

D. SOUTH CAMPUS “THE PROFESSIONAL CAMPUS”

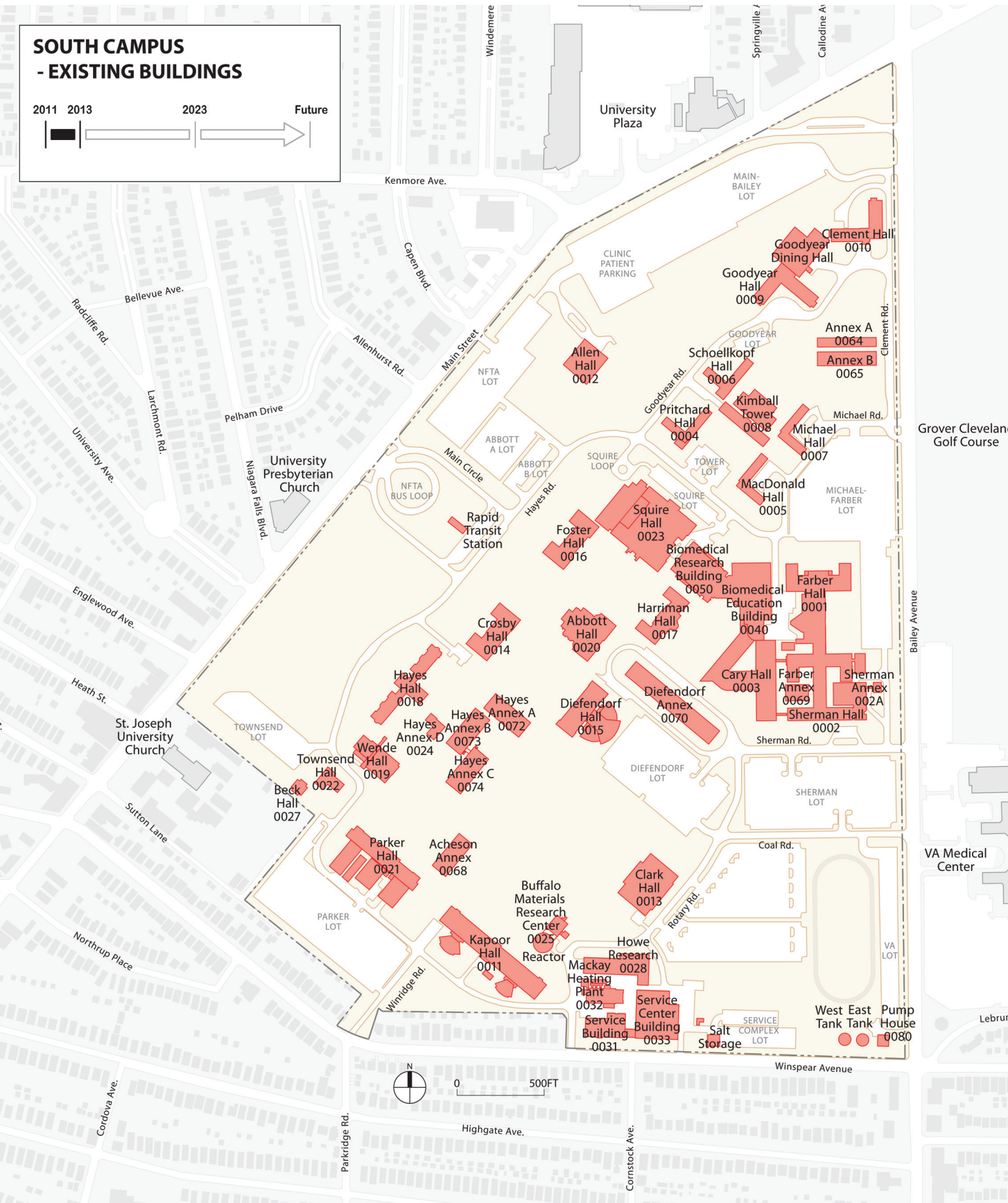


Figure D-94: Existing South Campus Plan (Building UB, 147).

SOUTH CAMPUS

From Main Street, UB’s South Campus presents a postcard view of the quintessential American university campus with historical buildings in a pristine landscape. From other viewpoints, however, the campus presents a different image of a campus with awkward building additions, 40 year old “temporary” sheds, a worn and patchwork landscape, and a confusing array of service routes and roadways. Since the early stages of North Campus development, when attention and resources were diverted away from South Campus, it has suffered from a lack of purpose and vision. The goal of the Facilities Master Plan for South Campus is to restore both its physical beauty and its intellectual and social vitality. It will have a new purpose, focused on the interdisciplinary potential of four professions with an orientation to civic engagement and the urban setting. Its classic plan is to be rehabilitated through judicious demolitions, strategically placing new buildings, a simplified loop road, new and restored quadrangles and a revitalized landscape.

**SOUTH CAMPUS
- ANALYSIS OF ASSETS FROM
THE EB GREEN PLAN**

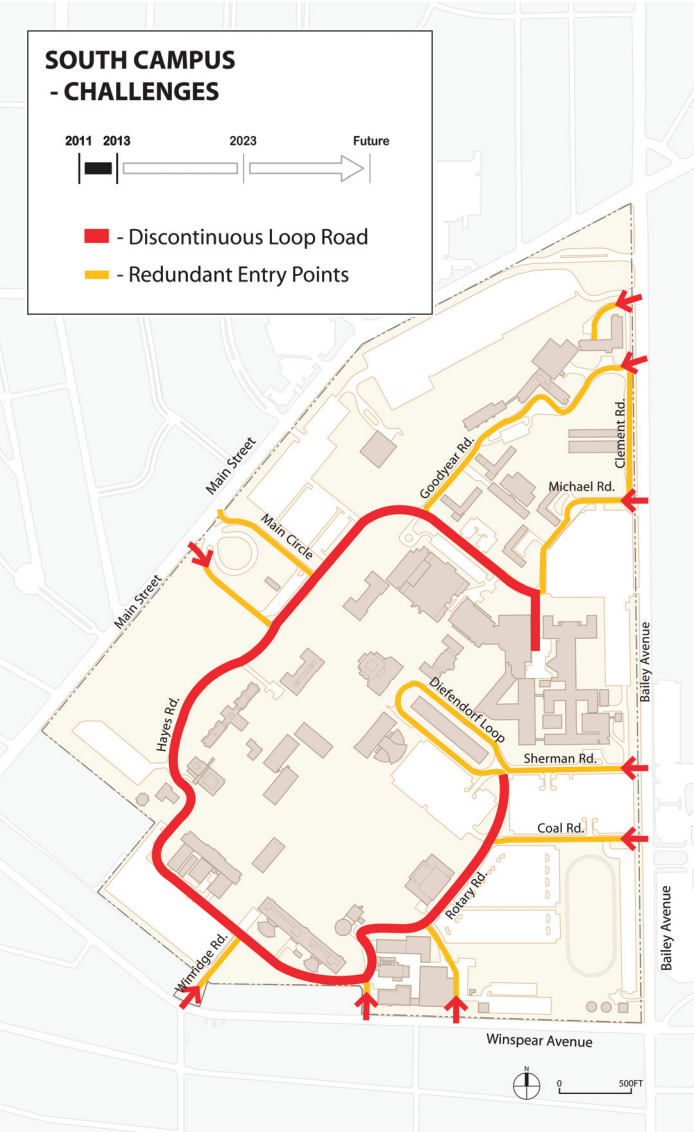


Figure D-95: South Campus Challenges (Building UB, 149).

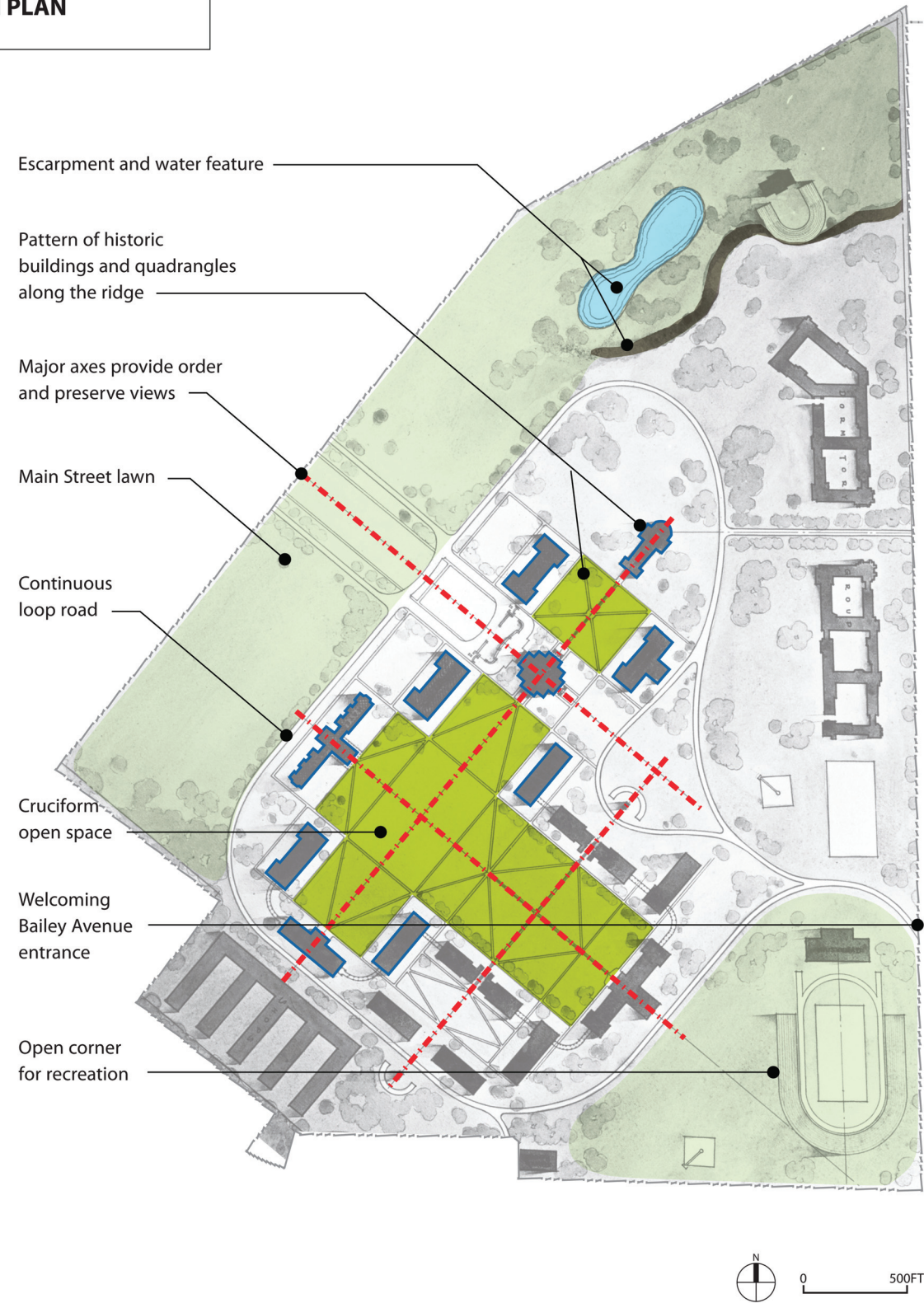


Figure D-96: Analysis of Assets from the E.B. Green Plan (Building UB, 149).

CURRENT LAND AND BUILDING USE

The South Campus as it exists today can be understood as a product of two eras of development. The first began in 1930 when the University commissioned E.B. Green to establish a new master plan. By that point, Foster Hall had already been completed, designed by renowned architects McKim, Mead, & White. E.B. Green integrated Foster Hall, along with Hayes, Wende, and Townsend Halls, into a campus plan of buildings organized around quads in keeping with the best of traditions in American campus planning. The firm designed and oversaw the construction of a wave of new buildings to implement the plan: Beck Hall, Crosby Hall, McKay Heating Plant and Service Building, Abbott Library, Harriman Hall, and Parker Hall. The 1930 plan guided the growth of the campus for the next 20 years.

By 1960, however, the campus succumbed to the pressures of rapid growth during the post-war era. The siting of Diefendorf Hall conformed to the E.B. Green plan, but the construction of Farber, Cary, and Sherman Halls broke with the plan as did the construction of MacDonald, Michael, Schoellkopf, Pritchard, Kimball, and Goodyear Hall dormitories. After UB became part of SUNY in 1962, population growth brought a series of prefabricated buildings cluttering what had been planned open space. These “temporary” buildings still stand today after over 40 years, compromising the realization of the original E.B. Green plan.

The campus roadways have also developed without adherence to the master plan. Without a complete loop road, drivers are forced to redirect themselves by exiting the campus and re-entering at other entrances. Together there are eleven different entrances to campus with no particular hierarchy. To add to the confusion, the roadways address some buildings at their fronts and others at their backs. In terms of open spaces, apart from having been filled in the campus core with temporary structures, at the perimeter, open spaces have been dominated by surface parking lots placed in utilitarian fashion, breaking up the pedestrian

environment. Despite these departures from the E.B. Green plan, the original campus assets that remain preserve the fundamental value of Green’s vision.

Today much of the development from before the end of the 19th century through the E.B. Green era makes up South Campus’s proposed historic district. While only Foster hall has made it onto the City of Buffalo’s historic register 13, buildings are eligible for registration on the National Register of Historic Places. The Historic District on campus is not only comprised of buildings but also includes central quads and pathways as well as the lawn in front of Hayes Hall.

Together, the built and un-built elements of the E.B. Green plan provide solid guidance for restoring the beauty and vitality of the campus. Another asset to South Campus is the surrounding University Heights neighborhood. The campus benefits from the housing, retail, and entertainment services the neighborhood offers. While its integration with the campus can be improved, the Metro Rail station and bus hub provides easy access to the campus, connecting it to Downtown Campus and other key destinations in Buffalo.

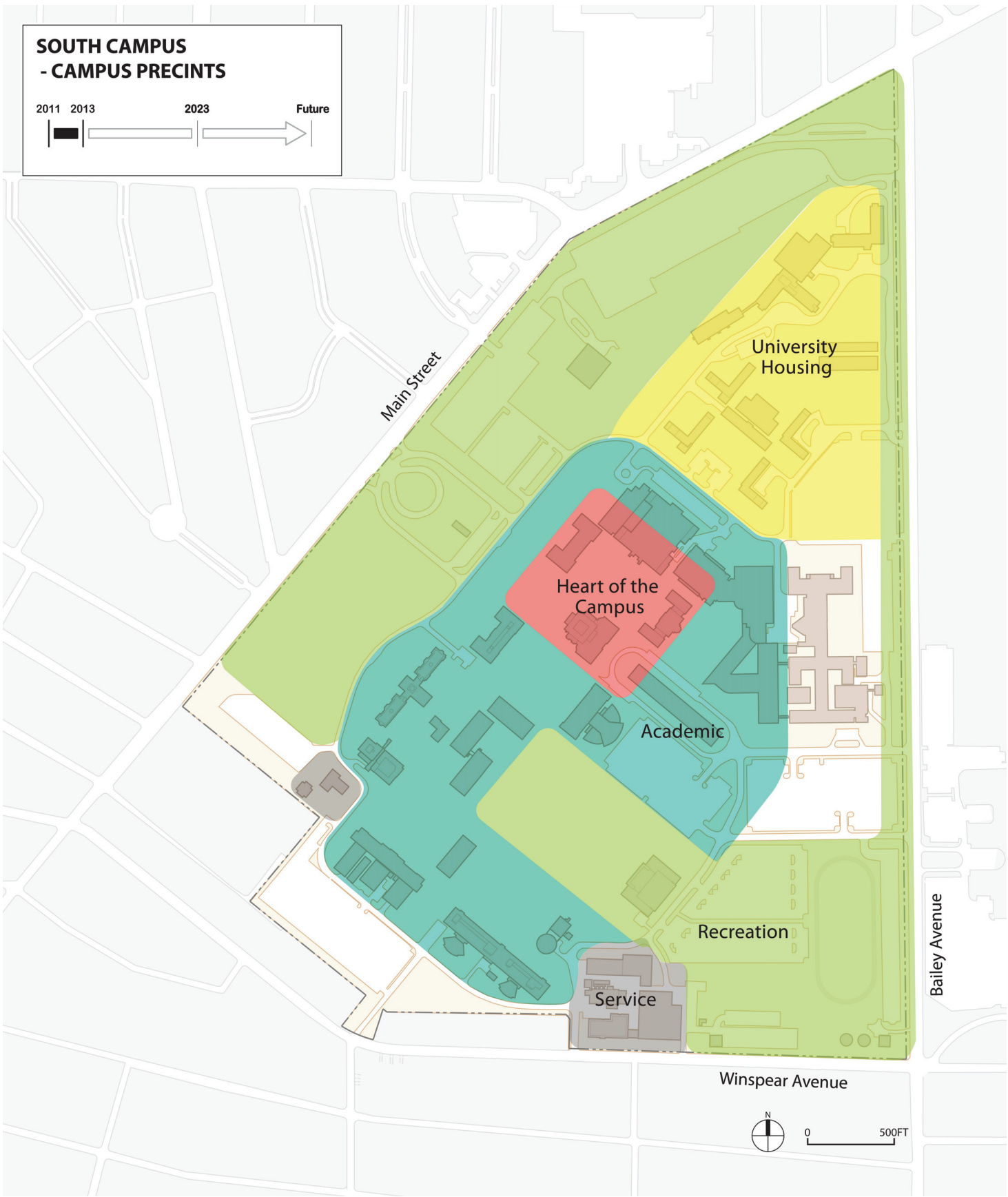


Figure D-97: Campus Precincts (Building UB, 149).

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Figure D-98: Framework for Campus Transformation (Building UB, 149).

DESIGN PRINCIPLES

In order to map out a strategy that restores the form of the E.B. Green plan while charting out the vision for the future professional campus, several guiding design principles were formulated:

- Strengthen the Professional Education Campus.
- Reinforce the historic E.B. Green Plan.
- Create an active and attractive public realm by landscaping quads and defining edges with buildings.
- Create an active and attractive Heart-of-the-Campus (HOTC).
- Remove outmoded buildings as soon as is practical to reduce operational and maintenance costs.
- Create connected campus loop roads.
- Maintain critical mass of population throughout stages of academic realignment.
- Limit number of moves per use to a single move if possible.

DESIGN APPROACH

The basic premise of Facilities Master Plan for South Campus is the restoration of E.B. Green’s original design intent. To this end, the plan preserves and updates legacy structures that have historic value while removing temporary and defunct structures that contradict the form of the E.B. Green plan. It also adds selective buildings to complete edges of quads and the central lawn.

