

## B. COMMON ELEMENTS

This section provides an overview of common themes and elements of the Facilities Master Plan that are common to the three campuses of the University at Buffalo. A central motto of the UB 2020 vision has been “Three Campuses – One University” and it is important that although there is a distinct purpose for each of the campuses, there should be consistency in approach and quality with regard to the initiatives of the Facilities Master Plan.

## CAMPUS PLANNING, CRITICAL MAINTENANCE AND CAPITAL IMPROVEMENTS

The University's objectives for its capital plan are to protect, maintain, preserve and modify its physical plant to comply with health and safety codes and environmental and energy conservation measures. It also aims to keep pace with changes in telecommunications, information, and educational technologies and emerging research requirements, as well as to adapt to ongoing changes in academic programs affected by evolving educational and emerging marketplace demands. Given these objectives, and the complexity of tasks that they demand, multi-year planning and financing are crucial to the University's ability to effectively schedule and implement ongoing capital program investments in its facilities.

## RECENT CAPITAL PROJECTS AT UB 2004 TO PRESENT

Recent capital projects at UB are bringing the physical plan to life. Projects consisting of newly constructed buildings, renovated buildings, and restored landscapes are all taking steps to achieving the goals defined in UB2020. Across the three campuses a total of 776,500 GSF have been newly constructed at a cost of \$335.6 million dollars and a total of 483,000 GSF of space has been renovated at a cost of \$107.1 million dollars. The following are brief descriptions of capital improvement projects that are moving forward in the years preceding 2013.

## UB CAPITAL PROJECTS: 2004 - PRESENT

<b>NORTH CAMPUS</b>		<b>SOUTH CAMPUS</b>		<b>DOWNTOWN CAMPUS</b>	
<b>Davis Hall (c)</b>	\$53.7 M	<b>Kapoor Hall (c)</b>	\$61.1 M	<b>CTRC (c)</b>	\$118 M
130,000 GSF		147,000 GSF		204,000 GSF	
<b>Greiner Hall (c)</b>	\$52.5 M	* <b>Hayes/Crosby (d)</b>	\$51 M	<b>EOC (c)</b>	\$26 M
198,500 GSF		158,000 GSF		64,000 GSF	
(Lee Rd. Ext/Roundabout)		* <b>Farber Renovations (c)</b>	\$10.2 M	* <b>UB Gateway Buildout (c)</b>	\$6.9 M
<b>Ellicott Dining (p/d)</b>	\$9 M	30,000 GSF		83,000 GSF	
33,000 GSF		* <b>Kimball Renovations (c)</b>	\$11.7 M	<b>BNMC Pk. Structure (c)</b>	\$6 M (UB)
<b>Solar Array (c)</b>	\$7.5 M	136,000 GSF		450 UB Spaces	
<b>361,500 GSF</b>	<b>\$122.7 M</b>	<b>Site Utility Project (c)</b>	<b>\$19.8 M</b>	<b>351,000 GSF</b>	<b>\$156.9 M</b>
		<b>Harriman Quad (com)</b>	<b>\$1.8 M</b>		
		* <b>Wende Hall (com)</b>	<b>\$7.5 M</b>		
		76,000 GSF			
		<b>547,000 GSF</b>	<b>\$ 163 M</b>		

New Construction:

776,500 GSF

\$335.6M

\* Renovations:

483,000 GSF

\$107.1M

**GRAND TOTAL:**
**1,259,500 GSF**
**\$442.6 M**

(c) complete    (d) design    (p) planning    (com) complete

Figure B-39: UB Capital Projects: 2004-Present (UB Capital Plan Agenda May 19, 2011 p. 8).

The illustrated “UB Capital Projects 2004 – Present” table was provided by UB and highlights the recent initiatives that have either been completed or are nearing completion. These are further described below.

## DOWNTOWN CAMPUS

## Clinical and Translational Research Center

The building will house research and development facilities, including UB's \$118 million Clinical and Translational Research Center (CTRC) and a UB Biosciences Incubator. It also will house Kaleida Health's \$173 million merger of its cardiac, stroke and vascular operations, plus a new and expanded emergency department. The project represents a ground-breaking collaboration between UB, Kaleida, and the Erie County Medical Center Corporation which is a major step in implementing the recommendations of a state commission on reform

of health care delivery in the region. The Department of Health (DOH) has set forth recommendations to Erie County Medical Center and /Kaleida Health for providing more consolidated services. One of the six recommendations set forth by DOH proposed Kalieda Health and the Eric County Medical Center develop new infrastructure in which to locate comprehensive heart and vascular services. In creating the CTSC these originations have successfully fulfilled one of the requirements the state has established for the health care providers.

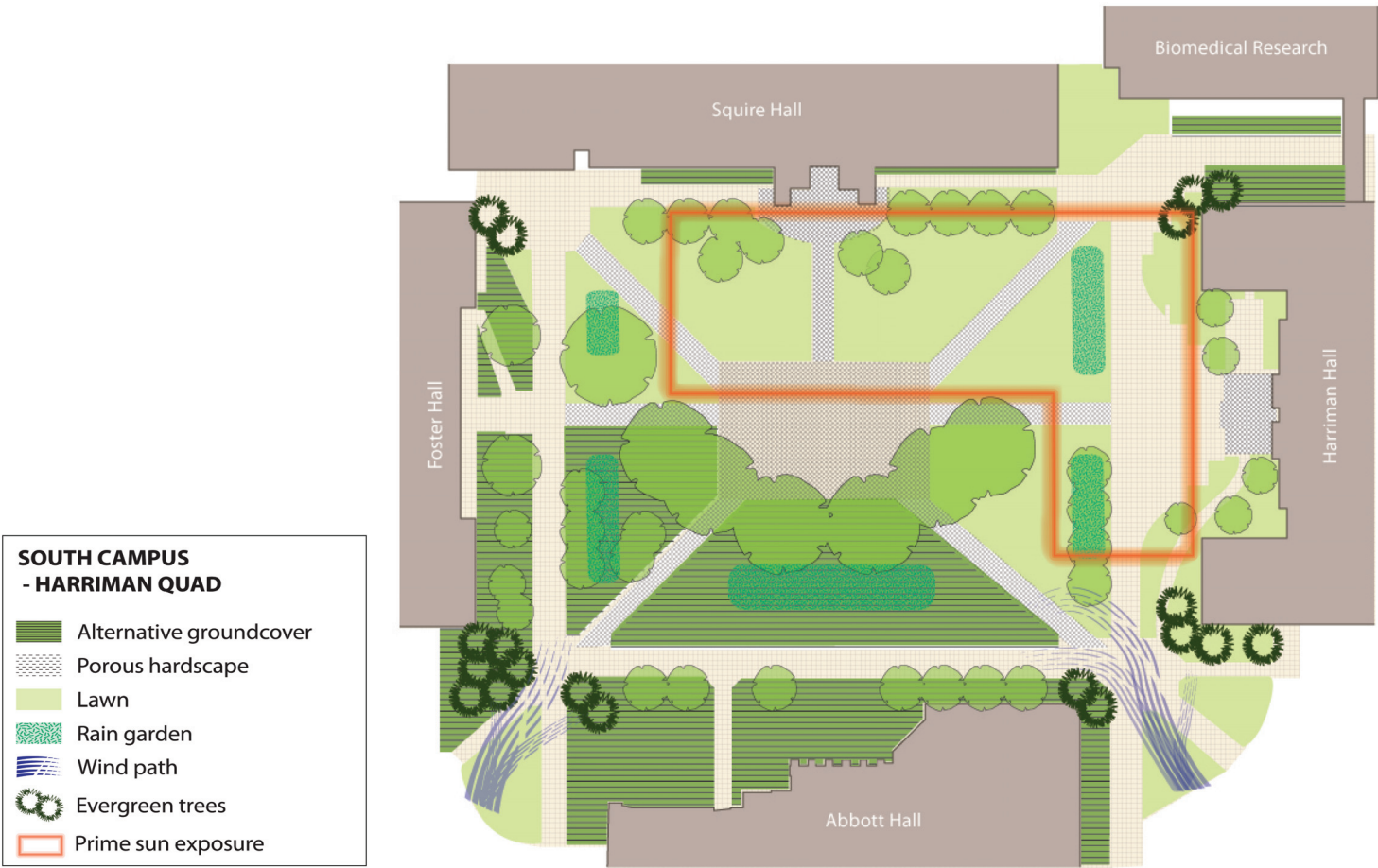


Figure B-40: Harriman Quad Restoration Diagram (Building UB, 186).

Education Opportunity Center

A new \$26 million dollar Leadership in Energy and Environmental Design (LEED) Gold building will house the new UB Educational Opportunity Center (EOC) and will become the second element in UB’s Downtown Gateway Complex. Physically connected to the former M. Wile building, the two buildings will establish the Gateway to University at Buffalo Downtown’s campus as well as the larger BNMC. Furthermore, the project will allow the Education Opportunity Center (EOC) to move out of antiquated quarters at 465 Washington St. and expand delivery of its job-training and college-preparatory programs. The EOC will include a conference center, Bethel Head Start programs, classrooms, offices, a computer lab, library, “information commons,” and student / faculty lounges.

UB Gateway

The UB Downtown Gateway bldg, not to be confused with the larger complex of the same name, provides space for community outreach and service/research programs serving the public. UB’s Regional Institute, a policy “think tank,” was the first program to take up residence in the former M. Wile & Co. building at 77 Goodell St. UBMD, the physician practice plan of the School of Medicine and Bio-medical Sciences will be the next occupant, along with UB’s Office of Economic Engagement.

BNMC Parking Structure

Located on the Buffalo Niagara Medical Campus, and built in collaboration, the newly built parking facility provides additional parking spaces to UB’s urban campus. Roughly one quarter, 450 spaces, belong to UB faculty and staff.

SOUTH CAMPUS

Kapoor Hall

Kapoor Hall, designed specifically for the needs and anticipated growth of UB Pharmacy, is an example of sustainable architecture due to its reuse and renovation of an existing South Campus building, the former Acheson Hall, which has been unoccupied since 1994. The 147,000-square-foot structure is targeting silver certification from Leadership in Energy and Environmental Design (LEED).

Hayes Hall and Crosby Hall

Comprehensive renovations of Hayes Hall and Crosby Halls will enable the iconic buildings on the South Campus to be better equipped and more efficiently serve current demands of the School of Architecture and Planning. Hayes Hall and Crosby Hall are two of the most historic and iconic buildings at UB. These projects will preserve the historic exteriors of the buildings while creating academic spaces befitting a 21st century school of architecture and planning. The two projects will renew both infrastructure and interior spaces. Hayes Hall is one of UB’s most identifiable buildings and a landmark on Main Street in Buffalo. It has been the home of the School of Architecture and Planning since 1975. It houses administrative and faculty offices, classrooms, research centers, the Architecture and Planning Library, a visual resources center, digital laboratories and exhibition galleries. Crosby Hall, completed in 1931, accommodates studio spaces, critique rooms, a digital workshop and lecture hall.

Farber Renovations

Renovations to Farber Hall will provide new research space for the School of Medicine and Biomedical Sciences and others. The project will establish an interdisciplinary simulation laboratory, debriefing rooms on the third floor, and research laboratories on the fourth floor. Work includes new heating, cooling, plumbing, electrical and communications infrastructure, as well as interior architecture and finishes.



Kimball Renovations

This project includes restoration of the building exterior, new fire alarms, asbestos abatement, new sewer infrastructure to eliminate basement flooding, a new roof and air conditioning. Other recent projects have provided new office space, classrooms and “learning landscape” features.

Site Utility Projects

Site utility projects on the South campus will enable utilities to be replaced, retrofitted, and repaired.

Harriman Quad

The restoration of Harriman Quad on the South Campus features a series of five rain gardens with porous asphalt pavements that will keep rain water out of storm-sewers and reduce the need for salting campus walkways. The project also included the replacement of damaged locust trees and pest-prone ash trees with more than a hundred new canopy and flowering trees. The new quad reinforces the historic plan for the campus with a contemporary design.

Wende Hall

The renovation of historic Wende Hall has transformed it into a user-friendly, energy-efficient, and dynamic setting for 21st century nursing education. The facility includes state-of-the-art classrooms, instructional laboratories and research space, along with a new elevator, and air conditioning and heating systems. The teaching spaces in the building include a center for nursing research, three specialized laboratories, faculty offices, and student and employee lounges.

NORTH CAMPUS

Davis Hall

This new engineering facility on the North Campus located just north of Bonner Hall, Davis Hall will serve as the engineering school’s front door to a quad-like campus setting for UB Engineering. Davis Hall will be home to department and centers previously scattered among several UB buildings, including computer science and engineering; electrical engineering; the Center of Excellence in Document Analysis and

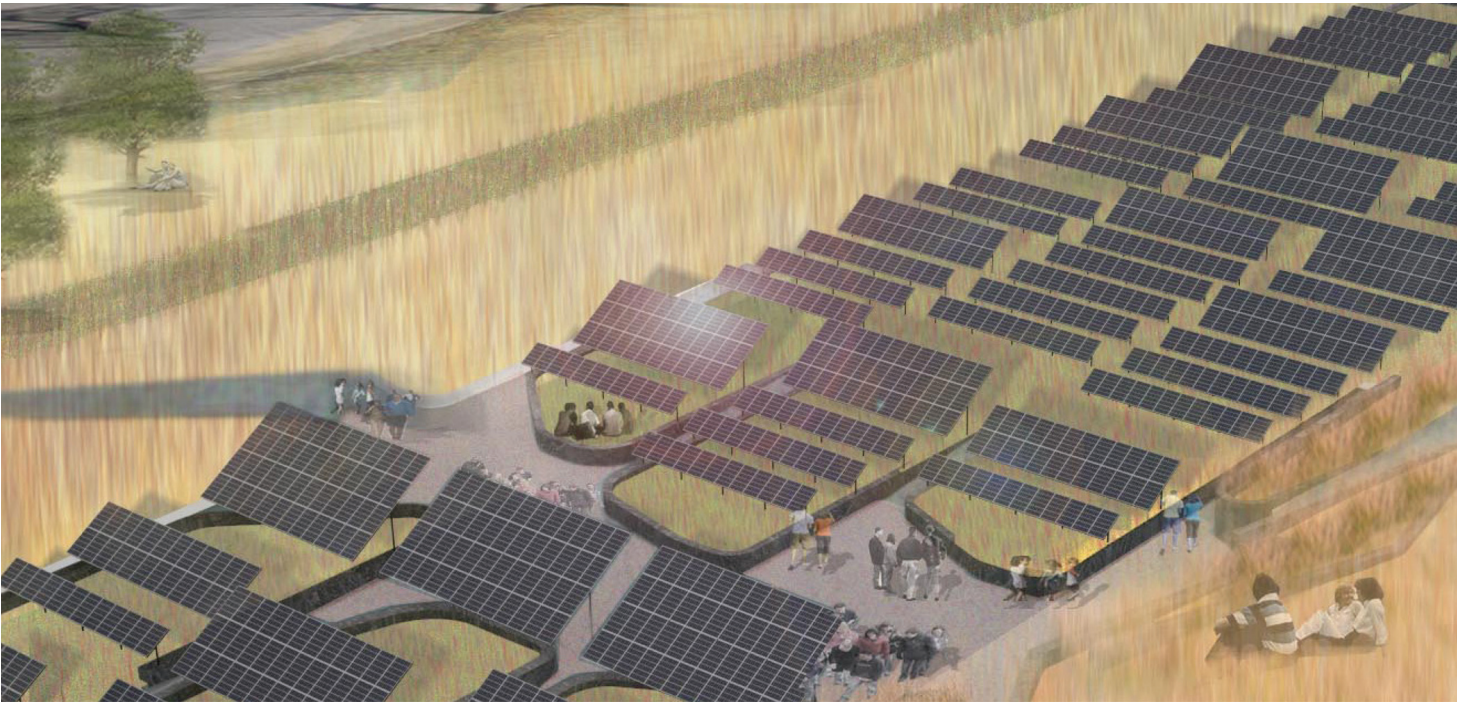


Figure B-41: Solar Array designed by Walter Hood.

