

RADFORD
UNIVERSITY

Master Plan

2020 – 2030





2020-2030 MASTER PLAN

- New Building Location
- Full Building Renovation
- Partial Building Renovation
- New/Improved Parking
- River Campus Development
- Drop-Off Shelter
- Central Campus
- Athletics/Recreation Campus
- Public-Private Enterprise Strategic Growth Zones
- Green Space/Pathways Improvements
- Tree Canopy Improvements
- Landscaping/Hardscaping Improvements

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Letter from the President



On behalf of the Radford family, I am pleased to present Radford University's 2020-2030 Master Plan, which reflects the University's commitment to optimizing the function and utilization of existing and future facilities and enhancing the development and overall engagement with the community by serving as a critical partner with the City of Radford and in the New River Valley. This plan capitalizes on the scenic beauty of the main campus' ideal location in the Blue Ridge Mountains and along the New River, as well as further expansion into the broader region, specifically the City of Roanoke, with the establishment and operation of Radford University Carilion, which is located in the Star City's Innovation Corridor.

Due to the dedicated work of the Master Planning Committee and its various subcommittees, as well the active engagement of the campus community, the 2020-2030 Master Plan provides the infrastructure to accomplish the visionary goals and strategies outlined in the University's 2018-2023 Strategic Plan: *Embracing the Tradition and Envisioning the Future* and establishes the foundation for our sustained growth and success. This plan represents yet another significant step forward in continuing our rich tradition of teaching and learning, while, at the same time, creating bold opportunities for collaboration and innovation.

With Highlander Pride,

Brian O. Hemphill, Ph.D.
President
@BrianOHemphill

Executive Summary

GOALS

The Radford University 2020-2030 Master Plan was developed to support the Radford University 2018-2023 Strategic Plan: *Embracing the Tradition and Envisioning the Future*. The 2018-2023 Strategic Plan contains goals and strategies to support the vision of transforming Radford University into a premier, innovative, student-centered university in the Commonwealth of Virginia and beyond with a keen focus on teaching, research and service. This Master Plan includes both overall guidance and specific actions for enhancing the University’s physical built environment as an integral part of this comprehensive strategic vision.

The Master Plan identifies actions to facilitate accomplishment of the goals and strategies associated with these areas of emphasis.

The goals of the Master Plan are multi-pronged.

- 1. Support the 2018-2023 Strategic Plan by enabling the University’s physical resources to accommodate future needs of the University. The 2018-2023 Strategic Plan is built around six areas of emphasis.
 - Academic Excellence and Research
 - Brand Identity
 - Economic Development and Community Partnerships
 - Philanthropic Giving and Alumni Engagement

- Strategic Enrollment Growth
 - Student Success
2. Plan for key building footprint components.
- Construction of the new Center for Adaptive Innovation and Creativity (CAIC) to replace College of Visual and Performing Arts (CVPA) space and also create interdisciplinary student spaces serving the Waldron College of Health and Human Services and the Artis College of Science and Technology.
 - Renovation and repurposing of McConnell Library for current and future uses.
 - Renovations to multiple existing residence halls to enhance quality of on-campus residential accommodations.
 - Repurposing of existing spaces to facilitate efficient use of current building footprint and promote cross-discipline collaboration.
 - Potential new building footprints as identified during the master planning process.
3. Provide a detailed, long-range plan for the residential life system that provides additional beds in residence halls either on-campus or off-campus, plans for the systematic renovation of existing residence halls and improves the variety of offerings in a manner that is financially sustainable.

4. Plan for transportation and parking systems to enhance access to campus, improve user satisfaction and encourage multimodal means of transportation.
5. Plan for infrastructure systems that anticipate growth rather than react to demand. Plan for systems that continue to support and enhance the University’s initiatives to maximize overall resource efficiency. Plan for systems that respond to the challenges of sustainability, including reductions in energy use and greenhouse gas emissions.
6. Enable connectivity with the City of Radford and greater Southwest Virginia through enhancement of existing facilities and virtual infrastructure environment, as well as the establishment of new locations and programs.

THEMES

Several themes have been identified as overarching influences in the preparation of the Master Plan.

- 1. Consistent Aesthetic Campus Brand: Buildings and landscape aesthetic characteristics will be complementary to the existing campus built environment, in terms of massing, color palette, materials, style, density, green space and other important current components.
- 2. Efficiency/Effectiveness/Collaboration of Building Space: Buildings will be efficient in their usage and effective in their support of overall University goals and education delivery.

3. Anticipate/Enable Growth: Building spaces and locations, exterior environments and overall campus infrastructure will anticipate and facilitate future growth and development.
4. Accessibility and Connectivity: Buildings and exterior campus elements will enhance accessibility for all users and occupants and encourage connectivity for students, faculty and staff across both academic and student life programs.
5. Sustainability: Buildings and infrastructure elements will achieve sustainability goals as set forth by the University and in accordance with stated core values.
6. Safety: Buildings and exterior spaces will provide safe environments for all users and occupants.

PLANNING ISSUES

In order to understand and address the overall goals, the Master Plan work began with data collection in the fall of 2017. This process started with compiling all current and historic information relative to campus buildings, infrastructure, student, faculty and staff populations and other information from outside relevant resources, along with field investigation and collection of technical engineering data from the Facilities team, transportation and parking assessments and analysis of existing green space and landscape elements.

The process also included information gathering meetings and work sessions with multiple

groups of students, faculty and staff, as well as representatives from the City of Radford and other appropriate stakeholders. The goal of these meetings was not only to understand physical needs and criteria, but to better understand the qualitative needs and the cultural aspects of the campus community. The result of the data collection process yielded vital information that informed the plan. The findings of the data collection process are summarized as follows.

- The central areas of the campus are beautiful, but not readily seen by visitors; therefore, the campus needs to connect more effectively to the surrounding community.
- The addition of a large amount of occupied building square footage over the last decade has brought about potentially inefficient and unbalanced space usage across several types of use groups and occupants on-campus.
- Changing academic delivery methods and pedagogies have created the need to rethink current learning spaces and provide new convergence spaces to facilitate cross-disciplinary activities.
- The Athletics area of campus is separated from the main campus by East Main Street and the railroad tracks. This separation appears to impact use of the recreation facilities near the Dedmon Center and attendance at athletic events.
- Parking is an issue on campus. Several small lots, particularly those within the Central

Campus, cause traffic congestion as vehicles move from lot to lot searching for a parking space, while the allocation to various user groups appears to be unbalanced.

- Most off-campus students live in neighborhoods adjacent to campus across Tyler Avenue to the west or across Jefferson Street to the east. This circumstance generates significant pedestrian traffic crossing these major vehicular routes.
- Central Campus has limited remaining opportunities for large new building footprints. Significant growth in the built environment, if identified in the future, will likely rely on acquisition and development of current off-campus locations.
- New off-campus residential apartment footprint adjacent to the Central Campus needs to be incorporated into the overall University housing plan.
- Transit service needs to be revised to accommodate the changing needs of students, faculty and staff. More efficient routes and stops will help incentivize ridership.
- The University needs to continue its commitment to overall sustainability across campus assets and programs.
- The merger of Jefferson College of Health Sciences brings about a significant new presence in Roanoke as Radford University Carilion (RUC).

VISION AND IMPLEMENTATION PLAN

Through multiple iterations of analysis by the Master Planning Committee; input from the University community and other major stakeholders; and subsequent refinement by the Executive Steering Committee, the final version of the Master Plan was approved by the Board of Visitors in December 2019. The major tenets of the Master Plan are far-reaching and will enhance the Highlander experience for generations to come.

○ **Existing Space Usage:** Based on current utilization of space, proposed student population can generally be accommodated in existing on-campus academic built footprint with a few specific exceptions. Current academic and administrative spaces will be repurposed to enhance new learning methods and support environments where appropriate.

○ **Existing Residences:** Based on the recent acquisition of more than 600 beds in apartment buildings located off-campus and adjacent to Central Campus, along with the current available on-campus residence halls and off-campus apartments, no additional new on-campus beds have been identified for the next 10 years.

○ **Central Campus and Athletics/Recreation Campus New Building Locations:** A number of locations have been identified on both Central Campus and Athletics/Recreation Campus as potential locations for identified new academic and student programs buildings and future buildings as the need arises, along with the proposed River Campus development.



○ **Primary Strategic Future Growth Areas:** In the long term, the campus will likely expand primarily to the east across Jefferson Street and along East Main Street. Short-term development is planned with an eye toward this long-term vision.

○ **Secondary Strategic Future Growth Areas:** The Tyler Avenue Corridor is also a location for anticipated future growth of the campus, along with related student and family services and amenities. This growth will need to be carefully coordinated with the City of Radford, given the number of established retail, housing, religious and government occupancies along Tyler Avenue.

○ **Enhanced and New Off-Campus Programs:** Radford University Carillon, the result of merging with Jefferson College of Health Sciences, is a major focus for expanding program services in Southwest Virginia. The Roanoke Higher Education Center and the Southwest Virginia Higher Education Center both offer growth opportunities for multiple existing and proposed academic programs in the region.

○ **Improved Parking System:** This will provide a more service-oriented business model by providing balanced, reliable, convenient parking on or adjacent to the Central Campus, while providing additional parking on the Athletics/Recreation Campus or off-campus with associated transit service.

○ **Transportation Options:** The transit system will be improved to better serve commuter students, provide better access to the Athletics/Recreation Campus area and allow easier access to downtown and connection to other localities.

○ **Infrastructure Improvements:** Campus systems and components will be analyzed and improved to ensure continuing services and to enhance overall campus sustainability.

○ **Landscape/Hardscape Improvements:** Comprehensive landscape and hardscape provisions will be undertaken to continue the landscape heritage of the overall campus, while improving perimeter aesthetics, pedestrian experiences and overall wayfinding.

2020-2030 MASTER PLAN — OVERALL SUMMARY

Construct

- CAIC — Highest priority
- Hurlburt Addition
- Administrative Services Addition
- Welcome Center
- Public Safety Building
- Athletics Ticketing/Concessions Building

Renovate

- McConnell Library
- Tyler/Norwood/Muse Halls
- Dedmon Center Arena

Repurpose

- Programmatic expansion through selective repurposing of areas within Davis, Cook, Walker, Peters, Kyle and Young Halls
 - Waldron College growth
- CEHD programs
- Tech Talent Pipeline
- Venture Lab
- Tourism Lab

Evaluate and Upfit

- Classrooms and labs — Scheduling, efficiency, delivery methods and REAL General Education
- Student study and collaboration spaces
- Event and meeting spaces

Enhance

- Sustainability
- Utilities
- Transit
- Campus perimeter
- Green spaces
- Brand identity

Create

- Greenway/Riverway — River Campus
- Roanoke locations — RUC/RHEC
- Hotel
- Public-private/retail spaces
- Other opportunities as identified



Long-Range Plan for Transformation

THE PROCESS

The planning team developed a five-phase process to study and prepare the Radford University Master Plan. This process included work in the following areas.

- Kickoff and Charge
- Discovery and Data Collection
- Analysis and Options
- Master Planning and Concept Refinement
- Implementation and Documentation

To understand existing campus conditions and the perceptions of these conditions, the Master Planning Committee and the Document Preparation Team conducted a series of meetings with various groups during 2018 and 2019. Additionally, the team toured campus, assessed building and space use, reviewed University Facilities existing technical documents and engaged with developers of the City of Radford Comprehensive Plan. The team also conducted

workshops and prepared surveys to collect information regarding academic programs, student programs, land use, infrastructure and other areas of interest.

The team utilized the 2018-2023 Strategic Plan: *Embracing the Tradition and Envisioning the Future* as its basic guide with specific goals for each of the following areas.

- Academic Excellence and Research
- Brand Identity
- Economic Development and Community Partnerships
- Philanthropic Giving and Alumni Engagement
- Strategic Enrollment Growth
- Student Success

The team also utilized a number of other previously prepared documents and studies for broad background in addition to the 2018-2023 Strategic Plan.

- Radford University's 2020-2026 Six-Year Plan and Six-Year Capital Plan
- Radford University's 2016 Virginia Department of Historic Resources Campus Survey Report
- Radford University's 2014 Athletics Master Plan
- Radford University's 2011 ADA Campus Accessibility Audit
- Radford University's most recent Campus Master Plans from 1993, 2001 and 2008

The team then engaged in multiple iterations of analysis and feedback with Radford University's Master Plan Executive Steering Committee. Based on this feedback, the planning team refined concepts and added supporting detail to the Master Plan. The final draft iteration was then presented to the Board of Visitors for review and comment. Upon incorporation of these final comments, the 2020-2030 Master Plan was finalized for publication.



Campus Context

MISSION

As a mid-sized, comprehensive public institution dedicated to the creation and dissemination of knowledge, Radford University empowers students from diverse backgrounds by providing transformative educational experiences, from the undergraduate to the doctoral, within and beyond the classroom. As an inclusive community, the University specializes in cultivating relationships among students, faculty, staff, alumni and other partners, thereby providing a culture of service, support and engagement. The University embraces innovation and tradition and instills students with purpose and the ability to think creatively and critically. The University provides an educational environment and the tools to address the social, economic and environmental issues confronting our region, nation and the world.

VISION

Radford University aspires to be the premier, innovative, student-centered university in the Commonwealth of Virginia and beyond with a keen focus on teaching, research and service.

CORE VALUES

- Student Empowerment and Success** — We engage and support our students in the discovery and pursuit of their own unique paths.
- Excellence** — We expect our community to strive for the highest standards.

- Inclusiveness** — We are committed to a spirit of cooperation and collaboration, embracing and honoring the diversity of our community.
- Community** — We foster relationships and a culture of service within and beyond our University community.
- Intellectual Freedom** — We encourage and defend a fearless exploration of knowledge in all its forms.
- Innovation** — We inspire and support creativity in research, scholarship, pedagogy and service.
- Sustainability** — We are committed to integrating sustainable practices into all aspects of our operations and engage students across the curriculum to learn, discover and contribute to positive current and future environmental solutions.

OVERVIEW

Campus Evolution

Radford University was founded in 1910 as the State Normal and Industrial School for Women to train teachers in the western part of Virginia and has been in continuous session since its 1913 opening. The School became Radford State Teachers College in 1924 and was authorized to award Bachelor of Arts degrees in 1935. The College steadily grew for the first 30 years of its existence, up until World War II. After the war, the College became the women's division of nearby Virginia Polytechnic Institute in 1944 and was renamed Radford College. In 1964, the College separated from Virginia Tech and again became an independent entity and was also authorized to award Master of Science degrees. The College became coeducational in 1972 and was renamed Radford University in 1979.



The campus is located in the Blue Ridge Mountains on approximately 204 acres within the City of Radford and adjacent to the New River. The primary transportation links to campus are U.S. Route 11 (Main Street) and State Route 177 (Tyler Avenue), both of which provide connections to Interstate 81, the major north-south transportation corridor serving Southwest Virginia. Topography varies dramatically from an approximate elevation of 1920 ft. at the south end of campus to an elevation of 1720 ft. at the north end of campus at the New River. The campus is mainly surrounded by residential areas, mostly populated with students, along with limited commercial development.

The campus has experienced several periods of growth during its history, as shown on the illustrated campus maps. The original campus comprised of approximately 12 buildings within a triangular footprint in the City of Radford and served students well for its first three decades. The first significant growth period occurred during a building campaign undertaken post-World War II with the addition of more than 25 buildings from the late 1940s through the early 1970s. These buildings stretched the campus to the south and to the east and incorporated several additional streets and properties. Another period of campus growth occurred during the 1980s, which most significantly brought about the addition of the Athletics/ Recreation Campus. Campus growth was fairly steady until the mid-2000s with the addition of approximately 10 major signature buildings during the last decade. These buildings mostly expanded the campus even further to the east, absorbing another existing block-width of properties.

There have been several Master Plans prepared throughout the history of the campus, as shown by the illustrated maps. The Master Plans have been useful in providing an overall framework for the growth of the campus throughout the years,

although off-campus parcels identified for potential expansion have not always been fully executed. The relatively long history of the campus and the various discrete growth periods have created a mixed-use campus with academic, administrative, student services, athletic and residential usages co-located across the campus. This mixed-use environment creates a diverse set of activities and interconnections throughout the campus footprint.

Campus Overall Aesthetics

The original campus structures utilized an overall Georgian architectural theme, including such elements as red brick facades, stone/precast accents and sloped slate roofs. These elements have been carried forward through the years with the recent introduction of a more modern design and materials for the newer structures around the perimeter of campus, particularly along Main Street. Building heights are generally three to four stories. The existing open green spaces have been largely preserved with a number of prominent quadrangles and pathways throughout campus.

Historic Resources

A reconnaissance-level architectural survey was prepared in 2016 and approved by the Commonwealth of Virginia’s Department of Historic Resources in September of that year. While no buildings on University-owned property are designated as historic, the original campus area is eligible for listing as a Historic District given its history in higher education in the state and its adherence to early campus master planning documents. The illustrated map indicates the extent of the eligible portion of the campus. In general, the buildings facing the Main Quad, Moffett Quad and the Governor’s Quad contribute to the potential Historic District. While the University has to date not chosen to seek this designation, any proposed

building or major campus modifications should be viewed with the potential Historic District in mind.

Off-Campus Locations

- The University has a presence at a number of off-campus locations
- Radford University Carilion (RUC) — Leased space in Roanoke comprising the recently acquired health and human services programs
 - Roanoke Higher Education Center (RHEC) — Leased space supporting several program offerings in Roanoke
 - Southwest Virginia Higher Education Center (SWVAHEC) — Leased space supporting several program offerings in Abingdon
 - Corporate Park — Leased space supporting several academic program offerings in Radford
 - Selu Conservancy — Leased space for academic programs, conference, recreation and other outdoor purposes for both the University and the community

