

FACILITY MASTER PLAN

Central Carolina Technical College

SOUTH CAROLINA

April 2009

The background of the entire page is a photograph of a modern, multi-story building with large glass windows and a prominent entrance. The building is surrounded by trees, some of which are bare, suggesting a cooler season. A bench is visible in the foreground on the left, and a paved area is at the bottom.

FACILITY MASTER PLAN

Central Carolina Technical College

SOUTH CAROLINA

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April 2009



MISSION

Central Carolina Technical College is a comprehensive, public, two-year institution of higher education that is dedicated to fostering a positive environment of teaching and learning for faculty, staff, and students. The College serves primarily the region of Clarendon, Lee, Kershaw, and Sumter counties in South Carolina and confers associate degrees, diplomas, and certificates. College programs and student support services provide citizens, businesses, industries, and communities with quality, affordable, accessible, customer-responsive post-secondary education through life-long learning and specialized training opportunities specifically designed to develop the foundation for personal growth, economic development, and an improved quality of life.

The College's vast array of associate degree, diploma, and certificate programs prepares students to enter the job market, to transfer to senior colleges and universities, and to achieve their professional and personal goals. Specifically, Central Carolina offers academic programs in business, health science, public service, industrial and engineering technology, and the arts and sciences. Through its comprehensive programs and support services, the College annually serves over 4,500 credit students and 15,000 continuing education students in both traditional and non-traditional formats.

Acknowledgements to

Central Carolina Technical College

The CCTC Facility Master Plan is a product of efforts by many that have spanned over a six-month period. From initial discussions regarding facility and site opportunities and constraints to the finalization of this new vision for the College, thanks are due to those on the following list. As with many projects of this magnitude, there may be individuals whose names were overlooked. We apologize for any oversights, but please accept our general acknowledgement of your contributions.

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A special thanks goes to the members of the Area Commission and CCTC Foundation, who took time out of their busy schedules to attend numerous meetings.

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FACILITY MASTER PLAN

1.

INTRODUCTION



April 2009

1. INTRODUCTION

The global economy of today requires a workforce that is highly skilled, technically proficient, and committed to life-long learning. Our College's focus is to prepare students to become competitive in this global environment both now and in the future.

Message from the President

Source CCTC Website: <http://www.cctech.edu/>

I. INTRODUCTION

Since its educational foundations in 1961, Central Carolina Technical College (CCTC, Central Carolina or the College) has endeavored to provide the highest caliber educational environment for its students, faculty, staff and community partners. As a part of the South Carolina Technical College System, CCTC is charged with *“providing learning opportunities that promote the economic and human resources located within the State of South Carolina’s central region.”*

PLANNING FRAMEWORK

In the fall of 2008, CCTC initiated a Facility Master Plan (FMP) for its five campuses. The planning effort consisted of a two-phased process with the following intent:

Phase I:

- Develop a CCTC Space Needs Analysis that would meet program and space needs to a target enrollment mix through 2017.
- Develop an assessment of Existing Physical Conditions on all CCTC campuses, sites, and centers.

Phase II:

- Develop a physical FMP with recommendations for development, organization, and enhancement that would accommodate the Space Needs Analysis recommendations for facility and space needs through 2017.

As a result, the primary focus of this report is to establish the recommendations and guidelines for institution-wide short-, mid-, and long-term physical development.

The proposed FMP described in this report was informed by CCTC stakeholders, the College's Vision, and the Space Needs Analysis. Highlights of the latter are discussed in this document as needed, while the full document is available in a companion report.

Each component identified above was critical in establishing a sound planning framework—one based in accurate data and resulting in a realistic development strategy.

PLANNING PROCESS

The master planning team—consisting of architects, campus physical and program planners, engineers, and landscape architects—has worked to maintain an open and engaged process involving institutional and community stakeholders including the CCTC Foundation.

At each milestone in the planning process, CCTC community input was sought through interviews, meetings, and presentations, with the resulting comments and recommendations incorporated into the final physical planning concepts and narrative. As a result, this FMP truly reflects CCTC and its community.

One such milestone event was the three-day physical planning “charrette,” the purpose of which was to help the College and its consultant team explore a variety of alternative organizational concepts for CCTC’s Main and Kershaw campuses and the Downtown Site (see figures 1-1 and 1-2). The charrette involved numerous sessions over the multi-day period where schemes were quickly generated through diagrams and sketches, then reviewed, discarded, or revised. This informal and fluid process afforded Central Carolina’s stakeholders unlimited opportunities for engagement in the process that ultimately promoted a sense of “ownership” in the process and final solutions.

The design and development recommendations included in this document for the Main and Kershaw campuses and the Downtown Site are refinements of the preferred concepts chosen by the College from a number of options developed in the charrette process (see figures 1-3 and 1-4).

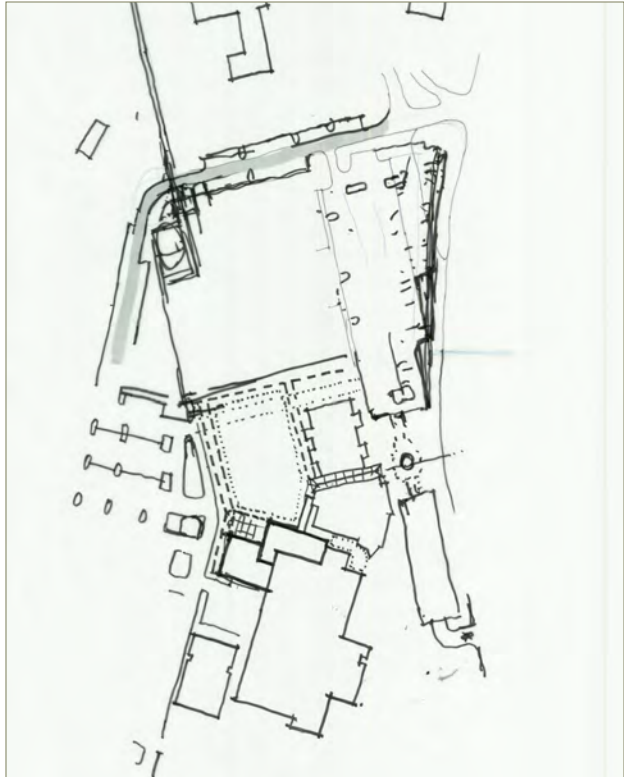


Figure 1-1: First generation concept for Main Campus



Figure 1-2: First generation concept for the new Kershaw Campus



Figure 1-3: Main Campus Facility Master Plan Illustrative



Figure 1-4: Kershaw Campus Facility Master Plan Illustrative

GOALS AND OBJECTIVES

Central Carolina Technical College will be the first choice for exceptional, quality, affordable, technical and comprehensive education provided in an innovative, student-centered learning environment.

CCTC Vision Statement

The foundation for this FMP has been the College's Vision Statement. In one concise sentence CCTC has captured the current state of affairs of higher education in the recognition of changing pedagogy and the need to move beyond traditional make-do facilities towards the creation of environments that are student-focused and facilitate learning.

This is reinforced by Central Carolina's Core Values of ***Excellence, Integrity, and Innovation*** and its high regard for ***"an environment that fosters creativity and resourcefulness among its students, faculty, staff, and administrators and encourages teamwork, open communication, and free exchange of ideas."***



Math Emporium



Flexible 'gathering' space that promotes engagement

To help the College accomplish its mission to be ***"a comprehensive, public, two-year institution of higher education that is dedicated to fostering a positive environment of teaching and learning for faculty, staff, and students,"*** the following goals and objectives were established to guide the decision-making process of the planning effort:

- Provide an exciting, attractive, and comfortable learning environment supported by enhanced student support facilities.
- Provide universal access to all CCTC facilities.
- Improve access to campuses, centers, and sites and reorganize circulation patterns to be more attractive, efficient, and clear for all users.
- Improve CCTC's way-finding through new signage for buildings, pedestrian access areas, internal and external roadways, and redesigned "gateway" entrance.
- Create formal and informal gathering spaces—within the landscape and in facilities—that encourage student-to-student, student-to-faculty, and faculty-to-faculty interaction and community building.
- Enhance CCTC's campus, center, and site landscapes to provide a variety of attractive experiences for students, faculty, and staff.
- Establish landscapes that are low-maintenance and representative of regional landscape.
- Integrate sustainability into physical design and operations of the College.
- Employ the latest technology tools to enhance learning.



Informal gathering space at Emory University

FACILITY MASTER PLAN

2.

PHYSICAL PLAN



April 2009

2. PHYSICAL PLAN

“If we do not choose to plan, then we choose to have others plan for us.”

- Richard I. Winwood



From top, CCTC's Downtown Site and Main Campus

2. PHYSICAL MASTER PLAN

CONTEXT

The FMP has been prepared in full awareness that the South Carolina Technical College System's institutions are intended to be highly adaptive learning environments able to meet the constantly changing workforce and economic conditions of their service area constituents. As a result, the FMP is conceived as a framework for development—a living document that can adjust and adapt to changing CCTC needs.

Since its founding in 1961 the College has successfully adapted through a succession of transformations—from its name to changes in campus locations. Located within South Carolina's dynamic East Central Region, CCTC's service area consists of Clarendon, Kershaw, Lee, and Sumter counties, with a combined population of 215,500—or roughly 5% of the state.

The College has numerous facilities located throughout its service area that contribute to the region's cultural and educational life and connect the institution to the larger community. Since 2006, Central Carolina has had a presence in each county, offering educational services at seven locations—from full campuses to centers to sites—which are, by county:

Sumter County

- Main Campus
- Natural Resource Management Center
- Shaw Center
- Downtown Site

Clarendon County

- FE Dubose Campus

Kershaw County

- Kershaw Campus

Lee County

- Lee County Site

The four-county service area (see Figure 2-1) is one of ethnic diversity and contrasting demographics, from affluent communities to areas of declining population and limited economic opportunity.

Over the next ten years the population of Kershaw County—the CCTC service area's northernmost county and one closest to Charlotte, North Carolina—is expected to expand and generate the largest increase in demand within the College (forecasts are linked to good economic conditions and population expansion in the Charlotte Metropolitan Region).

Sumter County, which is host to Shaw Air Force Base, should experience a one-time population increase resulting from the Department of Defense's Base Closure and Realignment Commission's (BRAC) recommendations to reassign approximately 742 uniformed personnel, along with their families, to the Base. This reassignment will generate new on- and off-base civilian jobs.

Conversely, Lee and Clarendon counties are forecasted to grow by only 2% each over the next decade.

Based on the demographic context, the findings of the Space Needs Analysis, and the relative age of some CCTC buildings and sites, the Executive Committee of the College decided to narrow in the focus of the FMP to its Main Campus and Downtown Site in Sumter County, and to develop a new Kershaw Campus on a recently acquired 40-acre property in Kershaw County. As a result, the following sections will focus primarily on these two existing and one proposed facilities.



Figure 2-1: CCTC Service Area

PLANNING ASSUMPTIONS

The planning horizon for this FMP is both short- and long-term, from 2009 through 2018. The plan identifies a sequence of early actions to occur by 2015 and a long-term vision for physical development through 2018 as space needs arise and funding becomes available.

