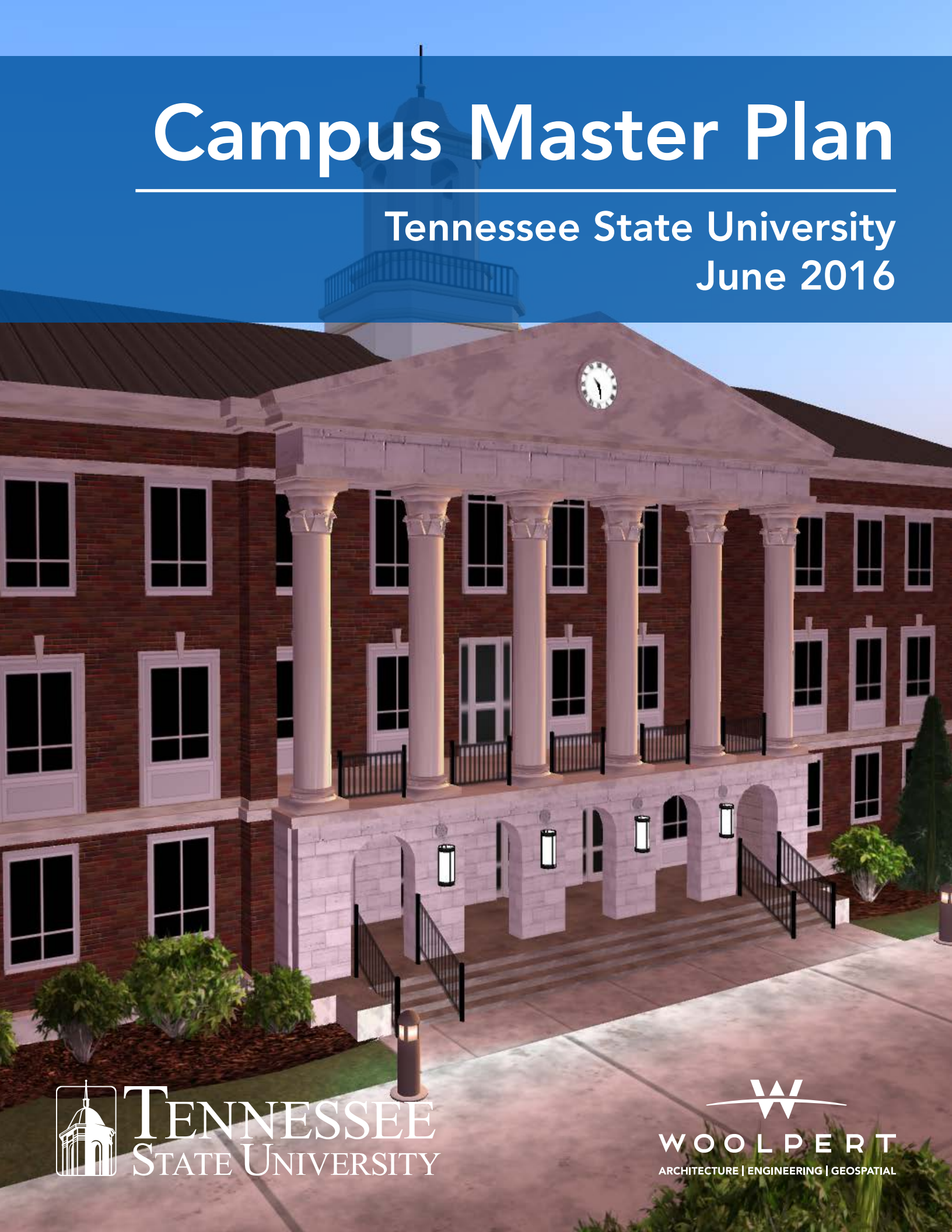
Campus Master Plan

Tennessee State University
June 2016



TENNESSEE STATE UNIVERSITY

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL

This page intentionally left blank.

Table of Contents ..... Page

I. Executive Summary I-1

A. Acknowledgments I-1
B. Summary I-1

1. Introduction I-1
2. Methodology I-2

C. Assessment of Existing Conditions I-2

1. Space Utilization I-2
2. Physical Condition I-4
3. Student Housing Demand I-5
4. Campus Recreation Demand I-5
5. Athletics Need I-5
6. Master Plan Summary I-6

II. History of the University II-1

A. Description of History II-1

1. History of Tennessee State University II-1
2. Accreditation and Affiliations II-3
3. History of Master Planning II-4
4. Buildings of Historical Significance II-5
5. Named Facility Honorees II-5

B. Overview of Institution II-7

1. Campus Characteristics II-7
2. Main Campus II-7
3. Avon Williams Campus II-8
4. Enrollment II-8
5. University Matriculation Agreements and TBR Policies II-8

III. Goal Formation III-1

A. TSU Institutional Mission Statement and Strategic Plan III-1

1. Overview of Tennessee State University III-1
2. Strategic Plan and Mission Statement III-1
3. Impact of Enrollment Changes III-1
4. Academic and Administrative Structure III-1

B. Goals and Issues for Future Academic Programs III-6

1. Campus Character and Spatial Organization III-6
2. Interview and Focus Group Findings III-6
3. Space Requests and Proposals III-11
4. College and Campus Needs III-12
5. Recurrent Themes III-12
6. Preliminary Comprehensive Physical Reconnaissance III-12
7. Proposed Changes in Research III-14

Table of Contents ..... Page

IV. Existing Campus Conditions IV-1

A. Existing Campus Grounds IV-1

1. Overview IV-1
2. Campus Framework IV-1
3. Land Use IV-7
4. Open Space and Pedestrian Circulation IV-9
5. Vehicular Circulation and Parking IV-12
6. Athletic and Recreational Facilities IV-16

B. Building Use and Condition IV-20

1. Core Academic Building Use IV-20
2. Facility Condition Assessment IV-23
3. Student Housing and Recreation Facilities Condition Assessment IV-34

C. Existing Campus Infrastructure IV-47

1. Domestic Water and Fire Protection IV-47
2. Electric Power IV-49
3. Sanitary and Storm Sewer IV-51
4. Steam and Chilled Water IV-55
5. Communications IV-60
6. Natural Gas IV-61

D. Community Setting IV-63

1. Regulatory Issues IV-63
2. Environmental Issues IV-63

V. Future Campus Requirements V-1

A. Space Needs By Target Year V-1

1. Executive Space Summary V-1
2. Student Enrollment Projections V-10
3. Faculty/Staff Projections V-11
4. Academic Space Requirement by Major Space Category V-12
5. Academic Support Facility Requirements V-30

B. Student Housing Demand Analysis V-34

1. Overview V-34
2. Methodology V-34
3. Findings and Recommendations V-35

C. Campus Recreation Demand Analysis V-37

1. Overview V-37
2. Methodology V-37
3. Findings and Recommendations V-37

D. Athletics Need Analysis V-39

E. Parking Space Projections V-40

1. Parking Generation Rates V-40
2. Parking Generation Rate Development V-40

Table of Contents ..... Page

F. Utility Infrastructure Requirements V-41

1. Domestic Water and Fire Protection V-41
2. Electrical Distribution V-41
3. Sanitary and Storm Sewer V-43
4. Steam and Chilled Water V-44
5. Communications V-45
6. Natural Gas V-45

VI. Preliminary Physical Master Plan VI-1

A. Alternative Concepts VI-1

1. Campus Character VI-1
2. General Planning Concepts VI-1
3. Alternative Concepts VI-1

B. Preferred Plan VI-12

1. Acquisition VI-15
2. Recommended Facility Additions and Improvements VI-15

VII. Physical Master Plan VII-3

A. Land and Building Use VII-3
B. Student Housing VII-5
C. Circulation and Parking VII-7

1. Vehicular Circulation VII-7
2. Public Transit VII-9
3. Parking VII-9

D. Open Space and Pedestrian Circulation VII-9
E. Athletic and Recreational Facilities VII-12

1. Athletics VII-12
2. Recreation VII-14

F. Campus Security VII-14
G. Utility Infrastructure VII-16

1. Domestic and Fire Protection Water VII-16
2. Electric VII-16
3. Sanitary Sewer VII-20
4. Storm Sewer VII-20
5. Steam VII-20
6. Chilled Water VII-21
7. Gas VII-21
8. Communications VII-22

VIII. Phasing and Implementation Plan VIII-1

A. Introduction VIII-1
B. Land Acquisition/Disposition VIII-1
C. Phased Implementation VIII-4

1. Initial Phase: 1-3 Years VIII-4
2. Near-Term Phase: 3-8 Years VIII-4
3. Long-Term Phase: 9-20 Years VIII-7

Table of Contents..... Page

D. Migration Plan VIII-9

1. Initial Phase VIII-9
2. Near- and Long-Term Migration VIII-9

E. Opinion of Probable Construction Cost VIII-9
F. Next Steps VIII-12

Figures ..... Page

II-1 Historic Districts and Structures II-6
IV-1 Regional Map IV-3
IV-2 Vicinity Map IV-4
IV-3 City Map IV-5
IV-4 Campus Context IV-6
IV-5 Existing Land Use Campus Land Use IV-8
IV-6 Open Space and Pedestrian Circulation IV-11
IV-7 Vehicular Circulation and Parking IV-15
IV-8 Existing Athletic and Recreational Facilities IV-29
IV-9 Building Use Classification IV-30
IV-10 Physical Quality Assessment IV-31
IV-11 Functional Quality Assessment IV-32
IV-12 Physical and Functional Quality Assessment IV-33
IV-13 Existing Water IV-48
IV-14 Existing Electric IV-50
IV-15 Existing Sanitary Sewer IV-52
IV-16 Existing Storm Sewer IV-54
IV-17 Existing Steam IV-57
IV-18 Existing Chilled Water IV-59
IV-19 Existing Natural Gas IV-62
IV-20 Environmental Features IV-65
VI-1 Alternative 1–Main Campus VI-5
VI-2 Alternative 2–Main Campus VI-8
VI-3 Alternative 1–Avon Williams VI-10
VI-4 Alternative 2–Avon Williams VI-11
VI-5 Preferred Plan Main Campus VI-13
VI-6 Preferred Plan Avon Williams VI-14
VII-1 Long Range Campus Master Plan VII-1
VII-2 Avon Williams Master Plan VII-2
VII-3 Building Use VII-6
VII-4 Circulation and Parking VII-8
VII-5 Pedestrian Circulation and Open Space VII-11
VII-6 Athletic and Recreation Facilities VII-13
VII-7 Secure Perimeter VII-15
VII-8 Water VII-17
VII-9 Sanitary Sewer VII-18
VII-10 Storm Sewer VII-19
VII-11 Steam VII-23
VII-12 Chilled Water VII-24
VIII-1 Proposed Land Acquisition VIII-3
VIII-2 Initial Phase VIII-5
VIII-3 Near Term Phase VIII-6
VIII-4 Long Term Phase VIII-8

