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Executive Summary

UNC Charlotte is North Carolina’s urban research university – urban in its focus as an institution and dedicated to its responsibility to address the cultural, economic, educational, environmental, health, and social needs of the region. This title conveys the University’s ongoing commitment to extend its research and creative capacities within the context of the city and region, develop a strong and enduring cultural and artistic presence, and effect positive change in the community.

Over its history, UNC Charlotte has transformed into a doctorate-granting, research institution of considerable size and scope. The 2010 Master Plan addresses the University’s expanding mission, growing student body, increasingly diverse people and programs, and emergence as a keystone institution of strategic importance in the region.

Campus-planning exercises in 1995 and 2000 established principles for the physical layout of the University. Emphasizing a traditional commons approach to education with internal quadrangles, the principles enabled the growth of a memorable campus core, integral to a thriving research campus. Based on an 18-month planning and design process, the 2010 Master Plan presents a cohesive, people-oriented campus committed to sustainability, efficiency, and social interaction. It also presents a stronger set of building and infrastructure connections to the surrounding neighborhood.

As a process, the 2010 Master Plan helps identify problems, needs, and aspirations. As a product, it helps link programmatic growth with physical development and resources, including the call for building and maintaining an infrastructure adequate to support a predicted student enrollment of 35,000 in the next ten to twenty years.

With the 2010 Master Plan, UNC Charlotte continues to build up the historic campus core of the University, adding much-needed density and academic space and giving recognizable character to the heart of campus. New student residential “villages” support student activities and learning communities to enhance campus life. Thoughtful land-use planning preserves and celebrates the range of natural landscapes and forested areas on campus.

As the center of University City, the most diverse and second largest neighborhood in Charlotte, UNC Charlotte is committed to designing the connections and campus necessary to support its position as a learning and research hub in the region. While the physical changes in the 2010 Master Plan focus on the campus and its surrounding neighborhood, the Master Plan aspires to broader regional implications. Charlotte is the center of a metropolitan area that encompasses 16 counties and more than 100 cities and townships. The 2010 Master Plan seeks to address the University’s current and future roles given the reality of its urban regional context.
The Planning Process

The planning effort involved a wide range of participants, including faculty, staff, students, alumni, and community members. A University Working Group consisting of the Chancellor, the Vice Chancellor of Business Affairs, the Dean of the College of Arts + Architecture, the Associate Vice Chancellor of Facilities, and the Facilities Planning Office guided the planning process within the University community. A larger Steering Committee, consisting of representatives from the University and the Charlotte community, reviewed design concepts during each planning phase. The Board of Trustees also received regular updates pertaining to the Master Plan process, which included:

Observation Phase
The Observation Phase measured both the quantitative and qualitative aspects of the campus, providing a comprehensive picture of the University and insight toward the development of Guiding Principles for the Master Plan process. The Guiding Principles reflect the culture, philosophies, and setting of the UNC Charlotte campus and serve as the foundation for the Concept Plan.

Concept Development
The Concept Plan is a graphic representation of the Guiding Principles and summarizes the analysis gathered during the Observation Phase. Broad-brush in its approach, the Concept Plan diagrammed the ideas generated during the Observation Phase and ensured the Master Plan remained true to its original intentions throughout the entire design process.

Precinct Studies
This phase studied the campus in detail by testing design solutions for discrete areas of campus. The planning team developed potential spatial organizations for buildings, investigated program adjacencies, and integrated open space concepts to find the optimal relationships between different parts of campus and create a cohesive final Master Plan.

Design Guidelines
The Design Guidelines Phase resulted in a document that provides broad recommendations to direct the development of future projects at UNC Charlotte. The Guidelines will sustain the 2010 Master Plan’s intentions by preserving special qualities of the campus while addressing issues that relate to site planning, landscaping, and building mass and character. In addition, the Guidelines address details including gates, walls, signage, site furnishings, and walks, as well as sustainability initiatives.

Final Plan: UNC Charlotte Master Plan 2010
To produce a final plan, the team refined the ideas and concepts generated during the previous phases. The 2010 Master Plan, detailed and documented within this report, proposes buildings, open spaces, infrastructure, and landscape treatments for the campus. Also included in this report, and essential to implementation, is a series of phasing diagrams that describe how the Master Plan will be achieved over time.

In all, over 600 people participated in shaping the Master Plan. It is a document for the campus community, drafted by the campus community.
Guiding Principles

We begin with the three principles that guided the planning process: Strengthening Our Collegiate Experience, Creating Memorable Places, and Engaging with Our Larger Community.

Strengthening Our Collegiate Experience
• Addressing anticipated campus growth
• Building upon our academic mission
• Reinforcing and expanding the on-campus community
• Celebrating our cultural resources
• Improving access, visibility, identity, and a welcoming presence
• Expanding opportunities for athletics and recreation
• Creating a pedestrian-oriented, compact campus
• Integrating transit and parking

Creating Memorable Places
• Viewing the campus and necessary growth comprehensively
• Balancing growth with land capacity
• Building a cohesive campus
• Binding identity to cultural destinations, memorable buildings & spaces, and the natural beauty of the land
• Modeling and practicing sustainable development

Engaging With Our Larger Community
• Embracing a regional perspective
• Partnering and collaborating with our neighbors
• Strengthening physical connections to University Place
• Supporting and influencing local planning initiatives
• Fostering mixed-use of development at our edges
• Providing a variety of housing options adjacent to campus
• Developing the potential for new transportation modes
• Integrating greenway construction
The resulting 2010 Master Plan is a synthesis of concepts that were thoroughly discussed, revised, and balanced to meet both the short- and long-term goals of the University. The Master Plan illustrates the campus at final build-out and provides a series of phasing diagrams that show how the University can implement the recommendations over time.

The University community saw a number of alternate schemes for campus development before determining a final plan. By identifying existing campus assets, future opportunities, and areas for improvement, the Master Plan is broad in its reach. It includes key issues such as future building sites, open space networks, parking locations, and improvements to pedestrian, vehicular, and service circulation.
Figure 1: UNC Charlotte existing campus
Campus History

UNC Charlotte began simply as the Charlotte Center, a night school program created after World War II to meet the growing demand of returning World War II veterans for higher education. Funded by the G.I. Bill, the Charlotte Center offered its first classes in the fall of 1946 to 278 students in Charlotte Central High School facilities. However, state support for education programs like the Charlotte Center dwindled after just three years. Fortunately, strong local support, particularly from Bonnie Ethel Cone, kept the Charlotte Center open. In 1949, with the help of other educators, Ms. Cone enabled the conversion of the Charlotte Center into Charlotte College, a two-year public institution. Ms. Cone successfully secured funds and professors for the fledgling school, and the College succeeded in attracting students from the city, Mecklenburg County, and a dozen surrounding counties. Local support for the college was so strong that Charlotte voters imposed a two-cent tax on themselves in order to keep the College open.

Until 1961, the City of Charlotte school district provided the physical home for Charlotte College. However, local business and political leaders quickly acknowledged that the growing school needed a campus of its own. In 1961 Charlotte College moved to its current location on 900-acres of former farmland ten miles north of the City of Charlotte. Building on this momentum, Charlotte College became a four-year institution in 1964. On July 1, 1965, the North Carolina state legislature voted for the institution to become the fourth branch of the UNC system. The school officially became the University of North Carolina at Charlotte.

Since 1965, UNC Charlotte has grown steadily. It has expanded enrollment for all but three years in its history. The University has grown its professional degree programs to include nineteen doctoral degree programs, sixty-three master’s degree programs, and ninety-one bachelor’s degree programs. It is the fourth largest university in the state system, with over 25,000 enrolled students and 900 full-time faculty members as of 2010. As UNC Charlotte approaches its forty-fifth year in the North Carolina system of higher education, its dedication to high-quality, research-intensive education grows.

![Figure 2: UNC Charlotte student enrollment growth, 1961 - 2007.](image-url)
1961-1969

Kennedy and Macy are the original academic buildings on campus, both constructed in 1961 when Charlotte College moved to its new location. In 1963, the University built a student activity center, later named after Bonnie Cone. New construction of buildings in the 1960s concentrated on the area along the ridgeline nearest what is now known as University City Boulevard (Route 49), an existing roadway that provided convenient access to campus. In 1965, the University became part of the UNC system and marked this milestone with the construction of three new buildings that comprise part of what is now commonly referred to as the Denny Complex: the Denny, Garinger, and Winningham buildings. It completed two more buildings (King and Smith) the following year, bringing the number of academic buildings to a total of eight. In 1969, the University finished construction of the Macy and Barnard buildings to complete the Denny Complex. The buildings constructed during this era are generally one to two stories, reflecting the relatively small campus size of the time – 3,000 students. However, enrollment by 1970 was already around 170 percent greater than enrollment in 1961, illustrating the early ambitions of UNC Charlotte and the needs of the region.

In 1969, the campus saw the addition of its first two residence halls, Moore and Sanford. Located south of the burgeoning academic quad near University City Boulevard (Route 49), these high-rise towers continue to provide housing to UNC Charlotte students. By 1969, eight academic buildings, two residence halls, six auxiliary buildings, and one student center comprised the campus, with a total of just over 500,000 gross square feet (GSF).

1970-1979

From 1970 to 1979, UNC Charlotte more than doubled its student enrollment, increasing from 4,068 students to 9,088. The University met that student growth with building expansion; gross square footage on campus nearly tripled during this period. As part of the expansion, the University added valuable student life spaces, such as a library, dining hall, and gymnasium, while continuing to meet growing academic and residential space needs. Hunt and Martin Villages, the University’s first apartment-style residence halls, opened in 1978 and 1979 respectively.
1980-1989

Through the 1980s, UNC Charlotte continued its expansion, adding 728,000 GSF of academic, residential, and auxiliary spaces. Reese Hall became the University’s first designated administrative building in 1982. Residence hall expansion took priority over other construction during this decade, adding 1,157 beds to campus.

The University built three new academic buildings: Friday, Burson, and the McMillan Greenhouse. Also added to campus were student service spaces in Prospector and the Cafeteria Activities Building. By the end of the decade, the Susie Harwood Garden and the Van Landingham Glen had become official areas of the UNC Charlotte campus, and student enrollment grew to 13,451 students.

Figure 5: UNC Charlotte campus: 1980 – 1989.

1990-1999

The period from 1990 – 1999 witnessed an expansion of both professional programs and athletic facilities on campus. In 1990, the University completed construction of the Storrs building, current home of the College of Arts + Architecture. To support the University’s academic mission, Cameron Hall and the Fretwell building came online in 1991 and 1996, respectively.

During this period, the University began to expand its athletics facilities, completing the Wachovia Field House in 1994, the Irwin Belk Track Complex in 1996, and the Barnhardt Student Activity Center in 1997. The Student Activity Center is a shared facility between Recreation Services and Athletics.

By 1999, thirty-five years after the University began awarding four-year bachelor degrees, UNC Charlotte’s enrollment had climbed to 16,950 students. The pace of this growth and expansion is indicative of both the University’s ambitions and the regional demand for first-rate higher education opportunities. Both of these factors continue to fuel UNC Charlotte’s growth into the twenty-first century.

Figure 6: UNC Charlotte campus: 1990 – 1999.
From 2000 – 2009, the University added 1.5 million GSF of academic, residential, administrative, and auxiliary space. Several new buildings (Bioinformatics, the Student Union, Phase IX Housing, and EPIC) were under construction or recently completed at the time of this report and are not part of the 1.5 million GSF total.

