



UNIVERSITY OF SOUTH CAROLINA

**2018 Master Plan Update
Executive Summary**



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Introduction

The University of South Carolina has completed an update to its campus master plan, reinforcing the university's mission to educate the state's residents through teaching, research, creative activity, and community engagement. This master plan update accounts for campus development since 2010 and anticipates undergraduate enrollment growth of approximately 5,000 students from 2016 to 2025.

Founded in 1801 as South Carolina College, the University of South Carolina is one of the oldest public universities in the United States. Initially founded on a campus of 36 acres, the campus has grown to encompass more than 450 acres in 2018. The university has undergone several growth spurts, including a dramatic expansion in the post-World War II period.

The university originally carried out campus planning in the 1930s. A master plan completed in 1961 guided campus growth until preparation of the 1994 Bicentennial Master Plan. Subsequent to the bicentennial plan, the university completed several planning efforts, including the 2002 Master Plan, 2007 Innovista Master Plan, 2008 Athletics Village Plan, and the 2010 Master Plan.

The 2010 Master Plan was a comprehensive, multi-year planning process that responded to the university's environmental, economic, and social sustainability goals and existing and projected facility needs. The 2010 plan established a development framework and vision for the campus while allowing the flexibility for the university to make incremental decisions as circumstances and resources permitted. The plan also proposed a long-range vision for the South Campus, featuring the redevelopment of Rocky Branch Creek as a linear park and recreation area and improved vehicular and pedestrian connections to Williams-Brice Stadium.

The University of South Carolina campus has a distinct character that is rooted in its history, physical setting, traditions, and programs. This character is inherent in the horseshoe, where the mix of uses, scale and quality of the landscape, and frame of historic buildings make it one of the classic campus quadrangles in the United States. This great quadrangle allows easy and safe pedestrian interchange between buildings.



2018 MASTER PLAN UPDATE ILLUSTRATIVE PLAN

- Existing USC building
- Proposed USC building
- Proposed building

As the university has grown, it extended this physical pattern of landscaped quadrangles to Gibbs Green. In the post-World War II period, the university bridged Pickens Street and developed the College Street landscape promenade leading to Capstone House. The bicentennial plan extended the quadrangle concept where possible to develop new landscape spaces at Preston College, the Russell House, and at the new student housing complexes. The Athletics Village

includes a new landscape quadrangle as its central feature. Innovista has introduced a new but complementary urban form to the traditional landscape of the horseshoe, with landscaped pedestrian-oriented streets and urban plaza spaces. Greene Street is conceived as a pedestrian-primary street linking the core campus to the future Congaree Waterfront Park.

2018 Master Plan Update: Distinguishing Characteristics

The university has made significant progress implementing the 2010 plan recommendations. This master plan update reflects these implementation achievements, assesses new program requirements, articulates a development strategy for the campus to accommodate these programs through 2025, and provides targeted development strategies beyond 2025. The development strategies identified in this report reflect projected enrollment growth and new university goals and opportunities.

The 2018 Master Plan Update has three distinguishing characteristics:

- Core Campus Concentration
- Engineering District Vision
- Student Life Experience



1) CORE CAMPUS CONCENTRATION

The plan proposes the continued densification of the core campus with the development of academic, research, and student life uses on underutilized sites. The university's research indicates that the number of students driving to campus continues to decline. With this trend, as well as the university's investment in multi-modal transportation options and the emergence of new mobility technologies, parking lots in the academic core will be ideal for redevelopment. Over time, other underdeveloped sites within the core campus may become available for redevelopment at appropriate densities.

Concentrating development within the core campus reinforces its goal to maintain a compact and walkable campus environment within a 20-minute class change interval. The university can accommodate its classroom and science teaching lab space needs through 2025 with the renovation of the Close-Hipp building and the former Law Center as a classroom/laboratory building. Both buildings are ideally located within the core campus and reinforce the university's existing concentration of academic activity along the Greene Street corridor.

To further support the university's goal of concentrating academic, research, and student life activity, the plan identifies several long-term infill development sites beyond the 2025 horizon of this planning study.



2) ENGINEERING DISTRICT VISION

The plan defines a vision for the redevelopment of the university's engineering facilities and surrounding context on South Campus, establishing a district identity and recommending institutional quality facilities and landscapes for this growing college. The vision includes renovation and expansion of the Swearingen Engineering Center and identifies sites for the development of new academic and research facilities.

A proposed engineering quad is the central organizing space of the district. Consistent with the 2010 plan, the 2018 Master Plan Update recommends the removal of the 300 Main Street building—located in the Rocky Branch Creek floodplain—as the university relocates programs to new or renovated facilities within the district. The engineering quad will transform the site of 300 Main into a stormwater management landscape and engineering showcase park, providing much needed green space, improving ecological values, and mitigating flooding impacts on South Campus.

Improvements to university facilities and the public realm in the engineering district will enhance connections to the emerging Catawba Street technology corridor west of Assembly Street. The plan envisions an integrated physical environment and symbiotic programmatic relationship between the College of Engineering and Computing and the Catawba Street tech corridor. The corridor's flexible innovation spaces will accelerate the research, development, prototyping, and commercialization of new technologies.



3) STUDENT LIFE EXPERIENCE

The plan recommends the creation of three distinct student union destinations. This approach responds to the needs of the growing campus community and the distribution of the population, including the significant shift of university activity westward to the Innovista District with the development of the Moore School of Business, research facilities, 650 Lincoln, and private-sector housing complexes.

First among these destinations is Russell House, which will continue its critical student life function with dining, meeting rooms, informal lounge space, and retail in a central location near the Thomas Cooper Library and horseshoe. As proposed in the 2010 plan, renovation of the Carolina Coliseum is a unique opportunity for the university to accommodate a mix of student life and other institutional uses in a highly visible location that can serve the burgeoning Innovista District as well as commuter students. Lastly, the university's participation with the community in the redevelopment of South Main Street, as envisioned in the city's adopted South Main Capital District Area Plan, will result in a pedestrian-oriented retail street anchored by restaurants and cafes for the enjoyment of the Columbia community, students, faculty, staff, and visitors.

In addition to student union destinations, the plan supports the university's proposal to build additional student housing on South Campus, as well as the development of a student recreation hub for intramural and club sports on the recently acquired 300-acre site near Williams-Brice Stadium.

Planning Priorities

At the outset of the planning process, university leadership identified 10 overarching institutional priorities. These priorities reach all corners of the university and address academic and research excellence, the student experience, the character and quality of the physical campus, and strategic partnerships.

The university's planning priorities complement the detailed goals defined in the 2010 plan. The 2010 goals derived from the university's mission statement, strategic plan, and framework for sustainability that addressed the environmental, economic, and social factors of campus planning, design, management, and community engagement.

With these institutional priorities as a foundation, the 2018 Master Plan Update focuses on physical planning and design strategies for infill development on the core campus, academic and student life facility needs, and improvements to the campus environment, particularly on South Campus.



ARTICULATE A 2050 CAMPUS VISION

The university aspires to articulate a vision for the university in 2050—a model of mid-size, urban campus development that is compact and walkable with appropriate densities and ample green space.



REIMAGINE THE SOUTH CAMPUS ENGINEERING DISTRICT

The College of Engineering and Computing is growing rapidly and links to the emerging innovation center and research activity along Catawba Street. The college is primed for improvements to its facilities and campus context. With significant projects completed on campus since 2010, it is now possible for the university to reimagine the engineering district.



BUILD ADDITIONAL ON-CAMPUS HOUSING

On-campus housing has not grown in parallel with enrollment growth. Consistent with the 2010 Master Plan, the university proposes development of a new housing district—Campus Village—that will add more than 2,500 net new beds, addressing the current housing deficiency and accommodating additional growth.



INITIATE HEALTH SCIENCES CAMPUS PLANNING

The university endeavors to develop a health sciences campus, including relocation of the medical school, in close proximity to the existing Palmetto Health complex.



CONNECT THE CAMPUS TO THE CONGAREE RIVER

The university aspires to crystallize the plan—initially proposed as part of the bicentennial vision and confirmed with the Innovista plan—to link the core campus to the Congaree River, including physical and programmatic connections from the horseshoe to the Congaree River with attractions on both east and west banks.



EVALUATE 2025 ACADEMIC AND STUDENT LIFE NEEDS

Both academic and student life space needs continue to increase with enrollment growth. The university will evaluate these needs and apply the most appropriate building strategies for the campus moving forward, with an immediate focus on the adaptive reuse of existing facilities.



EMPOWER THE CITY-UNIVERSITY PARTNERSHIP

A strong and strategic city-university relationship is critical and can be reinforced through ongoing working groups focused on developing a shared vision for downtown and the university. A successful partnership will be supported by leadership with the ability to commit resources.



REACH FOR RESEARCH EXCELLENCE

The university aspires to be in the company of the top research universities, which will require exceptional facilities to attract exceptional faculty. Reserving land for research expansion and new facilities within the core campus, Innovista, and the Catawba Street tech corridor will be key to advancing this vision for research excellence.



ANTICIPATE INSTITUTIONAL DEVELOPMENT PLAN ZONING

The university's planning initiatives should engage both the university community and the city, similar to the Innovista master plan and bicentennial plan. The 2018 Master Plan Update will provide the foundation for the development of an institutional zoning ordinance.



INVEST IN THE CIVIC REALM AND PUBLIC ART

In keeping with its longstanding commitment to campus landscape, as exemplified by the historic horseshoe, the university is interested in developing a holistic landscape/public realm vision for downtown and the urban campus, including an integrated public art strategy.

Implementation Achievements

The university has implemented new construction, comprehensive renovation, and public realm improvement projects consistent with the recommendations of the 2010 Master Plan. Several additional projects are in the planning stage. These implementation achievements, described in this section, provide the foundation for future development strategies.

NEW BUILDINGS AND COMPREHENSIVE RENOVATIONS

Significant new construction and building renovation has transformed the core campus. Since 2010, the university has completed 930,000 square feet of new academic, research, and student life construction and 675,000 square feet of comprehensively renovated buildings addressing maintenance and functionality. The university has also acquired approximately 16 acres of property for future development.

SOUTH CAMPUS - ATHLETICS AND RECREATION

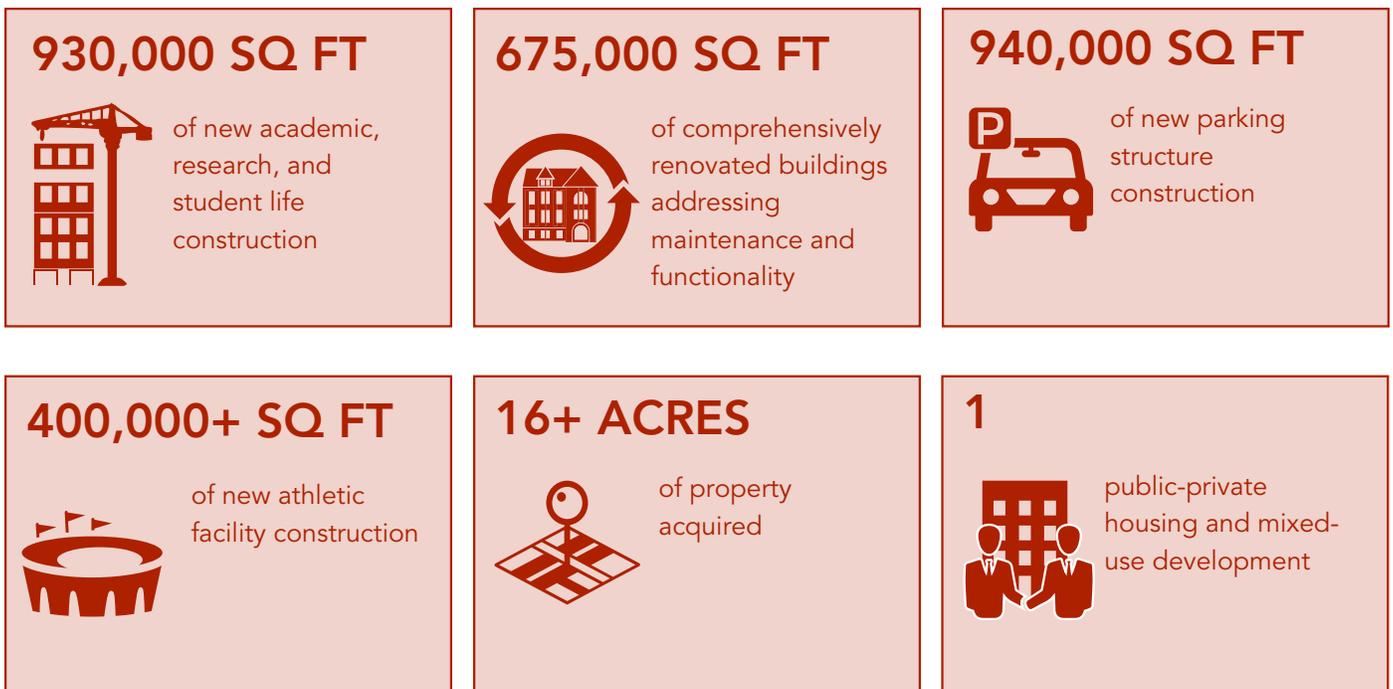
South Campus has significantly expanded with more than 400,000 square feet of new athletic facilities. The USC Foundation has acquired an approximately 300-acre site located to the south of the stadium, which is ideally suited to fulfilling the university's need for additional outdoor student recreation space.

