

## three | the master plan

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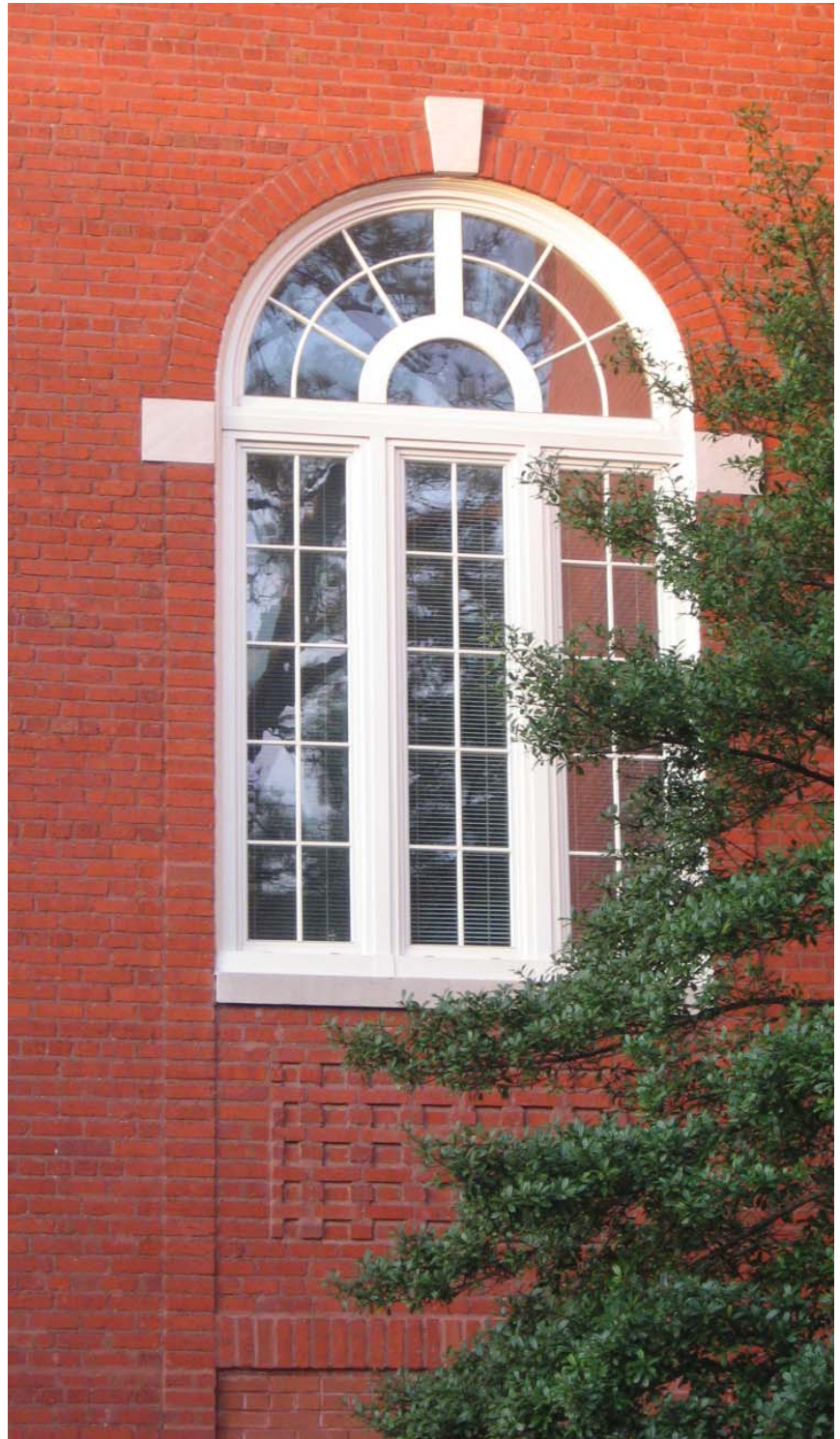
# Introduction

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The intent of the Campus Master Plan is to present a vision for East Carolina University that reinforces its goals and objectives, as it repositions itself for the future. The physical Campus Master Plan translates these guiding principles into an illustrative framework to aid ECU's future decision making process. It is comprised of three components: the Master Plan Principles, University-wide systems recommendations, and detailed district priorities.

The Master Planning Principles, outlined on the next pages, convey the intent, goals, and long-term values of the University. They are the most fixed and enduring elements. These principles embody ideas regarding campus enhancement, preservation, and transformation opportunities that will strengthen ECU's existing campuses. The key themes, goals and objectives served as the guiding framework from which all specific campus systems recommendations were derived.

The overall campus systems approach addresses improvements to the University's existing programs, circulation systems, open space network, and infrastructure for both the Main Campus and Health Sciences Campus. The recommendations outlined in this section strive to better connect both campuses to create a more unified University system. The following section takes a holistic approach to the recommendations, leaving detailed discussions of specific initiatives to the Neighborhood section which follows.





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# Master Plan Principles

## Themes, Goals and Objectives

Themes, goals and objectives were developed early in the master planning effort. These statements have guided the SmithGroupJJR team in evaluating alternative scenarios and determining decisions that resulted in the final plans.

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### Key Themes

- 1 Create a socially, economically, and environmentally **sustainable campus** plan that represents the hopes and aspirations of this region.
- 2 Bring four diverse campus environments into a **coherent and connected campus** plan.
- 3 Utilize the campus to **support and enhance** the University and the community.

## Goals and Objectives



### Goal 1: Education Outcomes, Instructional Content and Delivery, and the Student Experience

#### Objectives:

- Change is the constant and capital is scarce. Accordingly, flexibility (adaptability) is the highest imperative.
- Instructional capacity requirements will be based on a deliberate strategy for distribution between face-to-face and online delivery—as well as consideration of other locations used.
- Enhancement of the student experience with and in the campuses is a priority.
- In design, configuration, and utilization of instructional space, flexibility, quality, functionality, and efficiency will be valued as much (or more) than quantity of space.



### Goal 2: Research, Scholarship, and Related Faculty Community Issues

#### Objectives:

- Growth of interdisciplinary research and scholarship is a high priority, requiring new facility solutions.
- Beyond research space, all facility concepts will serve to strengthen the faculty's community of scholarship.



### Goal 3: Community/Regional Constituencies, Connections, and Partnerships

#### Objectives:

- ECU's campuses will be welcoming and navigable for community visitors.
- ECU will clarify its strategies for ongoing involvement in initiatives or projects that benefit neighborhoods in Greenville.
- ECU will define its future strategies for its role in downtown Greenville revitalization.
- ECU will pursue opportunities for urban planning coordination with the City of Greenville.
- ECU will sustain and expand clinical healthcare facilities for the community and region—in current and possible future locations.
- Knowledge-based business-industry partnerships are a priority for the engaged ECU and suitable facilities solutions are one factor in nurturing these partnerships.
- ECU will consider an expanded “footprint” in the region—including potential use of satellite locations in the counties for instruction and clinical activities.



### Goal 4: Physical Characteristics of the Campuses

#### Objectives:

- Physical features and development patterns must create campus identities, while at the same time, enhance the environment for programmatic collaboration and people connections—between campuses and beyond.
- Impact of the automobile will be reduced, in favor of more pedestrian-friendly places and public transit solutions.
- ECU's campuses will have a high level of safety and security—both real and perceived.
- Advanced information technology capacity will be ubiquitous.
- ECU will achieve carbon neutrality by 2050 and, in the Master Plan, will determine how much of this goal can be attained by 2025. ECU will pursue sustainability with both technical and policy solutions.
- In design and aesthetics, there will be a balance between appreciation of institutional history and anticipation of the future.
- In planning capital projects, ECU will achieve balance between five objectives: aesthetics, functionality, flexibility, sustainability, and life cycle costs.



### Goal 5: Business and Policy Considerations

#### Objectives:

- Users will be involved in planning new and renovated facilities—but they will be challenged to invent, consider and adopt new good ideas—sometimes breaking tradition.
- Revenue-producing facilities may receive somewhat different treatment in prioritization—especially if funding sources differ from those for non-revenue producing facilities.
- ECU will carry out a principle-based, orderly, prioritized, optimized, and sustained long-term capital development program.
- ECU will assign and re-assign all space based on pragmatic principles of efficiency and productivity, in ways that optimize mission accomplishment and in recognition of the fact that needs change.













# Growth and Strategic Plan

## Space and Program Summary

The following diagrams illustrate the planning goals for academics, residential, parking, and special use. It is important to remember that this program is an estimate of future needs based on recognized benchmarking of similar institutions and decisions made by the University as to specific possible needs in the future. While it is impossible to predict the exact needs of the University, this program sets a reasonable and flexible framework in which East Carolina University can grow for the foreseeable future. The additional building program that is represented below does not allocate demolition or renovation measures that are described later in this plan. These numbers were used to help drive the alternatives portion of the plan and may have been adjusted as the plan moved forward.




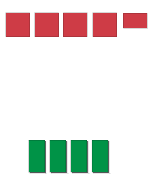






University Campus Population	2009 Population	Total Projected (2025)
Students	27,677	38,717
Faculty and Staff	5,129	7,573
Total Population	32,806	46,290

Health Sciences Campus Program Needs		
Academic (Classroom, Labs, Office)	Existing	Additional Academic
		
Academic	450,439	300,000
Special Use (Library, Special, General)	Existing	Additional Special Use
		
Special Use	71,249	64,000
Healthcare (Clinical Enterprise)	Existing	Additional Healthcare
		
Healthcare	88,788	340,000
Research	Existing	Additional Research
		
Research	52,651	75,000
Service Support	Existing	Additional Service Support
		
Service Support	33,799	3,000
Parking	Existing	Additional Parking
		
Parking (No. of Spaces)	3,115	1,500



## Main Campus Program Needs

Academic (Classroom, Labs, Office)	Existing	Additional Academic
		
Academic	1,154,178	860,000
Special Use (Library, Special, General, Athletics and Recreation)	Existing	Additional Special Use
		
Special Use	809,989	329,000
Residential	Existing	Additional Residential
		
Residential (NASF)	824,456	275,000
Service Support	Existing	Additional Service Support
		
Service Support	114,366	130,000
Parking	Existing	Additional Parking
		
Parking (No. of Spaces)	8,304	2,700

# Alternative Scenarios

## Program Use Bubbles

The master planning process tested projected program and space needs for the Main and Health Sciences Campuses in order to best achieve the vision of the Master Plan. Alternatives were presented to the campus community at open house and workshop sessions. During these meetings, preferred elements were identified to be incorporated into a final plan.

### Main Campus

East Carolina University's Main Campus physically embodies a long, storied history of higher education in North Carolina. It was for this reason that increased sensitivity was required in the master planning approach towards the Main Campus. A respected existing framework of traditional academic programs provided the foundation for master planning decisions. The proposed program and space recommendations for Main Campus build upon the current strength of these existing academic programs and facilities.

The existing density of the core campus area limited the potential for significant infill development, thus requiring new ideas for campus expansion. This reality presented the opportunity to both redefine existing campus boundaries and enhance underperforming lands within campus. Available University land adjacent to downtown Greenville, in the southern portion of Main Campus, and within the Warehouse District provided potential for the development or consolidation of programmatic elements such as new academic facilities, special uses relating to student life, and support services.

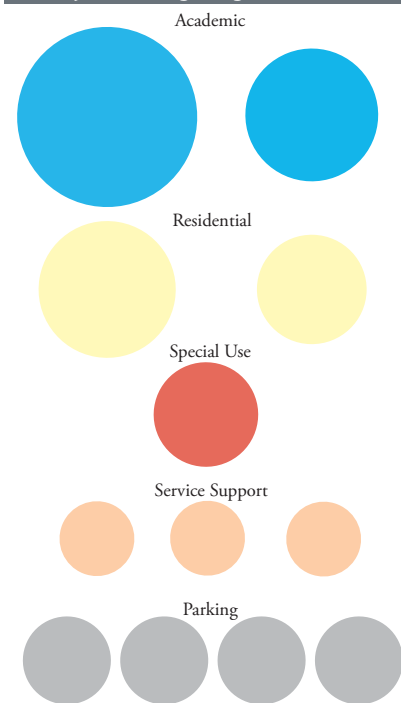
Certain programmatic elements such as new academic buildings, special student support services, and residential facilities were limited in their flexibility because of the desire to locate each of these future programs adjacent to similar uses.

In some situations, these intentions were addressed through proposed demolition, renovation, or expansion recommendations. Major future programmatic elements such as the 'Millennial Campus', parking, and University support services demonstrated significant flexibility and therefore served as moveable pieces during the master planning process.

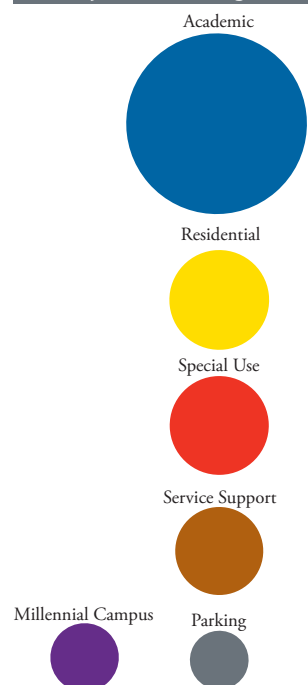
### Millennial Campus

The 'Millennial Campus' was considered a floating piece on both Main Campus and the Health Sciences Campus. The concept to create an environment which fosters relations between ECU and the private sector reflects an idea found in ECU's Strategic Action Plan 2010-2011. (For more information, please refer to the *Strategic Framework for Comprehensive Master Plan*, February 2010 by Eva Klein Associates.) The 'Millennial Campus' is proposed to serve as a tech transfer center that will allow innovative ideas, which emerge from ECU's academic programs, the opportunity to grow into independent entrepreneurial pursuits in an alliance between academia and private enterprise. The 'Millennial Campus' programmatic element provides the greatest potential to serve, both physically and symbolically, as a link between town and gown.

