



UNC PEMBROKE

MASTER PLAN 2022

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MESSAGE FROM THE CHANCELLOR
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INTRODUCTION



MESSAGE FROM THE CHANCELLOR



IMAGE 1 Robin Gary Cummings, MD

BraveNation,

Since 1887, The University of North Carolina at Pembroke has had the goal to provide students with a high-quality education, preparing them for a promising, successful future. As chancellor, I'm incredibly proud of all that has been accomplished over the last 135 years, including the growth in enrollment, programs and our campus infrastructure. And through it all, our mission to change lives through the promise of education has remained constant.

As with any organization, positive growth requires strategy, intentional planning and deliberate implementation. Our continued success relies on the uncompromising standards of excellence we set in teaching, research and service. Thus, it's critical that we have the infrastructure and resources in place to allow UNCP to continue growing and developing, thereby supporting our academic mission.

To this end, UNCP periodically undergoes a review of its master plan for our campus, taking into consideration changes in the resources, the needs of our region and the students we serve. Starting in late 2020, it became clear that an update was necessary given the changing landscape of higher education. Using Duda | Paine Architects, a nationally recognized expert in guiding campus development, a timeline was established. Subsequently, with input from many groups and individuals from the university, community and beyond provided invaluable information through their participation in the planning process for the Master Plan Update 2022. This comprehensive plan will move our vision of delivering transformational educational experiences forward in the next ten years.

Our campus has always had a welcoming appearance. Today, it is recognized as one of the most serene, open, and inviting campuses within the UNC System. The charge of this effort was to build upon that foundation. I think, when fully complete, this plan will indeed move our campus to its next level of development.

At UNC Pembroke, we are proud of our past and passionate about our future. The following Master Plan Update 2022 has been designed to guide the development of our campus to meet the needs now and into the future, ensuring the UNC Pembroke campus remains a warm, welcoming and lively place to learn and work.

Go Braves!

Sincerely,

Robin Gary Cummings, MD
Chancellor
The University of North Carolina at Pembroke

ACKNOWLEDGEMENTS

The Master Plan was achieved with the guidance and input of the Board of Trustees, Senior Staff, the Master Plan Steering Committee, and the Master Plan Design Team. Acknowledgment is also owed to faculty, staff, students and community members who provided valuable feedback throughout the master planning process. Many thanks to all participants for their efforts!

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EXECUTIVE SUMMARY

The UNC Pembroke Legacy

In the 1880's, the American Indian community of Robeson County came together with the idea to improve their lives through the pursuit of knowledge. These leaders, who were named Moore, Locklear, Brayboy, and Oxendine, came together with state legislator Hamilton McMillan in 1887 to create a school of education. Today, UNC Pembroke continues to follow the legacy of its founders, opening its doors to a diverse community to provide an accessible, high-quality education.

In the last decade, UNC Pembroke's commitment to the NC Promise program and its expansion of online programs has further increased accessibility to students of all backgrounds. From 2012 to 2022, enrollment has increased by nearly 2,100 students. In the coming decade, UNC Pembroke is poised to expand its physical campus and its regional partnerships to serve its growing student body.

Guiding Principles of the Master Plan

Driven by a set of six Guiding Principles which encompass the recurring themes in discussions, surveys, and a deep understanding of the campus, the 2022 Master Plan takes inspiration from the strong sense of place and walkability in the dense historic part of campus, which is distinguished by the welcoming landscape around the "Founders Quad" and long established buildings, such as Old Main.

Using these elements as its inspiration, the 2022 Master Plan pinpoints areas for improving gateways, increasing vibrant zones for student life, expanding pedestrian and cycling access, welcoming the community through its distinctive institutions, and encouraging areas of natural preservation and rehabilitation.



IMAGE 2 Old Main at UNCP, constructed in 1923

EXECUTIVE SUMMARY

Campus Framework of the Master Plan

The Campus Framework is the main concept and public infrastructure around which the 2022 Master Plan is organized. The approach on UNC Pembroke’s campus is to expand the pedestrian-oriented character of the historic campus northward. This is accomplished by connecting Faculty Row to Braves Drive to create a new “All Campus Path” which will extend from Old Main Road in the south to Facilities Drive in the north.

The path is envisioned as a multi-purpose, tree-lined route through the heart of campus that connects and organizes new and existing buildings and unites the diversity of open spaces and landscape throughout. The “All Campus Path” also provides opportunities to locate and organize utilities, water management, and other infrastructure. Public vehicular access will be eliminated in this area, though facilities and emergency vehicles will still be able to use the “All Campus Path” as needed.

Three cross streets running from east to west will provide access to vehicles, connecting University Road to Prospect Road/N. Odum Street. These streets are located on Old Main Road, University Drive, and Facilities Drive. They are envisioned as improved streets with clear and separate zones for pedestrians, vehicles, and bicycles.

IMAGE 3 James A. Thomas Hall at UNCP



EXECUTIVE SUMMARY

Master Plan Proposals - SOUTH CAMPUS

The east-west street connections on campus define three large districts: South Campus, Central Campus, and North Campus.

In **South Campus**, the vision focuses on **bolstering the density and defining characteristics of UNC Pembroke** by creating **vibrant gathering spaces for students and the public** through the following projects:

- **Livermore Library** expansion and reading room
- **Chancellor’s Residence** transformation to an Alumni Center
- **Former Business Administration Building** transformation to a Student Success Center
- **The James B. Chavis Student Center**

These student-oriented spaces are connected through **new outdoor spaces and plazas** that will connect to the **new pedestrian-oriented “All Campus Path” on the former Faculty Row** and incorporate more shade trees and furniture throughout.

“Lumbee Gateway,” at the intersection of Prospect Road/N. Odum Street and University Drive, will be transformed into a grand and inviting campus entry through a new **“Arts Oval,”** which will be anchored by a **newly renovated GPAC**. The transformation will serve the University and the community through expanded theater space, a Welcome Center, and art displays in a new events and gallery space.

IMAGE 4 2022 Master Plan Rendering of South Campus



EXECUTIVE SUMMARY

Master Plan Proposals - CENTRAL CAMPUS

In Central Campus, the vision is to extend the density of the South Campus northward to create a University-oriented mixed-use district. A transformation of Braves Drive will continue the pedestrian-oriented "All Campus Path" and provide a landscape framework to connect existing residential facilities, sports fields, academic buildings, and new buildings in Central Campus. The proposed projects reinforce existing athletics, recreation and science facilities in this area to create a new "Health-Science Neighborhood" with a distinct focus on wellness and recreation.

A new Allied Health Science Building is placed to complement the Weinstein Health Science Building and to anchor a new "Healthcare Quad" which will mirror the existing "Founders Quad." This new "Health-Science Neighborhood" brings with it opportunities to create partnerships with regional healthcare providers to facilitate larger academic programs in allied health. Residential halls may be added to the north of this area to enhance activity and diversity of uses in this district as needed. Facilities Drive, which is the main east-west connection in this area, will be renovated to become a multi-modal complete street.



IMAGE 5 2022 Master Plan Rendering of Central Campus

EXECUTIVE SUMMARY

Master Plan Proposals - NORTH CAMPUS

North Campus can develop in a variety of ways depending on the needs and conditions on campus in the next 20 to 50 years. Possible scenarios include:

- A new **Athletics and Recreation Complex** for baseball and softball
- A new **Academic Neighborhood**
- A new **Millennial Campus** or
- **Property exchange and leasing** of the 44-Acre property in the northeastern corner of campus

While the first two scenarios would rely more heavily on UNC Pembroke to invest in development, the second two scenarios would rely on leveraging relationships and sharing costs with developers or other regional partners to achieve appropriate density and programming. These scenarios may generate revenue for UNC Pembroke; however, commercial, retail, housing, and other local markets should be studied prior to development.



IMAGE 6 2022 Master Plan Rendering of the North Campus

EXECUTIVE SUMMARY



Master Plan Implementation

Priority projects for the next ten years, include landscape and building proposals.

Priority landscape projects are as follows:

- Faculty Row and Braves Drive Transformation to an **"All Campus Path"**
- Central **"Lumbee Gateway" Transformation**
- Central **"Bravehawk Gateway" Transformation**

Key transformational building projects are as follows:

- The new **Allied Health Science Building** and **"Healthcare Quad"**
- A new **Student Success Center** in the former Business Administration Building
- **GPAC Expansion & Renovation**

Other priority building projects are:

- The **Livermore Library expansion**
- **James B. Chavis Student Center expansion**
- A new **Alumni Center** in the current Chancellor's Residence

Each building project can be paired with landscape and infrastructure improvements that are outlined in Chapters 2 and 3 of this document.

DRAWING Future UNC Pembroke Campus Conditions 2032

TIMELINE

The Master Plan Process is divided into five phases, each of which culminates in the achievement of a milestone that encompasses all the feedback received along the way.



This chart provides an overview of main meetings and important work sessions throughout the 10 month master plan process.

THE MASTER PLAN PROCESS

Information Gathering Phase

During the Information Gathering Phase, the Design Team met with the Master Plan Steering Committee (MPSC) and the Chancellor to discuss master plan goals, survey the campus, and collect data about existing conditions on campus and its surrounding areas, including space use, mobility, landscape, sustainability, and utilities.

Visioning Phase

The main goal of the Visioning Phase was to identify key opportunities for improvement and growth on campus. Throughout this phase, the Design Team facilitated conversations, listening sessions and surveys with both internal and external stakeholders, including faculty, staff, students, and local community members.

Programming Phase

A space inventory and analysis of pre-pandemic course schedules was conducted to measure the use and efficiency of space in a range of categories, from classrooms and labs to offices. This phase culminated in an overview of space surpluses and deficits that can guide future building developments or improvements.

Conceptual Ideation Phase

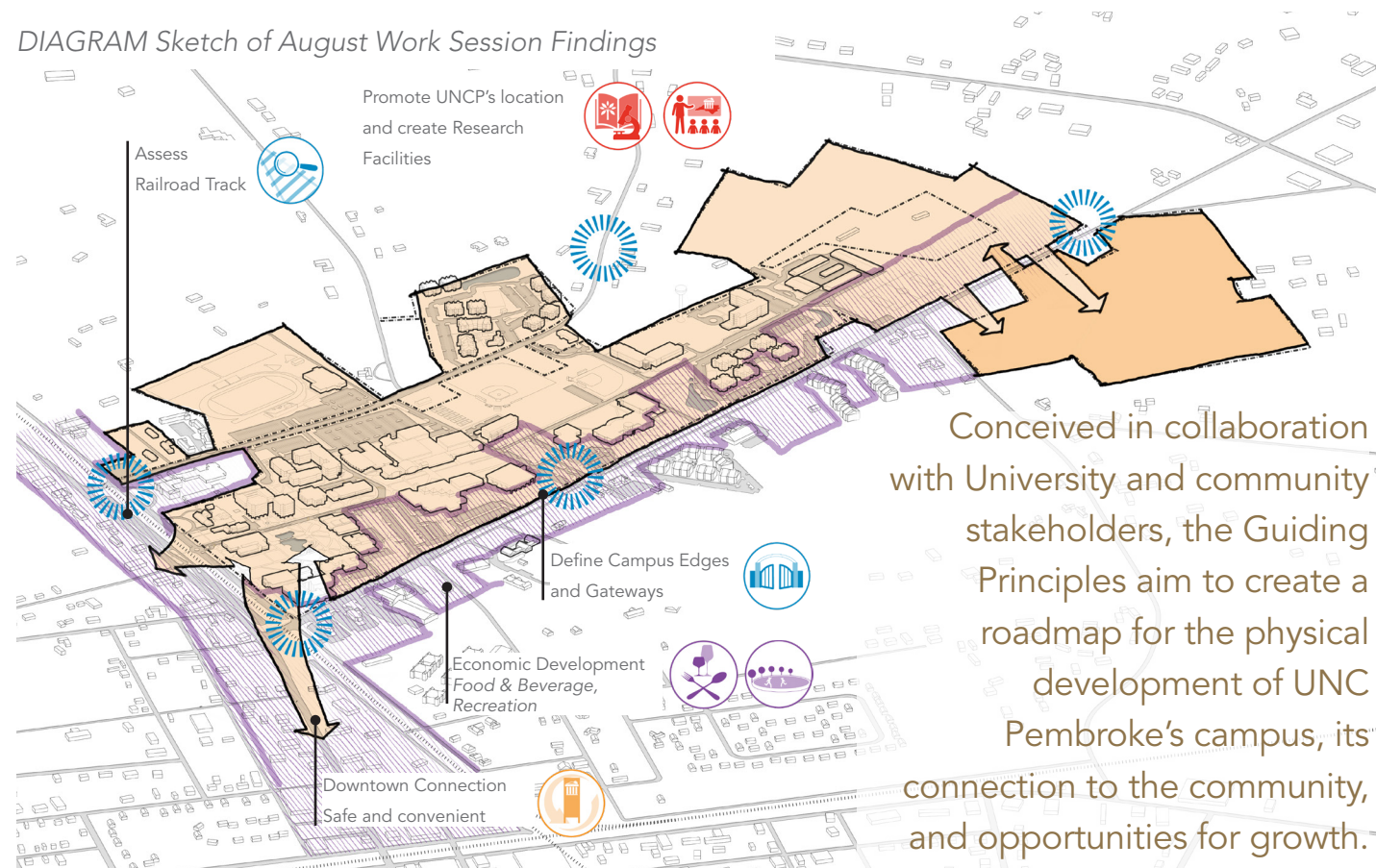
The Design Team developed a series of plans outlining different possibilities for the future of the UNC Pembroke campus during the Conceptual Ideation Phase. These plans were refined through conversations with University leaders, including the MPSC, the Board of Trustees, the Chancellor, and the Vice Chancellor.

Consensus Building | Documentation

A living document outlining a framework for the future development of the UNC Pembroke campus, Master Plan recommendations and solutions was created based on the information and feedback gathered from previous phases.



MASTER PLAN 2022 GUIDING PRINCIPLES



During the 2022 Master Plan process, the Design Team worked closely with the MSPC, Chancellor, and Vice Chancellor as well as University and community stakeholders to develop a set of Guiding Principles that respond to and current needs of UNC Pembroke. The purpose of the Guiding Principles is to identify the framework and key objectives of the 2022 Master Plan.

The final Guiding Principles align with many of those listed in the 2011 Master Plan, but are also a culmination of the overarching themes discussed throughout the Information Gathering phase of the

Master Plan. They represent the concerns of students, faculty, staff, and community members, as well as university and local leadership which were expressed during Listening Sessions and in survey responses.

The Guiding Principles were revised and refined through discussions with the Master Plan Steering Committee, Chancellor, and Vice Chancellor to ensure consensus as well as consistency with the strategic direction of UNC Pembroke.



Strengthen the Historic Core of Campus

- Enhance existing buildings
- Increase the visibility of art, culture, and history
- Envision new initiatives and landscapes that unify the campus



Reinforce Campus Arrival

- Expand on the successful campus gateway improvements
- Identify and organize campus neighborhoods
- Create new gateway and wayfinding locations



Provide Spaces that Serve a Diverse Student Body

- Create a plan that responds to academic program needs and guides space allocation
- Create gathering, dining, studying, and lounging areas to enrich student life
- Enhance the vibrancy of campus by programming open spaces to support on-campus events
- Evaluate housing to address on-campus life



Create a Pedestrian & Bike Friendly Campus

- Provide safe all-campus circulation
- Enhance pedestrian and bike safety
- Decrease vehicular traffic in the campus core
- Improve parking and service areas



Enhance Campus Edges to Engage the Local Community

- Reinforce view corridors into campus
- Strengthen connections to athletics
- Promote a safe and accessible campus



Encourage Sustainable Practices that Respect the Natural Landscape

- Provide outdoor spaces that connect to the natural environment
- Improve water management strategies
- Assess infrastructure efficiency

STRATEGIC PLAN 2020-2025 OVERVIEW & SPATIAL INITIATIVES

The 2022 Master Plan and its analyses, initiatives, and proposals are informed by UNC Pembroke’s Strategic Goals and Objectives.

UNC Pembroke’s 2020-2025 Strategic Plan was reviewed to ensure that the 2022 Master Plan fully reflects the goals and objectives of the University. Each Goal and corresponding Objective was reviewed and translated into initiatives for the

campus’ physical transformation and improvement in the 2022 Master Plan.

These initiatives informed the deliverables and analyses of the Master Plan, including the space analysis, built environment proposals, mobility, and landscape strategies. They are also actionable goals that can be achieved through a series of smaller and more targeted studies and strategic directions to inform specific campus developments and community engagement projects.



Innovative Academic Programming

Enhance & Expand Academic Facilities & Programs

- Assess academic campus space utilization, current and future space requirements
- Plan for growing enrollment while maintaining small class sizes
- Create new facilities and spaces for new and growing academic programs, such as Healthcare, STEM, Engineering, Education, and Cybersecurity



Engaged & Supported Student Experiences

Create Welcoming Multipurpose Student Hubs & Service Facilities

- Assess and evaluate student support services, campus technology, study areas, and hubs
- Determine enhancement and expansion needs of services such as dining, wellness, study areas, gathering spaces, resource centers, and athletics
- Create new facilities and spaces to support growing dining, wellness, social, and athletics needs



Operational Excellence



Celebrate UNCP’s Uniqueness



Regional & Community Engagement

Ensure that Campus is Attractive & Accessible

- Assess current faculty/staff spaces and needs
- Assess and evaluate facilities and accessibility
- Create new facilities and spaces to support faculty/staff needs, such as research, wellness, offices , and parking
- Enhance the navigational system of campus to address accessibility, transportation, and wayfinding needs

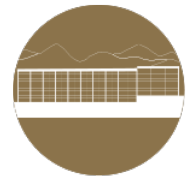
Celebrate UNCP’s Identity by Creating a Unique Sense of Place

- Assess space needs for UNCP programming, employee/partner outreach, community engagement, and University presence
- Create inclusive spaces and facilities that celebrate UNCP’s identity and welcome visitors and community members

Expand UNCP’s Physical Presence in the Community

- Identify community partnerships that enhance student educational experience
- Assess needs at existing facilities, such as the Entrepreneurship HUB and Office for Regional Initiatives
- Create opportunities that bring locals, partners, and the UNCP community together

MASTER PLAN BOOK OBJECTIVES



Architectural Strategies

- Space analysis
- Building renovations and expansions
- New building placement and orientation
- Potential building program
- Peripheral property development
- Future property acquisitions



Landscape Strategies

- Landscape as a spatial strategy and framework for campus growth
- Identify open space improvements
- Re-envision the public realm, quads, and plazas
- Placement of recreational/athletic fields and trails
- Natural preservation zones



Navigation Strategies

- Complete and shared streets planning
- Enhanced arrival, gateways and wayfinding strategies
- Accessibility and connection to town
- Traffic flow and parking solutions



Energy & Sustainability Strategies

- Utilities assessment
- Sustainable infrastructure and systems recommendations
- Strategies for future of energy and utilities on campus

A LIVING DOCUMENT

The UNC Pembroke 2022 Master Plan Update embodies the continuity of planning on campus through the adaptation of strong design principles from prior master plans. It serves as a flexible roadmap for the future growth of campus, outlining both important 10-year projects and potential opportunities 20 to 50 years in the future. The plan takes into account fiscal allocations, space utilization, and stakeholder feedback to create a vision for the south, central, and north campus areas based on UNC Pembroke’s short and long-term development goals.

The planning strategies for each campus neighborhood vary based on the needs, budget allocation, and time horizon of development. In the historic south of campus, the master plan vision focuses on the short-term transformation and adaptive use of existing buildings.

In the central part of campus, the focus shifts toward the creating a second “Healthcare Quad” that mirrors the success of UNC Pembroke’s existing Founders

Quad, but which highlights existing and proposed science buildings. The vision for the north of campus encompasses several design options which reflect flexible, long-term possibilities that can be reviewed and discussed based on local and regional developments within the next 20 to 50 years.

Though each vision aims to create a distinct neighborhood character, all three areas are organized around an “All Campus Path” running from north to south. This path connects campus buildings and creates a vibrant zone for pedestrians and active mobility, such as cycling and skateboarding. These strategies are further defined in Chapters 2 and 4, which provide a practical exposition and conceptual framework of each initiative. A set of flexible implementation strategies is provided in Chapter 3. Full reports of the studies conducted during this Master Plan process are provided in Chapter 7.

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SOUTH CAMPUS VISION

“FOUNDERS QUAD”

JAMES B. CHAVIS STUDENT CENTER QUAD - “BRAVES PLAZA”

“LUMBEE GATEWAY”

“BRAVEHAWK GATEWAY”

CENTRAL CAMPUS VISION

“BUSINESS COURTYARD”

“HEALTH-SCIENCE NEIGHBORHOOD”

“NORTHERN GATEWAY”

LONG-TERM & NORTH CAMPUS VISION

MASTER PLAN





SOUTH CAMPUS VISION



TRANSFORMED EXISTING GATEWAY TO
"LUMBEE GATEWAY" & "ARTS OVAL"

GPAC

JAMES B. CHAVIS STUDENT CENTER

OLD BUSINESS ADMINISTRATION BUILDING

CHANCELLOR'S RESIDENCE

LIVERMORE LIBRARY

The vision for South Campus is to reinforce its dense and vibrant character by showcasing UNC Pembroke’s Lumbee roots, serving the University community through renovated academic and social spaces, and highlighting public venues such as GPAC and the Belk Athletic Complex.

South Campus features the most iconic and historic spaces on campus, with academics and student life uses featuring most prominently. The main vision for this area is to strengthen existing buildings and open spaces.

To the south, the connection to campus from **Old Main Road** is improved with a new offset pedestrian crossing and fencing around the railroad tracks. The **"Founders Quad"** is enhanced through an **expansion of Livermore Library** and the adaptive reuse of the existing Chancellor’s residence as an **Alumni Center**. Further north, the James B. Chavis Student Center and the former Business Administration Building are expanded to include **student lounge spaces and a Student Success Center**. These student-oriented spaces are connected through a new plaza that features outdoor seating and movable furniture.

"Lumbee Gateway," which is located at the intersection of N. Odum Street and Prospect Road/ University Drive, is transformed to include an **"Arts Oval,"** which signals arrival and creates a grand, inviting open space for the public and the University. Along the "Arts Oval," a **newly renovated GPAC** features expanded theater space, a Welcome Center, and art displays in a new events and gallery space. Updated paving material along University Drive marks it as a ceremonial path between the two main public venues on campus: the theater at GPAC and the football stadium at the new **"BraveHawk Gateway."** Street improvements such as ample sidewalks, dedicated bike lanes, and clear vehicular zones increase safety and strengthen this east-west connection.

DRAWING Future UNC Pembroke South Campus Vision



SOUTH CAMPUS EXISTING CONDITIONS

① Old Main Road

- Opportunity for enhancement and widening to serve as a primary crossing to campus

② James B. Chavis Student Center Parking

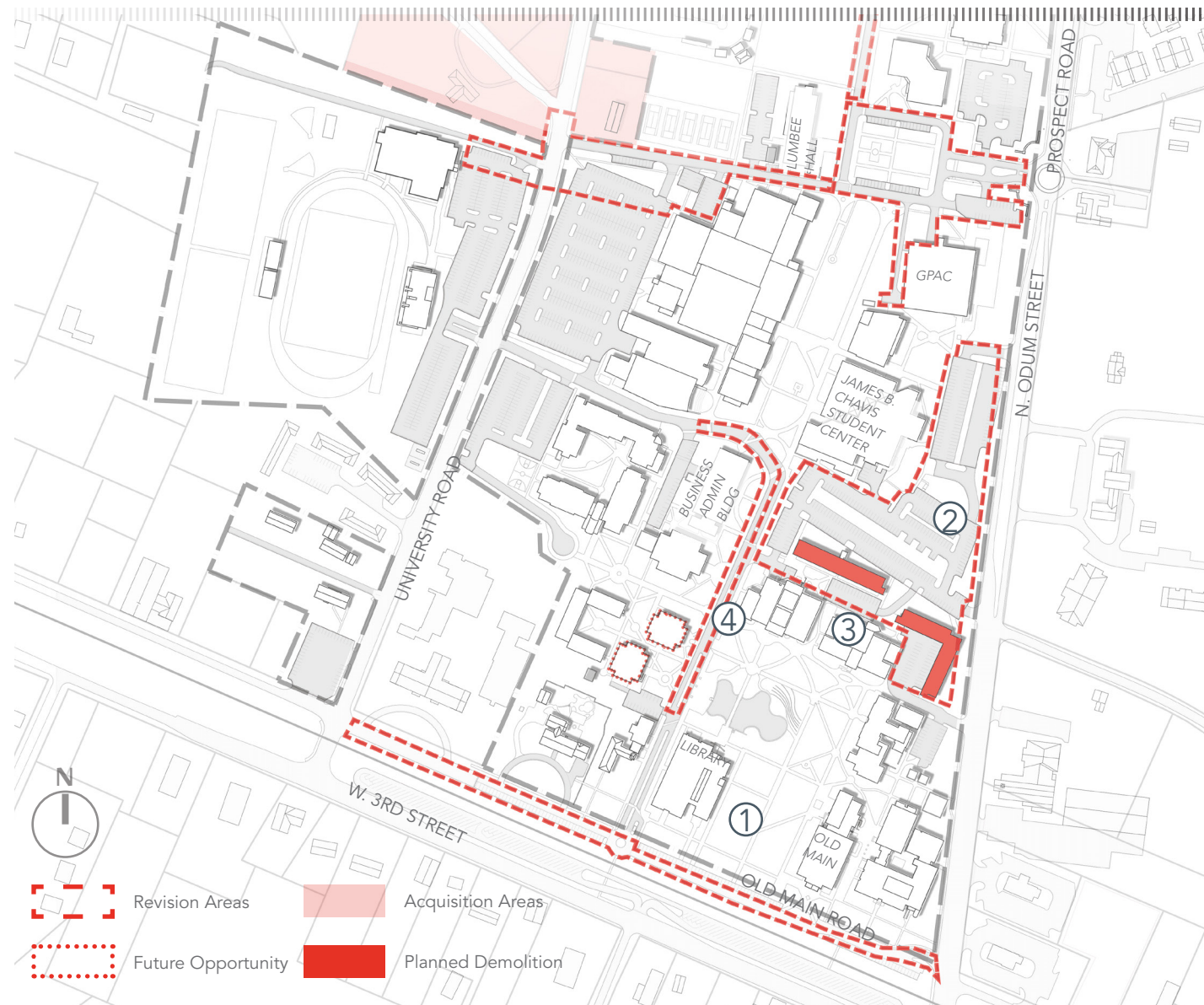
- Reconfiguration of parking lots to make more efficient use of the space following the demolition of Wellons and Jacobs Halls
- Landscape strategies to better handle stormwater issues in this location

③ Faculty Row

- Incorporation of Faculty Row into the "All Campus Path" to unify green spaces between Chavis Green and the Main Quad
- Paving strategies to create a grand pathway across the center of campus

④ Belk & North Residence Halls

- Currently used as swing space. To be considered for demolition based on UNCP housing needs and future building opportunities



SOUTH CAMPUS OPPORTUNITIES

A "Founders Quad"

Page 39

- Library Transformation
- Chancellor's Residence Repurposing

C "Lumbee Gateway"

Page 43

- GPAC Renovation & Expansion

B "Braves Plaza"

Page 41

- James B. Chavis Student Center Transformation
- Business Admin Building Renovation and Repurposing

D "BraveHawk Gateway"

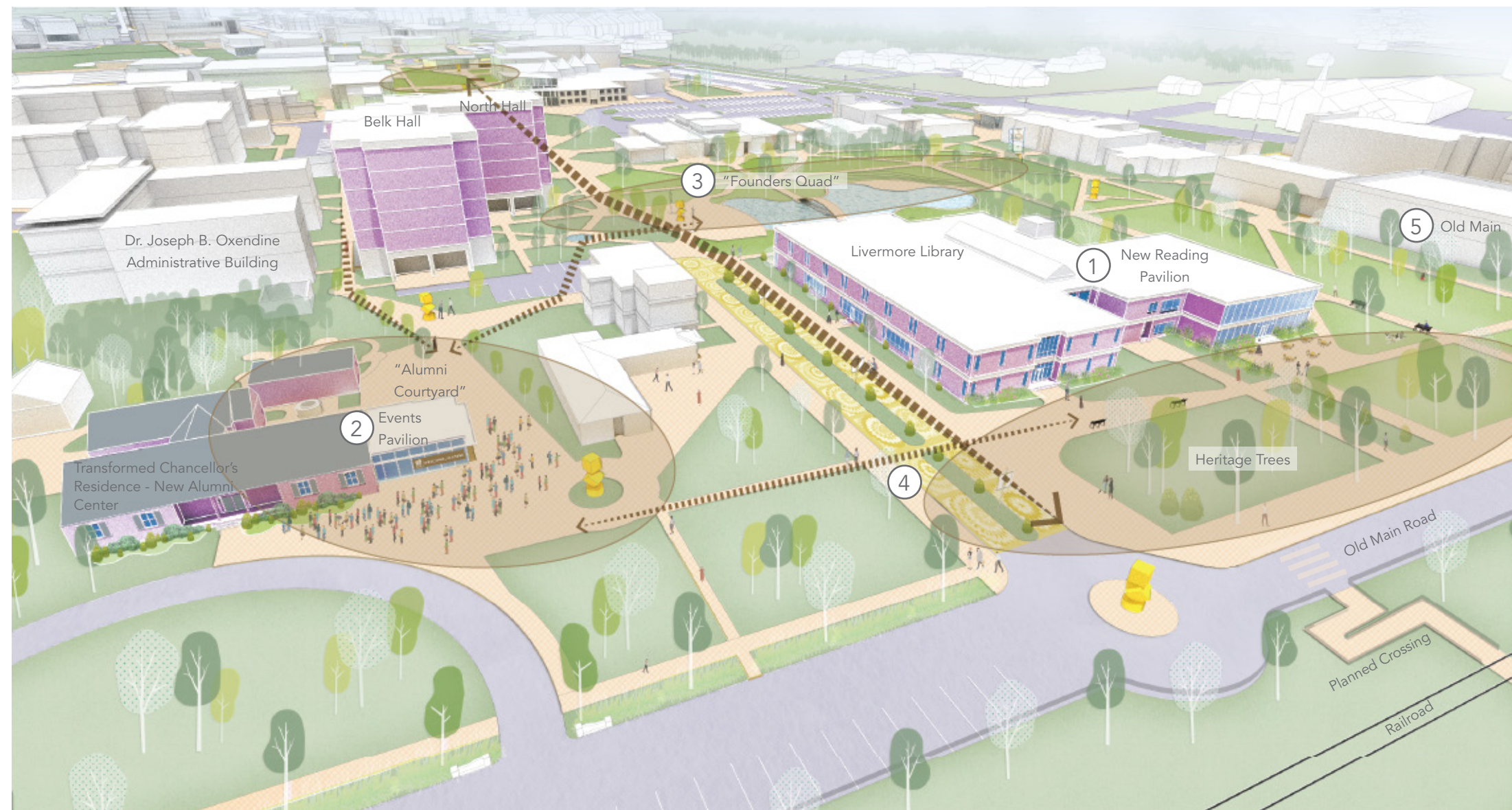
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- Caton Fieldhouse Facade Enhancement
- BraveHawk Pavilion



“FOUNDERS QUAD”

An reconfigured connection from Old Main Road leads visitors directly to a large green space and “All Campus Path” marked by a mural. This area is flanked by Livermore Library, with its new Reading Pavilion, and a new Alumni Center at the transformed Chancellor’s Residence, with ample space for events and gatherings.



① Livermore Library Renovation & Expansion

By integrating more efficiency and innovation into study spaces, the library becomes a place to study, collaborate and commemorate.

② Chancellor’s Residence Repurposing

The existing Chancellor’s Residence will become an Alumni Center and a front door of the south crossing on Old Main Road. Inside, interactive event space and offices will support UNCP Alumni and outreach activities. It’s location in the historic core also make it an ideal starting point for campus tours.

③ The “Founders Quad”

A historic outdoor hub marking the southern end of the “All Campus Path” and honoring former presidents and alumni who shaped the University.

④ Street Mural

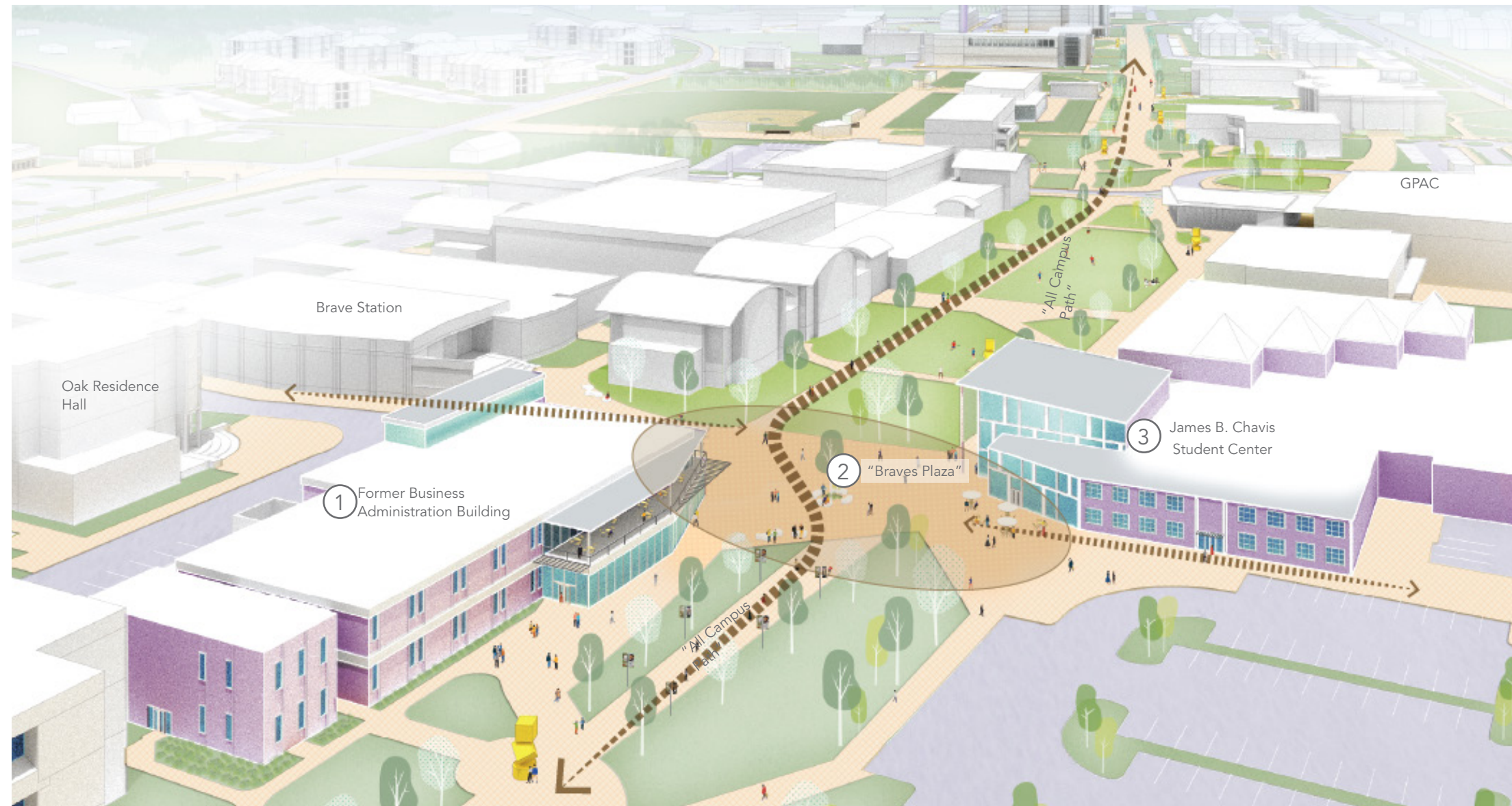
A street mural along the remaining portion of Faculty Row will mark the starting point of the “All Campus Path” and display the University’s Lumbee history and art on campus.

⑤ Old Main Renovation

A renovation would expand visibility and access to the Museum, providing educational opportunities for all.

THE JAMES B. CHAVIS STUDENT CENTER QUAD: THE NEW "BRAVES PLAZA"

The James B. Chavis Student Center Quad will be transformed into the new "Braves Plaza," which will be defined by a Student Success Center in the former Business Administration Building and a new double-height student lounge space in the James B. Chavis Student Center.



① **Former Business Administration Building Renovation | Repurposing**

A transformation of the former Business Administration Building will take advantage of its accessible and central location. The newly renovated building will serve as a connector between student housing, academics, and recreation. It will be used as swing space and a Center for Student Success.

② **The New "Braves Plaza"**

To create an active zone, the a new commons at Braves Plaza will offer playful seating options, as well as fun outdoor activities and art to energize this campus destination and to enhance social interaction.

③ **James B. Chavis Student Center**

An addition to the James B. Chavis Student Center will create a new entrance and provide more space in this interactive and interdisciplinary hub for student life.

“LUMBEE GATEWAY”

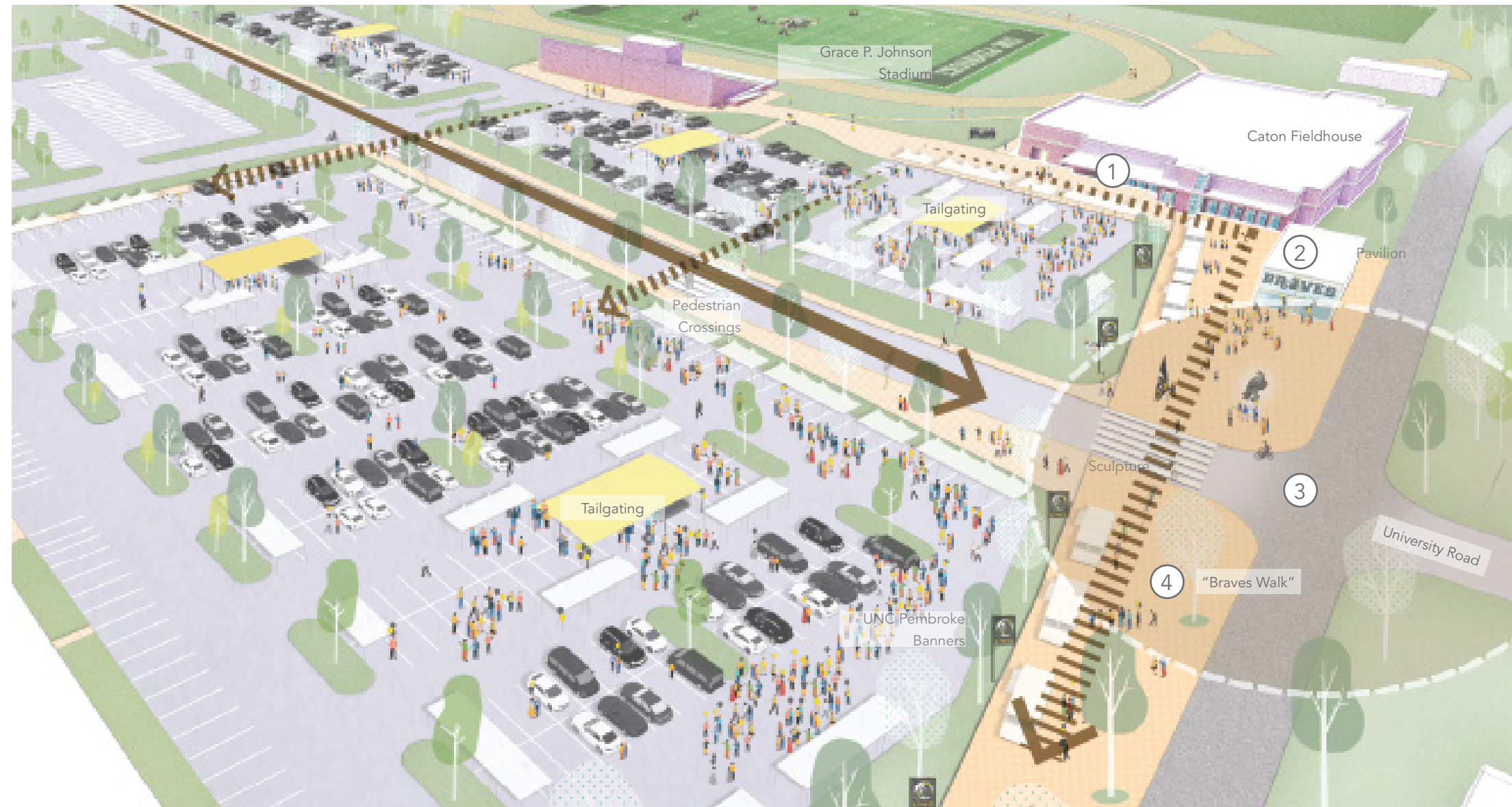
“Lumbee Gateway” is transformed with the “Arts Oval,” a grand open space and drop-off point for University members and visitors. The newly renovated GPAC becomes a landmark of this area with its transparent double height lobby and gallery spaces, as well as a new Welcome Center.



- ① **GPAC Renovation | Expansion**
The GPAC will be transformed to include an expanded theater with gallery space and an integrated Welcome Center, paving the way for the revitalization of UNC Pembroke’s main “Lumbee Gateway.” Transparent common spaces will line N. Odum Street and “Braves Walk” to activate the streets and invite the public to campus while also serving academic functions. Consistent tree plantings will provide shade for pedestrians and cyclists.
- ② **“Arts Oval” & “Lumbee Gateway” Lawn**
The “Arts Oval” will mark the “Lumbee Gateway” from N. Odum Street/Prospect Road and provide a gathering space for students, professors, and visitors. It will be a location for community events, from Food Truck Rodeos and Farmers Markets to the Lumbee Homecoming.
- ③ **“Braves Walk”**
A new landscape and east-west crossroads for the main “Lumbee Gateway” will connect UNC Pembroke’s event and entertainment hubs.

“BRAVEHAWK GATEWAY”

The “BraveHawk Gateway” highlights the Belk Athletic Complex and marks the western entrance into central campus with a pavilion and a monument to UNC Pembroke’s mascot, BraveHawk.



① **Caton Fieldhouse Facade Improvements**

The Caton Fieldhouse is updated to include a generous canopy, shading the path to the Belk Athletic Complex.

② **Braves Pavilion**

A new pavilion serves visitors and sports fans, providing amenities such as snack areas, club rooms, and dressing areas.

③ **“BraveHawk Gateway”**

A secondary gateway to central campus at the Belk Athletic Complex. The gateway is an ideal location for art that showcases UNC Pembroke’s school spirit.

④ **“Braves Walk”**

Along the southern edge of “Braves Walk”, the pedestrian hardscape is expanded to provide more generous space for pedestrians, tailgaters, food trucks, and other activities during sports events.

CENTRAL CAMPUS VISION



The vision for Central Campus is to expand the vibrant energy and sense of place in south campus northward by creating neighborhoods that promote wellness and recreation, and foster academic partnerships between the university and the region.

Central Campus features a mix of sports fields, academic buildings, and residential facilities. With the addition of the new School of Business at James A. Thomas Hall, it is poised to become the next major area of development on the UNC Pembroke campus.

Braves Drive will become part of the pedestrian-oriented **"All Campus Path"** running north-south through the entire campus. Vehicles and parking will be limited to the periphery of campus to encourage people to park once and walk. Moving northward along the path from University Drive, an athletics and recreation field across from the new School of Business will enliven the area with recreational activity for years to come, but should be considered for future building placement. It is an ideal location to continue the density of south campus and complement the

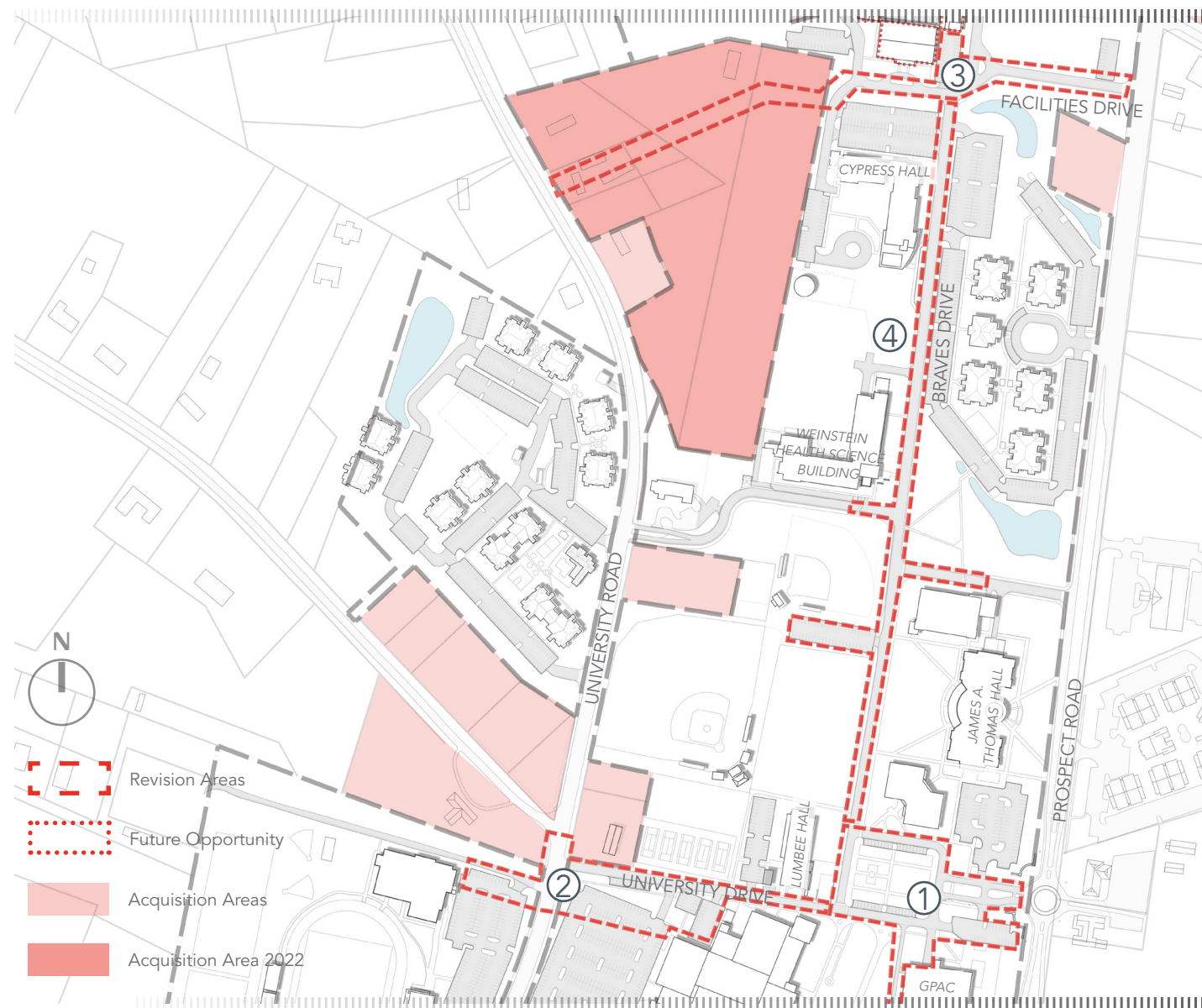
programmatic activities of the new School of Business with a future building and **"Business Courtyard."**

Further north, the **new Allied Health Science Building** is placed to complement the Weinstein Health Science Building and to anchor a new **"Healthcare Quad."** This outdoor space mirrors the existing "Founders Quad," but brings a unique identity to campus through a programmatic focus on wellness and recreation. The **new "Health-Science Neighborhood"** brings with it opportunities to create partnerships with regional healthcare providers to facilitate larger academic programs in allied health. Depending growth and demand, residential halls may be added to the north of this area. Facilities Drive, which is the main east-west connection in this area, will be renovated to become a multi-modal complete street.

DRAWING Future UNC Pembroke Central Campus Vision

CENTRAL CAMPUS EXISTING CONDITIONS

- ① **"Lumbee Gateway"**
 - Enhancement of main campus gateway to include pedestrians and bicycles
- ② **University Drive**
 - Enhanced central crossing through campus connecting east roundabout and athletics
- ③ **Facilities Drive**
 - Expand Facilities Drive and adjacent paving to create third crossing through campus
- ④ **Braves Drive**
 - Close Braves Drive to vehicular traffic, ensuring a continuous pedestrian experience between the old and new campus
 - Improved green space to expand circulation space into larger open spaces with social and educational functions



CENTRAL CAMPUS OPPORTUNITIES

- ⑤ **"Business Courtyard"** Page 51
 - Multi-functional outdoor space at new James A. Thomas Hall
 - Potential future building on athletics field
- ⑥ **"Health-Science Neighborhood"** Page 53
 - New Allied Health Science Building
 - "Healthcare Quad"
- ⑦ **"Northern Gateway"** Page 102
 - Facilities Drive complete street enhancements
- ⑧ **"Housing Quad"** Page 92
 - Future residential buildings based on need
- Water Tower landmark enhancement



“BUSINESS COURTYARD”

The Thomas School of Business is a catalyst for further development in central campus. A new courtyard provides room for Business School students and faculty to network and can serve as a mixing chamber for a future building across the way.



① “All Campus Path”

The “All Campus Path” defines the main campus framework, creating a north-south connector for pedestrian and active transportation modes that showcases art and increases connectivity between buildings and outdoor spaces.

② The “Business Courtyard”

A new courtyard for the Thomas School of Business provides space for resting, networking, and events such as job fairs. It also serves as a transition to the athletics field opposite this building.

③ Art Installations

Along the “All Campus Path”, artwork produced by the UNC Pembroke community and regional artists will celebrate Lumbee history, and showcase local culture and creativity.

④ Future Building Opportunity

A future building should be carefully programmed to connect to the “All Campus Path” and create a synergistic relationship with the new School of Business.

“HEALTH-SCIENCE NEIGHBORHOOD”

The new Allied Health Science Building is placed to create a synergistic relationship with neighboring science buildings and to anchor the “Healthcare Quad,” a new open space that mirrors the existing “Founders Quad” to the south and spotlights wellness and recreation in its design.



① **New Allied Health Science Building**
This building will provide lab and STEM spaces to support the new College of Health Sciences and other growing science programs at UNC Pembroke. It is sited and designed to help enclose the new quad in central campus. These programs will contribute significantly to the region’s workforce and demand for health professionals.

② **The “Healthcare Quad”**
Open spaces themed around wellbeing and recreation will offer spaces for outdoor education, movement, and activity as well as quiet reflection and introspection. The “Healthcare Quad” features an herb garden, a meditation labyrinth, outdoor teaching space, and ample pathways along a varied landscape.

③ **Water Tower**
A destination on campus and focal point on the “Healthcare Quad” and its pedestrian axis. The water tower will become a landmark, featuring art that reflects UNC Pembroke’s unique identity and Lumbee history.

④ **Housing Quad & Future Dorms**
Student housing can be added as needed. Recreational uses such as a volleyball court and outdoor gym can complement the residential buildings in this area.



LONG-TERM & NORTH CAMPUS VISION



The development of north campus is planned for the next 20 to 50 years. In this area, four visions are explored for a 44-Acre property based on UNC Pembroke’s needs and areas of growth: an Athletics and Recreation complex; a School of Agriculture; Millennial Campus | Mixed-Use Development; or a Property Exchange or Lease. These explorations are documented as a flexible roadmap of future potential and opportunities.

UNC Pembroke’s north campus can develop in a variety of ways depending on the needs and conditions on campus in the next 20 to 50 years. As such, the vision for UNC Pembroke’s north campus encompasses **several different scenarios for the existing 44 Acre property**, which are outlined in the pages that follow.

Scenario one considers the 2011 Master Plan proposal to create a new athletics and recreation complex for baseball and softball. This approach would provide ample space for growing sports programs, accommodate parking, and free space for new buildings on central campus. Similarly, scenario two maintains open space in the northern part of campus, using much of the area to slowly develop emerging academic programs. Looking to the future, these potentially low-impact uses of the land maintain vast

open spaces which could be further developed and densified over the long term based on university needs at the time.

Scenarios three and four, which propose a new millennial campus or property exchange and leasing of the 44-Acre property, have the potential to spur faster development. Both scenarios would rely on leveraging relationships and sharing costs with developers or other regional partners to achieve appropriate density and programming. These scenarios may generate revenue for UNC Pembroke; however, commercial, retail, housing, and other local markets should be studied prior to development. Other elements, such as the character of the campus framework and the placement of the new Chancellor’s Residence, are also affected by the University’s long-term goals.

DRAWING Future UNC Pembroke North Campus Vision

NORTH CAMPUS EXISTING CONDITIONS

① Facilities Drive

- Expands Facilities Drive and adjacent paving to create third crossing through campus

② Braves Drive

- Close Braves Drive to vehicular traffic, ensuring a continuous pedestrian experience between the old and new campus
- Improved green space to expand use from just circulation to also including social and educational activities

③ Recommended Property Acquisition

- To create continuity between north and central campus

④ 44 Acres Development Opportunity

- A large property with many potential development scenarios based on UNC Pembroke's long-term needs



NORTH CAMPUS OPPORTUNITIES

① North Campus Sports Facilities

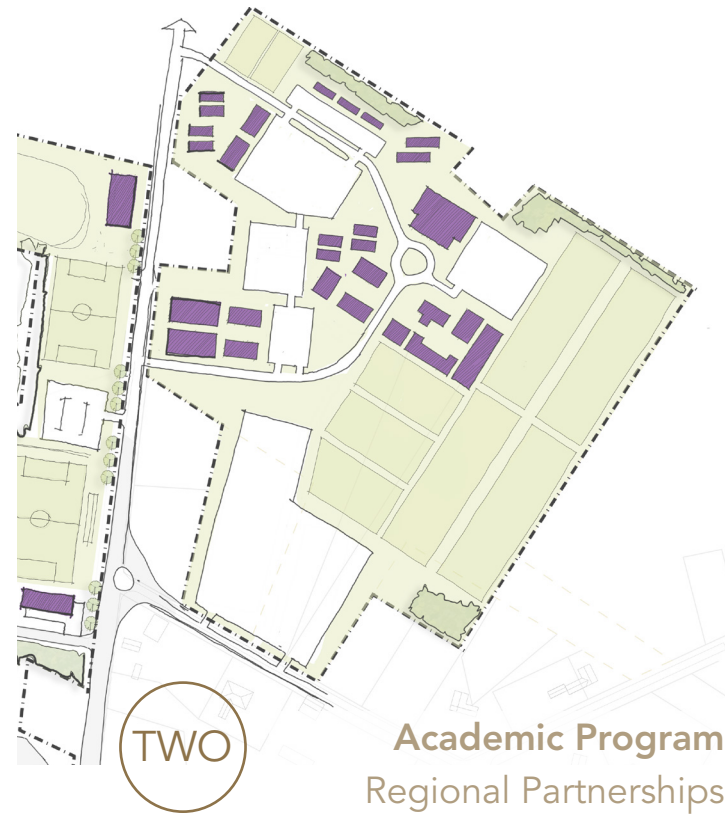
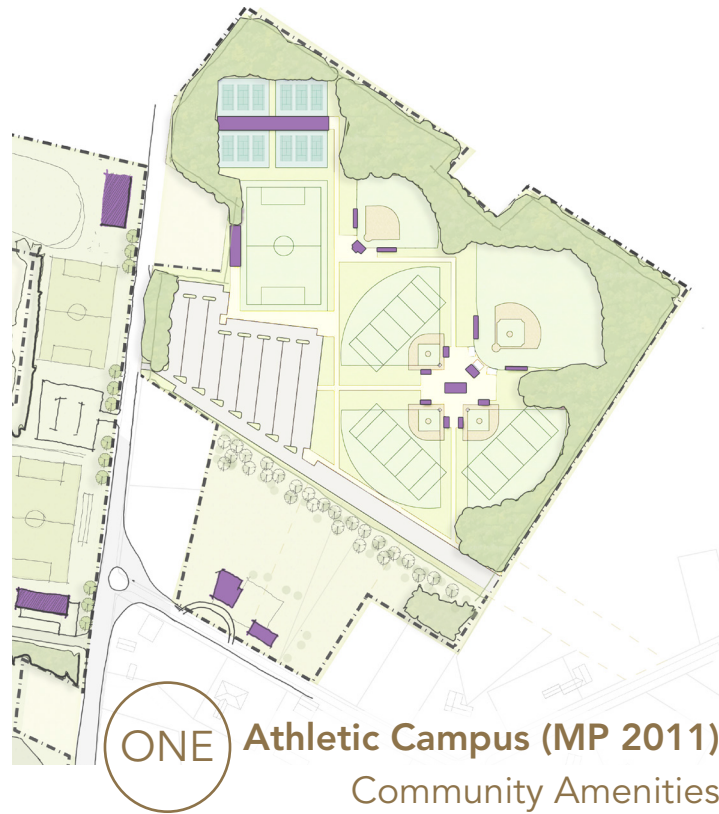
Ⓚ 44 Acres Development Scenarios

Page 61

- Scenario ONE Athletics and Recreation
- Scenario TWO Academic Program
- Scenario THREE Millennial Campus | Mixed-Use Development
- Scenario FOUR Partial Property Sale or Lease



NORTH CAMPUS 44-ACRE SITE OPPORTUNITIES



Pros

- High visibility and easy access from Prospect Road
- Adjacency to existing soccer stadium and ROTC
- Outward facing program to serve the community

Cons

- Separation from existing central athletic and recreation complex
- MP 2011 - development opportunity has not been considered to date

Pros

- Academic program will define Northern Gateway with high visibility from Prospect Road
- Opportunity for regional partnerships
- Adjacency to housing and amenities will activate campus
- Phased implementation possible

Cons

- May not generate the value or revenue of other uses in the long term (30+ years)

Pros

- Creates an opportunity for public-private partnerships, collaborative research projects, and community-engaged research
- High visibility from Prospect Road
- Walking distance to main campus and its amenities

Cons

- Less control of development and density

Pros

- Potential revenue generator that could assist with property acquisitions west of Prospect Road for UNC Pembroke's campus expansion
- Consider PV panel installation or other sustainable energy sources to support campus infrastructure

Cons

- Impact on campus arrival
- Limits UNCP's development priorities

The 44-Acre site development scenarios lend themselves to both short term and long term planning at UNC Pembroke. Understanding the University's academic and research priorities is a key step in determining how this land can best serve the University's goals.

NORTH CAMPUS OPPORTUNITIES & ECONOMIC OUTLOOK

The development scenarios for the north campus at UNC Pembroke include opportunities for both private development and university development.

University leaders and stakeholders have shared that allied health sciences and agriculture are expected to be major areas of programmatic growth. Specific programmatic drivers include the potential establishment of a school of optometry – the first in North Carolina, expanded allied health programs such as nursing and occupational therapy, and agricultural extension in the surrounding region of Lumberton and Robeson County to support the poultry and pork industries.

In order to capitalize on industry opportunities and craft robust partnerships that drive development on campus, UNC Pembroke should highlight and market its current and future academic and research priorities. The University should craft a role within its external affairs and economic development functions for engaging with industry leaders to promote these activities and identify partnership opportunities. Investment in programs, places, and people is a key starting point for attracting resources and creating a “market” on campus that may not currently exist.

With regard to private developments, such as commercial offices and retail, the area may have room for additional growth on or near campus with investment or supportive funding from the University. Pembroke’s multifamily housing market could also likely support new development, particularly near the University’s campus.

As UNC Pembroke navigates its real estate assets and explores development scenarios, it should invest in a

new academic program as a first step. In making this move, the University may be able to attract private industry partners around this programmatic investment, such as private clinics and retailers, which will contribute to place-making and creating a market on campus. The eastern edge of campus along N. Odum Street / Prospect Road could be an ideal place to attract amenities, office space, and retail.