PUBLIC REALM

The university and the county have made several public realm investments along Greene and Assembly Streets, as well as landscape renovations to the historic core campus, including the horseshoe and Gibbs Green.

PLANNING STAGE PROJECTS

The university has several significant projects currently in the planning stage. These aim to address immediate academic and student life needs as well as longer-term strategic partnerships and economic development opportunities.



SUMMARY OF THE UNIVERSITY'S IMPLEMENTATION ACHIEVEMENTS SINCE THE 2010 MASTER PLAN



HISTORIC CORE CAMPUS LANDSCAPE RENOVATIONS



DARLA MOORE SCHOOL OF BUSINESS



650 LINCOLN



HORIZON I



RICE ATHLETIC CENTER



FOUNDATION SQUARE



USC SCHOOL OF LAW



CAROLINA TENNIS CENTER

New Buildings and Comprehensive Renovations

1. Darla Moore School of Business
2. USC School of Law
3. Alumni Center
4. 650 Lincoln
5. Innovation Center/Bert Storey Engineering Center
6. Center for Health and Well-Being
7. School of Journalism and Mass Communication Renovation
8. Hamilton College Renovation
9. Petigru College Renovation
10. Harper/Elliott Renovation
11. DeSaussure Renovation
12. Rutledge Renovation
13. Legare/Pinckney Renovation
14. Patterson Hall Renovation
15. Women's Quad Renovation
16. 1600 Hampton Street Annex Renovation (not shown on map)
17. Carolina Coliseum Basketball Renovation
18. Horizon I (completed 2010)
19. Hollings Special Collections Library (completed 2010)
20. 1800 Gervais Building (2017 acquisition)
21. Discovery One
22. Preston Greenhouse
23. SJ + MC Studio Building

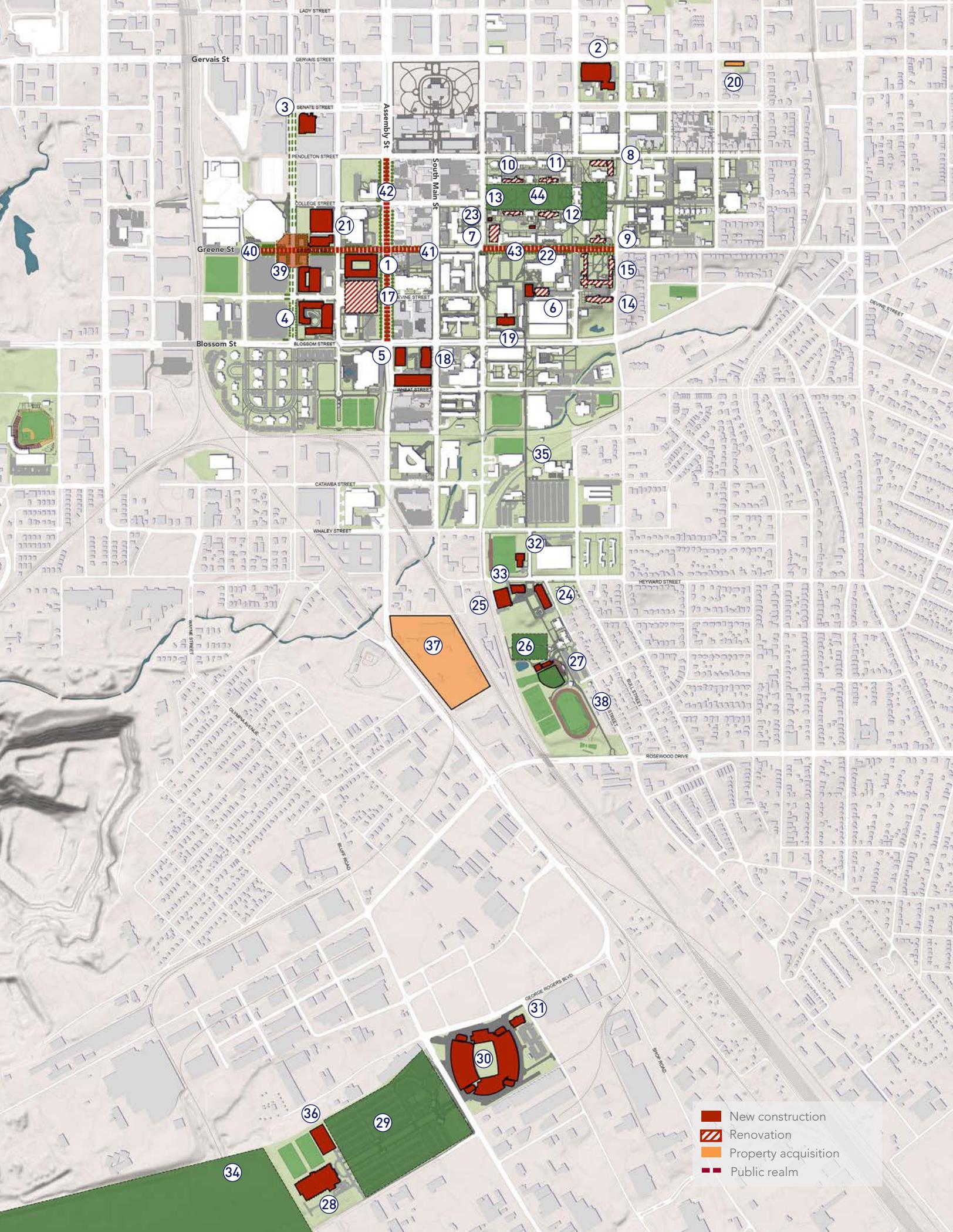
South Campus, Athletics, and Recreation

24. Rice Athletic Center
25. Athletics Village Parking Garage
26. Carolina Tennis Center
27. Carolina Softball Stadium
28. Football Indoor Practice Facility
29. Gamecock Park
30. Springs-Brook Plaza (Williams-Brice Stadium)
31. Bignon Gameday Center
32. Soccer Teams Facility
33. Academic Enrichment Center (Completed 2010)
34. 300-acre Acquisition (by USC Foundation)
35. Challenge Course Building
36. Football Operations Facility
37. Mill Building Property Acquisition
38. Track & Field Facility

Public Realm Projects

39. Foundation Square
40. Greene Street Improvements at Innovista
41. Greene Street Improvements at Core Campus
42. Assembly Street Improvements
43. Greene Street Pedestrian Zone
44. Historic Core Campus Landscape Renovations





- New construction
- Renovation
- Property acquisition
- Public realm

Gervais St

GERVAIS STREET

Assembly St

South Main St

Greene St

Blossom St

CATAMBA STREET

WHALEY STREET

KEYWARD STREET

ROSEWOOD DRIVE

GEORGE ROOSEVELT BLVD

SNIP ROAD

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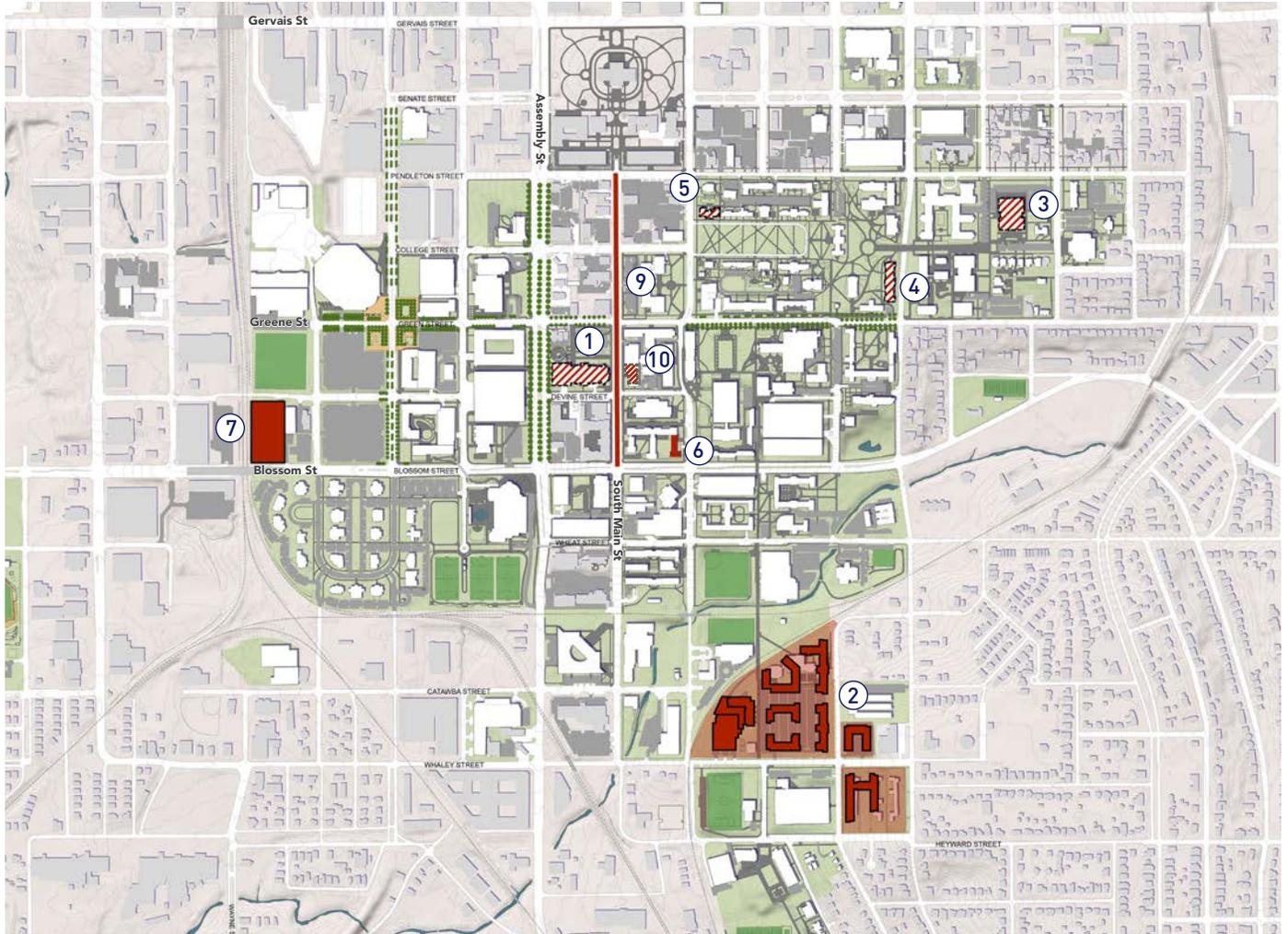
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Projects in Planning Stage

- 1. Renovation of Law School West Tower
- 2. Campus Village
- 3. Close-Hipp Renovation
- 4. LeConte Renovation
- 5. Caroliniana Library Renovation
- 6. Honors Residence Expansion
- 7. West Campus Parking Garage
- 8. School of Medicine New Campus (not shown on map)
- 9. South Main Street Redevelopment
- 10. Jones PSC Lab Renovation

