of this system benefits the entire campus community, but has especially significant impact on wayfinding for visitors and those with vision impairments. The pedestrian network will also prioritize accessible routes, particularly in the area around the drumlin where a new academic building provides an upper level connection.

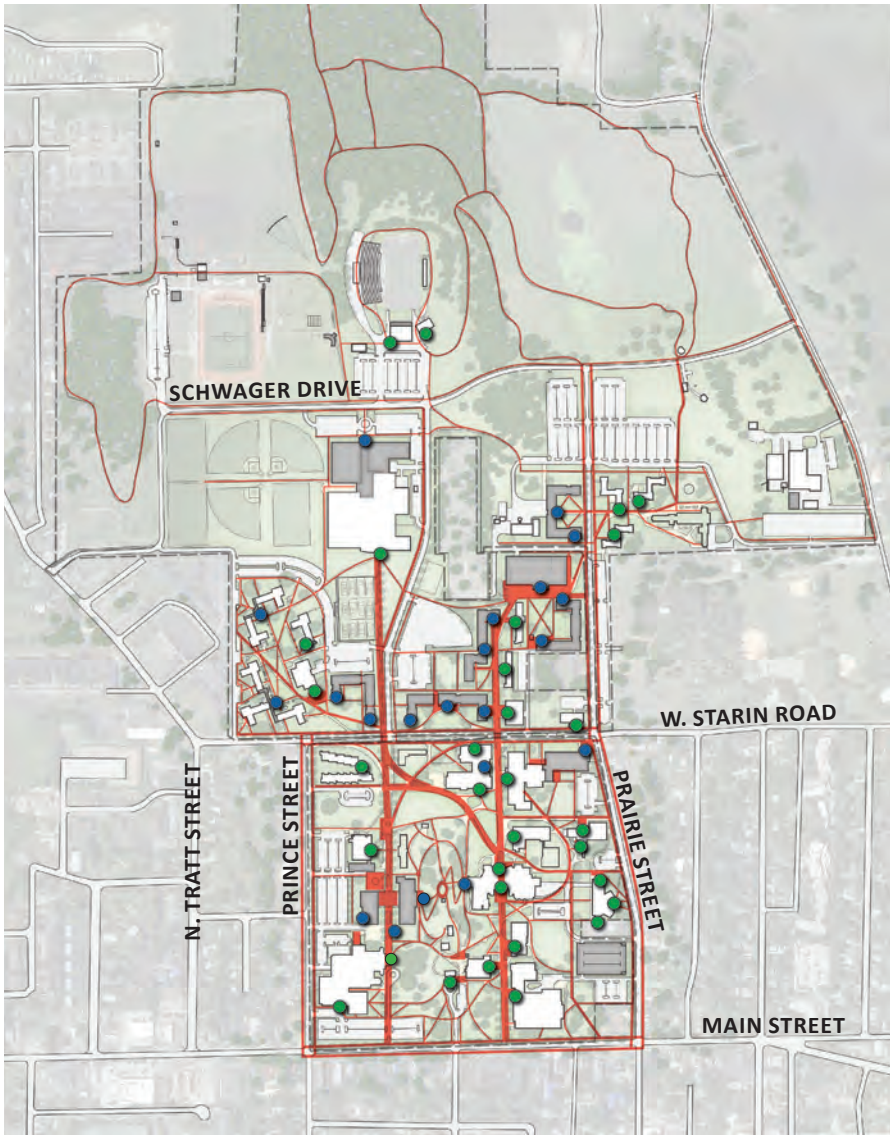

FIGURE 52: PROPOSED PEDESTRIAN CIRCULATION

- EXISTING MAJOR ENTRY
- PROPOSED MAJOR ENTRY

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Bicycle Circulation

The City of Whitewater Bicycle and Pedestrian Plan has identified three types of bike access adjacent to the campus; shared use paths, greenways, and bike lanes. Bike lanes are exclusive for bike travel, and identified with painting, striping, stenciling, and signage. In contrast, shared use trails provide bicycle connections on gravel or paved pathways that also provide other non-motorized traffic including pedestrians, in-line skates, and strollers. Neighborhood greenways provide needed bicycle connections on low volume streets, accommodating bicycles within the travel lanes, often without any visible designation. The combination of this designated bike access immediately adjacent to the campus complements the master plan by providing an improved alternative mode of transportation to the campus and greater connectivity to the community.

The University of Wisconsin-Whitewater Comprehensive Campus Master Plan identifies bike storage locations at the intersection of both Wyman and Carter Malls with the City of Whitewater proposed bike routes. Providing adequate bike storage at the periphery of campus reinforces the existing bike dismount zone in the central academic campus.

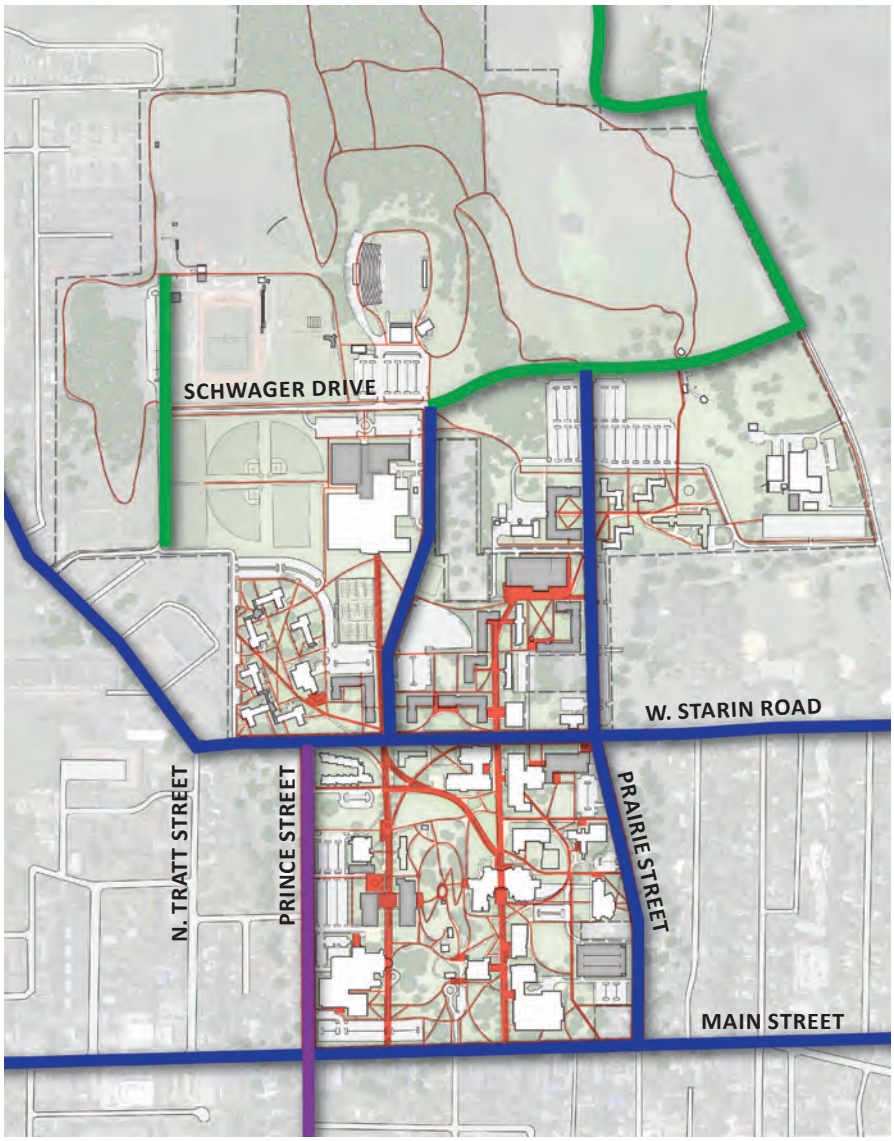

FIGURE 53: PROPOSED PEDESTRIAN CIRCULATION AND CITY OF WHITEWATER PLANNED BICYCLE INFRASTRUCTURE

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NOT TO SCALE

- PEDESTRIAN CIRCULATION
- SHARED USE PATH*
- BIKE LANE*
- GREENWAY*

*AS IDENTIFIED IN THE CITY OF WHITEWATER BICYCLE AND PEDESTRIAN PLAN

Vehicular Circulation

The academic core is located within the city street grid, defined by West Main Street, North Prince Street, North Prairie Street, and West Starin Road. West Main Street and West Starin Road are both major east-west connectors in the city's greater street network. North of Starin Road, campus streets primarily provide access to University facilities rather than facilitating through traffic.

In conjunction with the City of Whitewater's Pedestrian and Bicycle Master Plan, both city and campus streets facilitate multi-modal access for cyclists and pedestrians in addition to automobiles.

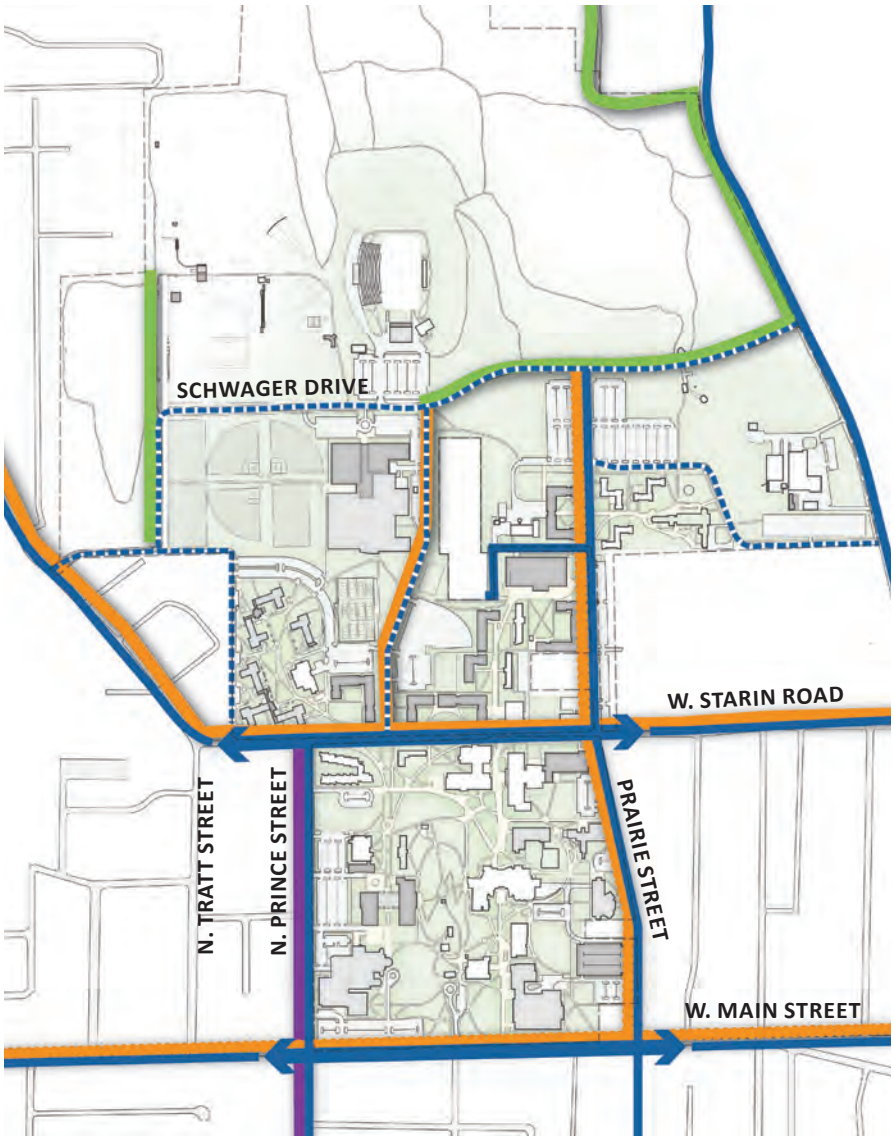

FIGURE 54: PROPOSED VEHICULAR CIRCULATION

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NOT TO SCALE

- CAMPUS STREETS
- CITY STREETS
- SHARED USE PATH*
- BIKE LANES*
- GREENWAY*

*AS IDENTIFIED IN THE CITY OF WHITEWATER BICYCLE AND PEDESTRIAN PLAN

Entry and Arrival

Entry and arrival to campus will be improved with a few strategic initiatives. A new approach to campus via Prince Street is proposed. City signage directional will be coordinated with the University visitor experience to direct guests to campus headed north on Prince Street to the Welcome Center, located in the new academic building on the Carter Mall. This new location will provide a more intuitive experience and ample visitor parking. Intersections at the corner of the academic core will be enhanced to also function as campus gateways using buildings, signage, and plantings to indicate transition from city to campus.

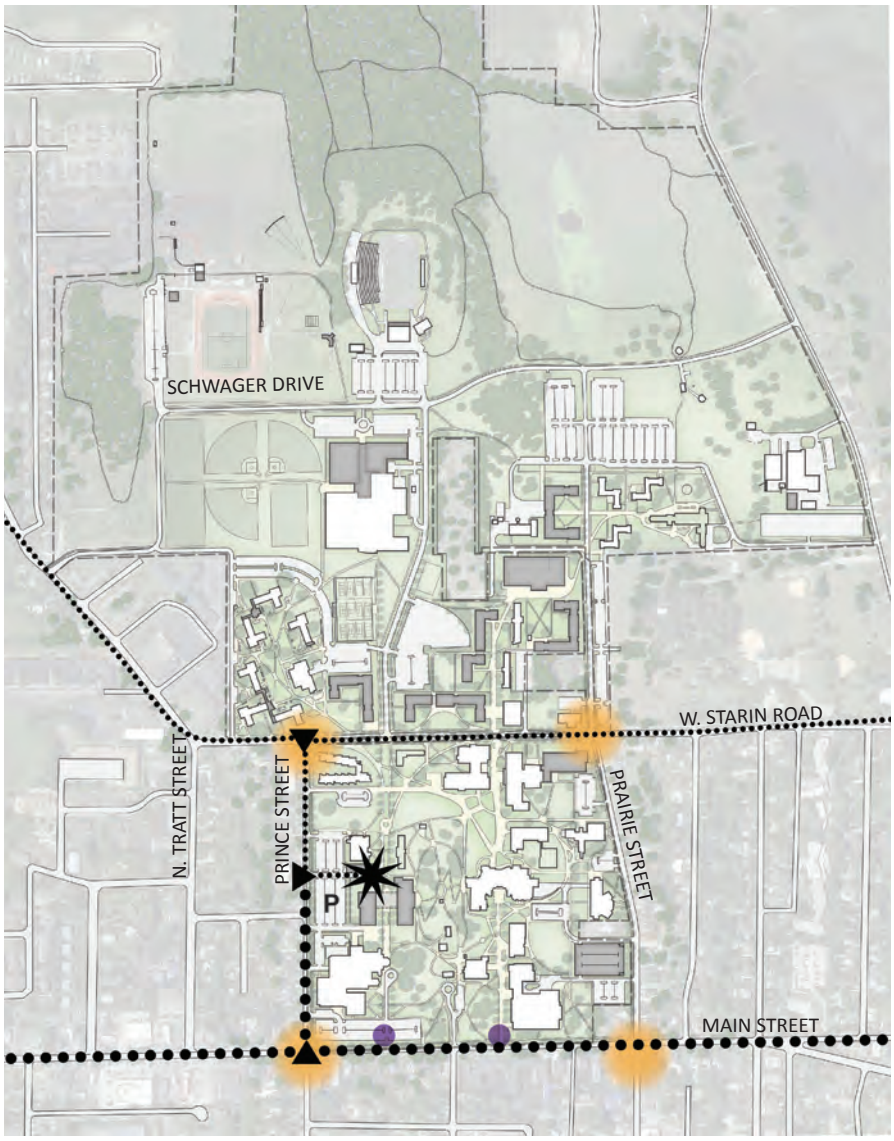

FIGURE 55: PROPOSED CAMPUS ENTRY AND ARRIVAL

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- DEVELOP CLEAR SIGNAGE AND EDGE TREATMENT OF CRITICAL CORNER INTERSECTIONS
- REINFORCE PEDESTRIAN MALLS WITH PEDESTRIAN GATEWAYS
- PRIMARY VEHICULAR ROUTE TO CAMPUS
- SECONDARY VEHICULAR ROUTE TO CAMPUS
- GREET VISITORS TO CAMPUS AT NEW WELCOME CENTER

Parking and Service

Vehicular circulation at the University of Wisconsin-Whitewater is provided through a network of public city streets, local campus streets and multi-purpose pavements serving, primarily, service vehicles and pedestrians. The existing system, particularly in the academic sections of campus, creates an ordered sequence of arrival, parking, and walking that reduces pedestrian/vehicle conflicts. The organization of service locations and access is accommodated within the existing system and generally, with a few exceptions, contributes to the positive sequence and separation of vehicles and pedestrians.

Currently a significant exception is Starin Road. Here traffic and pedestrian movements are managed by crossing guards in the busiest periods. The design of Starin Road accommodates the pedestrian crossing movements, provides refuge islands and marked crosswalks and employs traffic calming measures that support the crossing guards' actions and provide enhanced crossing safety when the crossing guards are not present.

At Starin Road, the majority of the vehicles and all of the pedestrian circulation are campus related. In the future, large parking areas just north of Starin Road will be displaced by new buildings, so as campus grows, the vehicle counts on Starin Road will actually decrease. Service to existing and new buildings north of Starin Road will be accommodated on routes that further the separation of vehicles and pedestrians, similar to the academic section of campus.

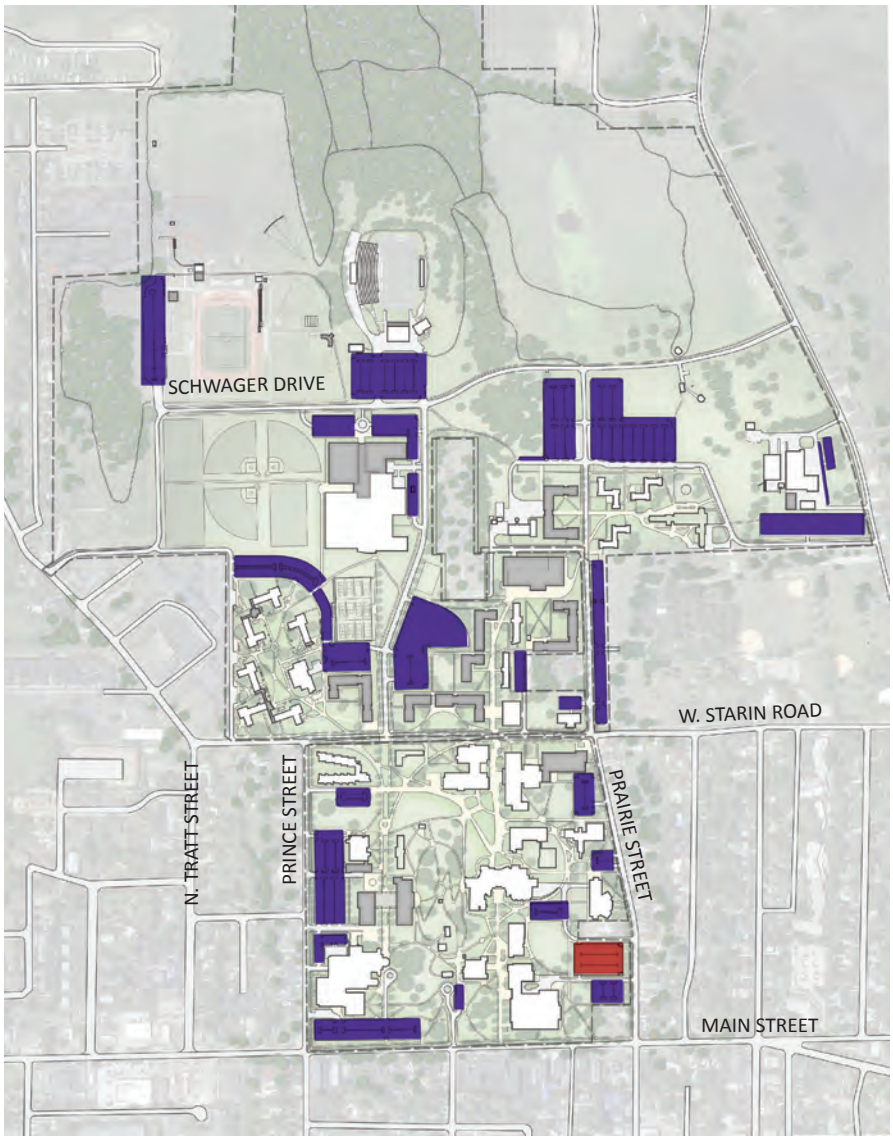

FIGURE 56: PROPOSED PARKING

PROPOSED SURFACE PARKING
PROPOSED PARKING STRUCTURE

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The two main pedestrian malls are the organizing features of pedestrian circulation, and will be reinforced as campus grows. These prominent north/south corridors are important components in an overall way-finding strategy, particularly effective in providing a legible organization for students with certain disabilities. The service diagram shows how the pedestrian malls are mostly uninterrupted by vehicular routes, while all buildings have convenient servicing locations. These service locations may also provide vehicle access for students with certain disabilities, as such, an important part of the campus systems.

Parking at UW-Whitewater is currently sufficient in quantity, much of which is conveniently located. As the campus grows, significant surface parking areas will be reclaimed for new buildings or open space development. The Comprehensive Campus Master Plan intentionally locates new buildings in a manner that establishes and enhances neighborhoods of use, i.e. student life or academic uses. The campus plan also maintains the compact nature of UW-Whitewater and actually decreases walk distances from building to building. These principles are applied at the expense, at some level, of convenient parking location and overall parking quantity.

The Comprehensive Campus Master Plan recommends a subsequent study of parking demand and long term management to accompany the long term reservation of a site for a future parking structure. This parking demand management study will help to identify which tools are most appropriate for UW-Whitewater. In the meantime, the phased implementation of new campus buildings prioritizes sites in the early phase that have limited impact on existing parking resources, to allow the campus to plan and implement a parking demand management approach.

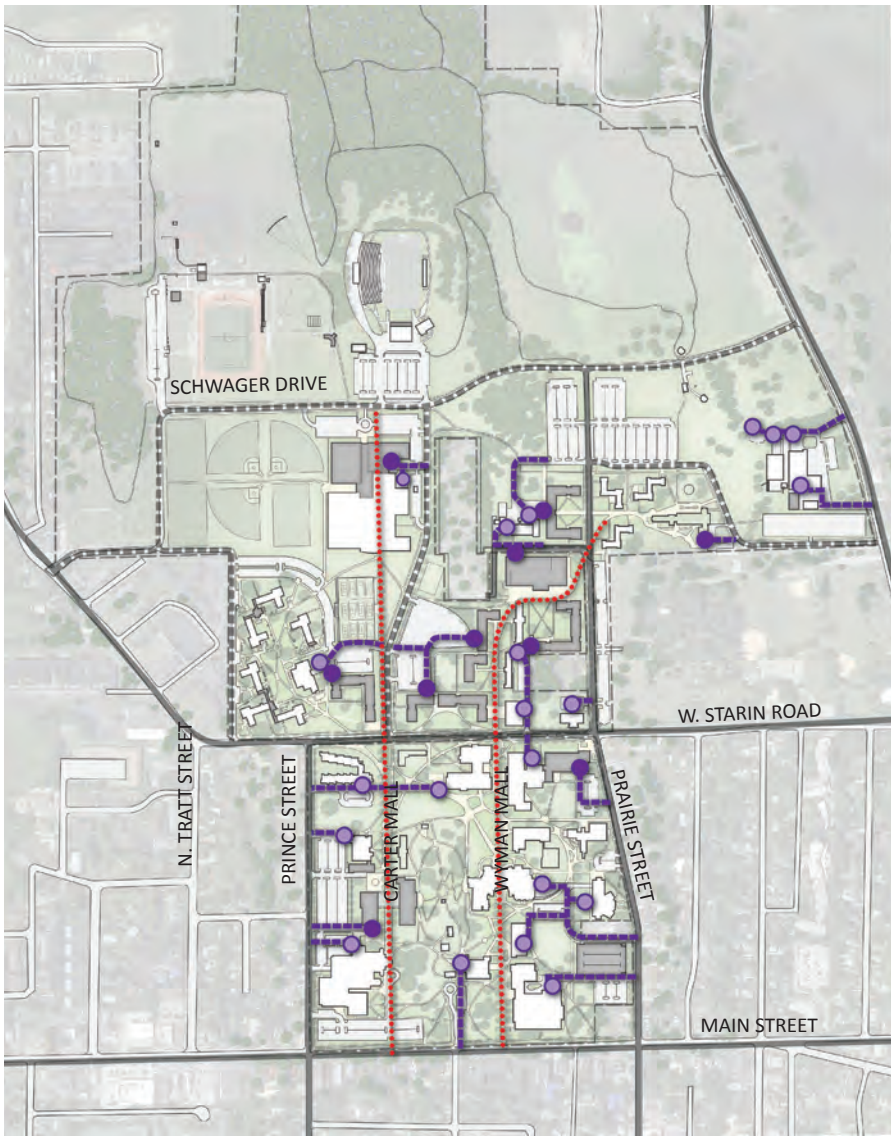

FIGURE 57: PROPOSED SERVICE ACCESS

- CAMPUS STREETS
- CITY STREETS
- EXISTING SERVICE
- PROPOSED SERVICE
- PROPOSED SERVICE ROUTES

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Utilities Infrastructure

Steam, chilled water, electrical power and telecommunications systems which serve the University of Wisconsin – Whitewater campus are beginning to show their age and will require repair, reconstruction and new construction during the time line of this Comprehensive Campus Master Plan. Strategies and upgrades are based on new proposed buildings, buildings being remodeled and buildings proposed for demolition as identified in the Master Plan.

Major initiatives identified in the utility planning include:

- Conduct a detailed study for increasing chilled water generating capacity.
- Provide additional electrical power capacity.
- Evaluate the need for additional boiler capacity.
- Provide additional distribution infrastructure for both system capacity and system reliability.
- Reserve utility corridors for additional distribution.
- Reconstruct existing aging distribution systems.
- Provide metering and monitoring controls throughout the system.
- Upgrade deficient building condensate pumps.

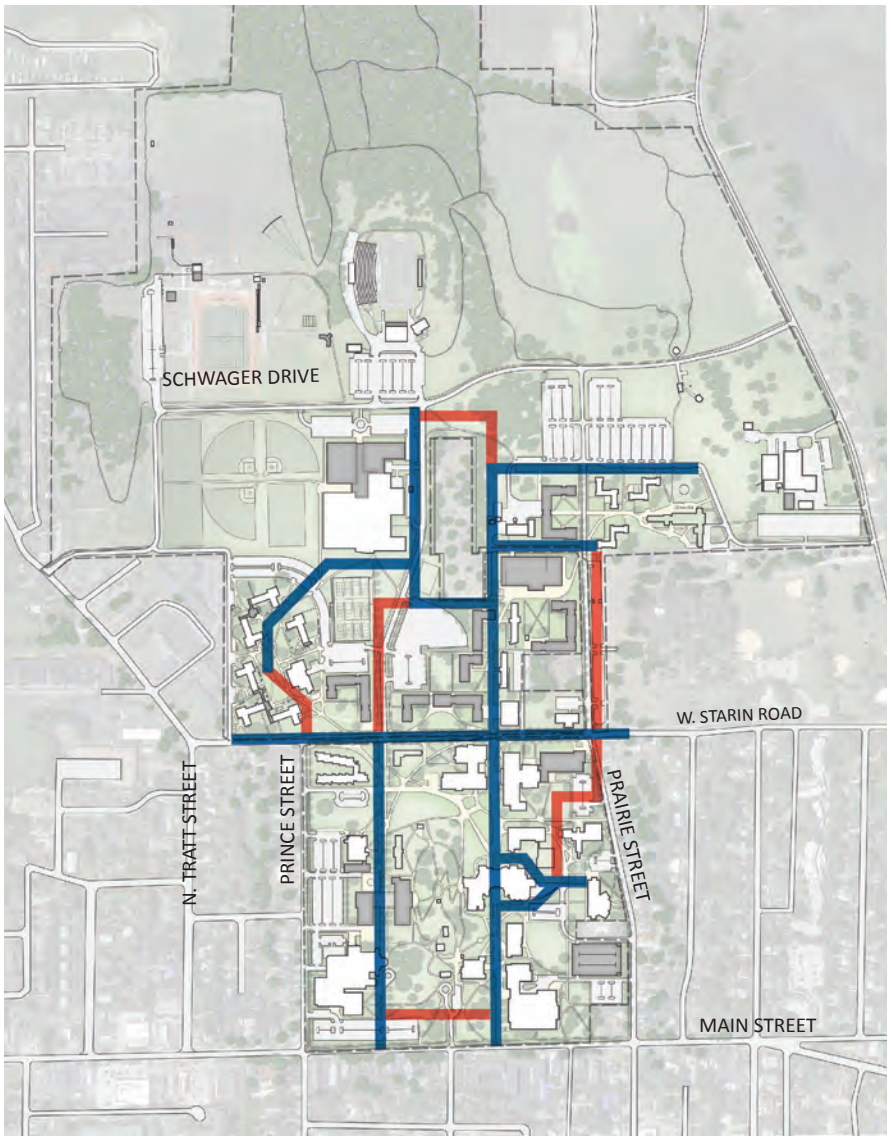

FIGURE 58: PROPOSED UTILITIES INFRASTRUCTURE

EXISTING CORRIDOR
PROPOSED CORRIDOR

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Sustainability

Pursuing sustainability in the Master Plan allows campus to meet its facility needs with sensitive proposals that assess a holistic consideration of interrelated issues. As a result, the University of Wisconsin-Whitewater's commitment to sustainability is evident across many aspects of its operations. Several facets of the Comprehensive Campus Master Plan have important sustainability considerations.

The plan consolidates new development in previously developed areas. This results in preserved natural landscapes, redevelopment of gray-fields, and a compact, walkable campus that decreases automobile dependence for trips between campus destinations.

Site planning prioritizes southern and northern exposure over eastern and western exposure where heat gain is more difficult to control, minimizing energy use of new buildings. Redevelopment of surface parking lots into building and open space reduces the impervious surface, thereby reducing stormwater runoff and will provide opportunities for infiltration. Existing buildings will be reused to reduce waste and resource consumption.

In conjunction with the City of Whitewater's Bicycle and Pedestrian Plan, new bicycle infrastructure will encourage more members of the University community to bike to campus. The University can further promote cycling by providing more bicycle-oriented amenities, including covered bicycle parking, storage, changing and shower facilities, and bicycle service.

Many other opportunities exist to implement sustainable initiatives on campus. Discussions throughout the Comprehensive Campus Master Plan process touched on opportunities to integrate sustainability education into landscapes and buildings, stormwater management best practices, and reducing energy usage in existing buildings by shutting them down in off hours and months.

A future sustainability plan is recommended to provide an opportunity for the University to map out an approach for campus wide sustainability.

FIGURE 59: SUSTAINABLE SOLUTIONS IN THE MASTER PLAN

- SOLAR ORIENTATION OF BUILDINGS
- GRAY-FIELD DEVELOPMENT
- REUSE OF BUILDINGS
- NEW GREEN SPACE / PERVIOUS AREA
- PRESERVED NATURAL AREAS

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FIGURE 60: IRVIN L. YOUNG AUDITORIUM

Campus Planning Boundary

The campus boundary encompasses properties that the University owns or desires to own in the future. By adding parcels to the boundary that are currently not owned by campus, the University can expedite the approval process to acquire those parcels when/if they become available. Once an un-owned property is added within the campus boundary, the acquisition procedures provide: authority to purchase in fee simple, authority to exchange parcels with another party or parties, authority to accept gifts of land, and authority to sell land previously declared surplus. The Comprehensive Campus Master Plan proposes adjusting the campus boundary to include properties (A) on the west side of North Prairie Street that the University does not currently own.

The nature preserve (B) is within the campus boundary but designated for protection under the Land and Water Conservation Fund Act (LAWCON). LAWCON land is protected to promote and preserve recreational areas adjacent to and within urban areas. Hence, some of the allowed uses of LAWCON land include uses such as picnic areas, playgrounds, tennis courts, etc. This designation also applies to the campus tennis court site (C) along North Prairie Street, which is not contiguous with the nature preserve and does not have the same sensitive ecological features. The Comprehensive Campus Master Plan recognizes the value of developing the tennis court site to create a connected residential campus. As a result, this plan recommends transferring the LAWCON designation from this area (C) to other University property.

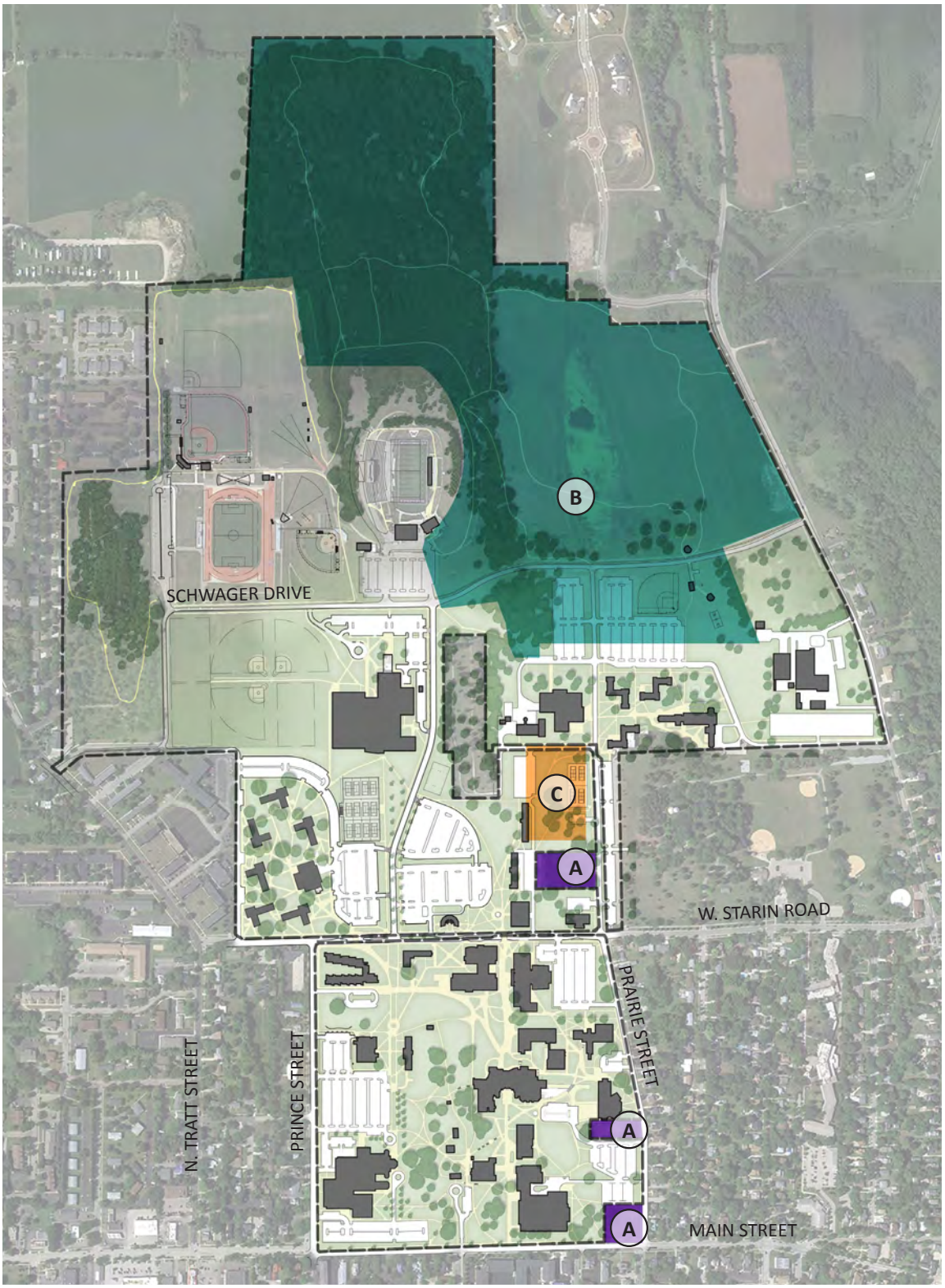

FIGURE 61: PROPOSED CAMPUS PLANNING BOUNDARY

- LAWCON LAND
- PROPOSED EXPANDED CAMPUS BOUNDARY
- LAWCON LAND, TENNIS COURT SITE

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Phasing and Implementation

NEXT STEPS: PLANNING

The Comprehensive Campus Master Plan sets a broad course of action for future development. More detailed studies are necessary to implement these proposals. The following plans and studies are suggested as a follow-up to this planning process.

Academic Plan (In Process)

The Academic Plan will outline desired enrollment growth and prioritize initiatives for individual academic programs. This plan will help clarify how the University's overall future space needs are distributed across the University units.

Athletics and Recreation Master Plan

To maintain the ability to accommodate the large footprints that athletics and recreation programs may desire in the future, an Athletics and Recreation Master Plan is recommended to explore needs for future programs and how those facilities will be sited on campus.

Migration Plan

To facilitate renovation and new construction on campus without interrupting a program's ability to continue operating, the University will need to complete migration plans detailing space relocations over time.

Pre-Design Studies

Pre-Design Studies will clarify the building program and specific site constraints for new academic buildings and renovations proposed in the Comprehensive Campus Master Plan.

Sustainability Plan

A Sustainability Plan will provide the opportunity to address the full range of initiatives necessary to realize the University's commitment to sustainability indicated by their signing of the American College and University President's Climate Commitment (ACUPCC) and their current Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking, Assessment & Rating System (STARS self-assessment). All aspects of campus sustainability, including operations issues related to energy and waste and building design and construction considerations, will be addressed.

Long Range Transportation Plan

Providing parking for the campus population will be a comprehensive approach including surface parking, structured parking, policy around parking assignments, and Transportation Demand Management (TDM) strategies to encourage people to use other modes of transportation. As the need for new buildings limits the availability of adjacent land for surface parking, the University will need to explore ways to approach parking in the future. The study will specify the most effective TDM strategies for the University of Wisconsin-Whitewater.

Signage and Wayfinding Guidelines

Establishing standards for both interior and exterior signage and wayfinding will ensure consistent implementation across campus and improve campus navigation.

IMPLEMENTATION STRATEGY

The implementation strategy maps a logical sequence of projects that will allow the University to build out the Comprehensive Campus Master Plan in phases. Project sequencing takes into consideration the need for enabling projects allowing others to move forward, space needs that correspond to enrollment growth, University priorities, and pace of development. Projects are grouped into intervals that correspond with the six-year pattern for long-range planning required by State statutes. Availability of funding may trigger the need to adjust this timeline as implementation progresses.

Many near-term solutions can provide some immediate space relief by more efficiently using the existing space. Scheduling existing space earlier in the morning, later in the afternoon, and at other off-times provides additional meeting capacity without the addition of new space.

The Key Recommendations section, page 52, includes a detailed description of building projects identified in the implementation strategy. Associated costs are identified on page 84. Utility projects are described in the Campus Systems – Utilities Infrastructure section, page 72.

FIGURE 62: VIEW TOWARDS HYLAND HALL FROM UNIVERSITY CENTER

Currently in Progress

The University has six projects currently underway. Each represents a significant first step towards implementing the Comprehensive Campus Master Plan vision for academic space, residence life, and athletics and recreation.

The projects include:

A. Residence Hall 1
B. West Campus Residence Hall Renovation (Phase 1) – Fricker and Arey Halls with new Link
C. Indoor Tennis Facility
D. Softball Stadium Expansion
E. Student Success Center
F. Fiber Optic Upgrades

** not listed in priority order*

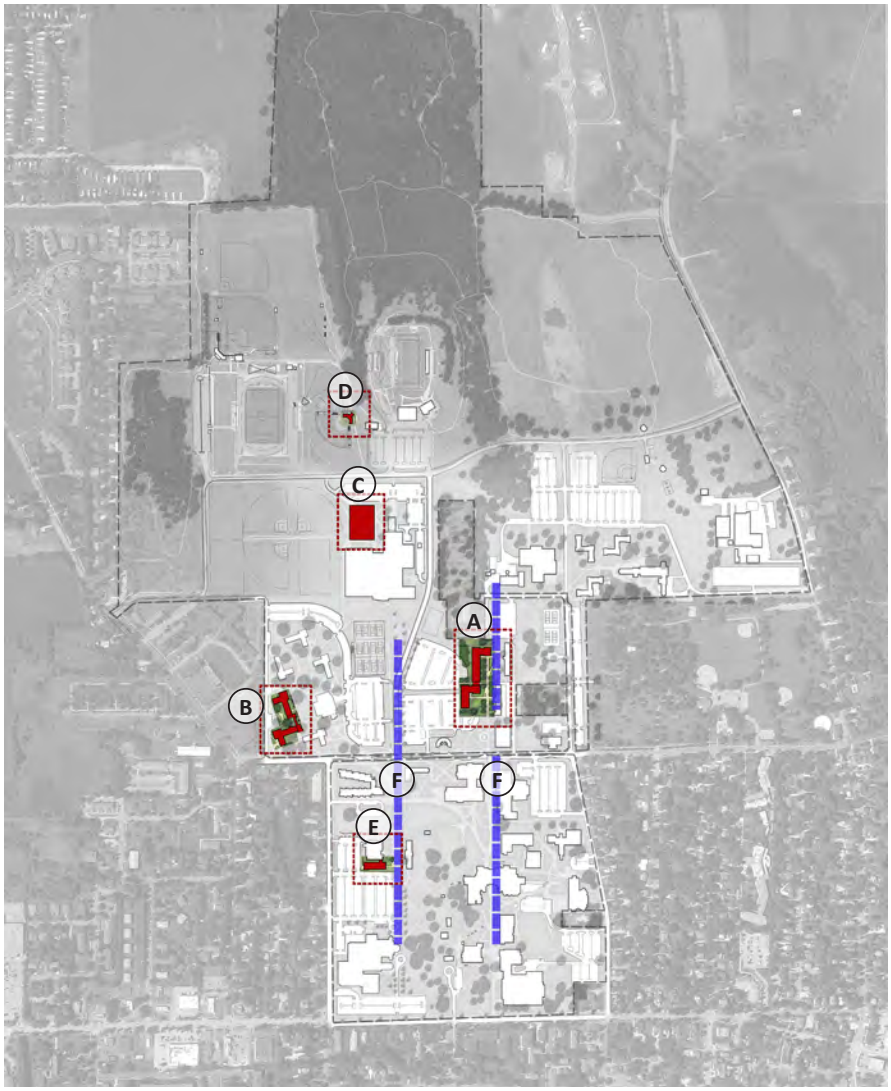


FIGURE 63: CURRENTLY IN PROGRESS

EXISTING BUILDINGS
PROJECTS CURRENTLY IN PROGRESS

N
NOT TO SCALE

Near Term

Near-term projects are planned to be completed in the six-year period between 2015 and 2020. In this phase of development, a significant amount of space in both the academic core and the athletics and recreation complex will be renovated and a second residence hall transforms the character of Starin Road.

Projects include:

A. Chiller Plant Expansion and Distribution System Extension
B. West Campus Utility Upgrades
C. Baseball Building Addition
D. Athletics Grounds Maintenance Building
E. Fiber Optic Upgrades
F. Residence Hall #2
G. Stadium Athletics Service Building
H. Perkins Stadium Renewal
I. Williams Center Gymnasium Addition
J. Williams Center Renovation
K. Heide Hall Renovations
L. Winther Hall Renovations
M. Andersen Library Select Remodel

** not listed in priority order*

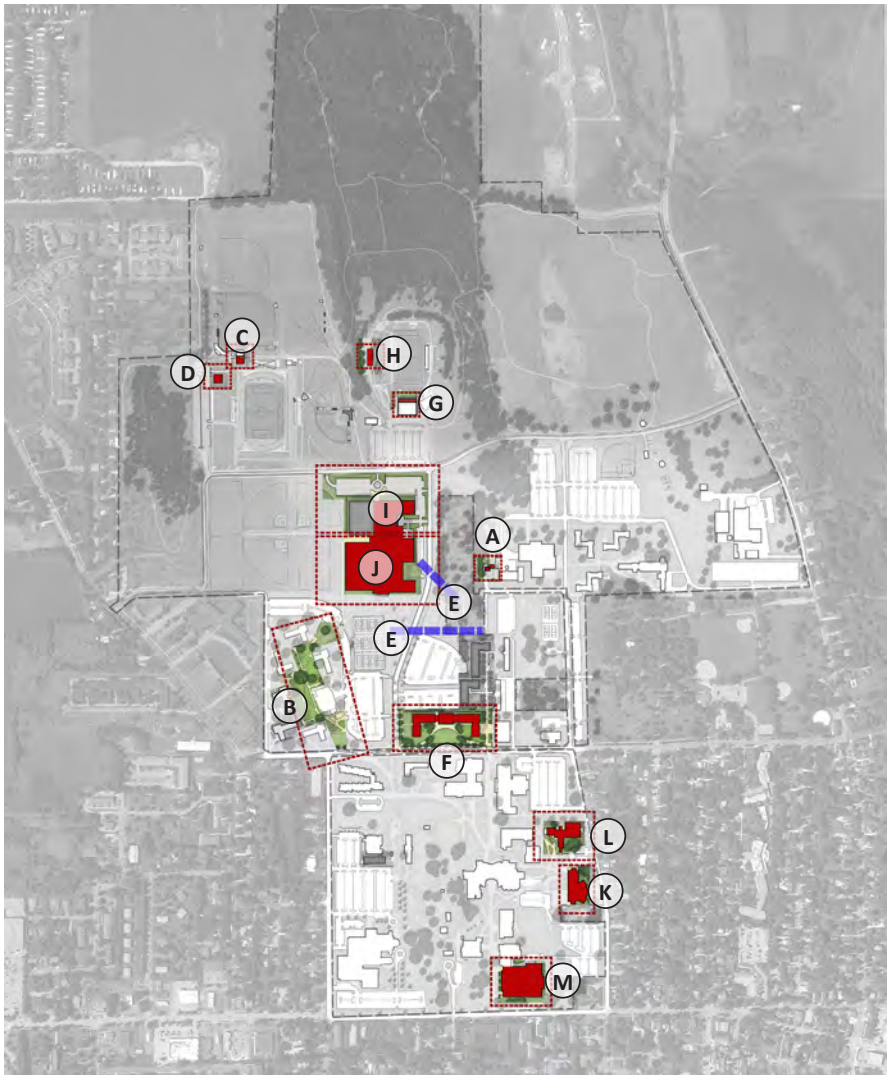


FIGURE 64: NEAR TERM

- EXISTING BUILDINGS
- PROJECTS IN NEAR TERM
- PROPOSED BUILDINGS ALREADY COMPLETE
- PROPOSED UTILITY PROJECTS IN NEAR TERM

N
NOT TO SCALE

Mid Term

Mid-term projects are planned for completion in the six-year period between 2021 and 2026. In addition to further academic and residence hall renovations, a new academic building and parking structure will be added to the academic core. A new dining hall and residence hall connects halls completed in earlier phases to the east campus residence halls that exist today.