IMAGE 7 Google Aerial View UNC Pembroke 2021



3

PROGRAMMATIC OVERVIEW
TEN-YEAR CAMPUS DEVELOPMENT
PLACEMENT STUDIES
NORTH CAMPUS DEVELOPMENT SCENARIOS
LONG-TERM VISIONS
RECOMMENDED ASSESSMENTS & CONSIDERATIONS

CAMPUS DEVELOPMENT



PROGRAMMATIC OVERVIEW

The 2022 Master Plan is broken down into two time-horizons focusing on short-term (10 year) and long-term (20+ year) investment in UNC Pembroke’s built and physical environment. Programmatically, the Master Plan aims to bolster the vibrant, mixed-use quality of neighborhoods already existing on campus.

In the historic campus to the south, the Master Plan proposes strengthening existing buildings and uses. Among the most important transformations are the expansion of Livermore Library (A), the repurposing of the former Business Administration Building to support Student Success (B); the expansion of James B. Chavis Student Center (C); and the renovation and expansion of GPAC (D) to include a Welcome Center,

exhibition space, and an expanded theater. These changes will add student support spaces and bolster the University’s relationship with the surrounding community.

Central campus proposals focus on new construction, with the new Allied Health Science Building (F) as the most immediate project. Longer-term plans also

include recommendations for a Future Academic Building (J) across from the Thomas School of Business and a Student Housing Quad (K). The opportunities in the north (L) are many, as is noted in the 44-Acre site studies in Chapter 2.

DIAGRAM Programmatic Overview 2022 MP



Proposed 10-Year Renovations | Expansions

- (A) Library Transformation
- (B) Former Business Admin Repurposing
- (C) James B. Chavis Student Center Renovation
- (D) GPAC Renovation and Expansion
- (E) Alumni Center at Chancellor’s Residence

Proposed 10-Year New Construction

- (F) Allied Health Science Building
- (G) Arts Pavilion
- (H) BraveHawk Pavilion & Field Houses
- (I) New Chancellor’s Residence

Proposed 20-Year+ New Construction

- (J) Future Academic Building
- (K) Student Housing Quad
- (L) North Campus Future Growth

TEN-YEAR CAMPUS DEVELOPMENT

The new Allied Health Science Building and former Business Administration Building transformation are among the priority projects in the 2022 Master Plan that have benefited from state funding. As of this writing, \$42.5 million and \$12.5 million has been allocated for each of these projects, respectively. Other priority projects with potential for future state or investor funding include the expansion

of Livermore Library, the Chancellor’s Residence transformation, the James B. Chavis Student Center renovation, and the GPAC expansion and renovation.

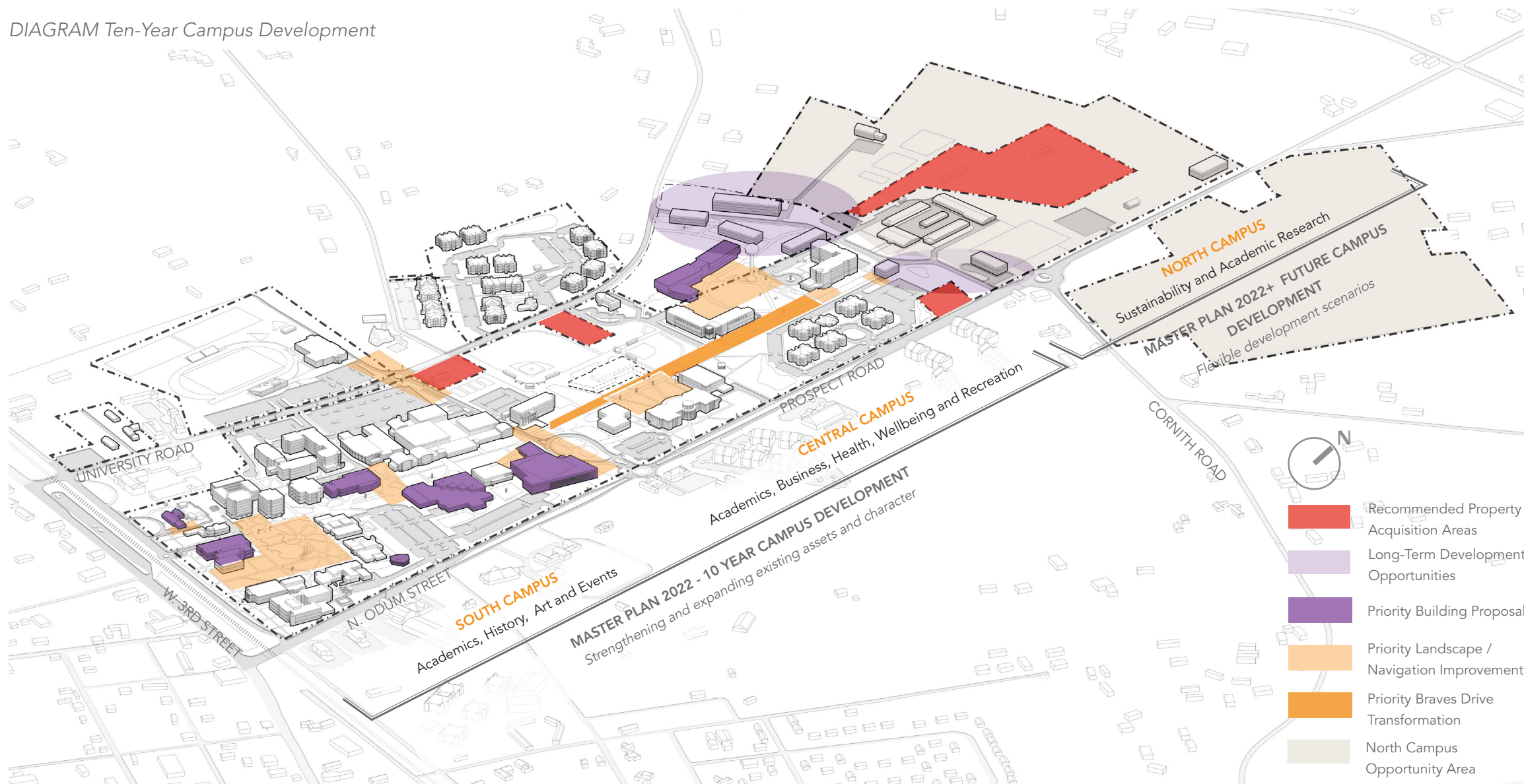
Where possible, building projects should include landscape and navigation components to facilitate the development of the “All Campus Path.” As an example, the “Lumbee Gateway” improvements can

be associated with the GPAC renovation and the new “Healthcare Quad” can be developed in conjunction with the new Allied Health Science Building. UNC Pembroke should also consider acquiring properties within its boundaries and campus edges, which are highlighted in red below.

Projects that are funded through investor support can

take place at any time during campus development depending on their ability to quickly improve campus or fulfill a community need. As such, UNC Pembroke’s community outreach will be an important step in forging such partnerships.

DIAGRAM Ten-Year Campus Development



Priority Landscape/Navigation Improvements

- Braves Drive Transformation to “All Campus Path” (page 119)
- Central “Lumbee Gateway” Transformation (page 43)
- Central “Bravehawk Gateway” Transformation (Page 45)

Priority Building Proposals/Transformations

- New Allied Health Science Building & “Healthcare Quad” (page 53 & page 83)
- Former Business Administration Building Renovation (page 41 & page 77)
- James B. Chavis Student Center Renovation (page 41 & page 81)
- Chancellor’s Residence Transformation & Relocation (page 39, page 79, & page 91)
- GPAC Expansion & Renovation (page 43 & page 85)
- Livermore Library Expansion (page 39 & page 79)

TEN-YEAR CAMPUS IMPLEMENTATION RECOMMENDATIONS

Prior to implementing the 2022 Master Plan, Utilities, Transportation, Space Planning, and Economic Outlook reports should be carefully reviewed.

Overall strategies addressed include the following:

- **Buildings:** The Space Analysis identifies primary needs for labs, student lounge, study, and dining spaces, and indoor recreation spaces. The Economic Outlook explores regional support and markets for housing, academic opportunities, retail, and other developments.
- **Utilities:** UNC Pembroke should expand its electrical circuit and owned infrastructure, study proposed shared generator locations, expand Wi-Fi, upgrade gas and water infrastructure, and implement recommended sustainability measures.
- **Transportation:** Studies are needed to improve speed and crossings in areas such as University Drive; increase pedestrian-oriented spaces on campus, and review the overall parking needs and strategy on campus.
- **Landscape & Placemaking:** An "All Campus Path" should be flexibly designed prior to Master Plan implementation to accommodate pedestrians, bicycles, and campus facilities/emergency vehicles. This path, along with proposed quads and plazas recommended by the 2022 Master Plan should be confirmed and shared with project teams and designers for all future projects.
- **Stormwater:** The upsizing of stormwater pipes and infrastructure is recommended. The university hydrology requires further study to determine the best interventions for each specific location.

DIAGRAM Ten-Year Campus Implementation



Some areas can be improved as part of specific projects while others are broader and require working with outside stakeholders and University leaders. If possible, it is recommended that the "All Campus Path" be designed prior new construction on campus. Some flexibility will be required to allow for the path to adapt to future projects.

- | | |
|--|-------------------------------------|
| ① Former Business Admin Repurposing Library | ④ Allied Health Science Building |
| ②a Transformation | ⑤ GPAC Renovation and Expansion |
| ②b Alumni Center at Chancellor's Residence | ⑥ BraveHawk Pavilion & Field Houses |
| ③ James B. Chavis University Center Renovation | ⑦ Future Academic Building |

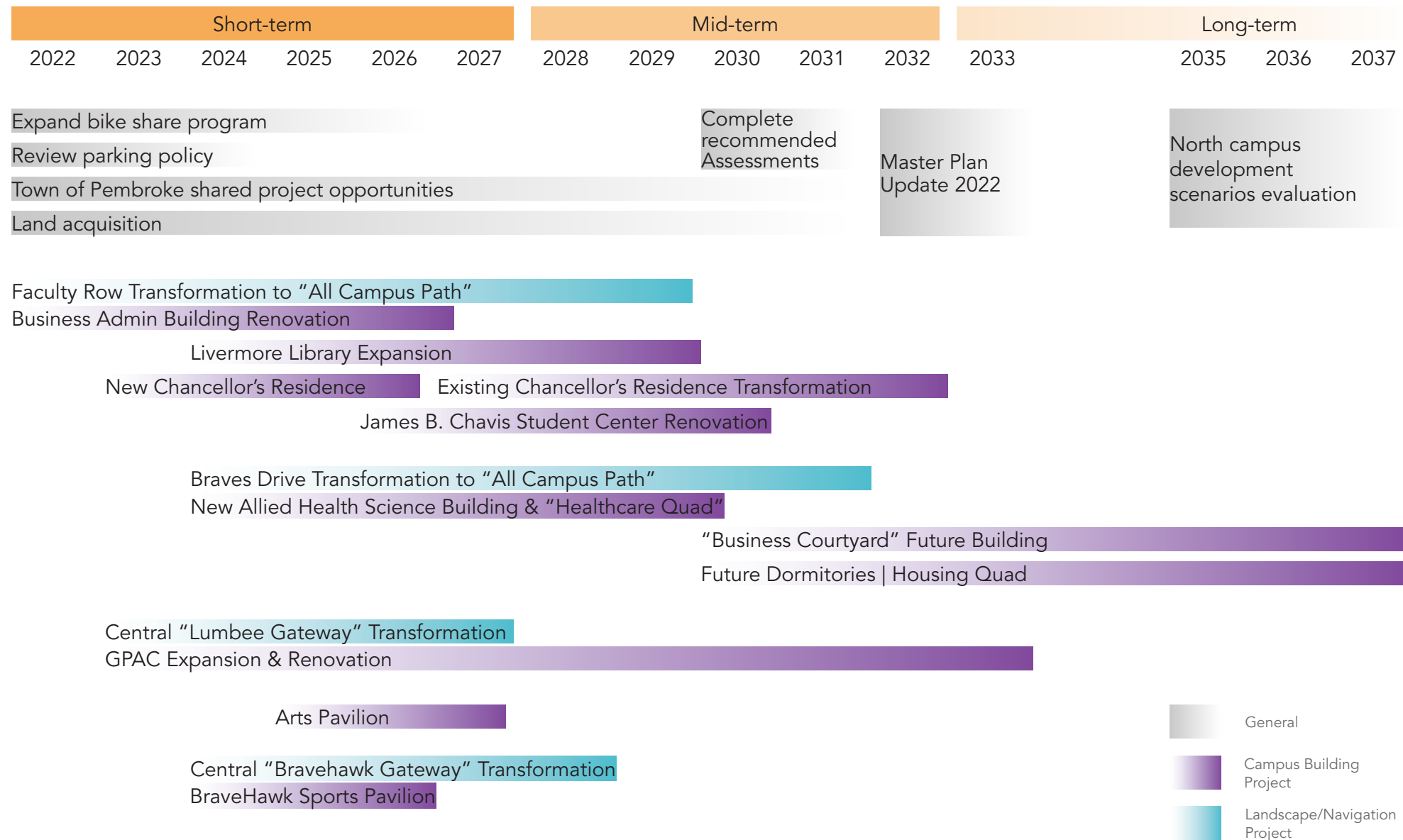
TEN-YEAR CAMPUS IMPLEMENTATION MATRIX

The table below outlines the approximate timeline key projects identified in Chapters 2, 3, and 4. They take into account the idea that campus organization begins with the “All Campus Path,” around which key future building and landscape projects are organized.

Prior to embarking on any campus development project, it is recommended that a Campus-wide Site Survey, Utilities Survey, Hydrologic/ Stormwater System Survey, and Campus-wide Geo-technical Study be competed. The outcome of these reports should inform a flexible, overall design of the “All Campus Path” that can be adapted to future projects as needed.

At the time of this writing, it is understood that a detailed, campus-wide Space Analysis is being completed. Together with the design of the “All Campus Path,” this study will inform the size of new buildings and renovations. To maximize funding and efficiency, it is recommended that landscape, utilities, and transportation projects be paired with new building construction and renovations.

Implementation recommendations for each of the projects in this table is outlined in more detail on the following pages of this chapter.



1. FORMER BUSINESS ADMINISTRATION BUILDING

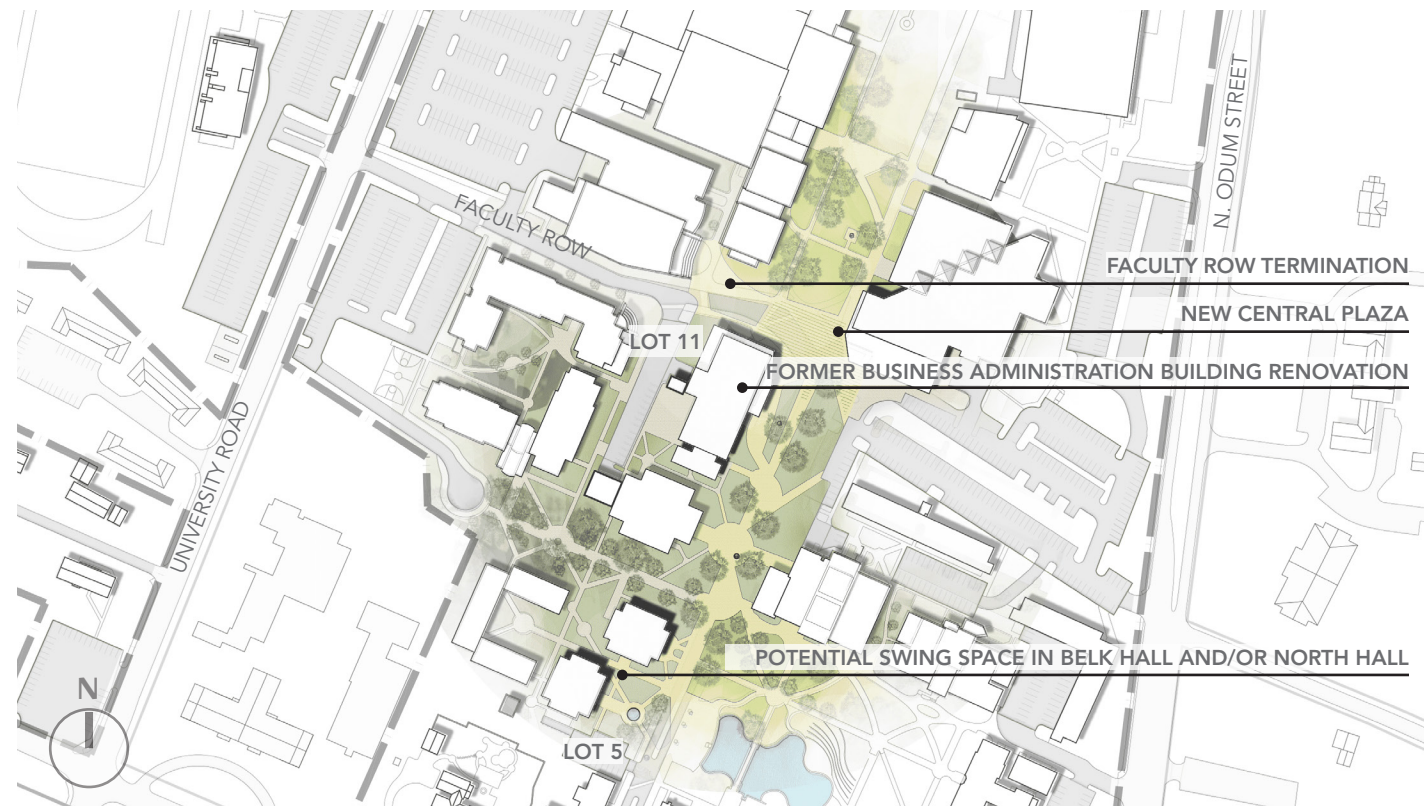


IMAGE 8 Former Business Administration Building

Buildings

The former Business Administration Building will be renovated and expanded into a **Student Success Center** with lounges and recreational areas for commuter students.

Belk and North to be used for classroom swing space (see placement study on page 92)

If possible, the University should consider implementing this project during the expansion of the James B. Chavis Student Center to ensure that the proposed plaza in this area equally addresses both buildings.

Landscape & Placemaking

A plaza should be added between Former Business

Administration Building and the James B. Chavis Student Center. The plaza should be designed to connect to the **“All Campus Path.”** The development of the design elements for plazas in this early project should be carefully considered, as they will likely become the blueprint for future plazas. **Landscape improvements** associated with this project may include:

- Development of varying space types and sizes in plaza area
- Development of the “All Campus Path” and plaza character
- Outdoor Furniture – Consider movable seating and benches
- Planting zone and tree plantings: to create shaded walking areas for “All Campus Path;” to enhance building entrance

- Branding/signage and banners
- New art in the plaza to showcase UNC Pembroke’s identity

- Green
- Consider the use of rain cisterns

Utilities & Sustainability

- New outdoor lighting to be consistent with selected lighting for “All Campus Path”
- Expand Wi-Fi access on proposed plaza and “All Campus Path”/Faculty Row
- The former Business Administration Building should be renovated sustainably: Green Globe Certified (PV ready; LED Lighting; low-flow fixtures and toilets; a display board showing how much energy is consumed in the building)

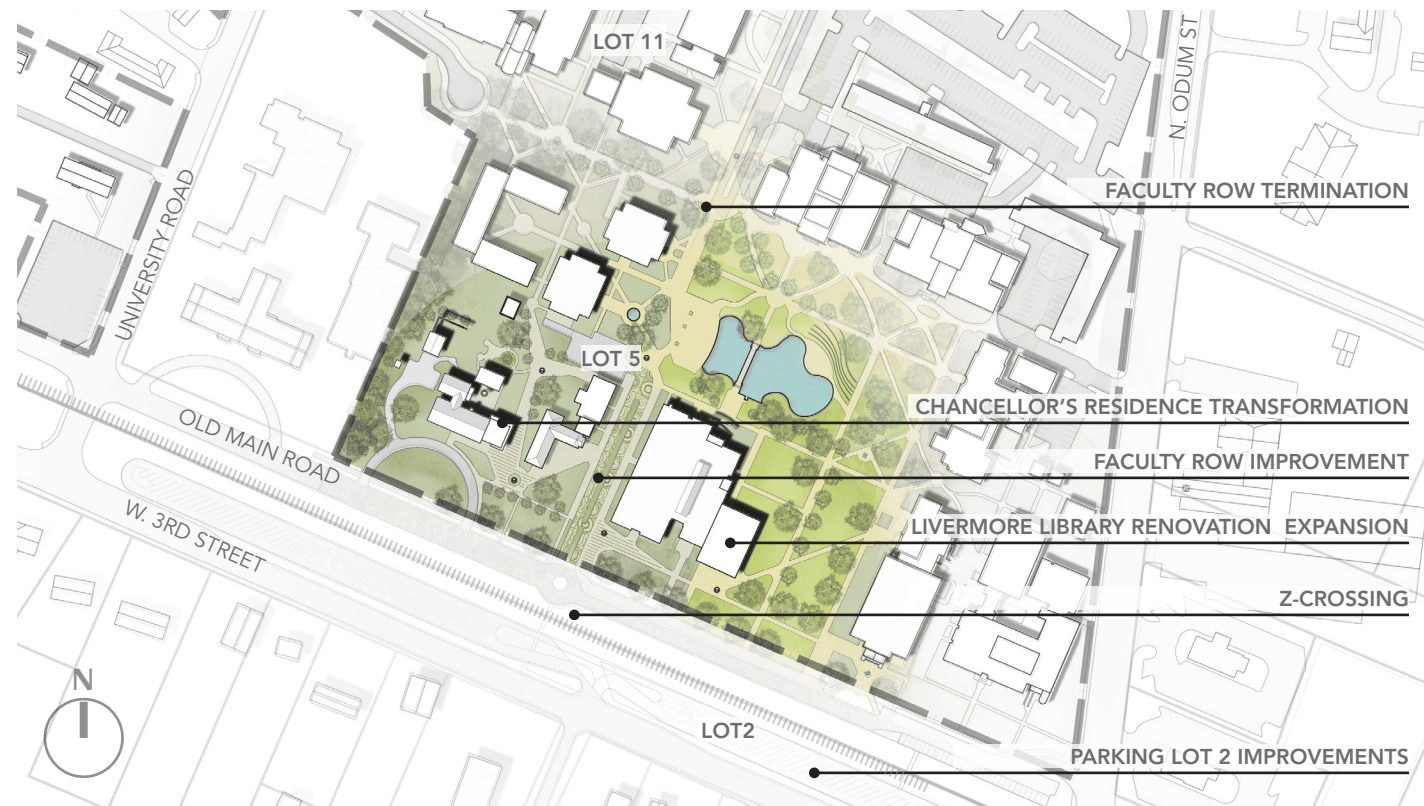
Stormwater Management

- Consider Stormwater Control Measures on Chavis

Transportation

- Faculty Row should be terminated at intersection of Parking Lot 5. This can be done immediately with minimal interventions. North of Lot 5, Faculty Row will be closed to vehicular traffic and will be transformed to a pedestrian-oriented zone. The east-west connection on Faculty Row will also be closed to public vehicles
- The proposed plaza should connect to the “All Campus Path” (the “All Campus Path” should be designed prior to construction of plaza)
- Expand bicycle parking and provide covered bike racks

2. THE SOUTHERN GATEWAY: LIVERMORE LIBRARY RENOVATION/EXPANSION & NEW ALUMNI CENTER



Buildings

- **Primary Building Project: Mary Livermore Library** should be renovated and expanded to provide a new Reading Room and study lounge areas
 - Completed Student Success Center (see page 41) to be used as temporary study library swing space as needed
- **Secondary Building Project:** Chancellor's Residence to become new **Alumni Center** with a small expansion for welcome/events (see placement study on page 91)

Landscape & Placemaking

Faculty Row improvements such as a Lumbee Tribe-

related street mural or pattern are recommended to showcase the University's culture at this key southern gateway. **Landscape improvements** associated with this project may include:

- New/additional outdoor benches for reading and resting near the Library
- Updates to planting zones and trees:
 - To create shaded walking areas for the "All Campus Path"/Faculty Row and enhance building entrances and study areas in front of the Alumni Center, Library and Reading Room
 - To maintain and protect existing mature trees in Founders Quad and surrounding area
- Hardscape expansions and renovations:
 - In front of the Library and new Reading Room to provide a new outdoor study patio



- In front of new Alumni Center to allow events to take place
- To enhance the existing plaza west of the existing water feature
- Branding/signage and banners along the "All Campus Path"/Faculty Row
- New art in the median and at the roundabout along Faculty Row to showcase UNC Pembroke's identity

Utilities & Sustainability

- New outdoor lighting consistent with selected lighting for "All Campus Path"
- Expand Wi-Fi access along "All Campus Path"/Faculty Row
- Expand on sustainability and energy conservation measures inside the Library and new Reading Room

Stormwater Management

- Consider rain gardens or cisterns in and around the Library and new Reading Room

Transportation

- Faculty Row should be terminated at intersection of Parking Lot 5. This can be done immediately with minimal interventions. North of Lot 5, Faculty Row will be closed to vehicular traffic and transformed to a pedestrian-oriented zone. The east-west connection on Faculty Row will also be closed to public vehicles
- Expand bicycle parking and provide covered bike racks
- Provide a new bicycle check-out location
- Work with the Town of Pembroke to provide on-street bike lanes on Old Main Road
- Work with the Town of Pembroke to install a new z-crossing across the railroad tracks on Old Main Road/West 3rd Street to connect to Faculty Row (project is underway)
- With Town of Pembroke, consider one of the following two options regarding Parking Lot 2 and the south campus gateway:
 - Remove Parking Lot 2 and replace with trees or other plantings to better connect to town and provide a more pleasant entrance to campus in the south; OR
 - Maintain Parking Lot 2 and enhance plantings along the southern edge of Old Main Road for screening. At the current N. Odum Street crossing from Parking Lot 2, remove the existing pedestrian crossing and construct a sidewalk to connect N. Odum Street to the eastern end of the parking lot

3. THE JAMES B. CHAVIS STUDENT CENTER EXPANSION



IMAGE 9 James B. Chavis Student Center

Buildings

The **James B. Chavis Student Center expansion** can provide additional lounges, recreation, dining, and resting areas for students.

- Completed Mary Livermore Library (see page 39) to be used as temporary student space as needed
- If possible, the University should consider implementing this project during the renovation of the former Business Administration Building to ensure that the proposed plaza in this area equally addresses both buildings.

Landscape & Placemaking

A plaza should be added between Former Business Administration Building and James B. Chavis Student

Center. The plaza should be designed to connect to the “All Campus Path.” The development of the design elements for plazas in this early project should be carefully considered, as they will likely become the blueprint for future plazas. **Landscape improvements** associated with this project may include:

- Movable outdoor seating and benches in front of James B. Chavis Student Center
- Planting zones and trees to create shaded walking areas for the “All Campus Path” and enhance building entrances
- Branding/signage and banners
- New art in the plaza to showcase UNC Pembroke’s identity

Utilities & Sustainability

- New outdoor lighting to be consistent with selected lighting for “All Campus Path”
- Expand Wi-Fi access on new plaza and “All Campus Path”
- Expand on sustainability and energy conservation measures inside the building with Green Globe Certification (PV ready; LED Lighting; low-flow fixtures and toilets; a display board showing how much energy is consumed in the building, create a robust compost and recycling system associated with dining)

Stormwater Management

- Consider Stormwater Control Measures on Chavis Green
- Consider Stormwater Control Measures at Parking

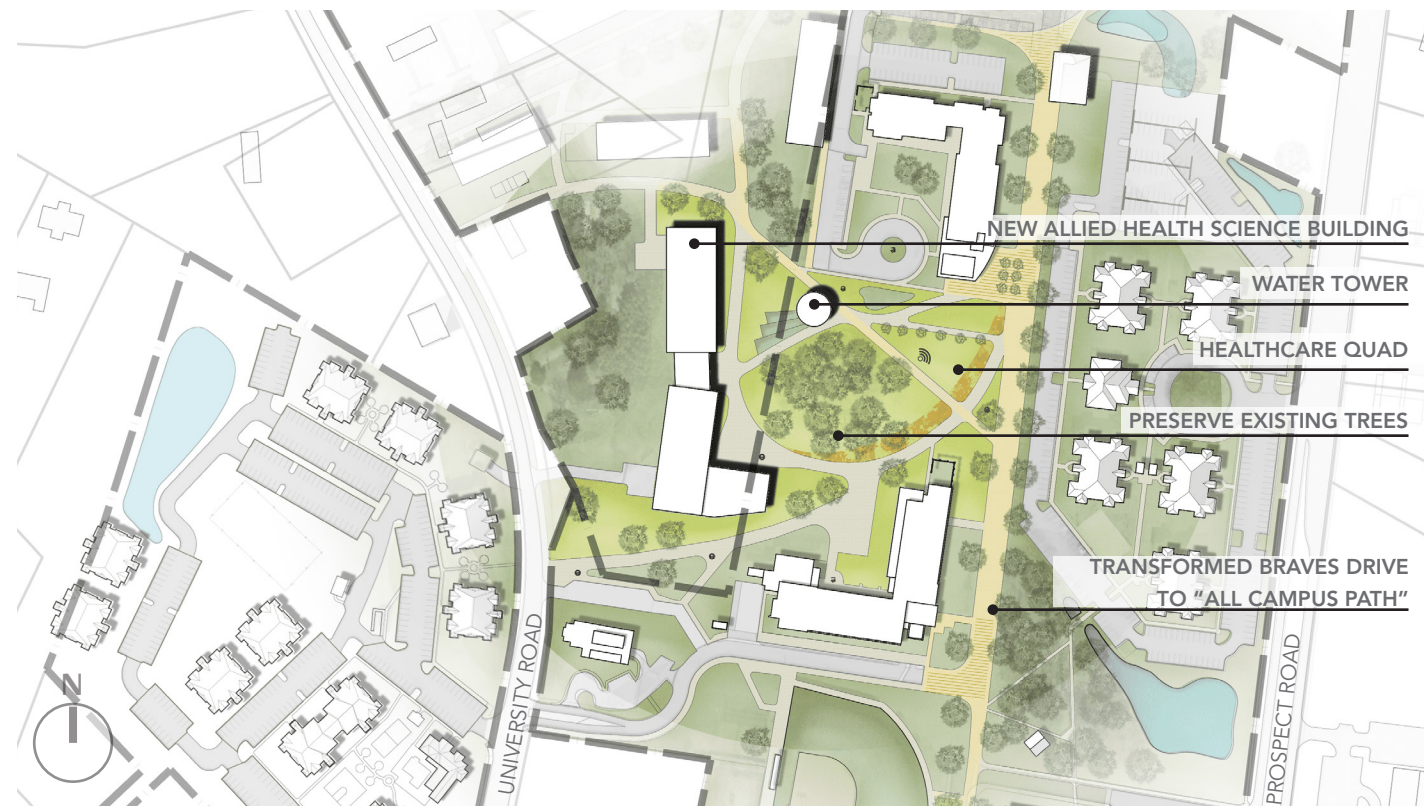
Lots 7, 9, 10, 11, 16, and 16A

- Consider the use of rain cisterns

Transportation

- Connect the proposed plaza to the “All Campus Path” (the “All Campus Path” should be designed prior to construction of plaza)
- Following the demolition of Wellons and Jacobs Halls, parking lots 7, 9, 10, 12, 16 and 16A to be rearranged to use space more efficiently and incorporate new landscaping/screening and stormwater control measures (improvements to parking lots can be phased to minimize disruption)
- Expand bicycle parking and provide covered bike racks

4. NEW ALLIED HEALTH SCIENCE BUILDING & HEALTHCARE QUAD



Buildings

A new **Allied Health Science Building** should be built to support the growing healthcare programs

- If constructed at the recommended location, swing space is not required

Landscape & Placemaking

A large **“Healthcare Quad”** should be designed in front of the new Allied Health Science Building. Landscape improvements associated with this project may include:

- A new Healthcare Quad with the following considerations:
 - Preserve existing trees if possible
 - Create new pathways between Weinstein,

Cypress Hall new Allied Health Science Building and for connection to University Road.

- Pathways should be designed for future connection to planned buildings in the north
- Focus on well being in the Quad: Provide features/elements that appeal to the senses and provide a sense of calm, such as a reflection pond, meditation labyrinth, or herb garden
- Provide movable seating in front of Allied Health Science Building and benches in the Quad
- Connect Healthcare Quad to “All Campus Path” (the “All Campus Path” should be designed prior to construction of the quad and associated plazas)
- Provide shade along the “All Campus Path”
- Provide a plaza with movable seating in front of Cypress Hall to connect to “All Campus Path”

- Branding/signage and banners on “All Campus Path” and throughout the Quad, including branding updates to the existing water tower
- New art along “All Campus Path” and throughout Quad to showcase UNC Pembroke’s identity

- Consider the use of rain cisterns
- Consider rain gardens in the Healthcare Quad
- Consider Stormwater Control Measures to the east at the University Village Apartments, which could be paired with expanded parking and property acquisition

Utilities & Sustainability

- Expand University electrical circuit to the east of the James B. Chavis Student Center/along Prospect Road/N. Odum Street
- Opportunity to switch from Duke Energy-owned campus primary electrical infrastructure to a campus-owned system both at the Pinchbeck Complex and University Village Apartments
- New outdoor lighting: to be consistent with selected lighting for “All Campus Path”
- Expand pedestrian-level lighting along University Road
- Expand Wi-Fi access on proposed Healthcare Quad, plaza, and along “All Campus Path”
- New Allied Health Science Building should be Green Globe Certified (PV ready; LED Lighting; low-flow fixtures and toilets; a display board showing how much energy is consumed in the building, etc.)
- Potential location for a shared generator
- Potential location for a Regional Energy Plant (possible geothermal)

Transportation

- Work with the Town of Pembroke to conduct a speed study on University Road along western edge of campus and determine need for pedestrian crossings on University Road and the following cross streets:
 1. Hawk Drive
 2. University Drive
 3. Faculty Row
 4. College Terrace
 5. Old Main Road
- Expand bicycle parking and covered bike racks
- Provide a new bicycle check-out location at the new Allied Health Building or Cypress Hall
- Work with the Town of Pembroke to expand the sidewalk and provide on-street bike lanes along University Drive
- There is an opportunity to expand Facilities Drive and connect it with Ernest Lowery Road and to create new parking lots north of this connection. Complete streets improvements should be applied to expanded Facilities Drive
- There is an opportunity to purchase property at University Village Apartments and expand parking in that area to accommodate Healthcare Neighborhood students, faculty, and staff. Reconfiguration of parking should be paired with new Stormwater Control Measures

Stormwater Management

- To the extent possible, provide a Green or Blue Roof on the new Allied Health Science Building
- Consider Stormwater Control Measures to the west of the new Allied Health Science Building

5. GPAC RENOVATION/EXPANSION & WELCOME CENTER



Buildings

GPAC should be renovated and expanded to provide breakout/exhibition space, incorporate a University Welcome Center, and provide ADA access.

- The GPAC renovation should redefine the building's front door and become transparent to invite people inside along the University Drive and Prospect Road/N. Odum street facades
- Lot 16 should be connected to a service entrance
- The University should explore the possibility of leasing specialized performing arts-related spaces during construction

Landscape & Placemaking

The "Arts Oval" is a large roundabout and open space

to replace the existing landscape at the main gateway. In addition to the "Arts Oval," the GPAC should feature a plaza along its northern façade and landscaping along its eastern façade. **Landscape improvements** associated with this project may include:

- New fixed benches in the GPAC plaza and the "Arts Oval"
- Planting zone and trees to create shaded walking areas for "All Campus Path" and enhance building entrances
- Branding/signage and banners in and along the "Arts Oval"
- New art in the oval to showcase UNC Pembroke's identity
- Perimeter landscape along the road edge of the "Arts Oval" to provide a feeling of separation



IMAGE 10 GPAC

Utilities & Sustainability

- New outdoor lighting to be consistent with selected lighting for the "All Campus Path"
- Expand Wi-Fi access along "All Campus Path"
- To the extent possible, the renovated GPAC should be designed sustainably (PV ready; LED Lighting; low-flow fixtures and toilets, etc.)

Stormwater Management

- Consider Stormwater Control Measures in the "Arts Oval"
- Consider the use of rain cisterns
- Consider rain gardens along GPAC's east and west facades

Transportation

- The "Arts Oval" should be carefully designed to consider crossings, where gathering areas within the

oval are located and sightlines for both pedestrians and vehicles on the approaches to crossings. Other features of the "Arts Oval" should include:

- Complete streets improvements on the oval and along University Drive to accommodate separate pedestrian, vehicular, and bicycle paths. The eastern side of University Drive can be improved first, with western side providing campus access to minimize disruption
- The "Arts Oval" should connect to the "All Campus Path" (*the "All Campus Path" should be designed prior to construction of the "Arts Oval" and plazas*)
- Expand bicycle parking and provide covered bike racks on the southern edge of GPAC

- There is an opportunity to purchase land east of the gateway on Prospect Road and construct a new surface lot to provide additional capacity for events and visitors

6. BRAVEHAWK GATEWAY & SPORTS PAVILION

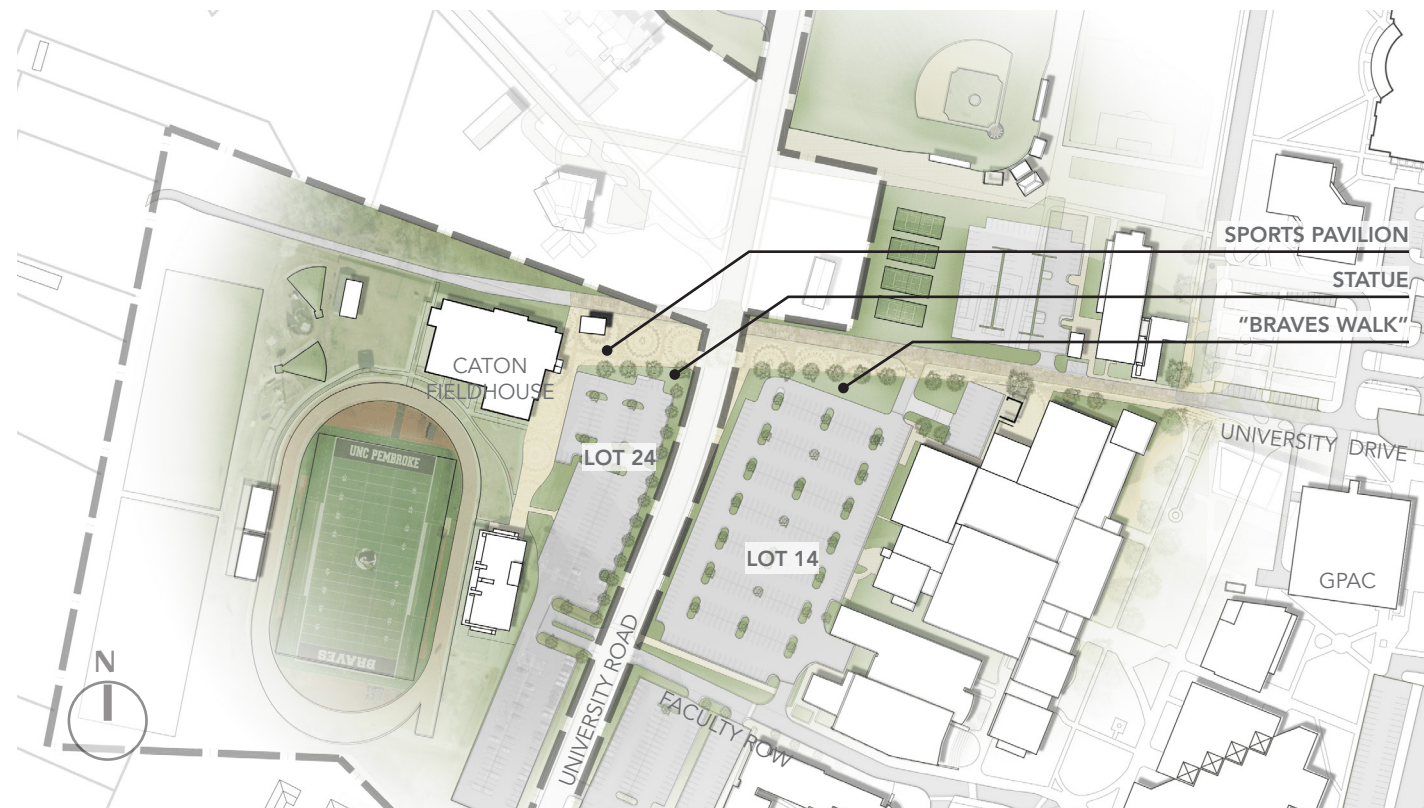


IMAGE 11 University Road

Buildings

- Minor renovations should be made to **Caton Fieldhouse** to ensure it is inviting and provides adequate shade
- A **new sports pavilion** is recommended to provide amenities for events and University use

Landscape & Placemaking

“**Braves Walk**” is an expanded sidewalk area along University Drive that will connect to improvements of University Drive at GPAC. This completion of University Drive improvements will mark it as a ceremonial walk for sports teams, the marching band, students, visitors, and spectators during school events. **Landscape improvements** associated with this project may

include:

- Planting zone and tree plantings to create shaded walking areas along the “All Campus Path”, University Drive and at Parking Lots 13, 14 and 24 to improve the tailgating experience
- A new statue at the intersection of Chevelle Road and University Road (*consider a BraveHawk sculpture or other school-spirit related icon*)
- Branding/signage and banners along University Drive and University Road
- Additional trees along University Road and Parking Lot 24

Utilities & Sustainability

- New outdoor lighting along University Drive to be

consistent with lighting for “All Campus Path”

- Expand Wi-Fi access in Parking lots 13, 14 and 24 and around the Belk Athletic Complex
- The pavilion should be designed sustainably: Green Globe Certified (PV ready; LED Lighting; low-flow fixtures and toilets, etc.)
- There is an opportunity to create a new primary electrical circuit expanding southward along University Road
- There is an opportunity to switch from Duke Energy-owned campus primary electrical infrastructure to a campus-owned system both at the Belk Athletic Complex and at the University Courtyard Apartments

Stormwater Management

- Consider the use of rain cisterns

Transportation

- Complete streets improvements are recommended along University Drive to accommodate separate pedestrian, vehicular, and bicycle paths. (Eastern side of University Drive can be improved first, with western side accommodating access to campus to minimize disruption)
- Expand bicycle parking and provide covered bike parking near Caton Fieldhouse
- Work with the Town of Pembroke to conduct a speed study on University Road along western edge of campus and determine need for pedestrian crossings on University Road at strategic locations along Parking Lot 24 and the following cross streets:

1. Hawk Drive	4. College Terrace
2. University Drive	5. Old Main Road
3. Faculty Row	

7. THE “BUSINESS COURTYARD” & POTENTIAL FUTURE BUILDING

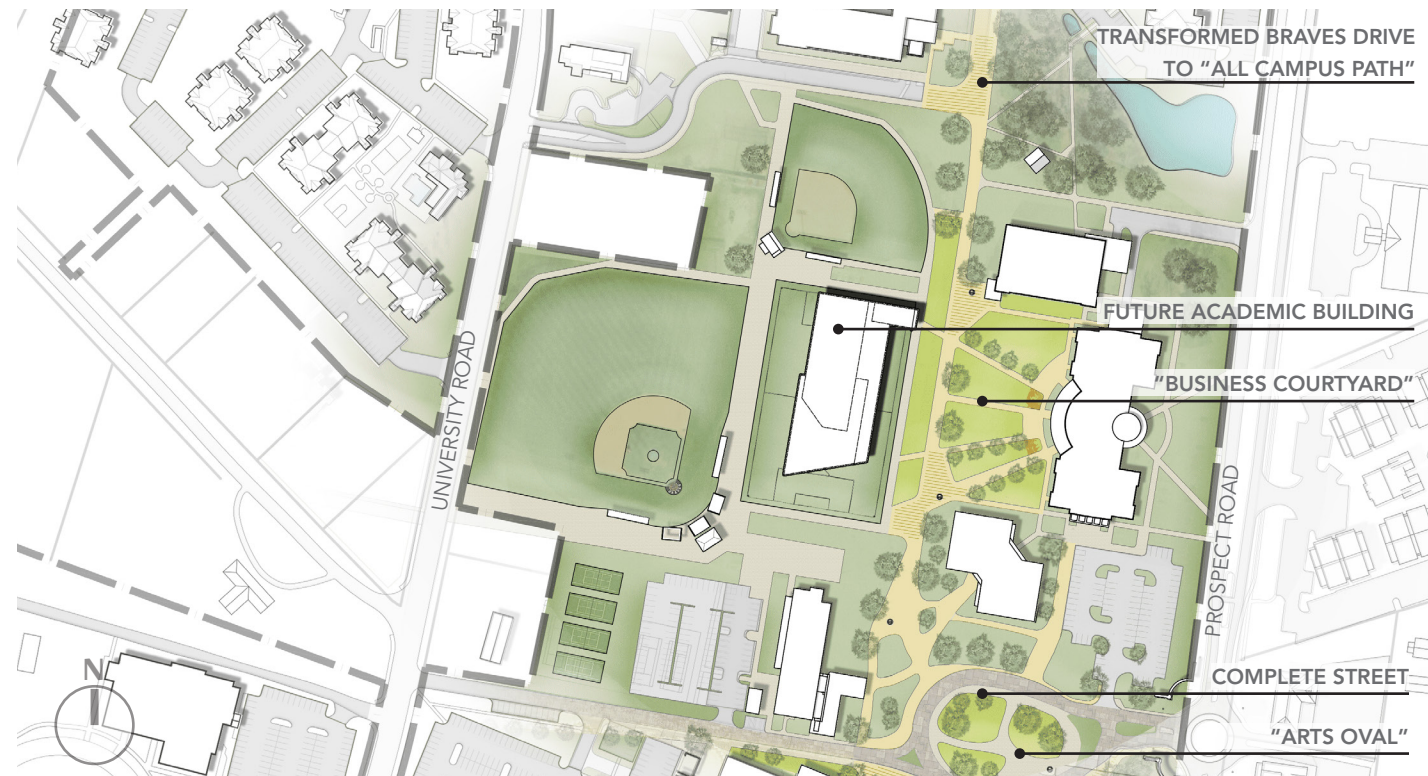


IMAGE 12 James A. Thomas Hall

Buildings

- The renovated sports field along Braves Drive is an ideal location for a **building opportunity in the future** (see placement study on page 91)

Landscape & Placemaking

The “**Business Courtyard**” should be designed to connect to a future building directly across from it. **Landscape improvements** associated with this future building opportunity can include:

- Planting zone and trees to create shaded walking areas for the “All Campus Path” and provide a visual buffer between the “All Campus Path” and the existing sports field
- New art in the “Business Courtyard” to

showcase UNC Pembroke’s identity

- Branding/signage and banners along the “All Campus Path”

Utilities & Sustainability

- New outdoor lighting along “All Campus Path”
- Expand Wi-Fi access along “All Campus Path”
- The future building should be designed sustainably: Green Globe Certified (PV ready; LED Lighting; low-flow fixtures and toilets, etc.)
- Stormwater Control Measures implemented to the east at the University Village Apartments (pair with expanded parking and property acquisition)
- Possible shared generator location with Sampson or Lumbee

Stormwater Management

- Consider Stormwater Control Measures at the “Business Courtyard”
- Consider the use of rain cisterns

Transportation

- Expand bicycle parking; provide covered bike parking near Thomas School of Business
- Provide a new bicycle check-out location
- There is an opportunity to purchase the property at University Village Apartments and expand parking in that area to accommodate Healthcare Neighborhood students, faculty, and staff. The reconfiguration of this parking should be paired with new Stormwater Control Measures

CENTRAL CAMPUS FUTURE BUILDING OPPORTUNITY

DIAGRAM Future Building Opportunity



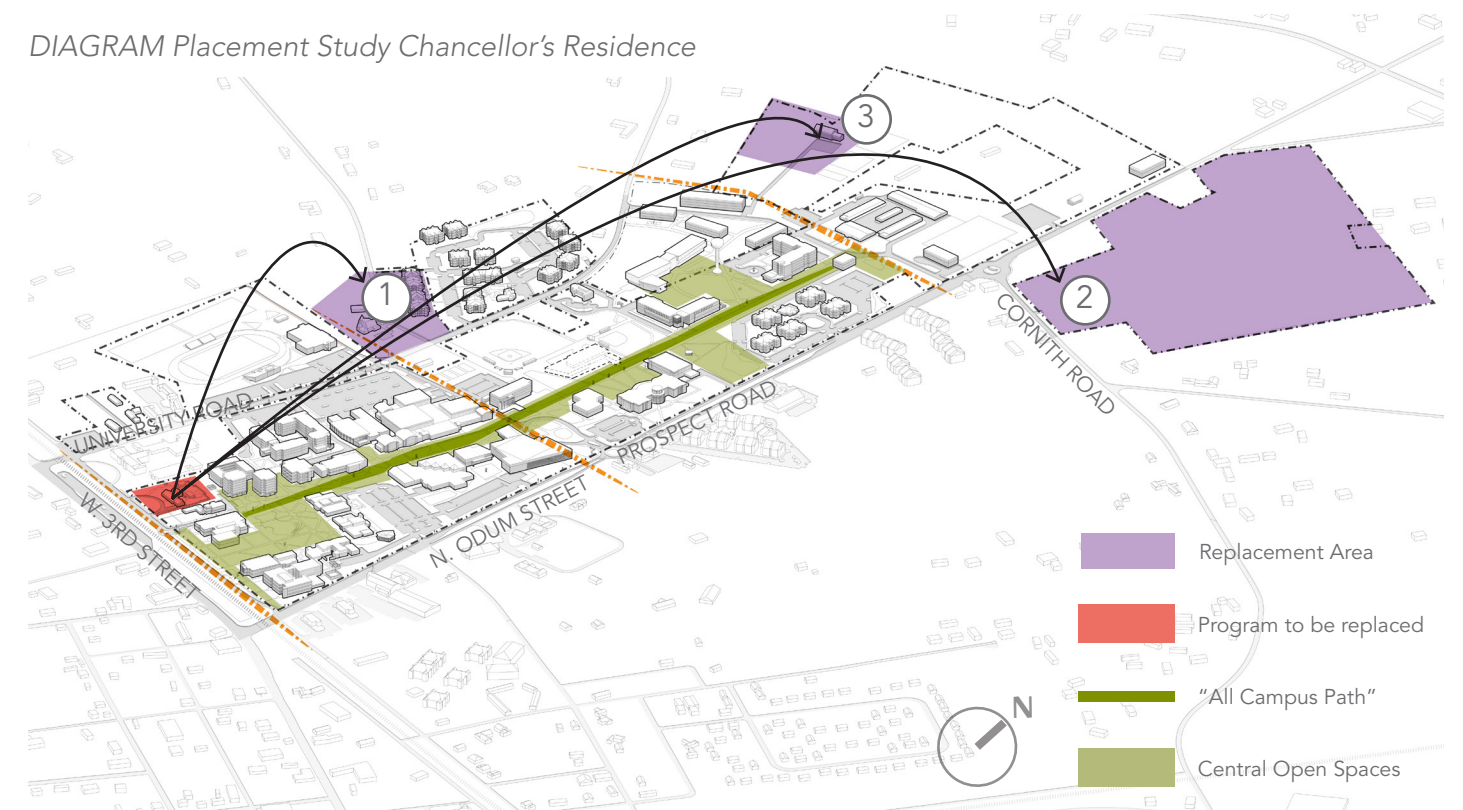
As of this writing, the athletics and recreation field along Braves Drive is scheduled for renovation. While there are no short-term plans to change the current use of this field, its prime location across from the Thomas School of Business and next to Lumbee Hall makes it an ideal area for a building in the future. A signature development in this area also has the potential to strengthen the sense of place along the "All Campus Path" and frame the main "Lumbee Gateway" of campus, enhancing the navigational experience.

In the event that this area were to be densified, the existing field could be moved to three potential areas in the northern part of campus. Each of these areas provides the benefit of large open spaces and natural

areas. Locations one and three would continue the campus pattern of distributing athletics and recreation fields and facilities throughout the entirety of campus. In contrast, location two would place the field in a less visible location, but has the potential to be developed into a large Athletics and Recreation Complex according to UNC Pembroke's needs at the time.

PLACEMENT STUDY: CHANCELLOR'S RESIDENCE

DIAGRAM Placement Study Chancellor's Residence



The 2022 Master Plan proposes that the existing Chancellor's Residence be transformed to an Alumni Center or other community-oriented space. In the event that such an adaptation were to occur, three potential locations have been proposed for the future Chancellor's Residence.

The first location is not currently owned by UNC Pembroke; however, it provides excellent visibility and connectivity from University Road and University Drive. Its central location would connect the Chancellor's Residence to the Belk Athletic Complex, GPAC, and the proposed "BraveHawk Gateway" and "Lumbee Gateway" on University Drive. This location would also be an ideal walking distance from Lumbee Hall and the "Founders Quad."

Locations two and three are owned by UNC Pembroke, but are less visible and accessible locations for the Chancellor's House. Both options offer the benefit of convenient parking, placement near the proposed "Northern Gateway" and generous, flexible space for a residence. In the long term, the growth and densification of these properties would better connect the Chancellor's Residence to campus activity.

BELK HALL & NORTH HALL

DIAGRAM Belk Hall and North Hall Considerations



The potential removal or reuse of Belk and North Halls has been discussed as part of the 2022 Master Plan. As a result of the COVID-19 pandemic, on-campus housing has not been fully occupied in the last several years and Belk and North Halls have remained vacant. While it is possible that occupancy of these traditional-style residence halls will increase once again as the pandemic eases, UNC Pembroke stakeholders have discussed potential opportunities related to their use and demolition.

In the short term, if Belk and North continue to remain unoccupied, they can be used as swing space while other projects, such as the renovation of the former Business Administration Building, take place. In the longer term, the demolition of these buildings has

been considered. The existing site would be in ideal location for a new academic building or an extension of the "Founders Quad," though it is not currently a need based on the 2022 Master Plan and space utilization study.

In the event that these residence halls are considered for demolition, it is recommended a study of housing needs be completed prior to doing so. As discussed in the Long-Term Vision for Housing, it is possible that at least some of the housing space demolished will require replacement. The 2022 Master Plan recommends that any new housing be built near the proposed "Healthcare Quad" in central campus; however, north campus also provides viable options for the placement of new housing.

LONG-TERM VISION: HOUSING

Though UNC Pembroke does not currently have plans to expand its on-campus housing stock, some new housing may be required in the coming years. UNC Pembroke currently has 6,318 enrolled undergraduate students which are expected to increase to approximately 7,238 students by 2030.

Current university policy requires that both freshmen and sophomores, which comprise approximately 50% of all undergraduates, live on campus. Based on an analysis of previous years, it is estimated that approximately 60% of freshmen and sophomores will live on campus, while the other 40% will be approved for waivers. Given these assumptions, approximately 2,172 freshmen and sophomores will be living on campus by 2030. It is also estimated that approximately 5% of juniors and seniors will live on campus, resulting in a total of 2,352 undergraduates living on campus in 2030. With a current

stock of 2,150 beds on campus, it is estimated that an additional 200 beds would be needed in the next 10 years.

As of this writing, freshmen are required to live in traditional-style residential communities on campus, which currently have 1,460 beds. While this stock is sufficient to house the estimated 1,086 freshmen living on campus in 2030, the demolition of North and Belk Halls, which provide 324 traditional-style beds, may also need replacement to ensure that there is an adequate supply of beds in the future. In addition, the University may consider forging relationships with developers to provide new and improved student housing, which may help bolster the University's mission and growth in coming years. For a more extensive housing report, see the Appendix (page 212).

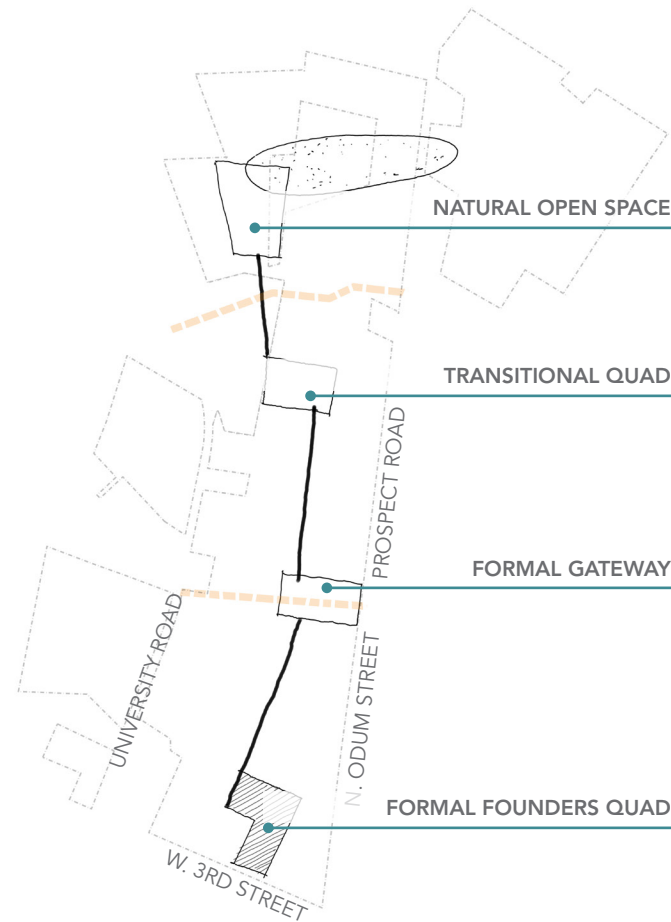


IMAGE 13-15 North Carolina School of Science and Math - Morganton

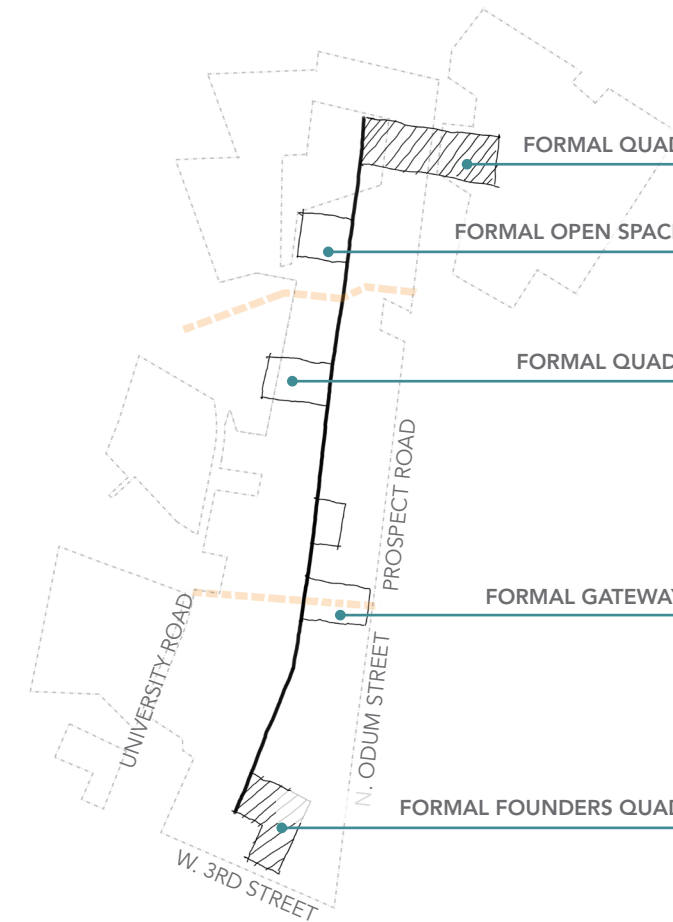
NORTH CAMPUS DEVELOPMENT SCENARIOS

The overall direction and character of UNC Pembroke's campus framework will be influenced by development decisions made for 44-Acre site and the other proposals for the UNC Pembroke 2022 Master Plan. UNC Pembroke's south campus is already a distinctive area comprised mainly of formal landscaping and the "Founder's Quad." The 44-Acre property and adjacent zone, which flank the northeastern end of campus, have the potential to mirror the existing campus patterns, as shown in scenario two, or to transition to a more natural, wild character, as shown in scenario one.