Tables ..... Page

IV-1 TSU Property Sizes IV-1
IV-2 Campus Land Use Areas IV-7
IV-3 Recreation Facility Gaps IV-16
IV-4 Building Areas by Year Constructed IV-20
IV-5 Existing ASF by Building and Space Type IV-21
IV-6 Peer Data Comparative Analysis IV-24
IV-8 Condition Rating System IV-27
IV-9 New Housing Projects IV-38
V-1 TSU Main Campus Space Needs by Division V-6
V-2 AWC Space Needs by Division V-7
V-3 TSU Main Campus Space Needs by Space Type V-7
V-4 AWC Space Needs by Space Type V-7
V-5 THEC Fall 2013 Space Needs Summary – Main Campus V-8
V-6 THEC Fall 2013 Space Needs Summary – AWC Campus V-8
V-7 TSU Main Campus space Needs by Division V-10
V-8 Classroom Summary V-15
V-9 Time by Day Percentages V-17
V-10 Classroom Utilization Summary V-17
V-11 Classroom Utilization by Building – Main Campus V-18
V-12 Classroom Utilization by Size – Main Campus V-19
V-13 THEC Day Classroom Calculation – Main Campus V-19
V-14 THEC Evening Classroom Calculation – AWC V-20
V-15 Classroom Needs Summary V-21
V-16 Enrollment Projections V-21
V-17 Classroom Needs Detail – Main Campus V-23
V-18 Classroom Needs Detail – Main Campus by College V-23
V-19 Classroom Utilization by Building – Main Campus V-24
V-21 Teaching Lab Space Needs – AWC V-25
V-22 Open Lab Space Needs Summary – Main Campus V-25
V-23 Research Space Needs – Main Campus V-26
V-24 Office Space Needs Summary – Main Campus V-27
V-25 Office Space Needs Summary – AWC V-28
V-26 Office Space Type Needs Summary – Main Campus V-28
V-27 Open Lab Space Needs – Main Campus V-29
V-28 Administrative Office Space Needs – Main Campus V-30
V-29 Main Library Space Needs – Main Campus V-31
V-30 Main Library Space Needs – AWC V-31
V-31 Campus Wide Space Needs – Main Campus V-32
V-32 Campus Wide Space Needs – AWC V-32
V-33 Unit Types Surveyed V-33
V-34 Student Housing Demand – Fall 2014 ..... V-33
V-35 Student Housing Demand – Future Enrollment V-35
V-36 Depth and Breadth of Demand V-36
V-37 Demand by Activity V-36
V-38 Gap Analysis V-37

Graphs ..... Page

IV-1 Number of Intercollegiate Athletic Teams IV-17
IV-2 Unduplicated Student Athlete Count IV-17
IV-3 Support Space Square Foot/Student Athlete IV-18
IV-4 Football Seating Capacity IV-19
IV-5 ASF per Student FTE-TBR Universities IV-22
IV-6 ASF per Student FTE by THEC space Type Categories IV-22
IV-7 Rental Rates per Bed per Month, including Utilities IV-34
IV-8 Percentage of Utilities Included in Rent IV-35
IV-9 In-Unit Amenities IV-35
IV-10 Community Amenities IV-36
IV-11 Percentage of First-Year and Undergraduate Students Living on Campus IV-37
IV-12 On-Campus Housing Bed Mix IV-37
IV-13 Margin of Error IV-38
IV-14 Importance of On-Campus Housing to Attendance Decision IV-39
IV-15 Description of Current Living Condition IV-39
IV-16 Factors Affecting Decision of Where to Live IV-40
IV-17 Personal Share of Monthly Rent IV-40
IV-18 Importance of Factors to On-Campus Housing Improvements IV-41
IV-19 Importance of New Housing Features IV-41
IV-20 Importance of New Housing Preferences IV-42
IV-21 Reasons for Living Off-Campus Next Year IV-42
IV-22 Current Location for Recreational Activities IV-43
IV-23 Reasons for Not Participating in Recreational Activities IV-43
IV-24 Accuracy of Responses for Not Participating in Recreational Activities IV-44
IV-25 Effect of Improved Indoor Recreation Spaces on Use (On-Campus Residents) IV-44
IV-26 Effect of Improved Indoor Recreation Spaces on Use (Off-Campus Residents) IV-45
IV-27 Comparison of Usage of Indoor Recreation Spaces After Improvements IV-45
IV-28 Adequacy of Current Recreation Facilities IV-46
IV-29 Desired Priority of New Recreation Facilities IV-46
V-1 Time by Day–Main Campus All Day V-16
V-2 Time by Day–AWC All Day V-16

I. Executive Summary

A. Acknowledgments

This Master Plan was one of the first initiatives of the new administration, following Dr. Glenda Glover becoming President of the University. This was a major undertaking for a new administration, especially when combined with the considerable effort involved in gaining approval for a new Health Sciences Building. The administration, staff and faculty are to be commended for the thought and effort that they put into this Master Plan. The leadership of President Glover, Supported by Vice President Jane Jackson and key administration officials, made this plan possible. Many people on campus participated in the extensive interviews, focus group discussions and meetings that developed the vision, goals and objectives that have guided the plan; they also played a vital role in the discussion of ideas that have led to the conclusions put forth in the plan recommendations.

Consultant Team

- Woolpert, Inc.
  4454 Idea Center Boulevard
  Dayton, OH 45430
  937.461.5660

Comprehensive Facilities Planning, Inc.

- Brailsford & Dunlavey, Inc.
- Melvin Gill Associates

B. Summary

1. Introduction

Tennessee State University is looking to its future, and to the changing needs and desires of its students. TSU has been intensely involved in a model of strategic planning and process improvement, based on the University's mission. The strategic planning process at TSU is an integration of several planning initiatives, in order to meld the vision of the President as well as support the work of the following groups:

1. President's Five Point Plan
2. Implementation of an Academic Program Review (initiated in July 2013 and completed during the Fall 2014 semester)
3. University Strategic Planning Council
4. Formation of interdisciplinary research clusters (based on Research and Sponsored Programs vision and goals)
5. Academic Department Questionnaire (request from master planners)
6. Tennessee Board of Regents (TBR) Strategic Planning process
7. University Assessment and Improvement Council Cycle (involved towards the end of the assessment cycle; however, the UAIC has produced a review of outcomes annually for the past five years)
8. Academic Master Plan (2008-2028)

Based on the aforementioned initiatives and activities, three primary themes have emerged for that work, each of which influences the Physical Master Plan:

1. Health Sciences (Nursing, cardio-respiratory, PT, OT)
2. STEM-focused activities
3. Education (K-12)

President Glover has been very sensitive to ensuring there is a respect for the work occurring among faculty, staff, administrators and students. In essence, TSU has been very involved in creating an environment of assessment and planning, based on the primary mission for the University and environmental trends in higher education.

After a recessionary period of flat or declining enrollment, TSU needed to update its Physical Master Plan to focus on improving the quality and functionality of its academic facilities, as well as the attractiveness and quality of its residence halls and student life facilities. While this document plans for and anticipates growth, its immediate and near-term focus is on replacing and upgrading facilities to better meet the needs and aspirations of its current and prospective students.

2. Methodology

The Master Plan combines an in-depth assessment of the condition and functionality of the current facilities with a thorough data-driven space utilization assessment and an analysis of athletics, student housing and recreation needs. The Space Utilization Study was based on the Academic Master Plan and enrollment projections, which were also based on information for the athletics and recreation study and housing assessment and employed both interviews and surveys.

Once data was collected and preliminary assessments made, the planning team convened workshops on campus to review the findings of the existing conditions inventory and analysis with a broad audience of faculty, staff administration, students and neighbors. From that discussion, the team prepared a final Space Utilization Report, which identified future campus needs derived from anticipated growth of academic programs and enrollment. Student input was summarized and benchmarked against peer institutions to determine nonacademic needs in athletics, housing, recreation and other areas of student life. After reviewing the future needs conclusions with the campus planning group, the planning team used the assessments and review feedback to develop Alternative Physical Master Plans for the Main Campus and the Avon Williams Campus (AWC).

The Alternative Plans were discussed and weighed against both the vision and goals of the University and the costs and funding potential of the various options. The resultant Preferred Plan allowed the University to view and evaluate the composite of a physical plan to accommodate the several priorities and needs that had been chosen to govern the plan. After a review of the Preferred Physical Master Plan, the planning team made adjustments in response to review comments to produce the Physical Master Plan and an implementation strategy for phasing implementation.

C. Assessment of Existing Conditions

A focus of the assessment of existing conditions was the use and condition of the campus buildings, particularly the academic buildings. The assessment followed a two-step process. First, departments completed a questionnaire to verify space assigned, room use and function, and seating capacities. Second, the planning team visited twenty-seven non-residential buildings to verify the data, and assess physical and functional quality.