CAMPUS GROWTH THROUGH HISTORY

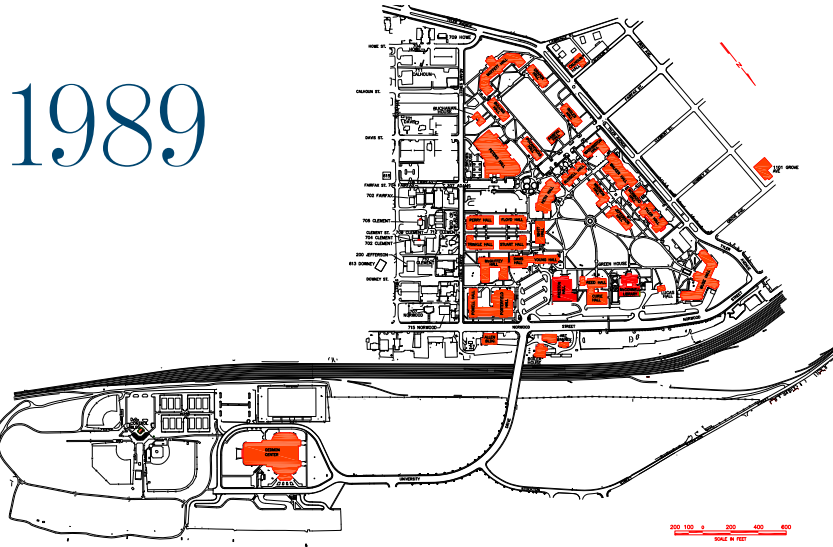
1949



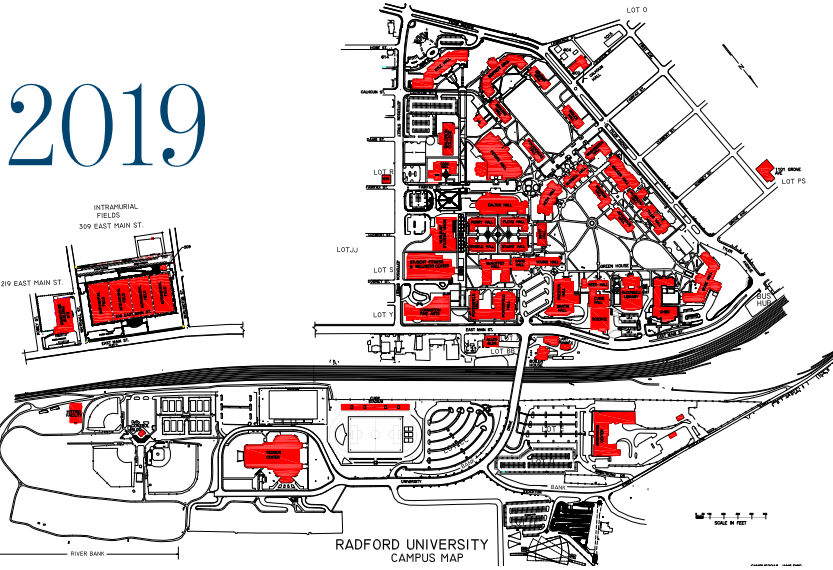
1969



1989



2019



BUILDING CONSTRUCTION/RENOVATION DATES



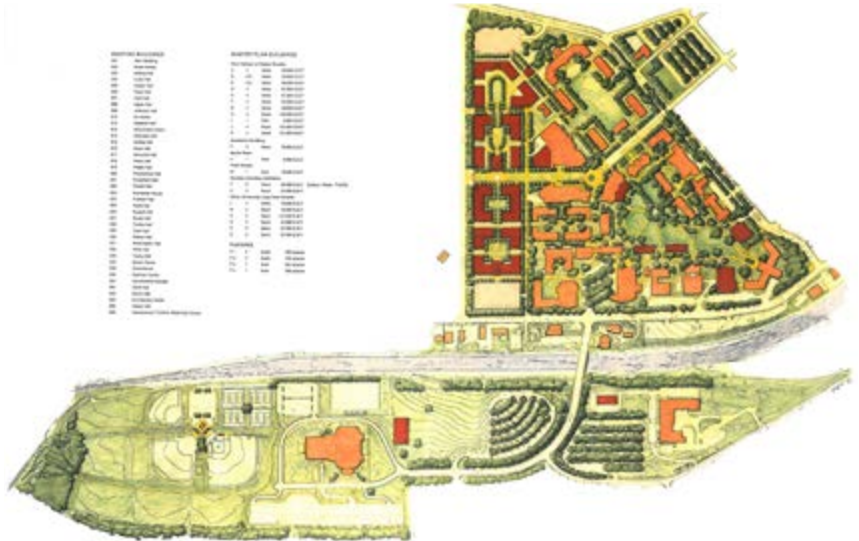
PREVIOUS MASTER PLAN MAPS



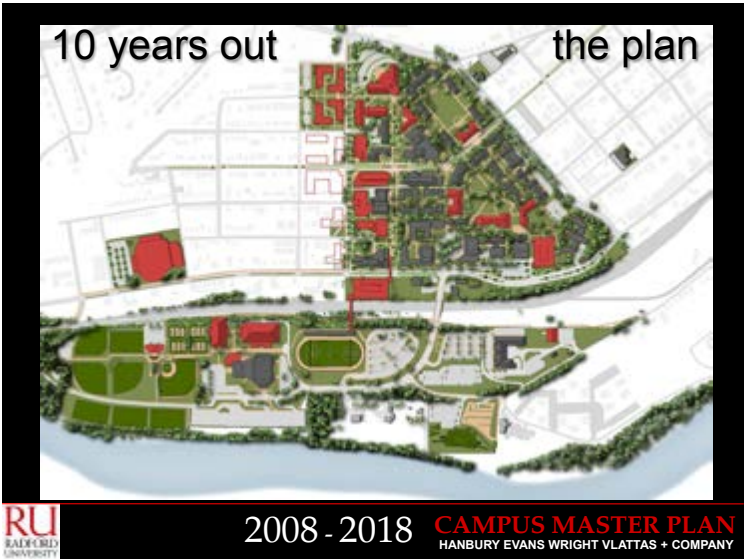
1911



1968

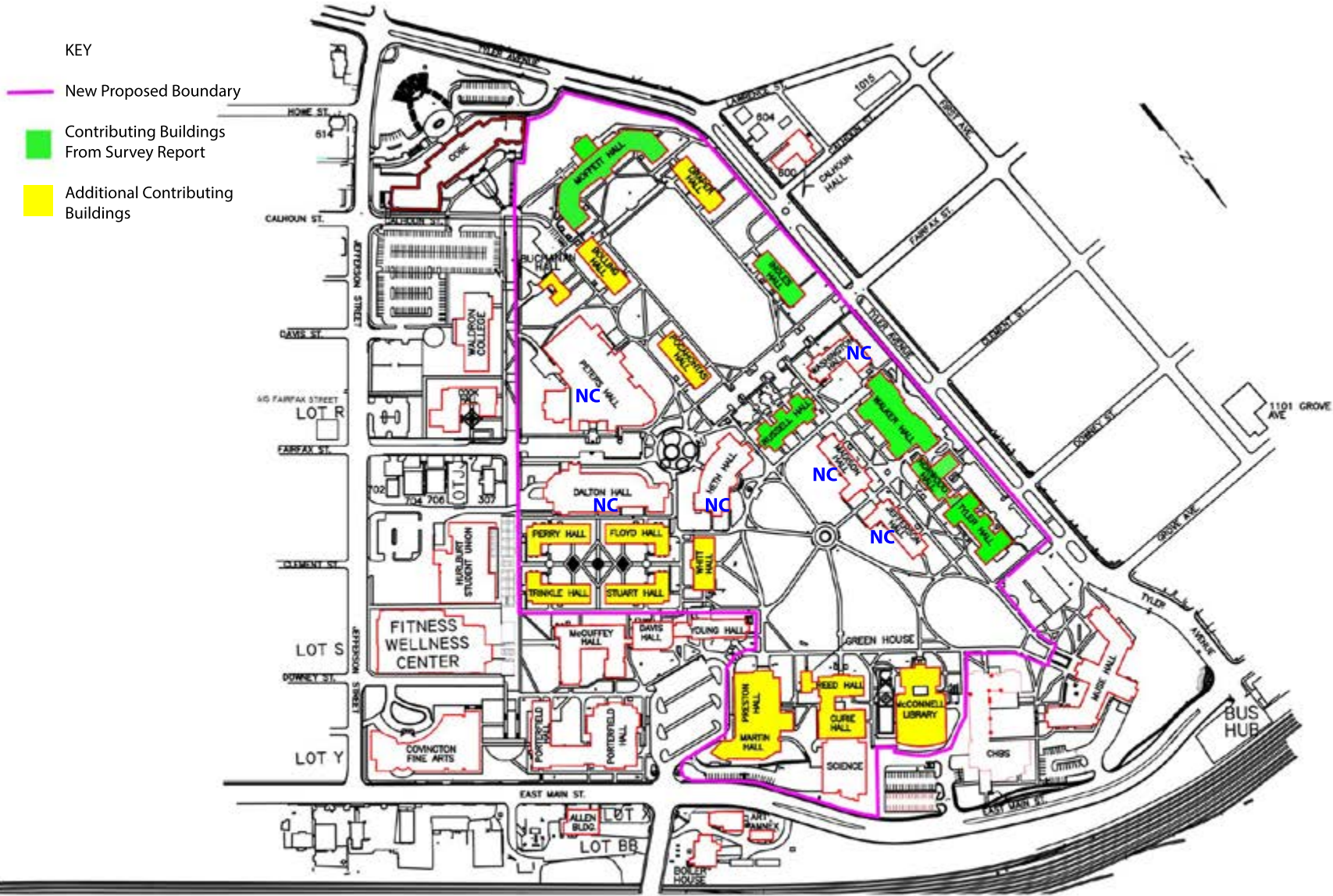


1993



2008

VIRGINIA DEPARTMENT OF HISTORIC RESOURCES (VDHR) PROPOSED BOUNDARIES FOR POTENTIAL RADFORD UNIVERSITY CAMPUS HISTORIC DISTRICT

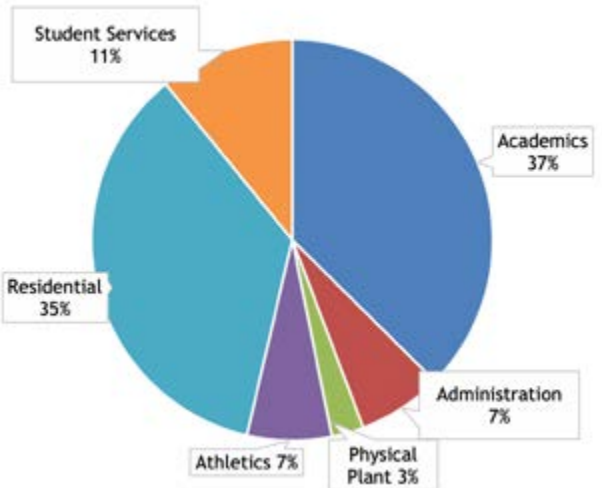


STATISTICAL BACKGROUND

It is instructive to understand a number of basic statistics about the campus.

- Total students: 11,870
- Total faculty and staff: 1,835
- -55 buildings (academic, administrative, auxiliary and athletics)
- -2,800,000 total building square footage (academic, administrative, auxiliary and athletics — broken down by various use groups and space types)
- -3,400 residential beds
- -204 total campus acres

These basic statistics can be used to characterize several key measures of efficiency and effectiveness and benchmark the campus against other peer institutions.



PLANNING INFLUENCES

Campus Open Space

In order for new development to complement and extend the qualities of the campus, it is important to understand existing campus density. The Floor Area Ratio (FAR) analysis is a helpful benchmark for overall planning. In simple terms, FAR is computed by dividing a building's total floor area by the building's supporting site area. For example, a one-story building that completely covers the building's supporting site area would have an FAR of 1.0, while a five-story building that covers the site would have an FAR of 5.0. While FAR can vary significantly depending on many factors, values ranging from 0.5 to 3.0 are generally accepted as representative on campus environments. Lower FARs are appropriate for open-space areas, and higher FARs are representative for denser housing areas. Further, new development FARs should not vary drastically from the FAR of the various existing campus areas.

Slope Analysis and Topography

Another characteristic of University land is the somewhat significant topographical challenges. Within the existing Central Campus, grade changes are fairly gradual, consisting of a series of plateaus decreasing in elevation from south to north with most areas between approximate elevations of 1880 ft. and 1800 ft. However, more dramatic slopes occur near the perimeter of campus, particularly at the south end of Jefferson Street. The Athletics/Recreation Campus lies between approximate elevations of 1780 ft. and 1740 ft. as it approaches the New River.



Flood Analysis

Radford University borders the New River at the northern portion of campus at the Athletics/ Recreation Campus and commuter parking areas. The current FEMA flood analysis shows that a good amount of the northern portion of the Athletics/ Recreation Campus is in either a 100-year flood plain, 500-year flood plain or the floodway at the approximate Base Flood Elevation (BFE) of 1740 ft. Due to these concerns, minimal development can occur on this land at this elevation or lower; however, development can occur in the 100-year flood plain if the structure is designed to be capable of resisting the effects of floodwaters, or if the development is located in the areas at elevations higher than 1740 ft. Limited development may also occur in the floodway if a “no-rise condition” can be met with no impediment or increase in the BFE. Recreational and associated uses appear to be one of the logical uses for portions of this area of campus. Although, other elements can be considered as long as all regulatory requirements are achieved.

FLOOR AREA RATIO BY DISTRICT



COMMUNITY INFLUENCES

City of Radford Comprehensive Plan 2017 Update

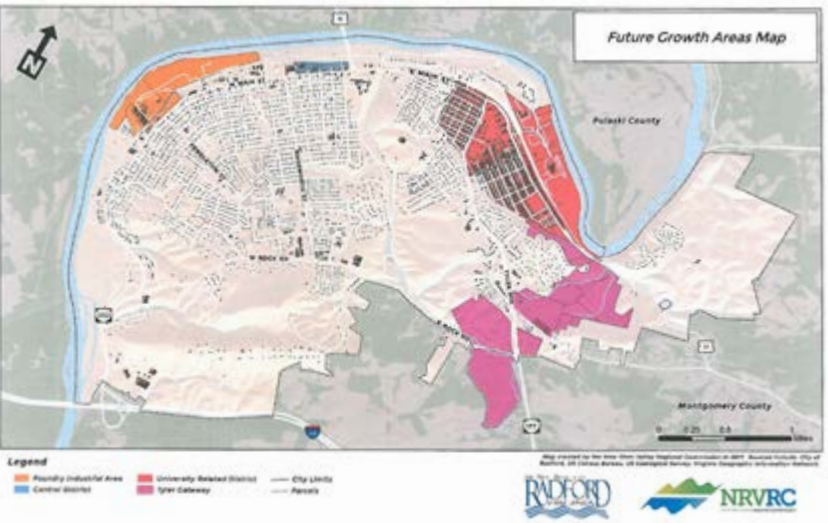
The City of Radford Comprehensive Plan 2017 Update identifies a variety of goals and strategies to provide guidance for future development in the City of Radford. These goals and strategies are organized around main broad focus areas, including specific items as they pertain to the University's areas of mutual interests.

- o **Economic Development:** Community Development Opportunity locations identified by the City of Radford near the University include the Jefferson Street Center at the intersection of Jefferson Street and East Main Street; the East End Downtown area; and the Radford University Recreation area.
- o **Infrastructure and Public Spaces:** Opportunities to improve transit, bike paths, trails, pedestrian paths and viewsheds are identified, particularly concentrating on the East and West Main Street and Tyler Avenue gateway entries to the City of Radford.
- o **Housing:** A detailed housing study within the City of Radford to evaluate age, size, use, capacity, occupancy and market value has been undertaken.
- o **Land Use:** Future land uses adjacent to the University include corridor business commercial along East Main Street and Tyler Avenue and residential along and east of Jefferson Street.

The City of Radford Comprehensive Plan is clearly focused on "areas for revitalization" surrounding the campus, along East Main Street, Tyler Avenue and Jefferson Street. Streetscaping, landscaping, crosswalks and improvements to pedestrian and

bicycle safety were mentioned specifically as needs for these areas, particularly at the "gateway" entry points to the City of Radford. This Master Plan agrees with these focus areas and presents an opportunity for the University to work with the City of Radford on these improvements.

Existing land use, as noted in the City of Radford Comprehensive Plan, identifies the University's campus as a "public/institutional" area, while the areas to its east and west are identified as a combination of "single-family and multi-family residential" and the areas to the north along Main Street are identified as "commercial." In the future land-use diagram, the City of Radford plan maintains Radford University as a "public/institutional" zone; however, the areas directly adjacent to Tyler Avenue and Jefferson Street and along East Main Street are now mostly identified as "corridor business commercial." Though these land-use zones are accurate for existing uses, all areas adjacent to campus may well be transformed into more "public/institutional" areas as Radford University acquires land for growth. It will be critical for the City of Radford and the University to work together as development of these areas moves forward.



City of Roanoke Comprehensive Plan
Vision 2001-2020 and Downtown
Roanoke Plan 2017

The City of Roanoke’s Comprehensive Plan Vision 2001-2020 and the Downtown Roanoke Plan 2017 identify a variety of goals and strategies to provide guidance for future development in the City of Roanoke. The framework for the Downtown Roanoke Plan 2017 is structured around six themes that serve to build on the success of downtown and aid in its continued revitalization and growth over the next 20 years, including specific items as they pertain to the University’s areas of mutual interests.

- 1. Build on Strengths
- 2. Fill in Gaps
- 3. Expand
- 4. Enhance Public Space
- 5. Strengthen Connections
- 6. Maintain and Market

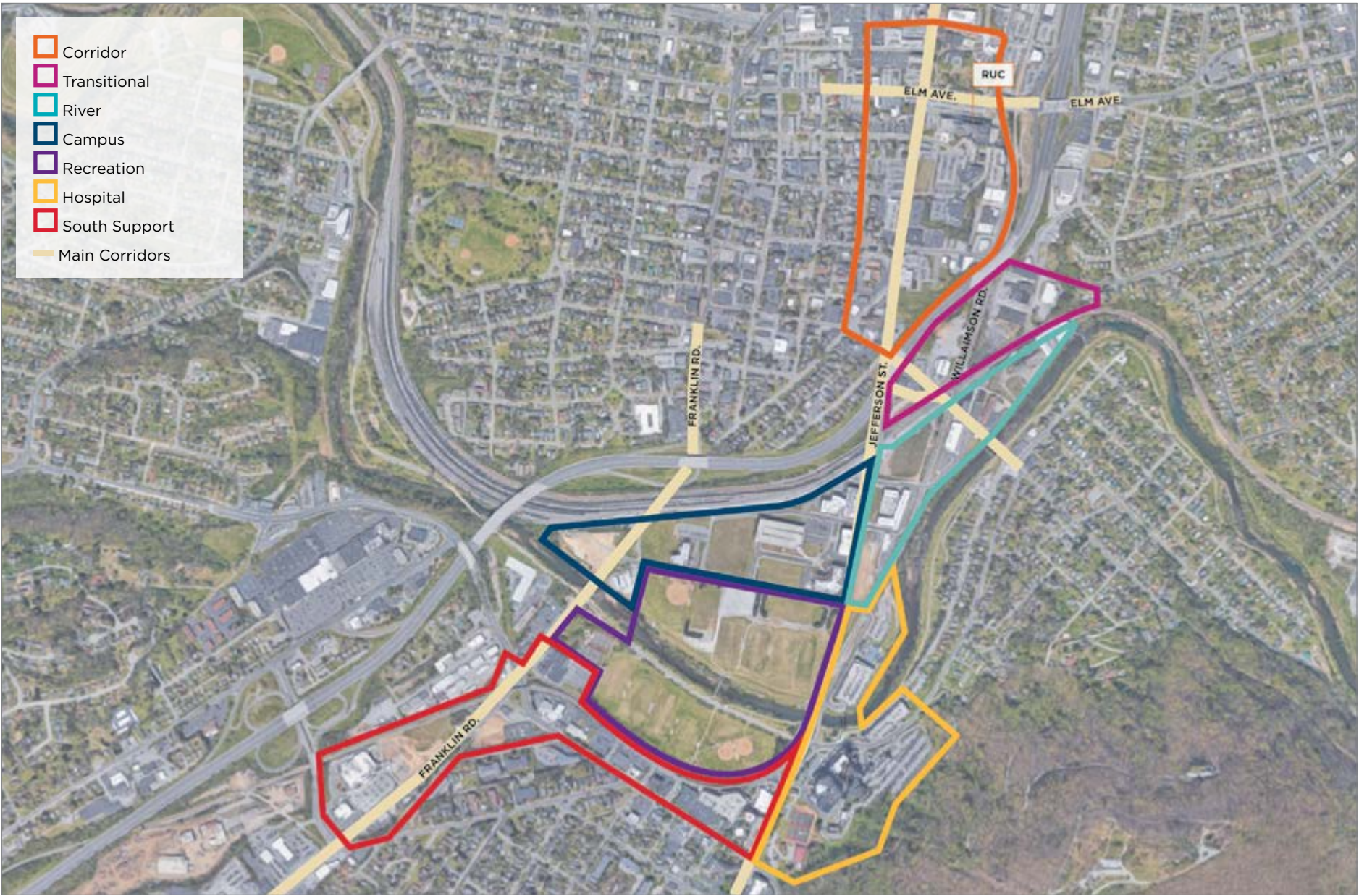
The Expand theme includes Policy 3-B: Capitalize on the expansion of the South Jefferson Redevelopment Area. In 2001, the South Jefferson Redevelopment Area Plan was approved and paved the way for a major economic development initiative for the City of Roanoke, Carilion Clinic and Virginia Tech. The Virginia Tech Carilion School of Medicine opened in 2009, and the Virginia Tech Carilion Research Institute opened in 2010 with the area between the core of downtown and the South Jefferson Redevelopment Area identified as a potential Innovation Corridor and Academic Health Center.



The proposed area in its entirety extends from Franklin Road at Wonju Avenue to the South Jefferson Redevelopment Area and north through downtown on Jefferson Street and across to the Hotel Roanoke and Conference Center and the Roanoke Higher Education Center (RHEC). The area to the south includes seven distinct districts with the area to the north identified as the Creativity District.

Given the University’s current significant presence in the RHEC located in the Carilion Roanoke Community Hospital, the University is integrally located along the identified Innovation Corridor and Academic Health Center location. This presents a significant opportunity for the University to work with the City of Roanoke on the continuing development of this corridor.

INNOVATION CORRIDOR DISTRICT



Academic Programs

ACADEMIC PROGRAM DESCRIPTIONS

Goals

The University desires to accomplish a variety of goals relative to academic programs.

- Provide state-of-the-art classroom, laboratory, faculty and support spaces for the University as a whole, for each college and school at all locations and for all shared academic spaces.
- Provide academic spaces that enhance and facilitate interdisciplinary study and research across all University programs/units and fields of study.
- Maximize the efficiency and utilization of all academic spaces with respect to all legislative and University guidelines and requirements.
- Anticipate the accommodation of the enrollment targets as set forth in the 2018-2023 Strategic Plan.

Current Academic Programs

The University offers 76 bachelor’s degree programs in 47 disciplines, three associate degrees and six certificates at the undergraduate level; 27 master’s programs in 22 disciplines and six doctoral programs at the graduate level; and 13 post-baccalaureate certificates and one post-master’s certificate.

The University is organized into a variety of Colleges and Departments.

Artis College of Science and Technology (Artis College)

- Anthropological Sciences
- Biology
- Biomedical Sciences
- Chemistry
- Geospatial Science
- Geology
- Information Technology
- Mathematics and Statistics
- Physics
- Pre-Health Advising

Sandra C. Davis and William C. Davis College of Business and Economics (Davis College)

- Accounting, Finance and Business Law
- Economics
- Management
- Marketing

Waldron College of Health and Human Services (Waldron College)

- Clinical Health Professions
- Communication Sciences and Disorders
- Occupational Therapy
- Physical Therapy
- Physician Assistant Studies

- Public Health and Healthcare Leadership
- School of Nursing
- School of Social Work

College of Education and Human Development (CEHD)

- Appalachian Studies Minor
- Counselor Education
- Health and Human Performance
- Peace Studies Minor
- Recreation, Parks and Tourism
- School of Teacher Education and Leadership

College of Humanities and Behavioral Sciences (CHBS)

- Criminal Justice
- English
- Foreign Languages and Literatures
- History
- Military Science (Army ROTC)
- Philosophy and Religious Studies
- Political Science
- Psychology
- School of Communication
- Sociology
- Interdisciplinary Minors
- Forensic Studies
- Intercultural Studies
- International Studies
- Women’s Studies

College of Visual and Performing Arts (CVPA)

- Art
- Dance
- Design
- Music
- Theatre and Cinema

College of Graduate Studies and Research

- Graduate Studies

Existing Academic Buildings

There are approximately 15 buildings with a primary function to support academics, and a number of them were established in the earliest years of operation. However, the University has built a significant amount of new academic footprint over the last decade or so. In fact, each of the six undergraduate colleges has occupied new or significantly renovated buildings since the late 1990s with the exception of most departments of the CVPA and the College of Graduate Studies and Research. A capital project is currently underway to renovate Reed and Curie Halls, which will complete the main complex for the Artis College. Detailed planning is also complete for a capital project for the Center for Adaptive Innovation and Creativity (CAIC), which will replace the existing McGuffey Hall and Porterfield East and West Halls. This project will mainly support the CVPA, but will also include multi-disciplinary spaces including Waldron College, such as music therapy.