Quads and lawns will be improved with a landscaping strategy that creates a more unified, lively, and pleasant environment that attracts activity and repose while establishing hierarchies that provide a sense of arrival and place. Abbott Hall along with Harriman Hall and Harriman Quad will be transformed to become the new heart-of-the-campus, with student life and services centered in these locations to provide a common place for social gathering and administrative uses.

A new main entrance to the campus will come in from Bailey Avenue creating an axis centered on Abbott Hall as the focal point. Meanwhile, a cross axis will be established along the natural ridge of the campus, joining the cruciform lawn with Harriman Quad as the main pedestrian pathway. Site restoration of the perimeter of the campus will also significantly affect the image of the campus as well as remain in keeping with the historic plan.

The Professional Education Center (PEC) is an important part of the vision for South Campus to engage the community. The PEC will house executive education programs of the School of Management and accommodate continuing education programs for other units of the University. Furthermore it will support interdisciplinary study, continuing education and fill an overdue need for more centrally scheduled classroom space. The PEC is situated in a prominent position at the south of Diefendorf Hall adjacent to the new Abbott Road entry drive.

COMPONENTS

The goal for the South Campus is to establish a new center of interdisciplinary professional education comprising the Schools of Law, Education, Social Work, Architecture and Planning, and some programs from the School of Management. All of these will migrate from North Campus with the exception of Architecture and Planning, which already resides on South Campus. Health sciences will simultaneously migrate to Downtown Campus, beginning with the School of Medicine and Biomedical Sciences and eventually the move of the School of Nursing, School of Public Health, School of Dentistry and School of Pharmacy. Long term visions of a UB-affiliated laboratory school and business incubators illustrated in the UB2020 may eventually find a place on South Campus but are currently beyond this FMP.

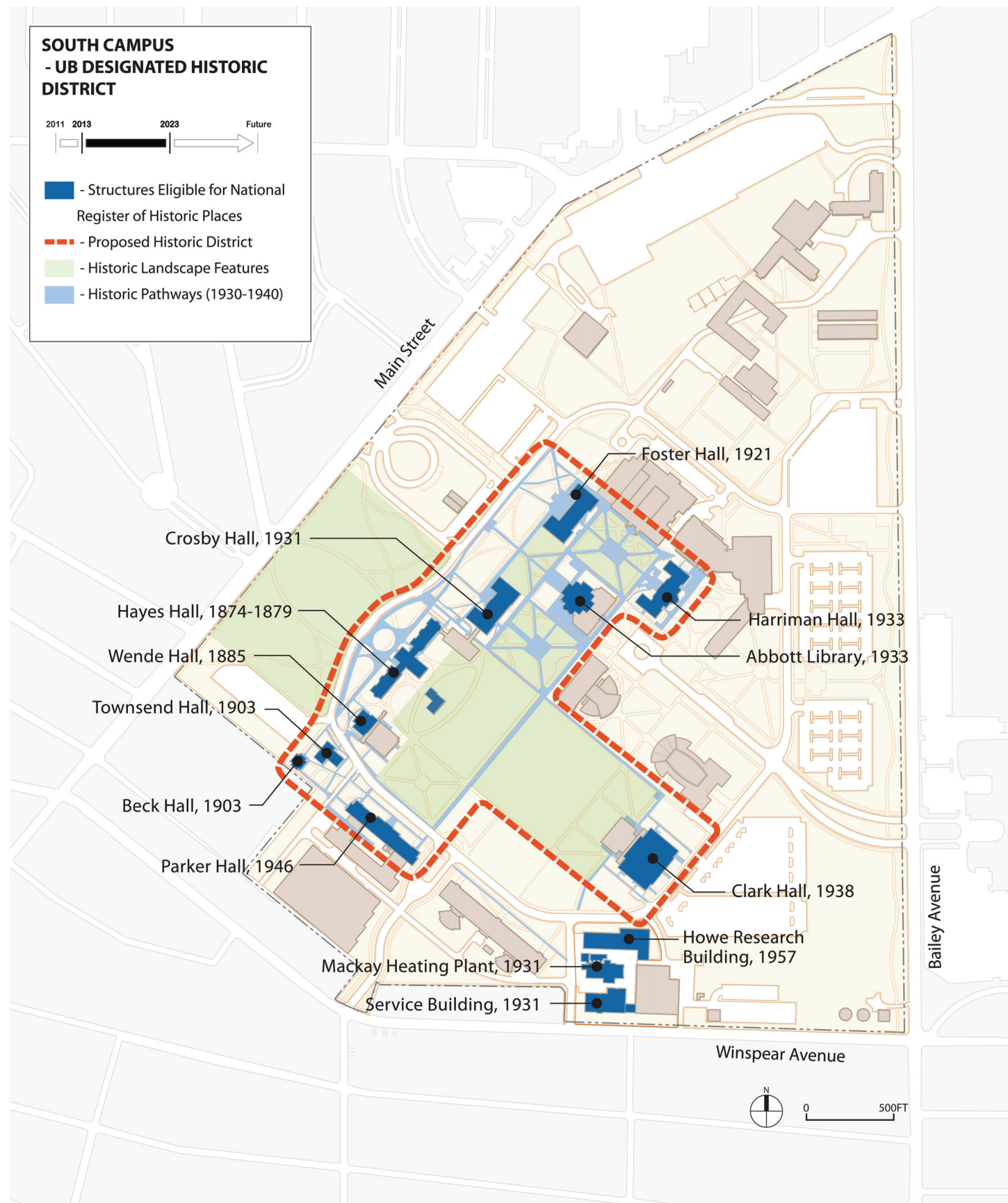


Figure D-99: South Campus UB Designated Historic District (Building UB, 177).

Emphasis will be placed on establishing important amenities to enrich campus life. UB 2020 envisioned a new dining hall with longer hours and more varied menu options that will serve the new professional population with full-time schedules. With more community oriented programs (including educational, recreational, and arts and cultural activities) on-campus dining venues have the potential of engaging the community at large.

In terms of housing, South Campus will dramatically change the number of beds that will be available to the shifting student demographic. Of the existing six residential halls only two, Goodyear and Clement Halls, will remain upon the final build out. Both Goodyear and Clement Hall will undergo extensive renovations in order to provide apartment style housing to support the professional student body. After renovation only 662 beds will remain between Goodyear and Clement Hall. Three additional student housing buildings will be added to the South Campus, but will also come to fruition beyond the 2023 timeframe. These three complexes will provide townhouse style apartments for graduate students on campus.

Additional campus life initiatives will start with the expansion and renovation of Clark Hall. This renovation along with the restoration of adjacent recreation fields will help to modernize the current facilities and will provide recreation space for not only the student body but for the community as well. Beyond the 2023 timeline a new Student Union and the development of multipurpose fields will follow. The new student union located in Squire Hall will act as a year round gathering space and provide a food court for students.

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Figure D-100: South Campus Community Connections (Building UB, 164).

COMMUNITY ISSUES

UB has had a symbiotic relationship with the neighborhoods surrounding its campus on Main Street for the better part of a century with the fates of the university and neighborhood 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, as well as the security and quality of the built environment, are of great concern to both. As Downtown Campus develops, South Campus becomes an important center point between downtown and North Campus. This FMP follows UB2020 strategy of “connecting” at South Campus through existing assets and strong relationships with the surrounding neighborhoods.

The community oriented spaces offered at South Campus include Allen Hall, expanded outdoor and indoor recreational spaces, the PEC, the transit pavilion, and many dining venues. Community oriented academic programs will be offered from various departments, but particularly the professional schools that will make South Campus their home. In order to fully engage the community, South Campus will maintain its openness and accessibility, without fences or gates, with clear entrances and parking options and pedestrian pathways. At the same time, campus safety and security will be improved with the application of the latest surveillance technology, careful landscaping that allows clear sight lines, better lighting, and increased police presence. With the collaboration with adjacent property owners, the campus and neighborhood can become safe and desirable.

RENOVATION AND DEMOLITION

While most of the legacy buildings on South Campus remain in fair to good condition, many structures are in poor condition with high FCI rating (Facilities Condition Index). Through the study of various past facilities conditions assessments, an approved list for the demolition and renovation of buildings has been formulated by the University and documented within this Facilities Master Plan. Buildings to be demolished include temporary structures erected in the 1960s, but also include Cary, Farber, and Sherman Halls which are to be vacated by the medical school and are not suitable for renovation. Other buildings slated for demolition include the four wings attached to Parker Hall, the Buffalo Materials Research Center, and dormitories known as the Triads. The remaining structures will be updated and adaptively re-used to maximize operational efficiency and meet the future programmatic needs of the campus.

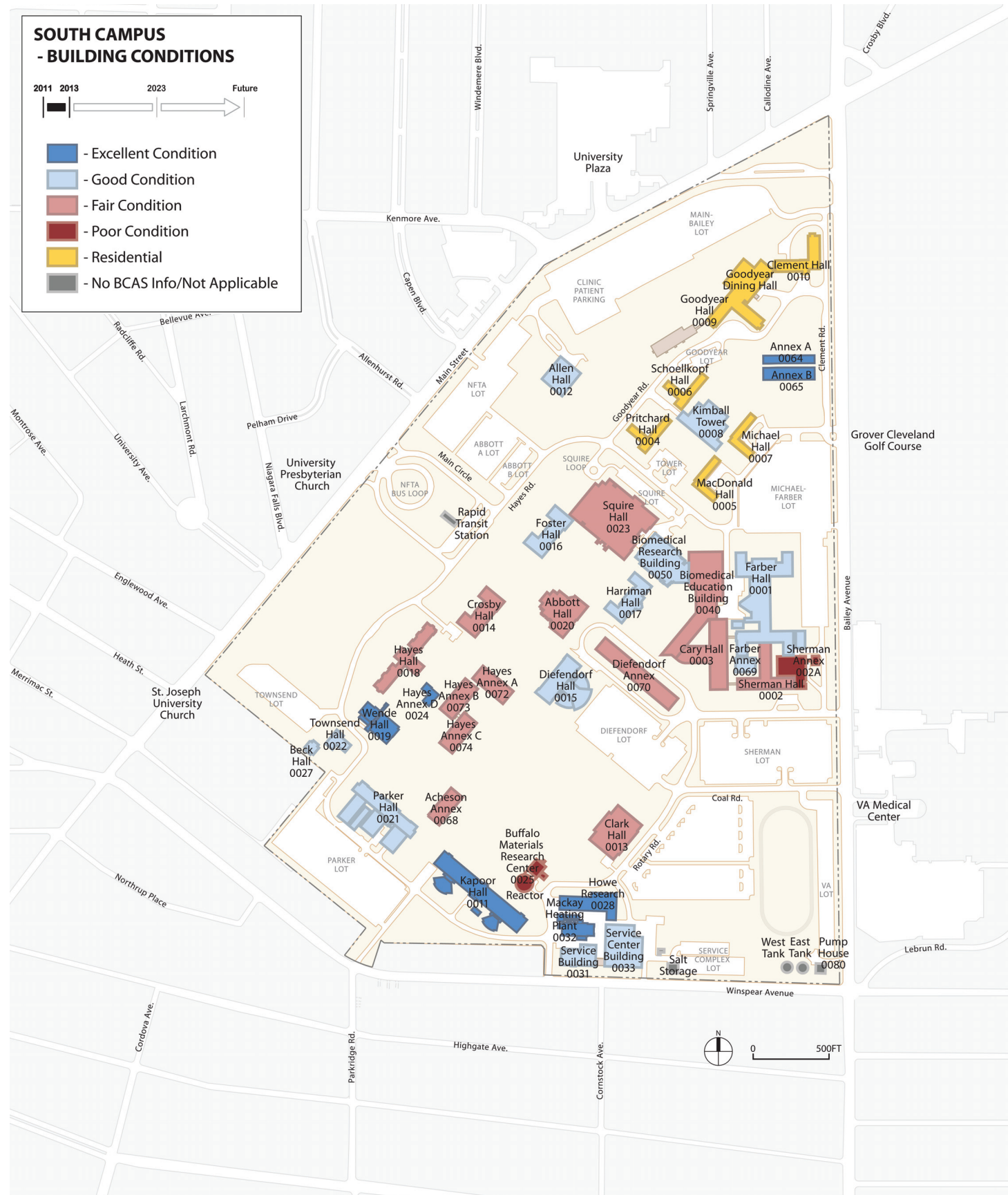


Figure D-101: South Campus Building Conditions Diagram.

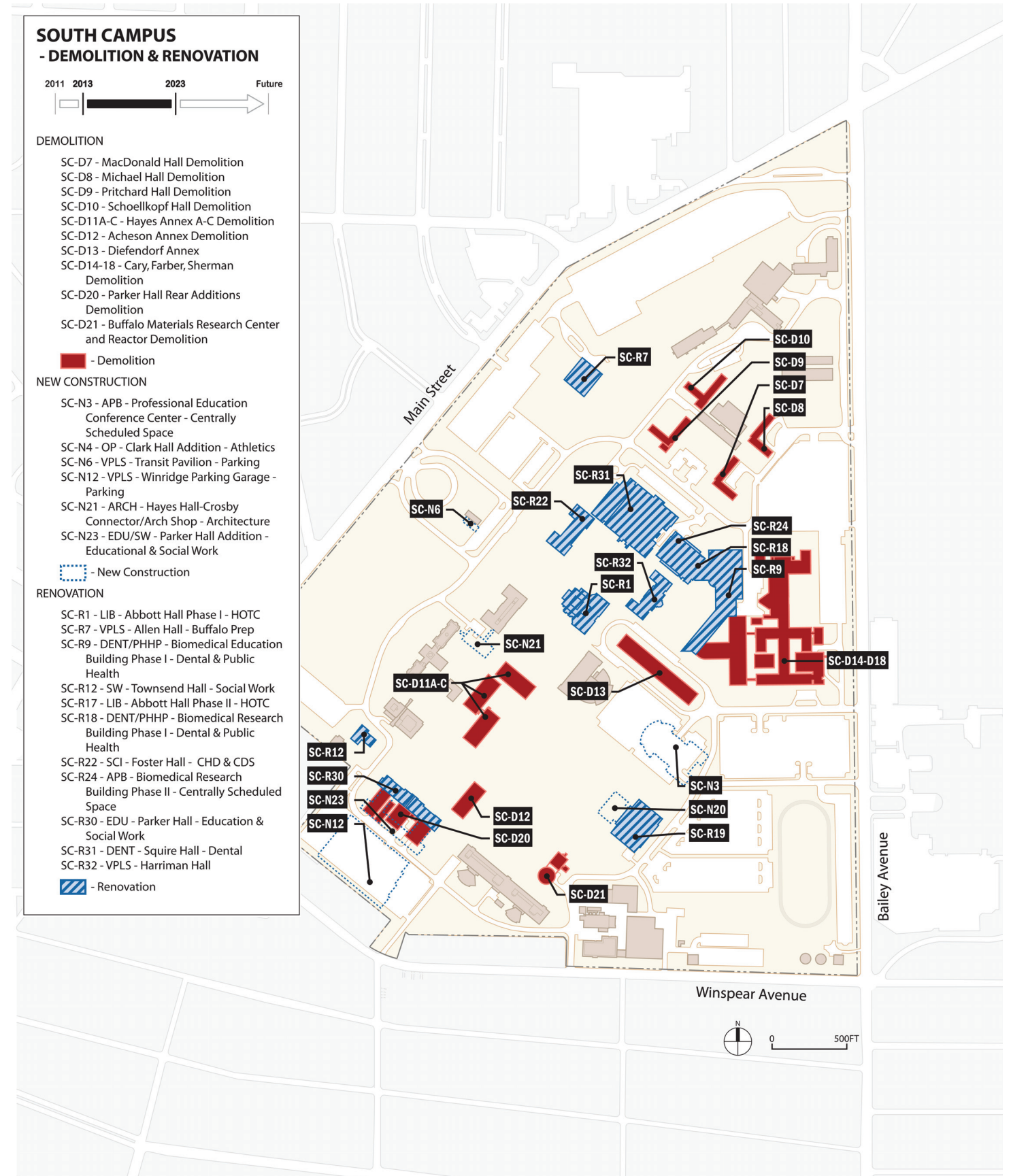


Figure D-102: South Campus Demolition and Renovation.

NEW CONSTRUCTION

New construction will be selectively added to accommodate the repurposing of the South Campus as a professional campus and to meet its evolving programmatic requirements. Each new construction project will present an opportunity to realize and restore the E.B. Green master plan by establishing hierarchies with buildings organized around quads. New projects include an addition to Parker Hall, in place of the demolished wings, designed to meet the space needs of the School of Education and School of Social Work. The Professional Education Center (PEC) building situated opposite Diefendorf Hall will create a new quad and become a focal point to the future main entrance at Bailey and Abbott Road. Hayes Hall will have an addition joining Hayes and Crosby Halls with a materials shop for the School of Architecture and Planning. As part of the campus life initiative, Clark Hall will be renovated and expanded to included recreation and wellness amenities. In order to accommodate population growth along the southern edge of the campus with the School of Social Work and Education moves, a new parking deck will be added south of Parker Hall in place of the existing parking lot.



Figure D-103: 2023 South Campus Diagram.