The FMP was focused on understanding the College's unique needs and critical components and translating them into planning assumptions that guided the planning process, which are its:

- Mission, Values, Goals, and Strategic Plan
- Space Needs Analysis, and
- Campus Physical Conditions (built and natural environment)

The College's mission, values, goals, and strategic plan—discussed previously in this report—have served as the overarching decision-making framework through which existing and recommended programmatic and physical elements are evaluated. The College's commitment to **excellence, innovation, and integrity** and to “foster a positive environment of teaching and learning for faculty, staff, and students” while providing “an innovative, student-centered learning environment” have served as the key guiding principles for the physical planning of this effort.

Although three CCTC locations—the Main, Kershaw, and Downtown Site—are the primary focus of this FMP, these proposed planning and design principals are both specific to the three locations and, because all learning environments share some physical characteristics, are applicable to other College sites when appropriate.



University of Southern Mississippi's 'Math Zone'

Utilization and Space Needs Analysis

The utilization and space guidelines used in the Utilization and Space Needs Study (USNS) were based on the State of South Carolina Space Planning Manual for Public Colleges and Universities and accepted practices and benchmarking analyses.

The primary goals and objectives of the USNS, identified at the outset, were to:

- Reflect a true picture of existing physical assets on each campus
- Portray optimum space needs by functional area at target enrollment and staffing levels
- Analyze the difference between the optimum space needs from a quantitative perspective
- Strategize the physical response to the planning objectives as suggested by the space needs outcomes

In addition to establishing a space need for existing CCTC programs, USNS also identified potential new programs that, if adopted, would help the College prepare its students for emerging and/or expanding professions, some of which are:

- Human Services
- Human Resources
- Massage Therapist
- Green Technology / Environment
- Mechatronics/ Industrial Maintenance
- Physical Therapy Assistant
- Consumer Electronics Installation Technology

The following is a brief summary for the existing to planning horizon space needs for the Main Campus, Downtown Site, and new Kershaw Campus. The facility space inventory and future need was identified in usable building area known as Assignable Square Feet (ASF), which does not include circulation, mechanical and electrical rooms, custodial closets, restrooms, and building structure.

MAIN CAMPUS:**Comments:**

- In 2017, the Main Campus will have space deficits in almost every category with a total space need of +-180,000 Assignable Square Feet (ASF)
- Greatest space needs/largest deficits in 2017 in Student Center and Library categories
- Includes a 9% headcount (HC) growth over planning horizon
- Relocating health care/sciences to Downtown Site will open space in Building M600 for other needs

Enrollment Summary	2007	2017
Students	2,568 HC / 1,427 FTE	2,800 HC / 1,680 FTE
Staff	217 HC	235 HC

HC: Head Count

FTE: Full Time Equivalent

Space Needs Analysis	2007		2017	
	Existing	Guideline	Existing	Guideline
Academic	124,239 ASF	110,045 ASF	123,771 ASF	124,984 ASF
Academic Support	39,224 ASF	41,407 ASF	40,807 ASF	45,754 ASF
Auxiliary (Student Center)	5,555 ASF	8,563 ASF	5,555 ASF	10,080 ASF
Campus Total	169,018 ASF	160,015 ASF	170,133 ASF	180,818 ASF

Table 2-1: Main Campus Enrollment and Space Needs Analysis Summary

DOWNTOWN SITE:**Comments:**

- Existing space is inefficient in terms of function and use
- Room for expansion as some inactive space becomes available
- Even with a 9% growth over planning horizon, the existing facility would still have space surplus of 89 ASF
- Should be reviewed as Health Care is moved to adjacent, renovated single-story former retail building

Enrollment Summary	2007	2017
Students	72 FTE	85 FTE
Staff	4 HC	6 HC

HC: Head Count

FTE: Full Time Equivalent

Space Needs Analysis	2007		2017	
	Existing	Guideline	Existing	Guideline
Academic	5,571 ASF	4,634 ASF	5,571 ASF	5,456 ASF
Academic Support	446 ASF	325 ASF	446 ASF	472 ASF
Auxiliary (Student Center)	NA	NA	NA	NA
Campus Total	6,017 ASF	4,959 ASF	6,017 ASF	5,928 ASF

Table 2-2: Downtown Site Enrollment and Space Needs Analysis Summary

KERSHAW CAMPUS (NEW):**Comments:**

- In 2017, the new 40-acre Kershaw Campus would require a facility(s) of +- 39,000 ASF (equates to +- 60,000 GSF)
- Phase I facility, in design, will provide +-9,424 ASF
- To meet 2017 space needs, Phase II would require an additional facility(s) of +- 29,768 ASF
- Accommodates a projected 218% headcount growth over planning horizon
- Assumes existing Center is vacated

Enrollment Summary	2007	2017
Students	314 HC / 134 FTE	1,000 HC / 500 FTE
Staff	10 HC	32 HC

HC: Head Count

FTE: Full Time Equivalent

Space Needs Analysis	2007		2017	
	Existing	Guideline	Existing	Guideline
Academic	5,251 ASF	5,369 ASF	0 ASF	30,096 ASF
Academic Support	667 ASF	1,788 ASF	0 ASF	6,596 ASF
Auxiliary (Student Center)	215 ASF	804 ASF	0 ASF	2,500 ASF
Campus Total	6,133 ASF	7,961 ASF	0 ASF	39,192 ASF

Table 2-3: Kershaw Campus (New) Enrollment and Space Needs Analysis Summary

Space planning standards are useful as guidelines but are not to be used as the only measure when making complicated decisions about facility needs.

State guidelines

Space Parameters

- Classrooms for credit, workforce, and continuing education—largest is 60 stations
- Laboratories include computer, biology, chemistry, health science, and technical (welding or similar)
- Offices for enhanced administration and full-time faculty
- Adequate academic and administrative support spaces, including meeting rooms for workforce/continuing education
- Library and student center based on consultant guidelines
- Space for physical plant/maintenance
- Adequate outdoor “Public Space” for CCTC community

Parking

The parking guidelines identified below are not derived from the South Carolina Commission on Higher Education or CCTC requirements, but rather are based on experience and knowledge of other community and technical college parking requirements. As a result, the following are meant to be flexible guidelines that can be modified to fit each facility—and its host community’s needs.

Student:

- One space for every two FTE students

Faculty/Staff:

- One space for every one faculty/staff (HC)

Visitor:

- One space per 100 students (HC)

ADA:

- Required: 2% of overall parking



From top, images of Computer Lab, Classroom, Health Science, and Student Center

EXISTING PHYSICAL CONDITIONS

The following summary of existing physical conditions was derived from data provided by the College, interviews with campus constituents and stakeholders, and numerous reconnaissance visits undertaken as part of the planning process.

MAIN CAMPUS

The character of the Main Campus is formed primarily by its buildings, service areas, and large surface parking areas. The limited green space exists as largely left-over area buffering roadways or, as building foundation landscaping—rather than as designed people spaces.

The campus lacks a coherent system of way-finding and signage that alerts visitors and users alike how to navigate within the campus. In addition, The University of South Carolina Sumter bounds the campus western edge, but there is no clear definition between it and the CCTC Main Campus, which often results in visitors and new students confusing the two campuses.



Parking in Main Campus Core



Figure 2-2: Aerial of Main Campus

Architecture

The predominant architectural character of the Main Campus—from its library to administration buildings to lowly utility structures—is utilitarian. The ubiquitous brick buildings, tightly massed along N. Guignard Drive create a sense of institutional uniformity without fully exploiting the opportunity to establish a strong campus identity or focal point along this high-visibility corridor. The “suburban” building configuration that is focused on parking lots rather than inviting landscapes further discourages user engagement outside the classroom, laboratory, or library. Each building stands as an independent entity, however, with its own front, back, and side yards, and little relationship to its neighbor.

Two large facilities are separated from the core Main Campus, with Building M600 across N. Guignard Drive, and Building M700 to the north and separated by Stoddard Drive and an assisted living facility. Both conditions create a campus disconnect resulting in access and safety issues. This is especially true with Building M600, where student, faculty and staff must transit the busy N. Guignard Drive at a poorly defined crosswalk without signalization.



Clockwise, images of existing Main Campus conditions: Entrance to M300; Drive between M100 and M300; View eastward through parking to M500; Main Entrance to M400; Internal M700 Corridor, and; Southern Entrance to M400



Circulation

Access to the Main Campus is by way of numerous entrances off N. Guignard Drive and Miller Road that all lead directly into surface parking areas. As a result, parking lot travel lanes serve as the primary vehicular circulation routes throughout the campus, blending, rather than segregating, vehicular and pedestrian circulation into undefined and potentially dangerous circulation patterns.

Landscape

The predominant landscape character is of a large linear lawn, with randomly located canopy trees, which separates campus buildings from N. Guignard Drive. While an attractive green swath of land, it does little to strengthen the presence of CCTC, and instead hides the campus. Buildings throughout the campus have foundation shrubs and trees where space permits. However, many of these plantings intrude into pedestrian walkways and seating areas.



Counter-Clockwise, images of existing Main Campus conditions: Visitor Arrival Walkway to M100 and M300; Parking along southern side of M400; View northward through Parking to M400; View of M400 across Guignard; Landscaped Area between M100 and M500; & Entrance to M600, blocked by overgrown vegetation.

DOWNTOWN SITE

The College's sole downtown facility is located along the City of Sumter's "Main Street." The building was originally a U.S. Post Office building, and presents an attractive front facade to the street. The character of the Downtown Site is urban. Existing poorly designed/defined surface parking and service areas occupy much of the city block on which the CCTC facility sits, except for a small building immediately east of the facility.

The College has undertaken the design of a new Health Science facility, with associated site development that will together occupy the existing surface parking areas within the block.

Architecture

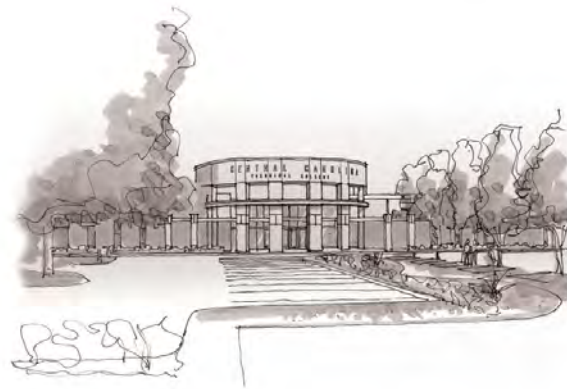
The existing U.S. Post Office building is within the Sumter Historic District and clearly contributes to the historic character of the district. Any publicly funded alterations to the structure will therefore need to be coordinated with, and approved by the South Carolina Department of Archives and History. Determination will need to be made as to both interior and exterior historically "salient" features that must remain, although most original interior features appear to have been previously removed or significantly altered. Generally, it should be expected that any addition to the historic structure will need to appear compatible in scale, rhythm and materials to the existing structure, yet easily discernible as an addition.

Circulation

Because the Downtown Site exists in an urban environment with an orthogonal grid of streets and sidewalks, vehicular and pedestrian access to the existing and proposed facility is via these city streets and sidewalks.