The most obvious addition to campus during this period was the construction of Duke Centennial Hall and Grigg Hall on the west side of campus, near Tryon Street (Route 29). This area, referred to as the Charlotte Research Institute (CRI), represents the University’s support and expansion of cutting-edge research and technology. CRI is a functioning part of UNC Charlotte, offering academic and research space to the University’s science and engineering programs, as well as incubator and research space to private business entities. UNC Charlotte plans to expand CRI in the coming decades, envisioning the development of a research village similar to models like Technology Square at Georgia Tech.

In Campus Core, Woodward Hall was built in 2005 to support the University’s science and engineering programs. The University also invested in new buildings to sustain its professional schools: the College of Education in 2004 and the College of Health and Human Services in 2006. Robinson Hall, completed in 2004, houses the University’s performing arts programs and is open frequently to the public for cultural events. The University also constructed several new residence halls during this phase.

Since 2000, the University has added much-needed auxiliary spaces to support the non-academic functions of campus. Cato Hall, whose tenants currently include the Graduate School, Admissions, and the Chancellor’s office, added much-needed administrative space to campus in 2003. The new Student Health Center opened in 2006 along with the Harris Alumni Center. The Student Union opened its doors in Fall 2009 when the University’s Facilities Management Department expanded into new buildings on campus. New recreational fields off John Kirk Road began construction in 2009.

Figure 7: UNC Charlotte campus: 2000 - 2009
Regional Context

The main campus of UNC Charlotte occupies 912 acres approximately ten miles north of the city of Charlotte, North Carolina. The campus falls within a specialized tax district known as University City; while not a municipality, University City does operate as an organizing entity for the area and recommends policy to the city pertaining to zoning, land use, and development standards. UNC Charlotte is currently constructing a building in center city Charlotte. The Center City Building was not included in the scope of the planning effort but points to the future potential of the University’s presence in uptown Charlotte.

Growth

To better understand the growth trajectory of the campus, it is helpful to study population increases of the region in which the University is located. The Charlotte region has experienced significant growth in recent decades. Since 1990 the city has grown 70 percent, increasing from 395,952 to 671,588 residents by 2007 (based on US Census Bureau information). The Charlotte-Gastonia-Concord metropolitan statistical area contained 1.6 million people in 2007, making it the 35th largest in the country. The area had a growth rate of 30 percent between 1990 and 2000, and census estimates indicate that it will continue to add population for the remainder of this decade.

The growth of the region has had a considerable impact on the University. UNC Charlotte has continuously expanded enrollment in order to meet the demand of the fast-growing metropolitan area in which it is located. Enrollment is predicted to increase to 35,000 students by 2020 largely based on demand from within the state. This generates the imperative to create a comprehensive Master Plan that will guide the University through the coming decades of expected growth.

Transportation

UNC Charlotte is extremely accessible within the region. Access to Interstate 85 and Interstate 485 are approximately two miles from the campus. State Route 29 and US Highway 49 provide direct access to campus. Highway 49, also known as University City Boulevard, is a strategic road for the North Carolina Department of Transportation and will play an important role in regional circulation and access in the future. Route 29, known as Tryon Street, is a regional road that carries a high volume of daily traffic.

Convenient access to the campus via the existing road network has been an asset to the campus and has facilitated its historic growth. However, it has also created a car-dependent culture. When the University first moved to its current location in 1961, it was surrounded by farmland and few other land uses. During the subsequent decades, the City has expanded to the campus’ edges, mostly in the form of suburban land uses that have created parking, traffic, and general circulation problems for the University.

UNC Charlotte and the city of Charlotte are looking for solutions to these problems. One is an extension of the Charlotte Area Transit System (CATS) LYNX light rail line to the UNC Charlotte in the next ten years. The proposed light rail train line will stop near the CRI campus on Tryon Street, as well as directly on campus near the current site of Parking Lot 26. Light rail service will significantly reduce travel times from the campus to uptown Charlotte and provide the campus community with an alternative commuting option.
Figure 8: Center City Proximity to UNC Charlotte campus

Figure 9: Regional transportation networks around UNC Charlotte (campus shaded green)
Natural Systems

While areas around the campus have been largely developed over the past 40 years, much of the UNC Charlotte campus remains in its original, undeveloped state. The Mallard Creek Watershed encompasses the physical boundaries of the University in its entirety, and two sub-watersheds exist on campus: Toby Creek and the stream that flows through the Susie Harwood Garden, both of which flow northward and empty into Mallard Creek at the northern edge of campus. Several smaller tributaries across campus feed into Toby Creek. While the campus is located in a suburbanized area, a regional network of greenways serves as a valuable asset to the campus by providing recreational and environmental opportunities. The city recently completed a greenway trail on campus along Toby Creek that connects to other regional trail ways.

A. Topography

Mecklenburg County is located within the North Carolina Piedmont, which is characterized by gently rolling hills that form the foothills to the Appalachian Mountain range. This results in significant grade changes across campus. The topography slopes downward 160 feet from the southeast edge (high) to the west side (low) of campus. The lowest elevation exists along Toby Creek, which runs west of the campus center. Steep slopes, with grades greater than 25 percent, occur in a number of areas on campus. An outstanding challenge, one addressed by this Master Plan, is how to overcome the east to west grade change between the Campus Core and the CRI campus.
Topography dictated the original location of the University along the high ridgeline on the eastern side of campus and has since influenced campus expansion, most of which has been close to this original ridgeline. Responding to the topography, Campus Core developed as a series of trays of common elevation around which primary building entrances center, making the University’s development similar to that of an Italian hilltown. These trays ease building access for individuals with disabilities, and though the topography of campus is sometimes perceived as a logistical challenge to overcome, it also creates several memorable views that form a distinct visual identity for the campus.

The geological conditions of the campus area primarily consist of metamorphosed granite rock, consistent with the Piedmont zone. The topography generated by this underlying rock bed create the University’s prominent natural identity, but it also produces challenges for the University during construction projects requiring substantial earth removal. This construction consideration was frequently examined throughout the master planning process.
B. Flood Plains, Wetlands, and Forest Cover

Located in an otherwise suburbanized area with a high percentage of impervious surfaces such as parking lots and large retail buildings, UNC Charlotte’s campus is a refuge of pedestrian-friendly green and open spaces. The campus plays an important role within the region by connecting key ecological corridors of forest cover and waterways that suburban development would otherwise fragment. For example, designated wetlands established by the North Carolina Department of Transportation are immediately north of campus. Undisturbed areas of campus connect to these wetlands to create a key corridor for wildlife. The natural areas of campus also provide recreational opportunities – running, hiking and biking trails, and recreational fields – for the campus community and its neighbors. As the campus has grown, it has respected and conserved its open spaces and natural features. However, several factors require consideration as the University plans for future expansion.

The campus is comprised of several significant water features, including Toby Creek and its floodplain, smaller tributaries, springs, and stormwater retention ponds. Roughly 100 acres of the campus’s 900 acres contain floodplains, wetlands, or streams. In the past, UNC Charlotte has followed state water quality and stormwater management requirements for new construction to control sediment run-off. While many of these efforts have been successful, additional efforts are necessary for portions of campus. Specifically, the volume of stormwater run-off from parking lots and other impervious surfaces erode streambeds and contribute to the flooding of Toby Creek. The University identified the areas around Greek Village, Martin Village, Hunt Village, and Lynch Hall as having existing stormwater erosion problems, primarily due to a lack of established vegetative cover. Phillips Road, which connects the core campus to CRI, crosses Toby Creek’s flood plain. The University has had issues with considerable flooding of this road as recently as Fall 2008. When this road floods, an essential point of access between the two campuses is severed.

Included in the 2010 Master Plan is a comprehensive stormwater management plan for the University to follow. The University’s physical campus has tremendous potential to become a living classroom through the adoption of stormwater management techniques such as bio-swales, rain gardens, rooftop gardens, and pervious pavers. The wetlands established and maintained by the North Carolina Department of Transportation north of campus serve as precedent. These wetlands fulfill functional, educational, recreational, and ecological purposes.

Figure 15: UNC Charlotte flood plains, streambeds, wetlands, and forest cover
As cited previously, UNC Charlotte’s campus contains several areas predominately covered with forest, 483 acres in all, including the 106-acre parcel north of Mallard Creek Church Road. The planning team studied and quantified the ecological value of wooded areas on campus and developed a three-tier rating system: (1) wooded areas that are relatively undisturbed and have limited habitat fragmentation such as the land area north of the CRI campus; (2) Wooded areas, such as the land on either side of Toby Creek Road, that have experienced disturbances and fragmentation over time that the University may enhance through habitat and stream restoration efforts; and (3) areas of low ecological value, limited to the small area north of campus where the University will build new recreational fields. Based on this rating system of the forest cover on campus, the planning team considers 286 acres to be of high ecological value, 173 acres medium-value, and 23 acres low-value forest cover.

In addition to large areas of forest cover, smaller wooded areas, referred to here as “green fingers,” help define the character of the campus. Van Landingham Glen, the Susie Harwood Garden, the area north of the high-rise towers, and the area south of Witherspoon Hall are all examples of the campus’s green fingers. These fingers extend into the campus core to create areas of natural landscape within the built environment and continue off campus to create a rather large portion of the ecological habitat corridors in University City. The University should strive to work with the city of Charlotte, Mecklenburg county, and neighboring land owners to preserve these ecologically sensitive areas.

Figure 16: UNC Charlotte forest cover assessment
Physical Infrastructure

A. Campus Land Uses

Building and land uses within the main campus are well organized. Student housing rings the campus to the north and south. Academic buildings appear along the eastern ridgeline where the University constructed its first buildings. As the University expanded, academic buildings migrated southward along Craver Road, forming an invert ‘L’ of academic land use in Campus Core. The CRI campus represents a new academic and research sector on the western edge of campus. Atkins Library, the tallest building on campus, serves as a strong visual landmark at the heart of Campus Core. Student-service functions are located primarily at the periphery of the academic core. Athletics and recreation fields fill the area between Campus Core and the CRI campus. Because these fields are located closest to the Toby Creek floodplain, using this land for recreation and athletics is preferred over its use as a building site.

Service and auxiliary spaces extend northward from the eastern edge of the academic core. The University completed a new facilities complex on Cameron Boulevard in 2006, moving those functions away from Campus Core and giving facilities and maintenance personnel convenient access to buildings for service. The new facilities complex also enables current facilities near the Campus Core to go offline in the future, freeing up this valuable land for its highest and best use as academic or student-support space.

Receiving facilities are located at the periphery of the campus core, simplifying access and distribution with minimal disruption to interior campus roads. Parking decks rim the perimeter of the academic core, primarily along Cameron Road. The three East Decks are accessible from Van Landingham Road and University City Boulevard. Multiple surface parking lots ring the campus perimeter.
Figure 19: UNC Charlotte building and land uses

Black - Parking Decks
Red - Academic/Research
Green - Athletics/Recreation
Blue - Residential
Orange - Library
Yellow - Administrative
Purple - Campus Life
Brown - Facilities
B. Vehicular Circulation

Visitors to campus arrive on one of four roads: Tryon Street (Route 29), University City Boulevard (Route 49), Mallard Creek Church Road, or WT Harris Boulevard. There are currently eight points of entry to campus. The Main Entrance, which was relocated and upgraded in 2008, is located along University City Boulevard and distinguished by a series of pillars and UNC Charlotte signage. The remaining seven points of entry are marked by more subtle usage of signage and gates. One member of the Master Plan’s steering committee described the multiple entry points to campus as allowing people to “leak” onto campus. The existing conditions make it difficult to direct visitors once they arrive on campus because they can enter campus via any one of the many points of entry.

Vehicular traffic moves around the academic core of campus on Cameron Boulevard, Mary Alexander Road, and University Road. The University constructed Cameron Boulevard to ease traffic congestion in the campus core; however, this road disconnects residence halls from the core and creates pedestrian/vehicular conflict areas (see Pedestrian Circulation).