#### Major Existing Program Bubbles



#### Major Future Program Bubbles



## Health Sciences Campus

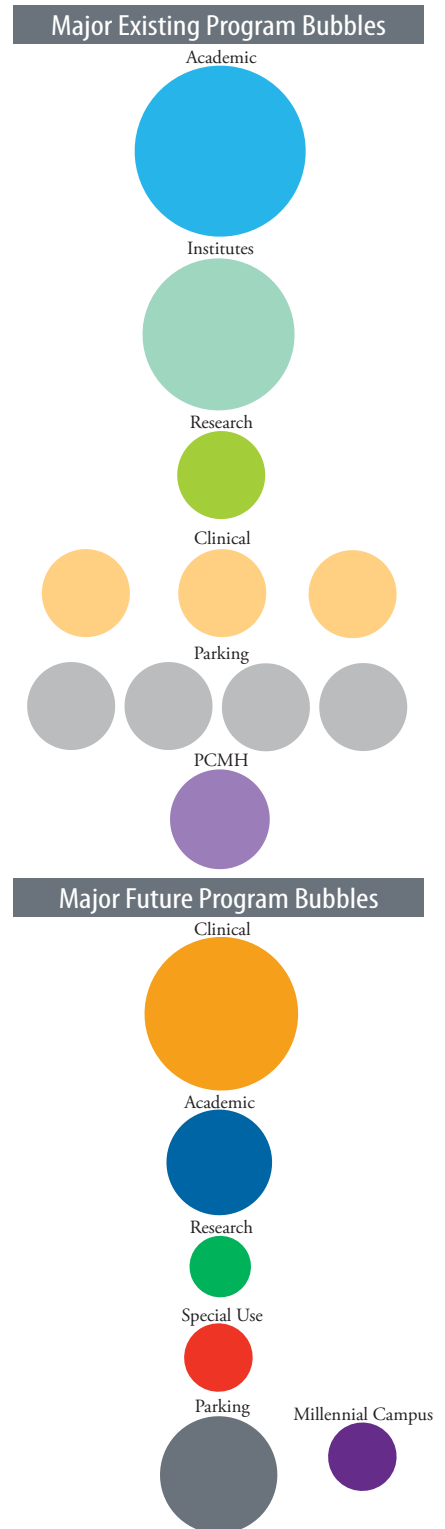
Since its development three decades ago, the Health Sciences Campus has continued to refine its focus on providing consolidated medical education in this campus location. The program for the Health Sciences Campus is unique in that it correlates entirely to the future of allied health and related medical programs.

The recent nature of development efforts on this campus presented increased flexibility, as compared to Main Campus, in defining the location for future programmatic opportunities. However, certain existing facilities such as the Brody Medical Sciences Building, PCMH, and the medical institutes were constants to be considered when siting new facilities. In addition, faculty and students' schedules are designed to move seamlessly between the hospital and medical education facilities. This required that a proposed medical education building be located in very close proximity to both Brody and PCMH.

A primary goal of the master planning process for the Health Sciences Campus was to develop a consolidated clinical model. It was desired that Ambulatory Care and Ancillary Services be located in one area with better access to the other medical facilities. This programmatic component served as one of the most malleable pieces during master planning discussions. However, the need for patient surface parking adjacent to proposed clinical

facilities limited opportunities for its placement due to the large footprint that would be required. It also necessitated that faculty, staff, and student parking needs be relocated to surface parking areas near the perimeter of campus or to a proposed parking deck.

At present, the Health Sciences Campus does not provide any student services. While residential facilities were not desired, incorporation of some student services such as dining and recreation were outlined as a strategic goal of the master planning effort. This programmatic element also served as a flexible component during the development of master plan scenarios, however its proximity to an area with significant student traffic was essential to ensuring its use and success.



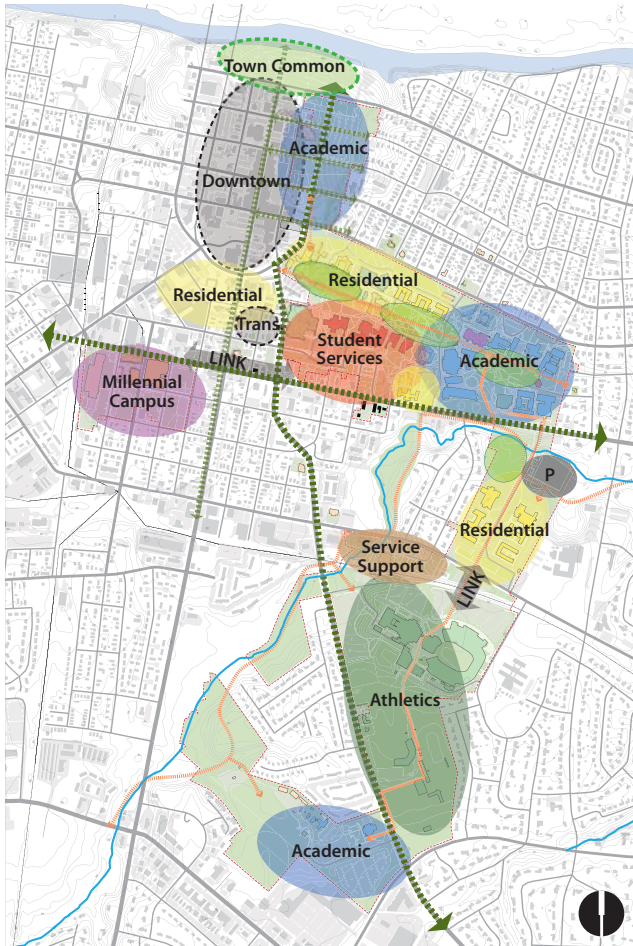


# Alternative Scenarios

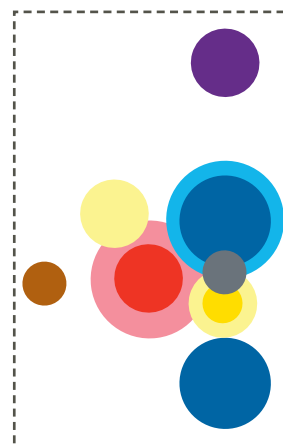
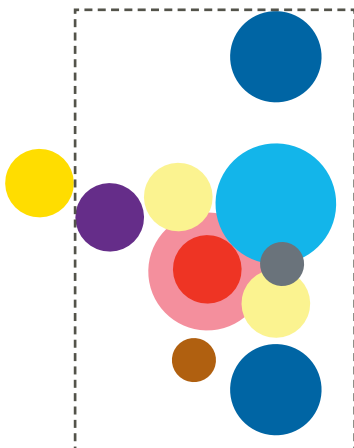
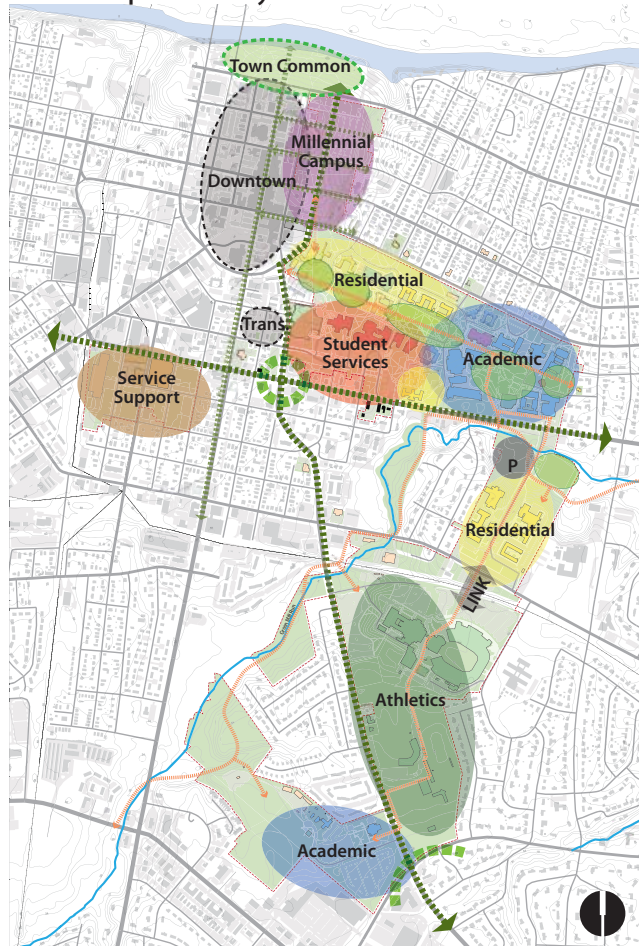
## Main Campus

Three alternative scenarios were developed for Main Campus. These “bubble” illustrations present a comparative overview of each. The primary movable pieces are the proposed growth areas for academic, residential, ‘Millennial Campus’ and facilities components. The stationary pieces are the established athletic, residential, and academic neighborhoods.

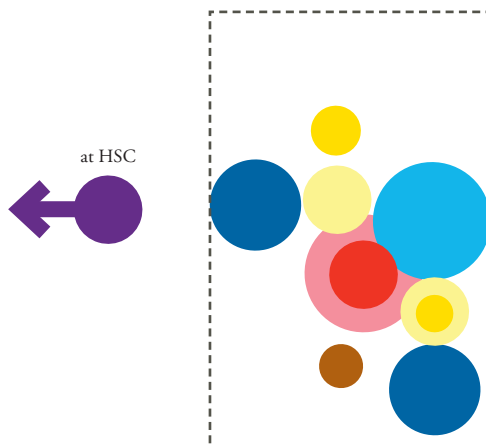
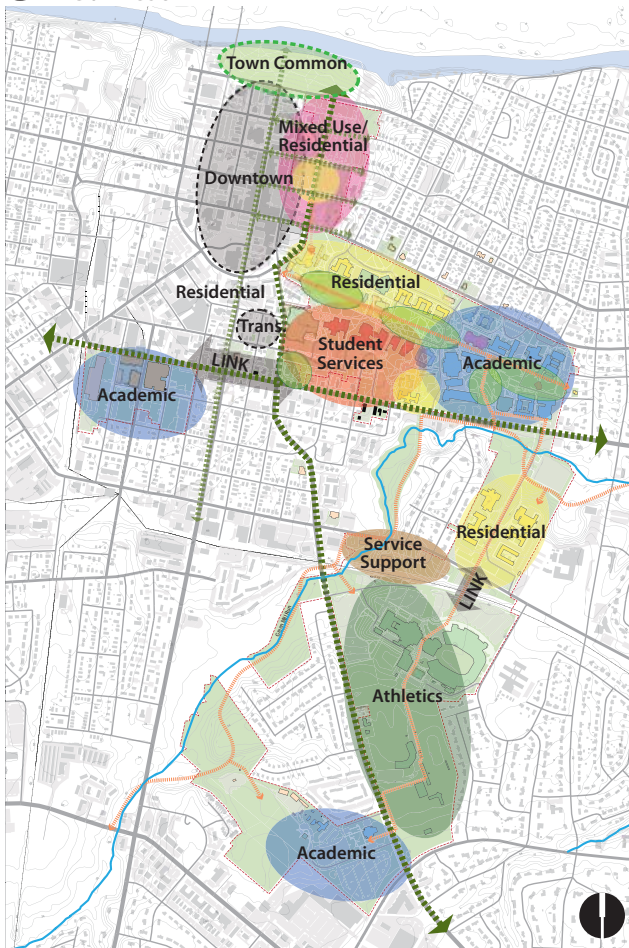
### 1 Go North



### 2 Campus Density



### 3 Go West



### 1 Go North

“Go North” illustrates a scenario in which future academic components are incorporated into the downtown fabric of campus. A new residential component would be distributed just to the south of this area, along both 5th Street and Reade Circle. This configuration has the potential to help spur revitalization efforts within the Downtown District. The proposed ‘Millennial Campus’ would be developed in the Warehouse District.

### 2 Campus Density

The “Campus Density” scenario shows an increased concentration of academic facilities within the existing east academic zone. New residential opportunities would be located in existing residential areas within the campus boundary. The ‘Millennial Campus’ would be developed within the Reade Street Corridor. Facilities and support services would be consolidated in the Warehouse District.

### 3 Go West

In the “Go West” scenario, academic expansion would occur in the Warehouse District. The placement of academics here would create a stronger linkage between the Main and Health Sciences Campuses. Residential expansion could be paired with mixed use in the downtown area. The ‘Millennial Campus’ in this scheme is located on the Health Sciences Campus.



# Alternative Scenarios

## Health Sciences Campus

Four scenarios were generated for the Health Sciences Campus for discussion. Established research, academics, and institutional zones were the immovable pieces that defined the parameters for a new medical education building, ancillary and ambulatory facilities, research expansion, and a student services building.

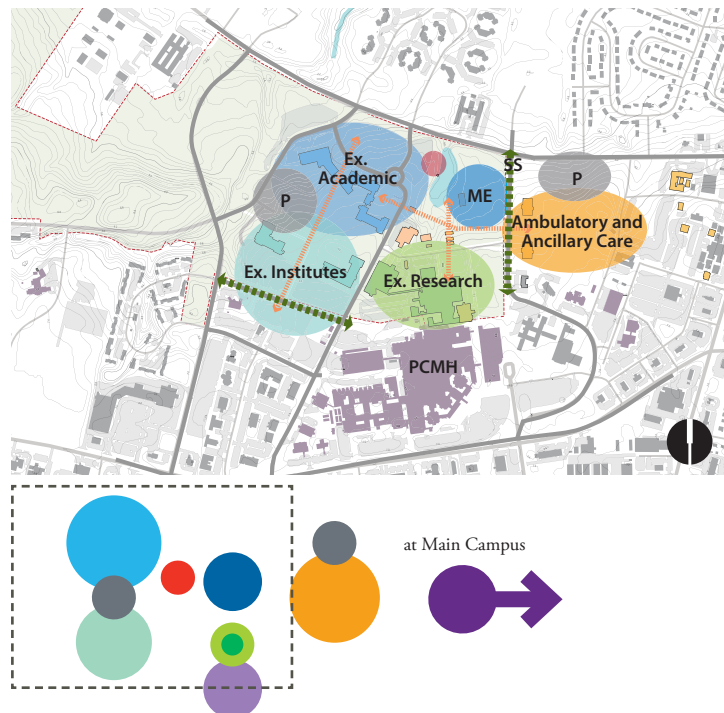
### 1 Live Within Your Means

“Live Within Your Means” explores a land use arrangement with future facilities to be constructed on land currently owned by ECU. Ambulatory Care and Ancillary Services would be consolidated into one central development on the west side of Moye Boulevard. A proposed Medical Education Building would front 5th Street and the medical institutes would expand to the south. In addition, expanded research areas would be located within the existing vivarium and Brody complex.