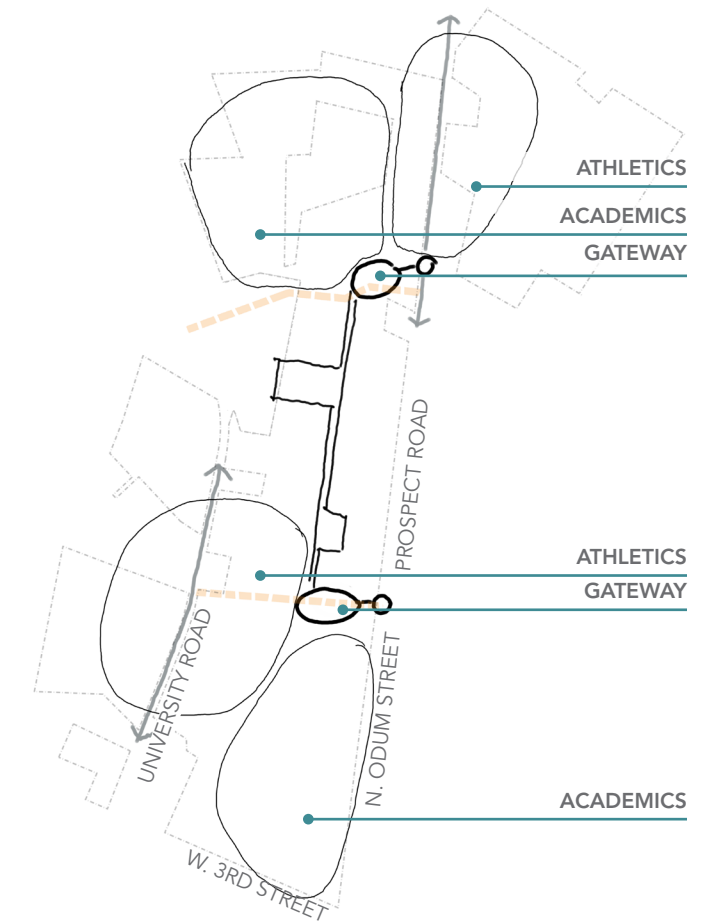
Another approach, shown in scenario three, would be for UNC Pembroke to create two main gateways at University Drive and at Facilities Drive where public, outward facing programs such as athletics and performing arts could be placed to engage with the community. A combination of these strategies could also be adopted with a larger vision in mind to ensure a strong character and identity at UNC Pembroke as its campus grows.



ONE A cascading progression of shifting open spaces which transition from formal to natural



TWO A formal, linear esplanade connecting neighborhoods and characteristic open spaces, from the "Founders Quad" to a new academic quad in the north



THREE A linear esplanade connecting two main campus gateways and their outward facing open spaces

DEVELOPMENT SCENARIO ONE



In this development scenario, open spaces shift along the Campus Green and “All Campus Path,” transitioning from the formality of the “Founders Quad” in south campus to a wellness-focused “Healthcare Quad” in central campus. From there, the “All Campus Path” would snake through a wild, native grove of trees along an Athletics

and Recreation Complex that ends at an Academic Development. This type of framework also transitions from the dense, historic campus in the south to a more open, region-focused campus in the north.

- (a) Allied Health Science Building and “Healthcare Quad”
- (b) Four new dorms to create Housing Quad on Northern Crossing
- (c) Pine Cottage Repurposing (potential Chancellor’s Residence or faculty conference space)
- (d) Maintain Facilities Office Building and relocate shops and storage buildings to campus perimeter
- (e) New Athletics and Recreation Complex with field house by existing soccer stadium
- (f) New northern Academic Research Quad and Recreational Park
- (g) Future Academic Development



DEVELOPMENT SCENARIO TWO



Development scenario two expands the formality and urban compactness of south campus toward the north. In contrast to development scenario one, the quads in the north part of campus maintain a traditional axial structure, connecting to a linear “All Campus Path” that offers straight sight lines to the north and south of campus. Consistent with

this approach, the 44-Acre property is developed into a dense and vibrant mixed-use area that includes a variety of academic and research buildings which can attract private investors. The relocation of the Chancellor’s House on the 44-Acre property will benefit from the proximity to campus activity.

- (a) Allied Health Science Building and “Healthcare Quad”
New Housing Neighborhood and Dorms
- (b) Pine Cottage repurposing to event space near
Athletics / Recreation Fields
- (c) Maintain Facilities Office Building and relocate
shops and storage buildings to 44- Acres perimeter
- (d) New Athletics and Sports Complex to the
northwest with grand arrival plaza
- (e) New Millennial Campus initiative Academic
Research Quad
- (f) New Chancellor’s Residence (~5 acres)
- (g)



DEVELOPMENT SCENARIO THREE



In development scenario three, a new gateway is developed at Facilities Drive to serve as a counterpoint to the main University Drive entrance. In contrast to the University Drive gateway, which focuses on engaging the local community through the arts and athletics, the Facilities Drive gateway could become a draw regional partners. A new

Millennial Campus would be featured prominently along the gateway, highlighting UNC Pembroke's engagement with regional industries. Another component of this mixed-use area would be the recreational facilities and opportunities along the northern part of Prospect Road which could serve as a draw for the local community.

- (a) Allied Health Building and "Healthcare Quad"
- (b) New Housing Neighborhood and Dorms
- (c) Pine Cottage repurposing to event space associated with nearby student housing
- (d) Maintain Facilities Office Building and relocate shops and storage buildings to 44- Acre property perimeter
- (e) New northern Academic Research Quad (Millennial Campus initiative)
- (f) North Athletics and Sports Complex flanking both sides of Prospect Road
- (g) Fields and support space (parking | event | practice space as needed)



LONG-TERM VISION: THE “NORTHERN GATEWAY”

As noted in the north campus development scenarios, Facilities Drive will become an important gateway in the future. It is also an important east-west connection that unifies UNC Pembroke’s 44-Acre property to the northeast of campus and the new “Healthcare Quad” in the newly acquired property to the west of central campus.

For this reason, an important consideration would be to connect Facilities Drive to University Road by merging it with Ernest Lowery Road or otherwise extending it to respond to new construction on the western edge of campus. Complete streets enhancements should also be made to ensure that Facilities Drive supports safe multi-modal traffic. Crucial to these improvements would be a widening of the road to ensure the separation of pedestrian, bicycle, and vehicular traffic.

In addition, active uses, such as academic facilities, sports venues, housing, or other commercial and retail uses should line this street to attract the Pembroke community and showcase UNC Pembroke’s exciting initiatives as future development opportunities take form in this area.

LONG-TERM VISION: PARKING

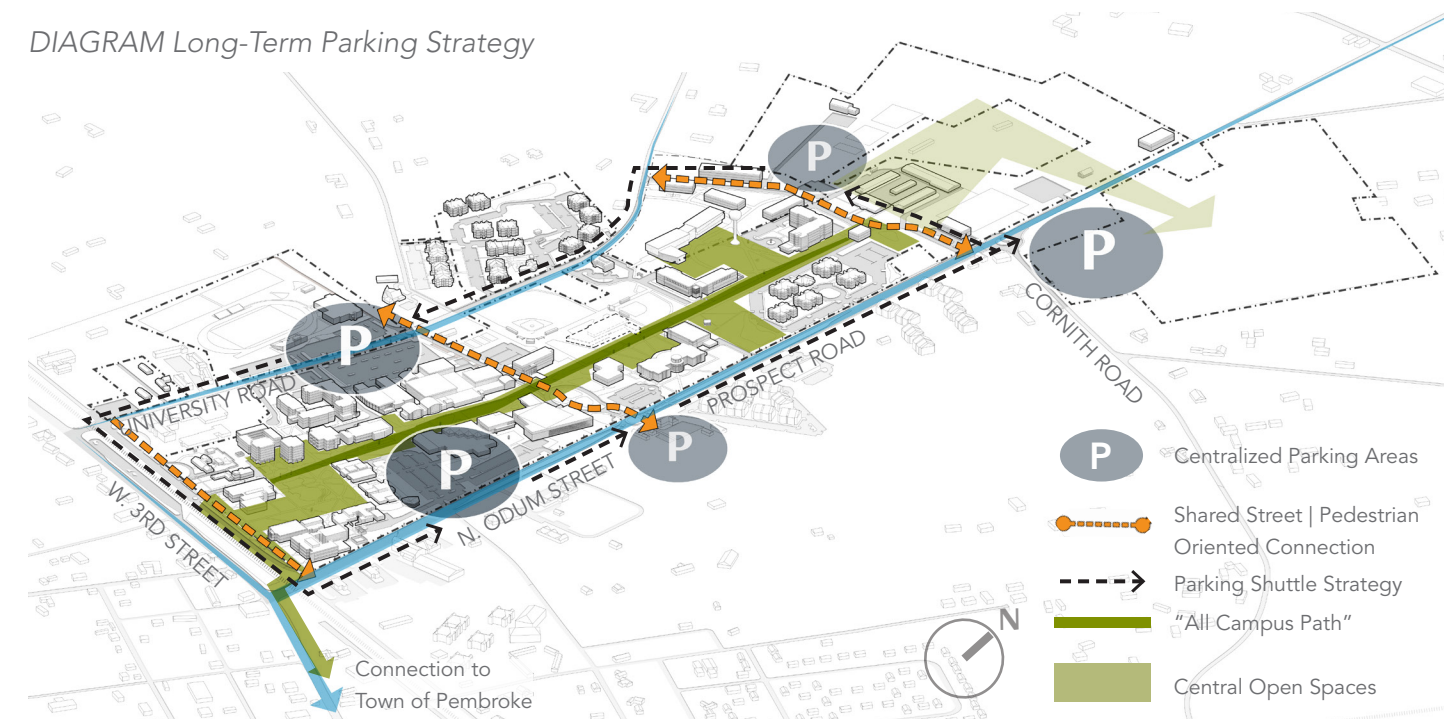
Consistent with UNC Pembroke’s goal of creating a safe, pedestrian and cyclist-oriented central campus, the 2022 Master Plan parking strategy proposes centralized parking areas at the periphery of campus. These park and ride lots will remove parking access from Braves Drive and require the majority of drivers to park once and walk.

The 2022 Master Plan is designed to be a flexible living document. For this reason, and to accommodate the location of future parking areas, it proposes approximately 1,100 new parking spaces; however, in the long term, it is recommended to lower the parking supply ratio, which is currently at 0.44, to 0.33. This decrease accounts for the following factors:

- Excess parking spaces are nearing 900
- As a result of the COVID-19 pandemic, there may be a permanent increase in telecommuting

- Peer institutions have similar parking supply ratios
- Additional parking recommendations are as follows:
- Reallocate resident parking to other user groups, such as commuters and visitors
 - Consider strategic land purchases, such as the area east of Prospect Road, to create new lots for visitors
 - Use the west side of the football stadium for parking.
 - Penalize not having a parking permit after an adequate grace period for students, faculty, and staff
 - Vary parking permit prices by location, demand, and user type
 - Consider closing part of the lot south of the railroad tracks
 - Construct new surface parking areas on the north and central ends of campus
 - Ensure adequate covered bicycle parking and lockers are available in key locations

DIAGRAM Long-Term Parking Strategy



RECOMMENDED ASSESSMENTS & CONSIDERATIONS

Planning, Space Utilization & Standards

- Campus-wide Site Survey
- Detailed, Single Category Space Utilization and Allocation Studies (Labs, Classrooms, Offices)
- DAVE Facilities Data Management System - Existing Data Assessment & Update
- Student and Residential Life Study
- Academic Master Plan
- Athletics Master Plan
- Facilities Master Plan (detailed assessment of campus buildings and conditions of existing building systems)
- Capital Improvement Plan
- Campus Design Guidelines

Landscape

- Campus-wide Geo-technical Study (to focus on infiltration rates of soils and depth of seasonal high-water table)
- Landscape Master Plan (to develop an overall, flexible design for the "All Campus Path," character and standards for new open spaces and plazas)
- Tree Survey & University Plant List

Navigation

- Comprehensive Parking Study (to update 2019 Kimley-Horn Study; Should include owned and leased parking)
- Mobility & Accessibility Survey (should consider ADA access as well as non-vehicular access on campus)
- Wayfinding Master Plan (should take into account 2017 Branding & Wayfinding Signage Study)
- University Road Speed Study

- Transportation Study (to determine the need for crosswalks on University Road at Hawk Drive, University Drive, Faculty Row, College Terrace, and Old Main Road)

Utilities & Sustainability

- Utilities Survey (to update 2011 Dewberry drawings)
- Hydrologic/Stormwater System Survey (existing January 2019 Hydrologic Study Report completed with the Town of Pembroke requires additional information, including elevations, pipe sizes, and clarification of connections)
- Define Campus-Wide Sustainability Guidelines
- Update 2017/18 Strategic Energy and Water Plan
- Consider new Sustainability Roles within the

- Operations and Maintenance office
- Green Infrastructure & Stormwater Management Plan (identify placement and viability of available interventions, permeable materials, etc.)
- Lighting Study (in low illumination areas)

Regional Partnerships & Strategic Goals

- Create an Academic Strategic Plan
- Consider roles outreach roles within the External Affairs office to identify potential partnerships



IMAGE 16 Livemore Library UNC Pembroke



IMAGE 17 Faculty Row at UNC Pembroke



IMAGE 18 - 20 UNC Pembroke Campus



4

NAVIGATION FRAMEWORK
LANDSCAPE FRAMEWORK
UTILITIES FRAMEWORK
OPPORTUNITIES FRAMEWORK
BUILT ENVIRONMENT FRAMEWORK

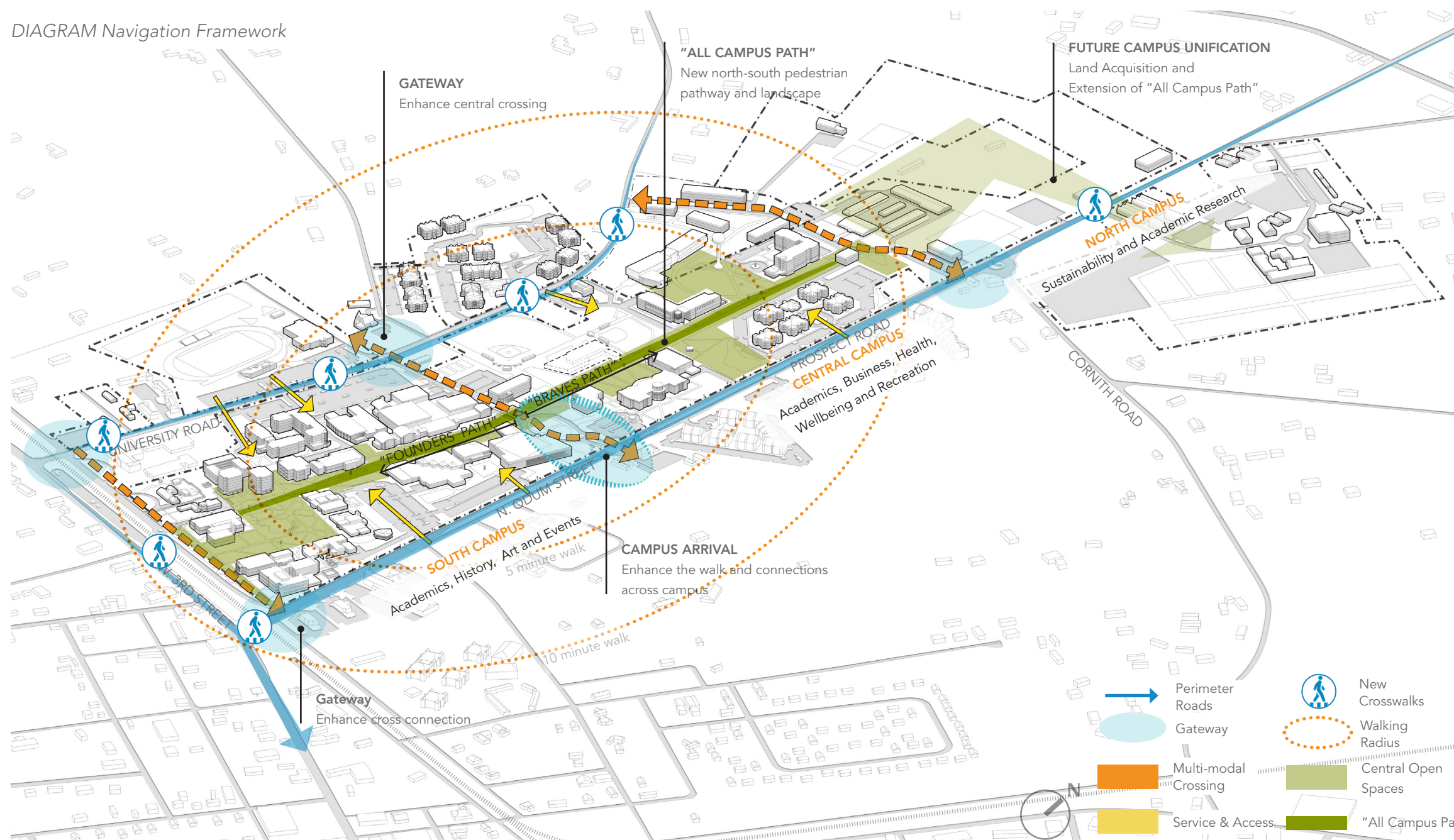
MASTER PLAN FRAMEWORK



NAVIGATION FRAMEWORK

The Navigation Framework is defined by an "All Campus Path" that encourages all forms of soft mobility and pedestrian activity. Three east-west connections on Old Main Road, University Drive, and Facilities Drive are enhanced in accordance with a complete streets design approach.

DIAGRAM Navigation Framework



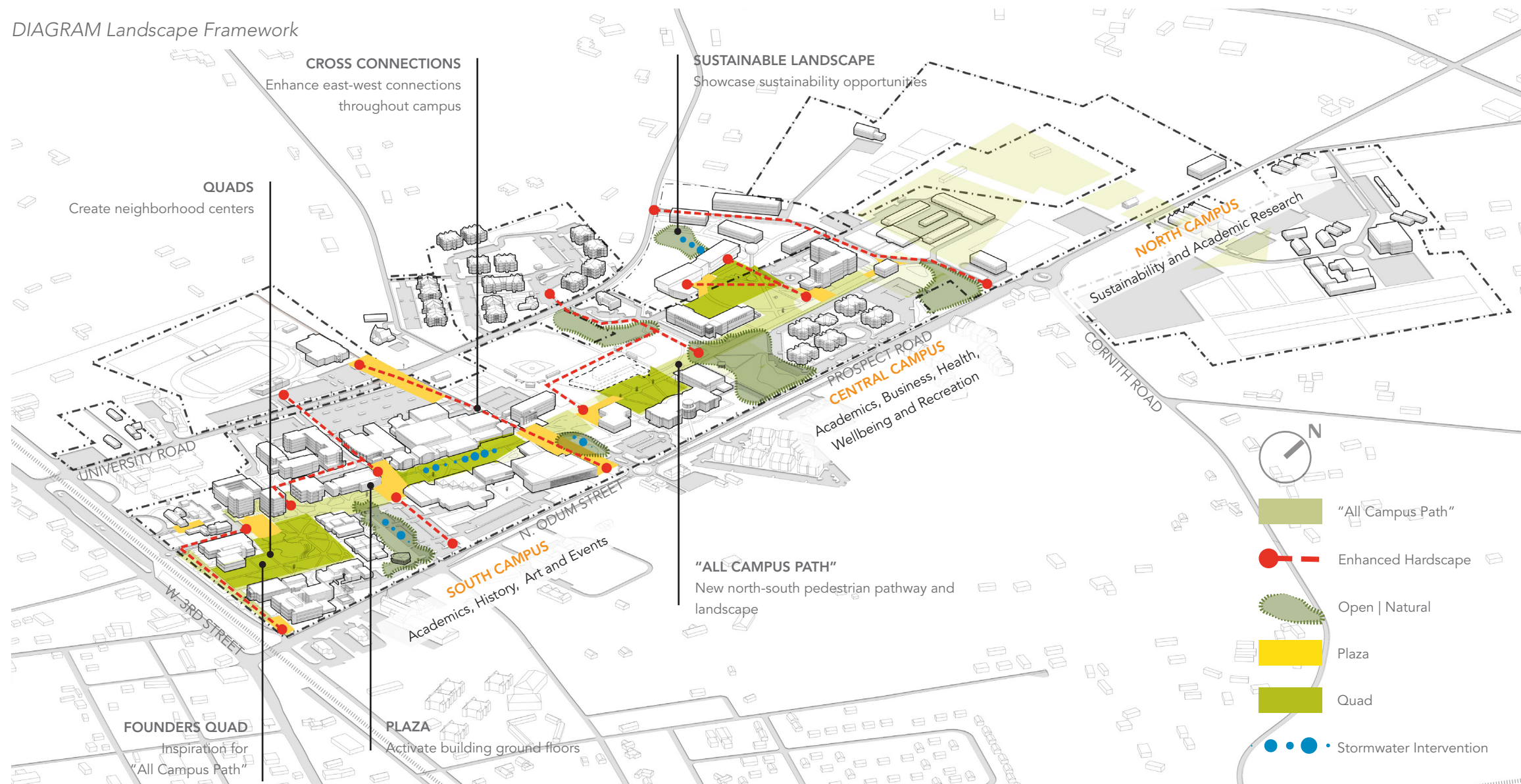
A key objective of the 2022 Master Plan is to create a walkable, bikeable campus where people can travel safely and comfortably. Vehicle access along Faculty Row and Braves Drive will be removed to create a new "All Campus Path" along that runs north-south through the entirety of campus. Shading along the path will ensure comfort and connections to larger open spaces for gathering and resting. The paving for the "All Campus Path" should allow for light vehicle traffic to ensure use and building access by the University's maintenance fleet.

Three secondary east-west connections will provide multi-modal and vehicular access between N. Odum Street/Prospect Road and University Road. Gateway enhancements are recommended along the central crossing on University Drive to connect and highlight GPAC and the Football Stadium, two of UNC Pembroke's most public venues. In addition, it is recommended that all cross streets be transformed to separate pedestrian, bicycle, and vehicular traffic. Existing service drives and reconfigured parking lots will be used to maintain service access to the buildings along the "All Campus Path." Parking will be moved to the perimeter of campus. In addition, vehicular speeds around the perimeter of campus will be reduced through the use of devices, such as crosswalks, which will also improve access across major roadways.

LANDSCAPE FRAMEWORK

The Master Plan vision builds on the progress that has been made to transform the campus to date – from the memorable open spaces in the historic core to the newer investments in the ceremonial gateway to campus – and creates a varied, multi-layered, and ecologically functional landscape.

DIAGRAM Landscape Framework



The historic core of campus has a strong sense of place and is a powerful attraction for both faculty and students. The Landscape Framework capitalizes on the opportunities provided by UNC Pembroke's campus by applying a unifying character inspired by the "Founders Quad" to the new pedestrian-oriented central spine. Closing select internal circulation roads to achieve encourages pedestrian circulation and safety while also transforming generic paved area into a more unified, continuous green space. Dubbed the "All Campus Path," this central corridor is comprised of a series of pedestrian-oriented open spaces that provide variation in the campus fabric and act as a continuous thread that reinforces UNC Pembroke's identity. The "All Campus Path" is also the main connector and organizing element for the Master Plan improvements.

Along the "All Campus Path," a wide pedestrian zone will allow unobstructed travel from the south to the north ends of campus. A diversity of adjacent open spaces will include three primary categories: **Plazas, Quads, and Natural Areas**. Each type of space serves as a node along the path, providing a specific function informed by the adjacent campus context.

LANDSCAPE FRAMEWORK

Plazas

Plazas serve as extensions to building oriented activities. These spaces provide flexible gathering spaces with ample seating and are strategically broken up with planting areas to create a more diverse range of spaces. Plazas are located around/in front of key buildings or structures that are social/activity hubs for the campus. While dominated by pavement, plazas should be constructed from a mixture of concrete, unit pavers and or brick pavers to provide visual interest on the ground plane.



IMAGE 21 Plaza in front of D.F. Lowry Building

Quads

Quads are the outdoor activity nodes for UNC Pembroke. Larger scale open spaces enclosed on multiple sides by several buildings, Quads are primarily open lawn crisscrossed with walks connecting building entries or campus paths leading to other campus locations. Quads are intended to be mostly planted with good shade coverage and plenty of room for a wide range of outdoor activities.



IMAGE 22 "Founders Quad" UNC Pembroke

Natural Spaces

Natural Spaces are the least organized of the space types. These are simply areas of preserved natural area or planting that is a deliberate imitation of the local natural aesthetic. Natural Areas should be densely planted with only passive activities being encouraged. These zones serve the important function of limiting impervious area and providing passive stormwater mitigation by allowing the dense plantings to intercept rainfall as well as encouraging the natural infiltration of rainwater.



IMAGE 23 Wooded Area by the Water Tower

CAMPUS PLANTING GUIDLINES

In addition to the broader landscape framework for the campus, incremental steps can be taken in the approach to planting that will complement the overall framework in providing a unified campus aesthetic. Wherever possible native and adaptive species should be used, which will cut down on maintenance costs and water use. Consideration should also be given to seasonal interest by using a variety of species that will bloom at different times throughout the year. Similarly, evergreen and deciduous shrubs and groundcovers should be used in relatively equal proportions.

Adequate space should also be provided to ensure long term viability of the plant material. Trees, for instance, should be provided enough uncompacted soil volume to reach the intended size. At a minimum, trees should not be placed in planters that are less than 8' in any direction.

Providing pollinator gardens or plants with habitat value should also be considered. These installations will be memorable bursts of color and diversity for students and faculty. Special care should be given to the locations of these features to prevent any wildlife that frequent these gardens as being seen as a nuisance. Avoid locating too close to outdoor dining, primary building entries, or heavily trafficked plazas.

Lastly and most critically, plants should be selected and maintained to ensure visibility and security.

Foundation Planting

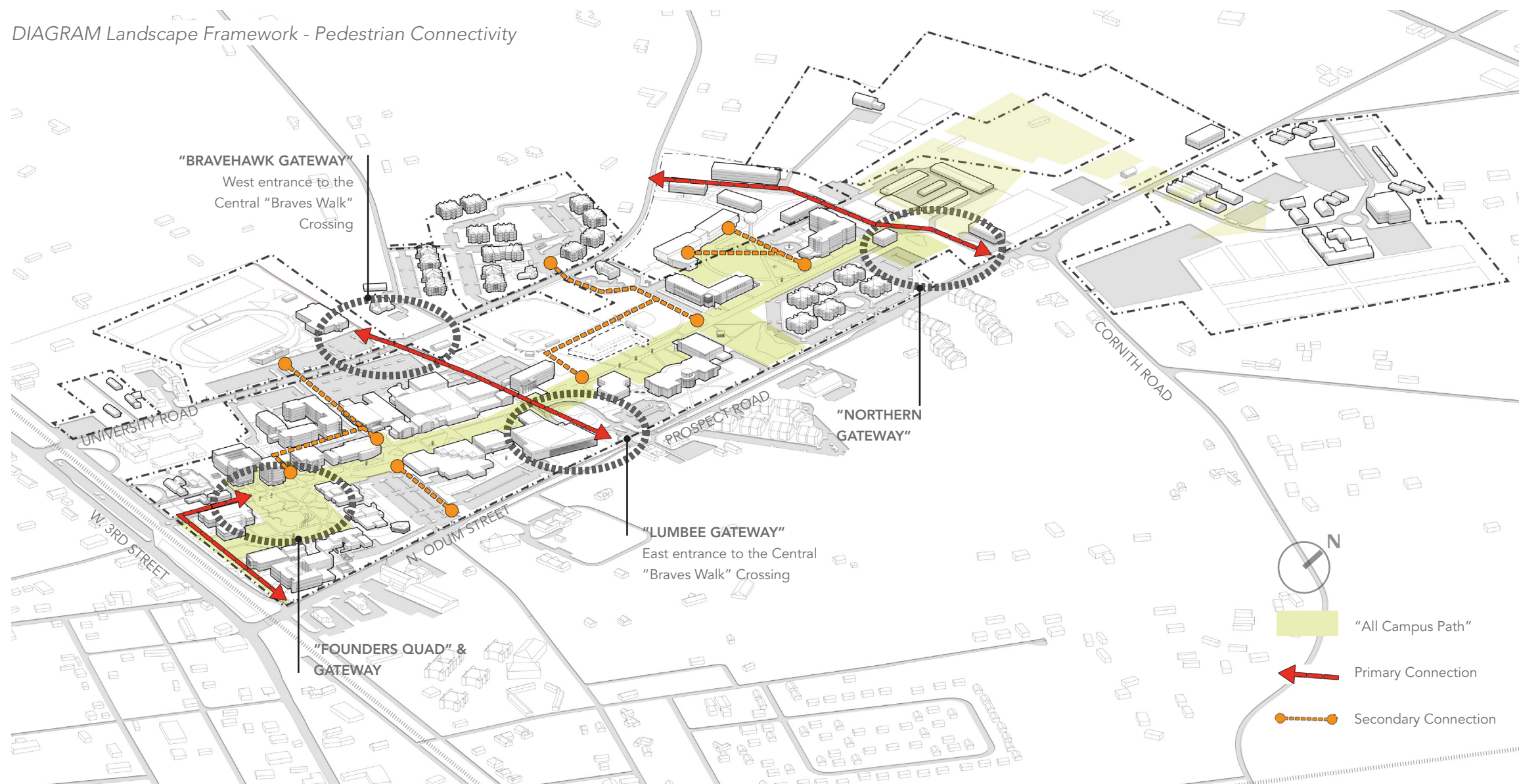
A continuous shrub presence should be maintained at the foundations of all campus buildings wherever possible. These shrubs should be placed in single or double rows and consist of largely evergreen species. Occasional and intentional variation in species and size is key to preventing a feeling of monotony. This variation can also be used to strategically accent building forms. Species selection for shrubs should take window heights into account so obstructing views out is avoided. Where space allows accenting the shrub rows with ornamental trees and groundcovers should also be considered.

Planting at/around Building Entries

Planting at building entries should be given special attention to help highlight these points as clearly as possible from a distance. Shrubs and groundcover that provide heightened visual interest (form, variegated foliage, blooms, etc.) should be used so the entries stand out visually from the more uniform foundation plantings. A heavier use of groundcovers and perennials is encouraged as these can attract attention without obstructing views. Lower height plantings should be used so entryways maintain clear views to other building entries and primary paths to help quickly orient pedestrians. Shade or ornamental trees should also be used where possible to provide shade, frame views and help entries visually stand out.

LANDSCAPE FRAMEWORK: PEDESTRIAN CONNECTIVITY

In addition to creating a central organizing “All Campus Path,” a hierarchy of pedestrian-focused paths is needed to link the campus together. These supplemental connections enhance campus permeability and improve wayfinding with visual cues such as paving materials and path widths.



Enhanced Hardscape Characteristics

Critical pedestrian pathways of various widths link the perimeter edges with the “All Campus Path” of campus. Landscaping and shade trees provide comfort and consistency along these pathways.

Primary Connections

Primary connections are continuous pedestrian paths along roadways connect the exterior of campus to the center. They focus on maximizing the pedestrian experience and separating pedestrian and vehicular traffic.

Secondary Connections

Secondary connections join important or critical elements or places within and around campus.

THE CENTRAL CROSSING: "BRAVES WALK"

"Braves Walk" marks the ceremonial path between GPAC and the Belk Athletics Complex. It runs east-west along what is currently University Drive. Each end features an important gateway, with the "Lumbee Gateway" to the east and the "BraveHawk Gateway" to the west.

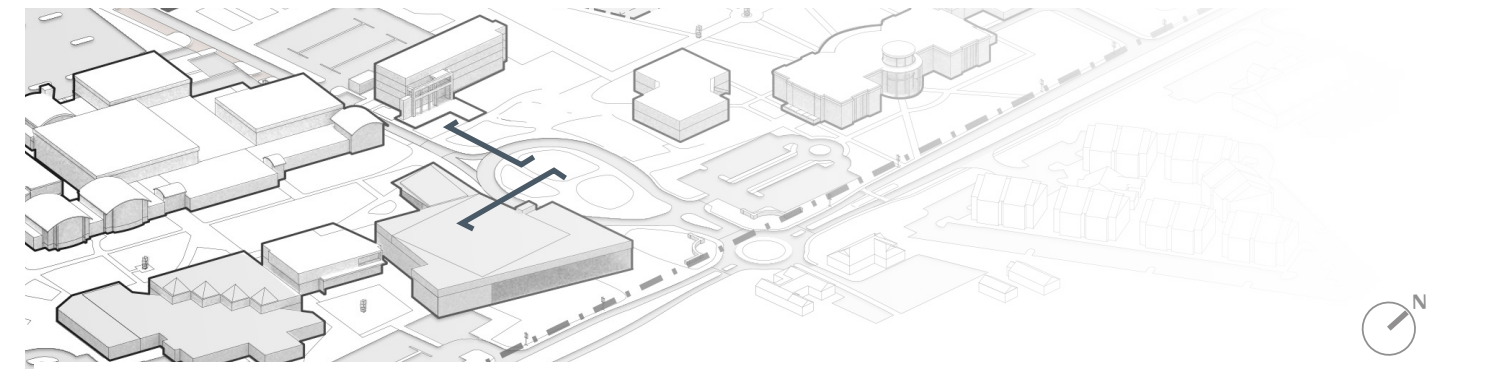


In predominantly hardscape-oriented areas, landscape will be used to organize the space into subdivided zones for differing uses or group sizes. These pockets of planting will also be used to ensure visual interest and variation are present. Care should be given where paths need to pass through plaza areas, so no individual path of travel visually dominates the space.

Plaza Landscaping

Despite being largely hardscape, planting in plazas is an important aspect of the design and weighs heavily into the success of these spaces. The inclusion of canopy trees is critical both for shade and to help visually organize the space. Planters containing trees should be sized appropriately to ensure long term health. Planters used to subdivide/organize plazas can be in-ground or manufactured, the important factor is they are sized appropriately

for the mature size of any plants that will be used in them. Low shrubs (2'-4' in height), groundcovers, and perennials should be used so a sense of separation is provided but visibility can be maintained across the plaza. The use of tall shrubs should be avoided except where needed to screen views along the edges (blank building walls, service areas, etc.).



Primary pedestrian pathways will be set back from the road with trees on either side at regular intervals where possible. In areas where space is limited, smaller planters can be provided to create a sense of separation from the road and enhance the pedestrian experience.

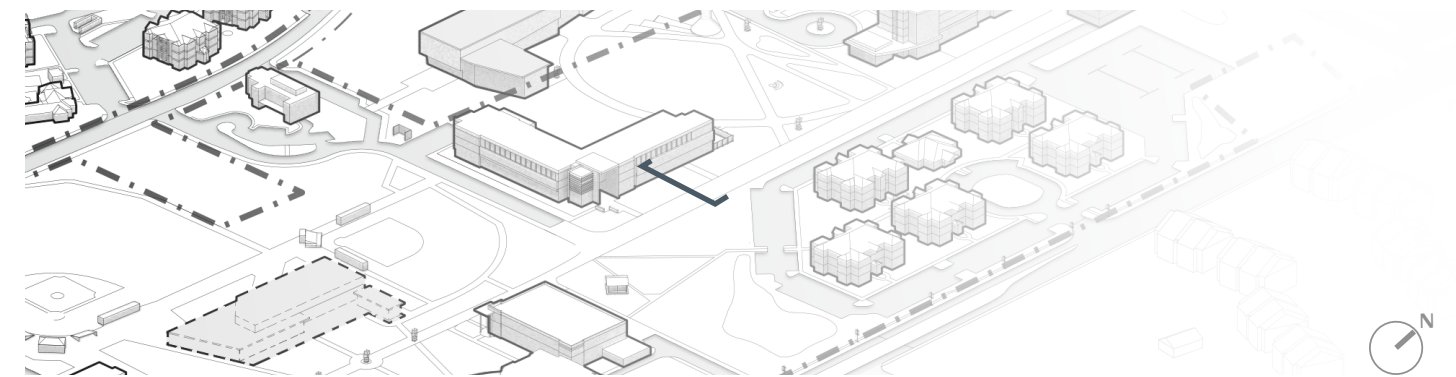
Streetscape Landscaping

Street trees should be provided at regular intervals along all campus streets, either in grates or in open planters. If trees are located in grates, additional strategies should be implemented to ensure the trees have access to uncompacted soil for root growth (root paths, subsurface soil cells, etc.). Where sidewalks are directly adjacent to roads, planters should be installed, continuous or at regular intervals, to provide a sense of

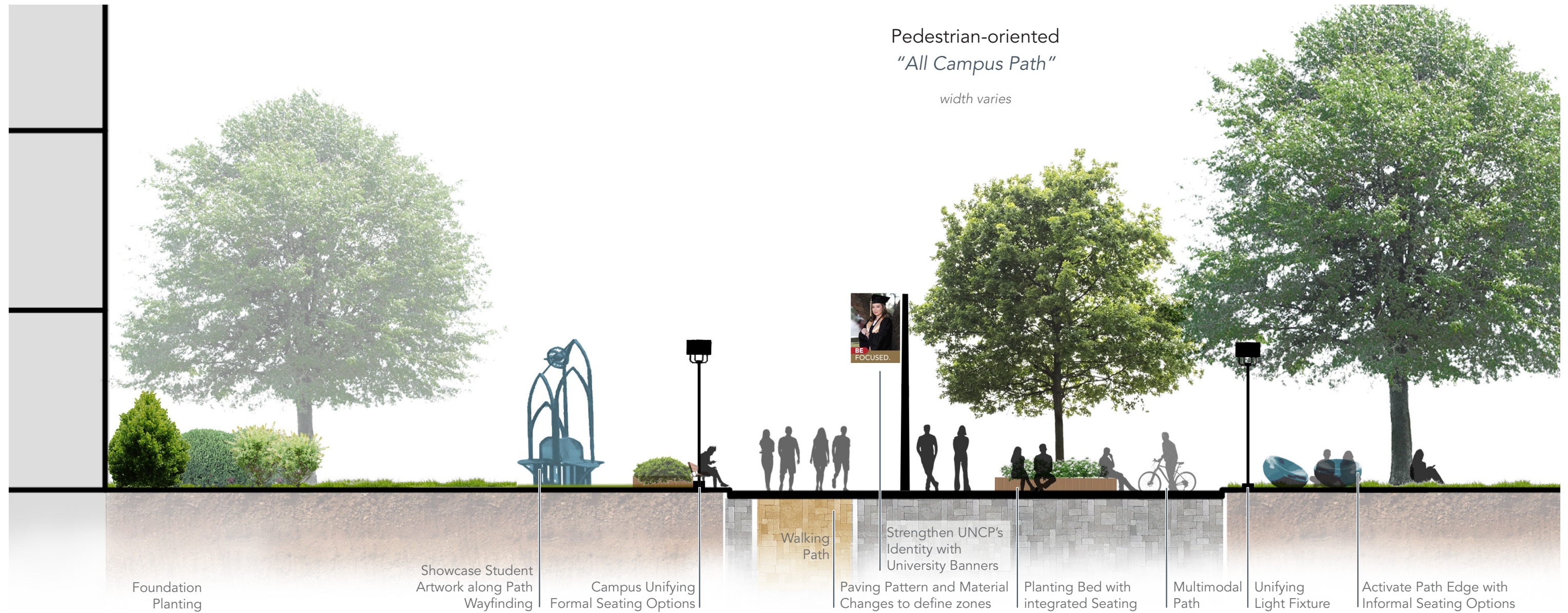
separation between cars and pedestrians. Plantings within the roadway planters should be largely groundcovers and/or perennials. Avoid the use of shrubs that exceed 3'-4' in height between roadway and sidewalks to prevent obstructed views.

LANDSCAPE FRAMEWORK: THE "ALL CAMPUS PATH"

The "All Campus Path" is comprised of a series of pedestrian-oriented open spaces that simultaneously provide variation in the campus fabric and act as a continuous thread that makes each moment along the Path feel like UNC Pembroke. These open spaces will be linked with a wide pedestrian path that allows unobstructed travel from the South end of campus to the North end.



Pedestrian-oriented
"All Campus Path"
width varies



LANDSCAPE FRAMEWORK: CAMPUS QUADS

Often seen as the most critical campus spaces, Quads are an instantly identifiable part of college life. Building upon and further expanding UNCP's Quad system will generate a series of memorable places and key destinations, encourage both passive and active socialization, and enhance campus life.

Quad Characteristics

Open lawn areas with buildings enclosing the majority of the perimeter. Quads will be primarily landscape/turf with hardscape limited to pedestrian pathways. The surrounding buildings will feature robust foundation plantings. Canopy trees will create shaded areas, while open grassy areas will provide sunlight and space for active users.

Primary Spaces | Quads

Large open areas that provide space for the student body and greater community. Quads feature various space types where large and small groups can gather.

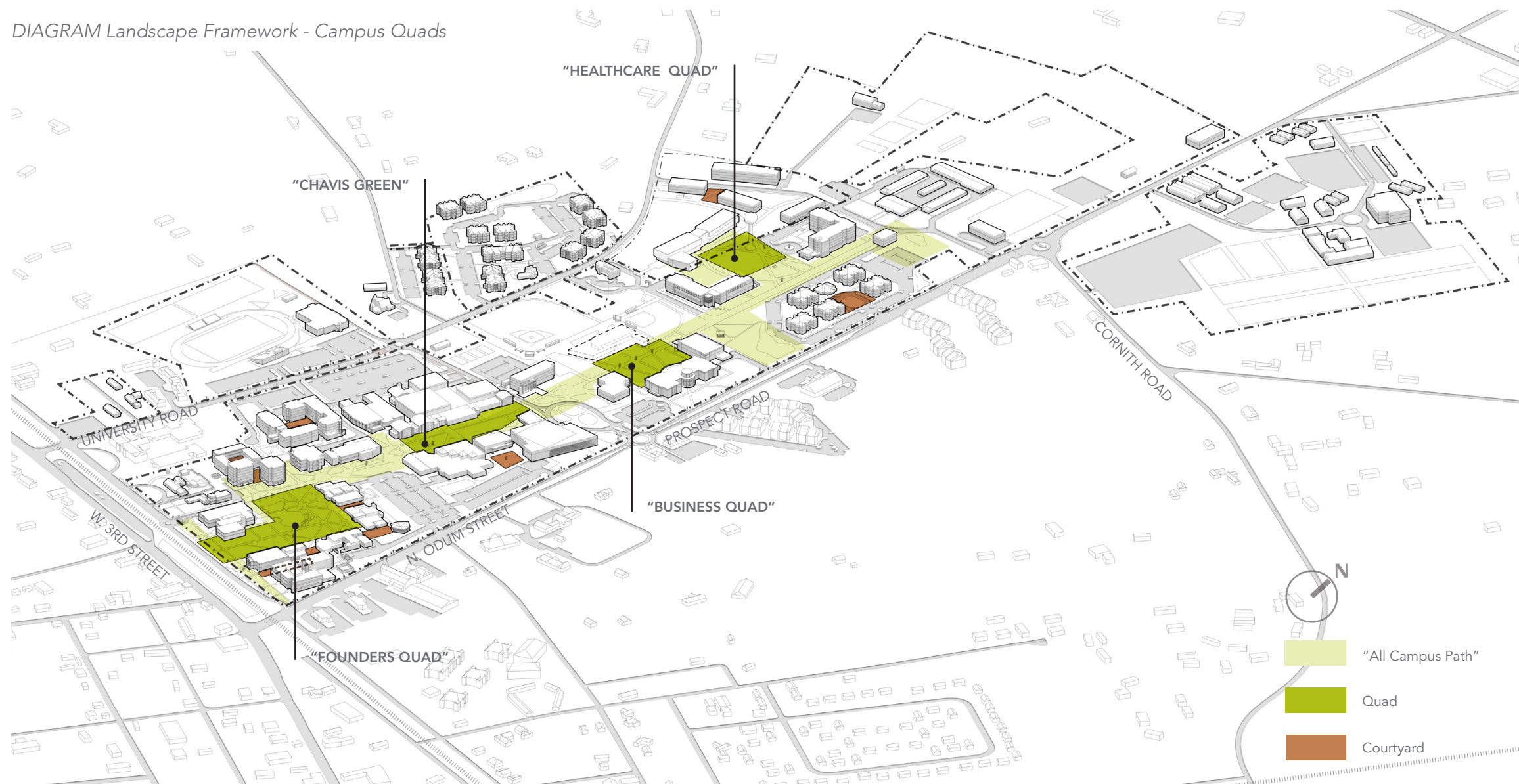
Secondary Spaces | Courtyards

Smaller open space areas oriented around residence halls which allow for more intimate gatherings of small groups.

Quad Landscaping

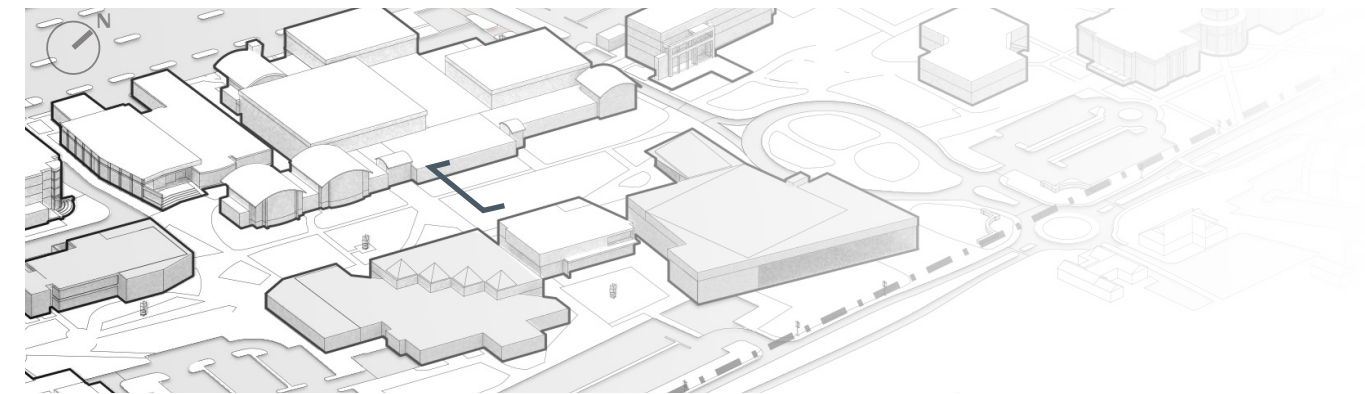
In addition to providing foundation planting for any buildings on the perimeters, planting in Quads should provide ample tree canopy. Trees should be provided at regular intervals along pathways to provide ample shade and introduce a visual rhythm to pedestrian's journey. Clusters of trees in existing quads (Founders Quad, Chavis Green, etc.) should be maintained to the extent possible. In new quads, clusters of any existing native trees should be protected where space allows to help preserve the natural aesthetic of the area. The use of shrubs, groundcovers, and perennials should be limited to the perimeters, sidewalk nodes, or where needed to create intentional views.

DIAGRAM Landscape Framework - Campus Quads



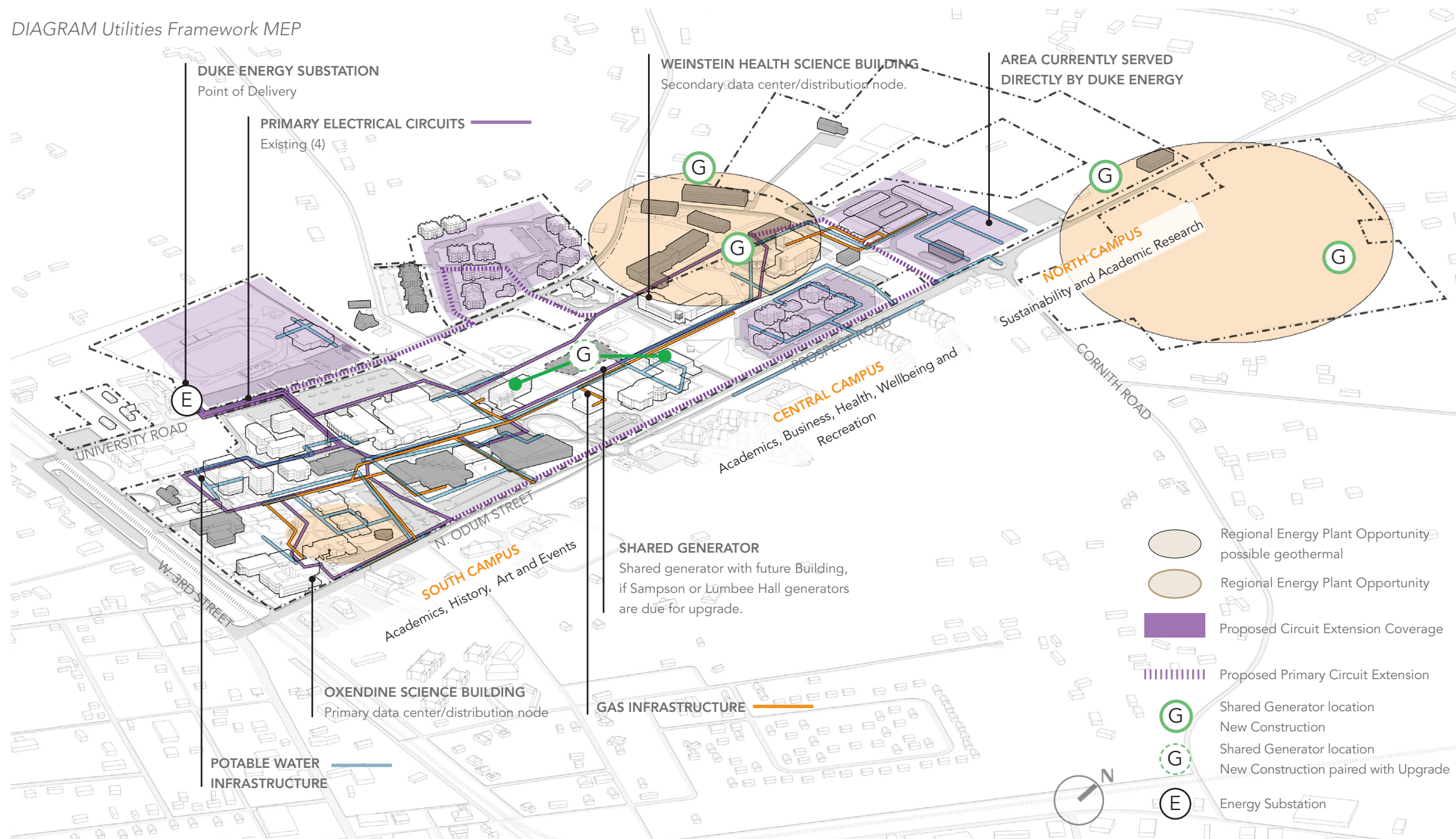
LANDSCAPE FRAMEWORK: CAMPUS QUADS

Quads provide UNCP with the day-to-day social and activity space needed to promote healthy campus life. Variable layouts, a range of scales and open to numerous activities, Quads should adapt to the adjacent context to cultivate the experiences that will be desired by students. Pathways through Quads should follow pedestrian desire-lines to prevent "cow-paths" from forming.



UTILITIES FRAMEWORK: MECHANICAL, ELECTRICAL, & PLUMBING

DIAGRAM Utilities Framework MEP



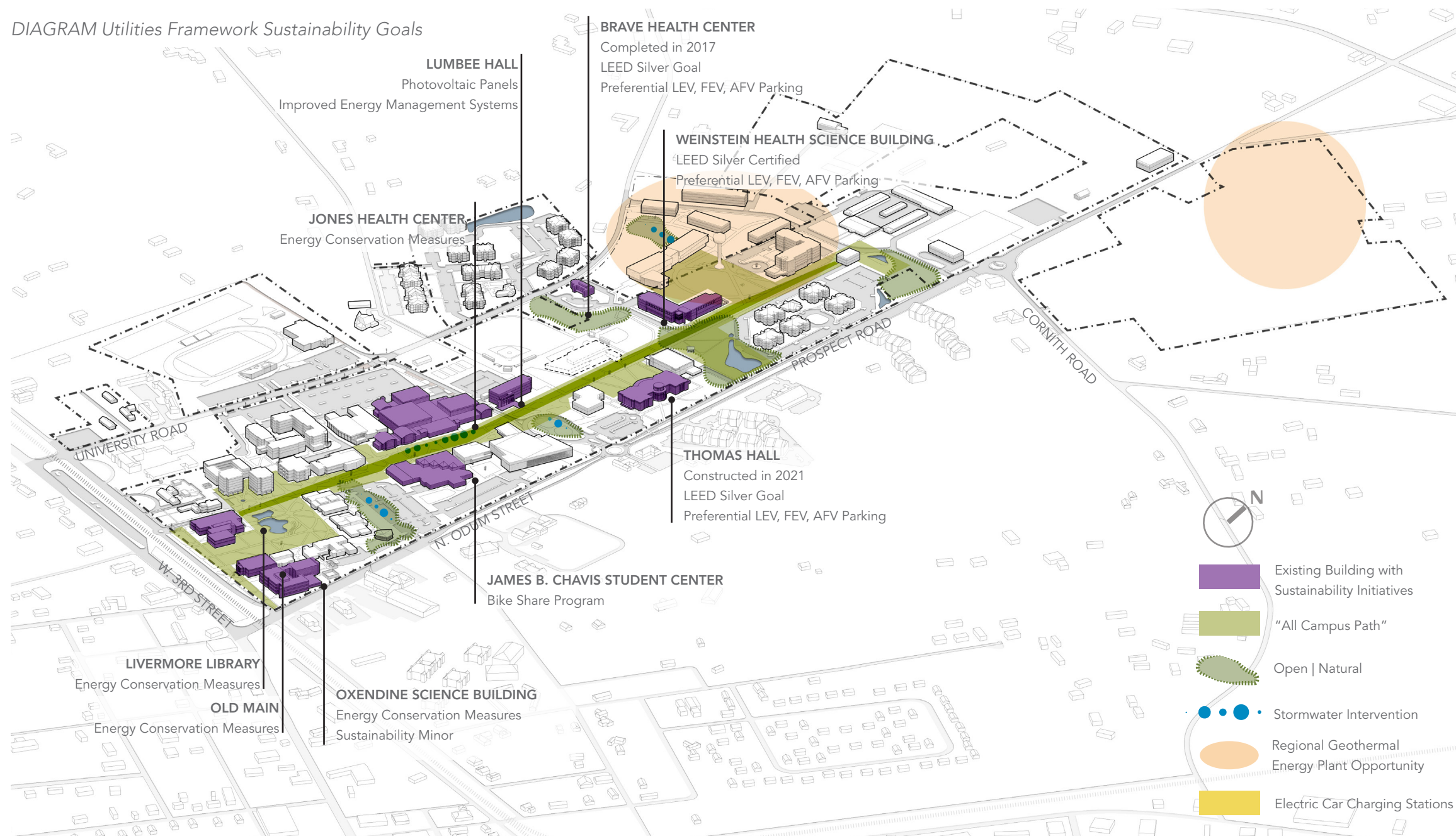
The utilities framework considers how the 2022 Master Plan will affect MEP infrastructure on campus. From an electrical perspective, it is recommended that the University replace any equipment that has not been updated since 2005 upgrades. Campus-owned primary infrastructure should be expanded along Prospect Road to serve new growth in the central campus. New infrastructure should be added along University Road to serve buildings to the west of the campus-owned system. It is also recommended that campus standards for lighting types, illumination levels and controls be developed.

With regard to technology, it is recommended that UNC Pembroke's data centers be modernized to ensure mechanical equipment is up to date and efficient. CCTV cameras should be used to enhance the remote user experience in hybrid classrooms. Expansion of wireless access coverage for common travel and collaboration areas such as walking paths, parking lots, and building adjacencies should also continue.

Aging water and gas infrastructure should be replaced and upgraded based on locations/ heights of new buildings. Finally, regional energy plant opportunities should be expanded for the production of chilled and hot water. Plants should be sized and sited in accordance with loads that will be served in each building. A full utilities report is available in the Appendix (page 248).

UTILITIES FRAMEWORK: SUSTAINABILITY GOALS

DIAGRAM Utilities Framework Sustainability Goals



Sustainability goals are geared toward both saving money and protecting the environment. Priority sustainability goals for the UNC Pembroke campus include the following:

- Strive to be a NC campus sustainability leader
- Upgrade utilities metering for energy monitoring
- Install maintenance-friendly energy efficient systems
- Ensure Green Globe certified and net-zero buildings
- Include solar Photo Voltaic installation on buildings
- Upgrade building lighting to LED to improve lighting levels, quality, and promote energy savings
- Implement load shedding strategies
- Install building daylighting controls
- Install occupancy controls for lighting and HVAC
- Connect LED lighting to Campus Energy Management System to allow for more control
- Reduce water use, harvest rainwater, and correct runoff and drainage issues on campus
- Support local agriculture
- Create a robust composting and recycling program
- Advertise water and energy initiatives on campus
- Provide sustainable programs and initiatives
- Display building water and energy use dashboards to create awareness and promote competitions between building occupants

OPPORTUNITIES FRAMEWORK

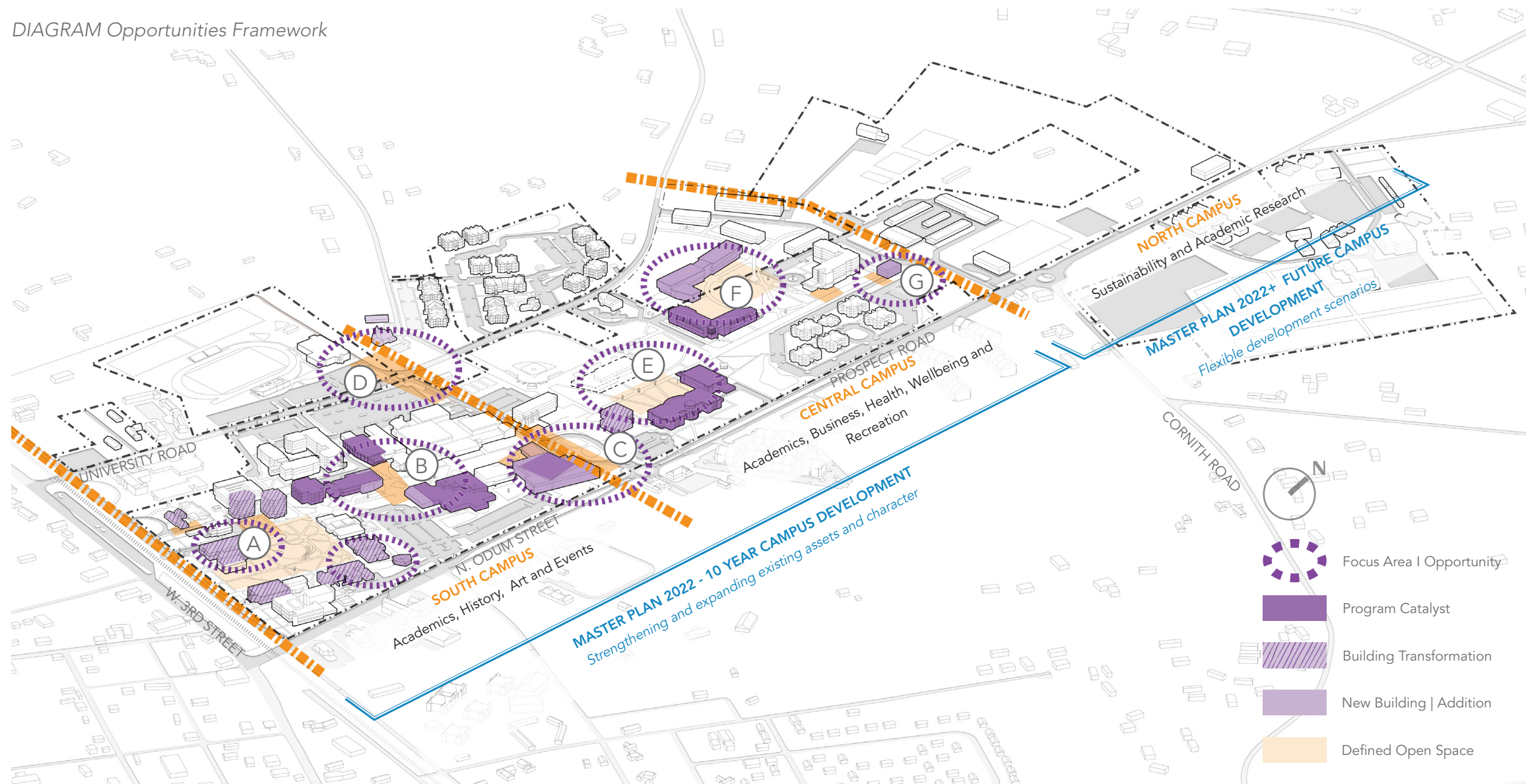
The 2022 Master Plan is divided into short-term and long-term development goals. Ten-year campus development goals focus on buildings in the south and central parts of campus and respond to the current needs of UNC Pembroke and the state budget.