Recognition (CEDAR); and the Center for Unified Biometrics and Sensors (CUBS).

Greiner Hall

The 600 bed, 198,500-GSF William R. Greiner Residence Hall, formerly known as the South Ellicott Suites, will enhance student learning by blending residential, academic and recreational areas. This sophomore residence hall is intended to be a model for future campus housing and will contribute to making the North Campus more dynamic, lively, and attractive. Its design incorporates environmentally friendly features that will help it qualify it for Leadership in Energy and Environmental Design gold certification.

Ellicott Dining

33,000 GSF of renovated dining within the Ellicott Complex.

Solar Array

UB’s solar installation of 5,000 photovoltaic (PV) panels will generate solar energy for 735 student apartments at UB, reducing the University’s carbon emissions by more than 500 metric tons per year. This project is not only an energy-producing facility but also a significant land art installation that will complement the Buffalo Niagara region’s already significant reputation as a destination for world-class art and architecture.





Figure B-42: Biomedical Reasearchers (<http://ubphoto.smugmug.com/>).

KEY INITIATIVES FOR 2013-2023

Key initiatives that the University desires to accomplish as part of the Comprehensive Physical Plan 2013 - 2023 include the following:

- Medical School moves from South Campus to Downtown.
- Cary/Farber/Sherman complex on the South Campus is demolished.
- The Triads and temporary annex structures on the South Campus are demolished.
- Health Science schools remain on South Campus.
- Some professional education will move to South Campus.
- Realignment, backfill and renovation on North Campus for College of Arts and sciences (CAS) and School of Engineering and Applied Sciences (SEAS).
- Creation of a “Heart of the Campus” on North and South Campuses.
- Improvement of Student Life and Amenities.



Figure B-43: Cary/ Farber/ Sherman Hall (<https://www.buffalo.edu>).

MEDICAL SCHOOL MIGRATION

UB has the clear goal of establishing its School of Medicine and Biological Sciences at the Downtown Campus within the 2011-2023 planning period. The new School of Medicine will be constructed in two phases: Basic Sciences / Medical Education / Research will be built first, followed by Clinical Research and Vivarium facilities. Future moves, beyond the 2023 timeframe, will include the allied schools of Nursing, Public Health and Dentistry.

SOUTH CAMPUS DEMOLITIONS  
Cary/Farber/Sherman Demolition

The demolition of the C-F-S Complex will have a significant impact on the look and feel of the South Campus and will enable the sequencing of several road improvement and site restoration projects, including the completion of the Loop Road. Prior to this significant demolition project, there are relocations other than those of the SMBS moves to the Downtown Campus. The Center for Dental Studies (CDS) and Public Health units would need to be moved prior to demo of Cary/Farber /Sherman and the College of Arts and Sciences (CAS) would want to be ahead of the curve in regard to planning and programming. CDS needs and considerations include both academic (currently in C-F-S complex) and clinical (currently in BEB).

Demolition of Annexes and Triad

The demolition of the several annexes and the Triad buildings will pave the way for extensive road and landscape improvement, allowing the campus loop road to be completed and will allow for the restoration of the lawns and quadrangle originally envisaged in the E.B. Green master plan.

HEALTH SCIENCES REPOSITIONED

As the School of Public Health and Health Professions, School of Dentistry, and Pharmacy will not move to their final destination Downtown within the 2013 – 2023 timeframe, it is necessary for renovation work to take place in the Biomedical Research Building, the Biomedical Education Building and Kimball Hall.

PROFESSIONAL EDUCATION CONSOLIDATION

In order to facilitate the move of the Schools of Social Work and the School of Education to South Campus, the Plan includes repurposing of Parker and Townsend Halls. The construction of a new model shop for the school of Architecture will link Hayes and Crosby Halls and allow the demolition of the wings behind the historic portion of Parker Hall. The Professional Education Center (PEC) is planned to be constructed as a priority, early in the 2013-18 planning period. This will also have the added benefit of having additional classroom and lecture space available on the South Campus when the Cary Farber Sherman complex is demolished.

NORTH CAMPUS - REALIGNMENT, BACKFILL AND RENOVATION

College of Arts and Sciences

The completion of the move of the School of Pharmacy and Pharmaceutical Sciences to the South Campus in the summer of 2012 will vacate approximately 87,000 NSF in the Cooke- Hochstetter complex on the North Campus. With a significant portion of the building vacant, a phased rehabilitation of the entire building will be possible.





Figure B-44: Davis Engineering Building on North Campus (<http://ubphoto.smugmug.com/>).

### School of Engineering and Applied Sciences

The move of the Departments of Electrical Engineering (EE) and Computer Science and Engineering (CSE) into the new Davis Engineering Building in Fall of 2011 will leave approximately 48,000 NSF vacant within various buildings on North Campus, the majority of the space found in Bell and Bonner Halls. A programming and space utilization exercise is underway by UB regarding possible backfill options. Furnas Hall is also recommended for building wide renovation for SEAS.

### HEART OF THE CAMPUS

The “Heart of the Campus” or HOTC, is a key concept from the UB2020 Comprehensive Plan and includes cross-service delivery, and one-stop-shopping of student services such as Admissions, Financial Aid, Health Care, Parking, Alumni, etc. with library/student services in the remainder of open space. The “HOTC” is an inter-departmental University-wide initiative to build community and a sense of place at the center of North and South and Downtown campuses.

### STUDENT LIFE AND AMENITIES

Initiatives are planned to improve on-campus recreational amenities for students, faculty, and staff. These include a Recreation & Wellness Center and University Club on the North Campus, a new Tennis Center closer to the Stadium and the renovation of Clark Hall on the South Campus, plus renovations to improve lawns for intramural activities.



Figure B-45: Rendered view of winter activity and recreation on Lake LaSalle (Building UB, 71).

### IMPLEMENTATION OF INITIATIVES

Refer to Chapter F Implementation for proposed schedule of initiatives and their planned implementation in the 2013 – 2018 or 2018 – 2023 timeframes.

The detailed list of projects proposed for the 2013-2023 planning period is extensive and is included in the Appendix.

### CRITICAL MAINTENANCE FUNDING

In addition to the proposed list of capital projects identified for the planning period 2013-2023, Critical Maintenance will be needed to bring UB facilities and infrastructure up to a state of good repair. These include interior building renovations, repair of masonry building exteriors, replacement of windows and roofs, mechanical systems replacement and upgrades, replacement of campus utility infrastructure such as electrical power, chilled water, steam, and site walk, plaza and roadway reconstruction. The University will determine the appropriate priority and funding strategies for these future projects.

### STUDENT SUPPORT AND STUDENT LIFE

The Facilities Master Plan recognizes that improving student amenities and enhancing student life are key elements of a balanced approach over the next ten year planning period.

Universities across the country are realizing the importance of student life in enhancing the overall campus quality of life, and are providing their students with state-of-the-art facilities. Student life activities conducted in residence halls, dining facilities, recreation centers, wellness centers, student unions, parking, and service centers play a major role in determining a college or university’s market position for recruitment and retention of students, faculty, and staff. These factors encourage casual and informal interaction between students, faculty, and staff; reinforce the sense of campus community; and help to strengthen the bond students feel for their alma mater.

Changes in the campus environment and populations have had a significant impact on the availability of adequate student service facilities (e.g., housing, union, health, parking and recreation) at the University at Buffalo. Space in general is at a premium, and the way in which it is being used is a major issue. Recent initiatives have sought to address a number of campus life projects (e.g., apartment style housing, improved food services, enhanced student activities

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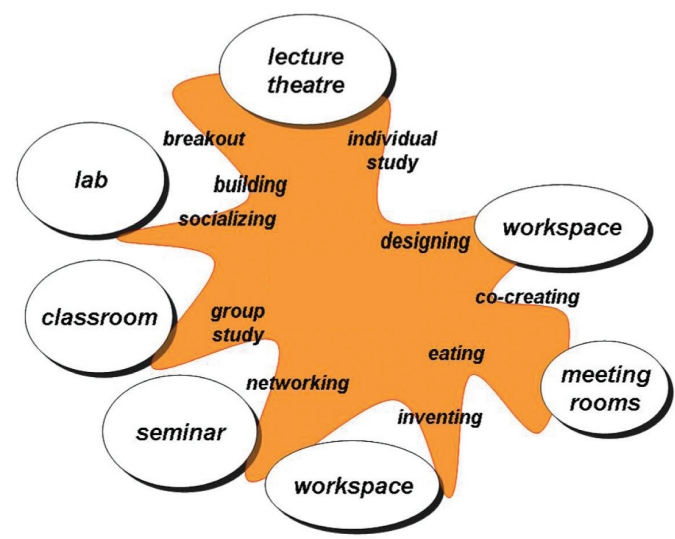


Figure B-46: The Learning Landscape - A continuous, immersive environment for discovery. A Learning Landscape takes advantage of the space between formal instructional spaces. (Building UB, 46).



Figure B-47: Learning Landscape (Building UB, 159).

facilities, Americans with Disabilities Act compliance). Limited campus facilities and a split/divided campus configuration (i.e., North and South Campus) have also contributed to challenges in service delivery and community-building for students. Recent changes in enrollment and limited availability of resources have placed additional and changing demands on facilities as the University is challenged to meet the growing number and range of student needs.

As educational instruction evolves and student populations become more sophisticated, the traditional boundaries between academic and non-academic life are becoming less discrete. At present, there are four areas of focus, with the first being the need for student recreation; including a Health and Wellness Center on the North Campus and renovation of the South Campus facility (Clark Hall). Campus recreation is a key component of campus quality of life and is essential to the University’s strategic goals and objectives of encouraging student individual growth in structured, out-of-classroom programs that contribute to sound interpersonal relations.

Second, there is the desire to adopt the “Learning Landscape” as a campus environment that allows opportunities for discovery and collaboration.

A third area of focus centers on the need for a centralized student service delivery system, since the University still has many of its student services randomly dispersed throughout campus, with service location determined by available space, not based on student needs. This will be discussed further under the heading “Heart of the Campus”.

Fourth, there are longer term strategies for how to provide additional student residential opportunities on the North and South Campuses, when justified by future enrollment numbers, and the expansion and improvements to food and dining facilities.

STUDENT RECREATION AND ATHLETICS

Modern, top-ranked public research universities demonstrate a significant attention to the health, wellness, and recreational needs of their faculty, students, and staff. Many of these universities have state-of-the art recreational facilities that provide a social and recreational center to the campus. An increase in the residential population has placed an increased demand on the recreation facilities the University at Buffalo offers. Current campus facilities do not meet demand for on-campus recreation and existing space restricts the types of activities that can be offered, that are expected by, and that are provided by competitors to students, faculty, and staff. Initiatives and options proposed by this plan include:

- Recreation & Wellness Center or an addition to Alumni Arena incorporating a Fitness Center.
- A new Tennis Center closer to the Stadium.
- South Campus Center – renovations to correct deficiencies currently at Hayes Hall Lawns for intramural activities.

Refer to Chapters D and E for further description of student Recreation and Athletics initiatives on the South and North Campuses.

THE LEARNING LANDSCAPE

UB has committed to embracing discovery as the fundamental work of the University, and enhancing new opportunities to allow this to happen - in classrooms and labs, dining halls and dorm rooms, on playing fields and on stage. The plan seeks not only to expand and improve these spaces, but also to better connect them in order to multiply the paths to discovery and leverage greater gains from it. At UB today, discoveries are often constrained by the physical condition of its campuses. Most of its facilities lack the flexible, collaborative, and informal spaces for teaching and learning that are needed today, as well as spaces for the rapid translation of new research into real-world applications. Student Life facilities at UB – from dining and housing to athletics, recreation, arts and culture – lack critical mass and are too remote, both literally and figuratively, from academic facilities.

A “Learning Landscape” is a continuous, immersive environment for discovery that supports the educational process throughout the campuses. Fundamental changes are needed in the way we plan, design, manage, and connect spaces for research, teaching, and student life so that the entirety of each campus fosters productive encounters among people and ideas.

With respect to facility design and planning, the Learning Landscape requires the creation of a continuous, immersive environment for discovery – that takes advantage of the spaces between formal instructional spaces. A university-wide learning landscape of informal spaces outside the laboratory and classroom, together with an improved and expanded public realm of comfortable, social indoor and outdoor places connecting campus precincts, will provide fertile ground for collaboration. New hubs, central gathering places, and campus life facilities will further expand the collaborative possibilities for UB faculty and students.



The central idea is to stimulate learning everywhere on UB’s campuses. The learning landscape requires more than improvements to formal spaces for instruction. At UB today, students and faculty already make use of other kinds of spaces. But many of these spaces were not designed to support learning. Faculty and staff are convening at bars and cafés off campus because there are few comfortable on-campus settings conducive to meeting, eating, and getting work done, and even fewer that are open after-hours. UB has started to incorporate Learning Landscapes into the public realm. The plan proposes the creation of a network of informal spaces to support the various habits of UB’s student population with more learning options, to provide technology and other amenities to enhance both teaching and learning, and to reinvigorate the culture of discovery at UB.

**LEARNING LANDSCAPE OPPORTUNITIES**

Together with the Heart of the Campus programs focused on the libraries (see the following pages), the following actions will transform each UB campus into a learning landscape of opportunities for discovery:

**Support a range of teaching and learning activities and work styles**

A variety of new teaching and learning hubs will provide a distributed supplement to the centralized spaces and services of the libraries. Depending on its location and association with a particular discipline, each space will be a tailored hybrid of teaching, media, and tech support hubs. These hubs will be designed to support the following efforts:

- Help faculty integrate new pedagogies and technologies in their teaching, with consultation rooms and experimental teaching spaces.
- Encourage the integration of digital media in learning, with rooms and workstations that support the sharing and visualization of group work.
- Provide technology services and support, with staffed help desks, displays, and demonstration and training spaces.

**Provide a campus-wide system of convenient, comfortable places to study and relax before and after class**

A variety of new study spaces will provide students and faculty with the settings, furniture, and technology for unscheduled, on-the-spot collaborative work, individual work, meeting, and socializing. Among other amenities, study hubs, front porches, and learning corridors will all provide comfortable seating, basic wireless Internet service, and outlets for laptop recharging.

- Study Hubs: Areas of mixed seating, group work tables, and individual workstations, co-located with the teaching, media, and tech support hubs.
- Front Porches: Café-style seating areas located immediately outside of formal instructional spaces to facilitate “spill-over” conversations.
- Learning Corridors: Niches and other spaces of varying size and seating arrangements located along major circulation paths and carefully designed to comply with life safety codes for egress and movement.

**BALANCE DISTRIBUTION OF THE LEARNING LANDSCAPE WITH CONCENTRATION OF RESOURCES**

While it is desirable to spread these spaces throughout each campus in order to maximize the number of opportunities for discovery between the dorm room or faculty office and the classroom, it is also necessary to aggregate these spaces in limited locations in order to minimize staffing costs and provide a “critical mass” of users that will generate activity day and night. For each campus, the plan provides a learning landscape distribution plan that balances these two objectives, according to the following principles:

- Provide a cluster of learning landscape spaces, tailored to departmental needs, at a central location within each academic precinct. Equipment, space, and support that students in the natural sciences



Figure B-48: South Ellicott Housing will incorporate a cafe, study lounges, multi-purpose teaching space, and learning corridors (Building UB, 103).

- need is different from what students in the arts and humanities need.
- Co-locate the learning landscape with dining venues and informal gathering spaces. Students and faculty will use these spaces according to their schedules and individual inclinations. Co-locating will both maximize and broaden the academic and social activity in each cluster.
  - Establish central oversight, approval, and funding, but design and manage each cluster with input from the faculty and students who populate the surrounding classrooms, offices, and dorms. This will give each cluster a unique character that will allow it to serve as a kind of departmental “living room,” an easily distinguishable landmark for an academic precinct within the larger campus. It will also help ensure that the primary users of each space have a voice in its staffing, maintenance, and periodic upgrades, whether these are centrally or departmentally administered.