### 2 Moye Village

“Moye Village” takes the concept of a consolidated Ambulatory Care/ Ancillary Services facility and locates it east of Moye Boulevard, in association with the existing clinical facilities. This would require ECU to purchase the former County hospital site for expansion and construction. The Medical Education Facility would shift further east to a new location at 5th Street and Moye Boulevard. Future research, institutional expansion, and the re-use of Brody for office and research remain the same as presented in Scenario 1.

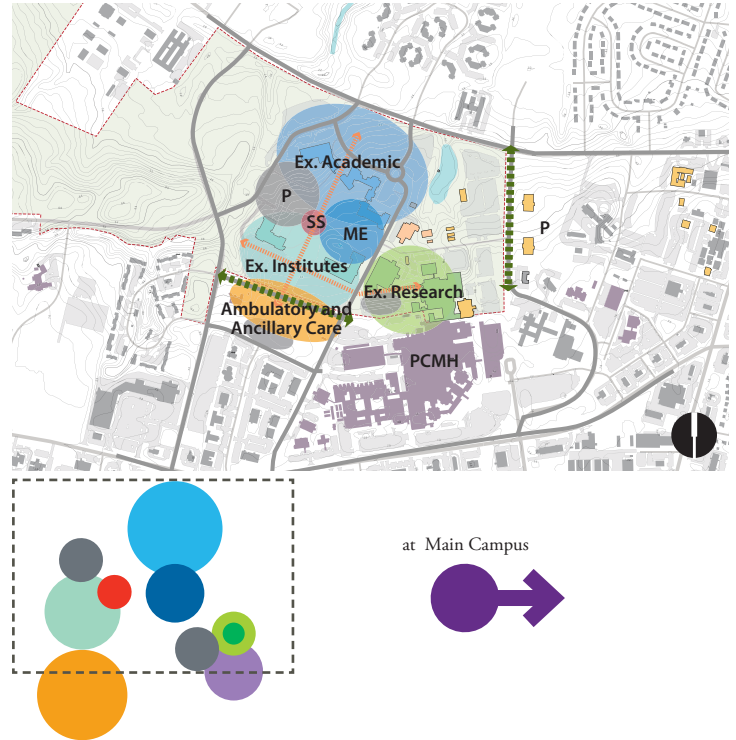




### 3

#### Partner with PCMH

In the “Partner With PCMH” scenario, Ambulatory and Ancillary components move south of Heart Boulevard for a more direct adjacency to PCMH on land owned by Pitt County. This brings future outpatient clinical functions closer to Family Medicine and the Cardiovascular Institute, and creates a new front door off of Arlington Boulevard. Partnering with PCMH could result in a greater cost sharing and savings for ECU. The new Medical Education Building would be located close to research and Brody would be re-used in a manner similar to the previous schemes.



### 4

#### Institution Zone Density

In the last scheme, the Ambulatory and Ancillary components move into a central location between the Family Medicine and Cardiovascular Institute. The Medical Education Building would be located between the Cardiovascular Institute and the Medical Library. Expansion of the vivarium and Brody complex would be similar to previous schemes. A ‘Millennial Campus’, is also proposed west of MacGregor Downs Road, to facilitate partnerships between ECU and private companies working on biomedical research.



# Alternative Scenarios

## Consolidation of the Big Idea

ECU and SmithGroupJJR identified the most desirable aspects of each of the alternative scenarios, as presented on the previous pages, for integration into a single comprehensive campus master plan. The proposed plan respects immovable programmatic pieces and preferred adjacencies; while capitalizing on the flexibility of other elements to create a unifying campus vision.

### Main Campus

Aspects from each of the three alternative scenarios developed for Main Campus are visible within this consolidated plan. A primary theme that emerged was the centrality of the existing Student Services District to the ECU campus. The Master Plan reinforces this role by enhancing it as a central hub of student life on campus and orienting all other districts as spokes radiating out from it. An increased concentration of academic facilities within the existing academic zone radiates from this hub to the east. To the south, spokes of residential and athletics will be supplemented with similar uses to reinforce these neighborhoods. A new Downtown District with a future academic component radiates off to the north and a new Warehouse District is proposed to the west.

The 'Millennial Campus' concept was embraced as an innovative idea that warrants space on both Main Campus and Health Sciences Campus to capitalize on research synergies happening at each location. On Main Campus, the Warehouse District was selected to help bridge

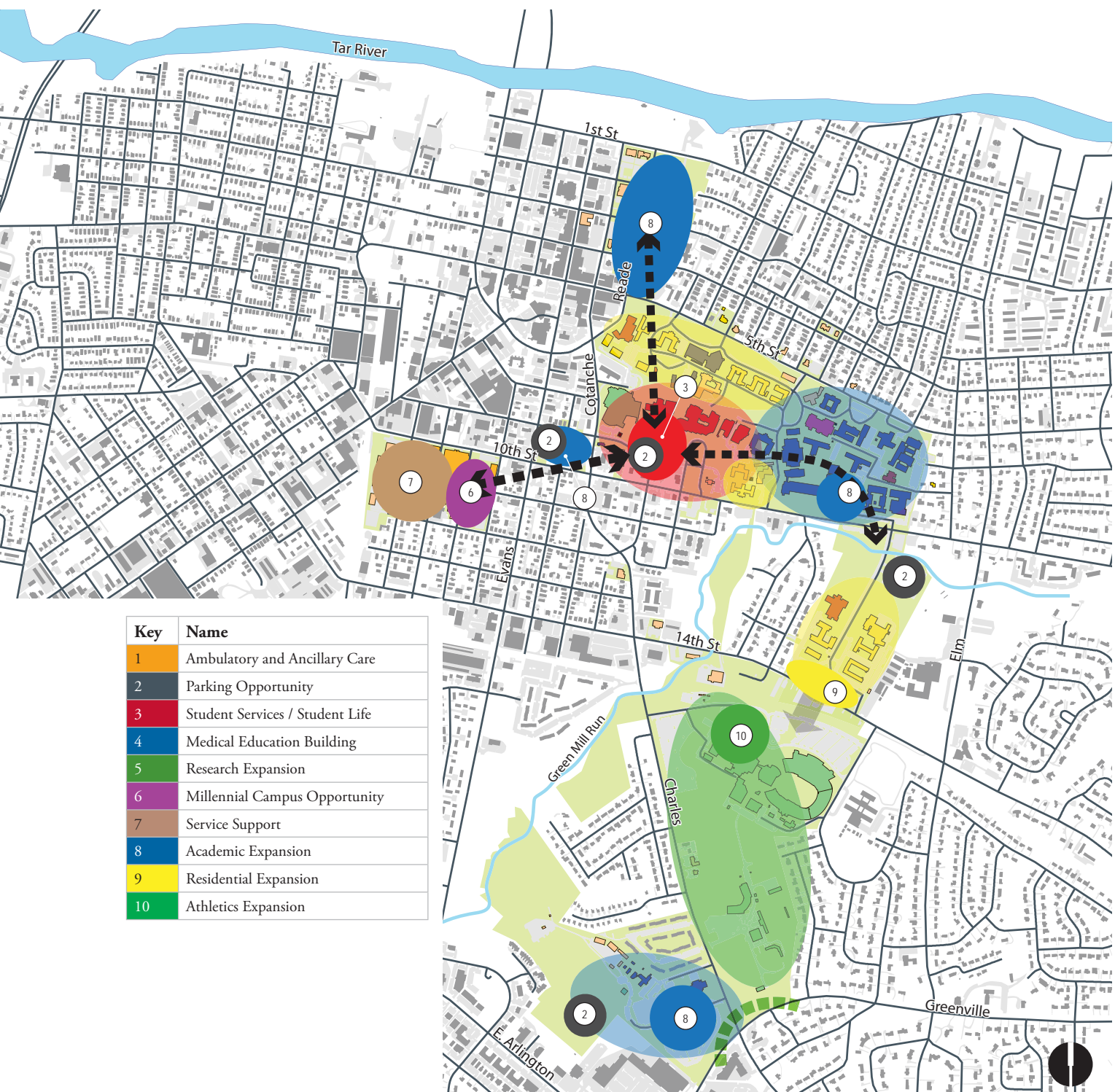


the distance between the two campuses. A 'Millennial Campus' is also proposed on the Health Sciences Campus, near a new Medical Education Building to facilitate partnerships focused on biomedical research.

### Health Sciences Campus

Alternative Scenarios 3 and 4 emerged as the most influential concepts to help shape development of the Master Plan. In addition, new ideas emerged during review of the various schemes that are also present in this consolidated scenario. The central location for Ambulatory

Care and Ancillary Services, between Family Medicine and the Cardiovascular Institute as shown in Scenario 4, was favored as a means to consolidate the institutes and encourage partnership opportunities with PCMH. As a result of this decision, it was determined that the Medical Education Building should also be located nearby to further reinforce collaboration across disciplines and with the hospital. Expanded research areas should be sited within the existing vivarium and Brody Building to create a consolidated medical complex. A Student Life Building is also introduced in the heart of campus.





# Master Plan Recommendations

## Illustrative Plan

The Illustrative Master Plan represents an ideal future vision for both East Carolina University’s Main Campus and the Health Sciences Campus. It translates the principles and key themes developed during the master planning process into a graphical representation. Both short- and long-term opportunities for the continued growth and development of the University are represented in the plan.

Specifically, the Illustrative Master Plan proposes the placement of new features such as future buildings, roadways, pedestrian corridors, open space, parking, and infrastructure with a thorough understanding of their relationship to ECU’s existing campus composition. The Illustrative Master Plan is supported by recommendations for campus-wide systems that include campus development, landscape character, circulation, parking, and campus infrastructure. However, the fundamental function of the Campus Master Plan is to suggest a principle-driven framework for managing future opportunities.



LEGEND

- Immediate Need Buildings
- Future Building Opportunity
- Existing Campus Buildings
- Reuse Candidate
- 10th Street Connector

Key	Name
1	Cancer Center and Medical Offices
2	Ambulatory Clinics & Ancillary Services
3	Medical Education Building
4	New Open Space
5	New Student Life Hub
6	Infill Opportunities
7	Future Infill Opportunities
8	Facilities and Service Support
9	Downtown Campus Development
10	New Open Space
11	Student Life Infill
12	10th Street Infill Opportunities
13	Academic Core Infill Development
14	College Hill / Gateway to Athletics
15	Athletics Improvements
16	Academic Infill Opportunities







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# Master Plan Recommendations

## Campus Sustainability

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Sustainability will play an important role in the development and improvement of East Carolina University's campus. The Campus Master Plan defines a broad holistic approach that unifies fundamental planning recommendations with meaningful qualitative and quantitative green strategies. Sustainable planning principles, alternative modes of transportation considerations, innovative building initiatives, and carbon reduction strategies all come together to inform the development vision for the campus and ensure that growth is forward thinking and environmentally sustainable.

East Carolina University is committed to developing a sustainable campus, and to contributing to an enhanced environment for the City of Greenville and the region. Signed by Chancellor Ballard in 2006, the ECU Safety and Environmental Policy Statement establishes the University's commitment to pursuing environmental sustainable design initiatives for campus activities and developments. The Campus Master Plan emphasizes several aspects of sustainability, summarized here, that should be considered in the design of any development.

### Sustainable Land Use Practices

Campus development should prioritize sensible land use practices that encourage physical and functional consolidation and facilitate pedestrian mobility, access, and convenience. Campus functions

should be concentrated in defined walkable areas, encouraging multiuse neighborhoods that minimize reliance on automobiles and promote alternative modes of transportation.

### Preservation of Natural Features

Natural resources should be leveraged to improve their inherent effectiveness and enhance environmental quality. The campus should be viewed in the context of the Coastal Plain Ecosystem and development should respect, and where possible, regenerate this ecosystem.

ECU's location between the Tar River and Green Mill Run, elevates the importance of managing and treating stormwater on site to reduce discharge volume and contribute to the restoration of natural systems. Stormwater management practices should be implemented that rely on natural features by restoring ephemeral stream beds, reducing impervious ground cover, and treating stormwater where it falls instead of pushing it downstream. Campus woodland areas and native habitats should be preserved and expanded to increase shaded tree canopies and promote indigenous wildlife.

### Diverse Transportation Options

To reduce greenhouse gas emissions and promote healthy lifestyles, pedestrian and bicycle connections on campus and to the community should be reinforced. Bicycle commuting should be encouraged with infrastructure enhancements

that include dedicated cyclist commuter lanes and convenient bicycle parking and storage. Similarly, automobile circulation should be considered carefully on campus and only provided for essential services.

Parking infrastructure should be refocused along core campus edges to reduce internal campus traffic and facilitate the daily transition of vehicle commuters to campus pedestrians. Transportation and circulation infrastructure should be fully integrated with local and regional transit systems and non-motorized trail networks to provide efficient access across campus to encourage diverse commuting options.

### Innovative Buildings

Sustainable design should be a priority for all new building construction on campus. North Carolina Executive Order 156 and State of North Carolina Senate Bill S581 and S668 established energy conservation goals and requirements for state-owned facilities. These guidelines provide numerous recommendations which promote sustainable design and user wellbeing. The University Construction Standards also recommend using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) evaluation system to guide designers for all campus developments.

