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"How will we grow?"









# The Long-range Framework Plan Provides a Flexible Guide for Future Development

The Framework Planning process examines how teaching, research, and outreach can be conducted on the Clemson campus, while also improving campus life and promoting student engagement. It focuses on the needs over the next five to ten years, guided by a longer-term outlook.

In support of ClemsonForward, the Framework Plan identifies the physical improvements that will enable the University to become:

- A national leader in learning through student-centered, evidence-based academic and global engagement
- Internationally known for innovation and creativity grounded in basic research and unique public-private partnerships
- The place to work and learn characterized by a welcoming, inclusive, and supportive campus environment
- · A leading land grant university

The Framework Plan is visionary, while building firmly upon Clemson's rich history, traditions, campus character, and strong sense of community. It aims to enhance a special, "high seminary of learning" for teaching, research, and public service aligned with changing demands of the coming decades.

# What is the role of the Framework Plan?

The Long-range Framework Plan is a decision-making tool. It charts an overall structure for future development, new open spaces, and mobility networks, while allowing flexibility to enable the University to respond to changing conditions and circumstances.

The development sites shown in the plan provide sufficient capacity to accommodate potential growth over the next ten years, as well as additional options if growth trends change.

# Framework Plan Drivers

The fourth in Clemson's history, this plan will set the stage for the next five to ten years of investment on the main campus and Ravenel, guided by a longer-term outlook. The Framework Plan responds to the following important considerations:

### Supporting ClemsonForward Goals

The Framework Plan studies existing space use and considers the future investments required to meet the University's strategic priorities of academic and research growth, student engagement, and living environments.

# Enrollment Growth& Space Needs

In recent years, enrollment has been increasing about 3% annually, and this trend is likely to continue. The Framework Plan considers new space needed to keep up with growing demand, including classrooms and labs, study space, housing, recreation, and other student life spaces.

## Changing Mobility Context

The completion of the Business School—along with Douthit Hills—will extend the campus core north of Walter T. Cox Blvd. The Framework Plan identifies opportunities to connect north and south across Walter T. Cox Blvd, while also expanding walking and bicycling networks across campus.

#### **Growing Campus Populations...Growing Space Needs**

**Today** 

2026

21,146

26,300 **TOTAL STUDENTS** 

TOTAL STUDENTS **ON CAMPUS** 

ON CAMPUS

18,600

22,300

**UNDERGRADUATE STUDENTS** 

**UNDERGRADUATE STUDENTS** 

2,546

4,000

**GRADUATE STUDENTS** 

**GRADUATE** 

**STUDENTS** 

4,110 STAFF

4,929

1,546

**FACULTY** 

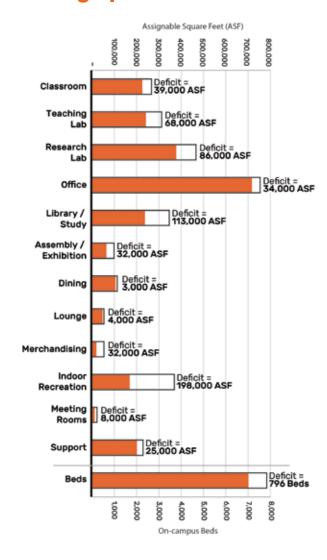
**FACULTY** 

1,853

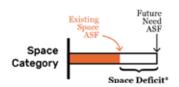
All numbers reflect populations at the Main Campus and Ravenel only (for example, numbers do not include Clemson graduate students at other campuses).

Today: 2016 data for students; 2015 data for faculty and staff

2026: Undergraduate future enrollments are based on the Strategic Enrollment Plan, one potential trajectory for future enrollment. Graduate future enrollments - based on direction set by ClemsonForward, projects increased rates of growth for masters and PhD students on campus. Faculty and Staff: maintains current ratio of faculty to staff, relative to increased future student population.



#### How to read this graph



\*Deficit from future growth: does not include displacements from future construction

Existing space does not include the Union, the new College of Business, or Vickery Hall. Existing space does account for the completion of Douthit Hills, including the Hub building and assuming all beds available for Clemson students.

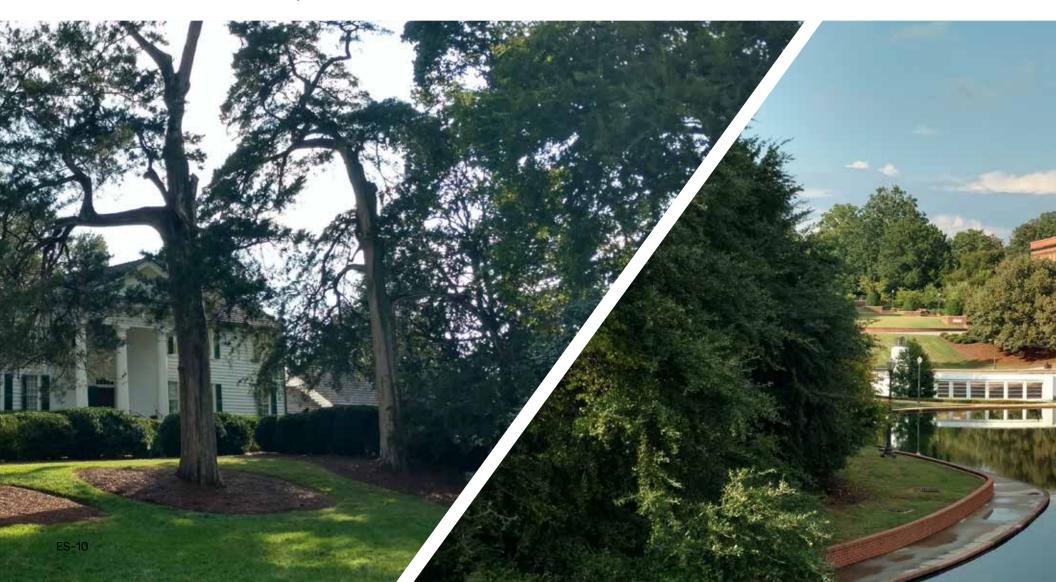
## **3 Vision Elements**

### The Heart of the Plan

A focus on Mission, Place, and People underlies all recommendations of the Framework Plan. These three Vision Elements express the core characteristics of Clemson's campus.

### **Mission**

Promote engaged learning and research—a "high seminary of learning"



### **Place**

Inspire great memories, delight, healthy living, innovation and ideas

### People

Cultivate a special sense of community and encourage interaction



## **5 Guiding Principles**

### The Desired Character of Campus

Articulated in these five guiding principles, the Framework Plan sustains and enriches the physical expression of Clemson's identity. It integrates learning, innovation, creativity, collaboration, and community into all aspects of the campus—its landscapes, buildings, social spaces, learning and research environments, mobility systems, and infrastructure networks.

### A CAMPUS THAT IS...





#### **GREEN & MEMORABLE**

Respect and extend the established open space framework of the campus; identify new opportunities for campus traditions and special spaces.

#### **ENGAGED & INNOVATIVE**

Promote active learning, discovery, and collaboration through the deliberate placement and design of learning environments at the heart of the campus.



# WARM & WELCOMING CONNE

Plan for a rich Clemson experience by promoting interactions, engaged living and learning environments, and a strong sense of community.



#### CONNECTED

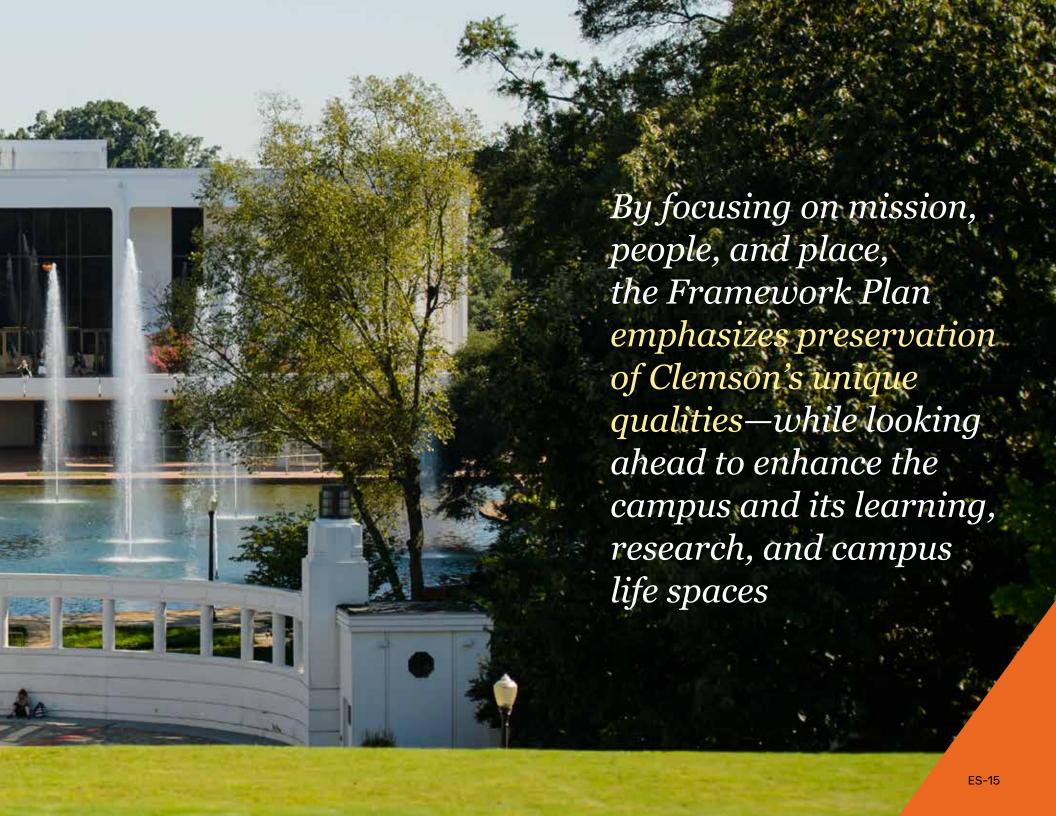
Plan for a greater variety of ways to get around the campus and the community, promoting pedestrian connectivity in the heart of campus.



#### SUSTAINABLE

Promote integrated planning in order to achieve Clemson's social, environmental, and economic objectives for the campus.





# 10 Big Ideas

The Long-range Framework
Plan supports and enhances
Clemson's mission, place, and
community. Here are the
ten big ideas of the plan.

Create a
Flexible
Framework

Reinvest and Grow Academics and Research

Preserve and Enhance Landscapes & Campus Character Establish a New Culture of Mobility

Transform the East Campus

Transform the Pedestrian Experience

Renew the Student Centers

Connect North and South Campus

Plan for a New West Campus Neighborhood

Always Build Community

## Create a Flexible Framework

The Long-range Framework Plan provides an integrated framework for decision-making. It identifies potential sites for new buildings, opportunities for landscape preservation and enhancement, mobility strategies, and urban design approaches to achieve a functional and attractive physical environment that preserves and enhances Clemson's special sense of place and community.





#### **▷▷** BIG IDEA #2

## Reinvest and Grow Academics and Research

Renovation and new construction will play equal parts in meeting academic and research needs.¹ Reinvesting in existing buildings will promote active, engaged learning, while new construction will address space shortages in classrooms, study space, labs, and research.





<sup>&#</sup>x27;Framework Plan includes 393,000 ASF of renovation and 283,000 ASF of new construction. In comparison, Cooper Library is about 150,000 ASF,



## Preserve and Enhance Landscapes & Campus Character

The Framework Plan builds upon the powerful landscape structure of the campus today with the goal of preserving the historic core, extending this structure to new areas, preserving key view corridors, and activating new and existing open spaces.





# Establish a New Culture of Mobility

The Framework Plan expands pedestrian, bicycle, and transit access. It enhances campus connectivity, prioritizes pedestrian movement, promotes universal access, and reduces vehicular traffic in the campus core.

Key mobility recommendations of the Framework Plan include:

- Expanded, connected bicycle network
- Enhanced transit hubs
- Guidance for golf carts use
- Transportation demand management to promote bicycling, walking, and transit





# Transform the Pedestrian Experience

The most significant shift in mobility will be visible in the campus core— where roads at the center of campus become new pedestrian walkways, shared with bicycles and the occasional vehicle.¹ Prioritizing walking and bicycling encourages face-to-face interactions and healthy lifestyles, supporting the Clemson identity.

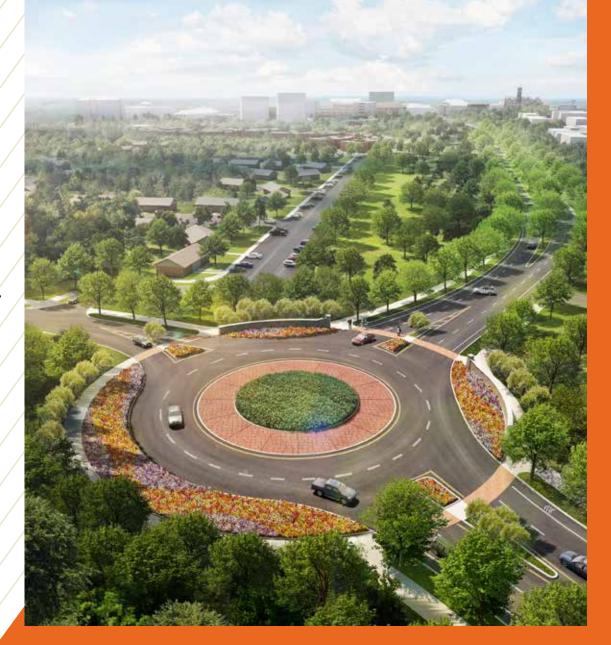


<sup>&</sup>lt;sup>1</sup>Pedestrianized streets will accommodate service and emergency vehicles, and will allow access to ADA parking spaces.



# Connect North and South Campus

The Business School will extend the central core of campus north of Walter T. Cox Blvd. The Framework Plan suggests an integrated set of strategies to expand pedestrian and bicycle options across and along Walter T. Cox Blvd, while maintaining existing vehicular travel lanes.



#### **Roundabouts as Gateways**

An important goal is to promote the use of Perimeter Road for campus vehicular traffic to reduce car volumes on Walter. T. Cox Blvd. Two roundabouts are proposed at the two ends of Walter. T. Cox Blvd to support the flow of traffic to Perimeter Road and improve the vehicular gateways to the campus.



Near-term Strategies for Walter T. Cox Blvd. Raised Crosswalks Promoting use of Perimeter Road reduces traffic volumes Realigned Calhoun Drive and Sherman Street intersections

Widened sidewalk along Bowman to share with bicyclists Expanded Off-road
Bowman: trail for
Shady terraced bicyclists on
landscape north side of
north of Walter. street
T. Cox Blvd.

Raised intersection and connection to Business School

# Transform the East Campus

The pedestrian transformation of McMillan Road and infill development creates opportunities for a series of new landscapes and connections, transforming the feel of the east academic core.

### New landscapes and connections







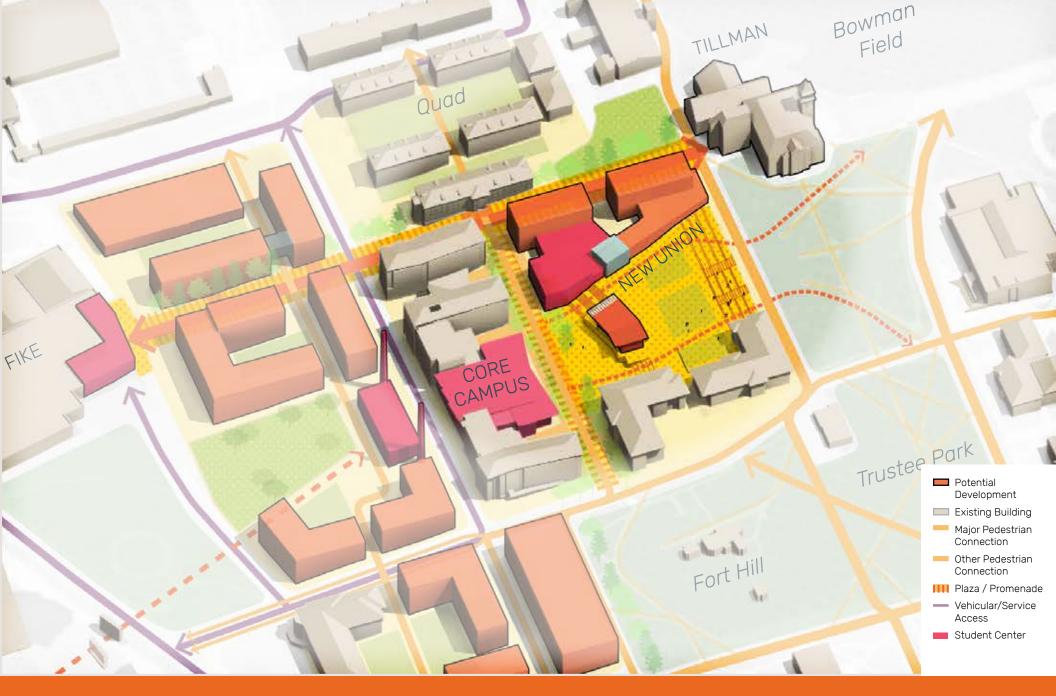
**▷▷ BIG IDEA #8** 

# Renew the Student Centers

Student centers are the heart of campus life neighborhoods, providing a common dining and gathering space for oncampus students as well as commuting students. The Framework Plan builds on the existing structure of distributed student centers, with ideas for enhancing Hendrix and constructing a new Union while maintaining a vibrant and healthy distribution of housing and student amenities on east, west, and north sides of campus.



The proposed **Hendrix Center Addition** expands student life on the eastern half of campus, providing the opportunity to replace Schilletter Dining Hall with a new dining area and to expand the social and meeting spaces of the building.



**A New Union** is recommended to transform the student life experience on the West campus. The Power Plant offers the opportunity to provide additional dining or other student life space.

Together with Core Campus, these student centers provide dining, study, and social space to meet the needs of a growing residential population.

BIG IDEA #9

# Plan for a New West Campus Neighborhood

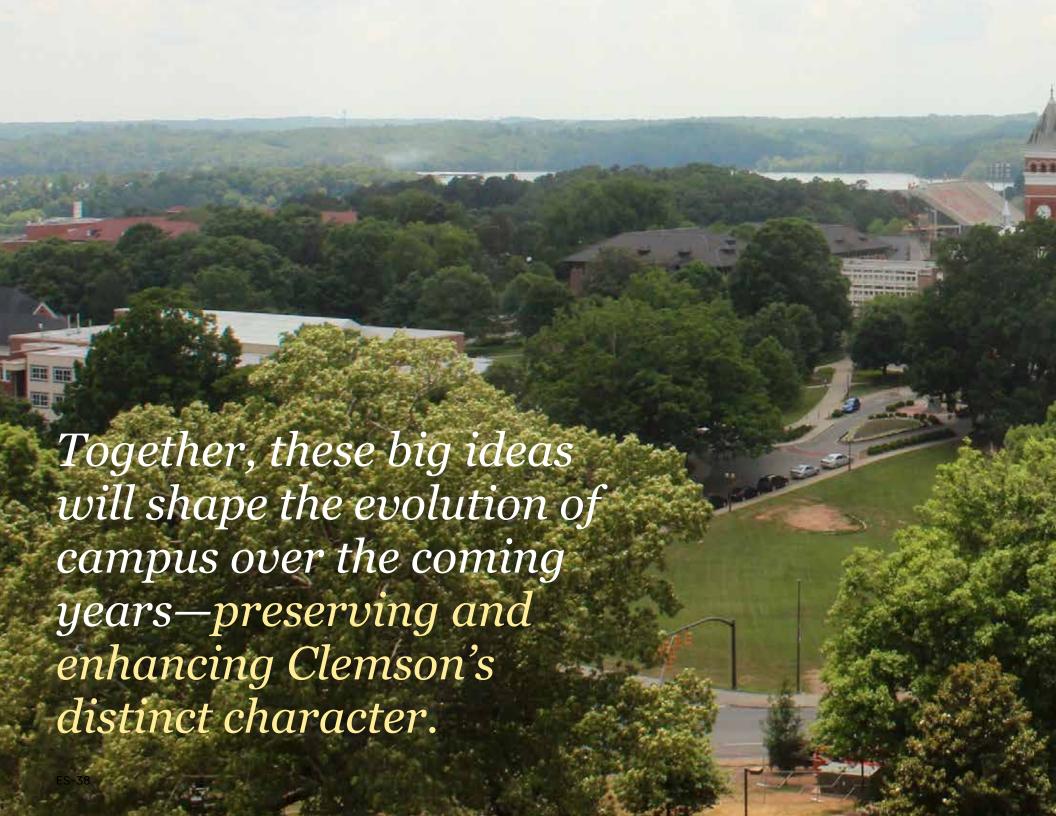
The relocation of Motor Pool facilities provides the opportunity to increase on-campus housing bedcounts significantly—and transform this part of campus. New open space and the renovated Power Plant anchors this new neighborhood, and an addition to Fike reorients the recreation center, connecting it more directly to the rest of campus.



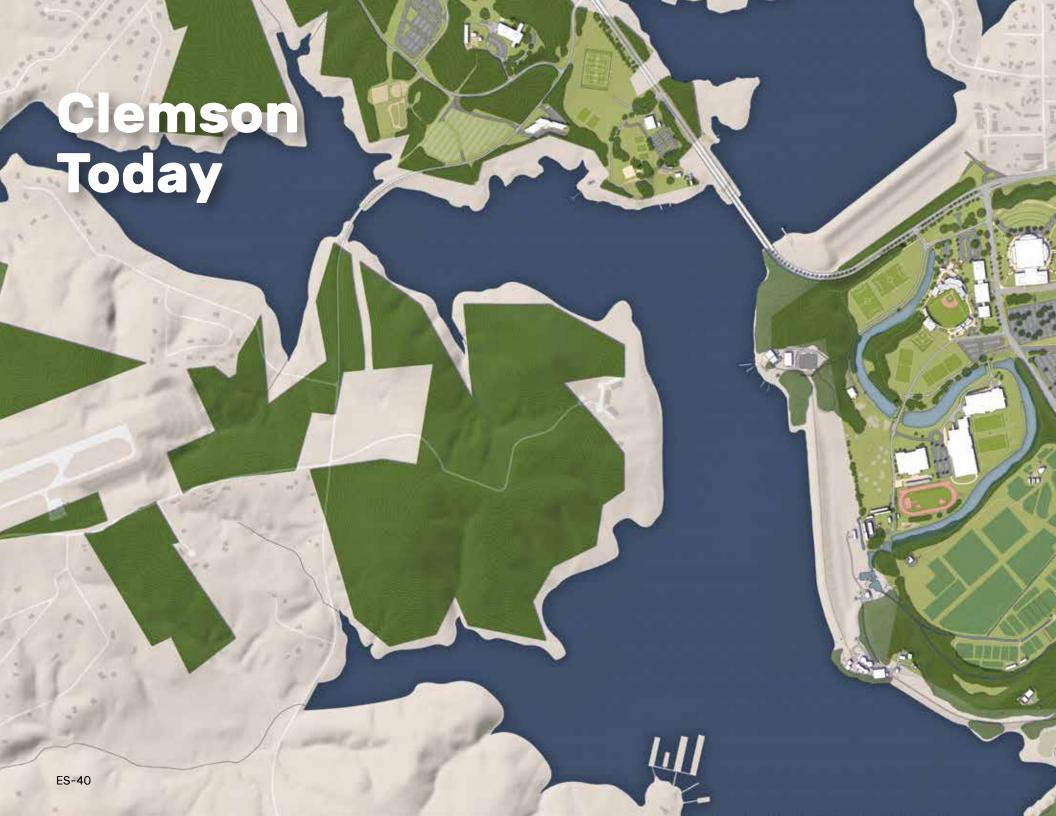




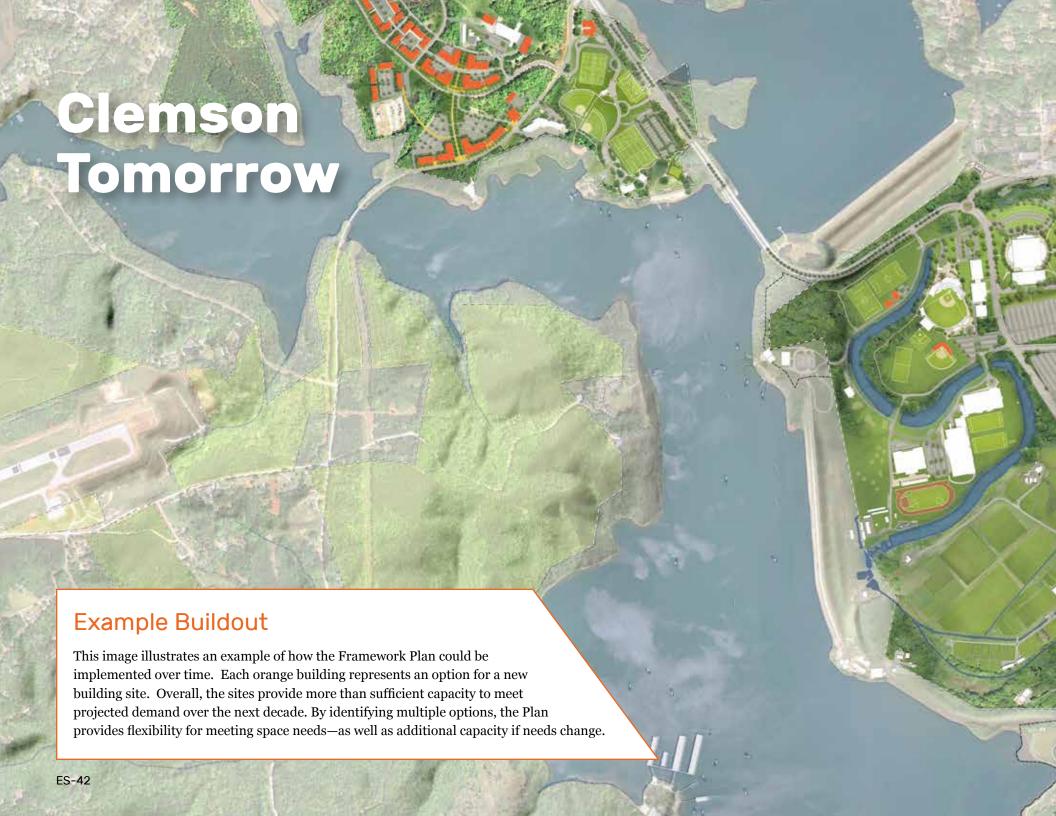






















## Supporting ClemsonForward's Strategic Priorities

The Framework Plan builds upon the goals and strategic priorities of ClemsonForward. Endorsed by the Board of Trustees in July 2016, ClemsonForward is a 10-year strategic plan to "ensure that Clemson University and its graduates are prepared for whatever comes next in our increasingly diverse, interconnected and global society." Focusing on four themes—Research, Engagement, Academic Core, and Living—ClemsonForward aims to build on Clemson's strong foundation while accelerating growth and achievement in research, diversity, inclusion, graduate education, and quality of workplace for faculty and staff.

### **CLEMSON FORWARD VISION STATEMENT**

Clemson University will be one of the nation's top 20 public universities

### **CLEMSON FORWARD MISSION STATEMENT**

Clemson University was established to fulfill our founder's vision of "a high seminary of learning" to develop "the material resources of the State" for the people of South Carolina. Nurtured by an abiding land-grant commitment, Clemson has emerged as a research university with a global vision. Our primary purpose is educating undergraduate and graduate students to think deeply about and engage in the social, scientific, economic and professional challenges of our times. The foundation of this mission is the generation, preservation, communication and application of knowledge. The University also is committed to the personal growth of the individual and promotes an environment of good decision making, healthy and ethical lifestyles, and tolerance and respect for others. Our distinctive character is shaped by a legacy of service, collaboration and fellowship forged from and renewed by the spirit of Thomas Green Clemson's covenant.





#### **STRATEGIC PRIORITY #1**

## Research

Clemson will be nationally recognized as a leader in research, consistently ranked among institutions with the highest level of research activity.

**STRATEGIC PRIORITY #2** 

## **Engagement**

Clemson will continue to be recognized as a leader in engagement, encompassing student engagement, community outreach and public-private partnerships.



# The Academic Core

Clemson will protect and strengthen the academic core, ensuring that it remains perennially ranked among the nation's top public universities.

#### **STRATEGIC PRIORITY #4**

## Living

Clemson will enhance the living environment to make the University an outstanding place to live, learn and work while also increasing diversity and a climate of inclusive excellence.

ClemsonForward Strategic Priorities





# Long-range Framework Plan Purpose & Introduction

### Introduction to the Framework Plan

The Clemson Long Range Framework Plan provides a flexible guide for future development enabling the University to respond to changing conditions and circumstances. It focuses on the needs over the next five to ten years and ensures that the future campus will retain its special sense of place and family spirit. The Framework Planning process examines how teaching, research, and outreach can be conducted on the Clemson campus, while also improving campus life and promoting student engagement.

To that end, it studies the physical organization and facility development strategy for the campus and considers new ways of supporting the activities of the University in the everchanging context of higher education.

In support of ClemsonForward, the Framework Plan identifies the physical improvements that will enable the University to become:

- A national leader in learning through student-centered, evidence-based academic and global engagement;
- Internationally known for innovation and creativity grounded in basic research and

unique public-private partnerships;

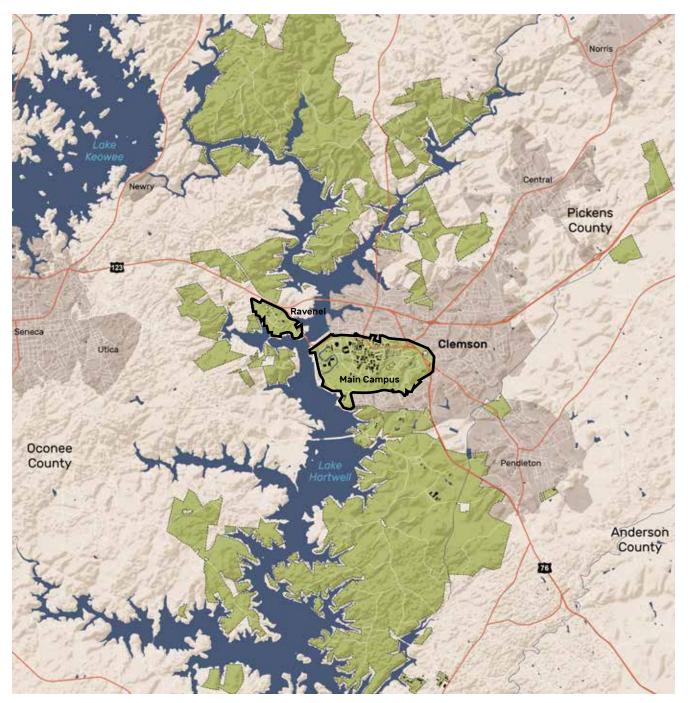
- The place to work and learn characterized by a welcoming, inclusive, and supportive campus environment; and
- A leading land grant university.

The Framework Plan focuses on enhancing Clemson's special character, its distinctive sense of place and renowned sense of community—the Clemson Family. The Plan provides a framework to sustain and enrich the physical expression of Clemson's identity. It integrates learning, innovation, creativity, collaboration, and community into all aspects of the campus—its landscapes, buildings, social spaces, learning and research environments, mobility systems, and infrastructure networks. It supports a sustainable approach to campus development addressing social, environmental, and economic issues.

The Framework Plan is visionary, while building firmly upon Clemson's rich history, traditions, essential character, and strong sense of community. It aims to enhance a special, "high seminary of learning" for teaching, research, and public service aligned with changing demands of the coming decades.

# What is a Framework Plan?

A Framework Plan is a systems-based approach to planning Clemson's campus. The Framework Plan is a decision-making tool, providing an overall structure for future development and mobility, while also allowing flexibility to allow for changing conditions in the future. It clarifies landscapes of preservation, identifies potential building sites, and suggests zones of different land uses. In this way, it provides options for future development, while also providing guidelines to ensure new construction contributes to Clemson's special sense of place. In comparison, a Master Plan is more prescriptive, providing more specific architectural recommendations about future buildings and a static design for the future campus. As a systemsbased approach, the Framework Plan considers how building uses, mobility networks, infrastructure, and landscape systems work together to support learning, research, engagement, and living.



## FRAMEWORK PLAN: PLANNING BOUNDARIES

The Framework Plan focuses on the main campus, including Ravenel.

## Study Area: Main Campus Including Ravenel

While Clemson's extended campus includes teaching, research, and public service centers throughout the region, state, and globe, the Framework Plan focuses on Clemson's Main Campus including the Ravenel area. This area includes University Property extending roughly west from the National Guard Armory to Lake Hartwell, plus the Ravenel area including existing research activities and the Snow Family Outdoor Fitness and Wellness Center. North to south, the study area includes Douthit Hills and University land along Walter T. Cox Boulevard, extending south to the Madren Center, Golf Course, and Botanical Gardens. Connections to other University sites in the local area like the Experimental Forest and the Advanced Materials Research Center were considered, but these sites were not specifically studied in the Framework Plan process. Like the geographic boundary, the enrollment figures and space needs discussed in the Framework Plan reflect totals for the main campus and Ravenel only.

<sup>1</sup> Clemson's extended campus includes teaching sites in Greenville and Charleston; research campuse, and public service centers throughout the state; and international sites in Italy and Dominica.

# How the Plan Will be Used

The Long-range Framework Plan provides a flexible guide for future campus development, including general principles about land use, open space, urban design, and mobility. It emphasizes landscapes to preserve and identifies opportunities for building renovation and potential sites for new development to meet space needs. District-scale frameworks outline more specific considerations and opportunities for new buildings and open space. The goal is to provide an overarching framework to guide future development, while allowing flexibility for the specifics of building program and architectural design to respond to changing conditions. Future development can be undertaken as needed, while ensuring it contributes to the campus as a whole, preserving the core character of Clemson. The development sites shown in the plan provide sufficient capacity to accommodate potential growth over the next ten years on campus, as well as additional options if growth trends change. The Framework Plan reflects input from representatives across the campus community and provides a record of feedback about preservation and enhancement for the campus, while meeting anticipated future needs.

#### MAIN CAMPUS AND RAVENEL TODAY: EXISTING CONDITIONS MAP

This map summarizes the existing landscapes, develpment, and campus character today.





## **Process**

This Long-range Framework Plan was developed over 18 months from Summer 2016 through Fall 2017. It integrates and builds upon recommendations from previous studies as well as recent and planned construction. The process included several site reconnaissance visits and six multi-day work sessions with a variety of University and Clemson City representatives. The acknowledgements section at the end of this document provides a list of participants in the planning process. The planning process was structured around three phases, described in more detail below.

## **Advisory Committees**

Throughout the process, feedback from University and other stakeholders was integral. Advisory committees including the Campus Planning Task Force, Mobility Committee, and Academic Facilities Space Priorities Committee provided input at key milestones throughout the development of the Framework Plan. These groups included university officials; student, faculty, and staff representatives; Parking and Transportation Services; University Planning and Design; City of Clemson planners; and other campus representatives.

## **Briefing Document**

Prior to the Framework Plan, a six-month Briefing Document process established the foundation for the Framework Plan. Through discussions with stakeholders and the Campus Planning Task Force, this process developed the scope and key considerations for the Framework Plan. The final Briefing Document outlined the content of the plan, the proposed planning process, and key supporting documents, data, and other inputs that informed the plan.









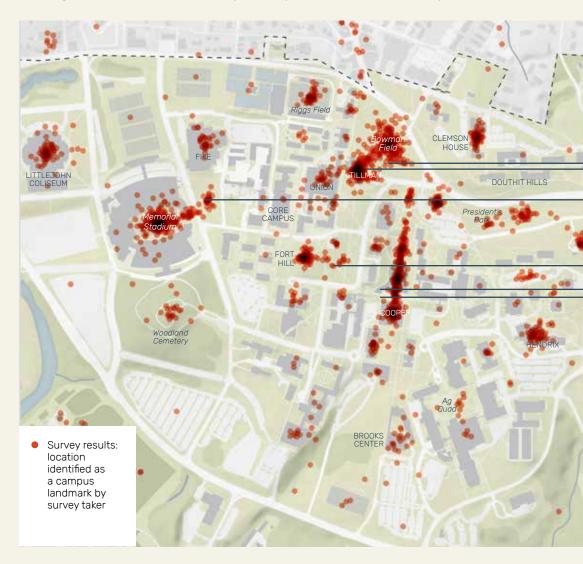
## Phase 1: Discovery and Analysis

Phase 1: Discovery and Analysis focused on broadly investigating and recording the existing site conditions of campus and the surrounding context. Integral to this process was input from the Campus Planning Task Force, Mobility Committee, Academic Space Committee, along with interviews with members of the administration; deans, faculty, and staff; and others. This phase focused on establishing the goals and planning principles for the Framework Plan, preliminary site reconnaissance, reviewing previous studies, and assessing existing conditions, needs and assets. Incorporating data and input from previous studies, this initial phase included an in-depth analysis of campus conditions, addressing such elements as space use, open space structure, natural systems and topography, mobility patterns, utilities and stormwater management, campus development history, academics and research, housing, campus life, and recreation.

Phase 1 included an online survey—MyCampus—open to all members of the campus community. Gathering nearly one thousand responses total, the survey asked participants to map various aspects of their campus experience. Overall, about 75% of respondents were students, 22% were staff, and 3% were faculty. Feedback from this survey revealed, for example, patterns of mobility, campus life, and academic, research, and study space use. Results from the MyCampus survey are available as an appendix.

This first phase also included a detailed look at space use on campus. This analysis focused on existing space use as well as projected future space needs based on potential growth trajectories from the Strategic Enrollment Plan. This analysis included reviewing the Teaching Space Utilization Assessment (Sitelines, 2015) for classroom and teaching lab utilization, as well as additional analysis using the GIS space inventory for the campus. Space types analyzed included classrooms, labs, office, study, campus life, and meeting space. More details about this process and its findings are explained in the next section below.

### Campus Landmarks MyCampus Online Survey Results



## from Survey Takers Love all the space on Bowman, great to play, picnic, spend time outdoors." It is one of the most beautiful and iconic spots on campus." The Scroll of Honor and Memorial Park are two of the most special places in Clemson" The trees and vast green spaces in the middle of campus are what made me fall in love with Clemson on my first visit here." Favorite view looking back toward reflection pool." "Library Bridge is the main directional place my friends and I use when trying to meet up/find each other."

Sample Quotes

## Phase 2: Framework Plan Alternatives

Building on the discovery and analysis completed in Phase 1, Phase 2: Framework Plan Alternatives studied different development, land use and building use, mobility, and landscape options. This phase identified potential future development sites and quantified their capacity to address space deficiencies identified during the Phase 1 space analysis. The goal of this phase was to identify a preferred framework to flexibly guide future development over the next five to ten years. The Campus Planning Task Force, University Planning and Design, Mobility and Academic Space Committees, and other university stakeholders reviewed the draft framework alternatives.

As part of this process, White Papers were developed to summarize feedback and trends. These papers covered key topics for the Framework Plan including Student Unions, Pedestrianization and Campus Mobility, Landscapes and Stormwater, Learning Environments, and Growth and the Clemson Experience. These White Papers are available as appendices to this document.

## Phase 3: Long-range Framework Plan Documentation

Phase 3: Long-range Framework Plan Documentation focused on the detailed development and documentation of the Framework Plan. The final documentation records the findings of the process and is intended to guide decision-making for the campus over the next decade. The Framework Plan provides a vision for the future as well as guiding principles. It illustrates build-out potential for campus development sites to address current and future space needs, while also improving mobility and connectivity.

## **Framework Plan Drivers**

The fourth Campus Master Plan in Clemson's history, this plan will set the stage for the next five to ten years of campus investments on the main campus and Ravenel, guided by a longer-term outlook. The Framework Plan responds to several important issues and considerations:

- ClemsonForward, Clemson University's Strategic Plan
- Increasing Enrollment Growth
- Changing Mobility Contexts, including the construction of Douthit Hills and the Business School, and the increasingly multimodal nature of transportation to and around campus

## Supporting ClemsonForward Goals

The Framework Plan identifies opportunities for the Clemson campus, including its academic and research facilities and living environments, to contribute to the objectives of the strategic plan:

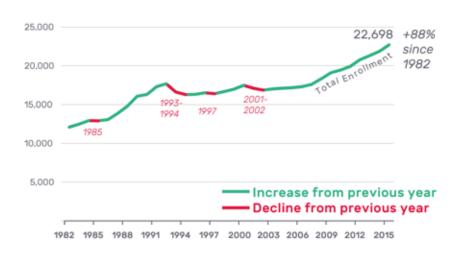
- Build on Clemson's strong foundation in undergraduate education, commitment to the land-grant mission, unmatched student experience, and well-known school spirit
- Sustain hard-won recent gains in quality, innovation, student performance, and national stature through investments in foundational processes, policies, and infrastructure
- Accelerate growth and achievement in research, graduate education, diversity, inclusive excellence, and the quality of the workplace for faculty and staff

**Building Futures** is one of four "key enablers" outlined in the strategic plan to support implementation of its priorities. The Framework Plan directly supports Building Futures. It studies existing space use and considers the future investments required to meet strategic priorities of academic and research growth, student engagement, and living environments. Through this process, it suggests sites for new construction, opportunities for renovation of existing buildings, and provides a framework focused on preserving and enhancing campus character, a key distinguishing feature of Clemson. Importantly, the Framework Plan looks to expand walking and bicycling opportunities important aspects of quality of life and in attracting faculty, staff, and students.

# Enrollment Growth & Space Needs

Since 2008, undergraduate and graduate enrollment at Clemson has been increasing about 3% annually, and this trend of growth is likely to continue. The Strategic Enrollment Plan projects 20% growth in undergraduate enrollment over the next 10 years. In addition, graduate student growth is expected to increase as well, based on the direction set by *ClemsonForward*. These growth trajectories would result in enrollment increases of about 4,000 undergraduate and 1,500 graduate students on the main campus. As the number of students increases, so does the need for

### Enrollment has increased nearly every year since 1982



faculty and staff. All of these groups bring demands for more types of space—classrooms, housing, offices for new faculty, study areas, recreational spaces, dining, and beyond.

Recent increases in enrollment have been absorbed largely in existing space, but limits are quickly being reached. The Framework Plan stakeholder interviews, space analysis, and MyCampus survey results all paint a common picture of space challenges. Classrooms, labs, and office spaces are at capacity; study space and recreation are already falling short of demand; and the freshmen class has outpaced traditional beds on campus. Investments in academic space and housing that are currently underway will create much-needed swing space to allow renovations to occur, but additional space will be needed over the next 10 years to keep up with increasing demand.

A central question of the Framework Plan is, "How will we grow?" Conversations and feedback throughout this planning process have made clear that growth needs to be accommodated in a way that will preserve the special sense of community and campus character at Clemson—in short: "Keeping Clemson 'Clemson." Historically, the Clemson campus has played a key role in cultivating the sense of family by providing a shared, memorable setting for generations of students, faculty, and staff. Open spaces like Bowman Field provide common gathering spaces, drawing students together.

To maintain the campus character as enrollment increases and new space is added,

redevelopment and reuse of underutilized sites will be increasingly important. Discussions about transportation demand management practices to limit the amount of new parking needed will also be essential. New ways of growth are needed because the main campus is reaching key thresholds regarding the use of its land. Land is limited within the established pedestrian core of the campus for accommodating additional space—as well as parking demand—in the same pattern as has been the case historically.

How will Clemson grow? The resounding answer reflected in the Framework Plan has been to continue to protect what makes Clemson special, while looking ahead to opportunities to further enhance interactions, build community, promote engaged learning, and add to the landscape framework that makes campus such a special place.

# CHANGING MOBILITY CONTEXT

In addition to growing enrollment, shifting mobility patterns are another key driver for the Framework Plan. New development, including Douthit Hills and the Business School, will expand the central core of campus across Walter T. Cox Blvd. The Framework Plan identifies opportunities to connect north and south parts of campus, to allow students to move across Walter T. Cox Blvd. Crossing points on Walter T. Cox Blvd., along with other strategies, will need to be considered relative to

safety concerns for pedestrians and bicyclists while also meeting the needs of regional vehicular traffic.

Mirroring trends around the country, significant shifts in transportation are also underway at Clemson. Walking and bicycling are on the rise, encouraged by the recent and planned development of thousands of apartments in Downtown Clemson. Campus is increasingly crisscrossed by a variety of transportation modes—vehicles, golf carts, mopeds, bicycles, and pedestrians. As enrollment increases, more students, faculty, and staff will be traveling to campus each day. Clemson has a robust parking management strategy and established practices for gathering parking allocation and utilization data, yet existing parking is quickly nearing its capacity. Balancing the increased demand for additional parking and encouraging other means of transportation to campus will be important considerations going forward. As Clemson becomes an increasingly multimodal campus, improvements to promote bicycling, walking, and transit use are important considerations of the Framework Plan. The Framework Plan is also an opportunity to consider how new development and connections can create a more accessible campus.

## **Space Needs Summary**

The Clemson space analysis and utilization assessment was conducted in the context of the Framework Plan in order to understand existing utilization of instructional spaces and to identify opportunities for optimizing space resources.

The analysis includes estimates for future space needs based on the enrollment projections and research goals of the University. Analysis utilized Spring and Fall 2016 room utilization data for classrooms and teaching labs and assumed future main campus populations of 22,300 undergraduate students, 4,000 graduate students, 1,850 faculty, and 4,930 staff.¹ Based on the CHE guidelines, Council of Educational Facility Planners International (CEFPI) space guidelines, and other guidelines, the findings provide a high-level campus-wide overview of needs.² More detailed descriptions of methodology and recommendations are available as an appendix.

### **Growing Campus Populations**

Today	2026
21,146 TOTAL STUDENTS ON CAMPUS	26,300 TOTAL STUDENTS ON CAMPUS
18,600 UNDERGRADUATE STUDENTS	22,300 UNDERGRADUAT STUDENTS
2,546 GRADUATE STUDENTS	4,000 GRADUATE STUDENTS
<b>4,110</b> STAFF	4,929 STAFF
<b>1,546</b> FACULTY	<b>1,853</b> FACULTY

All numbers reflect populations at the Main Campus and Ravenel only (for example, numbers do not include Clemson graduate students at other campuses).

Today: 2016 data for students; 2015 data for faculty and staf

2026: Undergraduate future enrollments are based on the Strategic Enrollment Plan, one potential trajectory for future enrollment. Graduate future enrollments - based on direction set by ClemsonForward, projects increased rates of growth for masters and PhD students on campus. Faculty and Staff: maintains current ratio of faculty to staff, relative to increased future student population.

<sup>1</sup> These future population totals are potential trajectories for future growth. The undergraduate student population reflects the Strategic Enrollment Plan, and the graduate totals are consistent with the goals of Clemson Forward to grow research and graduate study. All numbers reflect on-campus population totals only. Faculty and staff are assumed to grow proportionally to student growth.

<sup>2</sup> For classrooms, labs, and office the Sasaki methodology was used, informed by CEFPI and CHE guidelines with regard to utilization targets and recommended station sizes. For research labs, two methods were used and then compared. These methods include the CHE methodology and a simple dollar per square foot ratio projected into the future to account for growth. A traditional CEFPI model for study, campus life, support (FICM 400 - 700) space was used. Recreation includes indoor recreation only. More detailed descriptions of methodology and recommendations are available as an appendix.

### **Key Space Findings**

The study surfaced the following planning-level findings, including new space needs. Future detailed programming studies will be needed to more accurately determine the specific requirements of colleges, departments, or administrative units.

#### Classrooms

Large classrooms are well utilized but there is room for additional use. A deficit of rooms in the 1-25 seat range pushes small sections into larger rooms and contributes to a perception of space shortages during peak hours.

A surplus of rooms in the 26-45 seat range could be de-densified by removing furniture to increase the supply of small rooms in the 1-25 seat range and allocate up to 30 square feet per station to support interactive learning modes.

Right-sizing the classroom pool would alleviate pressure on large rooms and leave fewer seats unfilled in the long term. Right sizing refers to matching the number of classrooms in each size category with the enrollment in class sections. Right-sizing is a long-term goal; comprehensive consideration as buildings are renovated can help right-size the overall classroom pool.

#### **Labs & Research**

Lab utilization exceeds recommended targets by a wide margin in select disciplines. An additional 33 labs totaling 68,000 assignable square feet will be needed to support current and future enrollment in Business, Engineering, and the Sciences. The New Business School will help address this need.

In order to house activity associated with the University's goal of increasing research expenditures from \$79 million to \$100 million results in the need for new space projected in the range of 86,000 to 97,000 assignable square feet.

#### Office

The current campus office supply is exhausted, and future growth will require an additional 34,000 square feet of space for over 220 new offices.

#### **Library & Study**

Library stack space is sufficient, but there is a deficit of study space. Existing need and future growth will drive demand for about 113,000 square feet of additional space.

#### **Campus Life**

Future growth will also increase the need for new space associated with campus life, most notably dining (18,000 ASF), lounge space (4,000 ASF), meeting rooms (8,000 ASF), and assembly/exhibition space (32,000 ASF). Based on discussions with the University, the new bookstore at Douthit Hills is expected to meet the merchandizing needs of the University for the foreseeable future.