Landscape

Currently, the extent of vegetation consists of street trees. The proposed plans for the new adjacent facility identify significant plantings for the site.



Above, Rendering of new Health Science Building entry



Above, View of Downtown Site Facility



Figure 2-3: Aerial of Downtown Site - Full city block

KERSHAW CAMPUS (New)

CCTC's future Kershaw Campus will occupy a 40-acre greenfield site with significant areas of dense mixed hardwood/pine woodlands. The site abuts U.S. Interstate 20 and the campus will be accessible from the north via a new roadway.

The College is currently engaged in the design of the first facility for the new campus which will be a mixture of academic and support functions and house the county's economic development office.

Architecture

While plans are already underway for a small multi-use facility at the Kershaw Campus, it is understood that this facility will remain autonomous as the campus grows. New buildings planned for the Kershaw Campus will be clustered together around a new quadrangle. As such, they should establish a new, consistent architectural language of their own that may recall colors and textures from the main campus while appropriately expressing the College's core values and mission in a new way.

Circulation

As mentioned previously, access to the new campus will be from the north via a new roadway. The proposed plan for the first facility has identified an access roadway along the property's northern boundary that provides access into a large surface parking lot. Service access for the new facility will also be provided via the new northern roadway.

Landscape

Currently, the site is populated by a dense mixed hardwood/pine woodlands. The FMP did not undertake an in depth analysis of the site, so the quality and composition of the vegetation is not known.

Site topography slopes gently from the western and southern boundaries towards the eastern portion of the property.



Above, floor plan of Phase I facility

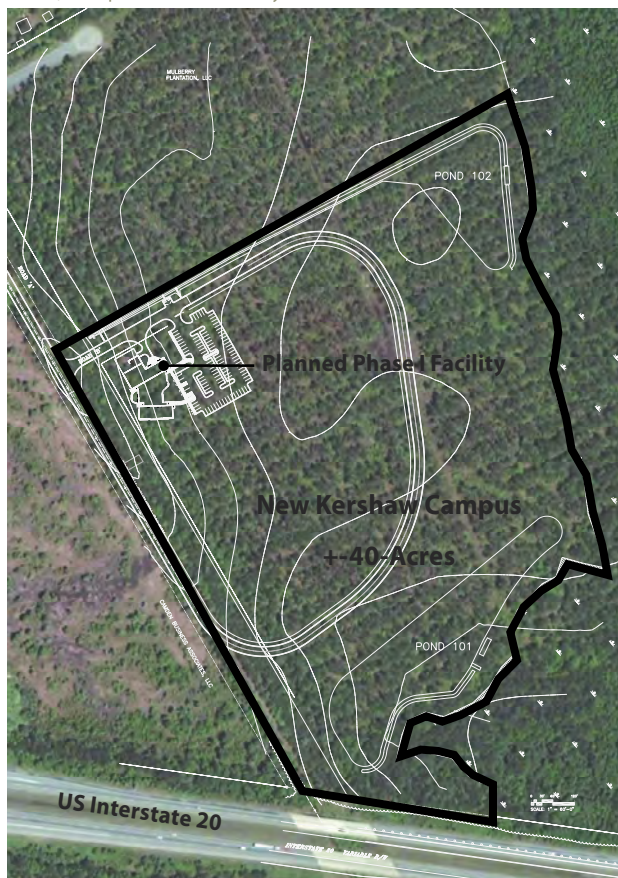


Figure 2-4: Aerial of new Kershaw Campus

CONCEPT EXPLORATION

A major component of the FMP was establishing consensus on an overarching planning direction for CCTC's numerous learning environments, founded in an understanding of its context and academic program and space needs. This was achieved through a multi-day on campus charrette that explored alternative facility use and organizational schemes for the Main and Kershaw campuses and the Downtown Sumter Site.

Working closely with CCTC stakeholders over a three-day period, the consultant team developed and evaluated multiple options for existing and new facilities, open spaces, way-finding, and circulation networks. By the final day, there was broad consensus on preferred directions for each campus. The following is a summary of the key recommendations that establish a conceptual framework for future planning and design of future CCTC learning environments.

CONCEPTUAL FRAMEWORK

The conceptual framework for all CCTC's campuses, centers, and sites is conceived as establishing clear, efficient, and attractive organization of facilities, circulation, way-finding, and open space that will provide an obvious and understandable sense of place, orientation, and identity—to everyday users and the larger community. At different locations, from the College's more urban to its suburban campuses, the response to organizational elements may differ, although the common elements are:

- The integration of architecture and landscape into iconic CCTC environments.
- The contrast and compliment architectonic and organics forms.
- The integration of a logical, safe, and universally accessible circulation network.
- The integration of sustainability throughout the planning and design of the environments.



Figure 2-5: Preferred Concept for the Main Campus



Figure 2-6: Preferred Concept for the Kershaw Campus

DESIGN PRINCIPLES

To accomplish the fundamental conceptual framework goals for CCTC learning environments, the consultant team, in coordination with College stakeholders, has developed an array of **planning and design principles** that, when implemented, will result in the creation of effective, efficient, and attractive learning, teaching, and working environments.

Although the three CCTC locations—Main and Kershaw campuses and the Downtown Site—are the primary focus of this FMP, the following proposed planning and design principles are both specific to those three locations, and should be used at other College sites when appropriate—as all learning environments share some physical characteristics.



Images of successful Campus gateway signage and integrated open space networks with clear circulation and gathering spaces

SYSTEM-WIDE

CCTC's campuses, centers, and sites should be configured to foster life-long learning, the College's core values and mission, and be integrated into their host community context, be it urban, suburban, or rural. The major organizing principles are:

- Make the highest and best use of existing campus facilities and land.
- Establish logical land use adjacencies.
- Strengthen the sense of campus community.
- Design visual identity through the implementation of a consistent CCTC "brand" of signage and way-finding that is highly visible from the surrounding community.
- Build upon the distinct sense of place of each learning environment.
- Design a network of functional and attractive open-spaces that serve as community gathering places and safe and attractive people-movement corridors.
- Design universal accessibility into all CCTC environments.
- Organize vehicular and service circulation to provide clear and logical movement patterns that minimize pedestrian/auto conflicts and have limited ingress/egress to only essential points.
- CCTC signage should be consistent with the immediate surroundings and system-wide.
- Unification of various visual communicative elements should foster the concept of a positive image and identity.
- Design a consistent plan for identification of College buildings.
- Design a consistent plan for off-campus directional signs to better serve visitors.
- Design consistent CCTC identity through implementation of uniform design principles on all campuses, centers, and sites.
- Design stormwater management facilities to be sustainable, educational, and visual amenities.
- Apply "green" design and development principles where possible.

MAIN CAMPUS

Architectural Character and Quality

New buildings and other architectural features should be designed to reflect an exciting, interactive learning environment and take full advantage of daylighting and views, with highly visible communal spaces for casual interaction programmed into them. Features should include expanses of glass and exterior materials that reinforce an image of state-of-the-art learning, openness, and technological progress. Major strategies include:

- Utilize exterior materials, such as masonry and metal trim, that are compatible with existing materials, albeit composed in fresh ways. New buildings should not appear as complete departures from the existing campus fabric in scale, color and texture.
- Incorporate sustainable principles and features such as sun shades and large expanses of glazing reserved primarily for northern and southern facades.
- Design easily identifiable entrances with ample entry lobby spaces visible from the building exterior that are inviting to the CCTC community and visitors.

- Site and design the new Student Center Building to serve as a “portal” to the core campus, which encloses and frames a new quadrangle and provides access via a central first-floor pass-through.
- Design building primary entrances to facilitate way-finding.
- Where possible, design building overhangs and/or detached covered areas at entrances and along primary pedestrian routes.

Building Program

The primary goal of the space needs analysis is to support the mission, and to provide a vision for completing the FMP with the intent of creating an improved environment:

- Re-purpose vacated space within existing facilities according to logical program uses.
- Program the new Student Center Building to maximize opportunities for innovative student focused functions.



Figure 2-7: Perspective view of proposed new student center encloses/creates a core public space and acts as a portal into the campus



Figure 2-8: Illustrative FMP for the Main Campus

Circulation

Vehicular Circulation

The primary goal is to establish clear and logical vehicular movement patterns:

- Establish a design hierarchy to campus ingress/egress points and reduce their overall number, which will facilitate way-finding and clarify internal circulation patterns.
- Design a core-campus vehicular circulation corridor to facilitate better access to parking and service areas.
- Increase quantity of parking spaces through expanding lots and design efficiencies, such as angled parking.
- Design drop-off zones at desired internal campus locations that can function as alternative transit stops.

Pedestrian Circulation

The primary goal is to establish a safe, pedestrian-focused environment:

- Design safe and attractive pedestrian circulation corridors throughout the campus.
- Increase number and quality of walkways that link key destinations.

- Where possible, provide shelter along walkways so that the walkways are usable in inclement weather.
- Connect the campus with the surrounding community via sidewalks and safe crosswalks.
- Design a pedestrian safety zone in the N. Guignard Drive median, at the crosswalk that links the main campus with Building M600.
- Design a linkage between the main campus and its host community through new sidewalks.

Open Space

The primary goal is to create a cohesive open-space environment that promotes community and generates identity:

- Design a “gateway” landscape at N. Guignard Drive and Miller Road intersection that firmly establishes CCTC’s presence and identity.
- Design a core campus gathering space that serves as the landscape heart of the campus.
- Design a landscape buffer between CCTC and USC-Sumter.



Figure 2-9: Perspective of proposed main campus iconic gateway at renovated/expanded ‘round’ building

Stormwater Management

The primary goal is to establish on-site stormwater management systems that are functional and aesthetic amenities.

- Design bioswales in parking lot islands and medians, vegetated with appropriate native species.
- Design a signature lake that will serve as stormwater detention/retention and a campus visual icon.
- Where possible, design rain-gardens that handle building run-off and function as educational landscape.



Occupancy sensed lighting

Infrastructure and Utilities

The primary goals are to provide HVAC, plumbing, and electrical maintenance and upgrades to existing facilities on an ongoing, as-needed basis while providing newer energy efficient systems for new facilities. New systems should incorporate sustainable design practices and meet ASHRAE energy efficiency standards. Long-term goals should be to replace existing lighting systems in existing buildings with newer lamp technology and occupancy sensed lighting controls for maximum efficiency.



Figure 2-10: Proposed architectonic and organic storm water management at the main campus ceremonial gateway

KERSHAW CAMPUS

Architectural Character and Quality

The primary goal is to establish an architectural vocabulary that is pedestrian and collegiate in scale and character and that creates a consistent, flexible identity for the new campus. The architectural language should be familiar and inviting while projecting a progressive image:

- Cluster buildings around a central quadrangle to create a campus focus and reduce development impact.
- Design development focal points at eastern and western ends of quadrangle and locate communal program facilities/functions at these focal points.
- Orient buildings primarily east-west for best solar exposure.
- Design building overhangs along south facades to serve as covered pedestrian walkways.
- Locate primary public interface uses at western side of campus, closest to access roadway.
- Design an iconic structure adjacent to, and visible from US Interstate 20, to create a recognized CCTC presence.

Building Program

- Distribute facility program in buildings according to logical program and phasing requirements.