Projects include:

A. West Campus Housing Renovation (Phase 2)
B. Dining Facility
C. Residence Hall #3
D. Chiller Plant Upgrade (Phase 2)
E. West Campus Housing Renovation (Phase 3)
F. Greenhill Center of the Arts Renovation (Phase 1)
G. Utility Corridor Improvements
H. Parking Structure
I. Academic Building #1

** not listed in priority order*

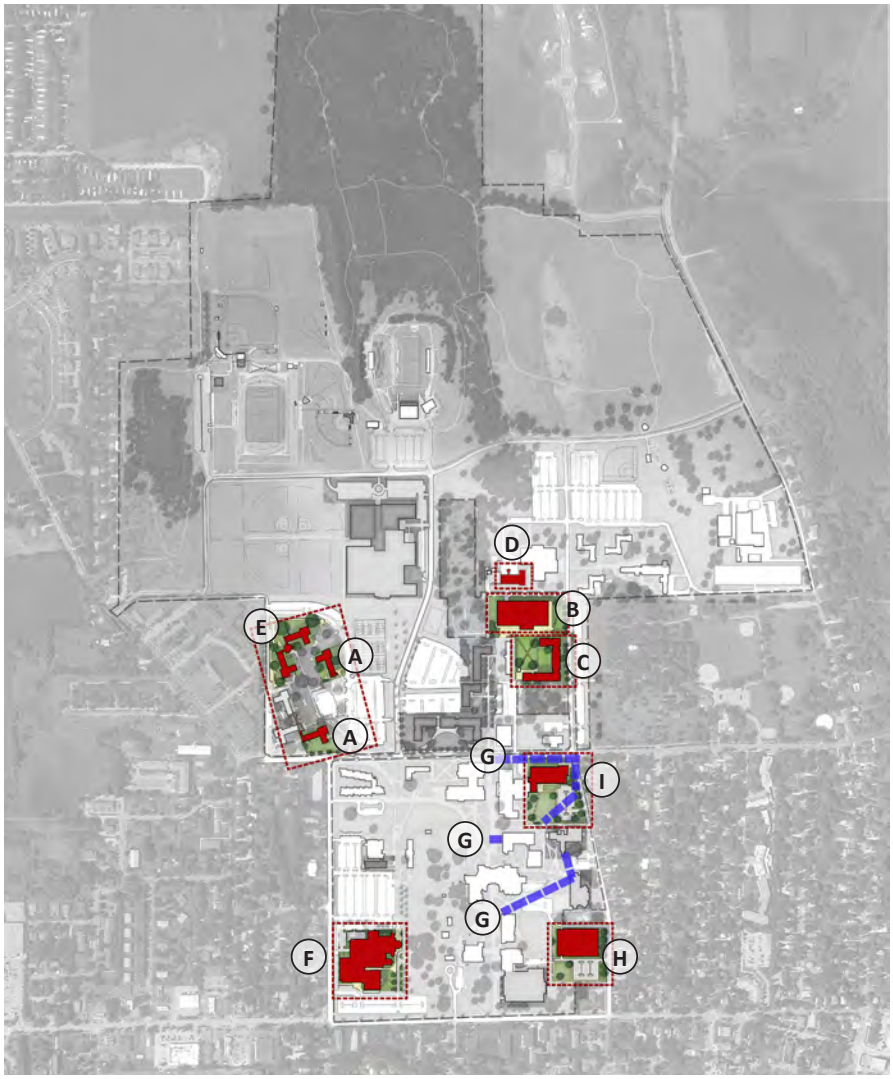


FIGURE 65: MID TERM

EXISTING BUILDINGS
PROJECTS IN MID TERM
PROPOSED BUILDINGS ALREADY COMPLETE
PROPOSED UTILITY PROJECTS IN MID TERM

N
NOT TO SCALE

Long Term

Long-term projects are planned for completion in the six-year period between 2027 and 2032. Two new residence halls complete the build-out of the residential community, and a second new academic building brings more activity to Carter Mall.

Projects include:

A. Residence Hall #4
B. Residence Hall #5
C. Utility Corridor Improvements-Carter Mall
D. Academic Building #2 / Student Services and Welcome Center
E. Roseman Renovation
F. Utility Corridor Improvements-Maintenance
G. Utility Corridor Improvements-Redundancy

** not listed in priority order*

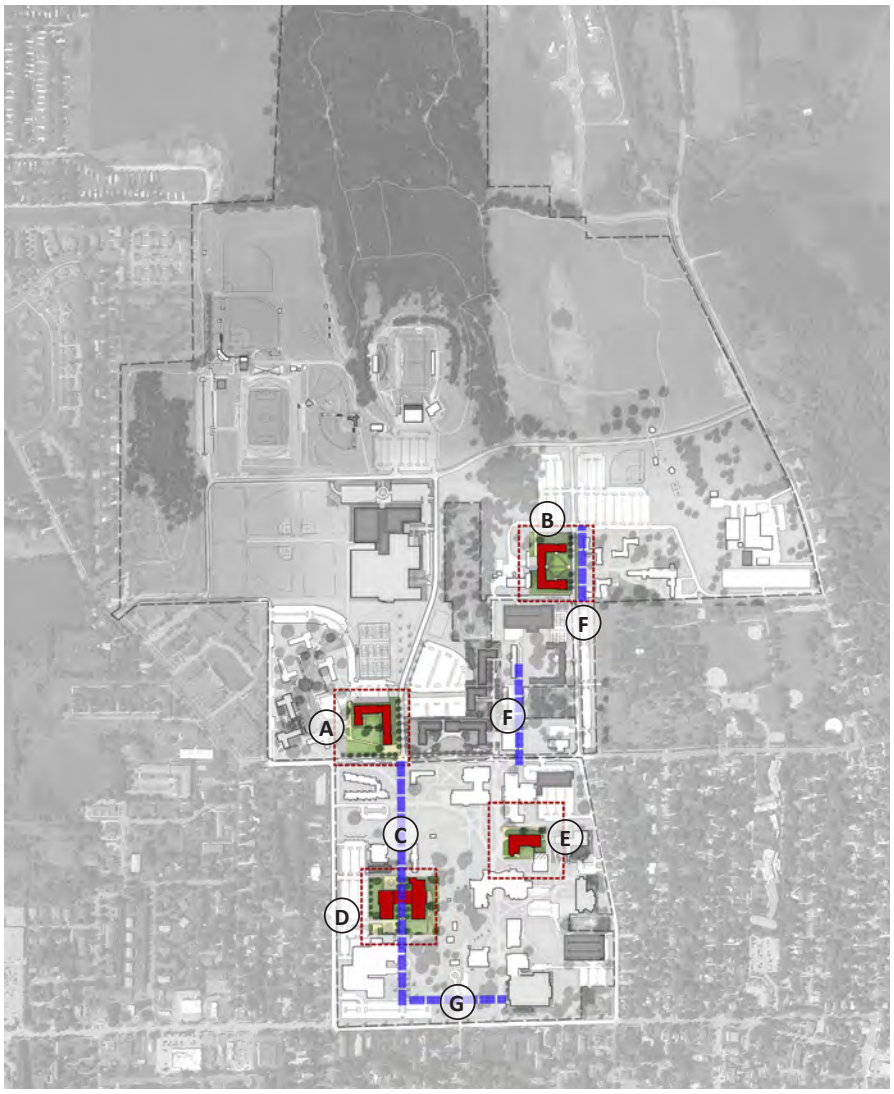


FIGURE 66: LONG TERM

EXISTING BUILDINGS
PROJECTS IN LONG TERM
PROPOSED BUILDINGS ALREADY COMPLETE
PROPOSED UTILITY PROJECTS IN LONG TERM

N
NOT TO SCALE

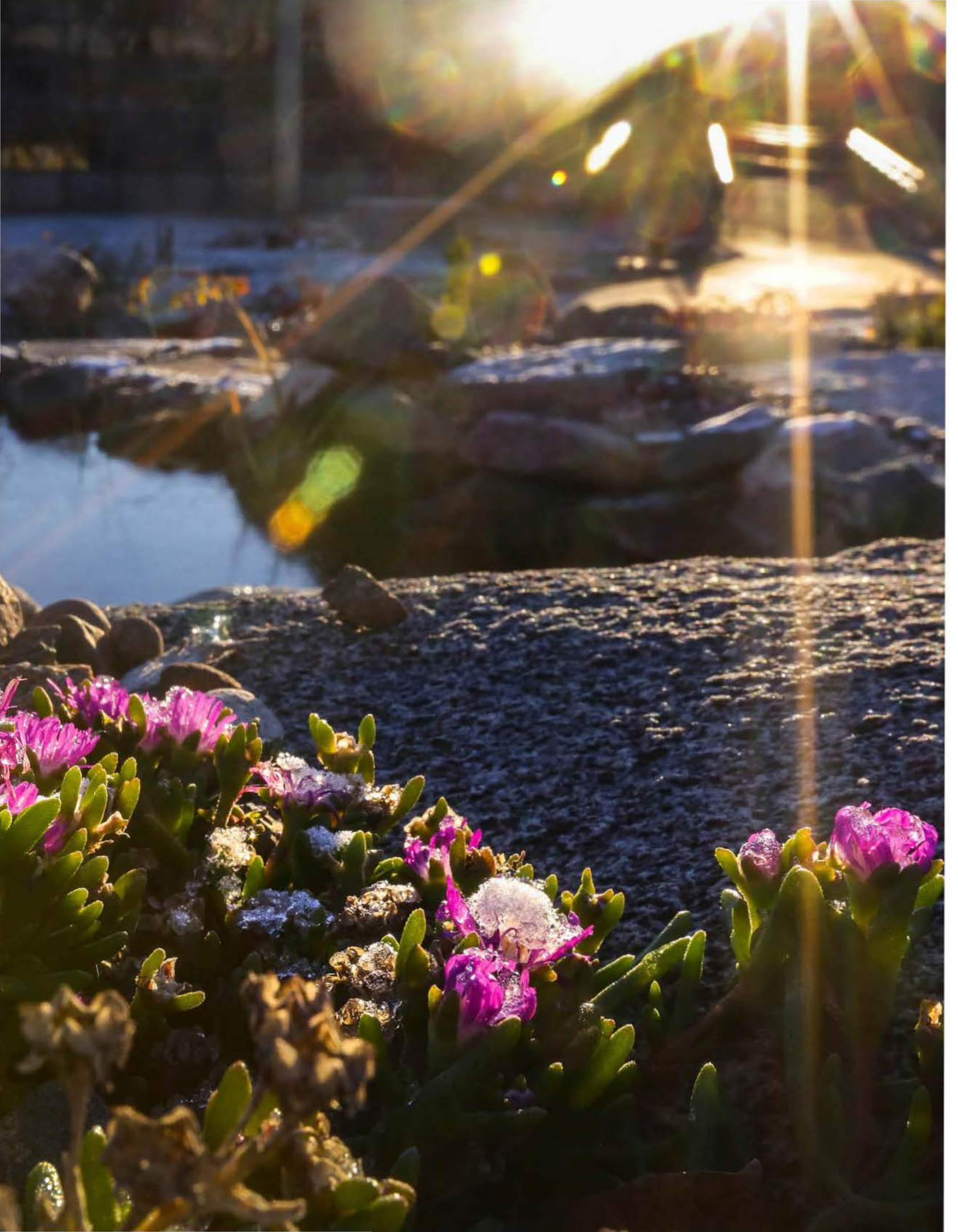
IMPLEMENTATION PLAN

		Project Size			Construction Cost		Total Project Cost	Capital Funding Sources			
Type	Project Name	ASF	GSF	EFF	Unit Cost	Est. Total	TPC	GSFB	PRSB	CASH	Gifts/ Grants
NEAR TERM (0-6 years)											
Student Life/Residential											
NC	**(12J3C)**						$28,000,000	No	Yes	No	No
UC	2. West Campus Res. Hall Renovation **(11L2J)**							No	Yes	No	No
Physical Education/Athletics/Recreation											
NC	3. Indoor Tennis Facility		48,800			$8,543,000	$10,799,000	No	Yes	Yes	Yes
UC	4. Softball Building						$1,272,000	No	Yes	No	No
Student Life/Residential											
A	5. Student Success Center **(10B1X-1)**						$19,500,000	Yes	No	No	No
Infrastructure											
U	6. Chiller Plant Expansion and Distribution System Extension					$7,000,000	$8,890,000	73%	27%	No	No
U	7. West Campus Utility Upgrades		NA			$4,750,000	$6,032,500	57%	43%	No	No
Physical Education/Athletics/Recreation											
	8. Athletics Complex (combined projects)					$3,384,000	$4,236,000	No	Yes	Yes	Yes
A	Baseball Services Building Addition		6,700								
R	Baseball Services Bldg Remodeling		2,200								
NC	Athletics Grounds Maintenance Building		1,400								
A	Stadium Athletics Service Building		3,150								
R	Stadium Services Bldg Remodeling		13,000								
Infrastructure											
U	9. Fiber Optic Upgrades **(14C1D)**		NA			$4,668,000	$5,712,900	57%	43%	No	No
U	10. Utility Corridor Improvements		NA			$4,200,000	$5,334,000	57%	43%	No	No
Student Life/Residential											
NC	**11. Residence Hall #2**		130,000			$30,850,000	$38,949,000	No	Yes	No	No
Physical Education/Athletics/Recreation											
R	12. Perkins Stadium Renewal						$2,000,000	No	Yes	No	Yes
A	13. Williams Center Addition		48,800			$8,538,994	$10,812,501	85%	15%	No	No
R	14. Williams Center Renovation		18,000			$2,259,000	$2,858,000	85%	15%	No	No
Academic											
R	15. Heide Hall Renovation		68,000			$8,074,000	$10,215,000	Yes	No	No	No
R	16. Winther Hall Renovation		43,938			$7,121,000	$9,009,000	Yes	No	No	No
R	17. Andersen Library Select Remodel		61,718			$6,672,000	$8,441,000	Yes	No	No	No

LEGEND:	
UC	Under Construction
R	Renovation
A	Addition
NC	New Construction
D	Demolish
S	Site
P	Parking
U	Utilities
C	Circulation

		Project Size			Construction Cost		Total Project Cost	Capital Funding Sources			
Type	Project Name	ASF	GSF	EFF	Unit Cost	Est. Total	TPC	GSFB	PRSB	CASH	Gifts/ Grants
MID TERM (7-12 years)											
Student Life/Residential											
R/A	18. West Campus Housing Reno.(Phase 2)						$16,554,000	No	Yes	No	No
NC	19. New Dining Facility		60,000			$17,015,000	$21,508,000	No	Yes	No	No
NC	**20. Residence Hall #3**		130,000			$31,550,000	$39,881,000	No	Yes	No	No
Infrastructure											
R	21. Chiller Plant Upgrade (Phase 2)					$4,000,000	$5,080,000	73%	27%	No	No
Student Life/Residential											
R/A	22. West Campus Housing Renovation (Phase 3)						$17,234,000	No	Yes	No	No
Academic											
R	1)		18,000			$4,429,000	$5,603,000	Yes	No	No	?
Infrastructure											
U	24. Utility Corridor Improvements		NA			$3,850,000	$4,889,500	57%	43%	No	No
P	25. Parking Structure		240,000			$11,831,000	$14,955,000	No	Yes	No	No
Academic											
A	26. Academic Building #1		177,700			$67,772,000	$85,846,000	Yes	No	No	No
LONG TERM (13-20 years)											
Student Life/Residential											
NC	**27. Residence Hall #4**		130,000			$31,516,000	$39,838,000	No	Yes	No	No
D	28. Demolish Esker Hall		41,233			$398,000	$503,000	No	Yes	No	No
NC	**29. Residence Hall #5**		130,000			$31,550,000	$39,881,000	No	Yes	No	No
Infrastructure											
U	30. Utility Corridor Improvements-Carter Mall		NA			$1,800,000	$2,286,000	57%	43%	No	No
Academic											
NC	31. Academic Building #2/ Student Services and Welcome Center		75,000			$22,079,081	$27,957,636	Yes	No	No	No
R	32. Roseman Renovation		57,000			$4,862,000	$6,151,000	Yes	No	No	No
Infrastructure											
U	33. Utility Corridor Improvements-Maintenance		NA			$450,000	$562,500	57%	43%	No	No
U	34. Utility Corridor Improvements - Redundancy (preferred alternative)		NA			$3,500,000	$4,445,000	57%	43%	No	No

LEGEND:	
UC	Under Construction
R	Renovation
A	Addition
NC	New Construction
D	Demolish
S	Site
P	Parking
U	Utilities
C	Circulation



Design Guidelines

DESIGN GUIDELINES

Introduction

The University of Wisconsin-Whitewater has a special emphasis to provide higher educational opportunities for students with disabilities. Central to this emphasis is UW-Whitewater's Center for Students with Disabilities (CSD). The CSD is a tremendous resource for campus design consultants; *www.uww.edu/csd*. A close collaboration with the CSD will provide valuable insight into the wide range of needs and preferences for students with disabilities, and will further the development of CSD's research database and toolkit. This collaboration, early in the design process, will also minimize the project cost impact of universal design.

Universal Design

The University of Wisconsin-Whitewater is committed utilizing the principles of Universal Design for all new buildings and building renovations. (*http://www.ncsu.edu/project/design-projects/sites/cud/content/principles/principles.html*)

The University recognizes that best practices are continually evolving and improving, therefore, an evaluative process, considering all of the Principles of Universal Design, must be applied to each new project, and to existing situations to continue to improve efforts and conditions at UW-Whitewater. The Principles of Universal Design will be integrated into a collaborative process with each project committee, students, faculty, staff, alumni and the community at large.

The Principles of Universal Design are:

1. Equitable Use-provide the same means of use for all users, identical where possible, equivalent when not.

2. Flexibility in Use-provide choice in methods of use.

3. Simple and Intuitive Use-use is easy to understand regardless of users' experience, knowledge, language skills, concentration level.

4. Perceptible Information-communicates necessary information regardless of users' sensory abilities.

5. Tolerance for Error-minimizes hazards and adverse consequences of accidental or unintended actions.

6. Low Physical Effort

7. Size and Space for Approach and Use-ability to approach and use regardless of body size, posture or mobility.

These principles are further described with additional guidelines and examples at the web site.

There is a large body of work including design guidelines, standards, indeed, statutory regulations and requirements for physically disabled people, particularly related to building and interior design. There is less information related to site and landscape design for physically disabled; and even less addressing learning and emotional disabilities. Given UW-Whitewater's emphasis, design guidelines of this master plan intend to direct campus design¬ consultants toward a heightened awareness of the issues designing for a diverse population, and the provides the opportunity to explore an underdeveloped area of practice particularly related to considerations for learning and emotional disabilities.

This exploration begins with consideration of the Principles of Universal Design, and searches for solutions and considerations at the intersection of disability and function.

Disabilities (partial list):

- Sensory; hearing, sight

- Physical/Mobility
- Learning; ADHD, ADD
- Emotional; psychological, PTSD, Autism spectrum

Activities and Functions (partial list):
- Wayfinding
- Access/Assistance
- Safety/Security
- Socialization/Collaboration
- Learning/Teaching
- Convenience/Comfort

The exploration of design solutions in the context of Universal Design furthers the University of Wisconsin-Whitewater's emphasis in considering the needs and preferences for students, faculty and staff with the wide range of disabilities, the work of the Center for Students with Disabilities and the overall body of work in this arena.

FIGURE 67: PERCEPTIBLE INFORMATION IN THE CLASSROOM

FIGURE 68: UNIVERSAL DESIGN ON CAMPUS

CAMPUS ARCHITECTURAL DESIGN GUIDELINES

The following architectural guidelines identify the criteria by which new building and building expansion/renovation projects will be guided to work both individually and collectively to achieve a desirable campus character. These guidelines represent the university's commitment for future building projects.

The guidelines are not intended to be so limiting that they inhibit creativity. Their purpose is to raise the bar in design and achieve a balance between the prescribed criteria and the mutual decisions that must be reached throughout the project development. The skillful use of these guidelines will help guide the development of new buildings on campus in a way that elevates the level of functionality and aesthetics beyond the bland, "one size fits all" buildings of the 1960's.

Architectural and Site Design shall incorporate Universal Design principles. Universal design (often inclusive design) refers to broad-spectrum ideas meant to produce buildings, products and environments that are inherently accessible to older people, people without disabilities, and people with disabilities. Included as part of the Campus design process UW-Whitewater Center for Students with Disabilities (CSD) will actively collaborate to create an inclusive, accessible university experience.

BACKGROUND AND HISTORY

The UW-Whitewater campus is currently identified by three distinct Architectural eras. The first is the Historical era (1900 to 1925) characterized by Hyer Hall which is the last remaining section of the Old Main Building c1925. This historic style is characterized by elements from the French/Italian Renaissance period. Basic building composition identifies a base, middle, and top. Building entrances are depicted by a strong, solid composition of stone.

The second era, called the "Academic Modern" period, extends from 1950-1970. Buildings in this era are characterized by simple geometry and use of natural materials in light to mid tone color ranges. Glazing openings were minimized to increase the energy efficiency of the buildings.

Finally, the Modern period extends from the 1980's to present. Buildings in this period are organized with simple geometry using warm mid-earth tone materials. Material mixes are composite metal panel, masonry, and precast concrete. Natural daylight is increased into the public building spaces through large glazed openings.

OLD MAIN BUILDING 1911, 1925, 1987

HYER HALL, 1925

FIGURE 69 & 70: HISTORIC STYLE ARCHITECTURE

WELLERS HALL, 1966, 2013

ANDERSEN LIBRARY, 1952, 1965, 1969

WELLS HALL WEST, 1967

WINTHER, 1969

FIGURE 71, 72, 73 & 74: ACADEMIC MODERN ARCHITECTURE

STARIN HALL, 2010

HYLAND HALL, 2009

FIGURE 75 & 76: MODERN PERIOD ARCHITECTURE

Campus Districts

The UW-Whitewater campus contains several distinctive use districts, which are further broken down below to identify design related groupings of similar styles, materials, massing and age within each district. Academic Districts are South of Starin Road extending to Main Street to the south and bordered by North Prince Street and North Praire Street. With the exception of Starin Hall, the Residential Districts will be north of Starin Road, and future residential buildings will also be north of Starin Road. The architectural character of this distict should reflect the use. The Athletic District is situated directly to the north of the Residential District. Buildings within these locations should develop a design unity between the buildngs and adhere to the campus master plan principles and City of Whitewater Zoning. Materials encorporated in each district are not required to match existing, but should correspond to a similar quality, texture, and color.

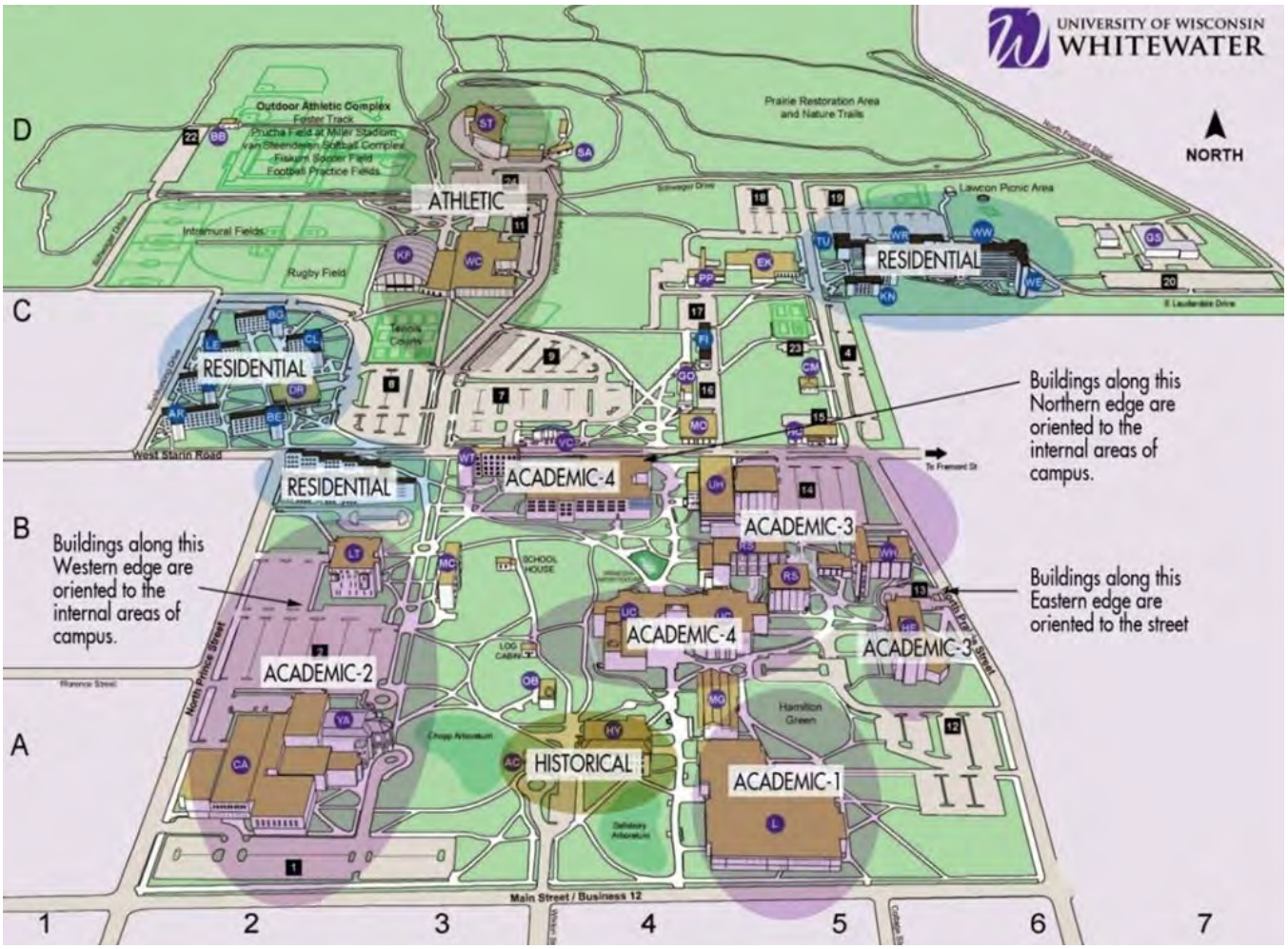


FIGURE 77: CURRENT CAMPUS PLAN

CHARACTER

Central to the idea of accepting and embracing an eclectic design sensibility across campus is the need to develop clear relationships to existing buildings in addition to creating a more contemporary expression. These ties involve the building characteristics such as size, massing, shape, material, color, etc. The challenge of the new architecture is to contribute to the visual unity of the campus while expressing its own design character. New construction within the zones should employ methods to maximize natural daylighting. New buildings, remodelings, and additions should build on the contemporary aesthetic established by the existing campus architecture that reflects several styles of "modern" architecture (as opposed to reflecting Vitruvian classical design elements). Building design should be representative of its time, expressing individual character while enhancing the natural landscape which is signature to UW-Whitewater. To maintain view corridors and appropriately scaled outdoor spaces, buildings should not be located closely adjacent to existing structures.

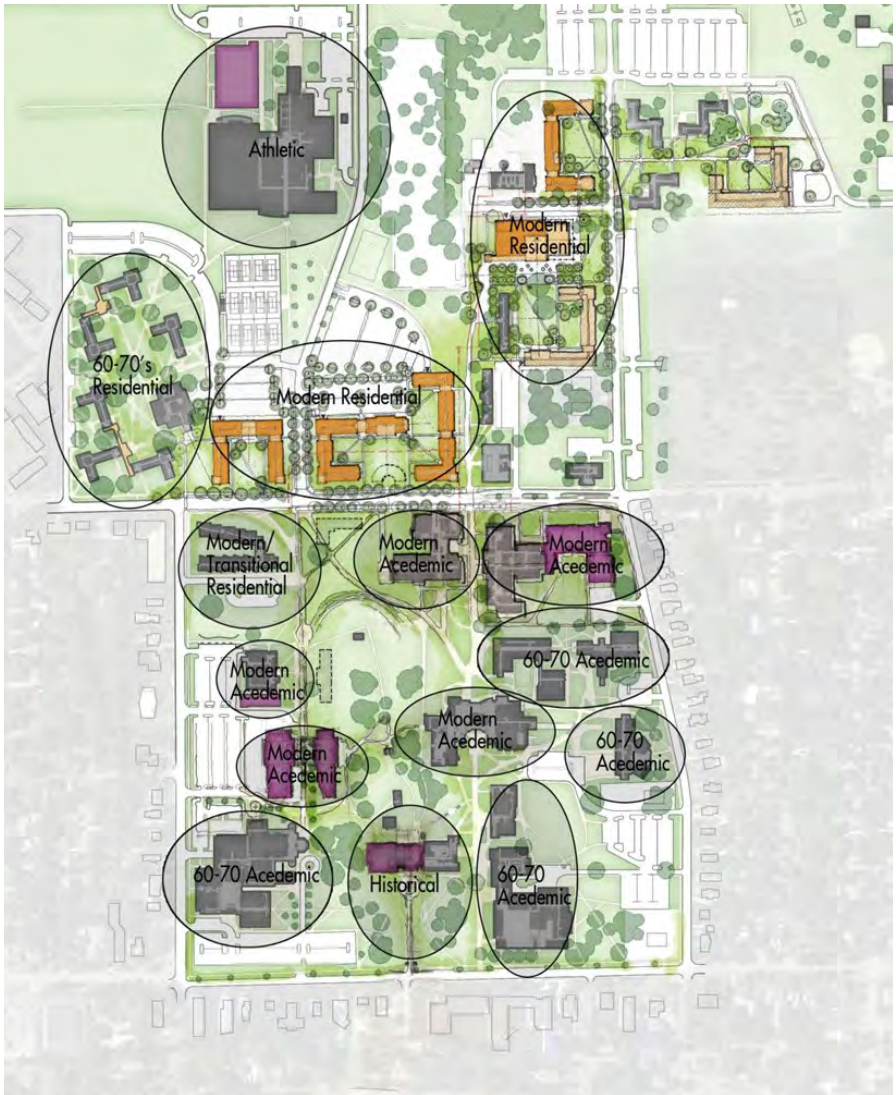


FIGURE 78: PROPOSED FUTURE CAMPUS DEVELOPMENT

Historical

Buildings in this district should maintain the scale and proportion appropriate to this era. Expression of a base, middle, and top is required. Hyer Hall which is the last remaining section of the Old Main Building is an example of this organization. Materials may vary but are required to relate to the existing materials. Roof forms in this district may be articulated with a slope or hip as seen on Hyer Hall. Exterior wall details must be in the spirit of this Historic Style. Glazing is to be Tinted Insulated Units in accordance with the Wisconsin Department of Facilities Development (DFD) Standards, and shall use clear, champagne, or medium bronze anodized window frames.

FIGURE 79: HYER HALL

FIGURE 80: PRECAST WINDOW SILLS AND TRIMS CAN BE A BUFF ACID WASH FINISH

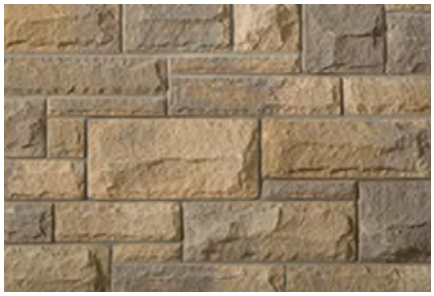
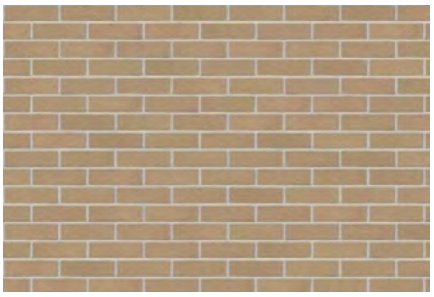
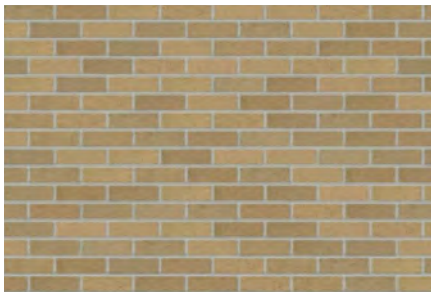


FIGURE 81, 82, 83: STONE LIGHT RANGE, STONE MEDIUM RANGE, STONE DARK RANGE (LEFT TO RIGHT)





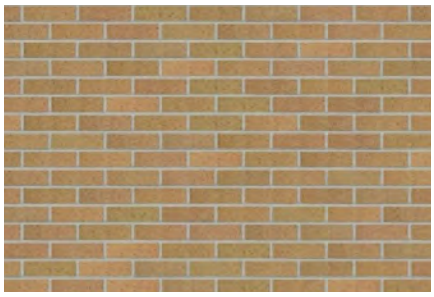


FIGURE 84, 85, 86: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE (LEFT TO RIGHT)

Academic I

Buildings in this District date from 1960 to 1970. Stone in an Ashlar Pattern is the dominant wall material. Limited areas of dark brick are used as the base of the Andersen Library Building. Materials used in this area should be predominantly Rock Faced Stone in an Ashlar pattern. A honed face may be used as accents in limited areas. Glazing is to be Tinted Insulated Units in accordance with DFD Standards with Clear, champagne, or medium bronze anodized window frames.

FIGURE 87: ANDERSEN LIBRARY

FIGURE 88: ANDERSEN LIBRARY MAIN ENTRANCE

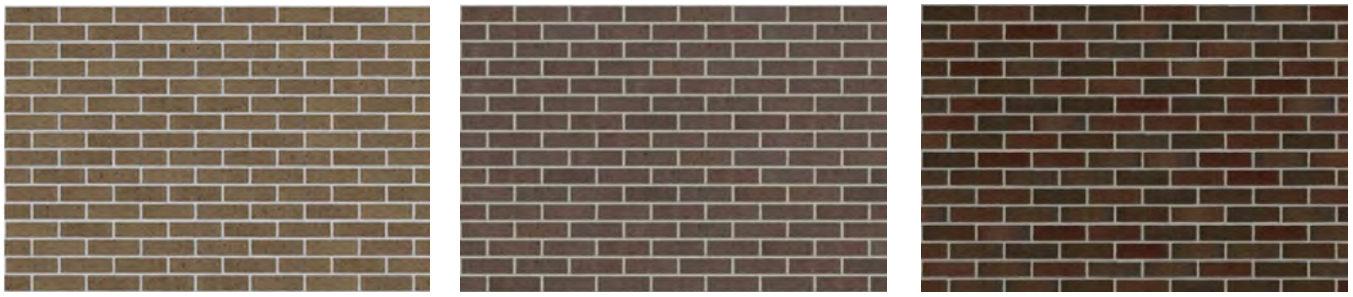


FIGURE 89, 90, 91: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE WITH VARIATION (LEFT TO RIGHT)

FIGURE 92, 93, 94: STONE LIGHT RANGE, STONE MEDIUM RANGE, STONE DARK RANGE (LEFT TO RIGHT)

FIGURE 95, 96, 97: PRECAST CONCRETE LIGHT RANGE, PRECAST CONCRETE MEDIUM RANGE, PRECAST CONCRETE DARK RANGE (LEFT TO RIGHT)

Academic II

Buildings in this location are considered 1960's/1970's Modern. Wall detailing is minimal with limited daylight areas. New buildings in this area should consider daylight and first floor transparency as opportunities to accentuate internal public program spaces. Additional wall detailing should be considered to break down scale of buildings and break up large expanses of wall. Any change in wall materials must adhere to DFD standards of construction and detailing. Glazing shall be Tinted Insulated Units in accordance with DFD Standards with clear, champagne, or medium bronze anodized window frames. Composite Metal panel may be incorporated into building additions and renovations in this area. However, the predominant building material should be brick. Existing brick is modular size (nominal 2.66" x 4" x 8") in a running bond pattern. If other brick sizes, coursing and patterns are considered they should be carefully studied to confirm compatibility with this district.

FIGURE 98: GREENHILL CENTER OF THE ARTS

FIGURE 99: YOUNG AUDITORIUM

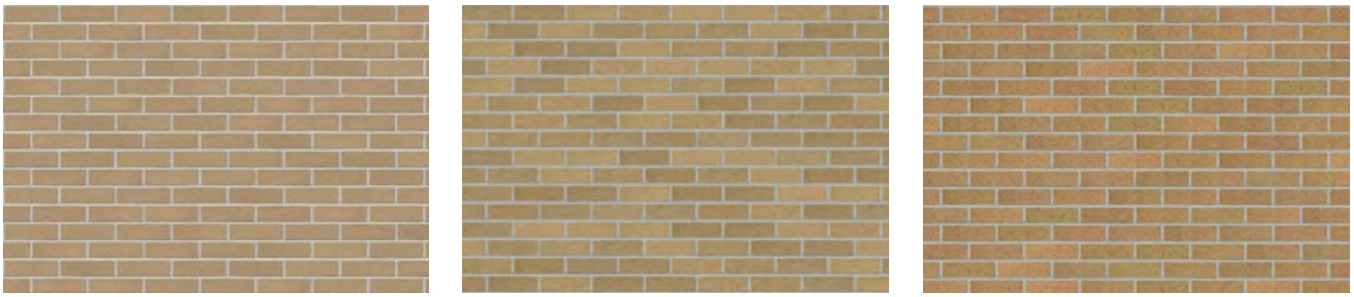


FIGURE 100, 101, 102: MEDIUM BRICK: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE WITH VARIATION (LEFT TO RIGHT)

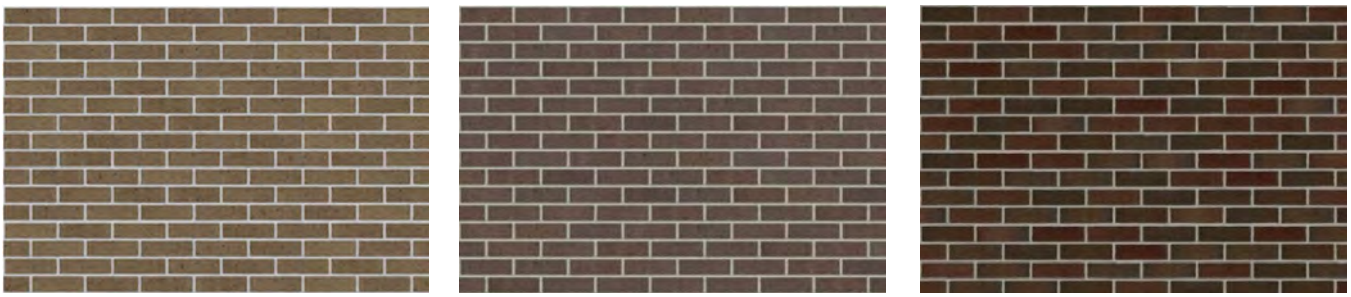


FIGURE 103, 104, 105: MEDIUM BRICK: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE (LEFT TO RIGHT)

FIGURE 106, 107, 108: PRECAST CONCRETE LIGHT RANGE, PRECAST CONCRETE MEDIUM RANGE, PRECAST CONCRETE DARK RANGE (LEFT TO RIGHT)

FIGURE 109, 110, 111: CLEAR ANODIZED METAL PANEL, METAL PANEL PLATINUM/ SILVER, MEDIUM CHAMPAGNE (LEFT TO RIGHT)

Academic III

Buildings in this location are considered 1960's – 1970's Modern. Wall detailing is minimal with limited daylight areas. New buildings in this area should consider daylight and first floor transparency as opportunities to accentuate internal public program spaces. Additional wall detailing should be considered to reduce scale of buildings and break up large expanses of wall. Any change in wall materials must adhere to DFD Master Specifications and Design Guidelines. To limit the uninterrupted expanses of wall consideration should be given to various brick coursing patterns or inserting a second material such as precast concrete bands. Glazing is to be Tinted Insulated units according to DFD Standards with clear, champagne, or medium bronze anodized window frames. Composite Metal panel may be incorporated into building additions and renovations in this area, however, the predominant building material should be brick. Building height should not exceed 4 floors.

FIGURE 112: HEIDE HALL

FIGURE 113: WINTHER HALL

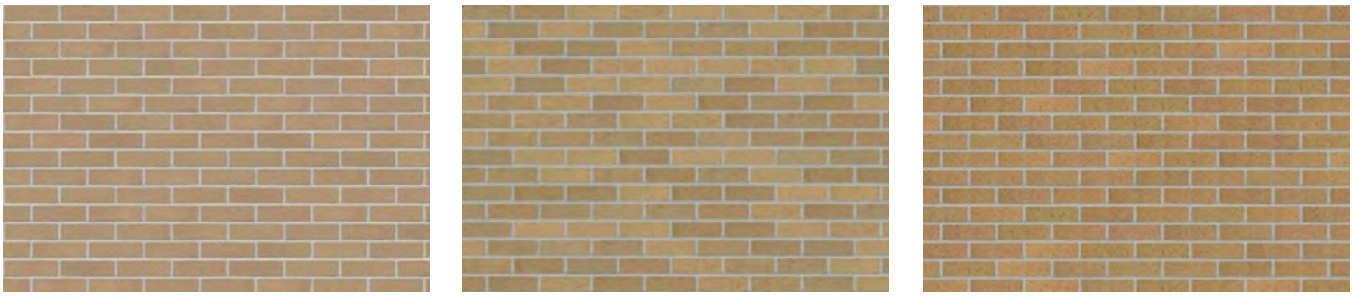


FIGURE 114, 115, 116: MEDIUM BRICK: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE WITH VARIATION (LEFT TO RIGHT)

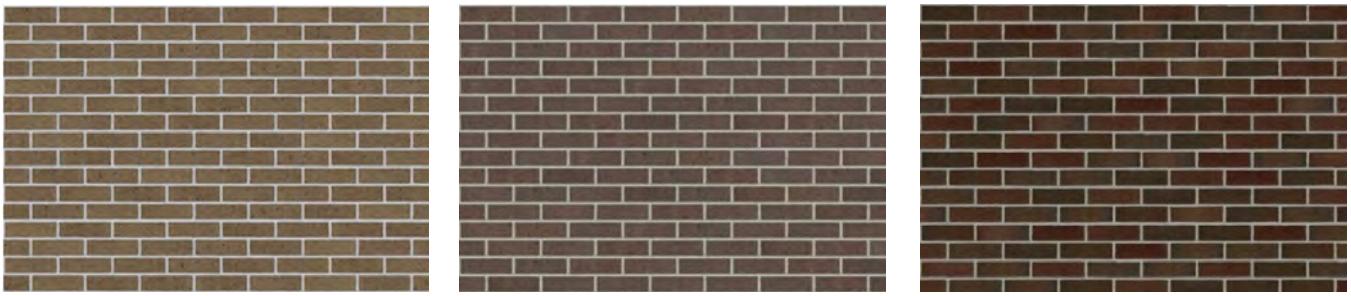


FIGURE 117, 118, 119: MEDIUM BRICK: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE (LEFT TO RIGHT)

FIGURE 120, 121, 122: PRECAST CONCRETE LIGHT RANGE, PRECAST CONCRETE MEDIUM RANGE, PRECAST CONCRETE DARK RANGE (LEFT TO RIGHT)

FIGURE 123, 124, 125: CLEAR ANODIZED METAL PANEL, METAL PANEL PLATINUM/ SILVER, MEDIUM CHAMPAGNE (LEFT TO RIGHT)

Academic IV

Buildings in this location are considered 2000's - present Modern. Wall detailing is enhanced with increased daylight to public spaces. Building massing uses relief to break up large areas of uninterrupted wall. New buildings in this area should consider daylight and first floor transparency as opportunities to accentuate internal public program spaces. Additional wall detailing should be considered to reduce scale of buildings and break up large expanses of wall. Any change in wall materials must adhere to DFD Master Specifications and Design Guidelines. To limit uninterrupted expanses of wall consideration should be given to various brick coursing patterns or inserting a second material such as precast concrete bands. Glazing is to be tinted insulated units according to DFD Standards with Clear, champagne, or medium bronze anodized window frames. Composite Metal panel may be incorporated into building additions and renovations in this area, however, the predominant building material must be brick. Building height should not exceed 4 floors.