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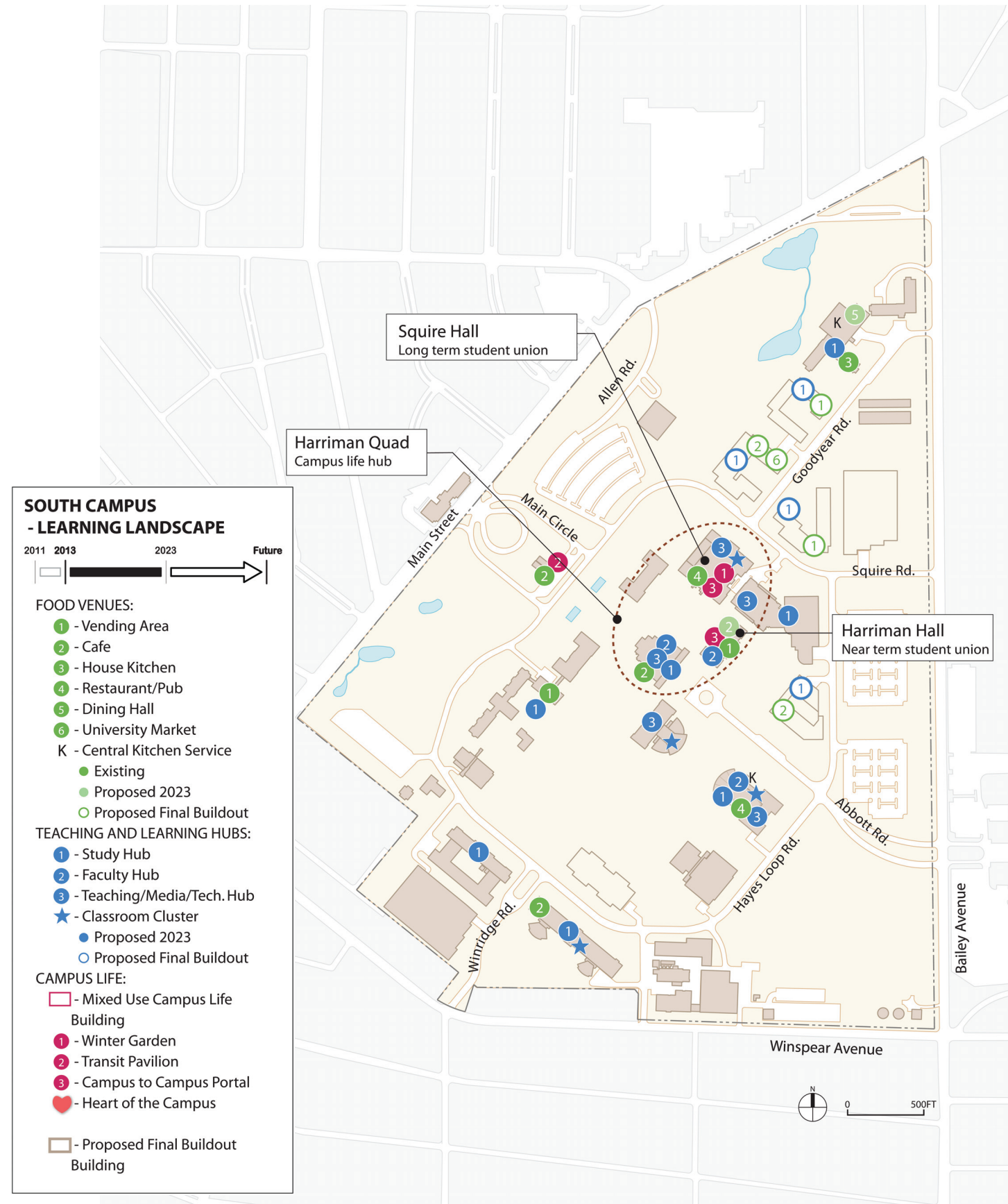
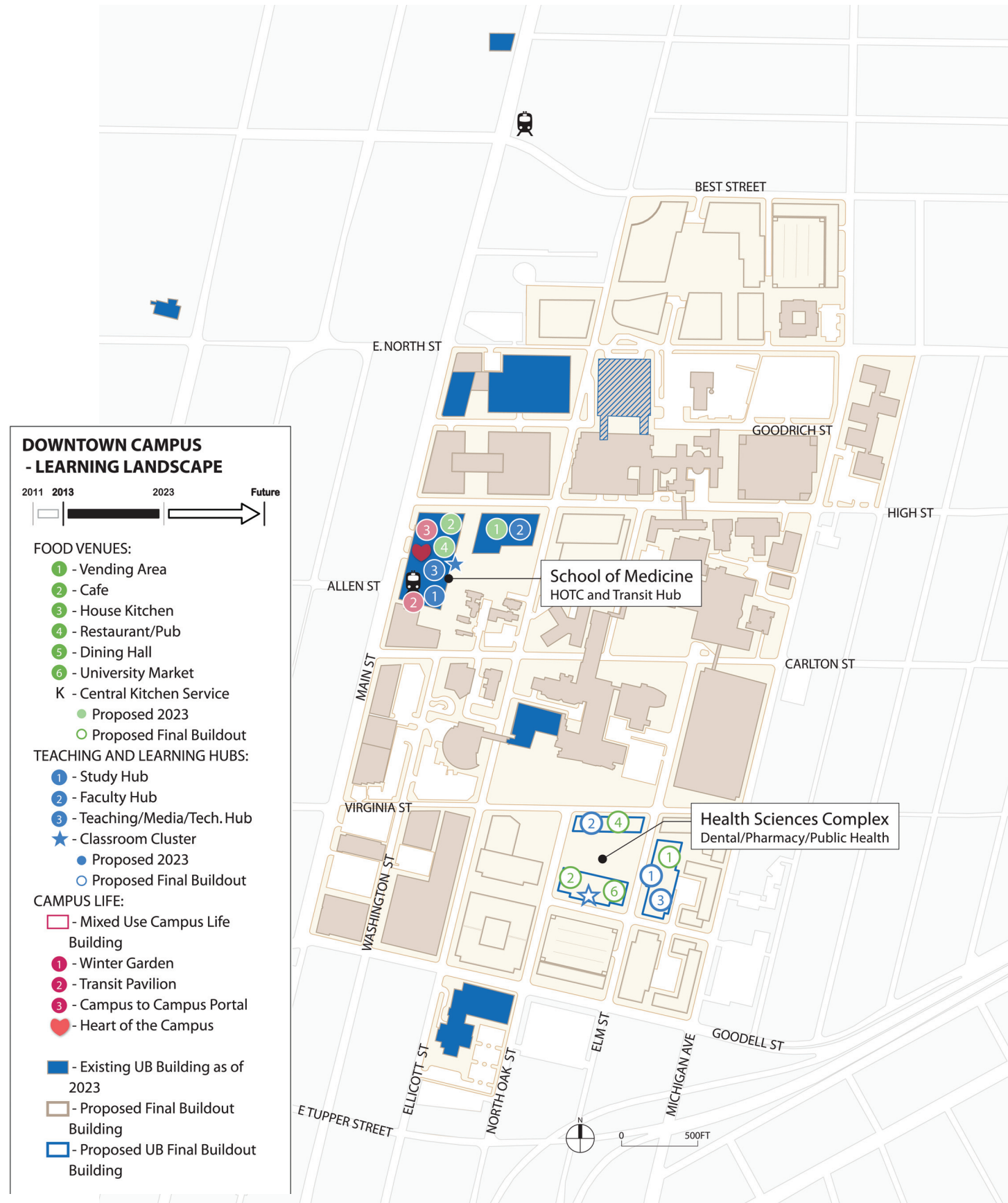


Figure B-49: South Campus Learning Landscape Map.



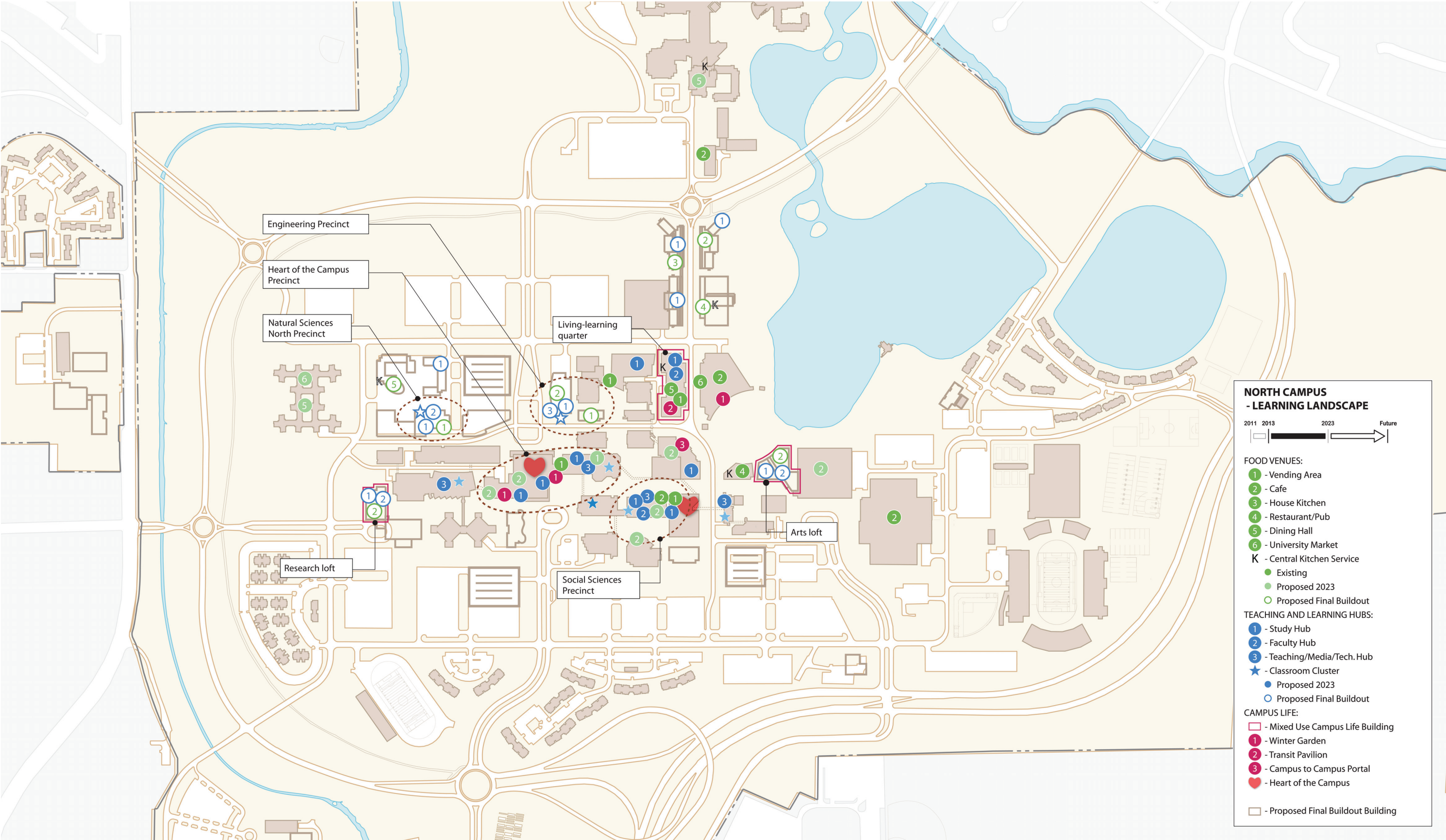


Figure B-50: North Campus Learning Landscape Map.



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Figure B-51: HOTC, Abbott Hall (Building UB, 53).

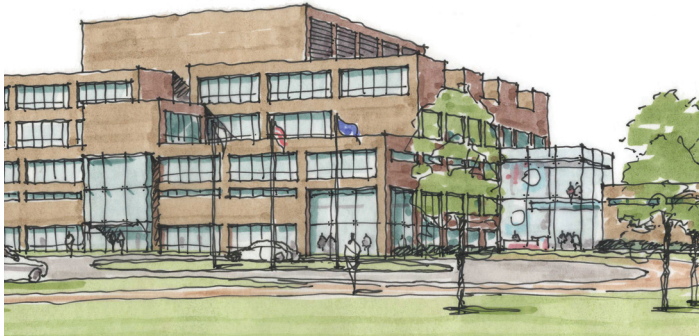


Figure B-52: HOTC, Capen Hall (Building UB, 52).

HEART OF THE CAMPUS

The “Heart of the Campus” or HOTC, is a key concept from the UB2020 Comprehensive Plan and includes cross-service delivery, and one-stop-shopping of student services such as Admissions, Financial Aid, Health Care, Parking, Alumni, etc. with library/student services in the remainder of open space. The “HOTC”, is an inter-departmental university-wide initiative to build community and a sense of place at the center of North and South campuses. HOTC reaffirms the role of the library as the figurative center, or heart, of each campus, while acknowledging that the 21st-century library will look and perform differently from the traditional library.

HOTC will transform central library and support space on each campus into a multi-use setting housing a variety of formal and informal learning environments, IT and faculty support, one-stop shopping for student services, and casual dining. The objectives are to:

- Create exciting and attractive learning spaces where they can be shared by the whole campus community.
- Strategically and economically take advantage of underutilized space that has been freed up by moving books to remote shelving.
- Remain competitive with peer institutions that offer technologically sophisticated and welcoming spaces for students, faculty, and staff to study, learn, and gather.

Refer to Chapter E - North Campus for additional description of the proposed renovations to Capen, Norton and Talbert Halls; and refer to the Chapter D- South Campus for the proposed remodeling of Abbott Hall as the respective Heart of the Campus facilities for those campuses.

The HOTC for the Downtown campus will have a slightly different emphasis – as more of a shared resource with potential partner organizations, and including such amenities as Medical Library, Conference Facility, Café, Fitness Center and Museum.



Figure B-53: Living learning environments include lounges, study nooks(above), and flexible classroom and gathering spaces. (Building UB, 46).

STUDENT HOUSING

Although a study of student housing needs has not been part of the scope of the Facilities Master Plan, long range planning recommendations regarding the location of future housing have been made. At the University at Buffalo, plans for student housing expansion will be integrated with related academic program growth and quality of campus life concerns. The projected need for housing in the UB2020 Comprehensive Plan was predicated on the anticipated growth of approximately 10,000 undergraduate students. Since this growth is now not anticipated, the need for additional housing is not as critical.

Since UB’s student residence facilities are funded through a self-supporting program that must cover staff fringe benefits as well as debt service, it is especially important that the program is fiscally sound and includes long-range plans for rehabilitation and repair and new construction. The capital cost of the housing will be funded from the apartment rental proceeds.

Students at the University are seeking more on-campus living opportunities and this is supported by the University as it moves toward a living /learning experience for its students. See further discussion under “Learning Landscape”. It is proposed that the Garden apartment complex developments will be “sunsetted” after a 30-year life cycle and the focus will be to densify the north/south spine.