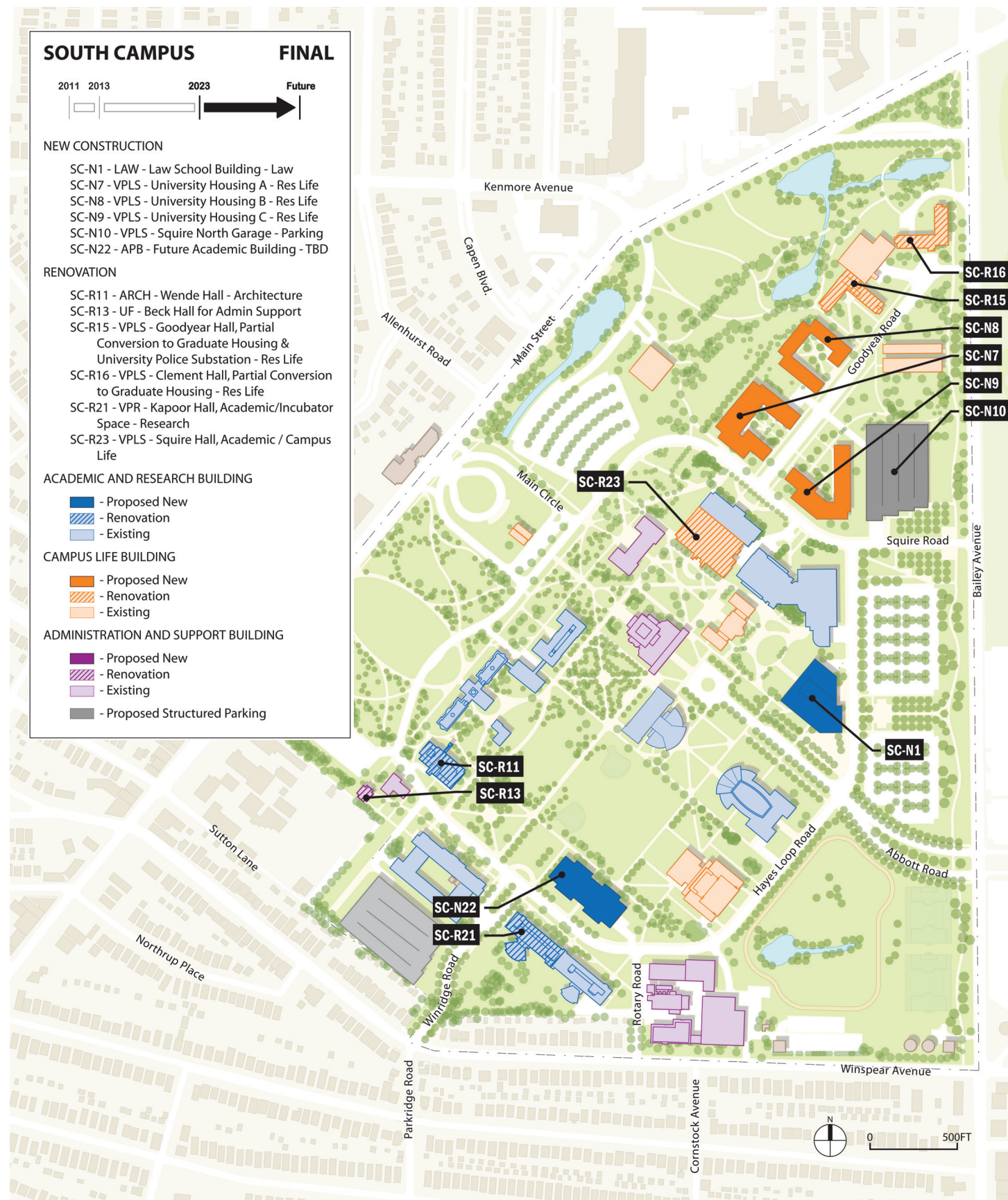


Figure D-104: Final Buildout South Campus Diagram.

ULTIMATE BUILDOUT

At the ultimate build-out of the South Campus, the spirit of the E.B. Green Master Plan will finally be realized. As quads are completed and landscape takes form, it will truly become the quintessential American campus that was once envisioned. Beyond 2023 the campus population will expand with new residence halls and business incubators forming new quads north of Squire Hall. The adjacent parking lot along Main Street will be replaced by a lush landscape integrating retention ponds as pastoral landscape features. The law school will finally occupy South Campus and bring with it an additional parking structure at Bailey Avenue. A new academic building will frame Clark Hall completing the cruciform lawn envisioned by E.B. Green. Other existing buildings will continue to be updated and restored to bring together the campus to become a heritage for future generations.

PUBLIC / PRIVATE DEVELOPMENT

Currently, there are no public/private projects identified within the 2013 – 2023 timeframe of this FMP for South Campus.

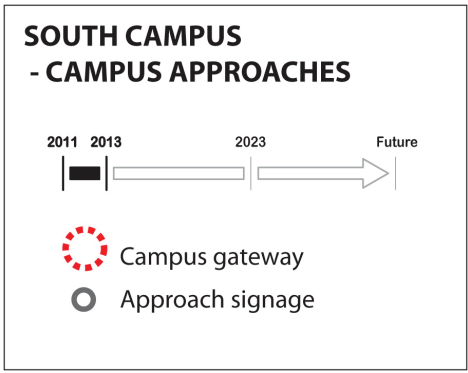


Figure D-105: South Campus Approaches Map.

WAYFINDING

The South Campus identity monument locations could be enhanced with entry features more in proportion to the campus environment with the addition of architectural walls and fence elements to direct and welcome visitors on all approaches. Primary and secondary features should coordinate with topography and landscaping to strengthen the corporate image of the facility and serve landmark functions.

Stone walls are employed to extend the vernacular of the more historic buildings and as a projection of the school’s long history in Buffalo. Permanent material applications and ground lighting would raise the level of sophistication for the name and lower maintenance costs.

Directional signs and building identity sign types should hold larger letters to allow for visibility and reading from a distance. Sign features at building entrances should fit the scale of the architectural experience and be positioned to frame entries and serve more viewing angles.

Regulatory sign types could be more consistent and much in the way of maintenance and replacement is warranted. A renovation of regulatory and code-required graphics and signage is needed to improve the way-finding and proper function of all spaces within the campus.

The South Campus is in need of enhanced identity elements to architecturally express main entrances. Dynamic sign types designed to carry seasonal and temporary messages can function more effectively than passive static designs. In addition to dynamic signage, monumental signage is another way to garner key focus on important campus features. For example, the line of sight on Main Street in front of Hayes Hall is an ideal and appropriate location for a monumental identity sign element. Although the entrance is adjacent the bus loop, the proper combination of sign elements will help guide visitors in and around to parking in a clear and logical way.

The existing monument in front of Hayes Hall should be replaced with an architectural gesture in masonry and other permanent materials; enhanced landscaping would also serve to establish its significance. A similar but scaled installation at the main / bus loop entrance, framing both sides of the entry, should include a sequence of vertical directional signs. These

directional signs are to be of a primary scale at street frontages and secondary scale within the campus roadways where speed of traffic is reduced.

At the intersection of Main Street and Bailey Avenue a similar need for an architectural feature must fit within the infrastructure (sidewalks, poles and transformer) but the background of mature trees provides another key view for purposes of branding the Health Sciences complex.

Existing signs do employ a sort of masonry with stone piers capped on either side to frame metal cabinets, but larger horizontal proportions would be in keeping with the dignity of the campus architecture and ornamental fence elements communicate the scale of a campus whether they entirely surround the perimeter or only frame sections at entry locations.

Likewise along Bailey Avenue and at entries off Winspear Avenue and Winridge Road, consistent use of retaining walls with monumental panels, scaled down to fit the confines of these secondary entries, will complete a framework of landmarks more memorable to visitors and provide for reassurance to visitors that they have ‘arrived’.

At Main Circle, Michael Road and Sherman Road there may also be a place for flagpoles or sculptural features to distinguish and serve in concert with signage for place-making purposes. Then it is important to follow up and provide description of elements and entry features where directions are provided on websites and printed pieces to complete the orientation.

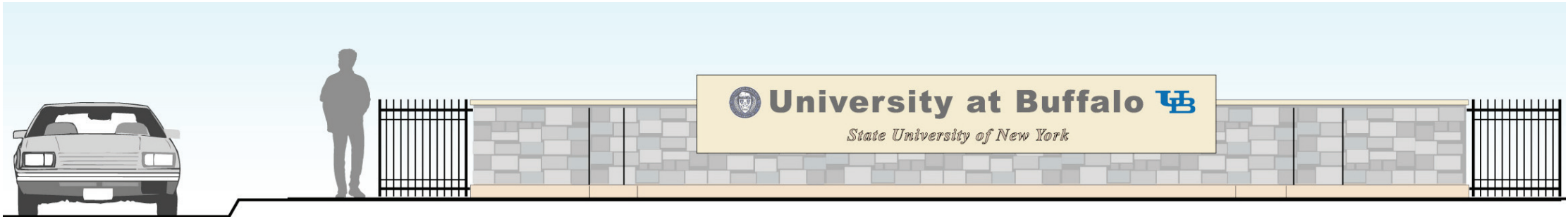


Figure D-106: South Campus Monumental Signage Types.

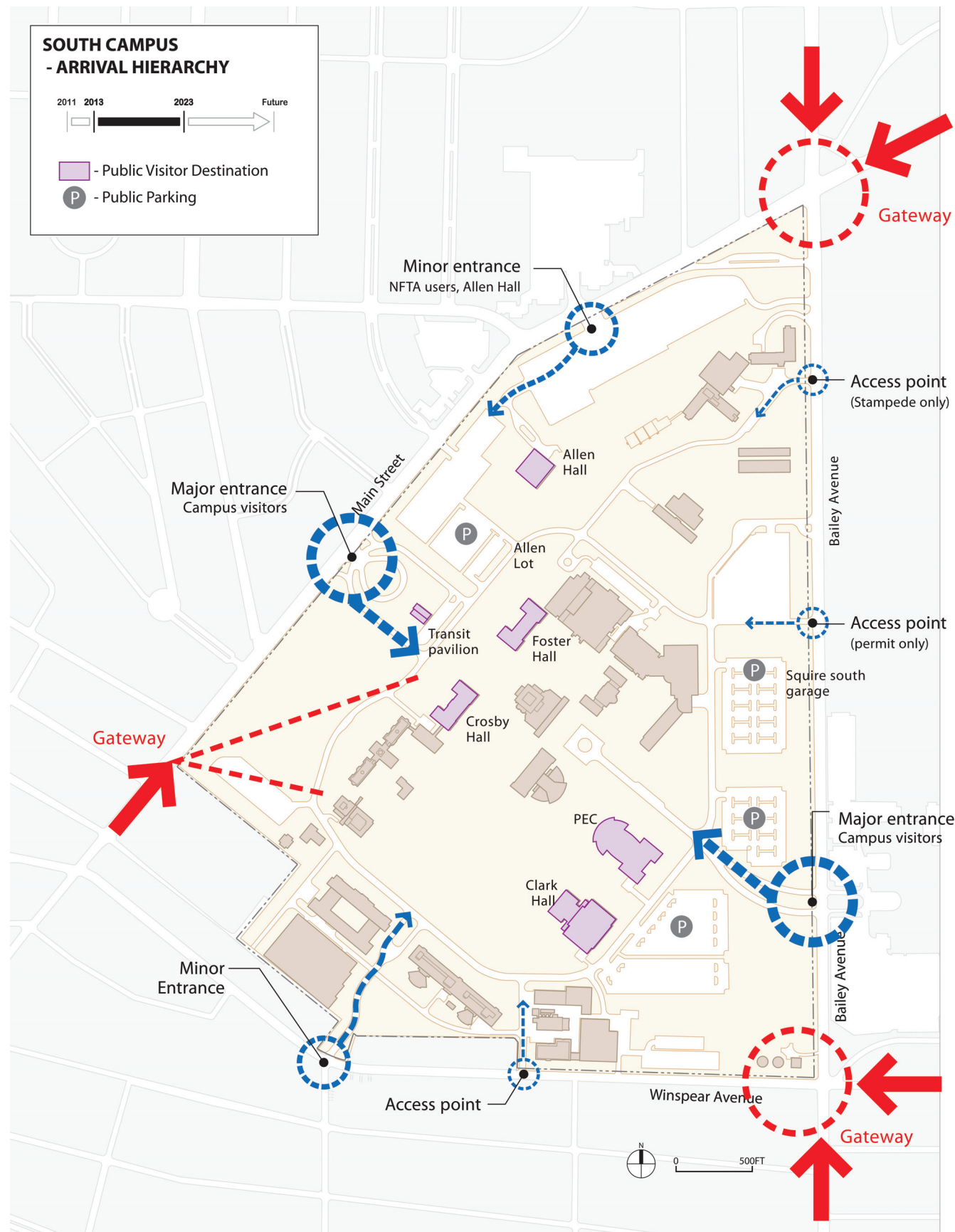


Figure D-107: South Campus Arrival Hierarchy.

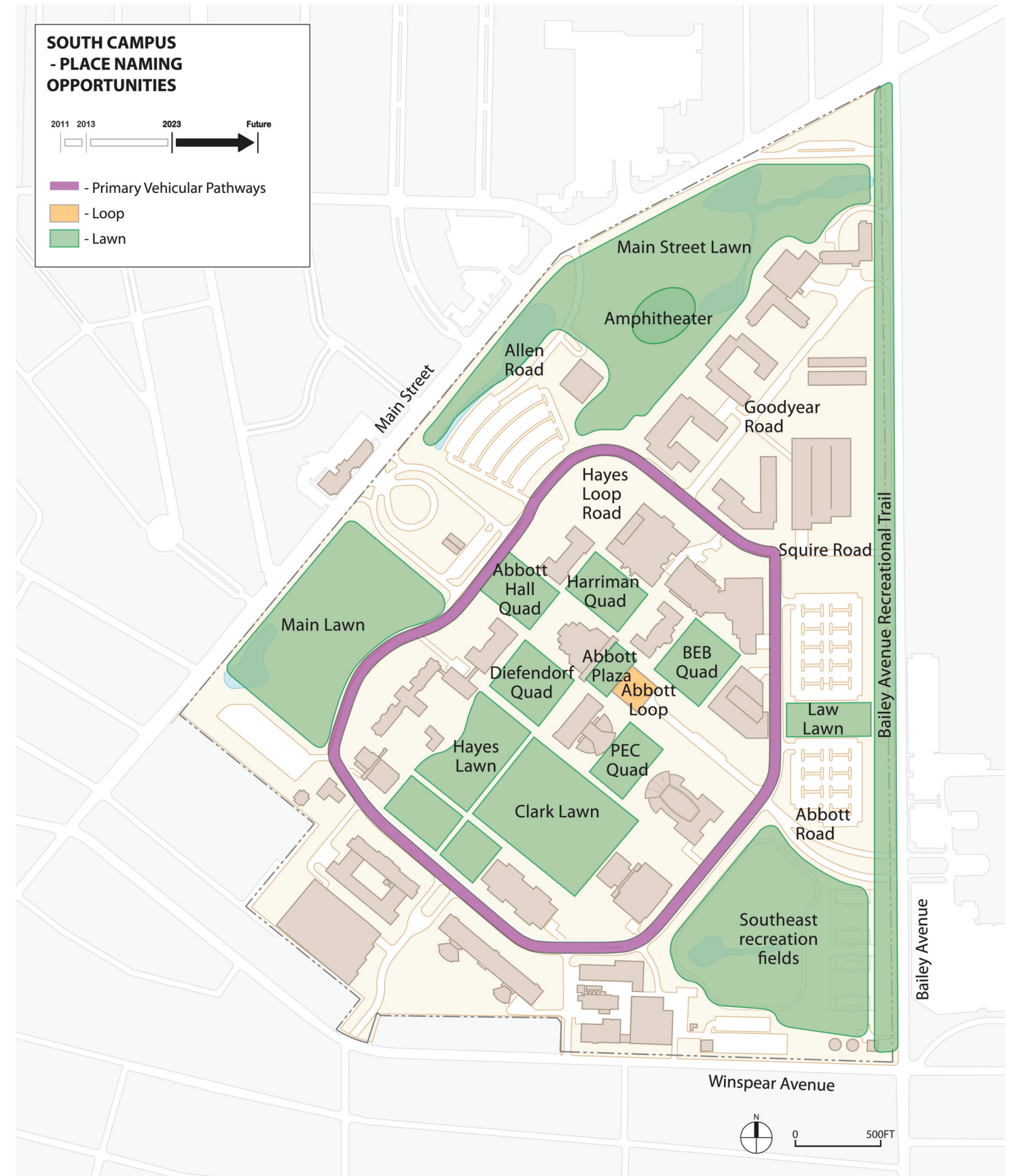


Figure D-108: South Campus Place Naming Opportunities.

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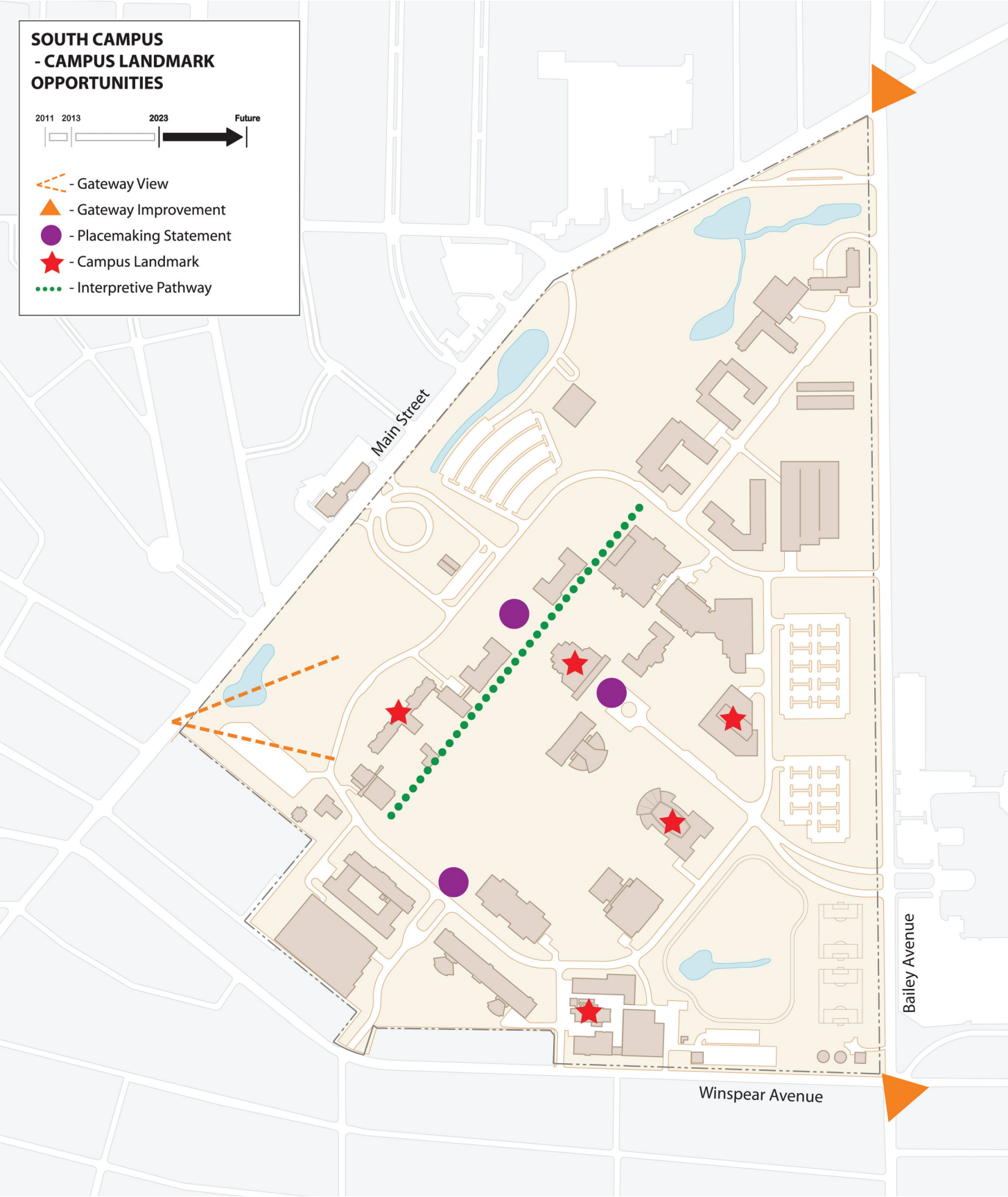


Figure D-110: South Campus Landmark Opportunities.