FIGURE 126: LAURENTIDE HALL (MAJOR RENOVATION)

FIGURE 127: STARIN HALL

FIGURE 128: HYLAND HALL

FIGURE 129: CONNOR UNIVERSITY CENTER

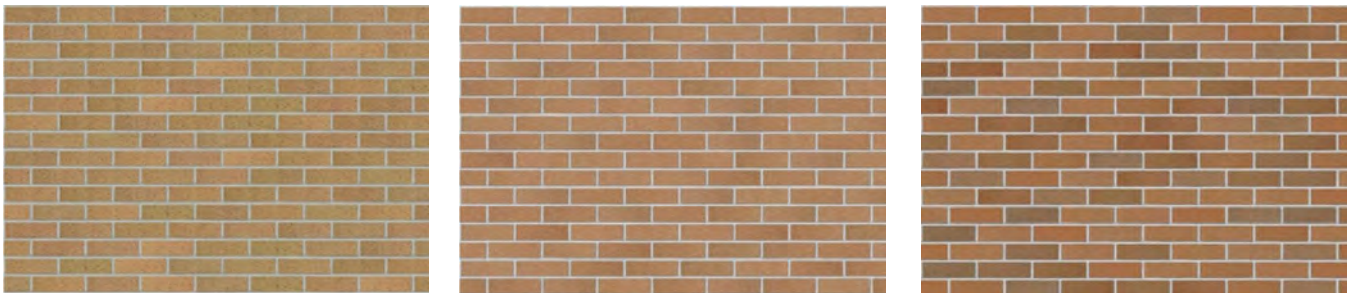


FIGURE 130, 131,132: MEDIUM BRICK: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE WITH VARIATION (LEFT TO RIGHT)

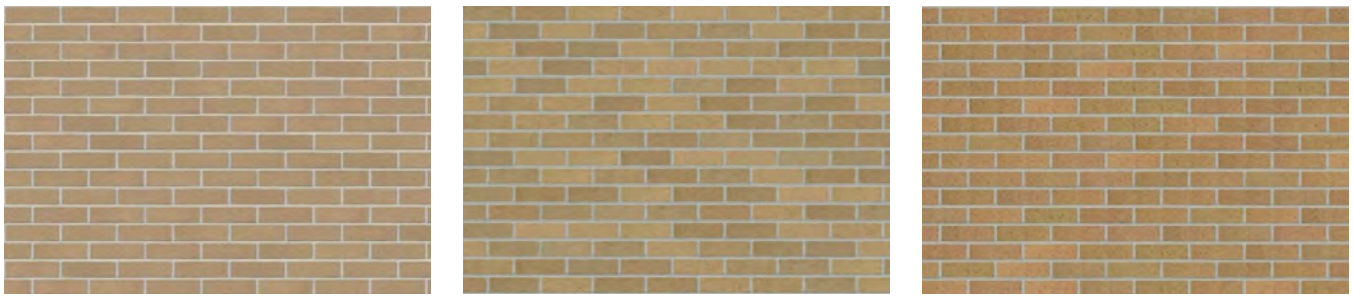


FIGURE 133, 134, 135: MEDIUM BRICK: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE (LEFT TO RIGHT)

FIGURE 136, 137, 138: PRECAST CONCRETE LIGHT RANGE, PRECAST CONCRETE MEDIUM RANGE, PRECAST CONCRETE DARK RANGE (LEFT TO RIGHT)

FIGURE 139, 140, 141: CLEAR ANODIZED METAL PANEL, METAL PANEL PLATINUM/ SILVER, MEDIUM CHAMPAGNE (LEFT TO RIGHT)

Residential

The majority of the current Resident Halls were constructed between 1960 and 1970, and Starin Hall was built in 2010. Residence halls typically are 4 stories, with the exception of Starin Hall at 5 stories and Wells Hall East and West Towers which are 10 stories (And Wells Towers are planned to be demolished after replacement housing is built). New housing should not exceed 6 stories and can be stepped to reduce the massing. New Residence Halls should have an individual architectural expression and scale reflecting a residential use. Consider increasing the transparency at the first floor levels consistent with Starin Hall. Predominant materials should be brick in a light color range, and secondary materials could include precast concrete and composite metal wall panels. Stone may be used in a contemporary application where appropriate using a honed or rock faced finish. Glazing is to be tinted insulated units according to DFD Standards with Dark Bronze Anodized window frames.

FIGURE 142: BENSON HALL, 1964

FIGURE 143: FISCHER HALL, 1996, 2013

FIGURE 144: WELLERS HALL, 1996, 2013

FIGURE 145: WELLS HALL WEST, 1997

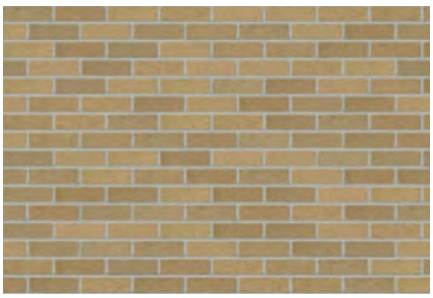
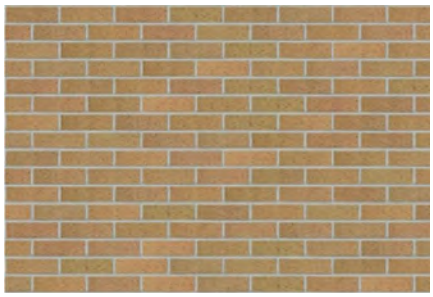



FIGURE 146, 147: BRICK LIGHT RANGE (LEFT); BRICK MEDIUM RANGE FOR ACCENT

FIGURE 148, 149: STONE LIGHT RANGE (LEFT), STONE MEDIUM RANGE FOR ACCENT

FIGURE 150, 151: PRECAST CONCRETE LIGHT RANGE (LEFT), PRECAST CONCRETE MEDIUM RANGE

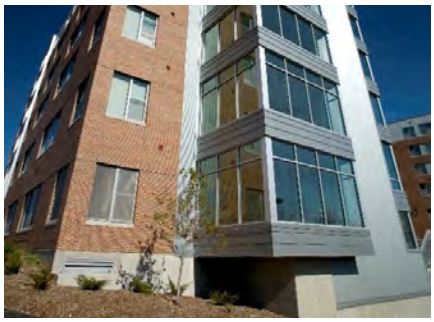


FIGURE 152, 153, 154: METAL PANEL CLEAR ANODIZED, METAL PANEL PLATINUM/ SILVER, METAL PANEL CHAMPAGNE (LEFT TO RIGHT)

Athletic

South of Schwager Drive: The contemporary addition to the original 1962 Williams Center is predominantly a medium tone brick with variation. New additions or renovations should be predominantly brick with precast concrete panels or metal panels. Composite metal panels may be integrated as a secondary material. Glazing shall be tinted insulated units according to DFD Standards with Clear, champagne, or medium bronze anodized window frames. In the event an addition occurs to the South face of the Williams Center, dark bronze window frames should be considered to integrate the façade.
North of Schwager Drive: The Athletic Training Facility, football stadium, softball complex, and track & field complex have contemporary designs, but many use less durable materials than other campus buildings (split face concrete block, metal buildings, exposed painted steel structural elements). It is recommended that future athletic buildings in this zone utilize materials, forms and massing that will be more durable, and will be more recognizable as "being part of campus".

FIGURE 155: KACHEL FIELDHOUSE

FIGURE 156: WILLIAMS CENTER

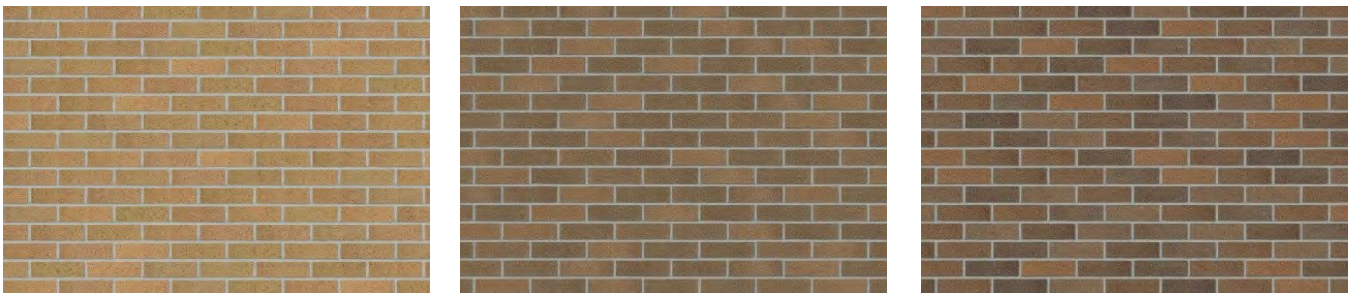


FIGURE 157, 158, 159: MEDIUM BRICK: BRICK LIGHT RANGE, BRICK MEDIUM RANGE, BRICK DARK RANGE (LEFT TO RIGHT)

FIGURE 160, 161, 162: PRECAST CONCRETE LIGHT RANGE, PRECAST CONCRETE MEDIUM RANGE, PRECAST CONCRETE DARK RANGE (LEFT TO RIGHT)

FIGURE 163, 164, 165: CLEAR ANODIZED METAL PANEL, METAL PANEL PLATINUM/ SILVER, MEDIUM CHAMPAGNE (LEFT TO RIGHT)

SCALE, FORM, MATERIALS

No single characteristic is responsible for achieving design identity, rather a combination of factors specific to each situation contribute to the building's successful contribution to campus diversification within a district. Scale, form, and materials characteristics are important design factors that define buildings and their surrounding spaces. The following sections make recommendations for scale, public space creation, massing, form, walls, roofs, entrances, transparency, and materials for this Campus.

Scale

The scale of buildings on campus varies by function. In order to have a relative consistency of scale per district, new buildings should be four to six stories for the academic buildings and six for the residential districts, and should have an overall footprint size that is not greatly different than neighboring buildings. Size of new facilities relative to their neighboring buildings is a critical factor in creating a diverse character to the campus both at the residential edges and the campus core. However, new residential buildings can approach 6 stories in an effort to conserve open campus space. Careful consideration of height and size relationships to adjacent buildings is critical for maintaining views of the campus.

New buildings shall be integrated within the Campus Master Plan and situated in a manner that reinforces visual continuity of adjacent buildings within the districts while adding definition to the campus landscape and open spaces.

FIGURE 166: SCALE OF BUILDINGS TO PUBLIC SPACE

FIGURE 167: SCALE OF BUILDINGS TO PUBLIC SPACE

Creation of Public Spaces

The positioning of new buildings should pay careful attention to the creation of outdoor spaces and the reinforcement and enhancement of existing spaces and pathways. Sensitive handling of the proximity and relationship to existing buildings to create favorable spaces without a negative sense of enclosure needs to be encouraged.

Public spaces between buildings must be designed as a defined, identifiable interval and provide a connection between buildings of various districts through the use of materials, texture, lighting, and vegetation. Various uses must be supported in Public Spaces such as: public circulation, reinforcement of building entries, seating, biking, and outdoor programming.

Setbacks and separation from roadways and other land uses should also be considered. Buildings along Starin Road, for example, should have a more urban orientation to the street and pedestrian zones. Development at the corner of Starin Road and Prairie Street should embrace and define the major corner of campus. Buildings that are close to service zones must account for separation of service and pedestrian traffic.

FIGURE 168: PUBLIC OPEN SPACE AND VISUAL CONNECTION TO CAMPUS THROUGH OPENINGS UNDER BUILDING

FIGURE 169: CIRCULATION SPACE

FIGURE 170: CIRCULATION SPACE

FIGURE 171: CIRCULATION AND PUBLIC SPACE

Massing

The mass (or "weight") of a building or group of buildings can help visually define the building's function externally. There must be a coherent relationship of the mass of an individual building to neighboring structures to maintain a harmonious campus "neighborhood". A new building's mass will be complementary to adjacent long-term structures through its use of scale, materials, color, or detail. Large, over-scaled walls, if necessary for building function, will have the mass of the wall diminished via relief in the plane of the wall, variation of texture or color, and articulation of detail inherent in the wall materials and structure. Effort needs to be exerted to have massing maximize natural daylight and enhance view vistas.

FIGURE 172: MASS AND WALL ARTICULATION

FIGURE 173: SCALE OF BUILDINGS TO PUBLIC SPACE

Form

General building shape should be basically rectilinear and respective of the campus organization. Exceptions to this standard need to be exercised with restraint and purpose. Spaces between building elements will contribute to the definition of outdoor space. Consideration should be given to connecting a sequence of buildings at grade through the use of open first floor areas. Curving or other elements may be considered if they represent an expression of an internal program element.

FIGURE 174: BUILDING MASSING FORM

FIGURE 175: BUILDING PLAN FORM

FIGURE 176: FORM RELATION TO PUBLIC SPACE

FIGURE 177: BUILDING WALL FORM

Walls

The materials, openings, surface pattern, proportions, and rhythm of exterior walls are some of the critical elements that need to be addressed during design, and must respond to the building use.

Openings for windows may be punched (i.e., singular windows), banded groups (i.e., multiple singular windows), or massed (i.e., small curtain wall areas). For the buildings in the academic districts, large unpunctuated expanses of plain glass curtain walls are discouraged. Size and shape of the window units, or areas, must be compatible with the building and space use as well as the context provided by adjacent buildings.

Recognition of the potential for pattern in the surface of the wall is encouraged. Use of surface articulation and pronounced material layering is desirable over plain, flat, unarticulated wall surfaces.

The rhythm of the wall surface, openings, and materials should possess a discernable, repetitive pattern in lieu of bland, static consistency, and show progression from top to bottom and side to side.

Majority of the wall surface should be constructed of earth tone brick masonry units. Accent materials, such as natural stone, precast concrete, metal, and glass, may be used as contributing subordinate elements in the overall wall composition

FIGURE 178: WALL PLANE TREATMENT

FIGURE 179:WALL PLANE TREATMENT

FIGURE 180: WALL MATERIAL

FIGURE 181: WALL MATERIAL SCALE WITH MASSING ELEMENTS

Roof

The Whitewater campus has generally followed the systemic practice of buildings with flat roof design. The steeply pitched roof forms of the Young Auditorium or blue standing seam roof at the visitor's center are not in keeping with the general campus aesthetic of flat roofs. Recreational or Athletic additions to the Williams Center may consider a slight curving roof to accommodate the structural system and required clear spans. New Academic and Resident buildings should incorporate flat roof design. These roofs may occur at various levels to break down the mass of a building. Where appropriate a flat overhang may be incorporated into the design.

Any building systems placed on the building roof (HVAC systems, large exhaust units, vents, laboratory scrubbers, and equipment) shall be visually screened from the campus grounds, adjoining buildings, and adjacent neighborhoods and incorporated into the design of the building form and appearance using materials compatible with the overall building design.

FIGURE 182: ROOF FORM ON ATHLETIC FUNCTIONS

FIGURE 183: ROOF FORMS ON RESIDENTIAL ENTRIES

FIGURE 184: ROOF FORM ON RESIDENTIAL BUILDINGS

FIGURE 185: ROOF FORM ON ACADEMIC BUILDINGS

Entrances

Building entrances, like campus entries, should be distinctive and welcoming. The strategic positioning of the primary entrance(s) will reinforce specific campus planning objectives and simplify way finding. Entries shall be oriented to major pedestrian malls and internal campus pedestrian routes. The primary entrance(s) should be articulated in an appropriate manner that clearly distinguishes it as a major building element. The entrance, as portal, orients the user to the building functions and sets the "tone" for the interior spatial experience.

All facilities shall meet or exceed barrier-free accessible entry requirements to allow for equitable entrances that contribute to the overall building integrity. All primary entrances shall have identifying signage to denote the building (refer to Signage).Vehicular and service entries shall be located away from main pedestrian routes.

FIGURE 186: ENTRY

FIGURE 187: ENTRY WITH LIGHTING

FIGURE 188: ENTRY WITH LIGHTING

FIGURE 189: ENTRY

Transparency

The degree of visual penetration of the planar surface of the building form is an effective design tool that needs to be carefully used. Transparency helps increase feelings of involvement in and awareness of the campus setting. Transparency also adds vitality of a building as it allows motion and activity to be seen from the exterior. The opacity of a wall, or the closeness, tends to emphasize boundaries and separation.

FIGURE 190: TRANSPARENCY INTO PUBLIC AREAS

FIGURE 191: TRANSPARENCY INTO PUBLIC AREAS

FIGURE 192: TRANSPARENCY INTO PUBLIC AREAS

FIGURE 193: TRANSPARENCY INTO PUBLIC AREAS

Materials

Colors of exterior brick materials on campus have been largely held to thelight tones of brick complemented by natural stone.

In some instances metallic exterior wall surfaces can be introduced to reduce the scale of large expanses of uninterrupted walls. The metal accents should not exceed 30% the appearance of the wall. To maintain a coherent (not monotonous) campus fabric, a similar color palette, using variations of hues and textures, should be maintained for new construction.

Brick should be the primary building material utilized throughout the campus. The brick should be modular- size units (nominally 2.66" x 4" x 8"), earth tone in color. Secondary materials include stone, glass, precast concrete, and metal. Consistency in the use of building materials and design composition is important in maintaining a coordinated and related appearance in the campus districts.

- As much as possible, primary material selections should be made from materials available or manufactured within a 150-mile-radius of the campus to complement the existing material palette.
- Glass should be tinted insulated Low-E in aluminum anodized thermal break frames. Highly reflective, deeply tinted, or boldly colored glass is discouraged.
- All material selections should be reviewed with facilities maintenance staff so as not to introduce materials that require specialized maintenance or cleaning procedures or cleaning substances.

Colored accent panels may be considered in limited areas to add texture and depth. The colored accent panels should not be the dominant building material and must be balanced with the exterior composition. Metal panels must be composite metal panels with a durable exterior finish. Metallic or Mica finishes should be the primary consideration. Detailing and location must coincide with DFD exterior detailing standards.

FIGURE 194: EXISTING MATERIALS, ANDERSEN LIBRARY

FIGURE 195 EXISTING MATERIALS, HEIDE HALL

FIGURE 196: METAL PANEL USE IN RENOVATION PROJECTS, LAURENTIDE HALL

FIGURE 197: MIX OF METAL PANEL AND MASONRY IN NEW UNIVERSITY PROJECTS, CONNOR UNIVERSITY CENTER

FIGURE 198: METAL PANEL AND MASONRY IN RESIDENTIAL PROJECTS

FIGURE 199: MASS AND ARTICULATION

FIGURE 200: PRECAST CONCRETE AND MASONRY

FIGURE 201: METAL PANEL AND MASONRY IN ACADEMIC PROJECTS

FIGURE 202: COLORED ACCENT PANELS IN A WALL SYSTEM FEATURE

FIGURE 203: COLORED ACCENT PANELS ON BUILDING

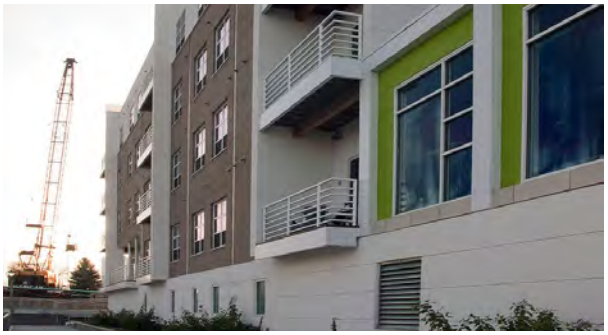


FIGURE 204: LIMIT VIBRANT COLORS TO SMALL AREAS OR UNDER CANOPIES

FIGURE 205: COLORED WALL PANELS AND FACADE TEXTURE

LANDSCAPE DESIGN GUIDELINES

Landscape design guidelines emerge from considerations for students with disabilities, sustainability objectives, new construction and remodeling projects identified in the master plan and landscape management processes.

Over the next 20 years there will be significant investment in student life at UW-Whitewater. This includes new and remodeled residence halls, dining facilities and related, adjacent utility corridor improvements. With this level of construction activity, there is an opportunity to visually and aesthetically define a residential neighborhood through scale, architecture, open space and landscape. This can be an important wayfinding tool. The landscape character of the residential neighborhood has human scaled open spaces with a higher percentage of managed turf to provide for ad hoc outdoor activities, informal gathering, and good visual access through the neighborhood for safety and security. Much of this landscape design and installation will occur (budgeted) within the projects of the associated buildings, remodeling and utility installations.

The landscape of the academic core of campus is characterized by two north south pedestrian malls, Wyman and Carter Malls, a modest density of buildings and large open spaces. A major open space is the drumlin between Carter and Wyman Malls. The drumlin is a natural geological feature with an informal scattering of mature trees. The southern area of the drumlin contains two areas of campus arboretum consisting of an informal forestry of a number of specimen trees. Campus planting policy for this area requires two trees replacement for each tree removed. The groundcover through most of the academic core is managed turf. The main academic core of campus does not include the same level of new construction. Remodeling of existing buildings will be largely interior renovations and not as impactful on the landscape in this area as compared to the residential neighborhood activities. Here the landscape character can be influenced by only a few new projects.

The master plan recommends that the landscape character of the main academic core evolve to a more naturalistic landscape pattern. The drumlin slopes are too steep and continuous to accommodate field activities. Maintaining this space in mowed turf is not sustainable, nor does campus benefit significantly from having the lawn space. A more sustainable strategy would be to restore the ground plane of the drumlin to a native prairie or a infrequently mowed meadow. Once established this landscape will reduce maintenance costs, emissions, runoff, enhance wildlife habitat, restore the soil profile and fertility and result in a distinctive landscape character for the academic neighborhood and UW-Whitewater as whole. This transformation can be accomplished incrementally as funds and labor can be applied. Smaller open space areas in the academic core could also be modified similarly.

A prairie or meadow landscape creating a definitive edge along the pedestrian malls and against surface parking lots would enhance wayfinding and would benefit stormwater management practices.

FIGURE 206, 207, 208, 209: LANDSCAPE CHARACTERS

Acknowledgments

Many members of the University of Wisconsin-Whitewater and the State of Wisconsin contributed to the Comprehensive Campus Master Plan through their participation in focus groups and open forum meetings. The University is grateful for the time and thoughtful input each person contributed.

These committees guided the Comprehensive Campus Master Plan process. Members included:

Executive Committee

Richard Telfer	Chancellor
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Jon Enslin	Vice Chancellor for University Advancement/UWW Foundation
Jeff Arnold	Vice Chancellor for Administrative Affairs
Tom Rios	Vice Chancellor for Student Affairs

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Denise Ehren	Classified Staff Advisory Council (Representative)
Lucas Tomachek	Whitewater Student Government (Representative)
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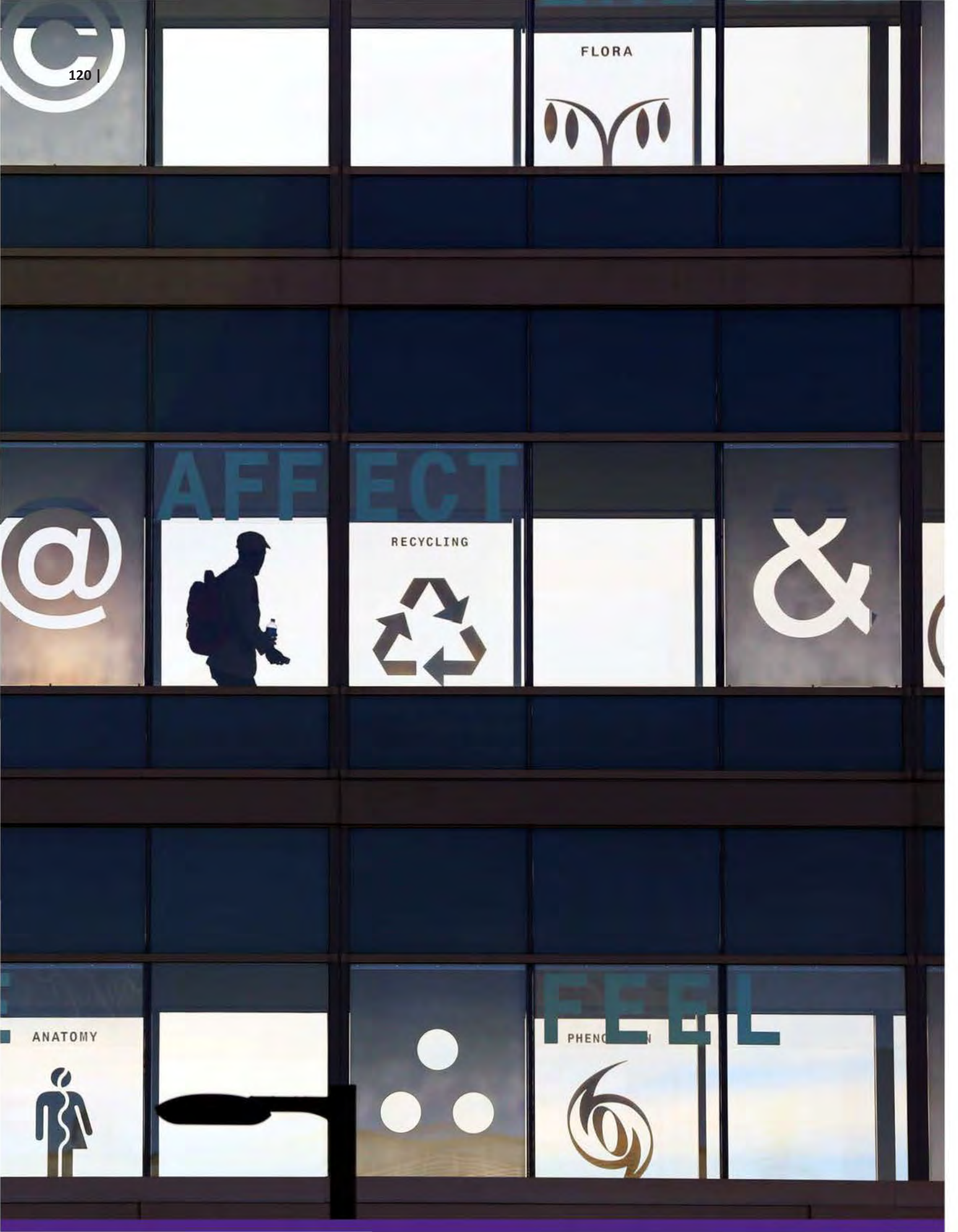
FLORA
AFFECT
RECYCLING
ANATOMY
FEEL

Technical Appendices

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Appendix A - Technical Report Summary

CIRCULATION

Existing Conditions

This section summarizes a review of current traffic and circulation conditions on the University of Wisconsin-Whitewater (UW-W) campus for use in updating the Campus Master Plan. The analysis of current traffic conditions at the University of Wisconsin-Whitewater, considered existing data provided by campus staff, a field visit completed in September 2013, and subsequent communication with campus staff.

A. Motor Vehicle Operations

Vehicular circulation to and within the University of Wisconsin-Whitewater is accommodated on a combined system of public City of Whitewater and private, campus, streets. In general, vehicular access to and circulation within the UW-W campus are adequate.

Congestion and queuing on streets and at intersections within and adjacent to campus are generally light, with the exception of some slowdowns and queuing along Starin Road during peak class times.

Starin Road between Prince Street and Prairie Street is a section of roadway where motor vehicle congestion and queuing were observed. In general, Starin Road serves the multiple modes of transporation adequately. During periods of high volume pedestrian crossings, conflicts arise. Figure 1 shows one of the high volume pedestrian crossings of Starin Road.

Most of the motor vehicle traffic on Starin Road is related to the UW-W campus. An informal turning movement count revealed that about 70 percent of motor vehicles entering the intersection of Starin Road and Warhawk Drive made a turn, rather than traveled through the intersection; which would indicate that traffic is directly associated with UW-W activity. Further, some portion of the 30 percent traffic through the intersection, is likely UW-W-based trips. Figure 2 is a photo of Starin Road and Warhawk Drive and the multiple transportation modes that are served by the facility.

During peak pedestrian circulation periods, typically from about 9:00 AM to about 3:30 PM, UW-W Campus Police provides officers to control the pedestrian crossings of Starin Road leading to Wyman and Carter Pedestrian Malls. Observation indicates the officers are actually there to provide gaps in pedestrian traffic so motor vehicles may proceed along Starin Road. This managed control began in 2011.

An interview with one of the officers controlling the easternmost crossing revealed the following:

The officer feels compliance between travel modes is generally good, and she has not witnessed any crashes or near misses.

The officer feels speeds of some eastbound motor vehicles on Starin Road approaching the westernmost pedestrian crossing can be higher than desirable.

The most notable congestion observed occurred occasionally from about 1:00 PM to 2:00 PM. During this period, westbound motor vehicles on Starin Road queuing at the westernmost pedestrian crossing sometimes backed up into the Warhawk Drive intersection. This, in turn, caused queuing for southbound vehicles leaving campus that reached 8 to 10 vehicles in length. While the queue lengths are notable, the delay experienced by the average driver was still relatively low - perhaps a minute or less.

While on-street bike lanes are marked along Starin Road, at the major pedestrian crossings they are partially blocked by "Yield to Pedestrian" signage (see Figure 3). This may encourage some bicyclists to ride on the sidewalk, which was also observed during the site review.

B. Pedestrian Circulation

Pedestrian infrastructure internal to campus is abundant, direct, and generally in good condition. Presently, pedestrian circulation encounters conflict with vehicles at street crossings, particularly at Starin Road.

FIGURE 1 - PEDESTRIANS CROSSING STARIN RD

FIGURE 2 - STARIN RD AT WARHAWK DR.

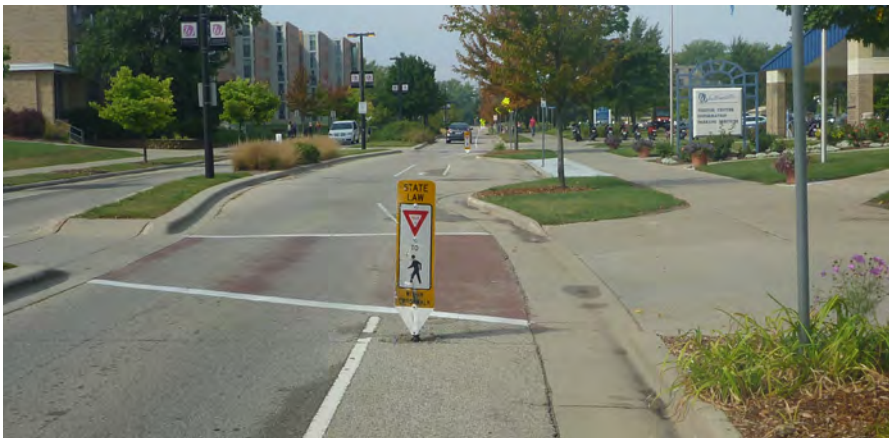


FIGURE 3 - SIGN INFRINGING IN BICYCLE LANE

Recommendations

Following is a summary of recommendations for circulation improvements. Some of the items listed will require coordination with the City of Whitewater regarding modifications to the streets and facilities surrounding campus.

A. Vehicular Circulation

The existing vehicular circulation system does not have significant vehicular traffic congestion issues. Conflicts between pedestrians and vehicles does create limited congestion for vehicles and safety concerns for pedestrians. The following measures could be implemented, in coordination with the City, if pedestrian/vehicle conflicts increase to unmanageable levels.

1. Consider traffic calming measures on Prince Street between Main Street and Starin Road. This might be accomplished primarily through markings in the form of on-street bike accommodations and/or additional marked crosswalks.

2. Consider traffic calming measures on Prairie Street between Main Street and Starin Road. This might be accomplished primarily by restoring on-street parking on the northbound side and/or through markings in the form of on-street bike accommodations and/or additional marked crosswalks.

3. Consider restoring on-street parking along both sides of Tratt Street from Main Street to Starin Road. Time limits and/or metering could be used to control who uses the parking and during which periods of the day/week/year. This recommendation could contribute to traffic calming and could also be a parking supply tool (see parking section).

Starin Road between Prince Street and Prairie Street is a corridor requiring focused considerations and solutions.

Campus officials should consider prohibiting large truck traffic (such as food delivery) serving campus destinations during peak activity times (i.e., Monday through Friday, 10:00 AM to 2:00 PM). During the field observation period, several full-size tractor trailers and single-unit delivery trucks traveled through campus on Starin Road. A delivery to the Moraine Campus Bookstore occurred at approximately 11:00 AM and required the tractor trailer to stop in the eastbound lanes and back across the westbound lanes to the loading dock, mounting some of the curbs in the process. It caused considerable disruption during a very heavy travel period.

The speeds of some eastbound motor vehicles on Starin Road approaching the westernmost pedestrian crossing appear to be higher than desirable. This may be mitigated by extending the traffic calming features that exist between Prince Street and Prairie Street farther west to Tratt Street. Alternatively, the intersection of Starin Road and Prince Street could be converted to all-way stop control, pending additional engineering analysis.

Standard pole mounted pedestrian crossing signs should be installed to eliminate existing interference with bicycle travel along Starin Road.

Modifications could be considered to ease this congestion including the following:

1. Instruct the officer controlling the intersection to monitor the westbound queue length and hold the pedestrians for a longer period when the vehicular backup nears Warhawk Drive to "flush" this westbound queue.

2. Evaluate more significant and permanent changes to control at one or more intersections along Starin Road.

B. Bicycle Circulation

Consider improvements along Schwager Drive. Collaborate with the City of Whitewater on improvements to the routes surrounding campus. Possible improvements include the following:

1. Add "Sharrow" shared lane use markings along Schwager Drive to convey that the street space is intended for both cars and bikes.

2. Consider modifying the multiuse path crossing at the intersection of Schwager Drive and Fremont Street to address poor visibility to path users for eastbound vehicles at the stop bar looking to the north. One option would be to modify the decorative pillar and signage and/or to bulb the path and relocate the crossing farther west.

3. Relocate "Yield to Pedestrian" signs along Starin Road to be outside of the marked on-street bike lanes.

4. Add on-street bike accommodations to Tratt Street from Main Street to Starin Road:

   Requires coordination with the City of Whitewater.

   Would need additional investigation to determine optimal configuration (narrow travel lanes and shared bike/parking lane, standard lanes with generous buffer to bike lane and no parking, etc.).

5. Add on-street bike accommodations to Prince Street from Main Street to Starin Road:

   Requires coordination with the City of Whitewater.

6. Add on-street bike accommodations to Prairie Street from Main Street to Starin Road:

   Requires coordination with the City of Whitewater.

   Would need additional investigation to determine optimal configuration (narrow travel lanes and shared bike/parking lane on both sides, maintain parking prohibition on northbound side of the street and add marked bike lanes in each direction, etc.).

7. Add on-street bike accommodations to Main Street:

   Longer-term goal that requires coordination with the City of Whitewater and a larger study of benefits/costs of implementation.

   Alternatively, a designated east-west Bike Route parallel to and south of Main Street could be investigated.

C. Pedestrian Circulation

Given UW-Whitewater's special mission addressing students with disabilities, another future consideration may be to reduce confusion in the existing pedestrian circulation system by simplifying or consolidating routes. Editing the overall system may make wayfinding more intuitive and direct, particularly for students with certain disabilities. Future circulation considerations should anticipate increases in bicycle use and other alternative transportation methods, some of which do not exist presently.

PARKING

Existing Conditions

Parking for UW-W commuter students, staff, faculty, and visitors is adequate in quantity, but is nearing capacity. Data provided by campus staff indicates there are currently about 5,120 on-campus parking stalls in surface parking lots plus about 120 additional metered, on-street spaces available on Prince Street and Prairie Street. During the field visit, the metered parking stalls had very low occupancy. The waiting list for parking permits is modest. For the 2012 - 2013 academic year, there were 25 students on the waiting list for Resident Lots 2 and 8, and 9 faculty and staff on the waiting list for Reserved Lots 2, 12, and 14.

Campus staff performed an occupancy survey of campus parking stalls the week of October 28 through November 1, 2013. The results confirm that current parking is adequate, but lots are nearing capacity at peak times (defined as 85 percent occupancy during some portion of a typical day).
Table 1 shows the results of the parking survey. Based on the field data, there is a modest buffer of about 140 to 250 stalls that could be displaced before parking demand would exceed the supply.

Current UW-W enrollment is approximately 12,000 students. This results in a current parking stall to student ratio campus-wide of about 0.44 stalls per student. The current growth agenda projects incremental growth over the next 20 to a future total of 13,875 students.

Assuming 13,875 as the student enrollment target, 6,105 parking spaces would be required to maintain the status quo at 0.44 spaces per student; an increase of just under 1,000 stalls.

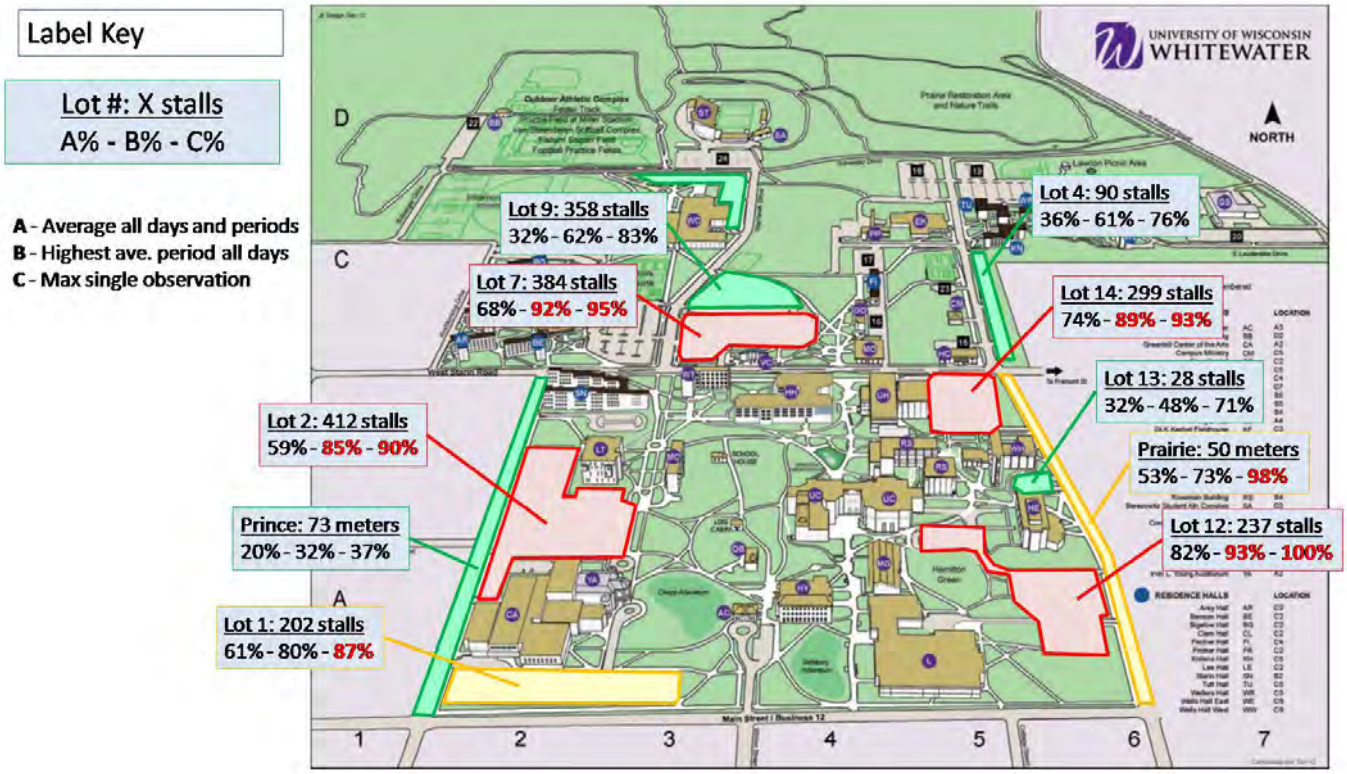
Many of the new buildings, building additions and new open space embodied in this campus master plan are proposed on existing surface parking areas. Approximately 1,000 existing parking stalls are eliminated in this manner. The combination of the loss of parking due to new buildings and the increase in student population results in a decrease in the parking to student ratio from 0.44 spaces/student to 0.31 spaces/student.

Another way to understand the parking situation is that about 1,865 new parking spaces would need to be constructed to maintain the current ratio.

Ultimately, a successful parking strategy for UW-W will determine the proper parking ratio that balances the impacts and costs of constructing new and/or replacement parking supply with managing parking demand.

Parameter	Existing Campus Reductions	MS4 Required Reduction	TMDL Required Reduction	Reduction Gap
Total Suspended Solids (TSS)	8.70%	20%	49%	40.30%
Total Phosphorus	Not reported	NA	66.40%	>57.7%

TABLE 1 - PARKING SURVEY STATISTICS



Recommendations

UW-Whitewater will be faced with a changing parking scenario as enrollment growth is combined with loss of surface parking areas to accommodate new buildings. Managing the changing parking scenario will require modifications affecting supply and demand. The following parking supply, demand and management tools are all components worthy of consideration and many may be part of the ultimate solution.

A. Parking Supply Modifications

There are areas on campus where surface parking could be feasibly added. However, existing lots 2, 7, 9, 12, and 14 represent the same area required to add the full 1,865 stalls that would be needed to maintain a 0.44 ratio long term. That area is about 12 acres, or roughly equivalent to the drumlin open space between Carter Mall and the University Center east to west and from Hyland Hall to Main Street north to south.

Some areas on campus that are currently in the Federal Land and Water Conservation Fund (LAWCON) restricted area might be made available for parking expansion by revising the LAWCON boundary as was done previously. There are properties adjacent to campus that could be considered for assembly and acquisition to add new areas for surface parking, but costs and timing add to the complexity of this solution.

Parking ramps and parking under new buildings could add supply and might be able to provide 1,855 parking spaces or some portion of that quantity. The cost of these spaces would dramatically impact the overall campus transportation budget because of debt service on the cost of the structure(s). This would most likely require significant increases in parking permit costs, which in turn impacts parking demand.

UW-W has an agreement with the City of Whitewater making some on-street parking stalls available for campus use. There are other streets nearby that could be added to this agreement and could add to the UW-W parking supply. There are various combinations of these strategies and more that could increase parking supply in the master plan build-out.

However, it is not likely that a master plan could include the new buildings required to accommodate the current growth agenda while establishing the desired setting for the future campus without impacting parking supply.

For a number of reasons, it does not seem likely that the current parking ratio will be maintained.

B. Parking Demand Modifications

Assuming the parking supply cannot keep pace with campus growth at the current parking ratio, UW-W campus decision makers should consider ways to manage the demand side of the parking equation. Demand can be influenced by adjusting prices, availability at different location, rules for distinct user groups,and transportation demand management strategies.

The fee for parking permits for faculty, staff, and students has a direct impact on the demand for on campus parking. Permit prices that are too low may encourage excess motor vehicle trips to campus and consume extra parking spaces. Permit prices that are too high may result in spillover parking to neighboring streets and properties, but they also tend to encourage ridesharing and alternative modes of transportation.

Current occupancy rates confirm that parking stalls closer to central campus are in higher demand by faculty, staff, and commuter students.

Additional data is needed regarding where off-campus residents and commuters live, where on-campus residents need to travel and how often, and so on. Regulations can be developed for on-campus residents and car parking or storage and off-campus students related to commute distances.

C. Travel Demand Management

Reducing the demand for on-campus parking stalls during peak times can be accomplished through many measures that can generally be classified as Traffic Demand Management (TDM). Such measures can include the following:

Improved pedestrian infrastructure and connections both internal and external to campus.

Improved bicycle infrastructure and connections both internal and external to campus.

Satellite parking areas with shuttle service and/or a larger campus transit system.

Enhanced accommodations for commuting students, faculty, and staff from other communities such as ride-matching and expanded commuter shuttles.

A modified growth agenda that results in an increase in the share of on-line, non-traditional, or other student types that contribute less to peak period parking demand.

D. Future Parking Study

The master plan recommends an in-depth study of parking supply, projected demand, parking policy and management to address the changes in parking that will occur as campus grows. Additional data and study are needed to fully address parking in a balanced manner for UW-Whitewater. This should include an in-depth study of users, parking use patterns, evaluation of scenarios based on financial availability and the "market" for parking at UW-W, property acquisition opportunities, cooperation/negotiation with City of Whitewater representatives, and more. In the near term of campus growth, design and construction of new buildings and additions should seek to limit net surface parking losses. Upcoming projects should limit net parking space losses to 150 stalls or less in total to avoid a significant impact on parking operations.

Additional study is needed to determine whether a parking structure or structures should be part of the long-term plan for UW-Whitewater. At this time it is recommended that two locations be held in reserve for a possible future parking structures and that future projects not preclude that possibility at these two locations: northeast of the intersection of Main Street and Prince Street on Lot 2 and northwest of the intersection of Main Street and Prairie Street on Lot 12.

STORMWATER

Introduction

This section summarizes a review of stormwater-related issues on the University of Wisconsin-Whitewater (UW-W) campus. The review considered existing data provided by campus staff, previous stormwater management studies and efforts.

This summary documents existing stormwater-related management efforts, describes the existing storm sewer system, provides commentary on the existing storm sewer system capacity, provides background on current stormwater quality requirements affecting the campus as a whole, provides an estimate of stormwater management needs for the proposed future building projects, and provides an implementation plan based on regulatory agency and master plan timing.

Existing Stormwater Management Planning Documents

Stormwater issues on the UW Whitewater campus generally revolve around stormwater quality and stormwater quantity (flooding) issues. The following documents past efforts in both stormwater quality and quantity on the campus.

Stormwater Quality Management

Stormwater Management Plan, UW Whitewater, Summer 2006, DFD Project No. 04B2C, Norris & Associates, Inc.- This plan addresses all the requirements of UW-Whitewater's Wisconsin Pollutant Discharge Elimination System Permit (WPDES General Permit No. WI-S050075-1) except the required stormwater quality modeling and planning. The plan includes the following sections: Executive Summary, Pertinent Codes, Existing Campus Features, Existing Storm Water Management Practices, Proposed/Anticipated Campus Development, Anticipated Storm Water Management Efforts, and Conclusions and Recommendations.