Student Programs

HOUSING PROGRAM DESCRIPTIONS

Goals

The University desires to accomplish a variety of goals relative to student housing.

- Redefine the atmosphere and social environment associated with living on-campus, thereby providing students with a memorable and life-shaping undergraduate housing experience.
- Reinforce the sense of community, belonging and identity associated with living on-campus by reinvigorating the community within existing residence halls and developing new communities that address student desires for increasing levels of independence.
- Develop spaces that offer opportunities for students to engage with faculty, thereby enhancing their potential for academic success.
- Increase the number of upperclassmen living on-campus, thereby increasing the potential for mentorship and leadership development.
- Increase the opportunities for non-traditional student housing, including married, military veteran and graduate students.
- Facilitate innovative new programs, such as support for local community college students.
- Anticipate the accommodation of the enrollment targets as set forth in the Strategic Plan.

Existing On-Campus Residential Housing

Muse Quad

- Muse

Main Quad

- Tyler
- Norwood
- Jefferson
- Madison
- Washington

Moffett Quad

- Ingles
- Draper
- Moffett
- Bolling
- Pocahontas

Governor’s Quad

- Floyd
- Peery
- Trinkle
- Stuart



The University has undertaken a program to bring all existing campus housing to a common level of condition and accommodations. All residence halls have been renovated since 2002 with the exception of Norwood, Tyler, Muse and Ingles Halls. All renovated dormitories have air-conditioning, single bathrooms and enhanced program and collaborative spaces.

Off-Campus Residential Housing

The University has current lease agreements with several privately managed residential properties. The Radford University Foundation has also recently acquired more than 700 beds in 32 existing off-campus buildings adjacent to campus, and these spaces have been leased for use by the University. These units will be renovated, where feasible, and appropriate for use as off-campus residences. If not feasible, the sites might be used for other potential uses, such as academic/administrative spaces or parking areas. The University also has current lease agreements with The Patrick Henry in Roanoke to support RUC student housing.



STUDENT RECREATION AND ACTIVITIES PROGRAM DESCRIPTIONS

Goals

The University desires to accomplish a variety of goals relative to student recreation and activities.

- Provide a variety of recreation and related facilities and programs for the enjoyment of students.
- Provide opportunities that enhance and facilitate the interaction between recreation activities and overall academic programs.
- Facilitate interactions with the surrounding community to enhance the use of these facilities.
- Utilize these facilities and programs to support University growth through the recruitment and retention of students.

Existing Recreation and Activities Facilities

With over 300 clubs and organizations, Radford University offers many opportunities for student engagement, leadership development and community service. Many of these activities are located in the Hurlburt Student Center, which also includes bowling, movies and food service options. The University provides dining options in a total of seven locations across campus, including full meals and dining areas, takeout options, such as pizza and sandwiches and a variety of small foods and snack options.



The University has invested significantly in the addition of recreation and activities facilities and programs over the last decade. Primary additions include the on-campus Student Recreation and Wellness Center, which provides significant opportunities for a wide variety of indoor student and intramural activities. Another recent addition is the Student Outdoor Recreation Center, located a few blocks from campus, which provides significant capability for outdoor intramural activities for both students and the surrounding community. Other facilities include the New River entry point for rafting and RU Able and RU Outdoors programs at various off-campus locations.



ATHLETICS PROGRAM DESCRIPTIONS

Goals

The University desires to accomplish a variety of goals relative to intercollegiate athletics.

- Provide state-of-the-art training and performance facilities for all intercollegiate athletic teams and individuals at Radford University.
- Maximize the efficiency and effectiveness of all athletics facilities to ensure appropriate return on the University's financial investment.

Existing Athletics Facilities

A member of the Big South Conference, Radford University competes in 16 men's and women's NCAA Division I athletics programs.

- Men's and Women's Basketball
- Men's and Women's Cross Country
- Men's and Women's Golf
- Men's and Women's Soccer
- Men's and Women's Tennis
- Men's Baseball
- Women's Lacrosse
- Women's Indoor and Outdoor Track and Field
- Women's Softball
- Women's Volleyball



The majority of Radford Athletics facilities are located on the Athletics/Recreation Campus. The Dedmon Center is the main venue for many indoor athletic activities, including basketball, volleyball and indoor track and field, along with the main administrative offices for Radford Athletics. Patrick D. Cupp Memorial Stadium, which serves

the outdoor track and field, lacrosse and soccer programs; the Williams Field at Carter Memorial Stadium for baseball; the softball field; and the Sioros Center indoor hitting practice facility for baseball and softball, are located adjacent to the Dedmon Center, as are the outdoor tennis courts.

Current Land Use and Building Placement

LAND USE

The current Radford University real estate portfolio consists of three main components: Central Campus, Athletics/Recreation Campus and off-campus facilities.

Central Campus

Radford University’s original Central Campus was based on a master site plan developed by Charles Robinson in 1911. The initial buildings surrounding the original triangular-shaped campus site were completed prior to World War II. After the war, the buildings comprising Moffett Quad and the Governor’s Quad, in addition to several other buildings along Adams Street and East Main Street, were completed by the late 1960s. The most recent additions to Central Campus during the last two decades are located between the Adams Street pedestrian corridor and Jefferson Street, along the east side of campus and East Main Street.

Athletics/Recreation Campus

The Athletics/Recreation Campus is located on land originally donated to the University by Norfolk Southern (NS). The overall parcel lies between the East Main Street/NS tracks corridor and the New River. Starting with the Dedmon Center in 1980, a variety of facilities have been constructed here with many supporting Athletics. The University’s Facilities Management operations units are located on the Athletics/Recreation Campus, along with several large parking lots.

Off-Campus Facilities

The University owns several off-campus sites and buildings, including 1101 Grove Avenue and the recently developed Student Outdoor Recreation Center. The University also leases a number of spaces from the Radford University Foundation and other private owners in the City of Radford, including housing, warehouse and office and support spaces. The Vinod Chachra IMPACT Lab is located in space leased from the Foundation at the Corporate Park. The University’s Printing Services are located in space leased from the Foundation at 219 East Main Street. These facilities are located adjacent to or near campus.

The University leases the Selu Conservancy from the Foundation. Located about 15 miles from campus, Selu includes facilities for academic, conference, recreation and other outdoor purposes for both the University and the community. Facilities include academic research spaces, an observatory, a working farm and period farmhouse, an access point for the Little River and conference support spaces.

The University has a significant leased presence in RHEC, located in Roanoke approximately 45 miles from campus, for a number of academic outreach programs in Southwest Virginia. In particular, the School of Nursing offers opportunities for academic and clinical engagements in the newly-expanded Clinical Simulation Center. The building has approximately 100,000 total square feet of leasable space, and the University is currently the largest tenant with approximately 25,000 square feet of leased space.



Radford University Carilion (RUC), the result of the merger with Jefferson College of Health Sciences, enhances the offerings in healthcare education in the Roanoke Valley. This significant presence provides undergraduate and graduate classes and other training and certification programs for a variety of users, many of whom are working, while attending classes. The coordination of these offerings at RUC with those on Central Campus is critical to ensure maximum leverage and effectiveness of this new academic footprint.

The University also currently leases space in the SWVAHEC, located in Abingdon approximately 100 miles from campus, for academic program offerings and continuing education.

BUILDING CONDITION ASSESSMENT

The University maintains a database that captures the overall condition of buildings, including the various building operating and infrastructure support systems. This database compiles condition information collected by the Facilities team for each building system and related equipment and components, such as roofing, HVAC and fire detection and alarm systems. This information is then compiled and totaled for each specific building, and an associated Facility Condition Index (FCI) value is calculated. The FCI value is computed by dividing the approximate costs of anticipated required equipment and systems repairs/replacements by the overall value of the building, such that the lower the FCI value, the better the building overall condition. FCI values in the range of 0.00 to 0.20 indicate buildings that are generally in reasonable condition, while values of approximately 0.50 and above indicate building conditions requiring attention in the relatively short term. This database is regularly updated to include recent renovations and equipment maintenance and is used by both the Facilities team and the Commonwealth of Virginia to prioritize various new construction, renovation and upgrade projects.

The current database FCI values show the overall average condition of all existing campus buildings, including minor buildings and non-permanent facilities, to be approximately 0.13. This indicates that the overall condition of campus buildings, on average, is comparatively good. However, there are several specific major campus buildings, which show clear requirements for major renovation.

- Porterfield West Hall FCI = 0.41
- Porterfield East Hall FCI = 0.55

- Norwood Hall FCI = 0.73
- Tyler Hall FCI = 0.42
- McConnell Library FCI = 0.60
- Davis Hall FCI = 0.67
- Muse Hall FCI = 0.59

The current Six-Year Capital Plan includes projects for a significant renovation or complete replacement for each of these buildings except Davis Hall. None of these existing buildings has been significantly renovated for the last several decades, and many of the associated existing building systems and components are at their end-of-life. These buildings are among the least energy-efficient on campus and do not include up-to-date safety, security and accessibility capabilities.

Further, the Facilities team utilizes the results of the condition database to identify and prioritize projects to be funded by the Commonwealth’s annual Maintenance Reserve funding. This process is instrumental in ensuring that all campus buildings are consistently reviewed and maintained in a consistent manner. For example, it is planned that annual Maintenance Reserve funding will be utilized to upgrade certain systems and components in Davis Hall, due to its FCI score and the fact that it is not on the current list for capital renovation.

Several existing properties have been identified to become unoccupied in the future, due to their functionality, location, condition or other factors. These include 615 Fairfax Street, Calhoun Hall, the modular buildings adjacent to the Armstrong Complex and potentially the Buchanan House. Alternate locations for the occupants of these buildings will be determined as part of future space development and utilization.

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA 2012-14 FACILITY CONDITION REPORT

Institution	Facility Condition
Christopher Newport	.02
George Mason	.25
James Madison	.33
Longwood	.23
Mary Washington	.32
Norfolk State	.12
Old Dominion	.32
Radford	.20
University of Virginia	.09
UVA’s College at Wise	.03
Virginia Commonwealth	.21
Virginia Military Institute	.28
Virginia State	.66
Virginia Tech	.16
William and Mary	.27
All	.19

BUILDING EFFICIENCY ASSESSMENT

Given the addition of substantial occupancy footprint over the last decade, the University undertook a review of the overall usages and efficiencies of all existing campus buildings. The state requires the University to report on the efficiency and occupancy of academic classrooms and laboratories, and this information is compiled annually; however, various other building occupancies have not been systematically reviewed for overall usages and efficiencies.

This review included visits to all campus spaces to identify current use, occupancy, furnishings, equipment and other salient information. As a secondary task, each space was also reviewed for its overall condition. Additionally, the University engaged a nationally recognized campus space planning firm to review the current situation. The results of this review provided several observations.

- **Classrooms:** The current and planned future classroom inventory is strained during peak hours. Adjusting the classroom capacity mix and scheduling practices should help alleviate the strain.
- **Labs:** The current and planned future labs do not meet utilization targets and should be reviewed for their use going forward.
- **Faculty/Staff and Overall Administrative and Support Spaces:** The existing inventory appears to be sufficient, and any new or reconfigured office spaces should be standardized going forward for consistency.

○ **Overall:** The net assignable square feet per student is currently 124, which is slightly less than institutions similar to Radford University, which are typically at 135-145 NASF/student.



Outdoor Spaces

OVERALL CAMPUS

The Master Plan provides an opportunity to improve and upgrade existing landscape and hardscape elements and components, while providing guidance on improving and expanding the overall current environment. To provide a framework for this work, the overall campus was reviewed based on a number of specific locations of “outdoor rooms” and current design elements.

MAIN QUAD, MOFFETT QUAD AND THE GOVERNOR’S QUAD

The Main Quad is the oldest part of Radford’s original campus and hosts some of the University’s oldest buildings. Its landscape is the most mature on campus with graceful old trees lining the pedestrian walks and shading the buildings. The existing walkways designed decades ago respond well to the asymmetrical shape of the Main Quad, successfully linking adjacent buildings, while emphasizing key vistas and axes within and through the space. The sweeping pedestrian arc at the front of Heth Hall is appropriate and engaging, and the existing bulb form of the walks extending from the front of Muse Hall is also of value.

The Moffett Quad landscape is also among the most mature on campus with similar components as Main Quad. The field space in the Moffett Quad is used for many functions, including Commencement and various student and alumni activities.

The Governor’s Quad is an established and mature recognized outdoor space, as well, and should be maintained in its current configuration. This Quad



forms an important connector between the Main Quad and facilities to the east.

ADAMS STREET CORRIDOR

The Adams Street Corridor serves as a primary north-south pedestrian route on campus. Much of the Adams Street Corridor has been converted to a major pedestrian mall. The two ends of the pedestrian mall are areas of key importance. Kyle Hall is located at the uppermost end of Adams Street Corridor. The front of the building addresses not just the pedestrian corridor, but also the axis from Heth Hall passing at the front of the Peters Hall entry at Moffett Quad. The lower end of Adams Street Corridor, adjacent to the Covington Center for Visual and Performing Arts, provides a

semicircular space hosting seating and landscape to screen the Covington Center’s utility area below on East Main Street.

FAIRFAX STREET CORRIDOR AND HETH PLAZA

The Fairfax Street Corridor serves as the major east-west pedestrian and vehicular corridor across Central Campus. Parking Lots DD, EE and JJ are located along this thoroughfare. At the midpoint of the corridor is Heth Plaza, which is a highly recognizable space nearly in the center of Central Campus. Its clock and brick pavers clearly identify the space’s importance to campus.

Fairfax Street and the parking lots along it have been developed in an organic fashion over the decades, as the buildings fronting this corridor are highly variable in their age and history on campus. Russell Hall, one of the original campus buildings, is located west of Heth Plaza and is currently occupied by student, parent and alumni service organizations. In many ways, it is the current “front door” to the University as prospective students and parents, alumni and other visiting groups meet here for tours and activities. Dalton Hall, which houses the University Bookstore, Post Office and dining operations, is also located along Fairfax Street.



DOWNEY STREET CORRIDOR

Another significant entry to campus from the east is along Downey Street, which is located between the Covington Center for Visual and Performing Arts and the Student Recreation and Wellness Center. The use of Downey Street, as a pedestrian way, is inhibited by these buildings’ requirements for parking and service entrances.

TYLER AVENUE CORRIDOR

Fronting onto the City of Radford’s most prominent entry corridor, the University’s Tyler Avenue street front currently appears more as a rear campus facade than as the front edge of a historic University. Improvements, along Tyler Avenue, have enhanced the street’s visual quality and pedestrian safety by adding attractive and well-maintained landscaping to the medians in the center of the road and adding colored crosswalks at Tyler Avenue’s intersections with side roads. Existing trees, along Tyler Avenue, should be preserved; in particular, the historic oak grove at the rear of Muse Hall should be preserved to enhance the established facade of the University.

Parking areas exist at both Walker Hall and Tyler Hall and include utility areas and assorted mechanical equipment. Along most of the length of Tyler Avenue, bicycle lanes have been installed on both sides of the street; the exception is a three-block stretch of the west side of the road with parking located at the side of the road with no dedicated bicycle lane.

EAST MAIN STREET CORRIDOR

Currently, a number of relatively new, tall buildings with paved parking lots in front dominate the campus’s western East Main Street facade (Tyler Avenue to University Drive). This stretch of East Main Street was improved as part of an overall road realignment project and includes medians and bicycle lanes. Although plantings were established within the parking lots, they have not yet had the time to grow sufficiently to screen buildings or shade the parking area. The campus’s eastern East Main Street facade (University Drive to Jefferson Street) was not impacted by the road realignment project and thus lacks the attractive landscaped medians and bicycle lanes of the western portion of the street.

JEFFERSON STREET CORRIDOR

Currently, the Jefferson Street campus edge is visually disorganized, bearing little visual relation to the older, statelier parts of the academic campus surrounding the Main Quad and Moffett Quad.

ATHLETICS/RECREATION CAMPUS

The only existing entry to the Athletics/Recreation Campus is the bridge over the railroad on University Drive. In its current condition, this bridge is an uninviting place for pedestrians, with four wide lanes, narrow sidewalks on either side for pedestrians and no safe accommodation for bicyclists.

Infrastructure

SUSTAINABILITY

The University is committed to reducing greenhouse gas emissions and enhancing campus climate resiliency, and it has been a leader in developing and implementing plans, strategies and upgrades to conserve energy use on the campus and operate in a more sustainable and efficient way. The University has established the Sustainability Office and also receives input and guidance from the Sustainability Steering Committee, a multi-discipline group providing a forum to discuss a variety of strategies to reduce energy use and greenhouse gas emissions generated by the campus community. The Steering Committee is broken down into five strategic working groups: Operations; University Services; Education and Research; Outreach, Student Involvement and Campus Culture; and Tracking, Assessing, Modifying and Funding.

The University continuously measures and monitors commitment to sustainability through multiple tools and reporting mechanisms. The University recently submitted information into the Sustainability Tracking, Assessment and Rating System (STARS) as administered by the Association for Advancement of Sustainability in Higher Education (AASHE) and earned a Silver Institution rating. The University also annually completes a greenhouse gas (GHG) inventory to help identify areas for emphasis in sustainability and greenhouse gas emission reductions and provides information for The Princeton Review’s “Guide to Green Colleges.”



One specific measure of overall campus sustainability is the U.S. Green Buildings Council Leadership in Energy and Environmental Design (LEED) rating system. This is the most common rating system used in the United States for documentation of sustainable practices for design and construction of the built environment. The ratings are Certified, Silver, Gold and Platinum, the highest rating for overall sustainability.

Commonwealth of Virginia policy requires a minimum of LEED Certified for all capital new construction and renovation projects, while the University has set a target of LEED Silver minimum. The University has been able to achieve these minimums, and in most cases achieve LEED Gold ratings, for all capital projects since the beginning of the state mandate. The illustrated map indicates the LEED ratings for capital new construction and renovation projects completed during the period of state-mandated LEED compliance. The total LEED Gold-rated and Silver-rated facilities represent more than 30% of all campus buildings.

Another measure of overall campus sustainability is the EPA’s Energy Star certification program. Energy Star certified buildings save energy, save money and help protect the environment by generating fewer greenhouse gas emissions than typical buildings. To be certified as Energy Star, a building must earn a score of 75 or higher, indicating that it performs better than at least 75% of similar buildings nationwide. The University has a number of Energy Star certified buildings, including Heth, Moffett, Ingles, Stuart, Norwood and Floyd Halls.

CAMPUS LEED BUILDINGS



CITY OF RADFORD EXISTING UTILITY INFRASTRUCTURE

The City of Radford and the University work closely on the connectivity between utility systems and components. The City of Radford has stated that the current capacity and overall condition of the utility infrastructure in the areas adjacent to University property is adequate and should continue to support the current needs of the University.

ELECTRIC

Electrical service is provided to the Central Campus by the City of Radford Electrical Department and is delivered to a substation located on East Main Street near the Allen Building. From there, it is distributed to each Central Campus building at 4160 volts through buried concrete duct banks. Five existing loops serve the various parts of Central Campus with the capability within each loop to keep buildings online in a redundant fashion to minimize issues given problems in any single building. Each building has a transformer, which reduces the voltage to 208 or 480 volts as required. Athletics/Recreation Campus buildings and other off-campus buildings are fed directly from Radford Electric Department overhead lines.

The University maintains the distribution system on Central Campus and owns the underground carrier lines and switches. The City of Radford maintains ownership of the transformers and overhead lines. Off-campus buildings are fed by lines maintained by the City of Radford Electrical Department.



STEAM

The University produces steam from a central boiler plant located on the Athletics/Recreation Campus. The central steam plant provides a constant flow of medium pressure steam to all areas of Central Campus through a looped distribution system on a 24-hour, seven-days-a-week basis. The plant consists of three 50,000 pounds per hour boilers, one 14,000 pounds per hour boiler and one 6,800 pounds per hour boiler. Each boiler has the capability of burning natural gas or No. 2 fuel oil. The system operates and distributes at 90 psig pressure in the heating season and at 50 psig pressure during non-heating seasons by utilizing the smaller boilers. The Armstrong Complex and the various other Athletics/Recreation Campus facilities utilize stand-alone boiler units and are not connected to the central steam system.

Steam is distributed across campus via steam tunnels with condensate return/recapture piping. Steam is utilized on-campus to satisfy building space heat requirements in addition to domestic water heating. Laboratories utilize steam at lab stations, autoclaves and other appliances as required. The existing steam distribution system consists of a single 8-inch main, which crosses East Main Street from the steam plant into Central Campus. All building steam service lines extend in radials from the main loop. In some cases, portions of the main loop are routed through existing buildings.