Figure D-109: South Campus Street Addresses.

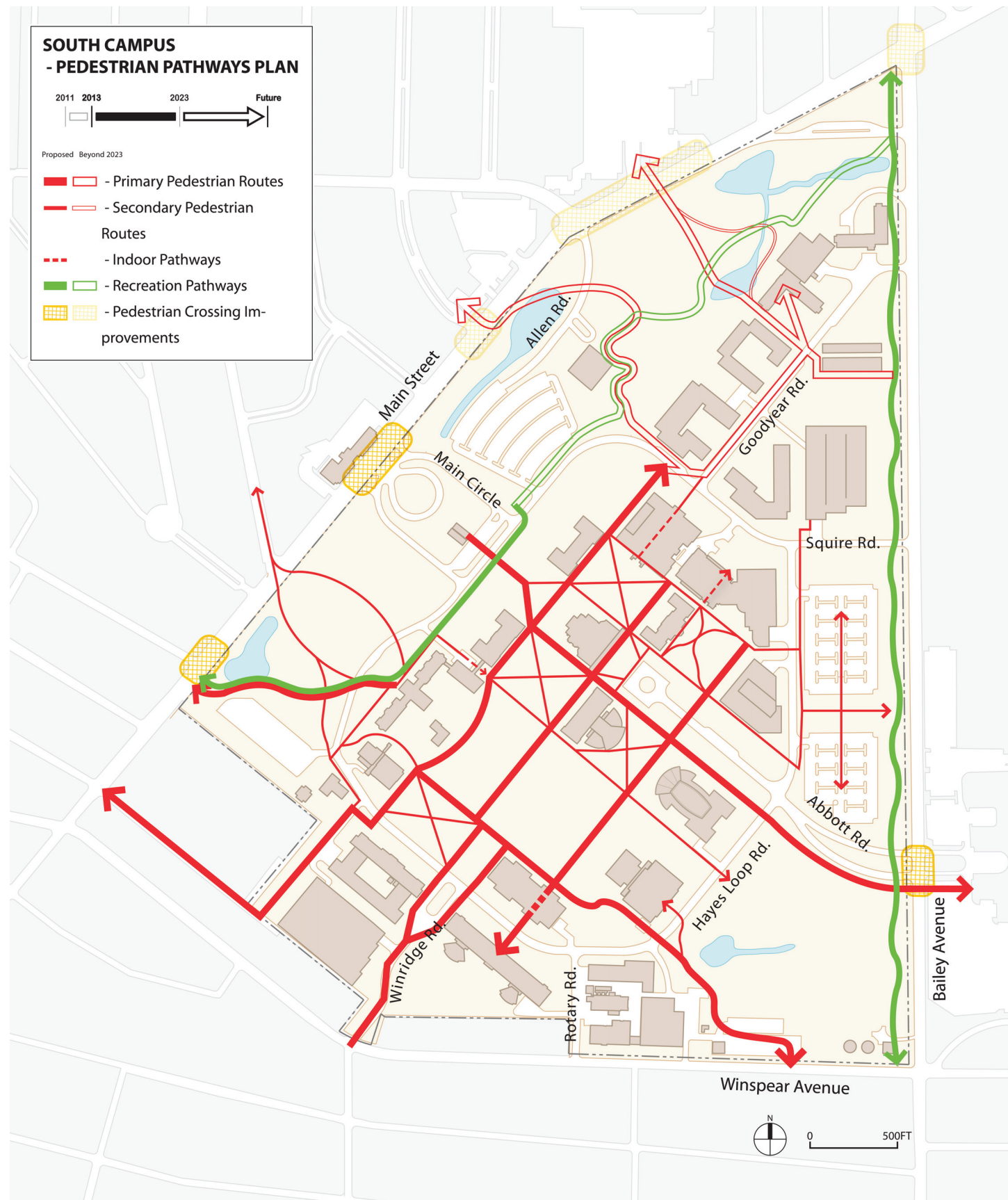


Figure D-111: South Campus Pedestrian Pathways Plan Diagram.

CIRCULATION

PEDESTRIANS AND BICYCLES

The realignment of campus buildings and roads in support of the original plan for the South Campus would result in a greatly improved pedestrian environment. The FMP would implement the initial phase of UB2020, focused on the southern two-thirds of the campus. A crisscrossing pattern of primary and secondary pedestrian routes through the center of campus would be designated, clarifying how to move between buildings, parking facilities, and transit connections. New roadways would be constructed with the pedestrian and cyclist in mind, including sidewalks and either bicycle lanes or share-the-road “sharrow” markings. All key roadways within campus, along with Winspear Avenue and Main Street on the campus perimeter, would have bicycling designations. Along Main Street, pedestrian and cyclist safety improvements are proposed at three locations in this initial phase – at Main Circle, Englewood Avenue, and Abbott Road. Two bike stations are currently proposed (at the NFTA pavilion and Clark Hall), as well as the installation of bicycle racks at key buildings and within any new parking structures.

A new addition proposed in this FMP is the multi-use recreational trail along Bailey Avenue. Although there is a sidewalk on Bailey Avenue, the addition of this recreational trail around the campus would provide a substantial amenity, both for the UB population, as well as the surrounding neighborhood. Developing this as an attractive place to walk, bike or jog will also enliven and beautify Bailey Avenue.

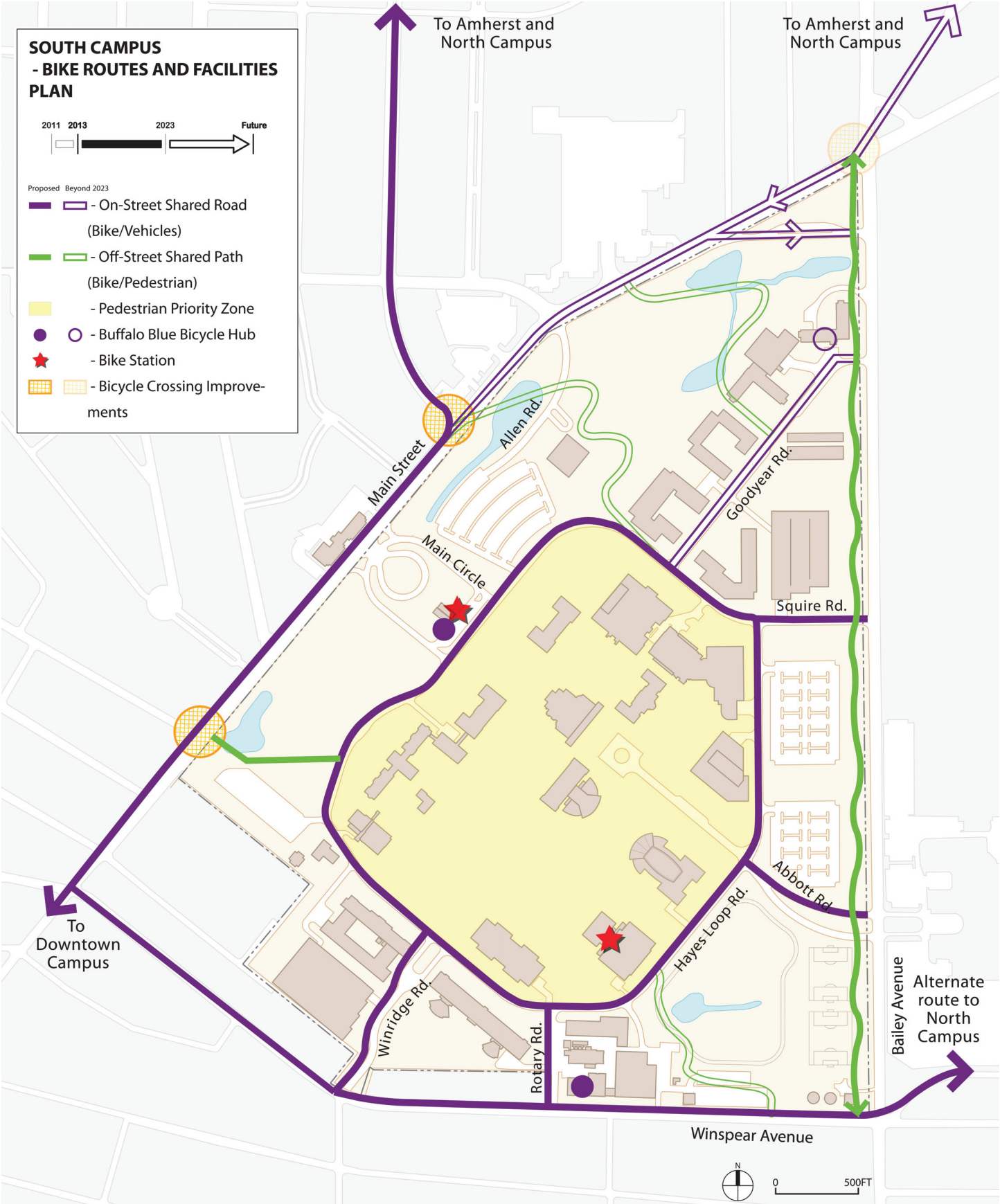


Figure D-112: South Campus Bike Routes and Facilities Plan Diagram.

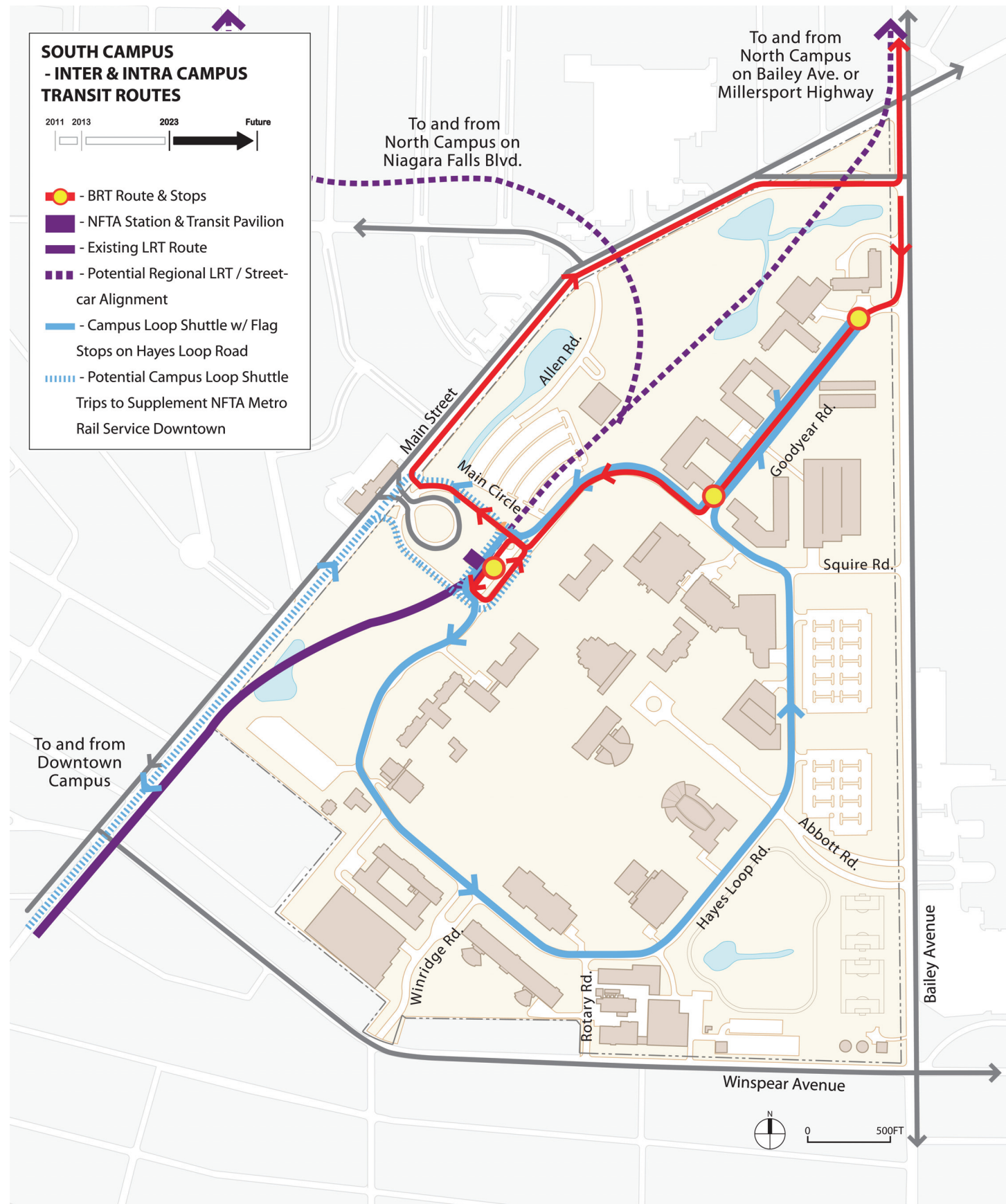


Figure D-113: South Campus Inter and Intra Campus Transit Route Plan.

TRANSIT

Two primary transit improvements would be implemented under the FMP. First, with the completion of Hayes Loop Road, further discussed below, the UB Stampede will be able to more efficiently circulate and serve the campus. The second would be construction of a new transit pavilion on the upper level of the NFTA train and bus station. This transit pavilion would incorporate a heated waiting area with amenities, and, most importantly, would provide a proper transfer location between NFTA services and the UB Stampede or future Bus Rapid Transit (BRT) route. This new pavilion will be located along Hayes Loop Road, relocating the current Stampede bus stop which is located along the circular driveway off Hayes Loop Road. This should facilitate quicker bus service, and provide bus riders with a more pleasant place to wait. Improvements to the intersections of the NFTA bus station entry at Main Circle and Main Street would also help to improve the flow of bus services to the campus.

As in UB2020, the desire is to eventually connect the South and North Campuses through an extension of the NFTA rail service, or with a BRT system in the interim. This will continue to be pursued, and students, faculty and staff will continue to be encouraged to use the bus to reach North Campus and the train to access Downtown Campus.

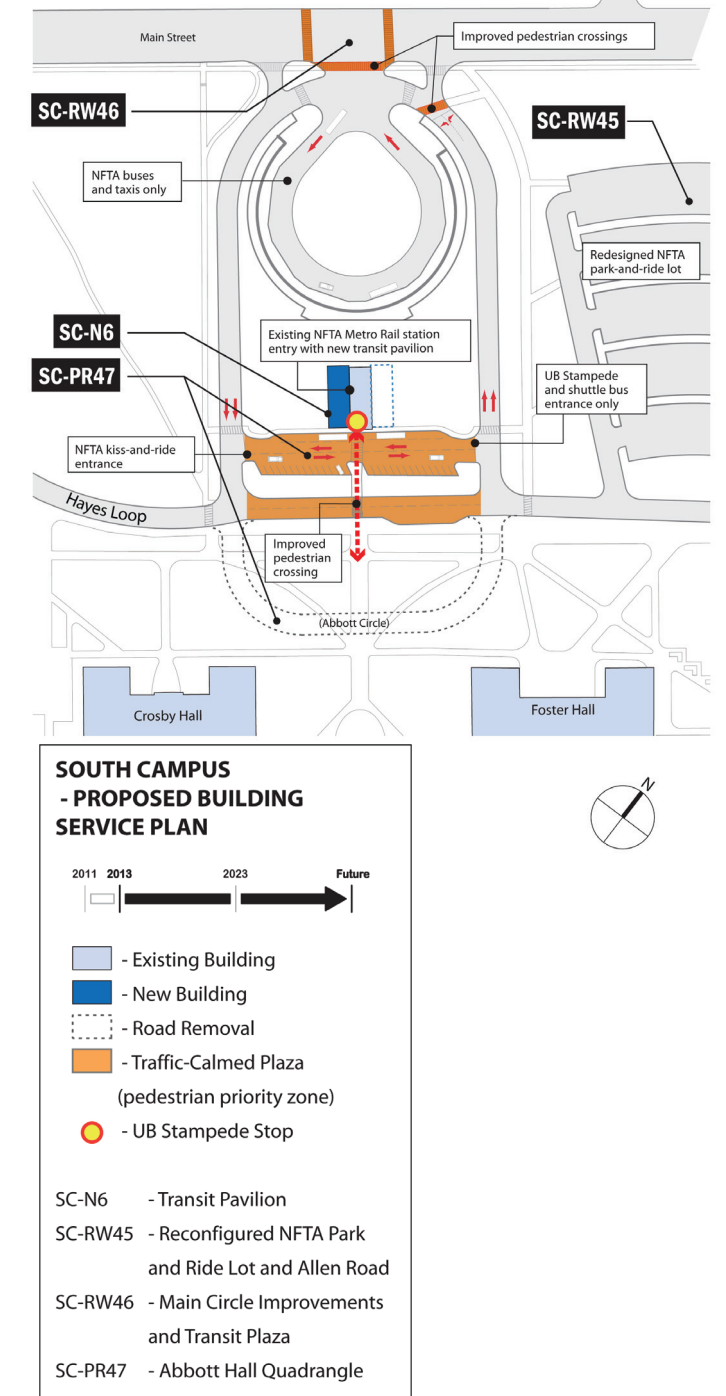


Figure D-114: South Campus Main Circle Improvements.

VEHICULAR CIRCULATION

The most significant improvement in vehicular circulation on South Campus, as referenced above, is the creation of an internal campus roadway loop, Hayes Loop Road. The west and north sides of Hayes Road will remain essentially as they are today, with realigned and new roadway segments added along the eastern and southern portions of the route. The demolition of Cary and Farber Halls allow space for the new loop road segment on the east side, whereas the loop is completed on the south side by moving the roadway from the back to the front side of Kapoor Hall.

In addition to the construction of a completed loop road, the access points to the campus have been realigned. A new primary entry point would be created at Abbott Road and Bailey Avenue, directly across from the entrance to the VA Hospital, creating a four-way intersection. This would provide a clear and grand entry to the campus from the east side, eliminating two existing access points at Coal and Sherman Roads. It is expected, after study and approval, that the existing traffic signal at Sherman Road would be relocated north to the intersection of Bailey Avenue and Squire Road. Also along Bailey Avenue, the minor entry points at Goodyear and Michael Roads would remain, however, with restricted access for transit or permitted vehicles only.