The campus opportunities are grouped around open spaces and surrounding buildings that enclose and activate each space. The vision for south and central campus is to strengthen and expand the existing assets and character of the UNC Pembroke campus. Successful spaces such as the "Founders Quad," the "James B. Chavis Student Center Quad," and GPAC are strengthened and expanded northward into central campus.

In the historic south of campus, the master plan framework centers on strengthening existing academic spaces, promoting the history of UNC Pembroke, and inviting community members to participate in gatherings, sports events, and theater performances. In the central campus, the focus is on the densification of campus and the creation of new outdoor spaces. The new James A. Thomas Hall and

the Weinstein Health Science Buildings become catalysts for further development in this area.

DIAGRAM Opportunities Framework



South Campus Opportunities

- (A) "Founders Quad"
Library Transformation
Chancellor's Residence Renovation and Expansion
- (B) "Braves Plaza"
James B. Chavis Student Center Transformation
Business Administration Building Renovation & Expansion
- (C) "Lumbee Gateway"
GPAC Renovation & Expansion
- (D) "BraveHawk Gateway"

Central Campus Opportunities

- (E) "Business Courtyard"
- (F) "Health-Science Neighborhood"
- (G) "Northern Gateway"

OPPORTUNITIES FRAMEWORK: PROGRAM CONSIDERATIONS

While the Opportunities Framework lists specific visions for south and central campus districts, the 2022 Master Plan provides more flexibility at the neighborhood scale. Understanding the 'inward' and 'outward' facing functions of each neighborhood is an important aspect of determining the primary types of programs and uses in each neighborhood. For example, an

outward facing neighborhood such as the Lumbee Gateway and GPAC (C) might include community-oriented programs relating to the arts. Buildings in this area may feature inviting design elements that draw in visitors, such as transparent gallery spaces and abundant seating. In contrast, inward facing areas such as the "Health Science Neighborhood" (F) might include more academic and student-focused

buildings and outdoor spaces. Still others, such as the "Founders Quad" (A) may feature a mix of inward and outward-facing programs.

Outward Facing Areas

Opportunities directed to outreach and engagement with the Town of Pembroke and the region while serving the institution. Amenities and programs connecting UNC Pembroke with the greater community.

- (B) "Braves Plaza"
- (C) "Lumbee Gateway"
- (D) "BraveHawk Gateway"

Inward Facing Areas

Opportunities focused on the campus community. Amenities and programs to enrich student life and the academic experience.

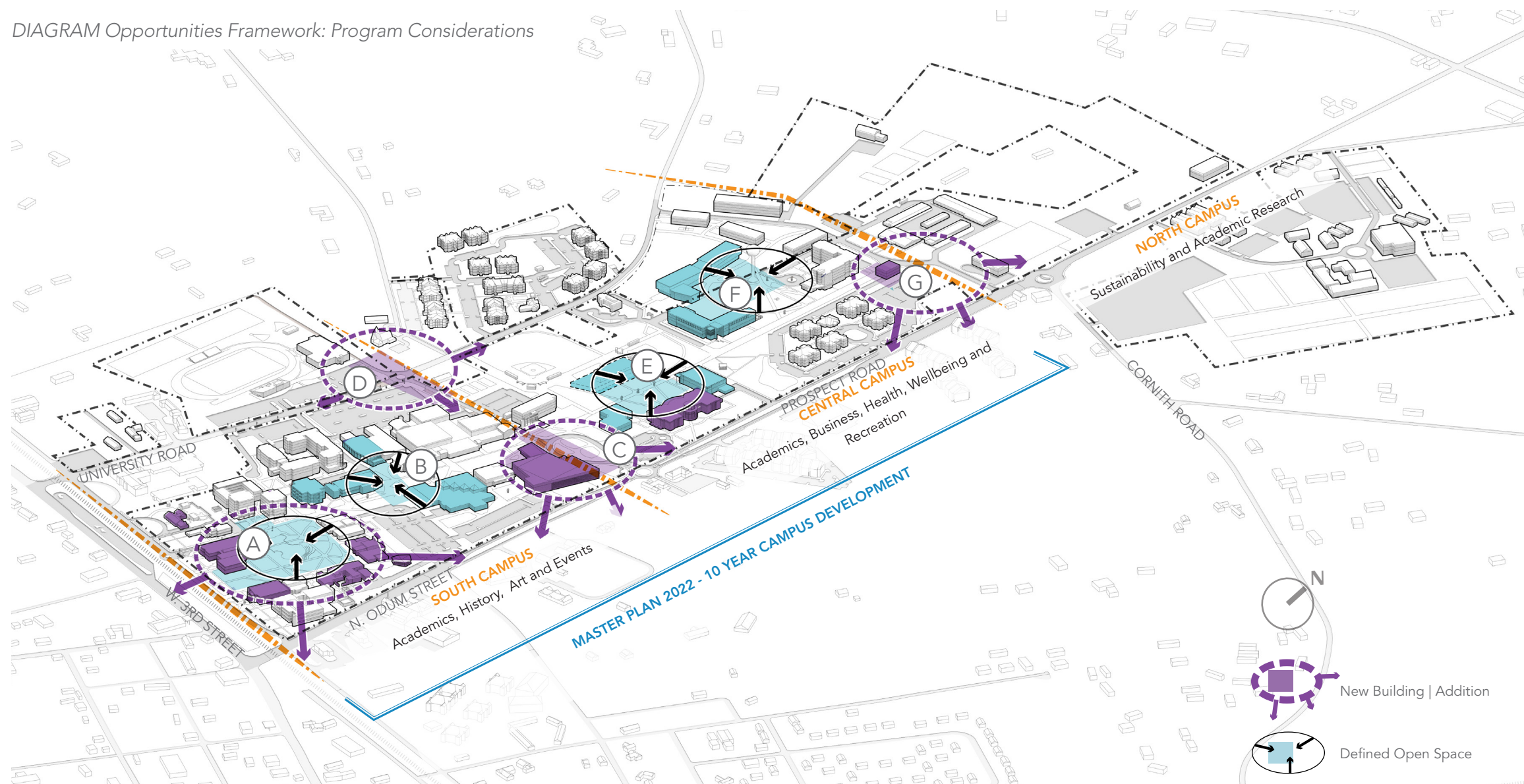
- (F) "Health-Science Neighborhood"
- (G) "Northern Gateway"

Mixed Areas

Opportunities featuring both outward and inward facing programs.

- (A) "Founders Quad"
- (E) "Business Courtyard"

DIAGRAM Opportunities Framework: Program Considerations



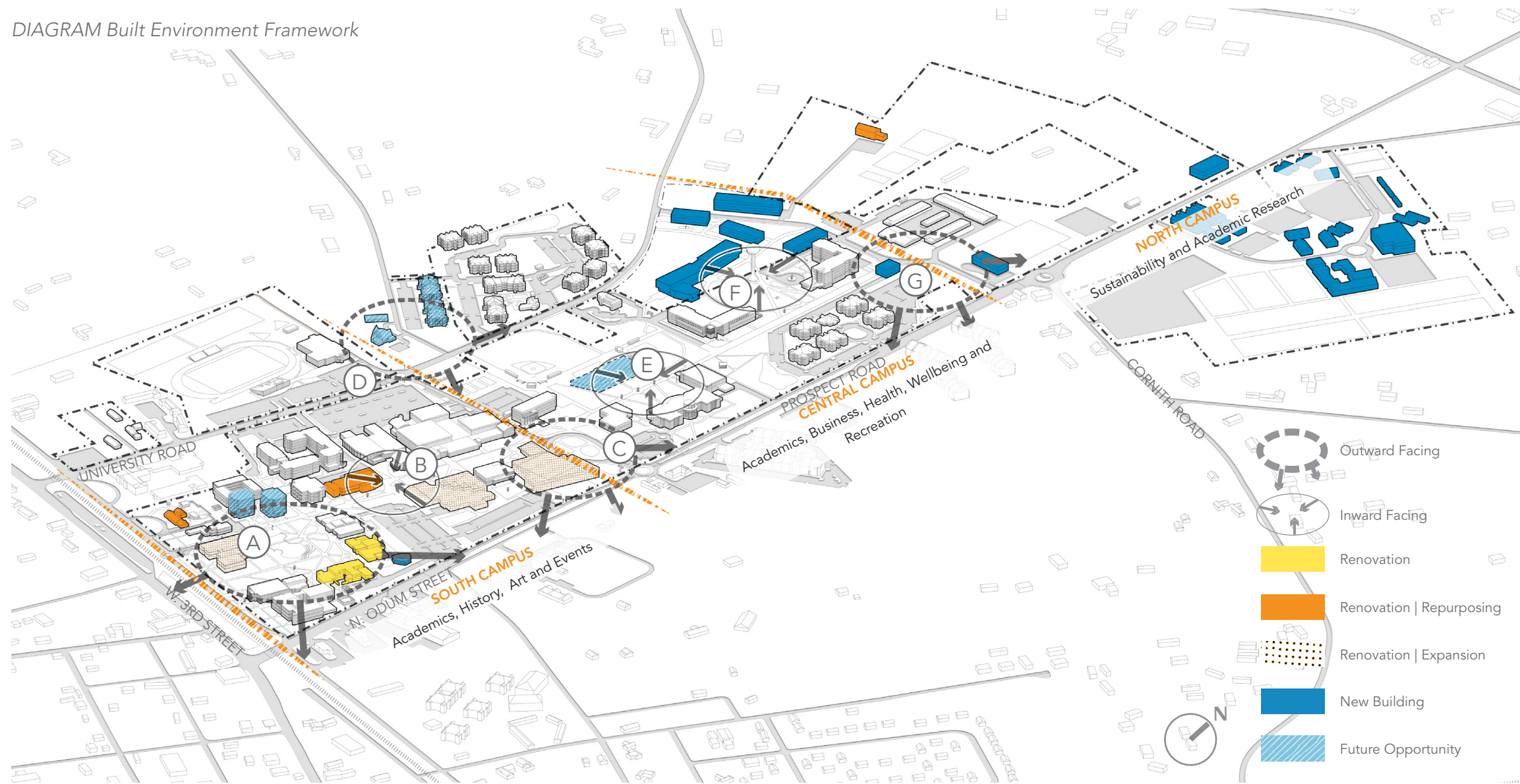
BUILT ENVIRONMENT FRAMEWORK

The building placements of the 2022 Master Plan are consistent with the goals of strengthening the historic core of campus and densifying central campus. In addition to space data, they take into account discussions and analyses completed during the Information Gathering and Programming Phases.

Recommendations in south campus focus on the renovation and expansion of existing buildings to improve performance, repurpose existing spaces, or provide more capacity. Key renovations in this area target Livermore Library, the old Business Administration Building, and the James B. Chavis Student Center. In central campus, the focus is on creating synergistic relationships between new and existing buildings. Crucial

to this transformation is the proposed Allied Health Science Building in the Health Science Neighborhood, which includes housing.

DIAGRAM Built Environment Framework



Outward Facing Opportunities

- (B) "Braves Plaza"
- (C) "Campus Lumbee Gateway"
- (D) "BraveHawk Gateway"

Inward Facing Opportunities

- (F) "Health-Science Neighborhood"
- (G) "Northern Gateway"

Mixed Opportunities

- (A) "Founders Quad"
- (E) "Business Courtyard"

5

SITE ANALYSIS & OBSERVATIONS

LOCATION AND HISTORY

CAMPUS PATTERNS

CIRCULATION PATTERNS

LANDSCAPE PATTERNS

ARCHITECTURAL PATTERNS

DATA COLLECTION

SPACE UTILIZATION ANALYSIS

PEER INSTITUTION COMPARISON

CAMPUS SURVEY

INFORMATION GATHERING



SITE ANALYSIS & OBSERVATIONS

The Design Team performed site visits and research to understand existing conditions, analyze key physical and qualitative characteristics of the campus, and identify potential opportunities.

During the Information Gathering Phase, the Design Team studied the location, historical context and growth patterns of campus to gain an understanding of regional industries and interests, access, the physical development of the campus, and the importance of the Lumbee Tribe in establishing UNC Pembroke. Building on this macro-view, the Design Team studied the structure and development of the UNC Pembroke campus, its navigational structure and parking, its landscape elements, and its hydrology. A final layer of site analysis included a visual inventory of UNC Pembroke’s outdoor furnishings and material palette, as well as that of its architecture.

Overall, it was determined that the University should focus on bolstering the strong sense of place in the

historic part of campus, using that as inspiration to further develop and densify central and north campus. Though mobility on campus centers on vehicles, University policy is evolving to prioritize pedestrians, providing many opportunities for the rethinking of navigation, wayfinding, and landscaped spaces.

Changes to the framework of campus can also integrate water management strategies such as rain cisterns, water-retention ponds, and rain gardens where appropriate. It was also determined that UNC Pembroke has a consistent material palette through its outdoor spaces and buildings, which could serve as a loose guide for future outdoor spaces and buildings. The University should integrate art throughout these areas to create landmarks and a strong sense of place.



DRAWING Existing Campus Conditions 2022

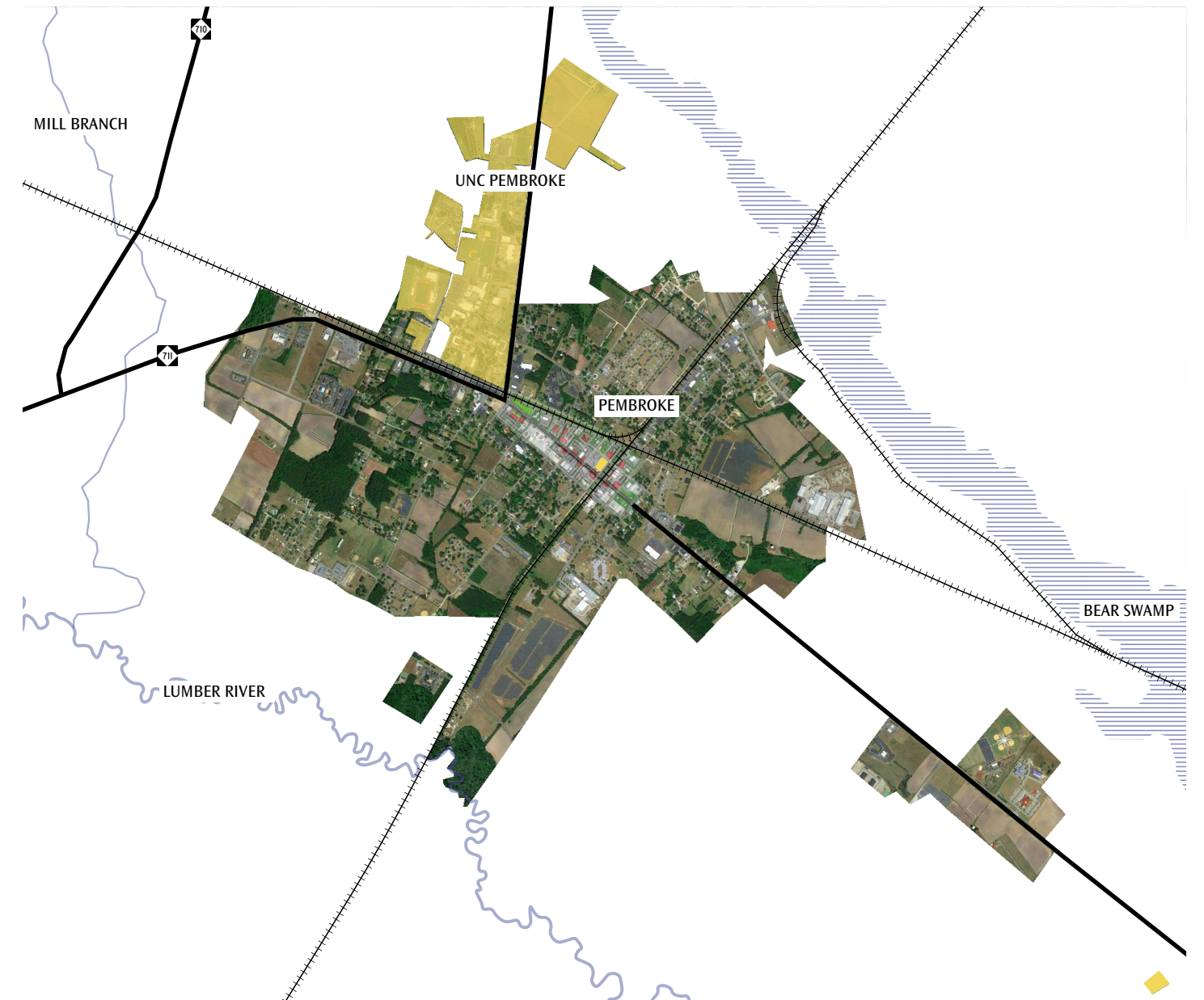
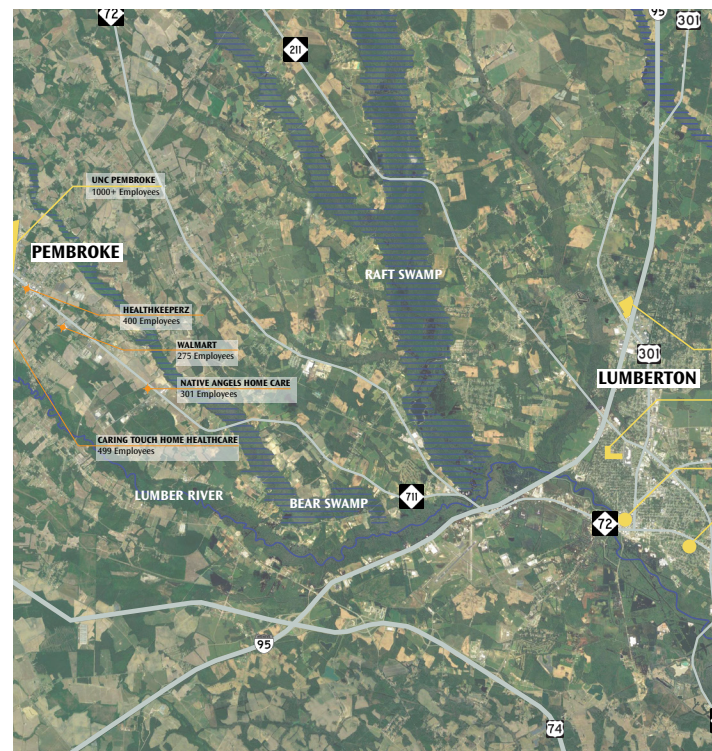
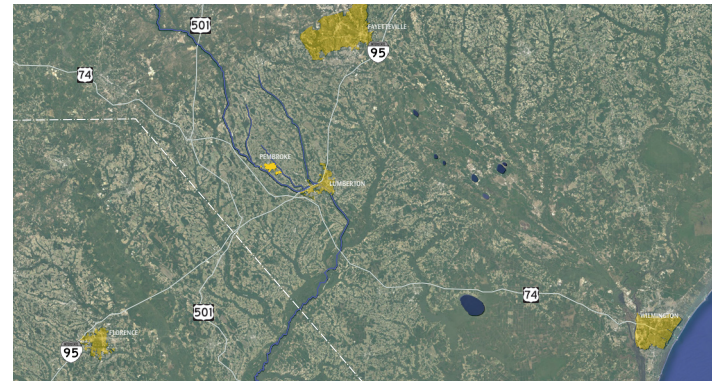
IMAGE 24 - 28 UNC Pembroke Campus Imagery

LOCATION & DEMOGRAPHICS

UNC Pembroke is located about 1.5 hours northwest of the Atlantic in Robeson County. The campus is easily accessible through Highway 711 which borders the southern edge of campus, while Interstates 74 and 95 are located approximately 10 miles to the south. It is just 1.5 to 2 hours away from both Raleigh-Durham and Charlotte.

Geographically, UNC Pembroke is situated between Bear Swamp to the north and the Lumbee River to the south. The area around the University is defined by the relatively flat sandhills featuring forests, swamps, and rivers, which were historically important to the Lumbee people who first settled in the area and comprise up to 89% of inhabitants in the Town of Pembroke. The area's close ties with the Lumbee Tribe is reflected in many of the names of buildings and spaces throughout UNC Pembroke's campus.

Important industries in the area include healthcare and social assistance, manufacturing, and agriculture. These industries, which surround campus, may provide opportunities for regional partnerships and educational programs.



UNC Pembroke's identity is closely tied to the history and education of the Lumbee Tribe, which comprises a significant portion of the local community. The campus can easily be accessed from large urban and coastal zones within a 100-mile radius.

HISTORY

UNC Pembroke’s unique history is a testament to the importance of both the collective action of the Lumbee Tribe and the support of government leaders in creating strong academic institutions.

UNC Pembroke’s history began in 1887 with the Lumbee Tribe in the area, who petitioned to enact a law giving them access to education. The legislation was sponsored by Hamilton McMillan, a Robeson County representative to the North Carolina General Assembly from 1885 to 1887.

Though the school started out offering primary and secondary education, it became a four-year college by 1939 and was the only such state-supported institution for American Indians through 1953. Following the decisions to open up the college to white students in 1953 and the Supreme Court’s desegregation ruling in 1954, UNC Pembroke experienced exponential growth, which has continued in recent years.

1972, UNC Pembroke became one of the University of North Carolina’s 16 constituent institutions. The University was declared “North Carolina’s Historically American Indian University” in 2005. The names of the founding Lumbee families on campus buildings acknowledge this important history: Oxendine, Locklear, Lowry, and Dial.

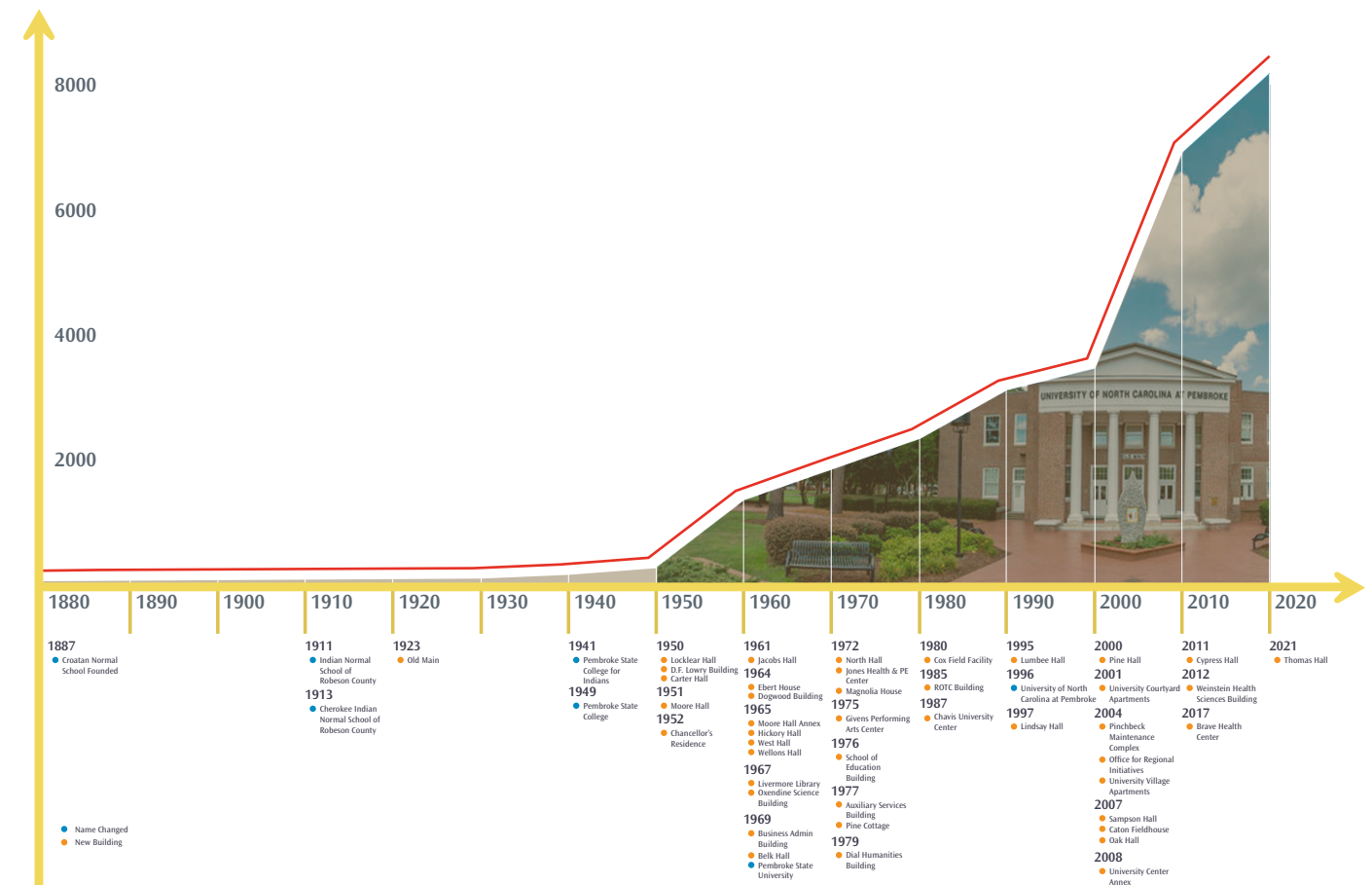


IMAGE 29 Class of 1940



IMAGE 30 Old Main, UNCP January 1972

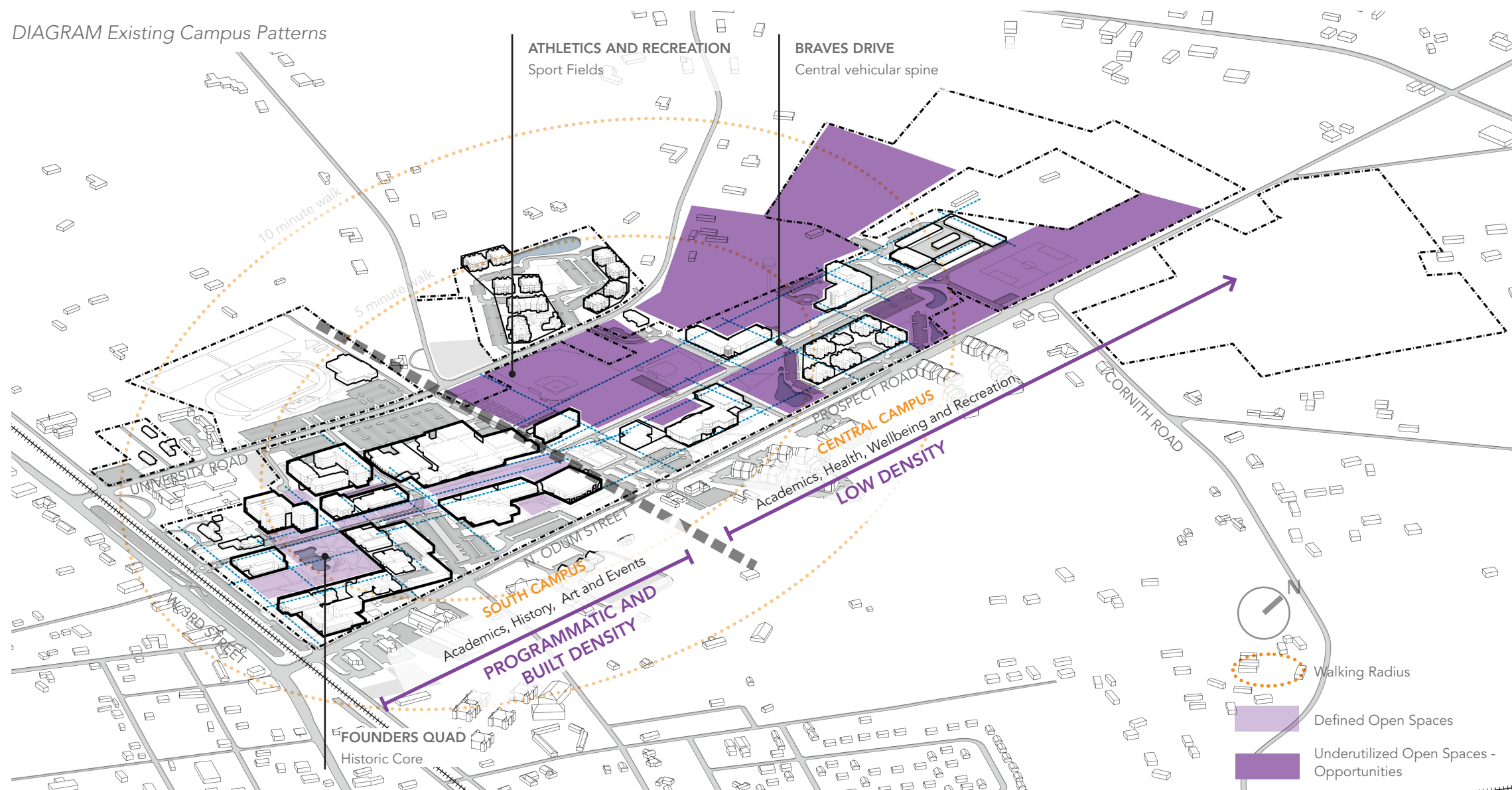
CHRONOLOGY & ENROLLMENT GROWTH



Enrollment on the UNC Pembroke campus increased dramatically from the onset of its desegregation in 1953. The University expanded its Science and Master of Arts programs in 2000. More recently in 2018, the UNC Pembroke experienced a large enrollment increase due in part to the University’s affordability and its offering of online programs. The physical growth and building inventory of campus mirrors these bumps in enrollment and program offerings through the years.

EXISTING CAMPUS PATTERNS

A study of the Campus Patterns reveals an opportunity to celebrate the successful density and outdoor spaces of UNC Pembroke’s historic campus by extending them northward.



A study of the physical characteristics and patterns of development at UNC Pembroke revealed a striking difference in density between the newest and oldest parts of campus. The historic area to the south of campus, which is between Old Main Road and University Drive contains approximately 20 buildings which frame key open spaces such as the “Founders Quad” and “Chavis Green.” These open spaces are shaded by trees and UNC Pembroke’s signature brick paved pathways.

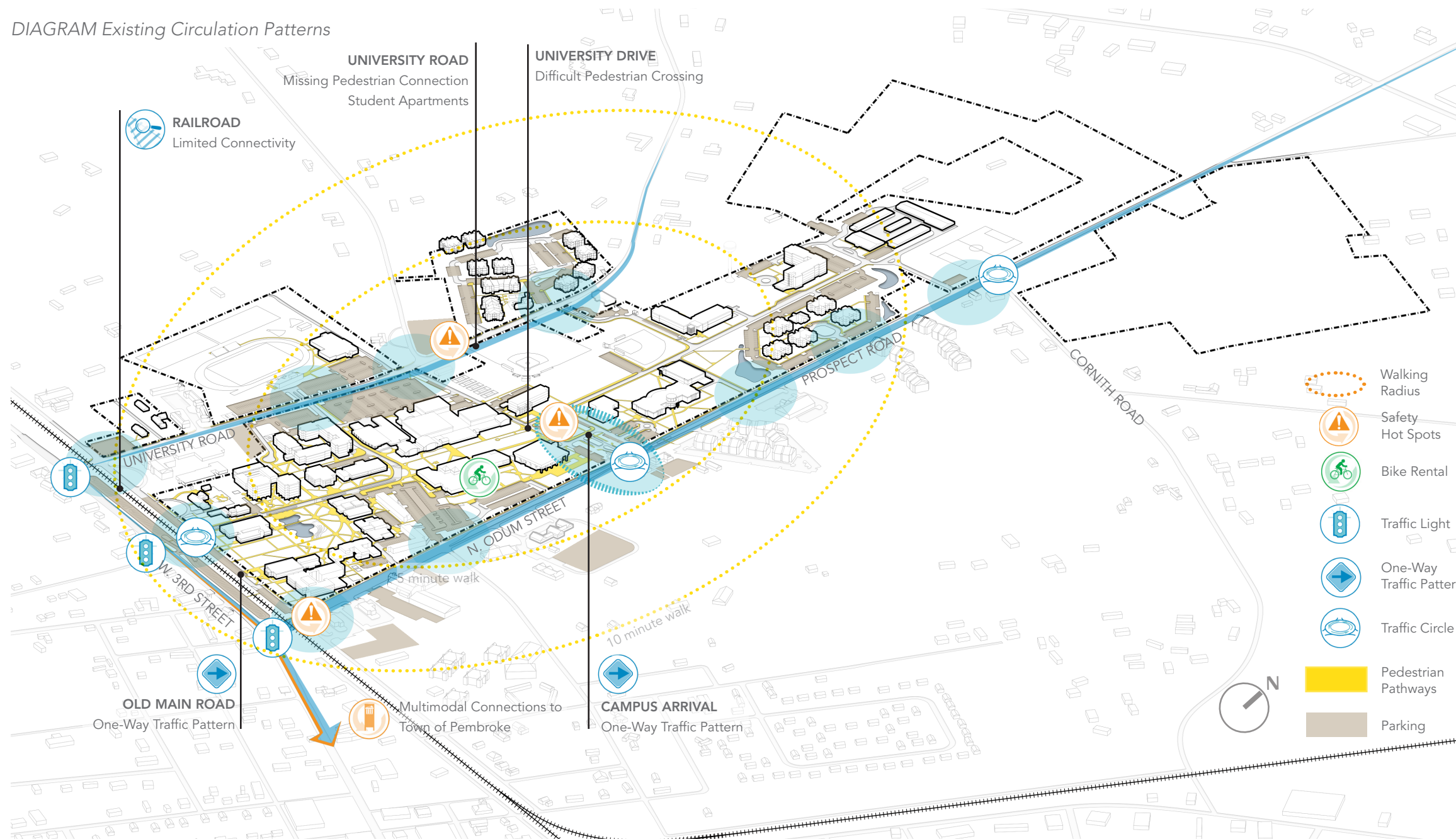
By contrast, central campus, which is bordered by University Drive and Facilities Drive, includes only 12 buildings, 6 of which are residential. The low density of this area also reflects a lack of enclosed public spaces. Braves Drive divides central campus, allowing vehicles into the area. Along with the presence of vehicles, a lack of trees and shade in this area makes it inhospitable to pedestrians. This pattern extends to the north of campus, which is not yet developed.

The abundance of space in north and central campus presents an opportunity to expand campus in this area based on University needs. New buildings should be carefully placed to frame outdoor spaces such as quads, courtyards, and pathways.

EXISTING CIRCULATION PATTERNS

UNC Pembroke strives to become a pedestrian and bicycle-friendly campus. Looking toward the future, campus policies should aim to reserve the center of campus for academic and student-oriented uses, limit vehicles to the perimeter of campus, and improve safety and accessibility across major roadways.

DIAGRAM Existing Circulation Patterns



Circulation patterns include a study of the access and circulation of all modes of transport as well as parking operation. Overall, the campus requires more separation between pedestrians, vehicles, and bicycles. While wayfinding on campus is satisfactory, the campus gateways require a clearer hierarchy. The main Prospect Road gateway should be improved to increase visibility and provide more access to visitor parking.

To ensure pedestrian and bicycle safety, sidewalks should be improved to accommodate traffic and meet ADA standards as needed. Several areas on campus require new or enhanced crosswalk markings to reduce pedestrian-vehicle conflicts. To this end, parking should also be reconfigured to reduce vehicular access in the heart of campus. Along with the policy of prioritizing pedestrians and decreasing vehicles, campus shuttle services are recommended to ensure access to town, parking, and other essential services. Expanding the existing bike share program is also recommended, along with an increase in dedicated bike lanes on campus. Currently, there is only one dedicated bike lane on N. Odum Street. A full transportation report is available in the Appendix (page 216).

EXISTING PARKING CONDITIONS

As of 2020, UNC Pembroke has approximately 3,500 parking spaces. With an on-campus population of approximately 8,200, the existing parking ratio is 0.44 or the equivalent of 44 parking spaces per 100 campus members.

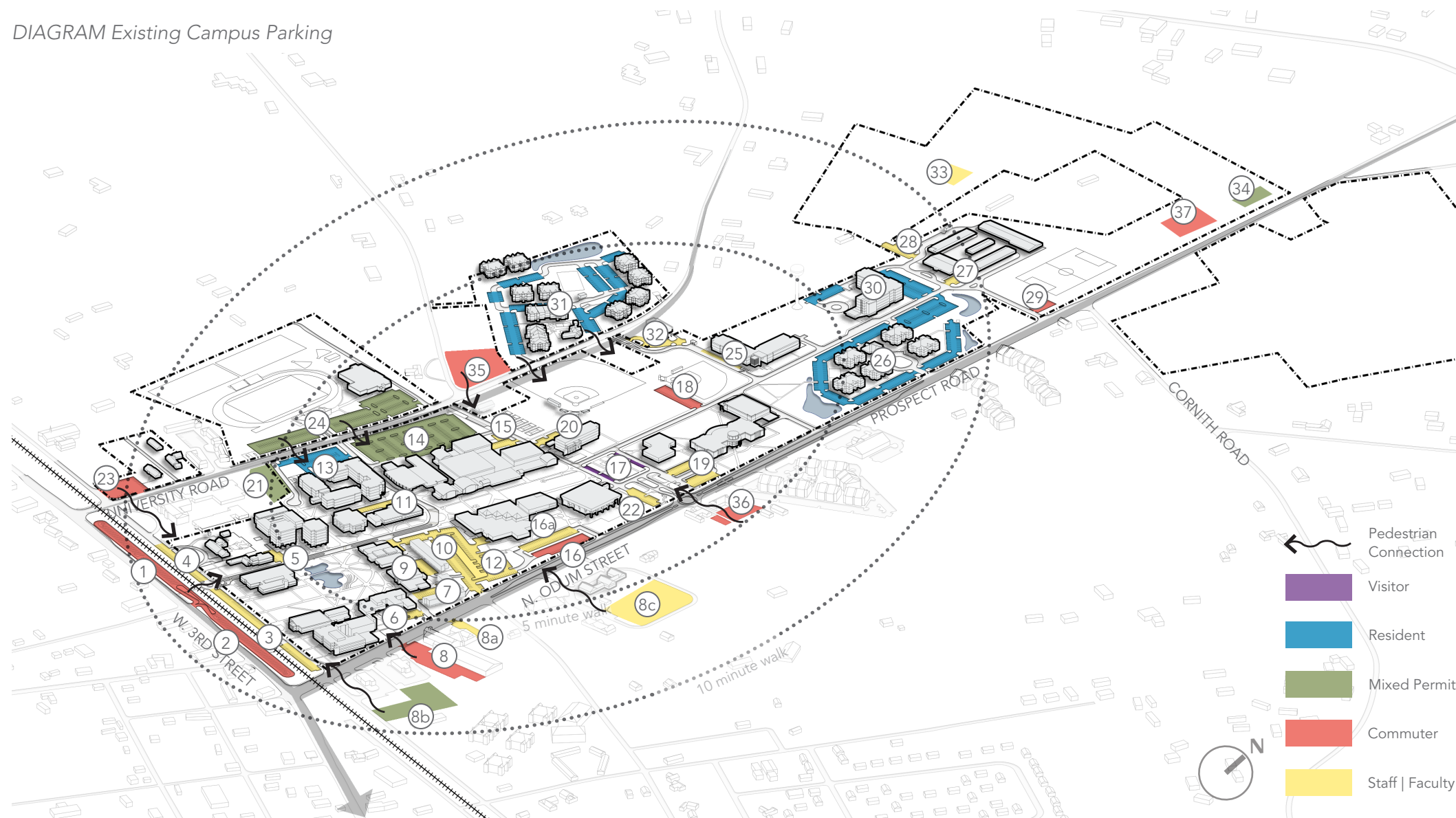
Compared to other universities, UNC Pembroke has slightly more parking than the campuses of Iowa

State, Oregon State, and Washington State University but less than universities like Auburn, Clemson, or NC State. The ITE Parking Generation Manual (5th Ed.) gives a recommended parking supply ratio of 0.32 per school population and 0.40 per student population for a university in a general urban/suburban location not within ½ mile of rail transit.

By 2030, the total University population is anticipated to rise to 11,000. With no changes to current supply, the campus-wide ratio in 2030 would be within the recommended range at 0.33. Increasing the parking spaces by 1,100 gives a ratio of 0.52 on campus. In addition, a 2019 parking study showed excess parking spaces available during peak demand for commuters, residents, and faculty/staff, while visitor

parking was full. The study indicated that there are about 900 unused parking spaces available before reaching the optimal parking efficiency of 85% to 95%. Resident spaces should be reallocated to accommodate projected parking needs of other users, such as commuters and visitors. The study recommends that no new parking be built.

DIAGRAM Existing Campus Parking



Lot #	UNCP Property	Location	Total Spaces	FEV/EV	ADA Accessible	Reserved
Lot 1	Yes	Across Tracks-West	77		5	
Lot 2	Yes	Across Tracks-East	88			
Lot 3	Yes	Old Main Rd E	68		11	10
Lot 4	Yes	Old Main Rd W	41		5	3
Lot 5	Yes	Belk Hall	14		3	3
Lot 6	Yes	Moore Hall E	23	1	2	8
Lot 7	Yes	Jacobs Hall	28		3	4
Lot 8	Leased	Berea Church S	95		2	
Lot 8A	Leased	Berea Church N	32		1	
Lot 8B	Leased	Behind Burger King	201			
Lot 8C	Leased	Carter Hall E	18			
Lot 9	Yes	Locklear Hall	25		4	5
Lot 10	Yes	Wellons Hall	117		4	10
Lot 11	Yes	School of Business (Old)	17		13	3
Lot 12	Yes	University Center E	98		3	
Lot 13	Yes	Pine, Oak W	117		5	2
Lot 14	Yes	PE W	342	1	13	2
Lot 15	Yes	PE E	30		2	4
Lot 16	Yes	UC Annex E	53			
Lot 16A	Yes	UC Annex E	56		8	5
Lot 17	Yes	Lumbee Hall E	30	2	4	
Lot 18	Yes	Softball Field	45		6	
Lot 19	Yes	School of Business (New)	115		4	10
Lot 20	Yes	Lumbee Hall W	41		4	12
Lot 21	Leased	West Hall	115			
Lot 22	Yes	GPAC N	20		7	
Lot 23	Yes	Chicken Hut	56		2	
Lot 24	Yes	Belk Complex	262		23	
Lot 25	Yes	Weistein Building	28	2	2	5
Lot 26	Yes	Village Apartments	281	2	9	1
Lot 27	Yes	Facilities	26		4	2
Lot 28	Yes	Facilities	30			
Lot 29	Yes	Soccer Field	10			
Lot 30	Yes	Cypress N	135		7	
Lot 31	Yes	Courtyard Apartments	367		18	1
Lot 32	Yes	Brave Health	24	2	2	1
Lot 33	Yes	Pine Cottage	4			
Lot 34	Yes	ROTC	65			
Lot 35	Leased	Deese Road	84			
Lot 36	Leased	Baptist Building	109			
Lot 37	Yes	Soccer Field N	179			
Total			3,566	10	176	91

2,912 UNCP Owned Parking
654 UNCP Leased Parking

EXISTING LANDSCAPE PATTERNS

UNC Pembroke’s landscape development dates to 1909 and includes a variety of evolved spaces and patterns extending from Lowery Bell Tower to the Pine Cottage grounds. The campus can be viewed in three general areas: south, central, and north.

DIAGRAM Existing Landscape Patterns

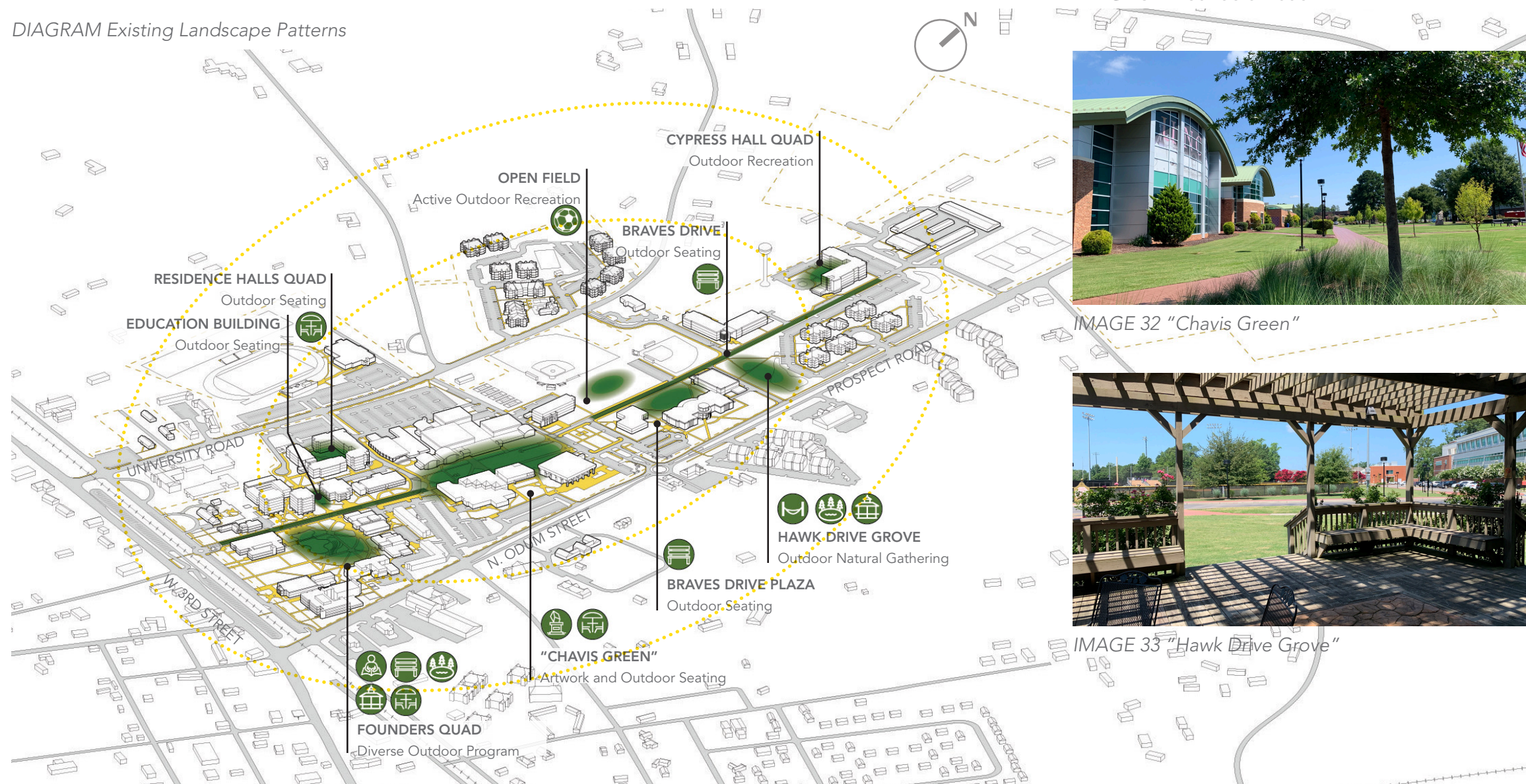


IMAGE 31 "Founders Quad"



IMAGE 32 "Chavis Green"



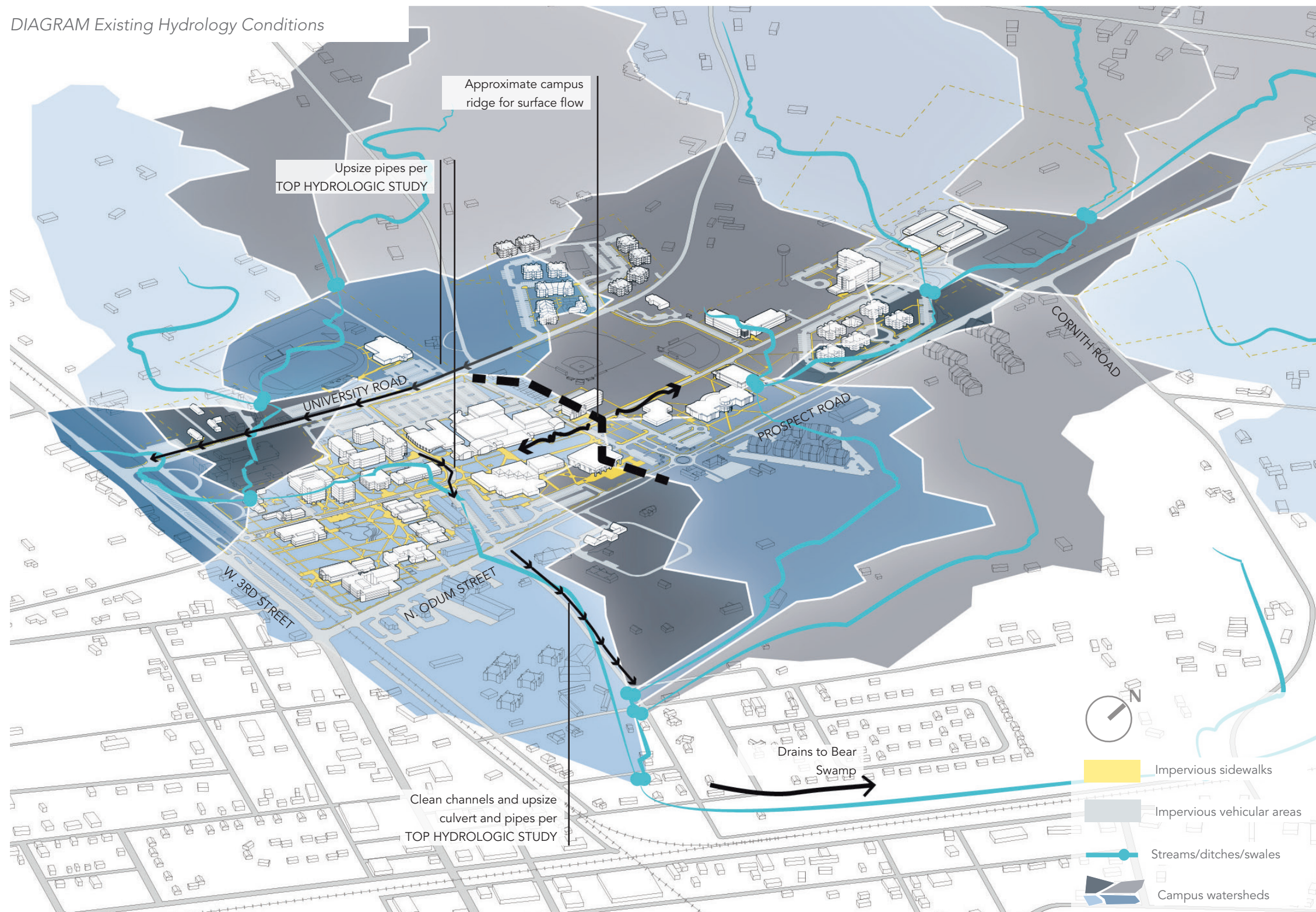
IMAGE 33 "Hawk Drive Grove"

UNC Pembroke was first established on the historic south campus, which is characterized by traditional quads and courtyards framed by an informal arrangement of large shade trees, flowering tree accents, formal evergreen shrubs, and brick walkways and plazas. The "Quad" and water feature are the most prominent landscape elements and a popular area for studying and gathering. Faculty Row forms a vehicular/pedestrian north-south "spine" in this area.

Central campus connects south and north campuses. Its defining feature is Chavis Green, a 400'x175' lawn flanked by two parallel walkways, scattered mature trees, and superb public art installations. It is bordered by the UC/Annex, Jones Center, and GPAC. Central campus is also distinguished by the ceremonial campus "front door" and entrance monumentation on N. Odum Street which directs visitors from a roundabout to a green space fronting Lumbee Hall.

North campus is the least built area, with more opportunities for "infill" development. It connects to south campus through Braves Drive. This central street is anchored by the new School of Business on the north edge, but also connects to housing, academic, and maintenance and athletic facilities, fields, and surface parking lots. Small wooded areas bordering Hawk Drive and a water tower also define this area.

EXISTING HYDROLOGY CONDITIONS

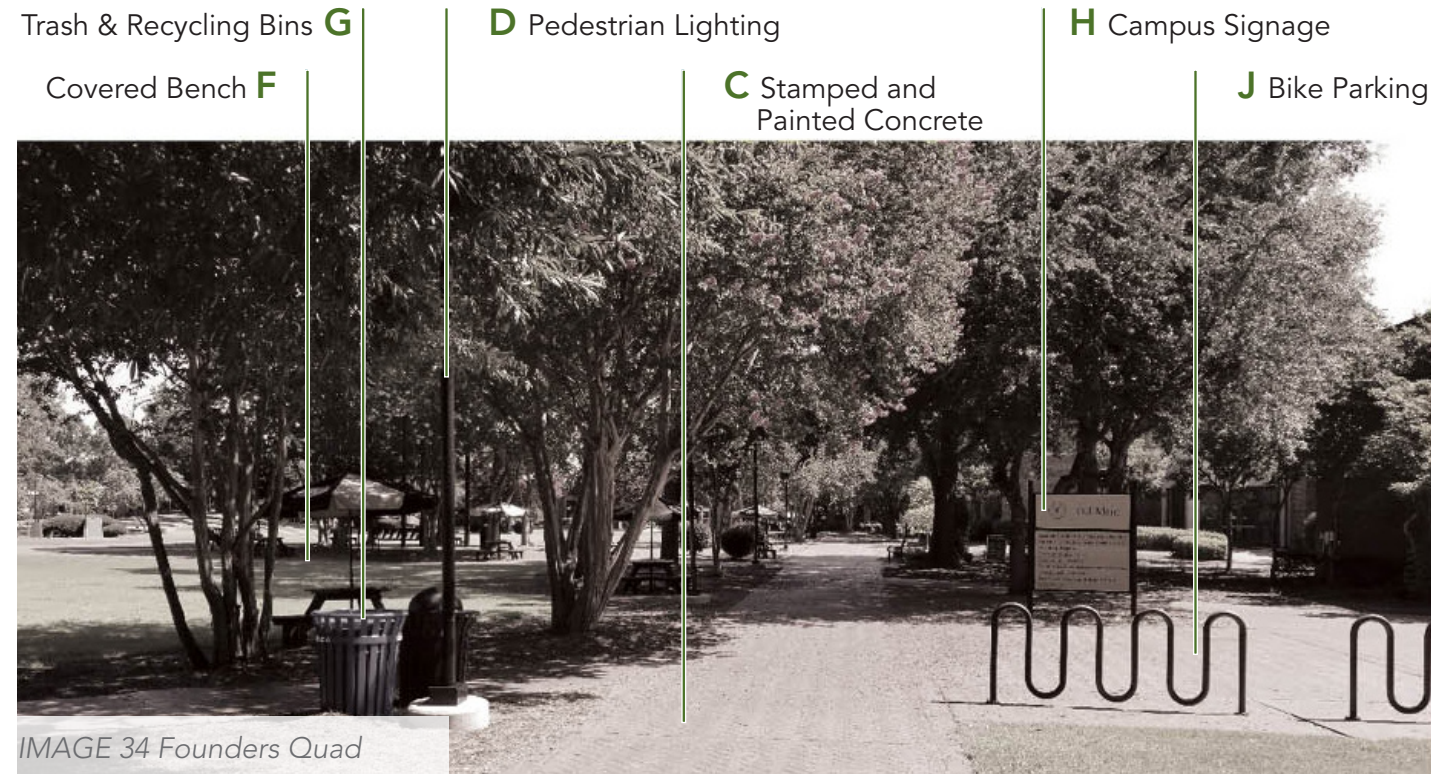


UNC Pembroke is situated in the Bear Swamp Creek watershed and is a transition point for flows upstream to several downstream collectors east of campus. While the soil is highly permeable, the topography in the region is limited to mostly shallow slopes (0%-2%), resulting in a shallow water table. This condition limits the use of infiltration based stormwater control measures (SCMs), so the campus relies on two existing detention ponds and piped infrastructure to address stormwater.

There is some history of flooding at the discharge points along the east edge of campus due to clogging of downstream channels. The University and the Town of Pembroke have addressed this issue by installing larger pipes in the storm system as well as cleaning and enlarging the swales east of campus.

Improvements and recommendations regarding stormwater management can be viewed in the Appendix (page 260).

EXISTING SITE ELEMENTS & MATERIALS



The predominant paving materials across south, central, and north campuses are painted stamped concrete and scored concrete in various combinations and designs. Some areas of the existing stamped concrete are cracked and can be slippery when wet. Stamped concrete can also be difficult to repair or change and salt cannot be applied to remove ice without damaging the concrete.

There are University standards for light fixtures, trash/recycling receptacles, and bike racks. Placement of these site components should be reconsidered as the campus develops and expands, and Master Plan recommendations are established.

There is a significant disparity between light fixture types, styles, and sizes, especially along streets and roadways, pedestrian circulation areas, and in parking lots. Other site elements include seating, outdoor tables and chairs (some with umbrellas), and a successful comprehensive signage/wayfinding program. There are several different bench styles across campus. Low brick landscape walls are common in the south and central campuses and provide additional seating opportunities. Brick screen walls are effectively used for concealing mechanical equipment, trash collection, electrical generators, etc.



Public art is an important ingredient across the campus landscape. Each installation helps define courtyards, plazas, walkways, and “Chavis Green”, the central iconic green space on campus.