Stormwater Quality Management Plan, UW-Whitewater, December 2008, Strand Associates, Inc. As a WPDES-permitted area administered through NR 216, the UW-Whitewater's Municipal Separate Storm Sewer System (MS4) is required to comply with the requirements of the general permit. This plan provided baseline and existing conditions stormwater quality modeling to comply with the requirements of the permit at the time.

Stormwater Quality Management Plan Updates, UW-Whitewater, June 2011, Strand Associates, Inc. To provide a plan to achieve the general permit requirement of a campus-wide reduction in total suspended solids (TSS) discharge to Waters of the State of 20 percent by March 10, 2008, and 40 percent by March 10, 2013, this plan updated the December 2008 baseline and existing conditions stormwater quality modeling and evaluated alternatives to achieve the 40 percent TSS reduction requirement. The plan documented an existing conditions (March 2011) 8.7 percent TSS reduction, leaving a 31.3 percent TSS reduction gap that would need to be closed. The plan evaluates six alternatives comprised of various combinations of sixteen potential best management practices (BMPs) that range in cost from $982,000 to $3.1 million. Alternative No. 1 at a cost of $1.1 million and achieving a 40.8 percent TSS reduction was recommended as the most cost effective alternative.

It should be noted that since the date of the 2011 plan, the State of Wisconsin has rescinded the 40 percent TSS reduction requirement. However, with the United States Environmental Protection Agency (USEPA) approval of the Rock River Total Maximum Daily Load (TMDL) on September 28, 2012, compliance with new, more stringent stormwater pollution reduction requirements (41.1 percent TSS reduction and 81.2 percent total phosphorus (TP)) will be required. These requirements are further discussed below.

Stormwater Quantity Management

Lauderdale Drive Drainage Study, UW Whitewater, March 2010, DSF Project No. 08G3J, GRAEF- Recurring flooding in the northeast section of the campus, adjacent to Lauderdale Drive, prompted the need for this study. Hydrologic and hydraulic modeling of the contributing watersheds was used to evaluate six alternatives to address the flooding. A combination of Alternative 1 and Alternative 6 was recommended for implementation at a cost of $213,500. Strand Associates, Inc.® completed the design of the improvements for the area that were constructed in 2012. Figure 1 shows a flood relief bioswale constructed as part of the project.Heide Hall Drainage Study, UW Whitewater, July 2011, Strand Associates, Inc.- This drainage study was commissioned by UW-Whitewater to address localized flooding on the west and southwest sides of Heide Hall. The study recommends a $26, 300 project to address the flooding consisting of storm sewer and storm inlet improvements. It is our understanding that improvements (see Figure 2) in this area were completed in 2013.

Existing Storm Sewer System

As shown in Figure 3, the UW-Whitewater campus is split into 18 individual drainage basins. Basin designations starting in WC drain to Whitewater Creek and starting in GC drain to Galloway Creek. These areas are drained through a drainage system consisting mainly of storm sewers, manholes, and inlets with portions of Schwager Drive (east half), Prairie Street (north end), and Fremont Street drained by ditch/swale.

FIGURE 1 - FLOOD RELIEF BIOSWALE -PRAIRIE ST.

FIGURE 2-HEIDE HALL STORMWATER IMPROVEMENTS

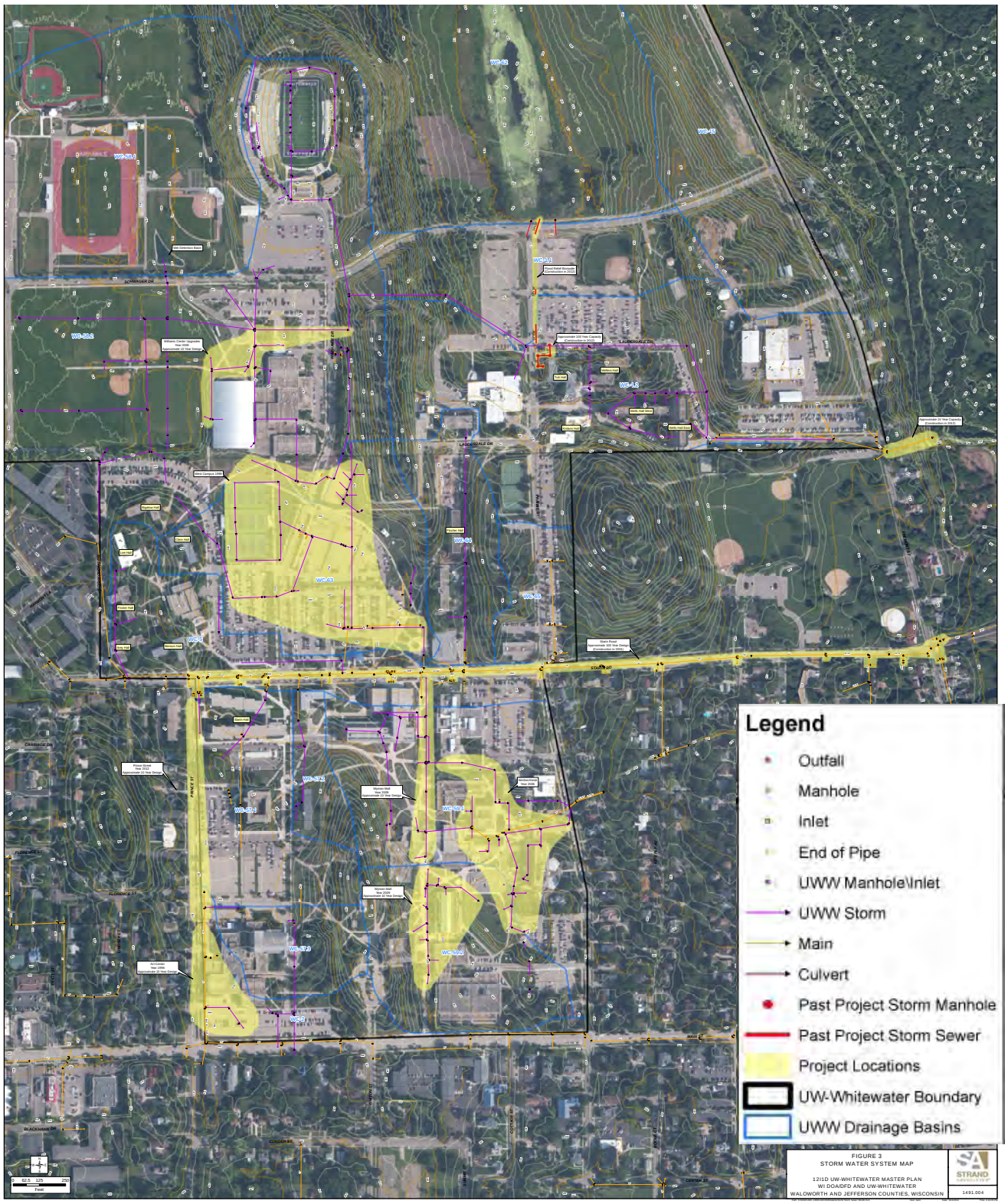


FIGURE 3 - STORM SEWER SYSTEM (NOTE-FULL SIZE DIAGRAM AVAILABLE IN THE DIGITAL APPENDIX)

From a stormwater treatment standpoint, existing BMPs include street sweeping, two bioretention basins serving Parking Lot 8 (drainage basin WC-5) as shown on Figure 4, one bioretention basin serving Parking Lot 2 (drainage basin WC-57.1) as shown in Figure 5, and a wet detention basin serving sports fields and the track (drainage basin WC-58.1).

Existing Storm Sewer System Capacity

Through discussions with UW-W staff, it is understood that there are currently no outstanding flooding problems on the campus. The flooding problem along Lauderdale Drive, north of Tutt and Wellers Hall, has been addressed by a flood relief system constructed in 2013. Flooding west of Heide Hall was addressed by a flood relief system constructed in 2012.

Existing Storm Sewer System Capacity-Figure 3 provides a map of the campus storm sewer system including contours, watersheds, storm sewers, and existing stormwater management BMPs. Where available, a design storm capacity is indicated. Over the years, various storm sewer extensions and upgrades have been completed though a specific design storm is not associated with the project. Figure 3 shows the locations of these upgrades and their year of construction.

Stormwater Quality Requirements

The UW-W campus is a Wisconsin Pollution Discharge Elimination System (WPDES)-permitted area (WPDES General Permit No. WI-S050075-1). As such, the UW-W Municipal Separate Storm Sewer System ([MS4] a designation assigned by EPA) must comply with the eight requirements of the permit:

- Public Education & Outreach
- Public Involvement & Participation
- Illicit Discharge Detection & Elimination
- Construction Site Pollutant Control
- Postconstruction Site Stormwater Man- agement
- Pollution Prevention
- Storm Sewer System Map
- Annual Report and Compliance Schedule

The existing stormwater quality management documents listed above provide efforts that generally comply with the requirements of the WPDES permit.
However, the WPDES permit reissued in 2013 as WPDES Permit No. WI-S050075-2, which will require updates to the campus stormwater program, including compliance with the Rock River Total Maximum Daily Load (TMDL).

Updates to the campus stormwater program including a TMDL Compliance Plan can be funded by a Wisconsin Department of Natural Resources' (WDNR) Urban Nonpoint Source and Stormwater Grant program that provides a 70 percent state and a 30 percent local (campus) match. The permit requires that the stormwater program updates be completed between March 15, 2015, and March 31, 2018, depending on the specific requirement. The grant program if successful, will provide funding in the January 1, 2015, through December 31, 2017, timeframe. This grant time frame works well to provide funding that will allow completion of permit requirements within the permit time frame. Compliance with the permit will require the implementation of sustainable green stormwater infrastructure on campus.

The scope for the stormwater program update and TMDL Compliance Plan would include updates to each of the bulleted requirements above.

One of the most critical items of the update will be stormwater quality modeling to
close the TSS and TP reduction gaps shown in Table 1. The TMDL Compliance Plan would look at ways to close this gap by way of stormwater infrastructure on the campus as well as the framework to potentially achieve the reductions through watershed adaptive management, pollutant trading, or through joint projects with the City of Whitewater.

Stormwater quality modeling efforts will need to comply with the DNR's TMDL Guidance for MS4 Permits: Planning, Implementation, and Modeling Guidance, currently in draft format. This document provides guidance for updating previous MS4 modeling to conform to requirements of the TMDL, among others.

The cost for the stormwater program update and TMDL Compliance Plan can be partially offset by grant funding, but in general can be in excess of $100,000.

As a state institution, UW-Whitewater is not normally regulated under Jefferson County, Walworth County, or City ordinances. State facilities are not subject to local ordinances except land use provisions of local zoningregulations.

However, the DOA has determined that the applicable stormwater regulations for each UW System campus shall include the most stringent of state and local ordinances to foster a good neighbor relationship with the local municipalities and counties where the campuses are located and to prevent degradation of the state's water resources. The master plan recommends that UW-Whitewater aspire to most stringent stormwater management requirements as a responsible steward and in keeping with the goals of a sustainable institution.

However, the campus is subject to Subchapter III of NR 151, Nonagricultural Performance Standards.

FIGURE 4 - LOT 8 BIORETENTION BASIN

FIGURE 5 - LOT 2 BIORETENTION BASIN

Applicable Stormwater Requirements

Review of Jefferson County, Walworth County, City of Whitewater, and NR 151 requirements reveals that there are no county ordinances. The most stringent of the City and NR 151 requirements will apply to the proposed new building and building addition projects on the UW-Whitewater campus.

New buildings and additions are characterized as "redevelopment" actions by DNR, and will require 40% reduction in Total Suspended Solids (TSS) from runoff from roads and parking areas per NR 151.

Stormwater quality requirements of the Rock River TMDL should also be considered. Again, as "redevelopment" actions, the federally mandated compliance with the Rock River TMDL requires:

49% Reduction in TSS and
66.4% Reduction in Total Phosphorus

Required Improvements for Proposed Building Projects

Conceptual stormwater management requirements for new buildings are shown in Table 2. It was assumed that the project size of a particular project would be 30 percent larger (of which 10 percent is parking, 10 percent is sidewalk, and 10 percent is grass) than the roof area identified in the Master Plan. HydroCAD and WinSLAMM modeling was completed to determine the size of the bioretention facility necessary to meet the stormwater requirements of NR 151 and the Rock River TMDL for each project.

A relationship between impervious roof area and bioretention top surface area was developed from this modeling information. This relationship can be expressed by the formula: Impervious Roof Area x 0.1085 + 595.22 = bioretention top surface area.

From a cost standpoint, a relationship can also be developed between the bioretention top surface area and the cost of the bioretention features. Again, this relationship can be expressed by the formula: Surface area (in sq. ft.) x $24.13 + $37,577 = probable cost for this aspect of storm water management.

Table 2 shows estimated areas of bioretention, probable cost in 2014 dollars related to building and building addition projects.

Parameter	Existing Campus Reductions	MS4 Required Reduction	TMDL Required Reduction	Reduction Gap
Total Suspended Solids (TSS)	8.70%	20%	49%	40.30%
Total Phosphorus	Not reported	NA	66.40%	>57.7%

TABLE 1 - MS4 AND TMDL REQUIRED REDUCTIONS

Proposed Building Project	Roof Area/Total Area (sq. feet)	Bioretention Surface Area	BMP Cost
Williams Center Additions	88,215/114,680	10,167	$ 282,900
New Res. Halls			
#1	28,135/36,576	3,648	$ 125,600
#2	35,742/46,465	4,473	$ 145,500
#3	29,452/38,288	3,791	$ 129,050
#4	31,707/41,219	4,035	$ 134,950
#5	30,036/39,047	3,854	$ 130,600
#6	31,504/40,955	4,013	$ 134,400
New Dining Hall	59,207/76,969	7,019	$ 206,950
Laurentide Hall Addition	7,149/9,294	1,371	$ 70,650
Carter Mall Academic Bldg.	53,312/69,306	6,380	$ 191,500
Upham Hall Bldg. Addition	30,772/40,004	3,934	$ 132,500
Athletics Additions			
#1	2,542/3,305	871	$ 58,600
#2	2,365/3,075	852	$ 58,150
#3	2,477/3,220	864	$ 58,400

TABLE 2 - STORMWATER MANAGEMENT PROJECTIONS FOR NEW BUILDINGS AND ADDITIONS

WATER SYSTEM

Introduction

This section summarizes a review of the current water distribution system on and around the University of Wisconsin-Whitewater (UW-W) campus. The review considered existing data provided by campus staff, available Geographical Information System records of the water system, the existing water system model for the City of Whitewater, and record drawings of recent facility improvements.

In general, the water system in the campus area is very robust, with significant, relatively recent water main improvement projects being completed on Starin Road, Wyman Mall, Carter Mall, and around the Williams Center/Kachel Field House. Eight and twelve-inch mains provide a strong network of mains through a majority of the campus.

The existing distribution system pressures during normal operation of the water systems range from 45 to 65 pounds per square inch (psi) throughout the study area. Pressure will be dependent upon water use throughout the city, water levels in the existing elevated tanks, and the wells that are in operation. A typical pressure contour map is shown in Figure 1. This is a relatively conservative estimate of the typical pressures in the area.

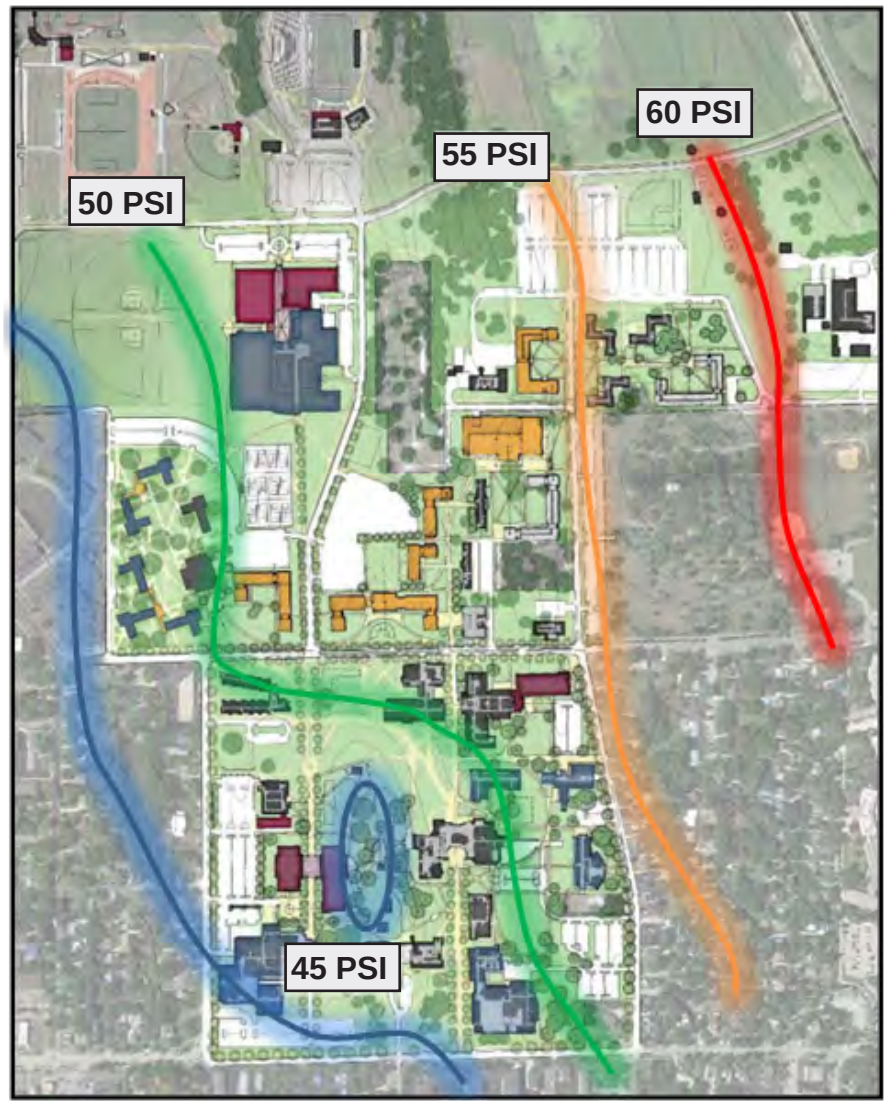


FIGURE 1 - WATER PRESSURE CONTOUR MAP

For planning purposes, conservative levels of demands, well operation, and tank levels were used. Typical pressures at grade in the area of the proposed residence halls, north of Starin Road, are expected to be a minimum of 50 psi under typical conditions. This will provide adequate pressure to serve the domestic demands of four-story residence halls as are currently proposed.

Additional floors would likely require booster pumps to supply them, as pressures would start to become marginal on the upper floors without. Pressures are slightly lower, on the order of 45 psi at grade, in the Carter Mall area. This is primarily due to the higher elevation in this area, rather than any weakness in the water distribution system. This will still provide adequate pressure for the proposed three story academic building proposed at this location. Again, additional floors will require booster pumps to achieve required pressure for domestic water use.

		Fire Protection (GPM)		
Building Type	General Use/Description	Est. Ave. H2O Use (GPD)	Sprinkler	Hydrant
Residence Halls	400-450 beds, 4 stories	45,000	345	1500
Dining Hall	General Dining Facility, 60,000 GSF	60,000	345	1500
Gymnasium/Locker Rooms	Accessible gymnasium and locker space, 70,000 GSF	15,000	345	1500
General Classroom	3 stories 170,000 GSF	20,000	345	1500
Laboratory	3 stories, 75,000 GSF	20,000	345	1500

FIGURE 2 - DOMESTIC WATER USE

Fire Protection

In general, the controlling feature of the water system design is the necessary fire protection for the proposed and existing facilities. Sprinkler system requirements appear to be capable of being met relatively easily by the existing distribution system. Hydrant flows, based on National Fire Protection Association guidance, on the other hand are more difficult to attain.

Depending upon the operating scenarios, the available fire flow throughout the study area varies from 1,800 gallons per minute (gpm) to greater than 3,500 gm at a 20 psi residual. The lowest flows were generally found around the west campus residence halls and Goodhue/Fischer Hall area. Fireflows are generally strong in the Fieldhouse area, Carter Mall, along Starin Road, and the Connor University Center. These areas include a network of newer 8 and 12-inch mains that provide solid fire flow capabilities.

The hydrant fire flows listed in Figure 2 are based upon structures that are fully protected by sprinkler systems. Areas with unsprinklered buildings will require larger hydrant fire flows and larger diameter water mains. Where no sprinklers are currently installed, these recommended hydrant flows increase by 75 percent and would range from 3,000 to 6,000 gpm with a residual pressure of 20 psi.

In general, the water utility is unlikely to be able to support hydrant flows in excess of 3,500 gpm. This level of water use exceeds the supply capacity of the overall system and would quickly deplete the storage available in the system.

A summary of the anticipated water needs for typical facility development included in the master plan is found in Figure 2 - Domestic Water Use.

Water System Recommendations

The following water system improvements or modifications are recommended as part of the master plan.

1. Indoor Tennis/New Gym and Entry Addition to Williams Center

An existing 12-inch water main runs just north of the existing Williams Center. This watermain will need to be relocated to avoid conflict with the proposed new structure. Replacement with a 12-inch water main is recommended.

2. West Campus Residence Complex Utility Project

This is an area of lower available fire flow. The modeled flow is just above the anticipated required fire protection need presented in Figure 1 for residence halls. A 12" water main replacement of the existing 6" main is currently planned as part of Phase I of the West Campus Residence Hall renovation project.

3. New Academic Building #1 (Carter Mall Location)

There is an existing north-south 8-inch water main located within the bounds of the proposed building footprint. The master plan specifically notes that the new building would "straddle" the exisitng water main, maintaining that service throughout and folllowing construction.

4. New Residence Hall 1/New Dining Facility/New Residence Hall2

This area is served by an existing 6-inch main that runs between Starin Road and the Lauderdale Drive/Prairie Road Intersection. The current water main also falls within the proposed footprint of the new dining facility.

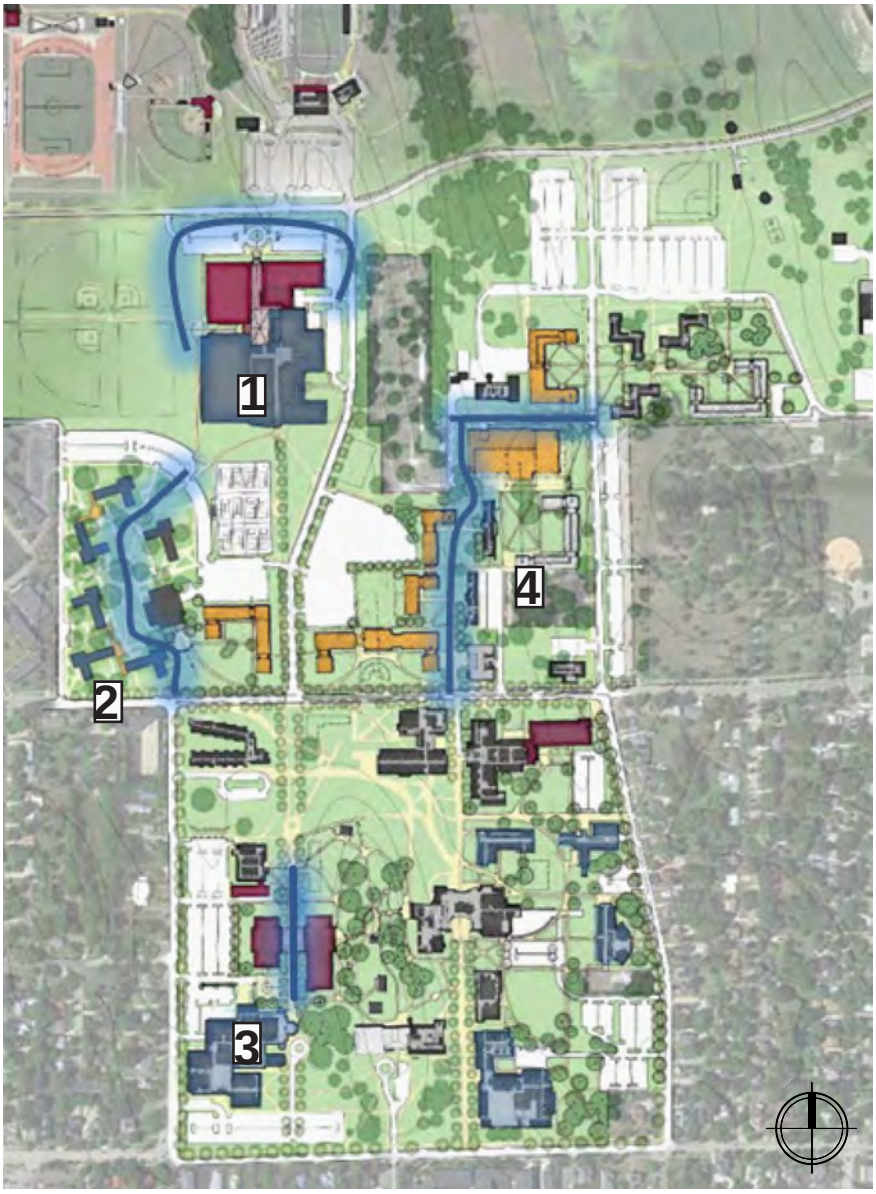


FIGURE 3 - WATER SYSTEM RECOMMENDATIONS

Relocation of the main around the proposed dining facility will be necessary.

Similar to the west campus residence halls, available fire flows in this area just meet the anticipated requirements and may be considered marginal. Replacement of the 6-inch main with a 12-inch main between Starin Road and Prairie Road is recommended.

CAMPUS UTILITIES

Overview

This utility master plan provides a high level assessment of steam, chilled water electrical and telecommunications systems which serve the University of Wisconsin – Whitewater campus. The assessment will review the overall condition, capacity and layout of the utilities and the ability of the utilities to meet the needs of the campus for a minimum of the next 20 years to coincide with the Campus Master Plan.

Strategies and upgrades are based on new proposed buildings, buildings being remodeled and buildings proposed for demolition as identified in the Master Plan. Strategies also consider the impact of the building changes to the boilers, chillers and electric services.

Profile

Steam - Buildings

The campus currently consists of 2,961,716 gross feet of building area of which 2,874,076 square feet (97%) is provided steam from the central steam system. Estimated building demands are included in the Campus Central Steam System Analysis (See Appendix A).

Over the time period of the master plan the gross building square footage of heated space on campus is projected to increase by approximately 58% (1,680,330gsf) to 4,554,406 gross square feet.

The 58% increase in building square footage will require a projected net increase in the profected campus steam demand of 43%. This will have a significant impact on the steam generation and distributions systems.

Steam - Generation

Campus steam is provided from nearby combined cycle gas-fired LS Power cogeneration plant operated by NAES. Currently the UW is in a 3 year contract (started September 2012) to purchase steam from the LS Power Plant at $2.63/1000#/hr. LS Power currently owns and maintains the main steam pressure reducing valve, condensate pumps and steam flow meter within the UW-Whitewater steam plant. Steam is utilized for building heating and for campus cooling thru three existing absorption chillers.

The UW-Whitewater steam plant is maintained to provide backup service to the LS Power supply to the campus. The steam plant consists of the following boilers:

- Boiler-1 (1965) 45,000 LB/HR Gas fired
- Boiler-2 (1965) 45,000 LB/HR Gas fired
- Boiler-3 (1970) 35,000 LB/HR Gas fired
- Boiler-6 (2010)100,000 LB/HR Gas fired

The current peak steam demand is 82,936 lbs/hour based on metered data. This demand equates to an average use of 27 BTU/gross square foot of connected building. The future peak steam demand is projected to increase 44% to 119,618 lbs/hour assuming demolition of identified buildings. Boiler-6 remains in stand-by mode in case the cogeneration plant goes off line. Boiler-3 and Boiler-6 are available to provide campus demand during annual LS Power scheduled maintenance shutdown in May. Boilers-1 and 2 have not been on-line since 1987 and are considered non-functional.

Boiler-3 and Boiler-6 could meet current and projected future peak winter campus demand if LS Power would go off line. If Boiler-6 would go down when LS Power is off line in the winter the campus would not have adequate back up to meet current demand.

The plant steam header operates at 125 psig and provides 80 psig to the underground campus distribution system to the campus buildings.

Existing plant equipment such as the boiler feed water pumps, dearator and condensate tank are original and in good working condition. Individual buildings are equipped with condensate meters.

There is currently a planned project to upgrade the make-up water treatment system with an RO system.

Steam - Distribution

The steam distribution system consists of approximately 12,679 lineal feet of concrete box conduit and 1,465 lineal feet of direct buried conduit. There are a total of 44 steam Pits. The existing layout of the steam distribution system is provided in Appendix A

There are currently two main steam routes from the plant to feed the

campus, one 10" main to feed the area east of the plant and one 12" main to feed steam south and west of the plant. Both mains are of adequate size to handle current campus steam loads. The 10" main is lightly loaded. The 12" main is considered at its maximum capacity.

The "Steam Distribution Condition Assessment" in Appendix A summarizes the condition of the steam distribution system. There have been ongoing upgrades to the steam distribution system since it was first installed in 1963.

The campus experiences an approximate 7-8 psig pressure drop at the far south end of the campus on a peak day.

Condensate is returned to the Heating Plant in the same pipe route as the steam system. With all campus isolation valves open there is not an issue with returning condensate to the plant. If condensate is isolated at Pit 3 and directed back to the plant via the west campus cross connect, condensate will backup and overflow from condensate receivers serving buildings on the south end of campus.

Chilled Water - Campus Buildings
The campus currently consists of 2,961,716 gross feet of building area of which 1,906,241 square feet (64%) is provided chilled water for cooling. Estimated building demands are included in the Campus Chilled Water Load Projections (See Appendix A).

Over the time period of the master plan the gross building square footage of air conditioned space is projected to increase by approximately 60% (1,142,292gsf) to 3,048,533 gross square feet. In addition there is an additional 230,841 gross square feet of existing buildings outside the 20 year timeline of this study that may require air conditioning..

Chilled Water - Generation
The original chiller plant was constructed as an addition to the central heating plant in 1999 with (3) 800 ton rated absorption chillers (CH-1, 2, 3). In 2006 a 1,400 ton electric chiller (CH-4) was installed in a new addition to the existing chiller plant.

The current total nominal plant capacity is 3,800 tons. Actual performance is significantly less. Data for a 94 degree 51% humidity day the plant could only generate 3400 tons of chilled water at 46 degree supply and 58.2 degree return with 6689 GPM. This demand was recorded on a day that was slightly above a design day condition. The chillers are currently set to provide a supply water temperature of 41 degrees with a 10 degree temperature difference. Based on the design day performance it is anticipated that the absorption chillers are underperforming with Chiller-2 producing significantly less than its name plate tonnage. Observations indicate that it is producing approximately 600 tons.

Each chiller has its own independent cooling tower and condenser water pump.

Each chiller has a primary chilled water pump. Chilled water is distributed to the campus with one electrically driven secondary pump with a variable frequency drive and one steam driven secondary pump with 13 psi backpressure steam. Low pressure steam from the backpressure turbine pump is used for the absorbers. A bypass/decoupler line is installed between the supply and return line upstream of the campus distribution pumps which creates a primary-secondary pumping arrangement.

The system distribution pumping differential pressure is approximately 30 psig on a design day.

Metering of chilled water is provided only at program revenue buildings; Esker Hall, Drumlin Hall, Conner Center, Fischer Hall, and Starin Hall. Metering information is brought back through the Metays control system.

Chilled Water Distribution System
The existing direct buried underground chilled water distribution system is fed thru ductile iron and some PVC piping from the chiller plant to the campus buildings. The distribution system is a radial concept with no loops. There is a single 20" main feed from the plant to serve the campus.

Evaluation of the hydraulic performance of the existing and proposed chilled water pipe distribution system was completed using the AFT Fathom pipe flow analysis program.

Electrical Power - Campus Buildings
The campus currently consists of

2,961,716 gross feet of building area of which 2,943,697 square feet (99%) is served by the campus electrical service. Estimated building demands are included in the Campus Electrical Load Projections (See Appendix C).

Over the time period of the master plan the gross building square footage is projected to increase by approximately 28% (1,154,048 gsf) to 4,097,745 gross square feet.

The 4160V switchgear presently has 6 spare circuit spaces that can be utilized to serve future load growth.

Electrical Power - Generation
The campus electrical service was installed in 2011. The service consists of 24.9 kV switchgear that supplies (2) 7.5 MVA 24.9kV to 4.16kV transformers and switchgear line-ups, labeled North and South. Electrical power is distributed from the (2) lineups of 4.16 kV switchgear to the various buildings on campus. The two transformers and associated 4.16 kV switchgear are designed to be redundant, should one fail the other system can handle the entire load of the campus.

Currently, the total load on the two transformers is 6.54 MVA. Thus a single transformer is loaded to 87% of maximum capacity.

Electrical Power - Distribution
The 4.16 kV electrical power is distributed to the various buildings via underground ductbanks. The distribution system is a loop concept so each building can be served from either of the 4.16 kV switchgear lineups (North and South). The switching of a building(s) from one lineup to the other occurs in various pad mounted switchgear units around the campus.

There are several locations in the ductbank system with limited or no spare duct capacity. There is one spare duct between manholes P1 and P3. This is the main ductbank that supplies the campus with the exception of the northwest quadrant.

While each building can be supplied from either the North or South 4.16 kV switchgear lineups, feeder #10 from the south lineup is the back-up feeder to feeders #4 and #6 from the north lineup and feeder #7 from the south lineup.

Currently if one feeder in each loop has to serve the entire load, the maximum loading of any feeder is 63%.

Telecommunications - Generation
The campus has two hubs for telecommunications, McGraw Hall and Goodhue Hall with a redundant link between the two buildings. The data center is located in McGraw Hall.

Telecommunications - Distribution
The communications cabling is distributed to the various buildings via underground ductbanks. The distribution system is a radial concept with no loops.

The buildings south of Starin Road are connected to McGraw while the rest of the campus is connected to Goodhue.

The existing distribution system of underground ductbanks has significant obsolete fiber optic cable but still in use, coax cable bot in use and abandoned and other miscellaneous cables. The ductbank system also contains a significant amount of underutilized multi-pair telephone cable. When the campus switched to voice-over-internet-protocol (VOIP), the amount of pairs in telephone cable still utilized is very low, some is completely abandoned.

Refer to the fiber optic study, Appendix D, for more details.

Recommendations

A. Steam - Generation
Boiler-3 and Boiler-6 should be maintained in good operating condition to continue accommodating LS Power maintenance shutdowns. A third boiler of 100,000 LB/HR would be required to provide reliable adequate backup capacity if full winter backup is required.

Due to age, condition and duration of non-operation Boiler-1 and 2 should be considered for removal although removal is not necessary. Removal of these two boilers would provide three open bays in the plant for other functions. One of the three open bays should be reserved for a third boiler.

B. Steam Distribution
Incremental maintenance repairs/upgrades to the existing aging steam/condensate distribution system will be necessary to continue to provide reliable distribution and adequate capacity for existing buildings and anticipated new construction identified in this master plan. Steam pits noted with "Poor" structural condition are the highest priority and recommended for reconstruction in the near term. Steam pits noted with "Poor" insulation or piping are the second highest priority and recommended for reconstruction in the mid term.

With a projected increase in campus steam demand of approximately 44% the steam pressure drop through the existing distribution system to the south end of the campus is anticipated to increase to 12-14 psig. An increase in the distribution pressure could be considered if pressure drop becomes excessive. An evaluation of the system components would need to be done toverify the ability to increase the system pressure. The system safety valve is set for 160 pounds per square inch.

A second 12" steam with 6" condensate is recommended to be extended from the plant to Pit 17. This line would supplement additional buildings for the south and west portion of the campus and also allow shutdown of the single deteriorating 12" steam and 6" condensate from the plant to Pit 3 for reconstruction.

Building condensate pumps on the far south end of campus should be upgraded to provide adequate pumping head back to the plant. Any new building should include a steam or condensate meter for monitoring energy use.

C. Chilled Water - Generation
The chiller capacity is currently at capcity. The projected future campus demand is estimated to be approximately 6,000 tons of cooling or about a 2600 ton (75%) increase from the current 3,400 ton plant capability. In addition, 2,000 tons of absorber capacity should be scheduled for replacement within the next zero to six years due to age and condition.

Four initial options for increasing plant capacity were considered for planning purposes. These options are indicated in the appendix. Based on the building master plan the capacity increase and upgrade of the existing chillers is suggested to occur in three separate increments. The first increment would be required before the occupancy of the first new building. The second increment would be required around year five and the third increment would occur at approximately year 10. In addition to the four options there are several other possible options that should be evaluated in a detailed plant study.

The existing chiller plant is not anticipated to have adequate space for the projected increase in cooling capacity. An addition to the plant or a second plant on campus should be further evaluated. Expansion into a portion of the boiler plant may also want to be evaluated depending on the long term plan for the plant.

Consideration was given to adding a second plant at the south end of the campus but the relatively inexpensive steam from LS Power and the available distribution, steam and electrical infrastructure would dictate the capacity be added at or near the existing plant.

Further study is required to evaluate whether to replace the existing absorbers with steam turbine driven chillers or a combination of steam turbine driven and electrically driven chillers. Both the existing steam plant or the LS Power steam service have enough capacity to serve 6,000 tons of turbine driven chilling capacity.

A detailed study is recommended to evaluate the various chiller/driver, cooling tower, plant and location options.

Chilled Water Distribution System
The flow model did not identify any areas of high velocity (exceeding 10 feet per second) at the "current" loading with a 10 degree tempera-

ture differential.
Evaluation of the distribution system for projected new buildings and with flows designed at a 14 degree temperature differential indicates that the system would exceed recommended pipe capacity in the next 10 to 15 years. It is recommended that a second 20" main be extended from the plant to provide increased capacity and reliability to the west and south portion of the campus.

All new buildings should be designed with a minimum 14 degree temperature rise between the supply and return water to reduce the need to upsize distribution lines and minimize distribution energy costs. Metering of chilled water and trending of energy use through the campus automation system should be provided for any building connected to the chilled water system.

D. Electrical Power Generation
The campus 5kV electrical load is approaching the capacity of one of the two 7.5MVA power transformers. When the load reaches this point, 100% electrical power transformer redundancy will not be available. . The campus load will reach this point with the construction of one building or the addition of electric chillers. An additional 24.9 to 4.16 kV transformation and associated distribution will be required to maintain redundancy.

Projected load growth to 12.2 MVA would require an additional 7.5 MVA transformer and distribution. The new equipment would be installed near the existing service equipment and the new transformer would connected to serve as a spare to either of the existing transformers along with serving the Heating and Chiller plants. Moving the large motor load of the plant to a dedicated transformer will cause less voltage variation of the two original transformers along with providing some year around load for the new transformer.

If the State decides to transfer ownership of the steam plant to a private entity, the electrical system will have to be reviewed to determine how the electricity to the plant can be metered.

E. Electrical Power Distribution
Upgrades to the existing electrical power distribution system will be necessary to continue to provide reliable distribution and adequate capacity for the anticipated new construction identified in this master plan.

With the anticipated new construction, an expansion of the ductbank system from the electrical manhole P1 to manhole P3 and east to manhole P20 and new ductbank from P20 south to manhole P8 will provide the pathway for new power distribution. A new loop feeder will be installed for the anticipated new residence halls and dining facility. All other anticipated new construction will be served from existing feeders.

Telecommunications Generation
The existing hub points will remain as is.

Telecommunications Distribution
Based on the Fiber Optic study, (see following appendix section) new underground ductbanks are only required for the anticipated new construction that cannot be served from the existing system. New looping ductbank is proposed between manholes SX1 and S36 to facilitate a possible future telecommunications ring system.

Otherwise, if the new fiber optic cable system as recommended by the Fiber Optic Study is installed and the existing abandoned cable is removed, the ductbank system has sufficient capacity for new fiber optic cable for the anticipated new construction.

Summary - Recommendations

- Study Chiller/Boiler options
  -Evaluate need for back-up boiler on firm capacity basis
  -Increase Cooling capacity.
- Add metering/monitoring controls.
- Increase campus electrical power

Buildings

- Upgrade condensate pumps.
- Add building metering and monitoring controls for steam, condensate, chilled water.

Distribution

- Provide loops in distribution where appropriate.
- Align utilities in defined corridors.
- Upgrade existing aging lines.
- Increase lines with inadequate capacity

Geothermal

An assessment was made to determine if geothermal would be a viable strategy for the University of Wisconsin-Whitewater. When assessing the viability of geothermal systems there are several factors which were considered:

Utility Rate Structures: Purchased steam rates ($2.83/1,000LBS/HR)from LS for the UW Whitewater Campus are significantly lower than other system campuses. The low rates would not allow the ability to recoup the high cost of the bore holes and other related first costs. The rate structure would need to significantly change (double or triple current rates) in order for geothermal to be considered.

Building Mechanical Systems: Geothermal systems require that buildings have heat pump systems or low temperature hot water systems. Existing buildings would require system replacement to be considered. New buildings could be designed for geothermal systems. Application would be most appropriate for the central campus area where the most new construction would be occurring.

Space Availability: With a current campus cooling load of 3,400 tons and the type of soils it is estimated that 2,775 bore holes would be needed, requiring an area of approximately 25 acres. With a projected campus cooling load approaching 6000 tons and the type of soils it is estimated that 4,900 bore holes would be needed requiring an area of approximately 45 acres.

The athletic fields on the north end of the campus as well as existing parking lots would be areas to consider locating geothermal fields. The athletic fields and the parking lots on campus encompass approximately 58 acres. Field areas are significantly scattered throughout the campus making a central system approach very costly. Parking areas and athletic fields on the north end of the campus are considered to provide the least opportunity for future building sites because they are the furthest from potential users thus increasing first cost and operating cost.

Intermittent green space around campus may be available for additional wells. The wells would need to be interspersed around existing trees, streets and utilities. In addition, geothermal loop piping would need to be extended to the various geothermal field locations. This piping would be disruptive to the campus landscape and has a high cost for the value.

Of the available areas of parking and athletic fields approximately 6 to 7 acres are considered available near proposed new Residence Hall-1, 2 & 4 as well as Academic Building-2 (Carter Mall).

Existing Campus Infrastructure: The campus has an existing chilled water distribution system in place that can be used for a central geothermal system.

The campus is heated by steam and therefore there is no central low temperature hot water distribution system in place. There is also no distribution system in place that could distribute water to dispersed bore fields for a central system.

With this lack of distribution infrastructure a central geothermal system is not considered viable. Localized new building or clustered new or remodeled building are considered to be the most viable applications to consider if the rate of electricity would decrease by 50% or more and the cost of steam would increase by 50% or more.

The addition of 6 to 7 acres of bore field for a geothermal system could reduce the need for approximately 800 to 1000 tons of cooling in the central plant and place it into the buildings. It would also reduce the amount of steam demand by approximately 9 to 10 million BTU/HR. This reduction in chilled water gen-

eration at the plant could eliminate the need to add another distribution line to serve the west and south area of campus. In a similar fashion steam infrastructure would not need to be extended from Pit 30 to Starin. Additional power would be required at the location of such a geothermal system which would offset some of the potential steam and chilled water distribution savings.

Summary: The current rate structure of steam and electricity will not allow for a payback of a geothermal system. The rate structure is not anticipated to change significantly in the immediate or distant future to justify implementation especially in the time frame for the construction of the core buildings in the central campus area.

Appendix B - Building Condition Assessment & Repurposing

GENERAL OBSERVATIONS

Five building were reviewed to collect information on suitability for current uses, building conditions, and suitability for re-purposing the buildings into different uses.

The buildings that were reviewed were built between 1962 and 1979, and have not had any significant improvements since they were occupied.

MEP systems are past their normal service lives.

Superstructures generally are concrete frame, with bay spacing and floor to floor heights that would accommodate several types of academic uses.

Large areas in some buildings are underutilized, and could be re-purposed for use as classrooms, class labs, or offices.

Partitions are concrete block, which are durable, but not easily remodeled.

Building envelopes have little insulation in walls. Most windows are original single pane units.

Finishes, fixtures, and furnishings are existing, worn, and dated.

Functional spaces are arranged for 45 year old pedagogies.

Technology needs improvement.

Accessibility is makeshift and piecemeal.

Daylighting is absent in many spaces.

BUILDING SPECIFIC OBSERVATIONS

Andersen Library

First and Third floors appear to be underutilized.

Collection security is challenging with collections located on multiple floors.

Large floor plates with long structural spans and high floor to floor heights are suitable for continued use as a library, or adaptable for other uses.

The portion of the building that has 2 levels of heavyweight storage structural framing at +/- 10 feet on center and very short floor to floor heights is unuseable for anything other than storage.

Center of the Arts

Finishes, furnishings, and lighting throughout this building are drab, worn, and uninspirational.

Multiple basement levels are not harmonious with universal accessibility, but nearly impossible to change.

Lack of daylight is correctable.

Superstructure has good bay spacing and floor to floor heights that would allow significant remodeling, but all partitions are concrete block, and therefore costly to change.

Heide Hall

Superstructure has good bay spacing and floor to floor heights that would allow significant remodeling, but all partitions are concrete block, and therefore costly to change.

Finishes, furnishings, and lighting throughout this building are drab, worn, and uninspirational.

Use of the fourth floor for offices may not be the highest and best use of the space.

Williams Center

First floor has decent structural bay sizing, decent floor to floor heights that could accommodate significant remodeling of locker rooms, classrooms, and office spaces.

Gymnasiums and pool areas are very purpose built and not easily changed.

Accessibility needs to be improved throughout the locker rooms of this building is problematic.

It would be challenging to locate an addition to this building.

Winther Hall

Classrooms have no daylight, original finishes, and original instructional furnishings designed for teaching pedagogies from the mid-sixties.

Toilet rooms do not meet accessibility requirements.

The elevator does not meet accessibility requirements.