#### Recreation

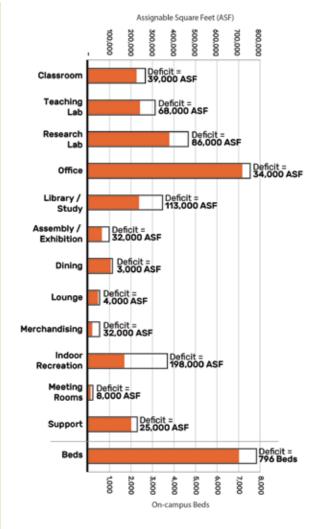
Recreation needs will grow, and opportunities to address this gap include the Snow Family Outdoor Fitness and Wellness Center as well as increasing outdoor recreation.

#### Support

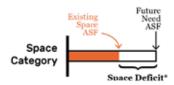
Additional support space associated with central services will also increase with new program, totaling approximately 24,000 assignable square feet.

#### Housing

The University will need 800 additional beds in student housing to accommodate future growth and achieve stated housing goals.



#### How to read this graph



\*Deficit from future growth; does not include displacements from future construction

Existing space does not include the Union, the new Onlege of Business, or Vickery Hall. Existing space does account for the completion of Douthit Hills, including the Hub building and assuming all beds available for Clemson studying.







## **INTRODUCTION**

The Long-range Framework Plan aims to reinforce Clemson's special sense of place and community while furthering the academic mission. This chapter introduces the underlying Vision of all recommendations of the Framework Plan. The Vision is comprised of three components:

- Campus Vision
- Five Guiding Principles
- Objectives

Reflecting the input of the Campus Planning Task Force and other stakeholders, these vision elements are intended to provide a guide for future decision making as well.



### Campus Vision, Principles & Objectives

- 1. Campus Vision
- 2. Five Guiding Principles
- 3. Objectives

## **Campus Vision**

Three vision elements form the foundation of the Framework Plan

The campus vision includes three elements that are integral to Clemson's distinct identity. Recommendations of the Framework Plan focus on preserving and enhancing the landscape, public realm, and urban design structure of campus; finding opportunities to grow academics and research; and enriching campus life. Collaboration, interactions, and engagement are integral to the Clemson Experience for students, faculty, and staff alike: the Framework Plan examines opportunities to support these ideas while accommodating current and future space needs.

#### **MISSION**

Promote engaged learning and research—a "high seminary of learning"

#### **PLACE**

Inspire great memories, delight, healthy living, innovation and ideas

#### **PEOPLE**

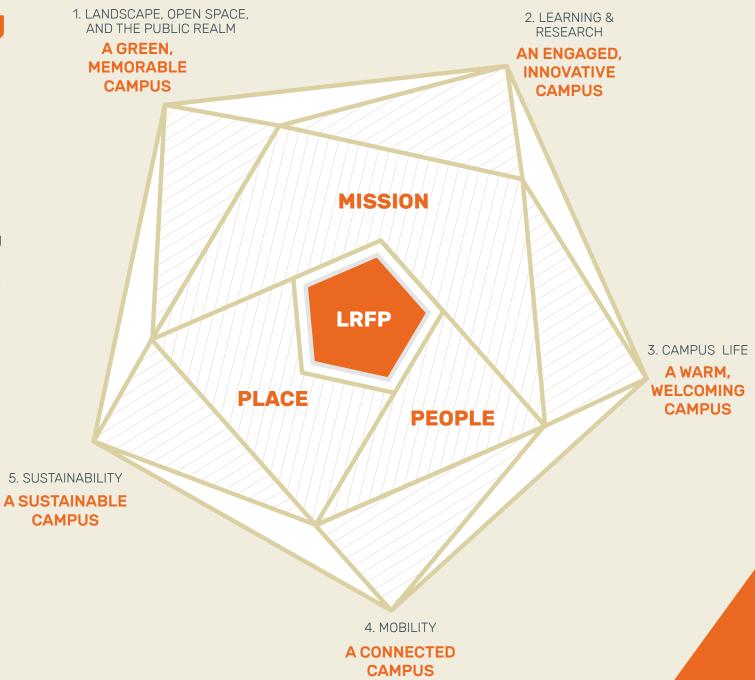
Cultivate a special sense of community and encourage interaction





### **Five Guiding Principles**

The five guiding principles support the three vision elements. They describe the ideal characteristics of campus now and in the future. They provide a guide for decision-making by expressing desired outcomes. The Framework Plan is largely structured around the guiding principles, with a chapter focusing on each one.







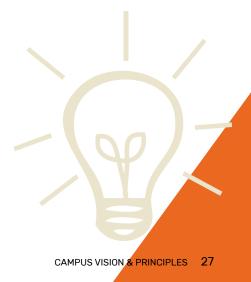
Respect and extend the established open space framework of the campus; identify new opportunities for campus traditions and special spaces



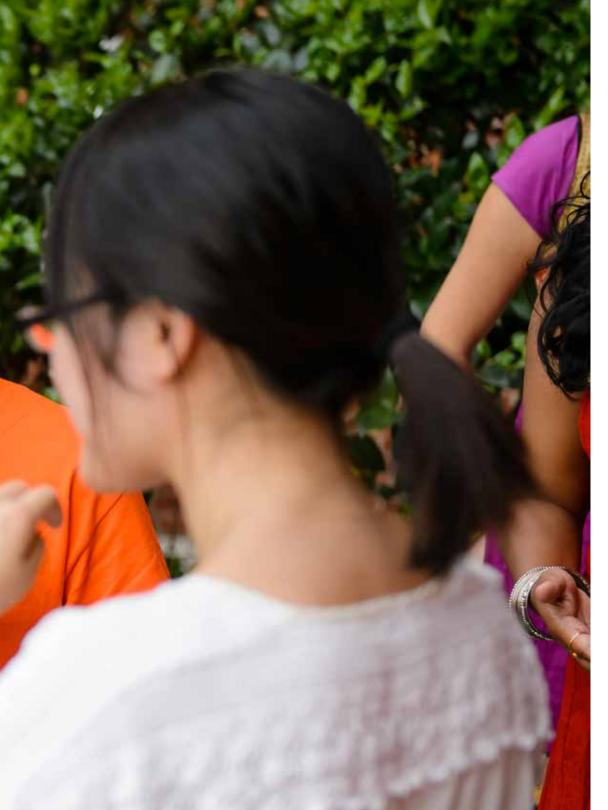




Promote active
learning, discovery, and
collaboration through
the deliberate placement
and design of learning
environments at the
heart of the campus

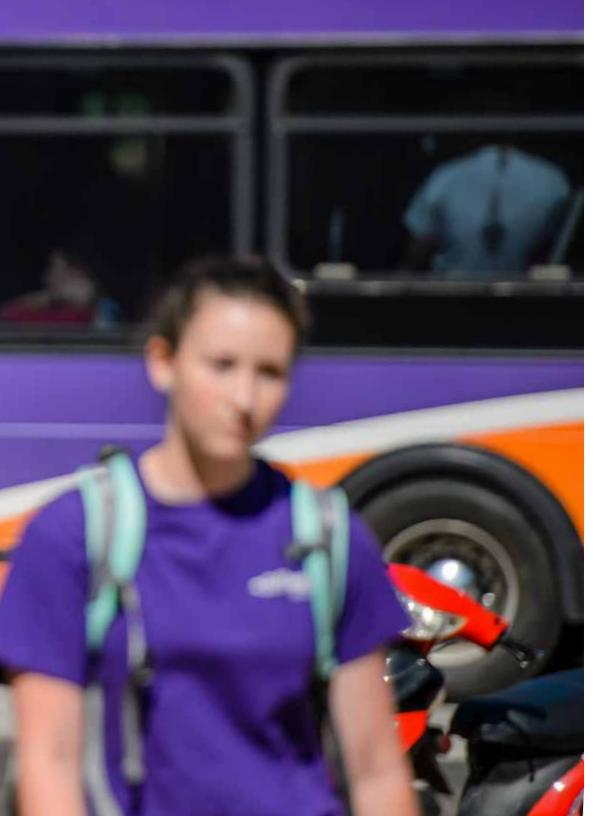






Plan for a rich Clemson experience by promoting interactions, engaged living and learning environments, and a strong sense of community

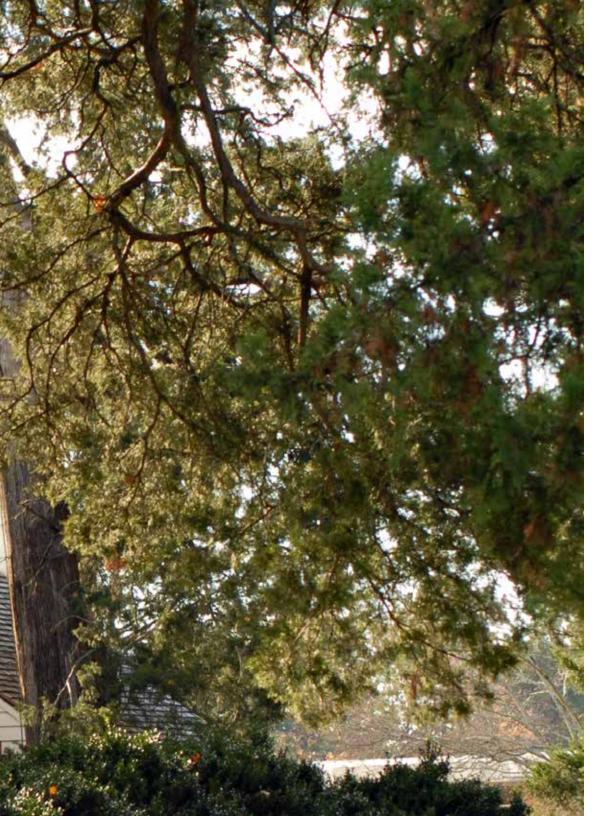




Plan for a greater variety of ways to get around the campus and the community, promoting pedestrian connectivity in the heart of campus







Promote integrated planning in order to achieve Clemson's social, environmental, and economic objectives for the campus

### **Objectives**

### Desired outcomes to guide decision-making

Each guiding principle includes a corresponding set of objectives, which provide more detailed aspirations for the campus. These objectives are intended to guide future decision making about campus open spaces, mobility enhancements, and new development.

A Green, Memorable Campus

### Landscape, Open Space, and the Public Realm Objectives

Preserve iconic landscapes and view corridors, and identify opportunities for enhancing and expanding these special spaces—especially in connection with new traditions.

### Locate uses and pedestrian connections to support interaction.

Concentrate pedestrian activity along major spines that pass through great open spaces.

Improve connections between indoor and outdoor spaces, especially along major pedestrian paths.

Improve connectivity to downtown, Lake Hartwell, and the Experimental Forest.

**Preserve and enhance the diversity of open space types** and programming;
maintain a balance of active recreation
opportunities, study/contemplative/quiet
spaces, and social gathering spaces.

As campus grows, ensure that new districts are organized around open spaces that are appropriately scaled and designed to have a distinct character that relates to surrounding uses.

View the pedestrian transformation of the campus core as an opportunity to improve the campus landscape and public realm.

Support the long-term stewardship of the campus tree canopy.

Reinforce the sense of arrival through distinct gateway experiences, building on the existing boulevard-style treatment of entry roads.

An Engaged, Innovative Campus

# Learning & Research Objectives

**Accommodate the programmatic need** for classrooms, research, study, and other academic spaces.

Increase the presence and visibility of research on the main campus.

**Encourage interaction** among diverse students, faculty, and staff.

Provide high-quality research spaces and active learning classrooms to promote collaboration and engaged learning.

**Focus academic and research facilities** in the central core of campus in support of a compact, walkable environment.

**Increase connectivity** between academic buildings and the campus and promote outdoor learning opportunities.

#### A Warm. **Welcoming Campus Campus Life Objectives**

Organize student housing and student centers in mixed-use neighborhoods, complimented with distributed study and social space throughout campus.

#### Provide sufficient on-campus beds and housing options to:

Accommodate all freshmen on campus, in traditional-style dorms where possible, with close proximity to the academic core of campus.

Accommodate the same percentage of undergraduate students on campus (35% in 2016).

Provide fitness and recreation opportunities that reflect student interest in active, healthy lifestyles.

Maintain a vibrant and healthy distribution of housing and student amenities on east and west sides of campus.

#### A Connected **Campus**

#### Mobility **Objectives**

Prioritize pedestrian movement. Walking promotes face-to-face interactions, promotes a greater sense of community, and is a healthy way to get around.

Improve connectivity and enhance the beauty and character of campus.

Limit vehicular travel in the core of campus, while maintaining appropriate service, emergency, and transit circulation and access to accessible parking.

Provide a connected bicycle network on and around campus in collaboration with the City.

Consider Walter T. Cox Blvd as the ceremonial gateway into campus.

Prioritize the use of Perimeter Road as much as possible for day-to-day access to the campus. Direct traffic to Perimeter Road and enhance the streetscape and wayfinding as part of the gateway experience.

Promote and facilitate the use of transit.

Focus on transportation demand management to minimize parking demand; encourage offcampus students to walk, bike, or take transit, rather than drive to campus.

Facilitate "universal access" across the campus especially in areas where new landscapes and development are proposed.

Allocate and provide parking in response to the travel patterns and the needs of user groups: provide faculty and staff parking in the core; provide additional surface parking for commuters on the east side of campus and at Ravenel; provide resident parking in more distant lots. Limit the need for parking garages as long as possible.

Integrate Ravenel into the campus pedestrian, bicycle, transit, and parking networks.

#### A Sustainable **Campus**

#### Sustainability **Objectives**

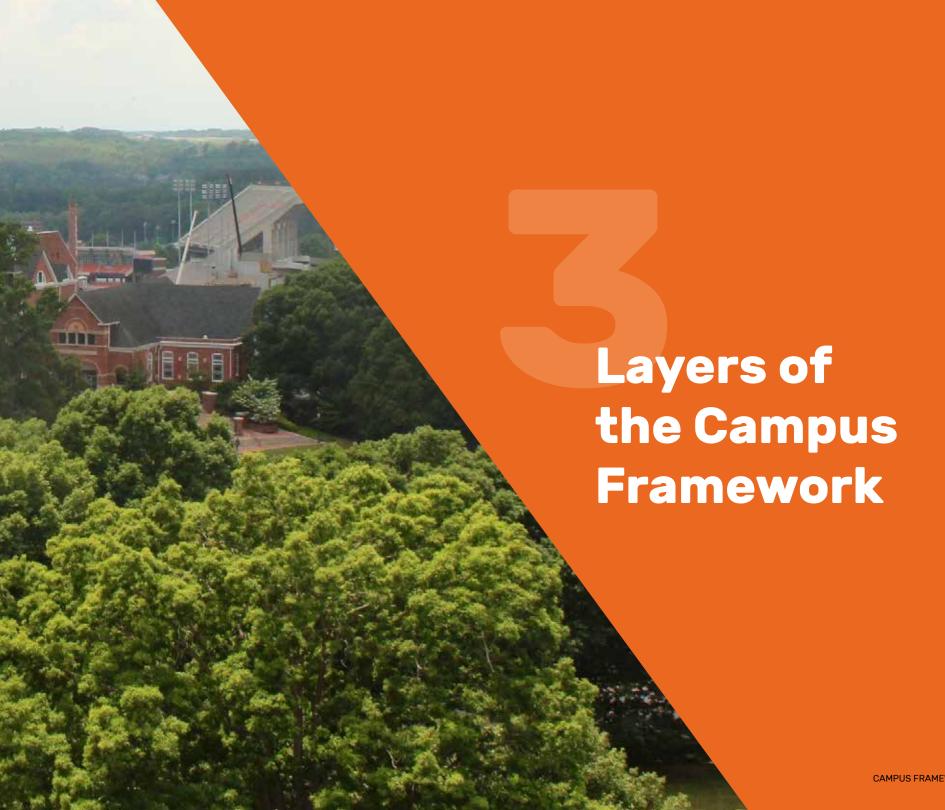
Model sustainable infrastructure, buildings, and landscapes.

Showcase working landscapes and stormwater management strategies.

Promote life-long stewardship for students.

Encourage energy efficiency and lower carbon emissions.







### INTRODUCTION

The Long-range Framework Plan provides an integrated series of five functional and design layers that collectively form a comprehensive and coordinated vision for guiding change on campus:

- 1. Landscape, Open Space, and the Public Realm Framework
- 2. Mobility Framework
- 3. Land Use Framework
- 4. New Development Framework
- 5. Urban Design Framework

This chapter introduces the five layers of the Framework. Details for each layer are provided in subsequent chapters.

#### **Purpose**

The Long-range Framework Plan provides a framework for decision-making. It identifies potential sites for new buildings, opportunities for landscape preservation and enhancement, mobility strategies, and urban design approaches to achieve a functional and attractive physical environment that preserves and enhances Clemson's special sense of place. The goal is to balance flexibility with guided recommendations. This approach allows the framework to accommodate change, while ensuring that resulting development or other actions will always further the sense of place of the campus appropriately.



#### Layers of the **Campus Framework**

- 1. Summary Campus Framework
- 2. Landscape, Open Space, and **Public Realm Framework**
- 3. Mobility Framework
- 4. Land Use Framework
- 5. New Development Framework
- 6. Urban Design Framework

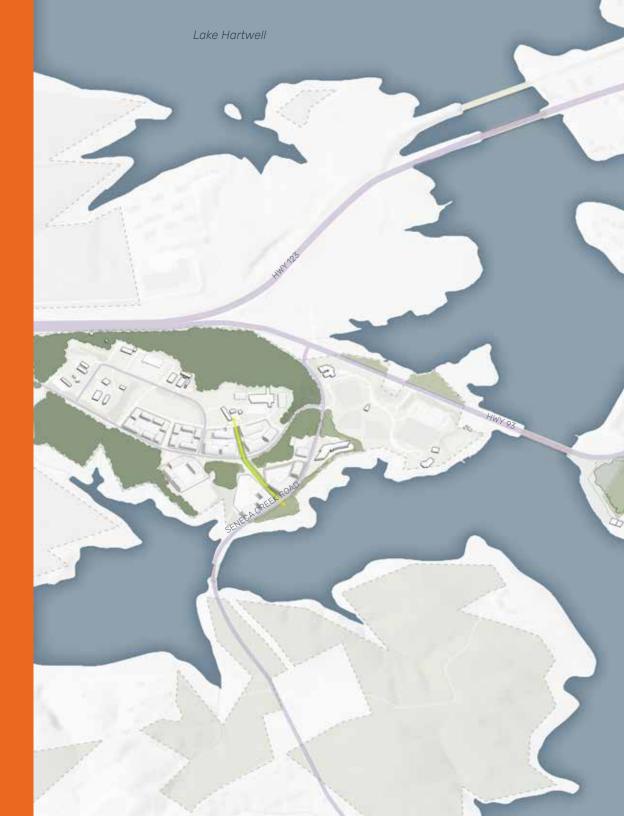
# **Summary Campus Framework**



This diagram summarizes the layers which comprise the Framework Plan. It includes major connections and campus open spaces, zones of land use, and key landmarks.

#### **Campus Framework Big Ideas**

- Maintain a compact, walkable campus
- Locate the right uses in the right places:
  - Central campus core: Focus on academic uses and signature open spaces
  - Adjacent zones: Mixed-use, campus life neighborhoods anchored by distributed centers and housing. Locate traditional housing in closest proximity to academic core; apartment housing can be slightly further away.
  - Outer tier: Parking, athletics, and additional open space.
- Prioritize renovation, redevelopment of underutilized sites, and infill to accommodate space needs
- Campus land is a finite, limited resource; use it efficiently, promoting appropriate density to allow preservation of open space, while maintaining a compact campus
- View new development as opportunities to define and enhance campus open spaces and—where possible improve accessibility
- Ravenel: Develop a long-term development and land use strategy to ensure best use of the site; consider Ravenel an extension of the main campus





# Landscape, Open Space, & Public Realm Framework

Clemson's landscape and open spaces are the heart of campus. They are the foundation of campus character, support vibrant campus life, and further campus environmental health and human comfort. Importantly, landscapes contribute to the University's special sense of place. The Clemson campus is memorable for many reasons including its iconic buildings, open space network, and diverse, well-designed landscapes. The combination of the open space structure and the landscape define places and views that leave a positive and lasting impression. The Framework Plan builds upon this powerful structure with the goal of preserving the historic landscape core of campus, extending this structure to new areas, preserving key view corridors, and activating new and existing open spaces.

The following chapter, Landscape, Open Space, and the Public Realm, includes additional details about these topics.

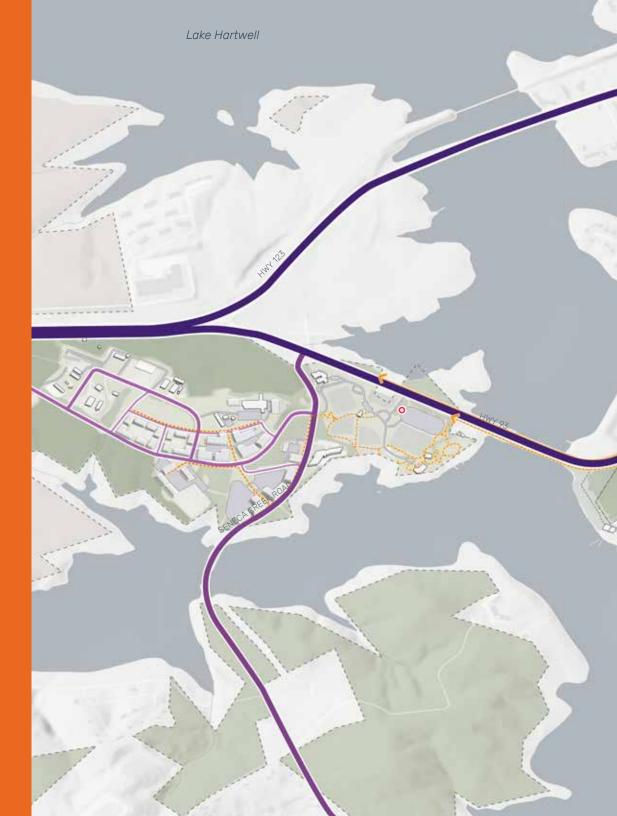


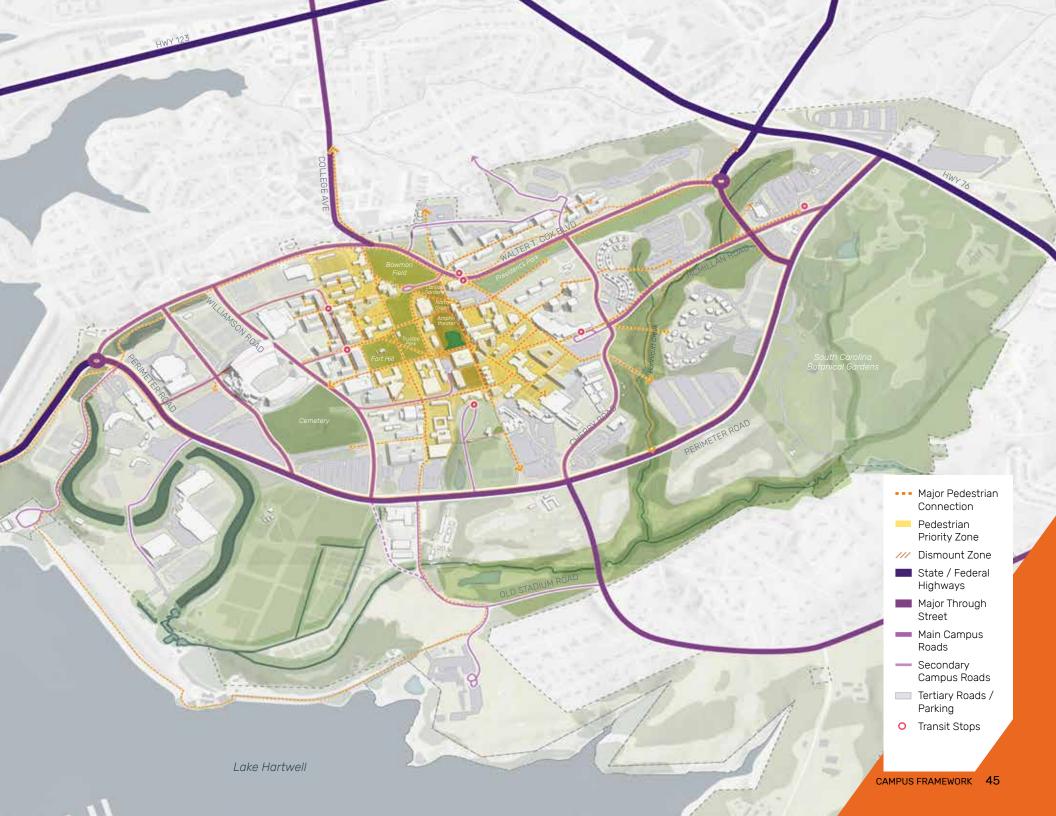


# **Mobility Framework**

The Mobility Framework provides a long-term approach for the entire campus mobility system; it integrates and coordinates all modes-pedestrian, bicycle, golf cart, transit, and private, service, and emergency vehicles. It prioritizes pedestrian movement in the core of campus and provides a campus-wide bicycle network. Vehicular traffic is primarily focused on roads at the edges of campus. An important idea of the Framework Plan is distinguishing the roles of Walter T. Cox Blvd. and Perimeter Road. The goal is to consider Walter T. Cox Blvd. as the ceremonial gateway, while promoting the use of Perimeter Road as the primary vehicular connection through campus. With these strategies, the Framework Plan is focusing on connecting north and south parts of campus.

See Chapter 7, Mobility, for more details about each mode of transportation.





# **Land Use Framework**

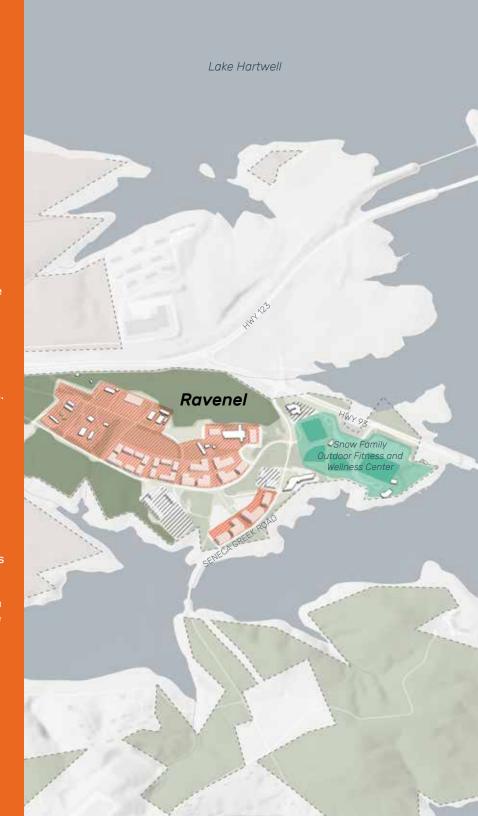
Clemson's campus features a well-structured organization of uses. Starting from Cooper Library in the heart of campus, academic uses create a central academic core. Beyond this central area, uses transition to campus life neighborhoods including student centers, on-campus housing, and related uses. Ringing the central campus, the outlying uses include recreation and athletic facilities, as well as major parking lots, and larger landscape areas like Calhoun Bottoms, the Walker Golf Course, and the South Carolina Botanical Gardens.

The Land Use Framework reinforces this existing structure, focusing on accommodating growth in places with similar or complimentary uses. Starting from the center of campus and moving outward, the major zones of the Land Use Framework are:

Central Academic Campus Core
 At the heart of campus, focus on
 academic uses and signature open spaces.
 Throughout this document "Academic
 uses" refers broadly to the full range
 of academic-related space categories,
 including classrooms, study space, labs
 and research space, offices, and other
 academic support uses.

- Adjacent Campus Life Neighborhoods
   Prioritize mixed-use, campus life neighborhoods anchored by distributed centers for campus life at the edges of the academic core.
- Edge Landscapes and Large Uses
   In outlying areas, predominant uses include athletic facilities and additional recreation spaces, large open spaces, major parking lots, and other support uses.
- Local Campus Extensions
   Home to academic, research, support uses, and campus life functions, Ravenel functions as an extension of campus.

The Land Use Framework provides a guide for where new uses should be sited, ensuring that new development is located strategically and with synergistic uses. It also supports more efficient mobility patterns across campus. Campus land is valuable and a finite resource; therefore, two key goals underlie the land use framework: 1) support a compact, walkable campus, and 2) locate the right uses in the right places. Maintaining a compact campus ensures destinations are walkable and supports a shared sense of community.





#### Four Main Zones within the Land Use Framework







#### Central Academic Core

All areas of the academic core are roughly a five to ten minute walk from Cooper Library. Focusing academic uses in the heart of campus builds upon the existing campus framework, which prioritizes learning and research at the campus center in support of the University's mission. With the completion of the new Business School, the Academic Core will extend north across Walter T. Cox Blvd. The Land Use Framework maintains the existing academic core, while growing it slightly at the edges to accommodate necessary new academic, research, and academic support uses.



#### Adjacent Campus Life Neighborhoods

The campus has three major campus life neighborhoods—on the east, west, and north sides of campus. The Framework Plan focuses on-campus residential growth in existing campus residential districts, complimented with access to dining, social space, and other campus life spaces. This organization ensures on-campus residents are connected to one another and campus life uses and are within walking distance of academic spaces. Where feasible, the Framework Plan recommends locating traditional student housing in closest proximity to the academic core.

Compact, mixed use districts contribute to a sense of community for on-campus students, while also providing campus life uses in locations adjacent to the academic core that are convenient to students commuting to campus from downtown or other neighborhoods.





This crescent-shaped zone of campus primarily lies along Perimeter Road and includes a mix of uses. Its peripheral location is more suited to uses like large landscapes, athletics and recreation, large parking lots, and other uses that do not need to be located on prime land in the campus core. More details on the edges of campus are available in Chapter 10 Campus Edges.



Local Campus Extensions: Ravenel

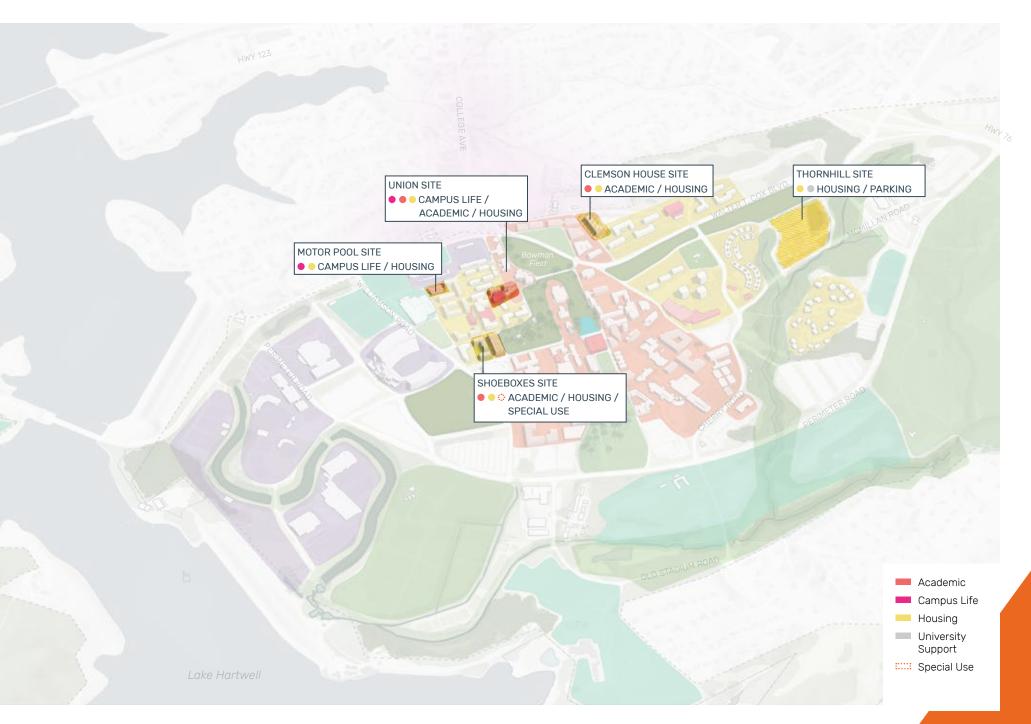
Ravenel has historically functioned as an extension of the main campus, and this role will become increasingly important over the coming decades. The Snow Family Outdoor Fitness and Wellness Center and the addition of satellite parking lots are already increasing the connectivity between Ravenel and the rest of main campus. With an area comparable to all of central campus, Ravenel has significant future development capacity, which could accommodate academics and research facilities, campus support uses, transportation and parking needs, and additional campus life spaces.

Prudent planning now and in the future is critical to ensure the area grows to be a vibrant, beautiful western extension of campus across Lake Hartwell. Determining whether a use is appropriate for Ravenel could include considering whether the use needs some degree of proximity to central campus, but would not require or be appropriate for central campus itself, due to size, noise, or other factors. More details on Ravenel, including a recommended framework for future development, are available in Chapter 9 District Frameworks.

### Flexible Sites/ Transition Zones

While most areas of campus fall distinctly in one of the major land use zones of campus, there are a few areas that could be considered a part of more than one zone. These "flexible sites" are located in-between two different zones. For example, the Shoebox site sits between academic and residential uses and adjacent to Fort Hill. If this site were redeveloped, it could remain residential or become a new academic site—or it could be a site with both uses. Another option is that its location could also be an appropriate location for a more signature use, something that would relate to Fort Hill and contribute to the campus experience.





# New Development Framework

The New Development Framework identifies potential sites for new construction. To accommodate space needs today and in the next five to ten years, approximately 900,000 assignable square feet of new construction will be needed including 800 new beds. To meet this need—while maintaining a compact campus and preserving campus landscapes—new construction will need to prioritize renovation, reuse of underutilized sites, and strategic infill.

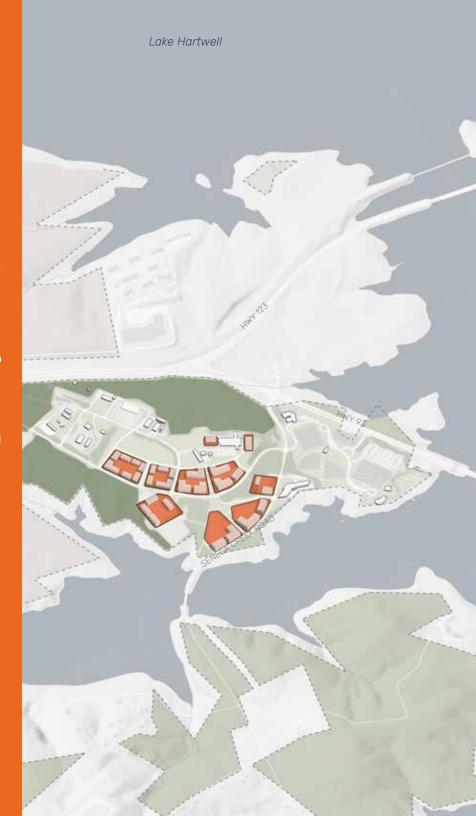
The Framework Plan identifies potential development sites; together, these sites provide more than sufficient capacity to accommodate current and projected space needs. These sites are located carefully, in places where new development or redevelopment can contribute to the campus structure. The selection process identified potential areas of campus that could be ripe for a new use in the next five to seven years, based on existing building condition, future space needs, and land use considerations. Prioritizing infill and redevelopment, sites meeting one or more of the following criteria were considered as potential future development sites:

- Underutilized sites: for example, single story buildings or parking lots in or near the core of campus
- Buildings nearing the end of their useful life, including outdated structures like Newman that are no longer appropriate for modern research, teaching, and learning

- Buildings with uses inconsistent with the land use framework, where redevelopment could provide an opportunity to insert a more appropriate use on a prime site
- Infill opportunities
- Available land at the edges of the campus core suitable for growing academic uses (for example, area west of Lee Hall or north of the new Business School)

As Clemson grows, using land efficiently will become even more important. Promoting density, for example 4-6 story buildings where appropriate, will ensure that more land can remain as open space, preserving iconic open spaces while maintaining the walkable core. New development should respect historic spaces and view corridors, while looking for opportunities to define significant new open spaces where appropriate. The Development Framework identifies opportunities for both new development as well as new open spaces on potential sites.

The Development Framework and Land Use Framework work together. When considering a new building, they provide a guide for sites that could be appropriate for it, based on its use. The Land Use Framework provides a suggested use or range of uses appropriate for available development sites.





# **Urban Design Framework**

The Urban Design Framework provides the broader armature of the built realm; it considers how campus buildings and open spaces work together to create a memorable, vibrant campus. This framework builds on the existing campus organization and previous campus studies, extending it to structure new campus districts.

The Urban Design Framework considers several key elements:

- Campus landmarks
   Iconic buildings and open spaces act as wayfinding beacons and play primary roles in campus character and memory.
- View corridors
   Preserving views of campus landmarks and landscapes connects different parts of campus together into a cohesive whole.
- Major pedestrian spines
   Like the Library Bridge that marks
   the mid-point of a campus east-west
   pedestrian corridor, these main pedestrian
   connections connect major destinations.
   As common-traveled routes, they
   also support a sense of community by
   providing opportunities for students to
   see familiar faces between classes.
- Active edges

The ground floors of buildings along major pedestrian corridors and surrounding key open spaces should feature greater transparency and active uses where possible, supporting the connection between indoor and outdoor spaces.

#### Student centers and major destinations

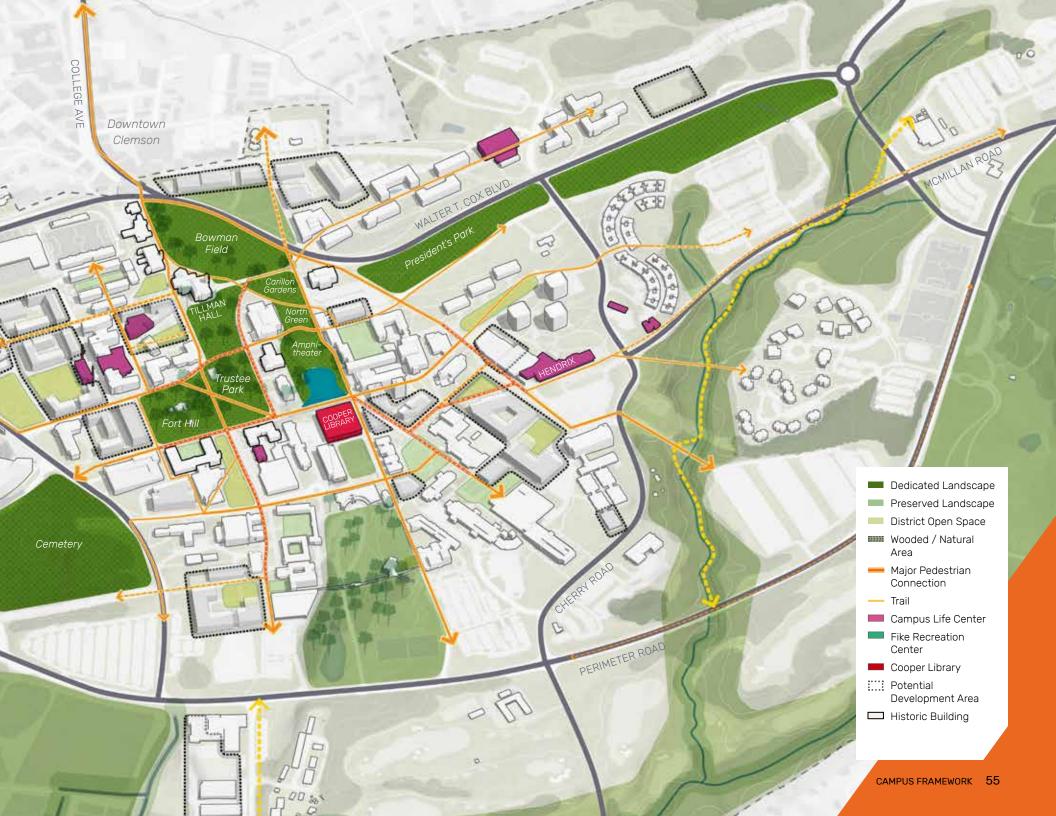
These significant destinations are the hearts of student neighborhoods and important draws for the broader campus community.

The purpose of the Urban Design Framework is to ensure that new development relates harmoniously to and supports the broader campus structure and sense of place.

The Urban Design Framework should be used as a companion to the Development and Land Use Frameworks. In this way, the Development Framework provides a potential site; the Land Use Framework suggests uses that would be appropriate on that site; and then the Urban Design Framework suggests considerations for the form of the building itself.

For more detailed urban design considerations, see the District Frameworks in Chapter 9.











## INTRODUCTION

Clemson's open spaces are the heart of campus and play important roles in campus life, environmental health, human comfort, and campus beauty. The landscape, open space, and public realm framework—the focus of this chapter—protects existing major campus open spaces like Bowman Field, the Amphitheater, and President's Park; it also looks for opportunities to extend Clemson's green network through a series of new landscapes and pedestrian connections.



## Landscape, Open Space, and the Public Realm

- 1. Existing Context
- 2. Landscape, Open Space and Public Realm Framework
- 3. BIG IDEA #1
  Preserving the Existing
  Landscape Framework
  Preserving the existing campus landscape
  framework
- 4. BIG IDEA #2 New and Enhanced Open Spaces Enhancing existing open spaces and creating new open spaces to anchor growing districts and neighborhoods
- 5. BIG IDEA #3 Pedestrian Transformation Building on opportunities of pedestrian transformation of central campus streets to enrich campus connectivity and character
- 6. BIG IDEA #4
  Natural Open Spaces and
  Improved Connections
  Improving pedestrian and bicycle
  connectivity to the natural treasures of
  campus—including the South Carolina
  Botanical Gardens, Lake Hartwell, and the
  - Gateway Landscapes
    Enhancing campus gateways, building upon the distinct boulevard character that is already established on Walter T. Cox Blvd.

7. BIG IDEA #5

## Existing Context Campus Landscapes







### Natural Setting

Nestled in the upstate near the Blue Ridge Mountains, Clemson's campus benefits from a rich natural setting. This broader natural systems and topographic framework has structured campus development over the years. Central campus is comprised of a series of topographic ridges and valleys. Higher parts of campus have typically become sites for development, while lower areas more typically are landscape corridors of varied character. The central green spine of campus is one of these corridors; another is the Hunnicutt Creek corridor that runs between Lightsey Bridge Apartments and Hendrix on its way across campus. As campus slopes down towards the base of the dikes lining Lake Hartwell, it transitions to open landscapes like the Bottoms as well as athletic fields and facilities. In this area, the ox-bow lakes are a remnant of the Seneca River.



## **Natural Areas** MyCampus Online Survey Results RAVENEL . DOWNTOWN South Carolina Botanical Garden Lake Hartwell Survey results: locations identified by survey takers as Natural Areas Location with Wildlife

## Landscape Typologies

Clemson's campus benefits from a diversity of open spaces, ranging from natural landscapes, to more formal green spaces and gardens, to landscaped quads and courtyards, to recreation fields. These landscapes together create the green framework of the campus, providing its distinct character, and also playing critical roles in the environmental health and civic life of campus.

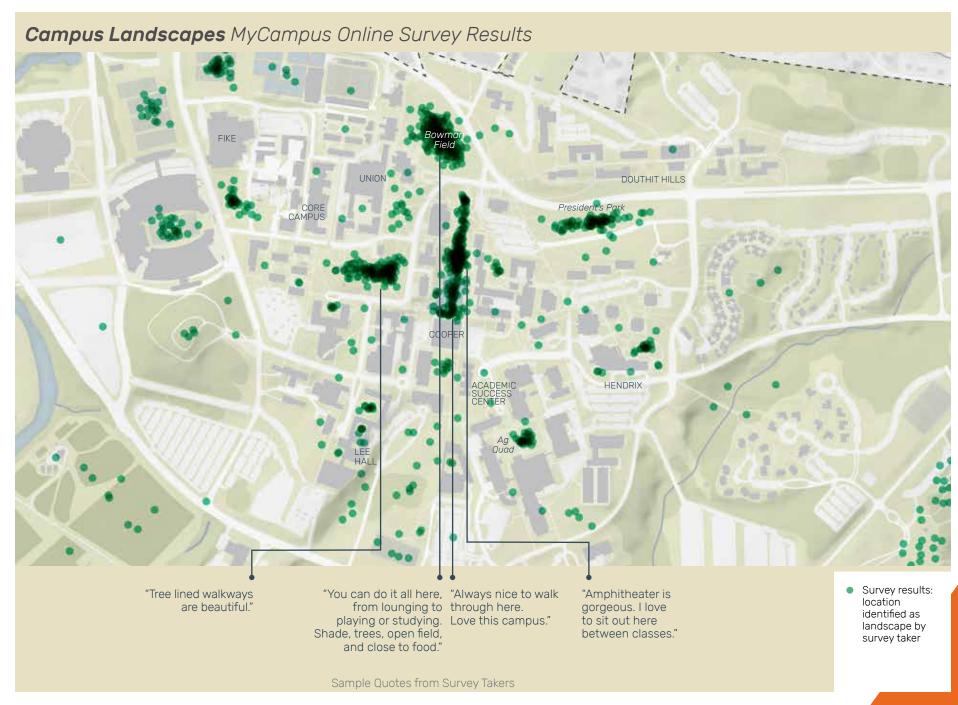
The Campus Green, the central green spine of campus, connects from Bowman Field south towards Perimeter Road. From this central green coridor, additional open spaces connect east and west across campus. Clemson's landscape setting is integral to its sense of place.











## Landscape, Open Space, & Public Realm Framework

The Landscape Framework preserves the existing campus open space structure and extends this structure to new areaspreserving key view corridors and activating new and existing open spaces. The Landscape Framework protects the historic core of campus and green central spine; defines opportunities for new district-scale open spaces; and preserves significant natural and forested areas for environmental health. In this way, landscape and open spaces are the foundation of campus character, support vibrant campus life, further campus environmental health and human comfort, and create the settings for memorable campus experiences—Clemson's special sense of place.

## LandscapeObjectives

Preserve iconic landscapes and view corridors, and identify opportunities for enhancing and expanding these special spaces especially in connection with new traditions.

Locate uses and pedestrian connections to support interaction. Concentrate pedestrian activity along major spines that pass through great open spaces.

Improve connections between indoor and outdoor spaces, especially along major pedestrian paths.

Improve connectivity to downtown, Lake Hartwell, and the Experimental Forest.

Preserve and enhance the diversity of open space types and programming; maintain a balance of active recreation opportunities, study/contemplative/quiet spaces, and social gathering spaces.

As campus grows, ensure that new districts are organized around open spaces that are appropriately scaled and designed to have a distinct character that relates to surrounding uses.

View the pedestrian transformation of the campus core as an opportunity to improve the campus landscape and public realm.

Support the long-term stewardship of the campus tree canopy.

Reinforce the sense of arrival through distinct gateway experiences, building on the existing boulevard-style treatment of entry roads.





LANDSCAPE BIG IDEA #1

## Preserving the Existing Landscape Framework

An underlying goal of the Framework Plan is to preserve the iconic landscapes of the campus.

The 2002 Campus Master Plan classified major open spaces as dedicated and preserved open spaces, and the Framework Plan retains these designations.

Dedicated Landscapes are those open spaces that are most integral to the character of Clemson. The "dedicated landscape" designation means they are protected from all types of campus development and require Executive Administration approval to alter. Dedicated landscapes include Fort Hill and Trustees Park, Cox Plaza and surrounding open space, Bowman Field, President's Park, Carillon Garden, North Green, Amphitheater, Reflecting Pond, and Woodland Cemetery.

Preserved Landscapes are other significant open spaces and environmental areas that should be protected, but in a less rigorous way. Preserved open spaces include the South Campus Green, the Bottoms, Hunnicutt Creek, and the South Carolina Botanical Gardens. These are identical to the preserved landscapes of the 2002 plan, with the addition of Hunnicutt Creek, a sensitive environmental corridor that should be considered a protected landscape to preserve its environmental health. In recent years, the creek has been facing erosion issues along its banks, and restoration is underway.

## PROTECTING CAMPUS

This map highlights the different levels of protection for existing landscapes, ensuring the special character of campus is permanently preserved.





LANDSCAPE BIG IDEA #2

## New & Enhanced Open Spaces

## Opportunities for growing the existing campus open space network

In addition to preserving the existing landscape framework, the Framework Plan extends the green character of campus through a series of new and enhanced open spaces. These open spaces anchor growing districts and offer new outdoor learning, socializing, and recreation opportunities. Each open space should have a distinct character, contributing to the overall network of diverse, memorable experiences and campus places.

Where possible, these open spaces should link to nearby buildings, creating a connection between indoors and outdoors. Transparency and active uses along ground floors can help enliven and activate surrounding open spaces; similarly, the indoor spaces can benefit from the green campus views.

The function and design of the open spaces can support the surrounding district. For example, open spaces in academic areas can include outdoor learning and study spaces, and could be designed to act as outdoor classrooms, while open spaces near residential areas could provide a flexible open space for students. Where possible, linking new traditions with open spaces can help extend the special character of landscapes, helping create new memories for students, faculty, staff, and visitors.