The current connected load to the central steam system is approximately 39,500 pounds per hour with the existing central boiler plant having a current firm capacity of 100,000 pounds per hour, based on the capacity of only two of the three largest 50,000 pound per hour boilers.



STORMWATER

Central Campus Jefferson Street/Adams Street Systems

The dividing lines for the drainage basins in the Central Campus area and in the areas east of Jefferson Street are shown on the adjacent map. The drainage from the Jefferson Street/Adams Street basin flows toward the north and west and discharges into a stormwater management (SWM) facility north of East Main Street and south of the NS tracks. This facility manages the quantity flows from much of the area extending from just east of Jefferson Street to west of Adams Street, including most of the Central Campus. For the most recent building projects in the Jefferson Street and Adams Street corridors, this SWM facility provided credit for quantity treatment requirements.

Athletics/Recreation Campus Systems

All current development on the Athletics/Recreation Campus is directly tributary to the New River.

East Jefferson Street Systems

In the areas east of Jefferson Street, the general slope of the ground is towards the north or northeast. There are a few small valleys/swales between Jefferson and Whitehall Streets, but the largest valley is located between Madison and Wilson Streets. The City of Radford has indicated that as drainage was directed toward Main Street over time, discharges were piped to the south edge of the Norfolk Southern Railway and discharged into a large gravel drainage ditch on the railway property that parallels the commercial properties, along the north side of East Main Street. Most or all of those culverts through the commercial properties (draining to the drainage ditch) were installed years ago, and there are no easements or rights-of-way for them.

A further complication is that the gravel drainage ditch on the railway property drains toward a large arch pipe structure that then crosses the railway and drains toward the Dedmon Center, eventually discharging into the New River. The City of Radford cleaned out the channel and culvert after the 1985 floods after debris from the railroad blocked the arch culvert. This blockage caused a backup in the drainage system and flooded several basements in the area east of Jefferson Street.



CHILLED WATER

The existing chilled water system at Radford University consists of unitary, mostly air-cooled chiller equipment. Four existing loops provide chilled water to multiple Central Campus buildings, which reduces energy costs and provides redundancy: Moffett Quad loop; Cook/Waldron loop; Governor's Quad loop; and the Martin/CFTS loop. These loops supply the chilled water needs for 20 buildings. Single system chillers supplying only those buildings serve the remaining buildings, which results in higher overall operating costs and shorter system life span compared to loop systems.

WATER

There are currently no significant issues with overall supply availability or pressures for the potable and fire supply systems at the Central Campus and Athletics/Recreation Campus. The Central Campus is on the City of Radford’s Low System. The Facilities team indicates there are some line pressures in excess of 100 psi. There have also been improvements to the City of Radford’s Middle and High systems to the south and east of the campus. The area east of Jefferson Street is served from the water mains along East Main Street.



SANITARY SEWER

The existing sanitary sewer infrastructure within the Central Campus is presently sufficient for the existing building infrastructure. As new capital projects have been constructed, new sewers have been constructed and older lines abandoned to facilitate the new construction.

In the area east of Jefferson Street, the sanitary sewer infrastructure is in less than ideal condition. Most of the lines are old, and there are a lot of infiltration/ inflow (I&I) problems with these older lines. This sewer shed drains toward an 8-inch diameter main running east, along the south side of East Main Street. A new 15-inch diameter sewer then intercepts that main and crosses under East Main Street and runs north toward the east side of the baseball and softball complex at the Dedmon Center, where it transitions to a trunk line running back west, along the river toward the City of Radford pumping station. The City of Radford believes that the system has good capacity back up to the end of the 15-inch main under East Main Street.



INFORMATION TECHNOLOGY

Telecommunications service including voice, video and data for the Central Campus and the Athletics/Recreation Campus is delivered by external telecommunication partners to wiring and network distribution points located in Jefferson Hall and the Armstrong Complex and then distributed to campus buildings via the campus steam tunnels and various buried conduits. Each building is connected via the use of fiber optic cabling back to Jefferson Hall and/or Armstrong Complex. Porterfield East is currently used as a fiber consolidation and splice point consolidation point for most fiber going to Armstrong Complex. This fiber network currently provides a minimum of one-gigabit connectivity from each building to the data center and 10-gigabit connections between data centers. Most academic buildings are connected at 10 gigabits. The University is continuing to enhance redundancy of the fiber network with intentions of providing a fiber path from each building to both Jefferson Hall and Armstrong Complex.

All campus buildings include WiFi access points supporting the 802.11 WiFi standard with 802.11 ac available in most areas to provide coverage for mobile devices. Outdoor areas are not targeted by WiFi coverage, but WiFi is available for users when they are in close proximity to campus buildings.

The primary campus data center is currently located in the oldest portion of McConnell Library. This data center was constructed in the early 1980s. Inefficient cooling, due to the configuration of the space and a water-based fire suppression, make this facility less than ideal as a data center. An additional data center is located in the Armstrong Complex and is shifting to be the primary data center.

Radford University has partnerships with Virginia Tech and two other telecommunications providers to establish a 10-gigabit connection between Radford University and RUC. This connection allows technology services to be provided seamlessly at RUC.

Fiber optic cabling was installed during the summer of 2019 to all University-operated, off-campus apartments. This was completed by a long-term contract with external telecommunications providers, which coordinated with the City of Radford for installation.



Multimodal Campus Access

SECURITY AND EMERGENCY SYSTEMS AND ACCESS

Radford University has deployed a number of exterior security and emergency systems across campus, including emergency phones, public address speakers, outside emergency lighting and designated vehicle access routes. The University regularly tests these systems for effectiveness, including mock events, test announcements and exterior night lighting inspection tours. The University also closely coordinates with the City of Radford Emergency Services on access routes and emergency system component locations.

ACCESSIBILITY

Radford University is committed to making its programs and facilities accessible and improving circulation and parking on-campus for students, faculty, staff and visitors with disabilities. In 2011, the University commissioned a study of the campus with respect to exterior accessibility of buildings, parking and pedestrian pathways. The University has been using the results of this study to undertake continuous accessibility improvement projects across campus and coordinate with new capital and renovation projects.

Along with a commitment for accessibility, the University is committed to inclusivity and has been providing facilities to ensure that the campus is welcoming. Recently, the University identified restroom facilities throughout campus that can be used by all genders. Facilities are also provided in support of other members of the campus community, such as disabled veterans, parents



with babies, individuals with visual impairments and those who use motorized wheelchairs and service animals. The designers of new buildings and renovated facilities are instructed to acknowledge a wide range of issues to ensure that the campus serves the entire community of stakeholders.

Handicapped accessibility is a challenge on Central Campus due to the intense changes in topography, particularly along north-south routes. As the principal pedestrian routes across the campus, both the Adams Street and Fairfax Street corridors are required to be compliant with the Americans with Disabilities Act, along with several other primary routes.

At the southern upper end of the Adams Street Corridor, there are accessible parking spaces closest to the south main entry of Kyle Hall. The building’s internal accessible routes then allow for negotiation of the grade change from the south parking area to the southern head of the Adams Street Corridor. Once this grade is achieved, it is possible to utilize

accessible routes to the north edge of the Main Quad. At the lower northern end of Adams Street Corridor, accessibility is achieved with compliant ramps and paths at the east side of McGuffey Hall with access to the Covington Center for Visual and Performing Arts building through the adjacent Porterfield Hall. On the north edge of Central Campus, the primary pedestrian paths parallel to East Main Street are accessible, along their full length. Internal accessible routes within all buildings, along the north edge of Central Campus, allow for negotiation of the remaining grade change down to East Main Street.

TRANSIT SYSTEM

The Radford Transit system currently has multiple routes that provide ridership opportunities for various University riders. In general, these routes travel the perimeter of Central Campus along Tyler Avenue, Jefferson Street and East Main Street; connect across University Drive to serve the Athletics/Recreation Campus; and travel along East Main Street to serve the Student Outdoor Recreation Center and adjacent housing. There are numerous stops on both campuses with time-checks at the stops at Waldron Hall, Lot A and Fairfax Street. Radford Transit also has routes that connect University riders to Fairlawn, Christiansburg, Blacksburg and the Roanoke Valley.

The University works closely with Radford Transit to ensure adequate coverage for riders, while also imposing minimal disruptions to pedestrian patterns. It appears there might be opportunities to improve the timeliness and frequency of numerous routes, including increasing the frequency and number of stops along the Central Campus perimeter.



Pedestrian Walking Distances

PEDESTRIAN WAYS

On the Central Campus, the primary pedestrian paths are the Adams Street Corridor running north-south and the Fairfax Street east-west central pedestrian corridor. Other significant pedestrian routes extend across the campus, including the path radiating from Muse Hall on the north to Heth Hall and then on to Kyle Hall on the south; the north-south path through Moffett Quad across Fairfax Street to Muse Hall; the east-west route from the Hurlburt Student Center through the Governor’s Quad to Whitt Hall; and the east-west route running from Jefferson Street along the old Downey Street Corridor between the Student Recreation and Wellness Center and the Covington Center for Visual and Performing Arts and through the Main Quad to Muse Hall.

On the Athletics/Recreation Campus along the New River, the primary pedestrian route extends from Cupp Stadium eastward to the parking areas at the eastern periphery of the space, connecting playing fields and indoor sports facilities. Secondary

connections are also throughout this area. The only existing pedestrian connection between the Central Campus and Athletics/Recreation Campus occurs at the University Drive Bridge.

BIKEWAYS

Existing bike paths run along Tyler Avenue and Jefferson Street and a portion of East Main Street, and bike racks are located throughout Central Campus. The City of Radford has modified several adjacent streets with bike lanes, including Tyler Avenue and East Main Street.

NEW RIVER ACCESS AND GREENWAYS

The New River is directly adjacent to the Athletics/Recreation Campus with boat access points at several locations near University property. Also, an extensive partially developed greenway/trail system parallels the river and extends to Bisset Park and other City of Radford facilities to the west of campus.

VEHICULAR ACCESS AND PARKING

The main traffic routes, adjacent to campus, include Jefferson Street, East Main Street, Tyler Avenue and University Drive with building and parking access primarily from these streets. Fairfax Street pierces Central Campus from both Tyler Avenue and Jefferson Street to Heth Plaza in the center of campus, creating the greatest potential for pedestrian/vehicle interactions. Given the addition

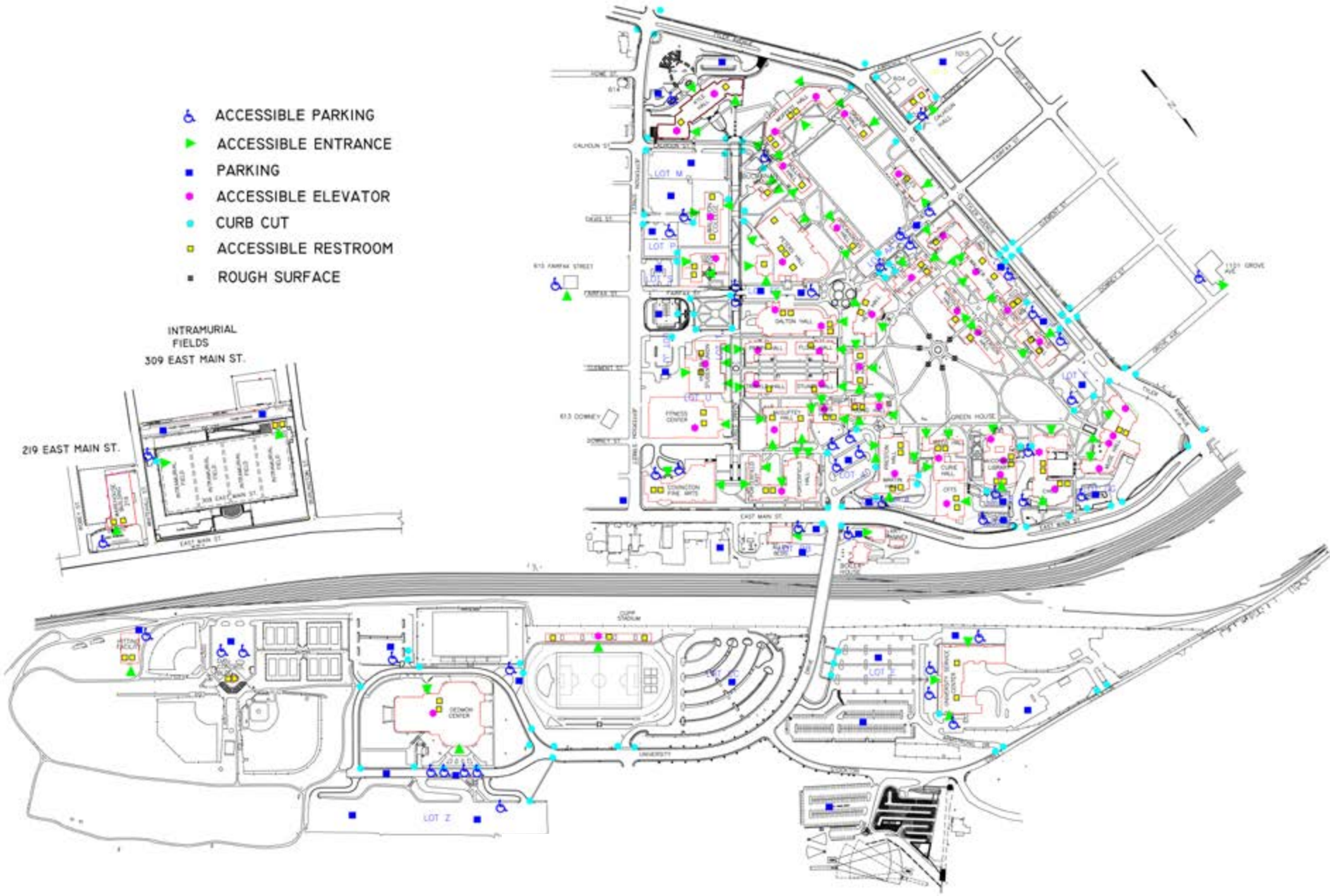
of substantial occupancy footprint over the last decade and associated displacement of parking, the University undertook an overall review of the usages and efficiencies of the current parking situation. The University engaged a nationally recognized parking and planning firm to engage in this review. The results of this review provide the following observations.

- In general, the University parking and transportation system appears to be well organized and efficiently operated.
- Based on peer comparisons, parking count survey and total permits, there are adequate available total parking spaces (71% filled and 29% available at time of survey.)
- The condition and capacities of existing parking lots are in good condition overall.
- Current parking conditions are less than optimal, mainly with respect to the distribution, allocation and location of spaces.
- Certain parking areas, while conveniently located adjacent to various campus buildings, are not well designed for overall circulation purposes.
- Many of these parking areas have been “organically” developed through the years as new buildings, renovations and pedestrian pathways have evolved.
- The mix of Faculty/Staff and Commuter parking areas needs to be reviewed for appropriateness, along with the potential to add spaces around the perimeter of campus.

EMERGENCY DEVICES



CAMPUS ACCESSIBILITY



CAMPUS PARKING LOTS AND TRAFFIC CIRCULATION



Strategic Planning and Future Needs

The 2018-2023 Strategic Plan requires the Master Plan to develop the University’s physical assets to support the six stated areas of emphasis.

- Academic Excellence and Research
- Brand Identity
- Economic Development and Community Partnerships
- Philanthropic Giving and Alumni Engagement
- Strategic Enrollment Growth
- Student Success

STAKEHOLDER INPUT

The Committee was organized into subcommittees to concentrate on several specific areas of the Master Plan.

- Academics
- Student Activities and Services
- Land Use
- Transportation
- Infrastructure and Sustainability
- Public-Private and Community

Each subcommittee met several times to identify specific issues and needs in their particular area of interest and finalize recommendations based on these issues and needs. All of this information was

used to bring focus to specific themes and areas of concentration to be incorporated into the Master Plan.

The Committee solicited input from a variety of campus stakeholders using various methods and in a number of different venues, including presentations to the University’s Leadership Council; the Faculty Senate; the Administrative and Professional Faculty Senate; Staff Senate; the Student Government Association; the Academic Affairs Leadership Team; and the Alumni Association Board of Directors. The Committee also held multiple campus open forums with students, faculty and staff.

The Committee administered a survey with Division of Academic Affairs faculty and staff concerning the overall campus learning environment and administered a separate survey with students concerning overall instructional spaces and related technology.

- Classrooms/Labs – Comments on the number and sizes, scheduling, furnishings, discipline-specific uses and IT/AV capabilities
- Student Spaces – Comments on the number, locations, scheduling, furnishings, IT/AV capabilities and access for commuters
- Event Spaces – Comments on the number and sizes



PROJECTED ENROLLMENT GROWTH

The 2018-2023 Strategic Plan indicates the following projected enrollments by Fall 2023.

- Undergraduate Students – 7,870
- Graduate Students – 1,371
- Competency-Based Education Students – 2,125
- Total Students – 11,366

It is anticipated that the Central Campus student population will be approximately 8,500 with the majority of the remaining growth occurring in Roanoke at RUC or in CBE-based programs.

COMPARATIVE SPACE ANALYSIS

Overall

Based on the current space inventory and existing needs along with the stated growth projections, the overall University footprint when viewed in terms of square feet of usable space per student is slightly less than peer institutions. This would indicate that the campus, as a whole, is relatively efficient with respect to space usage.

Classrooms

Based on the current classroom inventory, classroom space is strained during the peak delivery times between 9 a.m. and 3 p.m. Monday through Thursday. The distribution of various classroom sizes also does not appear to match the needs in some instances.

Both the student and faculty surveys indicated issues with various aspects of class scheduling, existing furniture/furnishings and IT/AV delivery tools.

Class Labs

Based on the current class labs inventory, class lab space is somewhat underutilized during normal delivery times. The distribution of various class lab sizes and attributes also does not match the needs in some instances.

As with classrooms, both the student and faculty surveys indicated issues with various aspects of class lab scheduling, existing furniture/furnishings and IT/AV delivery tools.

Offices and Support Spaces

Based on the current academic office and support space inventory, office space appears in general to be adequate. The distribution of office sizes and support spaces also does not appear to match the needs in some instances.

ACADEMIC PROGRAM GROWTH

New and Expanded On-Campus Programs

- Waldron College is nearly at capacity in its current locations, so it is likely that up-fits and renovation projects will be necessary to continue to accommodate the students in these buildings. Further, the Radford University Carilion merger likely will drive additional needs for Waldron College.
- Several programs in the CEHD will require some additional footprint. One example is the development of the Tourism and Special Events Resource Lab, which will require space and be led by faculty and staff from the CEHD. The Health and Human Performance program will also need extended research and training space, and the Nutrition and Dietetic Laboratory will need to be relocated from McGuffey Hall.
- The Artis College will need to accommodate the requirement to supply individuals with specific education and skillsets for the Commonwealth of Virginia’s “Tech Talent Pipeline” over the next 20 years, mostly in the Information Technology and Cyber Security Computer Science areas. The Artis College will also need to establish the related Security Studies Initiative and the Geohazards and Unmanned Systems Research Center.

- The Criminal Justice and Forensics Studies programs in CHBS are anticipated to continue their recent growth.
- Space for the Venture Lab was identified as a need.
- The existing Center for Interprofessional Education and Practice (CIPEP) is scheduled to expand.
- The Vinod Chachra IMPACT Lab anticipates continued growth, but it is preferable that this program remain in leased off-campus space to allow ease of expansion/contraction in the future.

New and Expanded Off-Campus Programs

- RUC is located in space leased from Carilion Clinic in Carilion Roanoke Community Hospital (CRCH), and is likely to remain in the current space at present; however, it is projected that the space in the RUC facility will need to expand as programs grow. Further footprint development in Roanoke is also probable as the current programs evolve and new programs are established to meet the needs of the region.
- To provide greater support for a number of programs in Roanoke, it is anticipated that the leased space in the RHEC may need to grow. Although the existing Clinical Simulation Center was recently expanded, it is expected that it may need to be expanded again going forward, given the growth of related activities in the Roanoke region.

- The Appalachian Community Outreach Institute is not projected to need additional leased space in the SWVAHEC for current and envisioned future programs, although the current space could be better utilized.

STUDENT PROGRAM GROWTH

New and Expanded Student Programs

- Develop the overall Greek Life and other thematic communities: Panhellenic Council (PHC), Interfraternity Council (IFC) and National Pan-Hellenic Council (NPHC). This could include certain outdoor areas of campus and potential alignment with identified contiguous off-campus housing in coordination with the City of Radford.
- Enhance student and visitor amenities, potentially including a welcome center, student organizations space, event space, expanded advising space and other activities.

SPACE NEEDS AND FACILITIES PROJECTIONS

Academic Spaces

- Waldron College anticipates future growth to meet the needs of the region across multiple locations.
- The CEHD has begun its Ed.D program, which will require additional faculty space estimated at 1,700 square feet.
- Artis College anticipates growth in the Information Technology Cyber Security Computer Science programs for the Tech Talent Pipeline, estimated at 2,500 square feet for additional faculty offices and support space.