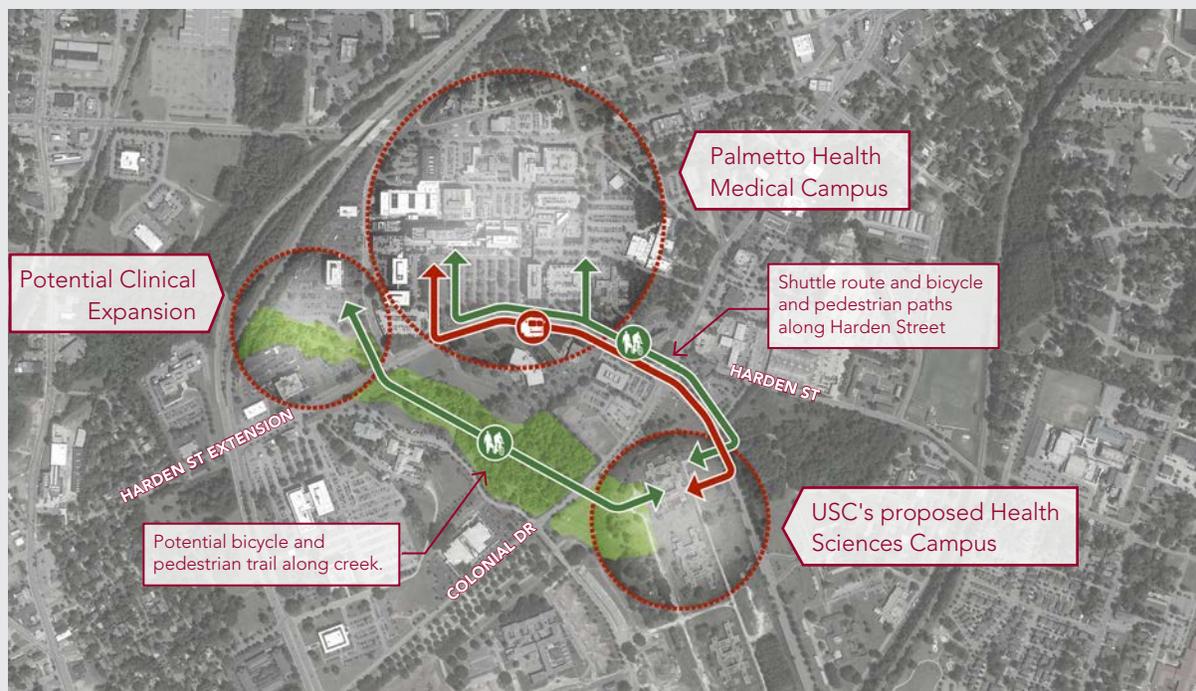
Health Sciences Campus

The university has initiated a programming and site selection process for its planned development of a new health sciences campus. A site bounded by Harden Street and Colonial Drive in close proximity to the Palmetto Health complex is the university's preferred location. The relocated USC medical school is expected to anchor the new campus, beginning with a medical education building and connected health sciences research building. USC expects that future development will include complementary academic, medical, and research uses and associated parking. Over the long term, the university envisions an integrated health sciences campus that will allow education, care, and research to occur in close proximity to one another and to Palmetto Health.

From the perspective of the 2018 Master Plan Update, several physical planning and design considerations are key to the realization of the university's health sciences vision. Principal among these are connectivity, integrated programming, and long-term growth flexibility. The plan recommends that the university prioritize the creation of pedestrian, bicycle, and transit connections between hospital, clinical, academic, and research facilities. These connections include improved sidewalks and bicycle

accommodation along Harden Street, as well as the development of a trail network along the existing creek corridor linking the university's preferred development site to the clinical office complex west of Palmetto Health. The city is planning a greenway that will extend from the Congaree River, through the Cottontown neighborhood, and link to this creek corridor, thereby connecting the proposed health sciences campus to a broader city and regional trail network.

In addition to the university's prioritization of the initial medical school facilities, the 2018 Master Plan recommends the exploration of a holistic, long-range medical district vision that encompasses Palmetto Health, the university-controlled clinical office complex, the university's preferred site for the health sciences campus, and the state-owned land bounded by Harden Street, Colonial Drive, and Bull Street. Nurturing a partnership between the university, the state, and Palmetto Health will be critical to the development of a comprehensive program and site development master plan for a physically connected, programmatically integrated medical district with a shared long-range vision.



FUTURE HEALTH SCIENCES CAMPUS AND SURROUNDING MEDICAL DISTRICT CONTEXT

2018 Master Plan Update

The 2018 Master Plan Update builds on the university's legacy of planning to strengthen the core campus, meet growing facility needs, and enrich the urban campus environment. The plan features a transformative vision for the engineering district, multi-destination student life approach, and long-range infill development strategy.





Congaree River

Rocky Branch Creek

Gervais St

Greene St

Blossom St

Catawba St

Assembly St

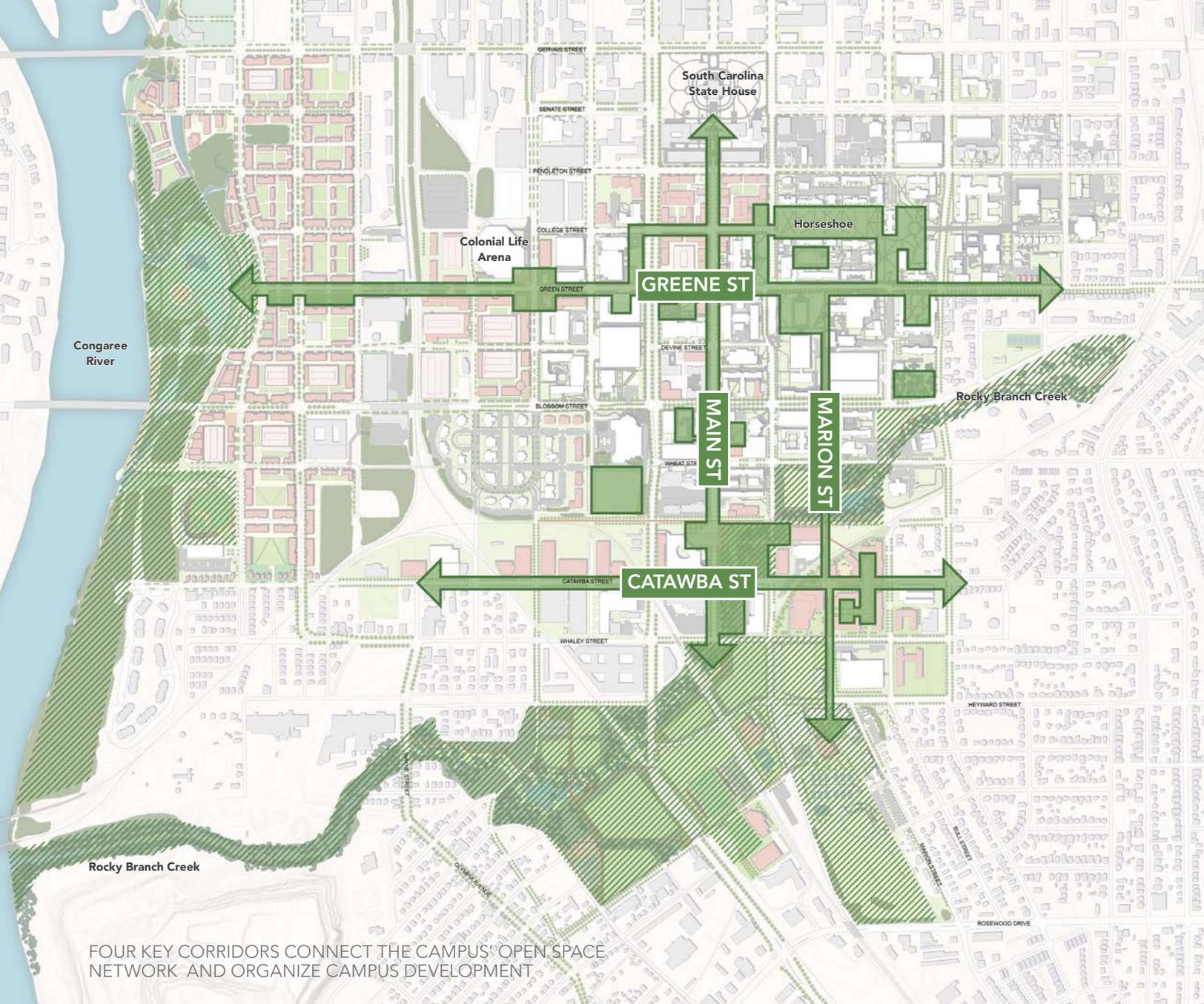
Sumter St

South Carolina State House

South Main St

The Horseshoe

- Existing USC building
- Proposed USC building
- Proposed building



FOUR KEY CORRIDORS CONNECT THE CAMPUS' OPEN SPACE NETWORK AND ORGANIZE CAMPUS DEVELOPMENT

Student enrollment has grown significantly since 2010 with undergraduate enrollment increasing by more than 24 percent, or approximately 5,000 students (as measured from fall 2009 to fall 2016). By fall 2017, enrollment increased by an additional 800 students. The university anticipates this growth to continue and projects an increase of 5,000 undergraduate students by 2025 as compared to fall 2016. With a growing student body, the university has a clear need for additional academic and student life space.

The plan puts forth a long-range vision for campus development that confirms, complements, and advances the recommendations of the 2010 plan. The vision builds on the 2010 development framework and South Campus transformation by focusing on infill development sites concentrated in the core campus and a reimagined engineering district.

The plan also affirms the environmental, economic, and social sustainability goals of the 2010 plan through a range of strategies. The strategies described in the following pages for academic buildings reinforce the optimization of existing spatial resources through adaptive reuse and improvement of instructional space. The engineering district underlines the 2010 goals of maintaining a compact campus, promoting sustainable and restorative landscape design, promoting university recognition and visibility, and advancing research, scholarship, and creative achievement. Lastly, the plan's development strategies related to student life advance the 2010 goals of improving quality-of-life facilities and open spaces, engaging with downtown, and contributing to the city's overall economic development.

Corridor Connections

The experience of the university's urban campus in downtown Columbia is inextricably tied to the character, comfort, and safety of the streets, sidewalks, parks, and plazas that comprise the city's public realm. Key city rights-of-way are conduits for the daily movement of students, faculty, staff, and the Columbia community.

Green spaces, especially on USC's urban campus, provide an indispensable common ground for the community to recreate, rest, and reflect. These spaces also have the potential to improve environmental conditions by mitigating the heat island effect in the hot summer months, reducing air and water pollution, and supporting stormwater management, among other factors. Further, great parks have been shown to increase property values, improve community attractiveness, and define campus identity.

The network of key university/city corridors and green spaces is a powerful framework for organizing campus development. The plan highlights four corridor connections: Greene Street and Catawba Street in the east-west direction, and Main Street and Marion Street in the north-south direction. These corridors provide a holistic campus experience, tying together programmed and informal green spaces with institutional and community uses. They also connect the campus with the greater landscape context of Rocky Branch Creek and the Congaree River.

Greene Street is the primary spine of the university's academic activity from the Close-Hipp building extending westward to the Moore School of Business and Innovista. Catawba Street, a corridor of growing significance, connects three marquee campus and community planning initiatives: the planned Campus Village housing complex, the expanding engineering district, and the Catawba technology corridor. Main Street through the campus reaches from the State Capitol Complex, through a mixed-use district of commercial and institutional uses, to the engineering district and Rocky Branch Creek. Marion Street, an important student route from the horseshoe to the Athletics Village, stands to rise in prominence with the proposed development of Campus Village along its axis.

From a physical planning and design perspective, primary considerations for these four corridors include the development of generous sidewalks with a regular tree canopy for shade, improvements to pedestrian safety with consistent street crossings, and provision of bicycle lanes to support multi-modal campus movement. The plan recommends that the university reinforce these corridors through the continued clustering of institutional facilities within the core campus coupled with the provision of transit.



ACADEMIC AND STUDENT LIFE USES ARE CONCENTRATED ALONG KEY CAMPUS CORRIDORS

Academic Facilities

The university’s academic core extends from Foundation Square at Lincoln Street on the west to Cloe-Hipp on the east, Pendleton Street to the north, and Swearingen Engineering to the south. The academic core has experienced a significant shift westward with the construction of the new Moore School of Business, but remains compact and can be traversed by students, faculty, and staff within a 20-minute class change interval. Most of the core campus falls within a 15-minute walking radius.

The 2018 Master Plan Update includes an analysis of existing academic space utilization, current space needs, and projected space needs based on the university’s anticipated undergraduate enrollment growth of 5,000 students by 2025. The current classroom supply is nearing capacity and many labs operate late into the evening to accommodate high demand. Several science labs are also undersized by typical guidelines.

SPACE NEEDS

The plan identifies a current need for 15,000 assignable square feed (ASF) of classroom instructional space and 12 science teaching labs (approximately 22,000 ASF).

Given the university’s projected undergraduate enrollment growth of 5,000 students, total needs in 2025 include 30,000-45,000 ASF of classroom instructional space and 24 teaching labs (approximately 44,000 ASF).