Open space additions and enhancements of the Framework Plan include:

- 1 Expanded Bowman
- 2 East Mall
- 3 South Campus Green
- 4 Ag Walk/Academic Success Open Space
- 5 Ag Quad Renewal
- 6 Centennial Quad
- 7 Expanded President's Park
- 8 Southwest Quad
- 9 Bryan Mall
- 10 New Union Central Open Space
- 11 Power Plant Open Space
- 12 Kappa Street Gateway Enhancements

These new and enhanced open spaces are described in more detail on the following pages.





## Campus Landscape Experiences

The campus landscapes each provide a distinct character; together they form a series of outdoor rooms. These open spaces and connections create the spatial structure of campus. The Framework Plan identifies opportunities to build on this existing memorable structure and to create new landscape moments.



#### 70



#### **Expanded Bowman**

With the completion of the Business School and Douthit Hills, the campus core will grow north across Walter T. Cox Blvd. Along with this expansion, the Framework Plan identifies the opportunity to extend Bowman Field as well, with a new open space on the north side of the street. Complimenting Bowman Field, this open space could have a shady character, terraced along the sloping hillside—providing an ideal vantage point to perch and watch the activity on Bowman Field or First Friday Parades.











#### East Mall

This new signature open space could be enabled by the pedestrian transformation of central campus. The area that is currently occupied by McMillan Road could be transformed into a new social open space, adding life to the Hendrix area. In connection with the addition/expansion of Hendrix,¹ this open space could act as a new outdoor front lawn for the student center. The East Mall could include flexible seating for outdoor studying or hanging out as well as open lawn space for lounging or programmed events. Along its north edge, a new major pedestrian path could provide an accessible connection from the Library Bridge to Hendrix.





<sup>1</sup> See Chapter 6, Campus Life, for more details about the renovation/expansion of Hendrix.



Extending the memorable Campus Green southward, activating the existing open space as a vibrant gathering place

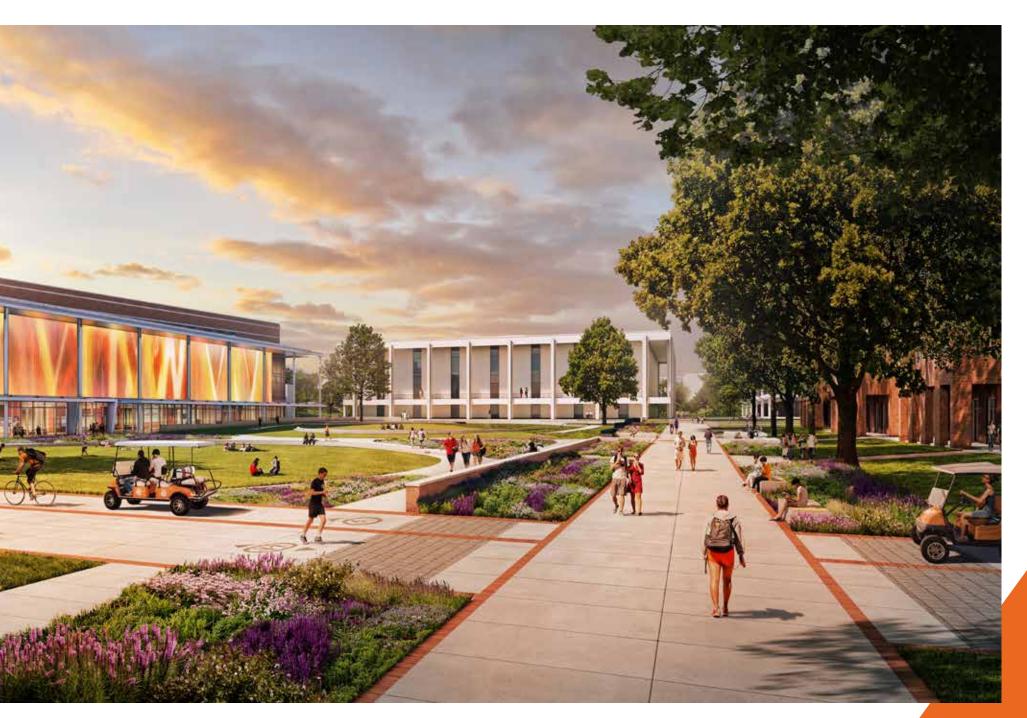


## South Campus Green

With the completion of the Watt Family Innovation Center, the open space south of Cooper Library has the potential to be enhanced as a more vibrant, distinct campus open space. Today most commonly used as a space to pass through, it could become a destination itself. Central lawn areas could provide places for gatherings and events; seating and planting areas along the edges could provide shaded places to study or talk with friends. The Watt Center's digital screen could provide a changing backdrop for the space. At the south edge of the space, the cross-campus bike and golf cart path provides an important mobility link.









## Ag Walk/Academic Success Open Space

The Ag Walk is a potential enhanced connection from Cooper Library and the center of campus to the Ag Quad. This open space could be a major pedestrian connection along a series of open spaces. Starting from the Library Bridge, the Ag Walk could begin at a plaza area. Located between Cooper Library, the new Library Annex, and Daniel Hall addition, this plaza could include outdoor seating and could function as an outdoor classroom. Moving south, the Ag Walk could pass beside the Academic Success Open Space and intersect with the new major pedestrian promenade connecting to Hendrix. Benches and trees along the walk could provide shade and places to pause. Looking back towards the center of campus, the Ag Walk could features views of Tillman Hall, framed by the Library Annex/ Daniel Hall addition.









### Ag Quad Renewal

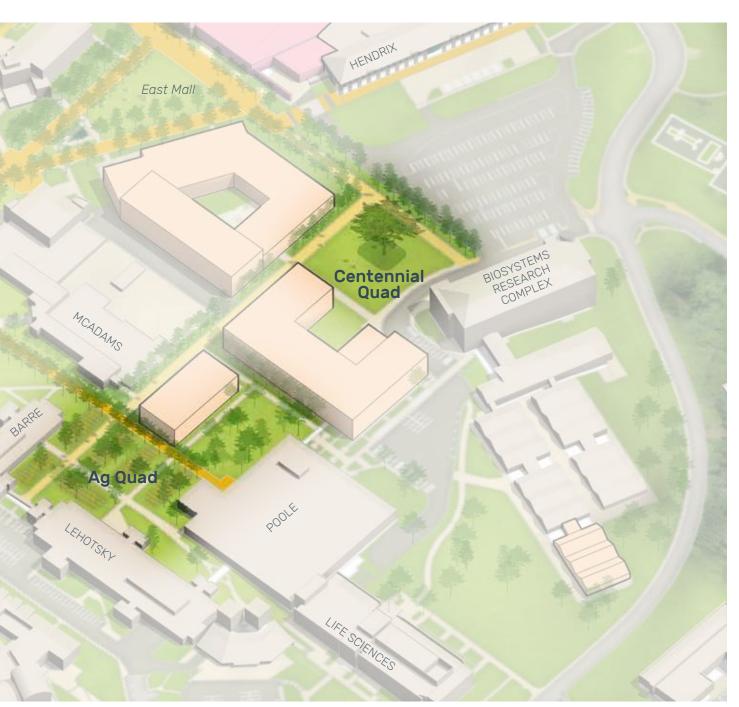
Shady and very large, the Ag Quad today is a relatively underutilized space on campus. Its overall dimensions feel disproportional relative to the height and massing of the surrounding buildings; greater definition of space is needed to help it feel more appropriately scaled. The Framework Plan identifies opportunities to narrow the space slightly, through the redevelopment of Newman Hall as well as through a new addition or small structure south of McAdams Hall.

Additional programming could also help activate the space and give it a distinct identity related to the academic character of the surrounding buildings. For example, expanding the Sustainable Landscape Demonstration Garden or using the quad for the University

Farmer's Market could reflect the quad's agriculture, forestry, and life sciences focus.

In addition, the Ag Quad is also an area with many opportunities to renew the surrounding structures. In the MyCampus survey, buildings in this area were marked as some of the most confusing for wayfinding on campus and most in need of renovation—or replacement in the case of Newman Hall-to improve learning and research functions. See Chapter 5 Learning and Research for more about recommended renovations to academic buildings. These potential improvements to the open space and the buildings could renew the Ag Quad by updating the space to more contemporary standards, making it a better reflection of the cutting-edge research occurring in and around it.







## Centennial Quad

The Centennial Oak currently sits on the edge of a parking lot, but the redevelopment of the Newman site provides the opportunity to consider a new open space around the majestic tree. This open space could compliment the Ag Quad by providing a second open space in the area. This new area would have a distinct identity tied to the Centennial Oak, which would frame the eastern edge of the space.





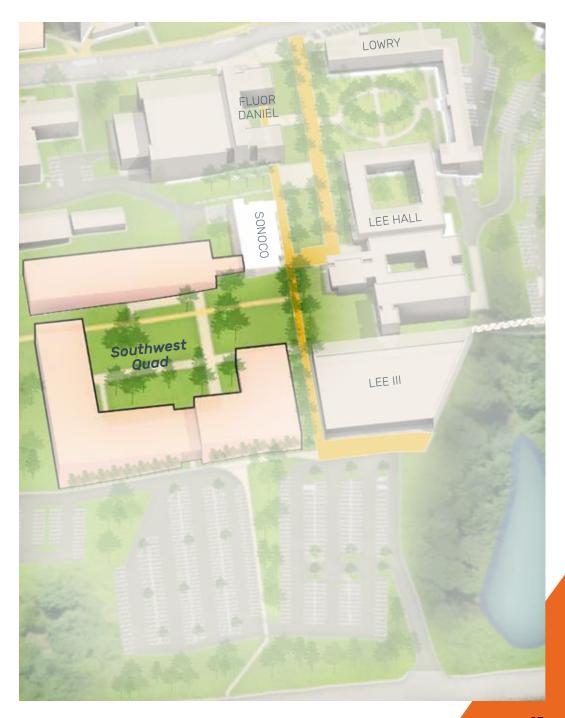
## Expanded President's Park

The open space between Thornhill Village and Walter T. Cox Blvd. has the potential to be enhanced, acting as an extension of President's Park. The goal is to further reinforce the gateway character of this area, improving the experience of entering campus. The character could build upon President's Park, or it could be something else memorable and distinct.



## **NEW & ENHANCED OPEN SPACES** Southwest Quad

The Southwest Quad is a potential new open space that could extend west from the Lee III open space. It could act as the central open space for a new cluster of academic buildings, building on the area's learning and research focus. This open space could help navigate the sloping topography, providing structure to the area for the surrounding buildings.





## Bryan Mall

The Framework Plan proposes transforming this area from a vehicular-focused zone into a central open space for the surrounding on-campus residents. In keeping with the recommended pedestrian focus in the campus core, streets in this area would be converted to primarily pedestrian use—while still allowing service and emergency vehicle access as well as move-in and move-out circulation. The central area of Bryan Mall could become a series of grassy terraces, gently stepping down the hillside. This landscape could accommodate outdoor studying, lounging, lawn games, and other activities by low-rise and high-rise residents.













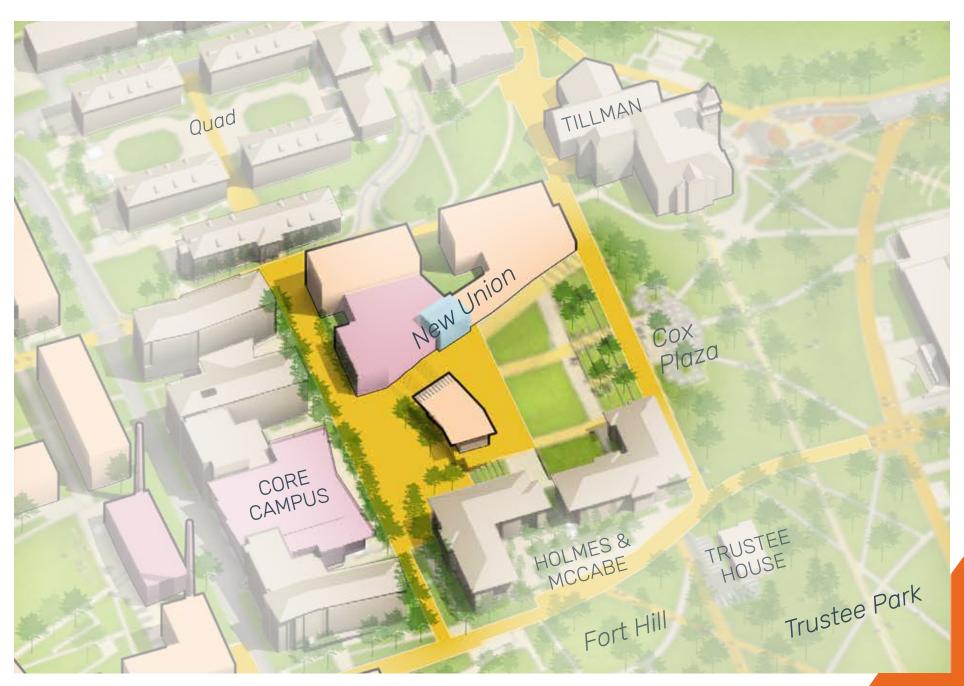
## New Union Central Open Space

The redevelopment of the current Union/ Johnstone site provides the opportunity for new open spaces integrated with the new Union and with the district's dramatic topographic changes. Building upon the open space concept of the Core Campus: Precinct Planning Study (VMDO and Stevens & Wilkinson, 2007) and Core Campus design, the Framework Plan considers a series of new open spaces, which step down from Cox Plaza to the front of Core Campus. Beginning at Cox Plaza, a stepped landscape could lead down to an intermediate level of two green spaces set amid a plaza landscape. A larger green could provide a lawn space that could be used for studying and lounging, or for special events. A smaller green could be located next to McCabe, providing a quieter setting with additional plantings and

benches. From this level, another series of steps could lead down to Core Campus. The landscape connecting to Core Campus could provide additional outdoor seating amid a shady plaza.

The goal of these open spaces would be to provide a connected series of outdoor rooms, each distinct in character, fitting with the topography, and related to the surrounding buildings. A key design consideration will be flexibility. Open spaces will need to accommodate a range of uses, including outdoor events related to the new Union and Core Campus while still providing enjoyable places to sit, study, and eat at other times. The design of the buildings and open space should also maintain views of Tillman Hall.

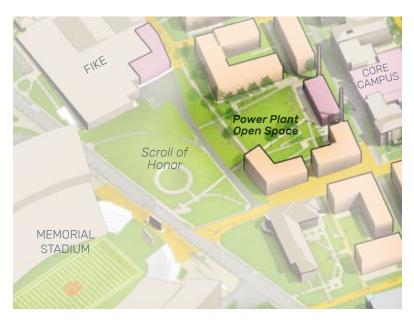






## Power Plant Open Space

This potential new open space lies in the heart of the new neighborhood on the west side of campus, on the current Motor Pool site. A sloping green lawn could connect from the renovated Power Plant, between new residential buildings, and then overlooks the Scroll of Honor Memorial Park and the west side of Memorial Stadium. This open space is envisioned to include outdoor seating at the uphill east end, connected to the renovated Power Plant, and then an open lawn for the enjoyment of students, including those living in nearby residence halls. On football game days, this lawn could become a new signature tailgate location, overlooking the Scroll of Honor, with direct proximity to the stadium.









As the new home of the Visitor's Center, Kappa Street will grow as a major gateway for campus visitors



#### **NEW & ENHANCED OPEN SPACES**

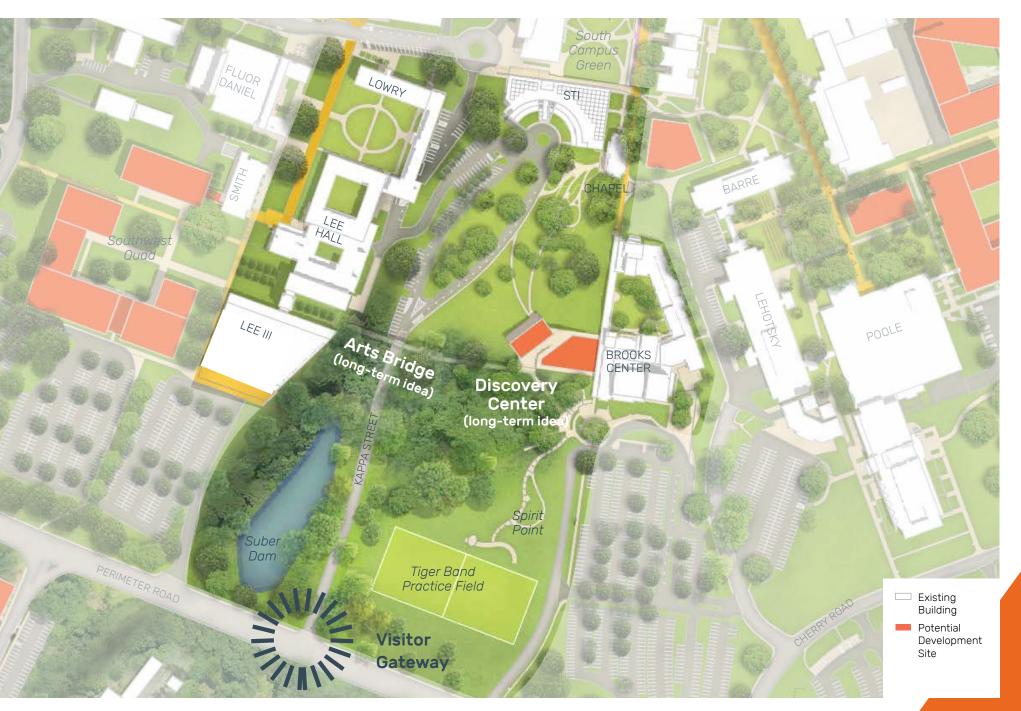
### Kappa Street Gateway Enhancements

South of STI, additional enhancements could improve the Kappa Street area as a new southern campus gateway. With STI functioning as the campus visitor center, this area will host potential students and their families, along with other visitors.

An idea for further study, a new Discovery Center could be located west of the Brooks Center, with access from the Brooks Center parking lot (C-11). The Discovery Center could provide a place for all kinds of visitors to start a campus visit, learning more about the many facets of Clemson's history and campus experience. Locating it at the top of the hill adjacent to Brooks could preserve natural flows of stormwater and minimize additional circulation and paving needs. This area could

also include a bridge connection in the future, connecting from Lee Hall to the Discovery Center and Brooks Center. A bridge like this could provide a physical link reinforcing the arts uses on both sides of the Kappa Street valley and could act as a new gateway element of the area.

Closer to Perimeter Road, additional landscape and stormwater enhancements could further improve this area's natural character and environmental health.



LANDSCAPE BIG IDEA #3

## **Pedestrian Transformation**

### Pedestrianized Streets, New Campus Public Spaces

In between open spaces and destinations, pedestrian paths and other connective landscapes also contribute to campus character. The Framework Plan recommends enhancing pedestrian connections, throughout campus. A Pedestrian Priority Zone (PPZ) is proposed in the core of campus. The goal is to make walking between all parts of campus an enjoyable experience, promoting social interactions along the way.

The Pedestrian Priority provides the opportunity to knit together the campus core.¹ Streets like Calhoun Drive, Fort Hill Street, and Fernow Street could be transformed into new public spaces. While still allowing emergency and service vehicle access, as well as access to ADA parking, these streets could have a new character, focusing more on people than on vehicles. In this way, roads would no longer feel like barriers separating different parts of campus; instead, they could become new pedestrian connections and shared social spaces. Some of these streets could also designate an area for bicyclists, enhancing bicycle connectivity.



<sup>1</sup> For additional details on the Pedestrian Transformation of the central campus, see Chapter 7 Mobility.

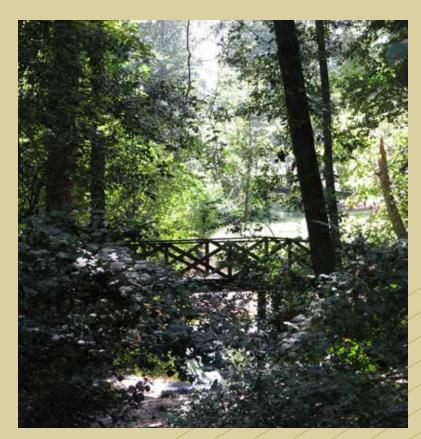


LANDSCAPE BIG IDEA #4

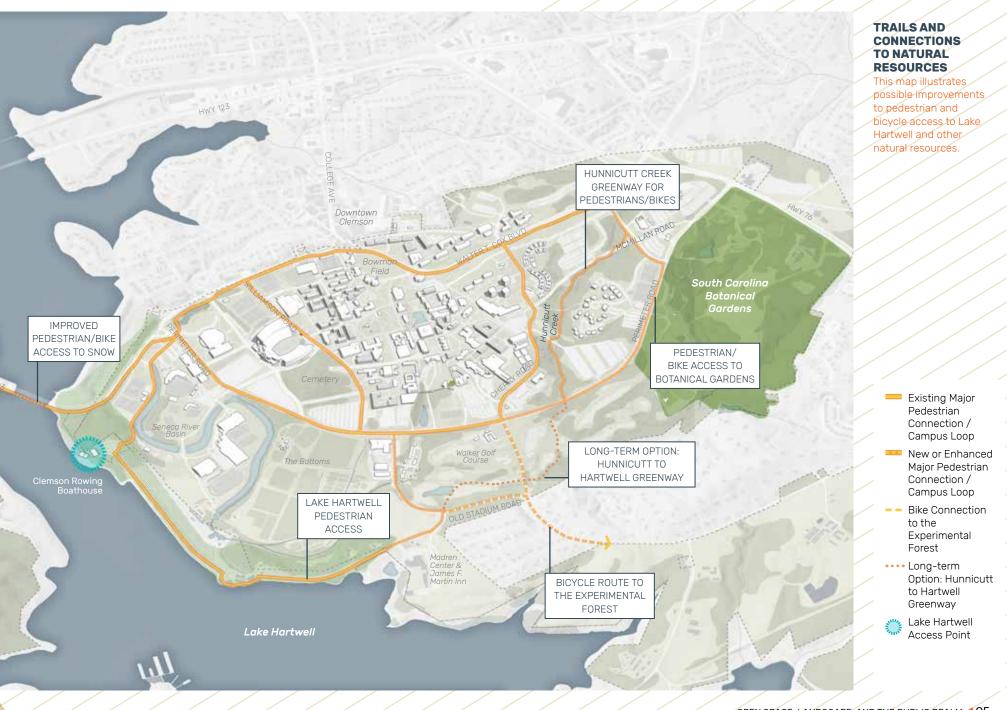
# Natural Open Spaces & Improved Connections

Connecting the campus to its natural setting and open space resources

Clemson's natural setting is one of its greatest amenities. Improving access to natural areas is an important element of the Framework Plan. Natural areas play essential roles environmentally, helping absorb and clean stormwater runoff and providing a home to campus wildlife. These areas also offer a respite for members of the campus community to find a quiet space removed from the hustle and bustle of campus, and they can also be places for research and learning.





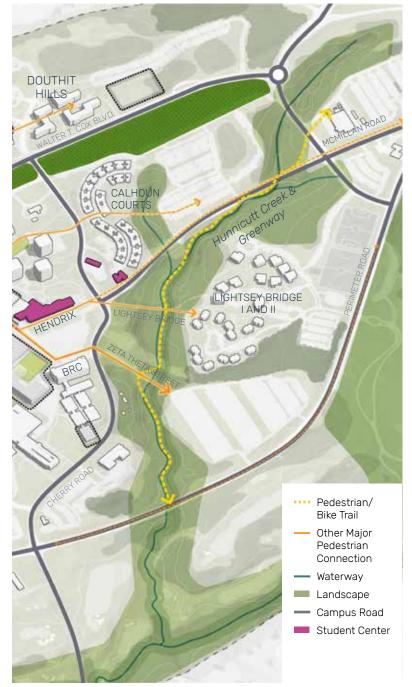


#### NATURAL OPEN SPACES & IMPROVED CONNECTIONS

#### Hunnicutt Creek Greenway and Environmental Restoration

Hunnicutt Creek runs through the eastern half of campus, passing underneath Lightsey Bridge. This creek corridor is currently experiencing erosion along its banks and restoration efforts are underway. In the future, this natural greenway could be enhanced with a multiuse trail, which could eventually connect towards Lake Hartwell.





### NATURAL OPEN SPACES & IMPROVED CONNECTIONS

# Improving Connectivity to Natural Resources

The Framework Plan recommends enhancing sidewalk and trail connections to Lake Hartwell, along Hunnicutt Creek, and to other natural areas on campus—and the Experimental Forest beyond. The goal is to improve opportunities to get out and enjoy the surrounding scenery. The Green Crescent trail could improve connectivity north and south to the Experimental Forest, and the Framework Plan proposes additional opportunities to enhance pedestrian and bicycle connectivity. For more details on trail connections and the bicycle and pedestrian networks, see Chapter 7 Mobility.



LANDSCAPE BIG IDEA #5

# Gateway Landscapes

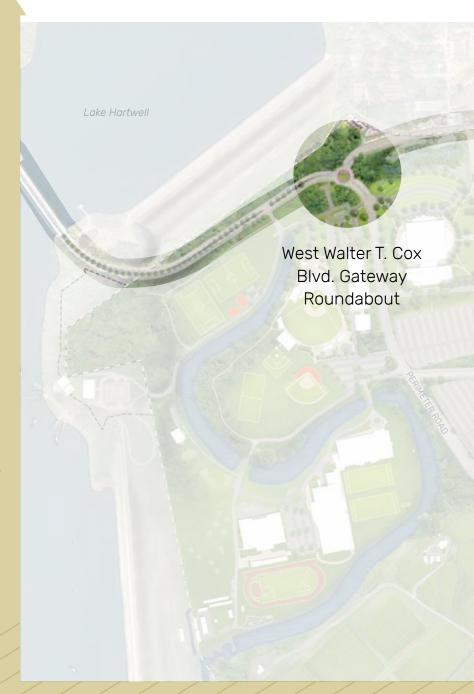
# Two new roundabouts on the east and west ends of Walter T. Cox Blvd. enhance the entry experience and improve traffic flow to Perimeter Road

At major gateways to campus, landscape strategies contribute to the sense of arrival. The existing tree-lined boulevards of Highway 93 and Walter T. Cox Blvd. mark the transition into campus. The Framework Plan looks for opportunities to extend this character along Newman Road as well as Perimeter Road to reinforce their increasing roles as gateways for day-to-day campus traffic including commuters. Enhanced wayfinding could compliment landscape strategies along Perimeter Road to improve its character as a gateway corridor along the southern edge of campus. Distinct gateways along Perimeter Road could each relate to the identity of different parts of campus accessed from it.

As Newman and Perimeter Road collect a greater share of campus traffic, Walter T. Cox Blvd. can continue to be enhanced as the ceremonial gateway to campus. Two new roundabouts at the junction of Walter T. Cox Blvd./Newman Road and Walter T. Cox Blvd./Perimeter Road support this goal

by encouraging the flow of traffic south to Perimeter Road instead of along Walter T. Cox Blvd. and through the core of campus. Promoting the use of Perimeter Road for traffic in combination with the addition of raised crosswalks and enhanced signalization along Walter T. Cox Boulevard will help improve connectivity—especially for pedestrians between Douthit Hills and the new Business School and the central campus core south of Walter T. Cox Blvd. The landscape character of the roundabouts will support the idea of gateway; their designs can function as "outdoor rooms" marking the threshold to campus. Beyond the east roundabout, extending President's Park to the east in the area north of current Thornhill housing will support an enhanced sense of arrival to campus.

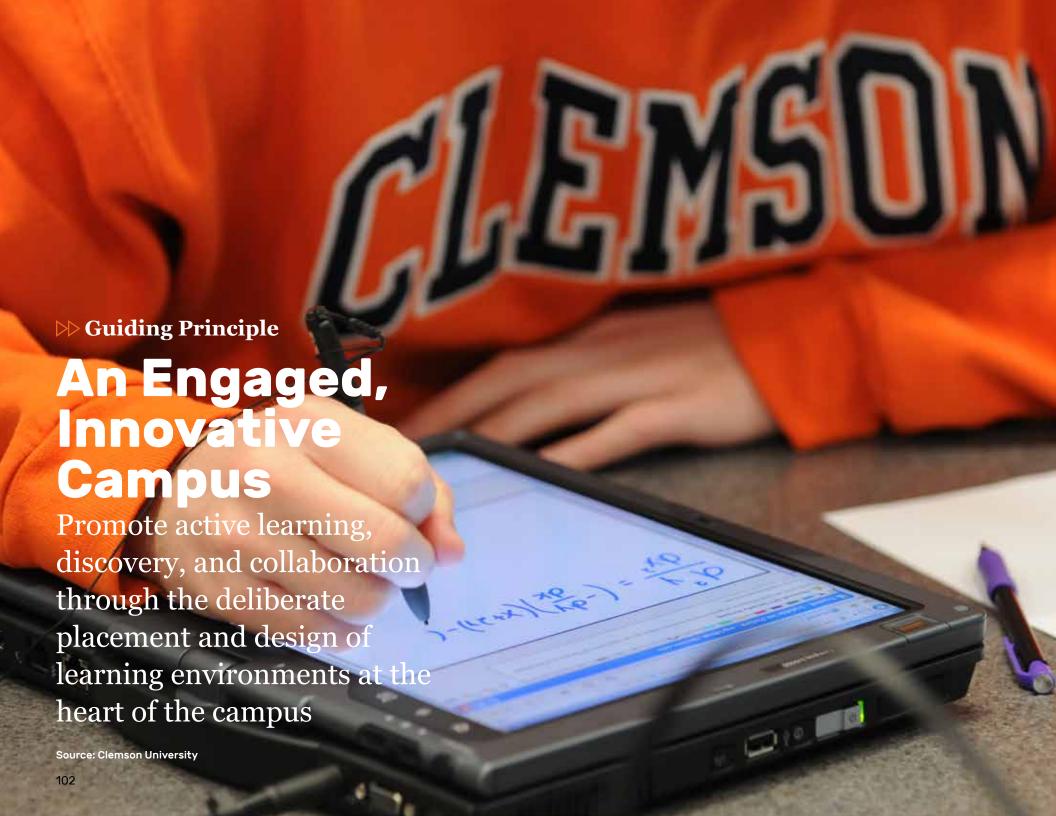
For more details on Walter T. Cox Blvd., Perimeter Road improvements, and the roundabouts see Chapter 7 Mobility.











### INTRODUCTION

In this chapter, the Framework Plan addresses building renovation and new construction in support of learning and research objectives. The underlying goals are to 1) ensure the campus and buildings are supporting engaged, active learning; 2) provide high-quality spaces suitable to today's research and teaching needs; and 3) grow and enhance research and academics on campus, in support of Clemson Forward's overarching goals for the University to be a perennial top 20 U.S. News and World Report institution and a perennial Research 1 institution. The Framework Plan also identifies opportunities to enhance connections between academic buildings and the unmatched beauty of campus, promoting outdoor learning as well as greater connectivity between indoors and outdoors.



#### **Learning & Research**

- 1. Existing Context
- 2. Learning and Research Framework
- 3. BIG IDEA #1
  Building Renovations
  and Active Learning
  Renewing existing academic facilities
- 4. BIG IDEA #2
  Growing Academics
  and Research
  New construction to increase
  academics, research, and academic
- 5. BIG IDEA #3
  Expanding Study Space
  Increasing study space—both indoors

### **Existing Context**

### Summary of Academic Space Needs

Since the previous Master Plan, Clemson's academic and research have been on an impressive upwards trajectory. As an R1: Research University¹ and ranked among top 25 national public universities for 9th straight year by U.S. News & World Report in 2016,² Clemson is nationally recognized for its strong academics and research presence. The desire to continue to grow academics and research on campus—combined with targets for small class sizes to promote engaged learning and increasing enrollment of both undergraduate and graduate students—results in a need for additional academic, research, and study space.

Today, the University is managing its existing academic space use to achieve very high utilization rates. Classrooms and lab usage are near or above ideal targets. Its current spaces are essentially operating at capacity. Recent growth of undergraduate and graduate enrollment, as well as faculty members, has largely been absorbed in existing building space. The Framework Plan looks ahead to the next five to seven years to identify additional academic space on the main campus, including Ravenel, that will be needed to support

potential future levels of enrollment along with the University's desire to increase research.

Academic and research facilities on the main campus including classrooms, teaching labs, research labs, and offices currently total approximately 1.5 million assignable square feet of space. An additional 190,000 assignable square feet of space is associated with study areas. Over the next ten years, an additional 380,000 assignable square feet of additional academic, research, and study space will be needed on the main campus to provide sufficient space based on current enrollment trajectories. In addition to this new construction, renovation of existing academic and research space will need to be a high priority. Today, the quality and technology of spaces varies significantly across campus. Renovation—or replacement in the case of Newman Hall—is recommended for several buildings to modernize them for current teaching and research needs.

"Clemson combines the benefits of a major research university with a strong commitment to undergraduate teaching and individual student success... The University is committed to exemplary teaching, research and public service in the context of general education, student engagement and development, and continuing education. In all areas, the goal is to develop students' communication and criticalthinking skills, ethical judgment, global awareness, and scientific and technological knowledge. The distinctive character of Clemson is reflected in the culture of collegiality and collaboration among faculty, students, staff, the administration and the University board."

From ClemsonForward

<sup>&</sup>quot;Highest research activity" in the Carnegie Classification of Institutions of Higher Education

<sup>2</sup> Annual guide to "America's Best Colleges"

#### AT A GLANCE

# Academic Space Needs

Study space is most significant academicrelated deficit from a quantitative perspective

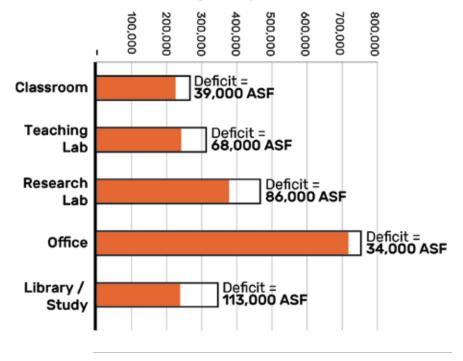
A handful of new buildings would provide additional space that is needed to meet future needs from growing enrollment and the expansion of research on campus.

These buildings would represent about one-fourth of the current academic/research capacity on campus; the main campus has significant additional capacity for longer term future or to provide space if needs change over next 10 years, and when Ravenel is added to consideration, there's even more capacity for the long-term.

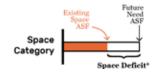
Renovation is as pressing as new construction (Framework Plan includes 393,000 ASF renovation vs. 283,000 ASF new construction)

#### Existing Space & Future Need<sup>1</sup>





#### How to read this graph



\*Deficit from future growth; does not include displacements from future construction College of Business building will add **162,000 GSF** and will help meet some of the academic space needs

After the Business School is constructed, the remaining academic deficit is

#### 187,200 GSF<sup>2</sup>

Including classrooms, research & labs, office. That's the equivalent of Brackett, Daniel, plus Hardin

## Library/Study Deficit = **188.300 GSF**

That's the equivalent of three-quarters of another Cooper Library

1 - Existing Space does not include College of Business.
Future space needs are based on 26,300 students
(headcount) and 1,853 faculty (1,780 FTE). For more
details, see the Growth and Space section in Chapter 1,
Introduction as well as the Space Analysis and Utilization
Assessment Appendix. Future need is based on projected
need based on enrollment trends compared to today's
space on campus using CHE guidelines. Future space
needs reflect demand increases due to enrollment ard
research growth; they do not include additional space
needs created by displacement of current space due to
new development.

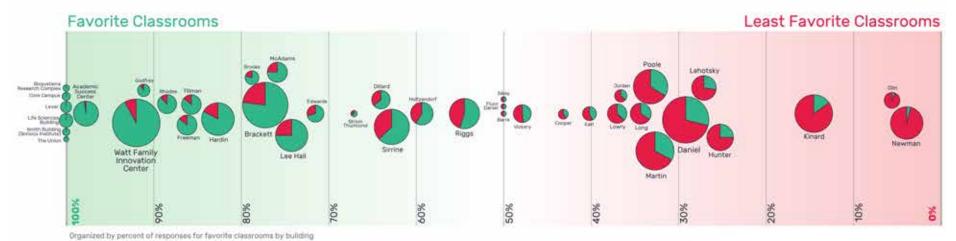
2 - Assumes 65% efficiency

# Feedback about Existing Academic Space

The MyCampus Survey provided additional qualitative feedback about existing learning, research, and study spaces. About seventy-five percent of survey takers were students.

#### Favorite & Least Favorite Classrooms

MyCampus Survey Results



% Favorite Classroom responses by building
% Least Favorite Classroom responses by building
Circle Size = Number of responses
Larger circles reflect buildings with more total responses

More favorite classrooms than least favorite than favorite than favorite

#### **Study Spaces** MyCampus Survey Results Bowman Field FIKE DOUTHIT HILLS President's Park HENDRIX Survey results: "Lee library offers "[Academic Success "If the library is full "[Core Campus has] "I like studying location very nice lounges Center] should be I like to study at a nice, quiet, and in the library identified as Hendrix, but it isn't with plenty of room open later & rooms lesser known nook when I can study location to study. Needs on campus (with find a place. should be available nearly as quiet. by survey taker lots of natural more outlets around It's generally to use for studying the room." light) to study." very full." purposes." Sample Quotes from Survey Takers

# Learning & Research Framework

In support of Clemson Forward's academic goals, the Framework Plan identifies opportunities for enhancing learning and research. As shown in the Land Use Framework, there are two major areas for academic and research uses. Core academic and research uses should be located centrally, while more specialized academic and research uses that do not require a central campus location can be located in other, typically more outlying, areas.

#### **Central Campus**

The central zone of campus should prioritize core academic and research uses. This area is the heart of the campus, so focusing academic uses in this area reinforces the underlying mission of the University to be a "high seminary of learning"—"educating undergraduate and graduate students to think deeply about and engage in the social, scientific, economic, and professional challenges of our times." With limited land, focusing academic space in the central parts of campus is important to maintain a walkable, compact campus that supports interactions and the University's strong sense of collegiality.

#### Other Academic and Research Uses

Academic and research uses that are less appropriate for the heart of campus due to limited daily use by undergraduate students, size needs, or noise or safety considerations should also be carefully sited. Ravenel has historically offered a space for other kinds of academic and research facilities that do not require central campus sites, and the Framework Plan includes additional recommendations to ensure future development in this area is planned as carefully as space on the main campus. Over the coming decades, Ravenel will increasingly become an extension of the main campus, so prudent planning now and in the future is critical. The area on Seneca Creek Road should be functionally appropriate and aesthetically in tune with the main campus. The balance of the area should be reserved for functional use not appropriate for the main campus. More details about Ravenel are available below, as well as in Chapter 9 District Frameworks.

Beyond central campus and Ravenel, other academic and research facilities in the surrounding area include the LaMaster Dairy Center and other CAFLS and Public Service facilities, as well as the Advanced Materials Center. These facilities are not part of the study area of the Framework Plan.

### Learning & Research Objectives

Accommodate the programmatic need for classrooms, research, study, and other academic spaces.

Increase the presence and visibility of research on the main campus.

**Encourage interaction** among diverse students, faculty, and staff.

**Provide high-quality research spaces** and active learning classrooms to promote collaboration and engaged learning.

Focus academic and research facilities in the central core of campus in support of a compact, walkable environment.

Increase connectivity between academic buildings and the campus and promote outdoor learning opportunities.



<sup>1</sup> See Chapter 3, Campus Framework

<sup>2</sup> Clemson Mission Statement (https://www.clemson.edu/brand/positioning/mission-vision.html)



LEARNING & RESEARCH BIG IDEA #1

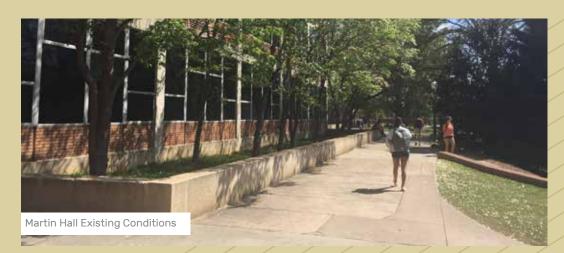
# **Building Renovations**& Active Learning

While new construction is needed to meet growing space needs, renovation and renewal of existing academic facilities is equally crucial to support active learning and to align with desired class sizes.

Renovating existing buildings allows their space to be used more efficiently to meet teaching and research needs. The completion of the Business School will provide much-needed swing space to allow renovations of other existing academic buildings to occur. Renovation will help modernize facilities and ensure they are providing the quality of learning and research space fitting for Clemson's academic goals. The Framework Plan identifies potential academic buildings for renovation based on existing building condition, feedback heard throughout the process, and planned renovations in the Comprehensive Permanent Improvement Plan (CPIP).

Renovation can also provide opportunities to increase natural light and indoor-outdoor connectivity while retaining defining elements of the original character for historical structures. The 2002 Hardin Hall renovation is a great example demonstrating these ideas. The building's renovation restored original features of the building, while upgrading building systems and technology. A significant

future opportunity is the renovation of Martin Hall. This project could upgrade classroom space, and it also could provide the opportunity to improve connectivity between the building's ground floor and the central green spine of campus. For example, a small addition could increase indoor-outdoor connectivity and add an active use along East Walk, a major pedestrian north-south spine of campus.



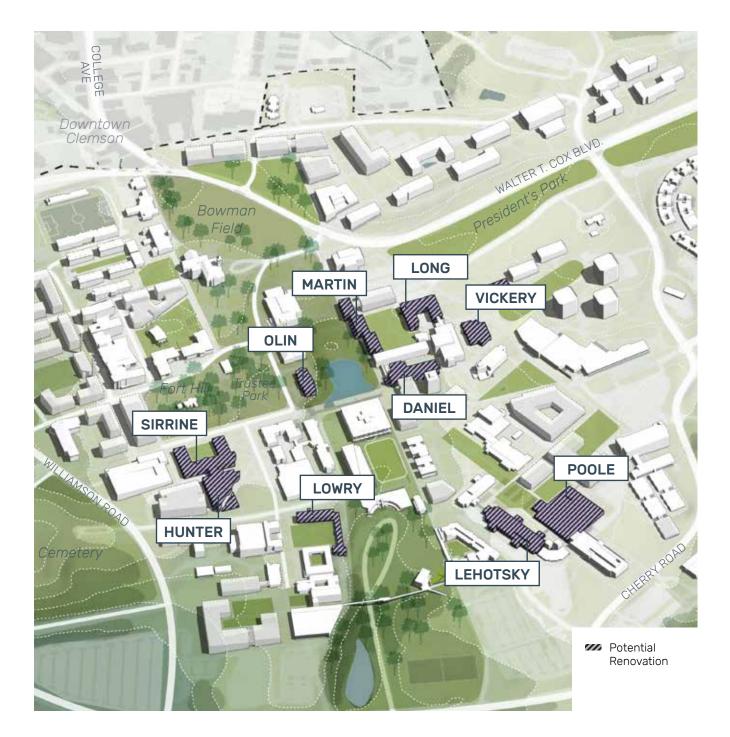




### BUILDING RENOVATIONS & ACTIVE LEARNING

# Academic Building Renovations

Renovation is a more significant need than new construction from a square footage perspective—with a total of nearly 400,000 ASF.¹ This map illustrates potential academic buildings that could be renovated to improve their quality of space for teaching and research.



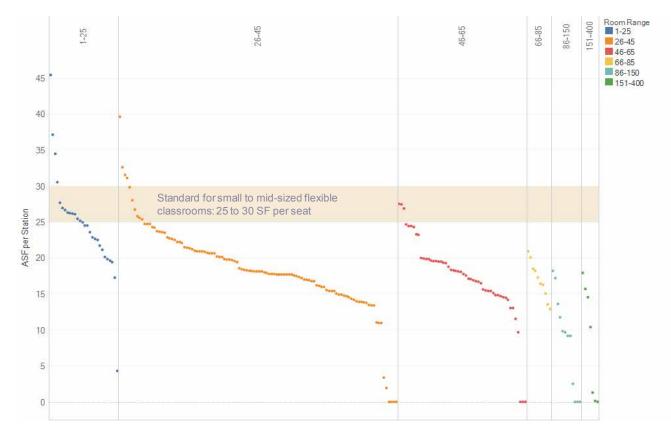
Includes: Sirrine, Hunter, Olin, Martin, Daniel, Long, Lehotsky, and Poole

BUILDING RENOVATIONS & ACTIVE LEARNING

# Promoting Active Learning

Promoting collaborative learning and group work, "active learning classrooms" are an increasing trend. These spaces are larger classrooms set up around tables that are digitally equipped and supported by multiple instructors. These classrooms allow teachers to direct individuals and groups toward knowledge. By encouraging students to find the solution themselves, they are better equipped to retain that information. Space guidelines for small to mid-sized flexible classrooms that allow for this type of learning and teaching are 25 to 30 SF per seat. Currently, only 10 percent of classrooms achieve the station size desired for active learning. "Right-sizing" the classroom pool would alleviate pressure on large rooms and leave fewer seats unfilled in the long term. Right-sizing refers to aligning the number of classrooms in each size category with the desired enrollment in class sections. By right-sizing the existing classroom inventory, the existing classroom supply is utilized more efficiently, minimizing the amount of new classroom space required with enrollment growth. More details on current space use, analysis, and recommendations are available as an Appendix.

Most classrooms today fall below the station size recommended for active learning. De-densifying existing furniture in some of these rooms would allow them to better serve smaller sections and could increase utilization of the room.



ACTIVE LEARNING / EXISTING STATION SIZE GRAPH

#### **Right-Sizing Analysis**

A right-sizing analysis was completed with the Framework Plan to compare the alignment of the room inventory with actual class sizes. The migration of small classes into medium and large classrooms currently results in belowtarget occupancy rates already observed in the 26-45 seat range and above. Sections that meet in rooms that are technically too large leave seats unfilled and prevent more appropriately sized sections from making use of the space. This heightened use of larger rooms often leaves the impression of a space shortage during peak hours. The right-sizing analysis attempts to quantify the actual demand for space in each size range and "right-size" the mix of classrooms to accommodate course offerings within optimal target ranges.

A right-sizing analysis organizes classrooms into discreet room ranges and determines the number of rooms required by optimizing the ratio of existing or future Weekly Student Contact Hours (WSCH) to the total capacity of WSCH at 65% occupancy. A Weekly Student Contact Hour is the number of hours a room is scheduled multiplied by the number of student in that room.

With this approach, the room count becomes the fundamental driver of space needs. After calculating the appropriate number of rooms in each size range, optimal space per station is allocated within each range to determine the overall space requirement.

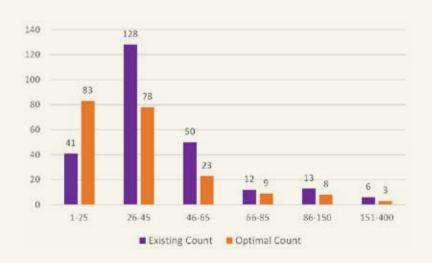
Analysis of the Fall schedule finds that an optimized existing classroom inventory would hold 64 additional rooms with 1-25 seats, 38 fewer rooms with 26-45 seats, and 26 fewer rooms with 46-65 seats. The mix of rooms with greater than 65 seats is appropriate to meet current demand.

Demand for space is different in the Spring. The analysis finds a need for 42 additional rooms with 1-25 seats, 50 fewer rooms with 26-45 seats, and 27 fewer rooms with 46-65 seats. The mix of rooms above 65 seats is also appropriate to support demand in the Spring term.

Ultimately, these findings can be used to optimize scheduling and guide future renovation and construction. Analysis of station sizes within discrete room ranges reveals that there are opportunities to dedensify rooms by reducing seat counts, thereby increasing the average station size per seat. For example, in rooms with 1-25 or 26-45 seats, most stations average fewer than 25 to 30 square feet per seat, the standard for small to mid-sized active and flexible classrooms.

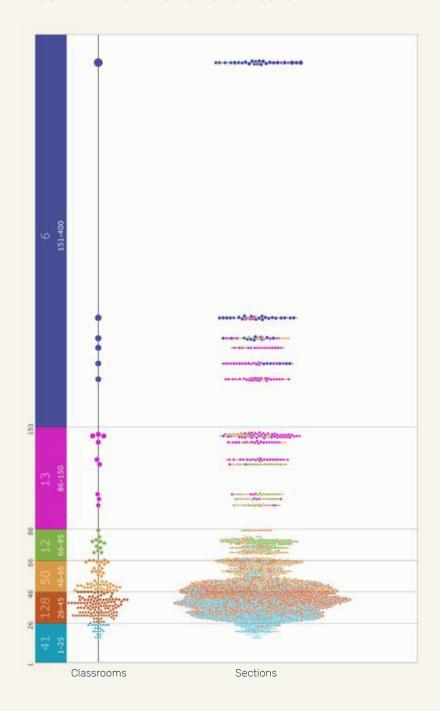
Removing seats from chronically under-filled rooms would free space for more flexible furniture configurations associated with student-centered active learning environments. Flexible classrooms allow both instructors and students to experiment with project-based learning formats and to reorient seating on the fly to support peer-to-peer discussion.