Visitor parking is available at the East Deck I and at the upper level of the Cone Deck. The East Deck is convenient to the Admissions Office in Cato Hall but provides visitors with a view of the parking lots rather than the campus core. University parking policies compound the problem of traffic congestion by not assigning parking spaces by specific lots or zones. The result is that drivers hunt for spaces, increasing the number of cars on campus roads throughout the day.

Figure 23: Road Network & Service
Blue- Roads
Green- Service Drives
Red Circles- Service/Loading
Campus Transit
The University operates two shuttle bus routes for students: the Gold Streak for cross-campus routes and the Nugget for the clockwise route. The University began the shuttle service in 2007 to tie the CRI campus back to Campus Core and strives to improve service regularly. The University adjusted the shuttle routes based on feedback received during the first year of operation.

Figure 20: Existing Campus Shuttle Routes
Red - Gold Streak Line
Green - Nugget Line
C. Pedestrian and Bicycle Circulation

All academic buildings in Campus Core are within a five-minute walk of the center of campus, (recognized as Atkins Library). Residence halls are generally within a ten-minute walk of the center of campus. Within fifteen minutes, pedestrians are able to reach the CRI campus from the library. Likewise, students living in Greek Village on the northeast edge of campus can reach the library in fifteen minutes.

While the scale of the campus is conducive to travel by foot or bicycle, the topography of campus often complicates this. The campus community perceives walk times between buildings to be long because of changes in grade during the walk. The physical distance between Woodward Hall and the McEniry building may be minimal, but the trip generally feels longer because of the steepness of Craver Road.

The highest concentration of pedestrian movement occurs between the parking lots and core academic buildings. Pedestrians traveling from residence halls to the campus core also generate high volumes of foot traffic. The section of Mary Alexander Road that separates the East Decks from the academic core is highly trafficked, as is University Road near the Cone Decks. Within Campus Core, the Belk Tower Quad and the plaza near the Prospector attract many students throughout the day.

Roads and parking lots frequently disturb the continuity of sidewalks and pedestrian paths on campus. Sidewalks along sections of Cameron Boulevard, University Road, and Mary Alexander Road are either too narrow or incomplete. This creates areas of conflict between pedestrians and vehicles and increases the perceived walking distance between different areas of campus. The most recent example of pedestrian-vehicular conflict occurs crossing Craver Road from the new Student Union into Campus Core. Various traffic calming measures on campus will help ease pedestrian-vehicular conflict.

Off-campus conditions on Tryon Street (Rte 29) and University City Boulevard (Hwy 49) are not conducive to pedestrian travel. Sidewalks end abruptly, are not on both sides of the road, and do not have buffers such as trees, parked cars, or turf between pedestrians and fast-moving vehicles. Crosswalks are poorly marked and signal timings at intersections favor the motorist, not the pedestrian. The North Carolina DOT plans to improve several of the key intersections around campus, such as the intersection of University City Boulevard and John Kirk Drive. Other improvements will occur along University City Boulevard and Tryon Street.

Only one percent of the University community (faculty, staff, and students) currently bicycles to campus. The University provides designated bicycle lanes on campus roads and bicycle storage outside academic and residential buildings. However, campus topography and road conditions leading to campus deter increased ridership. Development of the Toby Creek and Mallard Creek greenway trails may provide alternative access points to campus that will appeal to bicyclists. A greenway trail, if properly connected to the surrounding region, would be a more pleasant, safer alternative to biking on the roads surrounding campus.
Figure 21: Walk times between various areas of campus
Five Minute Walk Circles indicated in red

Figure 22: Pedestrian-Vehicular conflict zones
Blue: Roads
Red: Pedestrian Paths
Yellow Dash: Conflict Zones
D. Parking

The University maintains 11,766 parking spaces on campus, divided between six parking structures and numerous surface parking lots. Parking structures are located close to the academic core of the main campus and available to visitors, commuters, faculty, and staff. Surface lots tend to be adjacent to college-owned residence halls, providing parking for resident students. However, there are also surface parking lots for commuter students along John Kirk Drive (Lot 5, Lot 6), High-Rise Road (Lot 8), Cameron Boulevard (Lot 26,) and University Road (Lot 7).

The primary mode of transportation to campus is the single-occupancy vehicle. Land uses surrounding campus are not conducive to walking. Tryon Street (Route 29) and University City Boulevard (Highway 49) are high-speed, high-volume arterial roads with few pedestrian amenities. Although there are students living within five minutes of campus, a small percentage of these students walk or bike due to the unpleasant routes they must use. It is not surprising that most faculty, staff, and students purchase parking permits to bring personal vehicles to campus. According to a survey conducted in 2008 of 7,000 people at UNC Charlotte, 91 percent of faculty/staff, 72 percent of commuter students, and 67 percent of resident students purchased University parking permits.

University parking permits do not require faculty, staff, or students to park in a single, specific parking lot or structure. They must park in lots designated for their permit type (i.e. commuter, faculty/staff, etc.), but they are able to park in any of the designated lots. As a result, individuals sometimes move their cars throughout the day, looking for a premium spot close to their destination. This adds to congestion within the University’s road network.

In 2006, the University altered its academic schedule to a four-day week. This decision has changed the demand for parking and the University’s ability to meet that demand. Parking operates at full capacity Monday through Thursday but then drops on Friday, Saturday, and Sunday so that many parking lots and structures are empty three out of seven days of the week. This indicates potential on the University’s part to produce additional parking without necessarily building more lots or structures.

The University expects the proposed campus light rail train station on campus to alter parking demand. However, the light rail Blue Line extension will not be complete until 2016 at the earliest, and it may then require a few additional years to begin operating at full capacity. The University will need to supply sufficient parking on campus prior to this date since public transit options to campus are currently limited. However, UNC Charlotte should avoid over parking the campus and thereby de-incentivizing the use of public transit in the future.
Figure 24: Surface parking and parking structures
Red - Structured Parking
Blue - Surface Parking

Figure 25: Aggregate parking
E. Service and Loading

Service access to buildings is crucial for the execution of various campus functions. UNC Charlotte’s access roads and loading docks sufficiently service the campus buildings, but often at the expense of pedestrian circulation. Service vehicles use pathways meant for pedestrian use. Likewise, pedestrians travel on service drives that double as sidewalks.

Central receiving is located at the Facilities Complex off Cameron Boulevard. Large vehicles are able to access this location without greatly disturbing the campus core.
F. Utilities – Mechanical, Electrical, and Plumbing (MEP); Sanitary Sewer, Potable Water, and Storm Drainage

Campus population growth will require new construction on campus to accommodate growth, expansion, and major renovations. It will also require systematic upgrades to utility infrastructure. With regard to civil utilities (water and sanitary sewer), the University’s infrastructure is adequate for current and future needs. However, there are areas of campus that historically experience low water pressure, and the campus as a whole could benefit from utility loops to better connect existing infrastructure.

The campus’s existing MEP utilities also have sufficient capacity for today’s demand, and Campus Facilities is actively improving these systems in preparation for campus growth. Many of the campus’s mechanical infrastructure has been moved from the Campus Core to the facilities plant off Cameron Boulevard to make room for growth and upgrade systems, but some mechanical equipment remains in Campus Core. Eventually, Campus Facilities will consolidate utilities infrastructure into regional utility plants (RUPs) that serve several buildings on a redundant loop. RUPs ensure that a catastrophic event in one area of campus does not affect the entire campus and decrease required maintenance.
Institutional Space Needs

As UNC Charlotte embarks on its campaign to meet increases in student enrollment to 35,000 by 2020, it must assess its current utilization of campus spaces. The planning team completed a space audit and assessment of the campus based on Fall 2007 enrollment and course schedule data. The result of this effort created an account of existing facility utilization that the planning team compared against recognized national space standards for colleges and universities.

As expected, the initial assessment revealed that the University must add to its current building stock in order to accommodate student enrollment growth. Additionally, it revealed that certain categories of space are already insufficient to serve the current population. In other words, certain departments will begin the University’s course of growth at a deficit compared to standard benchmarks for peer institutions.

Categories with existing deficits include nearly all sub-categories of academic, academic support, and student spaces. The University will alleviate some of these deficits with the completion of the Student Union, Bioinformatics, and other proposed capital projects. The need for additional administrative space to accommodate increased student enrollment was also considered in the Master Plan process.

As individual departments grow on campus, they will require phased migration plans to maintain critical adjacencies and consolidate functions. This creates an opportunity to develop functional realignments that will enable the campus to grow in a more logical fashion.

Figure 26: Results of University space needs analysis
Concept Development

The planning team worked with the University to develop a set of Guiding Principles and a corresponding Concept Plan to guide the Master Plan through the design process. Information accumulated and analyzed during the Observation Phase informed the Concept Plan, and the planning principles complemented and built upon the University’s mission and strategic plan.

During the Observation Phase, it became evident that the University has specific goals for its future. These goals created the backbone of the Plan’s Concept Plan and Principles. Foremost among the goals was the desire to create identity and establish a strong sense of place. The University expressed interest in building and strengthening the collegiate quality of campus in order to attract top students, researchers, and faculty members.

The second goal concerned the University’s projected growth. UNC Charlotte has a relatively short history defined by substantial growth and construction projects. As UNC Charlotte plans for its future, the campus setting should reinforce the academic mission and build upon the existing campus in an authentic, organic way.

Third, UNC Charlotte recognizes the importance of the campus’ natural setting and the role that the natural setting plays in defining the University’s identity. Institutional growth will need to balance responsible capacity of the land.

Fourth, the University recognizes that it is in the midst of “growing pains.” In the past, the campus existed as a mostly suburban campus, tucked away from the city of Charlotte. However, after decades of growth, the city is now at the campus’s doorstep. UNC Charlotte has the unique potential to harness and lead development in the area toward vibrant, urbanized, and dense land uses that will appeal to and stimulate a campus community of researchers, scholars, students, and staff. In many ways, the University is the driver of initiatives for light rail, transit-oriented development, and new residential and commercial developments in the area. The goal is to guide these initiatives in ways that maximize benefits for the University.

The planning team divided the common themes and goals expressed by the University into three broad Guiding Principles. Each Guiding Principle has a corresponding Concept Plan to graphically illustrate its physical effects on the University’s campus.