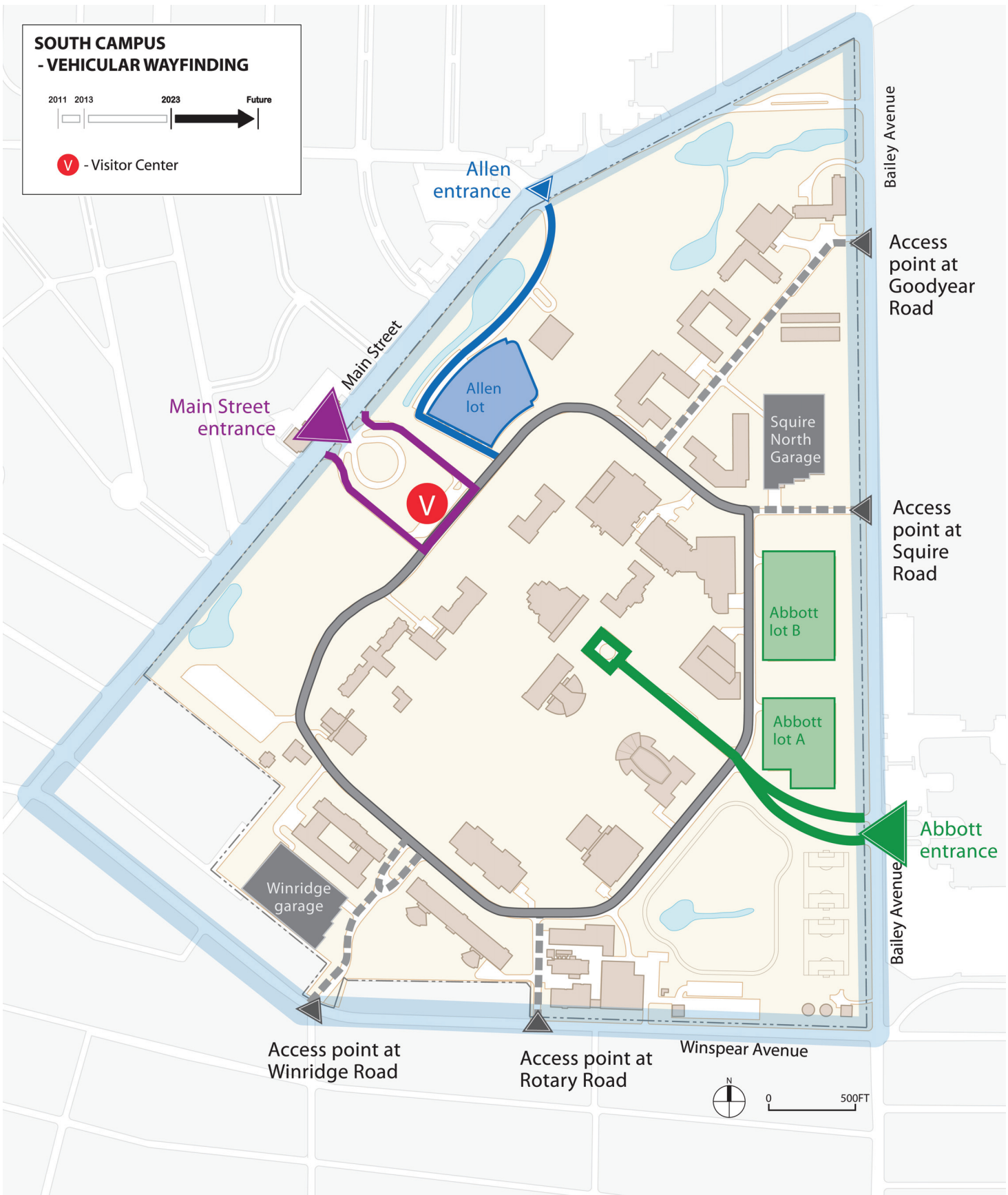


Figure D-115: South Campus Vehicular Wayfinding Plan Diagram.

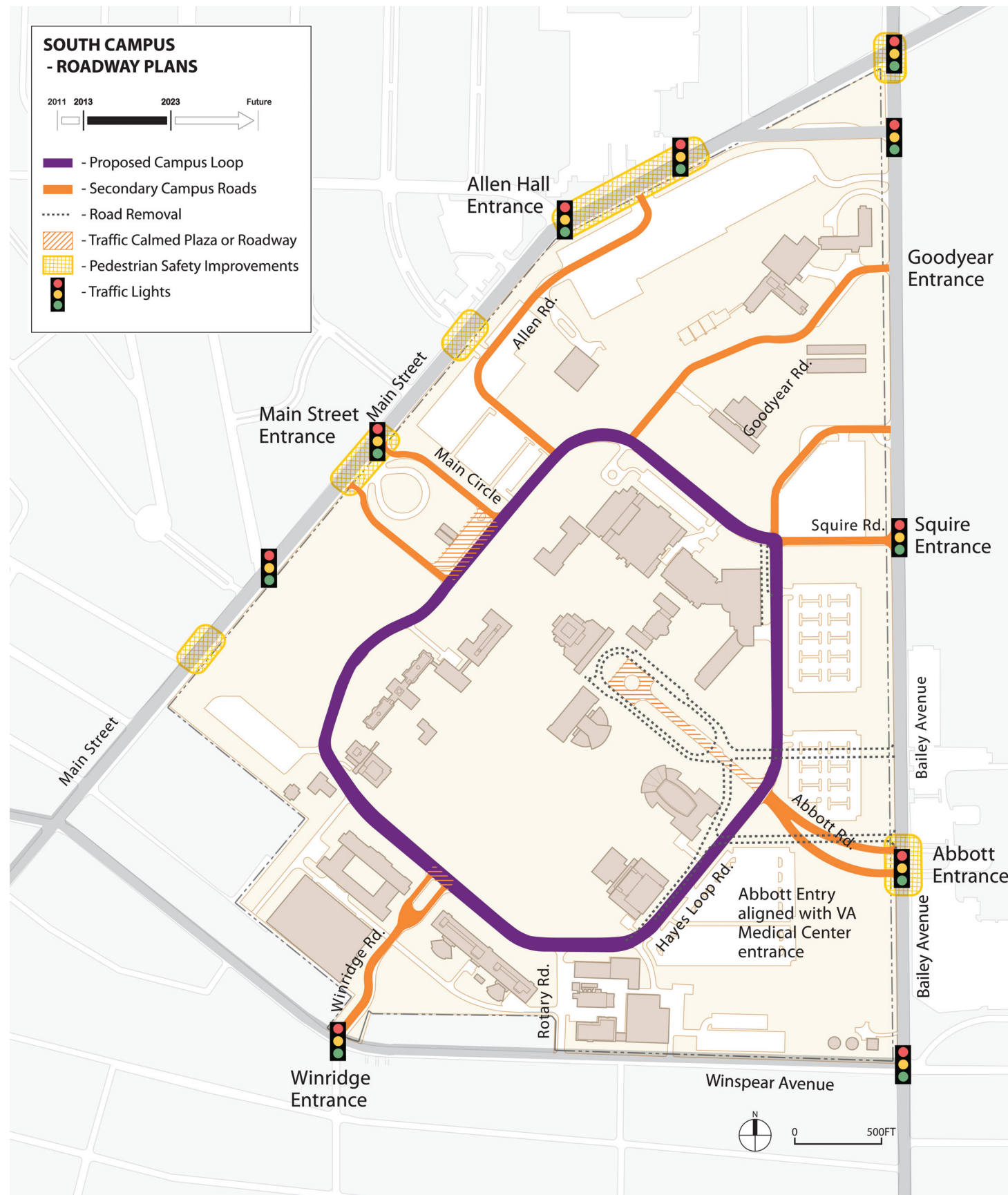


Figure D-116: South Campus Roadway Plans.

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PARKING

One parking garage was intended to be constructed within the FMP timeframe. The Winridge Garage, located at Winridge Road on the south side of the campus would accommodate about 1,100 spaces on three levels and allow for the removal of other surface lots on campus. Additionally, with the creation of the Abbott Road entrance, the Sherman Lot would be removed and replaced with surface parking constructed on the site of the demolished Cary and Farber Halls. These lots, identified as Abbott Lots A and B, would be located between the new Hayes Loop Road and Bailey Avenue and accommodate about 400 parking spaces. The Diefendorf Lot, located in front of Diefendorf Hall, may also be relocated if the decision is made to site a building in this space. In this case, the replacement surface parking would likely be constructed north of the new Abbott Lots A and B. In addition to these parking facilities, metered parking would be installed along Hayes Loop road.

The analysis of parking demand and supply included all of these changes, in addition to the removal of the VA lot on the southeast corner of campus, and numerous small accessory parking lots that would be removed when the adjacent building was demolished. This analysis shows that in all years there would be a surplus of parking of between about 800 and 1,150 spaces. These surpluses are attributed to lower population projections in the FMP as compared to UB2020. The table D-8 summarizes the parking projections.

South Campus (each phase cumulative)					
Parking Spaces	Existing 2010 ⁽¹⁾	2013	Phase 1 2018	Phase 2 2023	Beyond
Demand	3,292	3,539	3,691	3,394	2,329
Displaced Parking	-	0	-898	-1,792	-3,732
New Parking	-	562	1,662	2,232	3,365
Total Supply	4,027	4,589	4,791	4,467	3,660
Contingency (5%) ⁽²⁾	201	229	240	223	183
Total Available Supply	3,826	4,360	4,551	4,244	3,477
Surplus/Shortfall	534	820	860	850	1,148

NOTES:
(1) Existing 2010 parking supply numbers were assumed the same as the 2008 existing parking supply inventory provided in the UB2020 analysis.
(2) Contingency rate was similar to the UB2020 analysis.

Table D-8: South Campus Parking Plan.

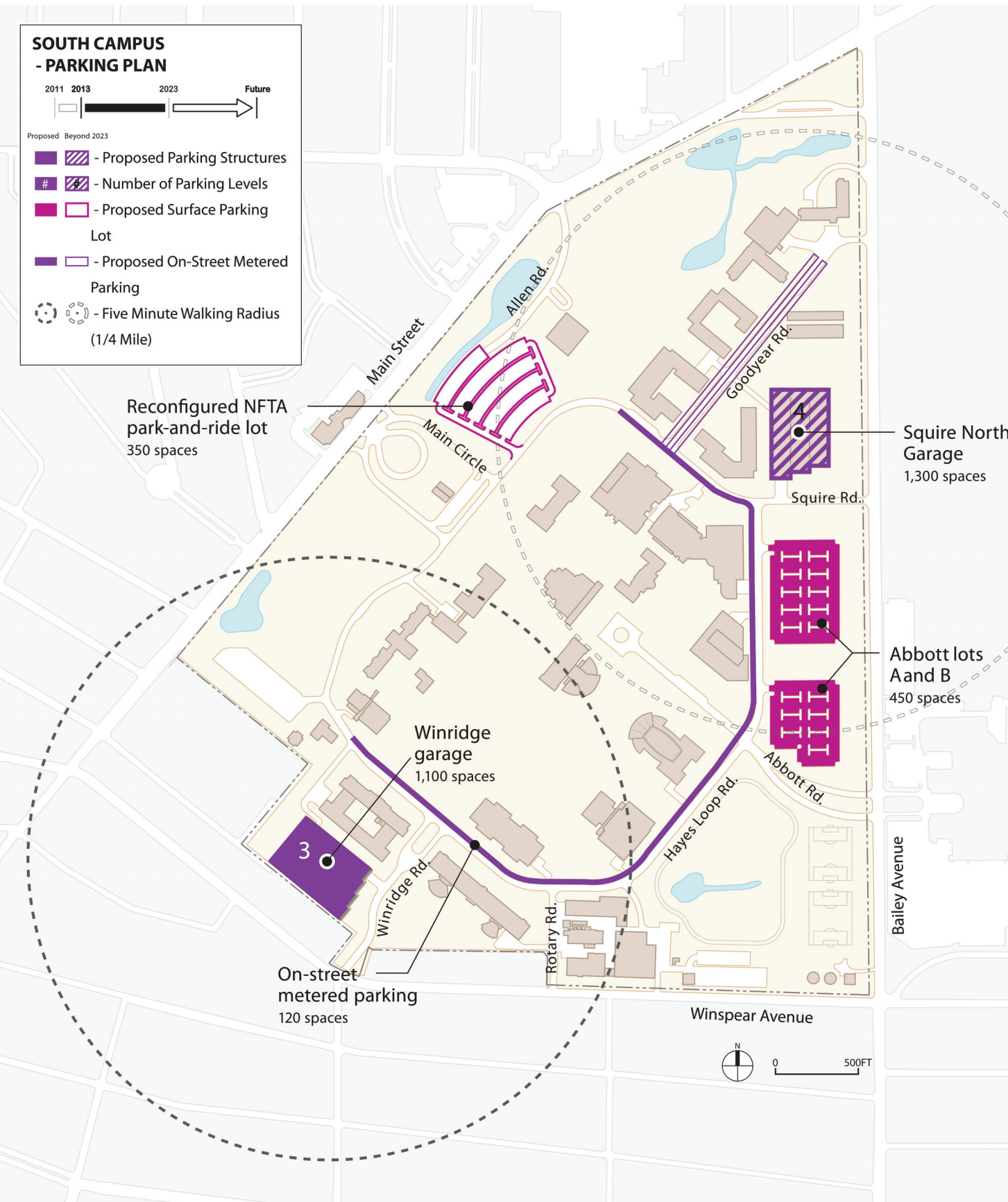


Figure D-117: South Campus Parking Plan.

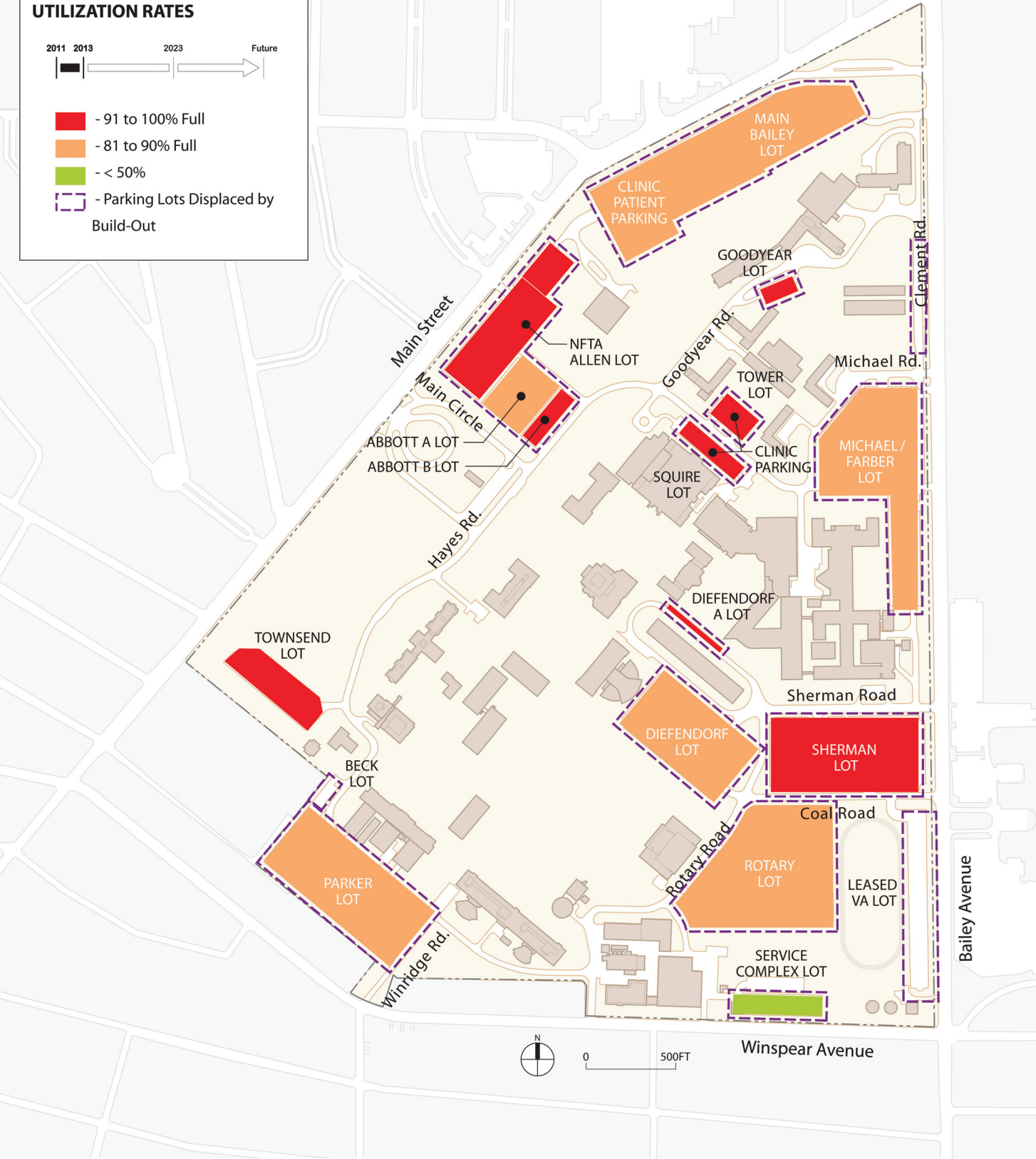
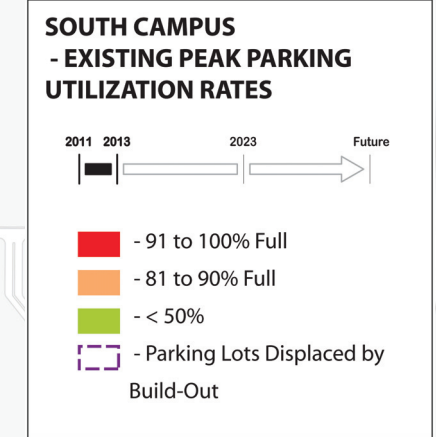


Figure D-118: South Campus Existing Peak Parking Utilization Rates.