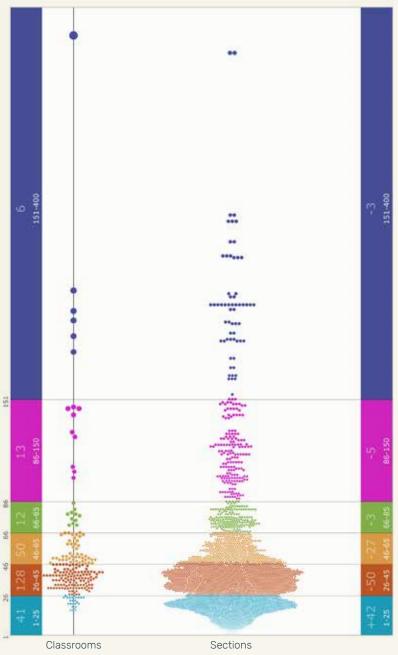
#### SUMMARY: OPTIMAL CLASSROOM COUNTS



#### **CURRENT DISTRIBUTION OF CLASSES**

#### OPTIMIZED DISTRIBUTION OF CLASSES





**LEARNING & RESEARCH BIG IDEA #2** 

# **Growing Academics**& Research

## New construction & redevelopment opportunities to address academic space needs

Based on current growth trajectories, about 380,000 assignable square feet of new academic and research space will be needed over the next 10 years. Development introduced in the Framework Plan options is designed to satisfy and accommodate the identified programmatic space need, as well as any square footage that gets displaced as a result of investment. Based on potential development sites and the land use framework, the identified development capacity for academic sites totals about 1.7 million gross square feet.¹ Approximately 26% of this available capacity is needed to meet projected ten-year space needs.²

Continuing to grow research is a core aim of ClemsonForward. The University's innovation campuses have grown significant research capacity over the past decade; the Framework Plan looks for opportunities to increase the presence and visibility of research on the main campus as well. In this way, undergraduate students can benefit from research advancements—supporting goals of providing more opportunities for engaged learning and real-world experiences for undergraduates.

Locations identified as potential sites for new academic construction are located within or immediately adjacent to existing academic areas of campus.<sup>3</sup> Prioritizing these sites for new academic construction reinforces the walkable character of campus by maintaining a compact, centralized academic campus core. The sites prioritize infill and redevelopment, and in some cases offer opportunities to extend existing districts. The identified sites are most suitable for academic uses, including classrooms, research and teaching labs, offices, study spaces, and other academic support spaces.

Described in more detail on the following pages, districts with potential for academic growth include:

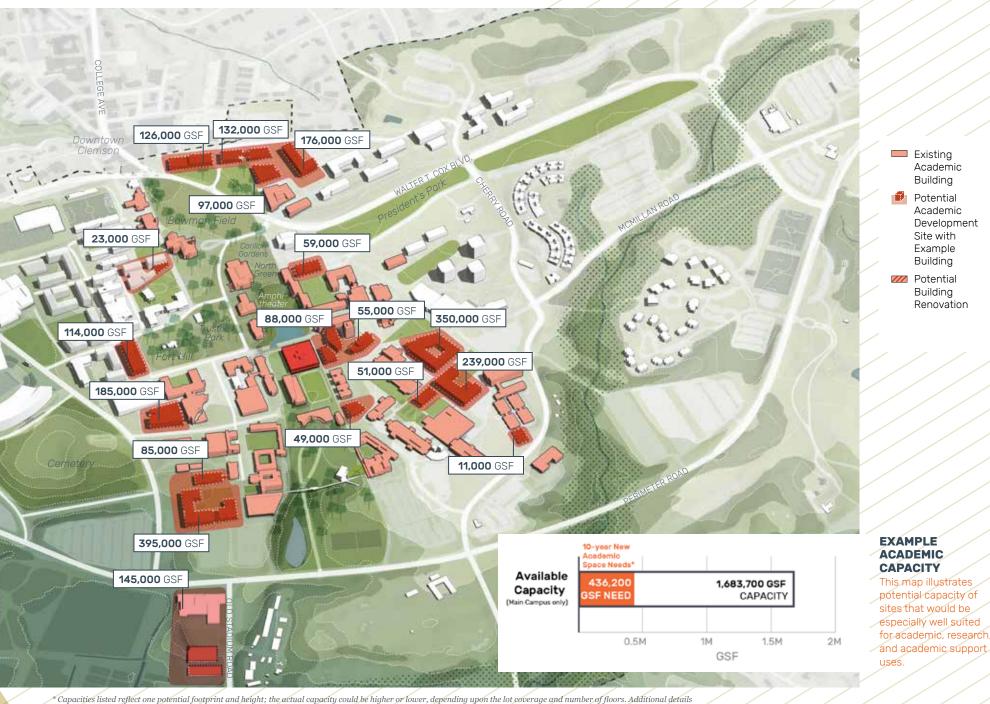
- Central Campus
- North of Bowman
- Ag Quad and East Campus
- Fort Hill District
- Southwest Quad and West Campus
- Ravenel

<sup>3</sup> For more details, see the Land Use Framework and New Development Framework in Chapter 3 Campus Frameworks. The development framework identifies potential development sites; the land use framework recommends priority uses for different areas on campus, based on their proximity to the campus core, adjacent uses, and other factors.



<sup>1</sup> Not including Ravenel

<sup>2</sup> Including space to address existing deficits, future growth (through 2026), demolitions/displacements from new development (Newman & Dillard); assumes 1/3 of study space met separately within student centers (New Union and/or Hendrix expansion)



Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors. Additional details about assumptions for each development site are available in the District Chapter of this report.

#### **GROWING ACADEMICS & RESEARCH**

#### Central Campus

In central campus, new development opportunities include infill sites that reinforce and extend the existing development framework. For example, a potential development site to the east of the north end of Martin Hall could create a northern edge to the existing quad framed by Martin, Long, and Kinard.

Two additional infill sites lie south of Martin Hall, east of Cooper Library.¹ These sites offer great opportunities for a Daniel Hall Addition / Library Annex—high-use academic spaces with additional general classrooms and study space, which could benefit from the sites' location at the intersection of two major pedestrian

1 Service access and ADA parking for the library could be preserved on the west side of Cooper.

corridors on campus. Locating academic spaces that will draw significant use in central locations provides convenient access and promotes the walkable nature of campus.

The Daniel Hall Addition / Library Annex will need to carefully respect the Library visually and architecturally and preserve views of Tillman from the south. The development also offers the opportunity to bridge topographic changes in the area; it could allow for the creation of an accessible route from the Library Bridge which could travel south of Strode Tower and connect east to Hendrix. This would provide an alternative route to Hendrix that does not require navigating stairs or steep slopes.

### DISTRICT CONSIDERATIONS

New academic development in this district presents opportunities to:

- Extend the existing academic axes, growing core academic and study space in the heart of campus through the Daniel Hall Addition / Library Annex
- Respect Cooper Library as a significant campus landmark
- Improve accessibility from the Library Bridge to eastern areas of campus
- Frame the north edge of the Martin/Long/Kindard Quad and respect the historic buildings of Sikes and Long Hall nearby
- Improve indoor/outdoor connectivity
- Preserve views of Tillman Hall
- Preserve existing service access to Strode, Daniel, and Kinard





#### **GROWING ACADEMICS & RESEARCH**

#### North of Bowman

The Business School will extend the academic core of campus north of Walter T. Cox
Boulevard. Additional development sites are possible along the northern edge of campus, which could further define the Bowman Extension open space.¹ These sites could allow for buildings with spectacular views across Bowman Field towards Tillman Hall and Sikes. Academics, academic support, and even a long-term home for the Visitor Center—if it were to move out of STI—could be natural fits for these sites, given their location and views.

Another option for growing academics on the southern edge of this district, the New Union could include an academic component. The eastern edge of the site (where Johnstone sits today) could extend the existing academic spine of Holtzendorff Hall and Godfrey.

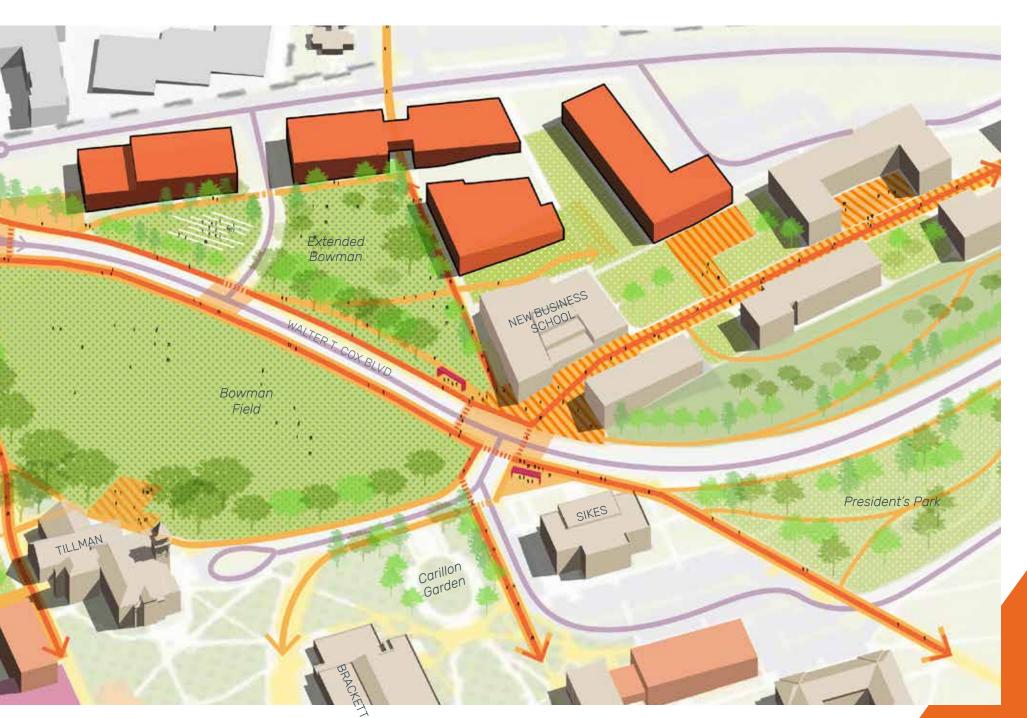
## DISTRICT CONSIDERATIONS

New academic development in this district presents opportunities to:

- Compliment the Business School and add energy to this growing district
- Feature views of Bowman
   Field and campus beyond
- Connect north and south areas of the academic core and to Downtown Clemson
- Integrate with the sloping topography of the district



<sup>1</sup> See Chapter 4, Landscape, Open Space, and the Public Realm, for more details on the Bowman extension.



## DISTRICT CONSIDERATIONS

New academic development in this district presents opportunities to:

- Enhance existing landscapes and define new ones, creating a series of appropriately scaled quadrangles with distinct identities
- Renew the Ag Quad through redevelopment of the Newman Hall site
- Extend the landscape and pedestrian framework through the transformation of McMillian Street into East Mall and the Ag Walk
- Develop respectfully near the Chapel



GROWING ACADEMICS & RESEARCH

# Ag Quad and East Campus

In and around the Ag Quad, several development sites provide opportunities to elevate the quality of research and academic space in the district and enhance the area's open spaces. Renewal of the Ag Quad could include renovation of several existing buildings, as well as replacing Newman Hall. The demolition of Newman could provide an opportunity to add a new modern building or a series of several buildings—to form the western edge of the Ag Quad. This new construction could enhance the quality of the open space, helping it feel more appropriately proportioned relative to the surrounding buildings. The eastern edge of the Newman replacement could also play a role in defining a new open space to the east of the Ag Quad, a new Centennial Quad around the Centennial

Oak. Southeast of the Ag Quad is the potential to add additional greenhouses to the Biosystems Research Complex, immediately south of the existing greenhouses.

North of the Newman site, the potential redevelopment of the Redfern site could offer another large development opportunity in the area. Like the Newman replacement, new construction on this site could play a significant role in defining the surrounding open space structure. The Redfern site faces the Centennial Quad to the south and the East Mall to the north. The location on the eastern

side of the campus core makes this site ideal for an academic use in the future.

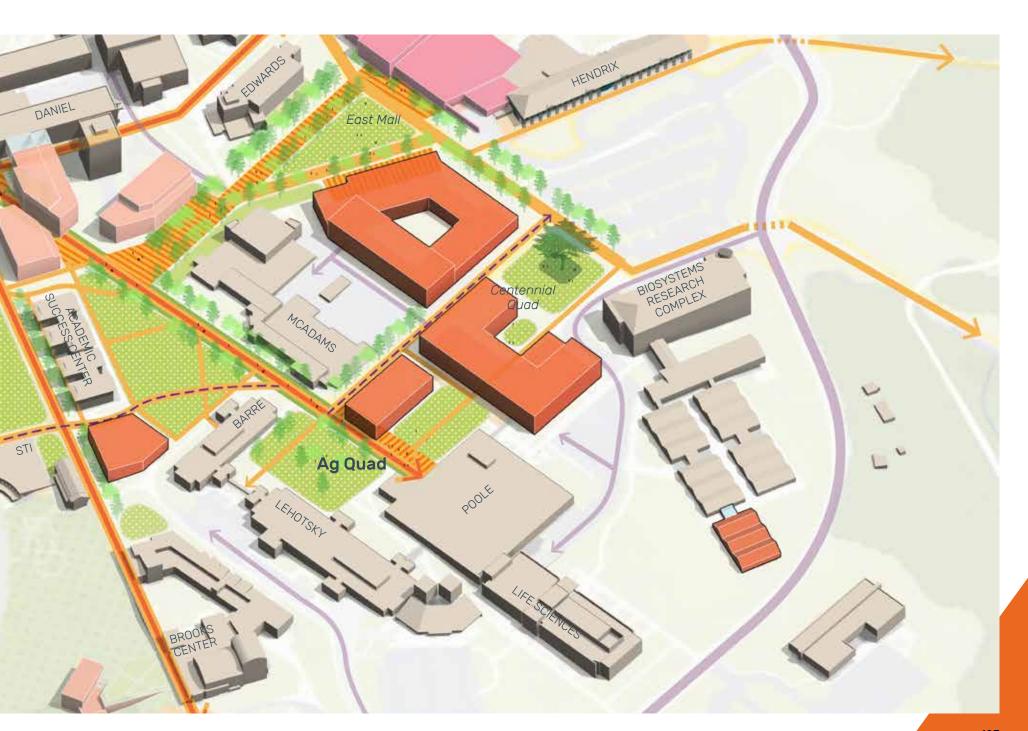
North of the Ag Quad, another development site sits immediately north of Barre Hall.

Development on this site could further define a quad east of the Academic Success Center.

More details about this open space as well as others in the area are available in Chapter 4

Landscape, Open Space, and the Public Realm.

<sup>1</sup> See Chapter 6 Campus Life for more information about the relocation of Redfern. A potential location for a new, larger health center on campus is beside Fike as part of the Motor Pool redevelopment.



#### **GROWING ACADEMICS & RESEARCH**

#### Fort Hill District

On the west side of campus, additional academic growth could occur around Fort Hill. For example, redevelopment of the Shoeboxes site could include an academic building. This location is a flexible site; it could also be suitable for additional housing or a use benefiting from the proximity to Fort Hill—or a combination of any of these uses. Any new development should respect Fort Hill and be an appropriate neighbor to the historic site.

Another nearby development site lies southeast of Sirrine Hall, to the west of Hunter. This site's proximity to Sirrine, Hunter, Earle, and Fluor Daniel make it a natural fit for an engineering or materials science use. Development on this site could displace part of the E-O4 parking lot, so identifying replacement parking spaces would be a key consideration with any new development. <sup>1</sup>

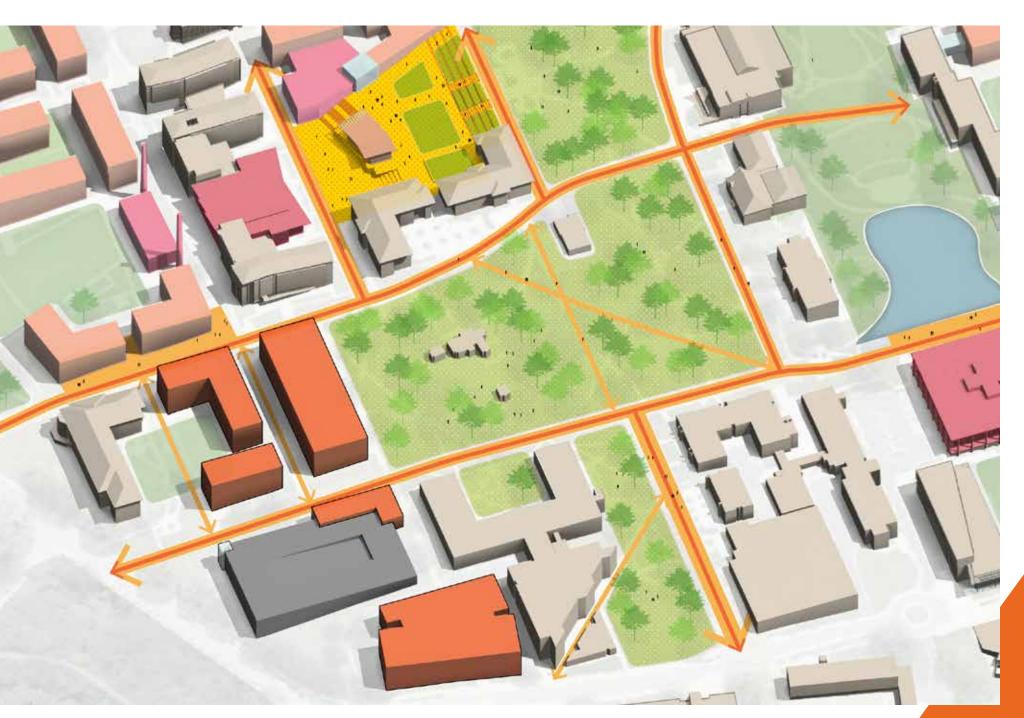
## DISTRICT CONSIDERATIONS

New academic development in this district presents opportunities to:

- Build on existing academic synergies and grow academic uses around the existing open spaces through redevelopment of the Shoeboxes site
- Respect historic Fort Hill considering potential uses and building scale
- Connect from the campus life neighborhood to the north and Stadium Suites to the west to the southwestern areas of the academic core
- Grow north/south pedestrian connectivity from Klugh Avenue through the district
- Extend the east-west pedestrian axis from the Library Bridge to Williamson Road



<sup>1</sup> Additional information on parking is available in Chapter 7 Mobility.





#### GROWING ACADEMICS & RESEARCH

# Southwest Quad and West Campus

The Southwest Quad builds on the framework established with the High Ground Precinct Plan and applied with the construction of Lee III and the Harris A. Smith Building, home to the Sonoco Institute of Packaging Design and Graphics. The Southwest Quad is an opportunity to extend this campus axis to the west, with additional academic buildings around a central open space. The area's sloping topography could allow new development to gracefully step down the hillside; open spaces and buildings could work together to shape the terrain, acting as retaining walls where needed to structure the district .

South of this new quad, directly across
Perimeter Road, redevelopment and/or
renovation of the Administrative Services
Building could provide an additional
development site suitable for an academic use.
Although outside of the immediate academic
core of campus, this site's walkable proximity to
Lee Hall and Lowry Hall could make it suitable
for related uses, especially uses that might need
more space than is available in the core. Reuse
of this site would require relocating facilities to
a new space; one opportunity for this could be
at Ravenel.

### DISTRICT CONSIDERATIONS

New academic development in this district presents opportunities to:

- Extend the Fernow Street spine with a new academic guad
- Integrate new development with the district's sloping topography and define new landscapes
- Compliment the transformation of Fernow Street to a pedestrian way
- Increase small-scale dining options in this part of campus to supplement Fernow Street Cafe
- Connect east to the Brooks Center, bridging across Kappa Street to create a connected arts district
- If the Administrative Services building is redeveloped with an academic use, growing pedestrian connectivity from Lee III south to Perimeter Road with an enhanced pedestrian crossing at Old Stadium Road



#### **DISTRICT CONSIDERATIONS**

New academic development in this district presents opportunities to:

- Grow research in proximity to the main campus
- Feature views of Lake Hartwell
- Create a distinctive sense of place, with development that defines new central landscapes and integrates with Ravenel's topography
- Use land efficiently and consider appropriate uses to maximize the opportunities of this district which will increasingly function

- as an extension of main campus
- Consider centralized parking opportunities
- Promote a connected, walkable district
- Respect the most sensitive areas of the site and avoid development on the steepest slopes and along natural drainage ways
- Develop in a way that is consistent with considerations of Land Use Land

GROWING ACADEMICS & RESEARCH
Ravenel

Ravenel has significant capacity for additional academic, research, and academic support uses, and it will increasingly grow as a significant academic support and research extension of the main campus. West of Seneca Creek Road, Ravenel's large area and topography naturally sets up two distinct zones for new development.

The first zone fronts directly on Seneca Creek Road and then transitions up the hill to include Ravenel Center. Development in this "front door" area can be sited to take advantage of views of Lake Hartwell; it is an appropriate location for signature research, office facilities, or academic support uses which do not present noise, vibration, or other issues. New development should be at least three to four

stories; density is important to ensure the full potential of these sites is realized because limited campus land enjoys such spectacular views. Building form and siting should work with the natural topography; parking should be located behind buildings where possible to enhance the character of this district. A central pedestrian spine connecting from Ravenel Center down to Lake Hartwell provides a central open space amenity for the district.

The second zone, the more northwestern sector of Ravenel, is currently used for more specialized research uses. Additional growth in this area is possible as well, with siting that will need to take into account noise, safety, vibration, or other factors related to these specialized uses.

Any use at Ravenel should have a reason to be located in proximity to the rest of main campus. While Ravenel has significant development capacity, strategically considering uses that belong on it will ensure it thrives over the long-term as a carefully planned extension of main campus. Thoughtful use of Ravenel's land is as important as land on main campus.



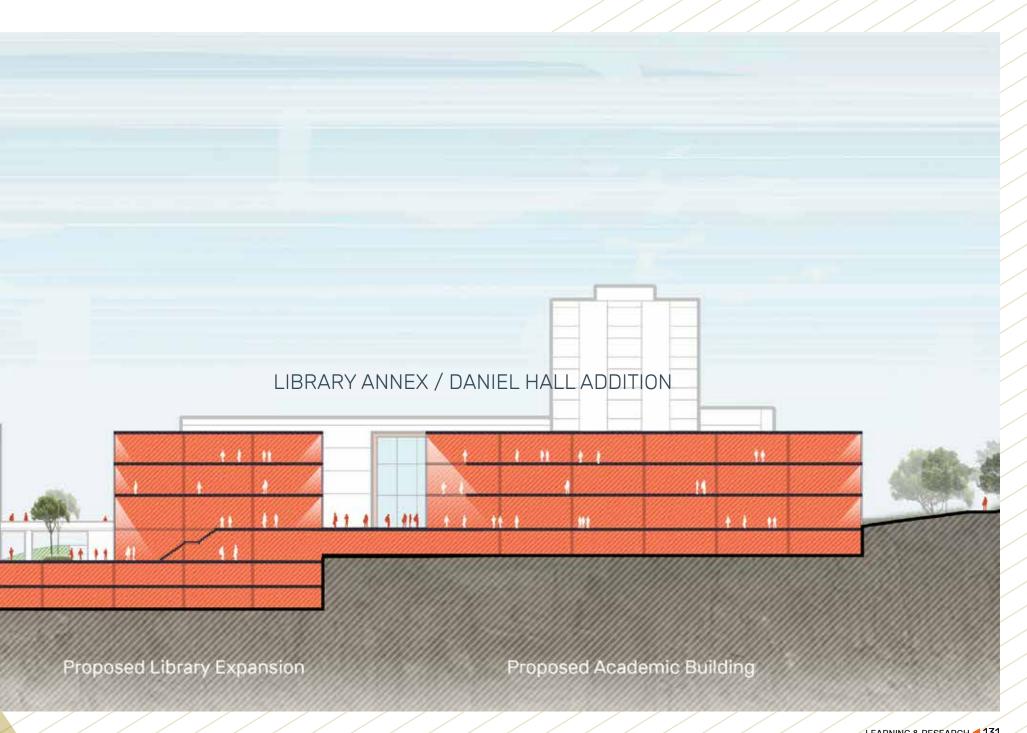
**LEARNING & RESEARCH BIG IDEA #3** 

# **Expanding Study Space**

113,000 new assignable square feet of study space is needed to meet current and projected needs—that is about seventy-five percent of another Cooper Library!

Additional study space is the most significant need from a space perspective among academic uses today, and the deficit is projected to increase as enrollment increases. Integrating study space in multiple new locations will be needed to meet projected needs. First, a new Library Annex/Daniel Hall addition could supplement existing study space in Cooper Library and will also include much-needed classroom space. More details on the potential Library Annex/Daniel Hall addition are available on the next page. Second, integrating study space with future student center projects could provide more study space across campus. Also described in more detail in the next chapter, the New Union construction and Hendrix Center Expansion could both offer opportunities to increase study space.





#### **EXPANDING STUDY SPACE**

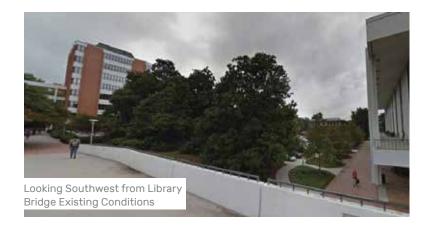
# Library Annex/ Daniel Hall Addition

With more than 9,000 daily visits on average, Cooper Library is already a significant hub of campus life, and the demand for study space is increasingly on the rise. The study space deficit will grow from about 100,000 assignable square feet today to 155,000 assignable square feet as enrollment climbs towards 26,300 students on campus. An addition to Cooper—a new Library Annex—presents the opportunity to address this key need.

With an iconic building like Cooper, an addition must be contemplated in a very sensitive manner. The Framework Plan proposes siting the addition on the eastern Library parking lot, with only a below-grade connection to Cooper. By connecting underground, the architecture of Cooper remains undisturbed, and it also preserves existing pedestrian access through the site. The physical connection streamlines operational considerations with the Annex.¹ The Library Annex could remain open 24 hours a day, allowing Cooper Library to close for the

1 In contrast, locating the Library Annex in a significantly different part of campus would require additional administrative oversight as well as the need to consider transporting books and materials between Cooper and the Annex. latest hours of the night during typical weeks. Restricting access to the smaller footprint would make it easier to provide support and oversight during these hours.

The New Library Annex could also function as an addition to Daniel Hall and could include additional classroom space as well. In this way, the new structure becomes even more of a heart of learning for the campus, located at the key intersection of the east-west and north-south pedestrian spines.









#### **EXPANDING STUDY SPACE**

#### **Outdoor Learning**

Clemson's climate and campus provides a fitting environment for outdoor learning, yet only a few areas are regularly used for outdoor learning today.

The Framework Plan includes recommendations for new outdoor spaces, many of which could provide spaces for studying outside. For example, the potential landscape improvements south and east of Cooper Library could include outdoor tables, benches, and other places to sit and study. Classes or study groups could use the steps or plaza areas beside the new Library Annex/Daniel Hall Addition as outdoor classrooms in nice weather. Shaded tables and power outlets could be provided to support outdoor learning.









# **Outdoor Learning Spaces** MyCampus Online Survey Results DOUTHIT HILLS President's Park Amphitheater HENDRIX Ag Quad

#### CURRENT **OUTDOOR LEARNING**

The online survey results show that the amphitheater is well utilized for outdoor learning but few other outdoor spaces are.

"If there were more outdoor outlets in shaded areas, learning outside would be way more awesome."

"Spend time studying in the amphitheater if it is nice outside."

"The outdoor seating in the library is great. I wish there were more options for outside studying."

"The Ag Quad should have more tables and chairs for outdoor studying because we all love the outdoors."

"We also have a lot of labs and lectures in the [Botanical] Gardens."

Survey results: location identified as an outdoor learning location by survey taker







## **INTRODUCTION**

This chapter focuses on campus life, including on-campus housing, recreation, and student centers and other campus life uses. The goal is to preserve and build upon Clemson's strong sense of community, ensuring the campus and its organization of housing, recreation, social, and study space supports interactions among diverse students, faculty, and staff.



#### **Campus Life**

- 1. Existing Context
- 2. Campus Life Framework
- 3. BIG IDEA #1
  Renewed Student Centers
  Rejuvenating the network of student
  centers
- 4. BIG IDEA #2
  Growing On-campus Housing
  Increasing on-campus housing,
  including a new west campus
  neighborhood
- 5. BIG IDEA #3
  Recreation, Wellness, and
  Active Living
  Promoting active recreation, fitness
  opportunities, and a new, enlarged

## **Existing Context**

#### Summary of Campus Life Space Needs

The enrollment growth over the past ten to fifteen years has led to significant investments in housing and campus life space. The Core Campus and Douthit Hills projects include significant additional on-campus beds as well as new dining, living/ learning spaces, and additional recreation opportunities. With projected future enrollment trajectories, additional beds and campus life space will be needed over the next five to ten years. As current facilities like Johnstone and the Edgar A. Brown Union are nearing the end of their useful life, now is also a fitting time to think ahead to the next generation of student centers and housing.

#### **Student Centers**

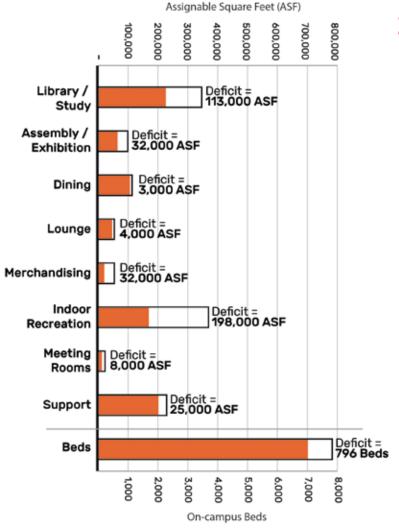
Clemson currently has a distributed model for student centers, with the Union and Hendrix serving the western and eastern sides of campus, respectively. The Douthit Hills Hub building will add dining, retail, and recreation uses for the new neighborhood at the north of campus. The current Union was built in the 1950s and is no longer meeting the needs of the campus and its students. A replacement student center has been discussed for some time. and the Framework Plan presents the opportunity to consider this need while thinking holistically about the campus. Key considerations include where the new student center should be located and how campus life programs should be allocated among the new student center, Hendrix, and other facilities. Space needs that will need to be addressed through the renovation and new construction of student centers include significantly increasing the availability of study space, adding meeting rooms and assembly spaces, growing lounge space, and increasing dining on west campus with the redevelopment of the Motor Pool site with new housing.

#### **On-campus Housing**

On-campus housing is currently operating at capacity. The completion of Core Campus in fall 2016 and the planned completion of Douthit Hills in 2018 will create much-needed swing space in housing stock, allowing renovations of other on-campus housing to occur while still meeting on-campus housing demand. Planned renovations include Mauldin Hall, Lightsey Bridge, and Calhoun Court apartments. No longer suitable for housing, Johnstone is planned to not be occupied in 2018, with demolition to follow. While Douthit Hills will add apartments and traditional beds to the housing stock, additional beds will be needed to match enrollment growth. Current construction and planned projects will result in approximately 3,094 available traditional beds on campus in 2018, while future freshmen enrollment is on the trajectory to increase to 4,000 a year by 2020. About 800 beds of additional on-campus housing will be needed to allow the same percentage of undergraduates to live on campus, and the most critical type of housing to add is traditional beds.

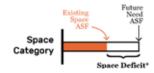
## Recreation, Healthy Living, & Wellness

Recreation and active living are high priorities for many on campus, so it's not a surprise that Clemson was ranked 10th by the Princeton Review in 2017 among colleges where everyone plays intramural sports. The Swann Fitness Center at Fike Recreation Center is currently the main recreational space, and the Douthit Hills Hub will add additional recreation opportunities for the north and west sides of campus. The Snow Family Outdoor Fitness and Wellness Center is adding additional recreation field space and outdoor recreation opportunities across Lake Hartwell. Clemson's climate presents an opportunity for additional outdoor recreation opportunities to close the existing recreation space deficit. Promoting active living, the campus boasts significant walking, bicycling, and running opportunities, yet currently, key connections to Lake Hartwell and other areas lack sidewalks or dedicated bicycle infrastructure. The Framework Plan identifies opportunities to enhance these routes by adding additional sidewalks, multiuse paths, and trail connections. Another space need is health and wellness: Redfern Health Center is undersized for the campus and needs a site where it can be enlarged.



# Existing/Planned Space & Future Need<sup>1</sup>

#### How to read this graph

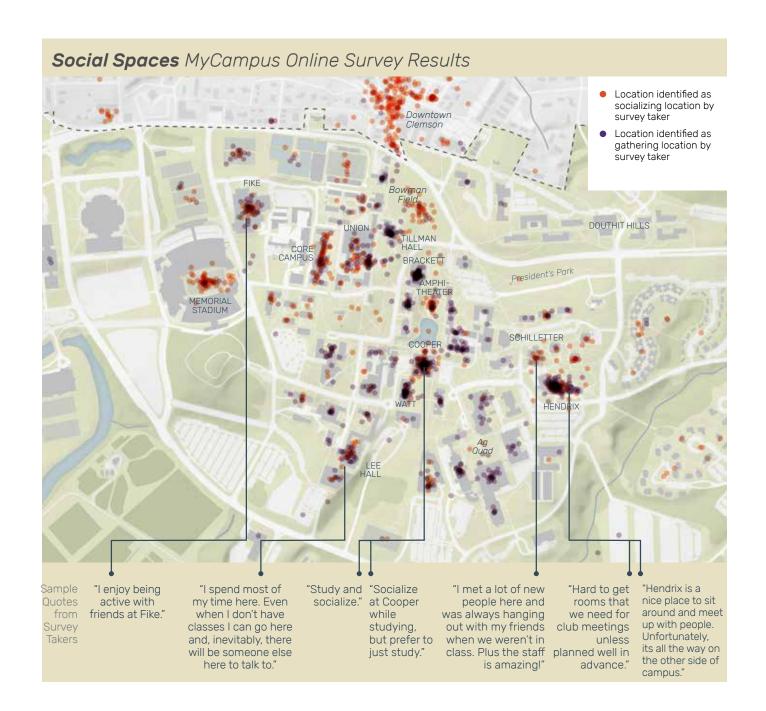


\*Deficit from future growth; does not include displacements from future construction

1 -Future planned space includes the Barnes Center and the Douthit Hills Hub; it does not include the Union, which is assumed to be replaced in the future. Future bed deficit is based on planned University Housing projects and includes the completion of Douthit Hills, assuming all beds are available for Clemson students. Existing space data source: HOK/Workshop study for Hendrix, Barnes, and Union; program estimates for Douthit, Schilletter, and Core Campus from Framework Plan research / University space inventory. Future space demand is based on national and CHE guidelines.

### Feedback about Existing Social and Recreation Spaces

The MyCampus Survey provided additional qualitative feedback about existing campus life spaces. Feedback shows that while social spaces are distributed across campus, recreation opportunities are more concentrated in the west and north.



#### **Recreation** MyCampus Online Survey Results Location identified as recreation location by survey taker LAKE HARTWELL Downtown OUTDOOR FITNESS AND WELLNESS CENTER DOUTHIT HILLS ROWING South Carolina Botanical Gardens TA COLOR DE VI Sample "Enjoy that "Running the "Intramurals." "Often too "Too far away "Fike is fantastic, but like the "Usually meet here "Pick up CORE offers dikes is the crowded. We for me to library, is often overcrowded. for runs with the sports games from canoes/kayaks/ need more of reasonably use, It is hard to find a time when triathlon team here." best" etc. for student everything that's I've only been it is not crowded, and is through and around Survey Takers use." in here for a here once. But discouraging to those who campus." school our size." it looked like a would like to get a quick fun place." workout in each day."

# Campus Life Framework

Today, campus life facilities and on-campus housing are organized in distinct, mixed-use neighborhoods on the east and west sides of campus. The completion of Douthit Hills will add a third neighborhood, in the north of campus. These neighborhoods are organized around student centers and are located at the edges of the academic core of campus.

The Campus Life Framework reinforces the three key student neighborhoods, with concentrations of student housing and other campus life amenities. The goal is to locate housing within walkable access of the academic core—especially for residence halls with traditional beds. The neighborhood structure supports a sense of community among on-campus residents and provides convenient access to dining and other campus life uses. Proposed student centers are located to serve both nearby resident students as well as commuting populations arriving on foot or by bicycle, bus, or vehicle.

# Campus LifeObjectives

Organize student housing and student centers in mixed-use neighborhoods, complimented with distributed study and social space throughout campus.

#### Provide sufficient oncampus beds and housing options to:

- Accommodate all freshmen on campus, in traditional-style dorms where possible, with close proximity to the academic core of campus.
- Accommodate the same percentage of undergraduate students on campus (35% in 2016).

# Provide fitness and recreation opportunities that reflect student interest in active, healthy lifestyles.

Maintain a vibrant and healthy distribution of housing and student amenities on east and west sides of campus.





**CAMPUS LIFE BIG IDEA #1** 

# Renewed Student Centers

# Distributing access to high quality campus life space

Student centers are the heart of campus life neighborhoods, providing a common dining and gathering space for on-campus students as well as commuting students. The Framework Plan builds on the existing structure of student centers, and provides ideas for enhancing Hendrix as well as constructing a new Union. The goal is to distribute access to student amenities geographically across campus, ensuring on-campus residents have a student center nearby while also locating centers to providing a convenient space for commuting students to access while on campus. Some programs like dining should be available at all student centers; other programs like student government or ballrooms are more appropriate for a particular student center on campus based on surrounding uses, proximity to parking, and additional factors.

#### AT A GLANCE

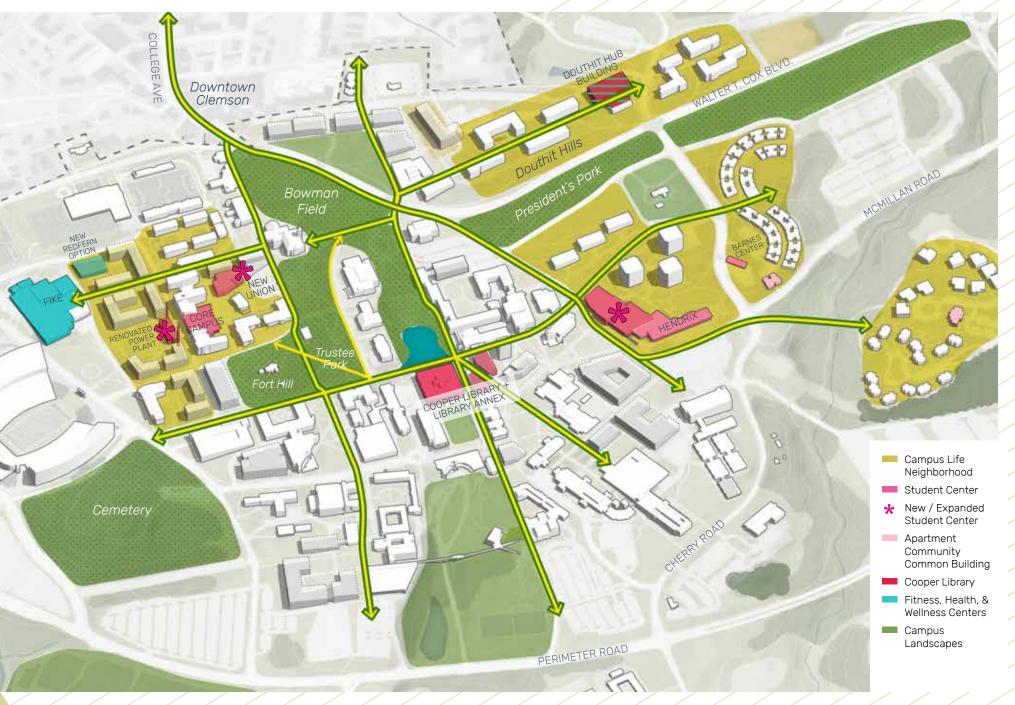
#### Campus Life Needs

Based on a future campus population of 26,300 students, CHE and other guidelines, and Campus **Planning Task force** feedback, the following program is suggested as a starting point for future campus life projects. The Hendrix addition, Union replacement, and Library Annex/Daniel Hall addition could all contribute to meeting these campuswide campus life space needs. The following section provides a possible distribution of this program among the student centers.

#### Potential Campus-wide New Student Center Program based on guidelines and feedback<sup>1</sup>

Dining/Food Service <sup>2</sup>	38,500 ASF			
Lounge	4,000 ASF			
Meeting Room	6,500 ASF			
Assembly/ Exhibition	35,500 ASF			
Retail/ Merchandising <sup>3</sup>	o ASF			
Student Leadership <sup>4</sup>	25,000 ASF			
Leisure Rec <sup>5</sup>	22,000 ASF			
Study Space <sup>6</sup>	113,000 ASF			
Total Campus Life Space	286,000 ASF			

- 1 Space calculations rounded up to nearest 500 ASF.
- 2 Guidelines suggest only 3,055 ASF of additional dining is needed, but feedback suggests that with the additional beds on west campus with the Motor Pool redevelopment, an additional dining hall will be needed. Space shown here assumes a new dining hall about the same size as Schilletter.
- 3 Guidelines suggest additional merchandising space could be needed at Clemson, but with downtown shops and new bookstore at Douthit, feedback is that no additional merchandising space is needed.
- 4 No typical guidelines for size of leadership/ student organization space. "Future Need" shown here reflects feedback from Clemson (current space = 14,000 ASF, which is not large enough)
- 5 Based on feedback, includes need for future leisure recreation. Assumes future need equivalent to the amount of space currently in the Union devoted to leisure rec (21,600 SF)
- 6 This is the total additional study space needed across campus. Meeting this need could be accomplished through new / renovated student centers as well as the Library Annex/Daniel Hall Addition. Distributed study space in connection with other new development could also help meet this need.



#### RENEWED STUDENT CENTERS

#### Network of Student Centers

The Framework Plan builds on the existing campus model of distributed student centers.

A New Union on the current Edgar Brown Union site could serve the population of the Core Campus housing and other existing and future housing on the west side of campus. It could also be designed to provide an amenity gateway for the growing number of students expected to walk into the campus from the downtown. It could also serve auto commuters who park along the western half of Perimeter Road. The New Union and Core Campus could serve as the primary campus life anchors in west campus, with the potential for the renovated Power Plant to serve as an additional campus life facility, potentially with additional dining or as a maker space.

Hendrix could focus on serving adjacent oncampus communities and could be the main center for members of the campus community travelling by bus or car. The facility is well positioned relative to these transit modes. It is also well positioned for major ballroom and large event spaces given available and proximate parking as well as transit access. Thus, it could serve as an outwardly focused gateway to the campus and a major commuter hub for faculty, students, and staff arriving by transit. An **addition to Hendrix** could provide the opportunity to replace Schilletter Dining Hall with a new dining component and expand the social and meeting spaces of Hendrix. The **Barnes Center** provides a secondary campus life facility in the area, which provides programs and space for the broader campus.

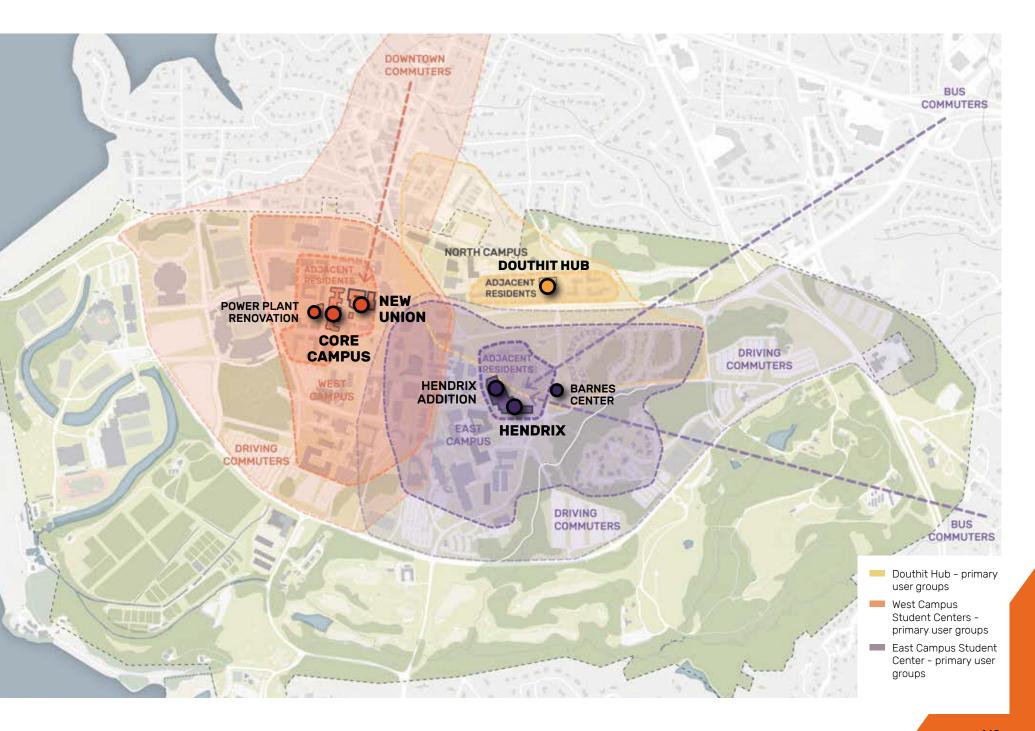
The **Douthit Hub** will serve the Douthit community, some downtown walking commuters, as well as the high rises, low rises, and Calhoun Courts and Thornhill apartments. It will include dining and recreation space and will become the new home of the campus bookstore.

The Library Annex / Daniel Addition could help meet the urgent need for additional study space; in this way, it could essentially function as a supplemental student center, in connection with Cooper Library. The Library Annex / Daniel Hall Addition is described in the previous chapter.

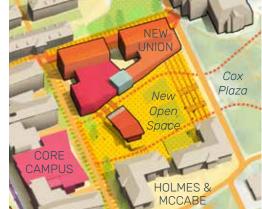
#### STUDENT CENTER NETWORK

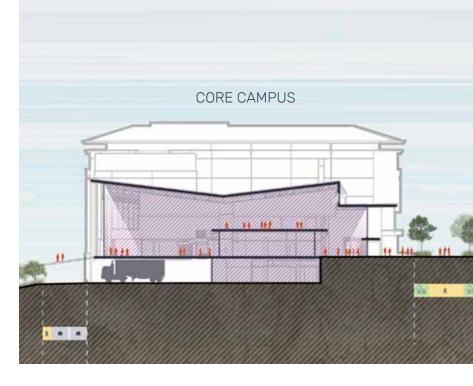
This map illustrates potential user groups for each student center. The goal is to provide centers across campus so that on-campus and commuting students have convenient access to these resources.





# Cox Plaza Open





RENEWED STUDENT CENTERS

#### A New Union

Edgar A. Brown Union is no longer meeting the needs of the campus community, so two key questions the Framework Plan considered were whether a replacement student center would be needed in the future, and if so, where the new center should be located. Based on data analysis and feedback, the need to replace the Union is clear. With current enrollment levels and potential future enrollment trajectories, the campus falls short of sufficient campus life space if the Union is not replaced, especially for meeting space, student leadership space, and lounge/study space. An addition to Hendrix could cover some—but not all—of these space needs.

In considering potential sites, several factors pointed to the need for a replacement center on the west side of campus. First, feedback from the Campus Planning Task force stressed the need for equitable access to campus life amenities on east and west sides of campus. A compliment to Hendrix for the west side of campus was seen to be important, supplementing the dining functions available at Core Campus. Second, another factor reinforcing the need for additional space on the west side of campus is the significant growth of downtown housing. Walking and bicycling commuters from downtown Clemson will arrive on the western half of campus, adding to the need for additional campus life space on this half of campus.

Of potential sites on the west side of campus, the current Union site best meets these

needs, providing a convenient location for surrounding on-campus students as well as downtown commuters.1 The current site's presence beside the historic core of campus. along a key academic spine, and near oncampus housing makes it an ideal location for serving a broad range of student needs. Locating the new student center on the current Union site places it at a major pedestrian crossroads, ensuring the future building benefits from the energy of students who can easily access it as they travel between other

<sup>1</sup> Other potential sites on the west side of campus were located further from the academic core and would not have been as appropriate for a campus-wide student center. The less central locations would put the new student center away from the heart of campus, making it a less attractive destination for students who did not live in the immediate area.



destinations. The redevelopment of the current site offers an opportunity to rethink the transition between Cox Plaza and Core Campus, with a new open space (see Chapter 5 Landscape for more details).

Although the New Union may be located in the same place, its program should be tailored to meet current needs. Uses like the ballroom that require nearby parking are recommended to be moved to Hendrix; uses like Parking Services, Student Mail Services, and administrative functions could find new homes elsewhere on campus rather than in the new Union. The idea is to focus on core campus life functions with the new Union space—with the potential to consider an academic element along the

eastern edge of the site, adjacent to Godfrey, or a combined housing component. Key campus life programs that would be most suitable for the new Union include: lounge/study for west campus & downtown commuters, student organization meeting rooms and offices, student leadership space, and potentially a replacement leisure recreation component. Compared to Hendrix, the new Union will have a more internal focus, concentrating on meeting the needs of campus students.

This side of campus also has the opportunity to significantly grow in on-campus students, and the addition of new beds will prompt the need for more dining space beyond Core Campus. Additional dining could be located in the Union

replacement, or in a renovated Power Plant (described on the following page), or integrated with the Motor Pool redevelopment.