Narrow footprint of office tower is inefficient, and not suitable for any use other than offices

This building has a lot of circulation space relative to useable space.

Roseman Building

This building was not included in the 5 buildings targeted for study

Only the gym, locker rooms, and fitness center were reviewed.

The men's wheelchair basketball team practices in this gym, and the women's team practices in the Williams Center due to space and timing constraints.

Men's and women's competition games are held at the Williams Center.

The men's competition wheelchairs are stored at the Roseman Bulding, and the women's are stored at the Williams Center. The men's chairs need to be transported to Williams Center the night before games. Any repair work for the women's chairs is done at Roseman, so they need to be transported back and forth for repairs.

The wheelchair rec programs are conducted at the Roseman Building.

There aren't enough lockers at Roseman for everyone on the men's wheelchair basketball team.

The fitness center at Roseman is much less crowded than Williams Center.

A new resilient floor was installed in the Roseman gym 2 years ago. When the daycare uses this gym the students and teachers track in salt and dirt, making the floor less suitable for use as a practice and recreational facility for wheelchair users.

The Roseman gym is not big enough to accommodate a full sized competition basketball court.

The wheelchair rec and athletics group likes having a dedicated space for their use. Ideally, it would be large enough to accommodate all of their programs, rather than having them split between Roseman and Williams Center

Individual Building Data Follows

Building Name	Andersen Library
Building No.	2, 2A, 2B
Building Type	Academic Library
Constructed	1952
Addition(s)	1964, 1969

Floors	AG	UG
	3	1

ASF 150,408 GSF 198,813 GPR - % PR - %

CENTRAL UTILITY CONNECTIONS

CW	☒	ELEC	☒	C. AIR	☒	WATER	☐
HPS	☒	FIBER	☒	N. GAS	☒	SEWER	☐

HISTORICAL

US	☐
WI	☐

C+	FUNCTIONAL RATING	PHYSICAL RATING	iii

Building Profile ratings based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition See the UW System Building Rating explanation at the beginning of this section for information regarding the purpose of this form and the ratings provided below.

Background and History

Andersen Library is the main library on campus and this was the building's original purpose. The library was expanded significantly in 1964 and 1969.

Occupant(s) and Use(s)

Andersen Library, Communications Dept (partial) including Cable TV and Radio Station studios, Center for Students with Disabilities, iCIT, Honors Program and Outside Reasearch Sponsored Programs (ORSP), MAGD program lab, Long Distance Learning Classroom.

Functionality Assessment

Building is not centrally located on campus.

The circulation arrangement makes it challenging to control Library inventory while at the same time allowing access to the multiple uses inside the Library.

Creation of spaces within the Library to address evolving needs has been piecemeal, resulting in an inconsistency of circulation, finishes, and separation of uses.

Other Building Issues

There is evidence of structural settlement at the Northeast exit stairwell of the 1952 archives area.

Future Building Plans

A detailed study of the space utilization and circulation in the Library building should be undertaken. This is a very large building with several spaces that seem to be underutilized.

The majority of this building has windows and a structural arrangement that allows for re-configurations of internal partitioning that could accommodate a variety of low impact academic, study, or office uses, but the depth of the building is such that many internal spaces might not have any daylight if measures for light sharing aren't included in the planning.

The 10' x 10' column spacing in the second and third floor high density storage areas of the original 1952 building make these spaces very difficult to repurpose.

Code and Health/Safety

Construction Type is 1A, building is unsprinklered. Site is generally accessible. Stairs over tunnel on the North side are not accessible, southeast exit is not accessible. Circulation to the high density storage area would not comply with current codes.

Architectural

Construction Type: Site cast concrete waffle slab, concrete columns

Exterior Materials: CMU back up with stone and brick veneer, in good condition. Windows are original. Exterior walls have no insulation.

Interior Partitions: Predominantly plaster on metal studs.

Newer Building: This portion of the building has large floor plates with long structural spans and high floor to floor heights, and is suitable for continued use as a library, or adaptable for other uses.

Original Building: This portion of the building has some first and second floor spaces that have floor to floor heights and structural bays that would accommodate office/computer lab space or classroom space.

The portion of the original building that has 2 levels of heavyweight storage structural framing at +./- 10 feet on center and very short floor to floor heights is not useable for anything other than storage.

Site: Building has access to parking and is located adjacent to pedestrian paths

Mechanical

HVAC performance is reported to be inconsistent. This building component was not reviewed; it appears that these systems are original to the building construction.

Electrical

This building component was not reviewed; it appears that these systems are original to the building construction.

Communication

This building component was not reviewed; it appears that these systems are original to the building construction.

Plumbing

This building component was not reviewed; it appears that these systems are original to the building construction.

Conveying

This building component was not reviewed; it appears that these systems are original to the building construction.

Equipment and Furnishings

Finishes and furnishings in the Library areas are mostly original, are worn, and do not support current occupant expectations of higher education libraries.

Institution UW-Whitewater
Building Name Andersen Library
Building Number 2, 2A, 2B

Date 4-10-2015

See the UW System Building Rating explanation at the beginning of this section for information regarding the purpose of this form and the ratings provided below.

COMPONENT	*CONFIGURATION/LAYOUT*	*SPACE UTILIZATION*	*ADAPTABILITY/FLEXIBILITY*	*INFRASTRUCTURE*	*ACCESSIBILITY*	*CODE & LIFE SAFETY*	*OVERALL*	*REMARKS*	*PHOTOS*
Site/Entry Location/Access	B	C	B	B	B	B	B	Connectivity to campus circulation routes, both exterior and interior, were reported by users as appropriate. Some users suggested that the library functions would better serve campus if the library was centrally located on campus.	
Center for Students with Disabilities Entry/Common Area	B	B	B	B	B	B	B	This area was remodeled in the last decade. Occupants reported that the physical environment was good, but they needed more space.	Fig. 2
IT Office and Support Areas	C	C	B	C	C	B	C	IT areas seem to be backfilled "leftover" spaces. IT space that is remodeled in a more holistic way would better serve this user group.	Fig. 6
Library Lobby	C	C	B	C	C	C	C	Current library lobby and collection circulation control is very awkward with collections on 3 levels connected by a stairway controlled by delayed egress door hardware.	Fig. 9, 10, 12
Library floor 1	C	C	B	C	C	C	C	The library functions on this floor underutilize this space. Access to this floor is awkward. This area could be repurposed for other uses.	Fig. 1, 17, 18, 19
Communications Dept., Cable TV station	B	B	B	B	C	B	B	Better identification of entrances to these areas and better interior wayfinding signage is needed.	Fig. 3, 4, 6, 19
Student study and meeting areas	B	B	B	B	B	B	B	Several people requested that more of this type of space be constructed.	Fig. 11, 16
Library floor 2	B	B	B	B	C	B	B	This is the main floor of the library, and the level that gets the highest use. Better configuration of the entrance/collection control point to this area would improve its functionality.	Fig. 13, 14, 15
Library floor 3	C	C	B	B	B	B	C	This is an underutilized, very large space. This area could be repurposed for other uses.	Fig. 5, 8

Institution UW-Whitewater
Building Name Andersen Library
Building Number 2, 2A, 2B

Date 4-10-2015

COMPONENT	*CONFIGURATION/LAYOUT*	*SPACE UTILIZATION*	*ADAPTABILITY/FLEXIBILITY*	*INFRASTRUCTURE*	*ACCESSIBILITY*	*CODE & LIFE SAFETY*	*OVERALL*	*REMARKS*	*COMPONENT*
Original archive area in 1952 building	I	I	I	I	I	I	I	This area is inefficient, has poor access, and poor MEP systems even for archive use. This area has columns at 10' x 10' spacing and 8' floor to floor height, which make the space unusable for any other function.	
MEP Systems	C	C	C	C	C	C	C	Review of MEP Systems was not part of this study, but MEP Systems appear to be original to the building and past their practical lifespan. The State Risk Management office recommends adding fire sprinklers.	
Exterior envelope	B	B	B	B	B	B	B	The exterior envelope is in good condition, but has original windows and no insulation, which is lower performing than what would be constructed today. Roofing is in need of replacement.	Fig. 20
Adaptability for other Uses	B	B	B	B	B	B	B	The 1965 and 1969 portions of the Andersen Library have large bay spacing, robust structural framing, and good floor to floor heights that make this building capable of accommodating a variety of other uses thorough a repurposing renovation. Partitioning is generally drywall on metal studs, ceilings are generally ACT, both of which are relatively easy to remove and replace. Concrete superstructure is relatively capable of accommodating new MEP openings. This building does not have fire sprinklers, so any additions need to be Type 1A construction to match existing unless fire separations between new and existing areas are provided. The 1952 archive areas on levels 2 and 3 are inefficient, have poor access, and poor MEP systems even for archive use. This area has columns at 10' x 10' spacing and 8' floor to floor height, which make the space unusable for any other function.	
Overall Average Rating							C+		

Photos are intended to provide the reader a general view of typical areas in the building, and are not necessarily identifying specific issues.

Figure 1, ground floor corridor between 1952 bldg and 1964 bldg.

Figure 2, 1st floor entry of depts in 1952 bldg.

Figure 3, 1st floor corridor between 1952 bldg and 1964 bldg.

Figure 4, 1st floor entry of depts in 1952 bldg.

Figure 5, high density storage, 2nd floor of 1952 bldg.

Figure 6, 2nd floor of 1952 bldg, high density storage area converted to office space for IT Department.

Figure 7, cracked CMU in 1952 bldg mech penthouse.

Figure 8, access stair in 1952 bldg high density storage.

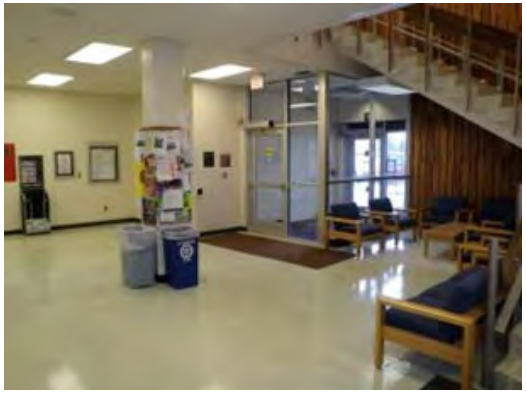


Figure 9, 1st floor library entry at 1962 building.

Figure 10, main stair from 1st floor to 2nd floor, 1962 bldg.

Figure 11, stair from 3rd floor to 2nd floor, 1962 building.

Figure 12, 1st floor entry at link btwn 1951 and 1962 bldg.

Figure 13, library stacks & mtg rooms, 1st floor 1962 bldg.

Figure 14, children's library, 1st floor 1962 bldg.

Figure 15 children's library and main stacks, 1st floor 1962 bldg.

Figure 16, computer lab, ground floor, 1962/1969 bldg.

Figure 17, reference stacks, mtg room, ground floor, 1962/1969 bldg.

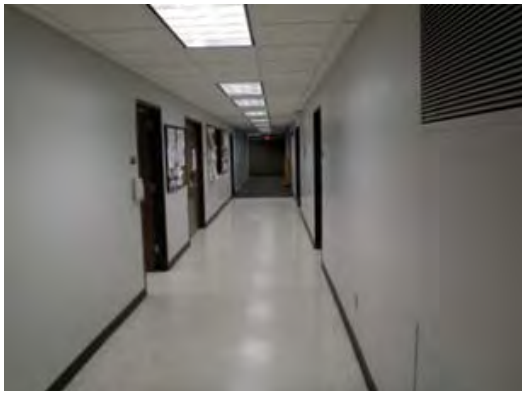


Figure 18, faculty offices, ground floor, 1962 bldg.

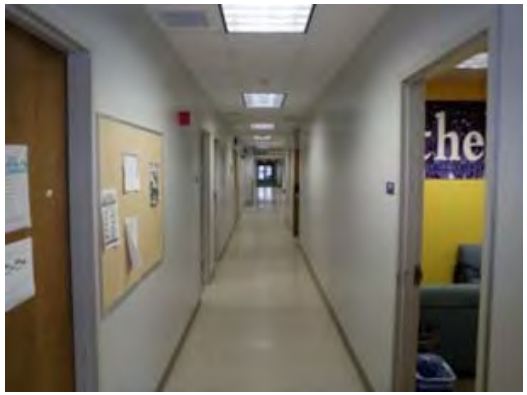


Figure 19, faculty offices, ground floor, 1962 bldg.

Figure 20, main entry, 1962 building

Figure 21, southeast corner, 1962 Building

Figure 22, southwest corner of 1962 building

Figure 23, northwest corner, 1969 addition

Figure 24, north face of 1952 building

Institution UW-Whitewater
Building Name Andersen Library
Building Number 2, 2A, 2B

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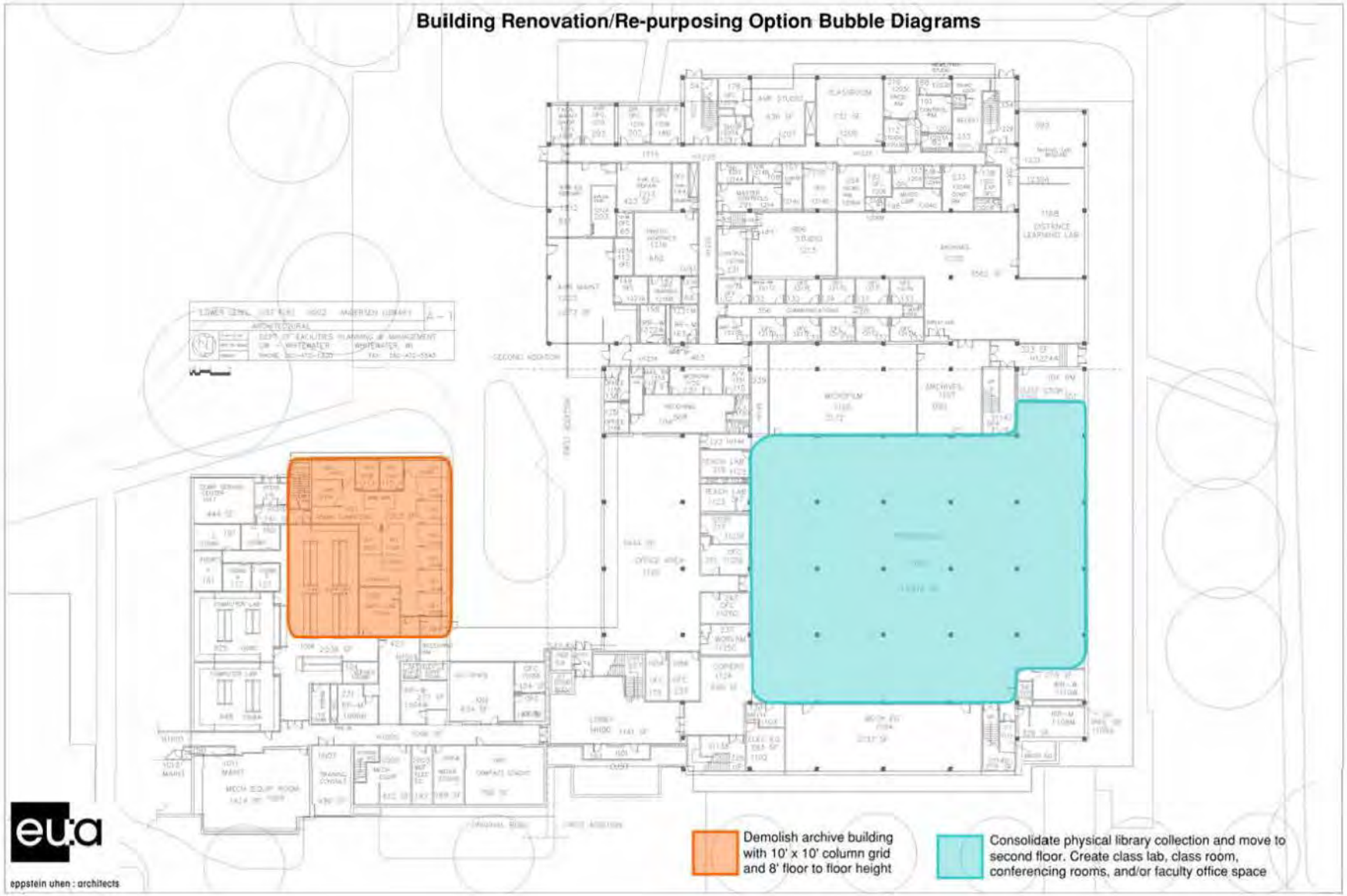


Figure 21

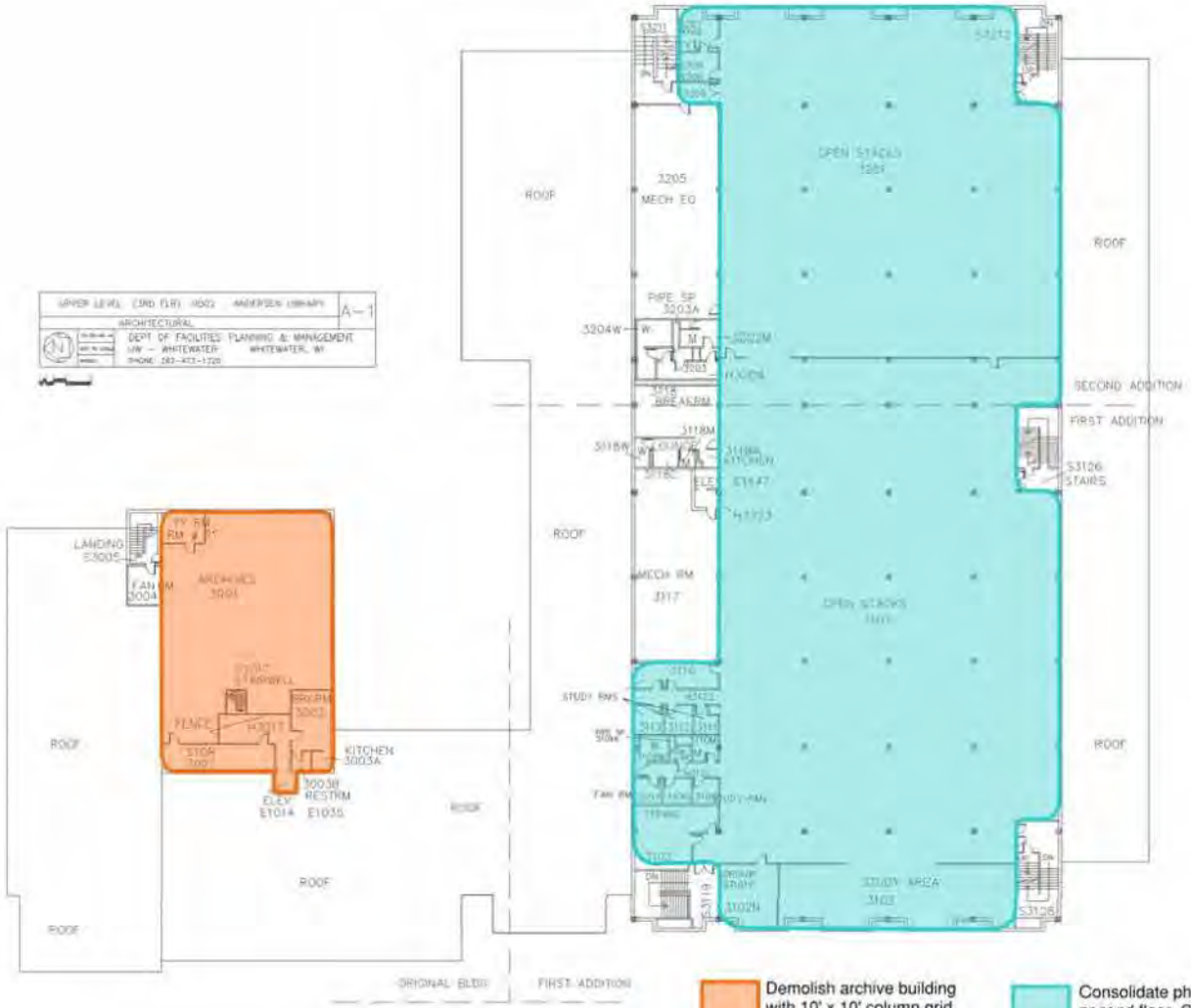
Building Renovation/Re-purposing Option Bubble Diagrams

eu:a

appstein uhen : architects

Figure 22

Building Renovation/Re-purposing Option Bubble Diagrams



eppstein uhen : architects

Demolish archive building with 10' x 10' column grid and 8' floor to floor height

Consolidate physical library collection and move to second floor. Create class lab, class room, conferencing rooms, and/or faculty office space

Figure 23

Building Name	Greenhill Center of the Arts
Building No.	4
Building Type	Academic & Performance Building
Constructed	1970
Addition(s)	1994

Floors	AG	UG
	2	1

ASF 89,040 GSF 153,310 GPR - % PR - %

CENTRAL UTILITY CONNECTIONS								HISTORICAL	
CW	☒	ELEC	☒	C. AIR	☒	WATER	☐	US	☐
HPS	☒	FIBER	☒	N. GAS	☒	SEWER	☐	WI	☐

C-	FUNCTIONAL RATING	PHYSICAL RATING	iv

Building Profile ratings based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition. See the UW System Building Rating explanation at the beginning of this section for information regarding the purpose of this form and the ratings provided below.

Background and History

Greenhill Center of the Arts has theaters, art programs, music and dance spaces, faculty offices, and gallery spaces. This was the building's original purpose. The "courtyard" area was converted to an "atrium" in 1994.

Occupant(s) and Use(s)

Theater, music, art and dance programs are the main uses.

Functionality Assessment

Unclear and complex circulation arrangement.

The multiple basement levels are not harmonious with universal accessibility, but are nearly impossible to change.

Other Building Issues

Lack of daylight is correctable.

Inflexible CMU partitions can be altered but it is costly to do so.

Future Building Plans

Finishes and lighting throughout most areas of the building are original, drab, worn, and dull. Corridor ceilings and lighting was replaced in summer of 2014.

Adding windows to occupied spaces that have exterior walls but no windows would greatly improve the quality of space. for the classrooms in this building.

Better shelter of outdoor kiln areas controlling precipitation and temperature is recommended.

This building has a robust concrete column and joist structural system with good bay spacing and good floor to floor heights, which could accommodate significant remodeling. The lack of daylight at instructional spaces, concrete block partitions, and multitude of different levels at the basement level add to the cost of a major remodeling.

Code and Health/Safety

Construction Type is 1A, the building is unsprinklered. The site is generally accessible. All entrances are accessible. Accessibility to bathrooms needs significant improvement.

Architectural

Construction Type: Site cast concrete waffle slab, concrete columns

Exterior Materials: CMU back up with brick veneer, masonry and concrete are in good condition, but could use routine maintenance.

Leaks at exterior walls at performance space need to be repaired.

Interior Partitions: Predominantly CMU

Site: has access to parking, entries are located adjacent to pedestrian paths, limited areas for expansion. Kilns are outdoors with an outdoor storage area. Trash and recycling are located in the parking lot.

Mechanical

This building component was not reviewed; it appears that these systems are original to the building construction.

Electrical

This building component was not reviewed; it appears that these systems are original to the building construction.

Communication

This building component was not reviewed; it appears that these systems are original to the building construction.

Plumbing

This building component was not reviewed; it appears that these systems are original to the building construction.

Conveying

An elevator was added to this building in 1994 as an external, stand-alone element.

Equipment and Furnishings

The drab interior finishes, beat up instructional furnishings, lack of furnished informal study spaces, lack of daylight, and lack of inspirational aesthetics seems incongruous with a Center for the Arts.

Institution UW-Whitewater
Building Name Greenhill Center of the Arts
Building Number 4

Date, 4-10-2015

Building Profile ratings based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition See the UW System Building Rating explanation at the beginning of this section for information regarding the purpose of this form and the ratings provided below.

	CONFIGURATION/LAYOUT	*SPACE UTILIZATION*	*ADAPTABILITY/FLEXIBILITY*	*INFRASTRUCTURE*	*ACCESSIBILITY*	*CODE & LIFE SAFETY*	*OVERALL*	*REMARKS*	*PHOTOS*
Site/Entry Location/Access	C	C	C	C	C	C	C	Like other buildings of this era on campus the Greenhill Center of the Arts has its main entrance oriented toward the street rather than to current internal pedestrian circulation routes, although the west entrance did get some upgrades when the Young Auditorium addition was built.	
Performance Spaces	B	B	B	B	C	B	B	Performance spaces appear to be in good condition, but seem to have had little in the way of performance A/V and technology upgrades since the building was constructed in 1970.	
Studios	D	D	D	D	D	D	D	Most studio spaces have no access to daylight, and spaces with no daylight are unpleasant to be in for long periods of time. Studios appear to have original finishes and lighting, which are drab an un-inspirational.	Fig. 11, 12, 13
Offices	C	C	C	C	C	C	C	Offices appear to be in the original configuration from when the building was built. Arranging offices around a light well provides some daylight to these internal spaces, but this arrangement also separates occupants so casual interaction is less likely to occur.	

Institution UW-Whitewater
Building Name Greenhill Center of the Arts
Building Number 4

Date, 4-10-2015

	CONFIGURATION/LAYOUT	SPACE UTILIZATION	ADAPTABILITY/FLEXIBILITY	INFRASTRUCTURE	ACCESSIBILITY	CODE & LIFE SAFETY	OVERALL	REMARKS	PHOTOS
Study & Breakout areas	C	C	C	C	C	C	C	There are one or two areas where furniture or built in elements are provided to accommodate informal break out or studying gatherings, but there is far more opportunity for more of these types of spaces.	Fig. 4
Toilet Rooms	D	D	D	D	D	D	D	Toilet rooms are original to the building, and have had makeshift changes to improve accessibility. All existing toilet rooms should be gut remodeled.	Fig. 6, 7
Internal Circulation	D	D	D	D	D	D	D	Internal circulation in this building is mazelike, confusing, and has circuitous paths for accessible routes to some spaces. Finishes and lighting is drab and un-inspirational.	Fig. 2, 9, 10
Monumental Stair (south entrance)	C	C	C	C	C	C	C	The south side of the building was designed as a main entrance, but campus circulation patterns have changed, and the entrances on the northwest and tucked behind the Young Auditorium addition are now the most heavily used. The “stair in a glass box” is cold, has worn finishes, and is not in a location that links destinations well. A major project that would include creation of a new entry element that provides daylight to basement areas and better links destinations would improve this area considerably.	
Atrium	C	C	C	C	C	C	C	The enclosure of this space in 1994 improved the opportunity for better use of this space. Campus report that this space is used frequently for pre-event gathering area, impromptu performances, student study areas, social gatherings and extended gallery space.	Fig. 1, 4, 5
Elevator	C	C	C	C	C	C	C	An elevator was added to this building as an external, stand-alone element in 1994 to provide a vertical accessible route in the building. Incorporating a new elevator or two in a more integrated way as part of a major entrance remodeling would provide better energy efficiency to the enclosure, and better, clearer access to all spaces in the building.	Fig. 8

Institution UW-Whitewater
Building Name Greenhill Center of the Arts
Building Number 4

Date, 4-10-2015

	CONFIGURATION/LAYOUT	SPACE UTILIZATION	ADAPTABILITY/FLEXIBILITY	INFRASTRUCTURE	ACCESSIBILITY	CODE & LIFE SAFETY	OVERALL	REMARKS	PHOTOS
Interior Finishes	D	D	D	D	D	D	D	Interior finishes are original to the building, are worn, drab, un-inspirational, and should be replaced.	Fig. 1- 2, Fig. 4-13
MEP Systems	C	C	C	C	C	C	C	Review of MEP Systems was not part of this study, but MEP Systems appear to be original to the building and past their practical lifespan. Corridor lighting was replaced in 2014. Lighting fixtures that provide light density, color, and controllability in a manner more appropriate to creating and displaying art should be installed in this building.	
Exterior envelope	C	C	C	C	C	C	C	The exterior envelope is in good condition, but has thermal properties that are much lower performing than what would be constructed today. Construction drawings for the original building do not indicate the presence of any insulation on exterior walls, nor any air spaces. Some insulation was added to spandrel glass areas and roofing in 1987. A building constructed today would have daylighting to occupied spaces.	Fig. 3
Adaptability for other Uses	D	D	D	D	D	D	D	This building has a robust concrete column and joist structural system with good bay spacing and good floor to floor heights, which could accommodate significant remodeling. The lack of daylight at instructional spaces, concrete block partitions, and multitude of different levels at the basement level add to the cost of a major remodeling. The unique configuration of the performance spaces make these areas poor candidates for re-purposing into a different use.	
Overall Average Rating							C-		

Figure 1, atrium

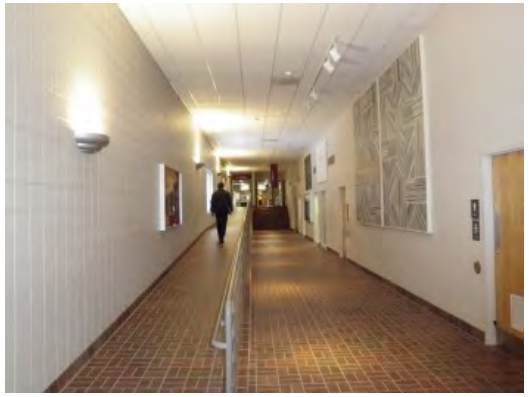


Figure 2, internal circulation ramp next to “flat” circulation

Figure 3, east entry between Young Auditorium and Center of the Arts

Figure 4, space adjacent to atrium

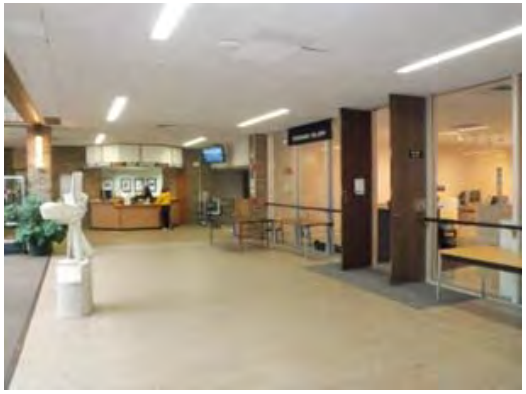


Figure 5, gallery entry adjacent to atrium

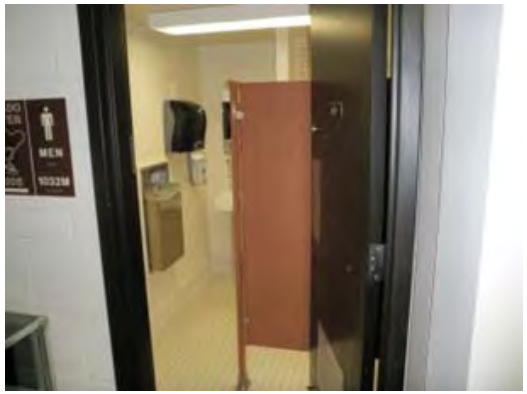


Figure 6, renovated toilet room

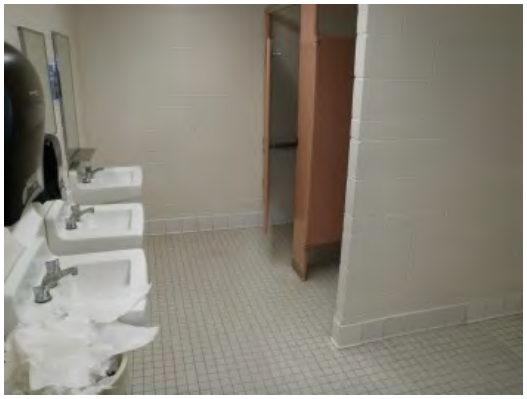


Figure 7, renovated toilet room

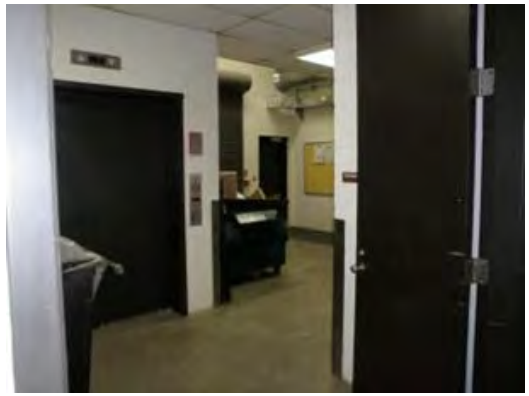


Figure 8, freight elevator, service area

Figure 9, internal circulation ramp next to “flat” circulation

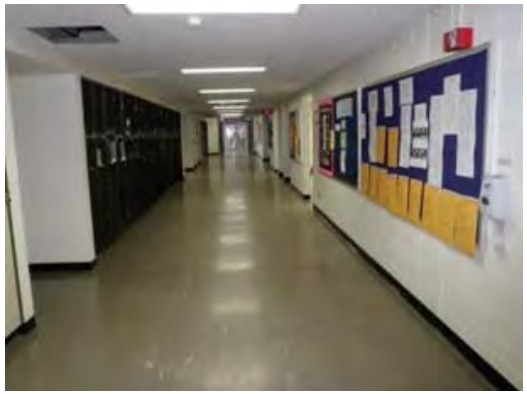


Figure 10, hallway and lockers at music wing, 1st floor

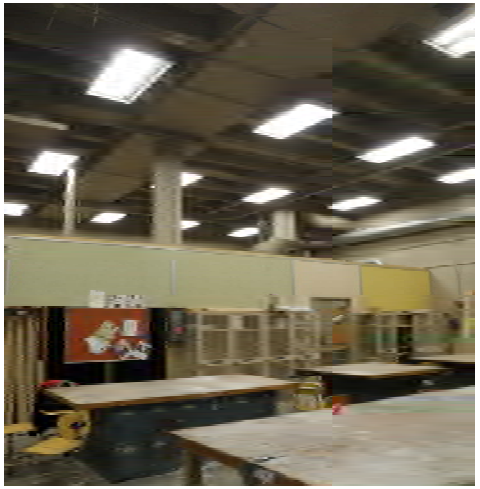


Figure 11, first floor, sculpture lab

Figure 12, first floor, ceramics lab

Figure 13, metals casting lab

Figure 14, main entry on south side of building

Figure 15, entry on east side

Figure 16, exterior kiln area

Building Renovation/Re-purposing Option Bubble Diagrams

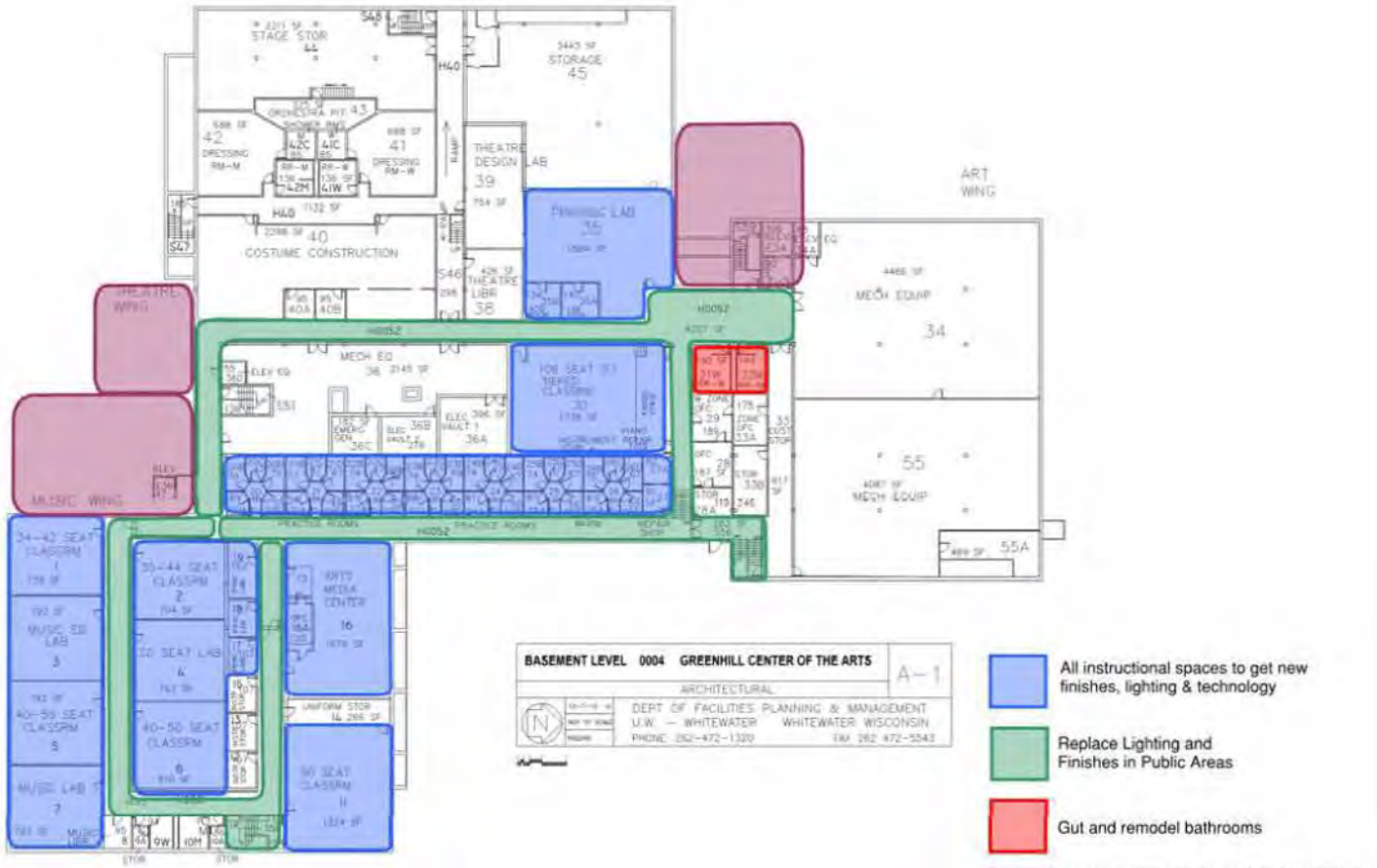


Figure 17

Institution UW-Whitewater
Building Name Greenhill Center of the Arts
Building Number 4

Date, 4-10-2015

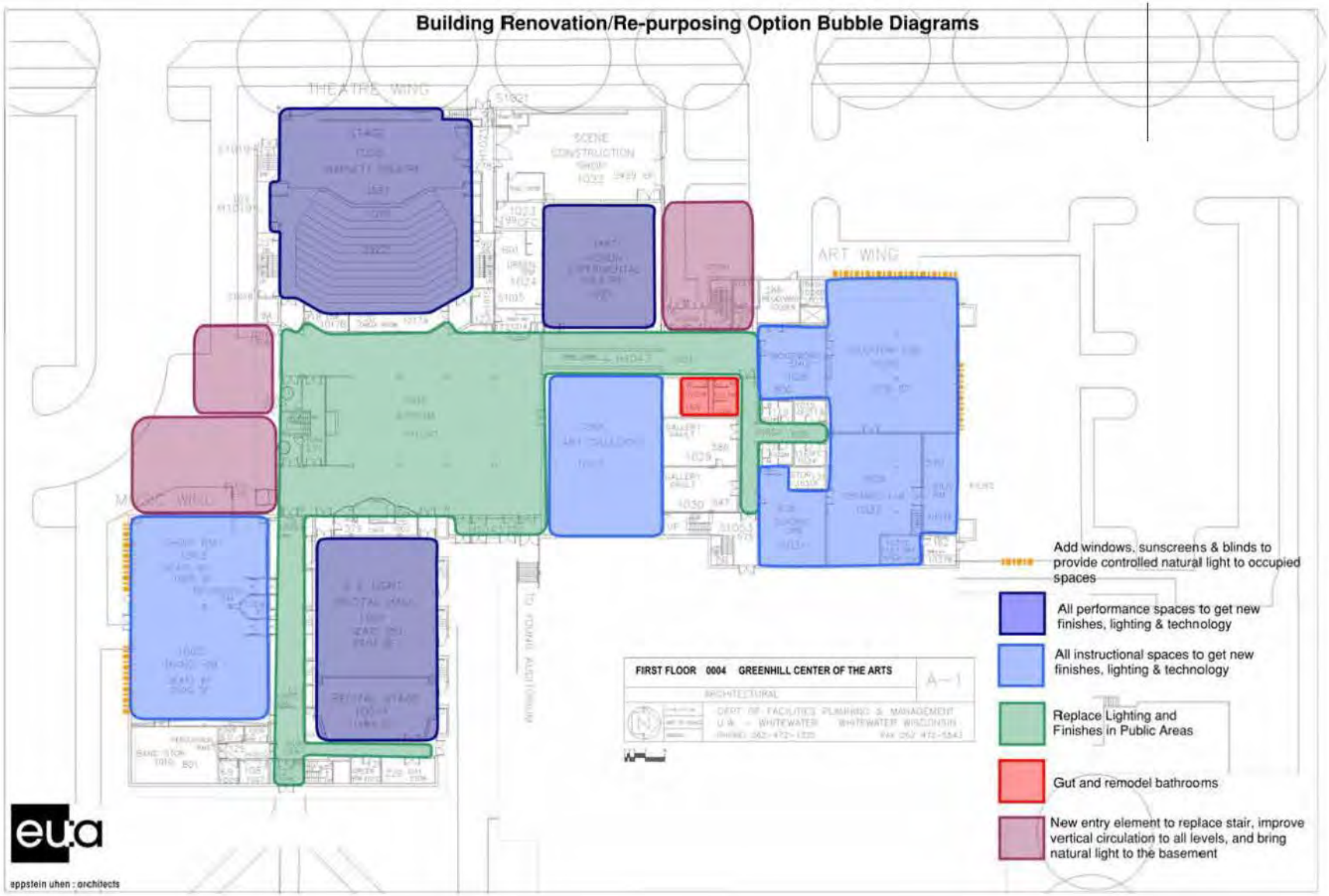


Figure 18

Building Renovation/Re-purposing Option Bubble Diagrams

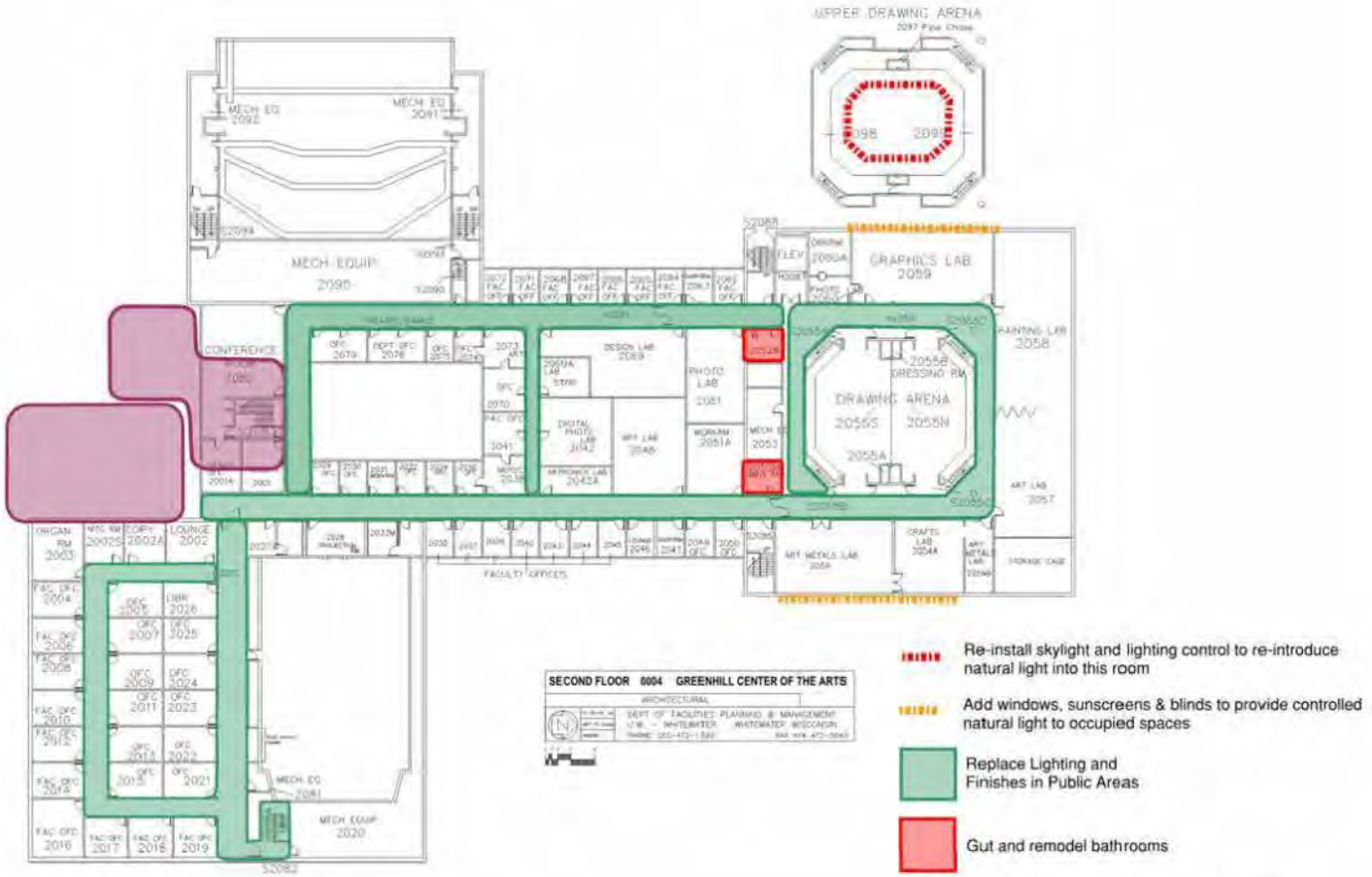


Figure 19

Building Name	Heide Hall
Building No.	9
Building Type	Academic Building
Constructed	1965
Addition(s)	

Floors	AG	UG
	4	0

ASF 36,910 GSF 62,552 GPR - % PR - %

CENTRAL UTILITY CONNECTIONS

CW	☒	ELEC	☒	C. AIR	☒	WATER	☐
HPS	☒	FIBER	☒	N. GAS	☒	SEWER	☐

HISTORICAL

US	☐
WI	☐

C-	FUNCTIONAL RATING	PHYSICAL RATING	iv

Building Profile ratings based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition. See the UW System Building Rating explanation at the beginning of this section for information regarding the purpose of this form and the ratings provided below.