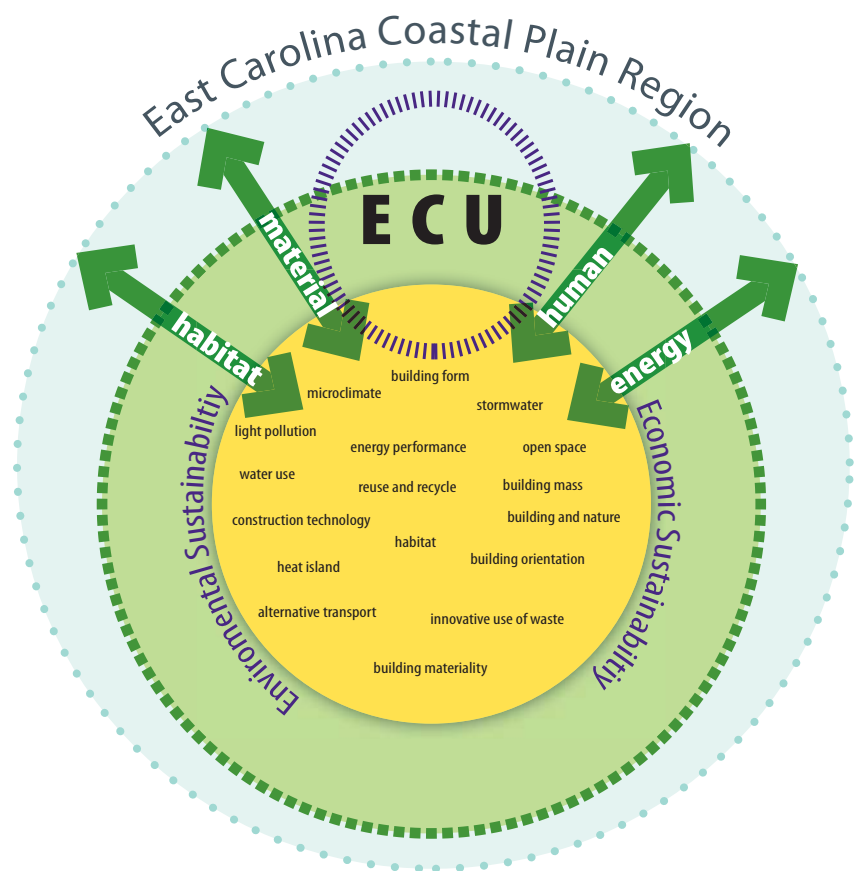
These two sets of sustainable guidelines provide benchmark opportunities to assist in the

development of innovative and sustainable new buildings for ECU's campus. Innovative measures may include optimizing energy performance, using recycled content or regionally sourced materials, designing buildings for daylight harvesting, and minimizing heat island effect from roof elements. New facilities should utilize strategies that are innovative by current standards and be flexible enough to incorporate future innovative features.

### Carbon Neutral Campus

Campus energy efficiency should be improved, and the University should move toward a carbon neutral campus by implementing greenhouse gas emission reduction strategies. These reductions can be achieved by reducing existing and future energy consumption, diversifying campus energy resources, and monitoring actual campus energy use to better understand power consumption and develop reduction strategies.

Designers are encouraged to evaluate building envelope thermal performance and to design and select systems that reduce energy consumption for building heating and cooling. Currently, a Greenhouse Gas Emissions Study is under consideration by East Carolina University. When completed, this study will provide a definitive understanding of the impact of campus developments, both existing and new, on the environment.



# Master Plan Recommendations

## Immediate Need Building Opportunities

The immediate building needs proposed for East Carolina University’s Main Campus and Health Sciences Campus address its commitment to the sciences, arts and humanities, research, and enhanced student life.

### Main Campus

On the Main Campus, a diversity of building uses are proposed. These include enhancements to traditional academic programs through the addition of Academic A and a Life Sciences / Biotechnology Building. Academic A strives to bridge the distance between Main Campus and the Warehouse District. The HHP division requires new academic space, as well as a new research gym. Immediate campus needs also include upgrades to student support services such as a new Student Union, Library addition, and Todd Dining Hall expansion. The introduction of an Alumni Center and Visual & Performing Arts Center on Reade Street is expected to enliven this corner of downtown Greenville.

### Health Sciences Campus

Development proposed for the Health Sciences Campus remains focused on the allied health professions and medical education. Consolidation of clinics and faculty offices were a primary goal for the University. On both campuses, parking presented immediate concerns. Recommendations include provisions for both the relocation of existing surface parking and the addition of parking decks.



### IMMEDIATE NEED BUILDINGS

- Immediate Need Buildings
- Immediate Land Acquisition
- Existing Campus Buildings
- Future Campus Buildings
- 10th Street Connector

Key	Name
1	Cancer Center
2	HSC Parking Deck #1
3	Ambulatory Clinics and Ambulatory Ancillary Services Building
4	Clinical Faculty Offices
5	Student Life Building
6	Medical Education Building
7	Utilities Expansion
8	Research Expansion
9	Facilities Building Complex
10	IT / Data Center

Key	Name
11	Academic A Building
12	Visual & Performing Arts Center
13	Office Surge Building
14	Alumni Center
15	Main Campus Parking Deck #1
16	Student Rec. Center Expansion
17	Student Union Building
18	Library Addition
19	Life Sciences / Biotechnology Bldg.
20	College Hill Parking Deck
21	Todd Dining Hall Expansion
22	Belk Hall Residence Replacement, Phase 1
23	Belk Hall Residence Replacement, Phase 2
24	Basketball Practice Facility
25	Stadium Press Box Addition
26	HHP Research Gym
27	HHP Classroom and Offices
28	Utility Expansion







# Master Plan Recommendations

## Future Building Opportunities

The Campus Master Plan recommends a number of future building opportunities that will accommodate academic, medical services, special uses, student life, and support service growth. This plan provides a long-range vision for ECU that allows for flexibility in its execution. While no program has been defined for the buildings highlighted, they provide ECU with expansion possibilities if the anticipated future need presents itself.

### Main Campus

The majority of future building opportunities proposed for Main Campus are located along Reade Street, adjacent to downtown Greenville. These include academic/mixed use facilities with associated parking structures. Additional building opportunities are centered around the intersection of 10th Street and Cotanche Street. A visitor center and additional academic buildings are proposed in this location. The Warehouse District is the recommended site for ECU's new 'Millennial Campus'.

### Health Sciences Campus

The Health Sciences Campus offers several future building opportunities that include academic, office, and clinical space, as well as the development of a 'Millennial Campus' that would focus on advancements in medical technology and the biosciences. The majority of expansion opportunities are focused along Moye Boulevard, with some development possible in the center of campus and near MacGregor Downs.



#### FUTURE OPPORTUNITIES

- Future Opportunity Buildings
- Future Land Acquisition
- Existing Campus Buildings
- Immediate Need Buildings
- 10th Street Connector

#### POTENTIAL FUTURE USES

Key	Name
1	Clinic / Medical Office
2	Academic
3	Utilities Expansion
4	Academic, Millennial, Office
5	Office
6	Parking Deck
7	Hotel / Conference Center
8	Parking Deck / Mixed Use
9	Academic / Mixed Use
10	Academic / Parking Deck
11	Millennial Campus / Office
12	Parking Deck
13	Academic
14	Visitor / Welcome Center
15	Academic
16	Academic / Office / Administrative



# Master Plan Recommendations

## Vehicular Road and Parking Removals

In order to accommodate the immediate and future building needs proposed for East Carolina University, several areas of surface parking and portions of existing roadway would require removal. In addition, certain areas of existing parking and roadway are recommended for removal in order to improve the overall campus circulation system and enhance ECU's open space network.

### Main Campus

Enhanced pedestrian circulation and open space improvements were a primary goal for Main Campus. It was for this reason that portions of several service drives are proposed for immediate removal. In addition, many surface parking lots are recommended for removal in order to provide building opportunities in strategic locations to respond to important adjacencies.

### Health Sciences Campus

On the Health Sciences Campus, immediate parking removal opportunities include the Health Sciences Campus Core and West Brody Lots. These removals allow for the immediate consolidation of medical education and clinical facilities. Service Drive between Heart Boulevard and North Campus Loop is also proposed for immediate removal in order to improve pedestrian connectivity on the Health Sciences Campus.



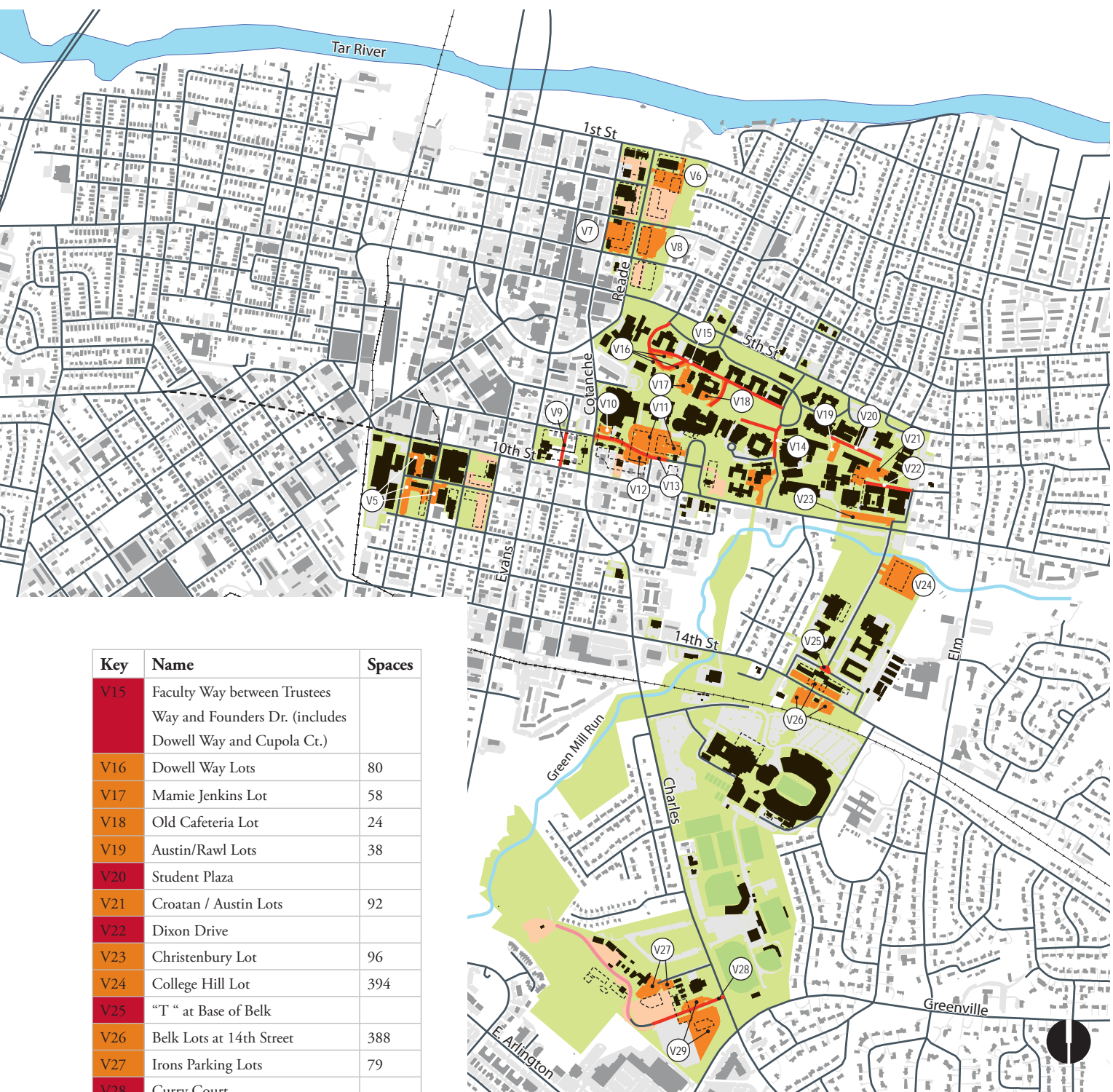
#### REMOVALS

- Immediate Need Parking Removal
- Future Parking Removal
- Immediate Need Road Removal
- Future Road Removal
- Existing Roads
- Proposed Campus Buildings
- Existing Campus Buildings
- 10th Street Connector

#### IMMEDIATE NEED PROJECTS

Key	Name	Spaces
V1	HSC Core Lot	280
V2	West Brody Lot	169
V3	Service Dr. between Heart Blvd. and North Campus Loop	
V4	Service Drive On-street Parking	39
V5	Misc. Warehouse District Lots	
V6	Willis Hall Lot	128
V7	West Reade Street Lot	194
V8	East Reade Street Lot	192
V9	Forbes St., between 8th and 9th	
V10	Rec. Center Lot	30
V11	Mendenhall Lots	309
V12	Surface Parking Lot	55
V13	Library Drive	
V14	Founders Dr. between Alumni Lane and Wright Circle	





# Master Plan Recommendations

## Building Removal Candidates

The Campus Master Plan recommends the removal of certain existing buildings in order to best achieve the outlined goals for ECU. Each removal candidate was carefully evaluated during the master planning process for its renovation and/or re-use potential. Ultimately, the buildings highlighted on the adjacent diagram were determined to prevent realization of the overall Master Plan vision. Therefore, these buildings are recommended for immediate or future removal. It is essential that all removal efforts be coordinated with proposed campus development projects to ensure that all building occupants and functions are transitioned to a new facility prior to demolition. Generally speaking, every campus building should be evaluated for preservation opportunities prior to removal. For example, the architectural elements found on Christenbury Memorial Gymnasium should be carefully removed and reused on the new HHP Gymnasium.

### Main Campus

All of the immediate building removal recommendations are located on the Main Campus. They include several buildings in the core campus area, six buildings in the Warehouse District, three buildings along Reade Street, two in the southern portion of campus, and Belk Residence Hall.

### Health Sciences Campus

There are no immediate building removal candidates on the Health Sciences Campus. However, several temporary facilities are recommended for future removal.



#### REMOVAL CANDIDATES

- Immediate Need Building Removals
- Future Building Removals
- Proposed Campus Buildings
- Existing Campus Buildings
- 10th Street Connector

#### IMMEDIATE NEED PROJECTS

Key	Name	Bldg. #
D1	Warehouse District Buildings	
D2	10th and Evans Buildings	
D3	Eller House	58
D4	International House	87
D5	Christenbury Memorial Gymnasium	7
D6	Bloxtton House	50
D7	Erwin Building	49
D8	Willis Building	56
D9	Administrative Support Annex	151
D10	Building #159	159
D11	Mail Services	43
D12	Belk Residence Hall	73
D13	Pirate Club Buildings	39
D14	Belk Annex	59







# Master Plan Recommendations

## Vehicular Parking Opportunities

The recommendations that relate to parking in the Campus Master Plan focus on strategic locations for replacing parking facilities that are displaced, as well as address the parking needs that are expected to result from new construction. Proposed parking, primarily in decks, is positioned to serve the Academic Core and downtown, for both the daily campus population and visitors. Additional future parking locations are shown as part of long-term planning within the Master Plan. These locations should only be considered for implementation as demand justifies their construction. Minor roadway adjustments are to be addressed immediately.