#### **Potential West Campus New Campus Life Program**

Summary of the considerations for new campus life facilities on the western side of campus

#### **Potential New Campus Life Facilities**

New Union, Converted Power Plant, New Dining Hall\*\*

#### **Primary User Groups**

New campus life facilities in this area should focus on accommodating the following user groups:

- Surrounding current resident students: Core Campus, Holmes, McCabe, Quad, Shoeboxes, and Stadium Suites
- New future resident students: Motor Pool site with new residential buildings
- Students, faculty, and staff moving through western half of campus
- Students walking or bicycling from downtown
- Students who park in west campus commuter parking

#### **Space Use**

New campus facilities should contribute to addressing campus-wide space deficits.

	Overall Campus Life Space Deficit***	x	Possible Percent of Space Deficit Met on West Campus	=	Potential West Campus Program (ASF)
Dining/Food Service	38,500	X	100%	=	38,500**
Lounge	4,000	X	50%	=	2,000
Study Space	113,000	X	45%	=	51,000
Meeting Room	6,500	X	100%	=	6,500
Assembly/Exhibition	35,500	X	0%	=	-
Student Leadership	25,000	X	100%	=	25,000
Leisure Recreation	22,000	X	100%	=	22,000

#### **Total Campus Life West Campus**

145,000 ASF (223,000 GSF\*\*\*)

<sup>\*</sup> Space totals rounded up to nearest 500 ASF; For more details about calculations and assumptions, see overall space table earlier in this chapter.

<sup>\*\*</sup> The New Dining Hall could be integrated as part of the new Union, included in the Power Plant renovation, or designed as a different structure

<sup>\*\*\*</sup>Assumes 65% building efficiency



#### RENEWED STUDENT CENTERS

#### Power Plant Renovation

In addition to the New Union, another significant campus life opportunity on the western half of campus is renovating the existing Power Plant for a signature new use. Preserving the Power Plant's distinct architectural exterior, including the two stacks, and then completely reimagining the interior will provide a space suitable for many kinds of new programs. The Power Plant could become the needed new dining hall, supporting the redevelopment of the Motor Pool site with hundreds of new residential beds. Alternatively, it could become a "maker space" for campus, where students could work together to innovate, build, and test new ideas.







#### RENEWED STUDENT CENTERS

#### Hendrix Expansion

The second primary student center, Hendrix's location makes it especially suitable to have a more external focus than the new Union. While still serving the campus life needs of the surrounding residential communities, it will also increasingly accommodate events and other programs serving the broader campus community. Ballrooms and other parking-dependent uses are more suitable for Hendrix because of its convenient parking access.

A significant opportunity is expanding Hendrix to better meet future needs and to provide additional programming to reenergize the building. By expanding the building to the north, it could accommodate a new dining hall, replacing Schilletter, with a new wing that is a higher intensity use of core campus land. The new dining hall could be located close to where the bookstore is today, allowing two significant advantages from a location perspective. First, it could be constructed without impacting operations at Schilletter, and second, it consolidates service and delivery in the district by locating all food operations near one another. The addition also provides the opportunity to create a new entry to

#### **Potential East Campus New Campus Life Program**

Summary of the considerations for new campus life facilities on the eastern side of campus

#### **Potential New Campus Life Facilities**

Hendrix Renovation & Expansion

#### **Primary User Groups**

New campus life facilities in this area should focus on accommodating the following user groups:

- Surrounding current resident students: High rises and low rises, Calhoun Courts, Lightsey Bridge I and II, and Thornhill
- Students, faculty, and staff moving through eastern half of campus
- Students, faculty, and staff commuting via bus transit
- Students who park in east campus commuter parking

(164,000 GSF\*\*\*)

#### Space Use

New campus facilities should contribute to addressing campus-wide space deficits.

	Overall Campus Life Space Deficit****	x	Possible Percent of Space Deficit Met on East Campus	=	Potential East Campus Program (ASF)*
Dining/Food Service	38,500	X	(Replace Schilletter only)	=	35,000**
Lounge	4,000	X	50%	=	2,000
Study Space	113,000	X	30%	=	34,000
Meeting Room	6,500	X	0%	=	0
Assembly/Exhibition	35,500	X	100%	=	35,500
Student Leadership	25,000	X	0%	=	0
Leisure Recreation	22,000	X	0%	=	0
<b>Total Campus Life</b>					106,500 ASF

<sup>\*</sup>Up to 15,000 ASF of these new needs could be absorbed in current Hendrix if the Michelin Career Center and administrative uses relocated (assume Bookstore's available space is replaced with new renovation); one potential home for the Career Center is in Vickery

**East Campus** 

<sup>\*\*\*\*</sup> Space totals rounded up to nearest 500 ASF; For more details about calculations and assumptions, see overall space table earlier in this chapter.



<sup>\*\*</sup>Includes space to replace Schilletter, which is assumed to be part of Hendrix expansion

<sup>\*\*\*</sup>Assumes 65% building efficiency





Hendrix, fronting on a new open space enabled by pedestrianizing McMillan Road west of Hendrix. The new entry places Hendrix more centrally on the major east-west pedestrian axis of campus, with an accessible connection from the Library bridge. An additional entry could be located at the addition's north edge, connecting Hendrix directly to Bryan Circle and other major pedestrian paths. In addition to dining, the new space could include ballrooms, student support programs like the Gantt Multicultural Center, and lounge and study areas for east campus and commuting students.

Other space shifts could supplement the addition and further recenter Hendrix as a vibrant hub of campus life. Shifting current administrative uses out of Hendrix would open up more space for student groups, campus centers, or other core campus life programs. Another option is to shift the Michelin Career Center to Vickery, providing it room to grow and increasing its visibility along major pedestrian routes. These other space moves could be completed with or without an addition to the building.

**CAMPUS LIFE BIG IDEA #2** 

# Growing On-campus Housing

# Maintaining the current percentage of students living on campus will require growing the housing supply by 800 beds

The Framework Plan builds on the existing campus student neighborhood structure to accommodate future housing needs. Two key University housing goals are to provide oncampus housing to accommodate the same percentage of undergraduate students on campus and to house freshmen in traditional beds where possible. To meet these goals, about 800 new beds will be needed on campus over the next ten years, with a particular focus on traditional beds. Depending on other projects, an additional 158 to 1,055 beds could be needed to replace any displaced housing.

The current neighborhood structure provides a range of housing options, organized in three main neighborhoods. Goals of the housing framework include:

- Locating all on-campus housing within convenient walking distance of the academic core of campus
- Prioritizing traditional beds closest to the core, with apartment communities beyond; this allows freshmen to begin their college experience living physically close to the center of campus life
- Promoting building community through access to open spaces, gathering spaces, and campus life amenities; each neighborhood should be located near a central open space, dining, and student center

The Framework Plan identifies potential sites for future housing to accommodate the future housing need. Based on the overall land use framework, development sites that are especially suited for housing include:

- Motor Pool site redevelopment
- Shoeboxes redevelopment
- Integrated with the new Union or the Hendrix expansion
- Thornhill redevelopment and Douthit II (both more likely longerterm options)

These potential housing options are described in more detail in the following sections.

AT A GLANCE

#### Campus Housing Space Needs

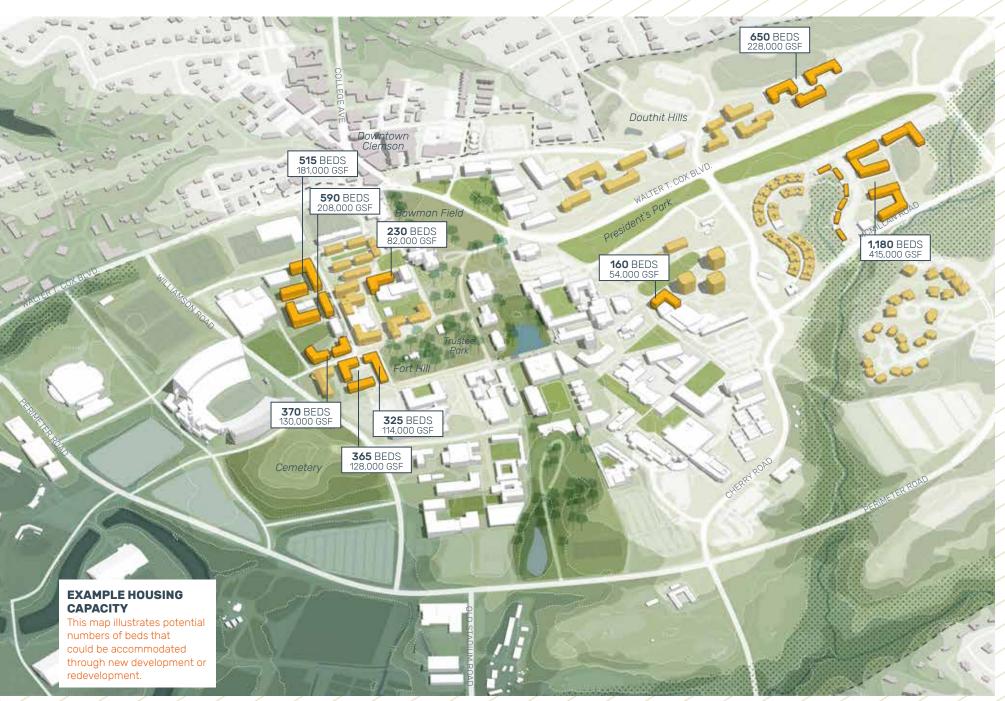
Housing today is operating at maximum capacity.

Significant additional new housing will be needed over the next five to ten years to provide sufficient beds for the same percentage of students to live on campus. At least 796 beds will be needed (for comparison, that is equivalent to about 100 more beds than Core Campus or about half of Douthit Hills).

From a housing typology perspective, the greatest shortage will be in traditional beds. When Johnstone is removed from the housing stock and Douthit Hills is completed, 3,094 traditional beds will be available to freshmen. By 2020, the number of freshmen could be 4,000 with enrollment projections.

The Motor Pool site could be redeveloped to meet the new demand from growth, but if the Shoeboxes or Thornhill are redeveloped with other uses, additional sites or denser development of housing will be needed.

<sup>1</sup> In contrast, locating the Library Annex in a significantly different part of campus would require additional administrative oversight as well as the need to consider transporting books and materials between Cooper and the Annex.



<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors. Residential capacity assumes 350 GSF average per bed. Additional details about assumptions for each development site are available in the District Chapter of this report.



#### **GROWING ON-CAMPUS HOUSING**

#### A New West Campus Neighborhood

With the shift of facilities out of the center of campus, the Motor Pool site will become available for a new use. Based on this site's location in the west campus neighborhood, it is especially suitable for a significant housing component.¹ This site alone could accommodate the additional 800 beds of housing needed over the next ten years, based on current enrollment trajectories. (If other projects displace beds currently at Thornhill or

1 Other potential uses that would be especially well-suited for this site include a new, expanded Health Center to replace Redfern (more details in next section about Recreation and Wellness) or a dining component if not included with the new Union or Power Plant renovation. Regulation-sized recreational fields were also considered for the Motor Pool site, but given the scarcity of core campus land, additional housing should be considered a higher priority for this site.

the Shoeboxes, additional housing sites beyond the Motor Pool will likely be needed.)

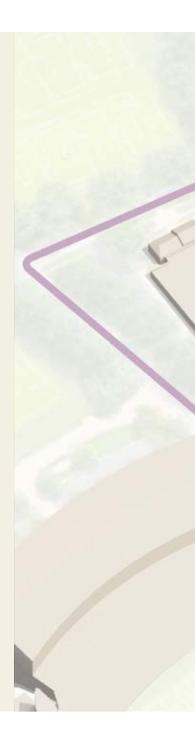
This neighborhood will offer its residents immediate access to Fike, walkable access to the academic core of campus, a shared open space for informal recreation, lounging, and studying, and close proximity to several campus life amenities—dining at Core Campus, the new Union, and the renovated Power Plant.

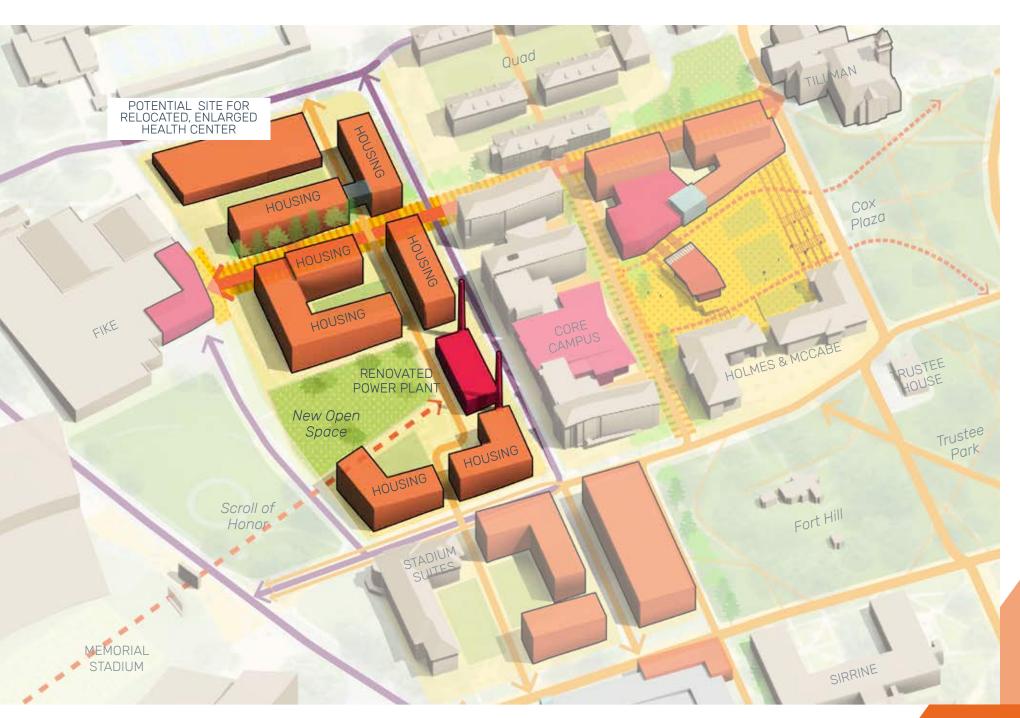
The new housing units would prompt the need for an additional dining hall in the area, which could be part of the New Union, the main program of the renovated Power Plant, or included elsewhere in the district.

## DISTRICT CONSIDERATIONS

New housing and campus life development in this district presents opportunities to:

- Significantly grow housing capacity
- Increase pedestrian connectivity
- Improve connectivity between Fike and the rest of campus
- Grow the existing open space network from Cox Plaza to the Scroll of Honor / Medorial Park and Memorial Stadium
- Increase informal recreational space





#### **GROWING ON-CAMPUS HOUSING**

#### Shoeboxes Redevelopment

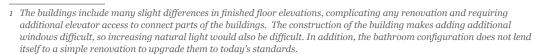
Growing outdated for today's student lifestyles, the Shoeboxes occupy an important site on campus. Renovation of these buildings is impractical due to many aspects of their configuration. If redevelopment of the Shoeboxes site occurs, future uses of the site could be quite varied. Given the site's proximity to housing, Fort Hill, and academic uses, many different uses could find a suitable home on this site. It could be developed as a new academic building or new campus housing—or a

combination of these uses. The western edge of the site is especially suitable for housing, to act as a compliment to Stadium Suites. In any case, the future use will need to act as an appropriate, respectful neighbor to Fort Hill.

If the Shoeboxes are replaced with a use other than housing, additional beds will be needed elsewhere on campus. Ideally, the replacement housing would have traditional beds.

The Shoeboxes could

be redeveloped as a combination of housing and academic, or as solely housing





#### GROWING ON-CAMPUS HOUSING

#### Student Centers and New Housing

Another option for adding future housing is integrating housing with future student center projects, if different funding streams can be aligned. The New Union could include a housing component, similar to the relationship between the current Union and Johnstone. The Hendrix expansion could also potentially include housing, overlooking Bryan Mall.



Like Core Campus, new and expanded student centers could include a housing component

#### **GROWING ON-CAMPUS HOUSING**

#### Other Long-term **Housing Options**

Additional sites offer other options for expanding on-campus housing, but due to their locations they are more likely to be longer-term options. All sites are located at the edges of existing neighborhoods with slightly longer walks to the academic core. For this reason, these additional development sites would be especially fitting for suites or apartments. They are less suitable for traditional-style resident halls, which preferably would be located closer to classrooms, dining, and other campus life amenities, enabling freshmen to begin their college experience more integrated with the heart of campus.

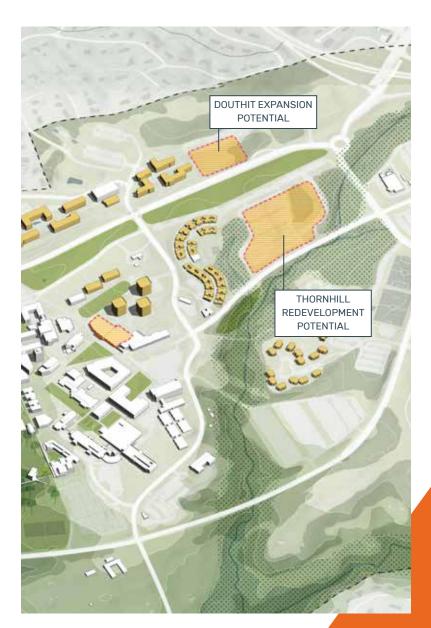
These long-term development sites include Thornhill and Douthit II. The potential of a Lightsey Bridge III was also considered but is less practical than other housing options due to the challenging topography of the area.

Thornhill Village presents several options for future redevelopment. In the near-term, the site could offer additional parking capacity, which would help reduce traffic along Walter T. Cox Blvd. (see Chapter 7 Mobility for more details). Over the long-term, the area could be

redeveloped with more dense housing, which could include a mix of housing typologies. The housing would be part of the University Housing system and managed by the University. One option is that Greek chapters could live in this University-operated oncampus housing, as they occupy the Quad housing today.1 In fact, this arrangement could create additional benefits because it would open up the Quad's beds for freshmen, which would provide an additional 700 beds for incoming students. Currently, University Housing is focused on providing on-campus housing for undergraduate students. If graduate student, family, or visiting professor housing is considered at some point in the future, redevelopment of Thornhill could provide a logical location.

**Douthit Hills** is another option for future housing development. Expansion could be considered to the north or to the east of the current buildings.

<sup>1</sup> The idea of a Greek Village was discussed during the Framework Planning process, but at this time an independently operated Greek Village is not viable because of the funding and operational changes it would require of Greek chapters.



**CAMPUS LIFE BIG IDEA #3** 

# Recreation, Wellness, and Active Living

# Expanding recreation and health centers on campus

The desire for Clemson students to lead fit. active lives is well-known. With many students participating in intramural sports and many others enjoying jogging around campus or working out in Fike, the demand for recreation opportunities is significant. With increasing enrollment, the demand for recreation space and fields is exceeding demand. The Douthit Hub and The Snow Family Outdoor Fitness and Wellness Center will expand fitness options, and the Framework Plan looks for additional opportunities to grow recreation and fitness and to support health and wellness. Three significant opportunities include expanding Fike, relocating and enlarging Redfern Health Center, and growing outdoor recreation.





## RECREATION & WELLNESS NETWORK

This map illustrates significant active recreation—both indoors and out—as well as the opportunity for a new location for an enlarged Redfern Health Center.

- Major Campus Running Loops - Existing
- Major Campus Running Loops - Proposed
- Long-term Hunnicutt to Hartwell Greenway Option
- Recreation Center
- Recreation Fields
- Potential relocated
  Health Center location
- /// Shared Athletics and Recreation
- Informal Outdoor Recreation



#### RECREATION, WELLNESS, AND ACTIVE LIVING

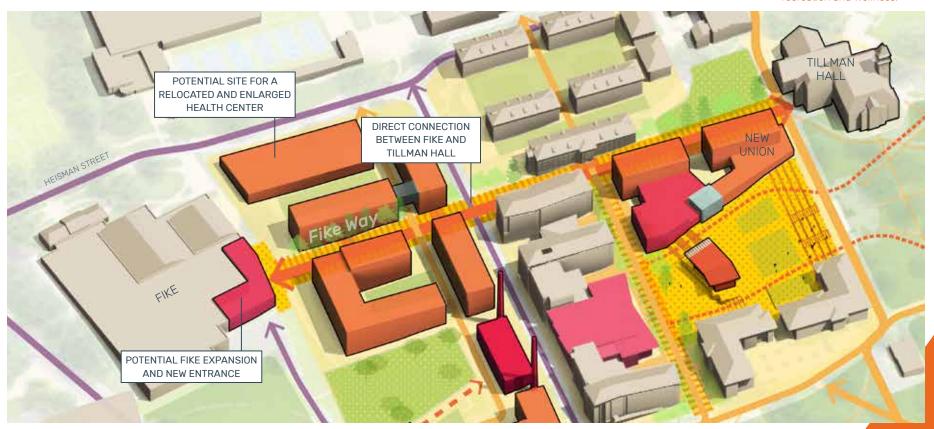
# Fike Expansion & New Health Center

The west campus neighborhood is already the center of campus recreation with the Swann Fitness Center at Fike Recreation Center and several nearby recreation fields. The Framework Plan enhances this area for fitness and wellness. A potential addition to the east edge of Fike (near the current rock climbing wall) provides an opportunity for a new entrance. This new entrance reorients the building, bringing it closer to the heart of campus. The new entrance forms one end of a new pedestrian walk, linking from Tillman directly to Fike. By shifting the entrance, the perceived distance to Fike is significantly less. This new entry would integrate Fike into the new neighborhood on the current Motor Pool site.

To the east of Fike is a potential site for an enlarged health center. Relocating Redfern to this location would allow it to be expanded, a significant need to meet the needs of a growing campus population. The proximity to Fike would be a natural fit for the new Redfern—linking health and wellness. This location is still within convenient access for students, and it would enable the existing Redfern site to become available for future academic development.

### **CONNECTING HEALTH AND WELLNESS TO THE REST OF CAMPUS**

Relocating the Fike entrance improves access by creating a more connect connection to campus. Relocating Redfern to this area could create links between recreation and wellness.



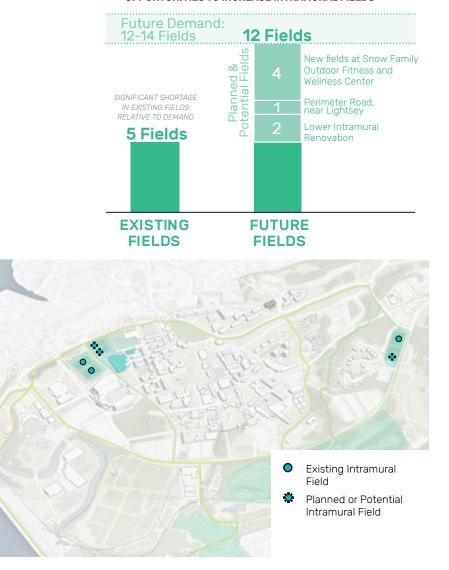
### RECREATION, WELLNESS, AND ACTIVE LIVING

# **Outdoor Recreation**

With Clemson's mild climate, outdoor recreation is a significant opportunity to help close the current recreation space deficit. Existing intramural fields (5) fall far short of current and future demand (12-14 fields). The Snow Family Outdoor Fitness and Wellness Center will significantly expand recreation space. See the next page for more details. Other intramural field opportunities include adding a field along Perimeter Road near Lightsey Bridge Apartments, and renovating the existing open fields north of Fike to improve drainage and bring them up to intramural standards.

In addition to regulation-sized recreation fields, the open space and campus life frameworks identify opportunities for connecting open space with residential buildings, ensuring students have nearby places for informal sports, tossing frisbees, and other outdoor activities. The beautiful campus is a natural fit for running and bicycling, and the Framework Plan includes enhancing sidewalk and trail connections to Lake Hartwell, along Hunnicutt Creek, and to other natural areas. The goal is to improve opportunities to get out and enjoy the surrounding scenery.

### **OPPORTUNITIES TO INCREASE INTRAMURAL FIELDS**



# SNOW FAMILY OUTDOOR FITNESS AND WELLNESS CENTER

The Snow Family Outdoor Fitness and Wellness Center is located on Lake Hartwell and is home to the sailing and water skiing clubs as well as the Clemson Outdoor Recreation and Education (CORE) program. It includes the LoConte Family Field, artificial turf fields for Intramural Sports, Club Sports and the campus population.

The master plan for the site provides a long-term vision and including the following: six flag football fields; five soccer fields; two rugby fields; two softball fields; and one multipurpose field. The Snow Center is an important addition to the campus providing much needed field and activity space.

The next chapter Mobility includes ideas for improving connectivity between the main campus and the Snow Center.









# INTRODUCTION

This chapter focuses on the mobility recommendations of the Framework Plan, addressing all modes of travel including walking, bicycling, transit, golf carts and vehicular circulation. The Framework Plan prioritizes pedestrian, bicycle, and transit access to enhance campus connectivity, prioritize pedestrian movement, promote universal access, and reduce vehicular traffic in the campus core.

The recommendations of the Framework Plan will result in a significant shift in mobility patterns—where roads at the center of campus become new pedestrian walkways, shared with bicycles and the occasional vehicle.<sup>1</sup> Promoting walking is intended to contribute to a greater sense of community as students, faculty, and staff pass each other as part of their daily routines. Expanding the bicycling network and enhancing transit access also supports this new culture of mobility.

Establishing a new culture of mobility will require an integrated and coordinated planning approach addressing all circulation modes as well as physical design and policy changes. Several physical design changes are proposed in the Framework Plan along with Transportation Demand Management policies that will help decrease the reliance on single occupancy vehicle use.



# **Mobility**

- 1. Existing Context
- 2. Mobility Framework
- 3. BIG IDEA #1 Pedestrian Enhancements Establishing a Pedestrian Priority Zone (PPZ) in the campus core and improving accessibility
- 4. BIG IDEA #2 Connecting Campus: Strategies for Walter T. Cox Blvd. and Perimeter Road Improving connectivity for pedestrians and bicyclists, promoting Perimeter Road as the primary east-west circulation route across campus, and enhancing gateways
- 5. BIG IDEA #3 Connected, Functional Bicycle Network Expanding the bicycling network
- 6. BIG IDEA #4 **Enhancing Transit** Continuing to promote the use of transit within the campus and from points beyond
- 7. BIG IDEA #5 Service and Emergency Access Accommodating access for service and emergency vehicles, as well as for individuals who require accessible parking
- 8. BIG IDEA #6 **Golf Carts** Providing guidance for golf cart circulation, parking, and utilization

9. BIG IDEA #7

**Transportation Demand** Management and Parking Encouraging the use of transportation demand management strategies to minimize parking demand; planning for sufficient parking to accommodate remaining demand, and

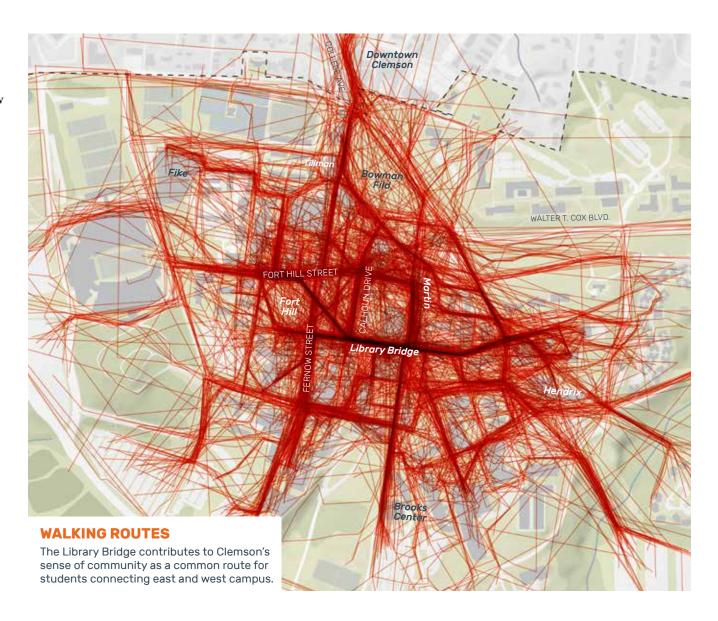
<sup>1</sup> Pedestrianized streets would accommodate service and emergency vehicles, and would allow access to ADA parking spaces.

# **Existing Context**

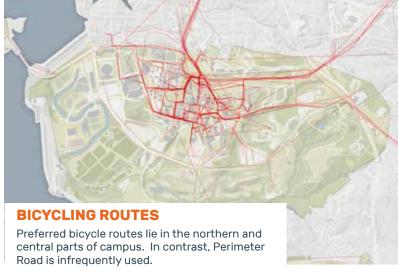
# Summary of Current Mobility Patterns

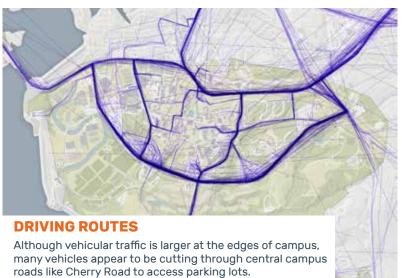
# MYCAMPUS ONLINE SURVEY RESULTS

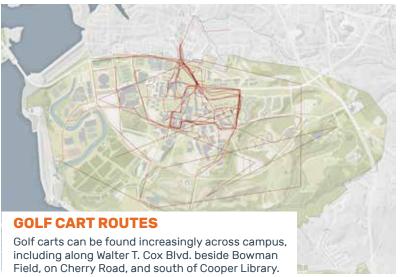
The MyCampus online survey asked existing campus students, faculty, and staff to map how they move through campus. The diagrams to the right illustrate walking, bicycling, transit, driving, and golf cart routes.











# **Mobility Framework**

The mobility strategy of the Framework Plan provides a long-term approach for campus circulation. It prioritizes pedestrian movement in the core of campus by establishing a Pedestrian Priority Zone (PPZ) and by providing a campus-wide bicycle network that extends into the surrounding community. Vehicular traffic is focused on roads outside the core, and parking is shifted to peripheral areas. Importantly, the Framework Plan redefines the functions of Walter T. Cox Boulevard and Perimeter Road. Walter T. Cox Blvd. is reimagined as the ceremonial gateway and a campus street rather than as an arterial road, while Perimeter Road is seen as the primary eastwest vehicular route across the campus.

# MobilityObjectives

**Prioritize pedestrian movement.** Walking promotes face-to-face interactions, promotes a greater sense of community, and is a healthy way to get around.

**Improve connectivity** and enhance the beauty and character of campus.

**Limit vehicular travel** in the core of campus, while maintaining appropriate service, emergency, and transit circulation and access to accessible parking.

**Provide a connected bicycle network** on and around campus in collaboration with the City.

Consider Walter T. Cox Blvd. as the ceremonial gateway into campus.

Prioritize the use of Perimeter Road as much as possible for day-to-day access to the campus. Direct traffic to Perimeter Road and enhance the streetscape and wayfinding as part of the gateway experience.

Promote and facilitate the use of transit.

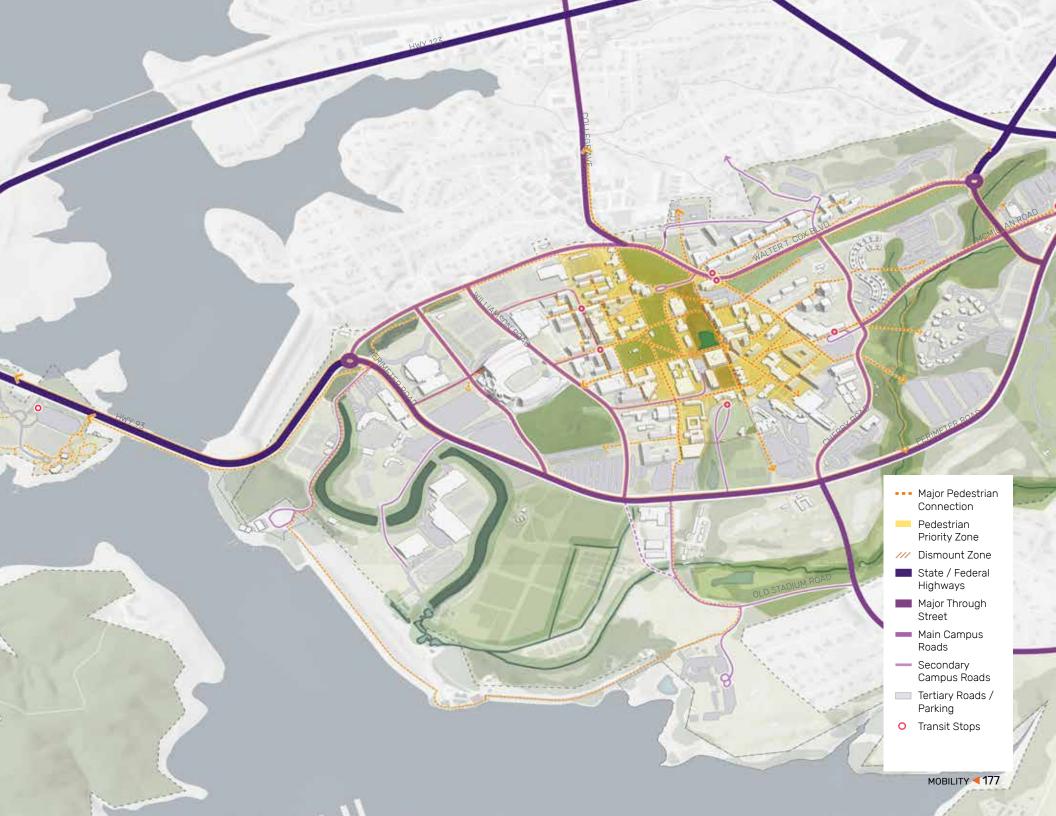
**Focus on transportation demand management** to minimize parking demand;
encourage off-campus students to walk,
bike, or take transit, rather than drive to
campus.

Facilitate "universal access" across the campus especially in areas where new landscapes and development are proposed.

Allocate and provide parking in response to the travel patterns and the needs of user groups: provide faculty and staff parking in the core; provide additional surface parking for commuters on the east side of campus and at Ravenel; provide resident parking in more distant lots. Limit the need for parking garages as long as possible.

**Integrate Ravenel** into the campus pedestrian, bicycle, transit, and parking networks.





MOBILITY BIG IDEA #1

# Pedestrian Enhancements

# Designating central campus as a Pedestrian Priority Zone and enhancing pedestrian connectivity

The creation of a Pedestrian Priority Zone (PPZ) in the campus core is a key recommendation of the Framework Plan. Implementing the PPZ will require several interrelated strategies to ensure that a coordinated mobility system is established over the coming years. These strategies include:

- Closing streets within the PPZ to general vehicular traffic
- Relocating parking to the periphery of the PPZ and other outlying areas
- Diverting traffic from Walter T. Cox Blvd. and Cherry Road to Perimeter Road
- Emphasizing Perimeter Road as the main access and cross-campus road
- Expanding the bicycle network
- Locating transit hubs to provide convenient access to the PPZ

The Pedestrian Priority Zone (PPZ) encompasses the central campus area generally extending from Walter T. Cox Blvd. and Heisman Street on the north, Cherry Road on the east, and Williamson Road on the west. The southern boundary is located within the interior of the campus and is defined by the Ag Quad, the STI building, and the proposed Southwest Quad. Overall, the idea is to limit vehicular traffic in the campus core to the degree possible, with the understanding that limited access will be necessary for transit, service,

and emergency vehicles as well as members of the campus community who are issued permits to use remaining parking spaces, including ADA parking areas.

The Framework Plan includes recommendations for reinforcing and extending major pedestrian corridors within the PPZ. Improvements are proposed with the goal of integrating each corridor with the campus landscape framework and improving accessibility. Each corridor will be coordinated with campus landscape objectives including a comprehensive shade tree strategy. Universal access also will be stressed where the corridors extend into new areas of the campus and where new construction or renovation projects provide the opportunity to resolve existing vertical impediments to movement, especially stairs.

The proposed pedestrian corridor network is designed to establish a grid of north-south and east-west circulation routes consisting of the following:

- East Walk
- West Way & Fike Way
- Library Walk
- Ag Quad Walk
- Bowman Way





- Major Pedestrian Connection
- Pedestrian
  Connection
- Pedestrianized Road
- ---- New Pedestrian / Bike Off-road Trail
- Pedestrian
  Priority Zone

### MAIN CAMPUS: MAJOR PEDESTRIAN CONNECTIONS

Prioritizing pedestrian movement in the heart of campus and extending connections across campus and to Lake Hartwell



# Major Pedestrian Connections

### **EAST WALK**

East Walk is a well-defined existing pedestrian route extending from the Brooks Performing Arts Center northward to the Academic Success Center, the Cooper Library, Martin and Daniel Halls, and, ultimately, Walter T. Cox Boulevard. The Framework Plan extends this route northward to connect with the new Business School. A continuation of the route connects to Daniel Drive and beyond to downtown apartment complexes. The idea is to provide a north-south pedestrian route through the heart of the campus. Conceptually, East Walk establishes a vibrant and active pathway connecting many of the major academic buildings of the campus. Proposed facilities that will enhance East Walk include: 1) an expansion to the east of the Library featuring ground floor transparency and active spaces; 2) a new collaboration and engagement space on the west side of Martin Hall; 3) a wider sidewalk west of Sikes Hall; and, 4) a new raised crosswalk at the reconfigured intersection of Calhoun Drive and Walter T. Cox Blvd. The East Walk also provides a connection to the central spine of the Douthit Hills development.

### **WEST WAY & FIKE WAY**

West Way includes an existing pedestrian route extending southward from the intersection of College Avenue and Walter T. Cox Blvd. into the campus along the east facades of Mell and Godfrey. The Framework Plan extends West Way to connect with Lee Hall, future development in the Southwest Quad, and beyond to Perimeter Road. Potential development and other enhancements will establish West Way as a second major north/ south route through the campus. Potential enhancements include pathway improvements on the west side of Tillman and redevelopment on the Johnstone site. At Tillman, West Way will intersect with Fike Way, a new pedestrian and bicycle route connecting to a new entrance on the east side of Fike. Construction of Fike Way will be possible when the Motor Pool site is redeveloped.

West Way ultimately will connect through Fort Hill/ Trustee Park to Fernow Street, which will be transformed as a multiuse path from Calhoun Drive southward to Lee III. The transformation of Fernow will provide the opportunity to extend street trees from Fort Hill to South Palmetto Boulevard. Given existing conditions, bicycle and golf cart use on West Way will be limited to the Fernow Street corridor (no bike or golf cart use will be permitted through Fort Hill/Trustee Park).





# Improving Accessibility

The Framework Plan promotes universal access as a long-term goal. As a general principle, all new construction and site renovation work should be designed to accommodate the mobility impaired by eliminating vertical impediments to movement, including stairs and steep slopes where possible. The goal will be to create multiuse paths with five percent slopes or less where possible.

For example, the proposed Ag Walk extension and East Mall will be designed to provide universal access in the area near the intersection of East Walk and the Library Bridge. The goal also will be to integrate accessible routes with primary pathways for use by everyone rather than creating alternative routes featuring switch-back ramps.

### LIBRARY WALK

Library Walk is defined by the existing Library Bridge corridor currently linking Bryan Circle on the east to Calhoun Drive on the west. Under the Framework Plan, Library Walk will be extended eastward along a pedestrianized Bryan Circle to link with the Calhoun Courts east of Cherry Road. It also will be extended westward along a multiuse path proposed on Calhoun Drive, ultimately providing pedestrian, bicycle, and golf cart connections to Williamson Road. Bicycle and golf cart circulation along Library Walk will be limited to Calhoun Drive on the west and Bryan Circle on the east; the Bridge will be limited to pedestrian circulation. Existing segments of this route present challenges to universal access, notably the stairs at the intersection of the Library Bridge and Calhoun Drive (an elevator is provided) and at the stairs north of Edwards Hall. The Framework Plan resolves the vertical impediment of the Edwards stairs via the proposed Ag Quad Walk extension and connection to East Mall (see below).

### **AG WALK**

Ag Walk will link the Ag Quad with the Library Bridge via a connection made possible by additions south of Daniel Hall and the eastward expansion of Cooper Library. Site work associated with these potential projects provides the opportunity to create an accessible connection from the Library Bridge level to East Mall, a transformed segment of McMillan Road west of Hendrix.

### **BOWMAN WAY**

Bowman Way is envisioned as a diagonal route across campus connecting the intersection of College Avenue and Walter T. Cox Blvd. to the Hendrix Student Center. This route will be redesigned to accommodate pedestrians, bicycles, and golf carts. Along Bowman Field, the existing sidewalk will be widened from the College Avenue intersection to the pathway linking Sikes Hall to Hendrix. Conceptually, this path will link downtown Clemson to the Hendrix Student Center and will connect to potential pedestrian and bicycle improvements on College Avenue envisioned by the City. Movement along Bowman Way is expected to increase as more students will be living in downtown apartment complexes.





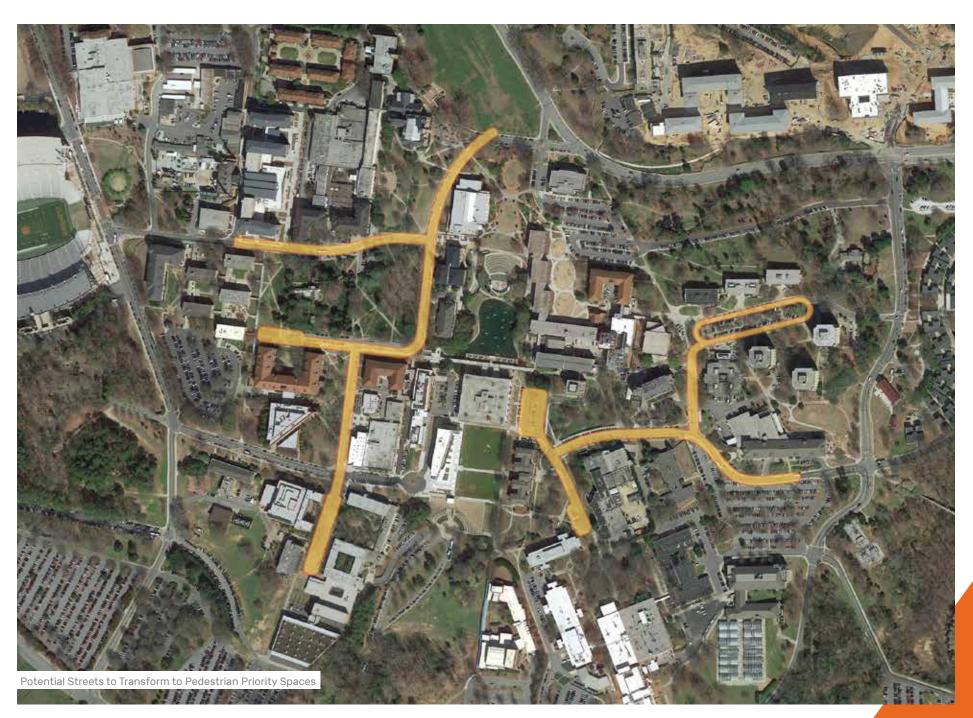
# Potential Street Closures and Changes

To create the Pedestrian Priority Zone (PPZ), several internal street closures will be necessary. The envisioned outcome will be a more unified and pleasant campus core with limited intrusion from motor vehicles. New paving materials, trees, lighting, benches, and other street furnishings will help transform existing streets to pedestrian, bicycle, and golf cart corridors. The goal over time will be to reprioritize circulation in the core toward human-powered modes (pedestrian and bicycle) as well as golf carts and transit. While internal campus streets may be closed to general automobile traffic, access will be maintained where appropriate for transit, service, and emergency routes as well as for ADA parking.

Several streets will be considered for closure with the intent of creating multimodal pathways:

- Fort Hill Street east of Klugh Avenue Fort Hill Street will be closed to general vehicular traffic east of Klugh Avenue and will be redesigned to prioritize pedestrian, bicycle, and golf cart circulation while maintaining limited access to parking.
- Calhoun Drive south of Tillman Hall –
   Calhoun Drive will be redesigned as a north-south multiuse route and as part of the extended east-west Library Walk.
- Fernow Street Fernow Street will be closed and integrated with West Way to provide a north-south route through the campus accommodating pedestrians, bicycles, golf carts, and service and emergency vehicles.

- McMillian Road west of Hendrix McMillan will be closed to create East Mall, a new open space intended to better integrate Hendrix and other facilities in the southeast academic area with the central core of the campus.
- Bryan Circle Parking and general traffic will be removed from Bryan Circle to provide much needed passive recreation and outdoor gathering space for the residents in the surrounding residential buildings. The redesign of the Circle will be coordinated with a potential redevelopment of the Schilletter site. General traffic will be prohibited; circulation issues will be considered relative to move-in and move-out days.





# Pedestrian Transformation

The result of the Pedestrian Priority Zone is a transformation of central campus. Roadways can become wide pedestrian pathways, shared with bicyclists. Reducing vehicular traffic in the heart of campus enhances the environment and provides more space for walking, bicycling, and face-to-face interactions—supporting Clemson's sense of community.







**MOBILITY BIG IDEA #2** 

# **Connecting Campus:**

Strategies for Walter T. Cox Blvd. and Perimeter Road

In 2017, the University gained control of Walter T. Cox Boulevard, providing significant opportunities for rethinking this important circulation corridor and landscape gateway to the campus and the community. The Framework Plan recommends improving the Walter T. Cox Blvd. streetscape from Newman Road to East Perimeter Road with an emphasis on pedestrian, bicycle and transit circulation.

# ► Goals for Walter T. Cox Boulevard

Uniting the north and south areas of campus

Providing convenient and enhanced crossing points in the north-south direction

Reinforcing the identity of Walter T. Cox Boulevard as a campus gateway and historic landscape corridor

Enhancing the Boulevard as a ceremonial gateway to the campus

Redirecting throughtraffic and commuters to Perimeter Road with the Newman Road extension

Reducing traffic volumes on Walter T. Cox Blvd.







# Overview of Recommended Mobility Improvements

Achieving these goals for Walter T. Cox Blvd. will require other roadway improvements to ensure that east-west traffic is diverted to Perimeter Road. In the Framework Plan, Perimeter Road will become the day-to-day entrance to campus parking areas as well as the east-west route across campus. Associated improvements include:

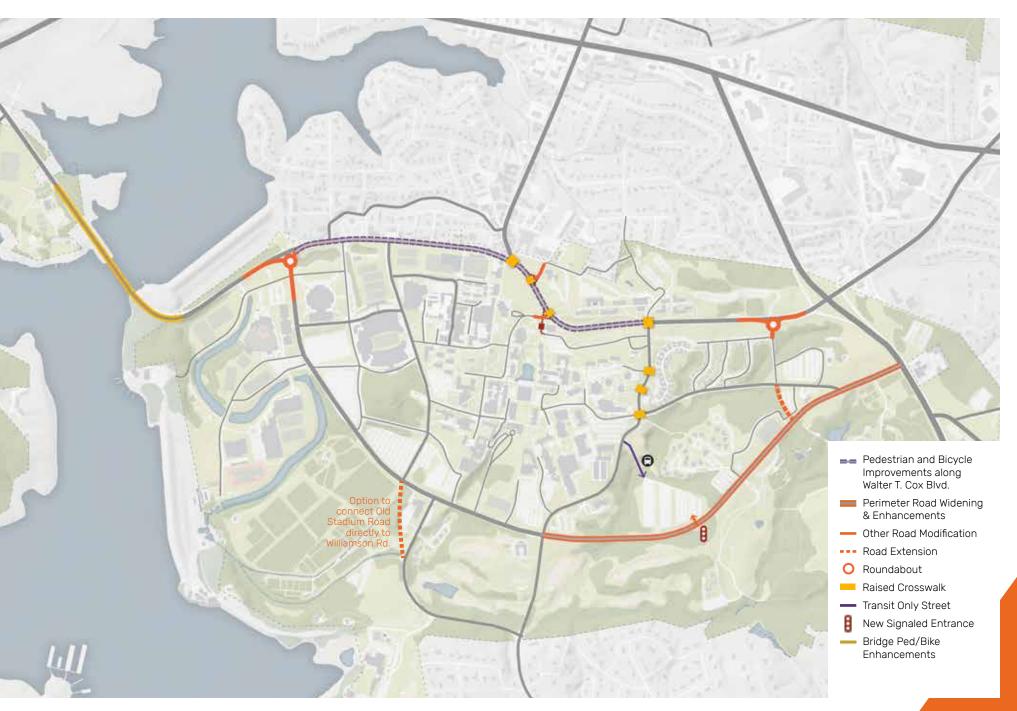
- Raised crosswalks at the following locations:
   Cherry Road, a reconfigured Calhoun
   Drive intersection, a reconfigured Sherman
   Street intersection, and College Avenue.
   Installation of raised crosswalks is intended
   to: 1) improve pedestrian movement; 2)
   calm traffic; 3) limit vehicular speeds; and,
   4) generally make Walter T. Cox Blvd. a less
   desirable and convenient east-west route.
- A roundabout at the intersection of Newman Road and Walter T. Cox Blvd. designed to redirect traffic to the south toward Perimeter Road.
- An extension of Newman Road from McMillan Road to Perimeter Road to provide a more direct route from Walter T. Cox Blvd. to Perimeter Road

- A widening of Perimeter Road to four lanes between Cherry Road and Highway 76 to accommodate additional traffic volume
- Raised crosswalks on Cherry Road and the closure of the Zeta Theta Street leading to Commuter Parking Lot C1 with the intent of making this a less convenient north-south route through campus and a less convenient way to access parking areas
- Reconfiguration of the Calhoun Drive and Sherman Street intersections to align perpendicularly with Walter T. Cox Blvd.
- A roundabout at the intersection of Walter
   T. Cox Blvd. and Perimeter Road on the west
   side of campus to divert east-bound vehicles
   onto Perimeter Road.
- Potential option to directly connect
   Williamson Road to Old Stadium Road. This connection would likely require a bridge given the steep topography in this area.