The planning team presented drafts of the Guiding Principles and Concept Plan to multiple groups within the University community. The Working Group, Steering Committee, and Board of Trustees reviewed and commented on the principles and concepts. Additionally, the University’s Department of Facilities Planning posted supporting documents on the University website for public view. This section describes the final Guiding Principles and Concept Plan adopted by the Master Plan.
Guiding Principle 1: Strengthening Our Collegiate Experience

- Addressing anticipated campus growth
- Building upon our academic mission
- Reinforcing and expanding the on-campus community
- Celebrating our cultural resources
- Improving access, visibility, identity, and a welcoming presence
- Expanding opportunities for athletics and recreation
- Creating a pedestrian-oriented, compact campus
- Integrating transit and parking

Figure 27: Strengthening our Collegiate Experience

Black Circles- Campus Thresholds
Red Blocks- Dense Urban Areas
Yellow- Formal Academic Quads
Guiding Principle 2: Creating Memorable Places

- Viewing the campus and necessary growth comprehensively
- Balancing growth with land capacity
- Building a cohesive campus
- Binding identity to cultural destinations, memorable buildings & spaces, and the natural beauty of the land
- Modeling and practicing sustainable development

Figure 28: Creating Memorable Places
- Black Circles- Campus Thresholds
- Blue Dashed Line- Sub-watersheds
- Green- Landscape
- Red Blocks- Dense Urban Areas
- Yellow- Formal Academic Quads
Guiding Principle 3: Engaging With Our Larger Community

- Embracing a regional perspective
- Partnering and collaborating with our neighbors
- Strengthening physical connections to University Place
- Supporting and influencing local planning initiatives
- Fostering mixed-use of development at our edges
- Providing a variety of housing options adjacent to campus
- Developing the potential for new transportation modes
- Integrating greenway construction

The final Concept Plan (Figure 29) incorporates each of the three Guiding Principles and represents the primary elements and intent of the 2010 Master Plan. First, it concentrates academic expansion within the existing core of campus. Academic quads will extend to the southern edge of campus along University City Boulevard (Hwy 49), activating this area and creating an improved experience for students who live on campus. Second, the Master Plan organizes the CRI campus as a denser, more urban area of campus to maximize the potential and capacity of land at CRI. Third, the Concept Plan elevates the importance of campus thresholds and the prominence of the proposed light rail line on campus. Fourth, the University’s green infrastructure (Toby Creek, Susie Harwood Garden, and Van Landingham Glen) extends through campus, connecting areas east and west and offering students the opportunity to interact daily with the natural environment. Finally, the Plan blurs the historically rigid boundaries between campus and the surrounding area so that the University emerges from this concept plan as the integral center of University City.
Precinct Studies
Using the information gathered during the Observation Phase as well as themes outlined in the UNC Charlotte strategic plan, the planning team divided the campus into thematic categories for detailed Precinct Studies. The Precinct Studies examine potential solutions to the University campus’s current as well as future needs. This phase evaluated the ultimate capacity of the campus by investigating all potential building sites and allowed the University community to consider options to improve vehicle and pedestrian circulation, locate new buildings, revitalize or re-purpose existing campus buildings, and create memorable spaces.

Figures 30 through 32, which detail options for locating a proposed Music Performance Building, typify the iterative thinking of Precinct Studies. Each scenario tests a different solution for the identified need: placing the building at the front entrance to campus near University City Boulevard (Hwy 49), constructing the building on an existing parking lot (Lot 5), and clearing the Denny Complex site for the new building. The design team created similar concept options to test a number of potential changes to the physical campus. Concept sketches not only tested building site locations but also new road alignments, open space configurations, and athletic/recreational field placements.

The University’s relatively compact campus allowed the Precincts to be thematic rather than geographic in organization. The planning process consisted of four separate Precinct Workshops, addressing the following campus themes: Academic Affairs, Athletics, Student Life, and Campus Perimeter. Precinct Workshops were two days in length and engaged a number of key stakeholders, including faculty, staff, students, and community members. The design team considered program drivers specific to the theme under study. The University’s planned growth was considered consistently throughout each of the workshops.
Planning and Design Considerations by Precinct

Precinct Study 1: Academic Affairs

The first workshop focused on the locations and relationships of facilities that will support the academic mission of the University. During this Precinct Workshop, institutional growth and space requirements directed design treatments and solutions. The University identified multiple building needs within its six-year capital project list:

- 200,000+ GSF science building
- Music Performance Building with 1,500 seat performing arts facility
- Addition to the College of Arts + Architecture’s Storrs Hall
- Modernization of existing academic buildings
- Modernization of Belk Gym for use by the Kinesiology Department
- Consolidation of utility infrastructure

These projects, in addition to issues such as pedestrian and vehicular circulation, service access, building footprints, open space, and landscape, organized discussion during the workshops. Initial findings from the Institutional Space Needs Study also guided the conversation.

The following opportunities were identified:

- By building only on previously developed land, the University can add approximately 5.2 million GSF of new academic space in Campus Core. This is approximately twice as much academic space as is needed to accommodate 35,000 students.

- The CRI campus is an integrated campus with a variety of opportunities for academic, research, service and retail, housing, and hotel and conference center spaces to link to the academic core, the Tryon light rail stop, and surrounding development. However, there are opportunities to better connect this area of campus to Campus Core.

- By concentrating new building projects within the academic core rather than dispersing academic functions across campus, the University will strengthen the collegiate experience.

- By using already developed land for new building projects, the University maintains the integrity of its natural landscapes which in turn creates memorable places on campus.

- The academic core of campus provides physical space to the University’s eight colleges: Business, Arts + Architecture, Computing and Informatics, Education, Health and Human Services, Liberal Arts and Sciences, Engineering, and the University College. Participants in the Precinct Workshop identified a need to improve organization within the academic core by arranging quads or sectors of use based on academic discipline and function.
Figure 33: Developable University land

Figure 34: Developable University land for academic uses

Figure 35: Aggregate developable University land for academic uses
The precinct group considered multiple schemes for each area of campus, each option testing opinion and appetite for expansion in various areas. An interactive process with the precinct group ensured that the planning team included various voices in the Master Plan. Much of the discussion focused on the group-endorsed proposal to build a pedestrian bridge from the Campus Core to the CRI campus.

A second area that garnered attention was the proposed extension of the Campus Core northward toward a new student health building. Currently, parking lots and campus utilities occupy this space, but its adjacency to the Campus Core makes it valuable real estate. Subsequent discussions with the Master Plan’s Working Group determined this area as an ideal location for the new Student Health and Wellness Center.

Finally, the group discussed potential locations for various academic buildings identified by the capital projects list. The Music Performance Building took high priority. While the group stated a desire to keep this building close to Robinson Hall, additional testing of the site’s capacity questioned the feasibility of this location. Another option considered was further east on Lot 6 near Van Landingham Glen. This location would make the building visible from the intersection of University City Boulevard (Hwy 49) and John Kirk Road and form the beginning of the Arts Walk, which would connect the new facility to Robinson Hall along Van Landingham Road. The University has the option of incorporating the building’s construction into the relocation of the greenhouses out of the academic core.

Figures 38 through 42 show multiple scenarios considered in this first Precinct Workshop.
Campus-wide

Figure 38: Option for campus expansion without pedestrian bridge to CRI

Figure 39: Option for campus expansion with pedestrian bridge to CRI
Figure 40: Four options for proposed Music Performance Building
North Mall

Figure 41: Options for the North Mall

Figure 42: Option for the North Mall showing the student health and wellness center on this site, in place of additional academic buildings.
Precinct Study 2: Athletics

In the fall of 2008, the Chancellor of UNC Charlotte endorsed the creation of a Division I football program at the University. The University community viewed this decision favorably, but it has since required careful attention and planning by the University. In order for the football program to begin by its target date of 2014, the University must build a football stadium, athletic support building, and practice fields. The stadium will be built to an original capacity of 15,000 seats and expandable to 40,000. The support building will be roughly 50,000 GSF. The football program will require two practice fields, one of which will need to be synthetic turf. Three additional varsity sports fields will also be constructed to meet Title IX requirements: one synthetic turf hockey field, one competition soccer/lacrosse field, and one soccer/lacrosse practice field. Finally, the University must find the proper location for twelve new competition tennis courts.

Locating the new football stadium, accompanying support building, and additional varsity fields/courts became the primary concern of the second Precinct Workshop. The Workshop also considered practical issues such as building footprints, treatment of open space, pedestrian and vehicle circulation, and landscape.

The Athletics Precinct identified the following opportunities:

- The planning team studied multiple sites for the football stadium based on parameters provided by UNC Charlotte, including the strong desire to keep the stadium on campus. Based on these parameters, two sites were eliminated – one at a downtown Charlotte location and the second at the 100-acre parcel along Mallard Creek Church Road. Two other areas on campus emerged for detailed study. The team considered issues of topography, floodplains, and access in its analysis.

- To the greatest extent possible, the University should utilize existing infrastructure (roads, parking structures, utility corridors, etc.) to service the new stadium.

- The University might consider refurbishing Belk Stadium to temporarily house the football program.

- Design concepts proposed wrapping the stadium with an athletic support building. The building could include additional functions such as food service, meeting, and academic spaces. The University identified Florida State University’s stadium as a favorable design precedent.

- Choosing either stadium location will require the relocation of some recreation fields on campus. The Student Life Precinct addresses this concern.

![Figure 43: Proposed football stadium location near Toby Creek Road](image1)

![Figure 44: Proposed football stadium location near Hayes Recreational Field Complex](image2)
Precinct Study 3: Student Life

The third Precinct Workshop focused on the locations and relationships of Student Life facilities. Two important needs emerged during this precinct: placement of new student housing and location of new recreational fields and facility.

Housing

Based on Fall 2008 data, UNC Charlotte houses 22 percent of its student population on campus in 18 existing residence halls and apartment complexes.

The Office of Housing and Residence Life maintains 4,796 on-campus beds, including the 320 beds in Greek Village, which opened in 2007 as the result of a public-private partnership. Beds are distributed relatively evenly by unit type: 34 percent of University beds are apartment-style, 29 percent are traditional-style doubles, and 25 percent are suite-style rooms. Although the University houses more first year students than any other class of student, apartment-style housing, which is not typically associated with first year students, is the most common unit type on campus.

Due to changes in state building codes, all University residence halls must have sprinklers installed by 2012. The University has decided to demolish three of its complexes, Hunt Village, Martin Village, and Phase III housing, as a result of this change in building code. The overall condition and life cycle of these buildings do not merit the expense of sprinkler installation. The University will lose several hundred apartment-style beds when it demolishes Hunt Village, Martin Village, and Phase III housing, built in 1978, 1979, and 1980 respectively. A new housing project currently under way, Phase IX, will create over 400 new beds on campus.

First year students are the largest category of students living on campus at 2,121 students. This number represents 69 percent of all first year students and 44 percent of the total on-campus resident population. The number of students living on-campus decreases with each subsequent class: 1,259 sophomores, 680 juniors, and 439 seniors in the Fall of 2008 (this count is typical of past years). The University’s primary concern is providing housing to its undergraduate population. Only 1 percent of graduate students live on campus. Fifty-two percent of first year students live in the four high-rise towers: Moore (1969), Sanford (1969), Scott (1972), and Holshouser Halls (1973). The remaining 48 percent of first year students live in the residence halls north of the academic core. Certain floors within Lynch and Laurel Halls cater to first year students by creating special living/learning communities. As the University grows to 35,000 students, it plans to continue housing the same proportions of students on campus.
Issues discussed during the Student Life Precinct include planned enrollment growth, housing variety, experience of maturation and progression in the residential life experience, definition of community, and strategic locations for new facilities and gathering spaces. The workshop also considered practical issues such as building footprints, treatment of open space, pedestrian and vehicle circulation, and landscape.

The Student Life Precinct Workshop identified the following opportunities pertaining to student housing:

- UNC Charlotte will need to build new residence halls to accommodate enrollment growth and maintain the current level of students housed on campus. When student population reaches 35,000 students, the University will need to have added 2,696 additional beds in order to sustain its 2008 rate. Assuming uniform growth rates across all years of students, first year students will need 1,192 new beds, sophomores 708, juniors 382, and seniors 247.

- The University will need to demolish Hunt Village, Martin Village, and Phase III housing prior to 2012. UNC Charlotte’s previous campus master plan assumed that the University would also demolish its high-rise towers. However, the University has since decided to keep the towers intact, requiring new schematic designs for this area of campus.

- The design team divided the Student Life Precinct into three proposed villages: South Village, East Village, and North Village, each containing concepts for student housing, recreation, parking, and other uses.

- The proposed South Village has the potential to become a vibrant core for the first- and second-year student experience. Additional residence halls, student activity space, informal recreational fields, and a dining facility in the area will improve the quality of student life programs and accommodate enrollment growth. Design concepts for the South Village organized buildings to create formalized quads and establish a neighborhood identity for the area. The concepts also included connecting both sets of high-rise towers with a two-story student space and renovating the towers.

- Additional residence halls in the East and North Villages have the potential to provide housing and recreational spaces for upperclassmen.