### Main Campus

The parking recommendations for Main Campus vary between immediate needs and future parking opportunities. The primary districts determined to have immediate parking needs are the Student Services District, Warehouse District, and the South Academic District. Within the Campus Core and Downtown District, proposed structure parking is recommended in lieu of surface parking to allow for building density in these areas.

### Health Sciences Campus

Parking structures are also proposed to serve the Health Sciences Campus in areas near the new medical education building and PCMH. Surface parking is also recommended to be located in perimeter areas of the campus.



#### PARKING

	Surface Immediate Need
	Surface Future Opportunity
	Structure Immediate Need
	Below Grade Structure
	Structure Future Opportunity
	Existing Roads
	Proposed Roads
	10th Street Connector
	Proposed Campus Buildings
	Existing Campus Buildings

#### IMMEDIATE NEED PROJECTS

Key	Name	Spaces / Floors
P1	Cancer Center Surface Lot	650
P2	Health Sciences Parking Deck #1	700 / 4
P3	Service Drive Loop	
P4	Medical Education Deck	200 / -2
P5	Main Campus Parking Deck #1	1,000 / 5
P6	College Hill Parking Deck	1,000 / 5
P7	College Hill Loop	
P8	HHP Surface Lot (phased)	1,300
P9	Olgesby Drive Extension	





# Master Plan Recommendations

## Academic, Clinical, Research and Support Building Opportunities

The master planning process revealed that several building opportunities exist to enhance and meet East Carolina University's future program goals for the Academic, Clinical, Research, and Support Service sectors. The Campus Master Plan suggests future building footprints to accommodate these proposed programs that are distributed across both the Main Campus and the Health Sciences Campus.

### Main Campus

Academic and Support Service Building opportunities are recommended for placement on the Main Campus. These initiatives are primarily centered in the Warehouse District and the Downtown District. The Warehouse District presents the opportunity to consolidate the University's support services, such as Police, Parking and Transportation, and the IT/Data Center, into one central location between both the Main and Health Sciences Campuses.

### Health Sciences Campus

The Health Sciences Campus also presents an opportunity to consolidate services. As was previously mentioned in this report, the clinical services are currently located in several different areas across this campus. The Campus Master Plan proposes that clinical services be centralized on campus, adjacent to both medical education and research and PCMH.

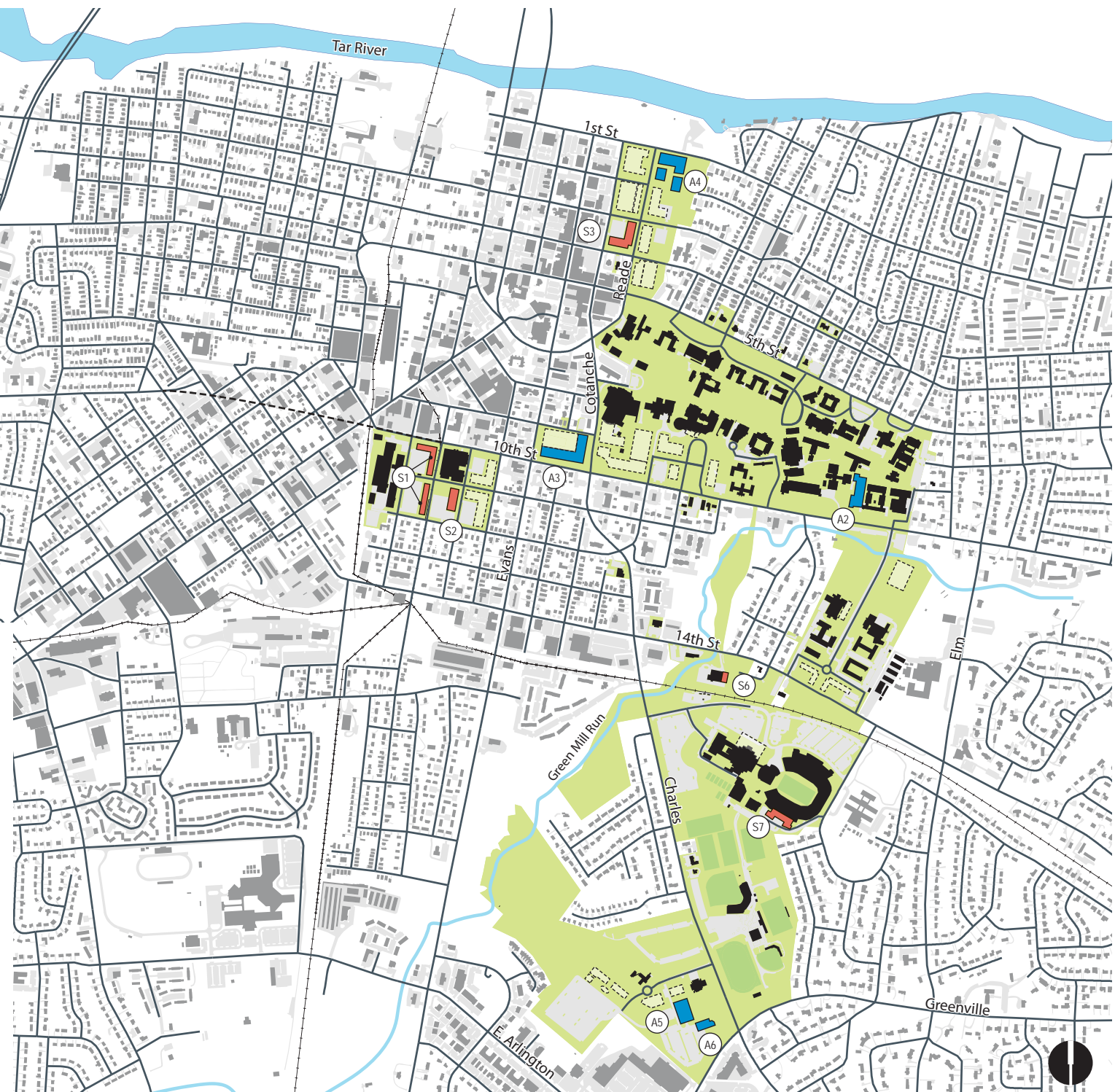


#### BUILDING OPPORTUNITIES

- Proposed Academic
- Proposed Research
- Proposed Support
- Proposed Clinical
- Proposed Campus Buildings
- Existing Campus Building
- 10th Street Connector

#### IMMEDIATE NEED PROJECTS

Key	Name	GSF/ Floors
A1	Medical Education	250K / 6
A2	Life Science / Biotechnology	270K / 6
A3	Academic A	275K / 4
A4	Visual & Performing Arts Center.	200K / 3
A5	HHP Research Gym	55K / 1
A6	HHP Faculty Offices	60K / 3
R1	Research Expansion	33K / 2
S1	Facilities Building Complex	50K / 4
S2	IT / Data Center	40K / 3
S3	Office Surge Building	40K / 4
S4	Clinical Faculty Offices	50K / 4
S5	HSC Utilities Expansion	
S6	Main Campus Utilities Expansion	
S7	Stadium Press Box Addition	25K / 6
C1	Ambulatory Clinics Building	100K / 5
C2	Ambulatory Ancillary Services	194K / 5
C3	Cancer Center	60K / 3





# Master Plan Recommendations

## Residential and Student Life Building Opportunities

East Carolina University remains committed to providing its students with exceptional residential and student life opportunities. During the master planning process, this translated into several proposed recommendations for new and expanded facilities across both campuses.

### Main Campus

The Master Plan recommendations for Main Campus address a variety of identified residential and student life needs. Several expansion efforts are proposed such as the Joyner Library, Recreation Center, and Todd Dining Hall to accommodate over use. New building opportunities include an Alumni Center within the Downtown District and a new Student Union. Changing trends in residential living resulted in the recommendation to replace Belk Residential Hall with a facility that combines more modernized suite-style residential options with communal study areas.

### Health Sciences Campus

A Student Life Building is proposed for the Health Sciences Campus to meet the existing student demands. Presently, no student support facilities exist upon this campus. This proposed building opportunity will serve as a welcome addition for students, staff and visitors and create a more complete campus composition.



#### STUDENT LIFE

- Proposed Student Center
- Proposed Athletics / Recreation
- Proposed Dining
- Proposed Residential
- Proposed Campus Buildings
- Existing Campus Buildings
- 10th Street Connector

#### IMMEDIATE NEED PROJECTS

Key	Name	GSF/Floors
SL1	Student Life Building	64K / 2
SL2	Student Union Building	230K / 5
SL3	Library Addition	22K / 1
SL4	Alumni Center	36K / 3
SL5	Recreation Center Expansion	63K / 2
SL6	Basketball Practice Facility	38K / 1
SL7	Todd Dining Hall Expansion	10K / 1
SL8	Belk Residential Hall Replacement, Phase 1	up to 120K / 8
SL9	Belk Residential Hall Replacement, Phase 2	up to 138K / 8



# Master Plan Recommendations

## Repurpose and Renovation Opportunities

The SmithGroupJJR team evaluated the condition of East Carolina University’s buildings and identified a range of facilities that are either in need of repurposing or renovation. The remodeling efforts primarily address conversion activities that will result from recommended development efforts that shift various academic and support services to new facilities.

### Main Campus

On Main Campus, the Academic Core, Student Services, and Warehouse Districts contain all of the buildings proposed for repurposing. One notable aspect of the plan is the transition of ECU’s business and educational programs to a new Academic A Building from Bate and Speight. A newly renovated Greenville Town Common, containing an outdoor amphitheater overlooking the Tar River, seemed the appropriate location for a new Visual & Performing Arts Center. This presents new opportunities for the existing McGinnis Theatre. The University has also planned the renovation of several of its residential halls to transform them into more modern living arrangements.

### Health Sciences Campus

Brody Medical Sciences Building is the only repurpose candidate on the Health Sciences Campus. The spatial needs assessment determined that Brody is no longer adequately serving ECU’s medical education needs. For this reason, Brody will transition to research and office space.



#### REPURPOSE CANDIDATES

- Renovation Candidate
- Residential Renovation Candidate
- Proposed Campus Buildings
- Existing Campus Buildings
- 10th Street Connector

Key	Name	Bldg.	GSF/Floors	Beds
P1	Brody Renovation	15	64 K / 2	
P2	Hainey Building	216	75 K / 1	
P3	Mendenhall Student Center	55	117 K / 3	
P4	Harold H. Bate Building	95	165 K / 3	
P5	Howell Sciences Complex	5	108 K / 3-5	
P6	McGinnis Theatre	33	36 K / 2	
P7	Speight Building	12	51 K / 3	
P8	Convert White Residence Hall	78	83 K / 10	250
P9	Convert Greene Residence Hall	77	83 K / 10	250







# Master Plan Recommendations

## Campus Roads and Entrances

The campus road and entry recommendations focus on a holistic vision for East Carolina University that seeks to visually unite its two primary campuses. Campus entries represent important routes into and out of campus, which should enhance the arrival experience of visitors. Entry portal improvements have been identified at a hierarchy of scales, to serve both vehicles and pedestrians. A counterpoint to these proposed measures is the revitalization of important city streetscapes. Much of the perceived character of ECU's campuses is derived from the quality of its edge conditions. As illustrated in the adjacent diagram, many opportunities exist for streetscape improvements through alliances with the City of Greenville.

### Main Campus

Analysis of traffic volumes suggest that there are two important existing entry portals into Main Campus, as well as an anticipated one near the Student Union. Enhancement of these areas, in combination with efforts to improve secondary entry locations and streetscapes, will contribute significantly to the overall visual impact of ECU's campus.

### Health Sciences Campus

The Health Sciences Campus would benefit greatly from a partnership with PCHM to enhance strategic entry portals, and to make wayfinding clear, concise and uniform. In addition, coordinated streetscape efforts with both PCMH and the City of Greenville would improve the overall experience of visitors.



### ROADS AND ENTRANCES

- Proposed Streetscape Improvements
- Improvements proposed by others
- Existing Campus Entrance
- Proposed Primary Campus Entrance
- Proposed Secondary Campus Entrance
- Proposed Joint Collaboration Entrance
- Proposed Campus Buildings
- Existing Campus Buildings
- 10th Street Connector



# Master Plan Recommendations

## Transit Routes and Stops

The master planning process revealed that East Carolina University could benefit from an improved campus transit network that accommodates a variety of modes of travel. The Campus Master Plan recommends enhancement of the campus transportation network through a multi-modal approach that encourages walking and biking, while also improving vehicular and transit movement. Recommendations for new bus routes and stops build upon the resources of an existing transit framework with the overall objective of improving campus accessibility.

### Main Campus







ECUSTA presently serves as the only transportation option on campus. The Master Plan recommends that a Main Campus Circulator Route be developed to provide timely access to major activity nodes on the Main Campus. The ECUSTA and Main Campus Circulator Routes should be coordinated to ensure overlap exists at their stops.

### Health Sciences Campus

In addition, a Health Sciences Circulator route is recommended to service the Health Sciences Campus. Presently, the ECUSTA route only stops along Moye Drive and 5th Street, making access to all campus facilities difficult for some individuals. The proposed circulator will help unite the campus by providing door-to-door service. It is also recommended that the ECUSTA stops be amended to include the new Student Life Building.