EXISTING ARCHITECTURAL PATTERNS

There are 51 University-owned buildings on campus. A review of construction dates and gross square footage of each building revealed that approximately 26% of all campus space was built on or before 1969. Another 28% was built between 1970 and 1989. The University experienced a large dip in new construction during the 1990's, but has built approximately 42% of its total gross square

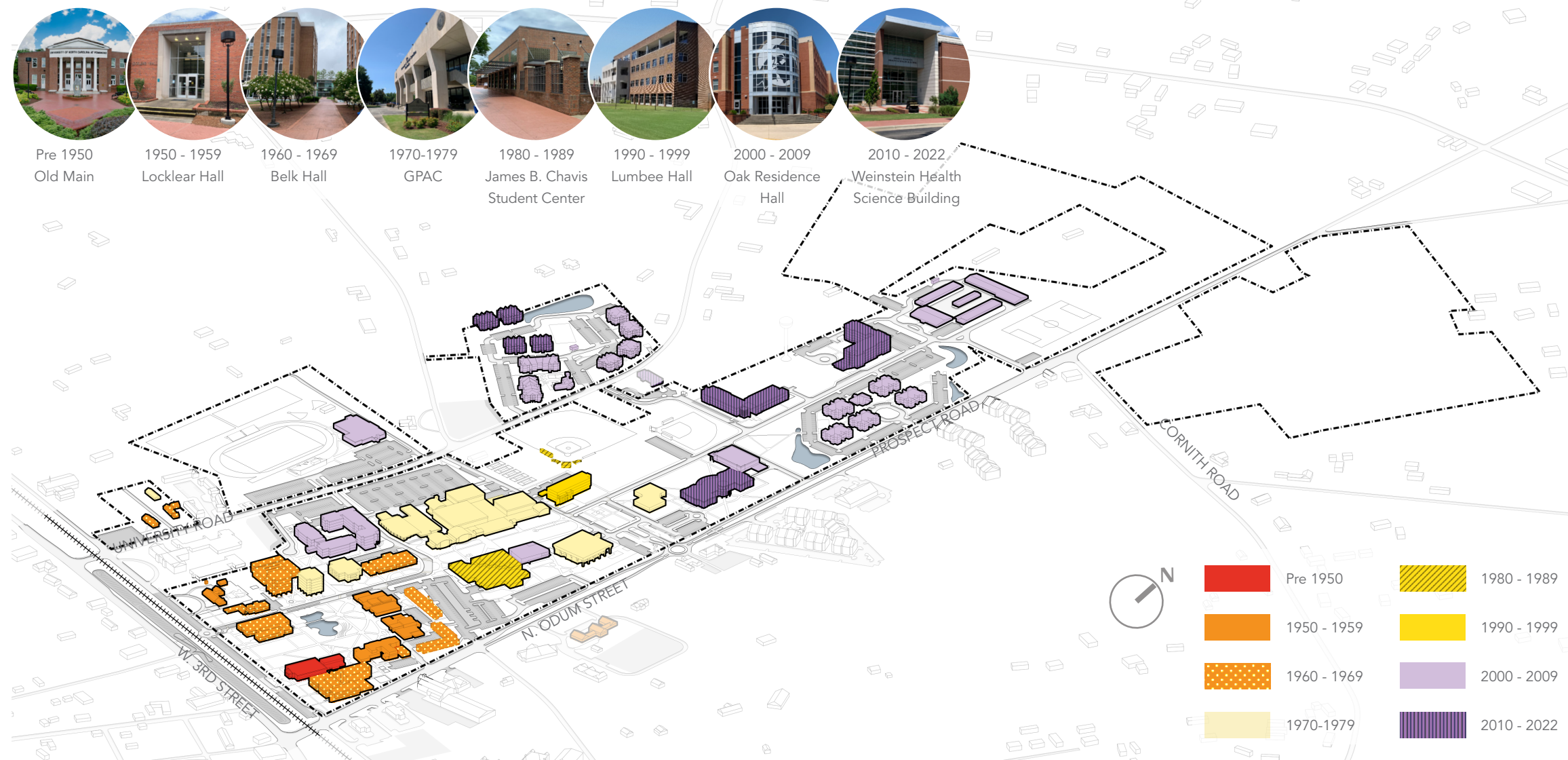
feet in the last 22 years.

Looking more closely at the overall use of the buildings and their ages, it is notable that the 10 administrative and 15 academic buildings are among the oldest on campus. Approximately 50% of all administrative buildings and 50% of all academic buildings were constructed on or before 1969.

Livermore Library, one of the main student services buildings on campus, was also built during this period. Since 2000, only 3 new academic buildings and 2 new administrative buildings have been constructed. Of the approximately 676,000 gross square feet constructed on campus in the last 22 years, 90% of it is residential space.

The former Business Administration Building exemplifies the classic brick and horizontal detailing that unifies many buildings on the UNC Pembroke campus.

DIAGRAM Campus Building History



Elevation Study Business Administration Building

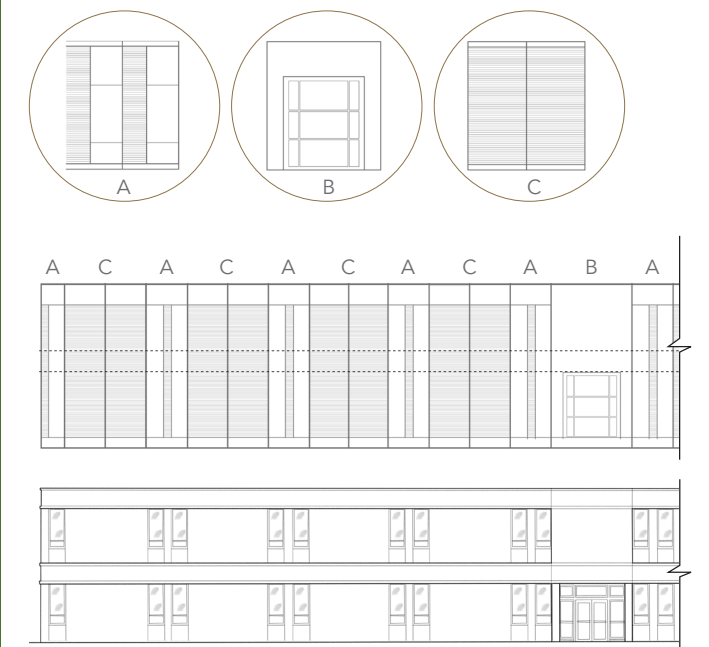


IMAGE 39 Business Administration Building 2021

EXISTING ARCHITECTURAL ELEMENTS & MATERIALS

Though UNC Pembroke does not prescribe the material palette of buildings on campus, the University has noted the importance of unity in the design of any new building in its Campus Design and Construction Guidelines. This general principle is reflected in both old and new buildings on campus, despite the fact that most buildings in the historic campus were built prior to 1970 and many

in central and north campus were built after 2000.

With the exception of apartment residences, most buildings on campus share a common material palette of concrete or stone, brick, metal panel, and glass. On the facades, a strong sense of rhythm and verticality is created through the use of windows placed directly on top of one another in long columns or curtain walls to

emphasize double height spaces. Vertical elements are broken by detailing in the form of horizontal stone or concrete bands.

The main entryways of campus buildings are also often marked by the use of concrete or metal panels in the form of a portal frame, an overhang, or a beam and column extrusion from the facade.

A common material palette unites many UNC Pembroke buildings on campus.



The Weinstein Health Sciences Building exemplifies a successful architectural moment on campus, with glazing and a grand entrance that emphasize verticality and a use of brick and concrete that respects the materiality of existing buildings on campus.

DIAGRAM Campus Building Materiality

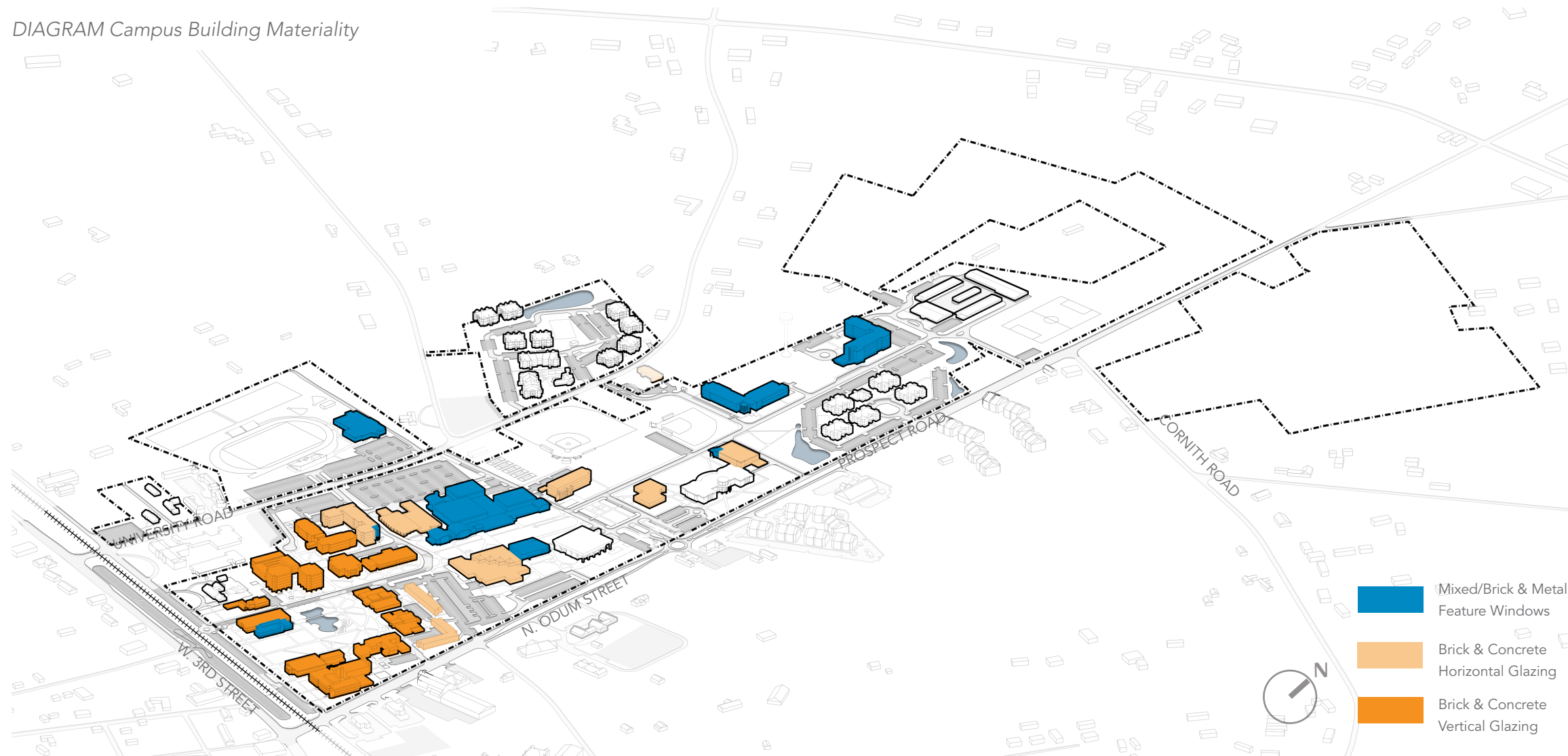
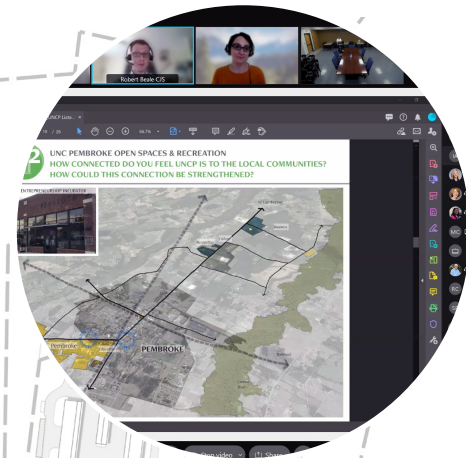


IMAGE 40 Weinstein Health Science Building

DATA COLLECTION



Virtual Listening Session

120+
CLUBS
AND
ORGANIZATIONS



STUDENT:FACULTY
18:1
AVG. CLASS SIZE
20

150+
UNDERGRADUATE &
GRADUATE PATHWAYS
TO A DEGREE

325+
FACULTY



UNCP Graduation



DRAWING Existing Campus Conditions 2022 Overlay with Fall 2021 Quick Facts

University data was collected in the form of building inventories, course schedules, and peer comparisons. A series of meetings, surveys, and Listening Sessions with internal and external stakeholders were conducted to supplement and support quantitative findings.

During the Information Gathering Phase, the Design Team held several meetings with UNC Pembroke’s Institutional Research department, the Office of the Provost, and Facilities staff to obtain information regarding existing buildings on campus and their condition as well as an understanding of current and future student enrollment. A space inventory was performed using the Fall 2018 course schedule to understand space use at full pre-pandemic capacity. This study revealed a need for labs; library and study spaces; recreational facilities; AV and television production spaces; and health care facilities.

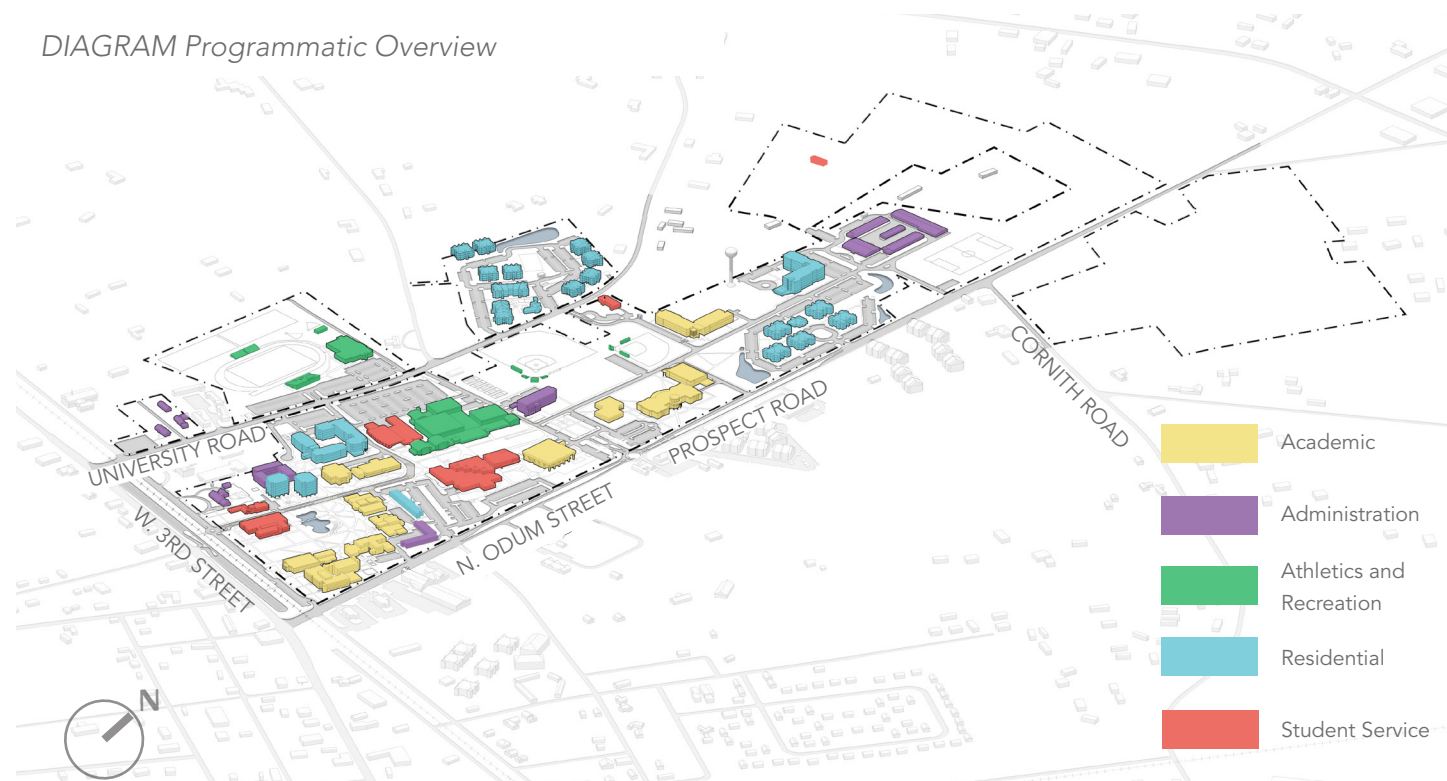
The Design Team also worked with the Vice Chancellor’s and Interim Provost’s offices to select a small group of peer institutions against which

to compare UNC Pembroke across measures such as student demographics, retention rates, and on-campus housing. This study informed the survey questions and spurred further conversations about housing, parking policies, and building improvements which were discussed at length during the Listening Sessions. Information gathered in these sessions revealed the need for improvements to parking policy and efficiency, increased shading along pedestrian pathways, and improvements to student gathering spaces as well as offices and conferencing areas for staff and faculty. In all, the space analysis conclusions were consistent with the findings of surveys and Listening Sessions.

An overview of Listening Session and findings is available in the Appendix (page 176).

SPACE UTILIZATION ANALYSIS OVERVIEW

DIAGRAM Programmatic Overview



The Design Team analyzed current and future space needs at the University of North Carolina Pembroke. In accordance with the 2011 Master Plan, existing facilities on campus were analyzed based on the standards and guidelines of the University of North Carolina, Association for Learning Environments (A4LE), and other regional benchmarks. The analysis examines the impact of targeted enrollment growth to 9,705 Headcount (HC) students and 8,540 Full Time Enrolled (FTE) students by 2030.

The results were discussed and revised in collaboration with various university stakeholders, including the Chancellor, Vice Chancellor, Provost, Master Plan Steering Committee, Facilities, and Institutional Research department. The goals of the

space utilization study were as follows:

- to determine if existing spaces support current enrollment and academic programs
- to serve as a general guide that can inform the size and program of future spaces, including optimization, renovation, and construction initiatives on campus
- to jump-start the conversation for further space analyses and studies

Spaces and facilities were analyzed categories specified by the Postsecondary Education Facilities Inventory and Classification Manual (FICM), which is a nation-wide system used in the space analysis of universities.

Table 1a: Summary of Current Space Needs (ASF)

FICM Category	Space Type	Existing Area (Current)	Guideline: Current Space Need (ASF)	Current Surplus (Deficit)
100	Classroom	110,265	32,792	77,473
200	Teaching Lab & Open Lab	65,928	96,330	(30,402)
250	Research Lab	2,614	0	2,614
300	Office	203,797	178,945	34,852
400	Study/Library	40,158	45,050	(4,892)
520	Recreation/Phys. Ed.	83,303	96,540	(13,237)
530	Audio/Visual/TV	3,478	7,154	(3,676)
610	Assembly & Exhibition	48,081	38,462	9,619
630	Dining	22,435	42,924	(20,489)
650-690	Student Services	52,482	45,050	7,432
700	Support Facilities	52,262	47,840	4,422
800	Health Care Facilities	2,408	3,546	(1,138)
Total		687,211	634,633	

Table 1b: Summary of 2030 Space Needs (ASF)

FICM Category	Space Type	Existing Area (Current)	Guideline: 2030 Space Need (ASF)	Current Surplus (Deficit)
100	Classroom	110,265	66,992	43,273
200	Teaching Lab & Open Lab	65,928	132,006	(66,078)
250	Research Lab	2,614	2,614	0
300	Office	203,797	210,131	(6,334)
400	Study/Library	40,158	52,233	(12,075)
520	Recreation/Phys. Ed.	83,303	110,404	(27,101)
530	Audio/Visual/TV	3,478	8,540	(5,062)
610	Assembly & Exhibition	48,081	42,621	5,460
630	Dining	22,435	51,242	(28,807)
650-690	Student Services	52,482	73,542	(21,060)
700	Support Facilities	52,262	56,648	(4,386)
800	Health Care Facilities	2,408	3,962	(1,554)
Total		687,211	810,936	

The analysis reveals a need for labs; library and study spaces; dining facilities; recreational facilities; AV and television production spaces; and health care facilities. There is currently a surplus of classroom space, office and university-focused assembly space. New teaching labs will also be needed to support the University's expanding Health Sciences programs, although it is recommended that current lab utilization be examined more closely prior to any new construction.

Current space needs will increase as enrollment grows and will also include deficits categories of offices and student service facilities by 2032.

Tables 1a and 1b summarize the current and future space needs for each category. For the purposes of providing a roadmap for future construction decisions, the deficits listed in the tables above are not offset by any proposed buildings included in the 2022 Master Plan.

A study of housing was conducted separately since housing does not fall within the HEGIS categories and is determined based on university policy. Assuming a capture rate of 33%, with 60% of freshmen and sophomores staying on campus per UNC Pembroke policy, there may be a deficit of approximately 200 beds in 2030. A full report of these studies is available in the Appendix (page 180).

PEER INSTITUTION COMPARISON

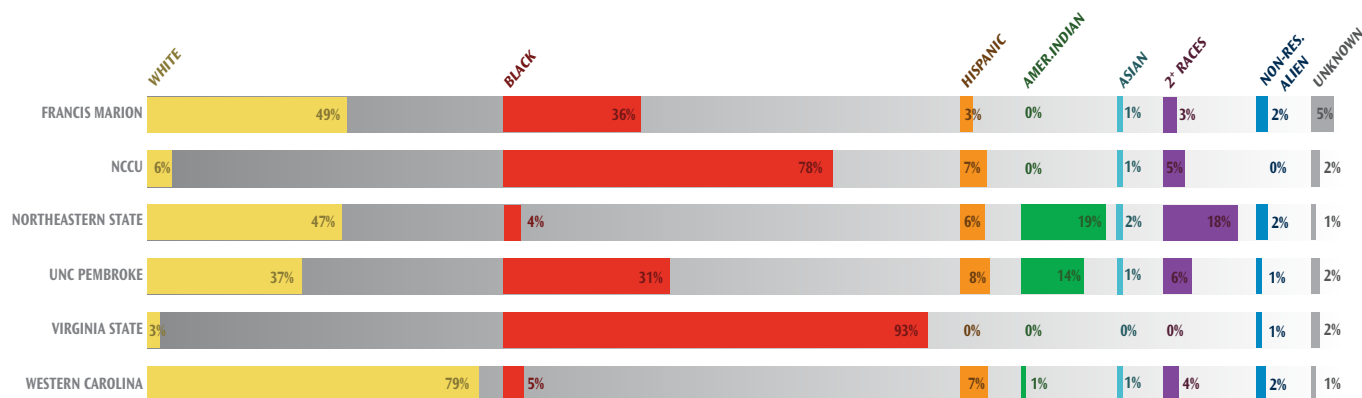
Peer Institutions

Peer institutions were provided to the Design Team by UNC Pembroke and chosen by the UNC System. Though the current list of peers includes 18 institutions, the following institutions were reviewed due to similarity in size, enrollment, student programs, demographics, and location.

- Francis Marion University, SC
- North Carolina Central University, NC
- Northeastern State University, OK
- Virginia State University, VA
- Western Carolina University, NC

Compared to its peers, UNC Pembroke is a diverse and accessible university with retention rates close to the national average. An increase in on-campus students and vehicular access points might necessitate policy changes related to alternative modes of transportation.

Student Demographics

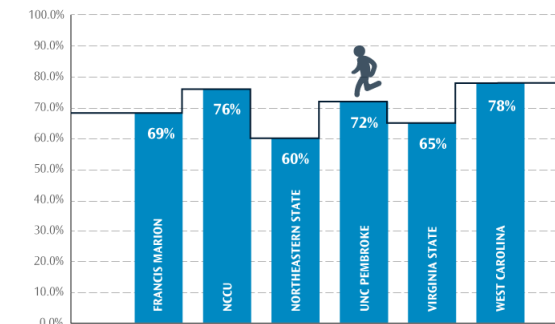


Overall, UNC Pembroke has a balanced and diverse student body in comparison with its peers. Currently, UNC Pembroke is also one of only three institutions participating in the NC Promise

Program, which bolsters the University's value of diversity by making education accessible to students of all socioeconomic backgrounds.

Freshman Retention Rate

UNC Pembroke has a satisfactory retention rate compared to its peers, at 76%. The national average retention rate is at 78%.



Student Housing: On & Off Campus



Compared to its peers, UNC Pembroke has a high percentage of off-campus students at 71%, which is second only to Northeastern State University at 81%. Among the peer institutions reviewed, it is notable that Northeastern State is the only one that does not offer a campus shuttle service, perhaps due to the

high proportion of off-campus students. In line with its other peers, if UNC Pembroke plans to increase the number of on-campus students and decrease vehicular traffic, it is recommended that shuttle services be extended for ease of access to popular locations and services.

CAMPUS SURVEY OVERVIEW: ALL RESPONDENTS

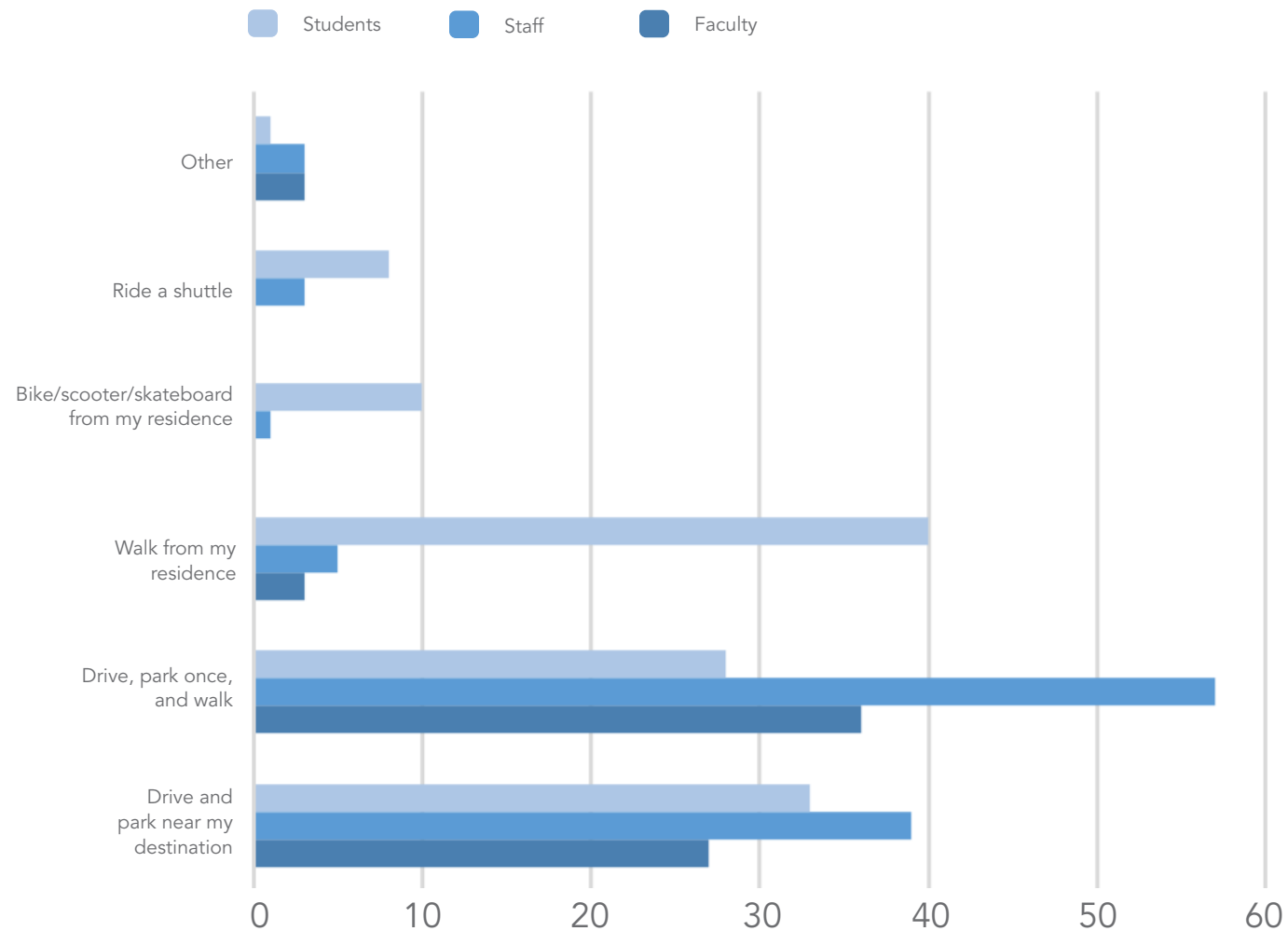
Campus surveys were sent to students, faculty, and staff and were live from 10/26/21 to 11/10/21. Among the notable findings were that many respondents prefer to use their cars to get around campus, though many remained open to parking once and walking. This highlights the importance of a creating a clear parking strategy.

If parking is moved to the periphery of campus, additional shuttle services or bicycle availability may be needed to ensure access to main campus as well as other locations and services, such as supermarkets and healthcare facilities.

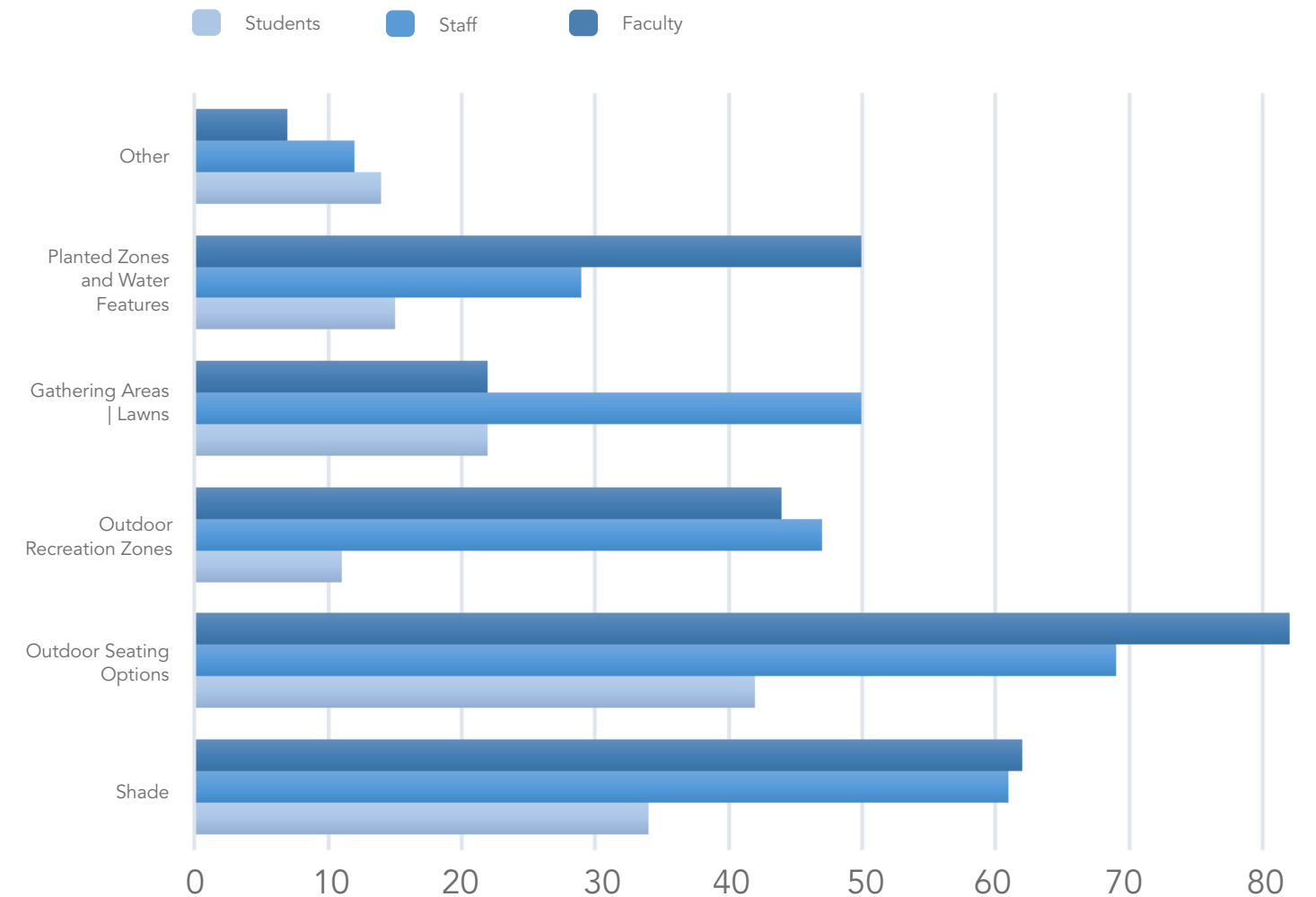
Pedestrian safety and comfort was another key concern. Many respondents noted the need for better

pedestrian accessibility, and increased seating and shading throughout campus. Other key takeaways include the need for better dining choices as well as more sustainable food options. Few building improvements were mentioned, though the need for renovation of existing buildings, such as Locklear Hall, was noted.

How would you prefer to get around campus?



What is missing from the outdoor spaces on campus?



CAMPUS SURVEY OVERVIEW: RESPONDENT GROUPS

Student Survey Results

On a typical day, are you able to find parking where and when you want it?



Among student survey respondents, 39% noted there is inadequate parking.

Students noted that more study spaces and dining options are needed on campus. They also believe housing, outdoor spaces, dining, and study spaces require major improvements. Academic buildings,

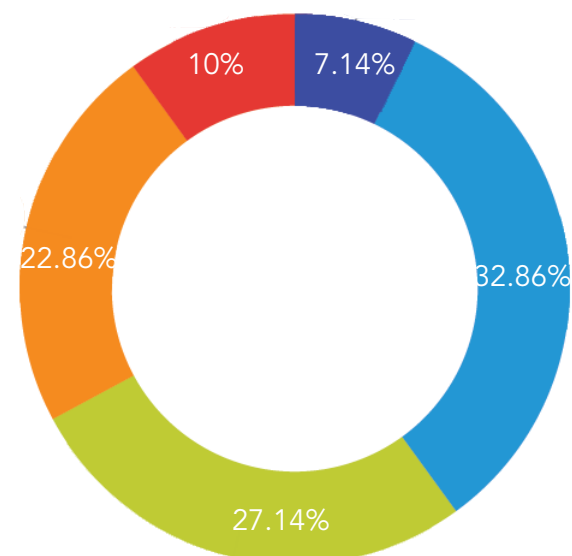
wellness, and lounge areas were also noted as places requiring improvements, though to a lesser degree.

Students also requested more outdoor seating and shade. On-Campus students also favor creating a stronger campus environment by activating campus edges and connections to the community.

Faculty Survey Results

Most academic buildings and classrooms have the space, technology, and equipment needed to create a productive learning environment:

Strongly agree Somewhat agree Neutral Somewhat disagree Strongly disagree

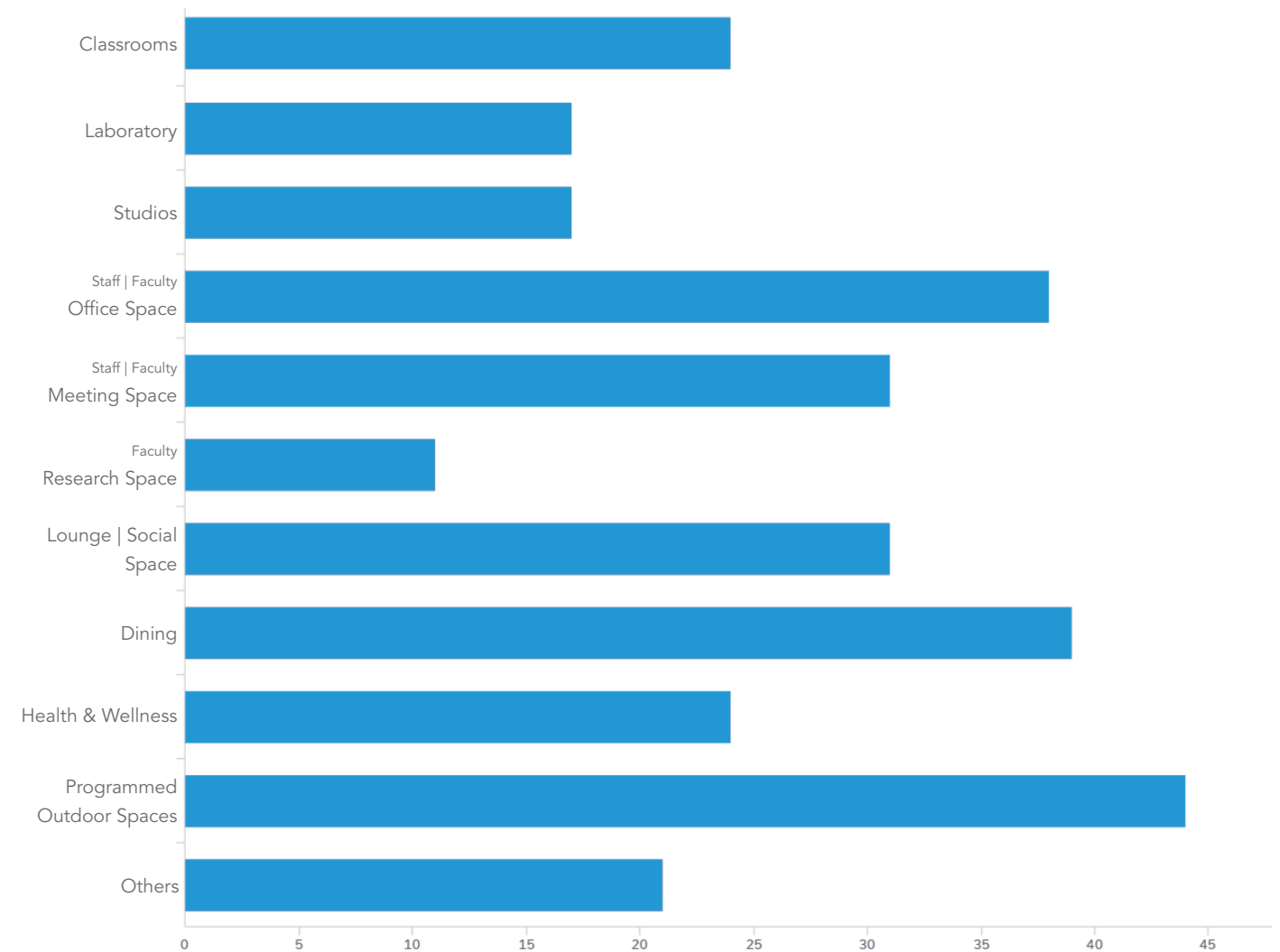


Faculty respondents noted that they struggle to find and book large classrooms and event spaces to suit their needs. They want more large and flexible space for teaching, speaking, and conferencing. It was also noted that faculty offices require improvement.

Regarding the overall campus, faculty favor creating a stronger campus environment to enhance the college town feel. They are also concerned about pedestrian safety on campus and in town.

Staff Survey Results

Of the following options what types of green infrastructure would you most like to see implemented on campus?



When asked about the built environment on campus, staff noted the need for improvements to housing and academic buildings. Office and meeting spaces are needed, but they also want more lounge, dining, and study spaces for students.

Overall, staff prefer a pedestrian-oriented campus where people can park once and walk. They also believe that retail is important to contributing to a desirable year-round community on campus.

2011 MASTER PLAN OVERVIEW

Continuity and viability are important to creating effective and flexible campus master plans. The 2022 Master Plan represents an evolution of prior master plan proposals in light of UNC Pembroke’s current needs.

The 2011 Master Plan proposed both renovations and expansions of the campus’ built environment. Key renovations and demolitions included the following:

- Old Main renovation and Museum expansion
- Livermore Library renovation and repurposing for Student Services
- Business Administration renovation and repurposing for general classroom use
- GPAC ADA renovation and lobby expansion
- Demolition of West, Jacobs, and Wellons Halls

Key new buildings, which are shown in orange, include:

- An Information Commons to replace Wellons Hall
- A new Business Building, which was sited near the current James A. Thomas Hall
- A new academic cluster across from the current site of James A. Thomas Hall

The main landscape proposals of the plan include a north-south ‘Central Spine’ which would remain pedestrian only from Old Main Road to University Drive, a quad for the new academic cluster, and enhancements at the main gateway on N. Odum Street. Initiatives that were implemented to date include the new James A. Thomas Hall and the planned demolition of Jacobs and Wellons Halls.



DRAWING 2011 Master Plan

6

REFERENCES

KEY TERMS

STAKEHOLDER WORK SESSION FINDINGS

DUDA | PAINE ARCHITECTS SPACE UTILIZATION REPORT

DAVENPORT TRANSPORTATION TECHNICAL MEMORANDUM

HR& A ADVISORS ECONOMIC OPPORTUNITY ASSESSMENT

SALAS O'BRIEN MEP ASSESSMENT AND

RECOMMENDATIONS

APPENDIX



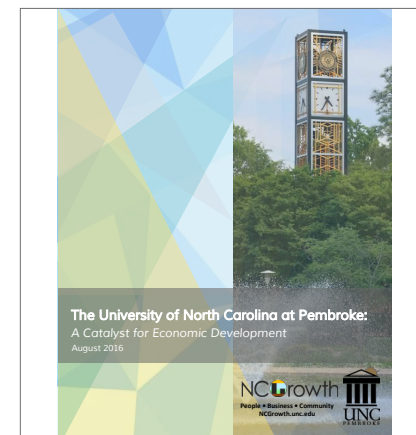
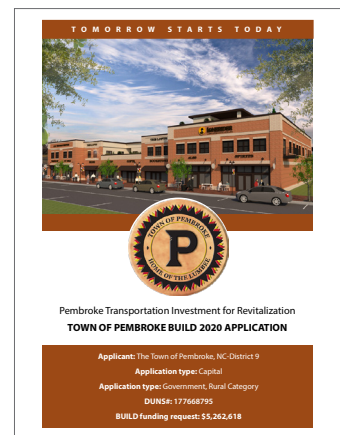
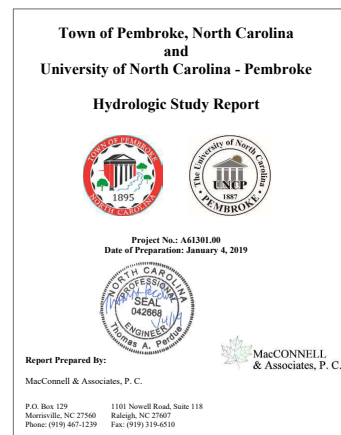
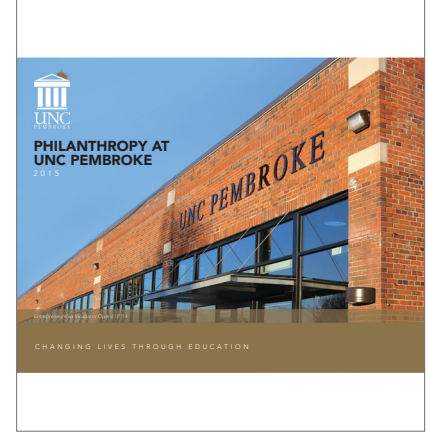
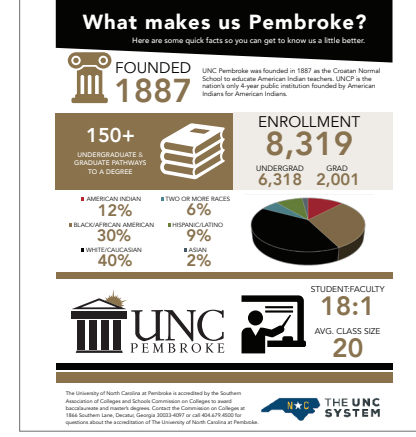
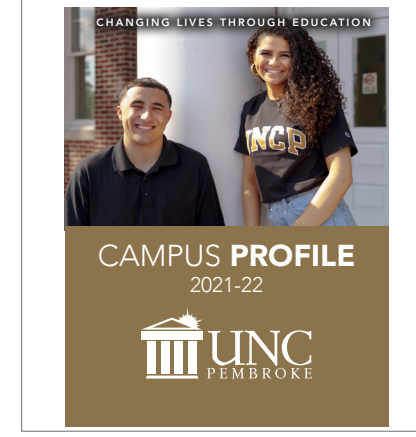
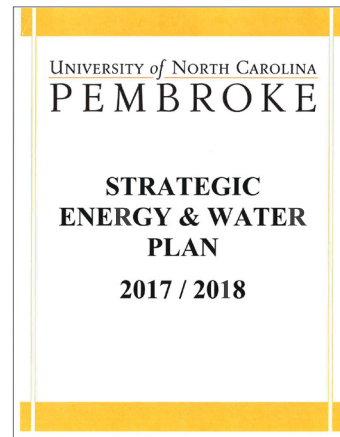
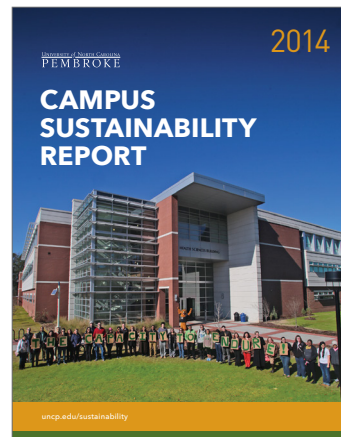
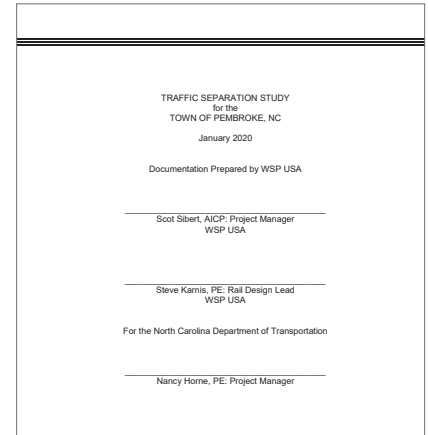
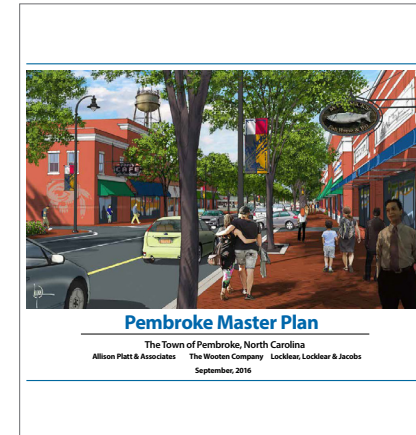
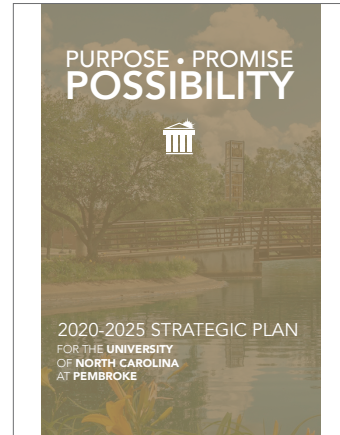
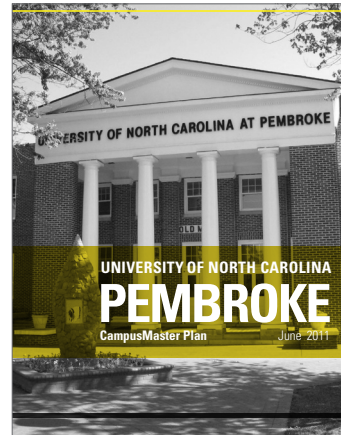
SELECTED REFERENCES

- University of North Carolina Pembroke
<https://www.uncp.edu/>

2004 Master Plan
2011 Master Plan and supporting reports
<https://www.uncp.edu/resources/facilities-management/master-plan>

Previous Capital Improvement Plans
<https://www.uncp.edu/resources/facilities-management/facilities-planning-design-and-construction/capital-improvement-plans>

Existing Campus Design and Construction Guidelines
<https://www.uncp.edu/resources/facilities-management/facilities-planning-design-and-construction/campus-design-and-construction-guidelines-page>
- University of North Carolina System
<https://www.northcarolina.edu/>
- Town of Pembroke, NC
<https://www.pembrokekenc.com/>
- The Thomas Entrepreneurship Hub (Thomas Center)
<https://thethomashub.org/the-facility/>



KEY TERMS

- **“All Campus Path”** – at UNC Pembroke, the “All Campus Path” is a proposal to create a pedestrian, bicycle, and skateboard-friendly path running from the north to south on campus. The path will replace Faculty Row and Braves Drive. Though it will be closed to public vehicles, it will be designed to accommodate access for University maintenance vehicles and emergency vehicles.
- **Campus Framework** - broad concepts that provide a strategy for the organization of campus. These concepts also include high-level recommendations for improvements to mobility, infrastructure, and sustainability on campus.
- **Campus shuttle** – A university provided mass-transit service provided operating on a defined route within campus boundaries.
- **Complete Street** – A street designed and operated to enable safe access for all users; ensures pedestrians, bicyclists, motorists, and transit riders of all ages and abilities can safely move along and across a street.
- **Courtyard** - A small open space oriented around residence halls which allow for more intimate gatherings of small groups.
- **Densification** – An increase in the density of people utilizing available built and build-able space. Corresponds with an increase in the ratio of total building floor area to area of buildable land.
- **Guiding Principles** - a set of broad goals for the physical development of campus that were developed through discussions, surveys, data, and analysis conducted during the Master Plan process. The Guiding Principles are used to evaluate Master Plan proposals, guide future development goals, and inform the direction of future master plans.
- **Landmark** – Readily identifiable objects that orient passers-by and serve as reference points.
- **Master Plan** – a flexible and dynamic long-term plan for the physical growth and development of an area. Master Plans typically include both analysis of existing conditions and a vision for the future transformation of a space. They combine stakeholder input, planning initiatives, and information about existing natural constraints, facilities, services, and resources to project how these elements should be developed and organized in the years to come.
- **Master Plan Visions** - Recommendations and solutions for the future development of campus. These include visions about the organization and layout of campus neighborhoods, improvements to arrival and navigation, the development of the campus at its peripheries, and ways to connect neighborhoods throughout campus.
- **Millennial Campus** – a designation which gives universities regulatory flexibility to finance development and collaborate with industry and the private sector on innovative ventures. At UNC Pembroke the potential Millennial Campus site is at the 44-Acre property in the northeastern portion of campus.
- **Mixed-use** – a type of development that blends residential, commercial, cultural, institutional, or industrial uses, where those functions are physically and functionally integrated. The integration of multiple uses in open spaces and buildings to encourage communication between people and maximize space. Many of the neighborhoods on UNC Pembroke’s campus are mixed-use.
- **Neighborhood** – A set of areas that feature a cluster of buildings serving symbiotic purposes, such as recreation or academics, which are connected through a series of pathways and mixed-use facilities.
- **Open Space** - A large, well-defined outdoor area that gives definition to campus neighborhoods and is considered a part of the public realm.
- **Parking Ratio** – Total number of parking spaces on campus divided by the campus population.
- **Pathway** – Any transportation route, from a footpath to a major transit route. These are mainly pedestrian-oriented routes.
- **Pedestrian-Oriented** – An environment that is safe, accessible, and comfortable for pedestrians so that they can move efficiently from one destination to another without the use of a vehicle. A strategy for reducing dependence on vehicles.
- **Plaza** - Flexible gathering spaces with seating that are broken up with planting areas to create a diverse range of spaces. Plazas are located around/ in front of key buildings or structures that are social/ activity hubs for the campus.
- **Quadrangle (Quad)** - A large open areas that provides space for the student body and greater community. Quads feature various space types where large and small groups can gather.
- **Watershed** - The entire land area contributing surface drainage to a specific point (e.g. the water supply intake) or alternatively, the geographic region within which water drains to a particular river, stream or body of water.
- **Wayfinding** – Signs, maps, and other visual or audible orientation devices and methods used to convey location and directions to travelers.



INTERNAL & EXTERNAL STAKEHOLDER WORK SESSION FINDINGS

INTERNAL STAKEHOLDER WORK SESSION AUGUST 24TH

15 Minute INTRODUCTION

- Introduction of the Master Plan Team
- Brief explanation of the purpose of a Master Plan Update
- Overview of the Master Plan Update timeline and completion
- Explanation of the meeting intentions and structure of the work session itself by outlining discussion topics
- Highlighting WebEx tools and ways to participate and provide feedback during the session
- Quick Poll to get to know the audience

Master Plan Update TEAM

PURPOSE of a Master Plan Update

TIMELINE Master Plan Update

TODAY'S Work session

TODAY'S Work session

QUICK POLL

1 UNC PEMBROKE VISION, IDENTITY & GROWTH: ACADEMIC & CAMPUS LIFE

- Visibility of academic work
- Promote UNCP's location to improve academic opportunities
- Expand academic program to be inclusive: online and on-campus
- Add social space to foster collaboration and community (event space)
- Provide designated space(s) for commuter students to lounge and eat
- Create faculty research spaces
- Foster flexible learning spaces and outdoor education
- Modernize campus buildings
- Celebrate UNCP's history and beautiful campus settings

UNC PEMBROKE VISION, IDENTITY & GROWTH: ACADEMIC & CAMPUS LIFE

WHAT BUILDINGS, SPACES AND LANDMARKS ON CAMPUS SPEAK MOST TO THE IDENTITY OF UNC PEMBROKE? WHAT IS MISSING?

INTERNAL STAKEHOLDER WORK SESSION AUGUST 24TH

Work Session BREAKOUT ROOMS

- 5 topics were addressed in each session:
 1. UNC Pembroke Vision, Identity & Growth: Academic & Campus Life
 2. UNC Pembroke Open Spaces & Recreation
 3. UNC Pembroke 2030: Campus Expansion & Community Presence
 4. Navigation: Physical Approach to Campus
 5. UNC Pembroke Campus Services & Utilities
- 10- 15 minutes discussions per topic facilitated by design team

UNC PEMBROKE VISION, IDENTITY & GROWTH: ACADEMIC & CAMPUS LIFE

UNC PEMBROKE OPEN SPACES & RECREATION

UNC PEMBROKE 2030: CAMPUS EXPANSION & COMMUNITY PRESENCE

NAVIGATION: PHYSICAL APPROACH TO CAMPUS

UNC PEMBROKE CAMPUS SERVICES & UTILITIES

2 UNC PEMBROKE OPEN SPACES & RECREATION FINDINGS

- Assess railroad tracks and adjacent parking
- Sustainability should influence open space planning, development and maintenance
- Enhance pedestrian experience and activate the campus outdoor open spaces by providing more shade
- Consider adding outdoor programmable spaces for events, and for student engagement
- Provide outdoor research and education spaces
- Create a safer and more convenient connection to downtown

UNC PEMBROKE OPEN SPACES & RECREATION

WHAT TYPES OF GREEN INFRASTRUCTURE WOULD YOU MOST LIKE TO SEE IMPLEMENTED ON CAMPUS?

3 UNC PEMBROKE 2030: CAMPUS EXPANSION & COMMUNITY PRESENCE FINDINGS

- Expanded food and beverage options on the edges of campus could catalyze meaningful new development
- New recreation opportunities along the campus edge (*putt-putt and a movie theater*)
- Additional housing options for students, faculty, staff and the community
- The university's business, nursing, and agriculture programs – existing or proposed – are likely the three strongest starting points for exploring programmatic and research partnerships

UNC PEMBROKE 2030: CAMPUS EXPANSION & COMMUNITY PRESENCE TACTICS FOR ACTIVATING EDGES

- Identify target areas on campus edges for growth/development
- Quantify high value university uses to target campus edges
- Link programmatic partnership opportunities that can offer capital and operating funding for development and activation

UNC PEMBROKE 2030: CAMPUS EXPANSION & COMMUNITY PRESENCE HOW CONNECTED DO YOU FEEL UNCP IS TO THE LOCAL COMMUNITIES?

UNC ENTREPRENEURSHIP INCUBATOR

4 NAVIGATION: PHYSICAL APPROACH TO CAMPUS FINDINGS

- Prioritize Parking strategy to improve all user experience
- Make UNCP a bike and skateboard friendly campus and consider expanding the bicycle program availability
- Enhance pedestrian experience on and crossing onto campus
- Consider improvement of wayfinding signage for on campus users
- Recognize Prospect Road improvements and use as role model for University Road
- Assess campus roads to refine overall conditions and pedestrian awareness
- Consider shuttle service (*golf cart tram?*)
- Provide campus wide ADA accessibility

UNC PEMBROKE 2030: NAVIGATION: PHYSICAL APPROACH TO CAMPUS VISION STATEMENT

The University of North Carolina at Pembroke will challenge students to embrace difference and adapt to change. Think critically, communicate effectively, and become responsible citizens.

CORE VALUES: The maintenance of a sustainable, safe, beautiful, attractive, and accessible campus.

UNC PEMBROKE 2030: NAVIGATION: PHYSICAL APPROACH TO CAMPUS WHERE ARE THE "HOT SPOTS"?

UNC PEMBROKE CAMPUS DIAGRAM - PARKING

UNC PEMBROKE - BRAVES DRIVE

UNC PEMBROKE - UNIVERSITY ROAD

UNC PEMBROKE - CAMPUS GATEWAY

5 UNC PEMBROKE CAMPUS SERVICES & UTILITIES FINDINGS

- Promote sustainability education and create initiatives and opportunities for on-campus participation
- Sustainability should influence building design, renovations and maintenance
- Improve exterior Wifi coverage on campus
- Expand camera coverage and lighting to improve campus safety and security
- Recognize WebEx campus status

UNC PEMBROKE 2030: CAMPUS SERVICES & UTILITIES RANK THE FOLLOWING SUSTAINABILITY ISSUES ON CAMPUS FROM MOST IMPORTANT TO LEAST (1 BEING MOST IMPORTANT, 10 BEING LEAST)

- Grounds, Open Space & Conservation Areas (litter, trees, landscaping, trail systems)
- Waste Reduction & Recycling (waste minimization, separating recyclables from trash, purchasing recycled and recyclable products)
- Water Resources (water consumption, water pollution)
- Energy & Buildings (green buildings, Building Certification, energy efficiency projects)
- Environmental justice (preventing disproportionately negative environmental impacts based on race, gender, social or economic status.)
- Climate Change (renewable energy, reducing carbon footprint, achieving carbon neutrality)
- Food & Food Waste (sustainable dining options - local, organic, community-based and third-party verified, reducing food waste)
- Sustainable Purchasing (procuring goods and services that are more beneficial to the environment)
- Education & Outreach (sustainability literacy, courses, programs, research)
- Other (specify)

UNC PEMBROKE 2030: CAMPUS SERVICES & UTILITIES POLL QUESTIONS & DISCUSSION

Thank You!

BOARD OF TRUSTEE LISTENING SESSION AUGUST 25TH

- Define campus edges and gateways
- Prioritize parking strategy and consider parking structure
- Create architectural standards and provide landscape improvements to enhance campus experience
- UNC Pembrokes role in the south-east north Carolinas for healthcare and agriculture

THOUGHT STARTER QUESTIONS

A. BUILT ENVIRONMENT QUESTIONS

- What academic programs – new, expanded, or improved – would have the greatest positive impact on the UNC Pembroke campus?
- What student services/facilities should be improved or added to campus to make UNC a regional place for three in four?
- If you had an unlimited budget, what changes would you make to the UNC campus and why?
- What buildings, spaces and landmarks on campus speak most to the identity of UNC Pembroke? What is missing?

THOUGHT STARTER QUESTIONS

B. LANDSCAPE & WAYFINDING QUESTIONS

- What is missing from the outdoor spaces (paths, courtyards, terraces, walkways, etc.) on campus?
- Does the adjacent natural impact the campus? If so, in what way?
- How well do you think sustainability is currently being addressed on UNC's campus? How would it be improved?
- Where do students, staff, faculty, and visitors typically enter the campus and where do they go when they arrive?

THOUGHT STARTER QUESTIONS

C. FUTURE GROWTH & COMMUNITY ENGAGEMENT QUESTIONS

- What buildings, landscape features and programs would enhance presence and community engagement in the core campus? At the perimeter?
- How have the Entrepreneurship Hub and Office for regional initiatives improved UNCP's presence and relationship with the surrounding community?
- What are the most successful current programs UNCP participates jointly with the Lumbee tribe?
- What events at UNCP are members of the community most likely to attend on the UNCP campus?
- During the summer months do summer camps, or other on-campus initiatives facilitate greater opportunities for prospective students and community members to experience the campus?
- What kind of commercial development would you like to see around UNCP's campus (e.g. retail, residential, office/lab, etc.)? How much development would you like to see?