1. Space Utilization

TSU has about 16.2% fewer assignable square feet (ASF) than the average peer institution included in this study. However, when examined on an ASF per full time equivalent student (FTES) basis the University exceeds the peer average by about 29%. The overall assessment, which compares the ASF/FTES ratios and percentage proportion to total space, indicates that the University has sufficient space in these categories. Quality of that space may not always meet current needs.

The needs assessment included 1,493,118 existing ASF at the Main Campus, and 117,385 ASF at the AWC. The current calculated needs at both the Main Campus and AWC generate a net surplus of space. The surplus for the Main Campus's surplus is 40,453 ASF (2.7% of existing space), and the surplus at AWC is 18,161 ASF (15.5% of existing existing).

Enrollment projections are the foundation for all projected classroom and laboratory space needs and any other space needs based upon total number of headcount or FTE's. On average, faculty and staff growth will be consistent with student growth. Over the past ten years, TSU's enrollment has been erratic. Overall, during this period the University's student FTE enrollment has declined by 4.5%. However, since 2008, enrollments have increased by 9.3%. The enrollment goal for the planning period is 7,687 FTE students—an increase of 20.2% on ground students. Each academic department has set its own individual enrollment expectations; some programs will grow at greater rates than others and some will remain stable. Enrollment goals have also been identified by campus, with the Main Campus increasing by 19.4% at AWC at 24.3%.

Main Campus

Although there is currently a calculated net space surplus on the Main Campus, space shortages exist in research labs, library space, exhibition and food service space. These categorical shortfalls will increase, with future significant deficits occurring in teaching labs, athletic/recreation space and campus support. Currently, four of the seven academic colleges do have space shortfalls. Support units under Academic Affairs have a net shortfall, primarily due to a deficit of space identified for the main library. The five individual departments with the largest current needs (deficits) are: Biology, Nursing, Electrical Engineering, Psychology and Communications.

In the future, projections indicate that the Main Campus will have an overall net deficit of almost 150,000 ASF (10% more than existing), due to planned enrollment growth and significant additional athletic/recreation needs. Five of the seven academic colleges will have future space shortfalls, with Agriculture, Human and Natural Sciences having the largest. Academic Affairs and the campus wide grouping will have the largest support needs, due to library and athletic/recreation needs. The five individual departments with the largest projected needs (deficits) are projected to be Biology, Nursing, Chemistry, Psychology and Communications.

The major space-related recommendation of this Master Plan is the construction of a new Health Sciences Building of about 120,000 GSF to consolidate Nursing and other allied health sciences in one modern facility equipped to meet the needs of preparing students for current and future health professions.

Avon Williams Campus

There is currently a large net surplus of space on the AWC. However, space shortages exist in student service areas such as exhibition, student lounge and meeting room space. A future deficit in teaching labs is also identified for AWC. The AWC surplus will decrease to 4,440 ASF (3.8% more than existing) due to the planned enrollment growth.

- **Classroom Needs:** Calculations for Main Campus resulted in a need for 90 to 95 classrooms, 3,274 seats, and 65,478 ASF. The current supply of 107 classrooms, 3,614 seats, and 69,397 ASF is sufficient to meet the instructional demand of the Main Campus. Calculations for AWC resulted in a need for 35 classrooms, 821 seats, and 19,706 ASF. The current supply of 32 classrooms, 1,092 seats, and 25,330 ASF is also sufficient to meet the instructional demand of the downtown campus.
- **Class Labs:** The existing inventory of teaching lab space is sufficient to meet the current instructional demand at the Main Campus. The Nursing and Cardio Respiratory Buildings have relatively small deficits, which constitute the 740 ASF shortfall in Health Sciences. Although there is a calculated current net surplus of teaching labs, five departments have deficits: Teaching and Learning, Communications, Psychology, Biology and Chemistry (in the order of greatest to least). The projections indicate that three of the five colleges will have significant deficits (over 1,000 ASF), with the largest being Health Sciences at 9,325 ASF (45.5% of existing space). Six departments will have significant future space deficits (over 1,000 ASF): Communications, Nursing, Biology, Psychology, Teaching and Learning and Chemistry (in the order of greatest to least).
- **Open Labs:** The academic colleges currently have a shortfall of 3,915 ASF (49.8% of existing space). The College of Liberal Arts has needs identified for a language lab and music practice rooms. Open computer labs are the primary need for other colleges. The projections indicate a shortfall of 5,827 ASF (74% of the existing space). The AWC has two rooms classified as open labs, which are assumed to be adequate.
- **Research Labs:** The University currently has a deficit of over 8,300 ASF (14.2% of the existing space). The Agriculture and Environmental Sciences and Chemistry departments have the greatest current deficit, followed by Civil and Architectural Engineering, Biology, Electrical Engineering and Psychology. The College of Engineering's net need almost exactly matches its existing space. However, Civil and Architectural Engineering and Electrical Engineering have deficits of 3,282 ASF and 2,992 ASF, respectively. The projected research space deficit will exceed 20,500 ASF (35.2% of existing space).
- **Office Space:** The current office space deficit is 5,579 ASF (5% of existing space), which is almost equally split between offices and office service/support space. Current shortages are concentrated within the Colleges of Education and Engineering. The College of Liberal Arts also has a deficit, primarily in Music. Teaching and

Learning is the department with the greatest deficit. The projected office space deficit will be 24,738 ASF (22% of existing space). All of the colleges, with the exception of Business and Public Service and Urban Affairs, will have significant (greater than 1,000 ASF) office deficits in the future.

- **Administrative Office Space:** Administrative office space on the Main Campus currently shows a surplus of 27,611 ASF (18.8% of existing space). Office support space, however, just meets the overall need and has significant deficits (over 1,000 ASF) in three divisions. It is presumed that the support needs are, in part, addressed through the office space surplus. Institutional Advancement is the only division with an office space shortage. A significant portion of the office space surplus is from unassigned space. If the unassigned space is excluded, the current surplus is reduced to 11,088 ASF. The projected office space will have a surplus of 21,366 ASF (14.6% of existing space). If the unassigned space is excluded, the surplus is reduced substantially. Four of the eight divisions indicate a significant deficit (over 1,000 ASF) of support space. The AWC has a surplus of 3,849 ASF (33.5% of existing space), which is projected to be reduced slightly in the future.
- **Library Space:** The Brown-Daniel Library on the Main Campus has calculated deficit of 25,267 ASF (42.6% of existing space), and all four of the library space subcategories show a significant space deficit (greater than 1,000 ASF). Reading/Study space has the greatest need. The projected need calculation for the main library increases the deficit to 30,349 ASF (51% of existing space). The AWC library has a current and projected net overall space surplus. However, deficits are noted in three of the four subcategories, with the reading/study space being the greatest.
- Campus Wide Space:
  - **Assembly and Exhibition:** Assembly space on both campuses is sufficient to address current and future needs. Neither campus has exhibition space that is not assigned to an academic unit. In both cases, there are needs identified for this type of space.
  - **Food/Dining:** The Main Campus has a shortfall Food/Dining space of just over 1,500 ASF (3.9% of existing), with a projected deficit of over 9,000 ASF (23.3% of existing space). The AWC food service space is sufficient.
  - **Other Student Services:** The amount of student lounge space on the Main Campus is adequate; however, at the AWC there is a significant deficit. Merchandising and meeting room space is sufficient on the Main Campus, but there are deficits at the AWC where there is not any designated meeting room space.
  - **Campus Support:** The Main Campus has a very small shortage of just under 500 ASF. However, future needs indicate a deficit of over 9,000 ASF. Support space on the AWC is sufficient.

2. Physical Condition

Physical quality was assessed through observations of buildings, meetings with University administration, facility management and staff. The Facilities Condition Assessment followed the Tennessee Board of Regents' (TBR) Physical Facilities Inventory and Survey (PFIS) Database, which was updated at the conclusion of the assessment. The team, working with TSU Facilities, rated individual buildings using a numeric value, summarized by a letter ranking, which grouped the buildings into priorities for repairs, renovation, redevelopment or demolition. Physical condition was compared to functional quality to determine an overall ranking of buildings relative to their ability to be of productive use as contemporary educational facilities.

This combined use, condition and functional assessment can help the University combine and balance expenditures for relocation and expansion of programs with maintenance needs to optimize the value of both construction and maintenance funds.

TSU has an aged campus with buildings that were designed in accordance with the educational requirements and guidelines of the period in which they were constructed. With changes in program requirements, energy management, health, safety and other codes over the ensuing years, most of the campus buildings are now out of date—and distressed with obsolete components; several are not practical to upgrade. Retrofitting some older buildings with new Information Technology (IT) is not optimum, and many existing classrooms are not conducive

to current expectations for teaching and learning with state-of-the-art IT. Similar conditions exist with laboratory equipment, fixtures and furnishings.

3. Student Housing Demand

Most TSU on campus housing is out of date and in poor condition, and do not meet contemporary student expectations. The options available to TSU students range from newer, luxury apartments to older buildings that have been converted into student housing. Local housing does not offer student-focused amenities such as by-the-bed leasing, utility inclusive rental rates or group study spaces, and few offer flexible lease terms.

The percentage of first-year students living on the TSU campus (72%) aligns directly with peer institutions, while overall, more TSU undergraduates live on campus (36%) than live-in on-campus housing at peer institutions. Within the peer group, TSU and Texas Southern are the only schools that do not have a live-on requirement.

An internet survey was used to test housing preferences of TSU students in order to project student demand for new/renovated housing. Survey questions were designed to assess preferences, selection criteria, amenities, price sensitivity and usage patterns. Response options were structured to maximize information regarding desirable characteristics and demand for specific housing and policies. Demographic profiles allowed responses to be sorted to identify unique user patterns in demand and develop preference results.