Circulation

Vehicular Circulation

The primary goal is to establish logical vehicular circulation and easily accessible parking:

- Provide vehicular access from new roadway with clearly designed/defined entrances.
- Keep vehicular circulation outside the core campus.
- Orient parking for easy access to the core campus and provide clear pedestrian connections from parking to facilities.
- Locate ADA access/parking within lots closest to building.
- Locate hybrid vehicle parking closer to buildings (optional).
- Reduce visual impact of parking by creating three major lots that are further separated into sub-areas by vegetated islands, large bioswale medians, and perimeter buffer plantings.



Figure 2-11: Perspective view of proposed Kershaw Campus iconic gateway entrance with views into the quadrangle framed by four new facilities



Figure 2-12: Illustrative FMP of Kershaw Campus

Pedestrian Circulation

The primary goal is to establish a comprehensive pedestrian network that is safe and attractive:

- Design linkages to all campus “destinations” by walkways.
- Design a pedestrian network as a sequence of passage zones interspersed by gathering spaces.
- Allow a preference for pedestrian movement over vehicular circulation, such as elevated crosswalks in parking lots and internal roadways.
- Design a network of trails that connects the core to the overall campus.

Open Space

The primary goal is to establish a comprehensive network of linked open spaces that range from a central quadrangle to connecting corridors, courtyards, intimate spaces, and natural parkland areas:

- Design a central quadrangle to serve as the campus core public gathering and ceremonial space.
- Design a signature main campus entrance at the campus quadrangle, and a secondary entrance at the first facility.
- Design open space to serve multiple functions, such as green infrastructure, social interaction, and aesthetic and symbolic landscapes.
- Design a signature lake with campus community activity/amenity elements, such as Vita Course, amphitheater, and boardwalk/nature trails.
- Design a range of environmental conditions that correspond to the natural hydrologic gradient of the site.
- Incorporate indigenous species in a manner corresponding to natural associations, in designed open spaces.



Figure 2-13: Perspective view of proposed Kershaw Campus core 'public space' quadrangle

Stormwater Management

The primary goal is to establish a stormwater management infrastructure that is a visual amenity, a natural water-quality cleansing system, and an educational tool:

- Design bio-swales in parking lot islands and medians, vegetated with appropriate native species.
- Design a signature lake that will serve as stormwater detention/retention and a campus visual icon.
- Design rain-gardens that handle building run-off and are linked to a campus-wide storm water system.

Infrastructure and Utilities

The electrical utility distribution should be handled on a building-by-building basis. An area should be centrally located and designated for future service entrance transformers required for each building. Full cutoff exterior lighting fixtures shall be used to minimize sky light pollution and disturbance of surrounding areas. Exterior lighting should be automatically controlled via time clock or photocell for maximum efficiency. A central chiller plant should be installed with fan coil units utilizing either hot water reheat or electric reheat.



Figure 2-14: Stormwater management at Kershaw Campus, with lake and native marshlands that serve as both 'green infrastructure' and amenity

DOWNTOWN CAMPUS

The Downtown Sumter “Campus” has been the focus of a recent planning and design study for a new health science facility and its associated parking, pedestrian access and landscaping. As a result, the focus of this effort is on the renovation and repurpose of the existing CCTC historic building.

Infrastructure and Utilities

The primary goals are to provide a new electrical distribution system with modern reliable equipment, update the fire alarm systems and emergency egress lighting throughout the facility, and provide maintenance for existing HVAC system. Long-term goals should include replacing existing lighting systems with newer lamp technology and occupancy sensed lighting controls for maximum efficiency. Replace existing boiler, chiller, cooling tower, and PTAC units with new energy efficient systems.



Figure 2-15: Rendering of new Health Science Building entrance



Figure 2-16: Plan for the downtown site expansion, with the renovated (Retail) facility for Health Sciences

FACILITY MASTER PLAN

3.

IMPLEMENTATION



April 2009

3. IMPLEMENTATION

It's a bad plan that admits of no modification.

Publilius Syrus, Roman slave and poet.

3. IMPLEMENTATION PLAN

The planning and design framework recommendations contained in this Facility Master Plan are based on a 10-year planning horizon, from 2007 to 2017. Over that period, the potential for CCTC development is substantial given enrollment growth projections of 2,500 FTE and 4,560 HC, with the associated increases in faculty and staff to support that growth. As a result, the College will require more than 180,818 ASF (+/- 9% increase) of facilities and associated site and infrastructure development to adequately meet its mission and core values.

To achieve the required growth, the FMP recommends that within a 10-year period CCTC will adopt a comprehensive implementation strategy that outlines sequencing of development projects, establishes consistent building and site design guidelines, and provides a clear system for project management and coordination.

The following section outlines implementation actions—short, mid, and long term—associated with the FMP goals and principles that are meant to enable CCTC to realize its full potential as a globally competitive educational environment.

The proposed implementation strategy contains three key categories: Design Guidelines, Phasing, and Order-of-Magnitude Cost Estimates. The FMP, and specifically the implementation strategy, should serve as a vital foundation for establishing future capital project funding priorities. However, the implementation plan identified in the following pages should be viewed as a living set of strategies, that must be periodically reviewed and updated to meet changing conditions and needs of the College—and its host service community.

DESIGN GUIDELINES

Cohesive architecture, logical and safe circulation, clear way-finding and attractive landscapes—designed and developed to be sustainable—are central to establishing a consistent CCTC vision for its physical learning environments. However, the facility master plan does not establish a comprehensive set of design guidelines, but rather identifies broad objectives and areas of content to be further refined as the first phase of projects are designed and developed.

Buildings

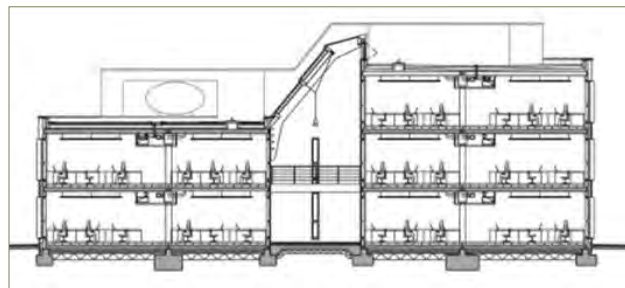
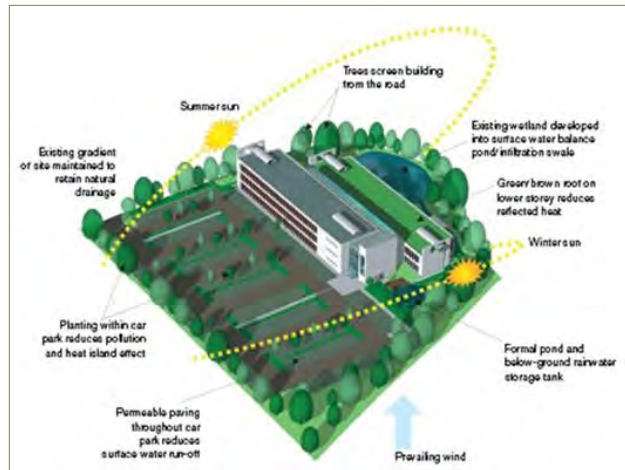
The intent of the facility master plan is to create a vocabulary of architectural styles that are appropriate to the climate and context of each CCTC campus, center and site. The massing, shape and fenestrations of new buildings should be designed to complement existing building styles, as well as work with the flow of the sun, wind and water to help conserve resources. Building design should reflect proposed programmatic functions, while retaining sufficient structural flexibility to accommodate repurposing, where appropriate. Lastly, new and renovated facilities should emphasize the inter-relationship between indoor and outdoor environments—which are especially pronounced in the temperate climate of the central region of South Carolina.

Building Character and Quality:

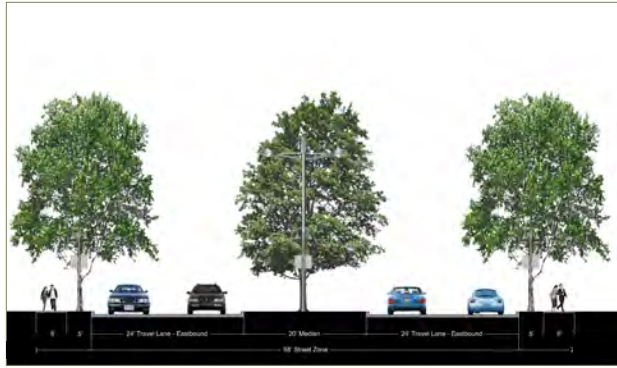
New buildings should promote and reflect a vibrant and open learning environment. Opportunities should be taken to provide daylight and views wherever possible, and architectural features, such as arcades and terraces, should be introduced to promote outdoor activity and circulation as well as exterior interest. Exterior detailing should incorporate a variety of scales, patterns and shadow lines with fenestration and trim while maintaining compositional restraint appropriate to a collegiate environment. Exterior materials should be compatible with the existing blond masonry and metal trim, but utilized in creative ways to both maintain consistency with the existing main campus and create a sense of contemporary vitality.

Building Height and Massing:

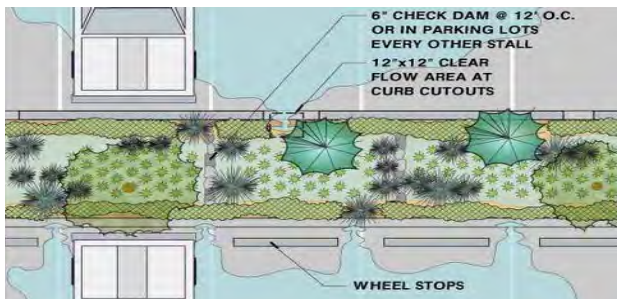
Where possible, new buildings should be oriented along an east-west axis with the long, thin façade facing south and



From top: Images of building orientation, environmental factors and daylighting in building design



Typical roadway cross-section with median



Typical parking lot with bioswale and plan view

north: This orientation permits maximum opportunity for access to daylight and minimizes east and west facing walls. However, where this orientation is not possible, current material and building technologies provides for mitigation of the effects relative to less desirable building orientations.

Building heights should be varied and be modulated, both within and between buildings, to avoid monotonous repetition. Mechanical equipment should be screened from direct view or incorporated into building envelopes, unless the equipment helps to showcase a specific technology or sustainable design approach.

Main entries, major common spaces and other specialized spaces—auditoriums, student centers and libraries—should be used to create signature features that create vibrant learning environments.

A palette of building materials should be selected that considers existing context, aesthetics and environmental impact. The material palette selection should balance cost, longevity and maintenance. Incorporating materials that link the buildings with site elements and indigenous materials are encouraged. Lastly, material colors and textures should be incorporated to create a vibrant and engaging learning and working environment.

Circulation

The Facility Master Plan identifies movement corridors that represent the most communally-shared outdoor parts of CCTC's learning environments. While many exist in some part today, the majority are fragmented and/or visually undistinguished. The FMP design guidelines highlights their potential to unify the College's environments, and provide them with visual logic.

The design guidelines identify attributes for each circulation type based on context, function and visual character. The corridors should be more than streets and walkways—they should be three-dimensional volumes of outdoor space that contains the community life of CCTC's learning environments.