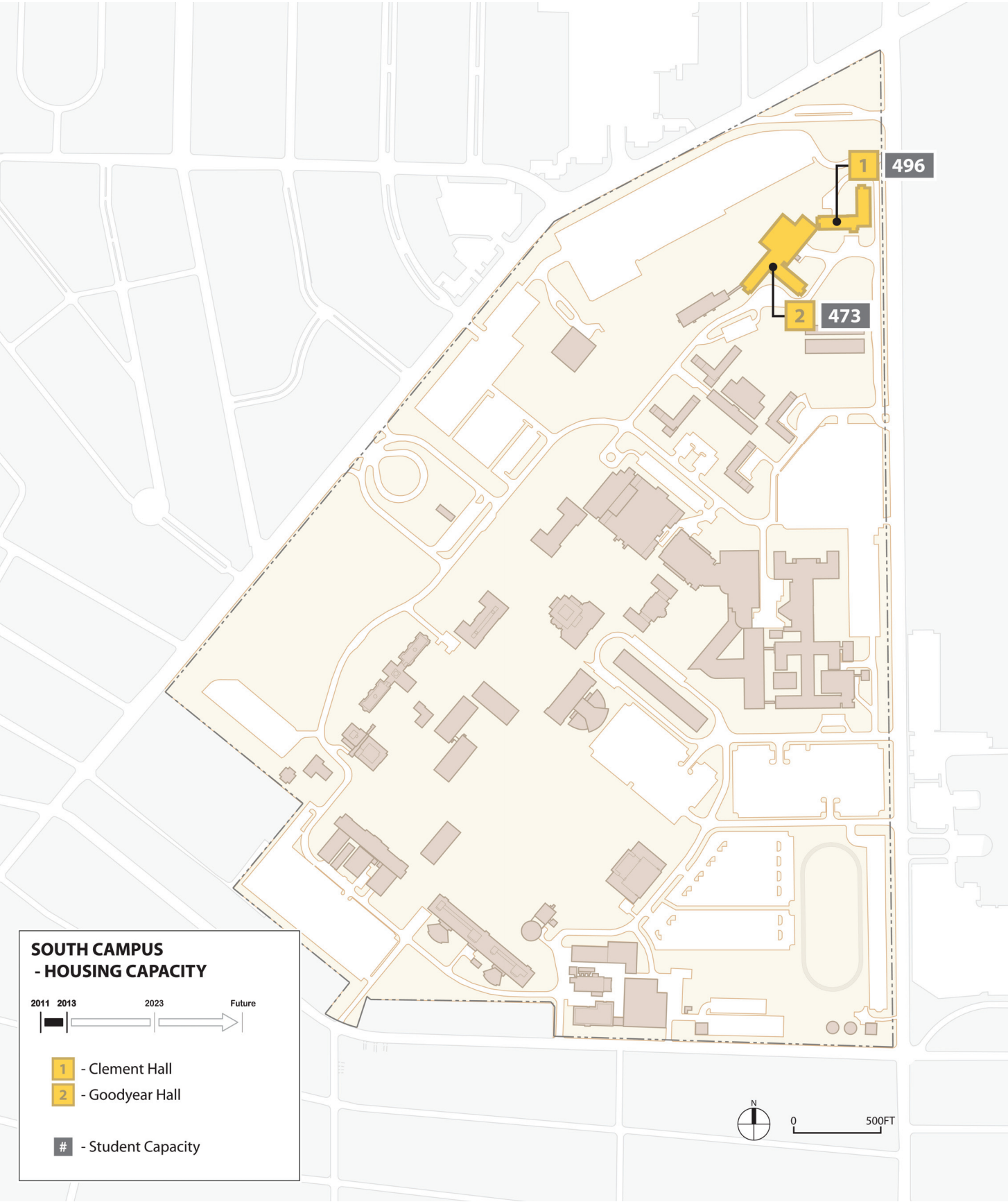


Figure B-54: South Campus Housing Capacity Map.

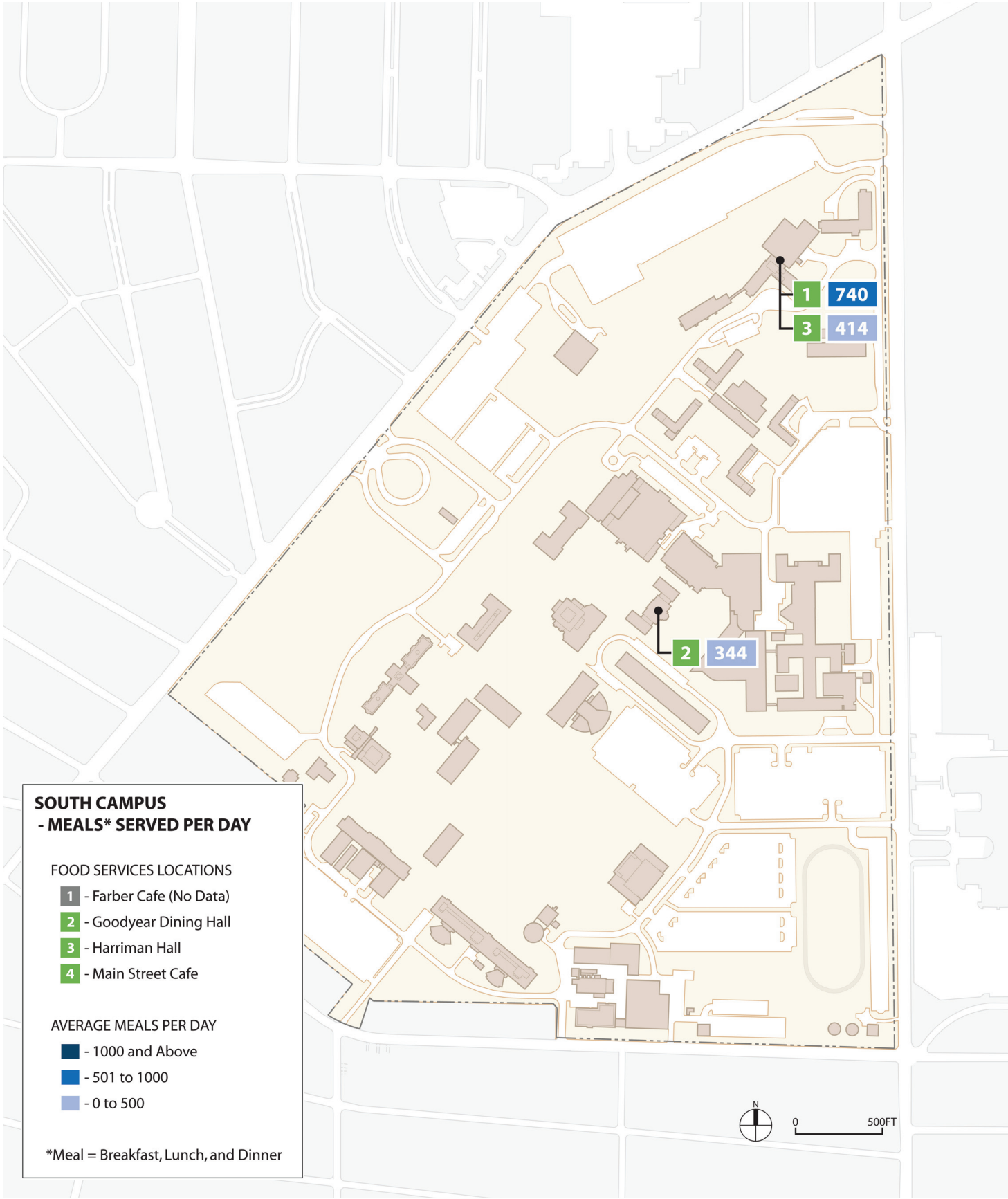


Figure B-55: South Campus Food Service Map.

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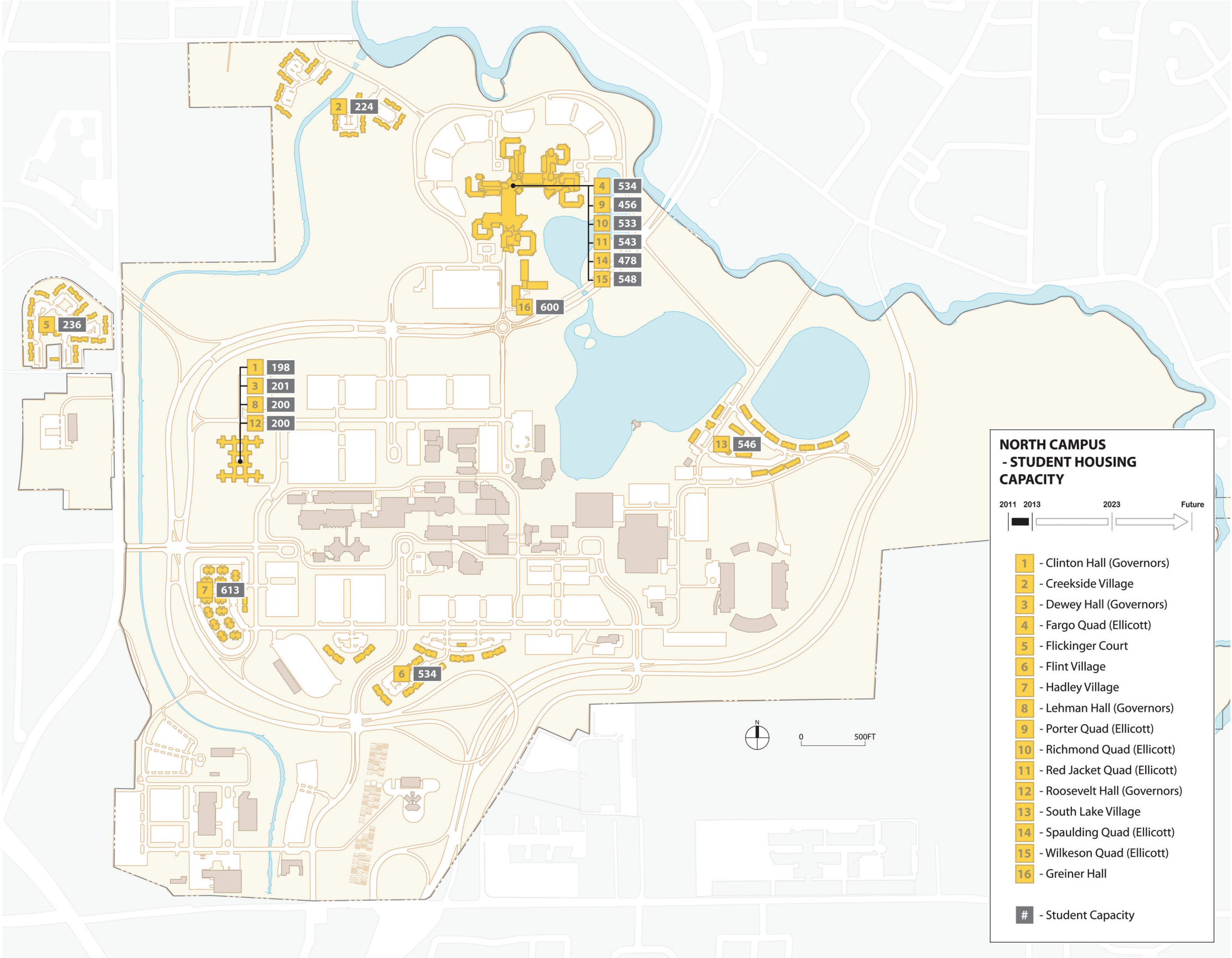


Figure B-56: North Campus Housing Capacity Map.



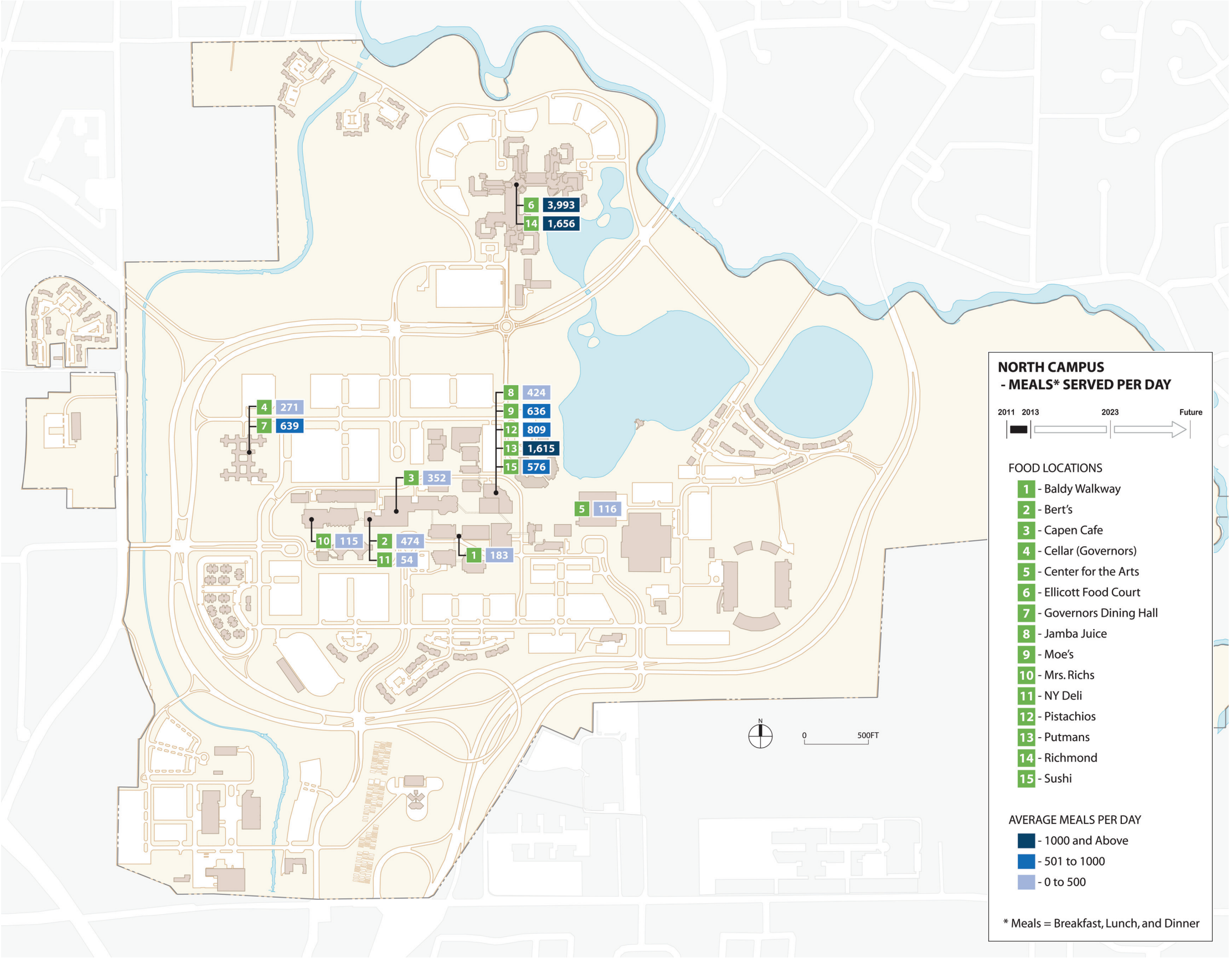


Figure B-57: North Campus Food Service Map.



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Figure B-58: Aerial View of Baker Chilled Water Plant on North Campus (<https://www.buffalo.edu>).

PROPERTY ACQUISITION / DISPOSITION

While the university already owns all of the land it needs to continue developing the North and South campuses, it currently owns relatively little of what will ultimately be needed to accommodate the new UB School of Medicine and Biological Sciences (SMBS) and other elements of Downtown Campus. Acquiring the right sites, making the right physical connections between related programs, and building at the optimum densities will require creative strategies, collaborative relationships, and collective discipline.

On-going discussions with BNMC member institutions are proceeding. The key to success for the entire enterprise – not just for UB but for all of its partners in the collaborative development of the medical campus – is to make sure that each has the opportunity to build what it needs for its own program, while maximizing the potential for integrating clinical care, research, and medical education. The danger is that projects built in the wrong location or at an inappropriate density will foreclose possibilities to create functional links, waste opportunities to develop open space and other shared resources, or isolate BNMC member institutions from parking, transit, or service access. Such collaboration, fortunately, is not unprecedented. The construction of UB’s new Clinical and Translational Research Center (CTRC) and UB Biosciences Incubator was made possible by working with Kaleida Health, which is building its Global Vascular Institute (GVI) on the floors below. This suggests the possibility of other joint ventures – multi-institutional projects, shared facilities, air rights, and land swaps, just to name a few examples – that will make the most of the potential for working together on the medical campus.

Refer to Chapter C – Downtown Campus for further discussion on land ownership as UB works to further establish its School of Medicine and Biological Sciences and allied programs in the downtown location. Chapter C also provides discussion on the opportunities and disadvantages of each of the sites under consideration with the options presented for the Downtown Campus.