Students indicated that availability of on-campus housing was either very important or important in their decision to attend TSU. A little more than half (53%) of students who live in traditional units responded that they were either very satisfied or satisfied with their current living condition, while 63% of respondents who live in suite-style units and 70% of respondents who live in on-campus apartment units are either very satisfied or satisfied with their conditions. 94% of students living off campus were either very satisfied or satisfied with their living conditions.

The assessment model used by the planning team projected a maximum demand of 3,429 student beds, approximately 37% of the total enrollment. The recommended bed count is 3,129 beds, representing a 147 bed deficit based on the 2,982 on-campus beds currently available at TSU. The existing mix (50% traditional-, 25% suite-, 25% apartment-style) does not align with the bed demand from students.

4. Campus Recreation Demand

An internet survey was used to test recreation preferences of TSU students in order to project student demand for additional/repurposed recreation space on campus. Response options were structured to maximize information regarding desirable characteristics and demand for specific recreation amenities and policies. Demographic profiles allowed responses to be sorted to identify unique user patterns in demand and preference results.

The survey helped to develop priorities classified by both “Depth of Demand,” representing the number of people who participate in an activity at least twice a week, and “Breadth of Demand,” representing the number of people who participate in an activity, even if only occasionally. Overall, self-directed fitness activities emerged as the core indoor student recreational routines. Cardiovascular equipment, weight machines and free weights are the activities most preferred by TSU students; flexibility, ease of use and lack of scheduling requirements were the primary reasons identified. Outdoor walking trails are the top outdoor priority.

5. Athletics Need

The assessment identified the following athletic facilities as important for TSU to remain competitive within the OVC, and meet the mission and vision outlined by the University:

- +/- 25,000 seat on-campus football stadium
- 5,000 square feet of additional support facilities
- 1,750 GSF Athletic Training Center
- 3,250 GSF Strength & Conditioning Center
- Indoor basketball/volleyball practice facility, adjacent to the Gentry Complex
- Facility upgrades to Gentry Complex locker rooms, athletic training, and strength and conditioning spaces

- Permanent seating, renovated dugouts, and completion of deferred maintenance in and around the Softball facility
- Resurfacing of both the indoor and outdoor tracks

6. Master Plan Summary

The Master Plan strengthens and further defines current land use patterns. It illustrates significant changes in seven areas of the campus surrounding the core.

- Campus arrival and entry, anchored by a new recreation center and Student/Visitor Center and parking garage
- A new residential precinct, comprised of two quads and a recreation field expands the campus east to Hadley Park
- Expansion of the existing housing cluster in the southeast corner of the campus (retained from the 2008 Master Plan)
- Reinforce the campus core with new buildings that replace obsolete buildings
- New, expanded Sponsored Research Corridor in the northwest corner of the campus, anchored by the new Health Sciences building
- Future academic and administrative buildings fill in the northeast corner of the campus core
- New Football Stadium (also proposed in the 2008 Master Plan)

A significant addition is a more clearly defined and secured perimeter. The entire campus will be framed by an ornamental fence, with limited, controlled access points. All persons coming to the campus, from students and faculty to visitors, vendors and delivery personnel will pass through a controlled gate, greatly increasing surveillance, and establishing a positive definition of the campus environment.

Athletics and Physical Education complexes remain clustered along the north side of campus. The physical plant is located in an appropriate space to the north of the academic core, ultimately moving to land north of Heiman Street.

This Master Plan concentrates parking on the perimeter of the Main Campus reserving the center as a pedestrian environment encompassing new and existing buildings and open space.

Student Housing

The analysis of housing demand and the condition of the residential facilities supports reducing the number of traditional-style beds from the on-campus housing stock and replacing it with suite-style beds in new or renovated. Feedback from the assessments indicates the importance to both recruiting and retention of upgrading the housing. This plan recommends up to five new traditional and suite style residence halls to replace out dated halls in poor physical condition.

The housing upgrade program should begin by building a new residence hall which will allow TSU to vacate and demolish the first of up to four existing residence halls. This process would be repeated, transferring students to new facilities and removing the old. Up to three new residence halls can be built on land that is currently used for parking or green space. The new residence halls should be constructed to form new residential quads in.an enlarged housing precinct built along a new pedestrian spine, linking the quads to the campus core.

While most of the residence halls can be built on land currently owned by the University, additional land east of 33rd and, eventually, 32nd Avenues will be needed to accommodate the necessary parking.

Circulation and Parking

This Master Plan takes a new approach to campus access and circulation, limiting vehicular access to four secured gates. Internal circulation provides access to all campus destinations from within the gateways. Four new secured gates may be manned or operated through electronic links. As in the 2008 Master Plan, general vehicle traffic and parking is kept to the perimeter of the campus, while service access is maintained to all buildings, either over service drives, or on occasion for special needs, over limited sections of walkway.

John a. Merritt Boulevard will be enhanced as the main and ceremonial entrance to Main Campus, with the arrival at a new Main Gate that will be moved to the east so that access to all of the campus, except a few

buildings on Merritt Boulevard is from inside the gate. The other campus gates are proposed for John L. Driver, on the west, the north entry drive off Davis Boulevard on the north, and Clare Avenue on the south. A new internal roadway along the south boundary will connect the Main Gate with the South Gate, and through existing roads to the West Gate. Only the North Gate will have limited access to the main part of the campus.

Parking will be consolidated along the perimeter of the campus, furthering the plan set down in the 2008 Master Plan. Concentrations of parking will be at the Main Gate, near the Recreation Center and Football Stadium, primarily in a garage, along the south boundary near most of the residence halls, at the west end near the future Research corridor, and on the north side of campus serving the Athletic facilities.

Open Space and Pedestrian Circulation

The Master Plan refines and expands the existing open space system, strengthening the focus on the formal mall at the center of the academic core. The mall is the heart of the campus to which most of the connecting open space corridors, quadrangles and gathering areas connect. As important as the formal open space and gathering areas are, the informal and casual open spaces, and natural areas that frame the campus are also valuable and integral parts of the campus environment. The open space system is comprised of several types of outdoor use area, each of which plays a vital role in the identity, structure and circulation of the campus:

- The Central Campus Green (campus core)
- Secondary Campus Green (secondary core)
- Main Gateway and Entry Corridor
- Plazas and Gathering Places
- Academic Quads
- Residential Quads
- Framing Green Space
- Natural Woodlands
- Sports Fields

Athletic and Recreational Facilities

The athletic fields will remain concentrated in the northern portion of the campus and consist of controlled access athletic spaces (baseball field, softball field, football field and practice fields, track and field, and tennis courts). The Master Plan proposes to supplement the existing multi-purpose recreational fields in the northern portion of the campus with a new rectangular field between the proposed new Recreation Center and new residential quads.

A new Recreation Center will add a net of 60,000 GSF of indoor recreation space to the center of campus, east of Kean, along Merritt. This prominent location at the main arrival point on campus puts it close to concentrations of both resident and day students, with good roadway access for events. A proposed parking garage will provide ample convenient parking. A new recreation field between the Recreation Center and residential quads will support programs at the Recreation Center, and become a focal point of student life. This field will provide much-needed informal recreation space in a location that is central to much of the student life facilities. It is also contained and secure within the campus by surrounding parking facilities.

Campus Security

The most visible element of the Security Master Plan is the ornamental security fence that will surround the entire Main Campus, and the four gateways that will control all access to the campus.

Utility Infrastructure

The Master Plan will expand the footprint of the TSU campus in many areas. Utilities will require expansion and some relocation to accommodate the Master Plan. Main sizes for new water mains will be increased to 8” and several existing mains will be replaced. Several electric duct banks will need to be relocated or extended, and the substation monitored to be sure demand does not exceed capacity, in which case alternate sources of power may be needed. Some sanitary and storm sewer mains will have to be relocated to accommodate and serve proposed development, and extend service to expansion areas. Existing pipes should be reviewed to ensure there are no leaks or capacity issues.

Expansion will increase demand for steam. The power plant currently has adequate output capacity and is capable of accommodating additional buildings. However, there are factors that limit the peak capacity. As new buildings come on line to the system, the system should be reviewed to ensure capacity does not become an issue. A tunnel extension and other service extensions will be needed to serve new buildings. A second chiller plant may be needed to accommodate growth. Other potential improvements include a tunnel extension and expansion to serve new buildings. Gas service will likewise need to be extended to new buildings.

Significant improvements are required to bring the University's communications system to adequacy. An increased server room is necessary, as is replacement of the telephone system. A VoIP should be considered. These improvements are especially important with the increased necessity for current technology. Other recommended improvements will be similar to the electric improvements.

II. History of the University

A. Description of History

This section presents a brief history of Tennessee State University, documents key events that have shaped the educational and physical form of the campuses, and identifies those forces which are likely to influence its future.

1. History of Tennessee State University

TSU was established in 1912 as a small Agricultural and Industrial Normal School for Negroes, serving a student body of approximately 250 to 300. Since then, TSU has flourished into a full-fledged, nationally-recognized university—offering undergraduate, graduate, and doctoral programs to a student body of over 9,000 and attracting students from 44 states and 38 countries.

With a deep-rooted history of empowering students by establishing and expanding opportunities for them, TSU has grown to become one of the nation's most highly respected Historically Black Colleges and Universities (HBCU). To its credit, TSU has accomplished this transition without losing focus on its primary mission—that of being an "access" school for Tennessee's financially challenged students, many of whom have few alternatives when seeking to gain a collegiate education.

Although TSU had previously been considered by some students to be a campus of "last resort," its recognition as a nationally-ranked university and reputation for quality curriculum-delivery has allowed TSU to become a campus of "first choice."

Today, TSU is comprised of multiple facilities on the nearly 760 acres located in Nashville and surrounding communities. The 290-acre Main Campus has more than 65 buildings and is located in a residential setting just west of Nashville's center. The Avon Williams Campus (AWC) is located downtown near the center of the Nashville business and government district. The master planning process is focused on the two-campus structure (Main and AWC) which resulted from the merger of TSU and the former University of Tennessee at Nashville on July 1, 1979.