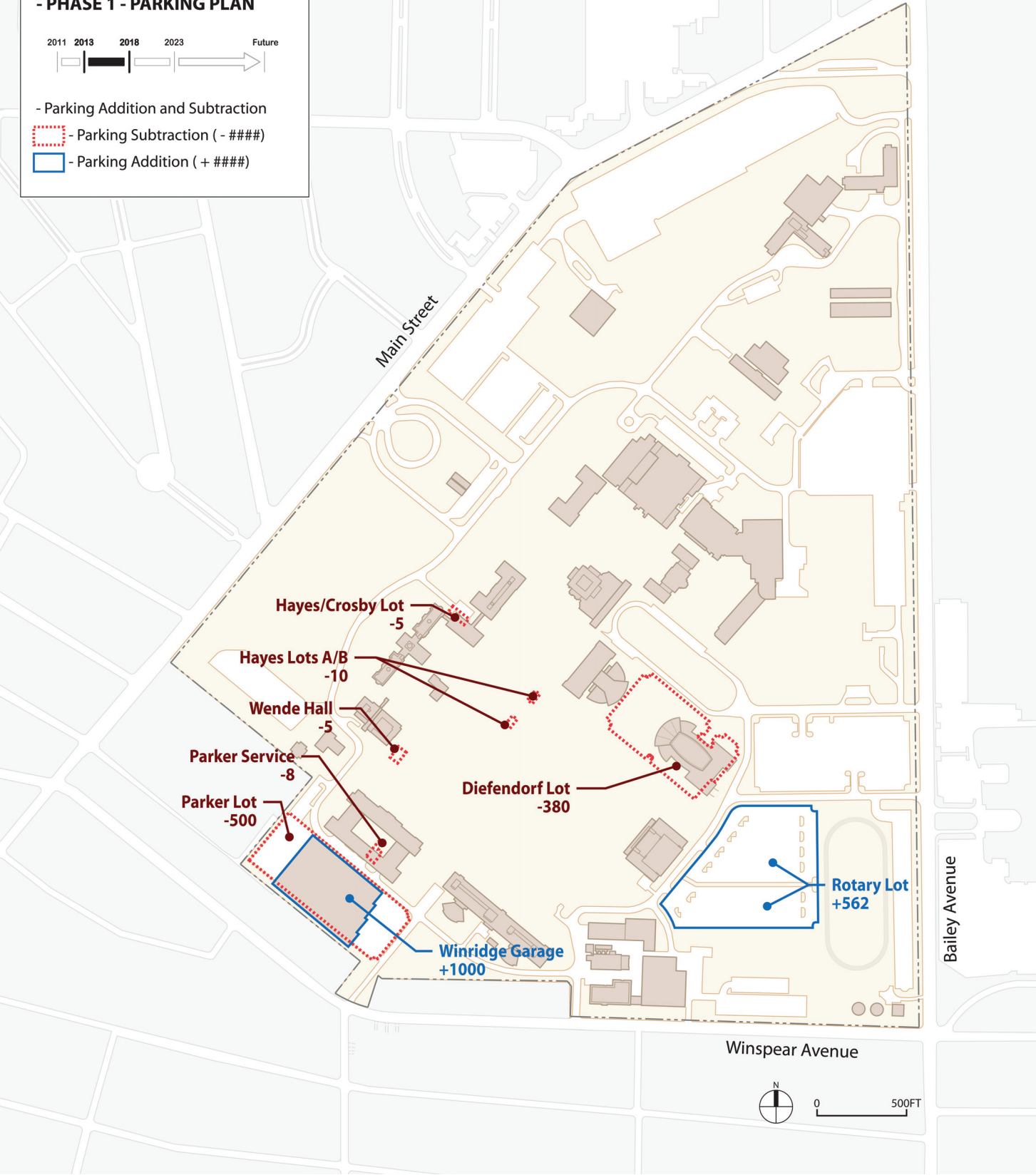
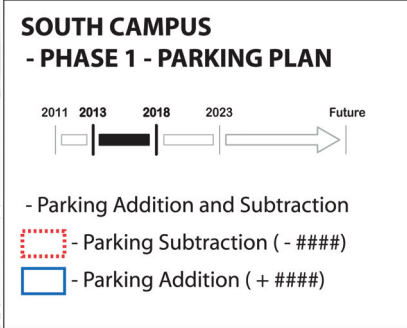


Figure D-119: South Campus Parking Plan Phase I.

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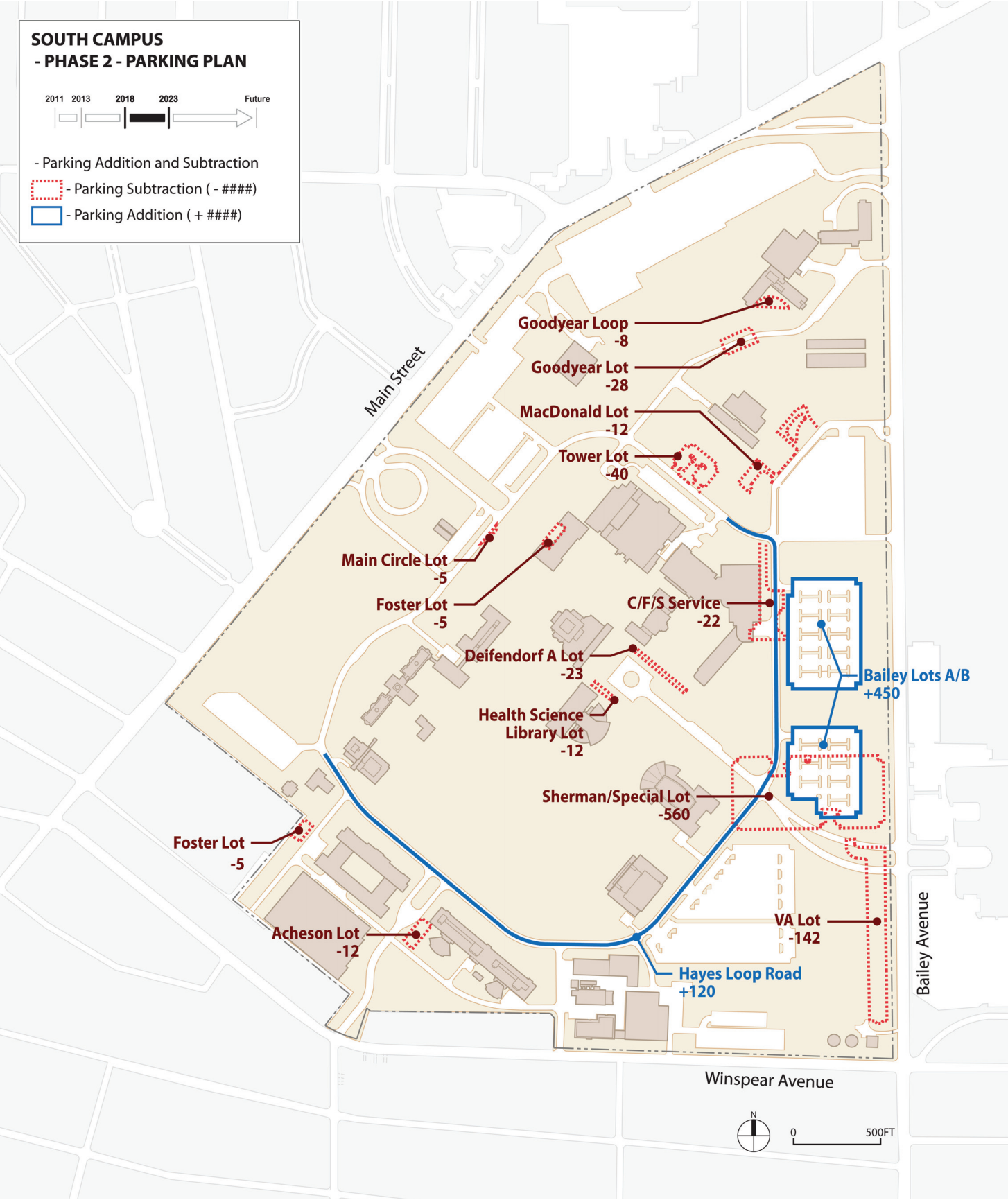


Figure D-120: South Campus Parking Plan Phase II.

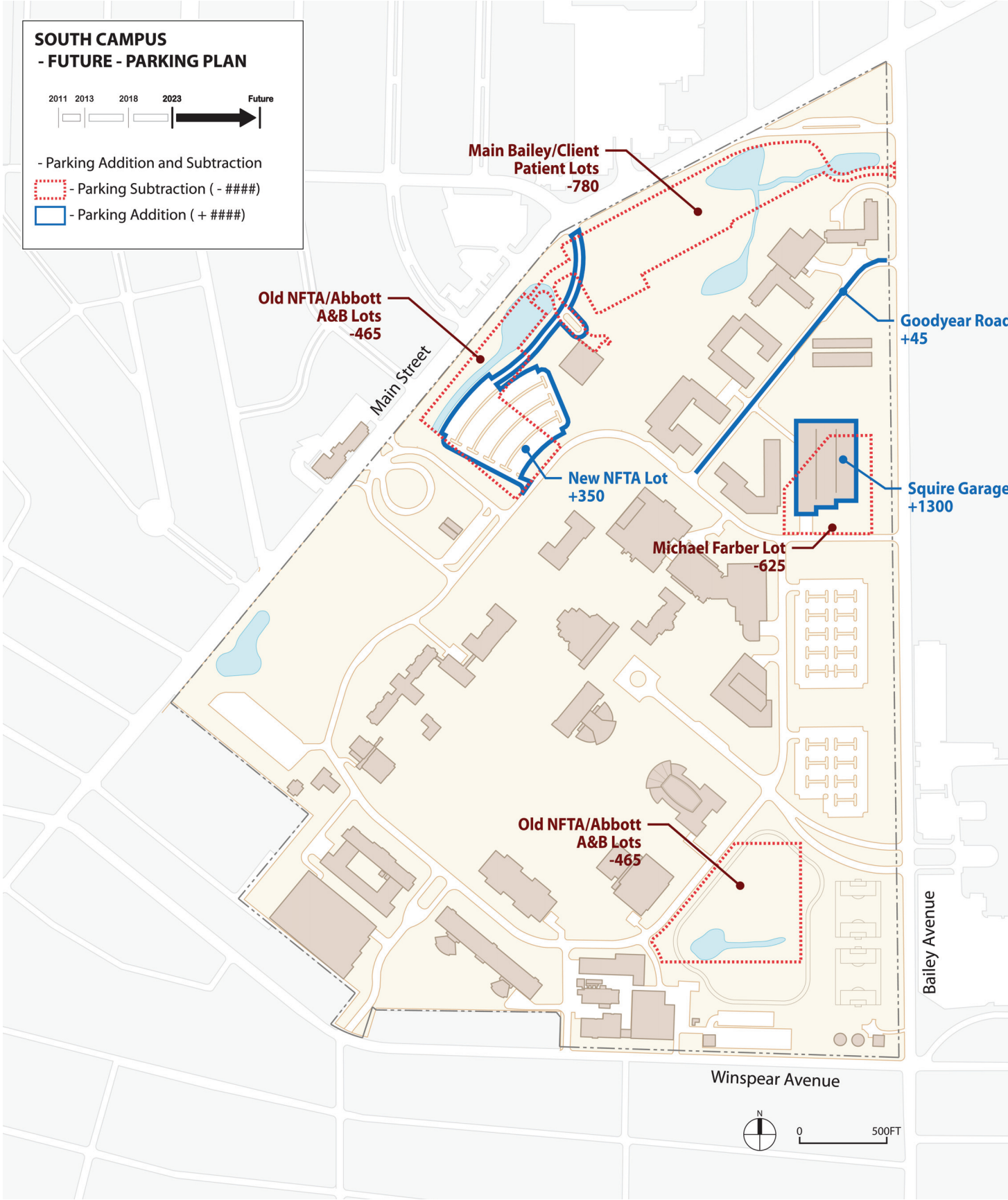


Figure D-121: South Campus Parking Future Plan.

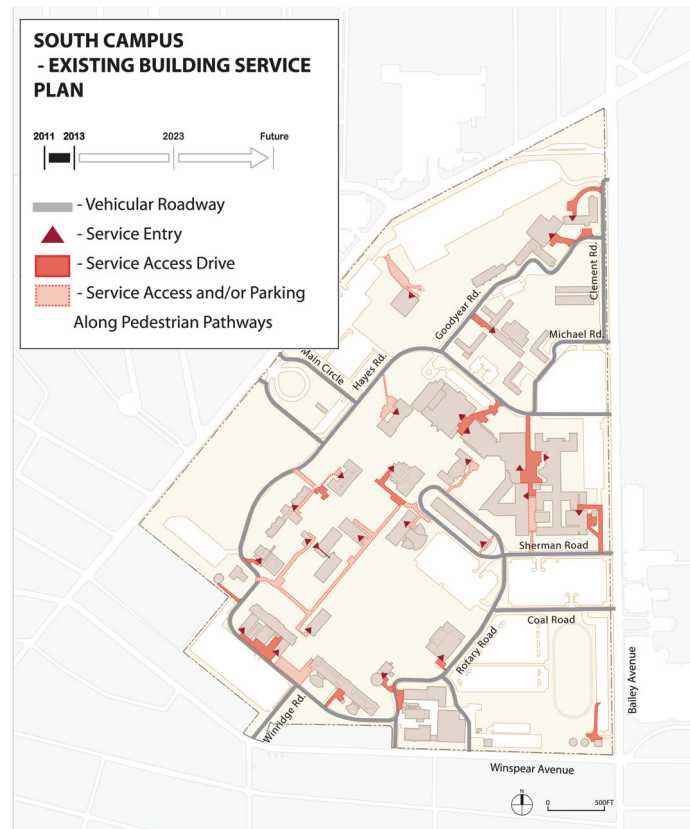


Figure D-122: South Campus Existing Building Service Plan Diagram.

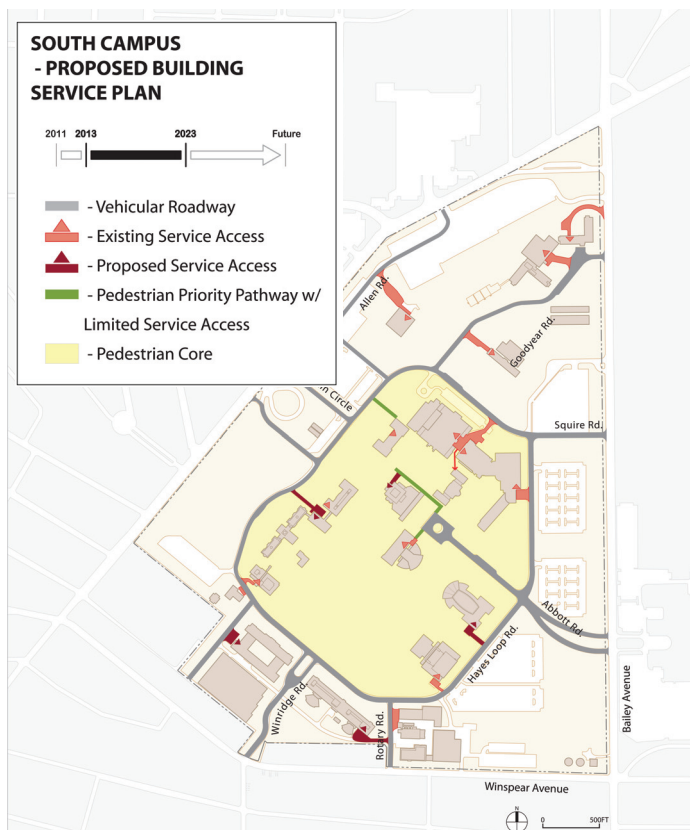


Figure D-123: South Campus Proposed Building Service Plan Diagram.

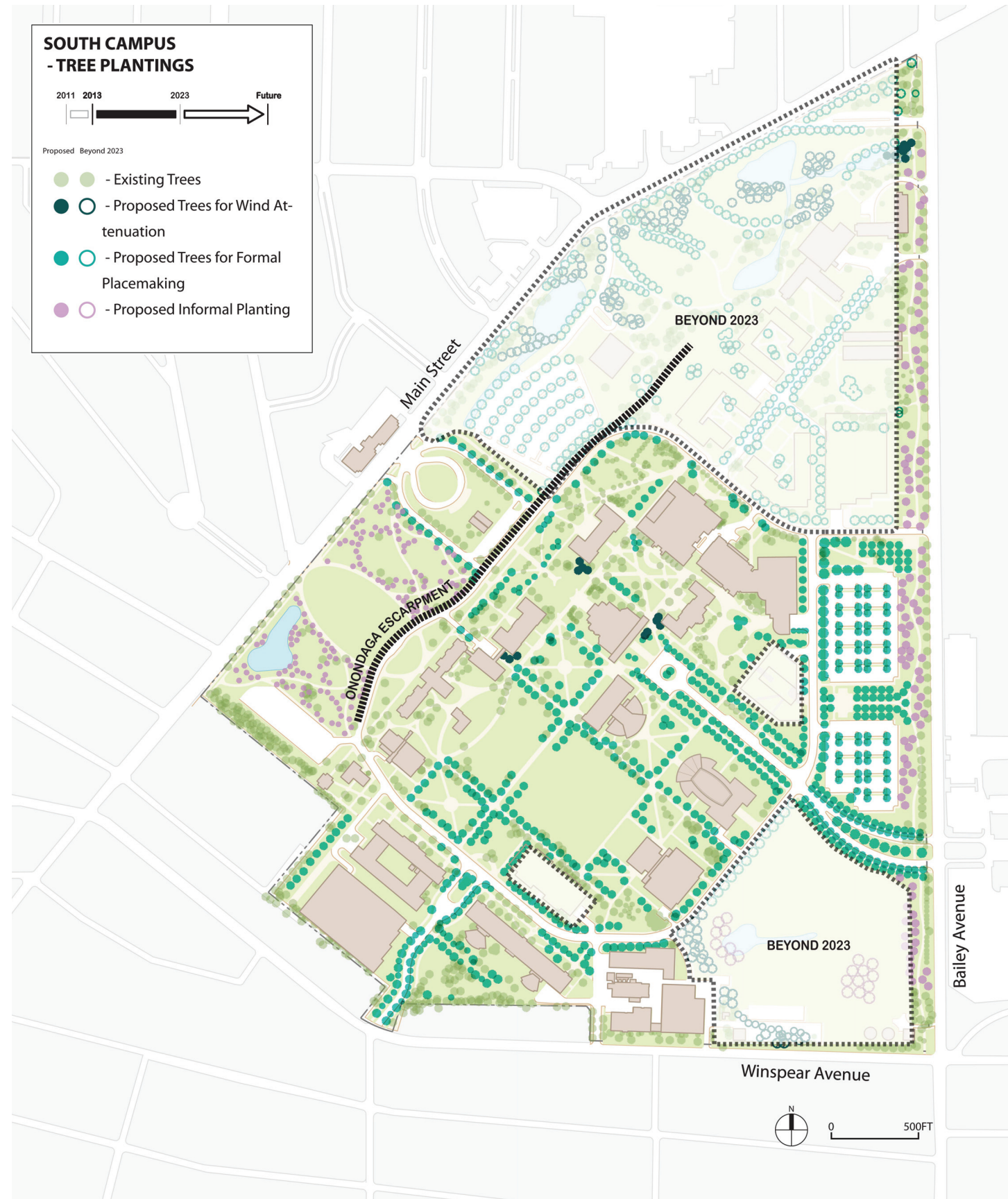


Figure D-124: South Campus Tree Planting Diagram.