Figures 47 through 49 show the various scenarios considered for each residential village.
Figure 47: South Village Options
East Village

Figure 48: East Village Options
North Village

Figure 49: North Village Options
Recreation
The UNC Charlotte Department of Recreational Services uses 17.5 acres of existing on-campus fields for intramural and club sports use. In 2007, students used these fields for 2,300 hours of play. Of the 17.5 acres, the Hayes Recreational Complex comprises 11 acres of lighted fields. The complex is an asset to the University but falls short of national standards for collegiate recreational fields. According to guidelines set by the National Intramural-Recreational Sports Association (NIRSA), a University with 25,000 students should have a minimum of 21 acres of lighted recreational fields.

To achieve the NIRSA standard, UNC Charlotte has started construction of a new field complex on University land opposite the Greek Village across John Kirk Drive. This complex will contain an additional 10.25 acres of lighted fields to bring the total acreage of fields to almost 28 acres. The NIRSA guidelines assume grass fields, which is the case at UNC Charlotte, however, use is limited to prevent degradation of the natural turf. It is recommended that the University invest in artificial turf fields to maximize use since artificial turf expands the life and use of a single recreational field.

During the Athletic Precinct, the planning team identified the Hayes Complex as a potential site for the new football stadium. Enacting this design concept will require the University to replace the 11 acres of fields currently at the Hayes Complex. As the University expands beyond 35,000 students, it will require additional acreage still for recreational purposes.

The University identified a new recreation center as one of its 6-year capital projects. Prior to the Precinct Workshop, Recreational Services emphasized that they would value having recreational fields clustered together, as a complex, and near the proposed recreation center.

The Precinct Workshop focused on the locations and relationships of proposed recreation facilities, involving issues such as planned enrollment growth, need for facilities renewal, location of the new campus recreation center, and locations for additional recreational fields. The Workshop also considered practical issues such as field adjacencies, treatment of open space, pedestrian and vehicle circulation, and landscape.

The Student Life Precinct Workshop identified the following opportunities pertaining to recreation:

- Enhanced connectivity between existing and proposed fields, the proposed recreation center, student housing, and the academic core is important to the success of the plans.

- Each of the three Villages proposed for student life precincts can accommodate recreational fields. Two of the Village concepts create the opportunity to place a cluster of on-campus recreational fields in close proximity to both student housing and the new recreational fields along John Kirk Drive (East and North Villages).

- Design concepts illustrated a much-needed campus recreation center in one of three locations: Lot 26, Lot 21/area west of the Student Health Center, and Lot 6. The new facility will provide fitness and recreation program space and a limited amount of parking. After the precinct workshop, a fourth location was considered south of the Health Center, along the proposed northward expansion of the academic core.

- During the Precinct Workshop, Recreational Services responded favorably to concepts that located the fields and proposed recreation center within the East Village because of its potential adjacency to the John Kirk Field Complex and student housing (both on and off campus). The recreational fields should be physically adjacent.
to one another in order to facilitate easier management. Informal recreational spaces, on the other hand, do not need to be adjacent; they should be located throughout campus, near student housing when possible.

- The University also determined that physical proximity of the recreation center to the Campus Core should take priority over proximity to recreational fields or student housing. All of the campus community, not just students, will utilize the recreation center.

- The design team considered relocating the recreational fields to the Toby Creek Road site considered for the football stadium. However, the topography of the area greatly limits the placement of recreational fields. Developing the site for recreational fields would require significant grading and earth removal, as well as the construction of retaining walls 30-50 feet high. The location is also very remote from campus and lacks existing utility infrastructure.
Precinct Study 4: Campus Perimeter

When UNC Charlotte became designated as a four-year public institution in 1964, it was located in an isolated area ten miles north of the city of Charlotte. At that time, Charlotte was a small city, and farmland surrounded the University campus. Much has changed in the subsequent four decades. Development from the city has sprawled towards the campus, and University City – the tax district in which the University is located – has emerged as a suburban area. In the past, the University exerted minimum control over development projects along its periphery. However, UNC Charlotte now recognizes the importance and necessity of directing and shaping future development of its surroundings. For this reason, the 2010 Master Plan strategizes multiple opportunities to create value-added development projects through public/private partnerships.

During the final Precinct Workshop, the planning team studied the areas around campus and surveyed the University community to collect opinions about the shape and character new development should assume. During this Workshop, the University invited community stakeholders – city officials, developers, planners, and neighborhood residents – to the table to discuss potential design options. The University will not be the developer behind proposed projects; however, it will collaborate with private developers on projects that align with a shared vision for the area.

Issues discussed during the Campus Perimeter Precinct Workshop included planned enrollment growth, housing variety, CRI expansion, strategic locations for new development (commercial and residential), and the character of new development. The workshop also considered practical issues such as building footprints, treatment of open space, pedestrian and vehicle circulation, and landscape.

The Campus Perimeter Precinct Workshop identified the following opportunities:

- The areas around campus divide easily into three “precinct” areas for study: University City Boulevard (Hwy 49) frontage, the 106 University-owned acres on Mallard Creek Church Road, and Tryon Street (Rte 29) frontage. Each area has a unique combination of assets and challenges, suggesting different development approaches for each area.

- Roads around campus are not pedestrian-friendly. Sidewalks are limited, vehicles travel at high rates of speed, there are no buffers between the pedestrian and the road, and pedestrian facilities are lacking in general. In all three areas, creating strong pedestrian connections will be essential for successful development.

- The proposed CATS light rail line has the potential to change the character of Tryon Street dramatically. Transit-oriented development (TOD) along Tryon will create an urbanized, dense street character, common of an urban boulevard model.

- The North Carolina Department of Transportation (NC-DOT) has identified University City Boulevard (Hwy 49) as a strategic, regional roadway. NC-DOT plans to increase volume and capacity of vehicles along this road while implementing some improvements to pedestrian walkways and crossings.

- Currently, University City Boulevard does not contain a strong retail component nor does it have a strong connection back to the campus. Many students live along this road and its intersection with John Kirk Drive; however, this area of concentrated student housing has no direct connections to retail or entertainment options.

- The 106-acre parcel along Mallard Creek Church Road presents several opportunities for the University. A public/private partnership could potentially develop the University-owned property into a mixed-use zone. A proposed Light Rail station on the site will allow higher density development. However, there are significant issues of topography and floodplains within the site that limit where development may occur. After the Precinct Workshop, the owner of a key parcel that would provide access to the University’s property sold the land to an outside developer. The final plan, therefore, varies from what the precinct group discussed during the Workshop.
The CRI campus has plans to expand its research and business incubator spaces, pursuing a research village model.

The Charlotte-Mecklenburg School (CMS) District is interested in establishing a magnet school for Science, Technology, Engineering, and Mathematics (STEM) near the University, to build on the University’s research programs. CMS could develop this type of school within a vacant, “big box” retail space north of Tryon. The University and CMS have also considered locating a K - 8 school on campus near the University light rail stop and the College of Education. This will require a new road extension from Cameron Boulevard to Mallard Creek Church Road to accommodate the additional traffic.

Figure 53: Campus Perimeter areas identified and studied

A- Tryon Street Frontage
B- Mallard Creek Church Road Frontage (100-Acre Parcel)
C- University City Blvd Frontage
The 2010 Master Plan is the culmination of ideas generated during the rigorous planning process. The plan builds on the history of the campus and culture of the institution and identifies potential building sites that are consistent with the scale and quality of the University’s existing campus environment. By respecting context – neighbors and ecology – the Master Plan also supports the unique identity of the campus.

The reorganization of land uses on campus addresses the three Guiding Principles and Concept Plan that led development of the Master Plan. Research and academic programs connect more fluidly to promote greater interaction and collaboration. Student housing is clustered together to form residential villages that promote student life and the sense of belonging to a collegiate community. The Campus Core gains density and design clarity, and the CRI campus proceeds to develop according to a research village model. East and North campus improvements accommodate new facilities for growing academic space needs and programs and create the connections essential to a dynamic campus. These campus sectors will connect and energize the dynamic flows of people, information, and resources and provide a sure but flexible foundation for UNC Charlotte’s long-term planning needs.

Proposed North Mall
Figure 54: UNC Charlotte Master Plan 2010
Existing Buildings
Proposed Buildings
Analysis

To ease understanding of the changes proposed by UNC Charlotte’s 2010 Master Plan, the descriptions are divided into sectors: Campus Core & North Campus, CRI Campus, North Village, Arts & Culture, South Village, and Mallard Creek Village.

Figure 55: Master Plan Campus Sectors

A- Campus Core
B- North Campus
C- CRI Campus
D- North Village
E- Arts & Culture (including East Village)
F- South Village
G- Mallard Creek Village
Campus Core and North Campus

Plan Highlights:
A. Over 2 million gross square feet (GSF) of academic growth and expansion space within the Campus Core
B. North Mall – creates over 725,000 GSF for professional school expansion and student-support space
C. Student Health and Wellness Center – 275,000 GSF student fitness center that provides health, educational, and recreational opportunities to the campus community
D. Student Academic Success and Retention Center – by replacing the existing Denny Complex with two separate buildings, the plan creates 132,000 GSF of additional student support services
E. A pedestrian bridge will connect Campus Core academic functions to research and educational experiences at the CRI campus
F. Science facility – a new, state-of-the-art science building will complete a growing science quad along Craver Road, with convenient access to the CRI campus via the pedestrian bridge
G. Removal of low utilization facilities maintenance and operations buildings and plants to make room for academic expansion

The site plan shows a number of changes to the Campus Core. Most prominent is the extension of the academic quad northward from the McEniry building to the Student Health Center to build up North Campus. Along the eastern edge of the North Campus quad, along what is here called the North Mall, the Master Plan sites the new Student Health and Wellness Center. This 275,000 GSF building will provide health, recreational, and fitness opportunities to the entire campus community, with the potential of expanding services to University alumni as well. The proposed facility’s adjacencies with student housing and the Student Health Center have obvious benefits. The plan also places building footprints for the University’s professional schools, specifically the College of Business and the College of Education, at the upper end of North Campus. This location will provide easy access to the future light rail station for commuting professional students.

With the academic expansion into North Campus, the University accomplishes several goals. First, University expansion will occur on previously developed land, preserving natural areas elsewhere on campus. Second, the quad will connect parts of campus that now feel isolated. For example, the Student Health Center completed in 2006 feels disconnected from the campus core. The North Campus design removes Lots 16 and 16A, relocating the utility infrastructure currently located in the area, and proposes new uses along the pathway to the Student Health Center to activate a route that currently feels long and uninteresting. This path, indicated in the plan as the North Mall, is a linear green space that will connect the Campus Core to the new academic and residential buildings of North Campus and provide a convenient and appealing path for the campus community. Third, new academic buildings will provide needed space for future professional program expansion. Finally, the proposed northern quad builds upon existing axial relationships in Campus Core so future development is in keeping with the character of the rest of campus.

In Campus Core, the Denny Complex will undergo demolition, the greenhouses will be replaced by an academic building, and the large lecture hall in McEniry will be removed to extend the north-south views between the North Mall and the Denny Complex location. The Master Plan replaces the Denny Complex with two separate buildings that frame the Belk Tower quad and open up the east-west view from Belk Tower to Cato Hall. These realignments create a clear, distinctive, and pleasant view of campus for visitors and prospective students arriving at Cato Hall. The University may use the new buildings for academic space and the proposed Student Academic Success and Retention Center.

The 2010 Master Plan includes locations for each new academic building project on the University’s six-year capital project list. The 242,000 GSF science building will be adjacent to the new Student Union building, opposite Woodward Hall across Craver Road. The topography of the site lends itself to the possibility of below-grade parking or a large lab space. In addition, the University will accommodate future growth in its Engineering, Computing and Informatics, and science programs with an expansion of Woodward Hall.