RECOMMENDATIONS

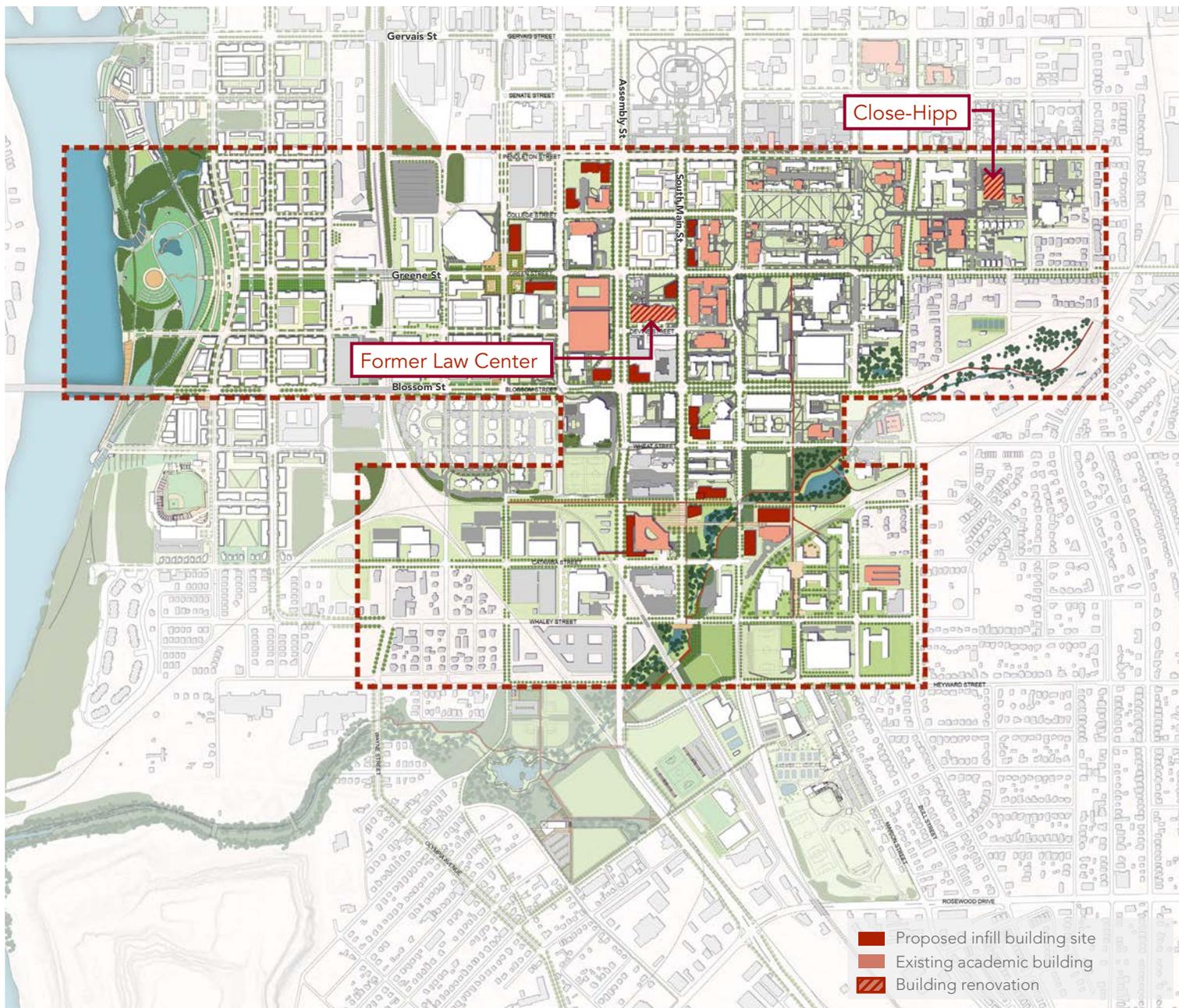
The university can accommodate current and projected classroom and science teaching lab space needs through the renovation of classrooms in the Close-Hipp building and the renovation of the former Law Center as a classroom/laboratory building. Both buildings are ideally located within the core campus, reinforce the university’s existing concentration of academic activity along the Greene Street corridor, and lend themselves to the proposed academic uses. Further, the renovation strategy supports the university’s imperative to maximize the use of existing space.

Close-Hipp currently has 117,000 ASF of available classroom space with renovation plans in progress to reactivate 25,000 ASF for 18 classrooms. The former Law Center (classroom/laboratory building) has 66,000 ASF of available space for academic programming, per university estimates. Renovation plans are in progress to create 17 labs as part of a phase one renovation. Pending implementation of sciences labs in the former Law Center, the university plans to renovate laboratory space in the Jones Physical Sciences Center.

ACADEMIC FACILITIES SPACE NEEDS

SPACE TYPE	CURRENT NEED	ESTIMATED 2025 NEED	RECOMMENDATION
Classrooms	15,000 - 45,000 ASF (15,000 - 30,000 ASF of 45,000 ASF total is based on conceptual station right-sizing to national guidelines. Calculation assumes 50% of stations in small to mid-sized rooms are increased to an average of 25-30 ASF/station)	30,000 - 45,000 ASF (Excluding right-sizing)	Adaptive Reuse of Close-Hipp 25,000 ASF planned for 18 classrooms <i>(117,000 ASF currently unassigned; renovation plans in progress by USC)</i> Adaptive Reuse of former Law Center (classroom/lab building) USC estimates 66,000 ASF available for additional academic programming
Teaching Labs	12 labs 22,000 ASF	24 labs 44,000 ASF	Adaptive Reuse of former Law Center (classroom/lab building) 17 labs planned in Phase 1 renovation USC estimates 66,000 ASF available for additional academic programming

Note: Estimated space needs above do not reflect the replacement of space recommended for removal in the 2010 plan



ACADEMIC FACILITIES AND LONG-TERM INFILL DEVELOPMENT SITES

LONG-TERM INFILL DEVELOPMENT SITES

While the adaptive reuse of Close-Hipp and the Law Center (classroom/lab building) satisfy the university's projected space needs for fall 2025, the plan identifies additional long-term redevelopment sites within the core campus. These sites are suitable for future academic, research, and student life facilities. As needs arise, the university should evaluate the development suitability, locational characteristics, programmatic adjacencies, and other factors for proposed development in order to prioritize the available sites.

The identification of long-term infill opportunities supports the university's goal to maintain a compact campus. As the university grows, this goal is among the most impactful. A compact campus developed to appropriate densities enhances the student experience by promoting walkability and the clustering of facilities, improves the efficiency of transportation and utility systems, and maximizes availability of land resources for green space.

Engineering District Vision

The College of Engineering and Computing fosters innovation by preparing engineers and computer professionals to develop new technologies that will improve our lives and the world. A rapidly growing area of the university with over 3,000 undergraduate and more than 500 graduate students, the college boasts over \$22 million in research funding and has been ranked first in South Carolina in faculty research productivity by the National Research Council. The investment in and success of research is further supported by the connection of the college to the emerging Catawba Street tech corridor.

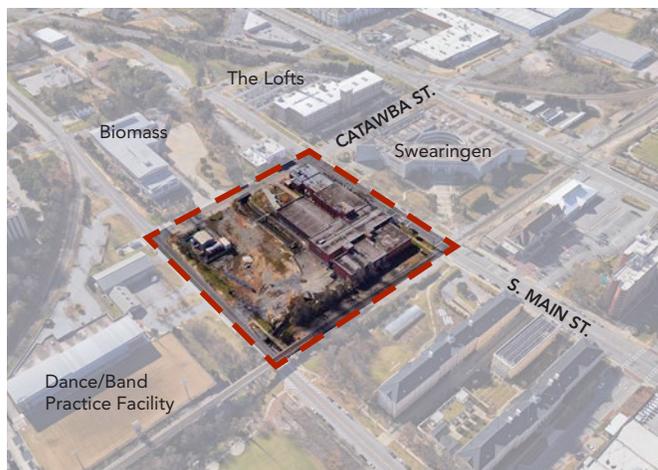
While the college is seeing growth and success academically and in research, its physical environment has not kept pace. With the exception of the Swearingen Engineering Center, the college’s facilities are dispersed in several buildings, some of which are outdated, and one of which, 300 Main Street, is located in the Rocky Branch Creek floodplain. This area of campus falls short of the quality of the core campus. Some streets are in disrepair. Sidewalks, lighting, and shade are inconsistent. This physical arrangement and condition stymies the realization of a cohesive college identity and character.

In order to attract and retain top students and faculty and improve its national standing, the college will benefit from a highly visible, well-defined district with institutional quality facilities and landscapes. Combined with the investment in the Athletics Village and the proposed Campus Village housing complex, a revitalized engineering district will anchor a wholly redefined South Campus that rises to USC’s high standard of institutional development.

VISION AND GOALS

In order to articulate the vision for the engineering district, the college has identified the following goals:

Establish a renewed identity for the college: Although academically prestigious, the college lacks a visible presence and cohesive identity on campus. A renewed identity can include significant building and public realm improvements, curriculum evaluation, and a new strategy toward faculty



PROPOSED ENGINEERING QUAD SITE

recruitment.

Define an iconic, integrated engineering district: The college currently serves as the anchor to South Campus, but would benefit from the formal definition of a larger district. An engineering district will allow for the integration of the Catawba Street tech corridor and the academic campus, strengthening the connection between industry and the college’s research and development capacity.

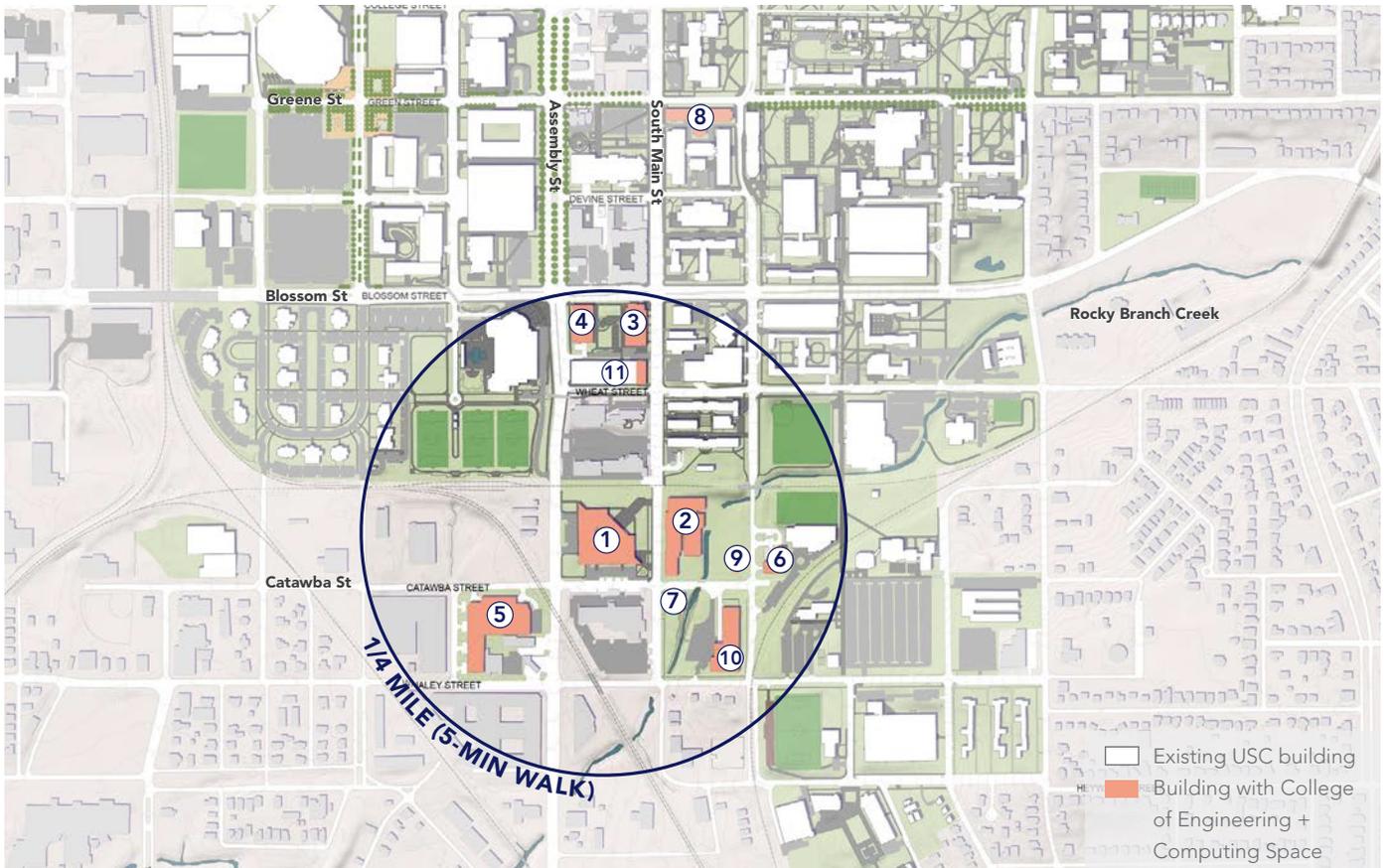
Consolidate facilities around a new engineering quad: In the 2010 plan, the university developed a vision for the redevelopment of the Rocky Branch Creek corridor as a linear park and student recreation area. This vision included a central quad located in front of Swearingen to serve as a teaching, research, ecological, and recreation landscape. The engineering quad will serve as a central gathering space for the college and as a stormwater management solution for the existing creek corridor.