- The construction has been completed for the Venture Lab. The space includes an office, student collaborative and virtual maker spaces, conference and pitch rooms and other support spaces. The total square footage is 4,500 square feet.
- The existing Center for Interprofessional Education and Practice (CIPEP) requires an additional 1,300 square feet for clinical, meeting and office spaces.

Classroom and Class Lab Enhancements

Current modern academic building design incorporates flexible instructional spaces to allow multiple uses and delivery methods. Examples include multiple displays and white boards, movable furniture with ample power and data capabilities. A number of factors, including changing instructional delivery methods, such as “flipped” classrooms and active learning environments, are driving this trend.

Amplifying this trend, the University plans to implement a revised General Education program. Students will choose degree programs (majors and minors) to fulfill four areas of knowledge and complete general education (the REAL areas),

- Scientific and Quantitative REASONING
- Humanistic or Artistic EXPRESSION
- Cultural or Behavioral ANALYSIS
- Applied LEARNING

The revised General Education REAL model builds on the idea that students can pursue their goals and engage in exploration and learning in many ways and in all departments. The REAL model recognizes that degree programs build competencies in the areas students need for lifelong learning and

success and allows students to cross-credit those competencies with general education areas.

From a footprint standpoint, while the REAL model may ultimately influence the required number of classrooms across campus, the more profound impact is the requirement for classrooms and other learning spaces to be as flexible as possible to allow use as multi- and cross-disciplinary learning environments.

A final factor is the requirement of the current higher education environment to maximize the utilization of the campus built environment, in order to ensure the most cost-effective campus delivery of education. This requires a culture of shared spaces and cross-disciplinary delivery, along with proactive scheduling techniques.

To meet all these ongoing trends along with the certainty that the academic environment will continue to evolve, the University will need to undertake a systematic regular review of the basic instructional spaces across campus. These regular reviews will help ensure that these current trends inform consistent upgrades to furniture, furnishings and IT/AV delivery tools and methods, along with purposeful scheduling for maximum space usage.

Collaboration and Integration Spaces

Current modern campus building and space design also includes purposeful identification of collaboration spaces adjacent to more traditional classroom/laboratory and academic spaces, recognizing changing student expectations for the ability to study and work effectively in a variety of settings and locations.

Due to the large amount of new academic space provided over the last decade or so wherein the design incorporated these recent trends, there already exists a fair amount of collaborative study space across campus. There are also numerous

dining options across campus, which also include spaces to be used for informal study environments. Further, the recent residential hall renovations have included purposeful spaces designated for lounge/study activities.

However, there are a few areas of campus where it is more difficult for students to find these collaborative learning spaces. In particular, the academic areas in Peters, Waldron and Cook Halls are lacking in these types of spaces. As new or repurposed footprints are brought online, these existing buildings should be explored for the potential addition of collaborative spaces. An additional enhancement of these types of campus spaces could include extended hours of operation, particularly for buildings with large concentrations of student study spaces, such as the CHBS Building, Kyle Hall, CFTS and McConnell Library.

Residential Spaces

Based on the current available beds in on-campus residence halls and the recent leasing of approximately 600 new beds in apartments located off-campus and adjacent to Central Campus bringing the total to approximately 800 leased off-campus beds, no additional new on-campus beds have been identified in the next 10 years. However, the University seeks ways to better integrate academics in residence halls, such as living-learning communities, advising space, faculty offices and classrooms.

The University will prepare a plan to renovate the recently acquired off-campus units to be comparable to the on-campus housing. In some instances, this will only require improvements to certain finishes, and in other instances, this will require significant renovations to basic building systems and components. The completed renovations of all units will require multiple years.

The University will also need to identify specific on-campus and off-campus locations for veterans, students and married students and their families, as these demographics are targeted for growth in the future. Potential Greek-life housing “communities” will also be identified for residential users, along with potential extensions of on-campus living-learning communities.

The University will also provide housing to support students attending New River Community College and living in on-campus housing in the “Bridge to RU” program. This program is designed to facilitate the retention of students early in their academic careers and ultimately transferring to Radford University.

Temporary beds may be required during the times that residence halls are being renovated, depending on the timing and duration of the renovations. The recently leased apartments will also be reviewed with respect to their condition and suitability for future occupancy, along with their use for alternate University purposes.

Student Support and Recreation Spaces

Additional student collaborative and study spaces were identified for various parts of campus. While recent construction projects and renovations typically incorporate these student-centered spaces, older buildings are inadequate in this regard.

Students and their parents currently desire sophisticated engagement, support staff and facilities during their entire University experience. While Heth Hall, Russell Hall and Whitt Hall currently provide many of these functions, there are other related activities and departments that could benefit from being collected in a single location. This might include services for international students, transfer students, overall academic advising, health and emotional wellness

support and student orientation activities, among others.

Students and their parents also desire expanded hotel, retail and dining opportunities during their University experience. The on-campus food options require regular “refreshes” to ensure the University stays abreast of changing taste trends. There is also currently a shortage of food and shopping options near campus, and there is not a centrally recognized grouping of establishments to act as the campus “main street” as exists in most college towns.

Further, it is desired to better connect students and others to the New River for both instructional and public uses. To enhance this connection, it is proposed to potentially move the RU Able equipment and program to campus from its current off-campus leased space location. In conjunction with RU Outdoors and the Tourism and Special Events Resource Lab, these programs will enhance and facilitate greater connectivity to the overall significant assets made available by the New River.

Athletics Spaces

The recent Athletics Master Plan identified the top two priorities for facility upgrades: renovation/repurposing of the Dedmon Center and a ticket/concessions facility for the baseball/softball/tennis outdoor complex. Other projects were also identified as part of the Athletics Master Plan, with available funding.

Administrative and Support Spaces

Currently, there are several Administrative Services and Public Safety departments that are housed in separate buildings both on-campus and adjacent to campus, which creates difficulty in communications and coordination of these functions. The existing buildings housing these functions are also not entirely suited for their required purpose, and a number of staff departments are actually housed in leased space.

There is also a shortage of available event space across campus to house various University functions and events. Kyle Hall and Muse Hall include spaces that can readily serve these purposes, but other spaces in Cook and Peters Halls that currently serve these purposes are less than optimal.

OVERALL INFRASTRUCTURE NEEDS

Sustainability

The Commonwealth of Virginia has promulgated a number of Executive Orders and other directives to promote sustainability at all state agencies. The University will need to continue to monitor the impacts of these initiatives and adjust activities and priorities accordingly. We will also need to continue to explore the feasibility and cost-effectiveness of potential alternative power sources and renewable energies and identify ways to reduce consumption of power, water and other natural resources.

Electrical

Based on analysis of the existing medium-voltage electrical campus loop supply system and the Radford Electric Department substation performance, the current infrastructure appears capable of handling the identified potential added power loads. Additional electrical secondary service fed from the loops will be required to provide power for potential added building footprint on Central Campus. Additional sources of emergency power are also desirable to provide power in certain buildings when necessary.

Steam

Based on the capacity of the existing boiler plant steam supply system, the current infrastructure appears capable of handling the identified potential added steam loads. Additional steam secondary service will be required to provide hot water for any proposed added building footprint.

Stormwater

Based on analysis of the existing stormwater system and components, several areas for improved drainage have been identified across campus. Additional stormwater management facilities will also be required to offset the impervious surfaces that are created by any proposed added building footprint. The University must also adhere to its own Municipal Separate Storm Sewer Systems (MS4) General Permit.

Water

Based on the existing service provided by the City of Radford’s water supply system, the current infrastructure appears capable of handling the identified potential added water loads. However, the locations and conditions of many existing components need to be documented and assessed

for potential replacements. Additional water service lines will be required to provide domestic and fire suppression water for any proposed added building footprint.

Sanitary Sewer

Based on the existing service provided by the City of Radford’s sanitary sewer system, the current infrastructure appears to be capable of handling the identified potential added sanitary drainage loads. Additional sanitary sewer drain lines will be required to provide capacity for any proposed added building footprint.

Chilled Water

Additional chilled water service, either as part of a loop or independently, will be required to provide cooling water for any proposed added building footprint.

Information Technology

Fundamentally, today’s stakeholders rely more heavily on the provision and support for technology systems and components than in the past. The ability to access and share electronic information and take advantage of evolving technology in both academic and administrative areas are critical components of current campus environments. To this end, additional data services will be required to provide capacity for any proposed added building footprint. Existing buildings will also likely require additional capacity to support new needs, as will the overall campus wireless network to support ever-expanding bandwidth requirements. In addition, the recently acquired off-campus housing will require the addition of cable, phone and wireless services.



MULTIMODAL CAMPUS ACCESS NEEDS

Security and Emergency Systems and Access

Additional security systems infrastructure and equipment will be required to provide capacity for any proposed added building footprint. Existing buildings may also require additional capacity to support new security and emergency system needs, such as door access control and exterior lighting, as will overall existing outdoor campus spaces.

Accessibility

New building footprints will need to be provided with accessible routes as necessary, and existing routes will need to be preserved and even enhanced where feasible.

Transit System

The Radford Transit system needs to be enhanced to provide more efficient service to the most heavily populated areas of campus, particularly around the campus perimeter. The current routes travel through multiple areas of both Central Campus and the Athletics/Recreation Campus, navigating many separate locations, which tends to make the overall circuit lengthy. The routes also do not provide adequate and timely coverage of the remote parking areas.

The routes also include an on-campus “hub” in front of Preston Hall in Lot A. This hub provides drivers with a consistent location for time checks and restroom facilities. Unfortunately, this location is a very heavily populated and high traffic area and further is adjacent to the main administrative functions in Martin Hall. While some of these hub functions have already been relocated to the bus stop at Fairfax Street and Hurlburt Student Center, it is desired to completely remove transit bus traffic from Lot A.

Pedestrian Ways

Pedestrian routes will need to be coordinated with new building footprints, and existing routes need to be enhanced where feasible. Pedestrian routes will need to be coordinated with the newly-acquired, off-campus housing where possible, in concert with the City of Radford. An additional issue requiring attention for pedestrian ways is shared usage with Facilities maintenance vehicles, particularly service carts.

Bikeways

New proposed bikeways need to be coordinated with pedestrian and vehicular routes as necessary.

Greenways

The existing walking trails, along the New River, need to be coordinated with the adjacent Greenway, offering connectivity to Bisset Park and other amenities in these areas.

Parking

The existing parking locations and policies need to be revised to accommodate new commuter patterns, new building footprints and allocation among various user groups. Lots have grown organically, leading to poor overall circulation patterns and misaligned user groups. The remote lots need to be better connected to campus by transit and pedestrian ways.

Signage

The existing major signage locations need to be expanded to include additional wayfinding for visitors to campus, particularly to the most frequently visited buildings. This signage can also serve to enhance and reinforce the branding of the University and the overall campus environment.

Implementation Plan

The Master Plan is organized around multiple overarching areas of emphasis.

- **Construct** — New capital projects
- **Renovate** — Multiple existing major campus buildings
- **Repurpose** — Numerous existing building occupancies
- **Evaluate and Upfit** — Existing space usages
- **Enhance** — Campus infrastructure and brand identity
- **Create** — New campuses and partnerships

PROPOSED NEW BUILDING LOCATIONS

Central Campus

The number of available sites for new buildings on Central Campus is limited, particularly those sites that do not negatively impact the current Central Campus view sheds and pedestrian and traffic patterns. However, there are a number of potential future building footprint sites.

- The location of existing Parking Lot F between Muse and Tyler Halls: This location has been identified in a number of previous plans and would provide an excellent completion of the perimeter buildings surrounding the original triangular-shaped campus. This location is near both academic and housing buildings, so a new building here could support any number of University needs.

- The locations of existing Parking Lots AA and JJ between the Hurlburt Student Center and Cook Hall: These two separate sites have been identified as a potential location for a future addition to the Hurlburt Student Center, but could also support other occupant uses.
- The location of existing Parking Lot M between Waldron and Kyle Halls: This location is mostly near other academic buildings, but could support a number of University needs.
- The location of existing Buchanan House adjacent to Waldron and Peters Halls: The demolition of this existing building, a small and inefficient building, which used to serve as the President’s residence, would not negatively impact the overall campus, and the location occupies a campus footprint, which could be used much more effectively as it is near both academic and student housing buildings.

Significant emphasis needs to be placed on ensuring that any new buildings on the Central Campus adhere to the established aesthetic campus brand, massing, materials and color palette, and that the buildings respond to current and future pedestrian patterns and historic and iconic viewsheds. Particular attention also needs to be given to the areas indicated in the historic resources survey as eligible for listing.

Athletics/Recreation Campus

There are several available sites for new buildings on Athletics/Recreation Campus, mostly located to support Athletics.

- The location of existing Parking Lot BF between the baseball and softball fields: This location has been identified in the Athletics Master Plan as the location of the ticketing/concession/restroom facility.
- The location of existing Parking Lot DC adjacent to the tennis courts: This location has been identified in the Athletics Master Plan as the location of the indoor tennis facility.
- The location of existing Parking Lot E adjacent to the Armstrong Complex: This location could support a number of University administrative functions, given its proximity to the other administrative functions already housed in the Armstrong Complex.
- The location of existing Parking Lot U and FF near the Armstrong Complex: This location was identified in earlier master plans as a potential location for a new Convocation Center.
- The area near the New River and beyond the Athletics facilities: This location might serve well for the relocated RU Able program and equipment.

Off-Campus

The University owns several parcels adjacent to Central Campus.

- The location of the existing building at 615 Fairfax Street: While this site is conveniently located along Jefferson Street, it is not very big and could only support a fairly small building. It may be better utilized as a parking lot.
- The locations of Parking Lots S and Y east of Jefferson Street: Again, while these sites are conveniently located along Jefferson Street, neither site is very big and could only support fairly small buildings. These may be better maintained as parking lots.
- The locations of Parking Lots K and L between East Main Street and the railroad tracks: These sites are reasonably conveniently located, but are adjacent to privately held properties. These may be better maintained as parking lots.
- The existing building at 1101 Grove Avenue: Printing Services is scheduled to be moved, which would leave this building/site available for another use. Given its location several blocks from campus, its potential uses, as it exists today, are somewhat limited. The most likely use would be to renovate the building for an administrative unit or other organization that is not required to be on campus; in the near term, however, its use as swing space for offices or labs could be valuable. There would also be an opportunity to demolish the existing structure and construct a new building in its place. This would provide an opportunity for additional building footprint on currently owned property.



- The location of the current Student Outdoor Recreation Center: This location would be well suited for a new Convocation Center, given its location and adjacent parking. This would require the relocation of the current outdoor recreation facilities.

The Foundation owns parcels adjacent to campus, including the recently-acquired apartments.

- The parcel bounded by Calhoun Street, Lawrence Street and Tyler Avenue: This site is directly across Tyler Avenue from the Moffett Quad and is large enough to potentially support multiple buildings.

- The parcels at the corner of Jefferson and East Main Streets: While there are several existing buildings on this site, it provides a potentially attractive location for a building or parking given its access to both East Main and Jefferson Streets.

- The parcels at the corner of Tyler Avenue and Jefferson Street: This site provides a potentially attractive location for a welcome center or other building given its access to both Tyler Avenue and Jefferson Street and its impressive view of campus. There are multiple existing buildings on this site with multiple current leases, which would impact the potential timing of its use.



- Numerous locations of the newly-acquired housing units might offer alternate effective uses for other building types or parking.

The City of Radford owns property adjacent to the Foundation-owned property at the Selu Conservancy. The Selu land-use plan is currently being updated and generally indicates that current University program activities at Selu are being met by the existing facilities; however, there are plans to continue to increase the amount of academic and related activities at Selu. There are no plans to expand the property boundaries at this time; however, given the City of Radford has no plans to utilize this adjacent property, there may be value in continuing

discussions between the Foundation and the City of Radford concerning this property.

Given the current Central Campus footprint and the locations of newly-acquired, off-campus housing, it is also advisable for the University to continue to review the opportunity for acquisition of adjacent properties, particularly including along Tyler Avenue, Jefferson Street and East Main Street. Private owners have multiple commercial and residential properties, along the Tyler Avenue and East Main Street corridors, that might be developed as public-private partnerships with the University. In particular, retail establishments for food, clothing and light grocery could serve both the City of Radford and the University in these commercial-zoned districts.

The RUC merger, in conjunction with the Clinical Simulation Center and other leased spaces in the RHEC, uniquely positions the University within the developing Innovation Corridor and Academic Health Center, along the South Jefferson Street Corridor in downtown Roanoke. Future developments, along this corridor, offer several opportunities for potential building footprints, which would need to be coordinated with multiple partners, including Carilion Clinic, Virginia Tech and the City of Roanoke. Examples would include academic, teaching and research space, but might also include student services uses, such as recreation and wellness, dining, residential and parking.



CAIC on East Main Street Looking South



CAIC Hub



CAIC View of Courtyard

PROPOSED ACADEMIC FACILITIES ACTIONS AND PHASING

In order to achieve the stated goals, several are proposed.

- The current Six-Year Capital Plan proposes a new building for the departments of CVPA, along with additional clinic space for Waldron College. The Center for Adaptive Innovation and Creativity (CAIC) will replace both the existing Porterfield Hall and the existing McGuffey Hall, which currently house several CVPA departments. These buildings are among the least energy-efficient on campus and are in dire need of replacement with many of the associated existing building systems and components at their end-of-life and without up-to-date safety, security and accessibility capabilities. This building also provides an increased emphasis on the campus dynamic for cross-disciplinary academic endeavors, particularly with respect to synergy between the arts and health sciences. The building will house clinical spaces for community health care, reinforcing ties to the surrounding area. The building will also include space for the expanded Center for Interprofessional Education and Practice (CIPEP) suite. The new CAIC will be built on approximately the same footprint on-campus as these two existing buildings. The Commonwealth of Virginia has approved the Detailed Planning design documents for the project, along with all other required technical approvals from the Department of Environmental Quality and the Art and Architectural Review Board. The Capital Budget Request for the project has been submitted for approval by the General Assembly.

- The current Six-Year Capital Plan also includes a proposed renovation and partial repurposing of McConnell Library. This existing building was built in three separate phases during the 1930s, 1960s and 1990s. A comprehensive renovation would transform McConnell Library into a 21st century facility supporting a wide variety of individual and group study spaces; state-of-the-art learning technologies; compact storage for print materials; flexible active learning spaces; and spaces to support the creation of new knowledge, creative scholarship, new media (audio and video studios, motion capture studio, 3D printing) and event and instructional spaces. The renovated building would also house offices for units, such as the Center for Innovative Teaching and Learning, Faculty Development and the Harvey Knowledge Center, that offer coaching, peer tutoring and mentoring for both students and faculty/staff. The Library Learning Commons should evolve from a combination of a library and computer lab into a full-service learning, research and project space, designed for the future with an open, flexible layout throughout the building and including a video conference room, digital media creation and editing tools, writing center, equipment checkout, a large multipurpose meeting and event space and numerous group study rooms, which can be reserved online. The Library Learning Commons should become an active, comfortable space where students can discover, create and collaborate with peers, a space that inspires them to be more productive and successful.



Previous studies indicated the relocation of the administrative offices; the addition of compact storage units to replace conventional stacks; the conversion of existing stack spaces to flexible study and workspaces; the capturing of the existing inaccessible courtyard as usable space; and the introduction of more public gallery and cafe spaces. The renovation would also contain a proposed consolidated Archives and Special Collections that protects the existing collections, as well as meets the standards set forth in the ASHRAE Handbook — HVAC Applications for Museums, Galleries, Archives and Libraries.



McConnell Library Proposed Third Floor

The library is also among the least energy-efficient buildings on-campus and in dire need of basic building systems replacement. It is likely that the state will be interested in funding these types of systems renovations, particularly those that improve sustainability and security, as well as repurposing spaces to optimize campus engagement and usage. The renovation would replace lighting throughout the building to meet library lighting standards, while also maximizing energy efficiency through the use of LED fixtures and would also replace all end-of-life controls and switches for efficient operations.

Given its location facing the Main Quad and within the potential Historic District, the renovation of the 1930s facade will pay particular attention to the original design and construction to preserve the building's historic integrity. Libraries are changing rapidly, in both form and function, and the recent changes in usage in McConnell Library acknowledge the need to revise library spaces to keep them current. Library staff is currently preparing the Strategic Plan for 2020 and will be undertaking a visioning process to help inform future plans for the library. A pre-planning study is underway to finalize the

programmatic elements of the renovation and repurposing of the Library. All of these elements — previous studies, strategic planning and the visioning process — will be folded into the proposed capital project planning and execution to ensure the library will remain a central part of the overall student experience.

- The current Six-Year Capital Plan also includes a proposed renovation of Walker Hall. This existing building was built in two separate phases and is in need of basic building systems replacement, along with reprogramming of the existing space. This renovation could possibly occur near the end of the ten-year Master Plan window.
- While not currently included in the Six-Year Capital Plan, Peters and Waldron Halls are both approaching an age that requires replacement of certain basic building systems and components and updating and refreshing of the spaces.
- There are preliminary plans to provide programmatic expansion through the selective repurposing of a number of existing campus spaces upon completion of the current Reed and Curie Halls renovation project and the future CAIC project,
 - Cook Hall spaces vacated by the Artis College will be repurposed to support a portion of the identified Waldron College and CEHD needs.
 - Davis Hall spaces vacated by the Artis College will be repurposed to provide additional faculty offices, classroom/labs or other academic spaces, potentially to serve the required expansion of the Information Technology and Cyber Security

Computer Science programs for the Tech Talent Pipeline. Certain building systems and components in Davis Hall will also be targeted for upgrades through Maintenance Reserve funding projects.