SITE AND UTILITY INFRASTRUCTURE ENHANCEMENTS

There currently are projects identified by the Facilities Planning and Design Group (FP&D), throughout all campuses, utility and infrastructure projects that include underground utility improvements and maintenance, roadway milling and resurfacing, site lighting, building utilities maintenance and upgrades and others. For instance there is a project currently underway on South Campus to study all underground utilities and recommend replacement and upgrade. The sanitary sewer system servicing the Ellicott Complex in the North Campus has been studied and is slated for replacement. There are numerous other projects under way. Identifying and listing individual projects and prioritizing or scheduling them is an effort that has proven to be non-productive in previous master plan exercises. Priorities change and projects either get disencumbered or become less critical depending on the circumstances at the time.

Refer to the paragraph ‘Critical Maintenance Funding’ for discussion on funding for critical maintenance projects including site and utility enhancements.

ELECTRICAL  
System Capacity

The North and South Campus substations receive power from the local electric utility service provider, National Grid. The North Campus central plant receives 34 kV feeds from the North Campus Substation, while the South Campus Central Utilities Building receives 25 kV from a nearby substation. The University is seeking to increase the distribution capacity on the campuses. In order to accommodate new construction and renovation of several buildings, the University will have to increase its distribution capacity.



**Building Construction and Renovation**

As described in our Phase II report, it is evident that many of the existing buildings on all three campuses have Electrical Systems rated in poor condition. It is recommended that these buildings will need to upgrade their emergency power/lighting systems, general lighting systems, and electrical wiring distribution. These upgrades will be included in the renovations of facilities selected as part of the 10 year capital plan. Additionally, the University will continue with necessary improvements on an as-needed basis for the many other buildings that will not be undergoing extensive renovation or re-purposing. All new buildings proposed as part of the facilities master plan will need to be designed with comprehensive electrical components that meet current codes and that will achieve the sustainability goals of the University.

**TECHNOLOGY**

**System Capacity**

The North and South Campus buildings are currently fed with 10 Gig Backbone from main data hubs with built in redundancy between hubs. Combinations of Single-Mode and Multimode fibers are delivered to each building in quantities that may support additional or new technologies currently planned out by the University. The Downtown Campus area is currently fed via leased fiber strands as part of the University’s 10 Gig Backbone, and is scalable in direct proportion to future needs via lease agreements.

**Building Construction and Renovation**

As described in our Phase II report, it is evident that many of the existing buildings on all three campuses have Telecommunications Systems rated in poor or fair condition. It is recommended that these buildings upgrade their technology infrastructure. These upgrades include grounding and bonding, which are not currently in place, and cabling deemed ‘abandoned’ would require, by code, abatement. Pathways need to be established, and systems labeling schemes are required. Telecommunications Rooms need to be designed with appropriate size,

the proper conditioning, and ideally are stackable. Horizontal cabling infrastructure should be Category 6A, and certified by a single manufacturer. Wall mounted 110 blocks will no longer be acceptable as they do not support Cat6A, and all horizontal cabling should be terminated to a rack-mounted patch panel to support both the data, and the VoIP (Voice over IP) telephone identified by the University as the new technology moving forward. Code-compliant fire-stopping systems, including labeling, will need to be installed. These upgrades will be included in the renovations of facilities selected as part of the 10 year capital plan. Additionally, the University will continue with necessary improvements on an as-needed basis for the many other buildings that will not be undergoing extensive renovation or re-purposing. All new buildings proposed as part of the facilities master plan will need to be designed with comprehensive Telecommunications that meet current codes and standards, and that will achieve the sustainability goals of the University.

**MECHANICAL**

**System Capacity**

The North Campus has a central chilled water plant and underground distribution system. The central chilled water plant has excess capacity that can be utilized for growth over the short term. The distribution system needs to be extended to new buildings and additions as they are built. With much of the growth projected at the north end of campus, and the plant located at the south end of campus, the distribution system needs to be carefully reviewed prior to connection of any building to assure that adequate pipe capacity is available at the point of connection. Heating plants for new buildings need to be incorporated into the individual buildings.

The South Campus has a central steam plant and underground distribution system in tunnels. The central steam plant has excess capacity that can be utilized for growth. The distribution system needs to be extended to new buildings and additions as they are built. There are plans to construct a chilled water

plant to serve the historic portion of South Campus. Extension of the loop is part of the larger utilities renewal and therefore not specifically identified in this FMP.

The Downtown Campus has individual building heating and cooling plants. Some buildings have been interconnected. New buildings need to be provided with the heating and cooling plants.

**Building Construction and Renovation**

Many of the existing buildings on all three campuses have Mechanical Systems rated in poor condition. The existing building HVAC systems will be upgraded as buildings are renovated resulting in more efficient operation, less maintenance and improved thermal comfort.



[B. COMMON ELEMENTS]

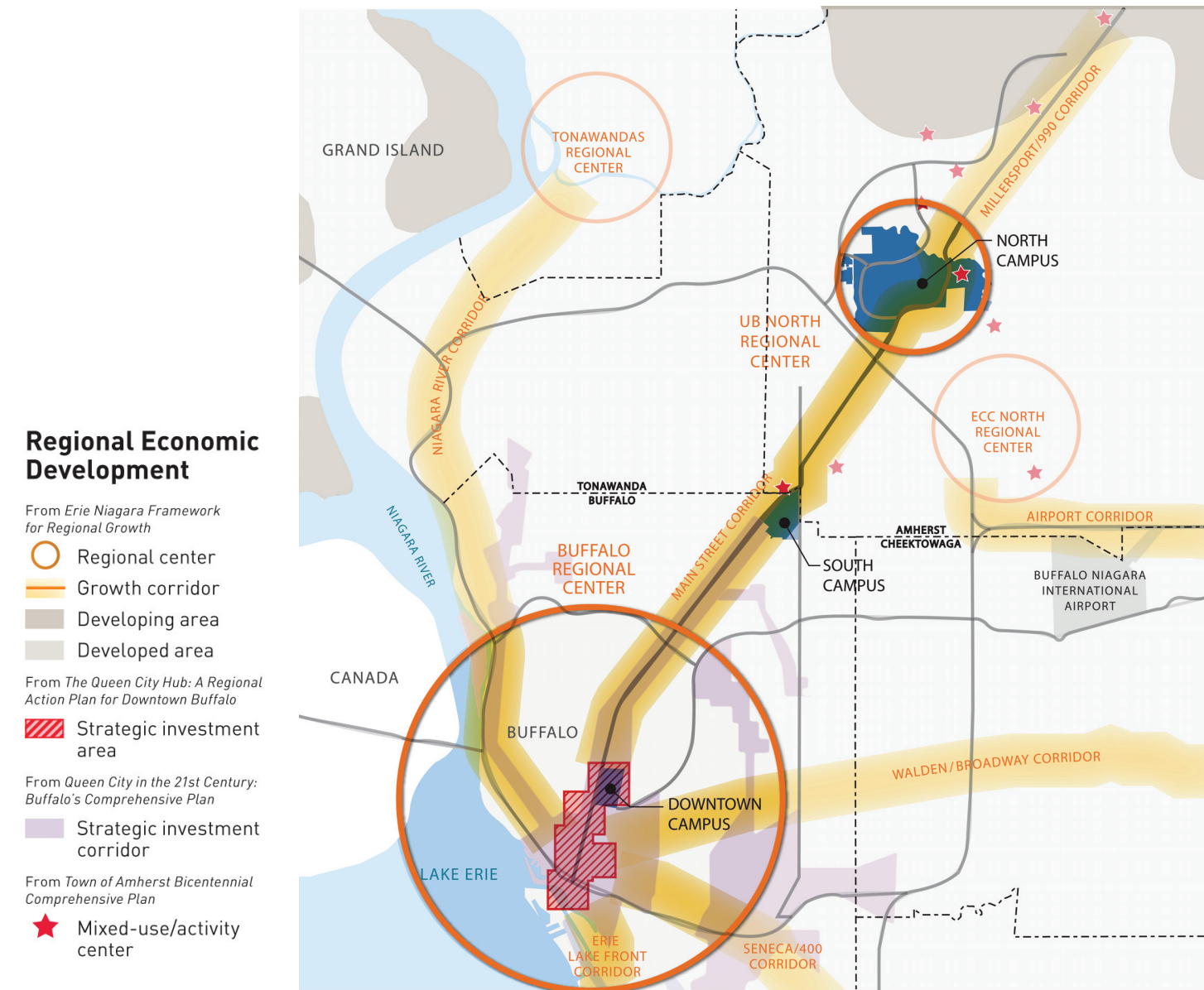


Figure B-59: Regional Economic Development (Building UB, 59).

COMMUNITY ISSUES

UB seeks to ensure that regional economic development driven by the expansion of its research activities, academic programs, faculty, and student enrollment will benefit the surrounding communities. One of the many ways UB seeks to do this is by continuing to collaborate with state, county, and municipal agencies, transportation authorities, community groups, and others on planning for the development of properties adjoining its campuses, as they have done in the making of the UB2020 plan.

OPPORTUNITIES FOR COMMUNITY GROWTH - DOWNTOWN

The infusion of new development and people that will come with the new School of Medicine and Biological Sciences (SMBS) moving downtown will certainly bring new opportunities to the neighboring communities flanking the Downtown Campus. Beyond the clinical programs of the SMBS, UB will bring new connections to the neighboring communities through the Educational Opportunity Center and other programs in the UB Downtown Gateway. Many of the campus life amenities of the Downtown Campus will also be open to community use. Improved physical connections through the medical campus and to the neighborhoods across Main Street and Michigan Avenue, will also bring UB closer to its neighbors and help ensure that campus growth supports neighborhood development through increased foot traffic.

MAINTAINING DENSITY & CONNECTIONS - SOUTH CAMPUS

The University at Buffalo has had a symbiotic relationship with the neighborhoods surrounding its campus on Main Street for the better part of a century, and the fates of university and community are deeply intertwined. Housing, retail services, and entertainment venues in the neighborhood are vital to the health of South Campus. Opportunities for education, culture, and recreation on campus are important for the neighborhoods. Access to

transportation, and the security and quality of the built environment, are of great concern to both.

Community Oriented Spaces

Many of the facilities planned for South Campus will serve both campus and community: the renovated Allen Hall, the new amphitheater nearby, expanded indoor and outdoor recreational spaces throughout the campus, the Professional Education Center (PEC), the transit pavilion and many dining venues will all be designed explicitly to welcome community use.

Integration with the Community

South Campus has always been open to the community. There are no fences, no gates that close, no barriers to those who would visit the University's facilities or stroll across the grounds. This plan renews UB's commitment to keep its campus safe and secure, but most importantly open to the community.

Maintaining Density

A common concern is that the School of Medicine moving to the Downtown Campus will result in a destabilization of the area due to a dramatically decreased population. However, due to the planned phasing of the School of Education and Social work onto South Campus prior to the School of Medicine's departure the overall campus population actually increases in the short term and stabilizes in the long term. As South Campus demographics shift towards more professional students there are sure to be slight changes in the dynamics of campus life atmosphere and when it occurs. Evening hour activity might actually increase due to typical scheduling of education classes, while daytime activity may decrease or be more sporadic. These changes are not likely to noticeably occur until after Nursing and Public Health move downtown beyond the 2023 timeframe for this FMP. The 10 years plus prior to this change is adequate time for South Campus to avoid any dramatic destabilization.



**SOFTENING THE EDGES - NORTH CAMPUS**  
**Encouraging mutually beneficial neighborhood development**

UB’s efforts to physically integrate North Campus with the region cannot rely solely on improvements to campus property; they must also strive toward the development of the properties surrounding North Campus in a way that will “soften” the campus edges with new campus- and community-oriented amenities. UB will continue to work with its partners to encourage such development. Further efforts will focus on the key locations, perhaps through the extension of the New Community District zoning designation that has been applied to the area north of the campus. Key neighboring areas include:

- Sweet Home Road and corridor along western edge of North Campus.
- Hotel and commercial development along the southern boundary of the campus.
- University Town Centre development planned for Maple Road.
- Campus property east of Millersport Highway.

**TECHNOLOGY**

UB has made great strides in the integration of wireless technology into all of its facilities. Future plans for new or renovated facilities should continue this effort and also recognize the shift toward learner-centered environments.

While there will continue to be a need for the traditional lecture halls and classrooms that facilitate teacher-centered, passive learning, UB must also provide the full spectrum of spaces necessary to support learner-directed, active learning through demonstrations, simulations, case studies, experiments, and hands-on analysis and problem-solving. This shift should be accompanied by an emphasis on flexible spaces supported by first rate telecommunications and audio-visual technology.

**Learning Landscape Technology**

In particular, compared to existing spaces, new and renovated instructional spaces should feature:

- A higher level of technology as an integral part of classroom design, with support and interconnectivity for student-owned devices such as laptops
- Adaptability to accommodate a wide variety of teaching and learning styles and changes in technologies, with multiple seating and viewing arrangements; and integrating state-of-the-art audio-visual technology
- High environmental quality, aesthetic quality, and maintenance levels to convey an atmosphere of professionalism and support student and teacher performance; and
- Integration of technology with the broader “learning landscape” to provide a social context for classrooms and a learning context for adjacent social spaces. As part of the Learning Landscape, the UB2020 plan proposes that at least one building in each academic precinct will house a hybrid combination of teaching, media, and tech support hubs, located adjacent to an existing or proposed classrooms cluster, to support classroom learning with flexible and technology-rich space for faculty to experiment and hone teaching methods.

**Assistive Technology**

The U.S. Department of Education requires that states receiving assistance under the Assistive Technology Act (AT Act) State Grant program comply with Section 508. UB’s goal should be to ensure it is keeping up with or developing a plan to meet Section 508 compliance, with respect to Technical Standards for software and hardware, including video and multimedia.

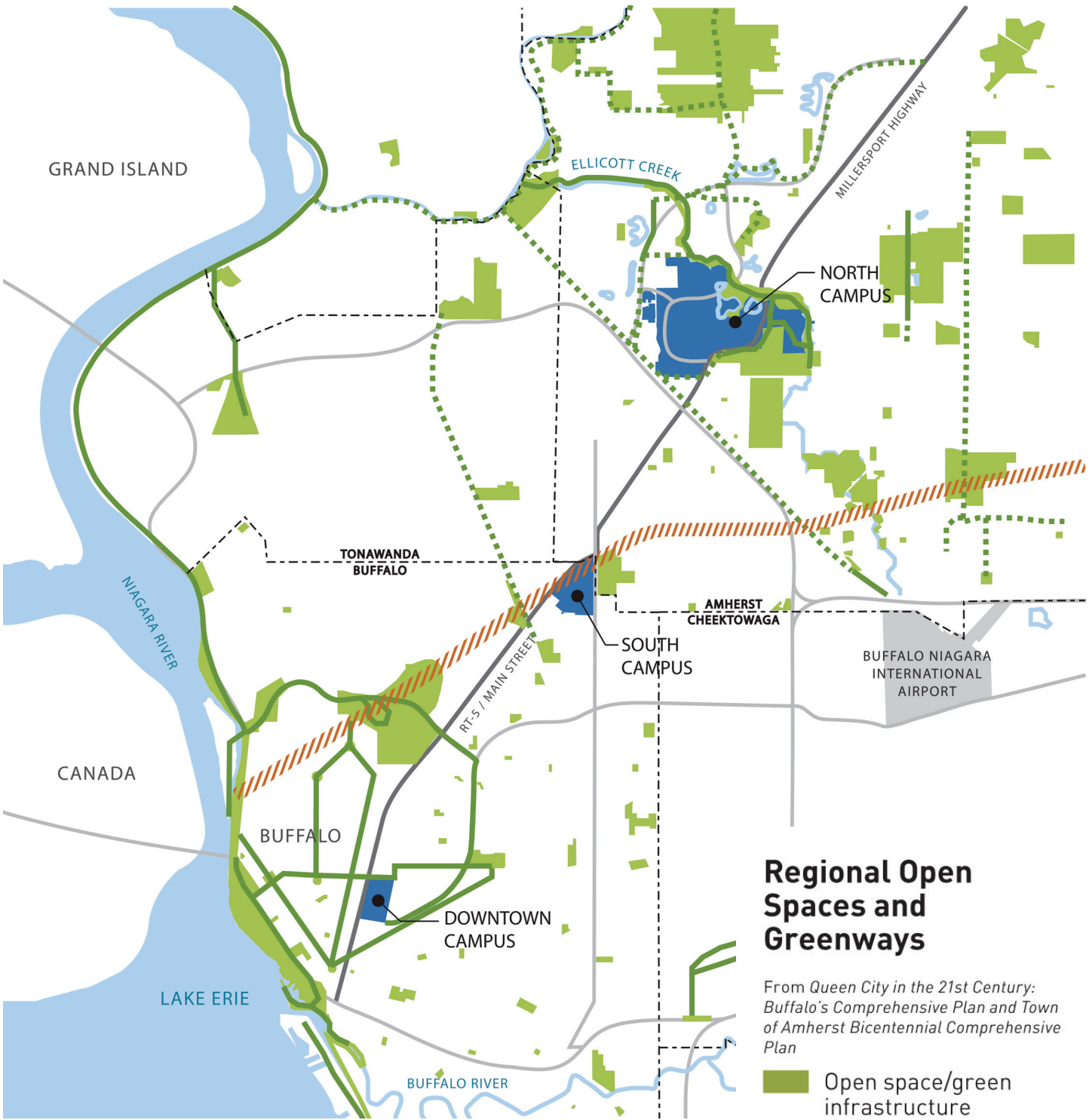


Figure B-60: Regional Open Spaces and Greenways (Building UB, 58).