Roadways

All primary vehicular circulation routes should be designed as roadways that move traffic in a logical and efficient manner, and where possible, eliminate conflict areas between pedestrians and vehicles. Roadways should be designed to include two eleven-foot, opposing direction travel lanes with adjacent demarcated four-foot bike lanes.

Service Areas

Service areas should be consolidated—one area shared by multiple buildings—and screened from direct view. Where possible, service areas should be incorporated within new building envelopes, such as with the Main Campus’s proposed Student Center Building.

Parking Areas

Surface parking areas should be designed to maximize efficiency, while serving as a sustainable component of the College’s infrastructure, which can handle storm water retention/infiltration on-site. Where possible, lots should be constructed with porous pavements (asphalt, concrete, or paver units) and bioswale areas between parking bays. Canopy trees should be located in vegetated parking islands at intervals of every twelve spaces, which will reduce heat-island effects and create a more pleasant environment.

Pedestrian Movement

Develop a pedestrian circulation hierarchy of configuration and materials that corresponds with circulation types in terms of importance and use, such as gateways, plazas, promenades, walkways and trails. The materials used should serve to integrate the architectural and landscape environments and establish a material hierarchy that aids in way-finding.

Signature gateways, plazas and promenades should be constructed of high-quality indigenous materials, such as brick and stone that identifies the importance of this “place” within the campus. These highly public spaces and corridors should be scaled to accommodate large numbers of users without dehumanizing the spaces through sterile, uninviting design.

Secondary walkways and entrances should be scaled and fabricated in a combination of high-and medium-quality materials that establishes a visual and textural relationship with the signature environments, but signifies a more utilitarian use. Primarily high-traffic corridors, these areas should be scaled to accommodate mixed-use traffic, with a typical minimum width of twelve feet.

Tertiary pathways and trails should be configured to accommodate more intimate circulation, with a maximum width of six feet. All pathways and trails should be designed to meander and conform to the natural topography to create visual interest and diversity of experience.



Pedestrian gateways, promenades and trails



From top, campus “green,” naturalized areas, gathering spaces, and buffer landscapes

Where possible, all pedestrian circulation should be fabricated in indigenous materials to reinforce the sense of place, and in porous pavement systems to accommodate storm water on-site.

Open Space

Open space design and development guidelines should be conceived holistically, as a cohesive array of landscape typologies that together creates a unified “sense of place.” The key design goal of the FMP is to use landscape to help establish a strong CCTC identity. In addition, the landscape must work with the architectonic elements of each campus to create an integrated, holistic environment.

The education goal is to use plants not only for their beauty, but as a teaching tool that demonstrates the role of plants in moderating climate and/or reducing the impact of human development. In addition, the use of regionally indigenous plant species (and select South Carolina noninvasive exotics) will help inform the CCTC community and public of the abundant diversity of native plant species that can be used in designed landscapes.

Overall, the designed landscapes should provide diverse experiences that are essential to creating vibrant and memorable places.

Parklands and Naturalistic Landscapes

Many CCTC campuses have existing remnant woodlands, wetlands and other plant communities within their boundary. The FMP recommends that CCTC undertake stewardship of these environmental assets and begin implementing Best Management Practices (BMPs) for each community type.

As part of CCTC’s larger identity, these areas should be accessible to students, faculty, staff—and the larger community—through networks of non-intrusive trails that promote safe and accessible movement through the landscapes. As a result, the trails should not be encumbered by extensive plantings that limit or block visibility.

Formal Landscapes




























In contrast to the woodlands and other natural open spaces, the formal landscapes should establish a structure that relates to the campus architecture, and be of scale, character and texture to create places that are inviting, experiential, and therefore, memorable. Landscape compositions should be most formal adjacent to buildings and gradually less formal the further removed they are from the core campus.

Planting

Plantings should consist of primarily native and “regionally friendly” species in the core public areas and as foundation and screening landscapes. Habitat specific native plant species, in accurate numbers and distribution, should be used exclusively in naturalistic landscapes, such as the littoral shelves of storm water lakes, bioswales and wooded parklands.

Plantings will reflect the following gradient:

- Species diversity will be greatest in landscape settings associated with naturalized areas, such as woodlands, wetland bio-swales, and marshes.
- Species composition will be less diverse and more formalized within the built core campus environments.
- Transitional zones between the two extremes will demonstrate the special characteristics where differing plant communities intersect
- Species selection will be clearly correlated to available moisture.
- Plant materials will be drought tolerant or xeric except for key areas where wetland species are required.

C A N O P Y T R E E S	 RED MAPLE <i>Acer rubrum</i>			S M A L L T R E E S	 AMERICAN SNOWBELL <i>Styrax americanus</i>			 REDBUD <i>Cercis canadensis</i>
	 LOBLOLLY PINE <i>Pinus taeda</i>				 PAGODA DOGWOOD <i>Cornus alternifolia</i>			
	 TULIPTREE <i>Liriodendron tulipifera</i>				 SAUCER MAGNOLIA <i>Magnolia soulangiana</i>			 DOWNY SERVICEBERRY <i>Amelanchier arborea</i>
	 CUCUMBER MAGNOLIA <i>Magnolia acuminata</i>		 AMERICAN BEECH <i>Fagus grandiflora</i>		S H R U B S			
					 SPARKLEBERRY <i>Vaccinium arboreum</i>	 DECIDUOUS HOLLY <i>Ilex decidua</i>	 PIEDMONT AZALEA <i>Rhododendron canescens</i>	

University Avenue Design Guidelines
Buffer Landscape and Open Space Vegetation

Typical Plant Schedule

Fixtures and Furnishings

Consistent with the goal to develop a “green” CCTC, all proposed and implemented site fixtures and furnishings should meet LEED standards, which will ultimately result in lower long-term maintenance costs. In addition, all furniture and fixtures should contribute to a pleasant, comfortable and safe learning environment and help establish a consistent CCTC identity on all its campuses.

The following are key elements that will help achieve these goals:

- Furnishings and fixtures should incorporate recycled materials, use Forest Stewardship Council (FSC) certified wood products, and international Dark Sky Association (IDA) approved light fixtures.
- Furnishings and fixtures should be proposed as a comprehensive ‘family,’ fabricated in a consistent palette of materials and forms.
- Where possible, fixtures in gathering areas should incorporate electrical outlets that provide ‘hot spots’ for computer connections, extending the period of time users will remain outside.
- Light fixtures should be utilized that provide adequate lighting for the intended purpose without contributing additional light pollution or unintended light spillage. Full cut-off fixtures should be utilized in all cases, to prevent spillage of light into the night sky. Tall light poles should only be used in parking lots. At pedestrian circulation, human-scaled, lower fixtures should be utilized and, if possible, wayfinding bollards, rather than lampposts, should be utilized.



Typical Fixture Schedule

Wayfinding + Signage

Wayfinding should be welcoming and informative. A system designed to be welcoming and helpful to visitors—starting outside the physical boundaries of the campus and efficiently guiding visitors to their destinations, including parking, walkways and buildings—will also be useful to those who come to the College every day.

As CCTC does not occupy one campus, but rather functions as a community of students, faculty and staff on seven campuses, centers or sites within a four-county service area, it is critical that a comprehensive and well designed system of wayfinding and signage be developed and implemented at all College locations. This will not only make the College arrival and access experience more pleasant, it will also establish a consistent CCTC identity and visual ‘brand’ throughout its large service area.

The following represents broad guidelines that should serve as an initial foundation in the development of a comprehensive wayfinding and signage system for CCTC, achieved through a subsequent detailed study. General outcomes of the wayfinding and signage study should include:

- Establishment of a decision making body (either an existing department or new entity) that shall exercise design approval on all signage in conformance with to-be-established locations and graphic standards

- Establishment of a comprehensive plan for wayfinding and signage locations within all College properties (and including signage beyond college boundaries)
- Establishment of a unified design theme, based on signage typologies, such as building identification, and directional and parking signs, to name only a few

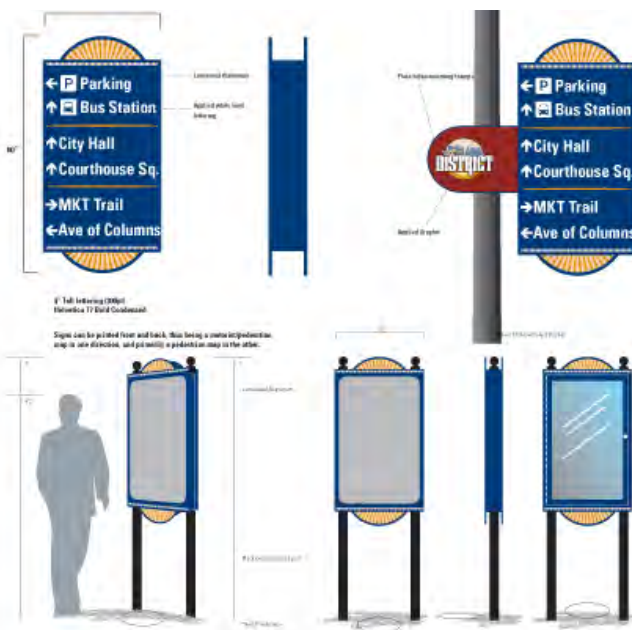
Guidelines

Regulatory Signs

Regulatory signs, such as stop, speed limit, and yield need to comply with standard federal regulations for the sign panel. However, the pole design is flexible and should be constructed to match that of other CCTC signs in color and fabrication. In addition, backs of sign panels should be painted to match pole color.

Campus ‘Entry’ Signs

Entry signs shall be located at major access points to each campus, center and site, project a positive, substantial and timeless CCTC image and include the College’s symbol. Signs should be scaled to be highly visible, without overwhelming the character and quality of each site. Where possible, fabrication should be consistent at all locations to reinforce CCTC identity.



Typical Campus Entry/Exit Signs



Building Identification Signs

- Building Identification signs shall reflect the formal building name as approved by CCTC
- Large free-standing signs shall be utilized for all major buildings
- Large freestanding signs should have changeable panels to accommodate special events or functions
- Smaller freestanding signs for less prominent buildings
- Building mounted identification signs that reflect the formal building name shall be located at major entry points
- Buildings with a high-level of public interface shall include primary functions, such as Admissions, Administration, etc. in addition to their formal building name
- Building mounted signs should be located to provide a clear line of sight from pedestrian circulation and from the street (if located along a major roadway)
- Freestanding signs should be located away from building foundation plantings that can block visibility
- Freestanding signs should be at a height to offer high visibility



Typical Kiosk



Typical Directional Signs

Building Information Signs

- Interior directories should be located at all key entries to individual buildings

On-Campus Directional Signs

- Vehicular circulation signs should direct users and visitors to parking areas and major destinations, especially high-level public interface facilities.
- Pedestrian circulation signs should direct users to buildings and other points of interest
- Directory maps should be located at key visitor destinations, central gathering places, major pedestrian crossroads and at all major pedestrian exits from visitor parking areas
- Directory maps should be located at key visitor destinations, central gathering places, major pedestrian crossroads, and at all major pedestrian exits from visitor parking areas.
- Directory maps should also show transit bus stops.