With the completion of the Student Health and Wellness Center, the University will be able to decant several uses from the Belk Gymnasium. This will in turn generate additional space for the Kinesiology Department and allow for the building’s expansion and modernization. Two new buildings, one of which will be a replacement of the
Brocker building (a one-story building that has reached the end of its useful life cycle), will strengthen University Road and create space for additional academic and administrative growth.

Other changes to Campus Core include expansion and renovations of existing facilities. For example, a 99,000 GSF addition to Atkins Library will replace the Career Center and provide space for the Library’s automated retrieval system. The 2010 Master Plan also renovates and expands the Cone University Center both outward and upward to better utilize the building site, demolishes the King building to form a new quad at the front door of the Library and Cone University Center, adds to the Burson building, sites an addition to the Storrs building, and creates additional parking through an expansion to the Union Deck. In the Plan, Craver Road becomes a restricted access road, open primarily to campus shuttles and emergency vehicles in order to ease pedestrian circulation traveling to the Student Union.

Finally, a major pedestrian bridge will connect the Campus Core and the CRI campus. The bridge will begin at the third level of the proposed science building, the same level where the science building meets the Student Union on Craver Road. The bridge will then cross Cameron Boulevard and Toby Creek via an elevated crossing to land on grade at the entrance of the proposed football stadium (see CRI Campus description).

The pedestrian bridge will improve the internal connectivity of the campus substantially, but it represents a connection as much psychological as physical. Currently, the University population perceives the CRI campus to be a great distance from the campus core because of changes in topography and few active uses along the primary route between the two. The bridge shortens the perceived distance by creating a clear, direct connection that individuals access from actively used buildings. Faculty, staff, and students also have the option to reach CRI and the proposed football stadium by traveling the more organic existing paths that lead down to Toby Creek through the wooded area.

Figure 57: Proposed pedestrian bridge to the CRI campus
Figure 58: Pedestrian Bridge Precedent at the University of Delaware

Proposed pedestrian bridge, Woodward Hall in foreground
CRI Campus

Plan Highlights:
A. 1.4 million gross square feet (GSF) for CRI expansion, including space for research, engineering, general sciences, and business incubation
B. Hotel and Conference Center – opportunity for 140,000 GSF Center on the CRI campus with convenient access to the North Tryon Street light rail station and business community
C. Football stadium – the initial stadium will have 15,000 seats, with expansion capacity to 40,000. A 92,000 GSF support building will create space for concessions, ticket sales, locker rooms, and VIP seating
D. Parking – two parking decks and football tailgating lots will create 2,000+ new parking spaces

The 2010 Master Plan identifies locations for several new projects on the CRI campus, most of which enable expansion of research, engineering, science, and business incubator spaces. One of the most significant changes in this area will be the new football stadium complex. The Master Plan also proposes building sites for the University Hotel and Conference Center as well as three buildings on the University’s capital project list that support the mission of the CRI campus: the PORTAL building, Motorsports Building II, and Parking Deck I/M.
The Partnerships, Outreach, and Research for Accelerated Learning (PORTAL) Building will offer new opportunities for research, business development, entrepreneurial activity, and University partnerships on the CRI campus. PORTAL will provide flexible surge space for large research projects and house the Ben Craig Center Business Incubator in addition to other uses.

The Master Plan sites the PORTAL building along CRI’s Tryon Street (Route 29) frontage. Since the building will house both public and private uses, it is important that the building have a prominent, visible presence in University City and that visitors are able to easily locate and access the building. The PORTAL building’s location opposite the Bioinformatics building completes the University’s original quad plan for CRI.

A second motorsports building will expand facilities for a growing academic program as the University’s current 5,500 GSF Motorsports building is no longer adequate for the program’s space needs. The proposed building will add 13,500 GSF of new lab, office, and support spaces. The Master Plan incorporates this building with Parking Deck I/M, a 1,000-space parking deck. Assuming that the University is able to align the project timing, it has the opportunity to embrace the topography of the site and incorporate the new motorsports building into the lower levels of the new parking deck. The proposed site – north of Duke Centennial Hall and the existing motorsports building – will allow students and faculty to travel quickly between the two motorsports facilities. In this location, Parking Deck I/M could also serve the proposed football stadium during sporting events.

The Master Plan also locates a hotel and conference center on the CRI campus that takes advantage of convenient access to the proposed Tryon Street Light Rail Station and other retail and entertainment venues on Tryon. The partially wooded setting, view of the pond, and connection to the Greenway will create an ideal environment for retreats and similar functions. Additionally, Deck I/M will provide ample parking for guests of the hotel.

The CRI campus road network will require several modifications. The primary vehicular connection between the Campus Core and CRI today is via Phillips Road. However, this connection has a difficult intersection at Cameron Boulevard that prompted discussions of other potential access routes. Extending Robert Snyder Road to intersect with Cameron Boulevard on the north side of campus will create a second connection, shift a high volume of traffic off Phillips Road, and potentially provide an opportunity to build the road along the same corridor as the proposed Light Rail. Modifying Phillips Road to align with Craver Road will also improve existing conditions, but the priority is to extend Robert Snyder Road. (Please see the University Transportation Plan in the appendix of this report for a detailed description of these options).
Plans for the eastern edge of the CRI campus build upon an existing athletics corridor of baseball, softball, and soccer fields by adding varsity practice fields and a football stadium complex. The proposed football stadium complex responds to the decision to add an intercollegiate football program at the University.

During the Athletics Precinct Workshop, the University decided that that most advantageous location for the football stadium complex is the current location of the Hayes Recreational Field Complex. Although this would require the University to move its lighted recreation fields, the site will require fewer modifications to existing infrastructure (road networks, sewage systems, and telecommunications, etc.) than the other site considered near Toby Creek Road.

The stadium, an athletic support building, and practice fields will comprise the complex. The athletic support building, proposed to the west of the Wachovia Field House, will consist of 53,000 GSF of meeting spaces, coaches’ offices, weight and training rooms, locker rooms, and restrooms. Practice fields will border the southwest edge of the stadium.

The proposed stadium works with existing topography to create a shallow bowl to hold stadium seating – 1,500 seats in its first phase and expandable to 40,000 seats as the football program becomes more established. By taking advantage of topography, the stadium will have a lower profile in keeping with the design standards for the CRI campus. The design will shield the view of the underside of the bleachers and provide space for ticket sales, office space, VIP seating, and food services. The stadium complex will connect to the proposed pedestrian bridge, which will be anchored at the other end by an academic support building in Campus Core. Positioned along this primary corridor between Campus Core and CRI, the stadium becomes a central component of the UNC Charlotte campus experience throughout the year.
Figure 62: Sketch of cross-sectional view of the proposed stadium wrapper

Proposed football stadium complex (view from Campus Core)
North Village

Plan Highlights:
A. CMS K-8 school – the 150,000 GSF complex will be a model school collaboration between the College of Education and Charlotte-Mecklenburg Schools
B. Child care center – the University child care center will provide a service currently in high demand
C. Physical plant complex – a 40,000 GSF expansion to the University’s physical plant complex will enable campus facilities to continue serving the needs of a growing campus
D. Light rail – the University’s Light Rail Stations will improve access between the University campus and Uptown Charlotte, including the University’s new Center City Building. During peak hours, trains will leave campus every 7.5 minutes

The 2010 Master Plan improves connectivity both on campus and between campus and surrounding areas. In a separate but simultaneous planning process, CATS has proposed to locate a future Light Rail Station along the southern edge of Lot 26 on UNC Charlotte’s campus. The University is enthusiastic about this addition and intends to add additional uses near the station, such as a K-8 school that will be a collaborative initiative led by the College of Education and Charlotte-Mecklenburg Schools (CMS). The successful teaching hospital concept will be the model for this clinical teaching school. The Master Plan also includes a site for a daycare center that will serve the University community.

Conflicting access needs – for the Light Rail Station, Deck H, daycare drop-off, and school traffic – necessitates redesigning the road network in this area. (Parking Deck H, which is in design at the time of this report, is adjacent to the Light Rail Station.) The plan assumes that if CMS builds a school at this site, CMS will also build a road connection to Mallard Creek Church Road that aligns with Stone Quarry Road. This road – referred to here as North Light Rail Road – will connect to the school from Mallard Creek Church Road via a below-grade crossing in order to separate school traffic from the proposed light rail line’s tracks.
Before and After: North Mall
Arts & Culture

Plan Highlights:
A. Music Performance Building – the new facility will provide an additional 116,000 GSF of musical performance, educational, and rehearsal space.
B. Arts Walk – through the use of public art and special landscaping, an Arts Walk will connect the new Arts and Humanities Building to the existing Arts Quad in the core campus.
C. East Village Residence Halls – four new upperclassmen residence halls, providing 960 beds, will activate this area of campus day and night.
D. Recreational Field Complex – the fields will complement planned fields across John Kirk Drive and provide additional acreage for student recreational space.
E. Garden Welcome Center – the McMillan Greenhouse and Garden Welcome Center will provide a front-door amenity and better highlight these resources to the University’s on- and off-campus communities.

During the planning process, the Arts & Culture concept evolved into a variety of mixed-uses that would provide space for student housing, recreation, academics, and campus visitors. The result is a dynamic, attractive area that takes advantage of its setting near the Susie Harwood Garden and Van Landingham Glen. Through carefully phased development, the University will revitalize an area of campus currently dominated by surface parking lots with land uses that further the institution’s mission.

The Music Performance Building, identified in the six-year capital project list, is one proposed use in this campus sector. A key component to enhancing the University’s music program, the building will include a 1,500-seat performance hall, music practice rooms, and classroom space.

This type of building requires significant space for service vehicles and convenient parking for performances. Originally, the precinct group considered several locations closer to the existing Arts + Architecture quad. However, those areas do not have sufficient space for service vehicle access so the group investigated alternative locations. The eastern edge of campus seemed distant at first, but it was tested for capacity and ultimately selected. The proposed Arts Walk will connect the new Music Performance Building to the existing Arts + Architecture quad in the campus core. As an on-campus laboratory for arts student experimentation as well as a place for professional art installations, the Arts Walk will activate the path, connect the campus core with the Botanical Gardens, and diminish the perceived distance between Robinson Hall for the Performing Arts and the new larger performance facility.

Locating the Music Performance Building in east campus takes advantage of existing conditions such as an outdoor performance area near the Cafeteria Activities Building and visitor parking in the East Decks. Furthermore, as a civic-oriented landmark viewable from University City Boulevard (Hwy 49), the new building will anchor the eastern entrance to campus from John Kirk Road. Also greeting visitors, students, and faculty at the eastern entrance will be the new Garden Welcome Center. The Center, in combination with the UNC Charlotte Botanical Gardens, will serve as a front-door amenity of the University and connect nature with music.
The Master Plan also includes improvements to student life spaces at East Village. Four new residence halls will replace Phase III and Martin Village apartments at full build-out. Although the University will demolish Phase III and Martin Village in 2012, the University can use these spaces as temporary parking to phase in recreation fields and the Music Performance Building (see Implementation Plan).