Background and History

Heide Hall was built as an academic building. In the summer of 2011 Heide Hall had its main lecture halls renovated.

Occupant(s) and Use(s)

Building contains faculty offices and classrooms.

Functionality Assessment

Classroom sizes and shape are compatible with many current instructional setups. Technology and lighting need major upgrades. Finishes are original to the building and un-inspirational. Building main entry location that is oriented to the east is no longer located on the current campus circulation routes. Three quarters of the offices on the 4th floor are original to the building, have demountable partitions in the original configuration, which doesn't necessarily optimally serve current uses. Technology is poor. Finishes are original and un-inspirational.

Other Building Issues

Windows are leaking. Inflexible CMU partitions at classrooms can be altered but it's costly to do. Lack of inspiring interior lighting and finishes is correctable. Circulation of pedestrian traffic crosses delivery and automobile routes. There is no airlock vestibule at the northwest and southwest entries. Toilet rooms have had slight modifications to improve accessibility, but are mostly original to the building and in need of major renovation to provide correct accessibility and privacy.

Future Building Plans

This building has a concrete column and joist structural system, good bay spacing, and good floor to floor heights that would accommodate remodeling for continued use as classroom space. This building does not have fire sprinklers, so any additions need to be Type 1A construction unless fire separations between new and existing areas are provided.

Code and Health/Safety

Construction Type is 1A. This building does not have fire sprinklers Site is generally accessible. All entrances are accessible. Bathrooms could use accessibility improvements.

Architectural

The exterior envelope is in good condition, but has original 1965 windows (which are leaking) and insulation, which are lower performing than what would be constructed today. Replacing the yellowed plastic glazing in the skylight over the lecture hall wing entry would help improve daylighting and aesthetics. Adding airlock vestibules to the north and south stairs would improve comfort and efficiency.
There are some water infiltration issues that need to be addressed at some below grade areas.

Site

Circulation of pedestrian traffic crosses delivery and automobile routes. There is space for additions on the North, South and West.

Mechanical

This building component was not reviewed, it appears that these systems are original to the building construction.

Electrical

This building component was not reviewed, it appears that these systems are original to the building construction.

Communication

This building component was not reviewed, it appears that these systems are original to the building construction.

Plumbing

This building component was not reviewed, it appears that these systems are original to the building construction.

Conveying

Elevator is original to the 1965 building. Size is the minimum required to meet accessibility requirements and is not capable of servicing high volumes of traffic. If an entry improvement is constructed new elevators should be provided as part of it.

Equipment and Furnishings

Finishes, furnishings are original, dated, and uninspirational.

Institution UW-Whitewater
Building Name Heide Hall
Building Number

Date, 4-10-2015

Building Profile ratings based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition. See the UW System Building Rating explanation at the beginning of this section for information regarding the purpose of this form and the ratings provided below.

COMPONENT	*CONFIGURATION/LAYOUT*	*SPACE UTILIZATION*	*ADAPTABILITY/FLEXIBILITY*	*INFRASTRUCTURE*	*ACCESSIBILITY*	*CODE & LIFE SAFETY*	*OVERALL*	*REMARKS*	*PHOTOS*
Site/Entry Location/Access	C	C	C	C	C	B	C	The "main entry" of this building is oriented to North Prairie Street, but most people access this building from the internal campus side at the north entry.	Fig. 1, 2,4
Internal Circulation	B	B	B	B	B	B	B	Internal circulation is simple and easy to navigate. Size of circulation spaces are adequate. The stairways act as vestibules at the northwest and southwest entries which are not energy efficient.	Fig. 2, 5, 7, 9, 11, 12, 13, 14, 16
Classrooms	C	C	C	C	C	C	C	Classroom sizes and shape are compatible with many current instructional setups. Technology and lighting need major upgrades. Finishes are original to the building and un-inspirational.	Fig. 10
Lecture Rooms	B	B	B	B	B	B	B	The lecture halls had technology, finish and accessibility upgrades within the last decade.	Fig. 8
Offices	C	C	C	C	C	C	C	Three quarters of the offices on the 4th floor are original to the building, have demountable partitions in the original configuration, which doesn't necessarily optimally serve current uses. Technology is poor. Except for the small recent renovation, finishes are original and un-inspirational.	
Toilet Rooms	F	F	F	F	F	F	F	Toilet rooms have had slight modifications to improve accessibility, but are mostly original to the building and in need of major renovation to provide correct accessibility and privacy.	Fig. 15, 17
Study and Breakout areas	D	D	D	D	D	D	D	Where study and breakout areas do exist in the lecture hall wing furnishings and finishes are un-inspirational. There are	Fig, 14, 16

								no furnishings, finishes or architectural elements on upper floor hallways that would better facilitate informal student gathering/study activities.	
Elevator	D	D	D	D	D	D	D	Elevator is original to the 1965 building. Size is the minimum required to meet accessibility requirements and is not capable of servicing high volumes of traffic. If an entry improvement is constructed new elevators should be provided as part of it.	Fig. 3
Interior Finishes	C	C	C	C	C	C	C	With a few exceptions noted above, interior finishes and lighting are original to the building, are worn, drab, un-inspirational, and should be replaced.	Fig. 1-17
MEP Systems	C	C	C	C	C	C	C	Review of MEP Systems was not part of this study, but MEP Systems appear to be original to the building and past their practical lifespan, except for lecture hall HVAC, which was replaced as part of the 2011 lecture hall remodeling project.	
Exterior Envelope	C	C	C	C	C	C	C	The exterior envelope is in good condition, but has original 1965 windows and insulation, which are lower performing than what would be constructed today. Replacing the yellowed plastic glazing in the skylight over the lecture hall wing entry would help improve daylighting and aesthetics. Adding airlock vestibules to the north and south stairs would improve comfort and efficiency.	
Adaptability for Other Uses	B	B	B	B	B	B	B	This building has a concrete column and joist structural system, good bay spacing, and good floor to floor heights that would accommodate remodeling for continued use as classroom space. This building does not have fire sprinklers, so any additions need to be Type 1A construction unless fire separations between new and existing areas are provided.	
Overall Average Rating							C-		

Figure 1, main entry, east side of building.

Figure 2, stairwell, north side of building.

Figure 3, original elevator.

Figure 4, main entry, east side of building.

Figure 5, corridor.

Figure 6, translucent skylight, main entry, east side.

Figure 7, ramp from east side entry to first floor.

Figure 8, remodeled tiered lecture hall.

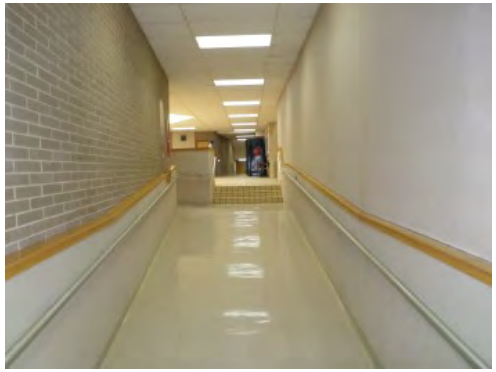


Figure 9, stair from east side entry to lecture hall.

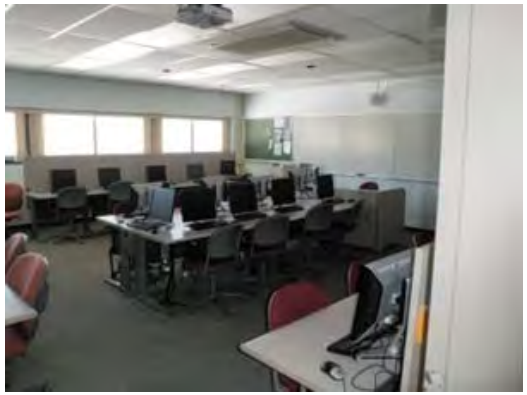


Figure 10, computer lab.

Figure 11, faculty offices on 4th floor.

Figure 12, faculty offices on 4th floor.

Figure 13, typical classroom.

Figure 14, stairs from east main entry to first floor.

Figure 15, typical bathroom.

Figure 16, top landing of central stair.

Figure 17, typical bathroom.

Figure 18, exterior view of the west side of the building.

Institution	UW-Whitewater	Date, 4-10-2015	**6**
Building Name	Heide Hall		
Building Number			

Figure 19, birdseye view of the east side of the building.

Figure 19, east entry of the building.

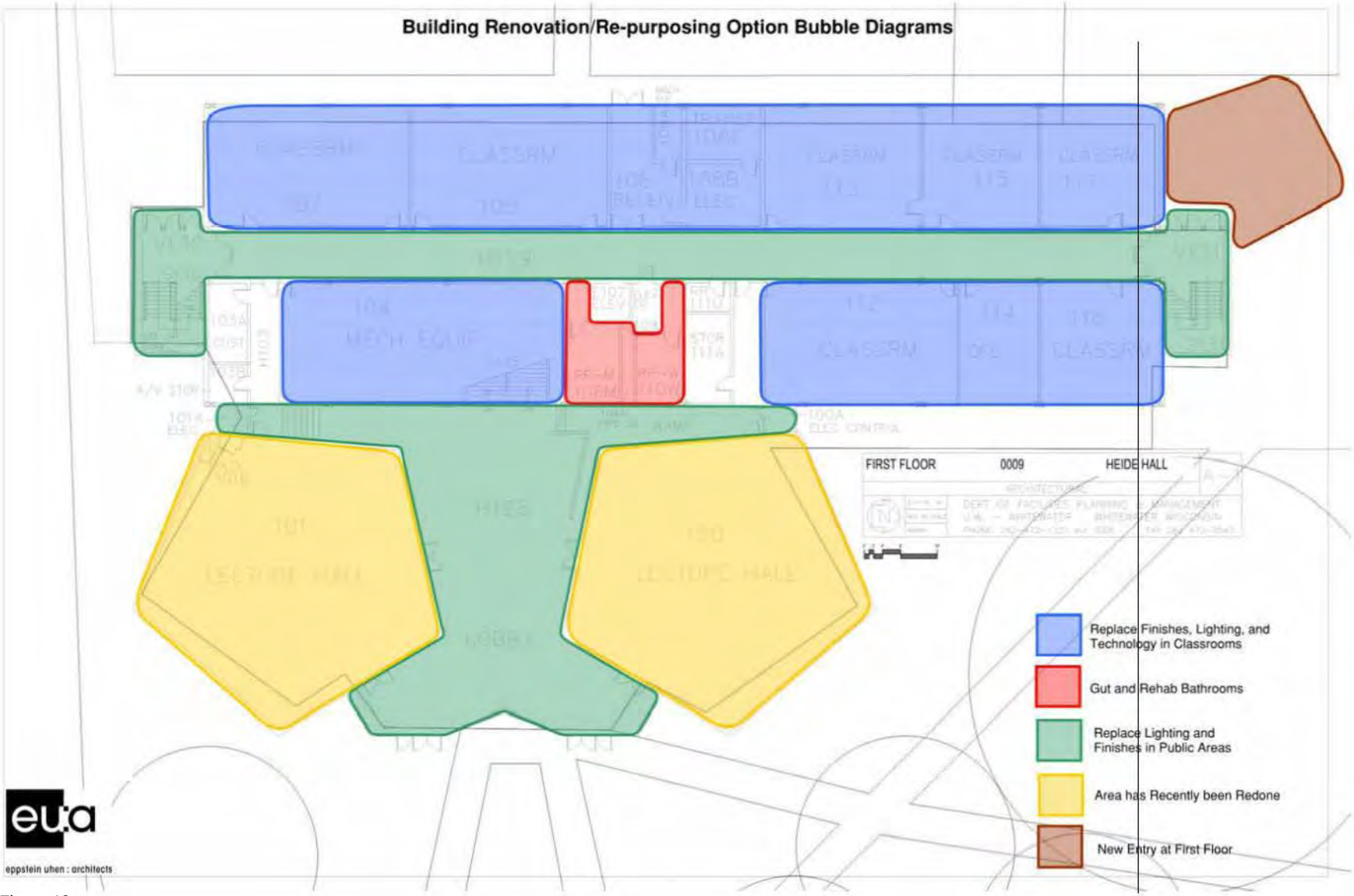

Building Renovation/Re-purposing Option Bubble Diagrams
FIRST FLOOR
0009
HEIDE HALL
Replace Finishes, Lighting, and Technology in Classrooms
Gut and Rehab Bathrooms
Replace Lighting and Finishes in Public Areas
Area has Recently been Redone
New Entry at First Floor
eu:a
eppstein uhen : architects

Figure 18

Building Renovation/Re-purposing Option Bubble Diagrams

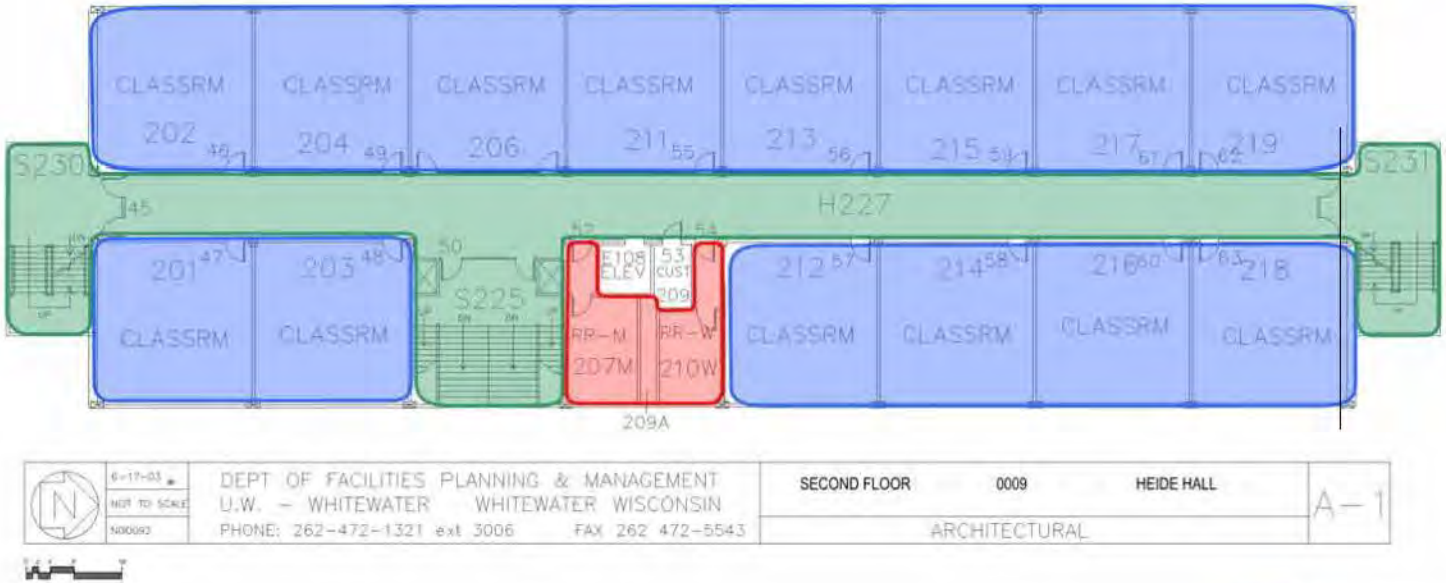
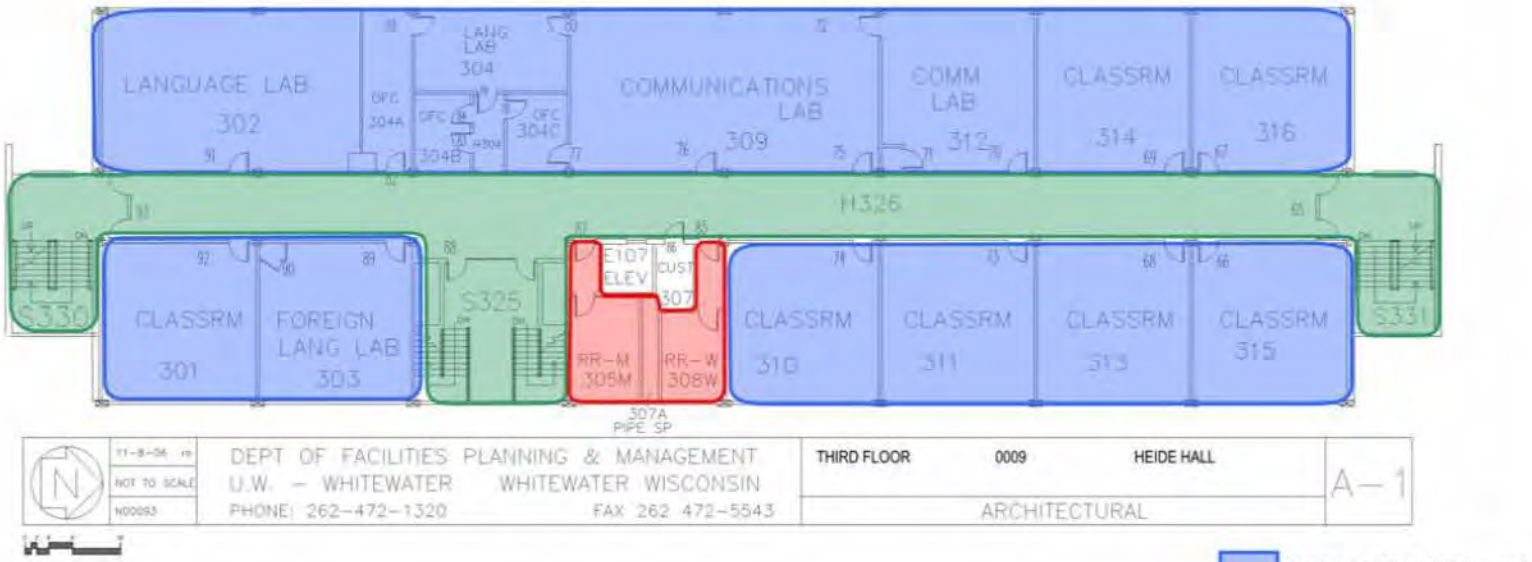


Figure 19

Building Renovation/Re-purposing Option Bubble Diagrams



Replace Finishes, Lighting, and Technology in Classrooms

Gut and Rehab Bathrooms

Replace Lighting and Finishes in Public Areas

eu:a

eppstein uhen : architects

Figure 20

Building Renovation/Re-purposing Option Bubble Diagrams

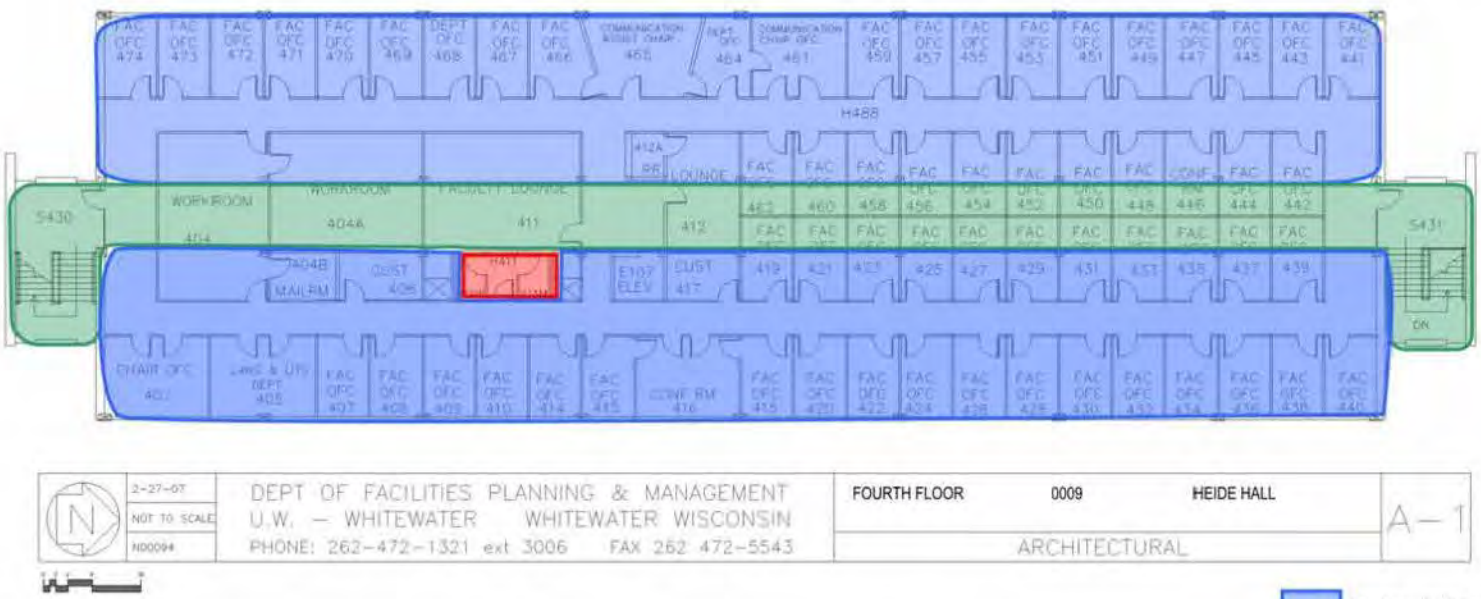


Figure 21

Building Name	Williams Center
Building No.	14, 14A
Building Type	Athletic & Rec Building
Constructed	1966, 1979
Addition(s)	

Floors	AG	UG
	2	0

ASF	180,490	GSF	329,278	GPR	- %	PR	- %

CENTRAL UTILITY CONNECTIONS

CW	☒	ELEC	☒	C. AIR	☒	WATER	☐
HPS	☒	FIBER	☒	N. GAS	☒	SEWER	☐

HISTORICAL

US	☐
WI	☐

C+	FUNCTIONAL RATING	PHYSICAL RATING	iii

Building Profile ratings based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition

Background and History

Williams Center is used for recreational purposes, and houses the Intercollegiate Athletics and the Physical Education Academic Program. It is the main gym and pool on campus. This was the building's original purpose. The building has not been completely renovated but has had some finishes updated.

Occupant(s) and Use(s)

Heavily used for recreational, athletic and community purposes.

Functionality Assessment

Aside from some very basic revisions to improve accessibility locker rooms are original to the building, worn, cramped, hard to navigate and provide little privacy. These areas should be completely gutted and remodeled.

Office spaces within Williams have been upgraded and appear to meet modern standards for technology, although space allocations and arrangement remains largely the same as when the building was constructed.

Study and breakout areas within the original Williams building could use improvements, especially the former main entry and stair area.

Other Building Issues

CMU partitions on the first floor are changeable, but costly to do so.

Gymnasiums and pool areas are purpose built and not easily changed.

Future Building Plans

This building has a robust concrete column and flat slab superstructure at the first level, with a 12'-8" floor to floor height – this arrangement could accommodate a gut re-model well, whether its improving the locker rooms or adding other spaces to accommodate athletics functions, such as training facilities, classrooms or offices. The gymnasium spaces and pool spaces on the upper levels have steel framed high roof structures, some bearing on exterior masonry walls, and some supported by columns and beams. While this structural arrangement provides clear spans and high floor to floor heights that could accommodate many uses, continued use as gymnasium space is the best use.

Code and Health/Safety

Construction Type is 1A. This building does not have fire sprinklers. Locker rooms are inconsistently accessible. Thresholds into some gyms exceed accessible route limits There is no accessible route to bleachers in the pool area.

Architectural

The exterior envelope is in good condition, but has original single pane windows and no wall insulation, which is lower performing than what would be constructed today. Daylight is provided to office and classroom areas of this building. There is opportunity to add daylight openings to north facing walls of gymnasium spaces.

Mechanical

This building component was not reviewed; it appears that these systems are original to the building construction.

Electrical

This building component was not reviewed; it appears that these systems are original to the building construction.

Communication

This building component was not reviewed; it appears that these systems are original to the building construction.

Plumbing

This building component was not reviewed; it appears that these systems are original to the building construction.

Conveying

Elevators were provided as part of the Field House addition.

Equipment and Furnishings

Many of the finishes are original/dated

Institution UW-Whitewater
Building Name Williams Center
Building Number 14, 14A

Date, 4-10-2015

Insert Text Here

COMPONENT	CONFIGURATION/LAYOUT	SPACE UTILIZATION	ADAPTABILITY/FLEXIBILITY	INFRASTRUCTURE	ACCESSIBILITY	CODE & LIFE SAFETY	OVERALL	REMARKS	PHOTOS
General Note regarding Scope of Review								For the purposes of this study the portion of the Williams Center that was reviewed is limited to the areas constructed in 1966 and 1979.	
Site/Entry Location/Access	B	B	B	B	B	B	B	The addition of the Kachel Fieldhouse greatly improved the entrance on the south and north sides of the facility. Entries on the east are small and non-descript, although a lot of pedestrian traffic passes through this side of the building.	Fig. 1
Internal Circulation	B	B	B	B	B	B	B	The addition of the Kachel Fieldhouse greatly improved the major circulation routes at Williams.	
Classrooms	B	B	B	B	B	B	B	Classroom spaces within the Williams Center have been upgraded and appear to meet modern standards for technology.	
Locker Rooms	D	D	D	D	D	D	D	Aside from some very basic revisions to improve accessibility locker rooms are original to the building; worn, cramped, hard to navigate and provide little privacy. These areas should be completely gutted and remodeled.	Fig. 15, 16, 17, 18, 19
Offices	B	B	B	B	B	B	B	Office spaces within Williams Center have been upgraded and appear to meet modern standards for technology, although space allocations and arrangement remains largely the same as when the building was constructed.	
Toilet Rooms	D	D	D	D	D	D	D	The addition of the Kachel Fieldhouse greatly improved toilet rooms outside of the locker rooms. Toilet rooms inside the locker rooms are original, don't meet accessibility requirements, and should be replaced as part of a locker room gut rehab.	Fig. 17

Institution UW-Whitewater
Building Name Williams Center
Building Number 14, 14A

Date, 4-10-2015

COMPONENT	*CONFIGURATION/LAYOUT*	*SPACE UTILIZATION*	*ADAPTABILITY/FLEXIBILITY*	*INFRASTRUCTURE*	*ACCESSIBILITY*	*CODE & LIFE SAFETY*	*OVERALL*	*REMARKS*	*PHOTOS*
Study and Breakout areas	C	C	C	C	C	C	C	Study and breakout areas that were updated as part of the Kachel Fieldhouse project are pleasant. Areas within the original Williams Center could use similar improvements, especially the former main entry and stair area.	
Pool Spectator Areas	D	D	D	D	D	D	D	Pool spectator areas are not accessible, and the current configuration of spaces adjacent to the pool would make it very challenging to provide an accessible route.	Fig. 11, 12
Elevator	B	B	B	B	B	B	B	Elevators to provide accessibility between floors of the Williams Center were installed as part of the Field House addition.	Fig. 2
Interior Finishes	C	C	C	C	C	C	C	There is an inconsistency between the levels of finish in the un-remodeled Williams Center spaces compared to the spaces updated as part of the Kachel Fieldhouse work. Finishes in public areas are muted compared to areas in the addition. Finishes inside locker rooms are dated and worn.	Fig. 1-19
MEP Systems	C	C	C	C	C	C	C	Review of MEP Systems was not part of this study, but MEP Systems appear to be original to the building and are at the end of their lifecycle.	
Exterior Envelope	B	B	B	B	B	B	B	The exterior envelope is in good condition, but has original single pane windows and no wall insulation, which is lower performing than what would be constructed today. Daylight is provided to office areas of this building. There is opportunity to add daylight openings to north facing walls of gymnasium spaces.	

Institution UW-Whitewater
Building Name Williams Center
Building Number 14, 14A

Date, 4-10-2015

COMPONENT	*CONFIGURATION/LAYOUT*	*SPACE UTILIZATION*	*ADAPTABILITY/FLEXIBILITY*	*INFRASTRUCTURE*	*ACCESSIBILITY*	*CODE & LIFE SAFETY*	*OVERALL*	*REMARKS*	*PHOTOS*
Adaptability for Other Uses	B	B	B	B	B	B	B	The Williams Center has a robust concrete column and flat slab superstructure at the first level, with a 12'-8" floor to floor height – this arrangement could accommodate a gut re-model well, whether its improving the locker rooms or adding other spaces to accommodate athletics functions, such as training facilities, classrooms or offices. The gymnasium spaces and pool spaces on the upper levels have steel framed high roof structures, some bearing on exterior masonry walls, and some supported by columns and beams. While this structural arrangement provides clear spans and high floor to floor heights that could accommodate many uses, continued use as gymnasium space is the best use. This building does not have fire sprinklers, so any additions need to be Type 1A construction unless fire separations between new and existing areas are provided.	
Overall Average Rating							C+		

Figure 1 entry on north side.

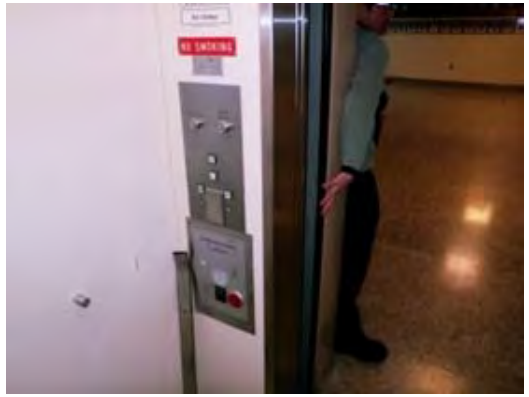


Figure 2, existing elevator.

Figure 3, flooring at gym entry.

Figure 4, threshold at gym entry.

Figure 5, existing stairs and railings.

Figure 6, existing gym.

Figure 7, existing gym.

Figure 8, wrestling gym.

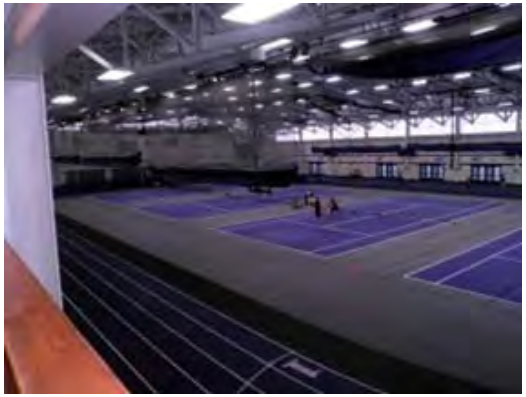


Figure 9, Kachel Fieldhouse.

Figure 10, dance studio.

Figure 11, bleachers in pool area.

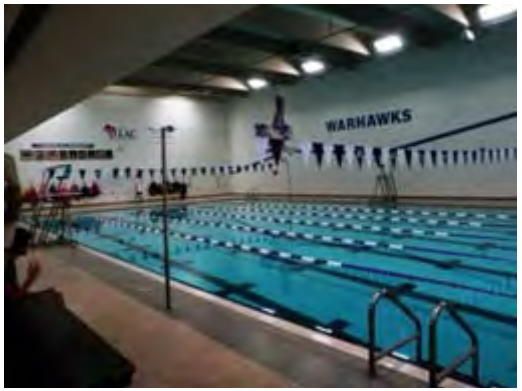


Figure 12, racing pool.

Figure 13, diving pool.

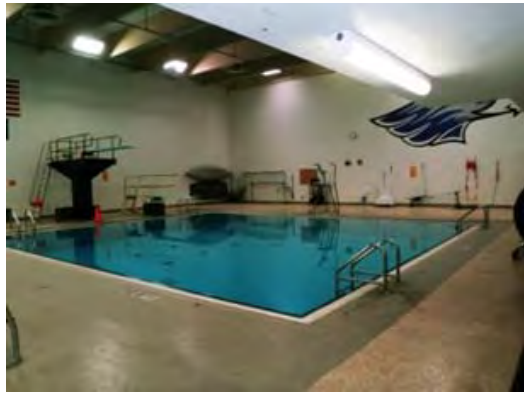


Figure 14, diving pool.

Figure 15, accessible shower.

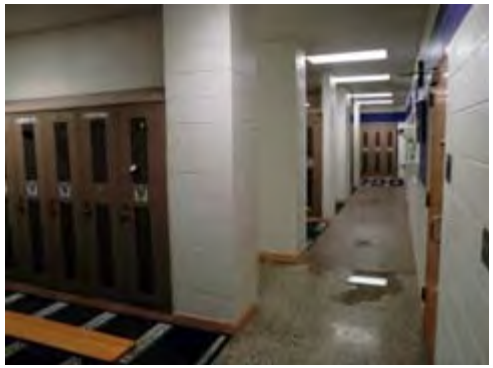


Figure 16, men's locker room.

Figure 17, men's locker room.

Figure 18, men's shower room.

Figure 19, men's locker room.

Figure 20, Williams Center north building entry,

Figure 21, Kachel Fieldhouse, south building entry

Institution UW-Whitewater
Building Name Williams Center
Building Number 14, 14A

Date, 4-10-2015

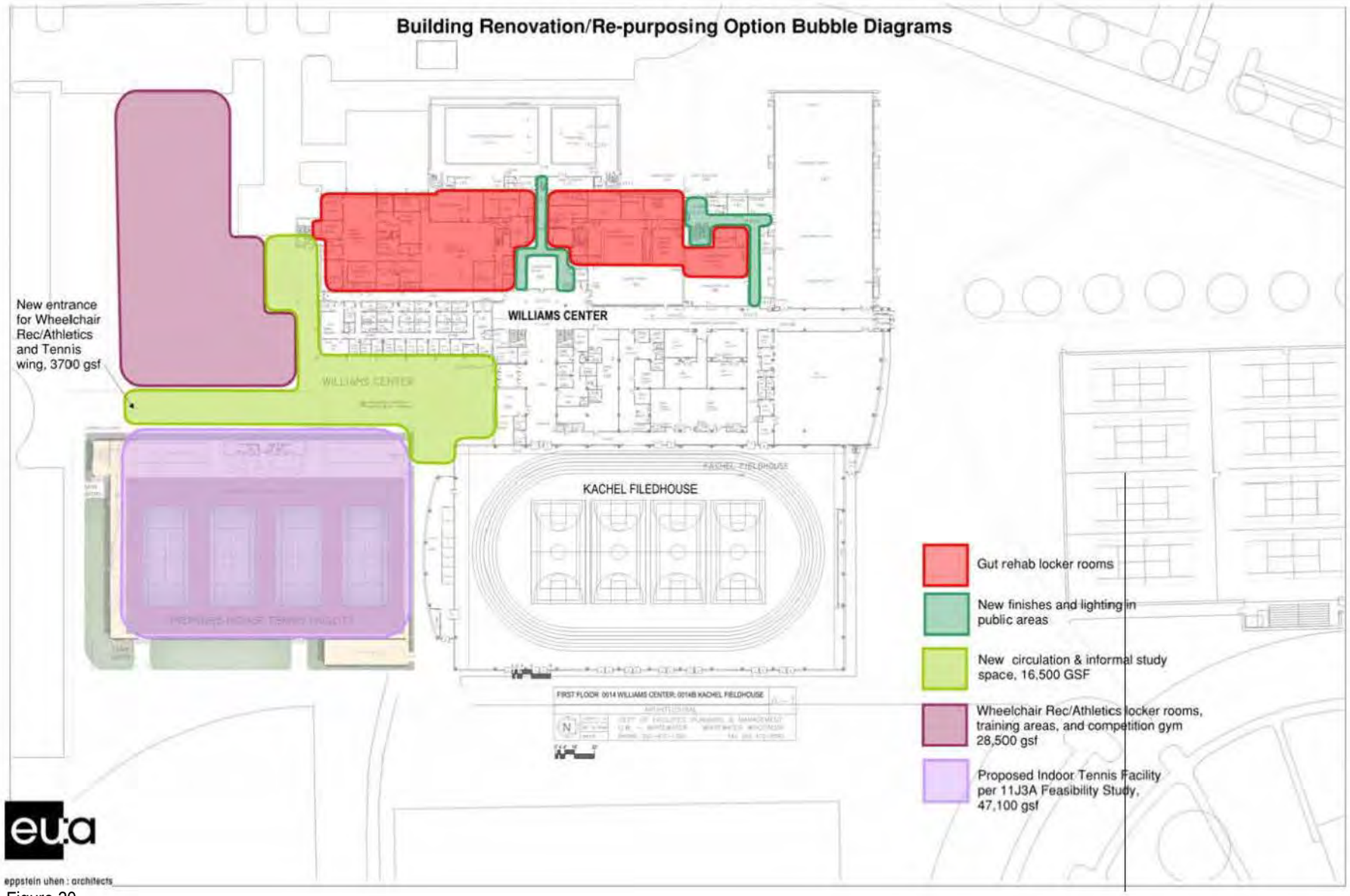
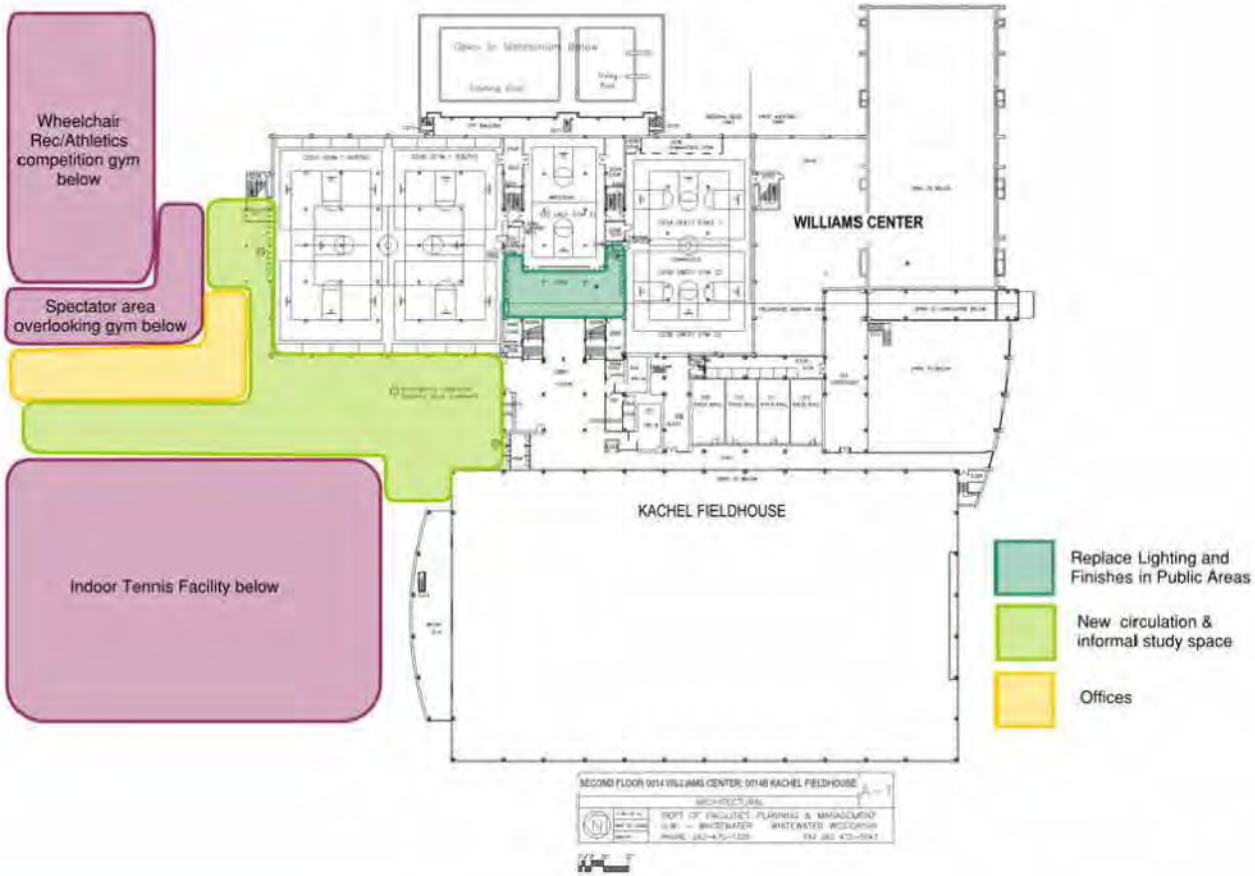


Figure 20

Building Renovation/Re-purposing Option Bubble Diagrams



eu:a

eppstein uhen : architects

Figure 21

Building Name	Winther Hall
Building No.	10
Building Type	Academic Building
Constructed	1969
Addition(s)	

Floors	AG	UG
	6	0

ASF 45,115 GSF 77,010 GPR - % PR - %

CENTRAL UTILITY CONNECTIONS

CW	☒	ELEC	☒	C. AIR	☒	WATER	☐
HPS	☒	FIBER	☒	N. GAS	☒	SEWER	☐

HISTORICAL

US	☐
WI	☐

C-	FUNCTIONAL RATING	PHYSICAL RATING	iv

Building Profile ratings based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM): 2006 Edition

Background and History

Winther Hall was constructed as, and continues to be used as an academic building.

Occupant(s) and Use(s)

The College of Education and Professional Services is the primary user. Additionally, Psychology, Race and Ethnic Studies are part of the College of Letters and Sciences functions in this building.

Functionality Assessment

An Instructional Lab or Classroom building constructed today would have daylighting to occupied spaces.

The east side of the building was designed as a main entrance, but campus circulation patterns have changed, and the entrance on the north is most heavily used. The south entrance (at junction between wings) is also heavily used since it connects with Heide Hall and is direct route to Andersen Library.

Existing toilet rooms are original to the building, are not accessible, and rooms for each gender are not provided on every floor. Existing toilet rooms can't be expanded in their current location – new accessible toilet rooms should be constructed elsewhere in the building.

Office configuration in the 6 story tower is original to the 1969 building, and modern office configurations are quite different in terms of size, configuration, and support spaces.

Other Building Issues

Lack of daylight in classrooms, sun glare and temperature variations in different zones in the building, finishes are worn and uninspiring.

Future Building Plans

A conceptual design for improvements to the building was created by one team as part of a UW Madison School of Engineering Senior Capstone class in the Fall of 2013. This study addressed improvements to the north primary entrance, improvements to vertical circulation, created accessible toilet rooms for each gender on each floor, and created study/breakout areas on each floor.

The classroom wing has good bay spacing and good floor to floor heights that would accommodate remodeling for continued use as instructional classroom space. The office wing has a narrow footprint that does not accommodate uses other than office space. This building does not have fire sprinklers, so any additions need to be Type 1A construction unless fire separations between new and existing areas are provided.

Code and Health/Safety

This building is classified as Type 1A. It does not have fire sprinklers. Accessible routes to the building could be improved, and currently only the high demand entries are accessible.

Existing bathrooms do not meet current accessibility codes.

Automatic door openers are rough in but not provided on Eastern entry due to low use of this entry.

Architectural

The classroom wing has a concrete column, beam and waffle slab construction system, good bay spacing, and good floor to floor heights. The office wing has a concrete column, beam and joist structural system, and a narrow footprint that does not accommodate uses other than office space. Partitions are constructed of concrete block, which is institutional looking and not easy to reconfigure.

The exterior envelope is in good condition, but has original windows and insulation, which is lower performing than what would be constructed today.

The site has access to parking and is adjacent to pedestrian paths. The site has space for additions on the North, South and West.

Mechanical

This building component was not reviewed; it appears that these systems are original to the building construction and are nearing the end of their lifecycle.

Electrical

This building component was not reviewed; it appears that these systems are original to the building construction.

Communication

This building component was not reviewed; campus reports that data fiber was added to this building.

Plumbing

This building component was not reviewed; it appears that these systems are original to the building construction.

Conveying

Elevator should be replaced as part of a building remodeling. Elevator is original to the building, does not meet accessibility requirements, and does not adequately handle traffic volume.

Equipment and Furnishings

Other than new finishes and furnishings in the classroom wing corridors the Interior Finishes, Fixtures and Equipment are original (40 years old) in many areas of the building. Finishes are worn and uninspiring.