Off-Campus Directional Signs

- Off-campus directional signs must conform to municipal, state and federal standards
- CCTC will work with the appropriate entity to establish signs that meet the standards of the specific roadway classification and governmental jurisdiction and provide clear routes to campuses. Care should be taken to see that older signs that either contradict new signage or are redundant be removed.



Building Information Sign



Area/City Maps and Directories

Parking Lot Signs

- Parking lot signs should clearly indicate parking lot number and any relevant schedule and/or enforcement information

Miscellaneous Signs

- All banners and temporary signs should be reviewed by the appropriate CCTC appointed reviewing authority
- All commemorative plaques and memorials shall be reviewed by the appropriate CCTC appointed reviewing authority

Irrigation

All irrigation should be designed to meet LEED standards. The following are key elements that will help achieve this goal:

- Re-use of captured storm water as the system's primary water source.
- A satellite-controlled irrigation system with state-of-the-art rainwater gauges on each campus.
- Irrigation zones based on the water requirements of the plant species, which will permit the long-term irrigation of formal zones, and the potential to phase out irrigation of parkland areas once predominantly native species are established.



Satellite-controlled irrigation

PHASING STRATEGY

The FMP is designed to accommodate incremental/phased site and building development. The phasing strategy identifies three sequences of development within the ten-year planning horizon of this FMP, which are: short-term (2009-2012); mid-term (2013-2015), and long-term (2016-2018). The first phase includes projects already underway, and proposed site development projects. The majority of the FMP's recommendations for building and site developments occur in mid- and long-term periods. As a result, the incremental development approach will require a review of each project proposed in the second and third phase, as programmatic and fiscal conditions may have changed. Conversely, should need and funding become available earlier, identified projects can be moved up in the phasing schedule, provided all associated site developments have occurred.

	2009-2012	2013-2015	2016-2018	Remarks
Facilities				
MF-1	Renovate M600			Repurpose after Health Sciences relocates to new downtown facility
MF-2			Addition/Renovation to M300	Repurpose core building for seminars/new façade, entrance, and restrooms
MF-3		New student center building		2-Story building: student services, bookstore, food services, conference rooms, etc.
MF-4		Renovate M400		Renovate entrance and restrooms
MF-5			Renovate M100	Repurpose former book store and food services
MF-6			Renovate M500	Repurpose spaces where functions were relocated to new student center building

	2009-2012	2013-2015	2016-2018	Remarks
Roadways & Parking				
MR-1	Close Guignard Drive main entrance fronting M500			
MR-2	Create new right-turn exit only onto Guignard Drive at M100			
MR-3a	Renovate surface parking Area B			
MR-3b		Renovate surface parking Area A		
MR-4		Expand and renovate surface parking Area E at M700		
MR-5	Renovate surface parking Area C			
MR-6		Create new internal-campus roadway fronting surface parking Area D		
MR-7			Renovate surface parking Area D	
MR-8	Create new gateway entrance at M100			

Table 3-1: Main Campus Phasing Schedule

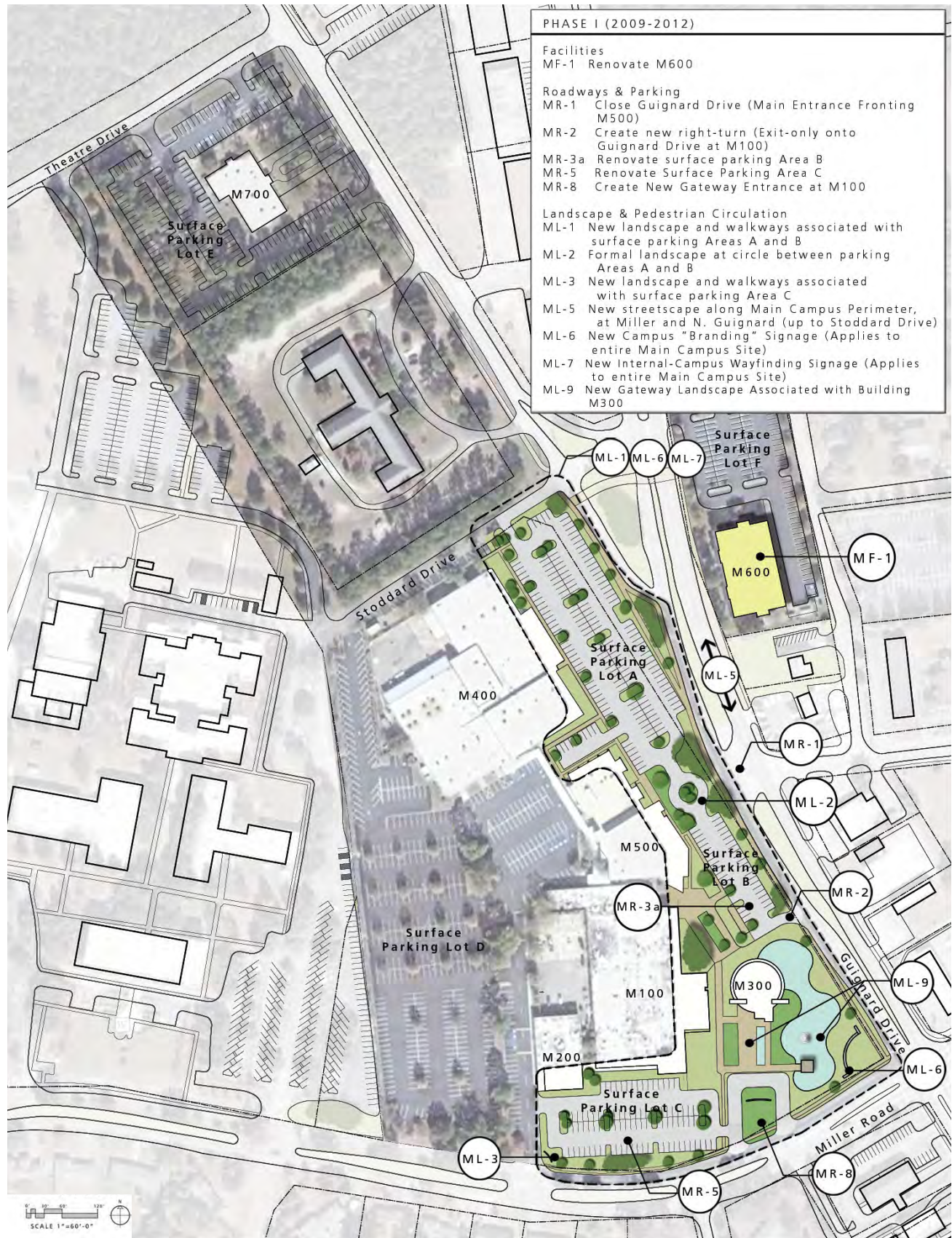


Figure 3-1: Main Campus Phase I Diagram

	2009-2012	2013-2015	2016-2018	Remarks
Landscape & Pedestrian Circulation				
ML-1	New landscape and walkways associated with surface parking Area A & Area B			Trees in parking islands and abutting parking edges @ 35' on center/evergreen hedge screen (42" high) along parking edge @30" on center. Walkway to be minimum width of 6' with ADA-compliant ramping at all HC parking access points
ML-2	Formal landscape at circle between parking Area A & Area B			Signature element such as water feature or tower in circle
ML-3	New landscape and walkways associated with surface parking Area C			See Remarks at ML-1
ML-4		New landscape associated with expanded parking Area E, building M700		See Remarks at ML-1
ML-5	New streetscape along main campus perimeter, at Miller and N. Guignard Drive (up to Stoddard Drive)			New streetscape with sidewalk (min. 8' wide), street trees @ 35' on center and signature pedestrian scale (12-14' height) lighting with CCTC banners
ML-6	New campus "branding" signage			Two categories: 1) Signature "gateway" signage at corner of N. Guignard Drive and Miller Road, and; 2) Entry signage at all parking & roadway campus entrances
ML-7	New internal-campus wayfinding signage			wayfinding signage to be located throughout campus to identify and direct all users, pedestrians and vehicular, to facilities and special function areas within facilities. All facilities to be clearly identified (on structure) at entrances
ML-8		New quadrangle landscape associated with new student center building.		Signature landscape with a mixture of space types, both public (quadrangle lawn, plazas, walkways) and private (garden-like seating areas). As the primary campus green space, plant, hardscape, furniture and fixtures should be of high quality

Table 3-1: Main Campus Phasing Schedule (continued)