A proposed recreational field complex will complement the recreational fields, currently in planning, across John Kirk Drive. The proposed complex will replace Lots 5A, 6, and 6A and improve pedestrian connections to the fields across John Kirk Drive. The new fields will replace the Hayes Recreation Complex at CRI where the proposed football stadium will be located. Combined with the new residence halls, parking structure, and the Music Performance Building, the proposed recreational fields will further engage and activate an area of campus currently considered isolated by students.
South Village

Plan Highlights:
A. Residence Halls – by creating 2,200 beds for first- and second-year students, this edge of campus will become a hub of activity; 42,000 GSF of additional communal space between the high-rise towers will enforce the community feel of this residential area
B. Student Dining Hall – replacement of the existing Residence Dining Hall will create new student activity space and modern facilities
C. Visitors’ Center – to establish an inviting, pleasant campus visit experience, a 40,000 GSF visitors’ center at the University’s main entrance will welcome guests to campus

During the Student Life Precinct Workshop, the concept of a South Village residential community for first- and second-year students gained traction with the University’s division of Student Affairs. The residential community is created through several strategies. First, the existing high-rise towers will be completely renovated and connect through two-story common areas between the buildings to create much-needed communal space. Second, new residence halls will replace existing surface lots to create a series of quads that improve organization and cohesion in the area. Third, informal outdoor quad-like spaces and recreation areas will provide social gathering space for students and strengthen the sense of community within South Village. Fourth, the plan locates a new dining hall and first-year student center at the main entry to campus to function as a connection between South Village and Campus Core. By placing the student center on a primary route between South Village residences and the academic core, the plan ensures that the space will be active throughout the day. The University may choose to allocate space within this building for other uses such as student activities offices, study space, or common areas. Also, the Office of Housing and Residence Life may be able to move from their current space into the center.

Per the University’s Housing Master Plan, the University will take the Hunt Village Apartments offline by 2012. This enables the University to construct new housing and replacement parking proposed by the South Village concept in an early phase of the Plan’s implementation. Two new parking structures in South Village will replace the surface parking lots that will be removed to build the new residence halls. By consolidating parking, additional open spaces are possible in close proximity to residence halls.
The final building proposed in South Village is the University Visitors’ Center. Located at the front door of campus and south of Robinson Hall for the Performing Arts, the building will welcome prospective students, special guests, and others to campus, thereby ensuring a memorable first impression. The Visitors’ Center will blend with the improvements made in 2008 to the University’s main entrance.
Mallard Creek Church Road Village

Plan Highlights:

A. Light Rail – the Mallard Creek Church Road Light Rail Station will be a primary park-and-ride facility for center city commuters coming from the north

B. Residential Housing – with approximately 750 apartment units (1,000 GSF/unit) for faculty, staff, graduate students, alumni, and general community members, this area off Mallard Creek Church Road will become an additional asset for the University

The Master Plan locates a housing development for the 106-acre parcel owned by the University on Mallard Creek Church Road. The site will accommodate limited mixed-use retail, particularly services that will appeal to commuters using the light rail line and residents of the development.

Development on the site requires realigning two roads to provide better access. The Master Plan recommends shifting the quarry access road to the utilities easement further east on Mallard Creek Church Road. Once truck traffic generated by the quarry is removed from Stone Quarry Road, Bonnie Cone Lane can be extended into the 106-acre parcel and connect with the existing Stone Quarry Road. The proposed North Light Rail Road (to be built by CMS – see North Village description) should align with Stone Quarry Road.
Land Use

The proposed site plan consolidates campus land uses to increase connectivity and efficiency. Land uses in Campus Core includes those functions most central to the University’s operation: academics & research, campus life, and some athletics & recreation. Connections between like uses are made more deliberate, and clusters of housing around the campus perimeter create unique living communities for students as they develop from first-year students to upperclassmen and graduates.
Throughout campus, the Plan maintains and creates high-quality areas of open space. By limiting development to previously disturbed areas, the University will keep significant forest patches intact. Areas along the campus’s periphery will remain wooded to the greatest extent possible. The University will also maintain the existing green fingers that bring the natural landscape into Campus Core (see Natural Systems description). In addition to its role in building the University’s identity and creating memorable places, the campus’s natural landscapes act as outdoor classrooms for biology, civil and environmental engineering, and art among others.

In terms of open space opportunities on campus, the University must continue to consider ways to:

- Embrace Toby Creek and its associated tributaries on campus as an amenity.
- Include the natural areas and streams in South Village as an integral part of the proposed residence halls, respecting the value of the riparian area and connecting students to the woodland with integrated paths and trails.
- Address the physical connections to Toby Creek, Mallard Creek, and the natural resources across campus with educational signage and programming that relate to responsible environmental stewardship and opportunities for sustainable life practices.
- Create wooded buffers along streams.
- Take the opportunity to transition between built areas (academic and residential) and wooded riparian areas with meadow or other native planting zones.
- Build and develop on the property north of Mallard Creek Church Road in a way that is sensitive to the ecology of the site, integrating architecture with the natural setting of the woodland and removing as few trees as possible. This is an area where there is an opportunity to utilize the natural shading of the trees to create courtyards between well-designed buildings that fit into the aesthetic of the woodland, perhaps creating an eco-village style residence opportunity.
- Consider the Sustainable Sites LEED criteria and the potential to apply these to new campus development.

Figure 69: Existing Landscape

Blue – water features
Dark green – natural landscapes
Light green – formal quads
Red – axial alignments
Yellow – athletics/recreation fields
Figure 70: Proposed Landscape
Dark green - natural landscapes
Light green - formal quads
Yellow - athletics/recreation fields
Blue - water features
Red - axial alignments
Green infrastructure principles combine stormwater management opportunities with a broader vision of ecological connectivity and regeneration to create an active campus landscape. Unique opportunities for programming, research, and curriculum exist on campus where the natural landscape meets the built environment.

Specific proposed green infrastructure and stormwater management opportunities are illustrated in Figure 71, as well as in the Appendix of this report. In general, the plan recommends the following:

- Natural landscapes for the Toby Creek corridor, stream buffers, currently undisturbed forested areas on the north and south sides of the campus, and the Botanical Gardens. These natural areas will serve as wildlife habitat, ecological corridors, and hydrologic sinks on the campus.
- Native groundcover (and conversion of existing turf) for the perimeters of the natural landscapes. These will provide a critical transition zone between the built environment and the interior forested areas.
- Manicured landscapes for proposed athletic fields and student gathering areas.
- Functional landscapes along the perimeter of the built environment. This is critical as the density of the central campus does not allow for large stormwater best management practices (BMPs), such as ponds.
- A distributed approach to treating runoff within landscapes will be necessary to meet future stormwater management requirements. Green roofs are recommended for all new rooftops proposed under the Master Plan to help meet the future requirements.

In the interest of protecting and enhancing the ecological health of campus, growth should avoid the following:

- Development and disturbance in Toby Creek buffer and 100-year floodplain
- Development in buffers around wetlands, ponds, and streams on campus
- Unnecessary crossings of Toby Creek
- Encroachment into ecologically valuable northern woodland patch (largest area of interior forest noted on campus)
- Development on steep slopes, especially in riparian areas
- Buffer encroachment especially when grading for or near new structures
Figure 71: Campus-wide Green Infrastructure
Circulation

A central tenet of the transportation plan is to achieve and maintain overall balance. For automobiles, the recommended road network balances the distribution of trips in all directions, avoids concentrating traffic in any one location, and provides multiple or redundant routing options. Beyond the single-occupant vehicle mode, the 2010 Master Plan recognizes the role of other modes of transportation in providing travel options and reducing the demand for additional roadway capacity.

From this central tenet follow several key strategies and recommendations:

• **Encourage parking once.** To reduce traffic congestion and conflicts with other transportation modes, driving between campus locations should be discouraged. This requires infrastructure and services to make walking, bicycling, and transit more attractive. This strategy also implies a parking system that eliminates driving around to find the best (or any) available parking space and that works with the road network to promote driving directly to a particular parking facility or zone via the shortest route.

• **Recognize differences in the value of parking spaces.** Not all people place the same value on a particular parking space, and not all parking spaces are equal in value to an individual. Location, time-of-day, and purpose of trip all affect the perceived value of a parking space. Given the opportunity, people will square price with their need and the value provided. Appropriate pricing can be used to manage demand, increasing occupancy in less convenient remote lots and generating revenue from more desirable, i.e. closer to campus, facilities.

• **Use strategies to reduce traffic and parking demand.** In addition to increasing capacity where necessary and appropriate, make alternatives available and provide incentives (and disincentives) to encourage their use.

• **Consider the total costs of transportation investments.** In addition to the costs of constructing, financing, operating, and maintaining transportation infrastructure projects, careful consideration should also be given to the opportunity costs (what else could be done with those funds or that land), as well as the often overlooked risks built into the assumptions justifying such projects. If fuel costs increase, causing people to drive less, will parking revenues be adequate to cover expenses, including debt service? Does the focus on satisfying expectations for automobile travel create a situation where there is little choice but for an institution (and its constituents) to invest even more resources into automobile travel?

• **Expand the pedestrian network, and simplify and clarify automobile circulation for visitors and daily users.** The transportation plan includes multiple changes to the campus road system: modification of road surfaces and/or cross-sections; realignment of existing roads; restricted access to certain roads or road segments; and construction or extension of existing roads when necessary.
Figure 72: Proposed Road Network

Figure 73: Proposed Core Shuttle Route

Figure 74: Proposed CRI Shuttle Route
Parking

Based on the analysis and assumptions described above, the cumulative change in parking supply will proceed as follows:

- Phase 1 – 1,629 spaces removed, 1,720 spaces constructed (includes temporary surface parking in East Village); 91 space net increase
- Phase 2 – 2,257 spaces removed (includes temporary surface parking in East Village), 3,953 spaces constructed; 1,696 space net increase
- Phase 3 – 1,753 spaces removed, 2,545 spaces constructed; 792 space net decrease
- Total – 5,639 spaces removed, 8,218 spaces constructed; 2,579 space net increase

Given the difficulty of building additional parking spaces at a pace that matches the demand, the University will have to rely on parking policy changes, travel demand management, and alternative modes of transportation, such as the proposed LYNX Light Rail Line, to meet the travel needs of the campus populations. The plan recommends consideration of the following:

- Permit price changes
- Permit proximity changes
- Travel Demand Management (TDM)
- New construction
- Remote lot with shuttle service

Based on the current parking replacement and construction plan, projected University population increases, and the parking policy changes, restrictions, and a travel demand management (TDM) program, UNC Charlotte should be able to meet future parking demand levels, as shown in Figure 72. There will be unmet parking demand during Phase 2, but the demand will be met once the LYNX light rail is operational.

As noted earlier, the parking demand and supply will vary each year and should be monitored by the University staff. Prices may need to increase to drive down demand, and TDM programs may need to be adjusted to increase efficacy. Constant monitoring and adjustments are the only approach that will keep parking demand and supply at similar levels.
Figure 75: UNC Charlotte Parking Demand Forecast
Figure 76: Existing parking
Figure 77: Proposed parking

Structured Parking: 11,650 cars
Surface Parking: 1,500 cars
Total Parking: 13,150 cars
Total Enrollment: 35,000+ headcount
Proposed Parking Ratio 2.65:1
Figure 78: Proposed road network and parking options
Utilities

Water
In order to facilitate the build-out of the 2010 Master Plan and provide adequate water supply (flow and pressure) to the campus, the following programs should be implemented as part of the utility master plan:

- Valve Exercise and Maintenance
- Construct/Complete Watermain Loops/Grid
- Increase Size of Watermains

In general, water distribution systems can be classified as grid (or looping) systems, branching systems, or a combination of the two. Looping systems are preferred over branching systems because any area in the system can be supplied from at least two directions. This redundancy provides for continued supply should one of the distribution lines need to be taken out of service due to maintenance or breakage. It also increases the available flow and pressure to points within the system by increasing the effective pipe diameter and reducing head (pressure) loss through the system. Branching systems can be characterized as having numerous terminals or dead ends.

The campus is currently supplied by three separate, yet interconnected sources from Charlotte-Mecklenburg Utilities (CMU) then distributed on campus via a branching (dead end) type system. The branching system limits the available pressure and volume to areas of campus. It also impairs the University’s ability to make repairs or expand the system without interrupting service.