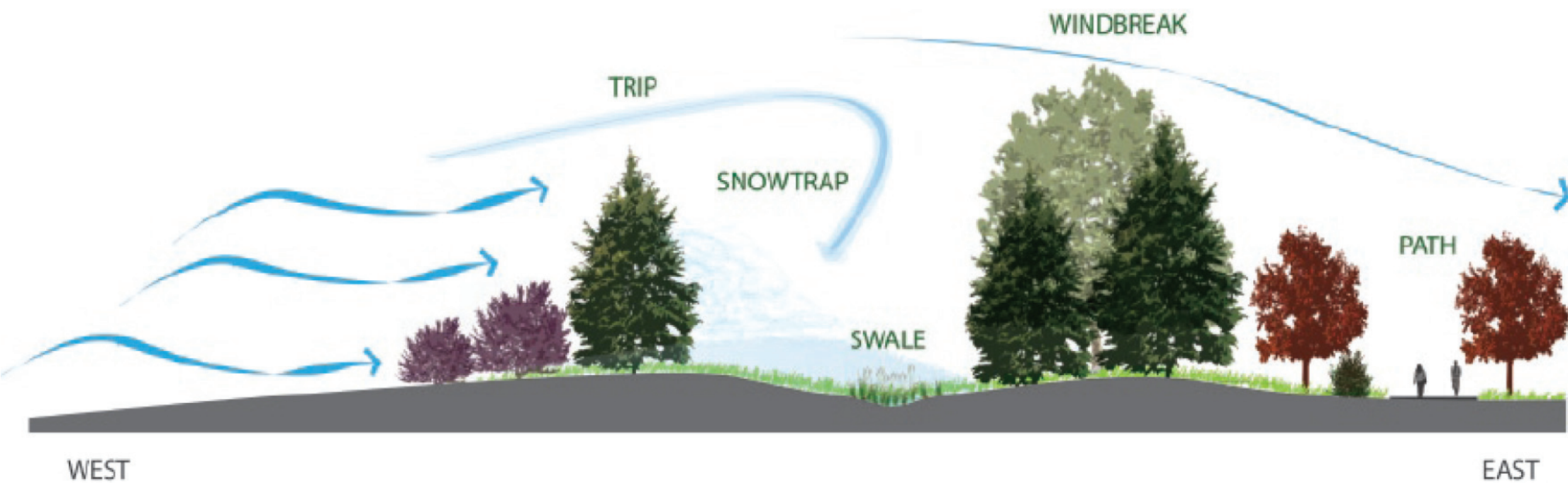


Figure B-61: Landscape Designs for Microclimate Improvement (Building UB, 74).

SUSTAINABILITY

UB2020 is guided by the overarching mandate of “sustainability” – understood not just in terms of care for the natural environment, but as a matter of generating economic prosperity and ensuring social equity as we protect the ecosphere. The Plan looks toward the “triple bottom line” in which ecological and social accounts are as important as economic ones, and it moves forward on all three fronts simultaneously.

The Facilities Master Plan initiatives include actions in support of these initiatives, such as:

- Demolition of energy-intensive buildings that have outlived their usefulness.
- Propose new construction that uses the highest standards of energy efficiency.
- Placement and clustering of new buildings to maximize efficiency of existing energy delivery systems and facilitate co-generation.
- Strategies to improve utilization of academic spaces and increase consolidation of administrative and support spaces.

- Roadway changes such as roundabouts and continuous loop roads that will improve efficiency and reduce commuter emissions.
- Co-location of multiple programs (e.g., residences, classrooms, campus life) in single buildings or precincts to reduce the volume of on-campus transportation.
- Increased quantity and quality of campus life programs (i.e., residences, dining, retail) on campus to reduce the need for transportation off-campus.
- Changes to land use and land cover, such as reduced paved surfaces and increased forestation, which will shelter buildings, reduce heat island effect, and sequester carbon dioxide.
- Natural regeneration strategies that minimize the use of fertilizer, equipment, and man-hours to establish and maintain landscapes.

As the University at Buffalo grows it embraces a responsibility to grow in ways that are cleaner, more efficient, and more sustainable. This includes the following strategies:

REDUCE UB’S NET GREENHOUSE GAS EMISSIONS TO ZERO.

UB has endorsed the American College and University Presidents Climate Commitment (ACUPCC), and has developed a Climate Action Plan (CAP) that will guide UB’s path to climate neutrality. The CAP details how UB will achieve climate neutrality through a combination of low-to-zero energy design for new construction, extensive building retrofits, operational efficiencies, onsite renewable power generation, low-impact transportation, offsets and renewable energy certificates.

DESIGN FOR BUILDING ENERGY EFFICIENCY

Buildings are our biggest consumers of energy – through heating, cooling, ventilation, and lighting. The CAP and the UB2020 plan design guidelines outline specific strategies for individual buildings, while the FMP itself calls for the demolition of energy-intensive buildings that have outlived their usefulness, and sites new buildings to maximize the efficiency of existing energy delivery systems and facilitate cogeneration.



**SUPPORT ALTERNATIVE MODES OF TRANSPORTATION**

Thousands of cars are driven to and parked on our campuses each day, polluting our air, adding to local traffic, and filling valuable space with parking lots and roadways. To minimize these impacts and enhance quality of life for both the UB community and our neighbors, the FMP contains a set of recommendations that will promote walking, biking, carpooling, and greater use of transit services including bus and rail.

**MANAGE STORMWATER ON UB’S CAMPUSES**

The FMP begins to address the need – now recognized in emerging federal regulation – to retain rain and snow on campus right where it lands, rather than shedding it to municipal and regional stormwater management systems. Reducing the burden on these systems will help prevent erosion, siltation, and the release of raw sewage into natural water bodies during heavy storms. Many stormwater strategies will simultaneously reduce the “heat island” effect, and attendant energy costs, caused by roads, parking lots, and rooftops that absorb solar energy.

**RESTORE REGIONAL ECOSYSTEMS**

UB’s campuses include some of the largest open spaces in the region. Naturalizing these spaces will expand and connect self-sustaining habitats for local flora and fauna – while reducing lawn areas that require high-energy maintenance, filtering and absorbing stormwater, capturing more carbon dioxide from the atmosphere, and providing a wider variety of recreational opportunities for university and community members alike.

**SHARE WHAT WE LEARN**

Both UB’s mission as a public research university and its endorsement of the ACUPCC charges the University to employ what it has learned about environmental stewardship in service to the larger community. An extensive community outreach and education program, in combination with an ongoing effort to integrate research on environmental stewardship into UB’s academic programs, will help promote the kind

of collaboration and cultural and behavioral change required to address the challenges of environmentally sustainable growth.

**CELEBRATE SUSTAINABLE TECHNOLOGY**

A new photovoltaic (pv) solar energy array currently under construction will cover several vacant acres of campus land between Audubon Parkway and Maple Road will provide an opportunity to create a truly unique campus landmark. Built by a partnership between UB and the New York Power Authority (NYPA), the 1.1 megawatt array – the largest on any college or university campus in New York – will provide enough electricity to power four of the five “villages” on North Campus. Rather than settle for a strictly conventional layout of the pv panels, UB and NYPA will commission an artist experienced in large-scale landscape installations to help design an array that is inspiring, educational, and welcoming.

**LANDSCAPE**

Landscapes of the three University at Buffalo Campuses provide an array of important civic and environmental functions. Public open spaces provide an interface with surrounding communities and help establish identity and character for each campus. Designed landscapes provide a unifying spatial system for campus architecture, provide venues for social gatherings, and support active and passive recreational activities. Developed and undeveloped open spaces provide irreplaceable ecosystem goods and services including storm water management, micro-climate modification, carbon sequestration, and biodiversity of flora and fauna. The campus landscapes can provide a cohesive visual fabric of four-season aesthetics that are related to and derived from the functions of natural processes within local ecosystems. Appropriate site planning and design supports a balance of multi-modal transportation that enhances the overall sustainability of the University.



[B. COMMON ELEMENTS]

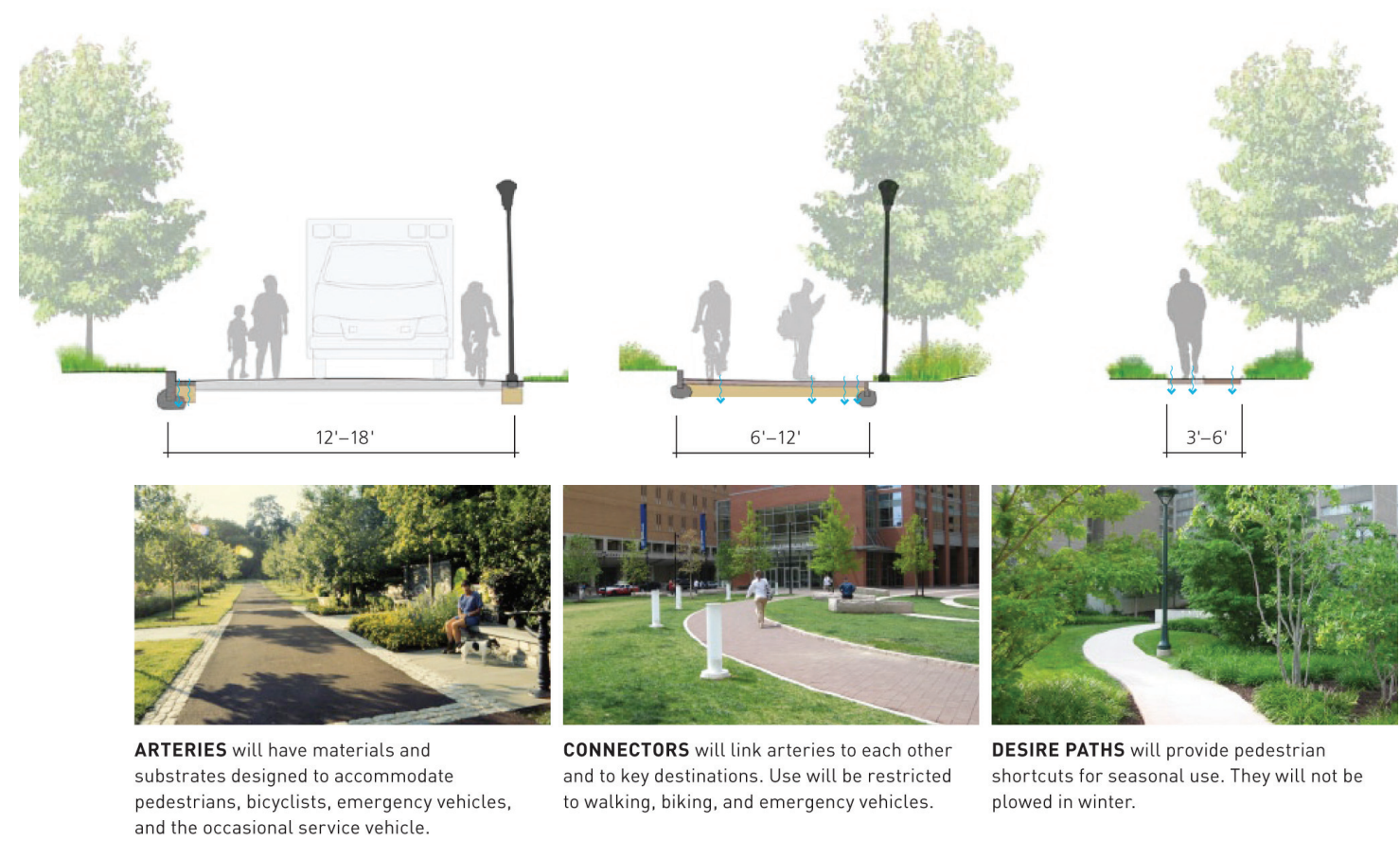


Figure B-62: Hardscape Hierarchy (Building UB, 77).

LANDSCAPE TYPES

Open spaces on the UB campuses cover a wide range of spatial scale, program and level of development. Landscape types that occur on UB campuses can be categorized as follows:

- Courtyards & Quadrangles
- Corridors & Promenades
- Plazas & Gateways
- Lawns & Greens
- Naturalized Settings & Ecological Restoration Areas

The landscape types form a hierarchy of open spaces that provides a clear organizational structure for the campuses. Site improvement projects proposed in this FMP will simplify and clarify campus zones, circulation systems and destination points. The character of each of the three campuses is established by unique iterations of the open space hierarchy.

SITE IMPROVEMENT OBJECTIVES

The UB2020 Comprehensive Plan proposes systematic and complete solutions for developing outdoor spaces that enhance the learning landscape by linking the formal instructional spaces. Planned improvements will focus on the student and faculty experiences as they move between the private learning environments, the public realm spaces and ultimately back into the community. These improvements will help foster immersive environment for discovery and collaboration. This FMP supports the Design Guidelines appendix of the UB2020 Comprehensive Plan’s list of goals for revitalizing the Campus landscapes. A summarized list of the overall goals for open space improvements across the campuses includes the following:

- Program the Landscape
- Simplify landscape maintenance
- Improve campus soils
- Create self-sustaining campus ecosystems
- Improve storm water management
- Provide for Active Transportation
- Design for micro-climate enhancements
- Improve winter use of the campuses
- Place-making and campus identity

Each landscape project engages a particular combination of the overall objectives. Landscapes are living systems, and there are a number of interdependent relationships between the objectives. “Improving campus soils”, for example, is interdependent with “Create self-sustaining campus ecosystems.” “Design for micro-climate improvements” will support both “Active Transportation” and “winter use of campuses”. Finding synergies within and between projects will provide the greatest long-term value and sustainability for campus site improvements.