TSU, in its earliest form, was created by an Act of the General Assembly in 1909 which created the Agricultural and Industrial State Normal School. This new institution first began serving students on June 19, 1912. William Jasper Hale was appointed as head of the school. The original 247 students, along with the faculty and staff, operated much like an educationally-focused family; everyone worked together to maintain the institution's academic and physical functions. Faculty, staff and students shared tasks that included clearing rocks, harvesting crops, carrying chairs from class to class and generally maintaining the facility while also conducting classroom activities.

In 1922, the institution was elevated to the status of a four-year teachers' college and was empowered to grant bachelor's degrees. The first degrees were granted in June 1924. During the same year, the institution became known as the Agricultural and Industrial State Normal College. In 1927, "Normal" was dropped from the name of the college.

As the college grew in scope and stature throughout the 1920s and 1930s, so did its impressive roster of alumni who embodied the school's charge: "Enter to learn; go forth to serve." In 1943, when William Hale retired after more than 30 years at the school's helm, an alumnus was chosen to succeed him: Walter S. Davis. From 1943 until his retirement in 1968, President Davis led the institution through a period of tremendous growth and change. As a result of his efforts, the university increased its academic offerings, built new facilities and gained worldwide recognition.

In 1941 the General Assembly authorized the State Board of Education to substantially upgrade the educational program of the college, which began with the establishment of graduate studies and led to the awarding of master's degrees. Graduate curricula were first offered in several branches of teacher education. The first master's degree was awarded by the college in June 1944.

In 1946, the institution was accredited by the Southern Association of Colleges and Schools. In August 1951, the institution was granted university status by approval of the State Board of Education. The reorganization of the

institution's educational program included the establishment of the Graduate School, the School of Arts and Sciences, the School of Education and the School of Engineering. Provisions were also made for the later addition of the Schools of Agriculture, Business and Home Economics. At this time, the university was known as the Tennessee Agricultural and Industrial State University.

In August of 1958, the university, by approval of the State Board of Education, was elevated to the status of a full-fledged land-grant university. The Land-Grant University Program included the School of Agriculture and Home Economics, the Graduate School, the Division of Extension and Continuing Education and the Department of Aerospace Studies. In 1974, the university added The School of Allied Health Professions and the School of Business. In addition, the School of Nursing was established in 1979.

Today, TSU consists of five colleges, three schools and the Institute of Government, which include:

- College of Arts and Sciences
- College of Business
- College of Education
- College of Engineering, Technology and Computer Science
- College of Health Sciences
- School of Agriculture and Consumer Sciences
- School of Nursing
- School of Graduate Studies and Research
- Institute of Government

In 1968, Andrew Torrence, also an alumnus, was named the university's third president. It was during his relatively brief tenure that the state legislature formally dropped "Agricultural and Industrial" from the University's name, which then became Tennessee State University. It was also during the Torrence presidency that one of the most significant events in the campus's history occurred: a lawsuit which would not be fully resolved or have its impact felt for decades to come.

In 1968 a TSU faculty member, Rita Sanders Geier, filed a lawsuit against TSU and the State of Tennessee alleging a dual system of higher education in Tennessee based on race. Two TSU professors, Ray Richardson and H. Coleman McGinnis, joined Rita Geier as co-plaintiffs in the lawsuit, as did the U.S. Department of Justice. An agreement between the two parties in this case, which over the years evolved into Geier vs. Tennessee, would not be reached for over 32 years. During this period, numerous court-ordered plans failed to produce progress on the matter. On January 4, 2001, a mediated Consent Decree agreed upon by all parties was ordered by the court.

In 1975 Frederick Humphries became TSU's fourth president. At that time, Nashville was still home to two public four-year universities: TSU and UT Nashville. On July 1, 1979, as a result of one of the court orders in the 1968 Geier vs. Tennessee case, the former University of Tennessee at Nashville was merged with TSU. President Humphries was the first TSU president to face the challenge of maintaining balance between TSU's role as one of America's preeminent historically black universities and as an emerging comprehensive, national university.

In 1947, prior to merging with TSU, the University of Tennessee at Nashville began as an extension center of the University of Tennessee. UT Nashville offered only one year of extension credit until 1960, when it was empowered by the Board of Trustees of the University of Tennessee to offer two years of resident credit. In 1963 authorization was granted to extend this to three years of resident credit, even though degrees were awarded by the Knoxville unit. In 1971, upon successfully meeting the requirements for accreditation by the Southern Association of Colleges and Schools and in order to more fully realize its commitment as a full-function evening university, the UT-Nashville campus became a full-fledged, four-year, degree-granting institution.

During the same year, the General Assembly sanctioned the institution as a bona fide campus of the University of Tennessee, and the new university occupied its quarters in the building at the corner of Tenth and Charlotte avenues in downtown Nashville. In part, it was the erection of this building which gave rise to the decades-long litigation to "dismantle the dual system" of higher education in Tennessee. The litigation resulted in the merger of both institutions (ordered by Judge Frank Gray in February 1977), resulting in an expansion of the present-day TSU as a Tennessee Board of Regents (TBR) institution.

In 1987 TSU's fifth president, Otis Floyd, assumed his post following a year as interim president. He left the University when he was appointed chancellor of the TBR in 1990. Floyd, as both President and Chancellor, kept TSU moving forward, initiating efforts that resulted in the University receiving an unprecedented $112 million from the state General Assembly for capital improvements in 1988. Under this plan, nearly all buildings on campus were renovated, and eight new buildings were constructed, including the Floyd-Payne Campus Center, the Ned McWherter Administration Building, the Wilma Rudolph Residence Center and the Performing Arts Center.

In 1991, James Hefner became the sixth president of TSU. He oversaw implementation of the capital improvements project and managed TSU during a period of enrollment growth to 9,100 students—which remains the population on TSU campuses, today.

In October, 2006, Melvin N. Johnson became the seventh TSU president. During his term as president, Dr. Johnson commissioned both the Academic Master Plan and the 2008 Campus Master Plan He also led development of a strategic approach to transforming TSU into a 21st Century institution of higher education.

In the University's second century of academic excellence and service, Dr. Glenda Baskin Glover became the eighth president and first woman to lead the 100-plus year institution in January 2013. She continues to make changes to further emphasize the excellence for which TSU is internationally known.

Today, TSU offers 45 bachelor's degrees, 24 master's degrees and awards doctoral degrees in seven areas: Biological Sciences, Computer Information Systems Engineering, Psychology, Public Administration, Curriculum and Instruction, Administration and Supervision and Physical Therapy.

In summary, during its history, eight presidents and five acting presidents have served the institution. They are:

- William J. Hale, 1912-1943
- Walter S. Davis, 1943-1968
- Andrew P. Torrence, 1968-1974
- Charles Fancher, (Interim) 1974-1975
- Frederick S. Humphries, 1975-1985
- Roy Peterson, (Interim) 1985-1986
- Otis L. Floyd, (Interim) 1986-1987, 1987-1990
- George W. Cox, (Interim) 1990-1991
- James A. Hefner, 1991-2005
- Melvin N. Johnson, 2005-2011
- Portia Shields (Interim), 2011-2012
- Glenda Glover, 2013-present

2. Accreditation and Affiliations

TSU is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award Associate's, Bachelor's, Master's, Specialist in Education, and Doctoral degrees. In addition, the following programs and associations support the high quality education available on the TSU campuses.

College of Liberal Arts

- **Art** (B.A.: National Association of Schools of Art and Design)
- **Music** (B.A.: National Association of Schools of Music)

College of Public Service

- **Social Work** (B.S.; M.S.W.: Council on Social Work Education)
- **Public Administration** (M.P.A., Ph.D.: National Association of Schools of Public Affairs and Administration)

College of Business

- **Business** (B.B.A., M.B.A.: AACSB (the Association of Advance Collegiate Schools of Business International))

College of Education

- **Education** (B.S., M.S., M.A.Ed., Ed.S., Ed.D.: National Council for Accreditation of Teacher Education (NCATE))
- **Psychology** (Ph.D. with concentration in Counseling: American Psychological Association (APA))

College of Engineering

- **Computer Science, Architectural Engineering, Mechanical Engineering, Civil Engineering, Electrical Engineering** (B.S.: Accreditation Board for Engineering and Technology)

- **Aeronautical and Industrial Technology** (B.S., Association of Technology, Management and Applied Engineering)

College of Health Sciences

- **Cardio-Respiratory Care Sciences** (B.S.: Commission on Accreditation for Respiratory Care)
- **Dental Hygiene** (A.A.S.: Commission on Dental Accreditation)
- **Health Care Administration and Planning** (B.S.: Association of University Programs in Health Administration)
- **Health Information Management** (B.S.: Commission on Accreditation of Allied Health Education Programs in collaboration with the Council on Education of the American Health Information Management Association)
- **Occupational or Physical Therapy M.O.T.** (Accreditation Council for Occupational Therapy Association; Education of the American Occupational Therapy Association)
- **Nursing** (A.A.S., B.S.N., M.S.N.: Accreditation Commission for Education in Nursing)
- **Physical Therapy** (D.P.T. Commission on Accreditation in Physical Therapy Education (CAPTE)).
- **Public Health** (M.P.H., Council on Education for Public Health)
- **Speech and Hearing Science** (M.S.: Council of Academic Accreditation of the American Speech-Language-Hearing Association)

School of Agriculture

- **Family and Consumer Sciences** (B.S.: American Association of Family and Consumer Sciences, Accreditation Council for Education in Nutrition and Dietetics)

College of Life and Physical Sciences

- **Chemistry** (B.S.: American Chemical Society)

3. History of Master Planning

TSU has had a number of Master Plans created through its history.

In 1951 a comprehensive mater plan was completed by Douglas Williston, a fairly well-known HBCU planner of that time. The 1951 plan features a campus wide map, information of planned facilities, and a robust landscape plan. This plan did not focus upon quantitative analysis or sub-plans for specific areas of focus.