PART 1A: UNCP MASTER PLAN 2032 SPACE ANALYSIS UPDATE

Section 1: Introduction

Duda | Paine Architects analyzed current and future space needs at the University of North Carolina Pembroke. In accordance with, and as an update to, the 2011 Master Plan, existing facilities on campus were analyzed based on the standards and guidelines of the University of North Carolina, Association for Learning Environments (“A4LE”) (formerly Council of Educational Facility Planning, or “CEFPI”), and other regional benchmarks. The analysis examines the impact of targeted enrollment growth to 9,705 Headcount (HC) students and 8,540 Full Time Enrolled (FTE) students by 2030.

Results were discussed and revised in collaboration with various university stakeholders, including the Chancellor, Vice Chancellor, Provost, Master Plan Steering Committee, Facilities, and Institutional Research department.

This report serves the following purposes:

1. to determine if the existing spaces support current enrollment and academic programs
2. to serve as a general guide that can inform the size and program of future spaces, including optimization, renovation, and construction initiatives on campus

1.1 Overview of Findings

The analysis reveals a need for labs; library and study spaces; recreational facilities; AV and television production spaces; and health care facilities, while there is currently a surplus of classroom and assembly space. New teaching labs will also be needed to support the University’s expanding Health Sciences program, although it is recommended that current lab utilization be examined more closely prior to any new construction. Current space needs will increase as enrollment grows and will also include deficits categories of offices and student service facilities by 2030. Tables 1a and 1b summarize the current and future space needs for each category, which can be used as a roadmap for future construction decisions. The deficits listed in Tables 1a and 1b are *not* offset by any proposed buildings included in the 2032 Master Plan.

Table 1a: Summary of Current Space Needs (ASF)

FICM Category	Space Type	Existing Area (Current)	Guideline: Current Space Need (ASF)	Current Surplus (Deficit)
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520	Recreation/Phys. Ed.	83,303	96,540	(13,237)
530	Audio/Visual/TV	3,478	7,154	(3,676)
610	Assembly & Exhibition	48,081	38,462	9,619
630	Dining	22,435	42,924	(20,489)
650-690	Student Services	52,482	45,050	7,432
700	Support Facilities	52,262	47,840	4,422
800	Health Care Facilities	2,408	3,546	(1,138)
Total		687,211	634,633	

Table 1b: Summary of 2030 Space Needs (ASF)

FICM Category	Space Type	Existing Area (Current)	Guideline: 2030 Space Need (ASF)	Current Surplus (Deficit)
100	Classroom	110,265	66,992	43,273
200	Teaching Lab & Open Lab	65,928	132,006	(66,078)
250	Research Lab	2,614	2,614	0
300	Office	203,797	210,131	(6,334)
400	Study/Library	40,158	52,233	(12,075)
520	Recreation/Phys. Ed.	83,303	110,404	(27,101)
530	Audio/Visual/TV	3,478	8,540	(5,062)
610	Assembly & Exhibition	48,081	42,621	5,460
630	Dining	22,435	51,242	(28,807)
650-690	Student Services	52,482	73,542	(21,060)
700	Support Facilities	52,262	56,648	(4,386)
800	Health Care Facilities	2,408	3,962	(1,554)
Total		687,211	810,936	

1.2 General Assumptions

This analysis provides a quantitative assessment of space and reports on data collected from stakeholders as it relates to UNC Pembroke’s expanding academic programs, community engagement, and regional opportunities. While it does discuss some of the qualitative topics recorded in surveys and Listening Sessions with internal and external stakeholders, it does not address quality of classroom, lab, or office space directly. This report also does not address issues of space efficiency in existing buildings, proposed renovations, or new buildings.

The assumptions of this analysis are as follows:

1.3 Enrollment Data Assumptions

1. Headcount (“HC”) data received via email from the Office of Academic Affairs and from the Office of Institutional Research is utilized.
2. Duda | Paine Architects was unable to receive Full Time Equivalent (“FTE”) projections for students. FTE projections are therefore based on an estimate that was derived based on a comparison of FTE to HC ratios from 2017 to 2021. Based on this ratio, it was determined that on average, FTE students represented approximately 88% of HC students; therefore, the FTE student projection used for 2030 is 88% of the student HC provided by the Provost’s office.
3. The target planning year of this study is 2030, though the findings of this report could have further implications for 2032 and beyond. According to the HC enrollment projections received, the target enrollment growth for 2030 is 9,705 HC. As noted above, the 2030 FTE was projected to be 88% of HC, or 8,540 FTE. A breakdown of this number would be 7,238 HC undergraduate students and 2,467 HC graduate students. The 2032 Master Plan Update can accommodate additional students if all proposed projects are implemented by UNC Pembroke in the future.
4. The enrollment information provided to Duda | Paine Architects is not broken down by online, in-person, and hybrid students. In correspondence with UNC Pembroke leadership on 12/3/2021, it was determined that the full HC/FTE projections should be accounted for, as the University anticipates an increase in in-person learning for all students. Depending on the

strategic direction of UNC Pembroke and projections of online versus in-person learning environments, it is recommended that the University conduct further studies to better understand how much physical space will be required on campus.

1.4 Faculty and Staff Data Assumptions

- Office staff population is used to calculate office needs. This was provided by Institutional Research on 10/7/21 in the form of the 2018 IPEDs report and accessed through <https://www.uncp.edu/employee-information> on 09/15/2021. The most recent available IPEDS report from 2020 was also reviewed.
- It is assumed that staff/faculty FTE = Fulltime HC + ½ part time HC.
- Consistent with the 2011 Master Plan and based on discussions with the Master Plan Steering Committee (MPSC) on 9/20/2021, staff growth is projected at 1% per year.
- Faculty growth projections are based on an overall FTE faculty to student ratio of 1:18. This ratio was used in proportion with the student enrollment projections, which include both graduate and undergraduate students. The FTE faculty to undergraduate student ratio is 1:16, though it is **not** used in this study.
- Staff and faculty categories and recommended sizes in Assignable Square Feet (ASF) are broken down as follows:

Faculty/Staff Category	FICM Office Size Standard (ASF)	UNC System Office Size Standard (ASF)
Faculty	155	190
Executive/Administrative & Management	240	275
Clerical & Secretarial	135	140
Technical & Professional	155	190

Office sizes for each category are based on the UNC System standard. The A4LE office standards are also listed and calculated, although they are **not** included in the calculations for current space needs (Tables 1a and 1b).

1.5 Building Inventory & Facilities Assumptions

- The building inventory is based on the “Building and Rooms_20206_November 3, 2021” spreadsheet provided by Institutional Research on 11/3/2021. Importantly, a small number of off-campus facilities not listed in the building inventory, such as COMtech, are not included in this analysis.
- The pre-pandemic Fall 2018 course schedule provided on 09/07/2021 was used to calculate weekly student contact hours.
- The space inventory and projections are based on categories 100 to 800 listed in the Postsecondary Education Facilities Inventory and Classification Manual (“FICM”). These categories were formerly known as HEGIS categories (“Higher Education General Information System”). The residential space category (900) is not included in Part 1 of this space analysis, although a basic projection of housing needs was calculated separately in Part 2. Space in residence halls in FICM categories 100-800 is included.

- All UNC Pembroke space provided in the building inventory is included in this study, except for Jacobs and Wellons Halls, which are excluded due to pending or completed demolition.

1.6 Planning Target Year Assumptions

- Planning years and building inventory for the analysis focus on 2021 and 2030.
- Proposed buildings from the 2032 Master Plan are not included in this space analysis; therefore, space surpluses and deficits through 2030 are calculated based on the assumption of **no new construction**. This will allow UNC Pembroke to decide whether to implement the projects listed in the 2032 Master Plan as the need arises.

1.7 Existing Space on Campus

- Based on the data provided, the total existing space on campus is approximately 687,000 ASF.
- The space is divided into categories as per the A4LE guidelines and FICM categories. Existing totals for each type of space are summarized below in Table 1c.

Table 1c: Summary of Space by Total Amounts on Campus (ASF)

FICM Category	Space Type	Existing Area (Current)	Percentage of Total
100	Classroom	110,265	16%
200	Teaching Lab & Open Lab	65,928	10%
250	Research Lab	2,614	0%
300	Office	203,797	30%
400	Study/Library	40,158	6%
520	Recreation/Phys. Ed.	83,303	12%
530	Audio/Visual/TV	3,478	1%
610	Assembly & Exhibition	48,081	7%
630	Dining	22,435	3%
650-690	Student Services	52,482	8%
700	Support Facilities	52,262	8%
800	Health Care Facilities	2,408	0.4%
Total		687,211	100%

1.8 Planned Space on Campus

Though the 2032 Master Plan recommends locations for several future academic, student life, and residential buildings, the primary facility proposed in the next 10 years is the Allied Health Science Building. Major renovations and expansions are proposed for the Givens Performing Arts Center (“GPAC”), the former Business Administration Building, Livermore Library, the Chancellor’s Residence, and the Chavis University Center (“The UC”). Upgrades and maintenance are also recommended for Moore Hall, the Dial Humanities Building, the Observatory, and Locklear Hall. At the time of this writing, a secondary and more detailed space analysis is being conducted at UNC Pembroke. Therefore, while the 2032 Master Plan proposes areas for new buildings, the square footages of proposed spaces are **not** used to offset projected deficits in this analysis. It is recommended that detailed program studies be conducted to determine appropriate size of new construction and expansion based on UNC Pembroke’s goals and priorities on campus at the start of each project.

1.9 Space Needs

This section provides an overall summary of UNC Pembroke’s programmatic needs as determined in accordance with the A4LE Guidelines. The A4LE Guidelines provide a general framework for space planning and allocation at institutions of higher education. Together with the FICM space categories, this framework has been used to determine the surpluses and deficits of space at UNC Pembroke through 2030.

Section 2: Classroom Space Needs (Category 100)

2.1 Classrooms: FICM Definition & Description

Classrooms include rooms or spaces under subcategory 110, which are generally used for scheduled instruction. Classrooms require no special equipment or configuration. Examples of such spaces include lecture rooms, seminar rooms, and general-purpose classrooms. Classrooms feature tablet armchairs, tables and chairs or other similar seating. They may also contain multimedia and telecommunications equipment. Also included in the calculation for this category are support spaces under subcategory 115 which serve one or more classrooms, such as projection rooms, prep rooms, closets, and storage areas.

2.2 Classroom Space Inventory

Classroom spaces were identified in the following locations:

Table 2a: Existing Classroom Space Locations (ASF)

Building Name	Existing Area With Support Space	Existing Area Without Support Space
Old Main	4,132	3,330
Moore Hall	1,676	1,676
Locklear Hall	2,560	2,357
Oxendine Science	10,767	10,667
Dr. Joseph B. Oxendine	3,220	3,220
DF Lowry	1,145	1,145
Former Business Admin. Building	11,589	11,447
English E. Jones	5,385	4,409
GPAC	3,923	2,434
Education Building	11,000	10,148
Dial Humanities	10,145	9,975
<i>Chavis (Bowling Alley)*</i>	<i>5,375</i>	<i>5,375</i>
Sampson	13,066	12,694
Caton Field House**	4,851	4,851
Weinstein Health Sciences	14,922	14,047
James A. Thomas Hall	11,884	11,884
Total	110,265	104,284

*Chavis Bowling Alley is excluded from the total.

**Caton Field House calculation includes room 126 and room 140.

*Calculation includes computer labs in non-science buildings.

Table 2b: Existing Classroom Space by Type

Building	Number of Rooms	Existing Area (ASF)
Seminar Rooms (3-19 Stations): 16		
Old Main	1	406
Dial Humanities	1	411
Sampson	3	1,668
Weinstein Health Sciences	9	2,528
General Classroom (20-49 Stations): 84		
Old Main	3	2,007
Moore Hall	2	1,676
Locklear Hall	3	2,357
Oxendine Science	10	6,431
DF Lowry	2	1,145
<i>Former Business Admin. Building</i>	<i>16</i>	<i>11,447</i>
English E. Jones	4	3,392
GPAC	1	689
Education Building	10	7,446
Dial Humanities	14	8,364
<i>Chavis Bowling Alley</i>	<i>1</i>	<i>5,375</i>
Sampson	9	7,555
Caton Field House	2	4,851
Weinstein Health Sciences	3	2,869
James A. Thomas Hall	4	3,982
Lecture (50+ Stations): 26		
Old Main	1	917
Oxendine Science	4	4,236
English E. Jones	1	1,017
GPAC	1	1,340
Education Building	2	2,702
Dial Humanities	1	1,200
Sampson	3	3,471
Weinstein Health Sciences	7	8,650
James A. Thomas Hall	6	7,902
Not Defined: 4		
Dr. Joseph B Oxendine	4	3,220
Total	130	104,284

2.3 A4LE Classroom Space Needs Formula

Classroom projections are based on the following A4LE formula:

Classroom Need* = Space Factor x WSCH

Space Factor =

$$\frac{\text{ASF per Student Station}}{(\text{Max. Number of Hours Room Used per Week} \times \text{Station Occupancy Rate})}$$

Where:

- a) ASF per station = 18 ASF
- b) Hours used per week = 35 hours/week
- c) Station occupancy rate = 0.65
- d) Weekly Student Contact Hours (WSCH)= number of hours a student will occupy a seat in a classroom per week; OR the number of students enrolled x credit hours for the course.

e) Projected WSCH = (2018 WSCH/2018 Student FTE) x (Projected Student FTE)

*ASF per station, hours used per week and station occupancy rates are based on standards and assumptions mandated by the University of North Carolina System. Guidelines are taken from the "FACILITIES INVENTORY AND UTILIZATION STUDY 2018 for The State of North Carolina, 52nd Edition" updated May 2020.

2.4 Classroom Space Needs Results

Applying the A4LE formula to existing and projected enrollment levels and WSCH at UNC Pembroke yields the following results:

Table 2c: Classroom Space Needs Results (ASF)

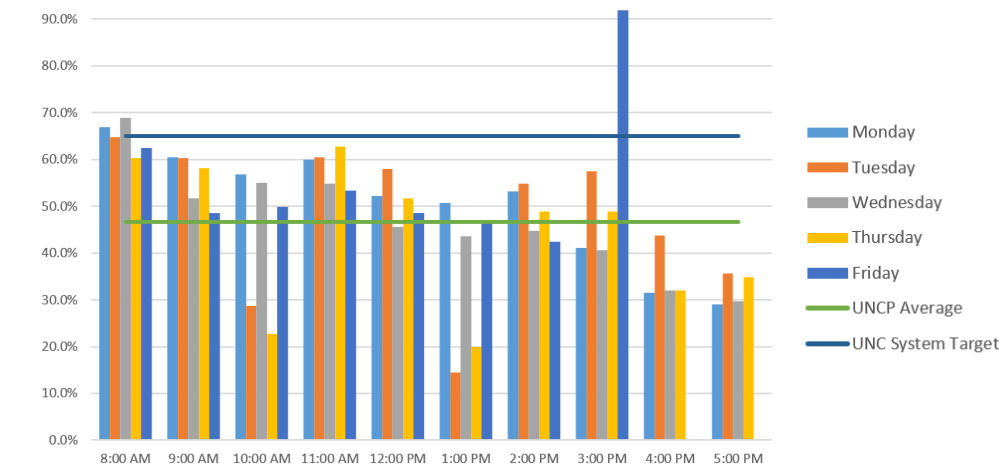
2018 Classroom Needs			2030 Classroom Needs	
Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
110,265	32,792	77,473	66,992	43,273

As compared to the A4LE classroom guidelines which project a current space need of 33,000 ASF, UNC Pembroke currently has a surplus of 77,473 ASF assuming 18 ASF per student station. The surplus decreases to 43,500 ASF in 2030 if there is no new construction in the classroom category.

2.5 Classroom Space Needs Conclusions & Areas for Further Study

Based on an analysis of Classroom Station Utilization Rates shown in Table 2d below, it is notable that despite the surplus of classroom space, the 2018 classroom utilization rate averages at 44% rather than the UNC System guideline of 65%. Though the UNC System guidelines recommend 18 ASF per student station in classrooms, UNC Pembroke’s average ASF per student station is approximately 21.5 ASF. Using this average station size instead of the UNC System guideline would decrease the surpluses significantly.

Table 2d Average Classroom Station Utilization Rates*

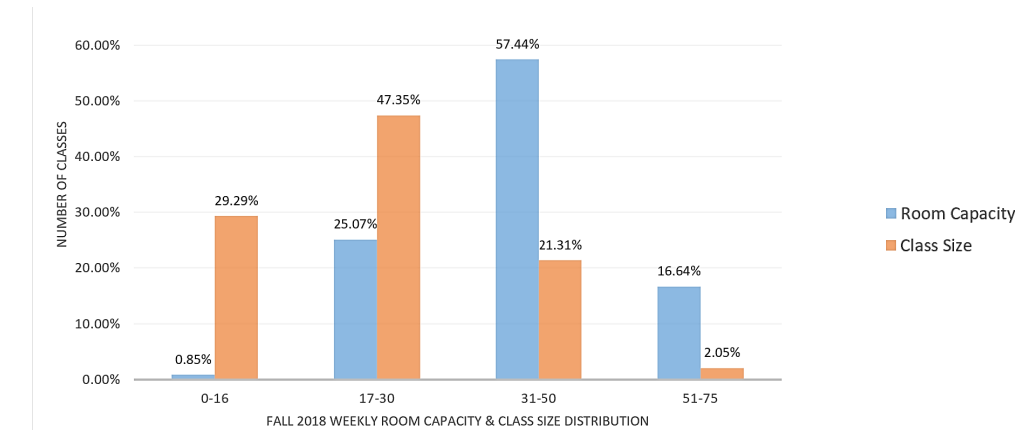


*The Fall 2018 Course Schedule includes 3 classes on Fridays at 3:00 PM which had a high station utilization rate (90%) or were slightly above capacity. This resulted in the above average station utilization rate shown above for Fridays at 3:00 PM.

It is recommended that UNC Pembroke develop an Instructional Space Master Plan in order to right size its various classroom spaces and student stations based on the type of classroom. For example, while 21 ASF would be a suitable station size for a flexible seminar classroom, the a smaller student station size of approximately 9 ASF should apply to a large lecture hall with fixed seating.

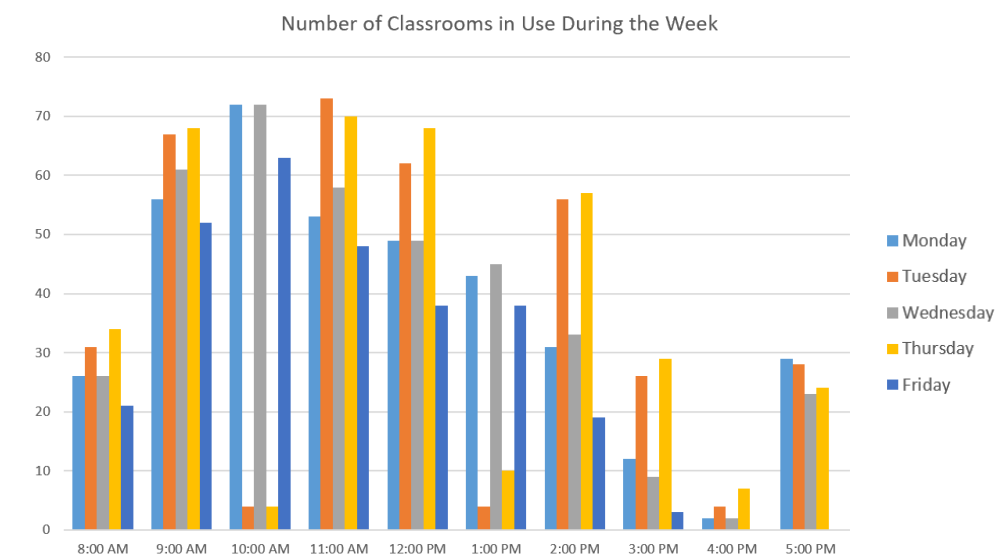
Table 2e also highlights the need for more classrooms in the seminar and general classroom categories. The Fall 2018 course schedule shows that a majority (77%) of classes had 30 or fewer students enrolled; however, many of the scheduled classrooms were larger than needed. Despite smaller class sizes, an analysis of the classroom building inventory shows that approximately half of the classrooms on campus feature more than 30 student stations. Furthermore, it appears approximately half of smaller size classrooms were not scheduled, particularly in the 0-16 station category which accounts for approximately 12% of classrooms. This could indicate that more efficient scheduling or matching of class enrollment and classroom size is needed. It may also indicate that UNC Pembroke should consider increasing the number of smaller classrooms on campus.

Table 2e Classroom Mismatch: Room Capacity vs Class Size



As shown in Table 2f, classrooms are mainly booked from 9:00 am to 2:00 pm, resulting in some missed opportunities to schedule more classes at 8:00 am and after 2:00 pm. It is also notable that classroom use decreases drastically at 10:00 am and at 1:00 pm on Tuesdays and Thursdays. This indicates that there might be opportunities for more efficient scheduling.

Table 2f Number of Classrooms in Use During the Week



Section 3: Teaching Laboratories & Open Laboratories Space Needs (Category 200)

3.1 Teaching Laboratories & Open Laboratories: FICM Definition & Description

Laboratories are spaces that include special equipment or configurations for instruction or research in a particular discipline or set of closely related disciplines.

Teaching Labs (Category 210) are typically scheduled, meaning that they generate weekly student contact hours (WSCHs), fulfill course requirements, and/or include the presence of an instructor or convener.

Open Labs (Category 220) are primarily used for instruction that is informally scheduled, unscheduled, or open. Open labs may also only be open to specific students or groups of students.

Examples of spaces in the 200 category include shops, computer labs, drafting rooms, band and choral rooms, music practice rooms, language laboratories, studios, theater stage areas, and health laboratories. As teaching laboratories, these spaces are scheduled and used for (group) instruction. As open laboratories, they may be used on an individual basis.

3.2 Teaching Laboratory Inventory (Category 210-215)

Approximately 46,000 ASF of Teaching Lab space was located in the following buildings:

Table 3a: Existing Teaching Laboratory Space Locations (ASF)

Building	Existing Area
Former Business Admin. Building	1,795
DF Lowry	489
Dial Humanities	2,522
English E. Jones	1,815
James A. Thomas Hall	1,386
Locklear Hall	6,347
Mary Livermore Library	717
Moore Hall	4,100
Old Main	156
Oxendine	19,397
Sampson	957
Weinstein Health Sciences	9,862
Total	47,748

Available Teaching Lab space increased to approximately 48,000 ASF in 2020 with the addition of the new Thomas School of Business.

3.3 A4LE Teaching Laboratory Space Needs Formula

Teaching Lab projections are based on the following formula:

Teaching Lab Need* = Teaching Lab Category Space Factor x WSCH

Where:

$$\text{Space Factor} = \frac{\text{Station Module Size (ASF)}}{(\text{Room Utilization Rate} \times \text{Station Occupancy Rate})}$$

The UNC System guidelines provide the following Teaching Laboratory standards from which the space factor for each category was derived:

Teaching Lab Category	Discipline	ASF per Station	Space Factor
Highly Intensive	Engineering (including Textiles), Applied Design, Dance, Dramatic Arts	108	7.2
Intensive	Agriculture, Architecture, Biological Sciences, Health Professions, Library Sciences, Physical Sciences	70	4.67
Moderately Intensive	Communications, Computer/Info Tech, Education, Art, Home Economics, Law, Psychology	50	3.33
Non-Intensive	Business, Cinematography, Music, Language, Letters, Mathematics, Public Affairs, Social Sciences	33	2.2

*ASF per Station Module Size and Space Factors are determined based UNC System standards outlined above and in the "Facilities Inventory and Utilization Study 2018 For the State of North Carolina, 52nd Edition" updated May 2020. Space Factors are based on a Percent Student Station Utilization (station occupancy ratio) of 75% and a Weekly Room Hour (room utilization rate) standard of 20 hours.

3.4 Teaching Laboratory Space Needs Results

Applying the A4LE formula to existing and projected enrollment levels and WSCH at UNC Pembroke yields the following results:

Table 3b: Current Teaching Laboratory Space Needs Results (ASF)

Teaching Lab Category	WSCH Fall 2018	2018 Lab Space (ASF)	Guideline	Surplus (Deficit) 2018
Highly Intensive	391	3,069	2,812	257
Intensive	5,142	27,024	23,997	3,027
Moderately Intensive	2,810	12,241	9,366	2,875
Non-Intensive	1,341	5,823	2,950	2,873
Totals	9,684	48,157	39,126	9,031

Table 3c: Future Teaching Laboratory Space Needs Results (ASF)

Teaching Lab Category	WSCH Fall 2030	Existing Lab Space (ASF)	Guideline	Surplus (Deficit) 2030
Highly Intensive	550	3,069	3,693	(894)
Intensive	7,247	27,024	33,821	(6,797)
Moderately Intensive	3,960	12,241	13,201	(960)
Non-Intensive	1,890	7209	4,158	3,051
Totals	13,648	49,543	55,142	(5,599)

As compared to the A4LE Guidelines which project a current space need of 39,000 ASF, UNC Pembroke has a surplus of 9,000 ASF the teaching lab category. Part of this may be explained by the fact only 29,000 ASF of the 48,000 ASF in teaching labs was scheduled in Fall 2018.

In 2030, the existing lab surplus becomes an overall deficit of 6,000 ASF if there is no new construction of teaching labs; however, since labs require specialized equipment, a review of deficits by category is

recommended. Looking more closely at the deficits by category, there is a projected deficit of almost 7,000 ASF in the Intensive Lab category, which includes labs for health professions and physical science.

3.5 Open Laboratory Inventory (Category 220-225)

Approximately 16,000 ASF of space is categorized as unscheduled or Open Lab space. Open Labs are located in the following buildings:

Table 3e: Existing Open Laboratory Space Locations (ASF)

Building	Existing Area (Current)
DF Lowry	1,312
Hickory Hall North	225
Magnolia House	391
Mary Livermore Library	35
Moore Hall	191
Moore Music Annex	464
Old Main	747
Oxendine	2,625
School of Education	1,784
Weinstein Health Sciences	8,611
Total	16,385

3.6 Open Laboratory Space Needs Formula

Open labs are not addressed in detail within the Facilities Inventory And Utilization Study 2018 for The State of North Carolina. The A4LE Guidelines also do not give specific recommendations regarding this category. Based on our research, it is noted that many higher education institutions provide 5 to 10 ASF per FTE student for open labs. In this calculation, we used 9 ASF based on other similar reports we have seen at the university level.

Teaching lab projections are based on the following formula:

$$\text{Open Lab Need} = \text{Open Lab Allocation per Student} \times \text{FTE Students}$$

3.7 Open Laboratory Space Needs Results

9 ASF per FTE student was allocated for the Summary of Space Needs provided in Tables 1a and 1b of this report; however, the open laboratory space needs formula was also applied with an assumption of 5 ASF and 10 ASF per FTE student station.

Applying the open lab formula to existing and projected enrollment levels yields the following results:

Table 3f: Open Laboratory Space Needs Results (ASF)

Year	FTE Students	5 ASF/FTE Guideline	5 ASF/FTE Surplus (Deficit)	9 ASF/FTE Guideline	9 ASF/FTE Surplus (Deficit)	10 ASF/FTE Guideline	5 ASF/FTE Surplus (Deficit)
2020	7,211	36,055	(19,670)	64,899	(48,514)	72,110	(55,725)
2030	8,540	42,702	(26,317)	78,864	(60,479)	85,404	(69,019)

3.8 Overall Laboratory Space Needs Results (Teaching Lab + Open Lab)

Combining teaching lab and open lab space needs yields the following results:

Table 3g: Combined Teaching and Open Laboratory Space Needs Results (ASF)

Existing Area	2018 Lab Needs		2030 Lab Needs	
	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
65,928	96,330	(30,402)	132,006	(66,078)

3.9 Laboratory Space Needs Conclusions & Areas for Further Study

Teaching Labs

As noted in Section 3.4 above, it is possible UNC Pembroke’s current surplus in teaching labs exists due to the fact that a number of lab spaces were either not scheduled or not included in the course schedule for Fall 2018. Unscheduled lab spaces in the 210 category include computer labs in Dial and Oxendine; art studios in Locklear Hall; science and healthcare labs in Weinstein; and music studios in Moore Hall. Despite the surplus of such spaces in 2018, a teaching lab deficit of approximately 6,000 ASF is projected for 2030.

Open Labs

The deficit of open labs will vary based on UNC Pembroke’s desired space allocation. While this analysis provided for 9 ASF per FTE student for open lab space, the University may determine that 5 ASF per FTE student is more appropriate. This difference in allocation of ASF per student would result in a difference of nearly 34,000 ASF.

Overall Assessment

The 2030 deficits in lab space may decrease upon further study of UNC Pembroke’s enrollment projections. Factors such as the number of online and on-campus FTE students as well as the projected number of graduate students on campus could decrease the amount of lab space needed. On the other hand, an expansion of health science programs on campus could increase the need for both teaching and open lab space.

Finally, it is noted that within UNC Pembroke’s DAVE system, some spaces that could be considered laboratories, such as teaching studios in the Music Department, are classified as offices. Others, which would be considered labs or study rooms, are classified as classrooms. These classifications should be reviewed, particularly within the 100, 200, and 400 categories, to ensure accurate categorization for the purposes of course scheduling and maintaining an up-to-date lab inventory. The lab space needs analysis is impacted by inconsistencies in space use codes as well as omissions of off-campus lab spaces, such as COMtech.

Based on the above analysis, it is recommended that lab spaces, enrollment breakdowns, and the expanding academic programs of UNC Pembroke be analyzed in more detail to fully understand the future space needs of the University. It is understood that a new space study is underway at the time of this writing.

Section 4: Research Laboratory Space Needs (Category 250)

4.1 Research Laboratories: FICM Definition & Description

Research labs are spaces used for experimentation, research, or training in research methods; professional research and observation; or a structured creative activity within a specific program or for sponsored research. These spaces are typically equipped for faculty, staff, and assigned students.

4.2 Research Laboratory Inventory

Approximately 2,600 ASF of Research Lab space is located in the following buildings:

Table 4a: Existing Research Laboratory Space Locations (ASF)

Building	Existing Area (Current)
Oxendine	1,458
Sampson	600
Dr. Joseph B. Oxendine	556
Total	2,614

Off-campus buildings were not included in the inventory.

4.3 Research Laboratory Space Needs

According to UNC guidelines, program considerations are the basis for justifying research space capital requests at UNC Pembroke. The *Facilities Inventory And Utilization Study 2018* for The State of North Carolina notes a recommendation to develop 4 categories of disciplines with the following ASF allowances per \$1 million of averaged expenditures:

Teaching Lab Category	Discipline	ASF per \$1M Averaged Organized Research Expenditures
Highly Intensive	Production Agriculture/Animal, Crop, Poultry, Soil Sciences	11,000
Intensive	Agricultural Sciences (other than Production Agriculture), Architecture and Related Programs, Conservation and Renewable Resources/Textiles, Forestry, Marine Sciences, Engineering, Health Professions, Physical Sciences	9,000
Moderately Intensive	Biological Sciences, Home Economics, Psychology	6,000
Non-Intensive	Applied Mathematics, Business, Communications, Education, Fine Arts, Languages, Law, Letters, Library Sciences, Public Affairs, Social Sciences	4,000

4.4 Research Laboratory Space Needs Conclusions

The expanding health sciences program and potential agricultural program could necessitate the addition of research lab space; however, such spaces would require private funding. The future need for research lab space will therefore be determined by UNC Pembroke’s academic priorities, regional partnerships, and funding opportunities that arise. It is recommended that the University consider these possibilities in collaboration with its external affairs and economic development functions.

Section 5: Office Space Needs (Category 300)

5.1 Offices: FICM Definition & Description

Offices are spaces that house working faculty, staff, and students. These areas typically feature desks, chairs, tables, bookcases, filing cabinets, computer workstations, or other office equipment. Also included in this category are office support spaces under subcategory 315, such as break rooms, kitchenettes serving office areas, copy rooms, closets, and storage areas.

5.2 Office Space Inventory

Approximately 204,000 ASF of Office space is located in the following buildings:

Table 5a: Existing Office Space Locations (ASF)

Building	Existing Area (Current)
Auxiliary & Business Services	6,732
Bob Caton Fieldhouse	3,505
Brave Health Center	2,720
Business Administration Building	8,817
Carter Hall	6,234
DF Lowry	6,701
Dial Humanities	7,981
Dogwood Building	1,709
Ebert House	1,156
English E. Jones	8,028
Givens Performing Arts Center	1,132
Hickory Hall	2,295
Hickory Hall North	2,301
James A Thomas Hall	8,678
James B. Chavis Student Center	7,370
Lindsay Hall	5,793
Locklear Hall	2,357
Lumbee Hall	25,847
Magnolia House	959
Mary Irwin Belk Hall	93
Mary Livermore Library	6,019
Moore Hall	4,050
North Hall	111
Office For Regional Initiatives	3,439
Old Main	7,867
Oxendine	14,158
Pine Cottage	1,464
Pine Hall	268
Sampson	5,222
School of Education	10,400
Thomas Entrepreneurship Hub	4,663
University Center Annex	2,586

Walter J. Pinchbeck Facilities Management Building	9,273
Weinstein Health Sciences	12,383
Dr. Joseph B. Oxendine	10,682
ROTC Building	804
Total	203,797

5.3 A4LE Office Space Needs Formula

Office space projections are based on the following formula:

Office Need = FTE Personnel x Office Module Size

The office module size is determined by personnel type. The number of office spaces is determined by the number of personnel employed by the University. This was provided by Institutional Research on 10/7/21 in the form of the 2018 IPEDS report. The 2020 IPEDS report was also reviewed.

Projections for the increase of personnel on campus were determined as follows:

1. Faculty growth projections are based on an overall faculty to student ratio of 1:18 through the year 2030.
2. Consistent with the 2011 Master Plan, staff growth is projected at 1% per year. Staff categories are broken down as follows:
 - a. Executive/Administration & Management
 - b. Clerical & Secretarial
 - c. Technical & Professional

The UNC System guidelines were used to determine office standards; however, the A4LE standards also provide office standards from which each office module size can be derived. The office module sizes are as follows:

Personnel Type	A4LE Office Module Size (ASF)	UNC System Office Module Size (ASF)
Faculty	155	190
Clerical & Secretarial	135	140
Exec/Admin & Management	240	275
Technical & Professional	155	190

As shown above, the office module sizes set forth by the UNC System guidelines are larger than those of the minimum A4LE Guidelines.

5.4 Office Space Needs Results

The UNC System guidelines are applied to the office space allocation in the Summary of Space Needs provided in Tables 1a and 1b of this report; however, the A4LE standards may also be used.

Applying the office space needs formula to existing and projected personnel at UNC Pembroke yields the following results:

Table 5b: Office Space Needs Results Based on UNC System Guidelines (ASF)

Existing Area	2018 Office Needs		2030 Office Needs	
	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Construction
203,797	178,945	24,852	210,131	(6,334)

Based on the current growth projections for faculty and staff, UNC Pembroke will have an office space deficit of approximately 6,000 ASF in 2030 if there is no new construction. Currently, the University has an office space surplus of approximately 25,000 ASF.

The following charts are a breakdown of the space needed based on the office module size guidelines and personnel type:

Table 5c: Breakdown of Office Space Needs Projection Based on UNC System Guidelines

UNC Guideline			2018*		2020*		2030	
Student FTE			5,549		7,154		8,540	
USER**	UNC	Data Input	Existing Pop	ASF Needed	Existing Pop	ASF Needed	Projected Pop	ASF Needed
Faculty	190	FTE	336	63,840	374	71,060	474	90,149
Clerical & Secretarial	140	FTE	156	21,840	156	21,840	165	23,053
Exec/Admin & Management	275	FTE	145	39,875	146	40,150	155	42,546
Technical & Professional	190	FTE	281	53,390	271	51,490	286	54,383
Totals			178,945		184,540		210,131	
Surplus (Deficit) (ASF)			24,852		19,257		(6,334)	

*Employment information based on 2018 & 2020 IPEDs reports; enrollment information at <https://www.uncp.edu/enrollment>

** Faculty growth is based on FTE student enrollment provided by UNCP Provost and a 1:18 student to faculty rate for all students. Staff growth is projected at a 1% per year

Table 5d: Breakdown of Office Space Needs Projection Based on A4LE Guidelines

A4LE Guideline			2018*		2020		2030	
Student FTE			5,549		7,154		8,540	
USER**	A4LE+	Data Input	Existing Pop	ASF Needed	Existing Pop	ASF Needed	Projected Pop	ASF Needed
Faculty	155	FTE	336	52,080	374	57,970	474	73,542
Clerical & Secretarial	135	FTE	156	21,060	156	21,060	165	22,230
Exec/Admin & Management	240	FTE	145	34,800	146	35,040	155	37,131
Technical & Professional	155	FTE	281	46,365	271	44,715	286	47,228
Totals			154,305		158,785		180,131	
Surplus (Deficit) (ASF)			49,492		45,012		23,666	

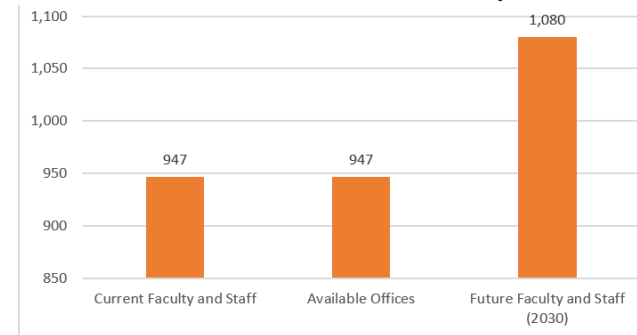
*Employment information based on 2018 & 2020 IPEDs reports; enrollment information at <https://www.uncp.edu/enrollment>

** Faculty growth is based on FTE student enrollment provided by UNCP Provost and a 1:18 student to faculty rate for all students. Staff growth is projected at a 1% per year

+A4LE recommended office sizes are provided in ranges as follows: Faculty (140-180); Clerical & Secretarial (75-140); Exec/Admin & Management (200-350); Technical & Professional (125-170); 2011 Master Plan ranges are used in this study

Based on the 2020 IPEDs report, some 947 faculty and staff occupy the 947 offices available on campus. 2030 projections anticipate a total of 1,080 faculty and staff. This will require an addition of approximately 130 new offices or office stations, as shown in table 5e:

Table 5e: Number of Offices vs. Current/Future Faculty and Staff



5.5 Office Space Needs Conclusions & Areas for Further Study

The office space deficit of 6,000 ASF in 2030 is impacted by several factors:

1. As noted previously, the application of UNC System guidelines for office space module sizes significantly increases the deficit for 2030. Use of the more moderate A4LE Guidelines results in a surplus of approximately 24,000 ASF in 2030.
2. The student to faculty ratio used for the projection of faculty office space is based on the overall ratio of 1:18, which includes graduate students. Using the faculty to undergraduate student ratio of 1:16 would decrease the number of faculty offices projected by approximately 76.
3. Depending on space planning, the repurposing of the former Business Administration Building to a student success-oriented use could decrease the overall office space inventory by up to 9,000 ASF. It is assumed a majority of the 45 offices in this building serve faculty rather than the staff that would typically be associated with a student success center.

Based on discussions with UNC Pembroke leadership, a further study of office assignments and utilization rates should be conducted. For example, it is unclear whether part-time staff and faculty are assigned offices and how often they are used. In addition to the assignment and utilization rates of offices, the distribution of office spaces should be reviewed. During the Listening Sessions conducted with faculty, a need for more evenly distributed office spaces across campus was mentioned.

The construction of James A. Thomas Hall added a significant amount of new office space in the central area of campus that currently accounts for approximately 4.25% of all office space; however, in discussions with faculty, the need for more office space on main campus was noted. The new Allied Health Science building will also likely decrease the projected 2030 deficit and add new faculty office spaces in the central area of campus.

6.1 Library/Study Space: FICM Definition & Description

This category includes libraries, study spaces and reading rooms, stacks, spaces combining study areas and stacks, processing rooms devoted to library support functions, and study service spaces that directly serve these functions. Study spaces may be located in libraries, residential facilities, student service facilities, or other areas intended for general study. They can also include multimedia equipment such as computers or microform readers. Study Space also includes “learning labs” or “computer labs” if they are not restricted to specific disciplines by equipment or software.

6.2 Library/Study Space Inventory

Approximately 40,158 ASF of Library space is located in the following buildings:

Table 6a: Existing Library Space Locations (ASF)

Building	Existing Area (Current)
James A Thomas Hall	5,749
James B. Chavis University Center	716
Mary Irwin Belk Hall	1,180
Mary Livermore Library	29,474
North Hall	1,165
Pine Hall	1,550
Sampson	120
Old Main	204
Total	40,158

6.3 A4LE Library/Study Space Needs Formula

Library space projections are based on the following formula:

Study and Library Allocation=

Reading Space + Stack Space + Service Space + Computer Space + Lounge & Merchandising Space

Where:

- a) Reading Space = (Faculty FTE x 5%) + (Student FTE x 10%) x 25 ASF/user
- b) Stack Space = Documents x .01 ASF/volume (the standard volume conversion based on media type is outlined below)
- c) Service Space = (reading space + stack space) x 25% service multiplier
- d) Computer Space = 1 ASF per 165 volumes (based on existing volumes per ASF of computer space)
- e) Lounge & Merchandising Space = 3 ASF per user x users (from “reading space” calculation)

Conversion of media types into number of bound volumes based on the A4LE methodology is as follows:

Table 6f: Estimated Computer Space Projections

Year	Media	Vol/ASF ref. Comp	Total ASF
2021	187,746	165	1,138
2030	209,023	165	1,267

Table 6g: Estimated Lounge & Merchandising Space Projections

Year	Total Users	ASF/user	Total ASF
2021	734	3	2,202
2030	878	3	2,633

Table 6h: Overall Library Space Needs Results (ASF)

ASF*	2028 Library Needs		2030	
Available	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit)
40,158	45,050	(4,892)	52,233	(12,075)

*Includes all 400 spaces across campus

6.5 Library/Study Space Needs Conclusion

Currently, there is a library space deficit of approximately 5,000 ASF. This is expected to grow to 12,075 ASF by 2030. Expanding Livermore Library to include a new reading room would mitigate this deficit; however, additional study space should be distributed throughout campus. UNC Pembroke should continue integrating study spaces into new academic buildings and residential facilities as it expands northward. As is noted in the 2011 space planning report, library spaces continue to evolve with changes in media and storage of information which should be considered during the construction and renovation of such spaces.

Section 7: Athletics and Physical Education (Category 520, 525)

7.1 Athletics and Physical Education: FICM Definition & Description

Athletics and Physical Education spaces are enclosed areas and rooms used by university students, staff, faculty, or the public for athletic or physical education activities. It includes enclosed areas such as gyms, athletic courts, weight and exercise rooms, bowling alleys, dance studios, and other indoor facilities such as tracks, pools, ice rinks, and indoor fields. Outdoor athletics and recreation facilities and fields are not counted in this category. It also does not include permanent covered spectator seating areas associated with athletic facilities (category 523).

7.2 Athletics & Physical Education Space Inventory

Approximately 83,303 ASF of Athletics & Physical Education space is located in the following buildings:

Table 7a: Existing Athletics & Physical Education Space Locations (ASF)

Building	Existing Area (Current)
Caton Field House	13,306
English E Jones Health Center	69,607
Johnson Stadium	288
Cox Field	102
Total	83,303

Though this category should include bowling alleys, it is noted that the Chavis Bowling Alley, which provides approximately 5,000 ASF of space, is classified as a classroom (Category 100) in the University's DAVE system. It is therefore not counted here.

7.3 A4LE Athletics & Physical Education Space Needs Formula

Athletics and physical education space projections are based on the following formula:

Athletics and Physical Education Allocation=

Core + [(Student FTE-3,000) x (10 ASF)] + Allowance for Intercollegiate Athletes + Ad Hoc

Where:

Core = 50,000 ASF

Allowance for Intercollegiate Athletes = 5,000 ASF

Ad Hoc = 0 ASF

7.4 Athletics & Physical Education Space Needs Results

Applying athletics and physical education space needs formula yields the following results:

Table 7b: Athletics & Physical Education Space Needs Results (ASF)

2018 Athletics & Physical Education Needs			2030 Athletics & Physical Education Needs	
Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
83,303	96,540	(13,237)	110,404	(27,101)

7.5 Athletics & Physical Education Space Needs Conclusion

The application of the guidelines indicates a current deficit of 13,000 ASF that will increase to 27,000 ASF in 2030. In this calculation, a 5,000 ASF allowance was made for intercollegiate athletes. UNC Pembroke can choose to remove this allowance, but there will still be a deficit of indoor recreational space through 2030. This calculation does not include any additional ad hoc space, which UNC Pembroke can add at its discretion based on internal deliberations and needs that are not foreseen in this report. Doing so would also increase the deficit.

Section 8: Audio/Visual/Television (Category 530, 535)

8.1 Audio/Visual/Television: FICM Definition & Description

Audio/Visual and Television spaces are used for the production or distribution of multimedia materials or signals such as TV studios, radio studios, sound studios, photo studios, video/audio/software production and distribution rooms, and media centers. This category also includes Audio/Visual/Television support spaces.

8.2 Audio/Visual/Television Space Inventory

Approximately 3,500 ASF of Audio/Visual/Television space is located in the following buildings:

Table 8a: Existing Audio/Visual/Television Space Locations (ASF)

Building	Existing Area (Current)
JACOBS HALL	1,059
JAMES A THOMAS HALL	10
OLD MAIN	2,409
Total	3,478

8.3 A4LE Audio/Visual/Television Space Needs Formula

Audio/Visual/Television space projections are based on the following formula with an allocation for institutions with fewer than 10,000 FTE students:

Audio/Visual/Television Allocation = 1 ASF x Student FTE

The allocation must be a minimum of 5,000 ASF.

8.4 Audio/Visual/Television Space Needs Results

Applying the audio/visual/television formula yields the following results:

Table 8b: Audio/Visual/Television Space Needs Results (ASF)

2018 Audio/Visual/TV Needs			2030 Audio/Visual/TV Needs	
Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
3,478	7,154	(3,676)	8,540	(5,062)

8.5 Audio/Visual/Television Space Needs Conclusion

The application of the formula indicates that there is a current deficit of 3,700 ASF of Audio/Visual space that will increase to 5,000 ASF in 2030 if there is no new construction in this category. As noted in the 2011 Master Plan, new models of education, which integrate more technology and take place online, could also affect needs for this type of space on the UNC Pembroke campus. This is especially relevant to UNC Pembroke’s online graduate programs and the increase in online teaching during the pandemic.

Section 9: Assembly & Exhibition (Category 610, 620)

9.1 Assembly & Exhibition: FICM Definition & Description

Assembly Space (Category 610) includes areas designed and equipped for assemblies of many people for events such as theater, concerts, pageants, or other such events. Examples of spaces in this category include theaters, concert halls, arenas, chapels, and livestock judging pavilions, regardless of their location. Assembly support spaces such as dressing rooms, storage, shops, and ticket booths are also included in this analysis.

Exhibition spaces (Category 620) include areas used for exhibition of works of art, artifacts, or other materials which are intended for general use by faculty, students, staff, and the public. Examples include museums, galleries, and planetariums used for exhibition.

Any assembly/stage areas or exhibition spaces used primarily for instruction are excluded from this category as they fall in the laboratory space category.

9.2 Assembly & Exhibition Space Inventory

Approximately 48,000 ASF of Assembly & Exhibition space is located in the following buildings:

Table 9a: Existing Assembly & Exhibition Space Locations (ASF)

Building	Total Existing Area (Current)	Assembly Area	Exhibition Area
Givens Performing Arts Center	22,697	22,697	0
James A. Thomas Hall	5,706	5,706	0
James B. Chavis University Center	858	858	0
Locklear Hall	1,095	0	1,095
Moore Hall	3,479	3,479	0
Old Main	7,643	1,264	6,379
University Center Annex	6,603	6,603	0
Total	48,081	40,607	7,474

9.3 A4LE Assembly & Exhibition Space Needs Formula

Assembly space projections are based on the following formula and UNC Pembroke’s status as a 4-year university with an established theater and music program:

Assembly Space Allocation =

Core + [2 ASF x (FTE Students - 5,000)] + Theatre Option + Music Option

Where:

Core = 14,000 ASF

Theater Option = 8,000 ASF

Music Option = 5,000 ASF

Exhibition space projections are based on the following formula and UNC Pembroke’s status as a university with 3,000-10,000 FTE students:

Exhibition Allocation = 1 ASF x FTE Students

9.4 Assembly & Exhibition Space Needs Results

Applying the assembly and exhibition space formula yields the following results:

Table 9b: Assembly Space Needs (ASF)

2018 Assembly Needs			2030 Assembly Needs	
Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
40,607	31,308	9,299	34,081	6,526

Note: While there is no deficit, GPAC has 1,600 seats and is used by the community. Fayetteville's Crown Center Theater which will be closed has 2,400 seats; the Arena which will close has an additional 4,500 seats.

Table 9c: Exhibition Space Needs Results (ASF)

2018 Exhibition Needs			2030 Exhibition Needs	
Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
7,474	7,154	320	8,540	(1,066)

9.5 Assembly & Exhibition Space Needs Conclusion

The application of the formula indicates that there is no current deficit of assembly and exhibition space, though there will be an exhibition space deficit of approximately 1,000 ASF in 2030 if there is no new construction in this category.

Though deficits are small, assembly and exhibition space should be studied more closely. Currently, the Givens Performing Arts Center anchors the main visitor gateway on campus and plays an important role in engaging the community. The closure of the arena and theater in the Crown Complex in Fayetteville in October 2022 may increase demand for such facilities. In addition, there have been discussions about including a Welcome Center in GPAC and updating the building to ensure ADA compliance and accessibility.

Section 10: Dining Facilities (Category 630)

10.1 Dining Facilities: FICM Definition & Description

Dining spaces include eating areas such as dining halls, cafeterias, snack bars, and restaurants. Dining facilities can be open to students, faculty, staff, and/or the public. They include seating areas and can be located in student life buildings, faculty clubs, residence halls, etc. Dining support areas, such as storage areas and kitchens, are included in this calculation.

10.2 Dining Facilities Space Inventory

Approximately 22,400 ASF of Dining Facility space is located in the following buildings:

Table 10a: Existing Dining Facilities Space Locations

Building	Total Existing Area (Current)
Auxiliary & Business Services	1,147
DF Lowry	1,101
James A. Thomas Hall	1,887
James B. Chavis Center	14,391
Mary Livermore Library	438
Cox Field	104
Weinstein Health Sciences	3,367
Total	22,435

10.3 Dining Facilities Space Needs Formula

Consistent with the 2011 Master Plan, the Pennsylvania State System of Higher Education Capital Facilities Planning and Programming Criteria has been used to calculate dining space needs, as there are no specific A4LE guidelines for this category. Dining space projections are therefore based on the following formula:

Dining Facilities Allocation = 6 ASF x FTE Students

10.4 Dining Facilities Space Needs Results

Applying the dining facilities space formula yields the following results:

Table 10b Dining Facility Space Needs Results (ASF)

Existing Area	2018 Dining Needs		2030 Dining Needs	
	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
22,435	42,924	(20,489)	51,242	(28,807)

10.5 Dining Facilities Space Needs Conclusion

The application of the formula indicates that there is a current dining facility deficit of 20,500 ASF that will increase to approximately 29,000 ASF in 2030 if there is no new construction in this category. Consistent with the 2011 Master Plan, it is recommended that dining spaces be scrutinized to account for students who eat off campus. It will also be important to ensure that there are adequate dining facilities distributed throughout the campus as UNC Pembroke continues to expand its physical presence northward.

Section 11: Student Services (Category 650-680)

11.1 Student Services: FICM Definition & Description

Student services include lounge, merchandising, recreation, and non-class meeting spaces as well as service and support areas in these categories. Examples of these spaces include upholstered seating areas, bookstores, student supply stores, exercise and general fitness rooms, and game rooms. Service space is also included for in the calculation of this category. Lounges that directly serves a specific or restricted area, such as a theater or a residence hall, are not included in this category.

11.2 Student Services Space Inventory

Approximately 52,500 ASF of Student Services space is located in the following buildings:

Table 11a: Existing Student Services Space Locations (ASF)

Building	Existing Area (Current)
Auxiliary & Business Services	15,872
Brave Health Center	388
Former Business Admin. Building	78
Caton Field House	272
Carter Hall	351
Dr. Joseph B. Oxendine	1577
Dial Humanities	260
Ebert House	147
English E Jones	847
Hickory Hall	219
Hickory Hall North	605
Johnson Football Field	144
James A Thomas Hall	231
James B. Chavis Center	11,967
Lindsay Hall	98
Lumbee Hall	1329
Magnolia House	216
Mary Irwin Belk Hall	1535
Mary Livermore Library	150
North Hall	1593
Office For Regional	3663
Old Main	77
Oxendine	995
Pine Cottage	470
Pine Hall	1245
Sampson	180
School of Education	108
Thomas Entrepreneur	6252
University Center Annex	514
Walter J. Pinchbeck Facilities Management Building	677
Weinstein Health Sciences	422
Total	52,482

Broken down by category, it appears that UNC Pembroke meets the minimum space allocations for each student services component:

Table 11b: Existing Student Services Space Locations by Category (ASF)

Category	Existing Area (Current)	Minimum Area Guideline
Lounge (650, 655)	21,709	5,000
Merchandising (660,665)	17,359	2,000
Recreation (670,675)	3,318	3,000
Meeting (680,685)	10,356	10,000

11.3 A4LE Student Services Space Needs Formula

Student Services space projections are based on the following formula:

$$\text{Student Services Allocation} = \text{Lounge Space} + \text{Merchandising Space} + \text{Recreation Space} + \text{Meeting Space}$$

Where:

- a) Lounge Space = [2.5 ASF x (FTE Students)] + [2 ASF x (FTE Faculty)]
- b) Merchandising Space = 2 ASF x FTE Students
- c) Recreation Space = 1.5 ASF x FTE Students
- d) Meeting Space = 2.5 ASF x FTE Students

11.4 Student Services Space Needs Results

Applying the student services space formula yields the following results:

Table 11c Student Services Space Needs Results (ASF)

2018 Student Service Needs			2030 Student Service Needs	
Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
52,482	61,551	(9,069)	73,542	(21,060)

Table 11d Student Services Space Needs Results Based on Space Categories (ASF)

Category	2018			2030	
	Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit)
Lounge (650, 655)	21,709	18,627	3,082	22,300	(591)
Merchandising (660,665)	17,359	14,308	3,051	17,081	278
Recreation (670,675)	3,318	10,731	(7,413)	12,811	(9,493)
Meeting (680,685)	10,356	17,885	(7,529)	21,351	(10,995)

11.5 Student Services Space Needs Conclusion

The application of the formula indicates that there is a current student services deficit of 9,000 ASF that will increase to approximately 21,000 ASF in 2030 if there is no new construction in this category. This deficit could be offset by the proposed renovation of the former Business Administration Building and the James B. Chavis University Center; however, it is important to distribute student services to make them accessible throughout campus. Listening sessions and surveys with students, faculty, and staff revealed that there is a need for indoor spaces where students can gather and rest. This is especially true for commuter students who have few places to go between classes.

Taking a closer look at specific student services categories shows that the largest deficits are in recreation and non-class meeting space, with deficits growing to 9,500 ASF and 11,000 ASF in each respective subcategory by 2030.

Section 12: Support Facilities (Categories 710-765)

12.1 Support Facilities: FICM Definition & Description

Support facilities provide centralized space for support systems and services of a campus to help keep institutional programs and activities operational. Categories 710-715 include central computer and telecommunications facilities; categories 720-245 include shops and central storage space and vehicle storage space; categories 750-755 include central service space; and categories 760-765 include hazardous materials space. The calculation for support facilities also includes associated support spaces.

12.2 Support Facilities Space Inventory

Approximately 52,300 ASF of support facilities space is located in the following buildings:

Table 12a: Existing Support Facilities Space Locations (ASF)*

Building	720-745 Category Existing Area (Current)	750-755 Category Existing Area (Current)
Auxiliary & Business Services	1,959	5,913
Brave Health Center	171	0
Dogwood Building	149	0
Ebert House	632	0
Moore Hall	34	0
Pine Cottage	1,390	0
Walter J. Pinchbeck Facilities Management Building	41,984	0
Lumbee River EMC	30	0
Total	46,349	5,913

*The building inventory showed no space in the 710-715 and the 760-765 categories; therefore, they do not appear in the above chart.

Broken down by category, it appears that UNC Pembroke does not have central computer and telecommunications space or centralized hazardous materials space:

Table 12b: Existing Support Facilities Space Locations by Category (ASF)

Support Facilities Space Category	Existing Area (Current)	Minimum Area Guideline
Central Computer & Telecommunications (710,715)	0	5,000
Shop, Central & Vehicle Storage Space (720-745)	46,349	2,000
Central Service Space (750,755)	5,913	3,000
Hazardous Materials Space (760,765)	0	10,000

12.3 A4LE Support Facilities Space Needs Formulas

Support facilities space projections are based on the following category-specific formula (“Specific Calculation”):

Central Service Space + Hazardous Materials Space

Where:

- a) Central Computer/Telecommunications Space = 4,000 + .75 ASF x (FTE Students - 5,000)
- b) Shop, Central & Vehicle Storage Space = Total ASF in all other space categories x 5% multiplier
- c) Central Service Space = 1 ASF x FTE Students
- d) Hazardous Materials Space = (.03 x ASF in the Research Lab Category) + (.02 x (ASF in the Shop, Central & Vehicle Storage Category))

Alternatively, the following general formula can be applied to calculate support space (“General Calculation”):

General Support Space Allocation =

Total existing ASF in all other categories x 6% multiplier

12.4 Support Facilities Space Needs Results

Applying the specific and general student services space formulas yields the following results:

Table 12c Support Facilities Space Needs Results Based on Calculation Used (ASF)

Calculation Used	2018 Support Facilities Needs			2030 Support Facilities Needs	
	Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
Specific Calculation	52,262	47,840	4,422	56,648	(4,386)
General Calculation	52,262	38,097	14,165	48,181	4,081

Table 12d Support Facilities Space Needs Breakdown Based on Specific Calculation (ASF)

Category	2018			2030	
	Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit)
Central Computer & Telecommunications (710,715)	0	5,616	(5,616)	6,655	(6,655)
Shop, Central & Vehicle Storage Space (720-745)	46,349	34,065	12,284	40,447	5,902
Central Service Space (750,755)	5,913	7,154	(1,241)	8,540	(2,627)
Hazardous Materials Space (760,765)	0	1,005	(1,005)	1,005	(1,005)

For 2030 projections of Shop, Central & Vehicle Storage Space, it was assumed that the full ASF of the space deficit (excluding support facilities space) would be built out by 2030. This assumption was made in part because the calculation for this category is a percentage of assignable square feet in all other built space categories on campus.

12.5 Support Facilities Space Needs Conclusion

The results of the support facilities calculation vary based on the whether the general or specific calculation is applied. The application of the General Calculation indicates that overall, there is an adequate amount of support facilities space. Based on the application of the general formula, there is a current support facilities surplus of 14,000 ASF, which will decrease to a surplus of 4,000 ASF in 2030.