Identify building sites to meet academic and research needs: The college projects a need for additional space to accommodate the growing faculty and student population. Specific needs include lab space for new faculty and experiential/research space for students.

SPACE TYPE	ESTIMATED NEED
Lab space for 40 new faculty members ¹	60,000 - 80,000 ASF (1,500 - 2,000 sq ft per faculty member)
Student experiential space	~10,000 - 20,000 ASF
Replacement Space ²	125,000 ASF

RECOMMENDATION
200,000 ASF of new construction/additions
25,000 ASF of adaptive reuse
Long-term potential expansion includes 110,000 ASF of new construction and 30,000 ASF of adaptive reuse

¹ Per conversation with Dean Haj-Hariri (September 2017)
² Buildings 2, 6, 7, 9 on map; obsolete and/or remote facilities



EXISTING COLLEGE OF ENGINEERING AND COMPUTING FACILITIES

Link the college and emerging Catawba tech corridor as one place: The university aims to strengthen campus districts that encourage institutional research and industry partnerships. The adjacent Catawba Street tech corridor is envisioned as a research, innovation, and prototyping district and should be physically and programmatically connected to the university.

SPACE NEEDS

The College of Engineering and Computing currently occupies a total of 316,187 assignable square feet (ASF), primarily concentrated along South Main Street. Given anticipated growth and efforts to consolidate space into a more unified district, the college projects a total future space need of approximately 195,000-225,000 ASF, as described below. The plan recommends that the university conduct a programming analysis to confirm specific space needs and timing.

- 60,000-80,000 ASF of lab space for 40 new faculty members (1,500-2,000 ASF/faculty member)
- 10,000-20,000 ASF of student experiential space
- 125,000 ASF to replace existing space in obsolete and/or remote facilities including 300 Main Street, 300 Sumter

EXISTING SPACE

MAP NUMBER	BUILDING	ENGINEERING+ COMPUTING ASF
1	Swearingen	106,668
2	300 Main Street	100,716
3	Horizon 1 Building	43,953
4	Innovation Center Building	25,803
5	1000 Catawba Street	15,395
6	300 Sumter Street	8,828
7	1200 Catawba Street	8,159
8	Sumwalt College	2,784
9	1223 Catawba Street	1,801
10	Biomass Building	1,095
11	Horizon Garage	985
TOTAL		316,187

SOURCE: USC, October 2017

Street, 1200 Catawba Street, Sumwalt College, 1223 Catawba Street, Biomass Building, and Horizon Garage

DISTRICT CONCEPT PLAN

The engineering district concept plan outlines an overall strategy for the physical framework of the district and identities opportunities for existing facility expansion, adaptive reuse, and new building construction. At the heart of the district plan is a new engineering quad along Rocky Branch Creek. The quad is envisioned as a unifying element to the engineering district: a student gathering space, a recreation space, and an ecological and research landscape. This space would also manage stormwater and help reduce flooding along the creek.

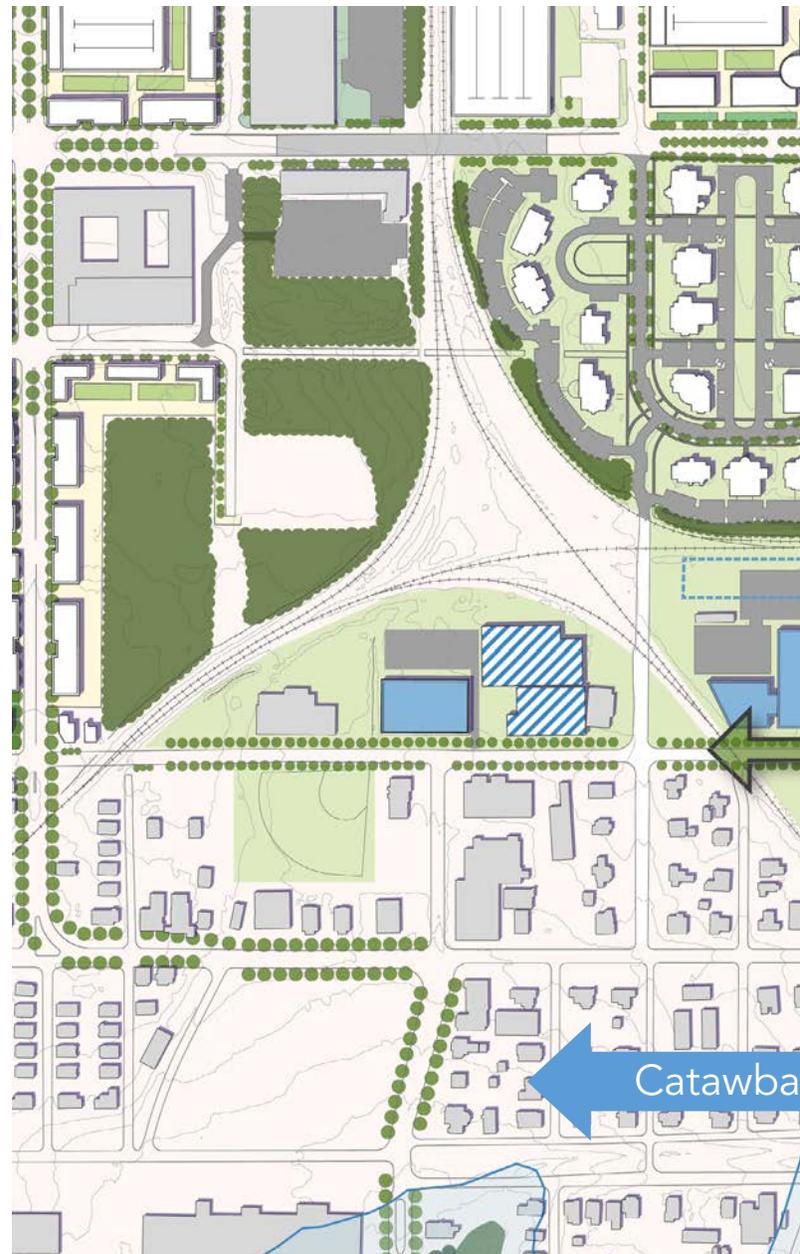
The site of the proposed quad is currently occupied by the 300 Main Street building and Rocky Branch Creek. Consistent with the 2010 plan, the 2018 Master Plan Update recommends the removal of the 300 Main Street building—located in the Rocky Branch Creek floodplain—as the university relocates programs to new or renovated facilities within the district over time.

PROPOSED SPACE IN DISTRICT CONCEPT PLAN

MAP NUMBER	BUILDING	ENGINEERING+ COMPUTING ASF*
1	Swearingen	106,668
2	Swearingen Addition	±40,000
3	Engineering Showcase	±20,000
4	Horizon 1 Building	43,953
5	Innovation Center	25,803
6	Biomass Building	±25,000
7	Engineering 1 (4 flrs)	±65,000
8	Engineering 2 (5 flrs)	±75,000
9	Engineering 3 (5 flrs)	±110,000
10	Band Building	±30,000
TOTAL		±540,000

*ASF of new buildings calculated as 67% of Gross SF area as shown on plan.

- 3. Building proposed to be 2 floors.
- 7. New building proposed to be 4 floors with +16,000 ASF per floor.
- 8. New building proposed to be 5 floors with +15,000 ASF per floor.
- 9. New building proposed to be 5 floors with +22,000 ASF per floor.



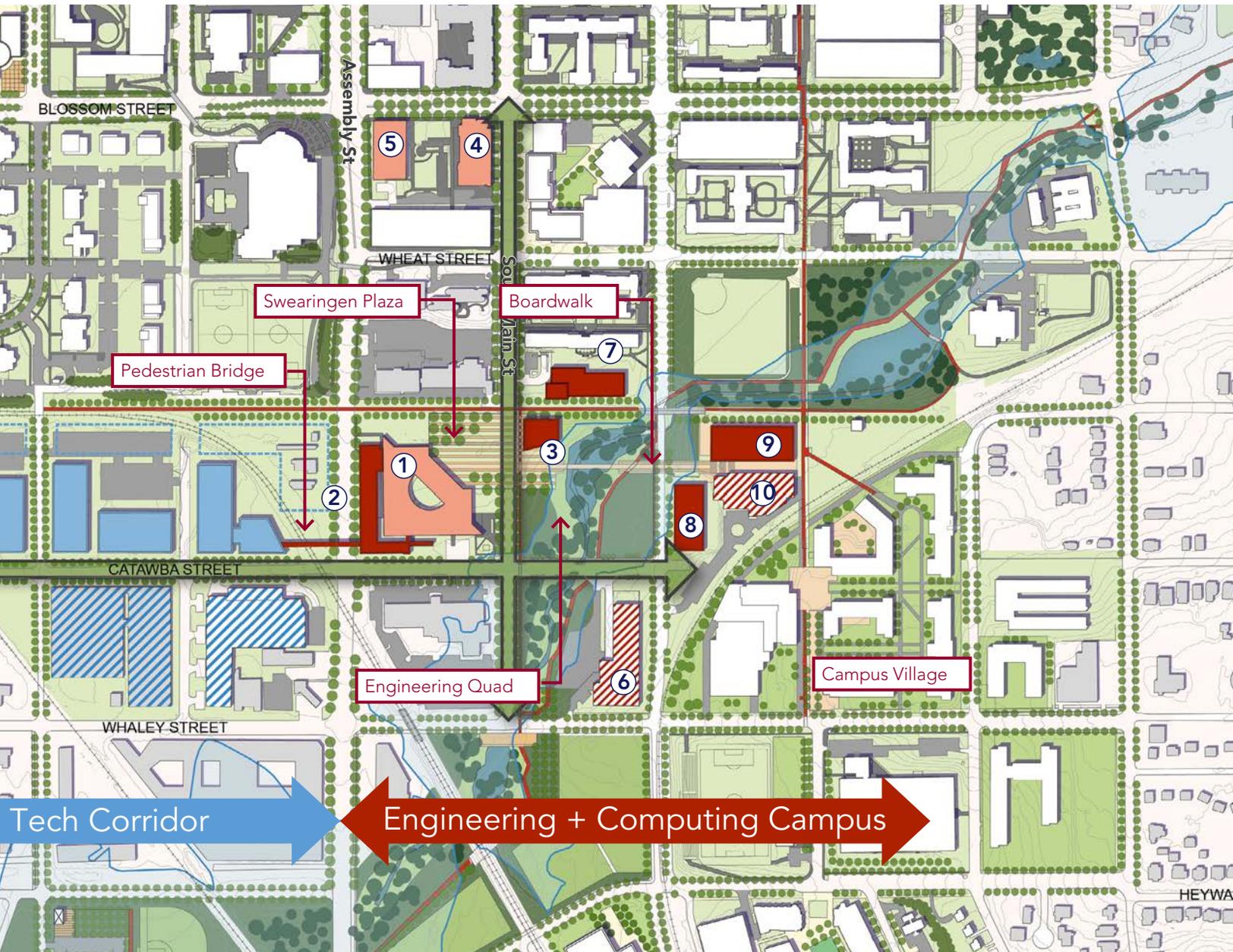
ENGINEERING DISTRICT CONCEPT PLAN
 *Plan illustrates potential build-out of Catawba tech corridor including sites controlled by others

While the plan assumes the continued use of 300 Main Street in the near-term, the university should avoid any future facility development within the floodplain.