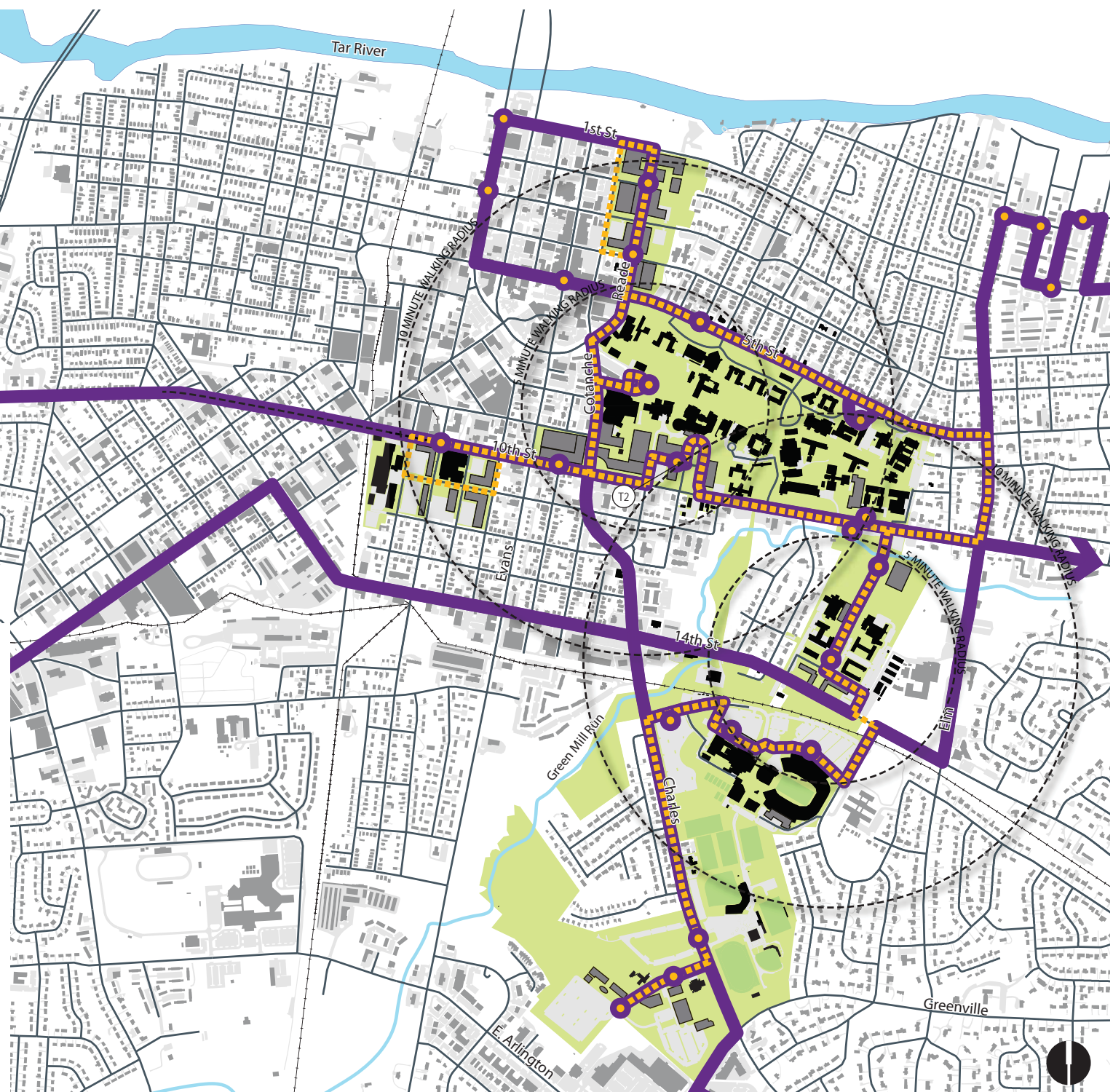
#### CAMPUS TRANSIT SYSTEM

-  ECUSTA Route and Stops
-  HSC Circulator Route and Stops (Shuttle)
-  Main Campus Circulator Route
-  Proposed Campus Buildings
-  Existing Campus Buildings
-  10th Street Connector

#### NEW TRANSIT HUBS

Key	Name
T1	Transit Hub at Student Life Building
T2	Transit Hub at Student Union Building





# Master Plan Recommendations

## Pedestrian Circulation

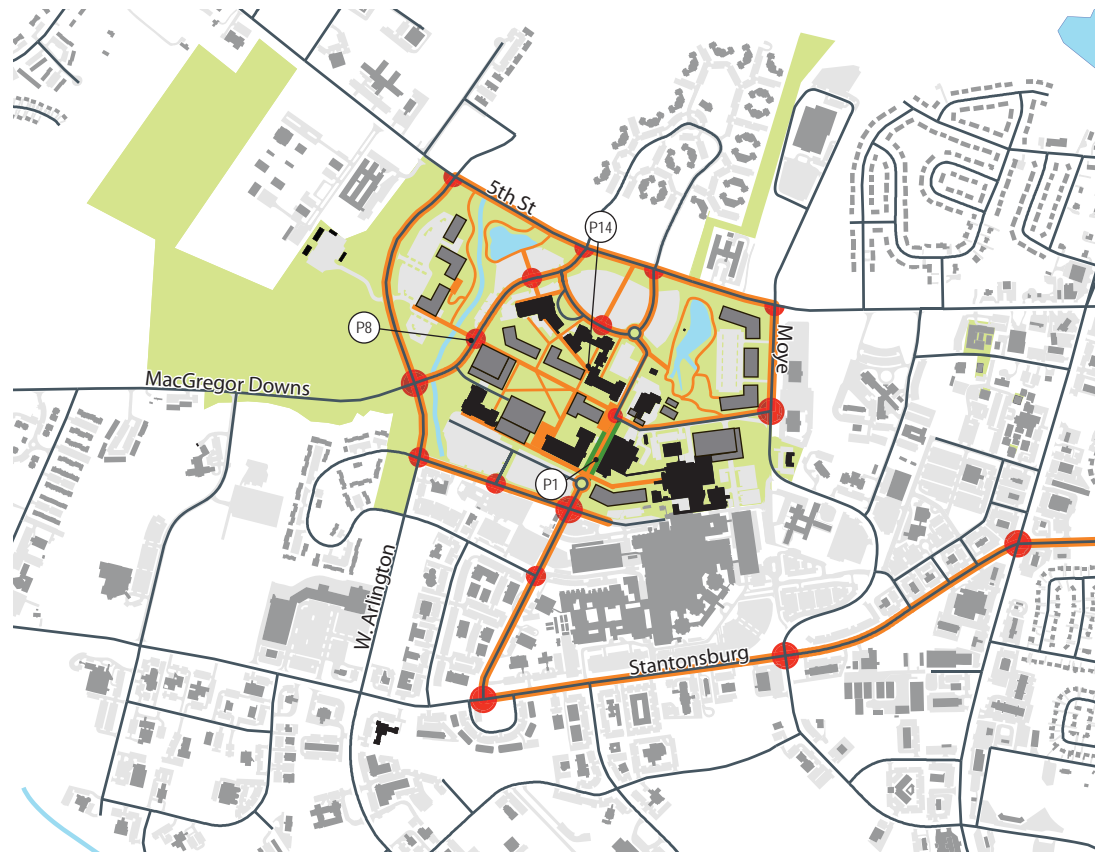
The Campus Master Plan seeks to improve the overall walkability and pedestrian connectivity of East Carolina University's campuses. Future pedestrian walks are proposed to enhance and expand the network of circulation routes already present across both the Main Campus and Health Sciences Campus. In addition, many areas have been identified that would significantly benefit from new or improved pedestrian street crossings.

### Main Campus

On Main Campus, recommendations specifically address the need to better connect both the east-west pedestrian network within the core campus area and north-south connectivity near College Hill and the Athletic District. In the Campus Core, several existing surface lots are to be removed to unite existing sidewalk networks to allow for fluid east-west pedestrian movement. Within the Downtown District, walks are proposed to align with existing city streetscapes in order to bridge the existing divide between town and gown.

### Health Sciences Campus

As mentioned earlier in this report, the segmented development of the Health Sciences Campus has resulted in the lack of a coherent pedestrian circulation network. The Campus Master Plan recommendations address this important concern by eliminating portions of existing interior campus roadway and surface parking lots in order to connect buildings, parking lots, and transit stops to one another.



#### PEDESTRIAN CIRCULATION

- Major Pedestrian Walks
- Shared Use Path
- Pedestrian Crossings
- Proposed Campus Buildings
- Existing Campus Buildings
- 10th Street Connector

#### PEDESTRIAN IMPROVEMENTS

Key	Name
P1	Service Drive shared-use path conversion
P2	Faculty Way shared-use path conversion
P3	Alumni Lane shared-use path conversion
P4	Founders Drive shared-use path conversion
P5	Student Plaza Drive shared-use path conversion
P6	Dixon Drive shared-use path conversion
P7	Connection to Downtown District
P8	Connection to Cancer Center
P9	Improved crossing to College Hill District
P10	Connection to Athletic District / rail crossing
P11	Athletic District connection
P12	Improved crossing from Athletics to South Academic District
P13	Recreational path through Natural Area District
P14	Connected circulation routes at HSC







# Master Plan Recommendations

## Bicycle Circulation

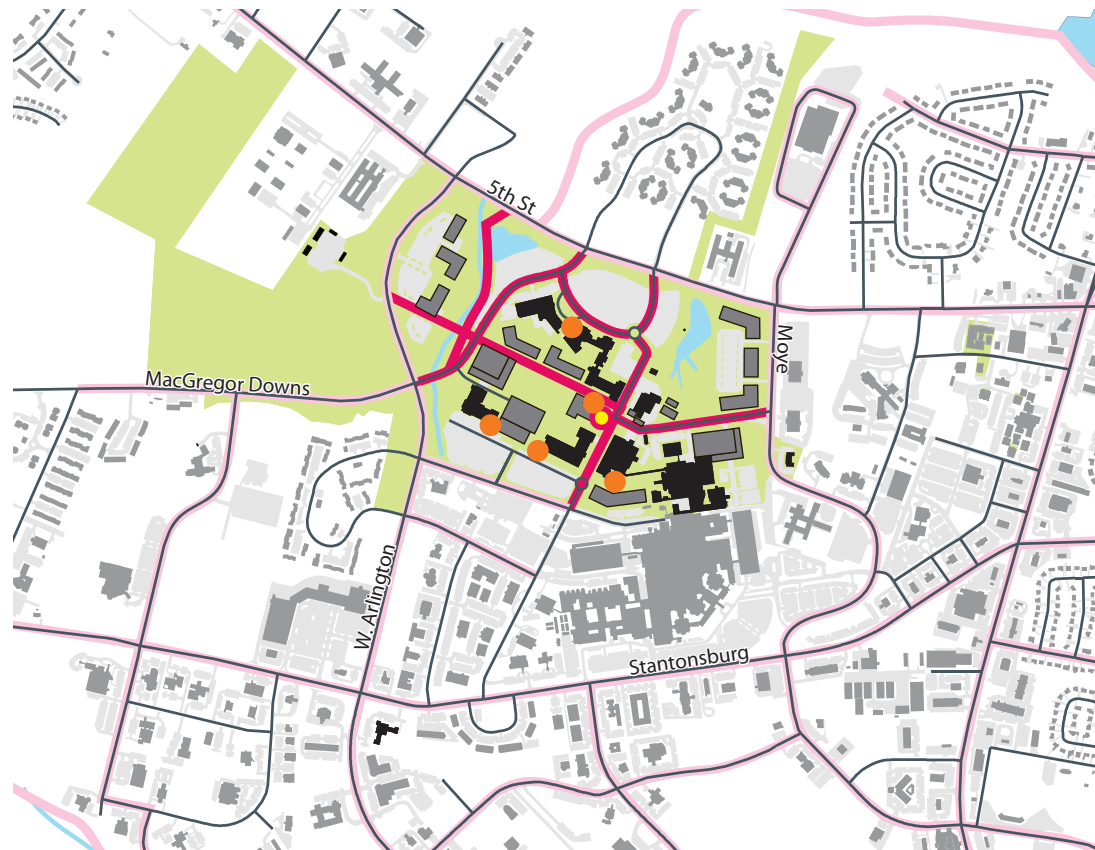
While bicycle ridership is gaining momentum on campus, East Carolina University does not yet have a strong bicycle network in place. Improvements to bicycle circulation involve strengthening the north-south and east-west routes on both campuses. In addition, increased bike parking and new bike stations, providing bicycle maintenance and supplies, are recommended to accompany the route improvements. All components must be in place for the system to function most effectively.

### Main Campus

Existing bike routes on Main Campus focus on east-west movement from non-University residential areas to the Campus Core. The Campus Master Plan recommends that a bicycle network be implemented that both enhances these existing east-west routes and also provides new paths from the southernmost portion of campus to the Downtown District. The recommendations acknowledge existing routes and future proposals from the City of Greenville. New bicycle routes connect with these existing and proposed systems to provide a comprehensive regional bicycle network.

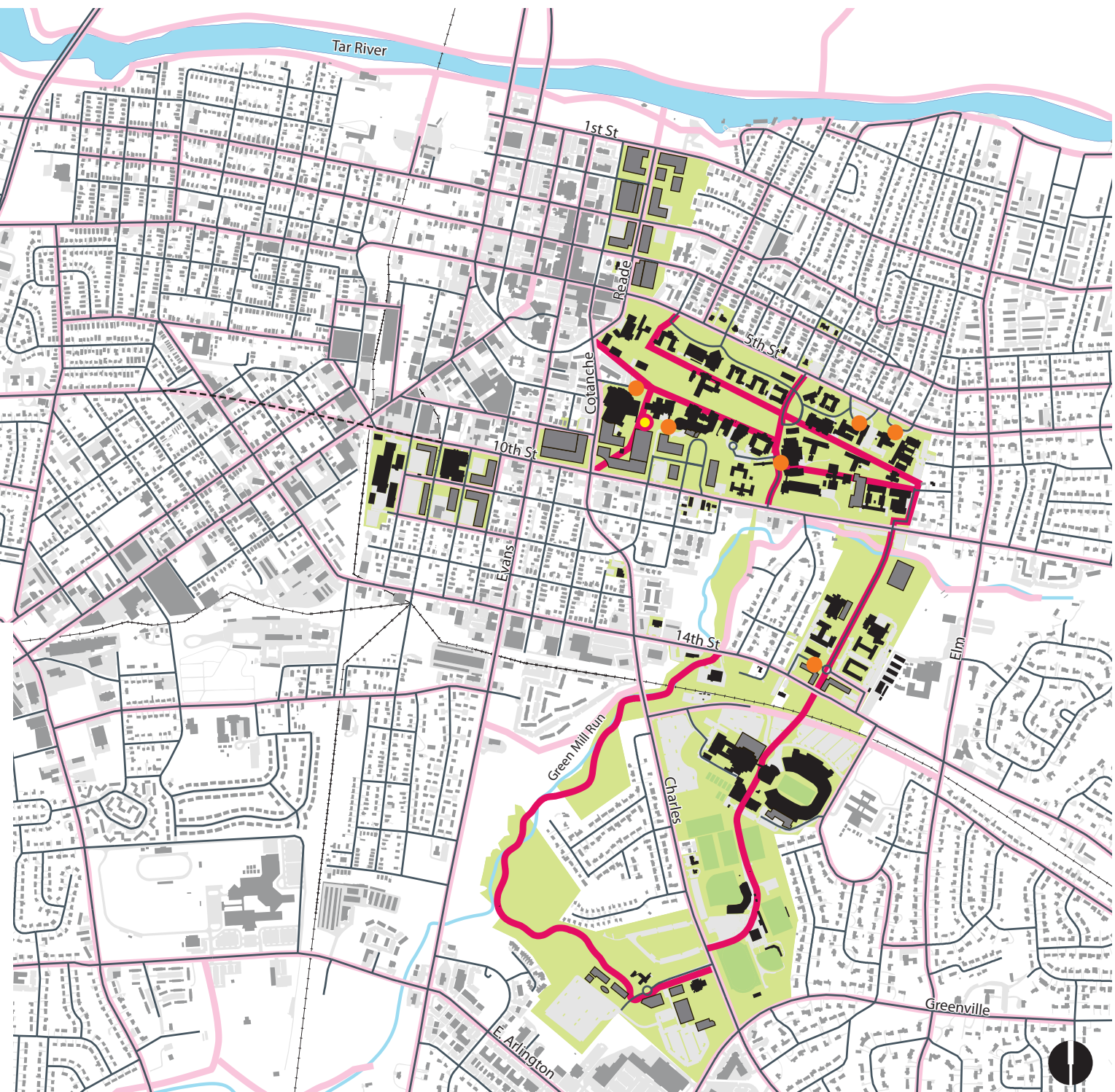
### Health Sciences Campus

Similar improvements are proposed for the Health Sciences Campus. A notable feature that is present on both campuses is a bike station near each Student Center. Combined, these transformations are expected to provide seamless connectivity both on campus and between the two campuses.