[B. COMMON ELEMENTS]

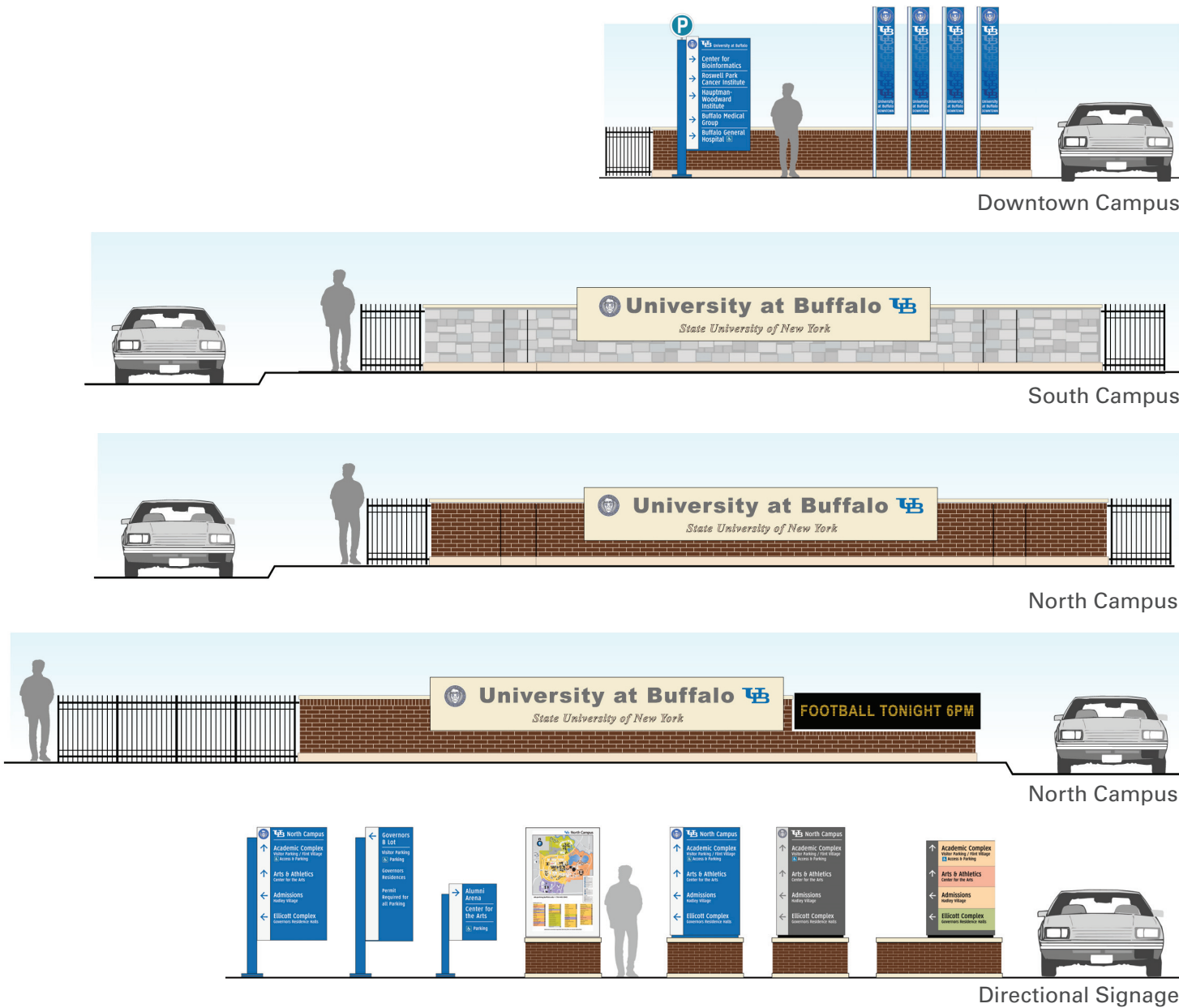


Figure B-64: Exterior Signage for Downtown, South and North Campuses.

WAYFINDING

VEHICULAR AND PEDESTRIAN WAYFINDING

UB’s campuses are in need of enhanced identity elements expressed by architectural form at the main entrances. Sign types designed to carry seasonal and temporary messages should be improved. The FMP will illustrate several ways that the simplification of directional sign type configurations and copy application processes will benefit the University.

EXTERIOR SIGNS

A sense of arrival and indication of the size and stature of the UB campuses should be expressed at main entries by the creation of “gateway” signage. These should be architectural elements with signage that are designed with high quality materials consistent with the architecture of campus buildings. Long low walls and enhanced landscaping can provide a better framework for the name of the University’s logo and seal elements. In accordance with the school’s environmental goals, ground lighting will provide low energy usage and require little maintenance.

Directional signs utilizing brighter markers that are positioned uniformly will be easier for visitors to read and understand. Employing digital prints as film messages will make maintenance and changes much more practical. In many cases existing elements can be re-used but stronger typography and enhanced identity / logo elements will better express the academic character of the University. Parking identity can share the scale of directional messages to strengthen the consistency of the corporate image and prevent the appearance of sign clutter where too many big signs converge at an intersection.

Directories can be simpler and more practical so that the quantity may be increased. Each parking area and every building entrance could include a map so that campus use is efficient and user-friendly. Building Identity must be readable from greater distances and proportional to the architectural façade experience. Individual letters can be specified from standard fonts and sign types that present a professional uniform

appearance, but proper sizing and placement are crucial to better function and enhanced way-finding.

Pedestrian directional and policy messages can be simpler and taller to better serve the campus way-finding needs. Typically signage, in large plazas or common environments, is often obscured by snow during the winter months. Furthermore snow and ice can potentially impede access to exterior campus maps, where students with visual impairments or those using wheelchairs cannot get close enough to the maps to read them. Also text on wayfinding signage should be sized appropriately to draw enough attention to key information so that it is easily found and be scaled to match the size of the sign itself.

CIRCULATION

UB2020 established six guiding principles for the future development of UB. Although most can apply to the development of campus transportation systems, the most directly related principle is to “establish UB as a leader in environmental stewardship and sustainable development and design.” Extending from the guiding principle, four key strategies were developed for “connecting” the campuses internally and externally, as follows:

- Creating walkable, bike-friendly campuses.
- Providing smooth transit connections.
- Improving the fit between cars and our campuses.
- Promoting sustainable transportation alternatives.

The FMP circulation elements for each UB campus are derived from the guiding principles and strategies, putting into place the initial implementation plan for the first phase of UB2020. This section introduces the general transportation-related characteristics and considerations that are common among all three campuses, described by the categories of pedestrians and bicycles, transit, vehicular circulation, and parking. A more detailed discussion of the circulation alternatives at the individual campuses will be presented in upcoming sections.

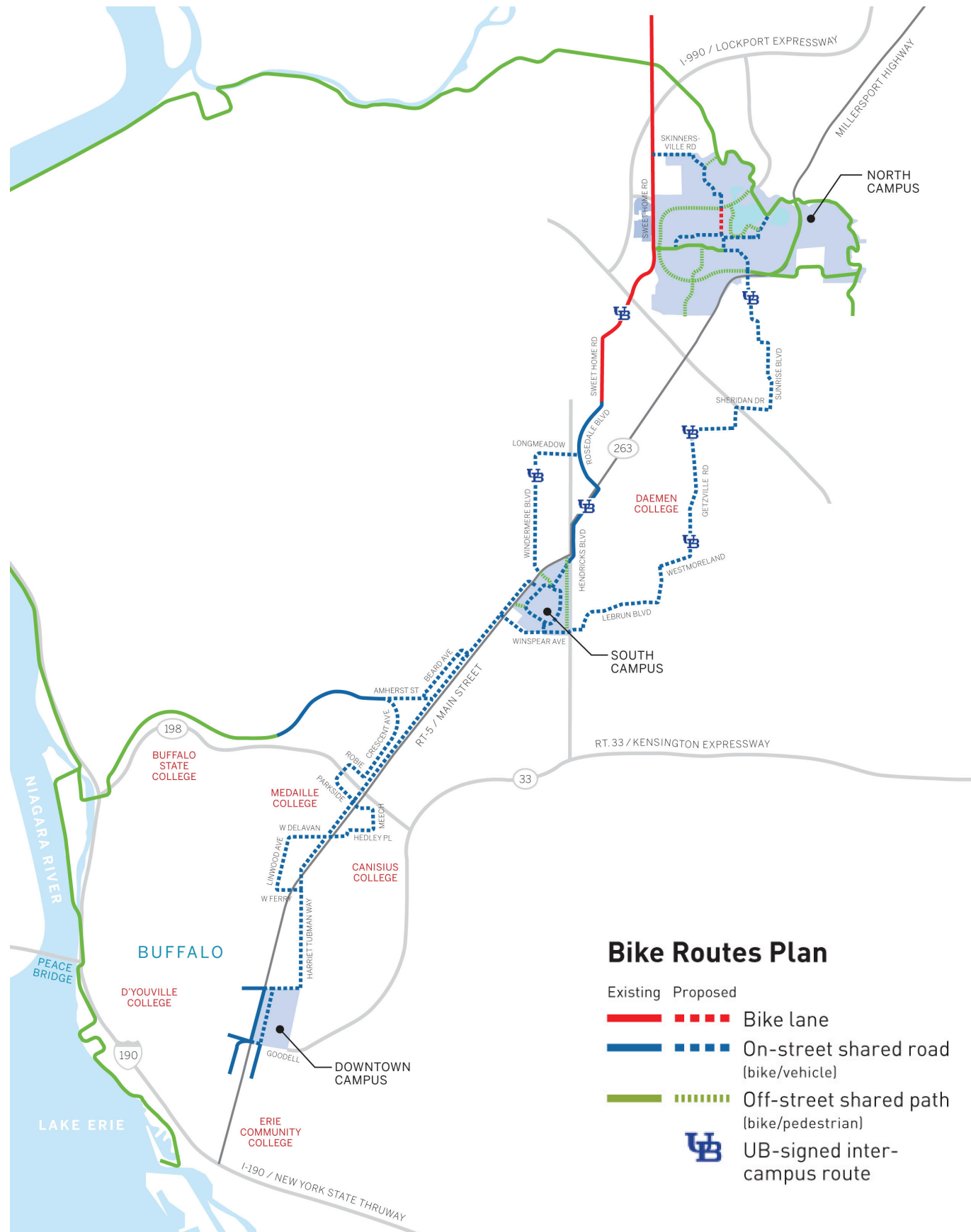


Figure B-65: Bike Routes Plan (Building UB, 61).

## PEDESTRIANS AND BICYCLES

The FMP establishes, as the core of the circulation plan element, strong support and encouragement of walking and bicycling as an alternative mode of transportation. At all three campuses, the focus is to create improved connectivity within the campuses, where walking and bicycling are safe and pleasant experiences that can occur year round. Important considerations in developing the pedestrian and cycling elements would include: comprehensive improvement of pedestrian pathways and designated bicycle routes through and around the campuses for both transportation and recreational needs; improving the physical infrastructure of sidewalks and crosswalks; improving bicycle parking throughout campuses and within any new parking structures; and connecting pedestrian and cycling access from the campuses into the surrounding communities. We recommend that UB conduct an evaluation of travel routes throughout each campus to determine compliance with sidewalks, curb ramps, detectable warnings, crosswalks, protruding objects etc.

## TRANSIT

As discussed in UB2020, the goal of transit improvements is to create more seamless connections between campuses, and within the campuses. The FMP focuses on the shorter term improvements of implementing more streamlined routes and stops for the UB Stampede, and improving connections to NFTA transit stations and bus stops. The goal is to allow easier connections from park-and-ride lots, for students accessing the train or buses, and for walking or cycling to and from transit from any point on the campuses. Coordination with NFTA is a crucial component of improving the transportation between the campuses.

## VEHICULAR CIRCULATION

Each concept alternative focuses on rationalizing and calming the circulation of autos and service vehicles within each of the campuses, while also improving circulation through simplifying roadways and clarifying access points. At all three campuses, roadways would be extended or relocated to improve circulation and access. In some cases, segments of roadway are redesigned or, in the case of North Campus, even removed to improve access for pedestrians and cyclists. Similarly, new roads would be proposed for construction to complete the loops within North and South Campuses and to more effectively connect into the community. The long-term plan of UB2020 remains intact, with this FMP providing an initial implementation of the roadway elements necessary to support the changing needs of the campuses and the student, faculty and staff.



[B. COMMON ELEMENTS]

Population and Related Parking Demand by Campus by Year											
North Campus											
	Population <sup>(1)</sup>					Parking Ratio <sup>(b)</sup>	Parking Demand				
	2010 <sup>(2)</sup>	2013 <sup>(3)</sup>	2018 <sup>(3)</sup>	2023 <sup>(3)</sup>	Beyond <sup>(4)</sup>		2010	2013	2018	2023	Beyond
Staff <sup>(6)</sup>	3,865	3,839	3,621	3,655	3,572	0.80	3,092	3,071	2,897	2,924	2,858
Faculty <sup>(7)</sup>	1,608	1,564	1,469	1,574	1,510	0.50	804	782	735	787	755
Non-res students <sup>(8)</sup>	16,590	16,246	14,786	15,068	14,539	0.27	4,479	4,386	3,992	4,068	3,925
Commutng resid stud <sup>(8)</sup>	834	817	743	757	731	0.49	409	400	364	371	358
Total Commuters	22,897	22,466	20,620	21,055	20,352	Percent of Commuter Demand <sup>(9)</sup>	8,784	8,640	7,988	8,151	7,896
Visitors							5%	5%	5%	5%	5%
Res students	5,955	5,823	5,308	5,409	5,219		439	432	399	408	395
Total	28,852	28,297	25,928	26,463	25,570		12,141	11,925	10,988	11,208	10,848
Total Change from 2010		-555	-2,924	-2,389	-3,282						
Population Projection from UB 2020 <sup>(11)</sup>					30,440	Parking Demand Projection from UB 2020 <sup>(11)</sup>					13,885
South Campus											
	Population <sup>(1)</sup>					Parking Ratio <sup>(b)</sup>	Parking Demand				
	2010 <sup>(2)</sup>	2013 <sup>(3)</sup>	2018 <sup>(3)</sup>	2023 <sup>(3)</sup>	Beyond <sup>(4)</sup>		2010	2013	2018	2023	Beyond
Staff <sup>(6)</sup>	1,235	1,261	990	1,003	637	0.78	963	984	772	782	496
Faculty <sup>(7)</sup>	636	680	606	389	216	0.49	312	333	297	191	106
Non-res students <sup>(8)</sup>	4,417	4,917	6,280	6,001	4,604	0.26	1,148	1,278	1,633	1,560	1,197
Total Commuters	6,288	6,858	7,875	7,393	5,457	Percent of Commuter Demand <sup>(10)</sup>	2,423	2,595	2,702	2,533	1,800
Visitors							22%	22%	19%	16%	10%
Res students	1,341	1,493	1,906	1,822	1,398		533	571	513	405	180
Total	7,629	8,351	9,782	9,214	6,854	0.25	335	373	477	455	349
Total Change from 2010		722	2,153	1,585	-775						
Population Projection from UB 2020 <sup>(11)</sup>					8,013	Parking Demand Projection from UB 2020 <sup>(11)</sup>					3,278
Downtown Campus											
	Population <sup>(1)</sup>					Parking Ratio <sup>(b)</sup>	Parking Demand				
	2010 <sup>(2)</sup>	2013 <sup>(3)</sup>	2018 <sup>(3)</sup>	2023 <sup>(3)</sup>	Beyond <sup>(4)</sup>		2010	2013	2018	2023	Beyond
Staff <sup>(6)</sup>	215	215	734	1,252	1,701	0.60	129	129	440	751	1,021
Faculty <sup>(7)</sup>	110	110	336	561	798	0.35	39	39	118	196	279
Non-res students <sup>(8)</sup>	195	195	826	1,457	4,025	0.15	29	29	124	219	604
Total Commuters	520	520	1,895	3,271	6,524	Percent of Commuter Demand <sup>(10)</sup>	197	197	682	1,166	1,904
Visitors							5%	5%	7%	9%	12%
Res students	0	0	0	0	0		10	10	46	99	228
Total	520	520	1,895	3,271	6,524		207	207	728	1,265	2,132
Total Change from 2010		0	1,375	2,751	6,004						
Population Projection from UB 2020 <sup>(11)</sup>					13,999	Parking Demand Projection from UB 2020 <sup>(11)</sup>					3,817
NOTES:											
(1) Obtained from UBFMP Campus Population Worksheet111005			(5) Parking ratios were obtained from the UB 2020 parking analysis.			(9) Visitor parking demand assumption was obtained from UB 2020 parking analysis.					
(2) 2010 population counts per campus were based on the UB2020 Parking Analysis. No change in population was recognized from 2008 to 2010.			(6) Staff FTE Growth Rates Based on FMP Phase III Report, Appendix F, Office Space Analysis and Guideline Application Table by Department. Aggregated by Campus.			(10) Existing 2010 and 2013 visitor demand was assumed to be similar to existing 2008 visitor rates in UB2020 parking analysis. “Beyond” visitor parking demand was assumed to be similar to UB2020 visitor rates for 2030. Phase 1 (2018) and Phase 2 (2023) visitor parking demand rates were calculated based on the projected population shift from South Campus to Downtown Campus in each of those phases. Based on projections in the UBFMP Campus Population Worksheet111005 spreadsheet, approximatley 25 percent of the total population shift from South Campus to Downtown Campus would occur by Phase 1 (2018), while 50 percent would occur by Phase 2 (2023).					
(3) 2013-2023 Population numbers were based on the FMP Phase III Projections for growth and planned academic realignment between campuses.			(7) Faculty FTE Growth Rates Based on FMP Phase III Report, Planning Assumptions page 13-14. Aggregated by Campus.			(11) Obtained from the UB 2020 Parking Analysis.					
(4) “Beyond” Population numbers only consider academic realignment from one campus to another. “Beyond” does not consider growth within schools that remain on campus as this information was not included within the Phase III report.			(8) 3.8% University Student Headcount Growth rate (Phase III, pg 11) from Fall 2009-Fall 2010 was applied to Fall 2009 departmental headcount (http://apb.buffalo.edu/facts/factbook/Enrollment/University/UniversityEnrollmentByMajorAndAcademicLevel.pdf) to determine Fall 2010 Student Headcount by department. Student FTE Planned Growth Rate by department (Phase III, page 13,14) was applied to 2010 Student Headcount and aggregated by campus.								