Institution UW-Whitewater
Building Name Winther Hall
Building Number 10

Date, 4-10-2015

Insert Text Here

COMPONENT	CONFIGURATION/LAYOUT	SPACE UTILIZATION	ADAPTABILITY/FLEXIBILITY	INFRASTRUCTURE	ACCESSIBILITY	CODE & LIFE SAFETY	OVERALL	REMARKS	PHOTOS
Site/Entry Location/Access	C	C	C	C	C	B	C	The "raised" entry level of this building and half story exit to the south is not the best configuration for accessible routes to this building. The "street entrance" oriented to N Prairie Street does not serve current circulation patterns on campus.	Fig. 9
Lecture Halls	B	B	B	B	B	B	B	Finishes, lighting, and AV systems were updated in these areas in 2001.	Fig. 3
Classrooms/Labs	D	D	D	D	D	D	D	Classrooms/Labs have original 1967 finishes, MEP systems, lighting, and instructional fixtures – these are extremely obsolete. None of the classrooms/labs have access to daylight, and spaces with no daylight are unpleasant to be in for long periods of time.	Fig. 1, 2, 4
Offices	C	C	C	C	C	C	C	Office configuration is original to the 1967 building, and modern office configurations are quite different in terms of size, configuration, and support spaces. Partitions are constructed of concrete block, which is institutional looking and not easy to reconfigure. Finishes are worn and uninspiring.	Fig. 5, 6
Study & Breakout areas	C	C	C	C	C	C	C	Furnishings have been provided in several areas to facilitate informal breakout and study functions, but no purposely defined spaces exist for these functions.	Fig. 7, 8
Toilet Rooms	F	F	F	F	F	F	F	Existing toilet rooms are original to the building, are not accessible, and rooms for each gender are not provided on every floor. All existing toilet rooms should be removed and replaced elsewhere.	Fig. 12. 13
Circulation at Instructional Spaces	C	C	C	C	C	C	C	Some areas of existing circulation are used for informal study spaces, while other circulation areas are too narrow to accommodate classroom turnover effectively. Remodeling these areas in conjunction with replacing bathrooms and adding study space could remediate these deficiencies.	Fig. 11

Institution UW-Whitewater
Building Name Winther Hall
Building Number 10

Date, 4-10-2015

COMPONENT	*CONFIGURATION/LAYOUT*	*SPACE UTILIZATION*	*ADAPTABILITY/FLEXIBILITY*	*INFRASTRUCTURE*	*ACCESSIBILITY*	*CODE & LIFE SAFETY*	*OVERALL*	*REMARKS*	*PHOTOS*
Monumental Stair (east side of classroom wing)	C	C	C	C	C	C	C	The east side of the building was designed as a main entrance, but campus circulation patterns have changed, and the entrance on the north is now the most heavily used. Lighting and finishes in both stairs are dated and gloomy. The current configuration in which the east stair tower is essentially the vestibule for this entrance is not energy efficient.	Fig. 10
Circulation at Office Spaces	C	C	C	C	C	C	C	Entrance zones of the office floors are cramped. Corridors are narrow and long. Finishes and lighting are original to the building and un-inspirational.	
Elevator	F	F	F	F	F	F	F	Elevator should be replaced as part of a building remodeling. Elevator is original to the building, does not meet accessibility requirements, and does not adequately handle traffic volume.	
Interior Finishes	C	C	C	C	C	C	C	With a few exceptions noted above, interior finishes and lighting are original to the building, are worn, drab, un-inspirational, and should be replaced.	Fig. 1-13
MEP Systems	C	C	C	C	C	C	C	Review of MEP Systems was not part of this study, but MEP Systems appear to be original to the building and past their practical lifespan.	
Exterior envelope	F	C	C	C	C	C	D	An Instructional Lab or Classroom building constructed today would have daylighting to occupied spaces. The exterior envelope is in good condition, but has original windows and insulation, which is lower performing than what would be constructed today.	
Adaptability for other Uses	C/D	C/D	C/D	C/D	C/D	C/D	C/D	The classroom wing has a concrete column, beam and waffle slab construction system, good bay spacing, and good floor to floor heights that would accommodate remodeling for continued use as instructional classroom space. The office wing has a concrete column, beam and joist structural system, and a narrow footprint that does not accommodate uses other than office space. This building does not have fire sprinklers, so any additions need to be Type 1A construction unless fire separations between new and existing areas are provided.	
Overall Average Rating							C-		

Institution UW-Whitewater
Building Name Winther Hall
Building Number 10

Date, 4-10-2015

Figure 1, classroom.

Figure 2, classroom.

Figure 3, lecture hall.

Figure 4, classroom.

Figure 5, faculty work room.

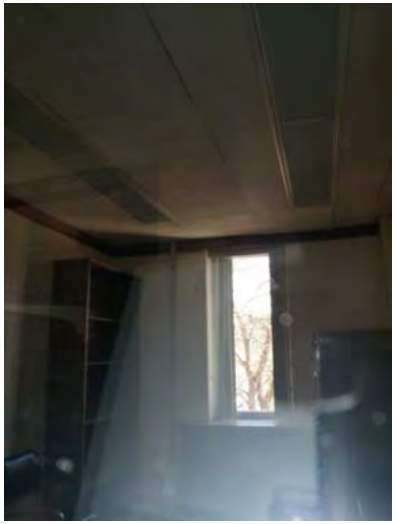


Figure 6, faculty office.

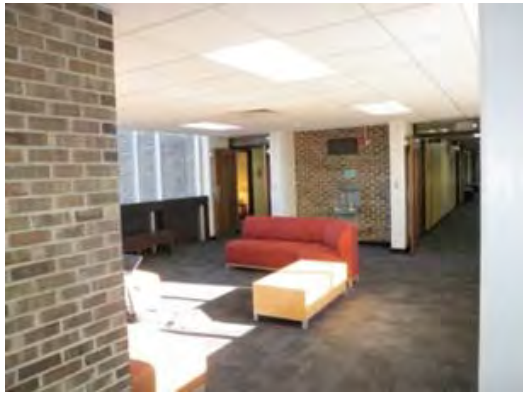


Figure 7, study lounge.

Figure 8, study lounge.

Figure 9, entry area.

Figure 10, monumental stair.

Figure 11, corridor in classroom wing.

Figure 12, toilet room.

Figure 13, faculty toilet room.

Figure 14, exterior view from southeast

Figure 14, exterior view from southwest

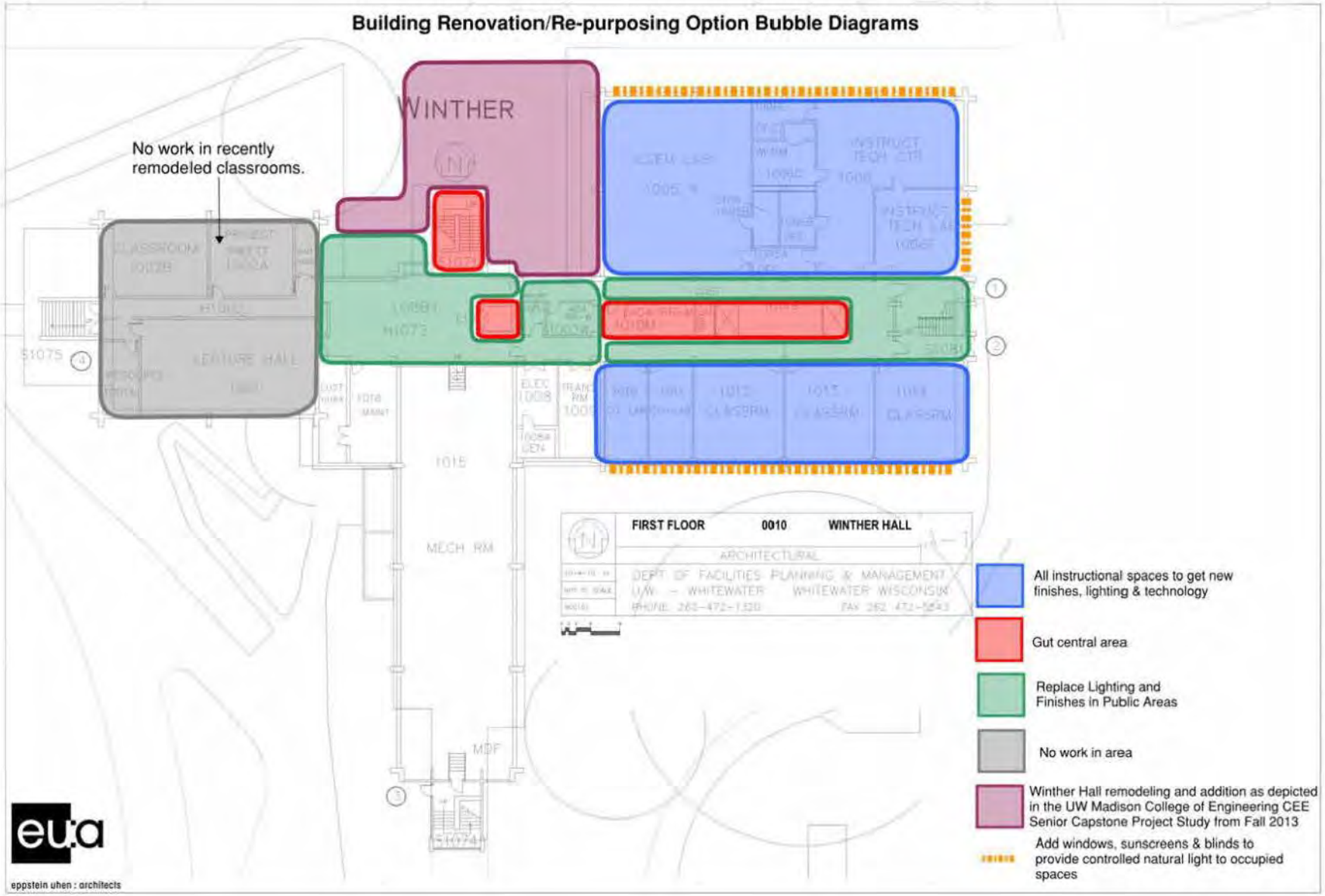

Building Renovation/Re-purposing Option Bubble Diagrams
WINTHER
No work in recently remodeled classrooms.
LECTURE HALL
MECH RM
MDF
FIRST FLOOR
0010
WINTHER HALL
ARCHITECTURAL
DEPT OF FACILITIES PLANNING & MANAGEMENT
UW - WHITEWATER
WHITEWATER WISCONSIN
All instructional spaces to get new finishes, lighting & technology
Gut central area
Replace Lighting and Finishes in Public Areas
No work in area
Winther Hall remodeling and addition as depicted in the UW Madison College of Engineering CEE Senior Capstone Project Study from Fall 2013
Add windows, sunscreens & blinds to provide controlled natural light to occupied spaces
eu:a
eppstein uhen : architects

Figure 14

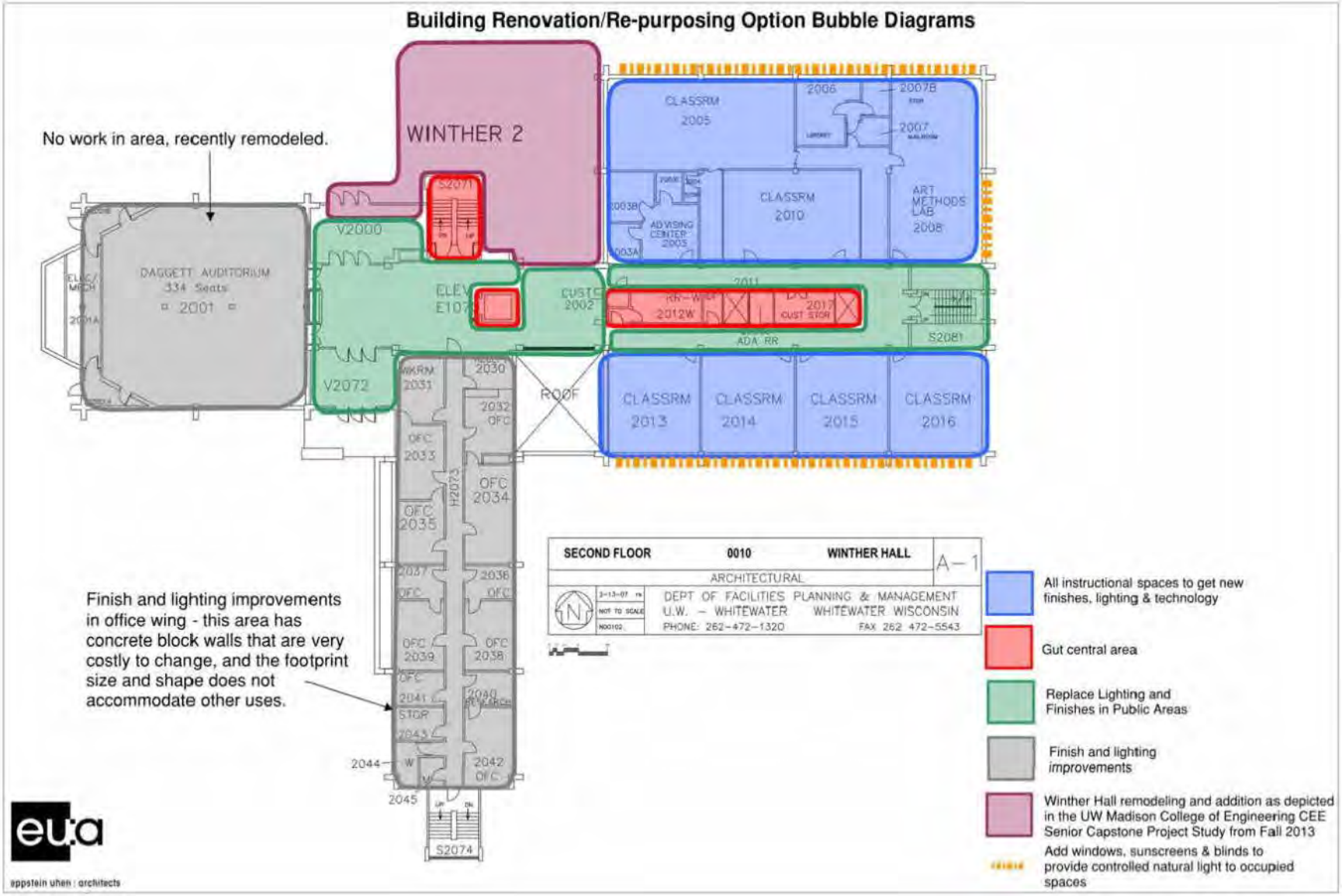

Building Renovation/Re-purposing Option Bubble Diagrams
No work in area, recently remodeled.
WINTHER 2
DAGGETT AUDITORIUM
334 Seats
2001
V2000
V2072
ELEV
E107
CUSTO
2002
ROOF
CLASSRM
2005
2006
2007B
2007
CLASSRM
2010
ADVISING CENTER
2003
ART METHODS LAB
2008
2012W
2017
CUST STOR
ADA RR
S2081
CLASSRM
2013
CLASSRM
2014
CLASSRM
2015
CLASSRM
2016
WKRM
2031
2030
2032
OFC
OFC
2033
OFC
2034
H2073
OFC
2035
2037
2036
OFC
OFC
2039
OFC
2038
OFC
2041
STOR
2043
2040
2044
2042
OFC
2045
S2074
SECOND FLOOR
0010
WINTHER HALL
A-1
ARCHITECTURAL
DEPT OF FACILITIES PLANNING & MANAGEMENT
U.W. – WHITEWATER WHITEWATER WISCONSIN
PHONE: 262-472-1320 FAX 262 472-5543
Finish and lighting improvements in office wing - this area has concrete block walls that are very costly to change, and the footprint size and shape does not accommodate other uses.
All instructional spaces to get new finishes, lighting & technology
Gut central area
Replace Lighting and Finishes in Public Areas
Finish and lighting improvements
Winther Hall remodeling and addition as depicted in the UW Madison College of Engineering CEE Senior Capstone Project Study from Fall 2013
Add windows, sunscreens & blinds to provide controlled natural light to occupied spaces
eppstein uhen : architects

Figure 15

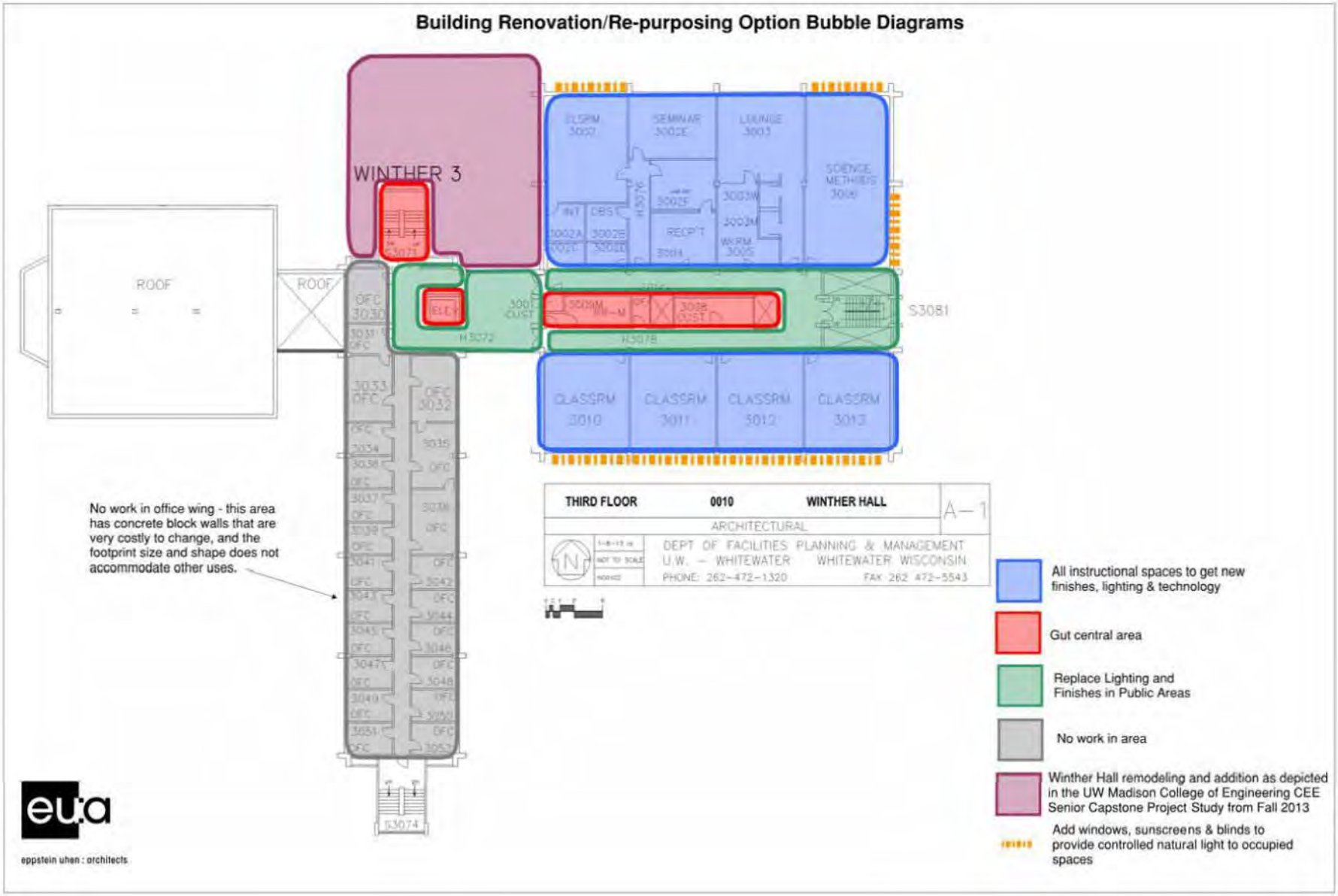

Building Renovation/Re-purposing Option Bubble Diagrams
WINTHER 3
ROOF
ROOF
ELEV
S3081
CLASSRM 3010
CLASSRM 3011
CLASSRM 3012
CLASSRM 3013
No work in office wing - this area has concrete block walls that are very costly to change, and the footprint size and shape does not accommodate other uses.
THIRD FLOOR
0010
WINTHER HALL
A-1
ARCHITECTURAL
DEPT OF FACILITIES PLANNING & MANAGEMENT
U.W. – WHITEWATER WHITEWATER WISCONSIN
PHONE: 262-472-1320
FAX 262 472-5543
All instructional spaces to get new finishes, lighting & technology
Gut central area
Replace Lighting and Finishes in Public Areas
No work in area
Winther Hall remodeling and addition as depicted in the UW Madison College of Engineering CEE Senior Capstone Project Study from Fall 2013
Add windows, sunscreens & blinds to provide controlled natural light to occupied spaces
eu:a
eppstein uhen : architects

Figure 16

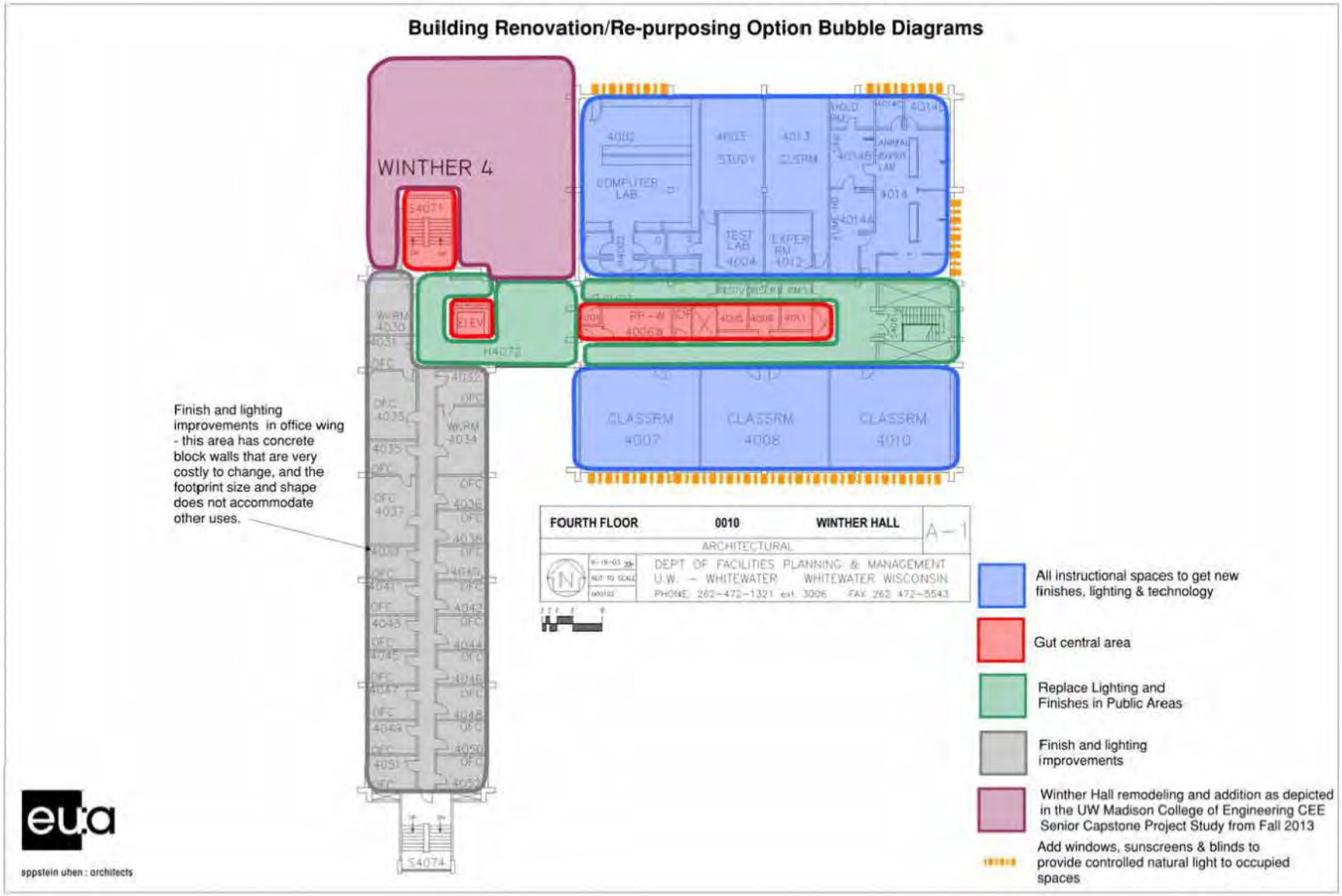

Building Renovation/Re-purposing Option Bubble Diagrams
WINTHER 4
COMPUTER LAB
STUDY
CLASSRM
TEST LAB
LKFER RM
CLASSRM 4007
CLASSRM 4008
CLASSRM 4010
Finish and lighting improvements in office wing - this area has concrete block walls that are very costly to change, and the footprint size and shape does not accommodate other uses.
FOURTH FLOOR
0010
WINTHER HALL
A-1
ARCHITECTURAL
DEPT OF FACILITIES PLANNING & MANAGEMENT
U.W. - WHITEWATER WHITEWATER WISCONSIN
All instructional spaces to get new finishes, lighting & technology
Gut central area
Replace Lighting and Finishes in Public Areas
Finish and lighting improvements
Winther Hall remodeling and addition as depicted in the UW Madison College of Engineering CEE Senior Capstone Project Study from Fall 2013
Add windows, sunscreens & blinds to provide controlled natural light to occupied spaces
eu:a
sppstein uhen : architects

Figure 17

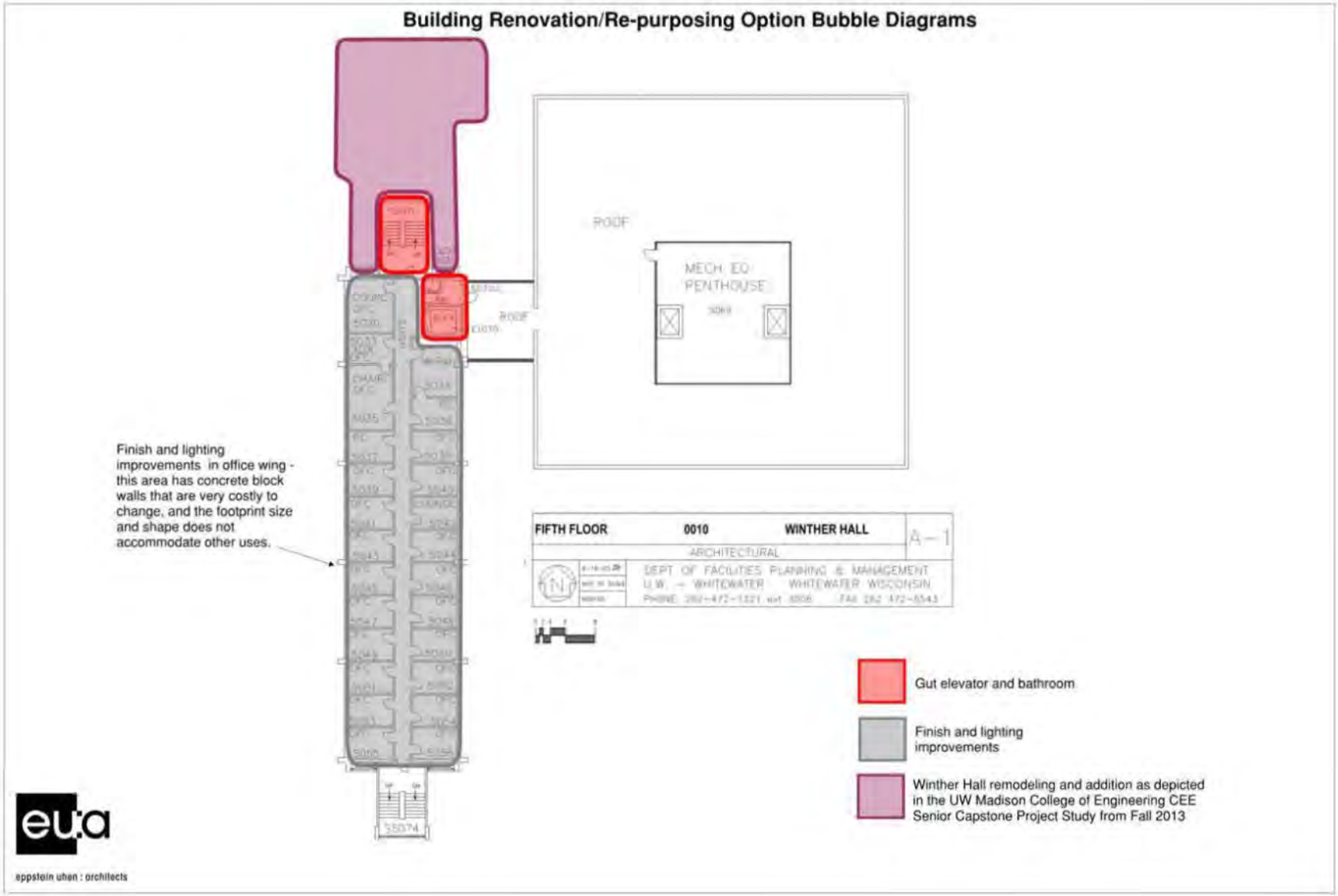

Building Renovation/Re-purposing Option Bubble Diagrams
ROOF
MECH EQ PENTHOUSE
ROOF
Finish and lighting improvements in office wing - this area has concrete block walls that are very costly to change, and the footprint size and shape does not accommodate other uses.
FIFTH FLOOR
0010
WINTHER HALL
A-1
ARCHITECTURAL
DEPT OF FACILITIES PLANNING & MANAGEMENT
U.W. - WHITEWATER WHITEWATER WISCONSIN
Gut elevator and bathroom
Finish and lighting improvements
Winther Hall remodeling and addition as depicted in the UW Madison College of Engineering CEE Senior Capstone Project Study from Fall 2013
eu:a
eppstein uhen : architects

Figure 18

Building Renovation/Re-purposing Option Bubble Diagrams

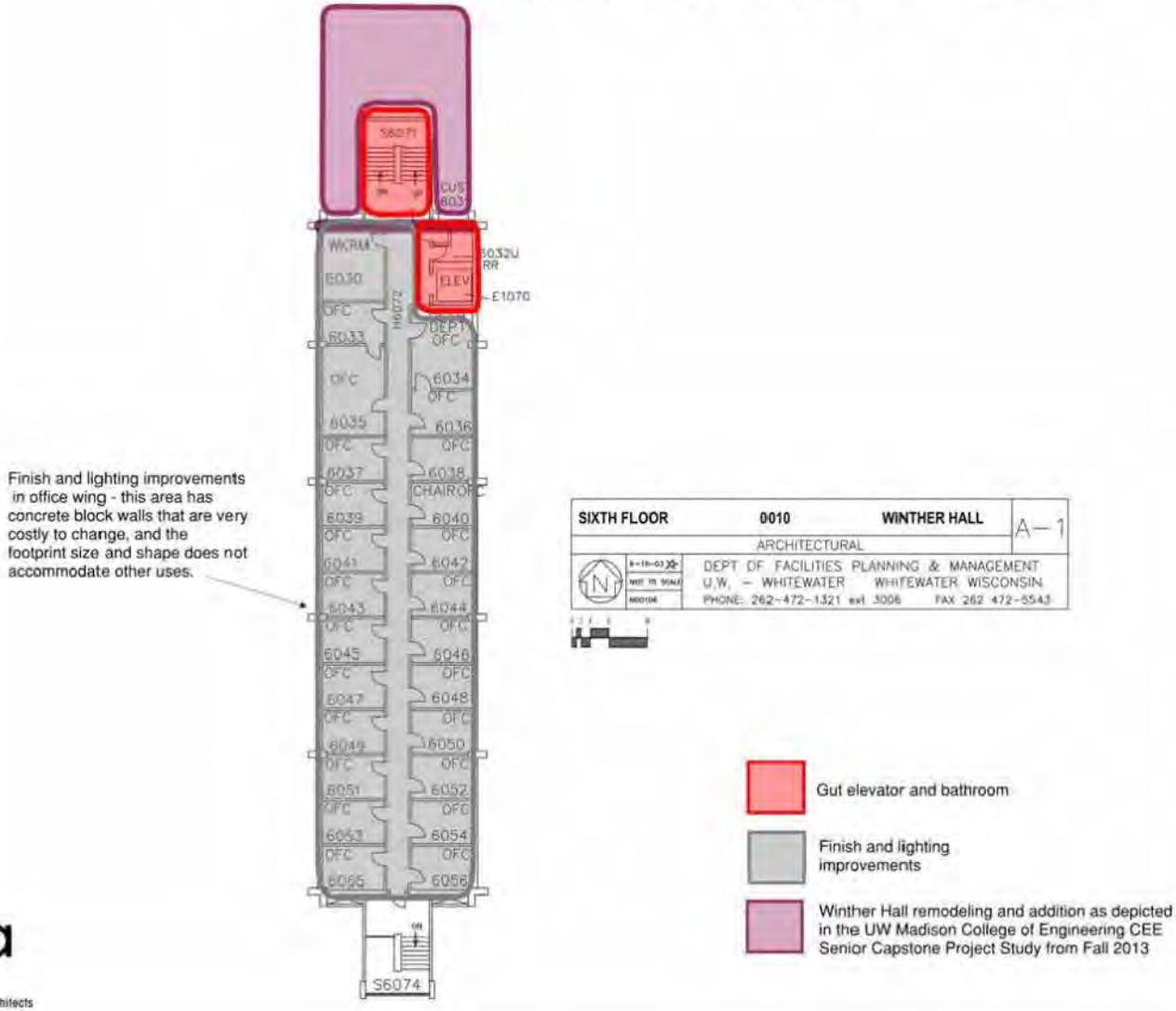


Figure 19

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Tennis Facility

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 48800 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 0 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jul-15 PROJECTED ENR INDEX: (7/2014)/5927(7/2015)=1.04

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Tennis Facility	48,000	162	1.04	0	$8,087,040
				0	$0
				0	$0
				0	$0

SUBTOTAL: $8,087,040

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL					
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					

SUBTOTAL: $ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 8,087,040.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 8,087,040
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 510,000
- Selective Demolition	$ 30,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 480,000.00	
- Pilings	$ -	
- Dewatering	$ -	
2. Special Design Freatures/Other Construction		$ 25,000.00
- Plaza	$ -	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ 25,000.00	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 102,000.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 2,000.00	
- Other (specify) Athletic Equipment	$ 100,000.00	
4. Special Mechanical/Electrical Systems		$ -
- HVAC Source Equipment	$ -	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ -	
- Electronic Surveillance	$ -	
- Lighting Controls	$ -	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ -	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 8,724,040.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 8,724,040.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ 35,000.00
- Water	$	10,000.00	
- Sewer	$	20,000.00	
- Gas	$	5,000.00	
- Electric	$	-	
- Steam/Chilled Water	$	-	
2. Site Development			$ 90,994.00
- Parking/Roads/Walks/Curbs	$	31,000.00	
- Stormwater Management	$	-	
- Site Lighting	$	-	
- Storm Sewer	$	29,994.00	
- Landscaping	$	20,000.00	
- Exterior Signage	$	10,000.00	
- Other (specify)_____	$	-	
- Other (specify)_____	$	-	
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$	-	
- Restricted or Remote Site/Limited Access	$	-	
- Occupied/Secure Site	$	-	
- Market Conditions/Location Factor	$	-	
- Other (specify)_____	$	-	
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$	-	
5. Asbestos Abatement/Environmental Clean-up			$ -
TOTAL CONSTRUCTION COST			$ 8,850,034.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 819,955.65
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$	-	
- Miscellaneous Fees (specify)	$	-	
- Audio/Visual Consultant	$	-	
- Asbestos/Environment Consultant	$	-	
- Commissioning	$	-	
3. Project Contingency, 9% of construction			$ 796,503.06
4. DSF Management, , 4% of const & cont			$ 385,861.48
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 354,001.36
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 11,206,355.55 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Residence Hall 2

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 130000 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 0 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jan-17 PROJECTED ENR INDEX: (7/2014)/6290(1/2017)=1.104

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Residence Hall	130,000	208	1.104	0	$29,852,160
				0	$0
				0	$0
				0	$0

SUBTOTAL: $29,852,160

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL					
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					

SUBTOTAL: $ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 29,852,160.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 29,852,160
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 780,000
- Selective Demolition	$ 150,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 600,000.00	
- Pilings	$ -	
- Dewatering	$ 30,000.00	
2. Special Design Freatures/Other Construction		$ 120,000.00
- Plaza	$ 120,000.00	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 20,000.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 20,000.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 950,000.00
- HVAC Source Equipment	$ 300,000.00	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 200,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 150,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 300,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 31,722,160.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 31,722,160.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ 1,205,000.00
- Water	$ 180,000.00		
- Sewer	$ 275,000.00		
- Gas	$ 130,000.00		
- Electric	$ 620,000.00		
- Steam/Chilled Water	$ -		
2. Site Development			$ 697,290.00
- Parking/Roads/Walks/Curbs	$ 247,290.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ 230,000.00		
- Landscaping	$ 150,000.00		
- Exterior Signage	$ 70,000.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ -
TOTAL CONSTRUCTION COST			$ 33,624,450.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 3,115,305.29
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 3,026,200.50
4. DSF Management, , 4% of const & cont			$ 1,466,026.02
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 1,344,978.00
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 42,576,959.81 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Williams Center Addition

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 0 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 66,700 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE:

PROJECTED ENR INDEX: (7/2014)/6416(7/2017)=1.13

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Gymnasium	28,500	165	1.13	0	$5,313,825
Entrance	3,700	180	1.13	0	$752,580
Offices /Study Space	34,500	165	1.13	0	$6,432,525
				0	$0

SUBTOTAL: $12,498,930

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					$ -
-COMPLETE					$ -
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					$ -
-SPECIAL NEEDS					
HVAC					$ -
-MINOR					
-PARTIAL					
-COMPLETE					$ -
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					$ -
-SPECIAL NEEDS					
ELEVATOR					
				SUBTOTAL:	$ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 12,498,930.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 12,498,930
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 337,100
- Selective Demolition	$ 85,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 252,100.00	
- Pilings	$ -	
- Dewatering	$ -	
2. Special Design Freatures/Other Construction		$ 80,000.00
- Plaza	$ -	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ 80,000.00	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 8,500.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 8,500.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 180,000.00
- HVAC Source Equipment	$ -	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 65,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 80,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 35,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 13,104,530.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 13,104,530.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ -
- Water	$ -		
- Sewer	$ -		
- Gas	$ -		
- Electric	$ -		
- Steam/Chilled Water	$ -		
2. Site Development			$ 450,000.00
- Parking/Roads/Walks/Curbs	$ 340,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ -		
- Landscaping	$ 80,000.00		
- Exterior Signage	$ 30,000.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ 15,000.00
TOTAL CONSTRUCTION COST			$ 13,569,530.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 1,257,216.95
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 1,221,257.70
4. DSF Management, , 4% of const & cont			$ 591,631.51
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 542,781.20
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 17,182,417.36 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Williams Center Building Renovation

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 0 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 18,000 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE:

PROJECTED ENR INDEX: (7/2014)/6416(7/2017)=1.13

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
	0	0	0	0	$0
				0	$0
				0	$0
				0	$0

SUBTOTAL: $0

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL	6000	40	1.13		$ 271,200.00
-COMPLETE	12000	76	1.13		$ 1,030,560.00
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE	12000	9	1.13		$ 122,040.00
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL	6000	15	1.13		$ 101,700.00
-COMPLETE	12000	29	1.13		$ 393,240.00
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL	6000	16	1.14		$ 109,440.00
-COMPLETE	12000	24	1.14		$ 328,320.00
-SPECIAL NEEDS					
ELEVATOR					
				SUBTOTAL:	$ 2,356,500.00
TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>>					$ 2,356,500.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 2,356,500
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 60,000
- Selective Demolition	$ 60,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ -	
- Pilings	$ -	
- Dewatering	$ -	
2. Special Design Freatures/Other Construction		$ -
- Plaza	$ -	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 4,500.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 4,500.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 32,000.00
- HVAC Source Equipment	$ -	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management		
- Electronic Surveillance	$ -	
- Lighting Controls	$ 12,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 20,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 2,453,000.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 2,453,000.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ -
- Water	$ -		
- Sewer	$ -		
- Gas	$ -		
- Electric	$ -		
- Steam/Chilled Water	$ -		
2. Site Development			$ -
- Parking/Roads/Walks/Curbs	$ -		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ -		
- Landscaping	$ -		
- Exterior Signage	$ -		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ 80,000.00
TOTAL CONSTRUCTION COST			$ 2,533,000.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 234,682.45
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 227,970.00
4. DSF Management, , 4% of const & cont			$ 110,438.80
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 101,320.00
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 3,207,411.25 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Heide Building Renovation

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 0 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 68,000 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE:

PROJECTED ENR INDEX: (7/2014)/6416(7/2017)=1.13

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Class Room Space	0	0	0	0	$0
				0	$0
				0	$0
				0	$0

SUBTOTAL: $0

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL	40950	40	1.13		$ 1,850,940.00
-COMPLETE	13650	66	1.13		$ 1,018,017.00
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE	68000	6	1.13		$ 461,040.00
-SPECIAL NEEDS					
HVAC					$ -
-MINOR					
-PARTIAL					
-COMPLETE	68000	29	1.13		$ 2,228,360.00
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE	68000	31	1.13		$ 2,382,040.00
-SPECIAL NEEDS					
ELEVATOR					
				SUBTOTAL:	$ 7,940,397.00
TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>>					$ 7,940,397.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 7,940,397
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 146,890
- Selective Demolition	$ 121,890.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 25,000.00	
- Pilings	$ -	
- Dewatering	$ -	
2. Special Design Freatures/Other Construction		$ 328,400.00
- Plaza	$ -	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ 209,200.00	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ 119,200.00	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 6,500.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 6,500.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 210,000.00
- HVAC Source Equipment	$ -	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 75,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 90,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 45,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 8,632,187.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 8,632,187.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ -
- Water	$ -		
- Sewer	$ -		
- Gas	$ -		
- Electric	$ -		
- Steam/Chilled Water	$ -		
2. Site Development			$ 230,000.00
- Parking/Roads/Walks/Curbs	$ 145,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ -		
- Landscaping	$ 60,000.00		
- Exterior Signage	$ 25,000.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ 125,000.00
TOTAL CONSTRUCTION COST			$ 8,987,187.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 832,662.88
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 808,846.83
4. DSF Management, , 4% of const & cont			$ 391,841.35
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 359,487.48
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 11,380,025.54 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Winther Hall

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 12005 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 43,938 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jul-18

PROJECTED ENR INDEX: (7/2014)/6544(7/2018)=1.15

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Entry Additon	12,005	240	1.15	0	$3,313,380
				0	$0
				0	$0
				0	$0

SUBTOTAL: $3,313,380

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR	15,267	25	1.15		$ 438,926.25
-PARTIAL	28,671	55	1.15		$ 1,813,440.75
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL	28,671	15	1.15		$ 494,574.75
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL	28,671	12	1.15		$ 395,659.80
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					
				SUBTOTAL:	$ 3,142,601.55
TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>>					$ 6,455,981.55

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 6,455,982
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 800,000
- Selective Demolition	$ 200,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 600,000.00	
- Pilings	$ -	
- Dewatering	$ -	
2. Special Design Freatures/Other Construction		$ 396,340.00
- Plaza	$ 60,000.00	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ 336,340.00	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 20,000.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 20,000.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 100,000.00
- HVAC Source Equipment	$ -	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management		
- Electronic Surveillance	$ -	
- Lighting Controls	$ 50,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 50,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 7,772,321.55

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 7,772,321.55
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ -
- Water	$ -		
- Sewer	$ -		
- Gas	$ -		
- Electric	$ -		
- Steam/Chilled Water	$ -		
2. Site Development			$ 100,500.00
- Parking/Roads/Walks/Curbs	$ 55,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ 20,000.00		
- Landscaping	$ 15,000.00		
- Exterior Signage	$ 10,500.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ 90,000.00
TOTAL CONSTRUCTION COST			$ 7,962,821.55
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 737,755.42
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 716,653.94
4. DSF Management, , 4% of const & cont			$ 347,179.02
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 318,512.86
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 10,082,922.79 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Anderson Library Renovation

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 0 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 61,718 (GSF Remodeling)

191,210 (GSF Total Bldg) 32.3% (% Remodeling)

ESTIMATED BID DATE:

PROJECTED ENR INDEX: (7/2014)/6416(7/2017)=1.13

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
				0	$0
				0	$0
				0	$0
				0	$0

SUBTOTAL: $0

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR	2000	40	1.13		$ 90,400.00
-PARTIAL	63033	54	1.13		$ 3,846,273.66
-COMPLETE	12000	76	1.13		$ 1,030,560.00
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR	2000	6	1.13		$ 13,560.00
-PARTIAL	63033	12	1.13		$ 854,727.48
-COMPLETE	12000	25	1.13		$ 339,000.00
AC ONLY					
ELECTRICAL					
-MINOR	2000	8	1.13		$ 18,080.00
-PARTIAL	63033	9	1.13		$ 641,045.61
-COMPLETE	12000	16	1.13		$ 216,960.00
-SPECIAL NEEDS					
ELEVATOR					
				SUBTOTAL:	$ 7,050,606.75
TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>>					$ 7,050,606.75

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 7,050,607
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 116,000
- Selective Demolition	$ 116,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ -	
- Pilings	$ -	
- Dewatering	$ -	
2. Special Design Freatures/Other Construction		$ -
- Plaza	$ -	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 6,500.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 6,500.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 195,000.00
- HVAC Source Equipment	$ -	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 65,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 80,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 50,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 7,368,106.75

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 7,368,106.75
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ -
- Water	$ -		
- Sewer	$ -		
- Gas	$ -		
- Electric	$ -		
- Steam/Chilled Water	$ -		
2. Site Development			$ 40,000.00
- Parking/Roads/Walks/Curbs	$ -		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ -		
- Landscaping	$ 20,000.00		
- Exterior Signage	$ 20,000.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ 75,000.00
TOTAL CONSTRUCTION COST			$ 7,483,106.75
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 693,309.84
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 673,479.61
4. DSF Management, , 4% of const & cont			$ 326,263.45
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 299,324.27
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 9,475,483.92 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Residence Hall 3

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 130000 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 0 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jul-21 PROJECTED ENR INDEX: (7/2014)/7518(7/2021)=1.32

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Residence Hall	130,000	208	1.32	0	$35,692,800
				0	$0
				0	$0
				0	$0

SUBTOTAL: $35,692,800

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL					
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					

SUBTOTAL: $ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 35,692,800.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 35,692,800
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 1,250,000
- Selective Demolition	$ 320,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 900,000.00	
- Pilings	$ -	
- Dewatering	$ 30,000.00	
2. Special Design Freatures/Other Construction		$ 120,000.00
- Plaza	$ 120,000.00	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 20,000.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 20,000.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 950,000.00
- HVAC Source Equipment	$ 300,000.00	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 200,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 150,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 300,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 38,032,800.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)		$ 38,032,800.00	
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions		$ 1,361,000.00	
- Water	$ 233,000.00		
- Sewer	$ 275,000.00		
- Gas	$ 123,000.00		
- Electric	$ 730,000.00		
- Steam/Chilled Water	$ -		
2. Site Development		$ 809,406.00	
- Parking/Roads/Walks/Curbs	$ 251,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ 240,000.00		
- Landscaping	$ 185,000.00		
- Exterior Signage	$ 133,406.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors		$ -	
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications		$ -	
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up		$ -	
TOTAL CONSTRUCTION COST		$ 40,203,206.00	
DESIGN/CONTINGENCY/ALLOWANCES:	%		
1. Design		$ 3,724,827.04	
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees		$ -	
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction		$ 3,618,288.54	
4. DSF Management, , 4% of const & cont		$ 1,752,859.78	
5. Work by Owner		$ -	
6. Movable Equipment Allowance (4% of const)		$ 1,608,128.24	
7. Special Equipment		$ -	
8. Other Allowances (specify)		$ -	
9. Land Purchase		$ -	
10. Percent for the Arts		$ -	
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>		$ 50,907,309.60	plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Center for the Arts Renovation