LANDSCAPING

CONNECTING TO THE HISTORICAL CONTEXT

Assets

The overall landscape character of South Campus continues to be defined by the vision set forward in the E.B. Green master plan. Many high-quality outdoor spaces are framed by traditional campus architecture. The Campus is characterized by a variety of groomed, urban, park-like landscapes with an extensive network of lawns, quads, and courtyards. Several of the Campus roads and walkways have many mature shade trees supporting the edges of the open spaces, and assist in defining the formal edges. The Main Street Lawn provides an unusually open and generous interface with the adjacent community and offers a great opportunity to expose and reintroduce the existing Onondaga escarpment as a foundation for future site development. The amount of existing open lawn areas offer great opportunities to introduce large expanses of native meadows and construct storm water retention ponds.

Challenges

The biggest challenge to overcome is to correct the undermined organization of outdoor spaces. As the Campus has grown, the introduction of temporary buildings and haphazard placement of service areas and parking lots have severely reduced the clear organization of pedestrian routes, vehicular routes and planned outdoor open space that was ever present in the E.B. Green master plan. The removal of the “loop road” has resulted in excessive vehicular entrance points to the Campus. Re-introducing a loop road will assist greatly in the campus organization and make wayfinding easier for visitors, residents, and emergency responders. Currently South Campus does not have any significant natural areas and provides little in the way of ecological services to UB or the region.

The existing landscape lacks variety and year-round beauty. Many of the mature trees have suffered storm damage, and there is not a good range of age among the viable specimens. The existing walkways throughout the Campus vary in material, lack sufficient site furniture and are in need of repair.

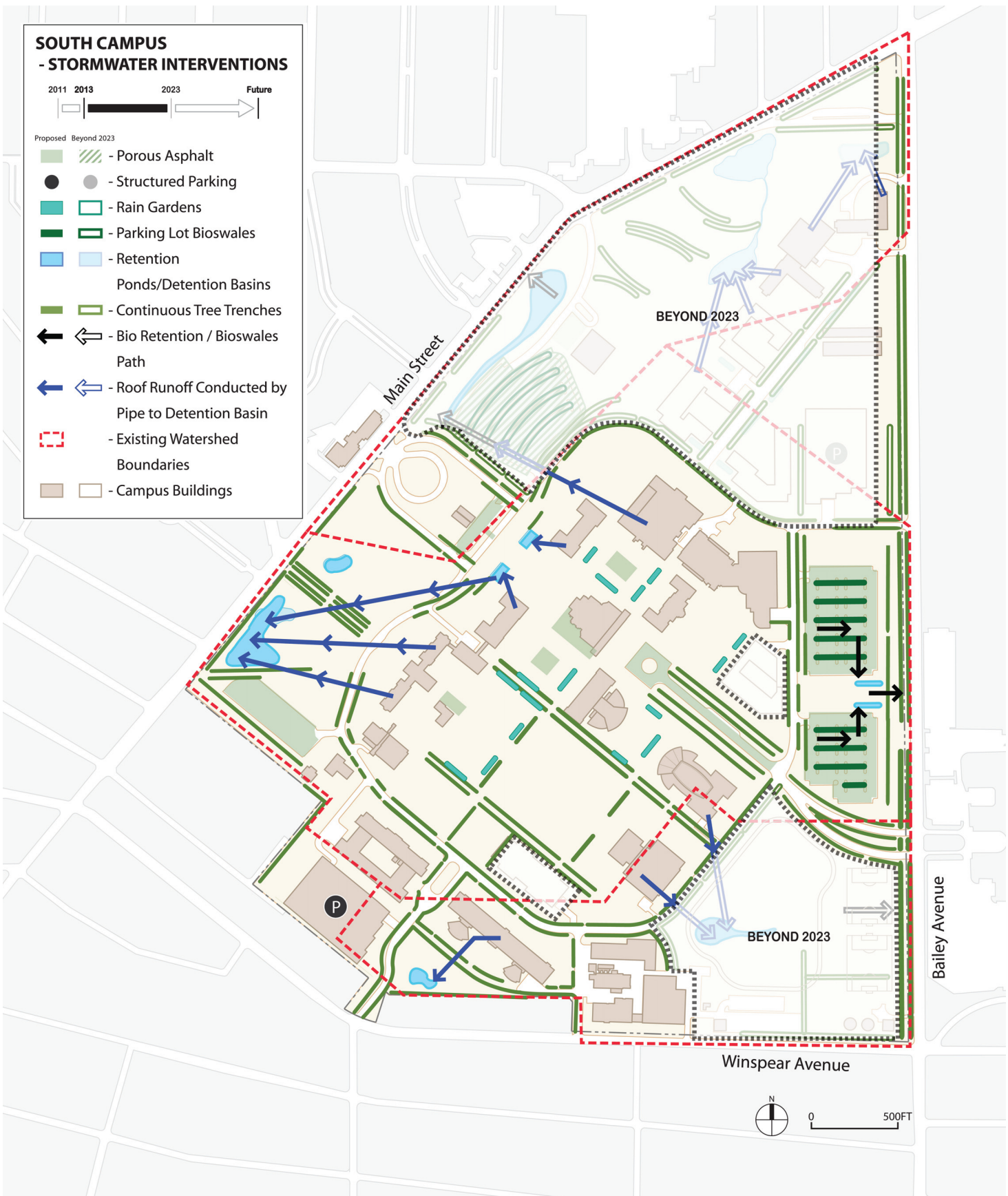


Figure D-125: South Campus Stormwater Interventions.

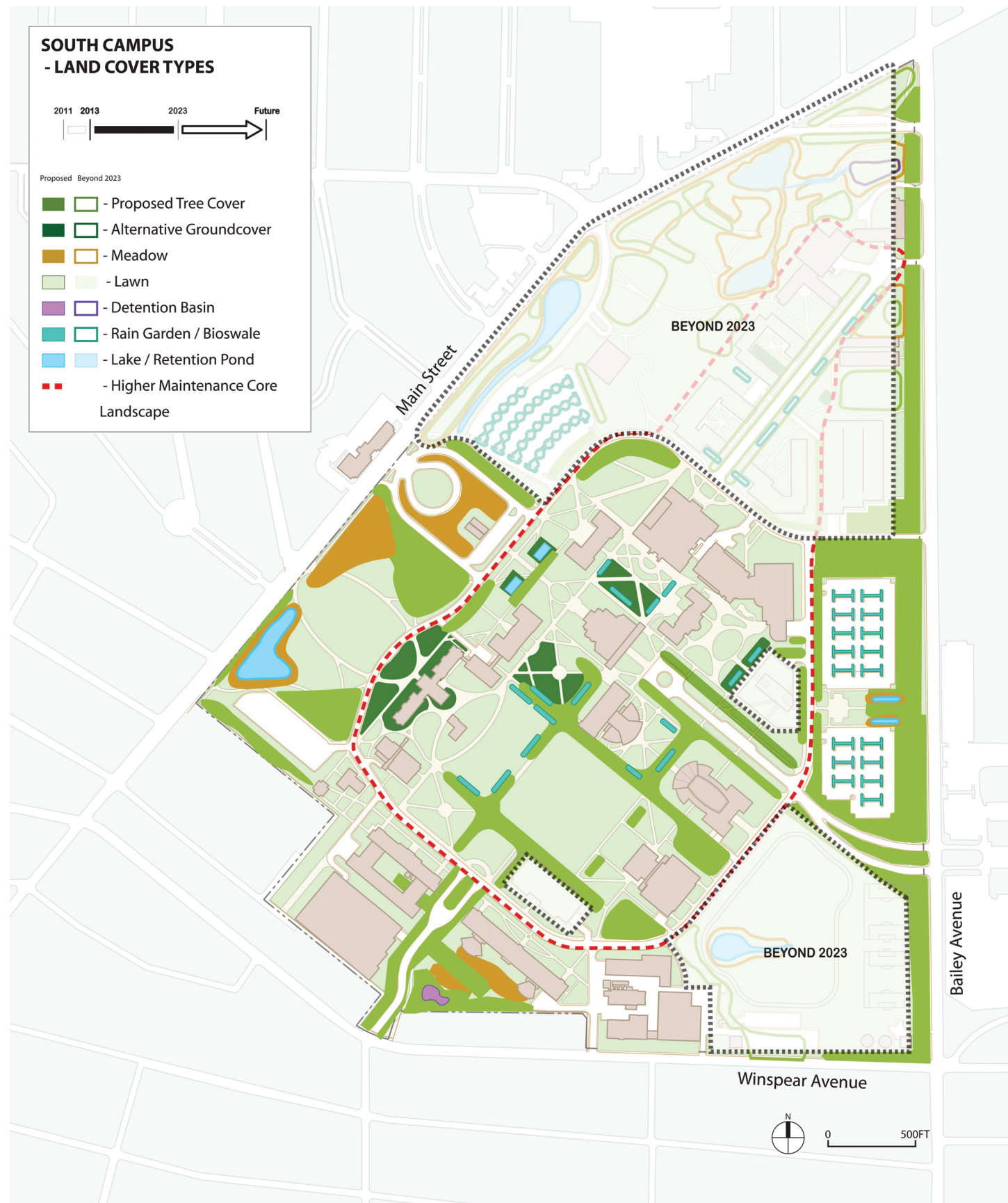


Figure D-126: South Campus Landcover Types.

Design Direction

The South Campus needs to support the learning landscape by providing clear, year round, beautiful landscape organized around a clear pedestrian oriented network of walkways and roads. The campus needs to reorganize the roadway system and upgrade and coordinate walkway configurations, materials and site furnishings to establish identity for the South Campus. The redesigned network of transportation shall focus on encouraging year round walking and bicycling. The landscape needs to reinforce a hierarchy of open spaces with a wide range of scales and functions suited to contemporary university life while creating a more coherent and vibrant public realm. The design should provide consistent and attractive streetscapes and support the quadrangles as shown in E.B. Green's master plan. The design shall celebrate ceremonial spaces, formal axes, and major entries into the Campus. Natural assets will be utilized to encourage year-round recreation through the exposure of the Onondaga escarpment, introduction of meadow areas, and the creation of storm water retention ponds. Future development will incorporate green infrastructure into the landscape and reduce and improve the quality of storm water runoff. All design solutions will apply concepts of Crime Prevention through Environmental Design (CPTED) to improve safety and security throughout the Campus.

Like UB2020 this FMP's landscape strategies for South Campus are intended to form a significant new public green space in the stylized pastoral tradition of Frederick Law Olmsted, who designed Buffalo's world-renowned system of parks and parkways, and to adhere to the original 1930 campus plan designed by E.B. Green. Both the challenge and the opportunity on the South Campus are to marry the classical landscape spaces with the latest advances in green infrastructure and sustainable site design. One model for this direction is the Harriman Quad Pilot Project that has successfully applied a 21st century approach to landscape sustainability within the framework of a traditional academic quadrangle. The resulting landscape aesthetic is compatible with the surrounding heritage architecture while providing a transparency and legibility to fundamental natural processes.

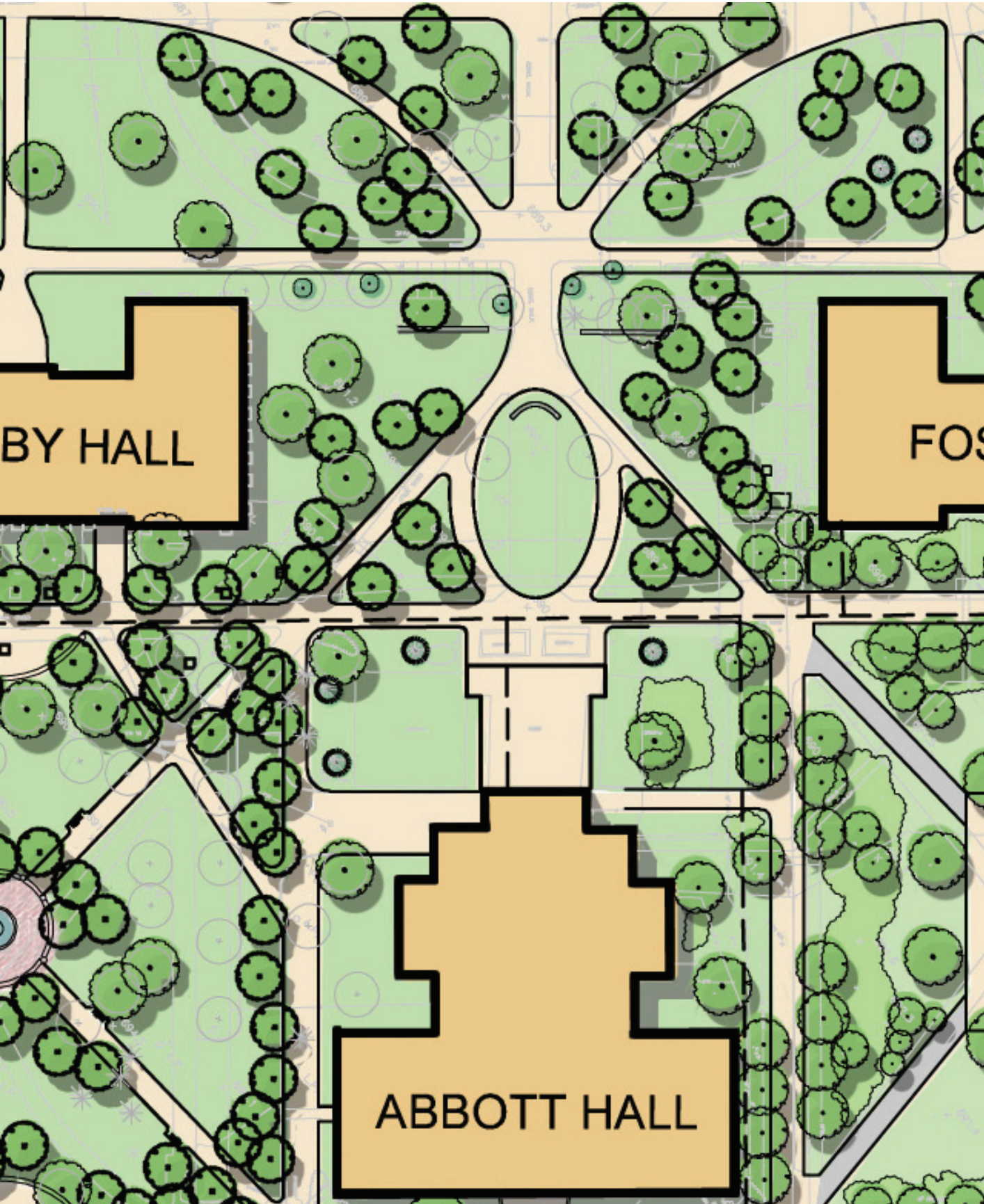


Figure D-127: Abbott Hall Quadrangle.

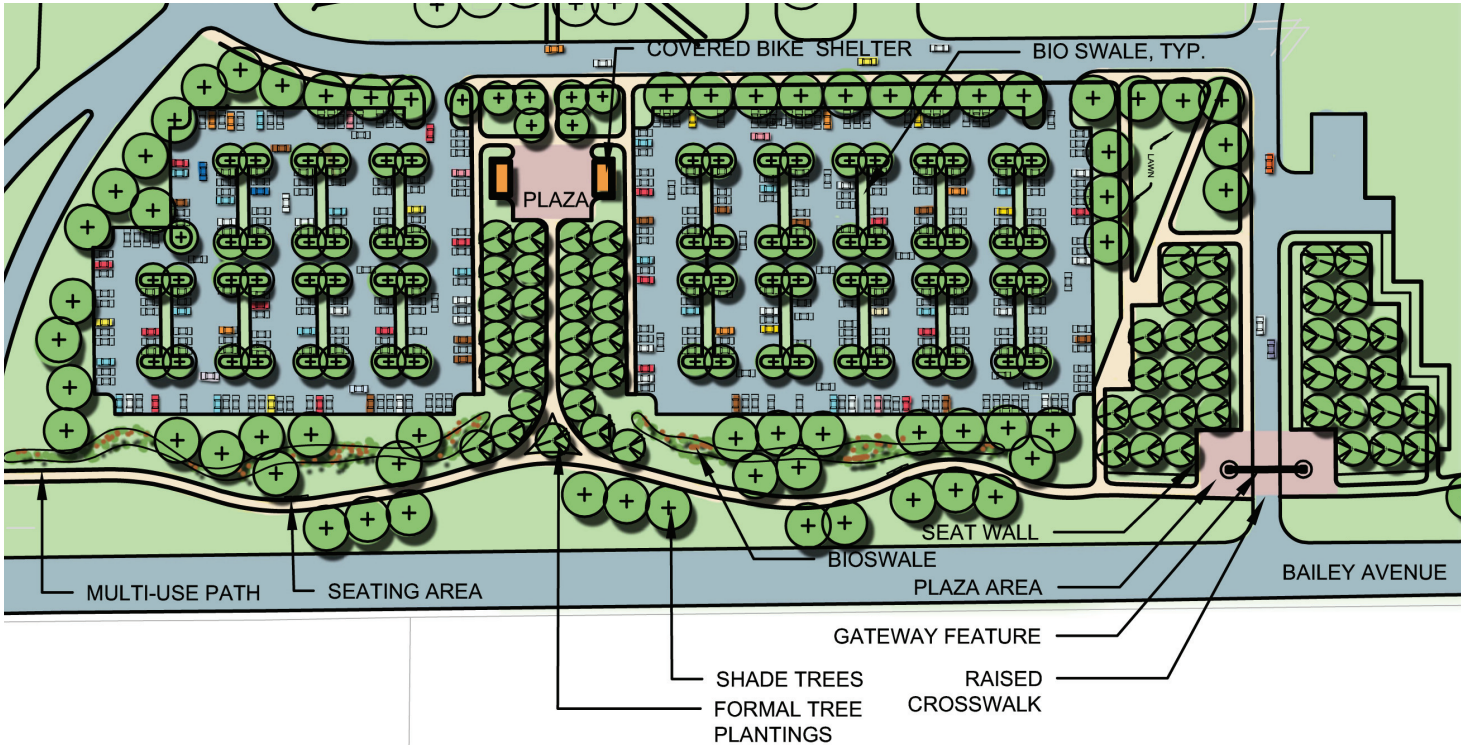


Figure D-128: Bailey Avenue Streetscape Plan.

REPRESENTATIVE PROJECTS

Abbott Hall Quadrangle

Open Space Type: Courtyards and Quadrangles
Framed by Foster and Crosby Halls, the Abbott Hall Quadrangle will provide a ceremonial entrance to the Academic Precinct from the west. This entrance will be improved by relocating the campus bus drop off to the adjacent NFTA drop off area. This will allow for expansion of the lawn area and will significantly improve the landscape experience. New concrete walkways will lead to the quadrangle from Hayes Road and Goodyear Road, with additional trees and shrubs installed to frame the view to Abbott Hall. Concrete pavers installed in the shared plaza on Hayes Road will help strengthen the sense of arrival on campus and the connection between the Abbott Quadrangle and the NFTA station. Other improvements include two formal stormwater detention ponds, new lighting, benches, bicycle parking shelters and bicycle racks. This landscape project addresses the following open space goals: provide for active transportation and program the landscape.