Based on the available information, we recommend extending watermains along the following roadways and connecting existing dead-end mains to complete the loops that serve the existing campus:

- Cameron Boulevard from Union Deck to Witherspoon Hall
- Mary Alexander Road from the McEniry Building to Cato Hall

Wastewater Treatment
Based on evaluation of the information available and discussions with University staff, the planning team determined that the existing campus sanitary sewer system has sufficient capacity to meet the increased demands of the 2010 Master Plan. Additional branches, sewer mains, or connections to CMU mains will be required to extend to new buildings and/or previously unserved areas of campus. The following programs are recommended as part of the utility master plan:

- Wastewater Education
- As-needed Main Relocation
- Upgrade Sanitary Sewer Main Material
- Upgrade Sanitary Sewer Manhole Construction
**Stormwater Control**

Based on evaluation of the information available, the following programs are recommended as part of the utility master plan regarding stormwater:

- NPDES Permitting – it is recommended that the University obtain an NPDES permit to streamline regulatory review for projects on campus.
- Stormwater Master Plan - due to soil characteristics, increased impervious area, and Federal and State regulations, UNC Charlotte must implement measures to control and treat storm water runoff on campus. The appendix to this report includes figures showing the location of proposed Best Management Practices (BMPs) for the campus.
- Irrigation and Rainwater Harvesting - Supplementing water supply with rainwater harvesting can reduce reliance and demand on potable water supply. Rainwater harvesting can also reduce the need for BMPs to treat and detain storm water runoff.

**Utility Corridors**

Designating areas of campus as Utility Corridors will benefit the implementation of the 2010 Master Plan by reserving sufficient space for the infrastructure necessary to support growth. Furthermore, maintenance of campus infrastructure is simplified when placed within designated corridors of sufficient width to allow excavation without impairing nearby buildings.

Designated utility corridors throughout the campus are recommended for all utilities. In some areas, the utilities can be combined into a single corridor. In other areas, gravity type utilities (wastewater and storm sewers) will need to be separate from the pressure type utilities (water mains) due to topography.

**System Mapping, Modeling and Maintenance**

Accurate and current maps of the University’s infrastructure are invaluable to the build-out of new facilities included in the 2010 Master Plan. Information regarding utility location can prevent conflicts and costly relocation projects. Infrastructure maps are also necessary for efficient emergency management, repair, and maintenance. It is recommended that the University continue to update maps of the campus infrastructure systems by incorporating electronic as-built plans for infrastructure improvements upon completion of construction. Maps should also be updated utilizing field survey, GPS, and/or sub-surface utility exploration (SUE, commonly referred to by the proprietary name “soft-dig”) to confirm location, size, material, and condition of existing infrastructure.

The University should maintain an up-to-date hydraulic model of each of the University’s infrastructure systems. Creating and maintaining said models will be helpful in planning campus growth and infrastructure systems. System modeling is also beneficial in emergency situations such as redirecting flow around a line break or service interruption due to construction. Because the infrastructure systems will continually change as the campus grows, the University should implement a program for continued maintenance of system models and mapping.
Implementation

Any master plan’s success depends on its ability to be implemented. The transportation, utility, and environmental components of the plan provide sound recommendations that the University can begin to implement immediately. The only feasible way for the University to complete the remainder of projects proposed in the 2010 Master Plan is through phased implementation.

This section divides campus projects into three phases based on increases in student enrollment, creating a flexible guide that is not pinned to specific year benchmarks. From the start, growing student enrollment numbers guided the 2010 Master Plan. Therefore, implementation is based on that growth, rather than funding streams that can be difficult to predict.

The implementation phases are divided as follows:
Phase I: Completion of 6 year capital project list (estimated 30,000 student enrollment)
Phase II: 35,000 students
Phase III: 40,000 students and beyond.
Figure 79: Phase 1
### Phase 1: 30,000 Students - 6 Year Capital Plan - 2009-2015

#### Currently Planned Appropriated Projects

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<th>Legislative List GSF</th>
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#### Currently Planned Residence Life Projects

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<td>2</td>
<td>18B New Construction</td>
<td>Administrative A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>19A Renovation</td>
<td>Fretwell Renovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>20A Renovation</td>
<td>Rowe Renovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>21A Renovation</td>
<td>Books &amp; Prospector Renovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>22A Demolition</td>
<td>Summer Programs Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>* Infrastructure</td>
<td>Light Rail Road Construction (with LRT Construction)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY PHASE 2**

| 891 | 1,735,000 |

Figure 82: Phase 2 Spreadsheet
Implementation
Phase 3

Figure 83: Phase 3
### PHASE 3 - Long-term Development - Showing 40,000 Students

<table>
<thead>
<tr>
<th>Appropriated/Non-Appropriated Projects</th>
<th>3 1A</th>
<th>Demolition</th>
<th>Parking Lot 8</th>
<th>-1,058</th>
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</thead>
<tbody>
<tr>
<td>3 1B</td>
<td>New Construction</td>
<td>Deck N</td>
<td>N 68,000 6 408,000</td>
<td>1,360</td>
</tr>
<tr>
<td>3 2A</td>
<td>Demolition</td>
<td>Partial Woodward Parking Lot</td>
<td>-23</td>
<td></td>
</tr>
<tr>
<td>3 2B</td>
<td>Expansion</td>
<td>Woodward Expansion</td>
<td>49 23,000 4 92,000</td>
<td></td>
</tr>
<tr>
<td>3 3A</td>
<td>Demolition</td>
<td>Parking Lot 7 &amp; 7A</td>
<td>-176</td>
<td></td>
</tr>
<tr>
<td>3 3B</td>
<td>New Construction</td>
<td>Core Academic H</td>
<td>47 21,000 4 84,000</td>
<td></td>
</tr>
<tr>
<td>3 4A</td>
<td>Demolition</td>
<td>Parking Lot 25</td>
<td>-496</td>
<td></td>
</tr>
<tr>
<td>3 4B</td>
<td>New Construction</td>
<td>CMS School</td>
<td>14 75,000 2 150,000</td>
<td></td>
</tr>
<tr>
<td>3 5A</td>
<td>New Construction</td>
<td>CRI Research G</td>
<td>7 45,000 4 180,000</td>
<td></td>
</tr>
<tr>
<td>3 6A</td>
<td>New Construction</td>
<td>CRI Research F</td>
<td>6 29,000 4 116,000</td>
<td></td>
</tr>
<tr>
<td>3 7A</td>
<td>New Construction</td>
<td>CRI Research E</td>
<td>5 34,000 4 136,000</td>
<td></td>
</tr>
<tr>
<td>3 8A</td>
<td>New Construction</td>
<td>CRI Research L</td>
<td>12 30,000 4 120,000</td>
<td></td>
</tr>
<tr>
<td>3 9A</td>
<td>New Construction</td>
<td>CRI Research A</td>
<td>1 40,000 4 160,000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3H Residence Life Projects</th>
<th>3H 1A</th>
<th>New Construction</th>
<th>Phase XVII- South Village Suites D</th>
<th>28 34,000 4 136,000 Residential 453</th>
</tr>
</thead>
<tbody>
<tr>
<td>3H 2A</td>
<td>Demolition</td>
<td>Cafeteria Activities Building</td>
<td>-19,385</td>
<td></td>
</tr>
<tr>
<td>3H 2B</td>
<td>New Construction</td>
<td>Phase XVIII-East Village Apartments B</td>
<td>18 15,000 4 50,000 Residential 200</td>
<td></td>
</tr>
<tr>
<td>3H 3A</td>
<td>New Construction</td>
<td>Phase IX- East Village Apartments C</td>
<td>19 18,000 4 72,000 Residential 240</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>100 Acre Parcel Development</th>
<th>3</th>
<th>New Construction</th>
<th>Mixed Use Light Rail Station</th>
<th>55 10,000 2 20,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing A</td>
<td>56 21,000 4 84,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing B</td>
<td>57 12,000 4 48,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing C</td>
<td>58 21,000 4 84,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing D</td>
<td>59 12,000 4 48,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing E</td>
<td>60 21,000 4 84,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing F</td>
<td>61 18,000 4 72,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing G</td>
<td>62 20,000 4 80,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing H</td>
<td>63 17,000 4 68,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing I</td>
<td>64 15,000 4 60,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing J</td>
<td>65 15,000 4 60,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Mallard Creek Housing K</td>
<td>66 16,000 4 64,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Infrastructure</td>
<td>Mallard Creek Surface Parking</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Construction</td>
<td>Deck O</td>
<td>50,000 6 300,000</td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY PHASE 3**

| 3 | New Construction | Partial Woodward Parking Lot | -23 |
| 3 | New Construction | Parking Lot 8 | -1,058 |
| 3 | New Construction | Parking Lot 7 & 7A | -176 |
| 3 | New Construction | Core Academic H | 47 21,000 4 84,000 |
| 3 | Demolition | Parking Lot 25 | -496 |
| 3 | New Construction | CMS School | 14 75,000 2 150,000 |
| 3 | New Construction | CRI Research G | 7 45,000 4 180,000 |
| 3 | New Construction | CRI Research F | 6 29,000 4 116,000 |
| 3 | New Construction | CRI Research E | 5 34,000 4 136,000 |
| 3 | New Construction | CRI Research L | 12 30,000 4 120,000 |
| 3 | New Construction | CRI Research A | 1 40,000 4 160,000 |
| 3H | New Construction | Phase XVII- South Village Suites D | 28 34,000 4 136,000 Residential 453 |
| 3H | Demolition | Cafeteria Activities Building | -19,385 |
| 3H | New Construction | Phase XVIII-East Village Apartments B | 18 15,000 4 50,000 Residential 200 |
| 3H | New Construction | Phase IX- East Village Apartments C | 19 18,000 4 72,000 Residential 240 |
| 3 | New Construction | Mixed Use Light Rail Station | 55 10,000 2 20,000 |
| 3 | New Construction | Mallard Creek Housing A | 56 21,000 4 84,000 |
| 3 | New Construction | Mallard Creek Housing B | 57 12,000 4 48,000 |
| 3 | New Construction | Mallard Creek Housing C | 58 21,000 4 84,000 |
| 3 | New Construction | Mallard Creek Housing D | 59 12,000 4 48,000 |
| 3 | New Construction | Mallard Creek Housing E | 60 21,000 4 84,000 |
| 3 | New Construction | Mallard Creek Housing F | 61 18,000 4 72,000 |
| 3 | New Construction | Mallard Creek Housing G | 62 20,000 4 80,000 |
| 3 | New Construction | Mallard Creek Housing H | 63 17,000 4 68,000 |
| 3 | New Construction | Mallard Creek Housing I | 64 15,000 4 60,000 |
| 3 | New Construction | Mallard Creek Housing J | 65 15,000 4 60,000 |
| 3 | New Construction | Mallard Creek Housing K | 66 16,000 4 64,000 |
| 3 | Infrastructure | Mallard Creek Surface Parking | 185 |
| 3 | New Construction | Deck O | 50,000 6 300,000 |

**SUMMARY PHASE 3**

<table>
<thead>
<tr>
<th>Student Headcount</th>
<th>Space GSF</th>
<th>Beds</th>
<th>Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1 6yr capital projects</td>
<td>1,502,000</td>
<td>1892</td>
<td>1060</td>
</tr>
<tr>
<td>Phase 2 35,000</td>
<td>1,513,000</td>
<td>1093</td>
<td>3953</td>
</tr>
<tr>
<td>Phase 3 40,000</td>
<td>1,024,000</td>
<td>893</td>
<td>1,360</td>
</tr>
</tbody>
</table>

**Note:**

* numbers are GSF not NET numbers  
** does not include 100 acre parcel
Figure 85: UNC Charlotte Master Plan 2010 at Full Build-out
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