#### BICYCLE CIRCULATION

- Planned or Existing City Bike Routes
- Campus Bike Circulation
- Additional Bike Parking
- Bike Station
- Proposed Campus Buildings
- Existing Campus Buildings
- 10th Street Connector



# Master Plan Recommendations

## Campus Open Space

East Carolina University combines quality natural systems with memorable outdoor spaces, resulting in a unique campus environment. Based on the planning principles, the Campus Master Plan recommends the preservation and sustainable management of these natural features, the creation of new memorable spaces, improvements to edges and gateways, and enhancement of the pedestrian realm to produce a more dynamic open space network.

### Main Campus

ECU's Main Campus contains important woodlands, floodplains, and steep slopes associated with Green Mill Run that necessitate preservation. In addition, this campus' longevity has established existing memorable spaces with mature landscaping that should never be built upon. However, careful analysis of the existing campus systems has revealed that new memorable spaces and pedestrian malls should be created to enhance the open space network. The overriding goal of the proposed pedestrian malls are to align with memorable spaces in order to encourage significant student use.

### Health Sciences Campus

As has been identified in the previous section of the report, the Health Sciences Campus does not yet have a memorable open space character, as demonstrated by Main Campus. Recommendations address this concern by defining new open spaces and pedestrian malls that will create visual cohesion across the campus.



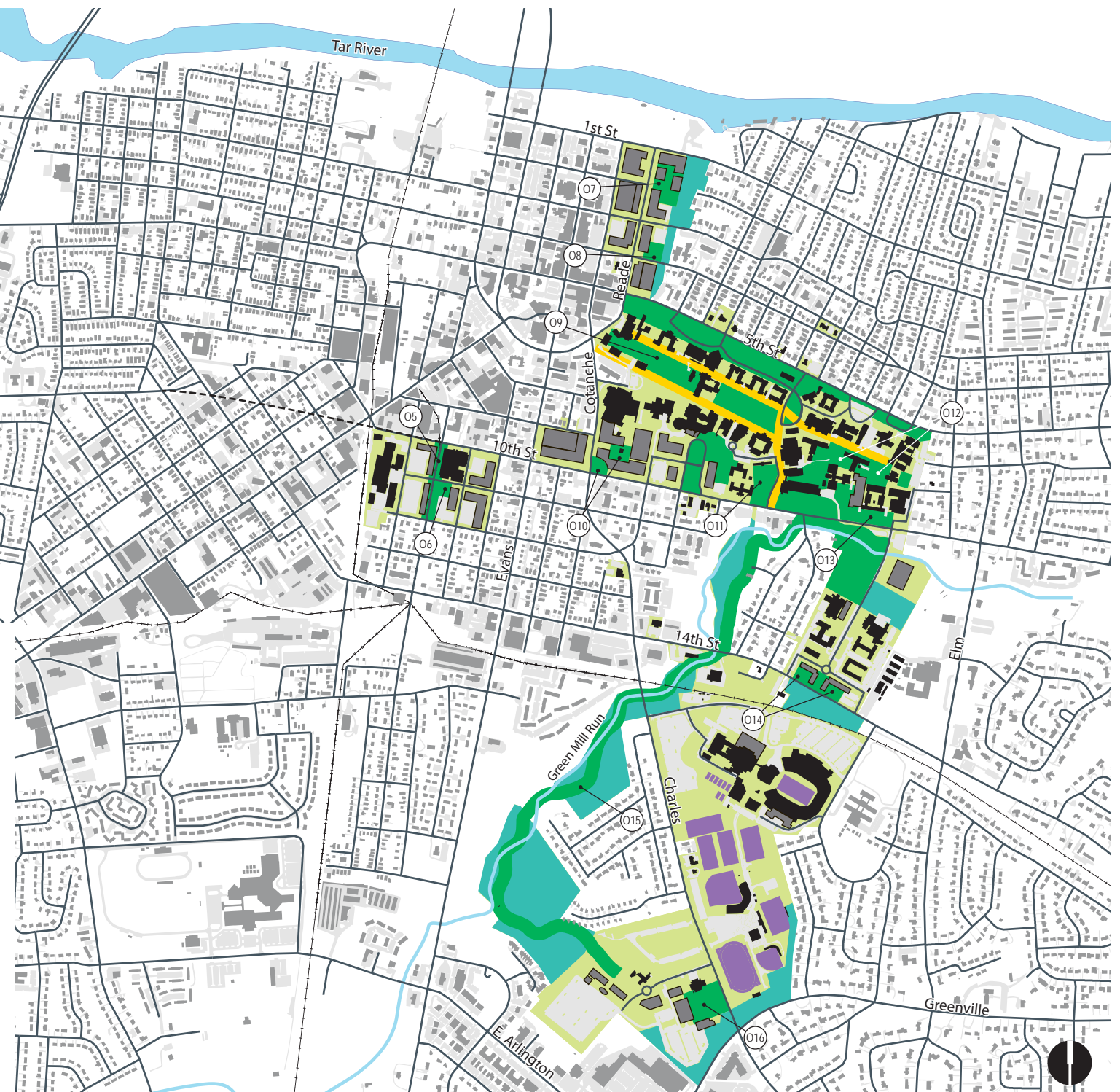
#### OPEN SPACE ZONES

- Existing Memorable Spaces
- New Memorable Spaces
- Preservation Zones
- Existing Athletic Fields
- New Pedestrian Malls
- Proposed Buildings
- Existing Buildings
- 10th Street Connector

#### NEW MEMORABLE SPACES

Key	Name
O1	Healing garden and recreation path at Cancer Ctr.
O2	Central campus green
O3	Medical Education courtyard
O4	Courtyard function space
O5	Linear green space
O6	Central open space
O7	Sculpture / art courtyard
O8	Alumni Center courtyard
O9	West Mall improvements
O10	Gateway open space courtyards
O11	Founders Drive open space
O12	Rawl, Austin and Howell open space
O13	10th Street open space
O14	Recreational space for residence halls
O15	Main Campus recreation path





# Campus Infrastructure

## Stormwater System

East Carolina University is located in the Tar-Pamlico River Basin and requires treatment of stormwater run-off. Due to its close proximity to the floodplain, any increased run-off from new impervious services must be captured and stored to avoid additional flooding. Ideally, new stormwater improvements will include Best Management Practices that capture and reuse run-off and improve the current flooding issues.

### Main Campus

Modifications to the existing stormwater system will be required at proposed building locations. Numerous areas will require additional inlets and/or upsized lines. The majority of the proposed buildings have been located on existing impervious area. Since there is no increase in stormwater run-off volume, only piping and structure relocation will be required. Improvements can be made in these areas for stormwater retention and treatment of run-off including rain gardens, cisterns, green roofs, bio-swales, sand filters, or retention ponds. Retention ponds permanently contain all collected stormwater run-off from the site, whereas detention ponds temporarily hold stormwater run-off and release it into the city storm sewer system at a pre-determined rate to prevent inundation of the system.











### Health Sciences Campus

The Health Sciences Campus will require additional stormwater measures to account for the increased



run-off storage and treatment. New stormwater infrastructure will be required at all proposed building sites including new catchment structures and pipe networks and retention and treatment of the stormwater run-off using Best Management Practices. Recommended improvements include adding new retention ponds on the campus, underground storage cisterns that could be utilized for water reuse in the new buildings, rain gardens, green roofs, bio-swale, and sand filters.

### STORMWATER SYSTEM

-  Existing Storm Line
-  Immediate Need Storm Line
-  Storm Line Upgrade Needed
-  Existing Detention Area
-  Proposed Detention Area
-  Existing Underground Detention Area
-  Proposed Underground Detention Area
-  Existing Buildings
-  Immediate Need Buildings
-  Future Buildings







# Campus Infrastructure

## Domestic Water System

The domestic water needs for East Carolina University are provided by the Greenville Utility Commission through a network of underground piping. The same network of piping provides building fire protection as well. The current piping arrangement provides ample reliability and redundancy for normal domestic water requirements and does not necessitate any improvements as part of the Campus Master Plan.

### Main Campus

As Main Campus expands, so does the need for domestic water and fire protection. While the quantity of water available on Main Campus is reliable and adequate, the water pressure needed for fire protection will require building booster pumps to increase water pressure. Due to the complexity of the piping network, a central pump house would not be feasible. New piping plans for connecting future buildings should include separate feeds for domestic water and fire protection.

### Health Sciences Campus

The domestic water distribution network on Health Sciences Campus is as complex as Main Campus. The water system utilizes a central booster pump package to increase water pressure for high rise buildings and fire protection. The booster pumps will provide ample water and pressure. New piping plans for connecting future buildings should include separate feeds for domestic water and fire protection. As a result of the central booster pumps, future buildings will not require separate building booster pumps.



#### DOMESTIC WATER SYSTEM

- Existing Domestic Water Line
- Immediate Need Domestic Water Line
- Existing Buildings
- Immediate Need Buildings
- Future Buildings



# Campus Infrastructure

## Chilled Water System

The anticipated growth at East Carolina University will facilitate the need for additional chilled water generation. The University already utilizes district cooling facilities in areas of high building density. Recommendations for continuing this approach will optimize redundancy and energy efficiency. In areas where buildings are remotely located, regional district facilities and unitary cooling is most appropriate.

### Main Campus

Two central cooling facilities currently exist on Main Campus. The Master Plan recommends one new district cooling facility and two regional facilities to support future growth and replace aging equipment. The development of a central distribution loop through the heart of Main Campus will connect the existing plant to a future district plant. This will provide the most redundancy and flexibility. Remaining regional facilities should be strategically located to reduce distribution piping while optimizing cooling efficiency.

### Health Sciences Campus

The Health Sciences Campus utilizes a single Central Utility Plant. All existing buildings proposed to remain are connected and receive chilled water from this plant. The Master Plan recommends developing a phasing plan for replacing chillers and expanding the plant to support future growth. Future buildings should tie into the distribution network. More remote buildings planned should utilize unitary equipment.

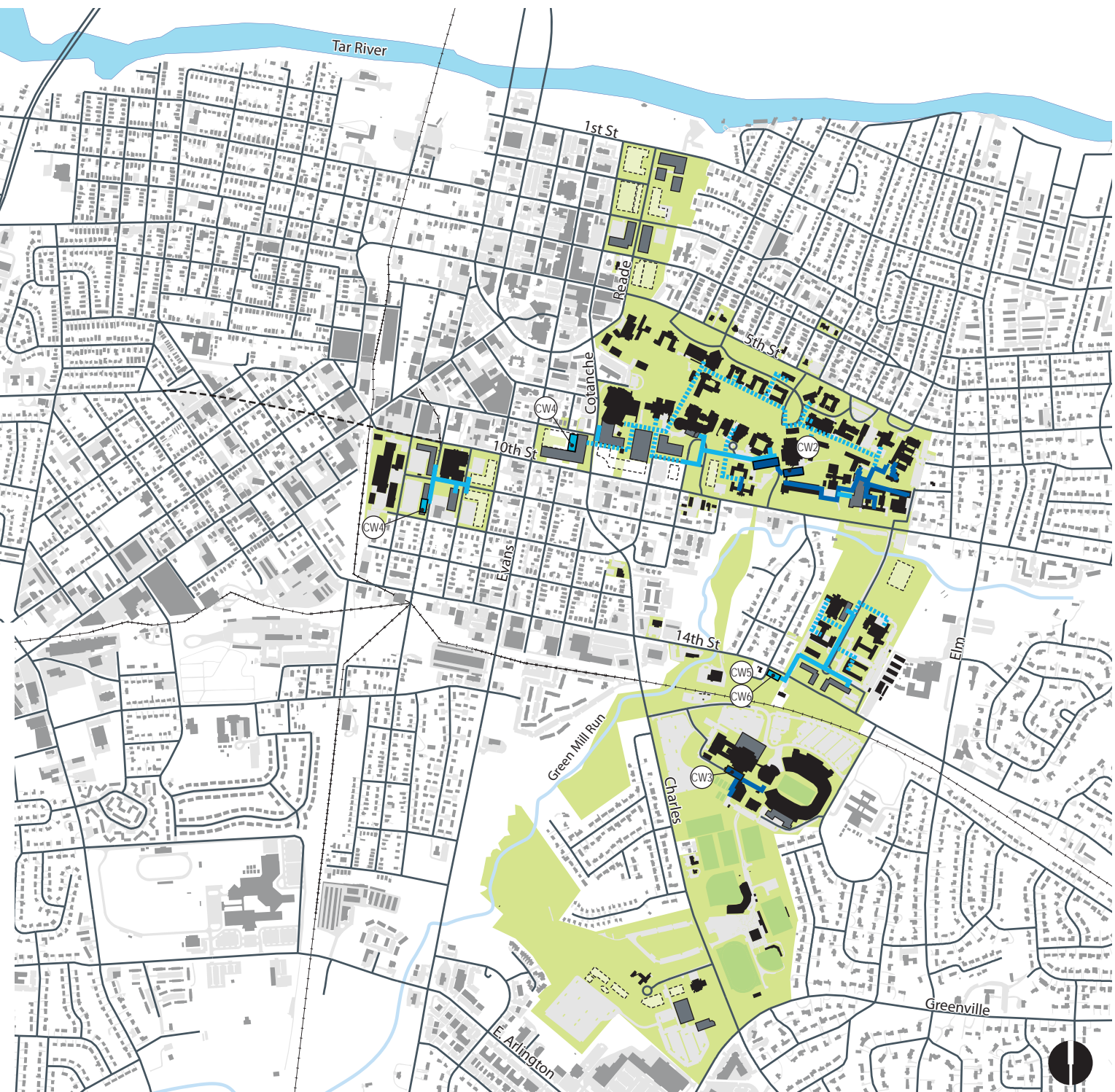


#### CHILLED WATER SYSTEM

- Existing Chilled Water Line
- Immediate Need Chilled Water Line
- ..... Future Chilled Water Line
- Existing Chilled Water Plant
- Future Chilled Water Plant
- Existing Buildings
- Immediate Need Buildings
- Future Buildings