The 1971 Master Plan was done by a local Nashville firm, Hamilton-Butt & Associates. This plan focused comprehensively upon the campus, including current and projected buildings. However, this plan also did not focus upon quantitative analysis or sub-plans for specific areas of focus.

In 1988 a Master Plan was prepared for TSU by Gruzen Samton Steinglass/The Ehrenkrantz Group—Hickerson—Fowlkes. Its purpose was to establish a long-range design framework for future campus development. The plan also involved a comprehensive campus needs assessment. The assessment included both spatial needs for the different departments and evaluations of the physical conditions of the buildings. This plan was well utilized for multiple projects on the campus.

In 1997, Lose & Associates conducted a North Campus Land-Use Plan. The primary focus of this study was to assess the current needs of the athletic programs and their facilities. The plan also included a land-use design to meet these needs. However, only portions of the design plan were ever realized; key aspects of the plan that were implemented include the tennis facilities and the large crescent shaped parking lot.

In 2007, TSU commissioned the BKV Group to complete a campus-wide master facility plan. This study was built on an estimated enrollment of 12,000 headcount by 2012, yet by recommending a lower Assignable Square Feet/Full Time Equivalent student (ASF/FTE) this plan did not include significant additional building. Instead, it focused on improving the pedestrian experience by moving parking to the perimeter to make the Campus Core more pedestrian friendly and unified.

By 2012, it was clear that growth would fall well short of projections, and changing educational needs called for a new Master Plan. TSU retained Woolpert, Inc., to prepare a new facilities plan based on a detailed assessment of academic program and space needs, as well as an updated facilities condition assessment, with the goal of balancing space with need to allow construction of new state-of-the-art buildings. This plan is based on a slower growth rate, and a desire to further strengthen the Campus Core.

4. Buildings of Historical Significance

While no individual TSU facilities meet the architectural or historical character requirements to be on the National Historic Register, the following facilities are located within a less rigid designation as a "historic district" on the register (see Table II-1).

Table II-1: Building Located within the National Register Historic District

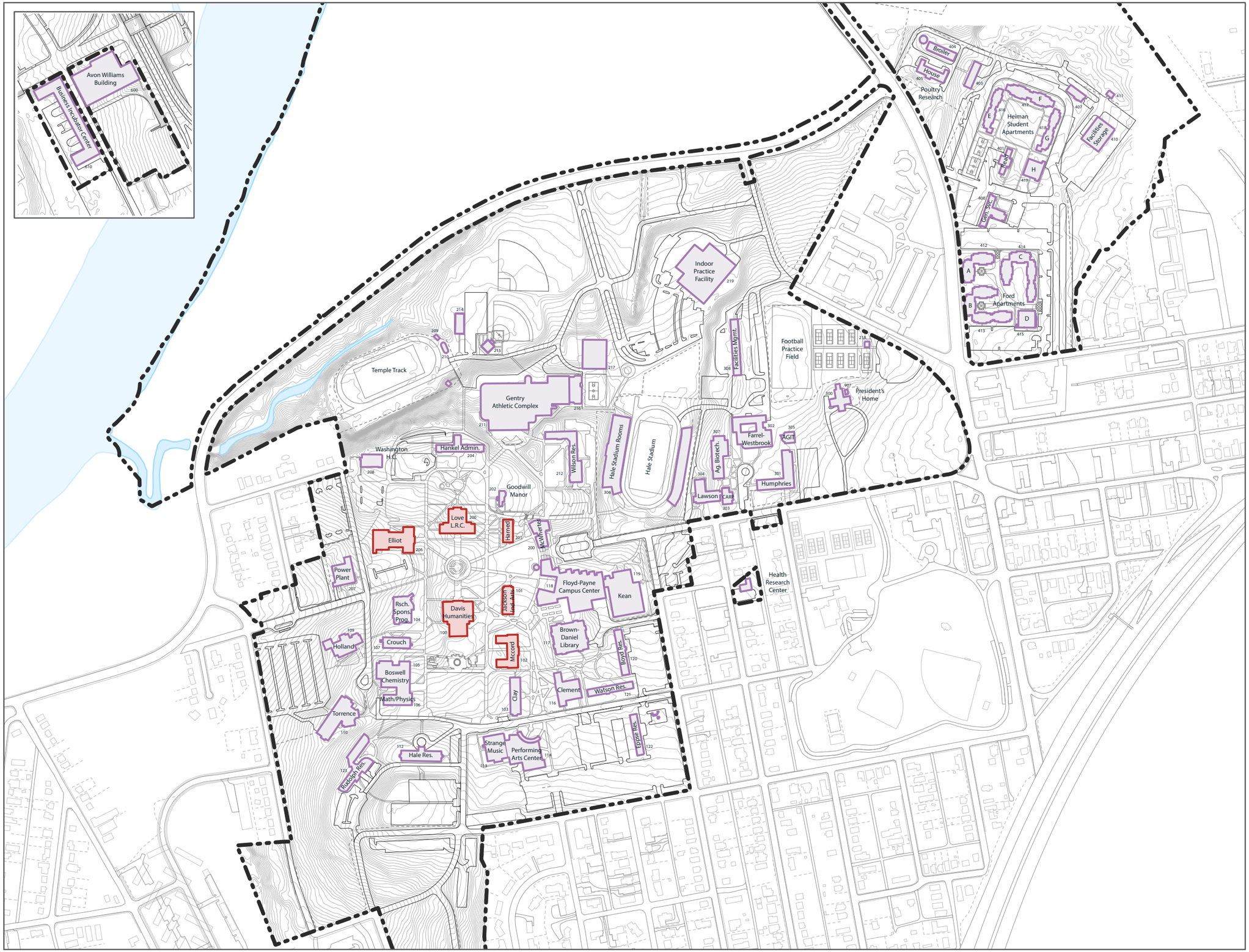
Building Name	Built
Davis Humanities	1933
Elliot Hall	1927
Harned Hall	1927
Jackson Industrial Tech	1933
Love LRC	1933
McCord Hall	1950

In addition, several facilities have significance to TSU history, but are not important as for their architecture alone, nor are they located within the historic district. Goodwill Manor, although it is a complete replacement/replication of the original facility, is the only surviving building from the original campus construction of 1912-1914. The old Football Fieldhouse/AFROTC Building, and the Ag Barn (Farrell-Westbrook), are known as Depression era WPA buildings, though very little of their structures are original.

5. Named Facility Honorees

There are several buildings on campus that have been named for important members of the Nashville or Tennessee area, including:

- **Averitte** Amphitheater—Laura M. Averitte, author of the University's Alma Mater, founder of the TSU Theater Program
- **Avon Williams** Campus—Avon N. Williams Jr., Tennessee State Senator, TN and US Supreme Courts Member, NAACP Administrator
- **Boston** Room AD Suite—Ralph Boston, Olympic Gold, Silver and Bronze medalist, one-time long jump world record holder
- **Boswell** Complex—Alger V. Boswell, Department Head, VP Emeritus, Registrar, Dean of Men
- **Boyd** Residence—Henry Allen Boyd, principal in founding of TSU/A&I, Founder of National Baptist Publishing and Citizen's Trust Bank. Administrator of Fisk and Meharry
- **Brown-Daniel** Library—Martha M. Brown, 1912 faculty member, Library Director 1925-1945. Lois H. Daniel–Library Director 1945-1976
- **Clay** Hall—Robert E. Clay, State Education Administrator and A&I supporter
- **Clement** Hall—Frank G. Clement, Tennessee Governor and TSU supporter
- **Cox–Fancher** Computer Science Complex—George W. Cox, Interim President and VP for Academic Affairs. Charles B. Fancher, Interim President and VP for Administration
- **Cox-Lewis** Theater—Dury Cox Jr., actor and TSU theater supporter. Edward C. Lewis Jr., father of TSU's Music Department
- **Crouch** Hall—Hubert B. Crouch, Graduate School Dean, Science Division Director
- **Crutchfield** Athletics Weight Room—Claude S. Crutchfield, TSU alumnus, Metro teacher, longtime supporter of TSU Athletics
- **Crutchfield** Athletics Hall of Fame/Lounge—Inez Gibbs Crutchfield, PE Professor and Administer
- **Davis** Humanities—Walter S. Davis, second TSU President, A&I grad, Professor, football coach, Department Head
- **Elliott** Hall—Janie E. Elliott, founder of A&I cafeteria system, first HBCU cafeteria system, Presbyterian missionary
- **Eppse** Residence—Merle R. Eppse, professor, History Department Head
- **Farrell-Westbrook** Ag Sciences Complex—James E. Farrell, Fred E. Westbrook, TSU Professors and Administrators–state, federal, and international agriculture agents
- **Floyd/Payne** Campus Center and Floyd Nursery Crop Research Center—Otis L. Floyd, TSU President and TBR Chancellor. Joseph A. Payne, Dean of Students and VP Student Affairs
- **Ford** Apartments Residence—John Ford and Harold Ford Sr., State Senator, and US Congressman, respectively. TSU benefactors
- **Gentry** Athletic Complex—Howard C. Gentry, football coach, Athletic Director, community leader.
- **Greer** Band Room—Frank Greer – Second TSU Director of Bands
- **Hale** Stadium—William J. Hale, first President
- **Hale** Residence—Harriett H. Hale, TSU First Lady, Professor, Administrator



Historic Districts & Structures

Figure II-1

Buildings Within the Historic District

Existing Buildings

Campus Boundary

No individual TSU facilities are old and original enough to be on the National Historic Register. The demarcated facilities constitute a less rigid designation as a "historic district" on the register.