Table B-6: Parking Demand Summary.

PARKING

As part of the larger growth expected with UB2020, addressing parking needs was a challenge. With the revisions in growth expected within this FMP and beyond, the stress on the parking network is somewhat reduced, however the need remains to consolidate surface parking into structures thus allowing room for redevelopment of land currently used as surface parking. This redevelopment and infill development will move UB toward the creation of real “places” within each campus, where even the parking structures themselves, can contribute. As stated in UB2020, “New garages at UB will be designed for security, efficiency, architectural quality, and environmental impact...[including stairwells] enclosed in glass and located in view of adjacent buildings and pathways,” among other design elements (UB2020, p. 65). Additionally, opportunities for on-street metered parking along campus roadways have been proposed.

UB2020 included a projection of future parking demand for each campus. As part of this FMP, we have used the same assumptions and calculations as UB2020, refined to address the changes in expected campus population from now to 2013, 2018, 2023, and beyond. To remain most conservative, we have not assumed any change in transportation demand management (TDM) such as increased use of transit or non-motorized transportation. Should UB progress with these initiatives, the demand for parking may be further reduced.

The FMP parking analysis has refined the parking supply and demand for the base year of the FMP, 2013, for both future phases in 2018 and 2023, and “beyond.” To complete this analysis, the following steps were taken for all analysis years (Existing, 2013, 2018, 2023 and “Beyond” :

- Updated population figures for the campuses were provided by UB and included the number of staff, faculty, non-resident, commuting resident and non-resident students for each of the analyzed years.

- Parking ratios, which determine the needed parking per person, were taken from the work done for UB2020. By using the same ratios, the FMP is directly comparable to that done for UB2020.
- The number of projected parking space needs, or parking “demand”, was calculated by multiplying the population by the parking ratio.
- The 2008 inventory of parking lots and spaces as provided by the UB2020 parking analysis was used as the “Existing 2010” condition, and assumes parking supply has not changed since 2008.
- The building addition and removal plans for each phase of the FMP were reviewed for corresponding changes in parking.
- The amount of expected displaced and new parking were quantified for each analysis year.
- The projected parking supply was calculated by adding/subtracting the displaced and new parking from the existing total inventory of parking spaces.
- As in UB2020, a 5% contingency of parking spaces was removed from the total supply to account for fluctuations in usage. The remaining parking spaces are referred to as “available supply.”
- The projected surplus or shortfall of parking spaces was calculated by subtracting the available supply from the demand.

Table B-6 shows the population, parking ratios and resulting parking demand by year for each campus. As in the UB2020 parking analysis, visitor parking demands are based on a percentage of the total number of parking spaces for those commuting to the campuses. The population figures are smaller than those used in UB2020, which is what accounts for the smaller number of parking spaces projected. The population and parking projections for UB2020 are shown in italics at the bottom of the “Beyond” column for comparative purposes.

Within the sections on each specific campus, the figures and calculations for demand, displaced and new parking, available demand, and the surplus or

shortfall of parking projected for each campus in each analysis year are presented. The results, however, are significant, particularly for North and South Campuses where all future years but one (North Campus in 2013) show a surplus of parking due to the original parking plans from UB2020 being based on larger campus population numbers. With the reduction in population, the demand for parking is reduced, resulting in a surplus that would be available for future use.

Downtown Campus, however, is more complex, because the supply of parking is not documented in UB2020 to the same degree as for North and South Campuses. As a result, it is not possible to assess whether there would be a future surplus or deficiency of parking, however, it can be stated that the number of parking spaces projected to be required is over 1,600 spaces less than projected in the full build out of UB2020.

## SUSTAINABLE TRANSPORTATION

Finally, although not within the purview of this FMP, one of the four transportation strategies of UB2020 is supporting sustainable transportation alternatives through a strong transportation demand management program. This remains a crucial tactic to encourage walking, biking and transit use, and to minimize driving and parking. Managing the supply and demand of parking through changes to university parking policies, including pricing, must also be pursued to most effectively implement this strategy.

## CAMPUS OPERATIONS

Campus Operations include safety and security, transportation, maintenance and operations, materials handling, and storage.

Overall building operations for the proposed projects should be efficient with limited disruptions, changes, and loss in existing building operations to the greatest extent possible. On the South Campus, the impact on Campus Operations will be more complex due to significant demolition work that is planned. The North Campus has a variety of building wide renovations

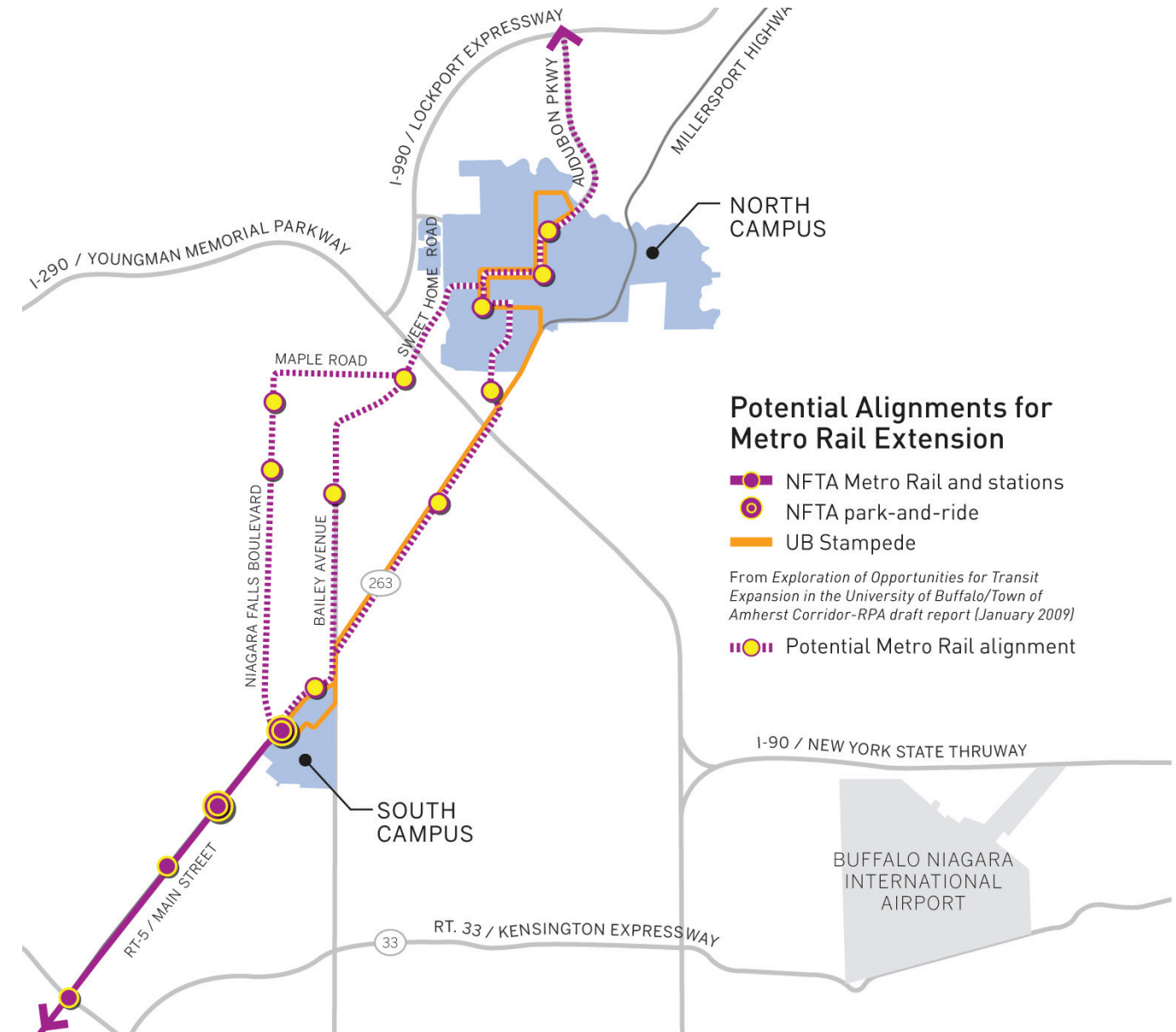


Figure B-66: Potential Alignments for Metro Rail Extension (Building UB, 61).

occurring while tenants are in place. These type of projects are likely to take longer overall and create more disruption in overall campus operations. Surge space in large congruent quantities is limited. However, when Media Studies moves from the Center for the Arts, 17,000 NSF will be available to utilize as surge space. While the School of Engineering vacated significant space within Bell and Bonner Halls, the college is projected to need space in all of its schools. Work to be completed in Cooke Hochstetter will occur in spaces vacated by the School of Pharmacy when it moves to Kapoor Hall on the South Campus.



SAFETY AND SECURITY

CURRENT PLANNING PERIOD

No significant new security initiatives are anticipated for the planning period 2013 -2023. Recent projects have included “blue light” and camera installations throughout the South and North Campuses, based on studies that were completed in 2007 and 2009 respectively.

BEYOND 2023

The Downtown campus will need a comprehensive facility with a communications and dispatch center, emergency operations center, and an enhanced police radio system, all of which should be shared by the security forces of other BNMC partners in order to coordinate efforts and maximize efficiency.

The Comprehensive Plan calls for a new University Police substation on the South Campus with modernized dispatch and monitoring facilities, dedicated parking, and a backup university-wide emergency operations center. The current facility, located in a room in Goodyear Hall, is inadequate to the security needs of the campus. The plan locates the substation in a new graduate student housing building atop the escarpment, overlooking Allen Hall and the Main Street Lawn, to provide high visibility and easy access to the new loop road and major pedestrian paths.

On the North Campus, a new public safety facility, located in a highly visible and accessible location on Millersport Highway near the Arts and Humanities and Athletics precincts, will replace cramped Bissell Hall with a modern, welcoming facility incorporating an emergency operations center that will serve all three UB campuses and the surrounding region.

ACCESSIBILITY

Accessibility spans across all aspects of campus community life; from transportation, wayfinding, outdoor green space and amenities, to the alterations and new construction of architectural elements including exterior and interior connective routes, academic buildings, on-and-off campus housing, daycare facilities, and to all programs, services and activities it offers to students, personnel, faculty and visitors.

UB’S CURRENT EFFORTS

UB is dedicated to creating a culture of diversity, sensitivity, and inclusion for all who work, go to school and visit all campuses. Its goal is to continually perfect the accessibility of its campuses, programs, and activities for people with disabilities. UB’s goal is to make certain that its Downtown, North and South campuses are fully integrated in a beautiful and seamless way, and that each campus and its buildings reflect a welcoming, compliant, and user-friendly atmosphere.

As a testament to its commitment, in 2003/2004 UB conducted a comprehensive Americans with Disabilities Act survey of its academic and residential facilities throughout its North and South Campuses. The 16-month long study, which spanned over 9 million square feet of buildings and over 1,100 acres of exterior site routes covered key areas of accessibility including parking, exterior and interior routes, entrances, horizontal and vertical circulation, toilet rooms, program spaces, and safety concerns. A two-phase Project Priority List was developed spanning from 2005 to 2014 identifying small to large accessibility improvements, many of which have been completed to date.

ACCESSIBILITY LAWS AND CODES

The University of Buffalo (UB) is a State-run University of New York (SUNY) and therefore must ensure that people with disabilities are afforded the same opportunities as those without disabilities under three distinctive federal laws:

- Section 504 of Rehabilitation Act of 1973,
- The Fair Housing Amendments Act (FHA) of 1988 , and
- The Americans with Disabilities Act (ADA) of 1990, specifically Title II covering State and local government programs, services and activities.

Section 504 covers schools that receive federal dollars. ADA Title II requirements affecting state-funded schools were modeled after Section 504. Higher education institutions receiving federal dollars that make available student housing including dormitories and apartments with five or more units must follow the design and construction requirements of the FHA.

Each of these laws comes with its own set of design and construction guidelines:

- Section 504 of Rehabilitation Act of 1973 uses the Uniform Federal Accessibility Standards (UFAS).
- The ADA Title II uses the 1991 ADA Standards for Accessible Design, or it also has the option of using UFAS.
- The FHA uses the FHA Accessibility Guidelines.

In addition to its federal compliance obligations, UB is also required to comply with the accessibility provisions within the Access Code of the New York State Building Code, Chapter 11, which uses the ANSI A117.1 Accessibility in Buildings and Facilities.

A more recent concept is that of “universal design”; a blueprint for the inclusion of all people. Universal design promotes design, construction and product concepts which are usable by people with the widest possible range of abilities, operating within the widest possible range of situations.

GUIDELINES FOR ACCESSIBILITY

The University’s Design Guidelines state that the most stringent accessibility standards are to be used for alteration and construction projects, which at the time of the ADA Assessment were the Americans with

Disabilities Act Standards for Accessible Design (1991). Under the New York State Building Code it was the American National Standard Accessible and Usable Buildings and Facilities - ANSI A117.1-1998.

**NEW ADA STANDARDS FOR ACCESSIBLE DESIGN COMPLIANCE DATES**

On September 15, 2010 the ADA Regulations and Standards for Accessible Design were updated and adopted by the U.S. Department of Justice, Civil Rights Division, and Disability Rights Section. The 2010 document was developed to harmonize the 1991 Standards and ANSI in an attempt to eliminate confusion for entities required to follow the many accessibility requirements, and mitigate errors and omissions when designing and constructing new or altered facilities. The updated documents contain two relevant parts:

- 1. Revised regulations and
- 2. Revised scoping and technical guidelines

**ACTIONS TO ACHIVE ACCESSIBILITY**

UB currently has ADA Title II obligations to comply with regulations that became effective on March 15, 2011. These regulations require UB to look at its policies and procedures to ensure compliance with:

- Sale, hold and release policies for accessible seating, and more.
- Allowance of service animals (dogs or miniature horses) on campus.
- Effective communication to include video remote interpreting (VRI) services as a kind of auxiliary aid that may be used to provide effective communication.

Utilizing the most stringent scoping and technical requirements from both the New York State Building Code and the 2010 ADA Standards for Accessible Design will ensure maximum accessibility and usability of all campus facilities.

**REQUIREMENTS BEGINNING MARCH 15, 2012**

On March 15, 2012, compliance with the 2010 ADA Standards for Accessible Design will become enforceable for new construction and alterations of buildings and facilities. It states that:

- Buildings/facilities or elements that were constructed or altered before March 15, 2012, and that do not fully comply with the 1991 Standards or with UFAS must be made accessible in accordance with the either the 1991 Standards, UFAS, or the 2010 Standards before March 15, 2012.
- Buildings/facilities or elements that were constructed or altered on or after March 15, 2012, and that do not comply with the 1991 Standards or with UFAS must be made accessible in accordance with the 2010 Standards on or after March 15, 2012.

The rule includes a general “safe harbor” under which elements in covered facilities that were built or altered in compliance with the 1991 Standards or the UFAS would not be required to be brought into compliance with the 2010 Standards until the elements were subject to a planned alteration.

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