Key	Plant	Name	Capacity
CW1		HSC chiller plant expansion (Phase 1)	1,200 tons
		HSC CH4 chiller upgrade (Phase 2)	to 1,200 tons
		HSC CH5 chiller upgrade (Phase 3)	to 1,200 tons
CW2	CCP1	Existing CCP1 chiller upgrade	(2) 1,500 tons
CW3	CCP2	Replace CH1 in CCP2	to 400 tons
CW4	CCP3	Construct CCP3	1,200 tons
CW5	CCP4	Construct CCP4	(2) 675 tons
CW6	CCP4	CCP4 chiller plant expansion	(2) 625 tons
CW7	CCP5	CCP5 chiller plant	500 tons





# Campus Infrastructure

## Steam and Condensate System

The current heating requirements for East Carolina University are met with steam generation located in district boiler plants. An underground network of steam and condensate piping deliver steam to the majority of buildings on campus for heating water production. While a vast steam infrastructure network is already in place, plans for replacing aged piping and development of new feeds to future buildings should be in place to maintain a reliable heating system.

### Main Campus

The existing central heating plant on 14th Street includes generation capacity to support heating needs of the Main Campus. While additional capacity will not be necessary, the replacement of older piping and new steam and condensate feeds will be required to support future growth. A phased piping plan is recommended to replace energy inefficient piping and connect future buildings. Remotely located buildings will be heated with unitary heating equipment.

### Health Sciences Campus

The Health Sciences Campus generates steam at the Central Utility Plant. To maintain a firm reliable source of heating, additional boiler capacity and auxiliary equipment will be required. Current plans have already been developed to replace aged portions of the distribution network and should be complete before any expansion is required. Buildings remotely located, far from distribution mains, will be heated with unitary heating equipment.

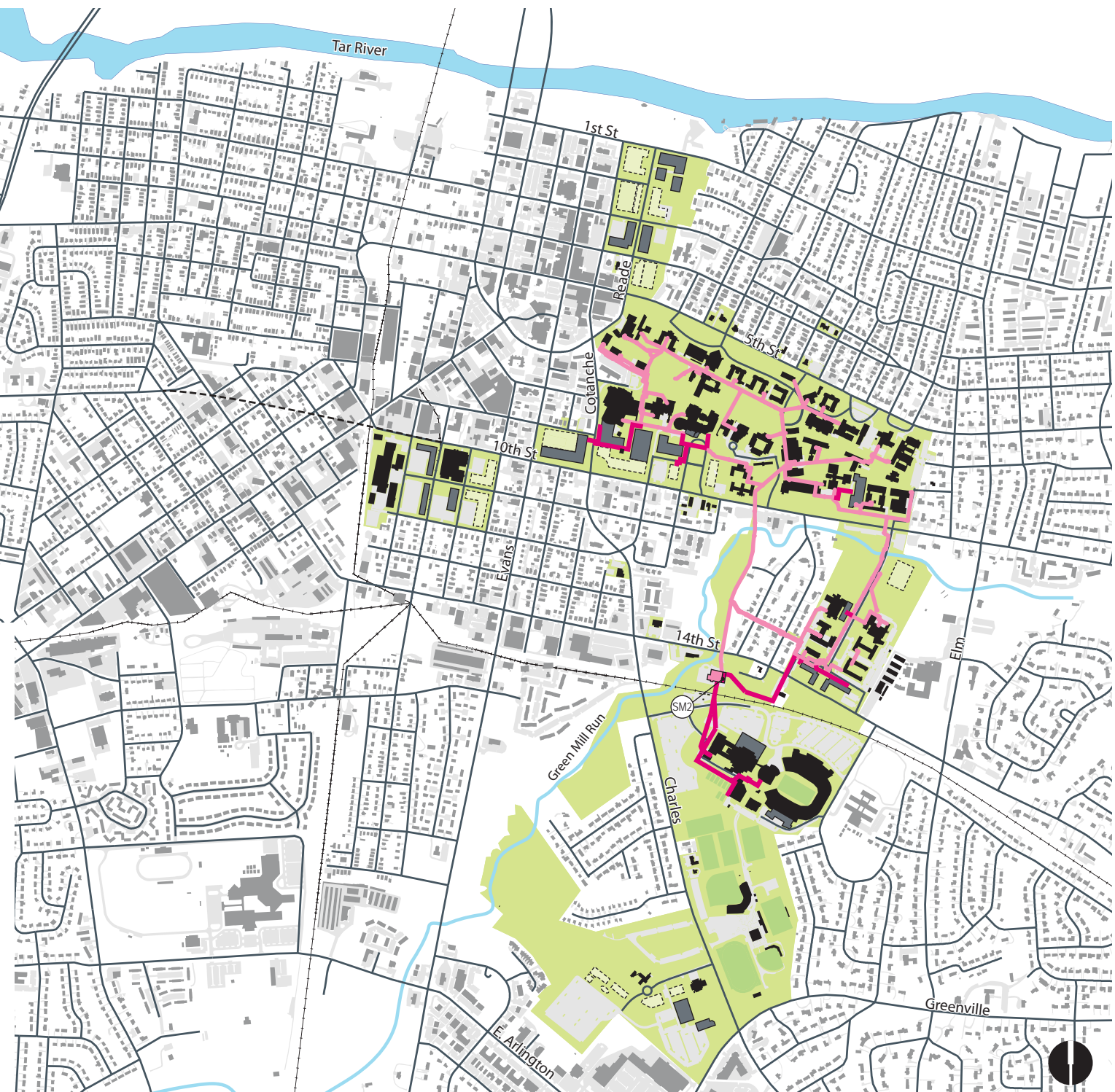


STEAM AND CONDENSATE SYSTEM

- Existing Steam Line
- Immediate Need Steam Line
- Existing Steam Plant
- Future Steam Plant
- Existing Buildings
- Immediate Need Buildings
- Future Buildings

Key	Name	Capacity
SM1	Boiler installation	1,000 BHP
SM1	Boiler no. 2 replacement	to 1,000 BHP
SM2	Steam Plant Expansion	







# Campus Infrastructure

## Sanitary Sewer System

The sanitary sewer system on East Carolina University's campuses is comprised of a University-owned piping network that discharges into the Greenville Utilities' system which discharges at the Greenville Utilities' Wastewater Treatment Plant.

### Main Campus

The sanitary sewer system on Main Campus connects to the GUC in numerous locations. The existing sanitary sewer systems at the proposed building locations will have to be relocated. All of the proposed buildings can be connected on to the surrounding GUC system.

### Health Sciences Campus

Additional capacity of the existing sanitary sewer main on the Health Sciences Campus, that is located west of Lake Laupus, exceeds the recommended capacity. The sanitary sewer line should be upsized using a slip-lining process to increase the capacity or a parallel line next to the existing line in this area could be installed. Sanitary sewer piping for the new development on the west side of Health Sciences Campus can be connected to the sanitary sewer main located in McGregor Downs Road.



#### SANITARY SEWER SYSTEM

- Existing City of Greenville or ECU Sanitary Line
- Immediate Need Sanitary Line
- Existing Buildings
- Immediate Need Buildings
- Future Buildings



# Campus Infrastructure

## Electrical System

The electrical needs for East Carolina University are met by an underground system of 15kV medium voltage loops that are owned and operated by the University. These loops are fed by the GUC at POD stations strategically located at each campus. The future growth of the University will require the expansion of these loops to feed power to new buildings, as well as new utility POD to service remotely located structures.

### Main Campus

The electrical system for the Main Campus consists of seven medium voltage loops owned and operated by East Carolina University. These loops are fed by GUC at two POD stations, each consisting of two separate circuits. The total capacity available to the University at these PODs is sufficient to provide power to all proposed future buildings. Future buildings close to the central areas of campus should be tied into the existing loop distribution system with the use of additional switches, duct banks, and feeders. For those buildings proposed to be located in remote areas of campus, it will be more economical to provide a separate utility feed rather than connecting them to the University-owned loop system.








In two or three locations the planned new construction will conflict with existing electrical duct banks. These locations will require re-work of the distribution to avoid having electrical underground below structures.



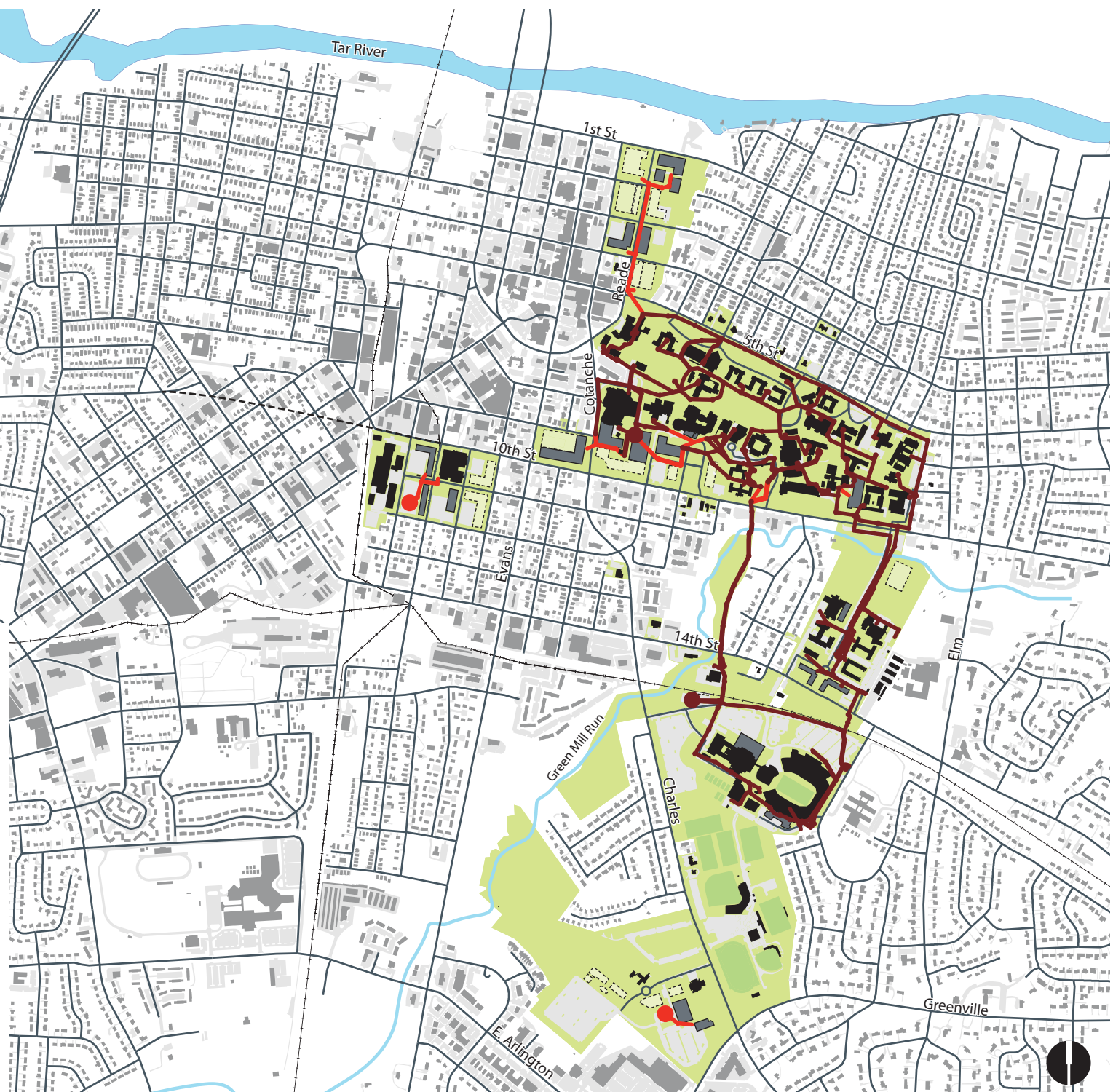
### Health Sciences Campus

The Health Sciences Campus electrical distribution system also consists of medium voltage loops owned and operated by the University. Power to these loops is provided by GUC at one POD consisting of two separate utility feeds through two University-owned distribution systems. Capacity from the utility is sufficient to feed all proposed future buildings, and it is recommended that all future buildings be integrated into the existing loop-fed distribution system.

### ELECTRICAL SYSTEM

-  Existing Electrical Line
-  Immediate Need Electrical Line
-  Existing POD Location
-  Future POD Location
-  Existing Buildings
-  Immediate Need Buildings
-  Future Buildings










# Campus Infrastructure

## Telecommunications System

Infrastructure for the telecommunications system is available for all additions near existing University buildings, for both Health Sciences and Main Campuses. It is anticipated that University telecom infrastructure will be required at all new University-owned facilities. The cost of the expansion of the fiber loops is not included in this study, however an opinion of cost to install conduit with innerduct is included.



### TELECOMMUNICATIONS SYSTEM

-  Existing Telecommunications Line
-  Immediate Need Telecommunications Line
-  Existing Buildings
-  Immediate Need Buildings
-  Future Buildings