UNIVERSITY HISTORIC DISTRICT

LOCATION:	3500 JOHN A MERRIT BLVD
ARCHITECT:	MARR & HOLMAN
ADDED TO NRHP:	JUNE 14, 1996
NRHP REF NUMBER:	96000677
GOVERNING BODY:	TSU

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

- **Hankal** Residence—Edna Rose Hankal, Professor, Matron of Ladies Housing, Dean of Women
- **Harned** Hall—Perry L. Harned, State Commissioner of Education and colleague of President Hale
- **Holland** Hall—Lewis R. Holland, professor and Business Department Head, founder and president of TSU Credit Union
- **Hughes** Natatorium/Pool—Thomas "Friend" Hughes, first swim coach, 5 consecutive national championships
- **Humphries** Hall—Frederick S. Humphries, TSU President and FAMU President
- **Jackson** Industrial Tech—Tom Jackson, State Commissioner of Tourism, TBR Regent and TSU benefactor
- **Kean** Hall/Gymnasium—Henry A. Kean, football and basketball coach, Athletic Director
- **Lawson** Hall—Wilfrid Whitehead Lawson, Professor and Scientist, first Director of Agriculture at A&I.
- **Lewis** HPSS Office Suite—Audrey E. Lewis, Professor and Department Head
- **Love** LRC—Harold M. Love Sr., TSU alumnus, Metro Councilman, State Representative, longtime TSU supporter
- **McCord** Hall—Jim Nance McCord, Tennessee Governor and TSU supporter
- **McClendon** Basketball Court—John B. McClendon, basketball coach, three consecutive national championships, first African American professional basketball coach
- **McWherter** Administration Building—Ned Ray McWherter, Tennessee Governor and TSU supporter
- **Merritt** Boulevard and **Merritt** Plaza —John A. Merritt-Hall of Fame football coach and community leader
- **Murrell** Forum—Robert N. Murrell, Director of Housing and Dean of Men
- **Poag** Auditorium—Thomas A. Poag, actor, coach and teacher of TSU's famed actors, first African American holder of Drama Ph.D.
- **Rudolph** Residence Center—Wilma Rudolph, Tigerbelle and Olympic Champion
- **Strange** Music Building—Marie Brooks Strange, long time music Professor and concert pianist
- **Torrence** Engineering—Andrew P. Torrence, Third TSU President, VP for Tuskegee Institute
- **Temple** Track and **Temple** Boulevard—Edward S. Temple, TSU ladies' track coach, USA ladies' Olympic coach
- **Van Gordon** Student Art Gallery—Hiram Van Gordon, artist and benefactor
- **Washington** Health Center—Queen Washington, staff nurse, head nurse, and administrator of health services for TSU
- **Watson** Residence—Lena B. Watson, Matron of A&I East Residence Hall
- **Welton** Plaza—Hazael Edward Welton, class of '32, established first TSU endowment scholarship in 1977
- **Williams** Honors Center—McDonald Williams, professor and Honors Center Director
- **Wilson** Ladies Residence—Mary L. Wilson, faculty member 1916, Professor and Dean of Women
- **Young** Poultry Plant—Frank A. Young, Dean of Nashville Sports Writers and A&I supporter

B. Overview of Institution

This section describes the overall dimensions and physical characteristics of the campus.

1. Campus Characteristics

TSU is located in the state's capital, Nashville, and the county seat of Davidson County. Located on the Cumberland River in Davidson County, in the north-central part of the state, Nashville is the second most populous city in the state after Memphis. It is a major hub for the health care, music, publishing, banking and transportation industries.

Nashville has a consolidated city-county government, which includes seven smaller municipalities in a two-tier system. The population of Nashville-Davidson County stood at 668,347 as of 2014, according to United States Census Bureau estimates. The 2013 population of the entire 14-county Nashville Metropolitan Statistical Area was 1,726,693, making it the largest metropolitan area in the state. These large population numbers support the desire for TSU growth in the next 5 to 10 years.

2. Main Campus

The Main Campus for TSU is located just east of a bend in the Cumberland River and northwest of the 28th Avenue North exit from Interstate 40—the main route for vehicular access to the campus from the Nashville area. In general, the Main Campus serves a population of mostly full-time students who are seeking a traditional educational experience, including a residential life program. The vast majority of student credits are earned

during the daytime hours of 8:00 AM to 3:00 PM. The Main Campus is comprised of 65 buildings that are generally of a similar character.

3. Avon Williams Campus

The AWC is located near the center of Nashville, the state capitol building and other governmental facilities. It is located on a city block just off Interstate 40 and exit 209 on 10th Street—conveniently located near the downtown area as well as suburban areas. The vast majority of AWC students are non-traditional, working or part-time students. Classes are taught, with few exceptions, during the evening hours of 5:00 PM to 10:00 PM. The AWC is a single building designed in a contemporary style and situated on a city block. It has no exterior space to speak of that is usable by students and faculty.

4. Enrollment

As of 2014 institution figures, the current TSU enrollment is 9,196 headcount students which is 7,464 Full Time Equivalent (FTE) students. Two growth scenarios were evaluated for the planning horizon of approximately 5 years: 10,001 headcount and 8,671 FTE, and 12,000 headcount with 9,910 FTE students respectively. These growth scenarios represent 16% and 33% growth above the 9,038 headcount figure of 2006. In 2007, unofficial enrollment showed 7,118 (79% of the student headcount) undergraduate students and 1,904 (21% of the student headcount) graduate students—resulting in a headcount of 9,022 and representing relatively flat growth. Long-term projections indicate relatively flat growth, although the University has a desire to grow enrollment in the graduate divisions and maintain the current enrollment in the undergraduate division. Also, as of 2007, there are 405 fulltime faculty members and 144 part-time faculty members on campus. It is not expected that this 74/26% ratio will change substantially. Of the roughly 9,200 headcount students attending TSU, approximately 39% live on campus in residential facilities owned by the University. In addition, of the 9,200 students attending TSU on either or both campuses, approximately 1,300 are taking some form of eLearning or on-line course. 71% of the total TSU enrollment is from the State of Tennessee, a reflection of its strong local presence.

5. University Matriculation Agreements and TBR Policies

TSU is one of 46 institutions in the Tennessee Board of Regents (TBR) system, which is the seventh largest system of higher education in the nation. TBR is the governing board for this system, which is comprised of six Universities, 14 two-year colleges, and 26 Technology centers. The TBR system enrolls more than 80% of all Tennessee students attending public institutions of higher education.

TSU, under the control of the TBR, is a regional University organized as the College of Business, the College of Education, the College of Engineering, the College of Health Sciences, the College of Liberal Arts, the College of Public Service, the College of Agriculture, the College of Life and Physical Sciences and the School of Graduate Studies and Research.

The University is a major, comprehensive urban land-grant institution offering 45 bachelor's degrees and 24 master's degrees. Doctoral degrees are offered in seven areas: Biological Sciences, Psychology, Public Administration, Curriculum and Instruction, Administration and Supervision, Computer Information Systems Engineering and Physical Therapy.

The University is a member of the following associations:

- Association for the Advance Collegiate Schools of Business (AACSB International)
- American Association of Colleges for Teacher Education
- American Association of Colleges of Nursing
- American Association of Collegiate Registrars and Admissions Officers
- American Association of Family and Consumer Sciences-Higher Education Unit
- American Association of State Colleges and Universities
- American Council on Education
- American Psychological Association (APA)
- APPA: Leadership in Educational Facilities
- Association of Administrators of Human Sciences
- Association of Colleges and Schools of Education in State Universities and Land Grant Colleges (ACSESULAC)

- Association of Schools of Allied Health Professions
- Aviation Accreditation Board International (AABI)
- Conference of Southern Graduate Schools
- Council for Counseling Psychology Training Programs (CCPTP)
- Council of 1890 Family and Consumer Sciences
- Council of 1890 Presidents
- Council of Colleges of Arts and Sciences
- Council of Graduate Schools
- Council of Historically Black Graduate Schools
- Council of the Great City Colleges of Education
- Nashville Area Chamber of Commerce
- National Association for Business Teacher Education
- National Association for Equal Opportunity in Higher Education (NAFEO)
- National Association for Multicultural Education (NAME)
- National Association of Collegiate Directors of Athletics
- National Association of Industrial Technology (NAIT)
- National Association of Schools of Art and Design
- National Association of Schools of Music
- National Association of Schools of Public Affairs and Administration
- National Association of State Directors of Teacher Education and Certification (NASDTEC)
- National Association of State Universities and Land-Grant Colleges
- National Collegiate Athletic Association
- National Council for Accreditation of Teacher Education
- National Society of Allied Health
- National University Extension Association
- Ohio Valley Conference
- Organization of Black Airline Pilots (OBAP)
- Southern Association of Colleges and Schools, Inc.
- Southern Business Administration Association
- Southern Regional Education Board
- Teacher Education Council of State Colleges and Universities
- Tennessee Association of Colleges for Teacher Education
- Tennessee College Association
- Tennessee Conference of Graduate Schools
- The College Board
- University Aviation Association (UAA)
- University Council for Educational Administration (UCEA)
- World Council for Curriculum and Instruction (WCCI)

TSU is an equal opportunity employer committed to the education of a non-racially identifiable student body. TSU affirms that it does not discriminate based on race, color, religion, national origin, sex, sexual orientation, age, disability or veteran status in the educational programs or activities which it operates, nor in admission to or employment in such programs or activities.

TSU adheres to the requirements of Title VI and VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, as amended, Sections 799A and 946 of the Public Health Service Act, the Age Discrimination Act of 1975, the Rehabilitation Act of 1973, Americans with Disabilities Act of 1990, Executive Orders 11246 and 11375, and the related regulations to each.

This page intentionally left blank.

III. Goal Formation

A. TSU Institutional Mission Statement and Strategic Plan

1. Overview of Tennessee State University

The objective of this work element is for the planning team and campus community to gain a general understanding of the University's present and future institutional mission and strategic plan and their impact on the campus' physical characteristics. This section also summarizes information from work sessions held with University students, staff, faculty and administration. The general purpose of the work sessions was to review the current Institutional Mission Statement and Strategic Plan.