Bailey Avenue Streetscape

Open Space Type: Corridors and Promenades
The new Main Street Lawn will feature curving pathways, clumps of trees, garden-like meadows, and stormwater retention ponds. In the vicinity of Hayes Hall, a shallow pond will provide stormwater management and campus beautification, and will also be suitable for supervised ice skating in winter. In the vicinity of University Plaza and the University Housing Precinct, a stretch of parking lots will give way to an amphitheater featuring a newly unearthed section of the Onondaga Escarpment as its backdrop. The project will involve removing and reconfiguring parking lots and pedestrian pathways, installing new pathways and site furniture such as benches, trash/recycling receptacles, bicycle racks and lighting. Landscape improvements include grading, seeding, new vegetation, and creation of a biofiltration swale. This landscape project addresses the following open space goals: program the landscape, improve storm water management, and improve the winter use of the campus.



Figure D-130: Main Street Lawn.

Reclaim the Main Street Lawn

Open Space Type: Lawns and Greens

The new Main Street Lawn will feature curving pathways, clumps of trees, garden-like meadows, and stormwater retention ponds. In the vicinity of Hayes Hall, a shallow pond will provide stormwater management and campus beautification, and will also be suitable for supervised ice skating in winter. In the vicinity of University Plaza and the University Housing Precinct, a stretch of parking lots will give way to an amphitheater featuring a newly unearthed section of the Onondaga Escarpment as its backdrop. The project will involve removing and reconfiguring parking lots and pedestrian pathways, installing new pathways and site furniture such as benches, trash/

recycling receptacles, bicycle racks and lighting. Landscape improvements include grading, seeding, new vegetation, and creation of a biofiltration swale. This landscape project addresses the following open space goals: program the landscape, improve storm water management, and improve the winter use of the campus.

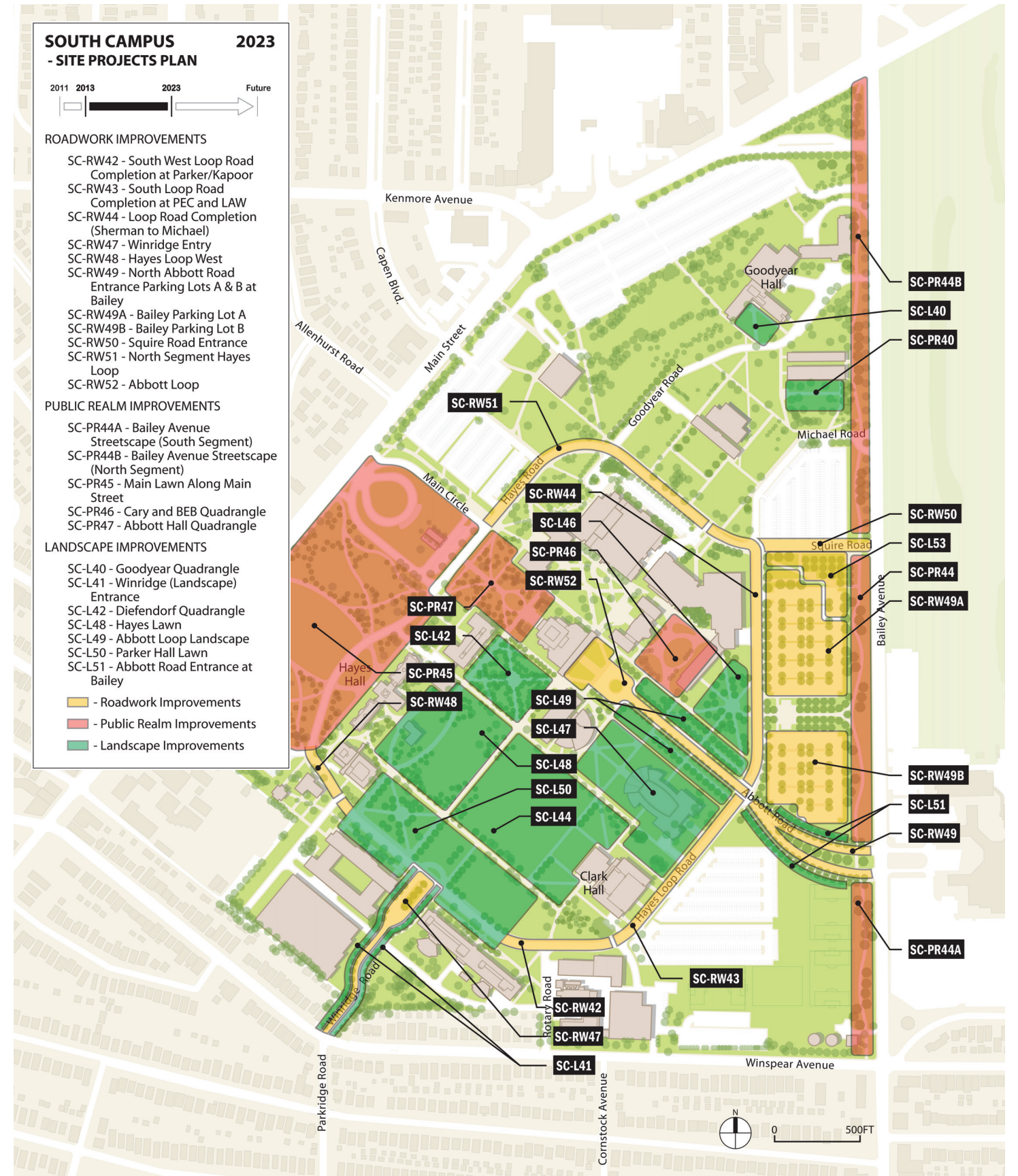


Figure D-129: South Campus Site Work Projects.

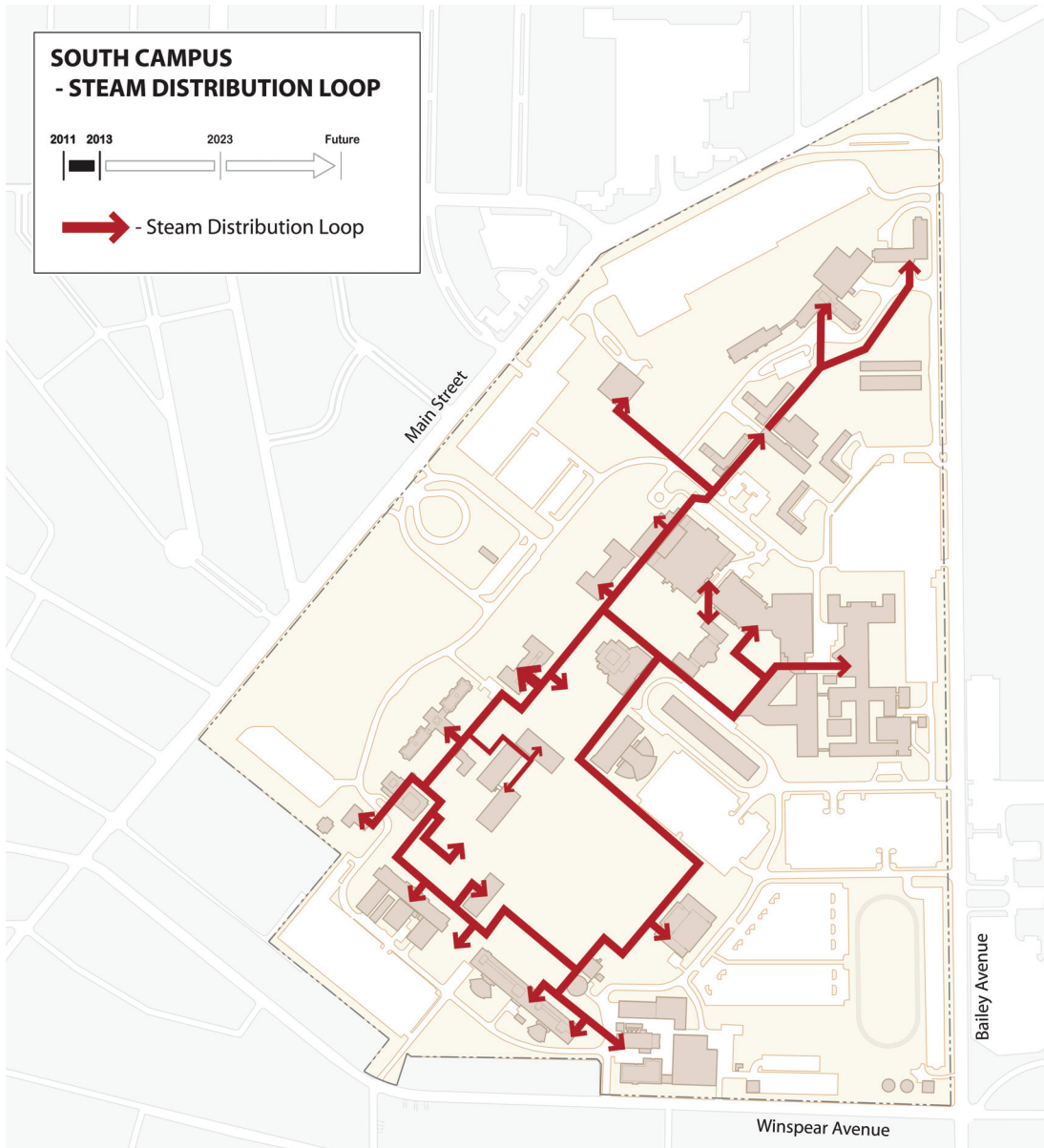


Figure D-131: Steam Distribution System Map.

South Campus Steam Plant Capacity Requirements	
	Estimated Heating (MBH)
Existing Buildings	78,000
Buildings to be Demolished	21,000
Existing Buildings to Remain	57,000
New Construction	10,000
Future Plant Total	67,000

Table D-9: Steam Plant Capacity Requirements.

SITE / INFRASTRUCTURE ENHANCEMENTS

The Facilities Planning and Design Group have identified various projects to improve and maintain all existing underground utilities and infrastructure. As building projects come on line it should be assumed that the South Campus utility systems should have the required capacity and are in good condition.

CENTRAL HEATING PLANT

System Capacity

The University at Buffalo South Campus has a steam generating plant at the South end of the campus in the Mackay Heating plant. Steam is generated by three 60,000 lb/hr boilers. Currently, any two of the boilers can provide the campus needs and the third boiler acts as stand-by capacity.

The heating requirements for current and future campus buildings has been estimated based on the building square footage and an estimated heating load of 35 Btu/hr per square foot. The campus heating load estimate is summarized in the “South Campus Steam Plant Capacity Requirements.”

Based on one pound of steam providing one MBH of heating, the estimated future campus heating load is 67,000 LB/HR of steam. This can easily be handled by any two of the existing boilers.

System Condition

The boilers were installed in 2003. In 2023 the boilers will be 20 years old and should still be operating well.

System Opportunities and Constraints

When a major renovation is undertaken, the steam is used to produce heating hot water which is piped around the building. This should be continued as buildings are renovated and built.

STEAM DISTRIBUTION SYSTEM

System Capacity

The University at Buffalo’s South Campus has a steam distribution system installed in tunnels to provide heating to the campus buildings. The distribution system has sufficient capacity for the planned renovations and new construction.

When new buildings are built, steam will need to be provided from the distribution system to each building. The distribution system is relatively close to all the proposed sites and major extensions of the system to serve the proposed new construction are not envisioned.

System Condition

The steam is distributed from the central plant through a tunnel system. The vast majority of the tunnel system is fully walk-able. The piping and the piping supports in the tunnels were replaced 2 years ago and are in excellent condition.

System Opportunities and Constraints

The steam tunnel system must be coordinated with new building and road construction. One possible location of the Professional Education Center appears to conflict with the steam tunnel distribution system. The new Architecture Shop location will need to be coordinated with the steam system. The new section of road at the south end of the campus needs to be coordinated with the steam tunnel.

CHILLED WATER

System Capacity

Generally, chilled water on the South Campus has been provided on a building by building basis. A chilled water loop from the Biomedical Education Building feeds the CFS complex and Kimball Hall with the potential to connect Allen Hall. The BRB loop feeds Harriman, Squire, Foster, Abbott and Diefendorf. In the summer of 2012, the BRB loop will be extended to include Crosby, Hayes, Wende, Townsend, Beck and Parker. Stand alone systems will continue to supply

the Winspear Service Complex, Goodyear, Goodyear Dining, Clement, and the Childcare Center.

System Condition

The localized chilled water plant in the Biomedical Education Building and Research Buildings has chillers that are about 8 years old that are in good condition. In 2023 these chillers will be about 20 years old and nearing the end of their useful life.

System Opportunities and Constraints

As buildings are renovated and built, the concept of localized chilled water plants can be extended with the ultimate goal of all the buildings being served from localized chilled water plants. This approach provides the advantages of a central chilled water system such as centralized maintenance, greater flexibility in the numbers of chillers operating and backup capacity in the event of a chiller failure. The localized plant concept requires a less extensive distribution system than a chilled water system serving the entire campus, reducing first costs.

ELECTRICAL

System Capacity

The South Campus substation receives power from the local electric utility service provider, National Grid. The South Campus Central Utilities Building receives 25 kV from a nearby utility substation.

The University is seeking to increase the distribution capacity at the campus. In order to accommodate the new construction and renovation of several buildings, the University might have to increase their distribution capacity in accordance with the calculated load of proposed renovations and associated new building construction.

Additional medium voltage distribution will need to be provided to new building construction as indicated in the Facilities Master Plan. Electrical distribution will consist of new medium voltage ductbank distribution from either existing radial/lateral electrical distribution adjacent to new structures. An electrical power

study should be developed in order to verify existing circuit capacity to ensure existing feeders will handle the upgrade/new construction loads. If existing substation/feeders lack capacity, modification might be required in order to serve new loads.

Building Construction, Renovation and Demolition

Renovated buildings will be provided with upgraded electrical components when required. The capacity of medium voltage feeders and associated distribution will be upgraded as required, but will be re-used where they provide sufficient capacity. The electrical system of several of the existing buildings was rated poor per BCAS report. New components will be provided to existing infrastructure such as main switchgear, power wiring, electrical distribution, lighting system, emergency power/lighting system, fire alarm system, telecom/data system (cabling only), and specialty systems. An upgrade should be done to the emergency power/lighting system, new lighting design, and electrical wiring distribution. Also, metering data should be gathered for each building, in order to determine current load capacity and evaluate what upgrades need to be made to each building’s power supply. For all existing buildings to be demolished, a study must be done prior to demolition to determine the location of underground electrical conduit routing.

New buildings shall be provided with all electrical components: main switchgear, power wiring, electrical distribution, lighting system, emergency power/ lighting system, fire alarm system, telecom/data system (cabling only), and specialty systems.

Selected Bibliography

Beyer Blinder Belle Architects & Planners LLP. (2009). *Building UB: The Comprehensive Physical Plan*. Buffalo, NY: University at Buffalo, the State University of New York.

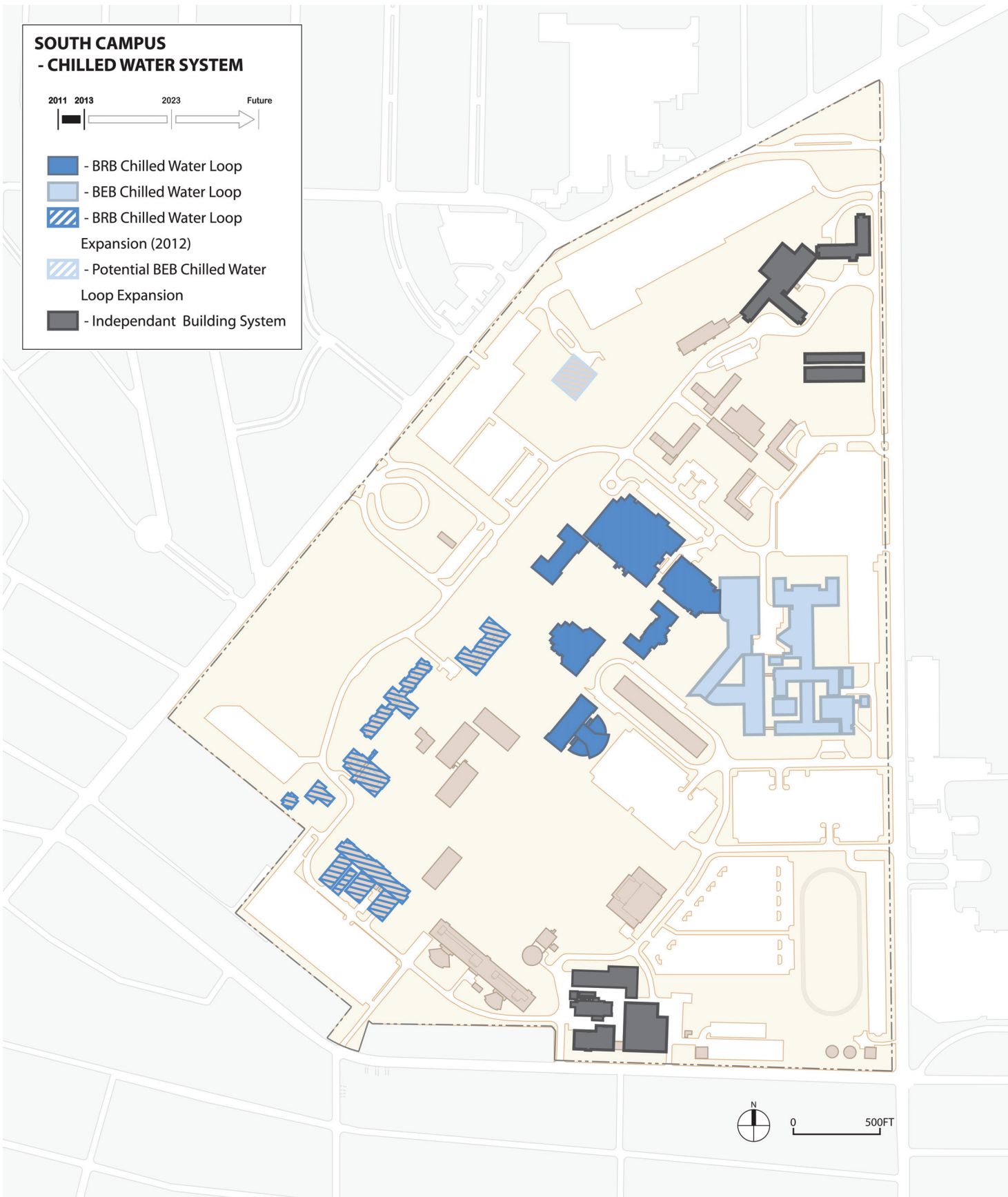


Figure D-132: South Campus Chilled Water Loop Diagram.