Engineering Quad

The 2010 plan envisioned a central teaching and research space along Rocky Branch Creek. Building on this vision, the 2018 Master Plan Update proposes to expand the function and importance of the engineering quad as the social and academic heart of the district.

The engineering quad can include a variety of landscape spaces that provide for recreation, gathering, and stormwater



retention, and reestablish and improve ecological conditions along the creek. The stormwater function is critical to the design intent of the quad and allows the space to serve as the college's first demonstration project integrating landscape design strategies into the urban creek context to improve flooding conditions. The quad will serve as a place for people as well as a functioning stormwater control system.

Initial stormwater and flood control improvements can occur prior to the demolition of 300 Main Street to begin the block's transformation. If the university pursues a phased approach, any initial design should be carried out in relation to the final design intent and should be an incremental step toward the completion of the quad.

With its central location within the college, the quad is imagined as a space that many students will use and traverse. A boardwalk across the creek will link Swearingen, South Main, and the Catawba Street tech corridor to new engineering buildings and the Campus Village. As the quad and South Main will function as primary pedestrian paths, the northwest corner of the quad is an ideal location for a new engineering showcase building. Envisioned as a transparent structure, the showcase building will highlight and demonstrate the university's academic and research initiatives and serve as a visual and programmatic link between the college, the campus, and the community.

The quad and the showcase building will have a transformative physical impact on the engineering district, defining a renewed



VIEW OF SWEARINGEN ENGINEERING FROM PROPOSED ENGINEERING QUAD AT THE BANKS OF THE RESTORED ROCKY BRANCH CREEK NEAR THE INTERSECTION OF WHEAT AND SUMTER STREETS



identity, increasing visibility and access, and providing a catalyst for growth.

Buildings and Facilities

With the anticipated removal of 300 Main Street over time as district development allows, and the college’s projected space needs, the plan proposes a mix of new buildings and the adaptive reuse of several existing buildings within the engineering district.

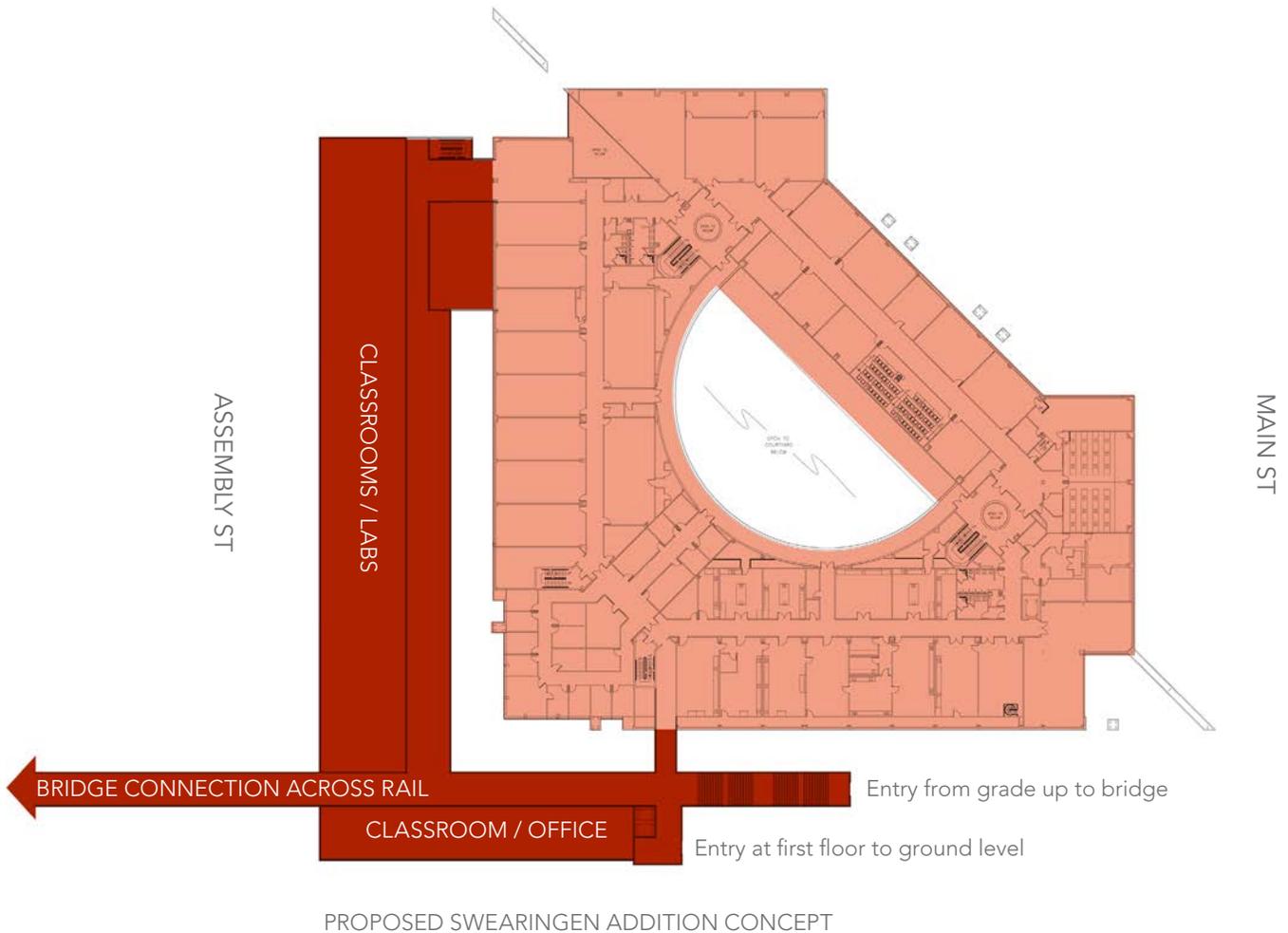
Swearingen Renovation and Addition: As the flagship building for the college, the plan proposes an addition to the western portion of the building to increase capacity and reimagine the gateway to the engineering district along Assembly Street. The addition can transform the blank façade of the existing building into a more inviting and open edge connecting the district and the college to Assembly Street.

The addition proposes an integrated pedestrian bridge across Assembly Street and the rail line to the Catawba Street tech corridor. This is an important connection to better integrate the innovation and research of the corridor with the engineering district and to improve pedestrian safety.

The bridge should connect directly to Swearingen and a new innovation building west of the rail, if possible, to maximize the success of the bridge and encourage student use.

Engineering Showcase: The showcase building is envisioned as a highly transparent and visible structure within the quad that highlights the work being done at the college. This should be designed as a space for students and faculty as well as prospective students and other interested parties.

Engineering 1 and 2: Two new buildings are proposed to frame the north and east edges of the quad. With flexibility in their final height based on space needs and funding, these two buildings can create approximately 150,000 square feet or more of new space for engineering, allowing for the removal of 300 Main Street and room for additional growth.



Biomass building: A portion of the existing biomass building can be adapted for use by the college and provides large spaces for a variety of potential research uses.

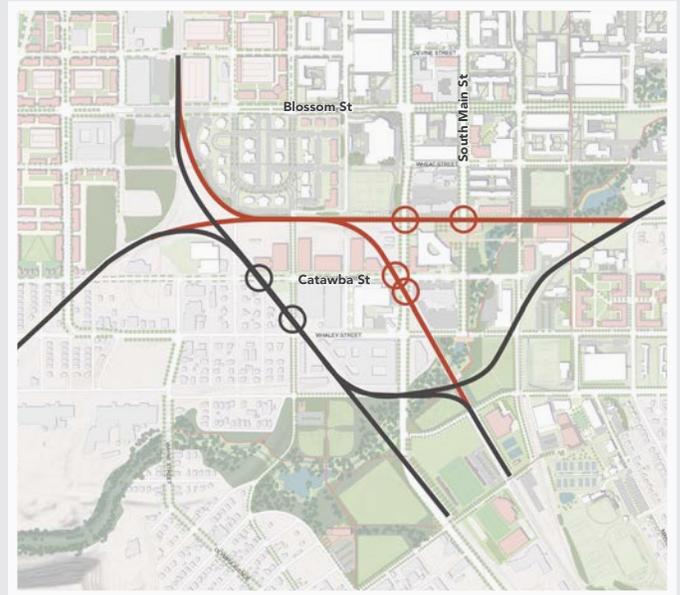
Engineering 3 and the Band/Dance facility: While the buildings previously described address the college's current needs, the district concept plan allows for additional future growth, if needed. Over the long-term, this could entail relocating band and dance programs and the practice field in the future and constructing a new engineering building on the field site. While demand for this additional space is not currently projected, it is important to maintain flexibility for future engineering program growth within the district.

The current location of the band and dance facility is a strategic site at the nexus of the engineering district and Campus Village. As the long-term buildout of the engineering district progresses, the university should carry out a collaborative study to identify potential alternate sites for the band and dance programs that meet their objectives.

SOUTH CAMPUS

The 2010 plan recommended the redevelopment of the Rocky Branch Creek corridor to reduce the impact of existing flood conditions, create recreation space proximate to student housing, and improve the environmental quality of the South Campus. The 2018 Master Plan Update confirms and reinforces this goal for the transformation of South Campus. The proposed engineering district, Campus Village housing complex, and the Athletics Village together will serve as catalysts and anchors for South Campus. These three major zones of campus life can unite South Campus as a university destination, with Campus Village placing thousands of students adjacent to the engineering district and directly linking the Athletics District to the rest of campus.

RAILROAD CONSOLIDATION



- Existing/new rail to remain
- Rail to be removed
- Grade crossing to be closed
- Grade crossing eliminated

Both the State of South Carolina and the City of Columbia have evaluated railroad consolidation alternatives for the rail line that crosses Catawba Street and Assembly Street and separates the college from the USC Innovation Center. Based on initial review of the proposed consolidation alignments, the plan recommends Alternate 2B as the preferred consolidation option to support the creation of an integrated engineering district.

This option proposes to remove the rail line that crosses Catawba and Assembly Streets and consolidate this line with the existing line that crosses Lincoln Street to the west. This option also proposes to remove the existing line north of Swearingen that crosses South Main Street. The elimination of these crossings would enhance connectivity across the engineering district, north to the core campus, and west to the Catawba Street tech corridor.

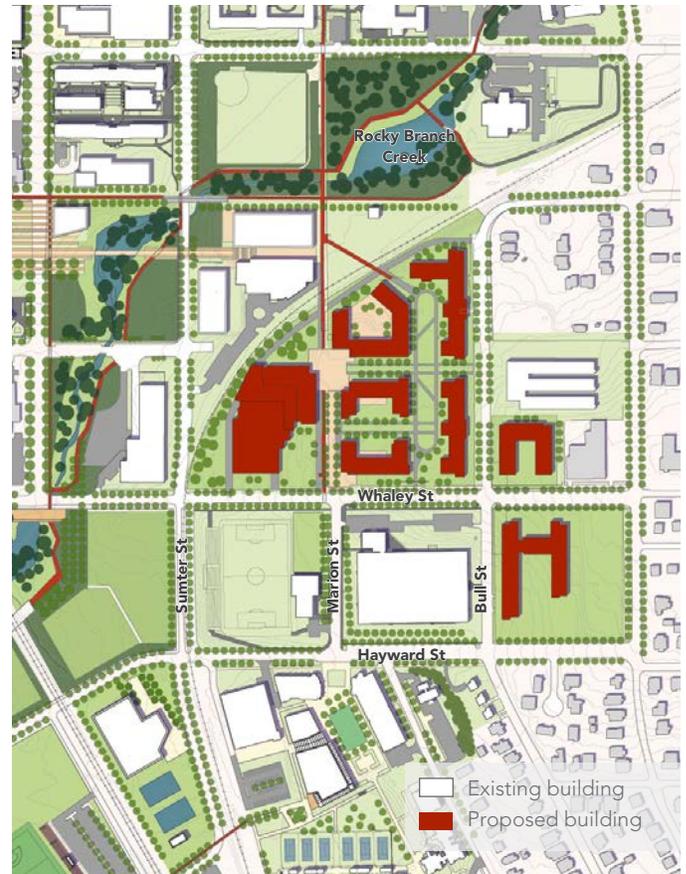
Student Life Facilities

Student life plays a critical role in shaping the campus environment outside of the classroom and in defining the individual student experience. The university is committed to continually evaluating and enhancing this experience in an effort to create spaces that enable all students to achieve their full learning potential. Given the recent growth in student population, the university currently has a deficit of housing, student union, and outdoor recreation space.

HOUSING

Student housing frames the university's academic core to the east and south within walking distance of academic facilities. The plan confirms the university's goal to maintain the close relationship of housing to the academic core.