- Walker Hall vacated swing spaces will be repurposed to consolidate most Information Technology staff, along with up-fitting space for several general classrooms/labs.
- McConnell Library vacated swing spaces will be repurposed as part of the McConnell Library's capital renovation project.
- Peters Hall spaces vacated by the CVPA Department of Dance will be repurposed for CEHD Department of Health and Human Performance spaces, including the relocated Nutrition and Dietetic Laboratory from McGuffey Hall.
- The Venture Lab has been accommodated on the first floor of Kyle Hall. The location was specifically selected to allow direct controlled access with the ability to accommodate non-regular-hours occupancy.
- The creation of "ACCESS Radford" identified in the Strategic Plan will require a small number of dedicated offices and can likely be accommodated by re-assignment of several existing offices and support spaces made available after the Reed and Curie Halls and CAIC projects.
- The Security Studies Initiative and the Geohazards and Unmanned Systems Research Center are being incorporated into the current Reed and Curie Halls renovation project.

- Evaluate campus classrooms, class labs and other basic instructional spaces with respect to continuing to upgrade technology, furniture and furnishings. Evaluations should occur on an annual basis within the duration of the Master Plan, and the evaluation teams will include members of Academic Affairs, Enrollment Management, Information Technology and Facilities Management. Improvements could include movable desks and tables to facilitate more interactive learning environments; additional white boards and smart boards; brighter and more resolute projection systems; simplified and updated control systems; appropriate interface technology for mobile and other display devices to promote material delivery; access to new and consistent 2-d and 3-d printing capabilities; and synchronous online delivery capabilities to allow concurrent on-site and off-site instruction.
- Evaluate campus classrooms, class labs and other basic instructional spaces with respect to scheduling and cross-discipline collaboration, efficiency regarding the use of spaces and in particular with respect to the "REAL" model for General Education. Evaluations should occur on an annual basis within the duration of the Master Plan, and the evaluation teams will include members of Academic Affairs, Enrollment Management, Conference Services and Facilities Management. The reviews should facilitate working towards a culture of sharing space and maximizing utilization for all instructional spaces, along with providing increased student exposure to additional areas of study.

- As spaces are repurposed across campus for various identified initiatives, continue to identify existing spaces that can be converted into collaborative study spaces, particularly in the older academic buildings on campus.
- The University will also identify specific existing buildings, or portions of existing buildings, which might be candidates for extended hours of operations. Opportunities might include the newer footprint buildings including the CHBS Building, Kyle Hall and the CFTS, along with the proposed CAIC. The identification and implementation of additional hours of operation will be reviewed and approved by the Divisions of Academic Affairs and Finance and Administration.
- The College of Graduate Studies and Research is currently located in the Buchanan House. This academic unit needs spaces that are more efficient and more central to campus and portray more business-professional office environments. It will be necessary to undertake a renovation of the Buchanan House, or possibly relocation of staff to another location, to accommodate these needs. In the final analysis, the Buchanan House has limited effectiveness given its inefficient configuration with limited ability for flexible future organizational occupant use, and its footprint location could better serve other future needs given its location near academic and residential buildings. The available site footprint could easily support a building with 15,000 to 20,000 square feet, while the Buchanan House only contains approximately 5,500 square feet. Its use as possible swing space is helpful, and after that need is met, it might be best to demolish the structure to capture the site for more efficient use of valuable campus real estate as needs arise.

- The Vinod Chachra IMPACT Lab is currently housed off-campus in the Corporate Park. Given the online nature of the program, the various content delivery schedules and the variable volume of coursework, it is appropriate to maintain this program in off-campus leased space. This allows the program to scale up or down rather quickly as footprint needs adjust. The Corporate Park currently provides adequate space for this unit, and the spaces have been customized for IMPACT's use. Although the building was not originally designed for this type of academic use, there are certain issues with the overall condition of the building and associated deferred maintenance. While the current occupancy in the building will allow additional future maintenance investments, alternate locations will be reviewed for this program as the needs change and space requirements expand.
- The RUC merger provides significant opportunities to expand the offerings in the RUC CRCH location. Initially, the University will continue to lease the same facility footprint from Carilion Clinic previously leased by Jefferson College of Health Sciences, as this space appears sufficient for the envisioned programs. As RUC develops, the current footprint will be evaluated for the appropriateness of the size, configuration and equipment and furnishings for the future. Further, the opportunity exists for the University to engage more deeply in the developing Academic Health Center and Innovation Corridor in Roanoke, along with Carilion Clinic and Virginia Tech. This could potentially lead to the development of a variety of new properties with these partners, through a number of potential delivery methods.



- RHEC also supports a number of academic programs currently offered in the Roanoke location. These include several programs for the Waldron College, including the Clinical Simulation Center, along with MBA, Criminal Justice, Social Work and Education programs. An overall facility review will be undertaken for the RHEC to investigate potential synergies of current spaces and programs and anticipate future growth potential, particularly in support of RUC.
- SWVAHEC currently offers a number of academic opportunities, including the Appalachian Community Outreach Institute. It is currently envisioned that the size of the space in SWVAHEC is sufficient for the foreseeable future, but a review should be undertaken to confirm the effectiveness of the space.

PROPOSED STUDENT FACILITIES ACTIONS AND PHASING

Proposed Housing Actions and Phasing

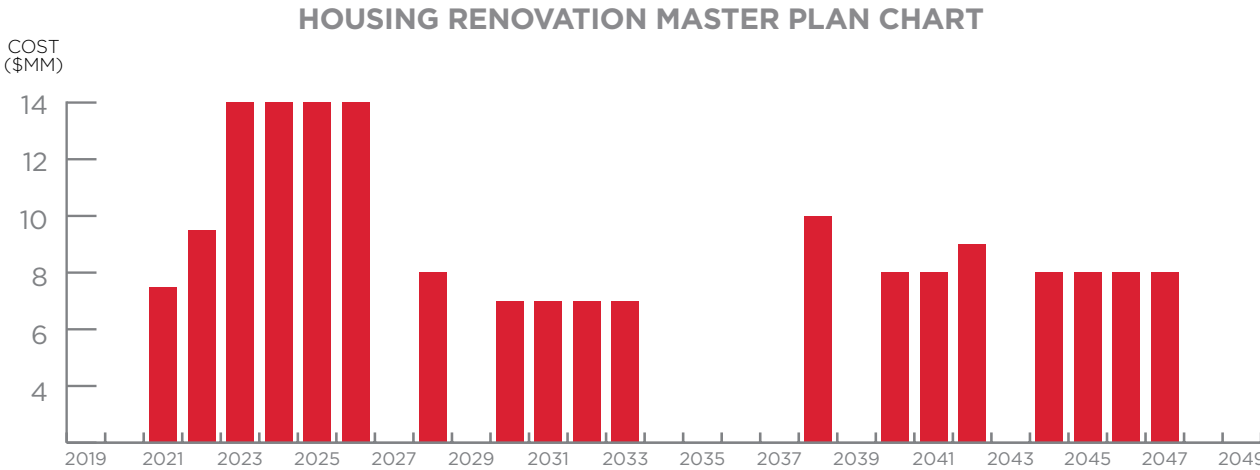
In order to achieve the stated goals, the following actions are proposed.

- The current Six-Year Capital Plan includes proposed renovations of Norwood, Tyler and Muse Halls over approximately the next eight years. Norwood and Tyler Halls will include the same level of renovation as the most recent residence hall renovations, including air-conditioning and single bathrooms, while Muse Hall will be renovated to a slightly lower level of renovation to allow an option for residential accommodations at lower student fees. These buildings are among the least energy-efficient on campus and are in dire need of replacement with many of the associated existing building systems and components at their end-of-life and without up-to-date safety, security and accessibility capabilities.

Given their locations facing the Main Quad and within the potential Historic District, the Norwood and Tyler Halls renovations will pay particular attention to their original design and construction to preserve their historic integrity. The Muse Hall renovation, however, will offer an opportunity to update the building elevation facing the Quad to incorporate elements, which more closely complement the more historic buildings in this area of campus. The illustration shows one early concept for an upgraded façade.

- The renovation design of these existing buildings will also purposefully include program space for various living-learning elements as part of the overall building. As an example, the Honors College has been identified as a potential program component in the renovated Tyler and Norwood Halls. A pre-planning study will be performed to identify the specific living-learning community program elements for these existing building renovations.

- Once these renovations are accomplished, a master schedule has been established for all 15 current existing residence halls to provide for planned renovations on an approximate 30-year frequency.
- For all residence hall renovations, program space will be identified to strengthen the current living-learning communities and academic support spaces, along with providing informal student study and collaborative spaces.
- An overall schedule for the renovation of the recently-acquired, off-campus housing units will be prepared. In general, the schedule will be compiled to allow the most time-effective methodology to complete all renovations, by concentrating on the most popular types of units and locations first.



Muse Hall Conceptual Elevation

Proposed Student Support and Recreation Facilities Actions and Phasing

In order to achieve the stated goals, the following actions are proposed.

- The Master Plan indicates a potential location for a University Welcome Center. This space would provide an initial point of entry to Central Campus, particularly for visitors and special events, along with support for maps, parking passes and other basic directional information. This function currently exists in Heth Hall and would require about 5,000 square feet.
- The Master Plan indicates a potential location for an addition to the Hurlburt Student Center, which might also be appropriate during the ten-year Master Plan duration. The program for this potential addition has not been fully defined at this point, but would probably include event space, student organization space and student study space.

- As spaces are repurposed across campus for various identified initiatives, the University will continue to identify existing spaces that can be converted into community spaces to support off-campus residents when on-campus, including meeting and gathering spaces, offices, outdoor spaces and other support spaces.
- Each on-campus food service option will be reviewed for potential renovation and updating at some point during the 10-year Master Plan window. Changes in locations for existing food service options, along with additional new options, may also be identified during this time frame, in coordination with the food service vendor.



Hotel Conceptual Perspective



Hotel Conceptual Site Plan

- The Master Plan includes the identification of walking and biking paths/trails both on-campus and in coordination with surrounding municipal facilities and locations. Discussions with the City of Radford indicate that there are opportunities to collaborate on the development of these assets.
- The Master Plan also includes the proposed relocation of the RU Able facilities from its off-campus Corporate Park location to the Athletics/Recreation Campus.
- The existing gymnasium in Peters Hall is also identified to be reconfigured and refurbished to allow multiple usages for both academic purposes for CEHD and event space for various campus functions.
- The Master Plan also includes locations for potential public/private mixed-use residential and retail properties, along the Tyler Avenue Corridor and the East Main Street Corridor. These properties could consist of dining and shopping destinations desired by students and parents and also faculty and staff, along with possibly the Bookstore or other University-related enterprises. The development of these facilities would need to be coordinated with the City of Radford and private development entities. The City of Radford has stated a clear desire to facilitate success in this area of East Radford to match recent successes of similar developments in West Radford.
- The City of Radford and the Foundation are currently collaborating on a hotel and related conference/alumni/event center project adjacent to campus. The Foundation and the City of Radford are working on the project with the help of Fortune 500 Company Jones Lang LaSalle (JLL), a commercial real estate services firm. The multilevel hotel will be located at

the intersection of Tyler Avenue and Calhoun Street. Four existing structures would be demolished to make way for the hotel, which will include 125 rooms, a conference center and on-site parking. The hotel is also planned to feature a rooftop restaurant with a view overlooking the campus. The hotel is planned to be completed by 2022/2023.

Proposed Athletics Facilities Actions and Phasing

The 2014 Athletics Master Plan identifies a number of improvements and additions to the footprint of athletics facilities. In order to achieve the stated goals, initial actions, as illustrated in the Athletics Master Plan, are proposed.

- Renovation and repurposing of the Dedmon Center to provide a more appropriate venue for the basketball and volleyball teams by reconfiguring the main court area and seating bowl. At the same time, this allows reconfiguring and increasing the amount of training, locker room and practice spaces within the building.
- The addition of a ticketing/concession/restroom building to support the outdoor baseball/softball/tennis complex.
- Other improvements in the Athletics Master Plan would be pursued in the future as demand is demonstrated and funding becomes available.

Proposed Administrative and Support Facilities Actions and Phasing

In order to achieve the stated goals, the following actions are proposed.

- The current Six-Year Capital Plan includes a project for various campus infrastructure

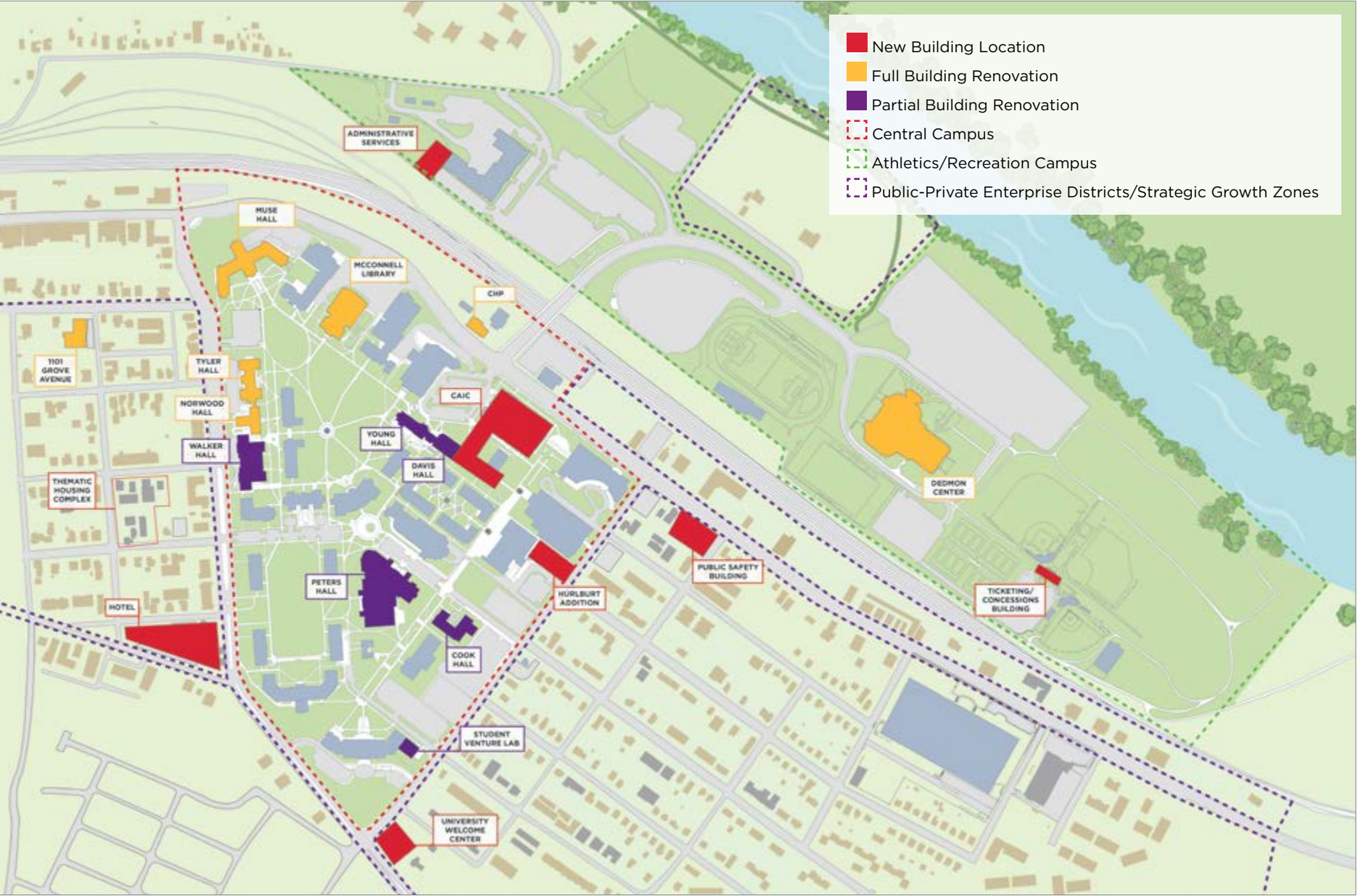


Dedmon Center Conceptual Reconfiguration

improvements, mainly including safety and security systems and components along with conventional utility systems. Planning studies are underway to analyze and prioritize the various utility systems and components improvements.

- Construction of an Administrative Services addition to the Armstrong Complex to collect the remaining administrative departments housed off-campus or in leased space, as included in the current Six-Year Capital Plan. The building would be approximately 15,000 square feet and would consist of flexible office and support spaces.
- Construction of a new Public Safety Building to collect all campus police, emergency services and safety personnel, as included in the later biennia of the current Six-Year Capital Plan, might also be appropriate during the 10-year Master Plan duration. The City of Radford is currently studying the need for an EMS location somewhere in East Radford. As the City of Radford’s study develops, the University will engage discussions on its location and program and the potential for shared spaces.

PROPOSED NEW BUILDING PLACEMENT



INFRASTRUCTURE IMPROVEMENTS

Sustainability

There are a number of features and recommendations in the Master Plan that promote the University’s sustainable development. Proposed new buildings are sited on campus to take advantage of existing utility infrastructure. New trees and plantings have been proposed for much of the campus to promote greater tree canopy cover. Stormwater and water quality management recommendations are identified, and the University will investigate opportunities to incorporate other stormwater quality practices on smaller scales surrounding existing parking lots and buildings on campus. These measures can include landscape planting areas and alternative infiltration areas in parking and adjacent pedestrian areas. Additionally, the University will continue to improve its on-campus initiatives for materials recycling.

The University’s greenhouse gas (GHG) inventory identifies areas for potential improvements in energy and utility savings and GHG reduction. Currently, purchased power continues to be the University’s largest emissions source at about 60% of total emissions. The next largest emissions source at about 22% of total emissions is on-campus stationary, which represents fuel sources consumed directly on campus.

There are many methods for reducing net greenhouse gas emissions, including employing energy efficiency and conservation practices and producing carbon-free energy. To pursue the emissions reduction goals identified in the University’s Climate Action Plan, the University will have to implement a combination of actions and strategies.

From a purchased power perspective, the University currently purchases electric power from the Radford Electrical Department. In order to provide a redundant source for campus power, along with overall emergency electrical capacity, the University continues to investigate the potential of repurposing the Art Annex building adjacent to the existing steam plant into a co-generation combined heat and power (CHP) facility. The facility would consist of natural-gas-powered generators to provide campus medium-voltage power, while also providing heat for the steam plant operations. The existing occupants of the Art Annex, consisting of the Ceramics program lab and equipment, would be relocated to a more suitable location given the inherent issues with students working in such an industrial area of campus. This significant change in basic campus utility infrastructure would be pursued in association with the City of Radford.

The University will also aggressively seek other opportunities to reduce electricity-related emissions. Examples of technologies and financial vehicles for evaluation include battery storage systems, photovoltaic solar panels, wind turbines and micro-grids. Continued upgrading of controls monitoring and commissioning activities can help identify systems and components to provide potential reductions in utility usage.

The University will also increase its efforts at student and faculty/staff education for sustainability and reduced energy usage. Studies have shown that even minimal efforts in this regard can be very cost-effective and drive real savings, as evidenced by an award-winning Radford University research project published in the International Journal of Sustainability in Higher Education. The University will also identify an opportunity to construct an educational display device for renewable energy to illustrate energy usage and reductions.

Electrical

Based on recent studies, the overall medium-voltage electrical system is currently adequate for the total load demand of the Central Campus, including both existing buildings and an estimated load for potential new buildings. Various specific system and component upgrades will be required for maintenance issues or routing situations, as the study recommended replacement of identified switches, elbows and other basic gear.

As the campus expands to the east across Jefferson Street, new medium-voltage electrical distribution from the existing substation on East Main Street and specific building connections would need to be added.

The overhead lines supporting the Athletics/ Recreation Campus appear to have capacity for both the current facilities and potential future buildings.

The University also desires the addition of emergency generators to provide power to certain buildings during outages. While a number of buildings already have this capability, numerous other facilities would provide value to the University during emergency situations if power was available.

Steam

The existing boiler plant capacity should accommodate the proposed new building footprints, such that central steam capacity is not a concern for the short term. The existing steam distribution piping will prove adequate for campus loads until the existing loop connected capacity exceeds 60,000 pounds per hour. Routine maintenance and replacement of piping, valves, supports and other components, along with the overall tunnel structure, will be needed over the course of the Master Plan.

Stormwater

Central Campus Jefferson Street/ Adams Street Systems

New projects in this area of Central Campus will need to address quality as well as quantity treatment requirements. The stormwater management solutions are limited due to the presence of shallow rock formations and karst geology. Infiltration is not permissible in karst areas, thereby eliminating the possibility of bioretention without an underdrain system. These issues also minimize the potential to utilize porous pavements and previous pavers for proposed impervious surfaces which would reduce the total impervious area, since these systems are most effective and cost efficient in areas where the subsurface soil conditions are conducive for infiltration into the groundwater.

Based on current regulations, stormwater solutions to treat water quality and quantity issues and that do not rely on infiltration could include one or a combination of the following best management practices (BMPs).