The application of the Specific Calculation reveals that while there is no overall deficit of such spaces at the time of this writing, the overall deficit of support facilities will increase to 4,400 ASF in 2030. Taking a closer look at the breakdown of each category current and future deficits in the categories of central computer and telecommunications facilities, central service space facilities, and hazardous materials facilities, with the most significant deficit of 6,700 ASF in the central computer and telecommunications category. In addition, a review of the existing building inventory provided by UNC Pembroke reveals that there is currently no central computer and telecommunications space, nor is there hazardous material space on campus. UNC Pembroke should consider the importance of these support facilities as the campus continues to grow in the future. The potential relocation of the existing facilities offices to the north of campus could provide an opportunity to create such spaces in the next 20 years.

Section 13: Healthcare Facilities (Category 800)

13.1 Healthcare Facilities: FICM Definition & Description

A healthcare facility is a room equipped with one or more beds and used for patient care. Examples of healthcare facilities include general nursing care, acute care, adult or pediatric bedrooms, intensive care units, observation units, etc. Veterinary facilities are also included in the 800 category, though UNC Pembroke does not have any such facilities on campus. Associated support and service areas, such as storage areas and patient lobbies, are also included in the calculation for this category.

13.2 Healthcare Facilities Inventory

Approximately 2,400 ASF of support facilities space are in the following building:

Table 13a: Existing Healthcare Facilities Space Locations (ASF)

Building	Existing Area (Current)
Brave Health Center	2,408
Total	2,408

13.3 A4LE Healthcare Facilities Space Needs Formula

Healthcare facilities space projections are based on the following formula:

$$\text{Healthcare Facilities Allocation} = \text{Core} + [.3 \text{ ASF} \times (\text{FTE Students} - 2,000)]$$

Where:

- a) Core = 2,000 ASF

13.4 Healthcare Facilities Space Needs Results

Applying the healthcare facilities space formula yields the following results:

Table 13b: Healthcare Facilities Space Needs Results (ASF)

Existing Area	2018 Healthcare Facilities Needs		2030 Healthcare Facilities Needs	
	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
2,408	3,546	(1,138)	3,962	(1,554)

13.5 Healthcare Facilities Space Needs Conclusion

The results of the healthcare facilities calculation show that there is a small deficit of healthcare space that will increase slightly to approximately 1,500 ASF in 2030. UNC Pembroke could consider expanding Brave Health Center or moving these services to an entirely new facility in the future.

PART 2: ADDITIONAL SPACE STUDIES

Section 1: Introduction

This section of the space study is intended to provide general analysis of spaces that were not included in the 2011 Master Plan, but which were mentioned throughout the 2030 Master Plan process. It includes a general study of future housing needs and an overview of the minimum facilities required for a future agriculture program. These are areas that UNC Pembroke should consider, but each of them will require further study depending on the needs on campus at any given time.

Section 2: Agricultural Facilities (Categories 560-585)

2.1 Agricultural Facilities: FICM Definition & Description

Agricultural facilities included in this calculation include field houses (560), animal facilities (570-575), and greenhouses (580-585). According to the FICM, field houses are barns or other similar structures used as animal shelters or for storage and handling of farm products, supplies, vehicles, or implements. Animal facilities house lab animals used for research and/or instructional purposes. Greenhouses are transparent or translucent spaces that are used the cultivation or protection of plants or seedlings for research, instruction, or campus physical maintenance or improvement purposes. Where applicable, support spaces for each of these subcategories is also included in this calculation.

2.2 Agricultural Facilities Space Inventory

Based on Duda |Paine’s review of the building inventory provided, UNC Pembroke does not currently have any agricultural facilities on campus.

2.3 A4LE Agricultural Facilities Space Needs Formula

Agricultural facilities space projections are based on the following formula, which is an addition of all the subcategories noted above:

Agricultural Space Allocation = Field Buildings + Animal Facilities + Greenhouses

Where:

- a) Field Buildings = Core + (.1 ASF x FTE Students) + Ad Hoc
 - Core = 25,0000 ASF
 - Ad Hoc = 0
- b) Animal Facilities = .2 ASF x FTE Students or Ad Hoc
 - Ad Hoc = 0
- c) Greenhouses = .5 ASF x FTE Students or Ad Hoc
 - Ad Hoc = 0

The calculation assumes that UNC Pembroke agricultural program will include elements of both crop and livestock farming.

2.4 Agricultural Facilities Space Needs Results

Applying the agricultural facilities space formula yields the following results:

Table 2a: Agricultural Facilities Space Needs Results (ASF)

Current Agricultural Facilities Needs			2030 Agricultural Facilities Needs	
Existing Area	Guideline	Surplus (Deficit)	Guideline	Surplus (Deficit) if no New Constructon
0	30,723	(30,723)	31,832	(31,832)

Table 2b: Agricultural Facilities Space Needs Results (ASF) by Subcategory

Year	Field Buildings Needs
2021	(25,715)
2030	(25,854)

Year	Animal Quarters Needs
2021	(1,431)
2030	(1,708)

Year	Greenhouse Needs
2021	(3,577)
2030	(4,270)

2.5 Agricultural Facilities Space Needs Conclusion

The calculation of agricultural facilities space needs anticipates that UNC Pembroke will need some 32,000 ASF of agricultural facilities by 2030. As can be seen from ad hoc portions of each formula, much of the space needed can be determined at the University’s discretion. The above calculation uses FTE Students as the guideline since limited information was provided about the potential development and growth of the agricultural program. UNC Pembroke should determine its academic needs and identify regional partnerships to right-size facilities as this program is developed.

Section 3: Residential Facilities (Not included in FICM)

3.2 Residential Facilities Introduction

Housing is not a category specifically addressed in the A4LE Guidelines. Duda |Paine Architects’ study of housing is intended to provide a broad overview of housing need in the next 10 years. It does not provide the same extensive analysis of the Student Housing Master Plan completed in July 2019 by Rieth Jones Advisors. As noted in discussions with University leadership, the 2019 Student Housing Master Plan should be updated to reassess the housing market in light of the needs of UNC Pembroke, the 2030 enrollment projections and the COVID-19 pandemic, among other factors.

3.2 Residential Facilities Space Inventory

Based on the housing information provided, approximately 2,150 beds are available on campus in the following buildings:

Table 3a: Existing Residential Facility Locations & Beds

Gross Area	UNC Pembroke Residential Communities	Existing Beds
107,775	University Village Apartments (Juniors & Seniors)	354
207,422	University Courtyard Apartments (Juniors & Seniors)	336
39,571	Belk Hall (Traditional - Freshmen)	132
39,571	North Hall (Traditional-Freshmen)	192
122,723	Cypress Hall (Full Suite - All Classes)	476
82,500	Oak Hall (Full Suite - All Classes)	360
89,078	Pine Hall (Semi-Suite - All Classes)	300
Current Total Beds		2,150

3.3 Residential Facilities Bed Projection Formula

Current university policy requires that both freshmen and sophomores, which comprise approximately 50% of all undergraduates, live on campus. Based on an analysis of previous years, it is estimated that approximately 60% of freshmen and sophomores will live on campus, while the other 40% will be approved for waivers. It is also estimated that approximately 5% of juniors and seniors will live on campus. Residential facilities space projections are therefore based on the following formula, which results in an overall capture rate of 33%:

Beds Required =

On-Campus Freshmen + On-Campus Sophomores + On-Campus Juniors + On-Campus Seniors

Where:

- a) On-Campus Freshmen = (Total Student Head Count x 25%) x 60%
- b) On-Campus Sophomores = (Total Student Head Count x 25%) x 60%
- c) On-Campus Juniors = (Total Student Head Count x 25%) x 5%
- d) On-Campus Seniors = (Total Student Head Count x 25%) x 5%

This formula also assumes that North Hall and Belk Hall will once again be used for freshman housing as the pandemic restrictions are lifted.

3.4 Residential Facilities Space Needs Results

Applying the residential facilities formula and assumptions yields the following results:

Table 3b Residential Facilities Space Needs Results*

Year	HC Undergraduate Students	Estimated On Campus Students	Bed Surplus (Deficit)
2020	6,436	1,817	333
2030	7,238	2,352	(202)

*Per our conversation with UNCP leadership, we assume all Freshman and Sophomores without waivers will be required to stay on campus. Based on prior years, we estimate that approximately 60% of the freshman and sophomore classes will be required to stay on campus. Only 5% of juniors and 5% of seniors have been added in this calculation. This results in a total capture rate of 33% for 2030.

3.5 Residential Facilities Space Needs Conclusion

Given the assumptions made above, approximately 2,172 freshmen and sophomores will be living on campus by 2030. With the addition of juniors and seniors, the result is a total of 2,352 undergraduates living on campus. Based on UNC Pembroke’s current stock of 2,150 beds on campus, it is estimated that an additional 200 beds would be needed in the next 10 years.

Though UNC Pembroke does not currently have plans to expand its on-campus housing stock, our calculations indicate that some new housing may be required in the coming years.

Furthermore, as of this writing, freshmen are required to live in traditional-style residential communities on campus, of which there are currently 1,460 beds. While this stock is sufficient to house the estimated 1,086 freshmen living on campus in 2030, the potential demolition of North and Belk Halls, which provide 324 traditional-style beds, may also need replacement to ensure that there is an adequate supply of beds in the future. In the future, the University may consider forging relationships with developers to provide new and improved student housing, which may help bolster its mission and growth in coming years.

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IMAGE 41 UNCP James B. Chavis Student Center Annex

**UNCP Transportation Master Plan Update
Transportation Technical Memorandum
DAVENPORT Project Number 210202
Prepared for The University of North Carolina at Pembroke
May 2022**

1.0 Introduction

The University of North Carolina at Pembroke (UNCP) is in the process of updating its Campus Master Plan. DAVENPORT has been retained for the transportation component of this plan, specifically to review vehicle, pedestrian, bicycle, transit, and parking operations; access and circulation; and to provide recommendations for improvements where necessary.

1.1 Objectives and Process

The purpose of this review is to identify recommendations to achieve the transportation-related objectives of the University. These include:

- 1) Strive to be a walkable, bikeable community where people can travel safely and comfortably.
- 2) Promote a heart of campus where walking, cycling, and skateboarding are prioritized and vehicles are limited.
- 3) Provide parking at the perimeter of campus to reserve land at the center of campus for academic and student-oriented uses.
- 4) Reduce vehicular speeds around the perimeter of campus while improving access across major roadways.

This study involved obtaining input from University administrative staff, and the project team, as well as a review of recent plans and upcoming projects in the vicinity. The findings and recommendations are summarized in the following pages. Figure 1 shows the overall map of the UNCP campus.



Figure 1: UNCP Campus Map

2.0 Gateway

The primary gateway entrance for visitors to UNCP is via the roundabout on Prospect Road at University Drive. Lumbee Hall, which houses the admissions office, and the Givens Performing Arts Center (GPAC) are most easily accessed here. Limited visitor parking is present between the roundabout and these buildings, as shown in Figure 2. Adjustments to the gateway area should be considered to improve it. Consideration should be maintained for ease of visitor access and parking. Separating vehicular traffic from pedestrians, cyclists, and skateboarders is highly encouraged to reduce conflict points and increase safety.

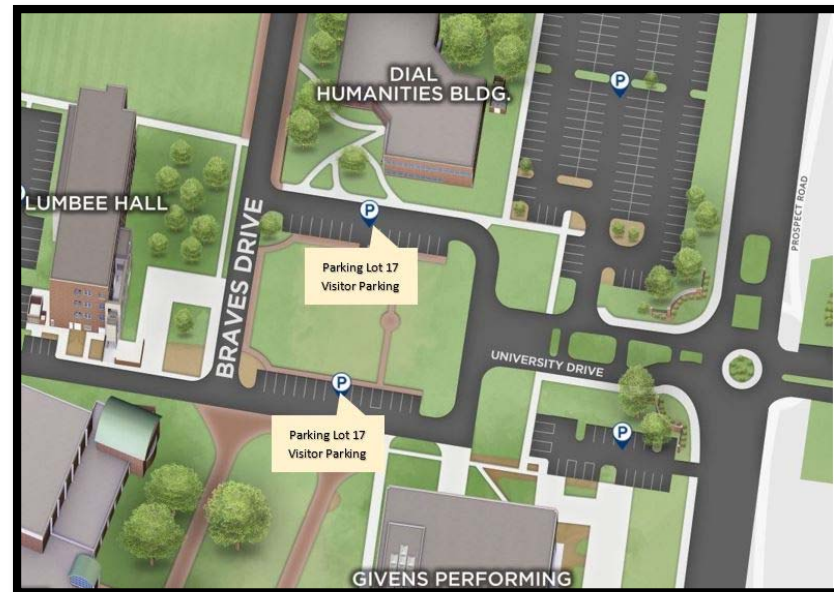


Figure 2: Map of UNCP Gateway

3.0 Pedestrian Accommodations

The University seeks to promote a pedestrian-friendly atmosphere, where students and staff are comfortable walking to all destinations on campus and outside the campus. A review of pedestrian-related conditions has been performed for the UNCP campus. While this section specifically focuses on pedestrians, reserving discussion of bicycles and skateboards for a latter section, many of these ideas are also applicable to wheeled, non-motorized travel and should be considered accordingly.

Currently, the University has a generally functional network of sidewalks and crosswalks throughout campus, which provides walkable routes both north/south and east/west. Figure 3 illustrates the major pedestrian routes in and around campus. However, several areas of deficiency were noted. These areas should be addressed to achieve the University's objective of a highly pedestrian-friendly campus environment.

- 1) Pedestrian safety issues exist at the intersection of University Drive and Braves Drive near Lumbee Hall due to pedestrian-vehicle conflicts.
- 2) Many crosswalks do not meet current ADA standards, e.g., Braves Drive at University Drive (north and south intersections).
- 3) Bringing crosswalk markings up to MUTCD standards (location, color, width, striping pattern) is required in various locations around campus. See Figure 4 for standard markings as shown in the Manual on Uniform Traffic Control Devices (MUTCD). Figure 5 shows an example of on campus crosswalk markings.
- 4) Speeding on University Road and a lack of marked crosswalks cause issues for pedestrians.
- 5) A speed study should be performed to determine the extent of speeding along University Road and to guide and inform recommendations.
- 6) Pedestrian accommodations, including crosswalks and lighting, are needed along University Road.
- 7) Prospect Road is missing a crosswalk to connect 698 Prospect apartments with campus.
- 8) An ADA-accessible ramp is provided to cross the railroad tracks at the end of Faculty Row and a second crossing is located at North Odem Street. Fencing does not currently exist to funnel pedestrians to appropriate crossings.
- 9) A crash history review showed two (2) reported crashes in the last 10 years of available data involving a pedestrian: one seriously injured (in 2013) and one killed (in 2015). Additional information is presented in the Crash Section.
- 10) Improved wayfinding is needed for pedestrians on campus. Any provided signage should be complementary to the recently completed Wayfinding Signage Study.
- 11) There are no noticeable gaps in the sidewalk network on campus.
- 12) Consideration should be given to widening some paths to accommodate higher traffic areas and/or wheeled non-motorized vehicles.
- 13) The area near the Lowry Bell Tower is a high traffic area that may benefit from wider sidewalk to facilitate ease of movement.
- 14) As in the 2011 Master Plan, it is proposed to convert Faculty Row to limit motorized travel to emergency and service vehicles, while providing landscaping and pedestrian-oriented access.

- 15) Similarly to how the 2011 Master Plan encouraged a connection between the Business School and Sampson Hall across Braves Drive in the form of a plaza that would favor pedestrian and bicycle priority compared to vehicular traffic, this Update encourages ultimately extending the Faculty Row/Braves Drive corridor as limiting motorized vehicles.
- 16) As in the 2011 Master Plan, reconfigure parking to reduce vehicular access to the center of campus.

Figure 5 shows yellow pavement markings for the crosswalks and stop bar instead of white and shows two different crosswalk patterns. The stop sign is not the correct octagonal shape, which, from behind, makes it unclear as to its function and less detectible to approaching drivers. Nonuniform regulatory signs have been shown to be less effective. Additionally, the placement of the crosswalk on the left does not meet MUTCD nor ADA standards.

Figure 3: Pedestrian Connectivity

Figure 4: MUTCD Examples of Crosswalk Markings

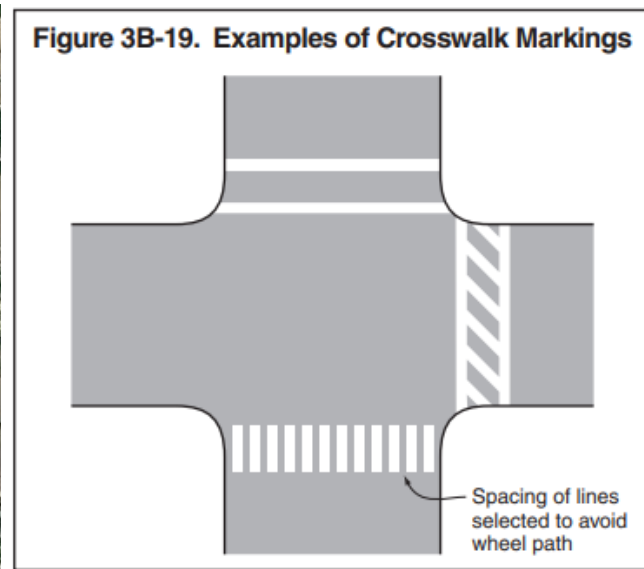
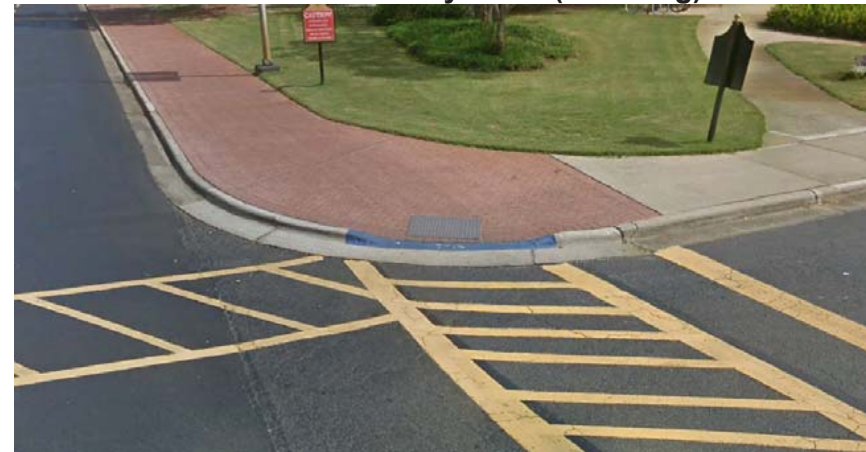


Figure 5: Braves Drive and University Drive (north leg) Northeast Corner



3.1 Planned Projects by Others

Planned pedestrian improvement projects in the area are discussed in the following paragraphs.

3.1.1 BUILD Grant¹: As part of a BUILD Grant to fund improved transportation infrastructure, the Town of Pembroke hopes to achieve the goal of providing new multi-modal transportation improvements to improve the safety, efficiency, and interconnectivity between the University of North Carolina at Pembroke (UNCP), the Lumbee Tribe of North Carolina, and downtown businesses and services. Phase 3A includes the installation of bike/pedestrian pathways between UNCP and Downtown with widened road shoulder, lighting, signage and road striping, and emergency call boxes.

There are approximately 400 bicycles on the UNCP campus, and half of students do not own vehicles. Walking downtown via Third Street is possible, but even with continuous sidewalk on the north and very few sidewalks on the south, the frequent curb cuts, high volume of traffic, and lack of landscaping actively discourage walking. The master plan recommends an alternate route via Railroad and College Streets at the north end of downtown. This pathway is planned to be a 10'-wide expansion of the roadway to accommodate both pedestrians and bicycles and includes a striped shoulder with lane marking and bike/ped symbols in signage and paving, conduit installation for new lighting, two safety police call stations, and bike racks at the Business Incubator building. The recommended upgrades to the Barker Street crossing will accommodate not only cars as before, but also enhanced crossings for pedestrians and cyclists walking their bikes.

The proposed handicap-accessible paths along Railroad Street and College Street will increase pedestrian and bicycle safety by diverting these modes of transportation to much less congested streets. The expansion of the pedestrian and bicycle infrastructure may reduce injuries to cyclists and pedestrians by as much as 50 percent by providing an alternate route.

The project is moving towards design and the surveying should be starting soon, according to the Town. Clearing utility poles began in 2021, and construction is anticipated to begin in the spring of 2022. Figure 6 shows the proposed location of the 1.2-mile bike/pedestrian path.

¹ FY 2020, Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants Program

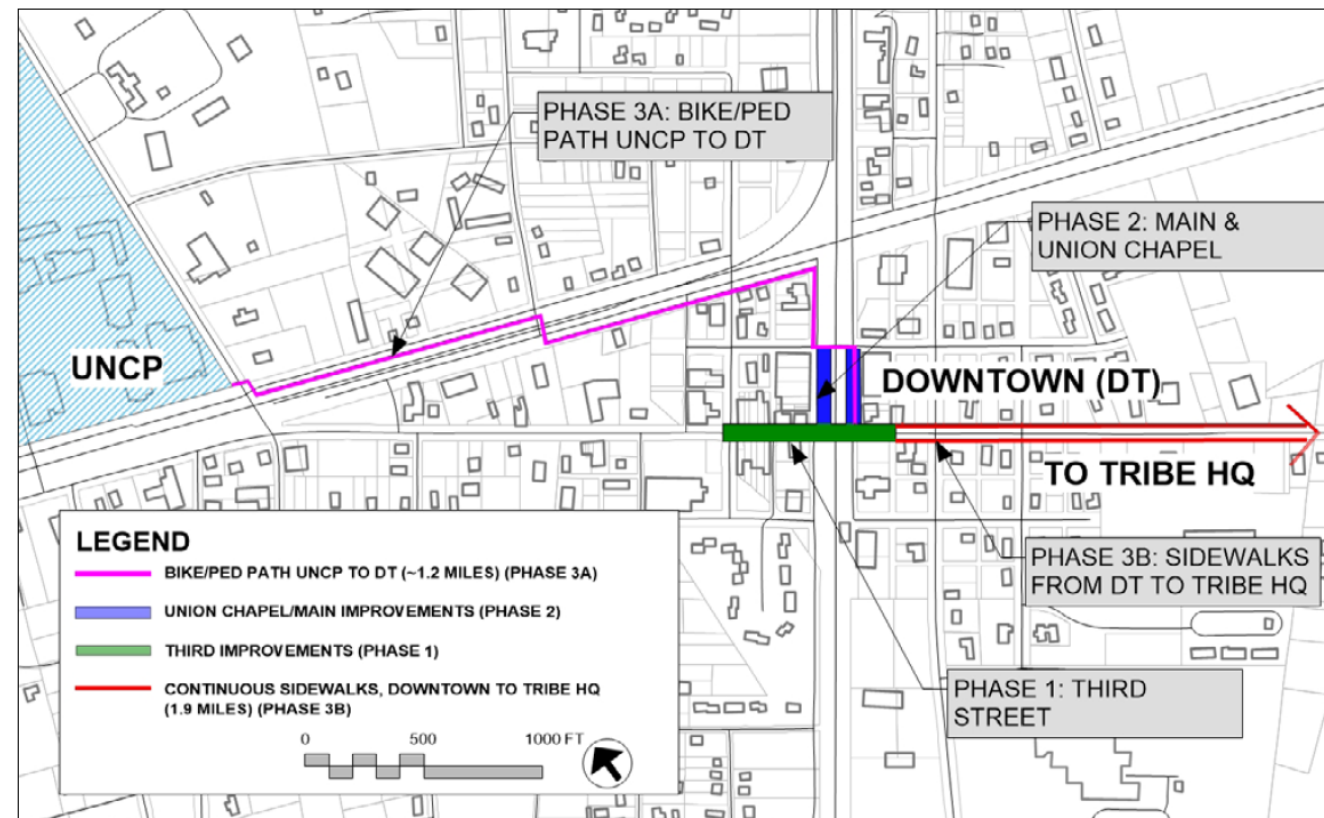


Figure 6: Planned Pedestrian and Bicycle Improvements between Town and University

3.1.2 Pembroke Traffic Separation Study (TSS): NCDOT recently completed a Traffic Separation Study in January 2020 to evaluate existing street/rail crossings in the Town of Pembroke. Specifically, the TSS evaluated two existing pedestrian at-grade crossings within the University campus along the CSX SE Line, which is an east-west corridor connecting Wilmington to Charlotte that carries 18 freight trains daily. Observations revealed that some pedestrians cross the CSX SE Line railroad tracks between the parking lot and the UNCP campus without utilizing either of the two existing pedestrian crossings and without looking left or right before crossing. Also noted was that some commuters appear to park within the CSX right-of-way at the northeast corner of the Odom Street at-grade crossing. Additionally, crash data from NCDOT and the Federal Railroad Administration (FRA) was analyzed from 1978 to 2017. Eight crashes involving train/vehicle collisions (no injuries or fatalities) were reported at University crossings.

One outcome of the study was a recommendation to install fencing along the rail corridor adjacent to UNCP to direct pedestrians to appropriate railroad crossing locations. As of the time of this writing, the University and NCDOT have a design and are coordinating details necessary prior to installation. Fencing should be constructed along the northern and southern boundary of the railroad corridor between SR 1561 (University Road) and Vance Street.

Furthermore, a recommended midterm improvement is to remove the existing partial pedestrian Z-crossing and construct a complete pedestrian Z-crossing just west of the existing location to connect to the existing pedestrian network on the UNC Pembroke campus. Figure 7 shows the proposed crossing.



Figure 7: Proposed Z-Crossing of Railroad Tracks at Faculty Row

At the current Odem Street crossing, the recommendation is to remove the existing pedestrian crossing and construct a sidewalk to connect Odem Street to the eastern end of the parking lot. The proposed sidewalk connection directs pedestrians to the existing sidewalk network to cross the tracks at Odom Street. Figure 8 shows the proposed sidewalk connection.

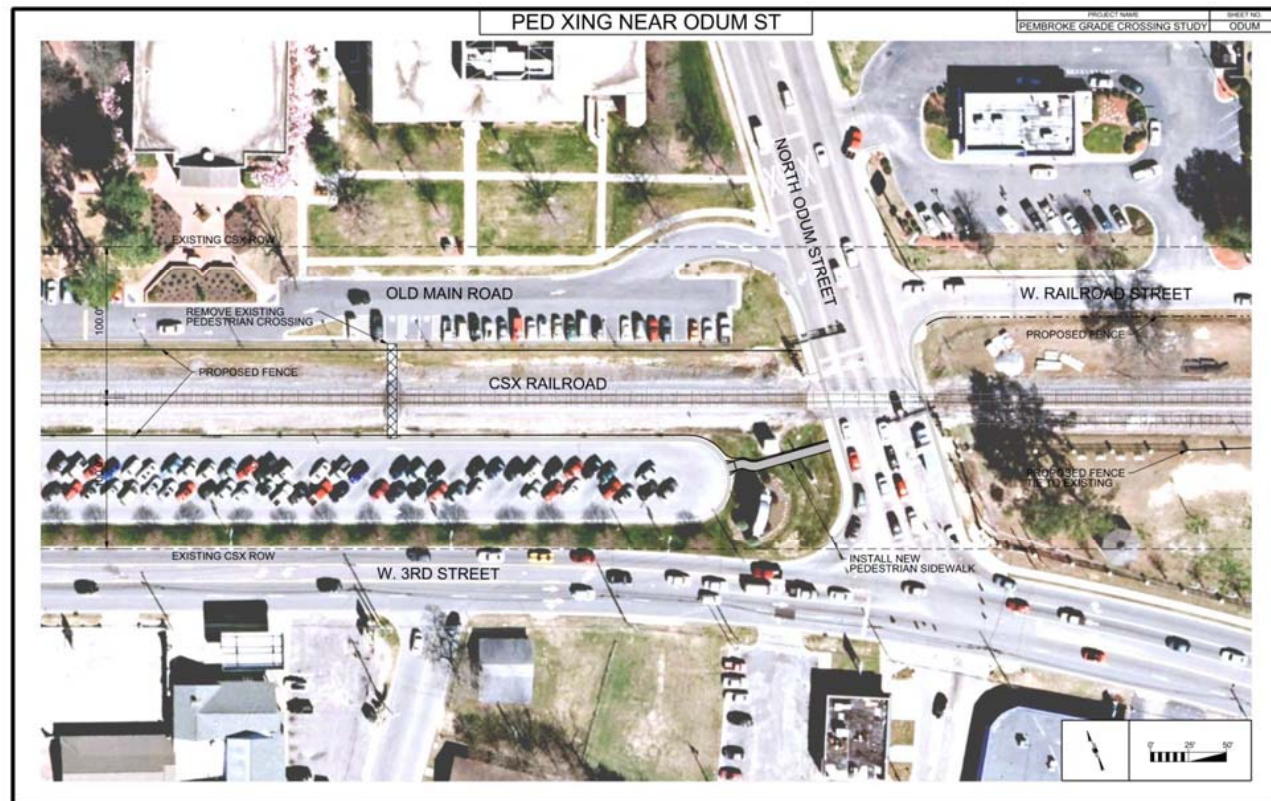
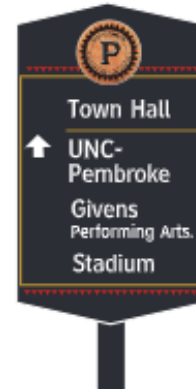


Figure 8: Proposed Sidewalk Connection to Direct Railroad Crossings to Odem Street

3.1.3 NC 711: Following improvements to Prospect Road along the eastern edge of the UNCP campus, a second project will widen a western portion of NC 711 (West 3rd Street) to multi-lanes and add sidewalks. This \$1.5 million state-funded project will improve connection of a commercial corridor with UNCP and is under design.

3.1.4 Branding & Wayfinding Signage Study: The study was completed in April of 2017, and the design is complete as of 2020. Wayfinding signage will welcome and orient visitors highlighting the features and spirit of Pembroke’s destinations. Two sizes were developed that will clearly indicate major destinations in and around Pembroke. Figure 9 shows an example of one of the wayfinding signs.

Figure 9: Wayfinding Signs



3.1.5 Jobs/Economic Impact: The University’s investment in the Business incubator and The Thomas Property Group investment in a new mixed-use building will create more interest in shopping and dining downtown. A Pembroke Market Analysis showed significant retail and restaurant leakage in downtown Pembroke. New construction will bring jobs and return investments to the community, while improving circulation through all transportation modes will begin to capture the money now being spent elsewhere.

3.2 Pedestrian Recommendations Summary

The development of pedestrian-related recommendations involved a review of existing deficiencies, information provided by the University and Town, previous planning efforts (including the 2011 University Master Plan) and sustained coordination with the project team. Table 1 provides a summary of the resulting recommendations, which are further discussed on the next page.

Table 1: Pedestrian Recommendations Summary

1. Focus on pedestrian paths and safety on and near campus.
2. Connect the upcoming Railroad Street multiuse path with campus.
3. Reduce the number and size of conflict points between pedestrians and vehicles.
 - Reconstruct the Gateway area to limit conflicts between vehicles and pedestrians at the intersection of University Drive and Braves Drive near Lumbee Hall.
 - Remove general traffic from Faculty Row near the School of Business.
 - Remove general traffic from Braves Drive
4. Reconstruct central spine along Braves Drive to provide a pedestrian greenway connecting the north and south ends of campus.
5. Provide separation for pedestrian traffic from wheeled non-motorized traffic when possible, including along the central spine.
6. Update existing pavement markings. Use standard high-visibility crosswalk pavement markings and standard signage across campus.
 - e.g., Braves Drive at University Drive (north and south intersections)
7. Install pedestrian wayfinding signage compatible with that recently developed for the Town.
8. Increase pedestrian-level lighting along University Road.
9. Perform a transportation study to determine the need to install crosswalks at key locations.
 - On University Road at Hawk Drive, University Drive, Faculty Row, College Terrace, and Old Main Road
 - On Prospect Road at 698 Prospect Apartments
10. Install sidewalk on the east side of University Road north of University Drive.
11. Perform a speed study along University Road to guide and inform recommendations.
12. Consider widening high-traffic paths or adding additional pedestrian routes to accommodate non-motorized vehicles and pedestrians, such as near the Lowry Bell Tower.
13. Encourage completion of new connections across the railroad and associated fencing.

3.3 Discussion of Key Pedestrian Recommendations

Connect Multiuse Path with Campus

To connect the future Railroad Street multiuse path requires crossing five travel lanes, a bike lane, and a median. Providing an offset crosswalk is recommended to direct those crossing to look towards oncoming traffic as they cross each side of the road. An example is provided in Figure 10.



Figure 10: Example of Offset Crosswalk

4.0 Wheeled Non-Motorized (Bicycle, Skateboard) Accommodations

The University seeks to foster a bicycle- and skateboard-friendly environment on and around campus, with safe and well-connected routes allowing users to reach any destination. Two sustainability goals for the campus are to become carbon neutral by the year 2050 and to improve the quality of your experience while on campus. This section provides a review of current bicycling facilities as well as recommendations to meet current and future needs.

Note that the recommendations in this section pertain to skateboards as well, which are widely used on campus, non-motorized scooters, or potentially to motorized scooters if/when they are allowed on campus in the future. Motorized scooters should use bicycle lanes but not sidewalks due to potential conflicts with pedestrians. When well-maintained bicycle lanes are available or sidewalks are crowded, skateboarders should be encouraged to use bicycle facilities.

At this time, dirt bikes, rocket bikes, gas scooters, four-wheelers, and privately owned golf carts are not allowed on campus streets, lots, or sidewalks. Staff do use golf carts on campus.

Figure 11 illustrates the major bicycle routes on the UNCP campus. The only designated on-street bike lane is on North Odum Street between Facilities Drive and Old Main Road with cyclists expected to merge with vehicular traffic to traverse the roundabout at University Drive and south of Old Main Road. Otherwise, cyclists ride in the street or on sidewalks.



Figure 11: Existing Bicycle Routes Network

A bicycle rental program is available on campus through the *Braves Share Program* that provides resources to students and employees with a valid Braves One ID. Bicycles must be checked out from one central location at the Student Center and returned the same day; they may not be kept overnight. The university currently buys bicycles from a vendor who provides repairs once a semester. Rented bikes, locks, and helmets have no associated fee as long as they are returned the same day. Additionally, UNCP offers free maintenance for student-owned bicycles.

Bike racks are stationed across campus at the following locations:

- Cypress Hall next to sidewalk at front entrance
- Oak Hall/Rear Entrance
- Moore Hall/left side of front entrance
- Health Science/East and West Entrances
- Sampson Hall/East and West Entrances
- Dial/front and back entrances
- Jones Center/North Entrance and West Entrance (shown in Figure 12)
- University Center/West Sideway Entrance
- GPAC/South side of front entrance
- Education Bldg. Front side/towards BA
- Belk and North/On back of buildings
- International Programs on Dogwood St.
- Village Apartments/Rear entrance of all buildings

Expanding the existing bike share program is recommended. The campus community would benefit from having additional locations to check out bicycles and being able to use them from early morning to the end of the day. This expansion could be accomplished by providing check out locations at residence halls and nearby apartments and/or by allowing bikes to be kept overnight. Outside vendors could be considered; some offer regular relocation of bicycles to high-demand areas while others require docking stations that reduce the number of bikes that would be left in undesirable locations.

Golf carts should also be kept in consideration since they are common for staff use, as shown in Figure 13.

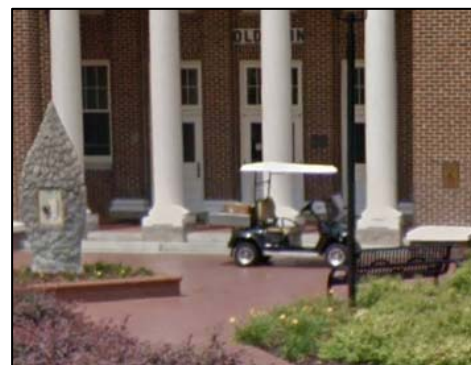


Figure 12: Bike Racks at Jones Health & PE Center Figure 13: Golf cart parked at Old Main

4.1 Bicycle Recommendations Summary

The development of bicycle-related recommendations involved a review of existing deficiencies, information provided by the University and Town, previous planning efforts (including the 2011 *University Master Plan*) and sustained coordination with the project team. Table 2 provides a summary of the resulting recommendations. These are further discussed in the paragraphs that follow.

Table 2: Bicycle and Skateboard Recommendations Summary

1. Foster a bicycle- and skateboard-friendly environment on and around campus.
2. Expand existing bike share program – locations and hours.
3. Support the BUILD Grant project to construct a multiuse path along West Railroad Street to North Odum Street. Ensure a connection to Old Main Road to continue connectivity to campus through coordination with the Town.
4. As general roadway or sidewalk improvements are made, consider expanding these facilities to accommodate bicycles and skateboards.
5. As a non-motorized corridor develops through the core of campus, provide separate areas for pedestrians and wheeled non-motorized vehicles. Where separate lanes are not delineated, implement a bicycle dismount zone to reduce conflicts between pedestrians and bicyclists.
6. Add bicycle lanes on University Road.
7. Cover bike racks where feasible.
8. Install wayfinding signage compatible with that recently developed for the Town to cover parking and key destinations.

4.2 Discussion of Key Bicycle Recommendations

Covered Bike Racks

It is recommended that the University install awnings or other types of shelter over bike racks where possible, such as is shown in Figure 14. This helps to keep bicyclists and their bikes dry from the rain, which makes bicycle travel more appealing. The covered structures can also be made highly visible in a way that advertises bicycling and promotes greater use. UNCP branding and/or branding to match the new wayfinding signs could be considered.



Figure 14: Example of Covered Bike Racks

Separate Bike and Pedestrian Lanes

It is recommended to designate separate bicycle and pedestrian paths along the central spine to reduce the number of conflicts between bicycles and pedestrians. A good design provides different lanes for users who travel at different speeds, as shown in Figure 15.



Figure 15: Example from Mass.gov of a Shared Use Path with Separate Bicycle and Pedestrian Lanes

5.0 Transit Services

The University has a limited shuttle service available to transport riders between campus, the grocery store, and limited shopping. To achieve truly multimodal transportation system objectives, additional routes are recommended to expand the transit services over the next several years. With parking on campus in high demand, shuttle services have the opportunity to gain popularity among students, staff, and faculty.

Moving forward with enhancement of transit for the future, this plan updates inventory of existing transit services, considers issues identified by stakeholders, and provides recommendations to help grow this fledgling service.

5.1 Braves Shuttle/SEATS (South East Area Transit System)

The school has piloted a local bus route before, but it did not catch on and had to be stopped early. A partnership between the Town and University might want to give it another try. The first pilot program began on August 15, 2016, and offered free service to students Monday through Thursday from 7:30 a.m. until 4:00 p.m. and Friday from 7:30 a.m. until 2:00 p.m. Stops included the Pavilion (Sampson/Village Apartments), Chavis University Center, and Old Main on campus and Pembroke Point Apartment Complex, Walmart, and downtown Pembroke at the Entrepreneurship Incubator off campus.

5.2 Braves Shopping Shuttle

The Braves Shopping Shuttle provides access to shopping and dining in the Town of Pembroke. The main purpose of the shuttle is to facilitate transfers between the University and key market locations in Pembroke. The shuttle offers transportation services from Monday through Friday from 3:00 PM until 7:00 PM and Saturday from 1:00 PM to 4:00 PM. Stops on campus include the Cypress Hall, University Courtyard Apartments, and North/Pine Halls. Riders can ride to Food Lion and Walmart. The service is free to UNC Pembroke students but requires registration, a sticker, and a valid ID. A limited version is available during the Winter Session for Wednesdays only.

Consideration should be given to making the riding process easier to students. After registering online, students must present their registration confirmation and receive a sticker for their ID. This process makes last minute decisions to use the transit service nearly impossible.

5.3 Airport Shuttle

The Airport Shuttle is available for transportation to or from the Raleigh-Durham International Airport (RDU). Reservations are required and the service follows a set schedule of one trip at the beginning and end of semesters, and Fall, Thanksgiving, and Spring Breaks. Consideration should be given to making the shuttle service more accessible to students whose flights may not fall on one of the ten scheduled days out of the year.

5.4 UNCP Access Shuttle (paratransit) [SUGGESTED]

The Access Shuttle would provide services to students that require trips off campus to health facilities or other appointment-based needs. This type of service is ideal for students, faculty, or staff that are unable to use alternative transportation methods or persons with disabilities who cannot use fixed-route vehicles.

5.5 Park & Ride Shuttle [SUGGESTED]

The main purpose of the park and ride shuttle is to enhance campus safety and minimize traffic congestion while providing convenient access. Shuttles would operate on a campus loop to facilitate transfers between parking lots, classes, or meetings. The route would circle campus, stopping at various locations during weekdays. Evenings and weekends could have fewer stops and run less frequently. Services should be free to UNCP students with a valid ID and could also be free to visitors. This service could easily be expanded for major events or conferences.

Establishing a relationship between enrollment and revenue also allows the transit system to expand service as needed to accommodate future growth and demand.

5.6 Transit Recommendations

The transit-related recommendations are listed in Table 3.

Table 3: Transit-Related Recommendations

1. Evaluate partnering with Town to restart local bus service.
2. Expand Braves Shopping Shuttle access for students.
3. Improve access to downtown.
4. Expand Airport Shuttle Service to be more accessible to students.
5. Provide a paratransit service to accommodate students without a vehicle, particularly those that must access medical care off-campus. This service could be started small and expanded as additional needs are addressed.
6. Implement a park and ride shuttle system as parking moves to the outer edges of campus.

6.0 Parking

A review of parking adequacy was undertaken, which considers not only parking supply and demand, but also the University’s objectives for a highly walkable and bikeable campus. The December 8, 2019, parking study by Kimley-Horn and Associates, Inc. was used as a reference.

Based on our observations as well as information provided by the University, the following is a summary of the parking-related needs or concerns that require improvements. Strategies to improve these conditions are discussed in the following sections.

- No shuttle system is available between parking lots and key campus destinations.
- For many users, the ability to park once and walk across campus without conflicts with vehicles was desirable.
- For some users, desired parking is difficult to find during typical school hours.
- Unloading, loading, and layover areas for charter buses are unclear.
- A parking deck was discussed briefly and eliminated from immediate future needs due to its high cost, particularly in comparison with the forecast parking needs.
- The 2011 Master Plan states that the Health Center requires adjacent parking for 45 cars and ambulance access.
- Excess parking spaces are available, nearly 900 spaces, though the distribution of user types (resident, commuter, staff/faculty, visitor, etc.) and location of spaces may not be ideal or in desired locations.
- A continuing recommendation from the 2011 Master Plan is to locate parking on the periphery of campus with the goal of eliminating pedestrian-vehicular conflicts in the interior of campus.

6.1 Existing Parking Supply

Table 4 summarizes the University’s parking inventory as provided by UNCP in 2022. As shown, the University has approximately 3,500 parking spaces, all of which use surface lots.

Table 4 - Parking Inventory Summary								
	FEV/EV	Handicap	Visitor	Reserved	F+S	Commuter	Residential	Total
South of Old Main Rd	0	5	0	0	0	165	0	165
Old Main Rd to University Dr	0	3	0	0	49	303	100	455
East of Prospect Rd	2	83	16	59	454	361	192	1,164
W of Univ. Rd, S of Chevelle Rd	0	25	0	0	14	54	225	318
W of Univ. Rd, N of Deese Rd	8	42	25	31	162	49	351	769
University Dr to Facilities Dr	0	0	0	0	0	244	0	244
North of Facilities Dr	0	18	5	1	0	84	343	451
Total	10	176	46	91	679	1,260	1,211	3,566

*Data provided by UNC Pembroke. Totals of parking space type do not match total number of spaces.

Key Points from the Kimley-Horn Study

The 2019 study showed excess parking spaces available during peak demand for commuters, residents, and faculty/staff. Visitor parking spaces were full. The study also indicated that there are nearly 900 unused excess parking spaces available before reaching the higher range of optimal parking efficiency of between 85% and 95% utilization, at which point drivers have difficulty locating an open space.

Resident spaces should be reallocated to accommodate projected parking needs of other users, such as commuter and visitor. The study recommends that no new parking should be built.

Parking Supply Ratio

The parking supply ratio can be used to quantify parking by specifying the number of parking spaces compared to the total campus population. These numbers assume all students are in person and do not have a reduction for online programs, COVID restrictions, or other scenarios that would allow virtual attendees. In 2020, the university had approximately 7,211 students and 947 faculty and staff members for a total campus population of 8,158 people. With 3,566 parking spaces available, the existing parking supply ratio is 0.44 for the entire campus, or the equivalent of 44 parking spaces per 100 campus members. The student parking supply ratio is 2,564 student spaces to 7,211 students for an existing student parking supply ratio of 0.36, or the equivalent of 36 parking spaces per 100 students. These values are included in Table 5 in the red highlighted row.

Comparing to other universities, UNC Pembroke has slightly more parking than the campuses of Iowa State, Oregon State, and Washington State University but less than universities like Auburn, Clemson, or NC State. Western Carolina University has a parking ratio goal of 0.33, Fayetteville State University has 0.32 spaces per student excluding Freshmen.

Looking towards the future, anticipated numbers for 2030 increase to approximately 9,705 total students and 1,171 faculty and staff members. With no changes to the current parking, the future parking supply ratio in 2030 would be 0.33 for the campus, as shown in the blue highlighted row.

The 5th Edition of the ITE Parking Generation Manual (Land Use Code 550) gives a **parking supply ratio of 0.32 per school population** and 0.40 per student population for a university in a general urban/suburban location not within ½ mile of rail transit.

At the current UNCP population trajectory, the peak period parking demand is anticipated to be about 2,900 to 3,500 parking spaces in 2030 with a parking supply ratio of 0.32. Without increasing the number of parking spaces, the 2030 ratio for the on-campus population would drop to 0.40, as shown in the yellow. The recommended ratio is around 0.32. Increasing the number of parking spaces gives a ratio of 0.52 spaces per person on campus, as shown in purple.

A lower parking supply ratio increases the demand for alternative mobility options.

Table 5 – Existing and Potential Parking Ratios

Year, Assumption	Students	Staff and Faculty	Total Population	Available Parking Spaces	Student Parking Spaces	Parking Ratio for Campus	Parking Ratio for Students
2020, All in person	7,211	947	8,158	3,566	2,564	0.44	0.36
2021, FTE	7,154	947	5,985	3,566	2,564	0.44	0.36
2030, All students	9,705	1,171	10,876	3,566	2,564	0.33	0.26
2030, in-person*	7,855	1,171	9,026	3,566	2,564	0.40	0.33
2030, All students	9,705	1,171	10,876	4,695	n/a	0.43	n/a
2030, in-person*	7,855	1,171	9,026	4,695	n/a	0.52	n/a

**In-person assumed as 25% of graduate students plus all undergraduates plus all faculty and staff*

6.2 Existing Parking Registration

Vehicle registration, fee, and shuttle information is summarized in Table 6. All vehicles must be registered and display a current parking permit. Parking enforcement is from 7:30 a.m. to 5:00 p.m. on weekdays, and violators will be issued citations. Fees for Commuter Students are \$91 for a semester or \$147 for an annual permit. Resident Students pay \$80 per semester or \$133 annually. Summer-Only Student have a \$54 fee for the three months. Faculty/Staff may pay \$433 for a reserved parking space or a variable fee based on salary of between \$139 and \$175 for a non-reserved space. Temporary permits are available for visitors and temporary employees at \$22 per month. Short-term visitors may use visitor parking spaces for thirty minutes or one hour. If visiting campus for more than one hour, visitors are required to obtain a parking permit at the Traffic Office in Business Services Building. Those who will be visiting campus for more than one day will be charged a \$5 permit fee. Bicycles must have a permit.

Faculty/staff and students must park in their respectively assigned areas, or in GENERAL parking (Lot #14, #23 & #24) if their area is full. Remote parking lots marked “Day Lot” are for general parking at a reduced rate and are available 7:30 a.m. – 5:00 p.m., Monday through Friday.

Reserved parking for conferences or events can be arranged in advance by contacting the Traffic Office. Conference guests will be required to display temporary parking permits. The sponsoring department should obtain these in advance through the Traffic Office.

Conversations with the stakeholders indicate that permits are often not purchased and drivers do not adhere to parking in their designated lots. Listed penalties for traffic violations include moving violations recorded on the individual’s driver’s license record and fees ranging from \$15 for most parking violations to \$60 for failure to register vehicle or parking in a handicapped space.

Table 6 – UNCP & Peer University Parking Fees and Related Data						
	UNCP	Francis Marion University	NC Central University	Western Carolina University	Virginia State University	Northeastern State University
# of Students, % Living on Campus	8,262 33%	4,240 41%	8,011 53%	12,243 37%	4,362 83%	7,517 19%
Vehicle Registration Fee	See below	\$20	\$300; \$475 parking deck	See below	See below	See below
Reserved Parking	\$433	n/a	\$575-675, person-specific	\$588	\$150	n/a
Faculty/Staff	Salary-based \$139-\$175	n/a	\$475	Salary-based \$132-\$363	\$119	\$25
Student	Commuter \$91 semester, \$147 annual; Resident \$80/semester, \$133 annual	n/a	\$300	Freshman to Juniors \$400; Seniors, Graduate Students, Commuters \$324	\$75 No freshman parking	\$25
Motorcycle	Treated as a motor vehicle	n/a	\$300	\$42	Treated as a motor vehicle	\$10, Must use motorcycle parking
Temporary employees	\$22/month	n/a	n/a	n/a	\$5 monthly	n/a
Visitors	\$5 or 30- to 60- minute visitor spaces	Appears to be free	Metered or using visitor decal in designated spaces	Metered	Must obtain free permit	Free parking for one day; with free permit for two weeks
PE/Recreation/ Wellness Center after 4 PM	n/a	n/a	\$40	n/a	n/a	n/a
Shuttle	None	Florence Transit PDRTA provides free hourly service	Eagle Shuttle, 20 minute headway	CatTran	Free VSU shuttle to town on Thursday-Sunday	

Figure 16 shows Lot 14, which has both commuter and faculty & staff parking indicated by colored lines. The colors are difficult to differentiate. Separating lots, where practical, may reduce drivers searching for an available space or parking in the wrong user-type space since they would not need to enter a lot without their designated color.

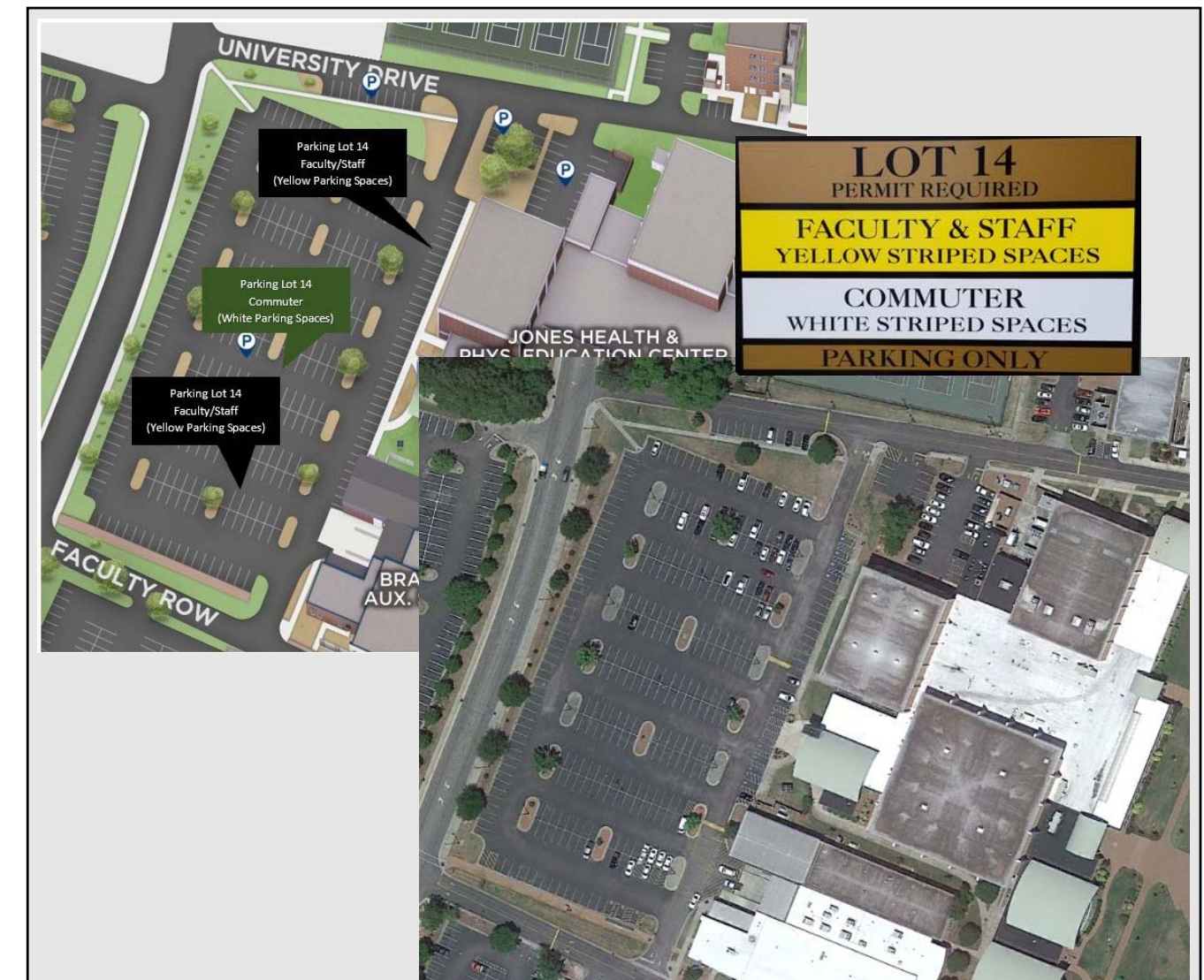


Figure 16: Shared Parking Lot with Yellow and White Designations

6.3 Future Parking Supply

It is recommended to lower the parking supply ratio (currently 0.44) to 0.33. This decrease accounts for the following factors:

- 1) Excess parking spaces nearing 900. Reallocation of spaces is recommended.
- 2) Remote classes and remote working as a result of the COVID-19 pandemic. There may be a permanent increase in telecommuting after the pandemic has ended, in addition to the typical level of online students.
- 3) Peer institutions have similar parking supply ratios.

Future campus population estimates were provided by the University. Table 7 shows the necessary future parking needs to meet a 0.33 parking supply ratio.

Table 7: Parking Projections Summary			
Existing Campus Population / Enrollment (Fall 2020)			
	Students	Faculty/Staff	Total
	7,211	947	8,158
Existing Parking Supply (2022)			3,566
Parking Supply Ratio (2020)			0.44
10-Year Projections (2030)			
	Students	Faculty/Staff	Total
	9,705	1,171	10,876
Goal Parking Supply Ratio			0.33
Total Required Spaces to Meet Goal Ratio			3,589
Additional Spaces Required			23

Off-Campus Lots

The Lumbee Regional Development Association (LRDA) lot across the street from Hawk Drive is utilized for parking and occasionally charter buses. Lots east of Burger King and KFC are also leased. The Baptist Student Center lots are used when not needed by the campus ministry; staff has expressed an interest in being a part of the parking solution for UNCP.

6.4 Parking Recommendations

The development of parking-related recommendations involved a review of existing deficiencies, information provided by the University and Town, previous planning efforts (including the 2011 Master Plan and the 2019 Parking Study), and sustained coordination with the project team. Table 8 summarizes the parking-related recommendations.

Table 8: Parking-Related Recommendations

1. Reallocate resident parking to other user groups, including commuters and visitors. Periodically evaluate allocations between user groups as growth occurs.
2. Purchase land east of Prospect Road near the Gateway. Construct new surface lot to provide additional capacity for special events and visitor parking.
3. Begin conversations with the Baptist Student Center regarding purchasing land.
4. Remove parking and parking access from Braves Drive.
5. Relocate parking to the periphery of campus.
6. Use the west side of the football stadium for parking. It is 1/3 mile to Lumbee Hall.
7. Incentivize getting or penalize not having a parking permit after an adequate grace period for students, faculty, and staff.
8. Vary parking permit prices by lot location, demand, and user type.
9. Consider closing part of the lot south of the RR tracks.
10. Construct a new parking lot near the Health Center (on the northwest side of campus).
11. Construct new surface parking areas on the north end of campus.
12. Consider relocating intramural field with additional parking and replacing with a building to mirror the new school of business.
13. Ensure adequate bicycle parking is available in key locations. Consider covered parking and locker options.
14. Long term: Create park and ride lots.



7.0 Crash History

Intersection crashes near the University occurring from 2016 to 2020 are shown in Figure 17. All the recorded crashes at intersections, available from NCDOT data, occurred along West 3rd Street. An additional NCDOT data set was reviewed to determine the fatal or serious injury crashes that occurred in the area from 2011 to 2020 as shown in Figure 18. There have been three serious injury crashes along West 3rd Street in 2011 and 2013, one of which involved alcohol. In 2015, prior to the corridor improvements, there was one pedestrian fatal crash on Prospect Road.