While the 2018 Master Plan Update does not include a detailed analysis of student housing needs, the university recently completed a housing master plan and is proactively addressing its demand for additional on-campus housing, including the freshman housing requirement, with the proposed Campus Village complex. Campus Village will add more than 2,500 net new beds to address the current deficiency and accommodate additional growth. This project is consistent with the student housing sites identified in the 2010 plan and will advance the continuing transformation of South Campus that began with the Athletics Village.



CAMPUS VILLAGE CONCEPT PLAN



VIEW OF CAMPUS VILLAGE LOOKING SOUTH

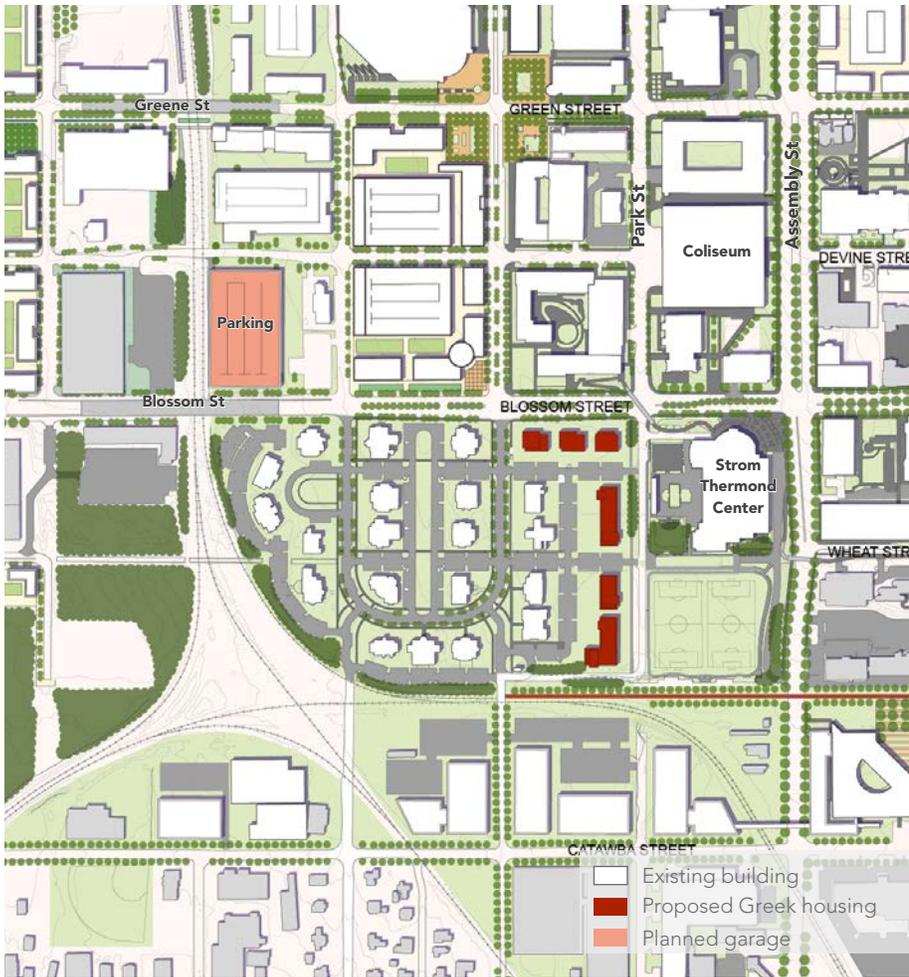
Source: USC, February 2018

GREEK HOUSING

In 2016, the university completed its *Report on Growth of the Fraternity and Sorority Community* which highlighted the growth in Greek life over the last five years and the correlation between increased campus enrollment and interest in fraternity and sorority life. Between 2010 and 2016, the Greek life community increased from 20 percent of the total student population to 27 percent of the total student population. Assuming that the Greek community maintains its current growth rate, the university projects a need for four additional Greek houses.

The plan accommodates this projected need adjacent to the Greek Village on university-owned property. The figure at left illustrates a concept for three mansion-style houses and three to four townhouse-style houses on an existing parking lot and recreation field, both owned by the university. Developing Greek housing in this location would require identifying suitable replacement space for the recreation field, potentially on South Campus.

Additional Greek housing is depicted on property owned by the South Carolina and Georgia Railroad and the Southern Railway Company. The university could develop these houses in the future, if needed, pending availability of the land.



PROPOSED GREEK HOUSING SITES



PROPERTY OWNERSHIP

- South Railway Co.
- Southern Regional Industrial
- South Carolina + Georgia Railroad

Source: Richland County GIS



CAROLINA COLISEUM ADAPTIVE REUSE CONCEPT

STUDENT UNION

The plan identifies the need for student union space in addition to the existing space at Russell House. The additional space would provide complementary services and activities to those offered at Russell House.

Space Needs

There is a current need for 100,000-110,000 ASF of student union space, including food service, lounge, meeting space, merchandising, and indoor recreation space. The analysis projects a total future need for 155,000-165,000 ASF in 2025. The university's proposed Campus Village housing complex, which includes approximately 30,000 GSF of dining space, will partially address this need.

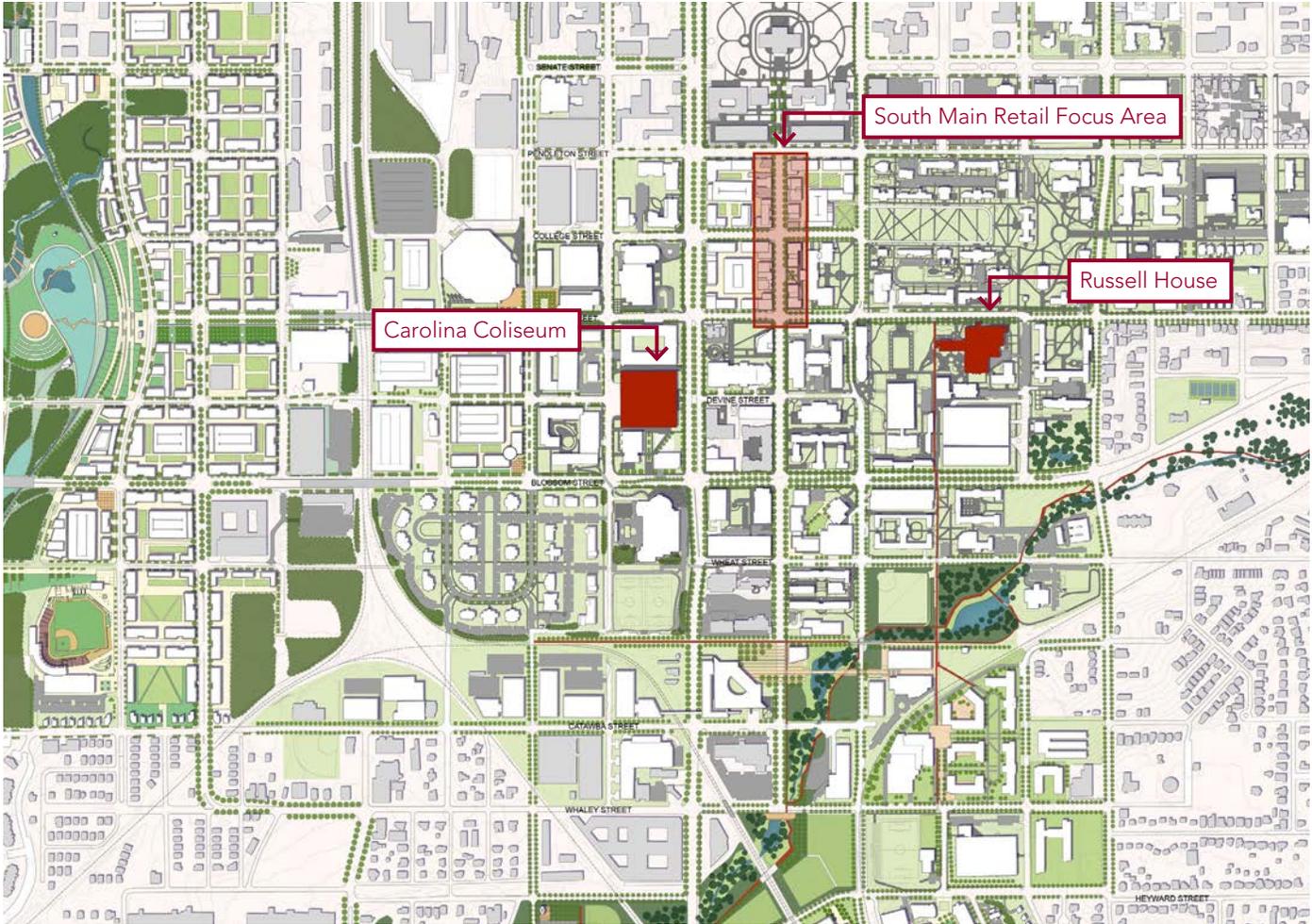
Recommendations

This master plan update confirms the 2010 plan's recommendation to accommodate additional student union activity, among other academic and student life uses, as part of the adaptive reuse of the Carolina Coliseum. This location is convenient to new and emerging academic, research, and housing facilities in Innovista, the Greek Village, Strom

Thurmond Wellness and Fitness Center, and parking for commuting students.

In addition to the Carolina Coliseum, the plan embraces the vision of the 2017 South Main Capital District Area Plan. The development of a mixed-use, pedestrian-oriented retail environment, with a particular focus on the two blocks bounded by Pendleton Street and Greene Street, will provide an important student and community destination and amenity.

Including Russell House, adaptive reuse of the Carolina Coliseum, and redevelopment of South Main Street west of the horseshoe, the plan proposes a three-destination approach to student union facilities on the core campus. Each of these locations can serve distinct student life purposes. Russell House can retain its student commons function and provide food service and meeting/lounge space. The Carolina Coliseum can serve as a hub for student government and a portal for commuter students, while providing a flexible mix of student life and academic spaces. Lastly, redevelopment of South Main Street can provide a mixed-use commercial area with ground floor retail and dining options for the university and Columbia community.



PROPOSED THREE-DESTINATION APPROACH TO STUDENT UNION SPACE

STUDENT UNION SPACE NEEDS

CURRENT NEED	ESTIMATED 2025 NEED	RECOMMENDATION
100,000 - 110,000 ASF Includes food service, lounge, merchandising, and indoor recreation space	155,000 - 165,000 ASF Campus Village will add approximately 60,000 GSF of dining space	<p>Adaptive Reuse of the Carolina Coliseum Up to 430,000 GSF <i>Source: Coliseum Adaptive Reuse Study, 2008</i></p> <p>South Main Capital District More than 200,000 GSF ground floor use <i>Source: South Main Capital District Area Plan, 2017</i></p>