- Underground storage pipes and appropriate filter system.
- Bio-retention basins or rain gardens with underdrain systems, planted with native vegetation adjacent to individual buildings/ impervious area.
- Green roof system on a portion of roofs.
- Cisterns to capture the stormwater runoff for use as gray water within the buildings.
- Manufactured systems connected to building downspouts and storm drainage systems.

- Purchase of off-site water quality credits.

- Previous regulations allowed regional approaches to stormwater treatment, such that BMPs could be established to cover several areas of campus in one combined BMP. In fact, the University has had one of these BMPs in place for quality treatment for a more than a decade. While the University can continue to maintain this BMP and take advantage of its treatment capabilities, no new regional BMPs are allowed. Therefore, BMPs will need to be included as part of any site project that reduces previous drainage areas.

Athletics/Recreation Campus Systems

Future development of the Athletics/Recreation Campus potentially includes a new concessions and bathroom facility and an indoor tennis facility. Site-specific BMPs are required to provide quality control as well as runoff reduction volumes (quantity control) to the regional system; however, the outlet from these facilities must be above the 100-year flood elevation of the New River. These site-specific practices may include one or a combination of the following.

- Underground storage pipes and appropriate filter system.
- Bio-retention basins or rain gardens with underdrain systems, planted with native vegetation adjacent to individual buildings/ impervious area.
- Cisterns to capture the stormwater runoff for use as gray water within the building.
- Manufactured systems connected to building downspouts and storm drainage system.
- Purchase of off-site water quality credits.

East Jefferson Street Systems

The City of Radford has indicated that, as drainage was directed towards Main Street over time, culverts were piped to the south edge of the Norfolk Southern Railway and discharged into a large gravel drainage ditch on the railway property that parallels the commercial properties, along the north side of East Main Street. If it is determined that one of those culverts needs to be enlarged to qualify it as an “adequate channel” for the purposes of meeting Virginia regulations for any new drainage system proposed, the University would probably have to deal with the individual landowners/businesses to acquire an easement.

Given the issues in this area, a recommended approach may be to over-manage or over-detain any new stormwater flows generated by new development on-site either by integrated stormwater management structures and underground storage or utilizing low-impact development (LID) techniques and then discharging storm flows at a rate lower than existing flows from this area to the existing systems.

Upon property acquisition of any areas east of Jefferson Street, site-specific water quantity and water quality BMPs will be required, using similar techniques as described for on-campus situations.

Stormwater Master Plan Documentation

In 2012, the University commissioned a Stormwater Master Plan in response to a request by the Virginia DEQ. This Stormwater Master Plan, supplemented by an extension to the Plan in 2016, documents specific information relative to the watersheds in the areas on and adjacent to campus. This Plan will help guide the future analysis and design for the indicated potential new buildings and other campus development.

Water

Given there are currently no issues with the overall supply availability or pressures for the potable and fire supply systems at the Central Campus and Athletics/Recreation Campus, the City of Radford has indicated that they are well positioned to serve the projected growth of the campus.

Routine maintenance and replacement of piping, valves, supports and other components will be needed over the course of this Master Plan. The University has also engaged in an overall system field investigation and analysis to assist in the preparation of current water system and components location mapping and condition assessment.

Sanitary Sewer

There is an issue with one of the main collector lines feeding out of the Central Campus, at the edge of the Preston Hall Parking Lot A along East Main Street. This older line has become blocked a number of times due to tree roots. The City of Radford has treated the line with chemicals in an effort to dissolve the roots multiple times. This blockage should be resolved prior to the addition of any new infill projects in the Central Campus with the removal and replacement of the existing line and removal of culprit trees.

If the expansion of the campus moves into the area east of Jefferson Street, the 8-inch diameter sewer, along East Main Street, may become overloaded. If growth is anticipated in the area east of Jefferson Street, an analysis may need to be done to determine the existing flows in that 8-inch sewer so that capacity projections can be made based on a phased growth plan. This will determine at what point the University may need to address the replacement of this line or if a new collector sewer connecting further downstream needs to be considered.

Routine maintenance and replacement of piping, supports and other components will be needed over the course of this Master Plan.

Chilled Water

New chilled water supply will be required for any new building footprints. Where feasible, the University desires to expand the network of regional chilled water loops serving multiple buildings; therefore, each building location will be viewed in terms of its ability to complement the required chilled water supply for adjacent existing buildings. In particular, new buildings near the Main Quad and the proposed CAIC will be reviewed for this capability.

Routine maintenance and replacement of piping, valves, supports and other components will be needed over the course of this Master Plan.

Information Technology

Expansion of the fiber network should continue forward with the recommendations of the Master Plan. Where possible, fiber should enter new buildings at two separate locations, and these cables should use diverse paths back to Jefferson Hall and Armstrong Complex for enhanced redundancy. As expansion of the Athletics/ Recreation Campus continues, it will be beneficial to provide redundant fiber paths from the Central Campus to the Armstrong Complex data center.

With the continued increase usage of wireless and cellular services by the University community and the expanded bandwidths offered by various providers, efforts should be made during planning and construction of new buildings to insure adequate cellular coverage in both exterior spaces and in the interior areas of buildings. Cellular service can also be enhanced by partnering with cellular service providers to add access points at various points across campus.



A critical component of future content delivery will be enhanced, more robust virtual connectivity between Central Campus and the University’s satellite campus locations, both current and future. The provision for conferencing technology and remote delivery will need to be accommodated, through both basic equipment and data pipelines expansions. One example would include the expansion of the RUC connection to the nearby RHEC.

Ultimately, decommissioning of the McConnell Library data center and transitioning to using the Armstrong Complex data center as the primary on-campus data center should be considered. Using shared systems housed at Virginia Tech or via cloud services can provide the necessary system redundancy. The University will always need to maintain wiring and distribution for the network layer and at least a small number of servers on campus to maintain speed and performance of several services.

With respect to overall systems and applications, new and enhanced technology solutions will need to be evaluated for implementation to promote continual optimization of operational efficiencies, productivity and data-driven decision making.

MULTIMODAL CAMPUS ACCESS IMPROVEMENTS

Security and Emergency Systems and Access

The Master Plan takes into account all of the various security and emergency systems and components to ensure they are not compromised by proposed buildings locations or transportation access routes. The Master Plan also identifies any required expansions of these systems to accommodate areas of future planned growth.

The University is in the process of converting existing fire alarm systems and components to a consistent campus-wide installation and desires to continue to make these upgrades. It is anticipated that all campus buildings and other selected off-campus buildings will be protected by a fire detection and alarm system provided by a single manufacturer within the 10-year Master Plan window.

The University also desires to expand the deployment of building access control and security, including card reader access systems and components. Current policy requires new buildings to have electronic access control for all building exterior public entries. Specific interior doors for new buildings are also provided with access control, as proposed and approved by the Divisions of Academic Affairs and Finance and Administration. It is anticipated that all existing campus buildings and other selected off-campus buildings will be protected by electronic door access control devices within the 10-year Master Plan window. This will include the installation of devices on existing doors and possibly the addition of exterior backbone cabling routes. The University will develop specific schedules and prioritization of buildings during the 10-year Master Plan window.

Accessibility

While parking around Central Campus may need to be relocated to make way for construction of other facilities, pockets of parking that remain will need to be prioritized for handicapped, visitor and other specific parking needs.

On the Athletics/Recreation Campus, accessible spaces will need to be maintained in the areas closest to the Dedmon Center, Cupp Stadium and the baseball and softball fields.

In order to ensure various user groups understand accessible routes and building entry locations, it is recommended that an interactive campus map mobile application be created. This will allow real-time awareness for students, faculty, staff and visitors to more easily navigate campus.

Transit System

The proposed short-term building footprint additions and renovations will not dramatically change the existing ridership patterns; however, future growth, along the Jefferson Street and East Main Street corridors and Tyler Avenue, may require adjustments to the routes and stop locations. Therefore, new “pull-off” stops are recommended along Jefferson Street, East Main Street and Tyler Avenue, to support a perimeter route around campus. This campus loop route should help facilitate increased ridership instead of the current longer routes. Off-site parking with more direct shuttle service will also be implemented.

The existing on-campus hub at Preston Hall is proposed to be transitioned to the stop at Fairfax Street, such that Lot A will no longer be accessed by transit buses. This will help to alleviate pedestrian and vehicle traffic in the vicinity of Lot A, Preston, Martin and Porterfield Halls. The stop in front of Waldron Hall is also recommended to be removed, to alleviate pedestrian and traffic interactions in this

congested area of campus. The additional pull-off stops will provide locations for loading and unloading of passengers.

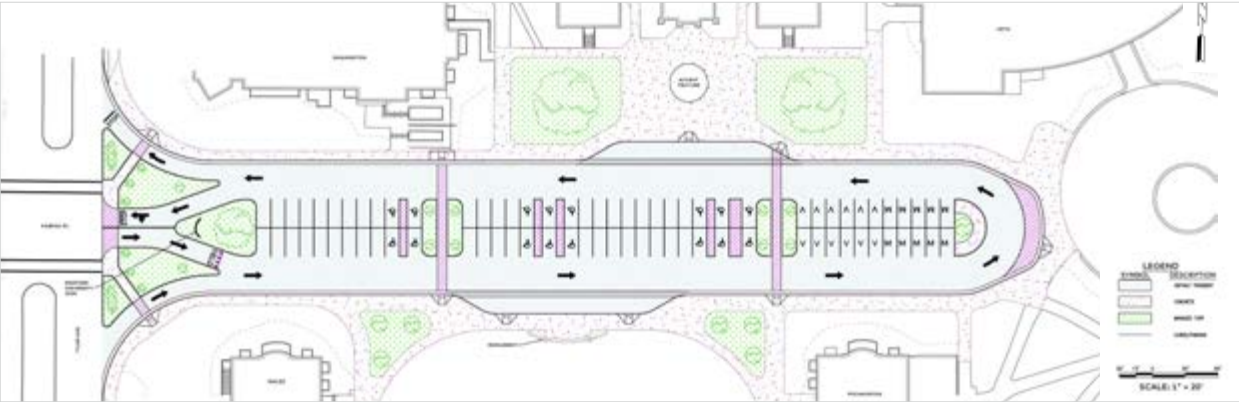
To provide an additional off-campus hub, it is recommended to relocate the current hub adjacent to the bank at the intersection of Tyler Avenue and East Main Street to the existing bus stop at Parking Lot BL at the Student Outdoor Recreation Center. This location provides adequate space for “stacking” of buses for required time-checks and is adjacent to the Student Outdoor Recreation Center restrooms for drivers. Further, this location greatly reduces the potential interferences of bus traffic with both pedestrians and vehicles.

The University will need to coordinate these proposed changes with Radford Transit; it is noted that conversations with the City of Radford and Radford Transit were positive concerning these potential revised routes and improved amenities.

Pedestrian Ways

Improvements are proposed to numerous streets connecting Central Campus to the City of Radford to the east and west, including Downey, Clement, Fairfax and Calhoun Streets. These improvements will help to more positively connect the adjacent housing and commercial areas to Central Campus and will need to be coordinated with the City of Radford. Various improvements are also recommended for the intersection of East Main Street and University Avenue, along with improvements to the pedestrian sidewalks and the bridge itself.

Numerous existing pedestrian ways and sidewalks on campus currently experience localized flooding during heavy rain events, including near Muse Hall, along the sidewalk between Tyler/Norwood and Jefferson/Madison and near Preston Hall. Limited grading and drainage projects are planned to mitigate these events.



Concept for West End Fairfax Street Improvements

The Master Plan proposes to provide small parking areas at various locations around campus for maintenance carts and other service vehicles, which will help mitigate instances of potential conflicts between these vehicles and pedestrians. These specific marked areas will also be located to minimize the visual impacts of these vehicles on major campus open space viewsheds.

Bikeways

The City of Radford has identified a number of proposed new bikeways to expand and complement the existing bikeways. The Master Plan acknowledges these proposed routes in the proposed landscape/hardscape improvements and traffic patterns. Existing bike paths run along Tyler, Jefferson and a portion of East Main Street, but could be improved through greater signage and markings. Upgrades to these three main traffic ways would need to be closely coordinated with the City of Radford.

The University is also reviewing the potential of providing a bike-sharing program between various campus locations and adjacent residential areas. Bike racks are located throughout

Central Campus, though it appears their use is not consistent; some are full, while others stand empty. Revised locations of bike racks or potentially bike lockers and storage units near busier corridors might well improve their use.

New River Access and Greenways

The City of Radford has identified new greenway connections to the proposed Pulaski Loop along the New River and integrates the University's existing portion of the greenway into this route. Improvements in the connectivity of the University trails to the greenway are proposed and will be coordinated with the City of Radford and other regional authorities as the route is finalized.

Vehicle Access and Parking

The Master Plan team's efforts in this area were supplemented by an outside independent consultant, to ensure the University incorporated the latest trends in this important part of the campus environment. The team and the consultant studied the current parking operating and management plan, including space locations, occupancy data, rates and fees and accessibility, and then closely

coordinated this information with pedestrian ways, transit routes and other factors.

In general, based on the outcomes of this study work, the Master Plan reconfigures a number of parking areas within the Central Campus; relocates parking areas from Central Campus to locations at the perimeter of campus and east of Jefferson Street; adds parking along East Main Street; and adds parking adjacent to the existing parking at Athletics/Recreation Campus near the Dedmon Center.

Overall landscaping improvements are also in order for a number of existing parking lots; in particular, Lot A adjacent to Martin Hall is in serious need of new trees, plantings and hardscape elements to enhance the beauty of the area and facilitate better pedestrian access.

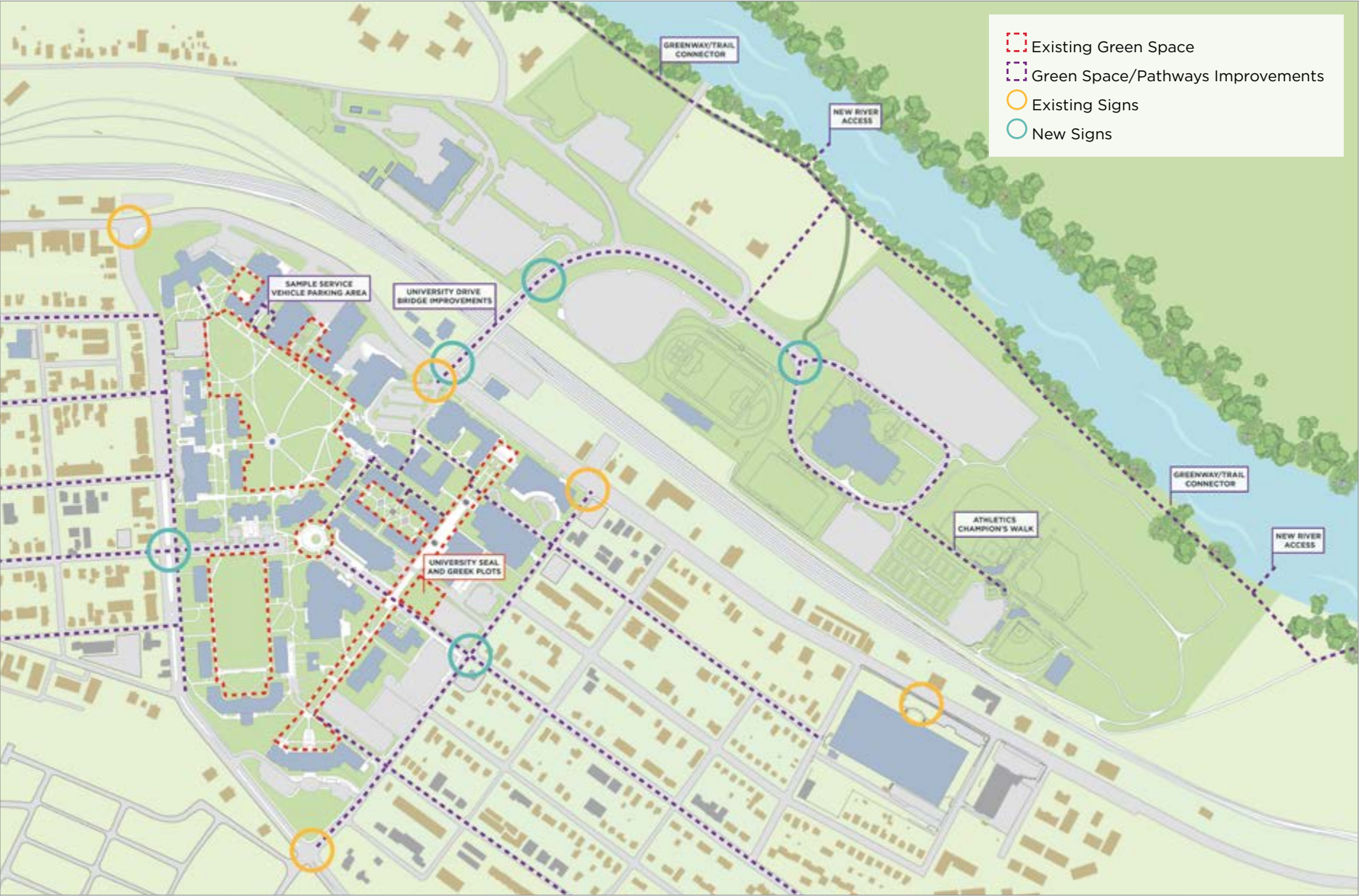
Signage

Additional campus entry signage is proposed for a number of prominent locations around the perimeter of Central Campus and Athletics/ Recreation Campus, including the east and west ends of Fairfax Street, both ends of the University Drive bridge and the entry to the Athletics area. These signs are proposed to be consistent with the current major signage and will help with wayfinding to a number of main visitor support buildings, such as Russell Hall. These signs will also continue to reinforce the branding and visual identity of basic campus elements.

PROPOSED NEW TRANSIT ROUTES



PROPOSED GREENSPACE AND SIGNAGE IMPROVEMENTS



PROPOSED LANDSCAPE IMPROVEMENTS



OUTDOOR SPACE IMPROVEMENTS

Overall Campus

The Master Plan provides an opportunity to improve and upgrade existing landscape and hardscape elements and components, while providing guidance on improving and expanding the overall current environment. Further, the ability to enhance the campus “sense of place” and create certain traditional student experiences and alumni connections is an important element of outdoor spaces. An example of this is the recent addition of the bronze statue of the Highlander mascot and associated bronze bench in the area between Russell and Heth Halls. The Student Government Association has also committed to providing a University Seal in an outdoor space on Central Campus, such that events could be held for students and alumni for specific occasions; for example, students could touch the seal upon admission or after commencement for good luck. Additional identified potential outdoor experiential spaces are “plots” to accommodate various National Pan-Hellenic Council functions and activities.

Several fundamental ideas and approaches are proposed as basic elements of the overall improvements to the campus outdoor spaces. Security will be considered with respect to any proposed new plantings and landscape elements to ensure the safety of all areas of campus. Irrigation will only be used for areas requiring intensive utilization, such as athletic fields. Hardscape elements such as sidewalks will be installed to provide buffers where feasible when adjacent to traffic and parking areas.

The University will continue to invest and maintain existing trees, landscape plantings and lawn areas.



Understanding the value of the arboreal assets adds to the aesthetic appeal of campus, reduces temperatures and decreases water runoff. Tree cover can also potentially be utilized in runoff amounts prescribed by the Municipal Separate Storm Sewer Systems (MS4) permit program. Indigenous species will be used as appropriate to provide diversity and reduce the negative impacts of monocultures. Decisions on the selection and maintenance of plantings will be made to minimize the need for pesticide applications and extensive maintenance efforts.

Specific goals and strategies have been identified for each of the identified campus outdoor spaces to meet these goals.

Main Quad, Moffett Quad and Governor’s Quad

The most important landscape goal for the Main Quad, Moffett Quad and the Governor’s Quad is to preserve and enhance the existing mature and historical character of these quads, particularly as they relate to the potential Historic District. To achieve this goal, the following strategies are considered.

- Locate new buildings in relation to pedestrian routes, mature trees and adjacent buildings.
- Preserve and extend established patterns of pathways and landscape/hardscape elements.

Proposed potential locations for new construction for the Main Quad are inserted into the Quad’s historic context to relate carefully to nearby buildings and to respect established built patterns.

The proposed potential new building site adjacent to Muse Hall will maintain the existing view and pedestrian route from Muse Hall to the fountain at the center of the Quad and to the residence halls along Tyler Avenue.

The sweeping pedestrian arc at the front of Heth Hall is preserved. A significantly reworked landscaped and hardscaped area in front of Muse Hall will replace the current large planter, seating, plantings and sidewalks, which have become outdated. A small hardscaped/landscaped area at the front of McConnell Library emphasizes the importance of this building along this route, offering a pleasant outdoor space for reading and studying alone or in a group.

Existing trees on the Main Quad should be preserved to the greatest extent practical, and new trees should be planted to emphasize views and screen undesirable views. In particular, new trees should be introduced into the reworked area in front of Muse to shade the space and help transition the height of Muse Hall and the width of the open space to a more human scale. Trees and shrubs should also be used to screen the quad from the parking areas flanking Muse Hall on Tyler Avenue and Main Street.