# Promoting the Use of Perimeter Road

The primary impetus for widening Perimeter Road is the desire to minimize traffic volumes on Walter T. Cox Blvd. The proposed roundabouts on Walter T. Cox Blvd. at Newman Road and Perimeter Road west, along with raised crosswalks at intersections, are intended to divert traffic and encourage motorists to use Perimeter Road for east-west circulation across the campus and for accessing commuter parking areas. These changes, along with traffic-calming measures on Cherry Road and the closure of streets within the Pedestrian Priority Zone are anticipated to result in higher traffic volumes on Perimeter Road. Future volumes have been estimated: the volumes analytically support the need to widen Perimeter Road from Cherry Street eastward to Highway 76. Unless widened, an undesirable Level of Service F is projected to occur during the AM Peak hour of travel. A detailed summary of the analysis is provided in the appendix to this report.





## CONNECTING CAMPUS

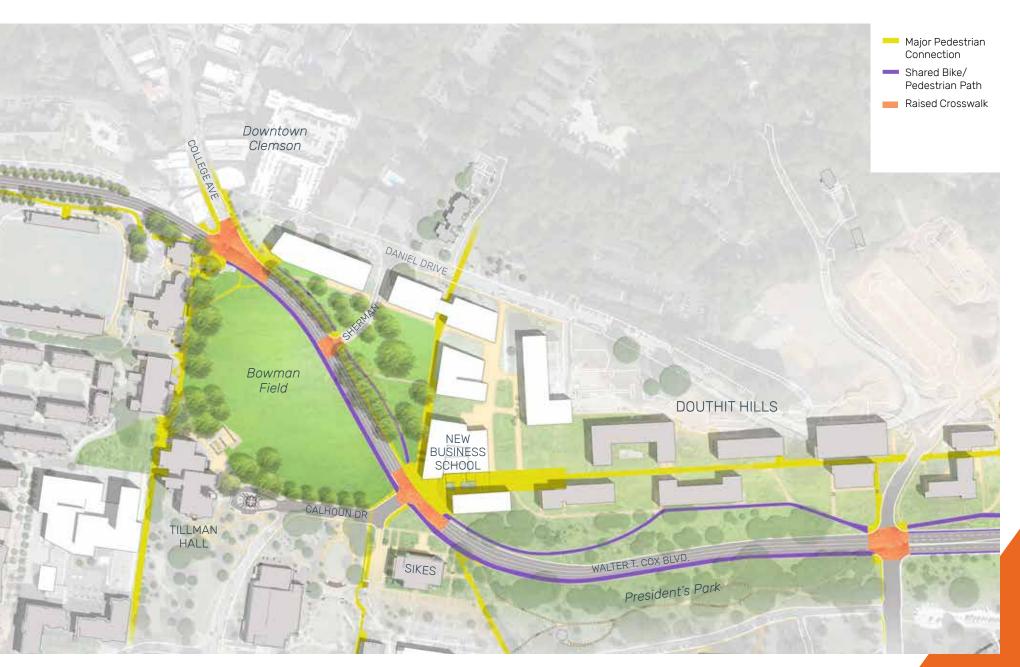
Walter T. Cox Blvd.: Near to Midterm Strategies

Pedestrian enhancements, expand bicycling options, and promote Perimeter Road for through-traffic

# At Bowman Field







# WALTER T. COX BLVD: NEAR TO MID-TERM STRATEGIES

The following diagrams illustrate how pedestrian and bicycling options vary along Walter T. Cox Blvd. to adapt to the road's different conditions between Newman Road and the western intersection with Perimeter. Some areas have greater flexibility to incorporate off road pedestrian/bicycle paths; other points are more constrained by the existing right-of-way, topography, and adiacent land ownership.

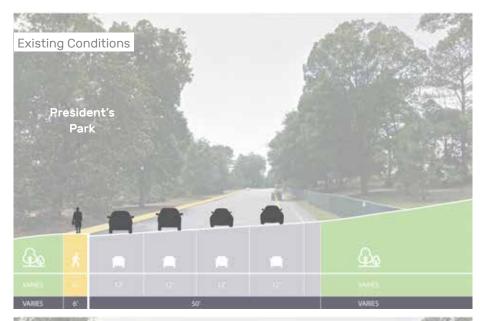


# East of Cherry Road





# West of Cherry Road





# 

# At Riggs Field





# At Williamson Road





# At the Esso Club







### **CONNECTING CAMPUS**

# Walter T. Cox Blvd.: Long-term Options for Future Consideration

### Strengthen campus connectivity

Over the long-term, the University may wish to consider additional changes to Walter T. Cox Blvd. in the interest of enhancing pedestrian and bicycle connectivity. Opportunities explored during the planning process that may be useful included the designation of the two outer lanes on Walter T. Cox Blvd. as combined bus and bicycle lanes. This may be possible as traffic volumes are shifted to Perimeter Road. Other ideas for transforming the street section were also explored including the creation of a central median with special paving (for left turns where needed) and one travel lane in each direction flanked by bike lanes along the outer edges of the road. In all cases, the road would need to be designed to handle four lanes of traffic for major events, regardless of road markings.







# **Existing Conditions**

# Proposed Pedestrian and Bicycle Enhancements



### **CONNECTING CAMPUS**

# Improved Bicycle and Pedestrian Access to Snow Family Outdoor Fitness and Wellness Center and Ravenel

East to west connections along Walter T. Cox Blvd. and its continuation to the west, Highway 93, will be important given the high volumes of pedestrian and bicycle traffic projected between the main campus and the Snow Family Outdoor Fitness and Wellness Center at Ravenel. In response, changes are proposed to the Highway 93 Bridge over Lake Hartwell. Specifically, the Framework Plan recommends reallocating the travel lane widths on the east-bound side of the bridge to create a wider multi-use path for pedestrians and two way bike circulation. This will be done to provide more convenient connectivity from the main campus to Ravenel, especially for students living on campus. The existing bike lane on the west-bound side of the road will remain for those traveling to points west of Ravenel.

# CONNECTING CAMPUS

# Gateway Enhancements: Strategies for Placemaking, Wayfinding, and Vehicular Flow

The Framework Plan builds on the boulevard character of Walter T. Cox Blvd and extends this gateway character.

Under the Framework Plan, Perimeter Road will be transformed physically and functionally. Physically, it will be widened to four lanes between Cherry Road and Highway 76 in anticipation of increased traffic volumes. In order to enhance Perimeter Road as a campus gateway, the widened portion will be designed as a boulevard featuring a central median with street trees.

Functionally, Perimeter Road will serve as the primary arterial for east- and west-bound traffic currently moving through the campus on Highway 93 and Walter T. Cox Blvd. It will also function as the gateway for visitors as well as day-to-day users of the campus. Access to commuter parking and visitor destinations will be enhanced along Perimeter Road by

means of signage and landscape improvements emphasizing the access points to various destinations including the Brooks Center for the Performing Arts, the Visitor Center, commuter parking lots, and the sporting venues on the west side of campus.

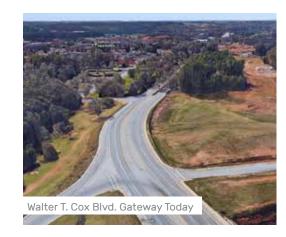
A new roundabout at Walter T. Cox Blvd. and Newman Road is intended to divert traffic to Perimeter Road. Newman Road will be extended southward to connect with Perimeter Road and also will be configured as a boulevard with a central median. A second roundabout will be constructed on the west side of campus at the intersection where Perimeter Road meets Walter T. Cox Blvd. with the goal of diverting east-bound traffic away from Walter T. Cox Blvd. More details about the roundabouts, including an illustrative visualization of the potential character, are available on the next page.





# Roundabouts at the two end points of Walter T. Cox Blvd.

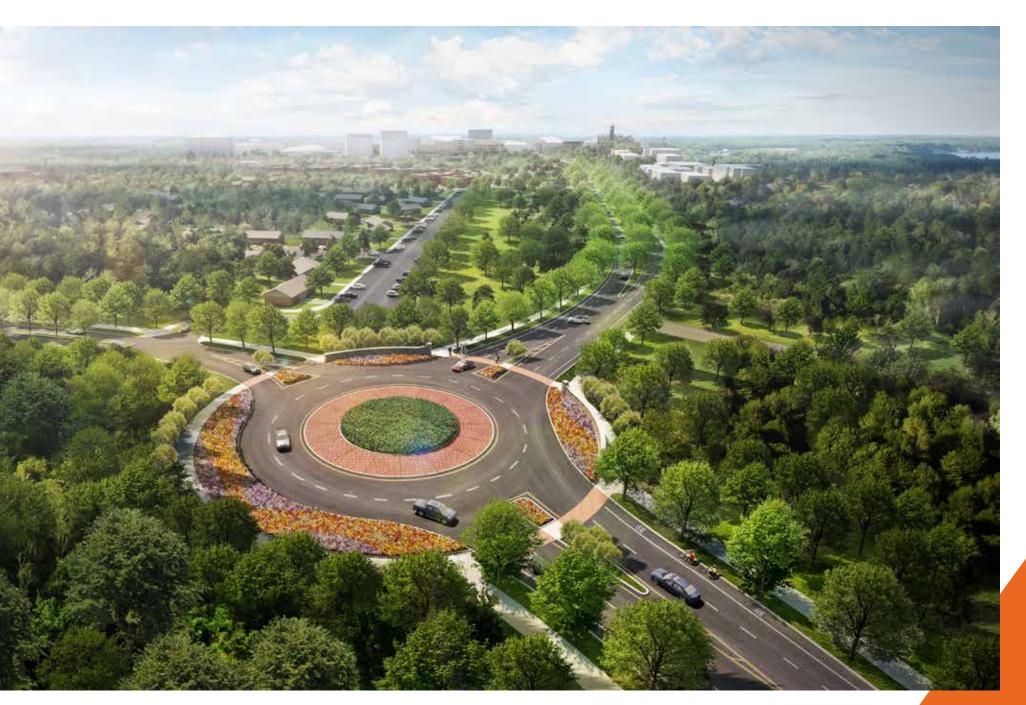
The roundabouts at the eastern and western ends of WalterT. Cox Blvd. are proposed to encourage vehicular traffic to Perimeter Road, while also creating a special gateway experience.









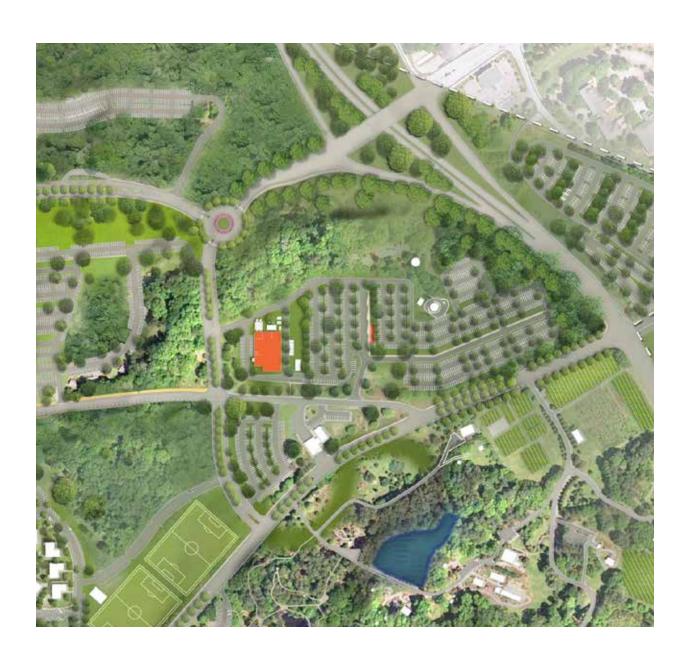


# CONNECTING CAMPUS

# Perimeter Road Gateway Character

Under the Framework Plan, Perimeter Road will be reinforced as a gateway to the campus for visitors as well as day-to-day commuters. Enhancements are proposed to the landscape and signage elements along the road with the aim of improving wayfinding and to more closely integrate the roadway with the identity of the University. Proposed improvements include:

- Creating a boulevard streetscape in conjunction with the widening of Perimeter Road from Cherry Road to Highway 76 and the construction of the Newman Road roundabout and extension.
- New landscape and signage features at major destination points along the road: Cherry Road (directions to the Hendrix Student Center); Brooks Center for the Performing Arts; Visitor Center/Kappa Street; and the sporting venues on the west side of campus.





# CONNECTING CAMPUS

# Improvements for Pedestrians & Bicyclists on Perimeter Road

The widening of Perimeter Road provides the opportunity to improve pedestrian and bicycle circulation as well. Enhanced pedestrian crossing points are proposed at Cherry Road, at the entrance to the Botanical Gardens, and at several other points along the road. A multipurpose path will be provided on the north side of the widened section of Perimeter Road for pedestrian and bicycle use, and as part of the campus running / jogging trails. Bicycle enhancements will provide better campus access for faculty, staff, and students arriving from the east on Perimeter Road and who seek to travel into campus on McMillan Road.





**MOBILITY BIG IDEA #3** 

# Connected, Functional Bicycle Network

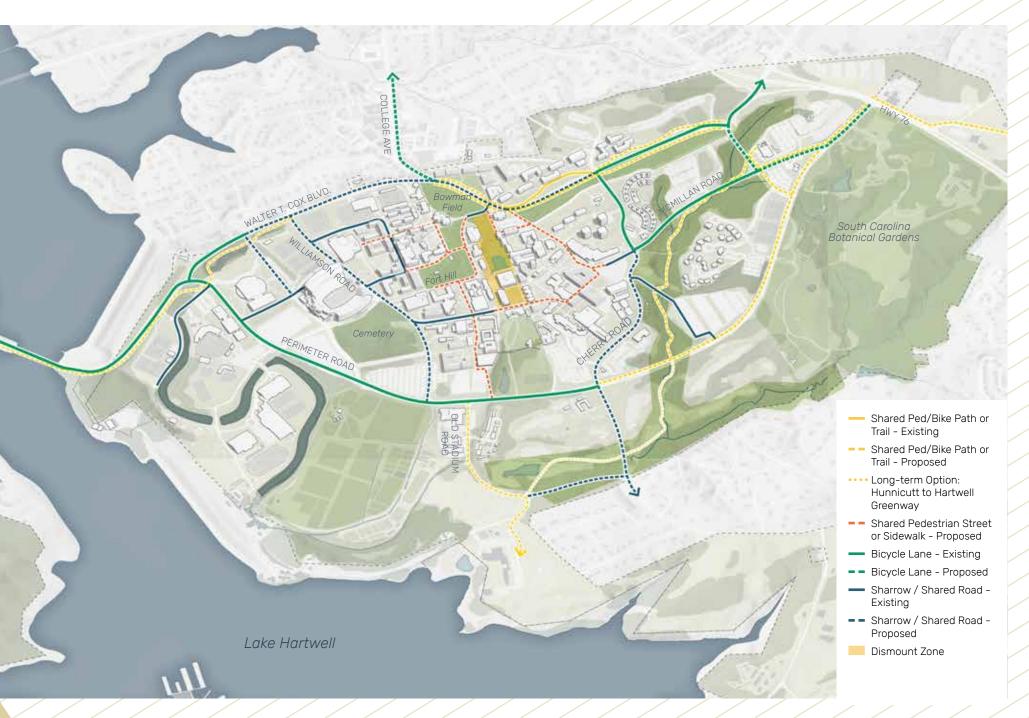
# **Expanding bicycling options on campus**

The Framework Plan provides recommendations for creating a comprehensive campus-wide bicycle network connected with the network of the City as well as regional trails. The goal is to encourage more bicycle use among those living on campus as well as those living downtown or in other surrounding neighborhoods where bicycle access is possible. The network will expand and enhance existing routes; it will include several route types tailored to the various conditions encountered on campus and in the surrounding context.

# PROPOSED BICYCLE NETWORK

Building on existing bicycle connections, the Framework Plan proposes expanding this network, through on-street bike lanes, off-street paths, and other types of connections.





# Components of the Bicycle Network

# Central Campus Dismount Zone

The Framework Plan maintains the existing dismount zone along the central green spine of the campus. Bicycle use will continue to be prohibited within this zone including the Library Bridge, East Walk, and the South Campus Green.

# **Bike Lanes**

Bike lanes provided on existing roads will be maintained including those on: Walter T. Cox Blvd. east of Cherry; Walter T. Cox Blvd. west of Centennial; Cherry north of McMillan; McMillan from Newman Road to Cherry; and Perimeter Road west of Cherry.

# Trails & Shared Pedestrian/Bike Paths

- Douthit Hills Trail An off-road trail is proposed north of Walter T. Cox Blvd. in association with the Douthit Hills development. This trail will extend from the new roundabout proposed at the intersection of Walter T. Cox Blvd. and Newman Road and will travel west to College Avenue. The purpose will be to provide an east-west route which is separated from traffic on Walter T. Cox Blvd.
- Hunnicutt Creek Greenway An off-road trail will be considered on the south side of Hunnicutt Creek as part of potential stream restoration projects that may be completed in the future. This combined pedestrian and bicycle route will provide a nature trail through the campus linking Newman Road to Perimeter Road. A long-term option is to extend this trail to Old Stadium Road and the lake beyond, the Hunnicutt to Hartwell Greenway.
- Highway 93 Bridge A new bike route is proposed on the south side of Highway 93 Bridge to provide connections from the main campus to the Snow Family Outdoor Fitness and Wellness Center at Ravenel. This route will be created by widening the sidewalk and bike lanes on the south side of the bridge to accommodate pedestrians and two-way bike traffic. The existing west-bound bike land will be maintained for bicyclists traveling to points west of Ravenel.
- Old Stadium Road an off-road route is proposed from Perimeter Road to the Madren Center on Old Stadium Road to the Lake Drive entrance, connecting to Lake Hartwell

# **Multipurpose Routes**

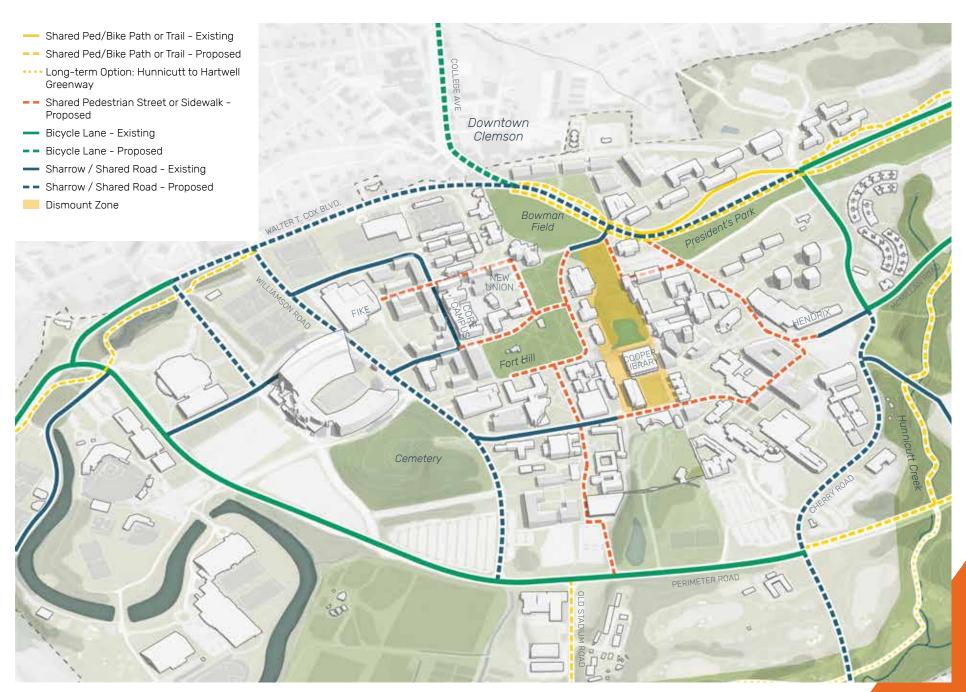
Several multiuse routes will be provided within the Pedestrian Priority Zone (PPZ), primarily along existing roadways that will be closed to general traffic. The following routes will be utilized by pedestrians, bicycles, and golf carts:

- Calhoun Drive south of Tillman to be known as Calhoun Way
- Fernow Street from Calhoun Drive to Lee Hall and beyond to Perimeter Road as part of the East Way
- Fort Hill Street from Calhoun Drive to Klugh Avenue
- South Palmetto Boulevard from the South Campus Green to the proposed East Mall
- Epsilon Zeta Drive as part of Bowman Way

### **Shared Lanes or Sharrows**

In some areas of the campus, dedicated bike lanes are not possible due to existing conditions or are not warranted given expected bike circulation volumes. In response, bike routes will be provided on the following existing streets as well as others that may be identified in the future. Known as sharrows, these routes will be considered on:

- Walter T. Cox Blvd. west of College Avenue and east of Centennial Boulevard
- Loop defined by Heisman Street, Klugh Avenue, and Fort Hill Street
- South Palmetto Boulevard
- Williamson Road
- Centennial Boulevard
- Avenue of Champions
- Parkway Drive
- Cherry Road from Walter T.
   Cox and to points south of Perimeter Road



# **Enhancing Transit**

# Promoting the use of transit to encourage alternative modes of commuting to campus

Expanded and enhanced transit services will be a critical means of campus access as the population grows and as parking demand increases. It also will be critical for establishing a more balanced approach to campus mobility. In response, the Framework Plan proposes a philosophical shift relative to how transit users will access the central campus. Instead of bringing transit services into the Pedestrian Priority Zone (PPZ), the Framework Plan locates transit hubs on the periphery of the PPZ and links the hubs to the core by means of improved pedestrian routes. The overall goal is to strategically position major transit hubs with an emphasis on the user experience. Hubs are positioned at locations accessible to pedestrians; at locations where a shared bike hub can be provided; and at locations featuring commuter amenities. The transit hubs are coordinated with the Student Centers and other major buildings with the goal of providing commuter amenities and services. In outlying areas, bus stops will be positioned for pedestrian access and in some cases will include Bike Share Hubs to facilitate bike movement into the campus core and PPZ.





# PROPOSED TRANSIT NETWORKS

Providing transit connectivity from the surrounding community as well as commuting parking lots.

- Existing Major Transit Route
- New Section of Major Transit Route
- Removed Existing Section of Transit Route
- Major TransitStop



### **ENHANCING TRANSIT**

# Transit Hubs

In planning for transit access, the Framework Plan focuses on transit hub locations with the understanding that transit routes and services will likely change over time. Therefore, emphasis is placed on positioning the transit hubs to best serve people traveling into the Pedestrian Priority Zone (PPZ). Major Transit Hubs are proposed as follows:

# • Hendrix Student Center Transit Hub The Hendrix Student Center will continue to function as a hub for community-wide transit as well as campus shuttle services to peripheral commuter parking areas at Kite Hill, east of Highway 76, and potentially on the Thornhill site. To accommodate buses, the south entrance plaza to Hendrix will be reconfigured and the Hendrix loggia will be utilized as a covered outdoor waiting area.

# West Campus Transit Hub

The construction of a new union on the Johnstone site, the renovation of the Power Plant, and changes to Klugh Avenue will provide the opportunity to integrate transit services more closely with the activities of existing and future development in the Core Campus area. To that end, a new transit hub will be provided at the Power Plant along with commuter amenities and services.

# • Walter T. Cox Blvd. Transit Hub

New transit hubs will be positioned on Walter T. Cox Blvd. West-bound buses will stop just west of the reconfigured Calhoun intersection providing convenient access to the new Business School. East-bound buses will stop east of Sikes Hall at Bowman Way providing access to the central campus and beyond to the Hendrix Student Center.

# STI Transit Hub

An enhanced transit hub will be located south of the STI building and campus visitor center on the existing Kappa Street Loop. This hub will provide transit connectivity with south campus academic buildings such as the Library and the Academic Success Center. Universal connectivity will be considered between Kappa Street and the South Campus Green levels by means of meandering pathways leading up to the East Walk near the Brooks Center.

# Commuter Services Hub

Beyond the PPZ, a commuter services hub is recommended in the Kite Hill parking lot. This hub will include an indoor waiting area for those parking at Kite Hill and taking buses to one of the transit hubs on the periphery of the PPZ. Point-to-point services are suggested from Kite Hill and points east of Highway 76 to the Hendrix Transit Hub. It will also include a break area and coordination office for bus drivers.



MOBILITY BIG IDEA #5

# Service and Emergency Access

# Maintaining access across campus

Service and emergency access to the central campus and the Pedestrian Priority Zone (PPZ) will be maintained in the Framework Plan. Each of the major routes through the core will be designed to accommodate fire trucks, emergency and service vehicles. The complete network of service and emergency routes is provided in the following diagram.

# PROPOSED SERVICE ACCESS

Access to loading docks and service points will be maintained within the Pedestrian Priority Zone.



# **Golf Carts**

# Providing guidance for golf cart use and parking on campus

Golf cart use has been on the increase at Clemson for several years, a trend that is expected to continue as the campus is pedestrianized and as internal roads are closed. In response, the Framework Plan identifies recommended golf cart routes and provides a range of policies that the University could consider.

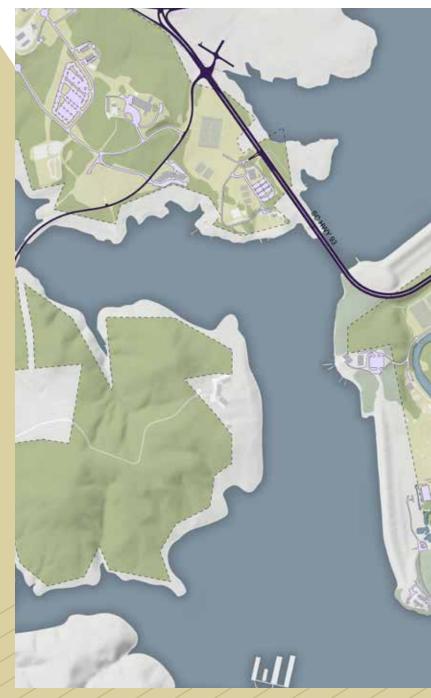
### **Golf Cart Routes**

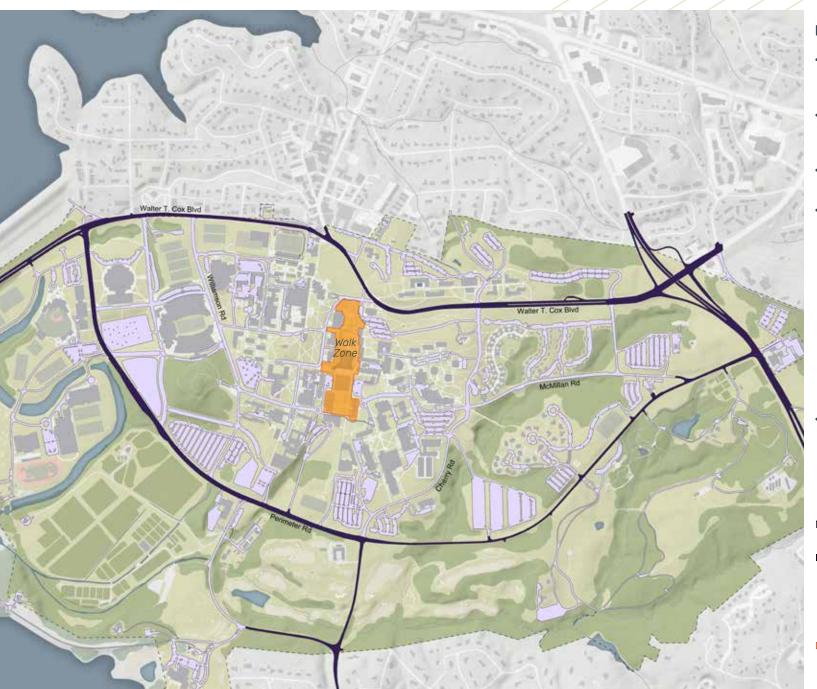
Generally speaking, golf cart use will be permitted within the campus area defined by Walter T. Cox Blvd., Highway 76, and Perimeter Road. Given the posted speeds on Walter T. Cox Blvd. and Perimeter Road, golf cart use is not recommended on these roads; crossing the roads will be permitted at designated intersections or pedestrian crosswalks. Within the established core of the campus, golf carts will be prohibited on the Central Green Spine of the campus extending from Calhoun Drive at Bowman Field to the south end of the South Campus Green, an area corresponding to the bike dismount zone.

The range of policies that Clemson may wish to consider for future golf cart use is based on a review of golf cart policies at twelve institutions across the country. The complete list of institutions and key policies are provided in the appendix. The policies address: 1) Acceptable Users and Uses; 2) Procurement; 3) Registration; 4) Operator Training; 5)Vehicle Operation Standards; 6) Vehicle Conditions; 7) Accident Reporting Procedures; 8) Parking / Storage; 9) Charging / Battery Standards; 10) Disposal; 11) Enforcement; and, 12) Special Events.

### **GOLF CART ACCESS**

This map summrizes where golf carts are allowed and prohibited on campus roadways.





# PERMITTED CART ACCESS MAP

- Carts should travel no faster than the speed limit of the road on which they are traveling.
- When moving through congested areas, speed should not be faster than pedestrians walking in the same area.
- Pedestrians have the right-of-way on all campus sidewalks at all times.
- Carts may not be parked where they block vehicular, pedestrian, or bicycle traffic, flower beds, building entrances and exits, fire department connections, or wheelchair ramps or curb cuts, or in any other location that may present a hazard. ADA and Fire/Life Safety Code compliance must be followed. Carts must be stored in a designated parking space or other location approved by Parking & Trnasportation Services with input from appropriate building proctor(s).
- Golf Cart / Utility Vehicle operators observed in violation of these rules can be cited by the police. Clemson Police on campus are responsible for enforcing these statutes.
- Carts Permitted on Roadway
- Carts **Not Permitted** on Roadway

Driving on sidewalkes allowed for sidewalks greater than 6' wide.
Perpendicular crossings across these routes allowed.

Walk Zone (Carts Not Permitted)

**MOBILITY BIG IDEA #7** 

# Transportation Demand Management & Parking

Minimizing new parking demand where possible, and coordinating parking supply with travel patterns

Transportation Demand Management (TDM) strategies will be important in the years ahead given the projected population increases and loss of parking due to the pedestrian transformation and development on the campus. Along with the physical improvements designed to emphasize pedestrian, bicycle, and transit use, policy measures and incentives will also be critical factors in establishing a more integrated and balanced mobility system.



# 18.5% (4,100)13.3% (2,963)38.0% (8,426)WALTER T. COX BLVD. 5.1% (1,138)14.6% (3,249)PERIMETER ROAD 10.5% (2,323)Lake Hartwell

# ROADWAYS USED FOR DAILY DRIVING TRIPS TO CAMPUS

in September of 2015, a Bluetooth study was conducted to determine origins and destinations of vehicles entering and leaving campus. One analysis of the resulting data investigated the roadways used on daily trips terminating on campus. The result of this analysis is shown in the map to the left.

The greatest percentage of trips terminating on campus (38.0%) enter via SC Hwy 93 toward Walter T. Cox Blvd. and Perimeter Road. The second highest percentage (18.5%) enter via College Avenue toward Walter T. Cox Blvd.



### TRANSPORTATION DEMAND MANAGEMENT & PARKING

# Parking Demand

Reducing increases in new demand for parking will be particularly important given the limited available land resources for surface parking and the cost of providing structured parking. The Framework Plan identifies opportunities for expanding existing parking lots and for creating new parking lots. It also considers the changes in land use occurring in downtown Clemson where the private sector has invested in higher density student apartment complexes located within walking or biking distance of the campus.

Estimates for future parking demand are provided in the Framework Plan, developed by sustaining the ratios of parking spaces to potential users indicated by 2016 parking inventory and enrollment data. Four scenarios

are explored with each scenario responding to projected population increases and to parking displaced by pedestrian transformation of central campus, development and other improvements. Variables considered in the scenarios include TDM strategies and redundancy¹ in the parking system .

Several TDM strategies were explored during the planning process and are detailed in the Appendix to this document. Strategies identified for consideration include the following, among others:

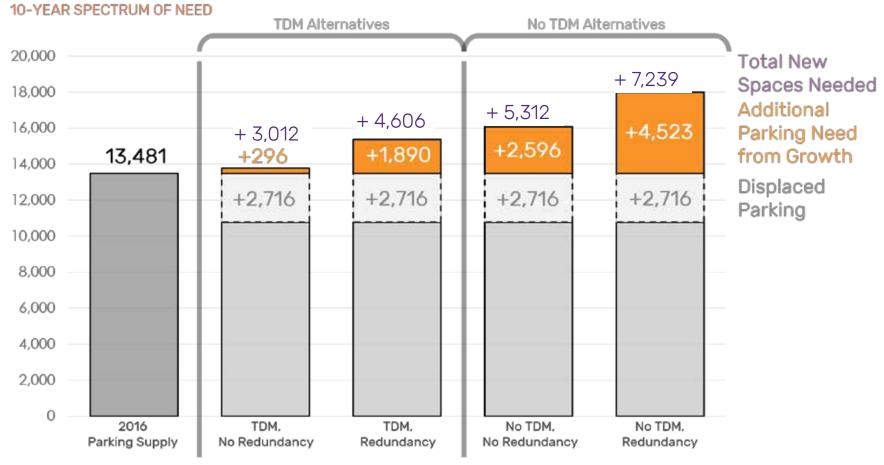
- Prohibiting students living north of the campus in the downtown area from purchasing a parking permit
- Limiting the number of permits available to freshmen and others living on campus

Redundancy is intended to make finding parking easier for users and to allow for unexpected increases in demand due to campus events or the temporary loss of parking due to construction or other activities.

Based on an analysis of the four scenarios, the estimated parking demand during the planning horizon for the Framework Plan is 14,000 to 18,000 spaces depending on the TDM Strategies implemented and whether or not the redundancy is built into the system. The estimated total includes replacement of spaces lost to pedestrian transformation or development. At the time of the analysis, there were in the range of 13,000 parking spaces on the campus.

<sup>1</sup> Redundancy calls for 15 percent more parking spaces than that required to meet estimated demand.

# Parking Need



# TRANSPORTATION DEMAND MANAGEMENT & PARKING

# Parking Supply

Establishment of the Pedestrian Priority Zone combined with future development will displace approximately 2,700 parking spaces across the campus. To plan for these losses and accommodate increased demand from enrollment growth, the Framework Plan identifies opportunities for expanding existing parking lots and for providing new parking areas in more remote areas of the campus. There are limited opportunities for new surface parking on the main campus.

# **East Campus Parking**

Approximately 38 percent of the commuting population lives in Central, Pendleton, and other communities east of the campus. In response to their travel patterns, additional commuter parking will be provided on the east side of campus with the goal of limiting the number of cars that must use Perimeter Road to access parking areas on the west side of campus. Proposed parking areas on the east side of campus includes: 1) an expanded Kite Hill lot; 2) new lots east of 76; and 3) Thornhill (over the long-term). Transit will be provided from each location to the transit hubs proposed along the periphery of the Pedestrian Priority Zone. Hendrix Student Center will be positioned as the commuter hub given its location on the east side of campus in close proximity to the east parking areas. Direct shuttle services will be provided along McMillan Street from the Highway 76 parking lots and the Kite Hill commuter services building to Hendrix. McMillan will serve as a transit way and will feature enhanced multiuse paths for pedestrians and bicycles. It is recommended that the campus bike share program consider locating a bike hub at Kite Hill allowing commuters to bike to Hendrix along McMillan. At Hendrix, lounges, retail, and campus food services will be available to the commuting population.

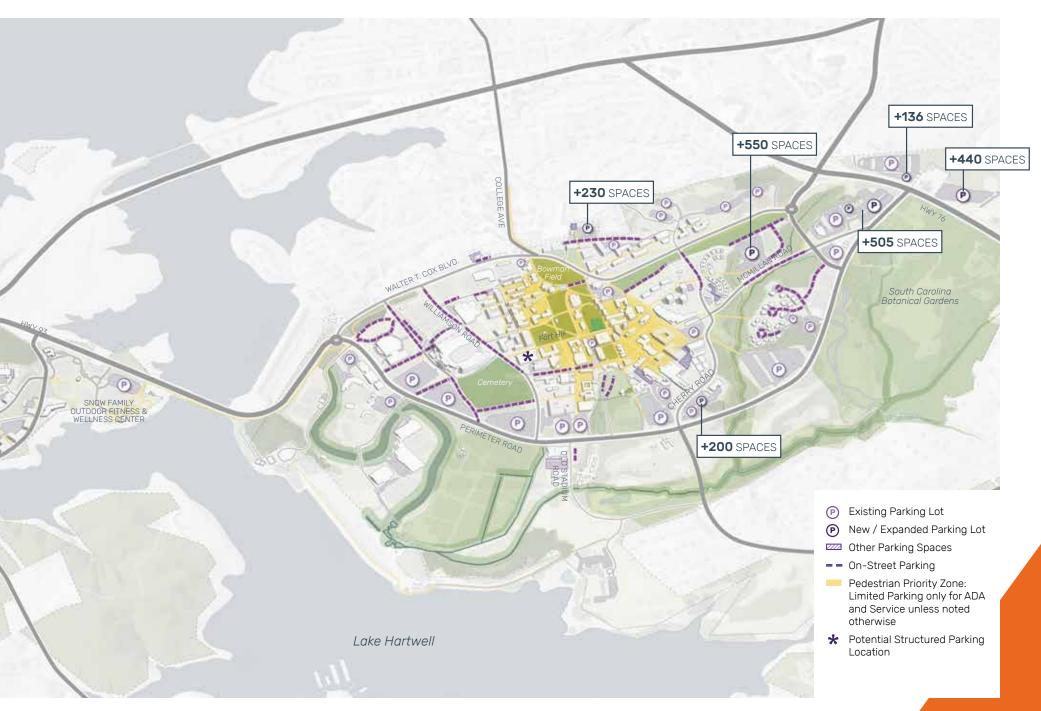
# **South and West Campus Parking**

Commuter parking will be provided along the southern and western segments of Perimeter Road as well. Access to these lots will be set up to occur from Perimeter Road. Enhanced pedestrian and bike routes will be provided into the core. For example, access to Lot C1 will be provided from Perimeter Road only. Parking also will be provided in the west commuter lots on Perimeter Road. Pedestrian and bicycle access will be enhanced from these areas to the New Union proposed on the Johnstone site.

# **Ravenel Parking**

Ravenel also provides the opportunity for additional remote parking, especially in the near term. Increased activity associated with the Snow Family Outdoor Fitness and Wellness Center and other uses proposed along with improved pedestrian, bike, and transit connections will make Ravenel parking more useful and accessible to the campus community.





# **Parking Allocation Policies**

Management of the parking supply will require new strategies and policies for allocating parking based on the needs of each user group including more emphasis on peripheral parking and shuttle services.

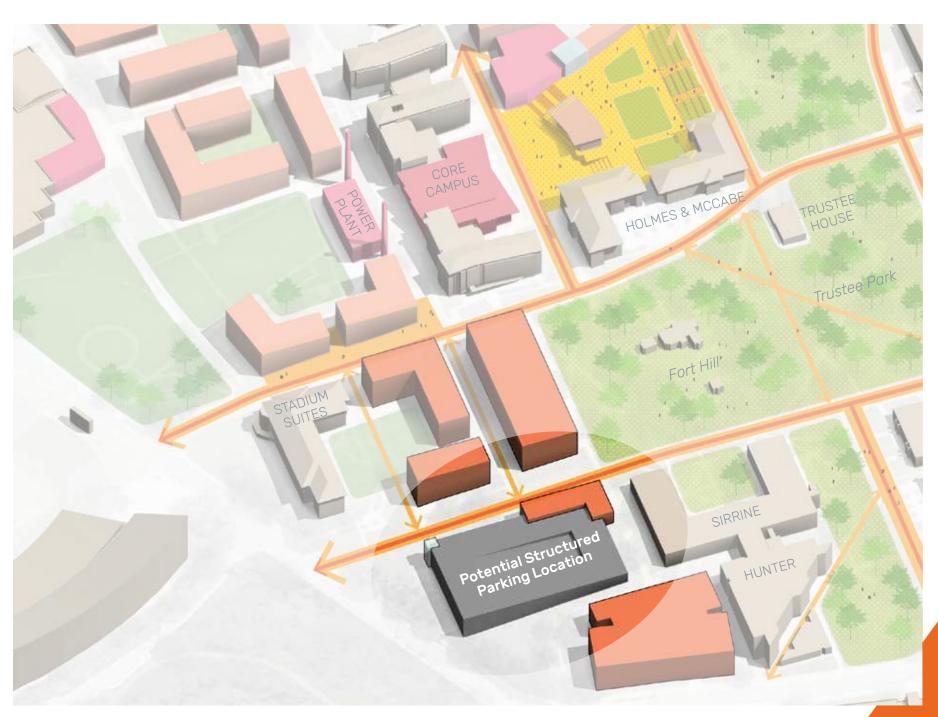
In general, it is recommended that parking be allocated to each major user group as follows:

- Faculty, staff, and some graduate researchers will be assigned parking in lots within or directly adjacent to the academic core.
- Commuter students will be assigned to lots along Perimeter Road, at Kite Hill, lots east of Highway 76, and at Ravenel.
   As noted, the goal will be to intercept and park as many cars as possible based on where they enter campus each day.
- Resident students will be assigned parking in peripheral lots including Ravenel.

# **Parking Garages**

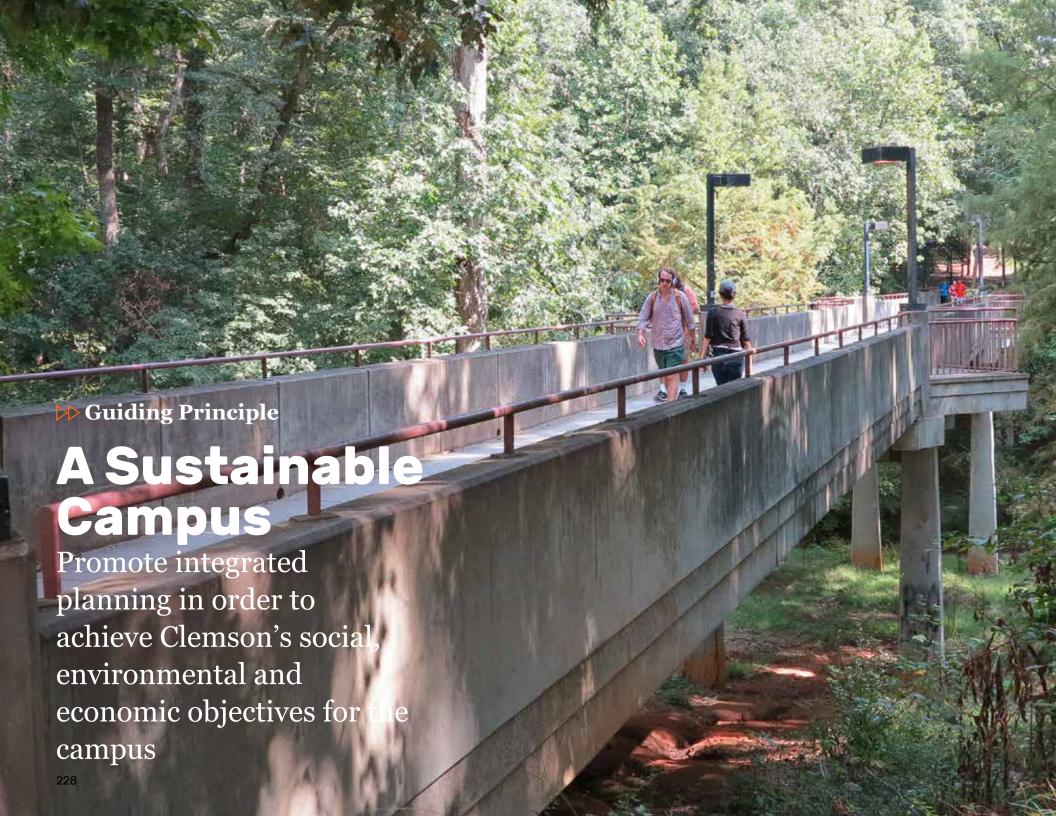
The Framework Plan emphasizes the need to avoid parking structures and punitive TDM measures as long as possible. Clemson may conclude that garage parking is needed for reasons of convenience and operations. In general, the recommended criteria for locating garages are as follows: 1) Garages should be accessible from the periphery of the PPZ; 2) garages should be accessible from the major pedestrian routes in the core; and, 3) garages should be located where high demand and space turn-over will support the financial case.

Over the long-term a parking garage located to serve the day-to-day parking demand in the central campus will be required given the population increases and the amount of parking displaced by pedestrian transformation of central campus and new construction. It may also be desirable in terms of convenience. The Framework Plan identifies a site for a future garage on Williamson Road west of Sirrine Hall. This site is recommended for the following reasons: 1) it is well-positioned to serve high demand in the central campus; 2) it is located on Library Walk and thereby integrated into the pedestrian network; 3) it is accessible from Willamson Road on the periphery of the PPZ; and, 4) it is convenient for game day use. Over the long term other garages may be required.









# **INTRODUCTION**

This chapter provides an overview of the sustainability strategies inherent to the Framework Plan. The strategies focus primarily on the sustainability elements associated with the physical planning, development, and operation of the campus rather than the teaching and research mission.



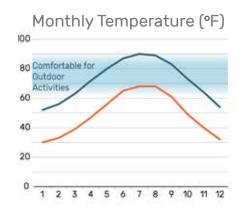
# **Sustainability**

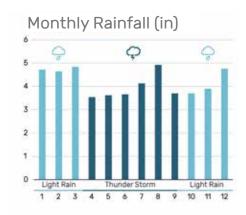
- 1. Existing Context
- 2. Sustainability Framework
- 3. BIG IDEA #1
  Water Resources and
  Stormwater Management
  Strategy
  Managing stormwater to improve
- 4. BIG IDEA #2
  Energy and Emissions
  Active energy and emissions
  reduction strategies and passive
  design strategies to reduce energ
  use and improve comfort

# **Existing Context**

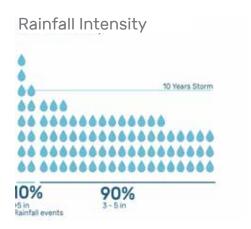
# Climate, Rainfall, and Temperature

Clemson enjoys a moderate climate, with temperatures comfortable for outdoor activities throughout most months of the year. During the summer, hot weather and thunderstorms can limit activities outside during some afternoons. During the school year, however, temperatures and humidity are usually comfortable for enjoying outdoor activities, including recreation, socializing, and studying. Shade is an important factor in making outdoor spaces comfortable as temperatures climb. Stormwater management is an important factor to consider because of the amount of rainfall Clemson gets annually. Runoff from storms can carry pollutants as it washes over parking lots and other surfaces, and it can cause erosion of stream banks (like Hunnicutt Creek) without management measures.

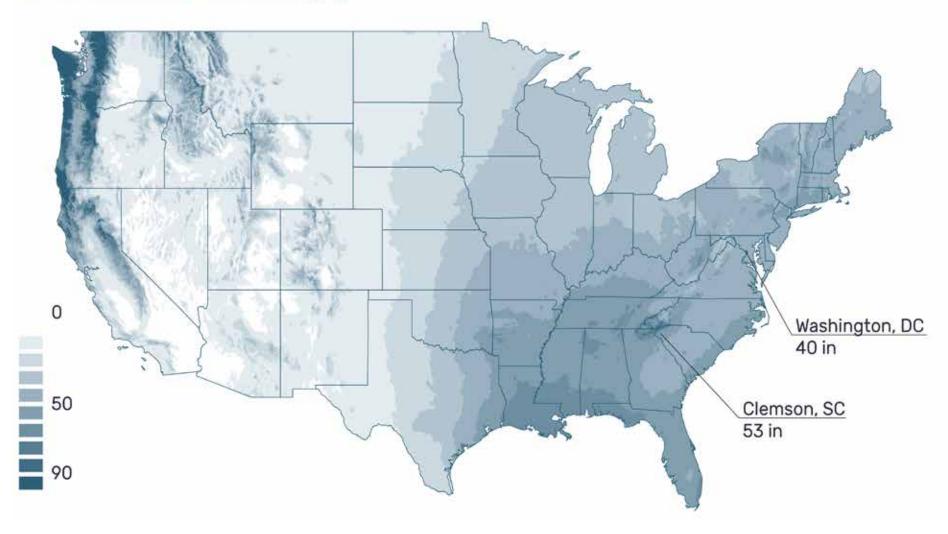








# Annual Rainfall Distribution (in)



# Sustainability Framework

The Framework Plan supports a systems-thinking approach to campus design and development. Systems-thinking is defined as a way of establishing an integrated and interconnected approach to the various systems on the campus and the way in which they contribute to the sustainability goals and objectives of the University. The following summarizes how each component of the Framework Plan contributes to sustainable outcomes.

## Land Use Framework

The land use framework is intended to encourage compact development with the goal of facilitating human-powered and transit-oriented mobility within the campus. Compact development is also proposed for more efficient infrastructure distribution systems and to conserve the limited contiguous land resources of the main campus.