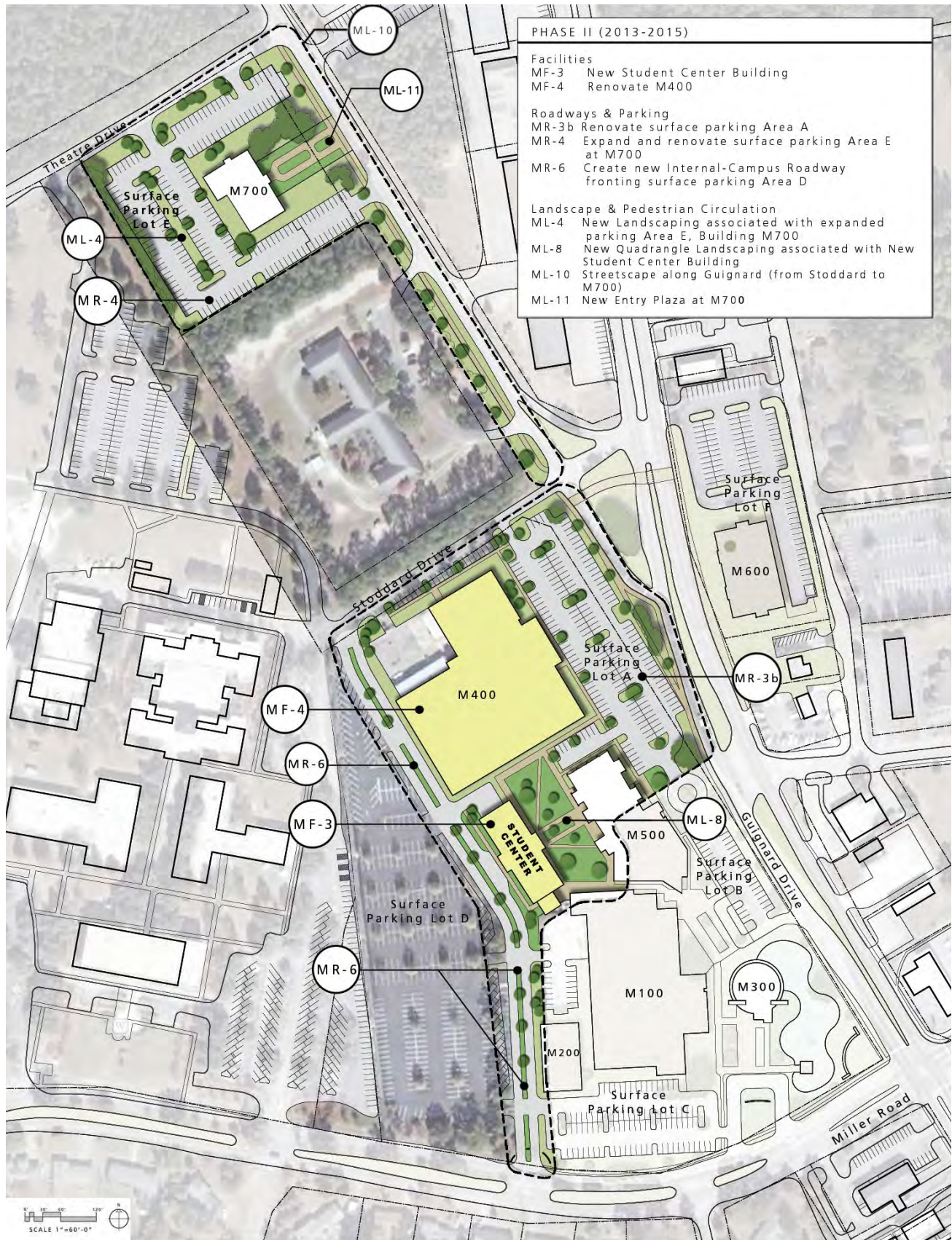


Figure 3-2: Main Campus Phase II Diagram

	2009-2012	2013-2015	2016-2018	Remarks
Landscape & Pedestrian Circulation				
ML-9	New gateway landscape associated with building M300			Signature landscape with campus entry drive/drop-off (driving area should be pavers), plaza with water feature, and lake (stormwater management). As the primary campus gateway, plant, hardscape, furniture and fixtures should be of high quality
ML-10		Streetscape along Guignard, from Stoddard to M700		See Remarks at ML-5
ML-11		New entry plaza @ M700		Wide walkway plaza (+-20' Wide) with central landscaping median
ML-12			New building foundation landscaping @ all facilities.	Tree, shrub and ground cover should be species types that require minimal maintenance (no pruning) and be of appropriate scale (mature growth will not hide/block windows and doorways). Trees should be set off from facilities reflecting size at maturity

Table 3-1: Main Campus Phasing Schedule (continued)

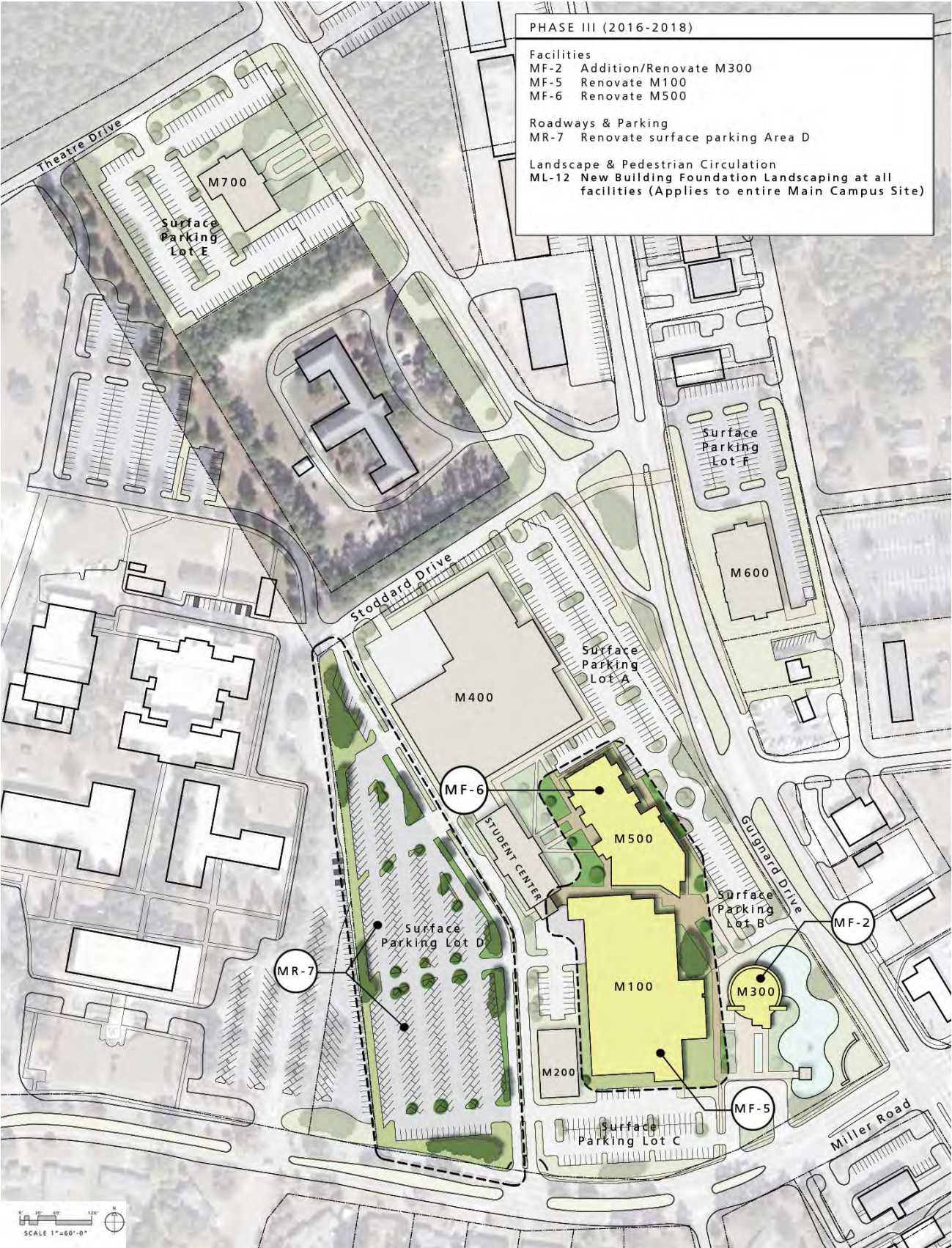


Figure 3-3: Main Campus Phase III Diagram

KERSHAW CAMPUS

	2009-2012	2013-2015	2016-2018	Remarks
Facilities				
KF-1	New facility (in progress)			In development
KF-2		New quadrangle Facility A		Multi-functional 2-story facility / program to be guided by P&A academic space needs analysis/should be designed to be eligible for LEED certification/potential for some function in first facility to be re-located to this facility
KF-3		Renovate / repurpose any vacated space in first facility		Program to be guided by P&A space needs analysis
KF-4	New gateway tower			Signature tower visible from interstate with CCTC "brand" signage/ potential carolinian, clock tower, viewing station
KF-5			New quadrangle Facility B	2-Story facility / program to be guided by P&A space needs analysis / should be designed to be eligible for LEED certification
KF-6			New quadrangle Facility C	See KF-5
KF-7			New quadrangle Facility D	See KF-5

	2009-2012	2013-2015	2016-2018	Remarks
Roadways & Parking				
KR-1	Redesign entrance vehicular drop-off to first facility to fit future master plan configuration			Entrance drop-off should be pavers, and travel lanes should be wide enough to accommodate two vehicles
KR-2	Develop first building access road			Relocate consistent with master plan to accommodate a min. 50' buffer / roadway should include bike lanes (min. 4' wide).
KR-3	Surface parking lot A			Parking lot should have bay areas developed as porous asphalt or concrete
KR-4		Expand parking lot A		Expanded parking lot should have bay areas developed as porous asphalt or concrete
KR-5		New roadway and entrance to quadrangle campus / linked to first facility entrance drop-off		Entrance drop-off should be pavers and travel lanes should be wide enough to accommodate two vehicles / roadway should be asphalt with demarcated bike lanes (min 4' wide)
KR-6			Develop surface parking lot B	Parking lot should have bay areas developed as porous asphalt or concrete
KR-7			Develop surface parking lot C	Parking lot should have bay areas developed as porous asphalt or concrete

Table 3-2: Kershaw Campus Phasing Schedule



Figure 3-4: Kershaw Campus Phasing Diagram

	2009-2012	2013-2015	2016-2018	Remarks
Landscape & Pedestrian Circulation				
KL-1		Develop lake		Re-designed to conform with FMP intent - sized to accommodate all future campus development/should include areas of vegetation and open water
KL-2	Vegetated buffer @ northern edge			Replicate an indigenous mixed pine/hardwood woodlands to screen campus from any potential undesirable views
KL-3	New landscape and walkways associated with surface parking lot A			Trees in parking islands and abutting parking edges @ 35' on center/evergreen hedge screen (42" high) along parking edge @30" on center. Walkway to be minimum width of 6' with ADA compliant ramping at all HC parking access points
KL-4		First building entrance landscape and arrival plaza		Signature landscape with campus entry drive/drop-off (driving area should be pavers), plaza as a campus gateway. Plant, hardscape, furniture and fixtures should be of high quality
KL-5	Signage at new roadway			Consistent with entry signage developed for main campus
KL-6	Streetscape along new roadway			New streetscape with sidewalk (min. 6' wide), street trees @ 35' on center, and signature pedestrian scale (12-14' height) lighting with CCTC banners
KL-7	Wayfinding			Consistent with signage and wayfinding developed for main campus
KL-8		Landscape & arrival plaza associated with new quadrangle campus entrance		Signature landscape with campus entry drive/drop-off (driving area should be pavers) plaza as the main Kershaw Campus gateway. Plant, hardscape, furniture and fixtures should be of high quality
KL-9		Amphitheater at tower		Turf and stone-stepped amphitheater focused on tower and lake with stage area meeting lake edge.
KL-10		Trail to tower		Trail through green space connecting campus to tower / amphitheater / should be porous pavement or raised boardwalk to minimize impact on environment
KL-11			New quadrangle in space formed by four new facilities	Signature landscape with a mixture of space types, both public (quadrangle lawn, plazas, walkways) and private (garden-like seating areas) as the primary campus green space. Plant, hardscape, furniture and fixtures should be of high quality. Terrace at eastern edge of quadrangle should extend onto and engage the lake

Table 3-2: Kershaw Campus Phasing Schedule (continued)

	2009-2012	2013-2015	2016-2018	Remarks
Landscape & Pedestrian Circulation				
KL-12			Streetscape a new road to quadrangle campus	See KL-6
KL-13			Landscape & walkways associated with surface parking lot 2	See KL-3
KL-14			Landscape & walkways associated with surface parking lot 3	See KL-3
KL-15			Quarter-mile nature/jogging trail	Meandering porous pavement nature trail/jogging trail that loops through campus-around the lake /optional: small gathering spaces along trail/Vital Course/connective boardwalks across lake

Table 3-2: Kershaw Campus Phasing Schedule (continued)

DOWNTOWN CAMPUS

	2009-2012	2013-2015	2016-2018	Remarks
Facilities				
DF-1	New health science facility			In development
DF-2	Renovate / repurpose existing historic facility			Program to be guided by P&A space needs analysis

	2009-2012	2013-2015	2016-2018	Remarks
Roadways & Parking				
DR-1	New / renovated parking within block			In development

	2009-2012	2013-2015	2016-2018	Remarks
Landscaping & Walkways				
DL-1	Landscaping and plaza associated with new health science building			In development
DL-2	New surface parking lot landscaping			In development
DL-3	Signage and wayfinding			Consistent with Signage and Wayfinding developed for Main Campus

Table 3-3: Downtown Campus Phasing Schedule

COST ESTIMATING

The following spreadsheets identify probable costs associated with each item identified on the preceding master plan drawings and phasing tables, pages 3-12 through 3-22. This spreadsheet is compiled from a detailed cost estimate prepared by Aiken Cost Consultants, available under separate cover. Each item is identified by the letters "M", "K", or "D", identifying the Main, Kershaw, or Downtown campuses, and an additional letter "F", "L" or "R", denoting that it is either a facility, landscape or roadway component. Each type of item is also referenced by number.