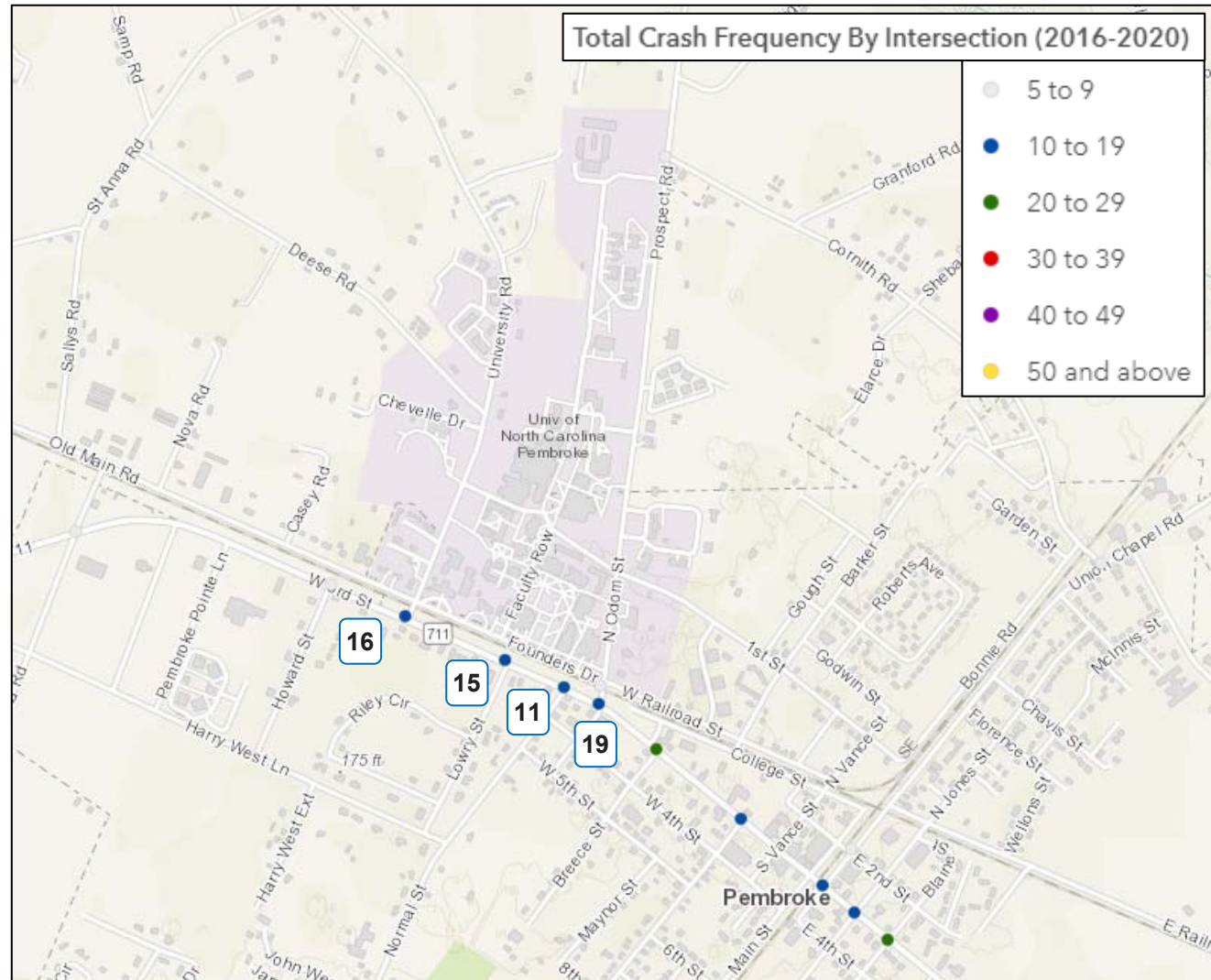


Figure 17: Intersection Crashes (2016-2020)

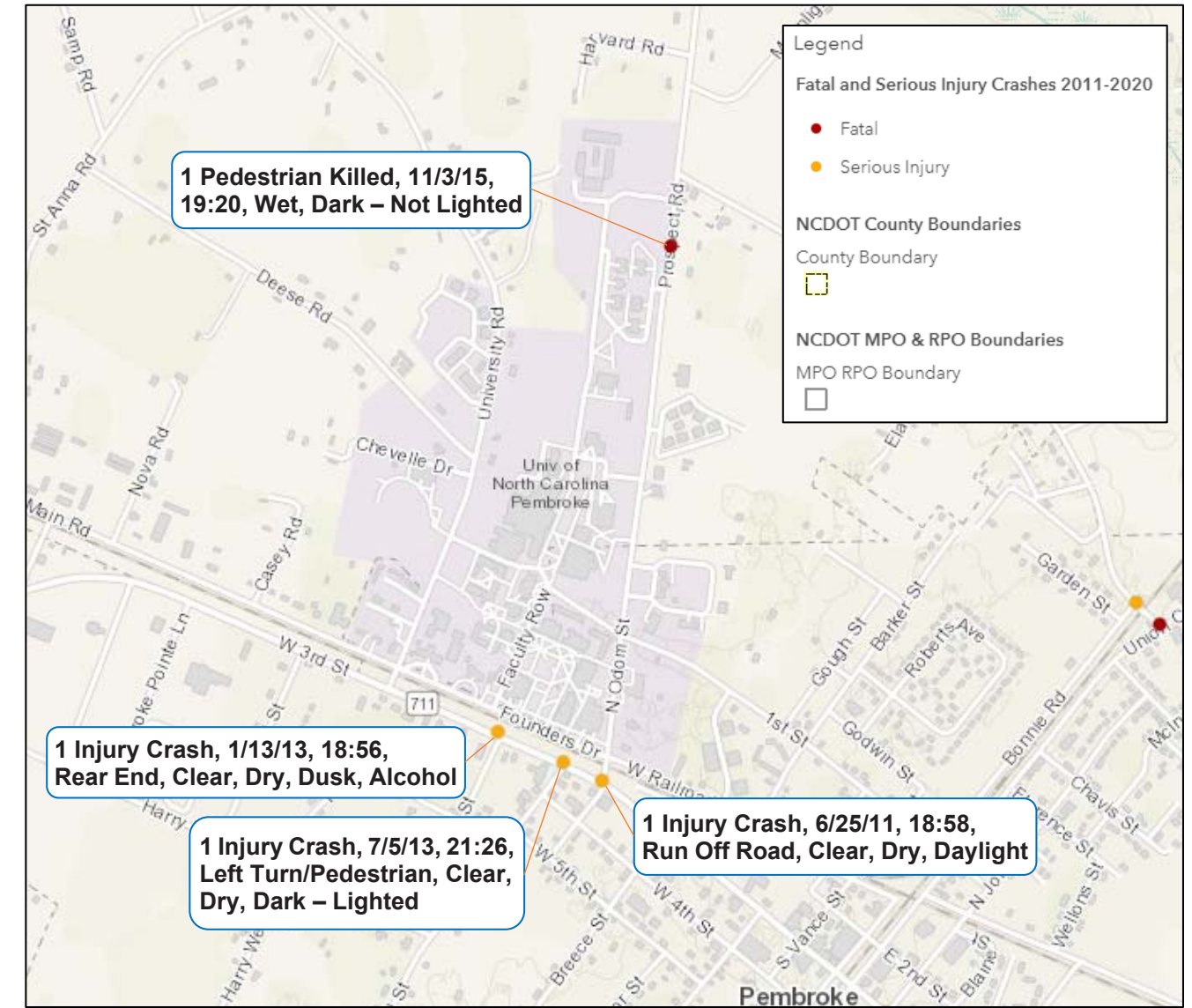
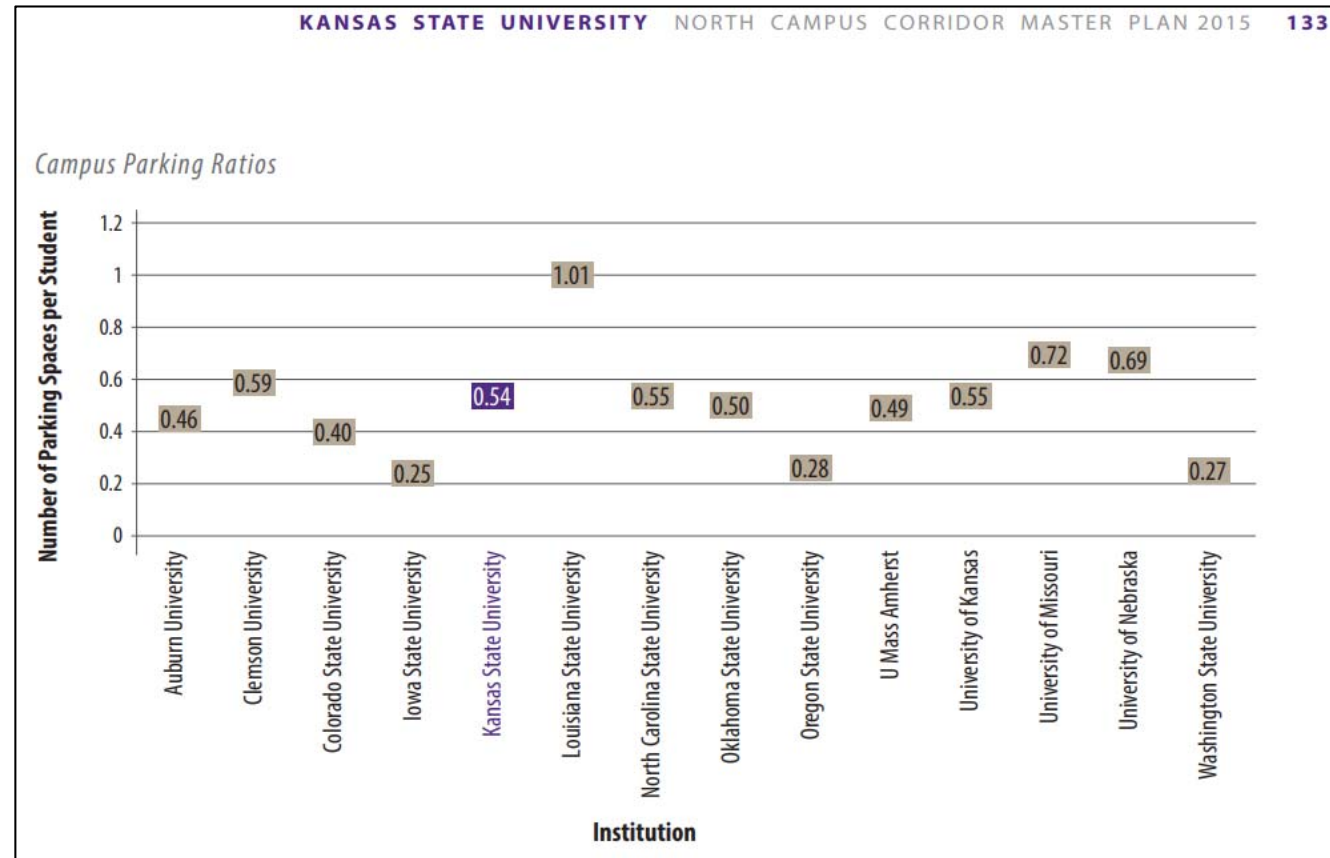
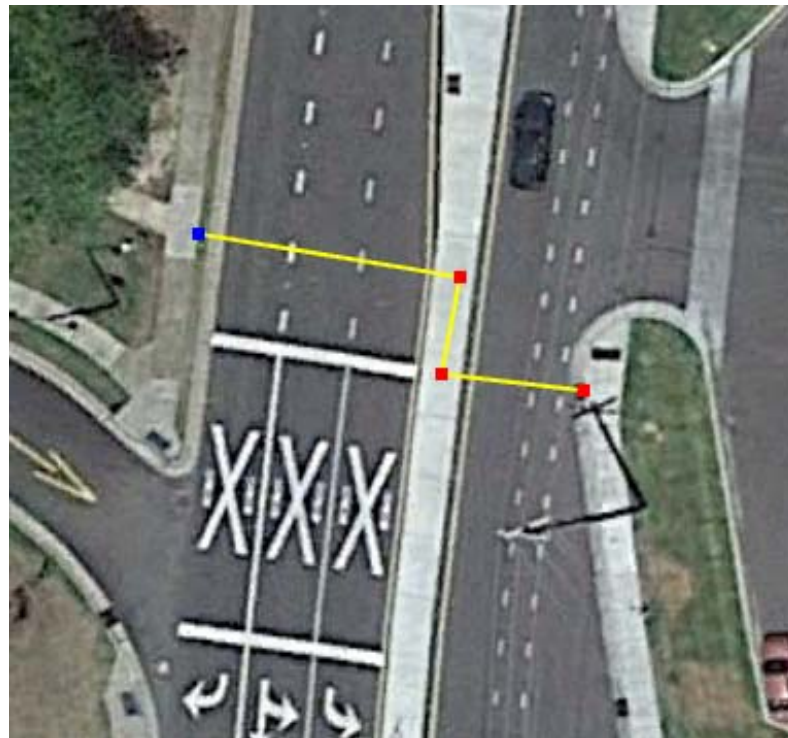


Figure 18: Fatal and Serious Injury Crashes (2011-2020)

Source info for other university's parking data.



<https://www.k-state.edu/parking/CampusTransportationStudy.pdf>



Possible location of offset crosswalk to connect UNCP with the future multiuse path along Railroad Street



IMAGE 42 UNCP Campus

MEMORANDUM

To: **Duda/Paine Architects**

From: **HR&A Advisors, Inc.**

Date: **February 24, 2022**

Re: **UNC-Pembroke Economic Opportunity Assessment**

Introduction

HR&A Advisors, Inc. (HR&A) has completed a preliminary evaluation of the economic and programmatic opportunity to attract private and industry partners to the UNC-Pembroke (UNC-P) campus. This memo summarizes our findings and identifies potential development scenarios to capitalize on these opportunities.

Market Summary

The commercial real estate market in Pembroke appears to be stable and may accommodate a modest amount of new development, though it will likely need financial support from the university or other public agency. HR&A has evaluated the Pembroke commercial real estate market using CoStar data. In order to collect and synthesize market data, HR&A identified the boundaries of the Town of Pembroke and the UNC-P campus as the “study area.” These findings reflect the market as of February 2022.

The commercial office market in the study area may have room for additional growth on or near the UNC-P campus with investment or supportive funding from the university. The commercial office market is comprised of approximately 172,000 square feet, all of which is classified as either “Class B” or “Class C.” In the decade preceding 2021, the commercial office market had an average vacancy rate of 12.2% with nearly zero average net absorption per year. However, in 2021 the vacancy rate dropped to approximately 2.5% after the study area saw 20,000 of positive net absorption. Rent rates in the study area average between \$11 and \$13 per square foot with a few outliers, including some medical office space. These rent rates may not support the development of new office space without supplemental funding or investment by the university.

Retail in the study area is stable, suggesting opportunity for growth and new development with investment or support from the university. The retail market in the study area is comprised of just over 532,000 square feet. Like the office market in the study area, all of the retail space in the study area is classified as “Class B” or “Class C,” with a significant amount of standalone fast food and restaurants as well as convenience businesses. Despite the large inventory of space, the retail market has a remarkably low vacancy rate of approximately 0.3%. The vacancy rate in the study area has been exceptionally low for well over a decade, suggesting a stable market. However, there has not been much new development or net absorption in the previous decade, likely in part due to rent rates that typically trend below \$10 per square foot. At this level, new development of retail space may also need supplemental funding to be financially viable.

Pembroke’s multifamily market could likely support new development, particularly near the university and nearby retail amenities. The multifamily market in the study area is composed of approximately 242 units across four properties, a relatively small market. The average rent per square foot in the study area is \$1.22 per square foot per month and has seen annual growth of nearly 2% in the previous five years. The market has a remarkably low vacancy rate of 1.5%, suggesting room for additional development.

Programmatic Opportunity

The university’s areas of growth and priority will likely frame the opportunity for programmatic and development partnership. University leaders and stakeholders have shared that allied health sciences and agriculture are expected to be major areas of programmatic growth. Specific programmatic drivers include the potential establishment of a school of optometry – the first in North Carolina, expanded allied health programs such as nursing and occupational therapy, and agricultural extension in the surrounding region of Lumberton and Robeson County to support the poultry and pork industries.

HR&A understands that UNC-P has initiated conversations with regional healthcare providers, including Southeastern Regional Medical Center in Lumberton, Scotland Health Care System in Laurinburg, and Moore Regional Hospital – Medical Center. These partnerships could facilitate larger academic programs in allied health. For example, they may provide opportunities for community-oriented clinics that are sponsored by these healthcare systems and give allied health students clinical experience in exchange for employment commitments to the healthcare systems.

Similarly in agriculture, as UNC-P navigates opportunities to partner with larger local farms such as Mountaire Farms and Sanderson Farms, academic and research partnership opportunities may emerge on campus to develop and commercialize innovations in farming.

Partnership Approach

In order to capitalize on industry opportunities and craft robust partnerships that drive development on campus, UNC-P should begin by highlighting and marketing its current and future academic and translational research priorities. The university should craft a role within its external affairs and economic development function for engaging with industry leaders to promote its academic and research activities. This role should also identify a spectrum of partnership opportunities based on legislative and operational guidelines to better define how industry partners can most effectively engage the university.

In addition to programmatically driven partnerships, the university may consider leveraging developer partnerships to fill its traditional needs. For example, new and improved student housing may help bolster the university’s mission and growth in coming years. And as student enrollment is expected to grow over the forthcoming decade by between 750 and 2,500 students, the university may explore engaging with a development partner to build new student-oriented housing on or near campus.

Potential Scenarios

Any partnership scenario at UNC-P should begin with “creating a campfire.” By this we mean a catalytic investment in programs, places, and people. This catalytic investment will start to attract additional resources, ultimately “making a market” on campus that may not currently exist.



programmatic investment, such as private optometry clinics, optometric retailers, and amenity retailers, which will all contribute to placemaking and making a market on campus. Stakeholders noted in August 2021 that the eastern edge of campus along Odum/Prospect, where new private multifamily development was recently completed, could be a compelling place to attract amenities, office space, and retail.

Challenges

Although a programmatic anchor and subsequent private development may be a compelling path toward a successful partnership model, it may need to overcome challenges of physical connectivity, lack of critical mass to achieve necessary activation, and untenable development economics.

Development beyond the traditional borders of campus, including on the east side of Odum/Prospect, face the challenge of a lack of physical connectivity to the main campus. While a programmatic anchor such as a school of optometry could create some momentum, there may not be enough to draw a critical mass of students across the street and activate the new development site.

Similarly, in light of the relatively small student population, new development on or near campus may not have sufficient critical mass of students, private residents, and industry workers to create a vibrant place with attractive retail amenities. The university may need to consider providing financial support to account for the lack of a critical mass of people.

Lastly, though all of the commercial real estate uses noted in this assessment have low vacancy rates, they also all have low rent rates that likely cannot support new development. In order to promote the success of new development, the university may need to consider providing financial support to new development to make it financially viable.

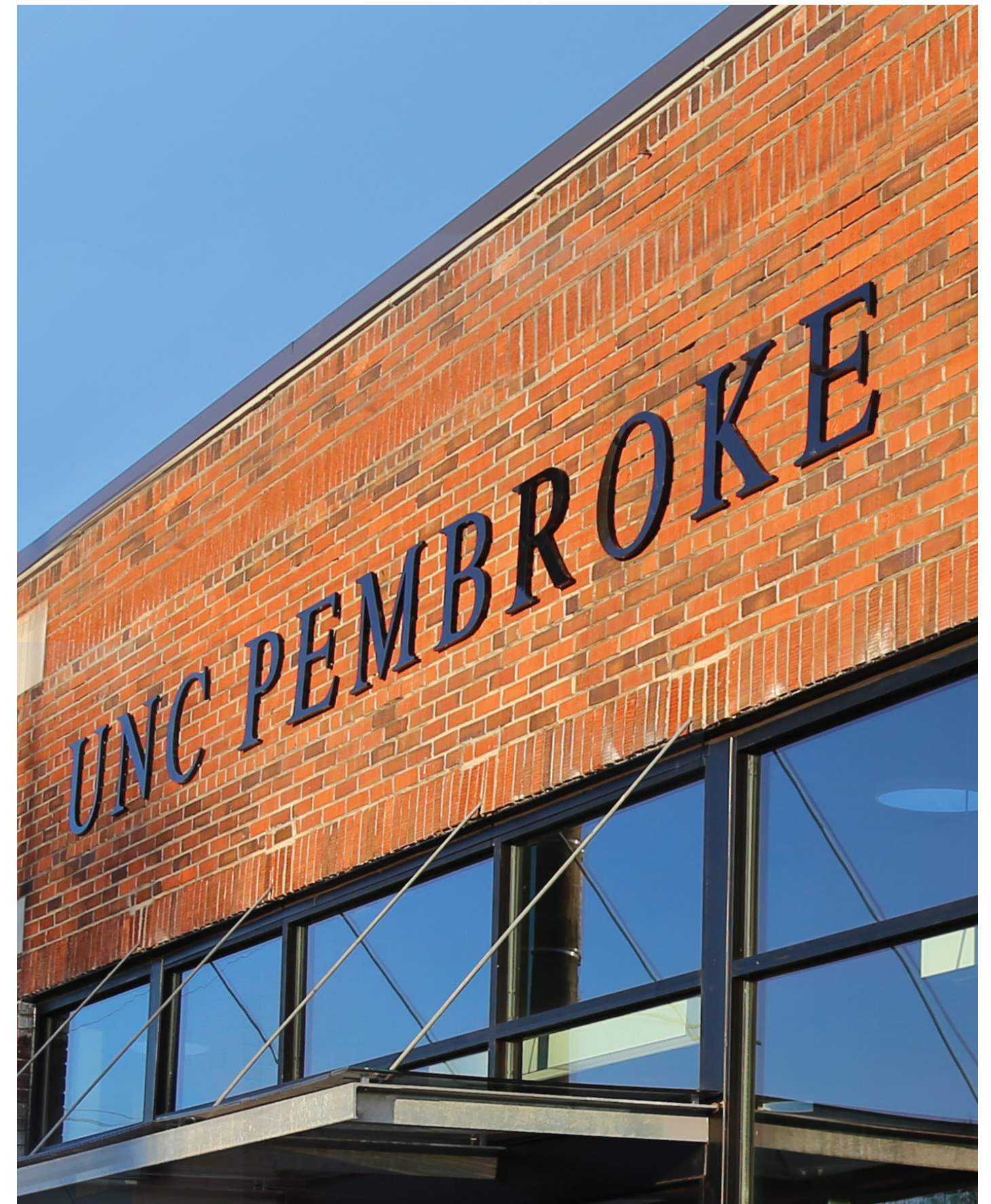


IMAGE 43 UNCP's Entrepreneurship Incubator Downtown

Salas O'Brien coordinated with the Design Team to review current campus infrastructure for Mechanical, Electrical, and Telecom for big picture strategies; documented existing conditions provided by UNCP; and provided campus planning for mechanical and electrical systems. The purpose of this review is to provide UNCP with existing utility conditions and issues/opportunities associated with potential campus expansions and renovations in collaboration with ColeJenest & Stone.

1.1 ELECTRICAL: PRIMARY ELECTRICAL INFRASTRUCTURE

Overview

The primary electrical infrastructure is largely campus owned and operated. This infrastructure consists of a single point of delivery from the local utility provider, Duke Energy. The substation at this point of delivery serves a single metal-clad switchgear line-up at 12.47 kV, 600 Amps, 3-phase with four fused distribution sections for campus distribution. These sections supply 200 amp feeders arranged for underground distribution on campus. There are provisions for the addition of two fused distribution sections for future growth. This equipment is manufactured by S&C and was installed in 2005.

The feeders are typically installed in concrete encased duct banks, with pad mounted switches arranged for interconnecting the feeders at selected locations. The remote switching capabilities at selected pad mounted switches provides a level of redundancy for service and maintenance activities. The switches are also used to distribute fused feeders for service to individual building transformers. Oil filled transformers as located near buildings served, sized to accommodate building load. Typical voltages at the buildings are 480Y/277V, 208Y/120V and 240V single phase. Most of the switches and feeders described above were

installed in 2005 and 2009. An existing primary switch at Givens Performing Arts dates back further and warrants replacement. Building transformers should also be considered for replacement, based on age and condition, at North Residence Hall and Belk Residence Hall.

There are four campus locations that are served directly by Duke Energy, rather than from the campus-owned primary infrastructure. These occur along the west edge and north end of campus and include the Belk Athletic Complex, University Courtyard Housing, the Pinchbeck Complex and University Village Housing. New pad mounted switches and building transformers would be needed to integrate these loads into the campus primary infrastructure.

Peak demand (kW) reported over last 36 months is 4,622 kW over the July-August 2021 billing cycle. Assuming a power factor of 0.88, this loading is 5,252 kVA and 243 Amps at 12.47 kV. This represents 41% of the electrical service capacity to campus.

Impact of Planned Growth

Planned growth occurs both within the perimeter of the campus owned primary electrical infrastructure and outside the perimeter. Accommodating new buildings within the infrastructure perimeter will require modifications to existing feeders to install new switches

and building transformers. Accommodating new growth outside the perimeter of the infrastructure will require the installation of new duct banks to add new circuits or extend existing circuits, in addition to installing new switches and building transformers.

Proposed Renovation and Construction inside existing infrastructure occurs in the South and Central Campus zones. Proposed Renovation and Construction in South Campus includes the Business Admin Renovation, GPAC Renovation/Expansion, James B. Chavis Student Center Renovation, Arts Pavilion, Library Renovation, Chancellor's Residence Renovation. Proposed construction in Central Campus is more limited in the near term and includes a New Academic Building and a New Allied Health Sciences Building.

Proposed Renovation and Construction outside existing infrastructure occurs initially in the Central Campus zone. Further planning includes growth along Prospect Road in North Campus. Expansion of the primary electrical distribution system envisioned in the 2011 Master Plan remains valid, with a new fifth circuit along the west edge of campus and an expansion of an existing circuit along the east edge of campus to North Campus.

A new primary electrical feeder routed along University Road, through the University Courtyard Housing Community, back into existing network at Hawk Drive creates infrastructure to support the New Chancellor's Residence and Student Housing Building. This also permits the transfer of the Belk Athletic Complex and the University Courtyard Housing Complex to be transferred from Duke Energy to the campus owned infrastructure. The extension of a primary electrical feeder routed along Prospect Road creates the infrastructure to support New Student Housing Buildings and a New Office of Community Engagement along Facilities Drive. It also

permits the transfer of the Pinchbeck Complex and University Village Housing from Duke Energy to the campus owned infrastructure.

This feeder was envisioned in the 2011 Master Plan to provide a tie between two existing primary circuits, extending capacity and creating redundant supplies to the new service areas. This new feeder section would be most likely to extend into the new School of Agriculture in the future.

The introduction of electrical loads associated with new buildings and the transfer of existing facilities currently served directly by Duke Energy must be reviewed with respect to the capacity of the electrical service to campus. Present loading on this service reflects capacity for new loads as the campus grows.

Proposed Upgrades

- Replace any remaining equipment (sectionalizing switches and building transformers) that has not been updated since the 2005 upgrades.
- Expand campus-owned primary infrastructure and maintain redundancy.
- Add new primary electrical feeder and infrastructure to serve new growth west of University Road.
- Transfer the Belk Athletic Complex and University Courtyard Housing to campus primary infrastructure.
- Extend primary electrical feeder along Prospect Road, connecting two existing primary circuits to serve new growth in north end of Central Campus and maintain redundancy in new feeder section.
- Transfer the Pinchbeck Complex and University Village Housing to campus primary infrastructure.



1.2 ELECTRICAL: GENERATORS

Overview

Based on an inventory listing provided by UNCP Facilities, there are twenty three permanent generators installed on campus. Most of the generators serve a single automatic transfer switch in a single building. Generators that serve multiple buildings include units at the Pinchbeck Complex and the North/Belk/West Residence Halls. With a single transfer switch served in each building, the anticipated loads are exit and egress lighting, fire alarm systems and similar. These are classified as emergency loads in the National Electrical Code, Section 700. This is consistent with design guidelines provided by UNCP as reference for this Master Plan.

Generators that serve multiple transfer switches in a single building include units at Oxendine Science Building, Sampson Building and Weinstein Health Science. The additional transfer switches are anticipated to serve loads such as telecommunications, refrigeration equipment and other sensitive equipment in academic buildings.

Various engine types are reported in use on campus, including diesel fired, natural gas fired and liquid propane fired. Design guidelines provided by UNCP as reference for this Master Plan identify natural gas-fired generators as the campus standard. The use of a public gas system to serve emergency loads defined by the NEC requires the approval of the authority having jurisdiction. This is generally permitted when it can be demonstrated that there is a low probability of a simultaneous failure of both the public gas system and power from the outside electrical utility company. Historical service continuity documentation from the public gas utility and classification as a

non-interruptible service are the most common means of establishing the low probability of concurrent utility failures.

A single diesel fired unit is reported in use on campus, being used as required by the NC Department of Insurance because a fire pump is served. It is assumed that liquid propane units are specified when it is not cost effective to bring natural gas service to the building.

Impact of Planned Growth

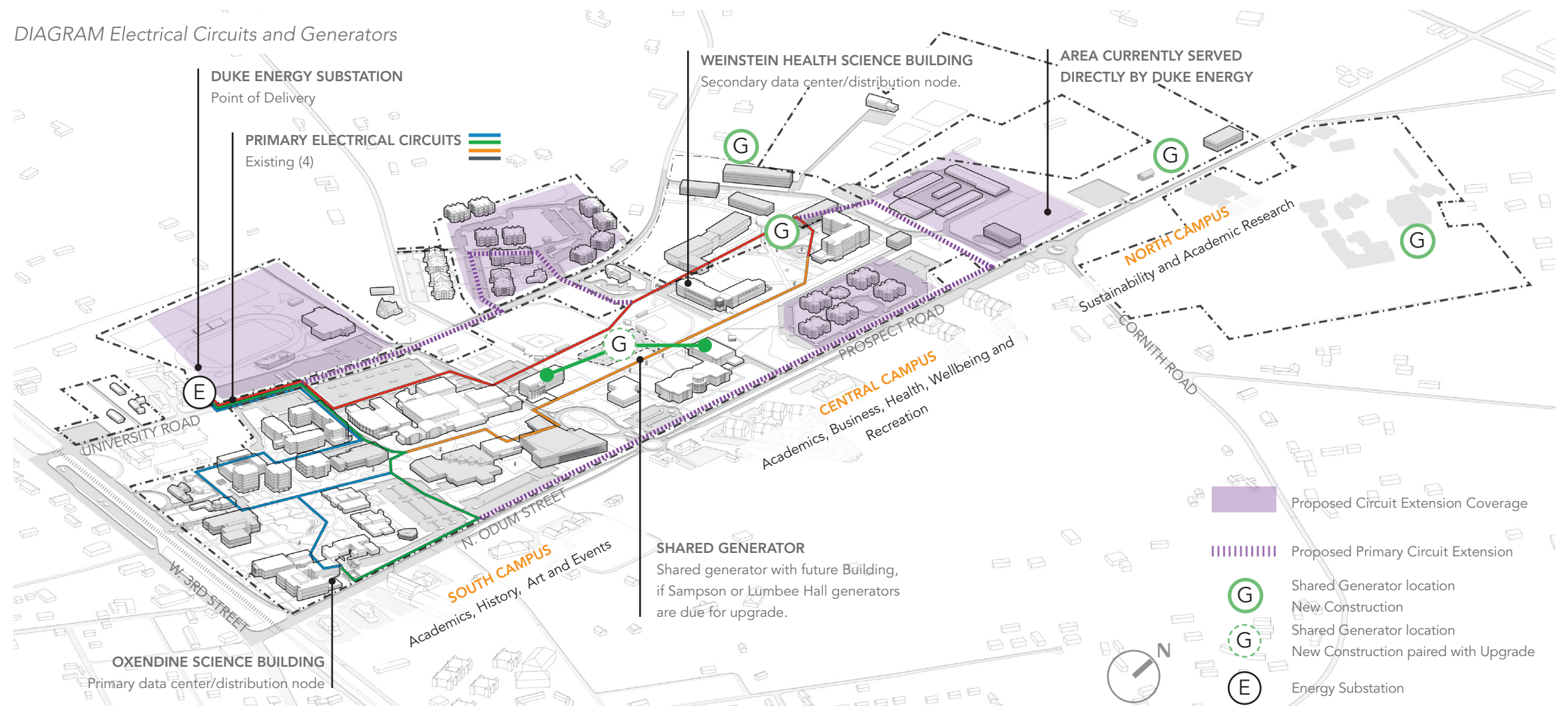
Projected growth is distributed across the campus. UNCP has expressed a desire to consolidate the use of future generators to serve multiple buildings. The benefits seen in this approach were presented as measures to reduce the quantity of equipment on

campus and consolidate maintenance requirements. Building proximity is a primary factor in successfully using a common generator for multiple buildings. The voltage generated from the units is typically 480 volts and 208 volts. Voltage regulation must be maintained for feeders leaving the generators. Once feeder lengths on the site exceed 100 feet, consideration must be given to increasing feeder sizes to offset voltage drop in longer runs. The optimal location for a common generator with be central to all buildings served.

Proposed Upgrades

- Consider consolidation of future building generators, to reduce maintenance and improve building sites. Understanding loads that will be served in each
- building and finding a suitable location that is reasonably close to each building served. Plan a common distribution panelboard or multiple branch feeder breakers at the generator for such applications.
- Additional capacity is desired for campus buildings where specific functions require continued support from the electrical system. Buildings identified include Jones Athletic Complex (used by Emergency Response Team), Student Union (dining facility), Mary Livermore Library and Lumbee Hall (Administration).
- Evaluate development of site distribution for natural gas to increase ability to utilized campus standard for new generators.

DIAGRAM Electrical Circuits and Generators



1.3 ELECTRICAL: SITE LIGHTING

Overview

Most of the site lighting has been upgraded to utilize LED sources in recent years. Benefits of this transition include significant reduction in energy consumption and improved light quality. The upgrades were described as fixture head replacements as opposed to retrofits for the lamps and ballasts.

Much of the site lighting on campus is owned and maintained by UNCP. Lighting types used on the site include parking lot lights and pedestrian poles. Product information provided for the recent construction of the Thomas School of Business was offered as a basis for future projects on campus. This includes a slim profile luminaire on a 25 foot round tapered pole for parking lots and drives and a smaller luminaire on a 10 foot round pole for pedestrian walks.

Lighting along the south and east perimeters of campus was reported to be leased from Duke Energy. This lighting is consistent in appearance along the perimeter, with two luminaires pendant mounted on 30 foot round tapered poles. There is limited roadway lighting along the west edge at University Road, primarily cobra head luminaires mounted on poles bearing overhead electrical lines.

Lighting controls on campus are primarily limited to photocell and time clock/photocell combinations. Control from these devices is limited to dusk to dawn operation in the former and dusk to a scheduled time in the latter. Greater control is desired on campus to permit setback options in areas where selected lighting can be operated at reduced output

during late night hours and responsive to motion thereafter.

It is also recognized that there are large pedestrian and commuter components to the population on campus. Public safety and energy conservation measures are each important considerations in planning site lighting coverage and control strategies on campus. It is generally felt that illumination levels and light quality are good in the site lighting on campus. The South Quad was reported as one location where improvements to illuminations levels are desired.

Impact of Planned Growth

Site lighting is typically integrated into new construction and renovations of campus buildings. Because these occur somewhat independently across time, the development of campus standards for lighting types, illumination levels and control methods are desirable. Such standards improve a sense of continuity across the campus development as growth occurs over time.

Proposed Upgrades

- Develop campus standards for lighting types, illumination levels and control methods.
- Use lighting controls systems or integrate site lighting with the campus energy management systems to allow setbacks and adjustments to illumination levels and motion detection.
- Conduct lighting study in areas where illuminations levels are considered low.
- Continue replacement of direct buried romex wiring in areas where development occurs or increased failure/maintenance warrants more immediate resolution. Underground wiring in raceways is the current campus standard.



IMAGE 44 "Chavis Green" - Existing Site Lighting

2. TECHNOLOGY INFRASTRUCTURE

Overview

The Technology Infrastructure at UNCP supports all data and standard voice communications for the campus. The site distribution arrangement of this system consists of fiber optic cabling installed in a loop between two distribution nodes located at Oxendine Science Building and Weinstein Health Sciences Building. Most buildings on campus are supported from this fiber infrastructure.

This site distribution arrangement has been upgraded in recent years with new fiber optic cable. The legacy cabling system was replaced in the existing duct bank infrastructure. The implementation of new fiber optic infrastructure by MCNC in recent years has allowed UNCP to obtain access to spare fiber and create a perimeter loop to increase resiliency in the site distribution topology.

UNCP reports there is additional work planned

to replace the active components (switches) in the buildings served by this infrastructure. With the completion of this phase of work, it is anticipated that the Technology Infrastructure will have the capacity to serve campus demand for the next 8-10 years.

UNCP is described as a WebEx campus that is ahead of the curve in providing classroom technology for the academic experience. Technology equipment (projectors, interactive displays, etc.) has been upgraded recently in most of the classrooms used for remote access as part of a five year refresh cycle. Upgrades for remaining classrooms is planned for completion this year.

Wireless access coverage is reported good inside buildings, with all residence buildings, academic and administration buildings are reported to include wireless access provisions. Exterior coverage has been extended to selected parking lots in the past two years. Further expansion is planned.

Impact of Planned Growth

There is a trend on campus to move selected software applications to cloud hosted environments. As with many facilities, this begins to offset the need to build and maintain new on-site infrastructure for core equipment. It is currently believed that the two physical data centers on campus will be sufficient to support the technology demands at UNCP.

Modernizing the facilities in the two data centers is planned. Electrical capacity and redundancy are reported adequate in these centers. Upgrades to the mechanical systems are considered an opportunity to increase the efficiency of this equipment. Localized cooling aisles are envisioned to replace room conditioning units (CRAC) in this upgrade. The technology infrastructure within buildings is typically integrated into new construction and renovations of campus buildings. Stand-alone technology projects are also viable for existing buildings where plans for renovations are more distant in the future.

The UNCP Telecommunications Infrastructure Cabling Specification include current product specifications and guidelines for the standardization of design and construction of interior building systems.

It was noted that the Thomas School of Business has a limited number of on-premise computers, relying more on student-owned devices. Such a trend in future building construction is often paired with a Student Computing Initiative, in which the institution uses larger scale purchasing power to extend equipment to students at a favorable cost. Campus planning in this direction should consider the increase

in charging provisions needed for mobile devices. There is a desire on campus to develop a cyber-security program. It is recognized that the focus of this program is at odds with the security of the campus technology network. Development of an isolated network to accommodate this program is considered necessary.

Proposed Upgrades

- Upgrade site distribution infrastructure to support redundancy of service through consideration of divergent pathways at the most critical points of system.
- Classroom upgrades to incorporate/expand use of CCTV cameras for full hybrid environment bringing remote access users further into the classroom environment.
- Expand mobile device charging provisions into classroom and similar teaching and/or collaborative spaces.
- Continue to expand wireless access coverage for common travel and collaboration locations. Areas identified in discussions include walking paths, parking lots and building adjacencies.
- Expand access control provisions to buildings, parking areas and services through use of card readers. It is noted that the management and implementation of this control system are overseen outside the campus IT department.
- Expand campus safety call box locations. It is noted that the management and implementation of these safety provisions are overseen outside the campus IT department.



3. SUSTAINABILITY GOALS & INITIATIVES

Overview

UNC Pembroke is working to build upon their current successes of being a good steward of natural resources. UNC Pembroke 2017/2018 Strategic Energy and Water Plan's objective is to foster economically and environmentally responsible usage of valuable resources in accordance with state legislation, while providing a positive and comfortable learning environment for students, faculty, staff and visitors. Key elements of the plan include:

- Educate and engage about the benefits of energy and water conservation
- Continue accurate measurements and analysis of electricity, gas and water usage
- Provide energy management system controls and other technical training to staff
- Provide high level of building control
- Update campus design and construction standard guidelines and operation practices to reflect all current mandates, commitments, and goals
- Install energy saving equipment, materials and measures
- Continue to benchmark progress, share and compare lessons learned and best practices with peer institutions
- Review costs and benefits associated with available utility supplier programs, rebate strategies, alternative power purchase agreements

Proposed Goals & Initiatives

The following goals and initiatives were identified through meetings and work sessions with students, faculty, and staff.

- Sustainability goals should save both money and environment.
- Strive to be a NC campus leader among other universities.
- Create a pattern for sustainability on campus
- Campus gardens and composting
- Rainwater harvesting
- Recycling program
- Reducing utility and maintenance costs
- Energy efficient systems that are maintenance friendly
- Upgrade utility (gas, water electrical, etc) metering for energy monitoring and billback.
- Green Globe certified and net-zero buildings
- Minimum solar PV ready buildings
- Electric vehicle charging stations
- Solar smart tables
- Upgrade building lighting to LED to improve lighting levels, quality, energy savings
- Site LED lighting connected to Campus energy management systems to allow setbacks and adjustments
- Sports lighting currently HID but interest in LED
- Reduction of landscaping water, correct issues with runoff and drainage
- Load shedding
- Daylighting controls
- Occupancy controls for lighting and HVAC
- Visible use of resources in buildings and sustainable initiatives
- Advertisement and signage for water and energy initiatives
- Education of sustainable programs and initiatives
- Better support local agriculture, region is

agriculture based

- Food waste: use of reusable containers and food donations to care centers
- Building dashboards to create awareness and building competitions

UNCP Sustainability Initiatives: IMAGES 45 Electric Vehicle Charging Stations | IMAGES 46 Solar Smart Tables
IMAGES 47 Green roof | IMAGES 48 Recycling program



4.1 PLUMBING: POTABLE WATER INFRASTRUCTURE

Overview

UNCP operates and maintains the potable water infrastructure on campus. The southern portion of campus has aging mains, and many are 100-year-old asbestos cement pipes. The northern portion of the campus infrastructure is newer and either ductile iron or PVC.

In 2009, a 300,000-gallon elevated water storage tank was constructed to increase campus fire protection capacity. Water volume and pressure is believed adequate for average/peak domestic demands and for lower-level buildings fire protection demands for current number of buildings on campus.

The campus water system adequately covers the existing campus and will be able to handle the increased demand associated with the projects outlined in this master plan. The building renovations for the Livermore Library, Former Business Administration Building, James B. Chavis Student Center, and the GPAC could require upsizing to the existing building service line connections depending on the final building renovation/expansion designs. This will need to be evaluated on a project-by-project basis.

The water service for the proposed Health-Science Neighborhood can be tapped from the 10" main near the campus water tower. An 8" extension should be adequate to supply the proposed buildings. 6" lines will need to be provided at each new building for fire suppression. We understand there is a current water infrastructure upgrade project underway.

Impact of Planned Growth

Hydraulic modeling and updated mapping of the existing water infrastructure is required to determine impact of new building construction to the water system. It is anticipated that where new construction is shown, the water infrastructure will require replacement/upsizing/increased water pressure.

Proposed Upgrades

- Sizing and replacement of aging infrastructure after evaluation of the water hydraulics and locations/heights of new buildings
- Provide additional infrastructure isolation valves for existing and new buildings

- Elimination of existing domestic and fire pumps with increased campus water pressure

4.2 PLUMBING: SANITARY SEWER

Overview

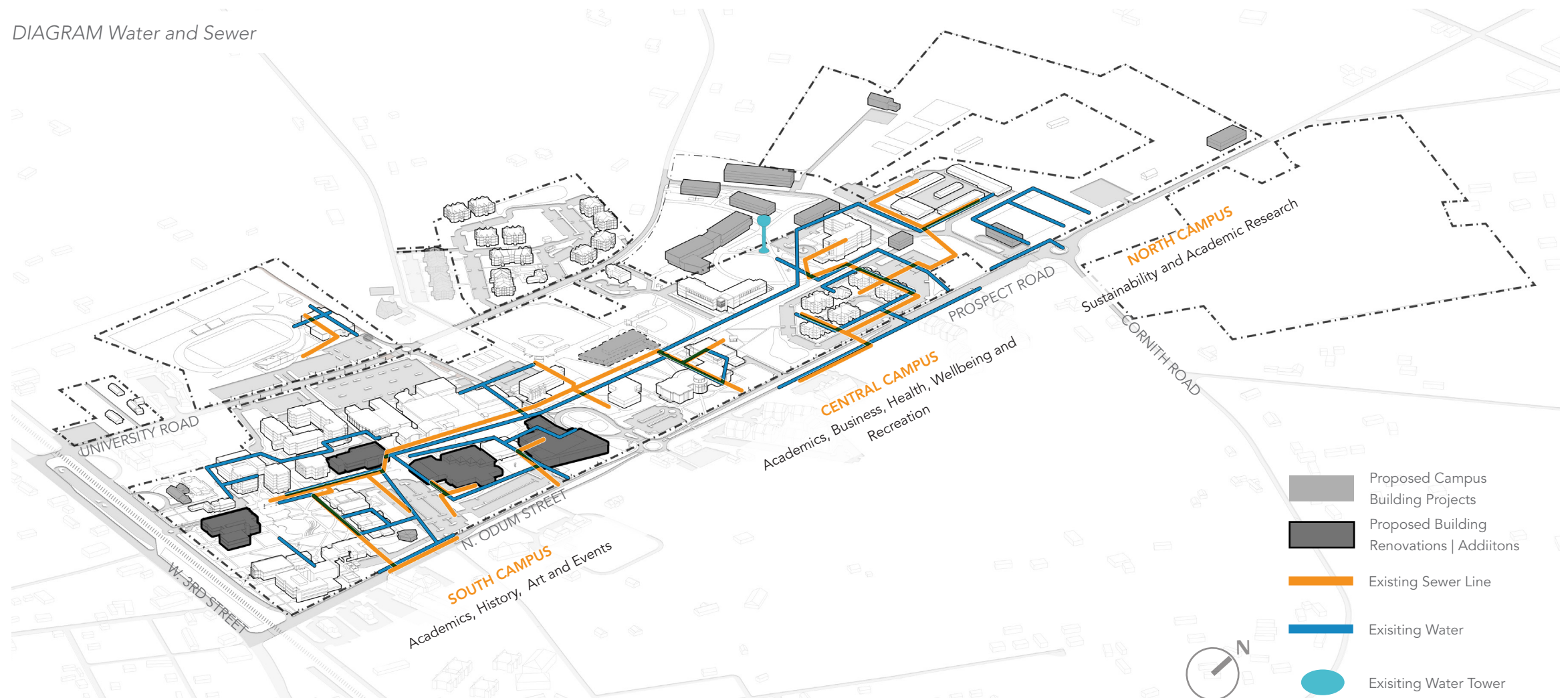
For the bulk of the development proposed in the master plan, the existing sanitary sewer system should be sufficient. The building renovations for the Livermore Library, the Former Business Administration Building, James B. Chavis Student Center, and the GPAC could require upsizing to the existing building service line connections depending on the final building renovation/expansion designs. This will need to be evaluated on a project-by-project basis.

The new Health-Science Neighborhood is the only area that might require adjustments to the system. An existing 8" sanitary sewer line is located nearby to serve the University Village Apartments, Cypress Residence Hall and Weinstein Health Science Building. This 8" line could be extended to serve the new healthcare campus, but if the future residential buildings are built, it is increasingly likely a new service line or upsizing of the existing pipes will be required.

Proposed Upgrades

- Sizing and replacement of existing sewer lines after evaluation of the water hydraulics and locations/heights of new buildings

DIAGRAM Water and Sewer



4.3 PLUMBING: STORMWATER INFRASTRUCTURE

Overview

Stormwater should continue to be a primary consideration for UNCP and should be approached holistically as an integrated part of the campus identity. UNCP's past and present coordination with the Town of Pembroke to address stormwater regionally rather than locally is one example of this type of approach. Additionally, focus should be placed not only on current needs but building additional resiliency into the stormwater system to mitigate the impacts of larger storms.

There are a number of effective stormwater management strategies that can be installed as standalone features or as integrated aspects of any new buildings. Infiltration based systems, such as rain gardens/bioretention or pervious paving, will require evaluation on a project-by-project basis due to the high-water table on UNCP's campus but should be implemented wherever possible.

Solutions such as rainwater harvesting/cisterns (above or below ground), raised stormwater basins, or bioswales should be used where infiltration-based systems are not feasible. The use of more traditional wetponds is also recommended where space allows. Should wetponds be used they should be designed as amenities with trails and other similar program opportunities located nearby and pond maintenance should be given heightened priority.

Planting in any of the treatment installations should be carefully planned to match the aesthetic of the direct context. Plants in bioretention or bioswales that are located next to plaza or quad areas, for

example, should be limited to 12"-24" in height. In addition to the treatment, it is recommended that stormwater infrastructure be oversized, particularly on the western side of campus, to provide additional storage capacity. This will also help in alleviating the existing flooding that is currently experienced in some parts of campus. UNCP has already begun this process under "Chavis Green" by replacing 12", 15" and 18" pipes with 30" pipes following the recommendations of the Pembroke Hydrologic Study Report.

In general, stormwater mains should be upsized to the

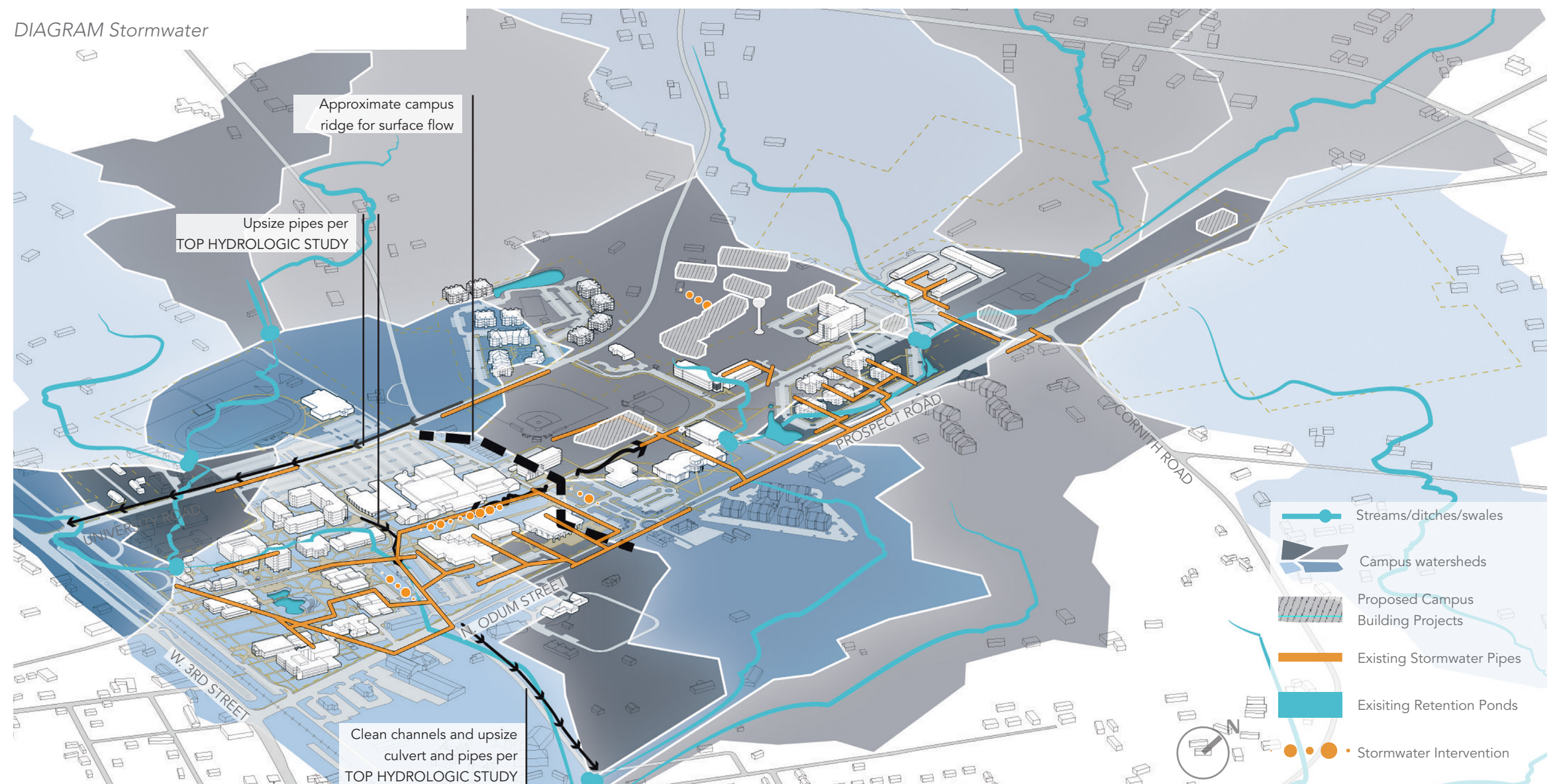
next standard pipe size (i.e. 15" becomes 18", 18" becomes 24", etc.). It is also highly recommended that all roof leaders be tied directly into the storm system rather than outlet at grade (see also page 151).

- Upgrade stormwater mains to the next standard pipe size
- Tie all roof leaders directly to stormwater management infrastructure

Proposed Upgrades

- Evaluate campus landscape to determine ideal areas for infiltration systems versus rainwater harvesting systems
- Upgrade and oversize stormwater infrastructure on the west side of campus as is being done under "Chavis Green"

DIAGRAM Stormwater



5.1 MECHANICAL: NATURAL GAS INFRASTRUCTURE

Overview

UNC Pembroke operates and maintains the natural gas piping and infrastructure on campus, except for the north end of campus. The northern end of campus is served by Piedmont Natural Gas Co. The campus gas infrastructure is aging, in need of upgrades including piping replacement and redundancy of service.

Impact of Planned Growth

Updated/verified mapping of the existing gas infrastructure is required to determine impact of new construction to the system. It is anticipated that where the new construction is shown, the gas infrastructure will require replacement and upsizing.

Due to the State of North Carolina's initiative to move away from fossil fuel use to the reduction of the State's carbon footprint, electrification of campus technologies such as heat pump chillers, heat pump water heaters, etc., should be evaluated as part of the design for future buildings.

Proposed Upgrades

- Piping replacement of campus owned system
- Upgrades to support new buildings and redundancy of service

5.2 MECHANICAL: REGIONAL PLANT OPPORTUNITIES

Overview

A campus (or campus precinct) with a group of new or heavy renovated buildings with varying use profiles such as academic, recreation, dining,

residence halls, and offices are a good application for energy plants. When multiple buildings with varying load profiles are connected to a central or regional energy plant, the potential for first-cost reductions can be significant. The cost can be much less expensive than handling at each building, i.e. building standalone systems. Due to load diversity, the amount of infrastructure will be reduced.

In addition, a campus (or campus precinct) is a good application for a geothermal energy plant. This blend of building types allows a mix of diverse HVAC and plumbing uses. Sharing and shifting energy using a geothermal energy plant allows significant opportunities for reducing the total cost of converting the entire campus to more efficient energy systems as well as the quantity overall campus emissions and

dependence on fossil fuel. Geothermal systems may include multiple forms such as deep earth horizontal directional bored loops; pond/lake loops; hybrid boiler/cooling tower systems; and heat pump chillers that produce hot and chilled water. The future North Campus or the Central Campus Extension would be great geothermal energy opportunities.

Impact of Planned Growth

Projected growth is distributed across the campus. Chilled water and hot water are used by HVAC equipment to cool and heat buildings. Connecting multiple buildings to multiple chillers and boilers provides cooling backup/redundancy, greater energy efficiency performance, reduced maintenance costs. Building proximity is a primary factor in successfully

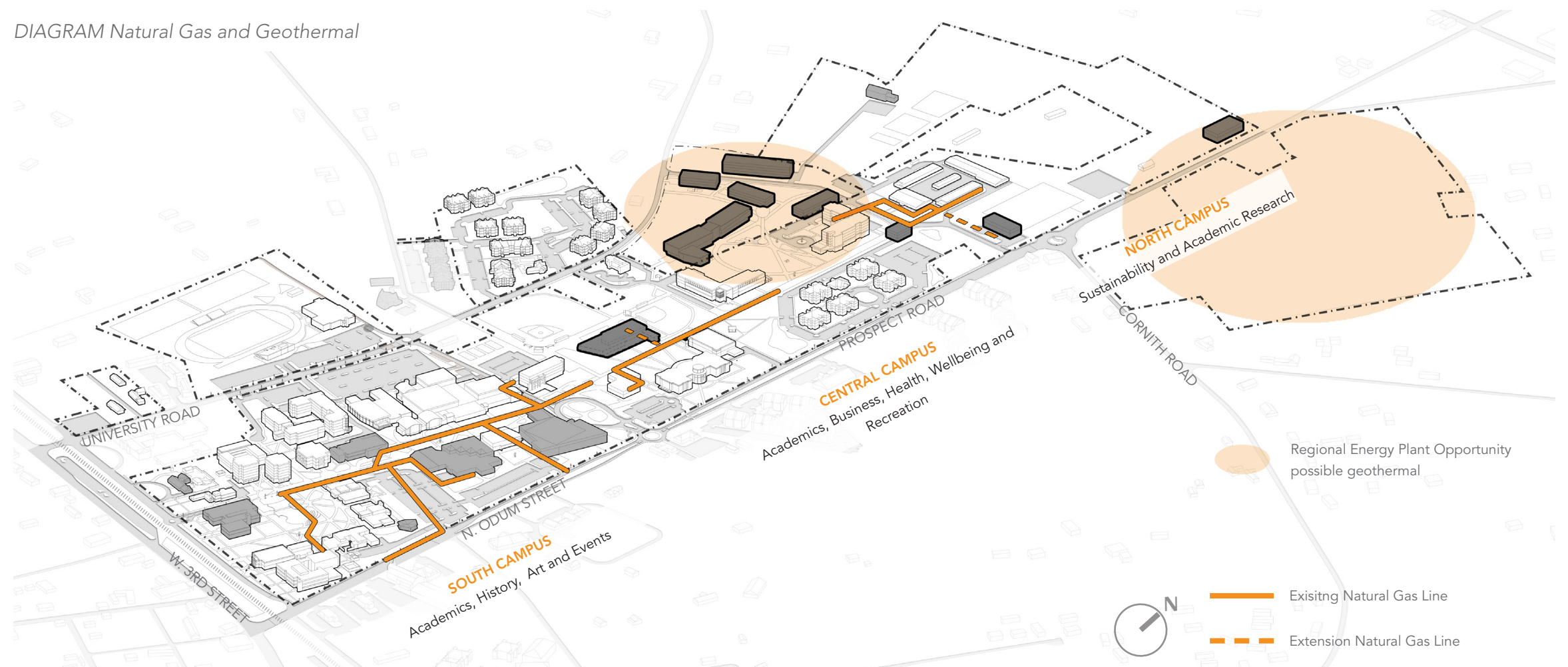
implementing a regional energy plant for multiple buildings. The benefits seen in this approach were presented as measures to

- Greater energy efficient equipment and systems
- Increase system redundancy
- Reduce quantity of equipment on campus to improve building sites
- Consolidate maintenance requirements

Proposed Upgrades

- Expanding and creating new regional energy plant and geothermal opportunities for production of chilled and hot water. Understanding loads that will be served in each building and finding a suitable location that is reasonably close to each building served

DIAGRAM Natural Gas and Geothermal



6. CONCLUSION

UNCP should continue to implement its Strategic Energy and Water Plan's objective to foster economically and environmentally responsible usage of valuable resources in accordance with state legislation, while providing a positive and comfortable learning environment for students, faculty, staff and visitors.

From an electrical perspective, it is recommended to replace equipment that has not been updated since the 2005 upgrades project. Campus-owned primary infrastructure should be expanded along Prospect Road to service new growth in the Central Campus and new infrastructure should be added along University Road to service buildings to the west from the campus-owned system. In addition, it is recommended that campus standards for lighting types, illumination levels and controls be developed.

With regard to technology, a shift is recommended to modernize two data centers in addition to expanding CCTV camera enhancements for hybrid classrooms. The trend of expanding wireless access coverage for common travel and collaboration location such as walking paths, parking lots and building adjacencies should be continued.

With regards to mechanical infrastructure, aging water and gas infrastructure should be replaced and upgraded to accommodate new and renovated buildings. Expanding and creating new regional energy plant and geothermal opportunities will promote the development of UNC Pembroke's Strategic Plan in addition to increasing systems redundancy, reducing quantity of equipment, improving building sites, and consolidating maintenance.



IMAGE 49 UNCP Campus Garden and Apiary

LIST OF FIGURES

The following images are courtesy of UNC Pembroke:

IMAGE 1 | IMAGE 2 | IMAGE 3 | IMAGE 12 | IMAGE 27 | IMAGE 29 | IMAGE 42 | IMAGE 43 | IMAGE 45 |
IMAGE 47 | IMAGE 48

**The following images are the property of Duda|Paine Architects, PA. or courtesy of
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Cover Image | IMAGE 4 | IMAGE 5 | IMAGE 6 | IMAGE 8 | IMAGE 9 | IMAGE 10 | IMAGE 11 | IMAGE 13 |
IMAGE 14 | IMAGE 15 | IMAGE 16 | IMAGE 17 | IMAGE 18 | IMAGE 19 | IMAGE 20 | IMAGE 21 | IMAGE 22 |
IMAGE 23 | IMAGE 24 | | IMAGE 25 | IMAGE 26 | IMAGE 28 | IMAGE 31 | IMAGE 32 | IMAGE 33 | IMAGE 34
| IMAGE 35 | IMAGE 36 | IMAGE 37 | IMAGE 38 | IMAGE 39 | IMAGE 41 | IMAGE 44 | IMAGE 46

The following image was saved out from Google Earth in December 2019:

IMAGE 7

The following images have been obtained online at source websites stated after each image:

IMAGE 30 | <https://blogs.lib.unc.edu/morton/2020/01/14/save-old-main/>
(2022-03-08)

IMAGE 40 | <https://walterrobbs.com/projects/college-university/unc-pembroke-health-sciences-building>
(2022-03-22)

IMAGE 49 | https://serve.uncp.edu/agency/detail/?agency_id=27454
(2021-08-19)





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UNC PEMBROKE MASTER PLAN 2022