Landscape, Open Space, and Stormwater Framework The landscape and stormwater framework supports campus sustainability objectives in several ways.

- First, the Framework Plan preserves existing wooded areas and recommends a strategy for restoration in key areas such as the Hunnicutt Creek corridor.
- Second, the Framework Plan includes a comprehensive shade strategy. Trees are proposed on the east and west sides of buildings to help reduce solar heat gain. Shade trees are also proposed along major pedestrian routes and in key outdoor gathering areas to provide human-comfort and to reduce the heat island.
- Third, Best Management Practices (BMPs) for stormwater are recommended to reduce impervious area and detain and treat rainwater where possible or appropriate. The BMPs are part of a comprehensive stormwater strategy for the campus and are most apparent at the proposed Suber Dam located in the southern portion of the central green spine.
- Fourth, restoration is proposed along Hunnicutt Creek.

### Mobility Framework

In support of reducing campus emissions and in response to the stated goal of achieving carbon neutrality by 2030, the mobility strategy emphasizes human-powered and transit modes of circulation to the degree possible. The following provides an overview of the key recommendations:

- Pedestrian Circulation will be facilitated through the compact land use pattern of the campus and by the recommended improvements to the pedestrian network. Major features include the pedestrian and multiuse paths proposed within the Pedestrian Priority Zone (PPZ).
- Bicycle Circulation will be promoted by means of a comprehensive network of campus bike lanes, paths, and shared roadways that connect with the town and regional trail networks. The bike share hubs and routes also are integrated into the Framework Plan. Bike share hubs are proposed at the Student Centers and other major campus destinations such as Fike as well as in remote parking areas such as Kite Hill.
- Transit Use will be facilitated by the transit hubs proposed on the periphery of the PPZ. Each hub will be designed to improve the user experience by providing access to sheltered waiting areas, retail and food service.

In addition to the above mobility strategies, the land use and housing recommendations will provide opportunities to reduce transportation-related emissions. As noted, a compact land use pattern facilitates human powered circulation especially for those who live on campus. The proposed increase in campus housing will also reduce the need for auto use and transit services as will the emerging land use pattern of downtown Clemson where a number of new apartments have been completed within walking and biking distance of the campus.

# SustainabilityObjectives

**Model sustainable infrastructure**, buildings, and landscapes.

**Showcase working landscapes** and stormwater management strategies.

**Promote life-long stewardship** for students.

**Encourage energy efficiency** and lower carbon emissions.



SUSTAINABILITY BIG IDEA #1

# Water Resources & Stormwater Management Strategy

Hunnicutt Creek, the former Seneca River basin. and Lake Hartwell, and its associated dikes, all shape the hydrological patterns of the campus. The reengineering of the Seneca River in the 1950s to create Lake Hartwell resulted in important stormwater management changes. Today, stormwater flows toward the former river basin on the west side of campus where it is pumped up and over the Lake Hartwell dikes using four large pumps at the Wastewater Treatment Plant. The current stormwater strategy relies on detention and retention areas aligned with the watersheds and topography of the campus. This unique situation, combined with stormwater regulations, requires careful water management planning along Hunnicutt Creek and on the interior of the campus.

The stormwater management strategy is coordinated with broader land use, landscape, and circulation concepts for the campus. The proposed strategy addresses Clemson's obligations under its MS4 permit (Municipal Separate Stormwater Sewer System) for the campus. The MS4 permit applies to the area generally bound by Highway 93 / Douthit Hills on the north; Highway 76 on the east; Hunnicutt Creek on the south; and, the Lake Hartwell dike on the west.

As a result of the damming of the Seneca River, flooding is a possibility in the areas west of Perimeter Road where the Calhoun Bottoms Field Laboratory and several athletics fields and facilities are located. This situation limits the development and use of land in these areas.

# **DRAINAGE AREA STRATEGIES**

## **OLD SENECA RIVER BASIN**

The "Old Seneca River Basin" is a portion of the Seneca River channel which remained following the construction of the dikes in 1963. Currently, there are approximately 139 acres of impervious surface draining to the basin. In 2015, Pickens County agreed that basin can provide water quality treatment for a total of 210 acres of impervious area. As of November 2017, the University has received approval to proceed with the installation of two gabion walls which will create the forebays, allowing for more efficient sediment trapping and removal. The installation of these gabion walls will be performed as funding and accessibility allows.

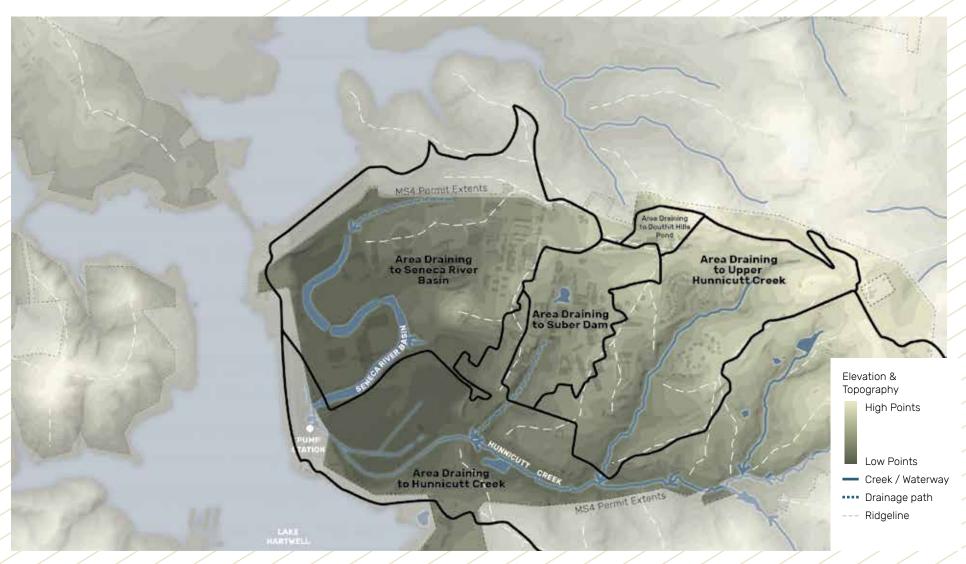
### SUBER DAM

Suber Dam, a permanent wet pond, has been designed to occupy the existing low-lying area north of Perimeter Road, between Lamda Street and Kappa Street. The purpose of this pond will be to provide water quality treatment for potential future development within its drainage area. The pond will address water quality across the 120 acre drainage area, while water quantity will still need to be addressed on a site-by-site basis. The pond and adjacent green space will also provide an aesthetic water feature to the Clemson community.

### **HUNNICUTT CREEK**

Hunnicutt Creek and North Hunnicutt Creek serve as major conveyances of surface water drainage for Clemson University. The creek corridor today shows evidence of pronounced erosion and incision of the creek channel. Incision of the creek bed is so severe in places, that it is not only an environmental concern, but also a safety concern for students, faculty, and visitors of the University. Vertical banks of 20-30 feet in height are present in multiple locations throughout the creek. The current condition of the creek has caused the creek to become an avoided aspect of campus rather than the desirable destination it has the potential to be.

The University is taking measures to restore degraded areas of the creek and reduce future impact as development continues. Some of these measures include managing stormwater through Low Impact Development techniques which encourage onsite infiltration of stormwater. Some examples implemented in recent projects include rain gardens and selection of permeable parking surfaces. Utilizing techniques such as these in future development will minimize the volume of runoff received by the creek during storms which will reduce the erosive forces exerted on the creek banks. The University also intends to pursue restoration and stabilization in severely degraded portions of the creek. Restoration efforts will start with the headwaters of the North Hunnicutt Creek east of Newman Road and will work downstream as funding becomes available. Permitting and available funding will play critical roles in the timeline of restoration completion. Restoration will be coordinated with landscape and potentially recreational trail projects.



# **Energy & Emissions**

Clemson signed the American College and University Presidents' Climate Commitment (ACUPCC) in 2007, committing to reduce the environmental footprint of the University. Clemson has set a goal to be a model of energy sustainability, operating as a "carbon neutral" campus by 2030.1 Strategies to reduce carbon emissions identified by the University include: 1) carbon-free energy sources; 2) energy systems efficiency; 3) building systems efficiency; 4) transportation energy efficiency; 5) conservation / resource management and waste elimination; and, 6) carbon offsets.

Since 2011, Clemson has eliminated coal as an energy source, and overall energy use has generally trended downward since 2007, despite increases in enrollment and built space. Increasing space utilization and investments in system and facility upgrades have contributed to this reduction. Despite these improvements, Clemson still lags behind peer schools with regard to emissions, largely a result of older

buildings with historically lower levels of reinvestment and higher air travel on average. 2

The projected population growth and increases in total campus square footage will present challenges to meeting energy consumption and emissions reduction goals, especially carbon neutrality by 2030. The challenge will be further complicated by potential increases in energy-intensive research lab space. In response, a series of passive and active energy reduction, fuel source, and renewable energy strategies are recommended.

2 Sightlines Energy Study

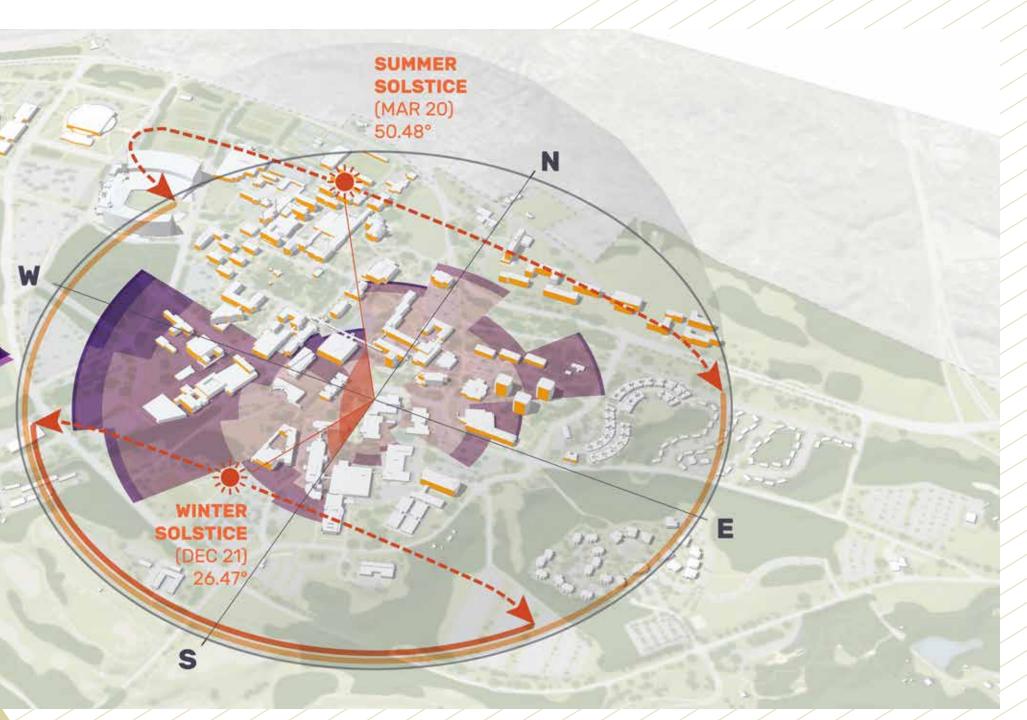
# DOMINANT WIND can reduce energy use, for

BUILDING

**ORIENTATION, SOLAR EXPOSURE, AND** 

PREDOMINANT WIND

1 Sustainability Report Card 2014





### **EXISTING TREE CANOPY**

Campus has many mature trees, shady areas, and woodlands. The University has an aspirational goal of maintaining a zero net loss of tree canopy on its main campus, to the extent possible, through preservation of existing trees and new tree plantings, to retain the maximum aesthetic and functional benefits provided by the multiaged landscape tree population (Main Campus Urban Forest and Landscape Management Policy).

Active energy and emissions reduction strategies include the new combined heat and power plant CHP at Kite Hill. The new plant will offer the opportunity to build an efficient, state-of-the art natural gas facility.

Potential Passive Design strategies fall into the following categories:

- Space Utilization: Aim to utilize existing building space efficiently recognizing the connection between space, energy, and emissions. All campus space consumes energy and, therefore, contributes to total emissions. This requires a new mindset with regard to the true cost of space.
- Passive Solar: Where possible, orient

buildings to optimize passive solar benefits and avoid excessive heat gain. East-west orientation will provide the best results but where this is not possible due to site conditions and organization of the campus, screening and strategic tree planting should be considered.

- Landscape (Shade) Strategy: Deliberately plant trees to reduce heat island adjacent to buildings, in gathering areas, and on the east and west facades of buildings.
- Solar Hot Water and Photovoltaics (PV): Consider incorporating solar hot water and photovoltaic technology in proposed buildings and existing building retrofits.
- Improve the energy performance of existing buildings: Aim to reduce energy

consumption when deferred maintenance issues are addressed and during major renovation. The energy usage intensity (EUI) of existing buildings needs to be decreased or stabilized as existing buildings and systems are remodeled.

- Establish Energy Use Intensity (EUI) Targets for new construction: Establish EUI targets for all proposed building types in support of energy and emissions planning objectives. Consider net zero building opportunities as appropriate.
- Mobility: Emphasize pedestrian, bike, and transit mobility with the goal of shifting the modal split toward lower carbon intensive forms of transportation.





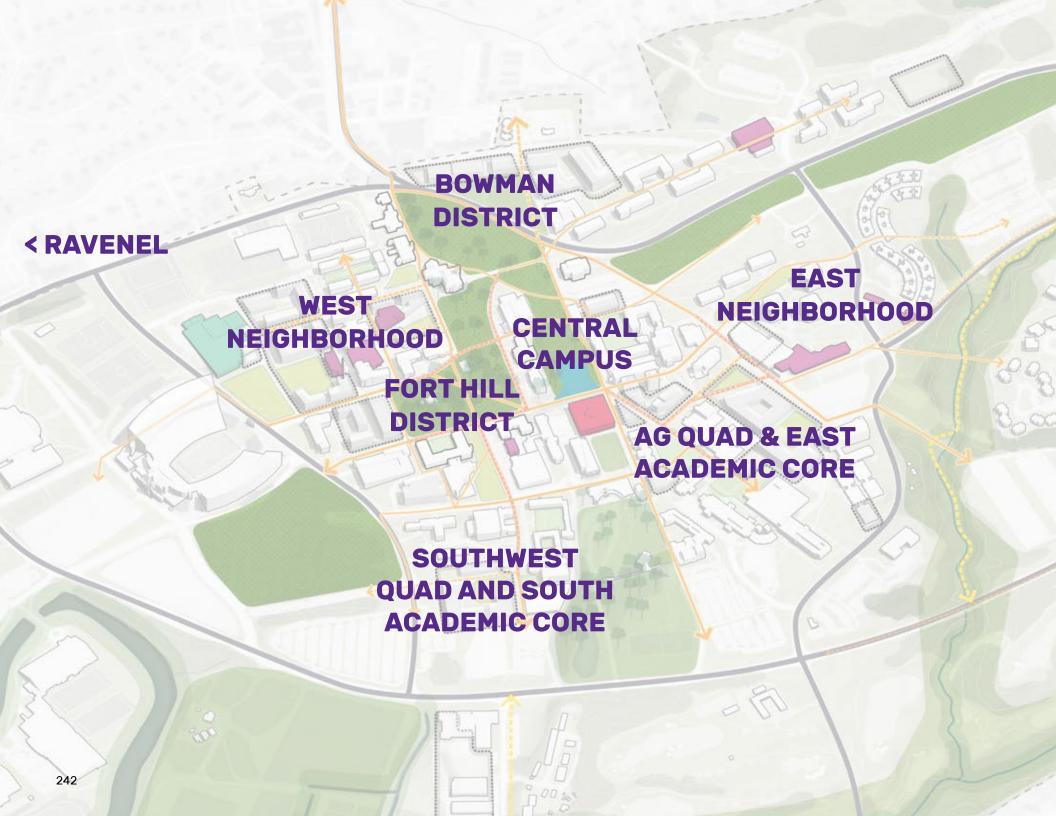
Surroundings influence how hot it feels.

#### **HEAT ISLANDS AND COOLING SHADE**

On a hot day, some parts of campus feel hotter than others. Areas with lots of paving get hotter than areas with shade and green space.







## INTRODUCTION

This chapter takes the Framework Plan to the next level of detail. It provides planning frameworks for campus districts where enhancements are likely or possible over the next five to ten years. District frameworks highlight opportunities for new development, connections, and open space. Each framework notes important urban design considerations for future development, including recommendations for active edges, view corridors, and major pedestrian connections.

Like the campus-wide frameworks, the goal is to balance recommendations with flexibility. The district frameworks define the elements that should be respected to ensure the long-term success of each district, without prescribing specific architectural details and other considerations that are more appropriate to determine during site design.

The chapter includes example build-outs for each district which illustrate a few potential ways future development could occur. These should be read as possible examples, not as the only potential options for a district. The goal of the frameworks is to define an overall structure for the district, while still providing flexibility for future development; the examples demonstrate a few ways this flexibility could play out.



#### **District Frameworks**

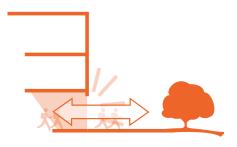
- 1. Urban Design Principles
- 2. Central Campus
- 3. Bowman District
- 4. West Neighborhood
- 5. East Neighborhood
- 6. Ag Quad and East Academic Core
- 7. Fort Hill District
- 8. Southwest Quad and South Academic Core
- 9. Ravenel

# **Urban Design Principles**

The following design principles underly the recommendations of the district frameworks. These principles are based on what makes campus vibrant, welcoming, and comfortable today. They provide a guide for new development to ensure it supports the district around it, contributing to a sense of place and community.



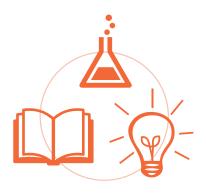
Enhance the campus open space network by preserving iconic landscapes and creating more special outdoor spaces that accommodate a variety of uses



Reinforce the public realm by providing active ground floor uses, indoor and outdoor connections, and environments that support human comfort



Prioritize pedestrian movement and create a mobility strategy that balances bikes, transit, and vehicular circulation and parking



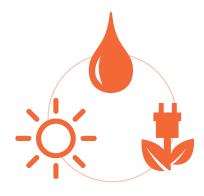


Accommodate growth with strategic infill, expansion, and land use synergies

Improve connectivity to downtown, Lake Hartwell, and the Experimental Forest



Create mixed use "neighborhoods" to build a sense of community, reinforced with campus life amenities



Foster sustainable development that is responsive to the climate, stormwater, energy, and context

# **Central Campus**

Central campus is the academic heart of campus, with major academic uses surrounding the central green spine. This area is roughly bounded by Sikes Hall on the north, Brackett Hall on the west, Cooper Library to the south, and Long Hall on the east.





### **▶** District Goals

Preserve and enhance the central green spine of campus

Increase connectivity between indoor and outdoor spaces

Promote infill and redevelopment of underutilized sites; promote densities that are appropriate for the acadedmic core of campus, which has limited available land

Improve accessibility through this area, which includes significant topography and many stairs

Promote active, engaged learning and provide outdoor learning spaces

Preserve view corridors of Tillman Hall and Cooper Library

#### CENTRAL CAMPUS

#### District Framework

In this area, the Framework Plan includes recommendations for building renovation and infill development—growing the academic capacity of this district, modernizing existing space to promote active learning and accommodate contemporary research needs, and further creating and enhancing open spaces in this area.

The Daniel Hall Addition/Library Annex is a significant opportunity to address two key academic space needs: additional classrooms and additional study space. Located at two major pedestrian cross-roads, this site is especially suitable for core academic uses which will serve the overall campus community.

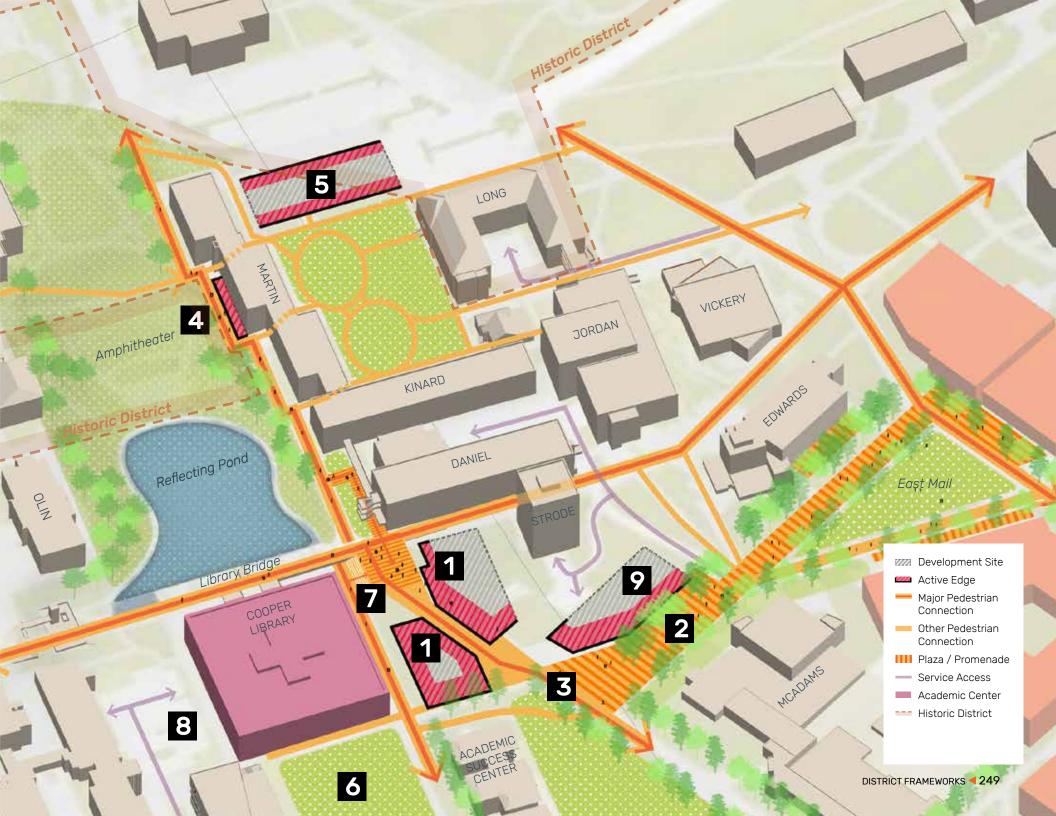
**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

	Potential Uses	Potential Height	Example Capacity*
1 Daniel Addition / Library Annex	Academic	3-5 floors	88,000 GSF (with 4 floors)
<b>5</b> Development site	Academic	3-5 floors	<b>59,000 GSF</b> (with 4 floors)
<b>9</b> Development site	Academic	4-6 floors	55,000 GSF (with 4 floors)

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors.

#### District Opportunities

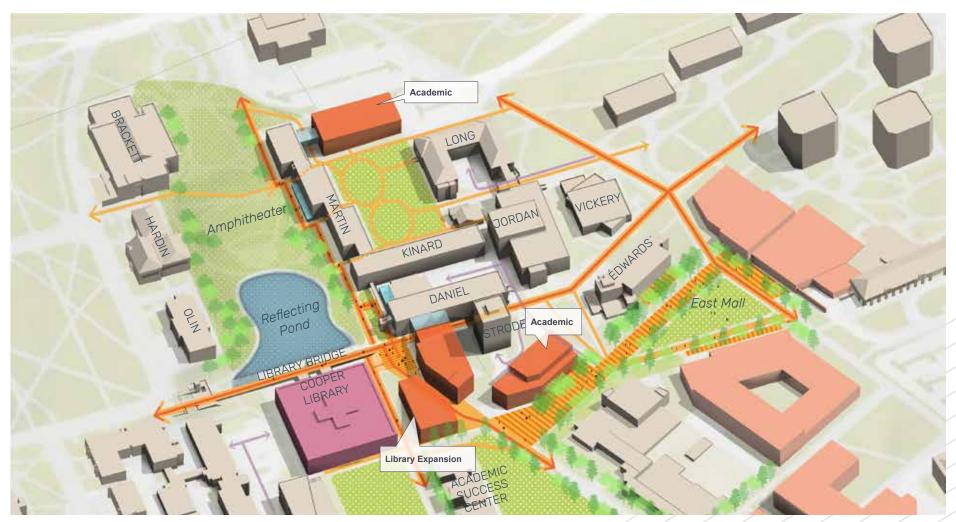
- 1 Daniel Hall Addition
  / Library Annex
  offers a significant
  opportunity to
  renew and expand
  academic space,
  growing core
  classroom capacity
  and study space
- 2 Accessible connection from the Library Bridge to Hendrix
- 3 Improved "Ag Walk" connection from the Library Bridge to the Ag Quad, with views of Tillman
- 4 Improving connectivity between Martin Hall and the amphitheater
- 5 New academic building east of the north edge of Martin Hall, further framing the green quad to the east of Martin
- 6 South Library Green enhancements
- 7 Additional outdoor seating, including steps that could double as an outdoor classroom
- West side of Library continues to offer ADA parking and service access
- 9 Additional development site



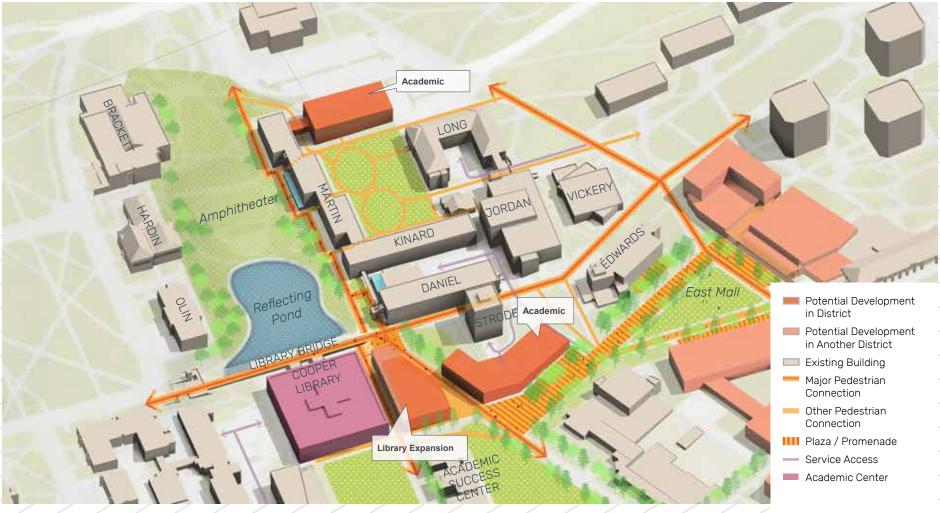
#### **CENTRAL CAMPUS**

# **Example Buildouts**

#### **Example Buildout 1**



#### Example Buildout 2



# **Bowman District**

The Bowman District encompasses the area surrounding historic Bowman Field and directly across Walter T. Cox Blvd.







### **▶** District Goals

Focus on enhancing pedestrian safety

Connect north and south parts of main campus

Expand bicycle options along Walter T. Cox Blvd.

Strengthen pedestrian and bicycle connectivity with Downtown Clemson

Enhance this area as a major campus gateway, preserving the dedicated open space in and around it

#### **BOWMAN DISTRICT**

#### District Framework

With the completion of the Business School, the academic core will stretch across Walter T. Cox Blvd. Redevelopment in this district could include the Clemson House site, Class of 1944 Visitor Center, and Alumni Center. Additional academic, academic support, or visitor/alumni uses could be added to the district in the future, and the open space north of Walter T. Cox Blvd. could be enhanced as a shady, terraced extension of Bowman. These new buildings would have some of the best views on campus, looking directly across to Bowman Field. This district acts as a key gateway to campus; connectivity to Downtown Clemson and College Avenue is an important consideration.

Mobility enhancements along Walter T. Cox Blvd. are core to the near- and long-term success of this district. Incremental steps include immediate improvements with the goal of improving pedestrian safety and—over the long term—additional ideas to further enhance the character of Walter T. Cox Blvd. as the ceremonial gateway to campus. See Chapter 7 Mobility for more details.

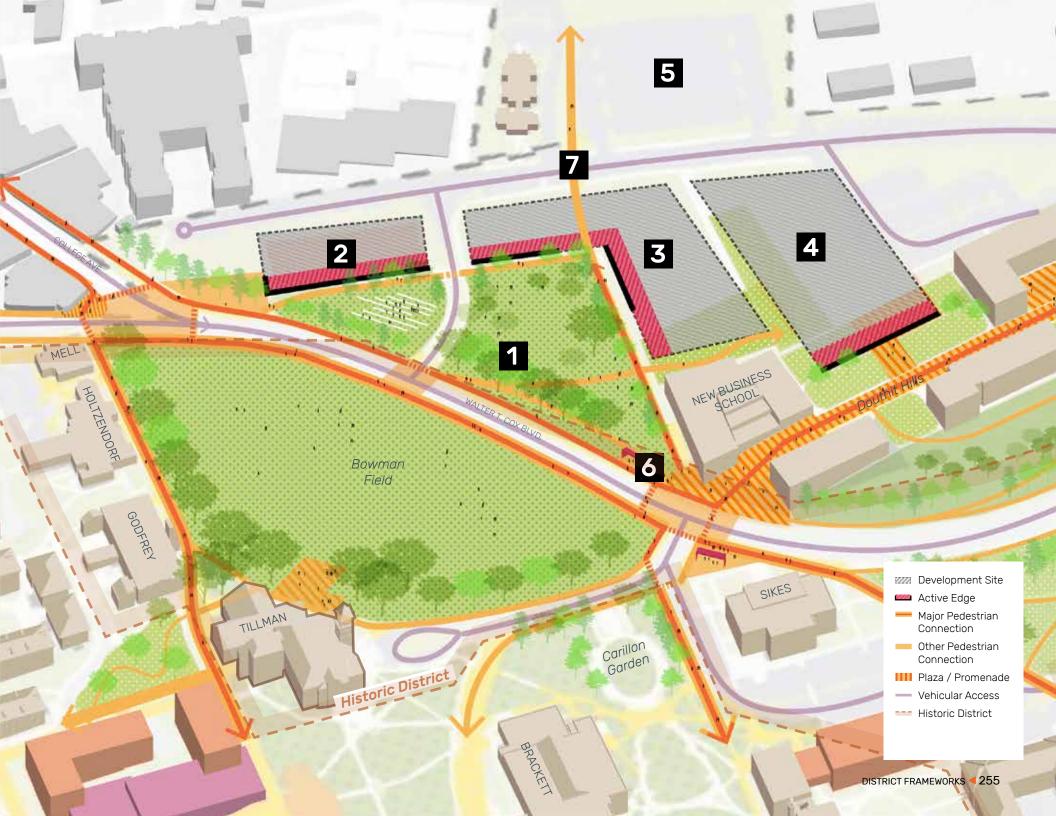
**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

	Potential Uses	Potential Height	Example Capacity*
2 Development site	Academic or Visitor	4-7 floors	126,000 GSF (with 5 floors)
3 Development site	Academic or Visitor	4-7 floors	229,000 GSF (with 5 floors)
4 Development site	Academic or Visitor	6-10 floors	176,000 GSF (with 7 floors)

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors.

#### District Opportunities

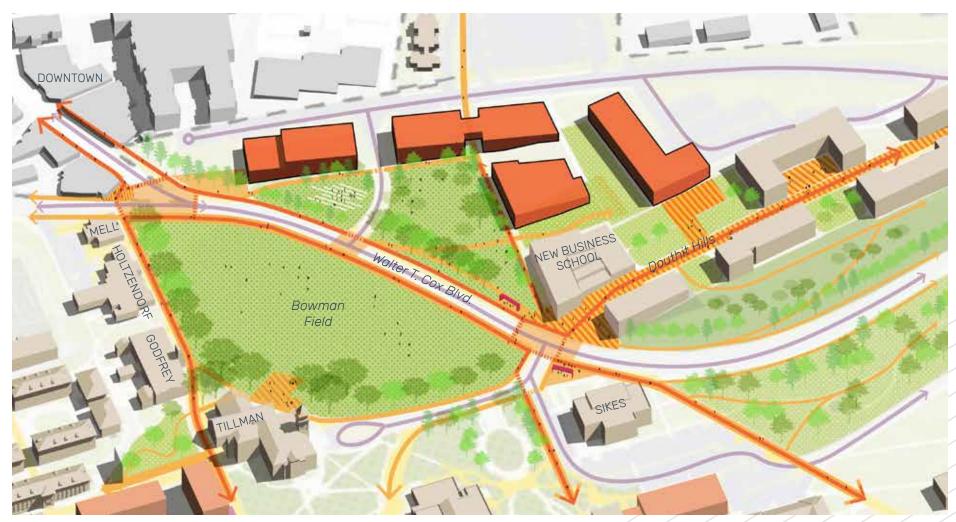
- 1 Expanded Bowman Field, with seating areas terraced into the hillside, a shady perch to overlook Bowman Field
- 2 West development site with direct views of Bowman Field
- 3 East development site with direct views of Bowman Field
- 4 Clemson House site redevelopment
- 5 Additional parking north of Clemson house site
- 6 Enhancements along Walter T. Cox Blvd. to improve pedestrian safety and expand bicycle access (raised crossings, realigned intersections at Calhoun Drive and Sherman Street, and parallel multiuse paths)
- 7 Improved pedestrian connectivity to north



#### **BOWMAN DISTRICT**

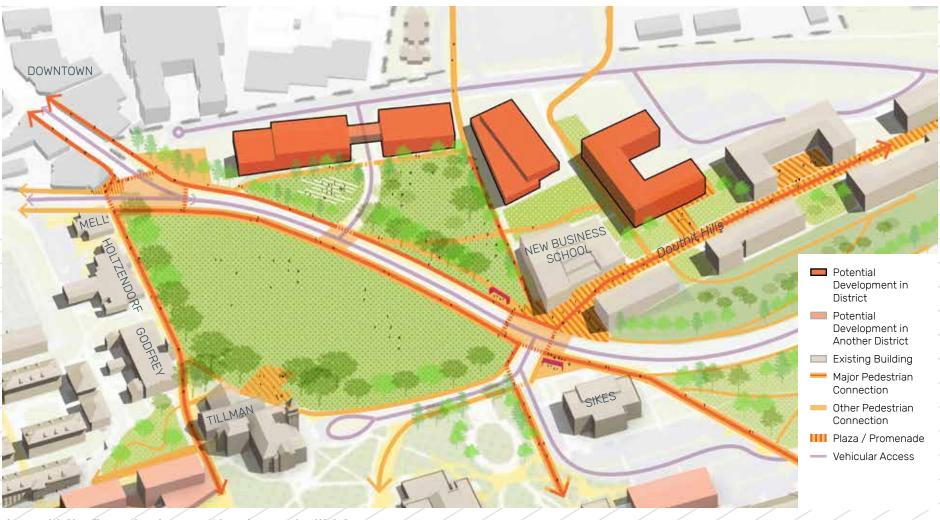
# **Example Buildouts**

#### **Example Buildout 1**



 $These \ example \ buildouts \ illustrate \ a \ few-of \ many-potential \ ways \ the \ Framework \ could \ be \ built-out \ over \ time. \ Building footprints \ should \ be \ viewed \ as \ illustrative \ examples \ only.$ 

#### **Example Buildout 2**



# West Neighborhood

The West Neighborhood is the center of campus life and housing on the west side of campus. It includes the area roughly bounded by the Quad to the north, Cox Plaza and Tillman Hall to the east, Fort Hill to the south, and Fike to the west.







### **▶** District Goals

Renew and enhance campus life

Develop and enhance a sequence of distinct, memorable open spaces that step from Cox Plaza to Core Campus, then to the Scroll of Honor.

Preserve view corridors of Tillman Hall

Improve pedestrian connectivity throughout the district

Better connect Fike to the center of campus

#### WEST NEIGHBORHOOD

#### **District Framework**

With the future demolition of Johnstone and the Union and the redevelopment of the Motor Pool site, this area is poised to undergo some of the most dramatic changes over the next ten years. New construction offers opportunities to accommodate the future need for additional housing while also strengthening connectivity in this district, including better connections between Fike and the rest of campus. The new Union is proposed in the same location as the current Union: this site remains an ideal location for a student center because of its proximity to student housing and central campus. It is also well located to serve the increasing number of students who will be walking to campus from downtown apartments. The redevelopment in this district offers significant opportunities to develop a series of special open spaces, which transition from Cox Plaza to Core Campus and then to the Scroll of Honor and Memorial Stadium. These open spaces will need to be designed to be multi-use, with areas near the new Union providing space for every-day activities such as outdoor eating and studying, as well as small-scale events on the new central lawn. The central green space near the Power Plant, overlooked by new residential buildings, can provide a green space for students to play, relax, and study, and on game days, it could become a new signature tailgate location.

**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

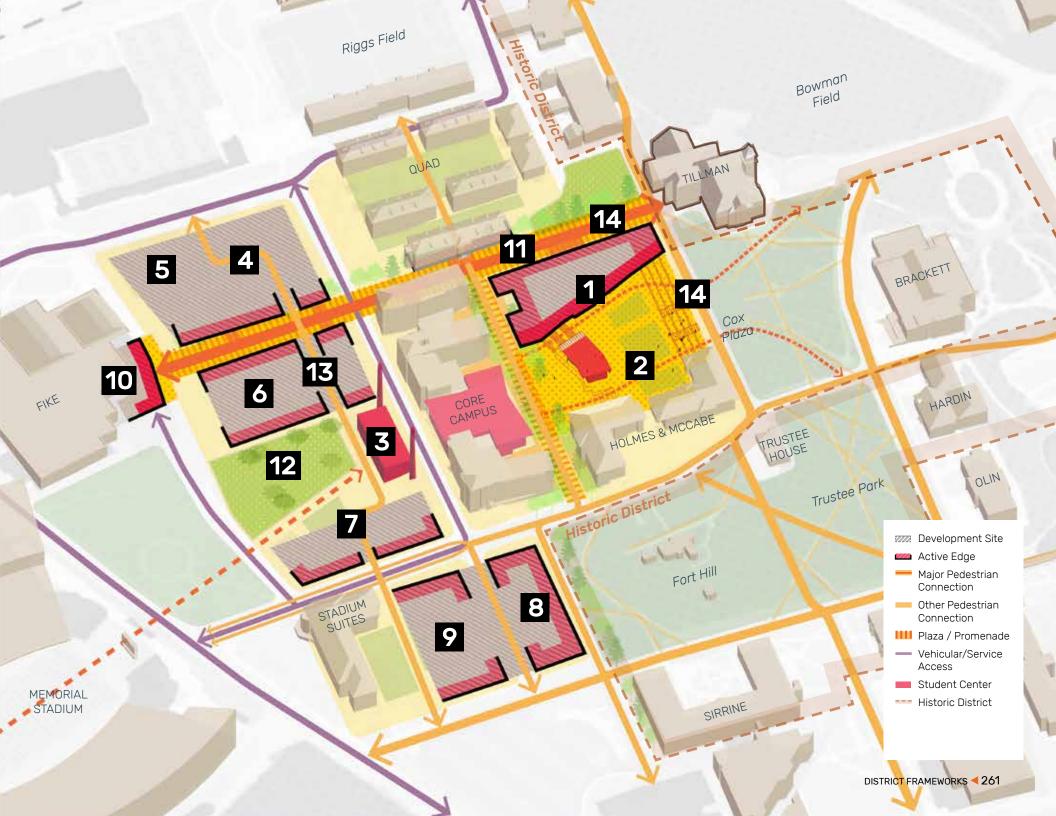
	Potential Uses	Potential Height	Example Capacity*
1 New Union	Mixed Use: campus life, academic, and/or housing	3-6 floors	191,000 GSF (with 2-4 floors; could include 230 beds)
4 Development site	Housing	5-6 floors	181,000 GSF / 515 beds (with 6 floors)
5 Development site	Housing or new Health Center	3-6 floors	48,000-75,000 GSF**/ 135 beds (with 3 floors)
6 Development site	Housing	5-6 floors	208,000 GSF / 590 beds (with 6 floors)
7 Development site	Housing	5-6 floors	130,000 GSF / 370 beds (with 6 floors)
8 Shoeboxes Redevelopment	Housing or Academic	3-5 floors	131,000 GSF / 325 beds (with 4 floors)
<b>9</b> Shoeboxes Redevelopment	Housing or Academic	4-6 floors	128,000 GSF / 365 beds (with 6 floors)
10 Fike Addition	Recreation	2-4 floors	23,000 GSF (with 2 floors)

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors. Residential capacity assumes 350 GSF average per bed.

#### District Opportunities

- 1 New Union
- 2 New open space connecting from Cox Plaza to Core Campus
- 3 Power Plant renovation, transforming it into a new student hub
- 4 Development site
- 5 Development site (potential for a new campus health center)
- 6 Development site
- 7 Development site
- 8 Development site
- 9 Development site
- 10 Fike expansion that reorients the entrance closer to campus
- 11 New pedestrian promenade directly connecting from Tillman to Fike
- 12 New open space overlooking the Scroll of Honor and Memorial Stadium
- 13 New north-south pedestrian connection(s)
- 14 View corridors for Tillman Hall

<sup>\*\*</sup> Range in size due to flexible use (if health center, could have larger footprint than if housing).



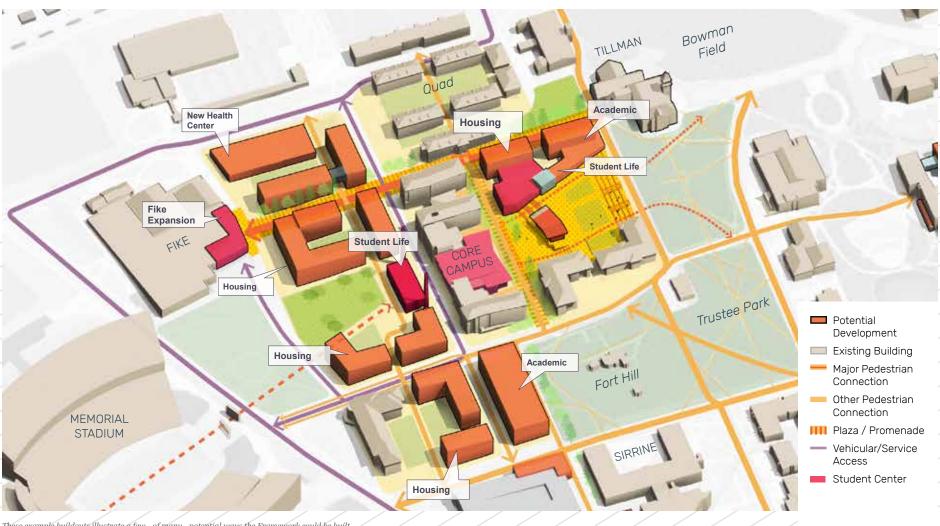
#### **WEST NEIGHBORHOOD**

# **Example Buildouts**

#### **Example Buildout 1**



#### **Example Buildout 2**



# **East Neighborhood**

The East Neighborhood is the center of campus life on the east side of campus. It includes the area roughly bounded by the Low Rises to the north, Cherry Road to the east, Hendrix to the south, and Edwards and Vickery Hall to the west.





### **▶** District Goals

Renew and enhance campus life

View the pedestrian transformation of McMillan Road as an opportunity to significantly transform the character of this district, knitting the campus together with a new focus on people rather than cars

Improve accessibility

Enhance pedestrian and bicycle connections

#### **EAST NEIGHBORHOOD**

#### District Framework

The most significant campus life opportunity in this area is the expansion and renovation of Hendrix, extending it north to the site currently occupied by Schilletter. This project would create additional meeting, study, dining, and campus life space, and it would help reenergize Hendrix. A new entrance along the west side of the extension would connect to a new outdoor lawn, with a significant pedestrian promenade leading to Cooper Library. This new promenade has the potential to offer an accessible connection to the Library Bridge, providing an alternative route to the existing path that involves many stairs. The new open space and promenade are enabled by the pedestrian transformation of McMillian road west of Hendrix.

This transformation will significantly shift the character of the district, helping it feel more connected to the rest of campus. Another significant open space transformation is the opportunity to renovate Bryan Circle, providing a series of grassy terraces for enjoyment by the surrounding resident students. The area could still accommodate move-in/move-out traffic, but on typical days would become a central amenity for the Low Rises and High Rises.

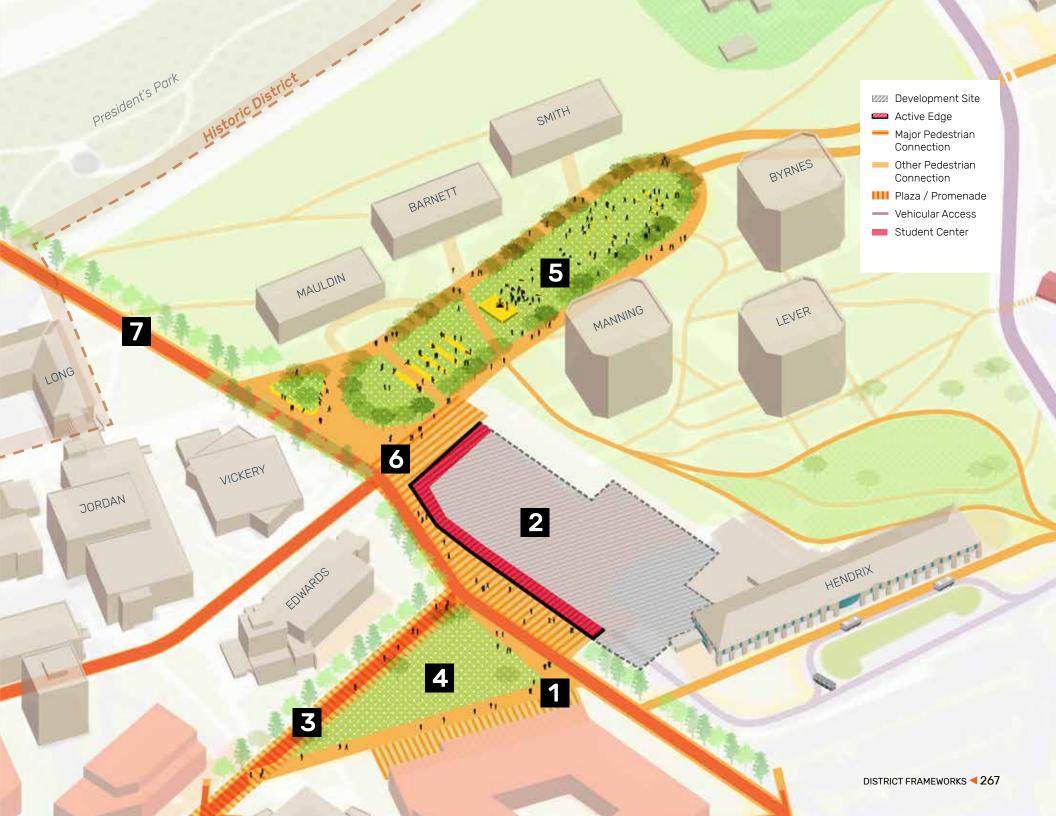
**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

	Potential Uses	Potential Height	Example Capacity*
2 Hendrix Expansion	Campus Life; could also include housing above	3-5 floors (6-10 if residential above)	139,000 GSF (with 3 floors)

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors.

#### District Opportunities

- 1 Transformation of McMillian road to a series of new campus open spaces and pedestrian connections
- 2 Hendrix expansion
- 3 Accessible connection from the Library Bridge to Hendrix
- 4 New open space
- 5 Enhanced Bryan Mall open space
- 6 New plaza
- 7 Improved bicycle and pedestrian connection to northern parts of campus



#### **EAST NEIGHBORHOOD**

# **Example Buildouts**

#### **Example Buildout 1**

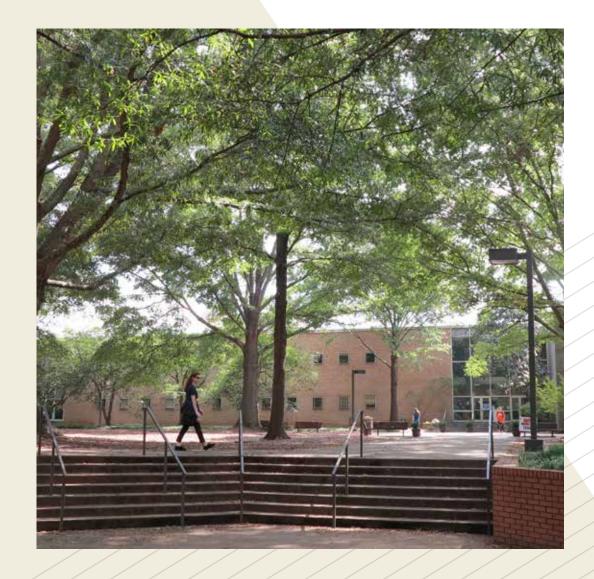


#### **Example Buildout 2**



# Ag Quad and East Academic Core

The Ag Quad and the East Academic Core includes the area is roughly bounded by Cooper Library in the north and west, Cherry Road to the south, and the Biosystems Research Complex (BRC) to the east.