The existing Alumni Garden between McConnell Library and Reed and Curie Halls is a mature outdoor space on the north of the Main Quad. While it offers an excellent space for outdoor reflection

and collaboration, its plantings and hardscape are also outdated. Further, the accessibility of the space is not appropriate. This space could be enlivened by reworking the hardscape elements and seating, possibly including an amphitheater space at its northern terminus.

Additional landscape and hardscape elements will also be added to Moffett Quad at the Fairfax Street end of the Quad, to provide seating and enable potential photo opportunities for students and alumni.

The Governor’s Quad is an established and mature recognized outdoor space and is proposed to be maintained in its current configuration with no new buildings. However, there are opportunities to enhance the current landscape/hardscape to provide additional seating and enliven the plantings.

The existing handicapped ramp between Stuart and Davis Halls adjacent to the Governor’s Quad needs significant improvement to its aesthetics and its functionality. The adjacent terrace between Whitt and Young Halls provides an improved pedestrian connection and experience from this area to the Main Quad; an improved ramp and landscape/elements in this location would complete the overall pedestrian experience in this location.

One specific addition to the Main Quad is the opportunity for placing a University Seal in a hardscaped area. This could be used as a specific photographic opportunity for students and others, along with potential ceremonial activities.

Adams Street Corridor

The most important landscape goal for the Adams Street Corridor is to continue to enhance this corridor as a primary north-south pedestrian route on campus. To achieve this goal, the following strategies are considered.

- Connect the plaza and garden at the Covington Center for Visual and Performing Arts with the adjacent proposed CAIC.
- Plant additional canopy trees at outer edge of walks and adjacent areas.

Much of the Adams Street Corridor has been converted to a major pedestrian mall. The Master Plan anticipates additional enhancement of this corridor with the two ends of the pedestrian mall as areas of key importance.

Kyle Hall is located at the uppermost end of Adams Street Corridor. The front of the building addresses not just the Adams Street pedestrian corridor, but also the axis from Heth Hall passing at the front of the Peters Hall entry at Moffett Quad. The existing plaza below Kyle Hall includes paved areas and grassed/planted areas, along with significant stretches of brick steps to tie the pathways to the building entries. The lower end of Adams Street Corridor, adjacent to the Covington Center for Visual and Performing Arts and the proposed CAIC, has been designed as a semicircular space hosting seating and landscape to screen the Fine Arts Center’s utility area below on East Main Street.

The proposed CAIC will include a working courtyard and a significant building entry, along the Adams Street Corridor. This new building will provide excellent opportunities to enliven the northern end of the corridor and will help attract and guide pedestrians to the west and along East Main Street.

The Master Plan also proposes reworking the intersection of the Adams Street Corridor with Fairfax Street, to provide a more visually appealing and safe environment for the interactions of pedestrians and vehicular traffic in this heavily traveled area.

A specific addition to the corridor are “plots” for use by the National Pan-Hellenic Council organizations. This area might consist of outdoor furniture and display components to facilitate meeting space for various National Pan-Hellenic Council organizations and activities.

Fairfax Street Corridor and Heth Plaza

The most important landscape goal for the Fairfax Street Corridor is to complete this corridor as a primary east-west pedestrian route on campus. To achieve this goal, the following strategies are considered.

- Reconfigure all existing parking areas, along Fairfax Street, to be more uniform and provide better traffic movement.
- Plant additional canopy trees at outer edge of walks and adjacent areas.
- Provide new additional signage at the ends of Fairfax Street to better identify this area.

The Master Plan identifies a series of significant projects to improve traffic and pedestrian flow along this corridor, reconfigure the multiple parking areas on both sides of Heth Plaza and create a much more aesthetically pleasing viewshed along Fairfax from Jefferson Street on one end to Tyler Avenue on the other. The parking area between Russell Hall and the Moffett Quad will be totally reworked to provide a smoother in-and-out traffic pattern and will include ample visitor, metered and handicapped parking adjacent to the active public Admissions and Advancement spaces in Russell Hall. The parking area between Peters Hall and Dalton Hall will also be evaluated to provide a smoother in-and-out traffic pattern or potentially the introduction of a pedestrian-only plaza.

New signage and other visual markings at each end of the Fairfax Street Corridor will also be provided for a much stronger identification of this corridor as a “main entry” to campus.

Downey Street Corridor

The most important landscape goal for the Downey Street Corridor is to complete this corridor as a significant east-west pedestrian route on campus. To achieve this goal, the following strategies are considered.

- Complete the connection of Downey Street to the Adams Street Corridor, between the Covington Center for Visual and Performing Arts and the Student Recreation and Wellness Center with future connection to the CAIC courtyard.

A significant entry to campus from the east occurs along Downey Street. While the construction of the Covington Center for Visual and Performing Arts and the Student Recreation and Wellness Center inhibited the use of Downey Street as a pedestrian way due to their requirements for parking and service entrances, the proposed new CAIC will provide the opportunity to open this corridor. This will serve to connect Downey Street from Jefferson Street into Parking Lot A on Central Campus and ultimately to Muse Hall. This natural and pleasing pedestrian connection will help to connect the east side of both the City of Radford and Central Campus to the west side. Further, the University will work with the City of Radford to potentially upgrade the sidewalks, along Downey Street from Central Campus to the Student Outdoor Recreation Center to the west. This will provide a strong connection between the indoor and outdoor recreation facilities and will “bridge” the west side housing areas to campus.

Tyler Avenue Corridor

The most important landscape goals, along Tyler Avenue, are to improve the University’s appearance in this busy thoroughfare and improve pedestrian and bicycle safety. To achieve these goals, the following strategies are considered.

- Improve shrub screening of parking and service areas.
- Plant additional canopy trees at outer edge of walks and adjacent areas.
- Indicate shared bicycle/vehicle lanes on the west side of Tyler Avenue.
- Introduce enhancements to discourage mid-block crossings.

Existing improvements, along Tyler Avenue, have enhanced the street’s visual quality and pedestrian safety by adding attractive and well-maintained landscaping to the medians in the center of the road and adding colored crosswalks at Tyler Avenue’s intersections with side roads. These efforts are strengthened in the Master Plan by introducing trees and plantings, along the edge of the sidewalk, to unify the appearance of this street front and reinforce the image of a respected academic institution. Existing trees, along Tyler Avenue, should be preserved with the rhythm of street trees adjusted in areas to accommodate the existing trees. In particular, the grove of existing trees at the rear of Moffett Hall and the historic oak grove at the rear of Muse Hall should be preserved to enhance the established facade of the University.

The parking area at Tyler Hall would be screened from the street with shrubs around three feet in height, planted between the trees to mitigate the visual impact of vehicles parked in these areas. Large utility areas and pieces of mechanical equipment would also be screened with dense

shrubs. The parking area at Walker Hall could potentially be removed completely, given the nominal number of spaces and its location directly across from Clement Street, a lively retail and food corridor. Note that, while screening parking and utility areas will improve the visual quality of the Tyler Avenue street front, the parking areas and the entries to adjacent buildings will require additional lighting for nighttime safety.

Along most of the length of Tyler Avenue, bicycle lanes have already been installed on both sides of the street, but for a three-block stretch of the west side of the road, parking is located at the side of the road with no dedicated bicycle lane. Bicycle travel should be accommodated with a 14-foot-wide shared bicycle/car lane. The median in this particular areas should be planted with low, spiky shrubs and ground covers and might also have a decorative metal fence installed along its centerline to discourage mid-block crossings by pedestrians.

University discussions with the City of Radford have reinforced the validity of these proposed improvements and offer opportunities for collaboration between the entities. A particular area for coordination is the intersection of Tyler Avenue with Calhoun Street, which is the location of the proposed hotel. Pedestrian connectivity between campus and the hotel should be enhanced as appropriate in this area to encourage interaction along this corridor.

East Main Street Corridor

The most important landscape goals, along East Main Street, are to improve the University’s appearance in this busy thoroughfare and improve pedestrian and bicycle safety. To achieve these goals, the following strategies are considered.

- Introduce mature trees in parking lots and along the street.

- Extend shared bicycle/vehicle lanes along East Main Street.
- Improve crosswalks and pedestrian accommodation at the intersection with University Drive.

Currently, a number of relatively tall buildings with paved parking lots in front dominate the campus’ western East Main Street facade (Tyler Avenue to University Drive). Though some nice plantings have been introduced within the parking lots, they have not had the time to grow sufficiently to screen buildings or shade the parking area. The Master Plan recommends more canopy trees for the parking area, of a sufficient size at installation to offer significant shade to the lot within five years. These trees will keep the parking lot’s surface from heating excessively during the summer months and will reduce the visual bulk of the tall campus buildings when viewed from the street. As along Tyler Avenue, large canopy trees are recommended on both sides of the roadway to enhance the visual quality of the street by unifying the street front and screening views of the large campus parking lot and the railway to the north.

The campus’ eastern East Main Street face (University Drive to Jefferson Street) was not impacted by the realignment of East Main Street some years ago and thus lacks the attractive landscaped medians and bicycle lanes of the western portion of the street. Flanking canopy trees should also be continued through this portion of East Main Street to unify this northern campus edge.

At East Main Street’s intersection with Tyler Avenue, University Drive and Jefferson Street, highly visible painted crosswalks are proposed to connect the corners of these intersections to guide pedestrian movement and make pedestrian crossings more highly visible to motorists. At East Main Street’s intersection with University



University Drive Bridge Update

Drive, the University should consider design enhancements in the center of the intersection to make the intersection more highly visible and to calm traffic. The University is also working with the City of Radford to incorporate improvements to the University Drive Bridge, including new fencing, lighting and sidewalk widening.

All of these enhancements would need to be coordinated with the City of Radford. University discussions with the City of Radford to date have reinforced the validity of these proposed improvements and offer opportunities for collaboration between the entities.

Jefferson Street Corridor

The most important landscape goal for the Jefferson Street Corridor is to improve the visual quality and organization on the campus street front. To achieve this goal, the following strategies are considered.

- Introduce canopy trees along the length of the street.
- Place new building infill to screen parking areas and extend vistas from Central Campus.

Currently, the Jefferson Street campus edge is visually disorganized, bearing little visual relation to the older, statelier parts of the academic campus surrounding the Main Quad and Moffett Quad. The Master Plan proposes a similar treatment for this area to offer greater visual cohesiveness and improve pedestrian safety.

As recommended for Tyler Avenue, Jefferson Street will include canopy trees on both sides of the road to unify the street front. The University should also coordinate with the City of Radford to potentially introduce turning lanes, traffic-calming devices and medians with landscaping along the length of the road. These elements, along Jefferson

Street, have the obvious aesthetic advantage of improving the appearance of one of the key faces of campus, but they also function to alleviate traffic coming down the hill from Tyler Avenue, channel vehicles into defined turn lanes and greatly improve pedestrian safety at crossings.

Potential new building infill, along Jefferson Street, would be carefully located to relate to each other on both the Central Campus side and eastern side of Jefferson Street. Vistas and pedestrian axes from the Main Quad and Moffett Quad would be preserved and extended across Jefferson Street, particularly below Kyle Hall to the current residential areas to the east.

University discussions with the City of Radford have reinforced the validity of these proposed improvements and offer opportunities for collaboration between the entities.

Athletics/Recreation Campus

The most important goals for the Athletics/ Recreation Campus outdoor spaces are to improve connections from Athletics/Recreation Campus to Central Campus, among athletic facilities and recreational options at the New River. To achieve this goal, the following strategies are considered.

- Enhance University Drive and the bridge to accommodate bicycles and encourage pedestrian use.
- Create a pedestrian corridor connecting through the center of the athletic facilities to be identified and branded as Champion's Walk.
- Revise the traffic patterns in the area of the Dedmon Center.

- Create a River Campus complex to provide connectivity to the New River and support numerous academic and student life activities.

The only existing entry to the Athletics/Recreation Campus is the bridge over the railroad on University Drive. In its current condition, this bridge is an uninviting place for pedestrians with four wide lanes, narrow sidewalks on either side for pedestrians and no safe accommodation for bicyclists. The Master Plan indicates improved accommodation of bicyclists and pedestrians by narrowing the four vehicle travel lanes and widening the sidewalk on each side of the bridge. Other elements that will help make the bridge more inviting to pedestrians and bicyclists include attractive light fixtures with banners and more attractive fencing on the sides of the bridge. Improvements at the intersection also could include colored crosswalks for pedestrian safety, enhancing the appeal of this key link between the academics and athletics areas of campus. All of these proposed improvements offer great opportunities to enhance overall branding for the University and would require close coordination with the City of Radford for both technical and funding considerations.

The 2014 Athletics Master Plan identified a significant transformation of the Athletics/ Recreation Campus to accommodate a number of additional and expanded athletic facilities. With the addition of these new facilities near the Dedmon Center, the area will be reorganized to accommodate these facilities and allow for separated vehicular and pedestrian circulation through the space.

Pedestrians are given priority on a tree-lined Champion's Walk extending from the eastern end of Cupp Stadium to beyond the softball field and Hitting Facility to the east end of the Athletics/

Recreation Campus. This pedestrian mall would pass between the Dedmon Center and the proposed future Indoor Tennis Facility, and then between the baseball field and the softball field and outdoor tennis courts. This corridor would serve to connect virtually all of the athletic facilities on Athletics/ Recreation Campus for pedestrians and could be used for outdoor events and pre-game activities.

General vehicular circulation would be limited to the area north of Cupp Stadium and the Dedmon Center, extending to the eastern periphery of the baseball field and the intramural fields. A smaller drive connects from the east end of the main drive of the railroad to the existing parking lot near the outdoor tennis courts and baseball field, and a service drive allows service access between the Dedmon Center and the soccer field to the rear of the proposed Indoor Tennis Facility. Parking is accommodated throughout the area with new parking lots at the east and west sides of the Dedmon Center and a parking lot at the east end of the Athletics/Recreation Campus. The parking at the east of the Dedmon Center is configured to preserve existing trees on the current roadway by providing a wide parking island within the lot that will allow the trees to continue to thrive and shade the parking lot.

River Campus

The Master Plan indicates the significant development of a River Campus to enhance the connectivity of the New River to the University. Construction of a greenway, along the river, is proposed, connecting on the west to the existing City of Radford New River Greenway coming from Bisset Park. Several gathering areas with appropriate outdoor furniture and shelters are proposed, along this greenway, to provide spaces for relaxation and contemplation with potential academic research and student life activities.



Boat and canoe launch ramps would provide direct access to the river for floats and canoes. Festival event areas, along with an amphitheater, are proposed adjacent to the river. Recreational elements, such as ziplines, ropes courses and climbing walls, would be located in the area, potentially for both student and public use. A restaurant adjacent to the river would provide food service and event spaces. A rails-to-trails connection, along the existing trestle bridge, would provide connectivity to other greenways in the New River Valley.

Development, along the New River, will be executed in full compliance with all regulatory and administrative local, state and federal requirements. Careful maintenance plans for existing riparian barriers will be established and followed. Materials will be selected to minimize maintenance and replacement given potential flood events. Activities and services would be coordinated between the City of Radford and other jurisdictions, along with the University, to maximize participation in the development of the River Campus and in the associated activities.

Standard Campus Elements

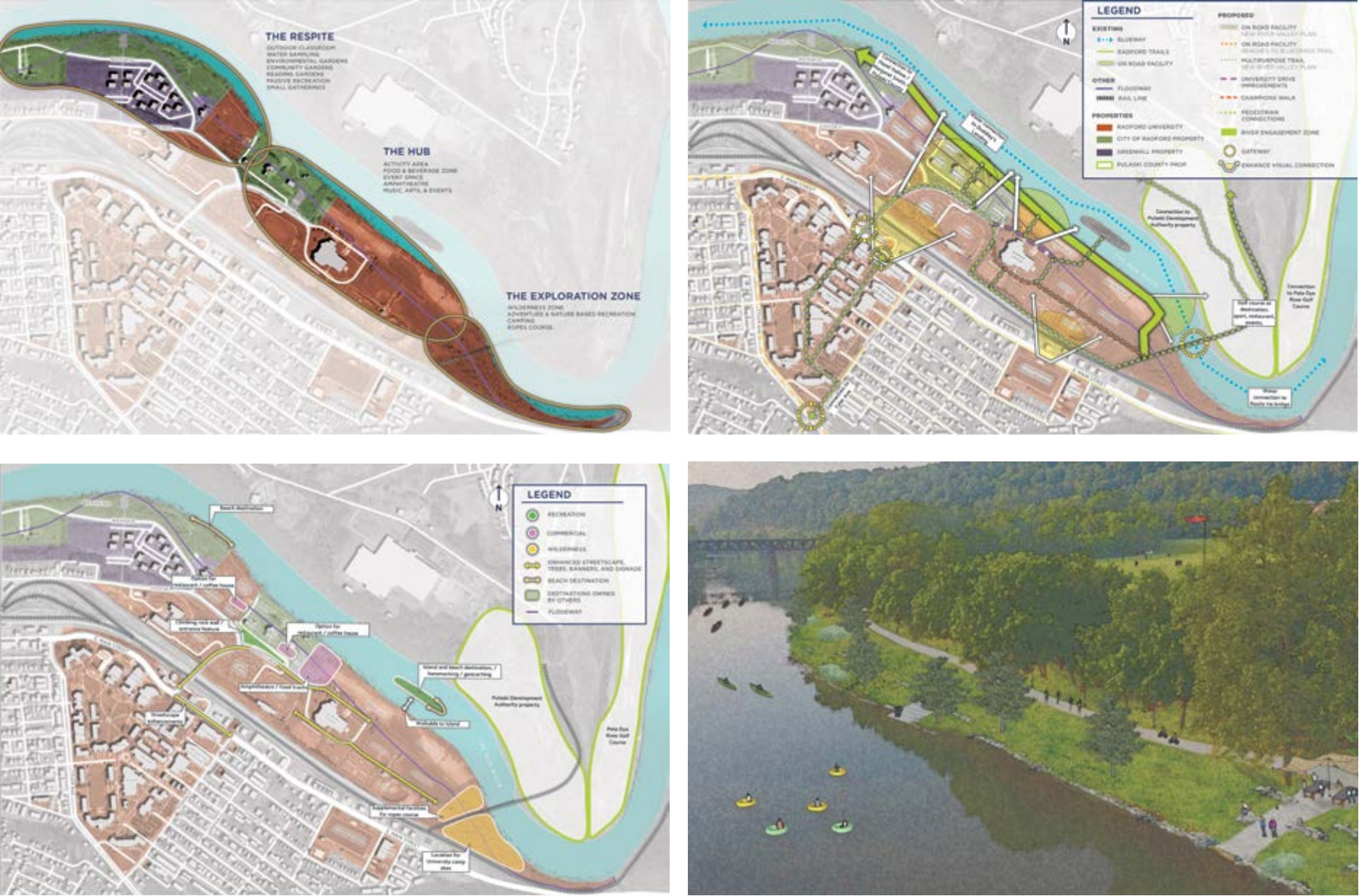
Over time across campus, certain common building, landscape and hardscape elements have been constructed and installed in various styles, colors or other inconsistent visual appearances. The Master Plan will identify standards for these common elements.

- Main entry signage
- Seating and benches
- Exterior light fixtures
- Emergency phones
- Railings and handrails
- Fences and guards
- Building signage
- Pavers
- Sidewalks
- Cart paths and access drives

Consistency in the provision and installation of these elements will help enhance the visual impact of the campus and reinforce overall University branding.



PROPOSED RIVER CAMPUS DEVELOPMENT



SUMMARY

The preparation of the 2020-2030 Master Plan provided a singular and significant opportunity for the entire University community to engage in the future development of the campus and the surrounding community. Further, the timing allowed the Master Plan to reinforce the 2018-2023 Strategic Plan by ensuring the University’s physical resources accommodate the future needs of the University. The Master Plan is organized around the following overarching areas of emphasis.

Construct

- CAIC – Highest priority
- Hurlburt Addition
- Administrative Services Addition
- Welcome Center
- Public Safety Building
- Athletics Ticketing/Concessions Building

Renovate

- McConnell Library
- Tyler/Norwood/Muse Halls
- Dedmon Center Arena

Repurpose

- Programmatic expansion through selective repurposing of areas within Davis, Cook, Walker, Peters, Kyle and Young Halls
 - Waldron College growth
 - CEHD programs
- Tech Talent Pipeline
- Venture Lab
- Tourism Lab

Evaluate and Upfit

- Classrooms and labs – Scheduling, efficiency, delivery methods and REAL General Education
- Student study and collaboration spaces
- Event and meeting spaces

Enhance

- Sustainability
- Utilities
- Transit
- Campus perimeter
- Greenspaces
- Brand identity

Create

- Greenway/Riverway – River Campus
- Roanoke locations – RUC/RHEC
- Hotel
- Public-private/retail spaces
- Other opportunities as identified

REFERENCES

The following references were used in the preparation of the Master Plan.

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- Six-Year Plan and Six-Year Capital Outlay Plan — Radford University, 2017
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- Radford University Academic Space Planning Services — Ayers Saint Gross, October 2018
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2020-2030 MASTER PLAN

-  New Building Location
-  Full Building Renovation
-  Partial Building Renovation
-  New/Improved Parking
-  River Campus Development
-  Drop-Off Shelter
-  Central Campus
-  Athletics/Recreation Campus
-  Public-Private Enterprise Strategic Growth Zones
-  Green Space/Pathways Improvements
-  Tree Canopy Improvements
-  Landscaping/Hardscaping Improvements



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