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 12600 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 18,000 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE:

PROJECTED ENR INDEX: (7/2014)/7668(1/2022)=1.35

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
New Entry Addition	12,600	180	1.35	0	$3,061,800
				0	$0
				0	$0
				0	$0

SUBTOTAL: $3,061,800

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR	23316	25	1.35		
-PARTIAL	23095	35	1.35		$ 1,091,238.75
-COMPLETE	900	56	1.35		$ 68,040.00
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE	900	12	1.35		$ 14,580.00
-SPECIAL NEEDS					
HVAC					
-MINOR	23316	6	1.35		$ 188,859.60
-PARTIAL	23095	12	1.35		$ 374,139.00
-COMPLETE	900	29	1.35		$ 35,235.00
AC ONLY					
ELECTRICAL					
-MINOR	23316	8	1.35		$ 251,812.80
-PARTIAL	23095	14	1.35		$ 436,495.50
-COMPLETE	900	22	1.35		$ 26,730.00
-SPECIAL NEEDS					
ELEVATOR					
				SUBTOTAL:	$ 2,487,130.65
TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>>					$ 5,548,930.65

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 5,548,931
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 80,000
- Selective Demolition	$ 80,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ -	
- Pilings	$ -	
- Dewatering	$ -	
2. Special Design Freatures/Other Construction		$ -
- Plaza	$ -	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 8,500.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 8,500.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 110,000.00
- HVAC Source Equipment	$ -	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management		
- Electronic Surveillance	$ -	
- Lighting Controls	$ 60,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 50,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 5,747,430.65

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 5,747,430.65
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ -
- Water	$ -		
- Sewer	$ -		
- Gas	$ -		
- Electric	$ -		
- Steam/Chilled Water	$ -		
2. Site Development			$ -
- Parking/Roads/Walks/Curbs	$ -		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ -		
- Landscaping	$ -		
- Exterior Signage	$ -		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ 120,000.00
TOTAL CONSTRUCTION COST			$ 5,867,430.65
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 543,617.45
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 528,068.76
4. DSF Management, , 4% of const & cont			$ 255,819.98
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 234,697.23
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 7,429,634.06 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Academic Building #1 Science

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 177000 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 0 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jul-22 PROJECTED ENR INDEX: (7/2014)/7668(7/2022)=1.35

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Office Lab Space	177,000	340	1.065	0	$64,091,700
				0	$0
				0	$0
				0	$0

SUBTOTAL: $64,091,700

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL					
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					

SUBTOTAL: $ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 64,091,700.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 64,091,700
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 785,000
- Selective Demolition	$ 150,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 600,000.00	
- Pilings	$ -	
- Dewatering	$ 35,000.00	
2. Special Design Freatures/Other Construction		$ 200,000.00
- Plaza	$ 200,000.00	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 3,790,000.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ 200,000.00	
- Library Shelving/Fixed Seating/Stage Rigging	$ 70,000.00	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 20,000.00	
- Other (specify) Lab Equipment	$ 3,500,000.00	
4. Special Mechanical/Electrical Systems		$ 1,150,000.00
- HVAC Source Equipment	$ 500,000.00	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 200,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 150,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 300,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 70,016,700.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 70,016,700.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ 768,000.00
- Water	$ 120,000.00		
- Sewer	$ 140,000.00		
- Gas	$ 65,000.00		
- Electric	$ 443,000.00		
- Steam/Chilled Water	$ -		
2. Site Development			$ 898,744.00
- Parking/Roads/Walks/Curbs	$ 540,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ 188,700.00		
- Landscaping	$ 120,044.00		
- Exterior Signage	$ 50,000.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ -
TOTAL CONSTRUCTION COST			$ 71,683,444.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 6,641,471.09
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 6,451,509.96
4. DSF Management, , 4% of const & cont			$ 3,125,398.16
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 2,867,337.76
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 90,769,160.97 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Residence Hall 4

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 130000 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 0 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jan-27 PROJECTED ENR INDEX: (7/2014)/10296(1/2027)=1.807

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Residence Hall	130,000	208	1.807	0	$48,861,280
				0	$0
				0	$0
				0	$0

SUBTOTAL: $48,861,280

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL					
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					

SUBTOTAL: $ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 48,861,280.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 48,861,280
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 1,790,000
- Selective Demolition	$ 460,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 1,300,000.00	
- Pilings	$ -	
- Dewatering	$ 30,000.00	
2. Special Design Freatures/Other Construction		$ 240,000.00
- Plaza	$ 240,000.00	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 20,000.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ -	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 20,000.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 1,150,000.00
- HVAC Source Equipment	$ 400,000.00	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 300,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 150,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 300,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 52,061,280.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 52,061,280.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ 1,930,600.00
- Water	$ 335,000.00		
- Sewer	$ 375,600.00		
- Gas	$ 200,000.00		
- Electric	$ 1,020,000.00		
- Steam/Chilled Water	$ -		
2. Site Development			$ 1,043,873.00
- Parking/Roads/Walks/Curbs	$ 351,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ 387,873.00		
- Landscaping	$ 185,000.00		
- Exterior Signage	$ 120,000.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ -
TOTAL CONSTRUCTION COST			$ 55,035,753.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 5,099,062.52
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 4,953,217.77
4. DSF Management, , 4% of const & cont			$ 2,399,558.83
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 2,201,430.12
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 69,689,022.24 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Residence Hall 5

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 130000 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 0 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jul-28 PROJECTED ENR INDEX: (7/2014)/11136(7/2028)=1.955

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Residence Hall	130,000	208	1.955	0	$52,863,200
				0	$0
				0	$0
				0	$0

SUBTOTAL: $52,863,200

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL					
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					

SUBTOTAL: $ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 52,863,200.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)			$ 52,863,200
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:			
1. Special Foundations/Site Preparation			$ 2,190,000
- Selective Demolition	$	560,000.00	
- Demolition (entire structure)	$	-	
- Site Excavation/Site Preparation	$	1,600,000.00	
- Pilings	$	-	
- Dewatering	$	30,000.00	
2. Special Design Freatures/Other Construction			$ 240,000.00
- Plaza	$	240,000.00	
- Special Exterior/Interior Finishes	$	-	
- Window/Exterior Door Replacement	$	-	
- Remove Architectural Barriers	$	-	
- Interface with Existing Building	$	-	
- Roof Replacement	$	-	
- Other (specify)	$	-	
3. Built-in Architectural Equipment			$ 20,000.00
- Food Service/Equipment	$	-	
- Dry/Cold Rooms	$	-	
- Library Shelving/Fixed Seating/Stage Rigging	$	-	
- Prison Security	$	-	
- Parking/Loading Dock/Waste Handling	$	-	
- Signage (ADA)	$	20,000.00	
- Other (specify) Lab Equipment	$	-	
4. Special Mechanical/Electrical Systems			$ 1,150,000.00
- HVAC Source Equipment	$	400,000.00	
- Heat Recovery/Refrigeration	$	-	
- Chemical Fire Suppression	$	-	
- Energy Management	$	300,000.00	
- Electronic Surveillance	$	-	
- Lighting Controls	$	150,000.00	
- Service to Owner's Equipment	$	-	
- Testing & Balancing	$	300,000.00	
5. Building Complexity Cost Factors			$ -
- Irregular Shape/Story Height	$	-	
- Floor Loading/Structural Details	$	-	
- HVAC/Electric Loads	$	-	
- Multi-Story Building	$	-	
- Design Life	$	-	
- Other (specify)_____	$	-	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>			$ 56,463,200.00

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WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)			$ 56,463,200.00
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions			$ 1,930,600.00
- Water	$ 335,000.00		
- Sewer	$ 375,600.00		
- Gas	$ 200,000.00		
- Electric	$ 1,020,000.00		
- Steam/Chilled Water	$ -		
2. Site Development			$ 1,149,585.00
- Parking/Roads/Walks/Curbs	$ 457,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ 387,585.00		
- Landscaping	$ 185,000.00		
- Exterior Signage	$ 120,000.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors			$ -
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications			$ -
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up			$ -
TOTAL CONSTRUCTION COST			$ 59,543,385.00
DESIGN/CONTINGENCY/ALLOWANCES:		%	
1. Design			$ 5,516,694.62
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees			$ -
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction			$ 5,358,904.65
4. DSF Management, , 4% of const & cont			$ 2,596,091.59
5. Work by Owner			$ -
6. Movable Equipment Allowance (4% of const)			$ 2,381,735.40
7. Special Equipment			$ -
8. Other Allowances (specify)			$ -
9. Land Purchase			$ -
10. Percent for the Arts			$ -
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>			$ 75,396,811.26 plus land cost

DSF PROJECT BUDGET WORKSHEET (page 1)

DATE: 10/22/14

BY: MCC

PROJECT TITLE: 12i1D UW/Whitewater Campus Master Plan-Academic Building #2 Communication

AGENCY: DFD

LOCATION: Whitewater

NEW BLDG AREA: 75000 (GSF New Const)

(ASF New Const) (% Efficiency)

REMODELING AREA: 0 (GSF Remodeling)

0 (GSF Total Bldg) (% Remodeling)

ESTIMATED BID DATE: Jan-28

PROJECTED ENR INDEX: (7/2014)/11136(1/2028)=1.96

CURRENT ENR: 5697

SPACE	GSP	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
Office/Teaching Space	75,000	221	1.96	0	$32,487,000
				0	$0
				0	$0
				0	$0

SUBTOTAL: $32,487,000

REMODELING SPACE/COST SUMMARY:

TRADE	REMOD SF	UNIT COST	INFLATION	SIZE/COST ADJUSTMENT	BUDGET
GENERAL					
-MINOR					
-PARTIAL					
-COMPLETE					
PLUMBING					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
HVAC					
-MINOR					
-PARTIAL					
-COMPLETE					
AC ONLY					
ELECTRICAL					
-MINOR					
-PARTIAL					
-COMPLETE					
-SPECIAL NEEDS					
ELEVATOR					

SUBTOTAL: $ -

TOTAL BASE BUILDING/REMODELING COST >>>>>>>>>>>>>>>>>>> $ 32,487,000.00

WORKSHEET (Page 2)

TOTAL BASE BUILDING/REMODELING COST (From Page 1)		$ 32,487,000
ADDITIONAL BUILDING CONSTRUCTION/REMODELING COSTS:		
1. Special Foundations/Site Preparation		$ 1,385,000
- Selective Demolition	$ 150,000.00	
- Demolition (entire structure)	$ -	
- Site Excavation/Site Preparation	$ 1,200,000.00	
- Pilings	$ -	
- Dewatering	$ 35,000.00	
2. Special Design Freatures/Other Construction		$ 200,000.00
- Plaza	$ 200,000.00	
- Special Exterior/Interior Finishes	$ -	
- Window/Exterior Door Replacement	$ -	
- Remove Architectural Barriers	$ -	
- Interface with Existing Building	$ -	
- Roof Replacement	$ -	
- Other (specify)	$ -	
3. Built-in Architectural Equipment		$ 270,000.00
- Food Service/Equipment	$ -	
- Dry/Cold Rooms	$ -	
- Library Shelving/Fixed Seating/Stage Rigging	$ 250,000.00	
- Prison Security	$ -	
- Parking/Loading Dock/Waste Handling	$ -	
- Signage (ADA)	$ 20,000.00	
- Other (specify) Lab Equipment	$ -	
4. Special Mechanical/Electrical Systems		$ 950,000.00
- HVAC Source Equipment	$ 300,000.00	
- Heat Recovery/Refrigeration	$ -	
- Chemical Fire Suppression	$ -	
- Energy Management	$ 200,000.00	
- Electronic Surveillance	$ -	
- Lighting Controls	$ 150,000.00	
- Service to Owner's Equipment	$ -	
- Testing & Balancing	$ 300,000.00	
5. Building Complexity Cost Factors		$ -
- Irregular Shape/Story Height	$ -	
- Floor Loading/Structural Details	$ -	
- HVAC/Electric Loads	$ -	
- Multi-Story Building	$ -	
- Design Life	$ -	
- Other (specify)_____	$ -	
TOTAL ADJUSTED BUILDING/REMODELING COST >>>>>>>>>>>>>		$ 35,292,000.00

Continue on Page 3--

WORKSHEET (Page 3)

TOTAL ADJUSTED BUILDING/REMODELING COST (from Page 2; Rounded)		$ 35,292,000.00	
UTILITIES/SITE DEVELOPMENT/LOCATION COSTS:			
1. Utilities/Service Extensions		$ 1,485,264.00	
- Water	$ 220,000.00		
- Sewer	$ 245,000.00		
- Gas	$ 129,275.00		
- Electric	$ 890,989.00		
- Steam/Chilled Water	$ -		
2. Site Development		$ 1,213,817.00	
- Parking/Roads/Walks/Curbs	$ 600,000.00		
- Stormwater Management	$ -		
- Site Lighting	$ -		
- Storm Sewer	$ 300,000.00		
- Landscaping	$ 234,500.00		
- Exterior Signage	$ 79,317.00		
- Other (specify)_____	$ -		
- Other (specify)_____	$ -		
3. Location/Site Conditions Cost Factors		$ -	
- Time for Construction	$ -		
- Restricted or Remote Site/Limited Access	$ -		
- Occupied/Secure Site	$ -		
- Market Conditions/Location Factor	$ -		
- Other (specify)_____	$ -		
4. Telecommunications		$ -	
Workstation/Staff 200 x $600	$ -		
5. Asbestos Abatement/Environmental Clean-up		$ -	
TOTAL CONSTRUCTION COST		$ 37,991,081.00	
DESIGN/CONTINGENCY/ALLOWANCES:	%		
1. Design		$ 3,519,873.65	
Architect/Engineer, 8.5% of const & cont			
2. Other Design Fees		$ -	
- Survey/Soils Engineer	$ -		
- Miscellaneous Fees (specify)	$ -		
- Audio/Visual Consultant	$ -		
- Asbestos/Environment Consultant	$ -		
- Commissioning	$ -		
3. Project Contingency, 9% of construction		$ 3,419,197.29	
4. DSF Management, , 4% of const & cont		$ 1,656,411.13	
5. Work by Owner		$ -	
6. Movable Equipment Allowance (4% of const)		$ 1,519,643.24	
7. Special Equipment		$ -	
8. Other Allowances (specify)		$ -	
9. Land Purchase		$ -	
10. Percent for the Arts		$ -	
TOTAL PROJECT BUDGET ESTIMATE >>>>>>>>>>>>>		$ 48,106,206.32	plus land cost

Appendix D
UW – Whitewater
Fiber Optic
Study Assessment

DFD Project #14C1D
Whitewater, WI

March 31, 2014

UW Whitewater Fiber Optic Study Assessment

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    - Pre-design Report and Budgetary Assessment
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UW Whitewater Fiber Optic Study Assessment

Part I: Purpose of Study

The purpose of this study is to provide an assessment of the existing Optical Fiber Backbone cabling system and existing Signal Duct Bank System for the University of Wisconsin Whitewater Campus and develop a Pre-Design Report with Associated Budgetary Cost. This was accomplished using existing Optical Fiber and Signal Duct Bank site drawings from UW-System Nine Campus original backbone design (P#9006-55), UW-System Signal System Study (P#03H1K) and UW-Whitewater Wyman Mall Utility Upgrade - central campus signal duct bank and fiber backbone upgrade (P#06B2D). We were also contracted to perform a detailed physical site survey of all the Telecommunication Rooms for every building on campus and all the Manholes and Signal Duct Bank south of West Starin Road. It was determined by the DFD and Whitewater University that the manholes south of West Starin Road would have the most updates based on changes that were made in the last 9-10 years. The first part of the physical site survey included updating existing and new Manhole drawings, this included documentation of all existing cabling and signal duct bank sizing and fill capacities. The second part of the physical survey included providing Telecommunication Room narratives and schedules noting the type of optical fiber and the optical fiber strand counts per building. In addition to this information we also gathered other crucial information that can contribute to the health of the network systems on campus such as Telecommunication room size, room temperature, the amount of lighting in each room, number of racks, rack utilization, grounding, cable support mechanisms, copper backbone pairs, CATV cabling, riser conduit capacity, and station cabling. We also provided additional documentation for Fire Alarm Panel locations, Security Access Control Panel locations, and Building Automation (JCI/Metasys) Control Panels where they existed within the Telecommunication Rooms.

The Pre-design Report with the Associated Budgetary Implementation Cost has been provided as part of the study to replace the Optical Fiber Backbone System campus wide due to ongoing maintenance and capacity issues. The current cable plant is comprised of Multimode and Singlemode fiber that were manufactured approximately 20 years ago. The current Multimode fiber cabling was not designed to support the high bandwidth requirements of the campus network today. This report and the pricing provided includes the replacement of all Inter-building Optical Fiber Backbone with new Singlemode OS2 fiber, as well as, all Intra-building Optical Fiber Backbone with new Multimode 50 micron OM4 Laser Optimized fiber. The cost provided includes the removal of all dead, cut-off, and unused Copper, Optical Fiber, CATV and Campus Signal Cabling that can be removed in order to free up the necessary additional Signal Duct Bank capacity and Building Entrance Duct capacity required. The report also includes a number of add alternates that would provide additional redundant Signal Duct and Optical Fiber connectivity between the two campus network hubs at Goodhue Hall and McGraw Hall. The addition of these redundant Optical Fiber connections would help increase survivability to the campus network in the event the primary connection between the two campus hubs was severed.

Part II: Findings

The following areas identified can affect the campus network performance either directly or indirectly. These finding were based on the campus site survey that was performed over the spring and summer months of 2013 and are based on the overall campus assessment of the Telecommunication Rooms, Manholes, and Signal Duct. Refer to the individual building Telecommunication Room Narratives, Optical Fiber Schedules, Building Entrance Schedules and Manhole/Signal Duct documentation for specifics on each building, each Manhole or Signal Duct Bank pathway. The following codes and standards were used as reference for our review for this Optical Fiber Study:

- NFPA 70 2011 National Electrical Code
- IEEE/ANSI 142-1982 Recommended Practice for Grounding of Industrial and Commercial Power Systems
- ANSI/TIA 568C Commercial Building Telecommunications Cabling Standard
- ANSI/TIA 569B Commercial Building Standards for Telecommunications Pathways and Spaces
- ANSI/TIA 606A Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
- ANSI-J-STD 607A Commercial Building Grounding and Bonding Requirements for Telecommunications
- BICSI TDMM Telecommunications Distribution Methods Manual Latest Edition

Telecommunication Rooms

Telecommunication Rooms can also be referred to as Main Distribution Frames (MDF), Intermediate Distribution Frames (IDF), Main Equipment Rooms (MER), Telecommunication Room (TR), or Entrance Facilities (EF). For the most part the last buildings built or remodeled on campus, Hyland Hall, Laurentide Hall, and Starin Hall all appeared to have been developed based on the current standards for Telecommunication Rooms. There were only a few minor discrepancies noted that were documented on the Building Telecommunication Room Narratives for these facilities and they mainly addressed some additional labeling that can be accomplished in each for the data racks and the grounding. As you will see below, we have tried to list some of the conditions we encountered in quite a few of the older Building's Telecommunication Rooms across the remainder of the campus.

- Room Size and Layout
    - Telecommunication Rooms that are not sized properly to accommodate the communications infrastructure as the infrastructure grew have been noted in the Telecommunication Room Narratives. In a number of instances the cabling infrastructure and network equipment required have come to outgrow the room. In other cases, such as one particular Telecommunication Room in the Anderson Library for an example, the data rack has been installed in an old Custodial Room having a sink. Since floor space was limited a floor standing data rack has been modified so it could be mounted on the back of a door. The door the rack is mounted to is the door to the closet that the cable riser conduits are in. In order to

access the conduits you have to open the door and pull on the cabling that is installed to the data rack on the rear of the door. This telecommunication room should not have been constructed as such and will not allow adequate support of any future upgrade to the cable infrastructure for the floor it supports (See Pictures Below).

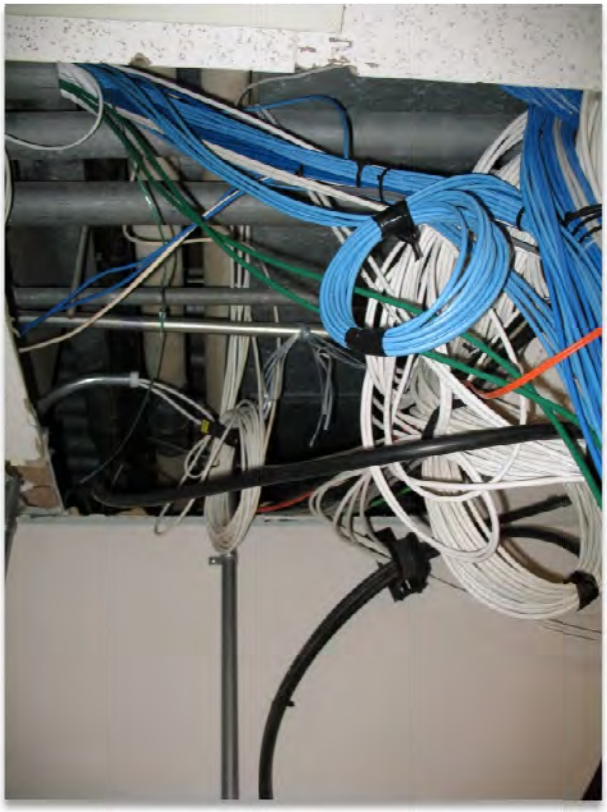
- Telecommunication Rooms should be dedicated rooms with proper cooling and lighting, similar to the rooms constructed for Hyland, Laurentide and Starin Halls (See Pictures Below of Hyland Hall 3rd Floor TR). This allows for better access control to the spaces and less chance that other mechanical or electrical systems installed within the rooms would have an adverse effect on the operation of the network. The following are standards based requirement for the development of a new Telecommunication Room:
    - The room should be no smaller than 8ft. x 10ft. if serving an area 5000sqft. or less.
    - Ceiling heights within the room should be no less than 8ft. AFF.
    - Doorways to the room should have full opening ability to 180° if permitted and be a minimum of 3ft. wide and 6.6ft. high.
    - Dust and static electricity should be avoided by installing tile vs. carpeting or, floor, walls and ceiling should be treated to minimize dust.

- Environmental control should be maintained 24 hours a day 365 days a year and maintain a positive pressure with a minim of one air change per hour. Temperature should be between 64°F to 75°F with the relative humidity in the range of 30% to 55%.
- Lighting should be coordinated with the equipment layout, especially overhead cable trays so fixtures are not obstructed. Light colored wall finishes can be used to enhance room lighting.

- Temperature

    - Most MDF, MER and EF rooms surveyed were sharing the same room with Electrical or Mechanical Equipment for the facility which generates a substantial heat load. Other rooms dedicated to just Telecommunications Equipment did not have proper cooling and a lack of air movement. Most rooms were found to have temperatures above the standards compliant 64-75°F temperature range and not conducive to the temperature controlled spaces that typical network equipment requires. This type of heat can shorten the life cycle of active network equipment.
- Lighting
    - Many rooms were found to have inadequate lighting that would make identification and termination of voice/data network cabling and equipment patching and cross connections difficult. Standards typically require 500 lux (50 foot-candles) measured at the point of cable termination. The equivalent would be a well-lit office space.
- Grounding
    - Most rooms had inadequate grounding or no grounding based on ANSI/TIA -607A standards. The following problems were found repeatedly:
        - Main Telecommunication Grounding Busbar (TMGB) or Telecommunications Grounding Busbar (TGB) sized improperly.
        - No non-conductive insulators present on busbar to isolate the installation of the busbar from the plywood wall field it is attached to.
        - Telecommunications Bonding Backbone (TBB) sized improperly. The TBB connects the main Telecommunication Ground in each Telecommunications Room to the same ground potential throughout the facility. This ground is typically installed from the main building ground to the MDF or Main Equipment Room Busbar and from this busbar it is extended to each of the busbar in all of the other IDF or Telecommunication Rooms within the building.
        - Ground wire within the room grounding the racks, lightning protection, equipment shields, cable shields, etc. sized improperly.
        - No ground labeling.
- Labeling
    - Labeling should be standardized between buildings and across the campus. The ANSI/TIA-606A standard should be used as a guide to develop proper campus wide labeling guidelines. The following labeling issues need to be resolved:
        - No data rack labeling.
        - Horizontal Voice/Data workstation labeling scheme inconsistent between buildings.
        - All cabling should be labeled at each end with wrap around computer generated labels. Labels should match faceplate and patch panel or wall field termination hardware labeling (110 or 66 Block labeling). Labeling was very inconsistent.

        - All termination hardware within the Telecommunications room should be labeled. This includes all patch panels, fiber termination shelves, 110 hardware, 66 blocks, CATV hardware, etc. Much of the labeling of these was poor or inconsistent.
        - Optical Fiber, Innerduct, Copper Backbone, CATV, Campus Signal Cabling was not labeled in the manholes or at the building entrances of all buildings surveyed.
        - Signal Ducts at the entrances to the buildings and within the manholes have not been labeled.
        - Telecommunications ground cable and busbar labeling in all buildings surveyed has not been done.
- Cable support
    - Cable support within many of the Telecommunication Spaces was inadequate or reaching beyond its capacity. In many rooms there were unmanaged slack coils of horizontal workstation, optical fiber and CATV cabling hanging directly above the data racks using tie wraps, D-rings, black electrical tape, or Velcro as a means of support. Cable tray or Ladder runway should be installed above the data racks to support cabling and provide slack management. These cable tray or ladder raceways should be sized based on current cabling capacity and future capacity needs. This becomes of the utmost importance as older category 5 and 5e cabling is replaced with higher performance category 6 cabling (See Pictures Below of TR 22 Center of the Arts).
    - In many cases vertical and horizontal cable management within the data racks was either not present or not being utilized. Patch cords dangling down in front of network equipment will block airflow to the equipment and can cause cooling issues even for equipment in well air conditioned Telecommunication Rooms.



- Firestopping & Firestop Labeling
    - Life safety drawings showing smoke and fire rated wall, or fire partitions for the buildings surveyed were not provided, however it has been noted in the building Telecommunication Room narratives where it appeared firestop was originally installed and at the time of the survey firestop was no longer present. It is our suggestion that the riser and horizontal penetrations within each of the buildings be reviewed and that proper UL Listed Firestop Assemblies with the proper labeling be installed were necessary to prevent the spread of fire and smoke in the event of fire. There are a significant amount of riser sleeves between floors that did not have firestop putty or pillows installed, and in most cases it has been our experience that the floors in most buildings carry a 2 to 4 hour fire rating.
- Abandoned Cabling
    - Many of the building surveyed have abandoned, cutoff, unused or outdated cabling that if left in place can increase fire loading unnecessarily or block air flow where installed in plenums. In some cases the abandoned cabling is filling up riser and horizontal conduits that could be used for the newer Optical Fiber or workstation Category 6 cabling as building communication infrastructures are updated. In most cases this removed copper cabling can be recycled. Based on current copper prices the return on the recycled copper cabling can be substantial.
    - Abandoned cabling per current code and standards shall be removed where accessible or identified for future use with a tag. The tag shall be of sufficient

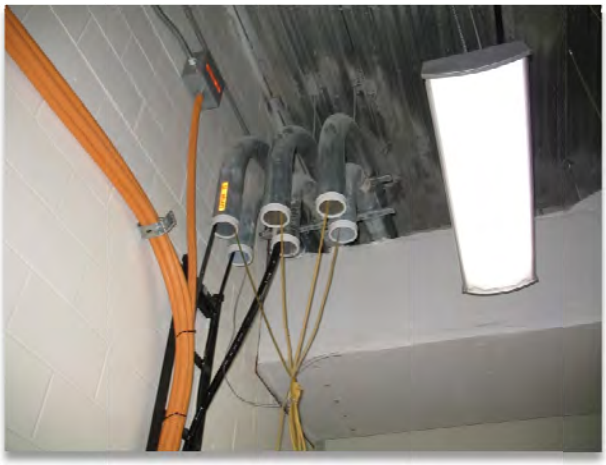
durability to withstand the environment the cable is installed in. (NEC 2011 Article 800.25 and 770.2)

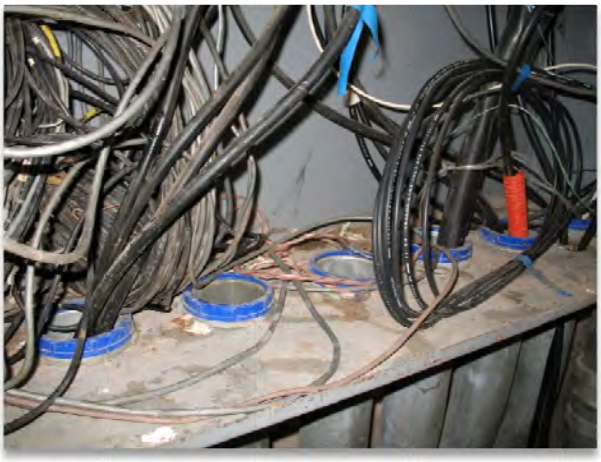
Manholes, Handholes and Signal Duct Bank

Manhole, Handholes and Signal Duct Bank – The campus site survey included all Communications Signal Duct Manholes and Signal Duct Bank south of West Starin Road. Additional Manholes and Signal Duct Bank north of West Starin Road were surveyed where it was thought that the existing Communications Signal Duct Bank may be troublesome or inadequate for the future needs of the Campus, these include: S6, S7, S8, S9, S10, SX46, SX16, SX17, SX18, S45, S3 and Athletic Field Hand-Hole.

- Manholes and Handholes
    - Most Signal Duct Manholes surveyed were adequately sized with the exception of SX7, SX8, SX17, SX18, and S3. These Manholes appear to be older, much smaller and have more abandoned cabling than many of the other holes. Manholes SX7 and SX8 East of Hyland Hall should be phased out of use or made larger since it is impossible to get into these holes without damaging potentially active optical fiber or signal cabling (See Pictures below of SX7 and SX8). It appears based on the new signal duct installed and surrounding Manholes that this has already been identified and these two holes will eventually be empty. SX17, SX18 and S3 located just outside Goodhue going north should be easier to work in once all old Multimode and the existing abandoned CATV and Campus Signal cabling is removed.
    - In most of the Manholes that where surveyed it was noted that an extreme amount of cable slack was coiled and left in each hole. This coiled cable slack in most cases was not secured to the wall of the hole; it was coiled around the inside of the hole or lying on the bottom of the hole. Most holes surveyed had metal strut built into the wall to support the installation of cable support hardware within the hole to facilitate an organized means to address cable slack and cable support thru the hole. This existing channel is underutilized.

- Signal Duct Bank
    - Most signal duct bank identified is adequate for the installation of the new Inter-building Singlemode Optical Fiber installation as detailed in the Pre-Design Report provided, however cable removal must be accomplished during the installation process to free up Signal Duct as the installation progresses. The removal of the old Multimode and in some cases, the Singlemode optical fiber and any abandoned cable must take place during the installation of the new Singlemode Optical Fiber in order for the existing Signal Duct Bank to accommodate all the new Singlemode Optical Fiber cabling. This new fiber installation and old cable removal has to be accomplished in a rather strategically planned fashion.
    - As a minimum all Signal Duct Bank conduits should be plugged with Duct Seal designed for that purpose to allow easy reentry in the future at the entrance to each of the buildings to prevent gases, rodents, insects and/or water from entering the building. Not a single Signal Duct Bank conduit was plugged at the entrance facility in the buildings surveyed. Most of the Signal Duct Bank that was examined was installed to a junction box mounted at the entrance inside the facility but not one of these junction boxes had a gasket on its cover or duct seal installed to the conduits within preventing potentially toxic gases, rodents, insects and/or water from entering the building. In 25% of the cases the junction box covers were not installed or missing (See Photos below from Hyland Hall, Anderson Library, Hyer Hall, Food Service Area In Perkins Stadium).





Part III: Future Considerations

Optical Fiber

The optical fiber solution provided for the Pre-design Report and Associated Budgetary Cost is a conventional Inter-Building Singlemode and Intra-building Multimode an Singlemode optical fiber cabling solution, meaning Singlemode between the buildings and Multimode and Singlemode optical fiber in the riser within each building connecting all the telecommunication rooms. This solution was proposed in order to clearly identify and capture all of the potential cost associated with the new fiber installation, removal of old abandoned cabling and to address the signal duct bank capacity in a worst case scenario. There are other optical fiber solutions available. The optical fiber itself, Singlemode & Multimode is the same, same connectors, same optical fiber shelves, but the installation technique is different. Below we have list two such solutions in order to better educate you on what is available.

The following two Optical Fiber solutions work well for a campus environment. Sumitomo FutureFLEX Airblown optical fiber or AFL/Duraline's FuturePath jetted optical fiber solution. Under these two solutions a Tube/Microduct system is installed between all the buildings. The Tube/Microduct quantities are based on the current optical fiber and potential future optical fiber needs within each of the facilities. Once the Tube/Microduct system is in place Multimode and Singlemode optical fiber cables bundled in 6, 12, 18, 24, and 48 strands can be blown or jetted in from building to building eliminating the need to re-enter the manhole system to install individual optical fiber cables. These two systems also maximize the Single Duct Bank usage because multiple 19-24 Tube/Microduct cables can be installed in a single 4"duct. This allows the potential to install 19-24 or more 48-strand optical fiber cables in a single 4" signal duct. This would be impossible using a conventional fiber installation without performing splices in the manhole system and breaking down large strand count optical fiber cables so smaller strand count cables can then be spliced to the larger cables and installed to each of the buildings on campus. This many splices within a manhole and signal duct system lend itself to future problems if the splices have to be re-entered at a later date for any reason. Under the Airblown/jetted optical fiber solutions individual Tube/Microducts can be coupled within the manholes

and the appropriate smaller amount of Tube/Microduct cables can be installed to each building. This allows a 48-strand or less optical fiber cable to be installed building to building without the need for splicing. There are both advantages and disadvantages to these solutions we will discuss (Also see Appendix B for Data Sheets on each solution).

- Advantages
  - A larger amount of optical fiber cables and strand counts can be installed using a smaller amount of duct space.
  - Optical fiber cables can be installed at any time, during any season that additional fiber is required. It is not necessary to physically run cabling through the manhole and signal duct system. Optical fiber can now be blown or jetted from building to building in another tube/Microduct when needed up to 5000ft. or more.
  - Optical Fiber can be installed with less manpower at speeds of up to 150 feet per minute.
  - Return on Investment on the initial Tube/Microduct system installation is short as additional fiber is installed or additional buildings are added to the system.
  - As new optical fiber solutions evolve the same Tube/Microduct system can be used. Older fiber can be blown/jetted out and new fiber can be blown/jetted in.
  - Installation of the Tube/Microduct system will take less labor if planned correctly than individual installation of 48-Strand optical fiber cables to each facility and additional fiber can be installed in a day's time afterward if required.
  - When optical fiber is added there will be little to no disruption to campus operations required. The fiber can be installed from Telecommunications Room to Room without the need to open ceiling within buildings and manholes between buildings.
  - Optical fiber and Tube/Microduct cable can be re-used as the campus changes, it is unnecessary to abandon optical fiber or Tube/Microduct cable if building are remodeled or replaced.
  - Tube/Microduct cables can be direct buried or installed in signal duct or conduit systems. When installed in signal duct or conduit systems, less ducts or conduits are required.
- Disadvantages
  - There are a limited amount of companies certified to perform the installation, but the list is growing as the solution becomes more wide spread. There are currently as many as 6 or more companies in Southeastern Wisconsin that can install one of the two solutions.
  - The initial Tube/Microduct cable system installation is more than it would cost to install conventional innerducts that could only be used once between all the buildings.
  - This solution is less cost effective for optical fiber riser cabling within a facility unless the facility has a large communications infrastructure with large grown potential such as a facility that may house a data center.
  - The system is only as good as the Tube/Microduct system initially installed. If spare Tube/Microduct cables are not provided to each building, or installed incorrectly the system will be limited in its gains and benefits. The initial Tube/Microduct system cable installation planning is of the utmost importance.
  - Once a solution is chosen either Sumitomo FutureFLEX or AFL/Duraline FuturePath the course needs to stay true to one solution or the other. The two solutions are not easily combined.

AFL/Duraline claims there fiber cable solution can be installed in Sumitomo's Tube cable system; however it would be difficult to warranty the combined solutions.

Manhole & Signal Duct Bank

The following are some Manhole and Signal Duct Bank considerations going forward. These are based on the ANSI and BICSI Standards.

- When having a contractor install cabling within the campus Signal Duct and Manholes always have them install from the bottom up when addressing which Signal Duct to use. This will ease subsequent cable placement.
- At a minimum all underground ducts entering buildings need to be plugged to prevent gas, rodents, insects and/or water from enter the building via the Signal Duct Bank.
- Have each cable labeled in the manhole, handhole and each building entrance with the same identifier label or tag.
- Be sure the contractor provides pull strings or ropes for all conduits, preferably with footage markers on it.
- Have a divider installed in each of the ducts such as a MaxCell cable sleeve or 1" innerducts. Innerducts however can also limit the amount that can be installed in a duct. If there are plenty of ducts in the series of manholes needed this may not be an issue (See Pictures Below).

- Be sure the contractor is utilizing a pulling shoe in each conduit duct prior to installing the cable to prevent damage to the cable from the rough edges of the duct. This can scrape off important cable information from the cable jacket for future identification.
- Be sure the contractor is using the cable management features of the manhole or handhole for managing cable slack. Slack left in the manhole or handhole should be a reasonable length from 20-40ft., not in the hundreds of feet. Longer cable runs do not require slack coiled in every manhole or handhole. All slack coils should be managed separately instead of coiled with other cables in case the slack is ever needed. It will prevent the chance of a knot or unmanageable loop from forming.
- Have the contractor take pictures of all manholes and handholes or have them inspected by IT or Facilities personnel, or the owners engineer upon completion of an installation to assure proper cable pulling, management, and administration standards are being implemented by the contractor.

University of Wisconsin - Whitewater

Fiber Optic Replacement Study

Outside Plant Fiber Plan

Outside Plant Fiber Plan - 48s SM cabling to all buildings (except for Hyland, Starin, and University Center)	$	2,115,000.00		
Johnson Controls System Budget Estimate	$	764,000.00		
Simplex System Budget Estimate	$	792,000.00		
Inside Plant Fiber Plan - 24s SM & 24s MM MER to each TR	$	997,000.00		
TOTAL CONSTRUCTION COST			$	4,668,000.00
Project Contingency		10%	$	466,000.00
A/E Fee		8%	$	373,500.00
DFD Management Fee		4%	$	205,400.00
Total Fees			$	1,044,900.00
TOTAL BASE PROJECT BUDGET (excluding any alternates)			$	5,712,900.00

University of Wisconsin - Whitewater

Fiber Optic Replacement Study

ALTERNATE #1 - MALL CORRIDOR REDUNDANT FIBER ROUTE

ALTERNATE #1 - Redundant 144 strand TIE cabling between McGraw & Goodhue (Mall Corridor)	$	87,000.00		
Duct Package		N/A		
TOTAL CONSTRUCTION COST			$	87,000.00
Project Contingency		10%	$	8,700.00
A/E Fee		8%	$	7,000.00
DFD Management Fee		4%	$	3,900.00
Total Fees			$	19,600.00
TOTAL ALTERNATE #1 BUDGET			$	106,600.00

University of Wisconsin - Whitewater

Fiber Optic Replacement Study

ALTERNATE #2 - WEST CORRIDOR REDUNDANT FIBER ROUTE

PREFERRED ALTERNATE FOR REDUNDANT FIBER ROUTE

ALTERNATE #2 - Redundant 144 strand TIE cabling between McGraw & Goodhue (West Corridor)		$	138,000.00	
Duct Package		$	1,040,000.00	
TOTAL CONSTRUCTION COST				$ 1,178,000.00
Project Contingency	10%	$	117,800.00	
A/E Fee	8%	$	94,300.00	
DFD Management Fee	4%	$	51,900.00	
Total Fees				$ 264,000.00
TOTAL ALTERNATE #2 BUDGET				$ 1,442,000.00

University of Wisconsin - Whitewater

Fiber Optic Replacement Study

ALTERNATE #3 - EAST CORRIDOR REDUNDANT FIBER ROUTE

ALTERNATE #3 - Redundant 144 strand TIE cabling between McGraw & Goodhue (East Corridor)		$ 103,000.00		
Duct Package		$ 1,920,000.00		
TOTAL CONSTRUCTION COST			$	2,023,000.00
Project Contingency	10%		$	202,300.00
A/E Fee	8%		$	161,900.00
DFD Management Fee	4%		$	89,100.00
Other Fees	2%		$	40,500.00
Total Fees			$	493,800.00
TOTAL ALTERNATE #3 BUDGET			$	2,516,800.00

University of Wisconsin - Whitewater

Fiber Optic Replacement Study

ALTERNATE #4 - FIBER EXPANSION TO REMAINING BUILDINGS

ALTERNATE #4 - 48 strand singlemode fiber to Hyland and University Center	$ 37,000.00			
TOTAL CONSTRUCTION COST			$	37,000.00
Project Contingency		10%	$	3,700.00
A/E Fee		8%	$	3,000.00
DFD Management Fee		4%	$	1,500.00
Total Fees			$	8,200.00
TOTAL ALTERNATE #4 BUDGET			$	45,200.00

PROJECT PLAN

Building Name	OSP Fiber	Simplex Est.	Johnson Controls Est.	ISP Fiber	PREFERRED Alt#2 - 144s West Corridor Route	Associated Fees	TOTAL PROJECT BUDGET
POP (NW by ballfields)	$65,000	$18,000	$16,000				
Stadium Pressbox (Stad.Ath.Svs.)	$16,000	$18,000	$16,000				
Stadium Athletic Service Bldg (Goodhue)	$53,000	$18,000	$16,000	$26,000			
Student Athletic (Stad.Ath.Svs)	$20,000	$18,000	$16,000				
Williams Center (Goodhue)	$44,000	$18,000	$16,000	$47,000			
Bigelow (Goodhue)	$52,000	$18,000	$18,000				
Clem (Goodhue)	$51,000	$18,000	$18,000				
Lee (Goodhue)	$52,000	$18,000	$18,000				
Drumlin (Goodhue)	$50,000	$18,000	$18,000	$17,000			
Fricker (Goodhue)	$54,000	$18,000	$18,000				
Benson (Goodhue)	$50,000	$18,000	$18,000				
Arey (Goodhue)	$50,000	$18,000	$18,000				
General Svs. (Goodhue)	$62,000	$18,000	$16,000	$17,000			
Residence Life Storage Building (Gen.Svs.)	$13,000	$18,000	$16,000				
Hazardous Material Storage Building (Gen.Svs.)	$13,000	$18,000	$16,000				
Wellers (Goodhue)	$52,000	$18,000	$18,000				
Tutt (Goodhue)	$51,000	$18,000	$18,000				
Knilans (Goodhue)	$55,000	$18,000	$18,000				
Wells East (Goodhue)	$60,000	$18,000	$18,000	$70,000			
Wells West (Goodhue)	$55,000	$18,000	$18,000	$104,000			
Esker (Goodhue)	$46,000	$18,000	$16,000	$17,000			
Central Heating Plant (Goodhue)	$36,000	$18,000	$16,000				
Fischer (Goodhue)	$29,000	$18,000	$16,000				
Moraine Book Store (Goodhue)	$25,000	$18,000	$16,000				
Ambrose Health Center (Goodhue)	$34,000	$18,000	$16,000				
Visitor Center (Goodhue)	$31,000	$18,000	$16,000				
Laurentide (McGraw)	$56,000	$18,000	$18,000	$65,000			
Starin (McGraw)	$4,000	$18,000	$18,000	$173,000			
Hyland (McGraw)	$4,000	$18,000	$18,000	$111,000			
White (McGraw)	$50,000	$18,000	$18,000				
McCutchin (McGraw)	$55,000	$18,000	$18,000				
University Center (original) (McGraw)	$30,000	$18,000	$18,000	$48,000			
Observatory (McGraw)	$32,000	$18,000	$18,000				
Center of the Arts (McGraw)	$71,000	$18,000	$18,000	$47,000			
Hyer (McGraw)	$26,000	$18,000	$18,000	$32,000			
Alumni Center (McGraw)	$32,000	$18,000	$18,000				
Upham (McGraw)	$39,000	$18,000	$18,000	$63,000			
Roseman (McGraw)	$35,000	$18,000	$18,000	$17,000			
Winther (McGraw)	$44,000	$18,000	$18,000	$63,000			
Heide (McGraw)	$44,000	$18,000	$18,000	$17,000			
Library (McGraw)	$25,000	$18,000	$18,000	$63,000			
Library Add. (McGraw)	$30,000	$18,000	$18,000				
Mcgraw	$232,000	$18,000	$18,000				
Goodhue	$187,000	$18,000	$18,000		$138,000		
Duct Bank					$1,040,000		
	$2,115,000	$792,000	$764,000	$997,000	$1,178,000	$ 1,308,900 =	**$7,154,900**

Master Plan Consultant Team:

Ayers Saint Gross
Eppstein Uhen Architects
Ring and DuChateau Engineers
Strand Associates, Engineers
Middleton Construction Consulting
Ken Saiki Design