### **▶** District Goals

Renew and modernize this district, making it more reflective of the cutting-edge research and academics that occur within it

Improve connectivity between this district and the rest of campus

Enhance the district's open spaces, ensuring they are appropriately-scaled

Preserve views of Tillman from the Ag Quad

Provide cross-campus connection route for bicycles and golf carts

Grow academic and research capacity

#### AG OUAD AND EAST ACADEMIC CORE

#### District Framework

This district includes significant opportunities for renovation, redevelopment, and infill; an aim of the Framework Plan is to renew this district and its open spaces. Pedestrianizing the campus core will strengthen connectivity between the Ag Quad and central campus. Redevelopment of the Newman site provides a significant site for new academic development.

A second significant academic site is the Redfern site, which could become available for a future academic use if the health center were relocated to a new location where it could be enlarged to better meet the needs of the growing campus population. The Newman and Redfern sites both offer opportunities to shape and enhance open spaces on campus, including the Ag Quad, a new Centennial Quad around the Centennial Oak, and the Hendrix Mall.

**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

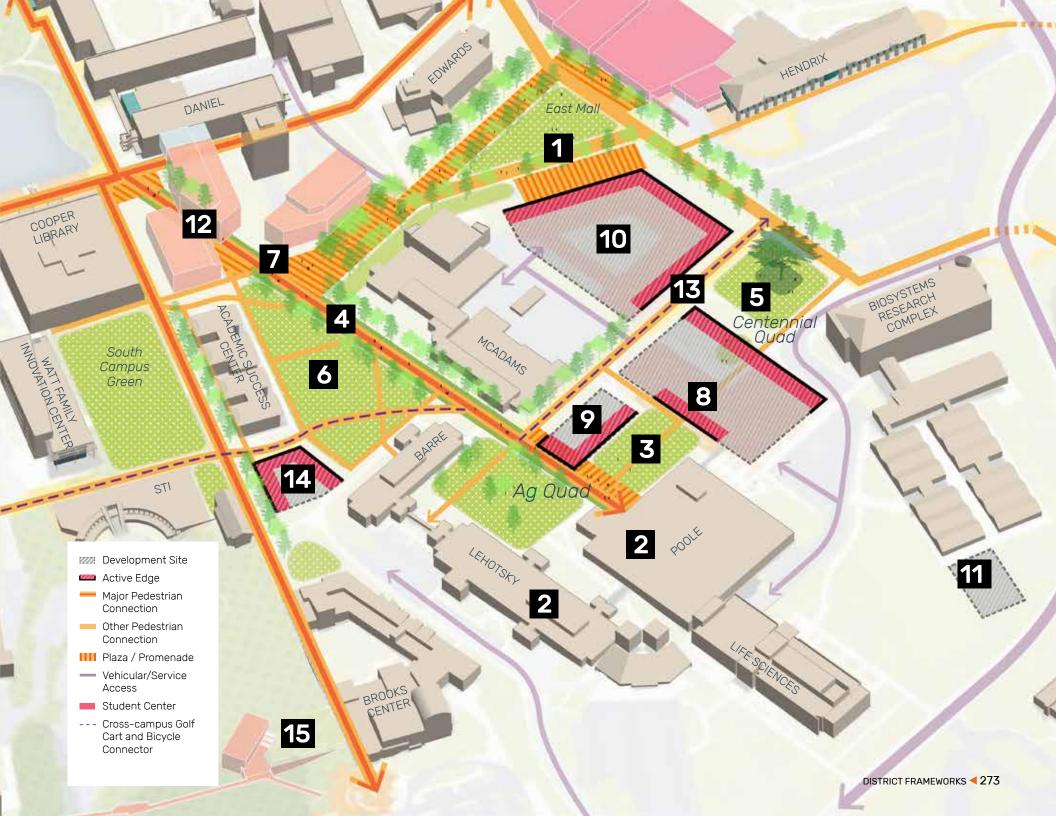
Potential Uses	Potential Height	Example Capacity*
Academic	4-6 floors	239,000 GSF (with 5 floors)
Academic	4-6 floors	<b>51,000 GSF</b> (with 4 floors)
Academic	4-6 floors	350,000 GSF (with 5 floors)
Academic	1 floor	11,000 GSF (with 1 floor)
Academic	3-6 floors	<b>49,000 GSF</b> (with 3 floors)
Visitor / Special Use	3-5 floors	<b>58,000 GSF</b> (with 3 floors)
	Academic Academic Academic Academic Academic	Academic 4-6 floors  Academic 4-6 floors  Academic 4-6 floors  Academic 1 floor  Academic 3-6 floors

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors.

#### District Opportunities

- 1 Transformation of McMillan Street into new pedestrian connections and open space (while still allowing for service/emergency vehicle access, as well as access to ADA parking)
- 2 Building renovations
- 3 Enhancements to Ag Quad's central open space
- 4 "Ag Walk" improved connection to Cooper Library and the core of campus
- 5 Centennial Quad
- 6 Academic Success
  Quad enhancements
- 7 Central plaza / outdoor classroom
- 8 Newman demolition & redevelopment
- 9 Development site
- 10 Redfern redevelopment
- 11 Additional greenhouses
- 12 Tillman view corridor
- 13 Bicycle and golf cart access
- 14 Development site
- 15 Development site

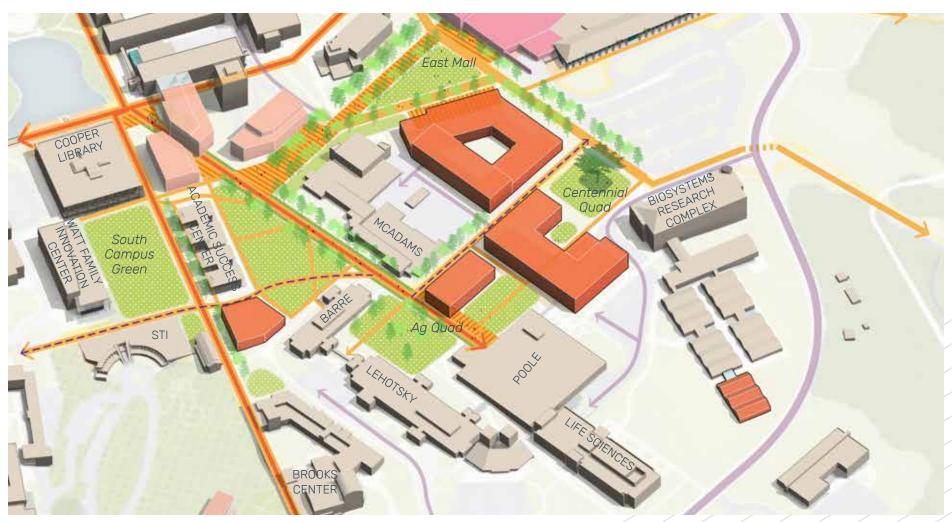
<sup>1</sup> See Chapter 6 Campus Life for more details about one example site for Redfern, which could be relocated next to Fike.



#### AG OUAD AND EAST ACADEMIC CORE

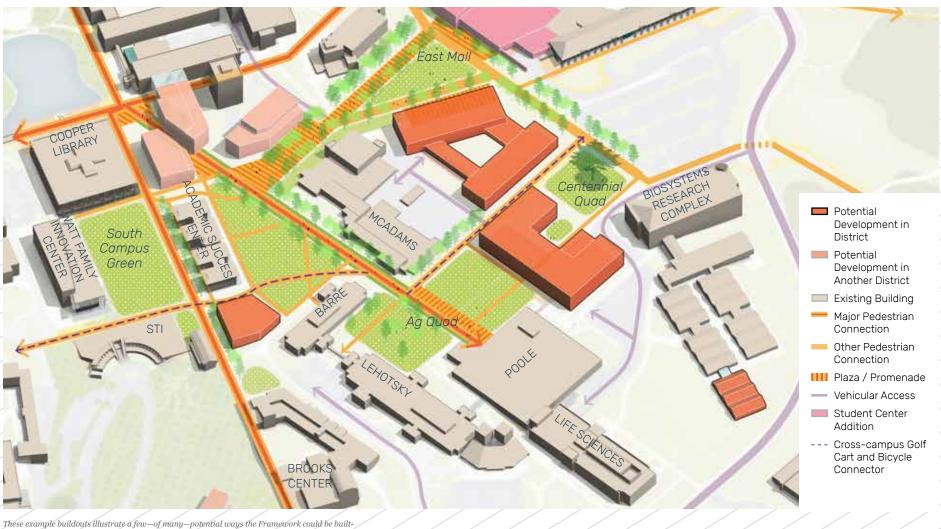
# **Example Buildouts**

#### **Example Buildout 1**



 $These \ example \ buildouts \ illustrate \ a \ few-of \ many-potential \ ways \ the \ Framework \ could \ be \ built-out \ over \ time. \ Building footprints \ should \ be \ viewed \ as \ illustrative \ examples \ only.$ 

## **Example Buildout 2**



These example buildouts illustrate a few—of many—potential ways the Framework could be builtout over time. Building footprints should be viewed as illustrative examples only.

# Fort Hill District

The Fort Hill District includes the areas around Fort Hill, stretching from Fort Hill Street south to S. Palmetto Drive. It is a diverse district—with uses ranging from historic Fort Hill, to academic uses, housing, parking, and open space.





# **▶** District Goals

Strengthen pedestrian connectivity, including north-south from Klugh Avenue and east-west from the Library Bridge axis to Williamson Road.

Respect Fort Hill with future development

Grow academics and research use, enabling future renovation of Sirrine Hall and Hunter Hall

#### FORT HILL DISTRICT

# **District Framework**

Two future development opportunities lie on the western half of this district and provide opportunities to strengthen pedestrian connectivity through this part of campus.

West of Hunter Hall is a potential future development site. This site could include a new academic building, and it also has the potential to accommodate a parking structure, if parking demand cannot be absorbed with additional surface parking lots and transportation demand management incentives.¹ The new academic building could grow research and teaching

capacity, and would create more "swing space," enabling the renovations of Sirrine and Hunter.

The Shoeboxes are growing less suitable for current student housing expectations, and their site could be redeveloped in the future. This location would be a natural fit for either housing or academics—or for a special use that could benefit from the proximity to Fort Hill. It could also be redeveloped to have a combination of these uses, perhaps with a housing component that could relate to Stadium Suites and an academic building facing Fort Hill, complimenting Sirrine.

**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

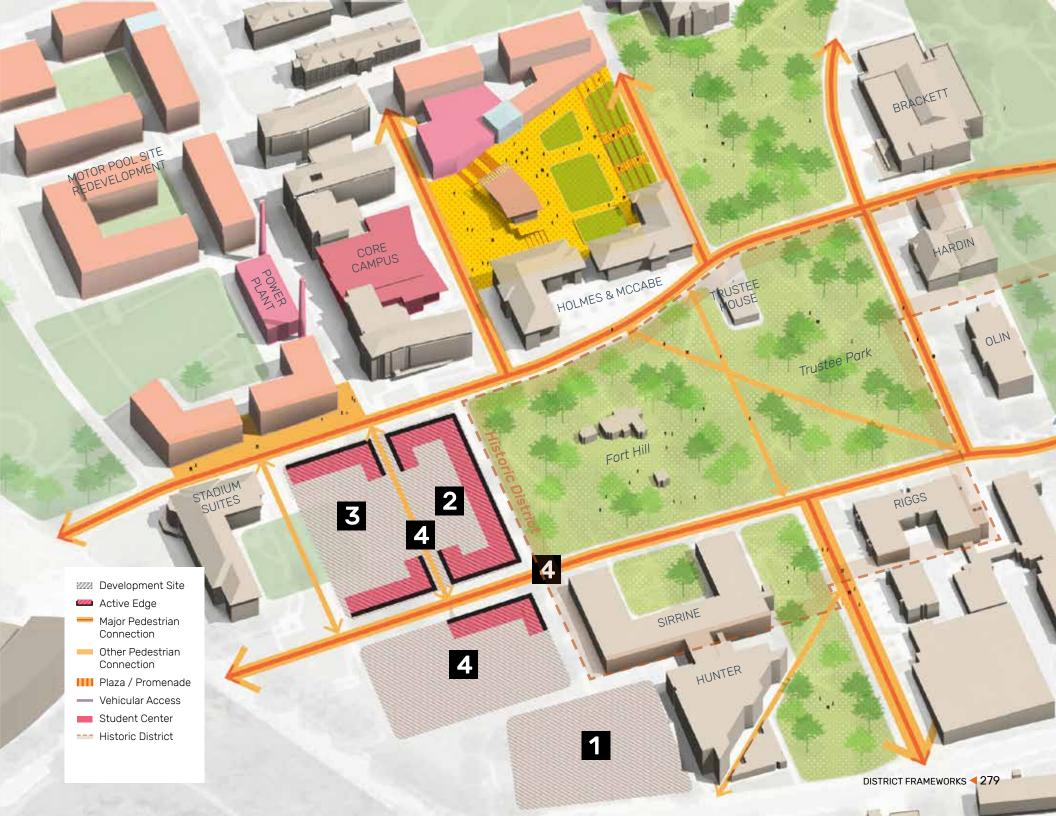
	<b>Potential Uses</b>	<b>Potential Height</b>	Example Capacity*	
1 Development site	Academic	4-6 floors	<b>185,000 GSF</b> (with 5 floors)	
2 Shoeboxes Redevelopment	Housing or Academic	3-5 floors	131,000 GSF / 325 beds (with 4 floors)	
3 Shoeboxes Redevelopment	Housing or Academic	4-6 floors	128,000 GSF / 365 beds (with 6 floors)	
4 Development site	Structured Parking	3-4 floors	550 spaces (180,000 GSF, with 2 bay design and 4 floors) 830 spaces (270,000 GSF, with 3 bay design and 4 floors)	

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors. Residential capacity assumes 350 GSF average per bed. Parking space estimates assume an average of 325 GSF per space. A four floor garage allows parking on 5 levels (4 floors + roof); a three floor garage allows parking on 4 levels (3 floors + roof).

# District Opportunities

- 1 New academic building west of Hunter
- 2 Redevelopment of the Shoeboxes site, with academic and/ or housing uses, or a special use related to Fort Hill
- Redevelopment of the Shoeboxes site, with academic and/ or housing uses, or a special use related to Fort Hill
- 4 Potential for structured parking west of Sirrine
- pedestrian connection from the Library Bridge eastwest connection to Williamson Road
- 6 Improved northsouth pedestrian connection from the new academic site north towards Klugh Ave, Core Campus, and the converted Power Plant

<sup>1</sup> Of potential locations on campus for a parking structure, this one has many advantages. This location offers the opportunity to tuck the structure into the topography to minimize its appearance; it is located in relatively close proximity to the central academic core, yet is very accessible from the edges of campus; and it is located near Memorial Stadium, making it an attractive option for gameday and special event parking. See Chapter 7 Mobility for more details.



## FORT HILL DISTRICT

# **Example Buildouts**

# **Example Buildout 1**



 $These \ example \ buildouts \ illustrate \ a few-of \ many-potential \ ways \ the \ Framework \ could \ be \ built-out \ over \ time. \ Building footprints \ should \ be \ viewed \ as \ illustrative \ examples \ only.$ 

## **Example Buildout 2**



These example buildouts illustrate a few—of many—potential ways the Framework could be builtout over time. Building footprints should be viewed as illustrative examples only.

# Southwest Quad and South Academic Core

This district includes the academic area south of S Palmetto Street, between Williamson Road and Kappa Street. Today, it is home to many engineering, design and building sciences, and arts uses.





# **▶** District Goals

Enhance Fernow Street as the major north-south pedestrian link in the southwest quadrant of campus

View new development to the west of Lee III as an opportunity to create a gateway to the academic core of campus

Integrate new buildings and open space with the district's topography

Increase visibility and presence of research on main campus

Promote synergies between engineering, science, design and building sciences, and arts

Enhance the Williamson Road and Perimeter Intersection for pedestrians

#### SOUTHWEST OUAD AND SOUTH ACADEMIC CORE

# District Framework

In the future, additional academic growth is possible to the west of Lee III and the Smith Building. New growth could include several new buildings, arranged around a central open space. The buildings and open space will need to be integrated with the area's topography, which slopes down towards Williamson Road and Perimeter Road. South of Perimeter Road, the Administrative Services Building site could be renovated and expanded to provide a large site suitable for a research and teaching use. This site would be suitable for a use that needs a larger footprint than is available in the campus core and would engage undergraduates on a daily basis. Improving pedestrian connectivity between Fernow Street and the site would be an important component of the redevelopment.

Other mobility improvements in this district could include converting Fernow Street to a pedestrian promenade, while S Palmetto Street would provide vehicular access and service connections through the district, connecting to the west Library Parking lot. Improving the pedestrian crossing at Perimeter/Williamson Road is another opportunity. This connection is an important crossing point for bicyclists and pedestrians traveling to the Madren Center and Lake Hartwell, and it will connect into a proposed multiuse trail for bicyclists and pedestrians on Old Stadium Road. Improving the Perimeter/Williamson Road intersection would also benefit University golf carts crossing at this point traveling north into campus for service purposes. If the Administrative Services Building were redeveloped, improving the intersection would also provide a better connection for students and faculty traveling between this site and the rest of campus.

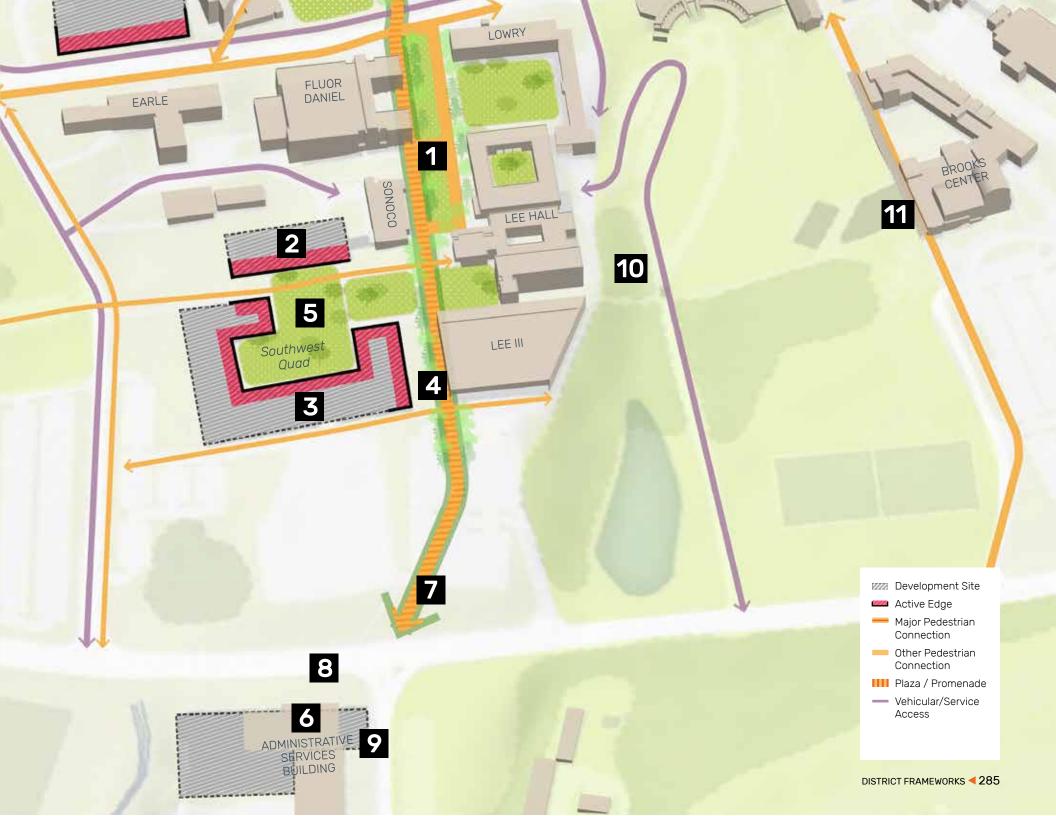
**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

	Potential Uses	<b>Potential Height</b>	Example Capacity*
2 Development site	Academic	3-5 floors	<b>85,000 GSF</b> (with 5 floors)
3 Development site	Academic	4-6 floors	395,000 GSF (with 5 floors)
6 Administrative Services Building Redevelopment	Academic or Support	2-4 floors	<b>145,000 GSF</b> (with 2 floors)
11 Development site	Visitor / Special Use	3-5 floors	58,000 GSF (with 3 floors)

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors.

# District Opportunities

- 1 Pedestrian conversion of Fernow Street
- 2 New academic development site
- 3 New academic development site
- 4 Southern Gateway to the academic core of campus
- 5 New quad
- 6 Academic / research facility site possible directly across Perimeter for largescale research and teaching that would engage undergraduates on a daily basis
- 7 Pedestrian
  connection and
  crosswalk between
  Fernow Street and
  the academic /
  research facility
  across Perimeter
- 8 Improved pedestrian crossing at Perimeter and Old Stadium Road
- 7 Trail connection towards the Madren Center and Lake Hartwell
- 10 Potential for bridge from this district to the Brooks Center
- 11 Development site



# SOUTHWEST QUAD AND SOUTH ACADEMIC CORE

# **Example Buildouts**

# **Example Buildout 1**



 $These \ example \ buildouts \ illustrate \ a \ few-of \ many-potential \ ways \ the \ Framework \ could \ be \ built-out \ over \ time. \ Building \ footprints \ should \ be \ viewed \ as \ illustrative \ examples \ only.$ 

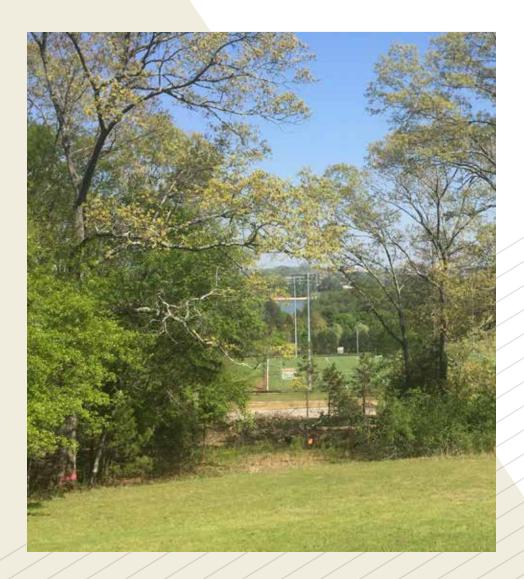
## **Example Buildout 2**



These example buildouts illustrate a few—of many—potential ways the Framework could be builtout over time. Building footprints should be viewed as illustrative examples only.

# Ravenel

Ravenel has historically functioned as an extension of the main campus, and this role will become increasingly important over the coming decades. The Snow Family Outdoor Fitness and Wellness Center and the addition of satellite parking lots are already increasing the connectivity between Ravenel and the rest of main campus. With an area comparable to all of central campus, Ravenel has significant future development capacity, which could accommodate academics and research facilities, campus support uses, transportation and parking needs, and additional campus life spaces.





# **▶** District Goals

Function as an extension of Main Campus

Support University research, academic, and campus life

Create a distinct identity rooted in the district's natural features topography and Lake Hartwell adjacency

Foster appropriate densities to maximize use of this valuable campus land

Enhance walking, bicycling, and transit connectivity to strengthen the connection to Main Campus

#### RAVENEL

#### District Framework

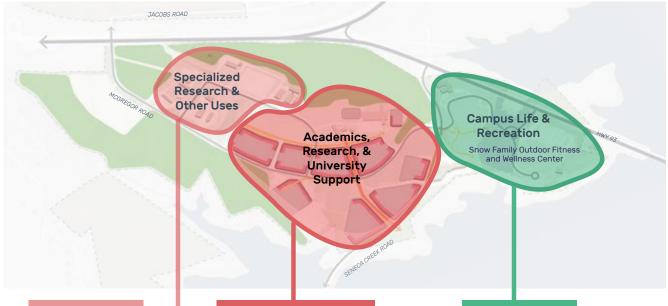
The future framework for Ravenel builds on the current structure of the area, while increasing density, lake access and views, and providing a greater sense of place. The Framework Plan proposes three distinct planning zones for Ravenel, illustrated and described in the map to the right.

#### Site Selection Criteria

Prudent planning now and in the future is critical to ensure the area grows to be a vibrant, beautiful western extension of campus across Lake Hartwell. Any use at Ravenel should have a reason to be located in proximity to the rest of Main Campus and should follow considerations of Land Use Property (see opposite page for more details). While Ravenel has significant development capacity, strategically considering uses that belong on it will ensure it thrives over the long-term as a carefully planned extension of main campus. Thoughtful use of Ravenel's land is as important as land on main campus.

Uses appropriate for Ravenel could include the following:

- Academics and research uses which need some degree of proximity to central campus, but would not require or be appropriate for central campus itself, due to size, noise, or other factors.
- University support uses which do not require a central campus location
- Remote parking
- Campus life uses like the Snow Family Outdoor Fitness and Wellness Center



**Ravenel West** 

This "back of house" zone, the northwestern sector of Ravenel, is currently used for more specialized research uses. Additional growth in this area is possible as well, with siting that will need to take into account noise, safety, vibration, or other factors related to these specialized uses. Any use at Ravenel should have a reason to be located in proximity to the rest of main campus.

Ravenel Center & Lakefront Development

This zone fronts directly on Seneca Creek Road and then transitions up the hill to include Ravenel Center. Uses in this area could include office and university support which do not present noise, vibration, or other issues. Development in this "front door" area can be sited to take advantage of views of Lake Hartwell and could include new development along Seneca Creek Road, as well as new development stepping up the hillside to Ravenel Center. This district of Ravenel should feature the highest densities, in order to take advantage of lake views and topography. Building form and siting should work with the natural topography; parking should be located behind buildings where possible to enhance the character of this district. A central pedestrian spine could connect from Ravenel Center towards Lake Hartwell. providing an important open space amenity for the area.

#### Ravenel East

Home to the Snow Family Outdoor Fitness and Wellness Center, the area of Ravenel between Highway 93 and Seneca Creek Road has a focus on campus life, recreation, and campus support uses. It will also be home to a campus daycare facility. To enhance pedestrian and bicycle connectivity between Ravenel and the Main Campus, the Framework Plan proposes reallocating the space of the Highway 93 bridge to allow for widening of the sidewalk on the west side. Narrowing the existing travel lanes from 13 feet to 11.5 feet could enable the creation of a shared pedestrian/bike path measuring 13 feet wide.

# What does "Land Use Property" mean?

Land Use Property is a permanent designation for 17,500 acres of University land that are part of the Experimental Forest and "dedicated to natural resource conservation, education, research and the land grant mission of Clemson University." The Mission of the Experimental Forest summarizes what this designation means for use and management:

#### Mission

The prime directive for the forest is to be a well-managed, self-sustaining, ecologically healthy, living laboratory, classroom and recreational resource for the benefit of the university, commerce and citizenry of South Carolina, vouchsafed with a mandate to protect and promote in perpetuity the forest as an irreplaceable educational, environmental, scientific and social asset.

 The Clemson Experimental Forest is a national exemplar of a teaching, research and public-service resource for a top-tier university.

- evaluating and demonstrating best scientific natural resource management practices.
  The forest serves as a rejuvenating sanctuary, revitalizing the bond between people and the natural environment and benefiting the community at large.
  The forest will generate revenues from fees, grants, endowments and forest products sales, enabling it to be self-supporting.
  The forest is a multipurpose greenspace, offering a diversity of opportunities and benefits to students, faculty and staff and the public.
  The forest is managed consistent with the intent of it being the nation's gift to
  - The forest is managed consistent with the intent of it being the nation's gift to Clemson University, showing the federal government's faith and confidence in the university to use the land for teaching, research and service.

The forest enhances Thomas Green

seminary of learning."

Clemson's vision of the university as "high

The forest leads by example, developing,

• This working forest is to be used to meet current teaching, research and public-oriented needs and held in trust to meet the needs of future generations. The forest holds a unique status, serving as a historical and scientific repository of regional land-use and research. It is an invaluable evolving record for present and future generations of scholars and public-policymakers.



Sources: www.clemson.edu/public/experimental-forest/about/index.html & www.clemson.edu/public/experimental-forest/index.html . Boundaries of Land Use Property based on 2002 Campus Master Plan (pg. 19)

#### RAVENEL

### **District Framework**

**Development Sites** This table summarizes potential development sites within the district. Numbers are keyed to the map on the opposite page.

	Potential Uses	Potential Height	Example Capacity*
2a Development site	Academic	4-8 floors	215,000 GSF (with 6 floors)
2b Development site	Academic	4-8 floors	247,000 GSF (with 6 floors)
2c Development site	University Support / Academic	2-6 floors	27,000 GSF (with 2 floors)
3a Development site	Academic	3-5 floors	101,000 GSF (with 4 floors)
<b>3b</b> Development site	Academic	3-5 floors	101,000 GSF (with 4 floors)
3c Development site	Academic	3-5 floors	140,000 GSF (with 4 floors)
3d Development site	Academic	3-5 floors	140,000 GSF (with 4 floors)
4a Development site	University Support / Academic	4-6 floors	<b>61,000 GSF</b> (with 4 floors)
4b Development site	University Support / Academic	4-6 floors	<b>43,000 GSF</b> (with 4 floors)
7 Development site	University Support / Academic	2-4 floors	120,000 GSF (with 3 floors)
8a Development site	Academic	3-8 floors	143,000 GSF (with 3 floors)
8b Development site	Academic	3-8 floors	<b>185,000 GSF</b> (with 3 floors)

<sup>\*</sup> Capacities listed reflect one potential footprint and height; the actual capacity could be higher or lower, depending upon the lot coverage and number of floors.

# District Opportunities

- 1 Enhancing walking and bicycling connectivity to main campus
- 2 Potential development sites with views of Lake Hartwell
- 3 Hillside development terraced up the slope
- 4 Increased density through new development sites at Ravenel Center
- S Central pedestrian spine connecting from Ravenel Center and other development areas to Lake Hartwell
- 6 Locating parking behind buildings to provide a more urban edge to district roads
- 7 Development site
- 8 Long-term development sites
- Extend McGregor Road to improve connectivity through district
- 10 Respect steep slopes and natural drainage ways to promote environmental health
- 11 Ravenel Gateway

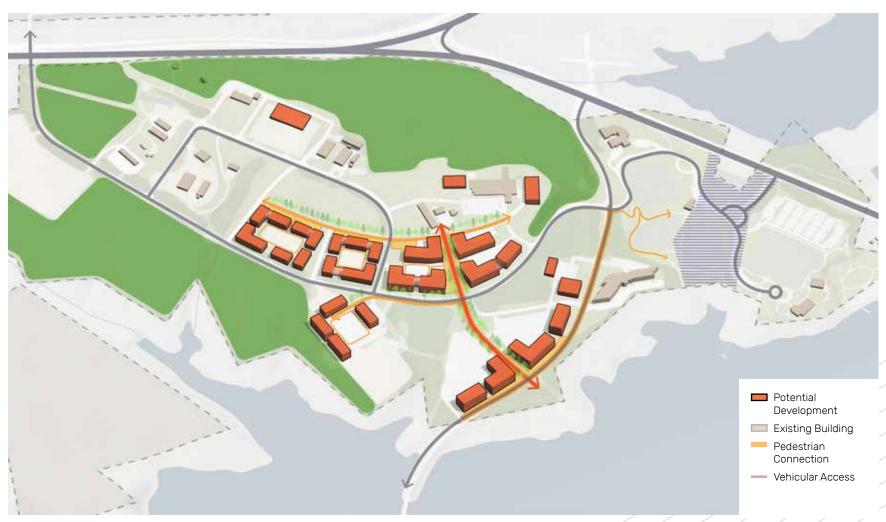


Vehicular Access

## **RAVENEL**

# Example Buildout

# **Example Buildout**



 $These \ example \ buildouts \ illustrate \ a \ few-of \ many-potential \ ways \ the \ Framework \ could \ be \ built-out \ over \ time. \ Building footprints \ should \ be \ viewed \ as \ illustrative \ examples \ only.$ 







# INTRODUCTION

This chapter focuses on recommendations of the Long-range Framework Plan for the edges of campus. It addresses all of the main campus boundaries that are held in common with private and public owners and describes existing and planned conditions for University property. It highlights potential future changes, including new development, mobility enhancements, and new open spaces. The chapter is organized geographically, with sections covering University-owned land along each edge of the main campus and Ravenel.



# **Campus Edges**

- 1. Northern Edge of Main Campus
  Land from the north property
  boundary to Walter T. Cox Blvd, from
  the Perimeter Road/Walter T. Cox Blvd.
  intersection in the west to Highway 76
  in the east
- 2. Eastern Edge of Main Campus
  Land from the eastern property
  boundary to Highway 76
- 3. Southern Edge of Main Campus
  Land from the southern property
  boundary of main campus (south
  edge of the South Carolina Botanical
  Gardens and Golf Course) to Perimeter
  Road, from Cherry Road in the west to
  Highway 76 in the east
- 4. Western Edge of Main Campus Land from Perimeter Road west to Lake Hartwell, including the Madren Center, James F. Martin Inn, and the western sections of the Walker Golf
- 5. Ravenel Edges

  Land at the perimeter of Ravenel

# Northern Edge of Main Campus

Extents: Land from the north property boundary to Walter T. Cox Blvd, from the Perimeter Road/Walter T. Cox intersection in the west to Highway 76 in the east



# **Existing Conditions**

Bordering the City of Clemson, the northern edge of campus lies adjacent to a mix of private, institutional, City, and Federal uses. East of College Avenue, significant University development is underway with the construction of Douthit Hills and the Business School, as well as the demolition of Clemson House. This area also includes the Visitor and Alumni Center buildings as well as Foundation property.

West of College Avenue, the northern edge of campus includes Gentry Hall, as well as several athletic and recreation uses immediately south of Walter T. Cox Blvd. College Avenue provides the main connection between campus and Downtown Clemson, with additional connection points for pedestrians, bicyclists, and vehicles throughout the corridor.





# Planned Conditions

As the Business School is completed, the academic core of campus will grow across Walter T. Cox Blvd. This significant shift will impact campus mobility patterns and will necessitate a series of improvements along Walter T. Cox Blvd., with the goal to improve pedestrian safety. These near-term improvements include

- Raised crossings at Sikes, Sherman Street, College Ave, and Cherry Street
- Realigning Sikes and Sherman Street intersections
- Widening the Bowman Field sidewalk as a shared-use pathway for bicyclists and pedestrians
- Adding a separate parallel shared use path on the north side of Walter T. Cox Blvd.

The vehicular cross section will remain four lanes wide, as it is today.

On either end of Walter T. Cox Blvd., at the east and west gateways to campus, roundabouts are proposed to improve vehicular traffic flow, promoting the use of Perimeter Road for through traffic. Related improvements include widening Newman Road and extending it to connect with Perimeter Road.

Over the long-term, additional options for Walter T. Cox Blvd. could be considered. With the proposed improvements to increase the use of Perimeter Road, traffic volumes along Walter T. Cox Blvd. could decrease, enabling the consideration of other enhancements to further reinforce its function as a campus road. Long-term options for future consideration are available in the Mobility Chapter of the Framework Plan. All options would need to accommodate four vehicular travel lanes for egress following football games.

In addition to these mobility changes, future development is possible in this area in the future. North and northwest of the Business School, additional development could include new academic, academic support, and/or visitor-oriented uses. This could include redevelopment of the Clemson House and Visitor and Alumni Center Sites, as well as an additional development site immediately west of the College Avenue / Walter T. Cox Blvd. intersection. These new development sites could frame a central open space—a shady extension of Bowman Field. This open space could be enhanced with terraced seating and regrading to create a more gentle slope that

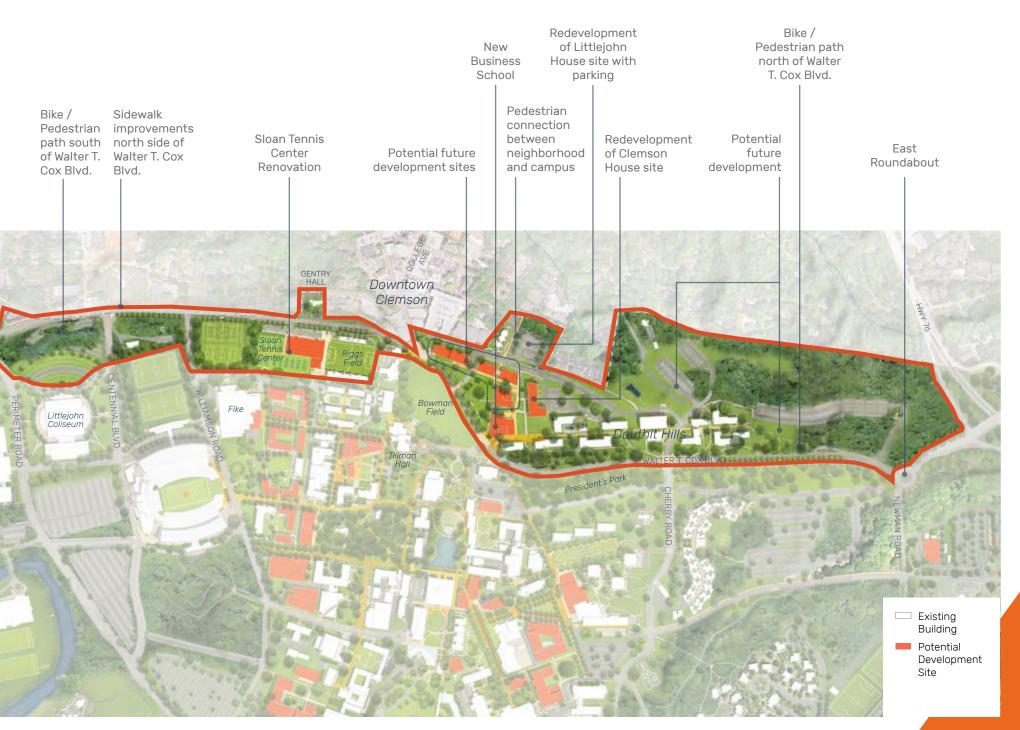
replaces the existing retaining wall in this area. This open space could provide a quiet place for studying and overlooking activity on Bowman Field, as well as the First Friday Parade. Other changes in this area include redeveloping the Littlejohn House site for parking. As redevelopment occurs, it should provide for continued connectivity for students walking from downtown Clemson apartments to campus.

To the east, the Douthit Hills area has the capacity for additional development; the most likely uses are additional on-campus housing.

West of College Avenue and immediately south of Walter T. Cox Blvd., planned improvements include renovation of the Sloan Tennis Center. The Framework Plan also proposes renovating the recreation fields north of Fike to make them suitable for intramural use. These renovations would be similar to those recently undertaken on the intramural fields north of the stadium. Regrading to improve drainage would allow for improved parking on football game days, while allowing enhanced recreational use at other times. Improving these fields is needed to address a shortage of regulation-sized fields.

Western Roundabout









Walter T. Cox Blvd. Planned Near-term Improvements At Bowman Field









The goal of the two roundabouts is to encourage vehicles to naturally flow to Perimeter Road, reducing traffic volumes on Walter T. Cox Blvd.



# Eastern Edge of Main Campus

Extents: Land from the eastern property boundary to Highway 76, excluding the SC National Guard Armory



**Existing Conditions** 

East of Highway 76, University property extends roughly east to Vineyard Road and Ridgeview Drive, excluding the National Guard Armory. Currently, this part of campus includes a parking lot north of the Armory, as well as a few other buildings between Pendleton Road and Highway 76. With visibility from Highway 76, this area functions as part of the gateway experience for visitors arriving from the south. East of campus, the area includes residential neighborhoods and the Clemson Presbyterian Church.



# Planned Conditions

In the future, additional parking is possible south of the Armory site, which could be connected to the existing parking lot with a new road behind the Armory and/or accessed off Rock Creek Road. Parking east of Hwy 76 could be connected by a transit link to the Hendrix Center. Considering bicycle and pedestrian access from this eastern part of campus to the center of main campus will be needed as well.



# Southern Edge of Main Campus

Extents: Land from the southern property boundary of main campus (south edge of the South Carolina Botanical Gardens and Golf Course) to Perimeter Road, from Cherry Road in the west to Highway 76 in the east



**Existing Conditions** 

West of Highway 76, the southern edge of main campus includes Perimeter Road, the South Carolina Botanical Gardens, and a portion of the Walker Golf Course.





# Planned Conditions

Future changes in this area include improvements to Perimeter Road, widening it to four travel lanes and improving pedestrian and bicycle connectivity, including a shared use path along the north side of Perimeter Road. Landscape improvements in connection with the widening of Perimeter Road can further enhance Perimeter Road as a campus gateway. The goal is to promote the use of Perimeter Road for through and commuting traffic, reducing traffic volumes along Walter T. Cox Blvd.

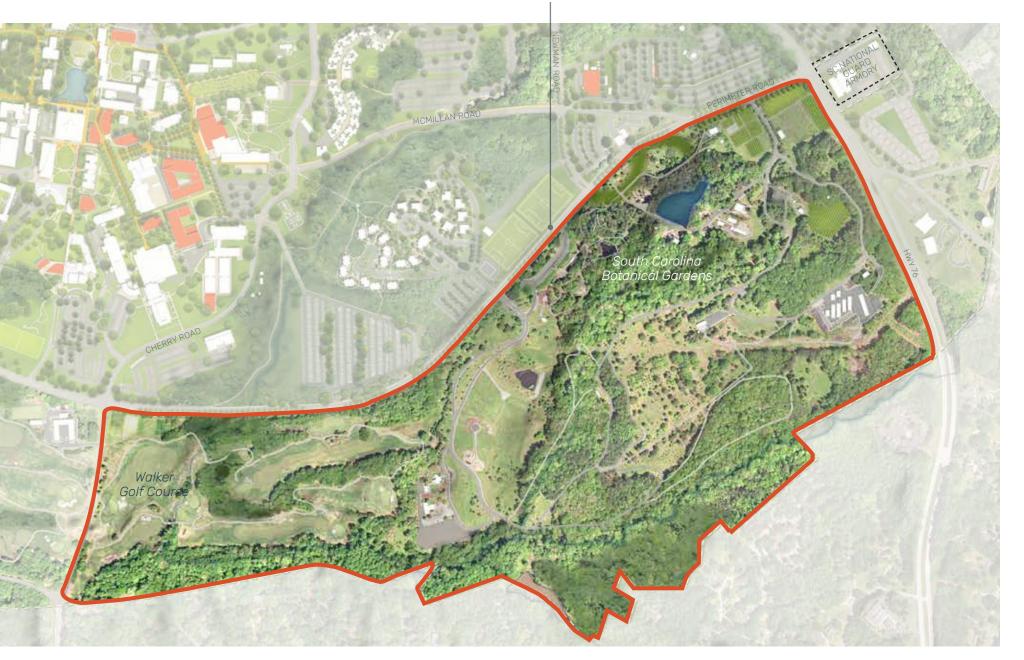
The Framework Plan does not include any changes to the South Carolina Botanical Gardens or the Walker Golf Course.

# Perimeter Road Enhancements





Perimeter Road enhancements between Cherry Road and Hwy 76, including widening to four lanes, adding pedestrian/bicycle path on north, and adding boulevard character with a planted median



# Western Edge of Main Campus

Extents: Land from Perimeter Road west to Lake Hartwell shore, including the Madren Center, James F. Martin Inn, the western sections of the Walker Golf Course, and athletic uses and significant campus landscapes



# **Existing Conditions**

The western edge of campus extends from Perimeter Road towards the shores of Lake Hartwell. An area with many diverse uses, it includes the Bottoms, the Seneca River Basin, multiple athletic uses, the Walker Golf Course, the Madren Center and James F. Martin Inn, and campus support and infrastructure uses.

The ownership and regulatory context of this area is perhaps the most complex of central campus. The dikes that bound Lake Hartwell and keep campus dry are property owned by the Army Corps of Engineers. Clemson leases two sections of this shoreline, including the Clemson Rowing boathouse and parts of the lakefront portion of the Walker Golf Course south of Lake Drive. The Wastewater Treatment Plant is a Clemson facility located on Army Corps property. The area west of the Seneca River Basin has an U.S. Army Corps of Engineers (USACE) easement that impacts uses, and the northern tip of this area between

the waterway and Perimeter Road is Land Use property.<sup>1</sup>

The low-lying areas including the Bottoms and Seneca River Basin are within the floodplain, a consideration future development must take into account. Where development does occur, elevating ground floors above the base flood elevation, for example, helps reduce the risk of damage during a flood event. A 100 year (24 hour) storm is anticipated to increase the water elevation to 622 feet (typical water elevation is below 615 feet). Locating essential campus uses and critical infrastructure away from floodprone areas is preferred.



<sup>1</sup> Land Use Property is a permanent designation for 17,500 acres of University land that are part of the Experimental Forest and "dedicated to natural resource conservation, education, research and the land grant mission of Clemson University." For more information see: https://www.clemson.edu/public/experimental-forest/about/index.html or https://www.clemson.edu/public/experimental-forest/index.html

<sup>2</sup> Hydrology Study for Hunnicut Creek Including Jervey Meadows (AECOM, 2014)



# **Planned Conditions**

The west edge of campus is located outside of the core academic zone and student life neighborhoods. The Framework Plan does not envision significant changes to this area. Much of the area contains athletic uses, and additional growth in these areas is anticipated with the addition of a softball facility and soccer operations building.

The Administrative Services Building at the intersection of Perimeter Road and Old Stadium Road is a potential candidate for expansion or redevelopment. Additional space is needed for campus support uses; expanding the existing building on the current site could provide needed room for growth. Alternatively, these campus support uses could be relocated to Ravenel, which would allow the existing building and site south of Perimeter Road to be renovated for a new use. The site's location just outside the main academic core of campus could make it suitable for certain types of academic uses—uses that would not be the highest use of land within the academic core but which do anticipate a significant amount of undergraduate student contact and, therefore, would still require close proximity to the academic core.

The Framework Plan does not include recommendations for changes to other uses in the area—like the Bottoms, James F. Martin Inn and Madren Center, and the Walker Golf Course.

Mobility enhancements in the area include improving pedestrian and bicycle access along Old Stadium Road; converting the Perimeter Road / Walter T. Cox Blvd. intersection into a roundabout; and reallocating the existing Highway 93 bridge width to allow for a wider shared pedestrian/bicycle zone on the west side of the bridge.¹ With the development of the Snow Family Outdoor Fitness and Wellness Center, walking and bicycling between main campus and Ravenel is expected to increase. The recommended improvements to the existing bridge will improve connectivity between both parts of campus.



<sup>1</sup> To accommodate a 13 foot wide shared pedestrian/bicycle path on the west side of the bridge existing vehicular travel lanes would need to be narrowed from 13 feet to 11.5 feet. The existing north-bound bicycle lane on the east side of the bridge would remain.



# **Ravenel Edges**

# **Extends: Land around the perimeter of Ravenel**



# **Existing Conditions**

Ravenel is currently home to a diverse mix of uses—ranging from campus life, to university support and parking, to research and academics. Ravenel is accessed from Highway 93 and Seneca Creek Road. McGregor Road and Hugo Road are the primary internal streets.

North and west of Seneca Creek Road, the edges of Ravenel are largely forested today and include some areas with steep slopes. In the southeast of Ravenel, to the north of Seneca Creek Road, areas are used for parking for athletic events as well as by Tiger Transit.

South of Seneca Creek Road is the National Council of Examiners for Engineering and Surveying. In the north areas of Ravenel are several campus research facilities, accessed from Hugo Drive. Between Seneca Creek Road and Lake Hartwell, the Snow Family Outdoor Fitness and Wellness Center is increasing recreational uses for campus. A portion of this land includes an U.S. Army Corps of Engineers easement. A parking area immediately west of Highway 93 is providing daily parking for campus.



# Planned Conditions

Ravenel has historically functioned as an extension of the main campus, and this role will become increasingly important over the coming decades. The Snow Family Outdoor Fitness and Wellness Center and the addition of satellite parking lots are already increasing the connectivity between Ravenel and the rest of main campus. With an area comparable to all of central campus, Ravenel has significant future development capacity, which could accommodate academics and research facilities, campus support uses, transportation and parking needs, and additional campus life spaces.

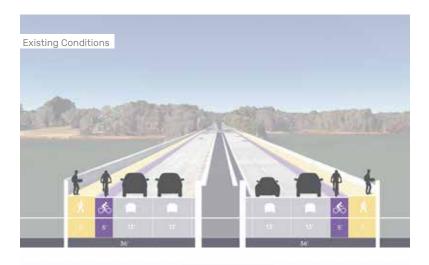
The future framework for Ravenel builds on the current structure of the area, while increasing density, lake access and views, and providing a greater sense of place. Over the coming years, the Snow Family Outdoor Fitness and Wellness Center will continue to be developed, and a university daycare is anticipated to be added north of the recreation area, at the corner of Seneca Creek Road and Highway 93. To

enhance pedestrian and bicycle connectivity between Ravenel and the Main Campus, the Framework Plan proposes reallocating the space of the Highway 93 bridge to allow for widening of the sidewalk on the west side. Narrowing the existing travel lanes from 13 feet to 11.5 feet could enable the creation of a shared pedestrian/bike path measuring 13 feet wide.

The area north and west of Seneca Creek Road will continue to house university support functions and a mix of research and academic uses. These uses are likely to increase, with new buildings possible along Seneca Creek Road, McGregor Road, and Hugo Drive. New development will need to be sited to avoid areas of very steep slopes, which are anticipated to remain forested as they are today.

McGregor Road could be extended northwest to Highway 123, increasing connectivity through the district.

More details about Ravenel are available in Chapter 9, District Frameworks.











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