Items are bundled per priority and phase, and projected costs are generated in three columns:

- "Base Bid", per Aiken Cost Consultants' estimate,
- "Total Construction Cost", per Aiken Cost Consultants' estimate (includes a construction contingency of 5%).

- "Total Project Cost" (includes a 28% multiplier to cover costs such as geotechnical, professional and testing fees, FF&E, programming, and an additional miscellaneous 2% contingency).

It should be noted that these costs are estimated based upon conceptual data only, under the assumption of competitive bidding climates. Please see the detailed cost estimates for "Bid Factors" according to number of bidders. Further, escalation factors for later phases are projected based on historical data, and may prove inaccurate over time. While these estimates serve as reasonable orders of magnitude, new professional detailed cost estimates should be generated individually for projects, as they come on-line.

Campus		Estimated Base Bid	Total Construction Cost (x1.05)	Total Project Cost (x1.28)
PHASE I				
Main	ML-6 New Campus "Branding" Signage	\$ 47,840	\$ 50,232	\$ 64,297
Main	ML-7 New Internal-Campus Wayfinding Signage	\$ 39,520	\$ 41,496	\$ 53,115
Main	ML-9 New Gateway Landscape Associated with Building M300	\$ 286,097	\$ 300,402	\$ 384,515
TOTAL COST		\$ 373,457	\$ 392,130	\$ 501,927
Main	MF-1 Renovate M600	\$ 757,120	\$ 794,976	\$ 1,017,569
TOTAL COST		\$ 757,120	\$ 794,976	\$ 1,017,569
Main	MR-1 Close Guignard Drive Main Entrance Fronting M500	\$ 91,587	\$ 96,166	\$ 123,092
Main	MR-2 Create New Right-Turn Exit Only onto Guignard Drive	\$ 25,122	\$ 26,378	\$ 33,764
Main	MR-3a Renovate Surface Parking Area B	\$ 125,244	\$ 131,506	\$ 168,328
Main	ML-1 New Landscape & Walkways Associated w/ Surface Parking Areas A & B	\$ 266,311	\$ 279,627	\$ 357,923
Main	ML-2 Formal Landscape at Circle Between Parking Areas A & B	\$ 79,768	\$ 83,756	\$ 107,208
Main	ML-5 New Streetscape Along Main Campus Perimeter at Miller and N. Guignard (up to Stoddard Drive)	\$ 390,037	\$ 409,539	\$ 524,210
TOTAL COST		\$ 978,069	\$ 1,026,972	\$ 1,314,525

Table 3-4: Cost Estimates

Campus		Estimated Base Bid	Total Construction Cost (x1.05)	Total Project Cost (x1.28)
Main	MR-5 Renovate Surface Parking Area C	\$ 214,614	\$ 225,345	\$ 288,442
Main	MR-8 Create New Gateway Entrance at M100	\$ 156,602	\$ 164,432	\$ 210,473
Main	ML-3 New Landscape and Walkways Associated with Surface Parking Area C	\$ 103,689	\$ 108,873	\$ 139,357
TOTAL COST		\$ 474,905	\$ 498,650	\$ 638,272
Kershaw	KR-1 Redesign Entrance Vehicular Drop-Off to First Facility to Fit Future Master Plan Configuration	\$ 246,355	\$ 258,673	\$ 331,101
Kershaw	KR-2 Develop First Building Access Road	\$ 236,817	\$ 248,658	\$ 318,282
Kershaw	KR-3 Surface Parking Lot A	\$ 311,567	\$ 327,145	\$ 418,746
Kershaw	KL-2 Vegetated Buffer at Northern Edge	\$ 63,876	\$ 67,070	\$ 85,850
Kershaw	KL-3 New Landscape and Walkways Associated with Surface Parking Lot A	\$ 193,906	\$ 203,601	\$ 260,609
TOTAL COST		\$ 1,052,521	\$ 1,105,147	\$ 1,414,588
Kershaw	KF-4 New Gateway Tower - Visible from Interstate	\$ 988,000	\$ 1,037,400	\$ 1,327,872
Kershaw	KL-5 Signage at New Roadway	\$ 20,800	\$ 21,840	\$ 27,955
Kershaw	KL-6 Streetscape Along New Roadway	\$ 107,077	\$ 112,431	\$ 143,912
Kershaw	KL-7 Wayfinding	\$ 52,000	\$ 54,600	\$ 69,888
TOTAL COST		\$ 1,167,877	\$ 1,226,271	\$ 1,569,627
Down-town	DF-2 Minor Architectural Renovations	\$ 300,000	\$ 315,000	\$ 403,200
Down-town	DF-2 New Mechanical System	\$ 343,200	\$ 360,360	\$ 461,261
Down-town	DF-2 Sprinkler System (exposed)	\$ 56,160	\$ 58,968	\$ 75,479
Down-town	DF-2 Electrical Upgrades	\$ 166,400	\$ 174,720	\$ 223,642
Down-town	DF-2 Elevator Addition	\$ 364,000	\$ 382,200	\$ 489,216
TOTAL COST		\$ 1,229,760	\$ 1,291,248	\$ 1,652,798
PHASE I TOTAL		\$ 6,033,709	\$ 6,335,394	\$ 8,109,306

Table 3-4: Cost Estimates (continued)

Campus		Estimated Base Bid	Total Construction Cost (x1.05)	Total Project Cost (x1.28)
PHASE II				
Main	MR-6 Create New Internal-Campus Roadway Fronting Surface Parking Area D	\$ 700,044	\$ 735,046	\$ 940,859
TOTAL COST		\$ 700,044	\$ 735,046	\$ 940,859
Main	MR-3b Renovate Surface Parking Area A	\$ 268,885	\$ 282,329	\$ 361,381
TOTAL COST		\$ 268,885	\$ 282,329	\$ 361,381
Main	MR-4 Expand and Renovate Surface Parking Area E at M700	\$ 454,101	\$ 476,806	\$ 610,312
Main	ML-4 New Landscape Associated with Expanded Parking Area E, Building M700	\$ 136,227	\$ 143,038	\$ 183,089
Main	ML-10 Streetscape Along Guignard, From Stoddard to M700	\$ 276,189	\$ 289,998	\$ 371,197
Main	ML-11 New Entry Plaza at M700	\$ 67,406	\$ 70,776	\$ 90,593
TOTAL COST		\$ 933,923	\$ 980,618	\$ 1,255,191
Main	MF-3 New Student Center Building	\$ 8,811,029	\$ 9,251,580	\$ 11,842,022
Main	ML-8 New Quadrangle Landscape Associated with New Student Center Building	\$ 289,283	\$ 303,747	\$ 388,796
		\$ 9,100,312	\$ 9,555,327	\$ 12,230,818
Main	MF-4 Renovate M400	\$ 411,800	\$ 432,390	\$ 553,459
TOTAL COST		\$ 411,800	\$ 432,390	\$ 553,459
Kershaw	KF-2 New Quadrangle Facility A	\$ 5,015,800	\$ 5,266,590	\$ 6,741,235
Kershaw	KR-4 Expand Parking Lot A	\$ 300,653	\$ 315,686	\$ 404,078
Kershaw	KR-5 New Roadway and Entrance to Quadrangle Campus/Linked to First Facility Entrance Drop-off	\$ 1,042,752	\$ 1,094,890	\$ 1,401,459
Kershaw	KL-4 First Building Entrance Landscape and Arrival Plaza	\$ 170,575	\$ 179,104	\$ 229,253
Kershaw	KL-8 Landscape & Arrival Plaza Associated with New Quadrangle Campus Entrance	\$ 250,406	\$ 262,926	\$ 336,545
TOTAL COST		\$ 6,780,186	\$ 7,119,196	\$ 9,112,570
Kershaw	KL-1 Develop Lake	\$ 1,648,798	\$ 1,731,238	\$ 2,215,985
Kershaw	KL-9 Amphitheater at Tower	\$ 142,675	\$ 149,809	\$ 191,756
Kershaw	KL-10 Trail to Tower	\$ 63,783	\$ 66,972	\$ 85,724
TOTAL COST		\$ 1,855,256	\$ 1,948,019	\$ 2,493,465
PHASE II TOTAL		\$ 20,050,406	\$ 21,052,925	\$ 26,947,743

Table 3-4: Cost Estimates (continued)

Campus		Estimated Base Bid	Total Construction Cost (x1.05)	Total Project Cost (x1.28)
PHASE III				
Main	MF-2 Addition/Renovate M300	\$ 1,709,747	\$ 1,795,234	\$ 2,297,900
Main	MF-5 Renovate M100	\$ 1,312,192	\$ 1,377,802	\$ 1,763,587
Main	MF-6 Renovate M500	\$ 2,624,384	\$ 2,755,603	\$ 3,527,172
Main	ML-12 New Building Foundation Landscaping at All Facilities.	\$ 232,936	\$ 244,583	\$ 313,066
Main	MR-7 Renovate Surface Parking Area D	\$ 592,828	\$ 622,469	\$ 796,760
TOTAL COST		\$ 6,472,087	\$ 6,795,691	\$ 8,698,485
Kershaw	KF-5 New Quadrangle Facility B	\$ 4,505,837	\$ 4,731,129	\$ 6,055,845
Kershaw	KF-6 New Quadrangle Facility C	\$ 4,505,837	\$ 4,731,129	\$ 6,055,845
Kershaw	KF-7 New Quadrangle Facility D	\$ 5,599,299	\$ 5,879,264	\$ 7,525,458
Kershaw	KL-11 New Quadrangle in Space Formed By Four New Facilities	\$ 550,562	\$ 578,090	\$ 739,955
Kershaw	KL-12 Streetscape A New Road to Quadrangle Campus	\$ 32,561	\$ 34,189	\$ 43,762
Kershaw	KL-13 Landscape & Walkways Associated with Surface Parking Lot 2	\$ 114,751	\$ 120,489	\$ 154,226
Kershaw	KL-14 Landscape & Walkways Associated with Surface Parking Lot 3	\$ 195,211	\$ 204,972	\$ 262,364
Kershaw	KL-15 Quarter-Mile Nature/Jogging Trail	\$ 138,840	\$ 145,782	\$ 186,601
Kershaw	KR-6 Develop Surface Parking Lot B	\$ 365,982	\$ 384,281	\$ 491,880
Kershaw	KR-7 Develop Surface Parking Lot C	\$ 525,569	\$ 551,847	\$ 706,364
TOTAL COST		\$ 16,534,449	\$ 17,361,172	\$ 22,222,300
PHASE III TOTAL		\$ 23,006,536	\$ 24,156,863	\$ 30,920,785

Table 3-4: Cost Estimates (continued)