STUDENT RECREATION

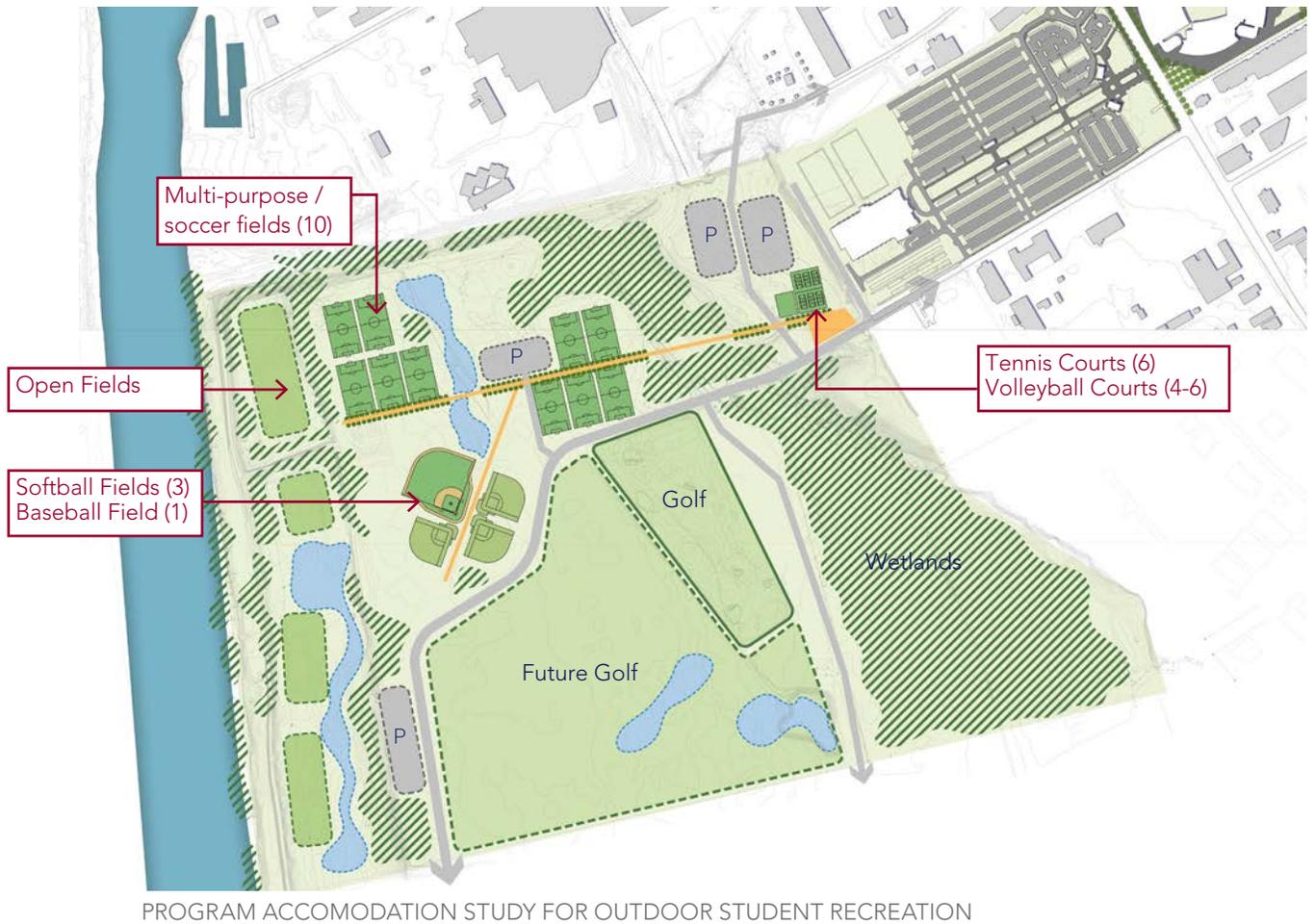
The plan identifies a significant need for multi-purpose fields for student recreation and club sports. The university has an existing estimated deficit of eight fields, expanding to a total need of 10 fields in 2025. Additional outdoor recreation needs, including softball and tennis are estimated below.

As part of the redevelopment and restoration of Rocky Branch Creek, the 2010 plan recommended including recreation fields along the creek creating a necklace of small lakes, ponds, and student recreation facilities. The 2018 plan reinforces this vision for the redevelopment of the creek while also proposing the development of a student recreation destination on the newly acquired land near Gamecock Park.

The 300-acre site purchased by the USC Foundation adjacent to Gamecock Park can accommodate current and projected outdoor recreation needs. The figure on the facing page illustrates a conceptual program accommodation of ten multi-purpose/soccer fields, three softball fields, one baseball field, four to six sand volleyball courts, six tennis courts, and four open field areas. The site accommodation study incorporates existing and proposed golf facilities for varsity athletics and illustrates the capacity and flexibility of the site to meet the university’s student recreation space needs.

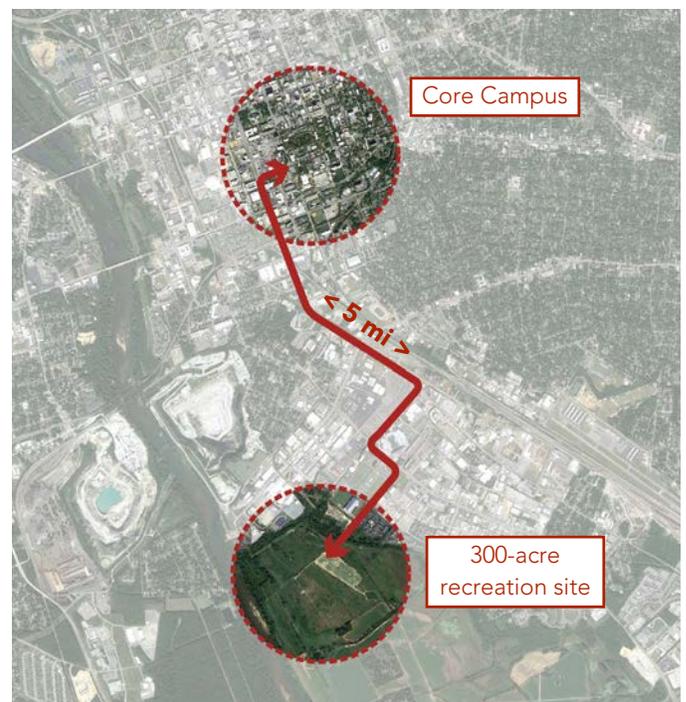
OUTDOOR STUDENT RECREATION SPACE NEEDS

SPACE TYPE	CURRENT NEED	ESTIMATED 2025 NEED	RECOMMENDATION
Multi-purpose fields	8	10	10 fields at 300 acre site
Softball fields	2	2	2-3 fields at 300 acre site
Tennis courts	3	6	6 courts at 300 acre site
Sand volleyball courts	4	6	6 courts at 300 acre site



The 300-acre site is located approximately five miles from the horseshoe, a distance from the core campus that will require careful consideration to ensure regular use by the student body. The university should implement a convenient shuttle system linking key campus destinations to the site. Further study is needed to determine the shuttle system's optimal frequency to encourage transit use and discourage student use of personal vehicles. Bicycle routes should be improved and expanded to create a clear and safe path from core campus destinations and student housing to the 300-acre site.

Given the site's distance from campus, it is likely that scheduled recreation activities will be the predominant use. The 2018 Master Plan Update continues to support the introduction and protection of open spaces, multi-purpose fields, and other outdoor spaces within the core campus for general recreation use. Should the opportunity arise, over the long term, the plan recommends that the university investigate the development of additional recreation space as part of a comprehensive planning and programming exercise for lands along the Congaree River adjacent to the Innovista District.



RECREATION SITE DISTANCE FROM CORE CAMPUS

Implementing the Plan

The 2018 Master Plan Update illustrates a 21st century urban campus which celebrates its location in downtown historic Columbia. Stable neighborhoods such as the Vista, University Hills, and Wheeler Hills frame the campus. The city and community have developed well-conceived area plans for such areas as West Gervais Street, the Mill District, and the South Main Capital District.

The university continues its investment in the vitality of the core campus, guided by previous planning efforts. The design qualities of the university's historic horseshoe provide timeless inspiration for campus development, as exemplified by the following characteristics:

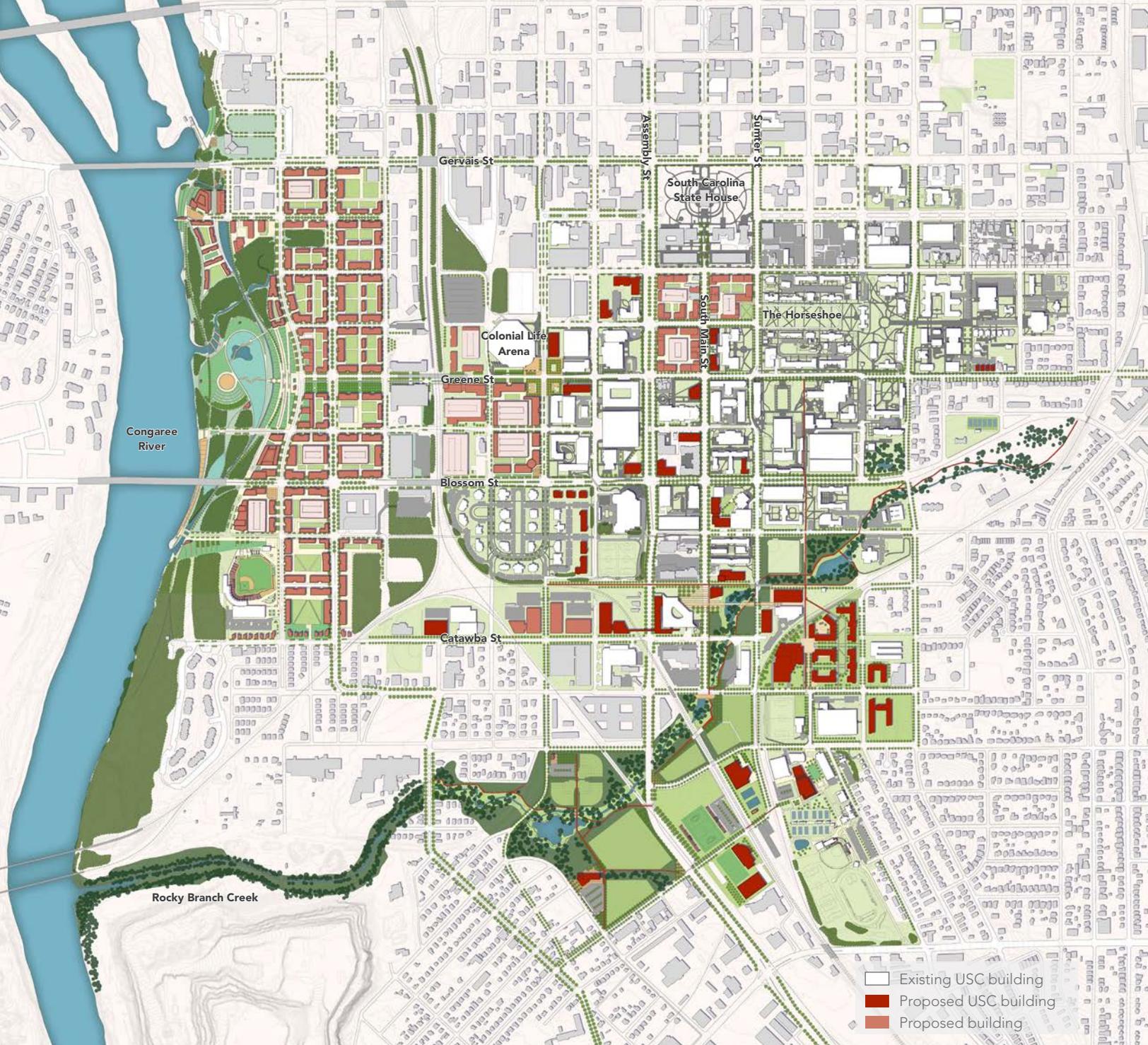
- Mixed land and building uses where academic facilities are comingled with residential and student service uses
- A compact pedestrian campus environment where the academic core is accessible in a 10- to 15-minute walk
- Adaptive reuse of existing land and building resources whenever programs move or change
- The introduction of more green space and shade to create common ground for learning outside the classroom and to mitigate Columbia's summer heat
- The importance of beauty in campus buildings and landscape for its subliminal teaching value, as a recruitment tool for faculty staff and students, and for retaining the loyalty of the university's alumni

On South Campus, the promise of nearly a quarter-century of planning and design is within the university's reach. The Athletics Village is nearly complete. The university's proposed Campus Village housing complex coupled with this plan's redevelopment concept for the engineering district can transform South Campus, raising it to the institutional quality and character of the rest of the campus.

For Innovista and South Main Street, the university's partnerships with the city, county, state, and private property owners are of utmost importance. These partnerships made possible the building of Horizon One and Discovery One, and the improvements to Greene Street, to name a few examples. The university's private development partnership brought about the marquee mixed-use project at 650 Lincoln.

This has been a propitious era in USC's campus development. Through a progressive vision and steadfast commitment, university leadership has made remarkable progress implementing the recommendations of the 2010 plan. This master plan update celebrates these implementation achievements and confirms and advances the university's long-term strategic development goals.





- Existing USC building
- Proposed USC building
- Proposed building

2018 MASTER PLAN UPDATE ILLUSTRATIVE PLAN

Significant opportunities, and their attendant complexities, lie ahead. From a physical planning and design perspective, priorities include realizing Campus Village to provide critical on-campus housing and support the undergraduate student experience; investing the university and alumni community in the mixed-use redevelopment of the Carolina Coliseum; initiating improvements to the engineering district and Rocky Branch Creek to improve the safety and aesthetics of South Campus; embracing a district planning approach with the state and Palmetto Health to envision an integrated medical district, including the university’s vision for its health sciences

campus; advancing the Innovista plan to connect the heart of USC’s campus to the Congaree River along Greene Street; and working with the city as part of its rezoning process to prepare an institutional zoning ordinance that will facilitate campus growth for years to come.

Acknowledgements

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SASAKI