2. Strategic Plan and Mission Statement

Mission Statement

TSU, an 1890 land grant institution, is a major state-supported urban and comprehensive university. This unique combination of characteristics differentiates the University from others and shapes its instructional, research and service programs, which are designed to serve Metropolitan Nashville, Middle Tennessee, and the entire State of Tennessee, as well as the national and global community. The University is committed to maintaining its diverse student body, faculty and staff.

TSU provides quality instruction through academic programs which are broadly comprehensive at the baccalaureate and masters levels. Doctoral programs are offered in select areas where the University exhibits strength in instruction and research, and are consistent with the University's unique mission. The University's educational programs are intended to increase students' level of knowledge, enhance students' skills and expand students' awareness.

TSU is committed to engaging in pure and applied research that both contributes to the body of knowledge and broadens the application of knowledge. Whenever possible, the University strives to provide its students with the opportunity to be involved in the research activities of faculty and academic staff.

TSU serves its constituents through an array of programs and services that apply the knowledge, skills and discoveries of the instructional and research units at the institution. These services are intended to broaden the perspectives and enhance the quality of life of the University's service constituents.

TSU expresses its commitment to students' overall development by promoting life-long learning, scholarly inquiry and a commitment of service to others. Programs and services are geared toward promoting and nurturing students' growth and development as persons who are liberally educated, appreciate cultural diversity and embody a sense of civic and social responsibility.

TSU projects itself to its students, faculty and alumni, and to the citizens of the State, through the motto, "Think, Work, Serve."

TSU remains committed to the education of a non-racially identifiable student body and promotes diversity and access without regard to race, gender, religion, national origin, age, disability or veteran status.

3. Impact of Enrollment Changes

TSU foresees student headcount enrollment growth from 9,027 for Fall 2014 to 10,000 in Fall 2020, an 11% increase. In order to support this growth, TSU will require additional facilities, as well as improvements and upgrades to some of its existing facilities.

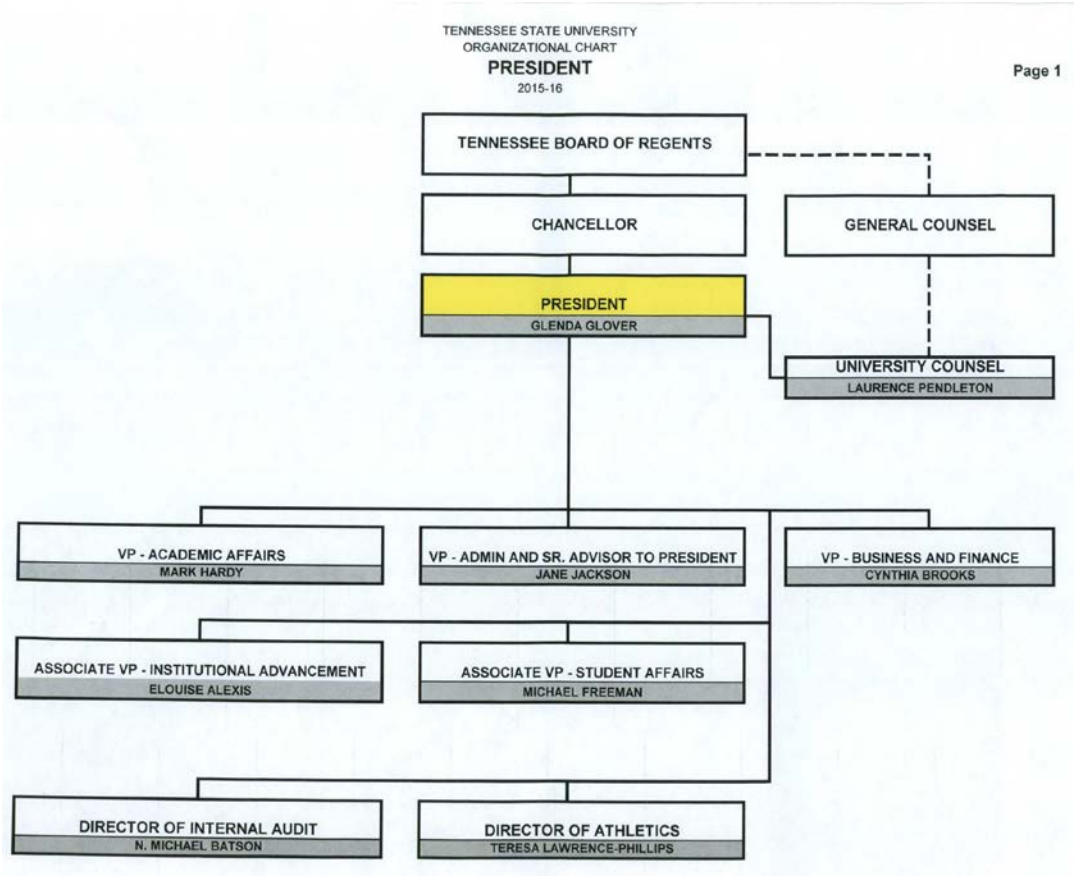
4. Academic and Administrative Structure

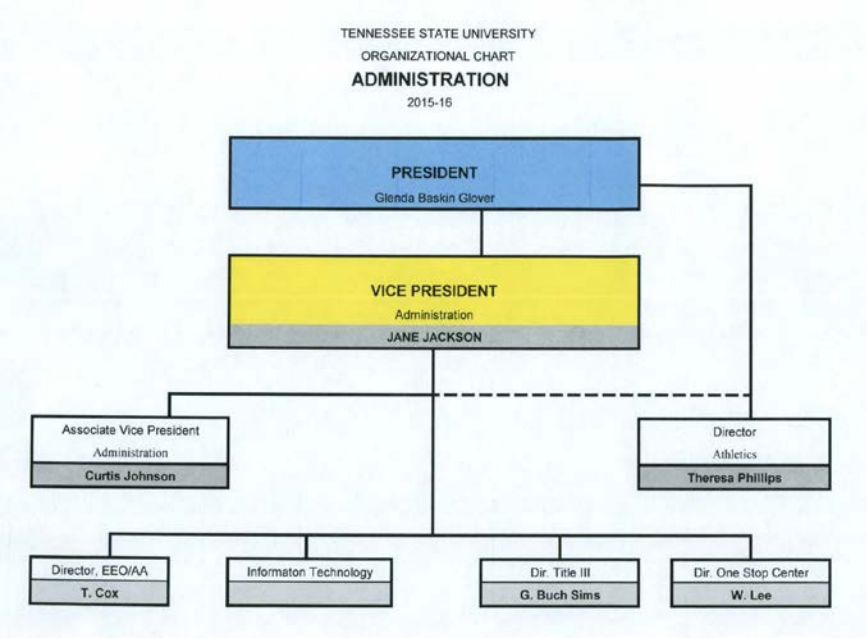
TSU delivers its academic programs in six colleges and three schools; supported by the Library:

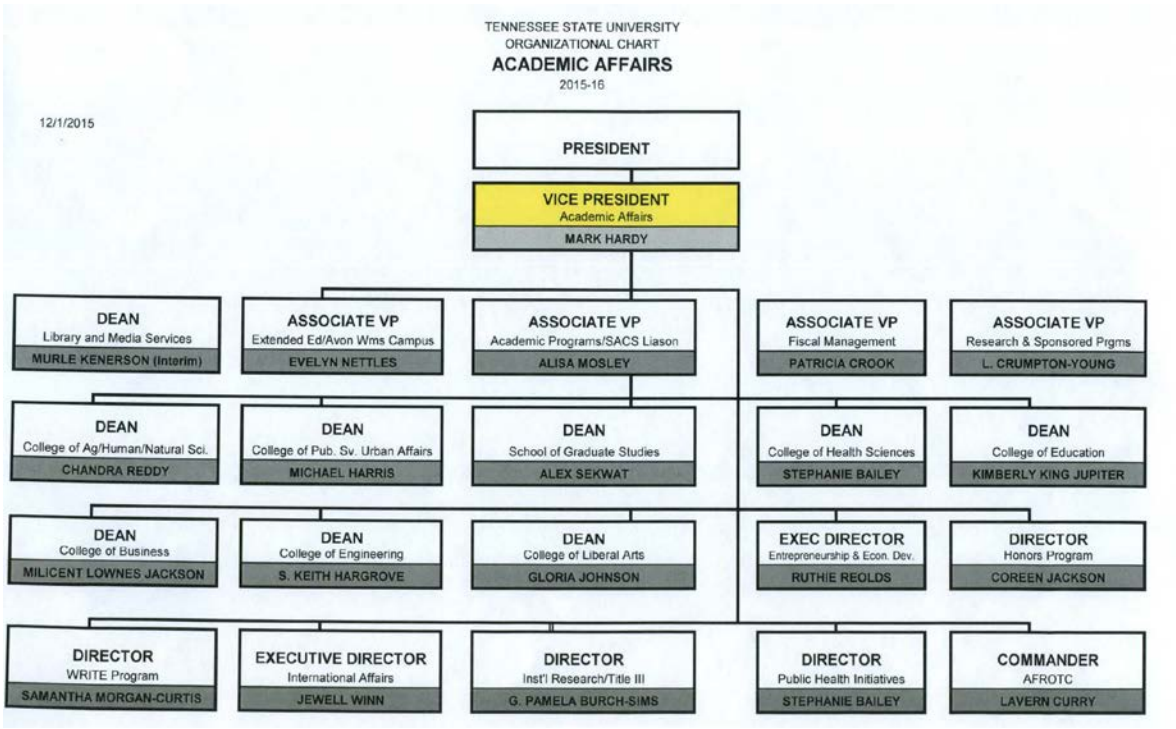
- College of Liberal Arts
- College of Business
- College of Education
- College of Engineering
- College of Health Sciences
- College of Public Service
- College of Agriculture
- College of Life and Physical Sciences
- School of Graduate Studies and Research

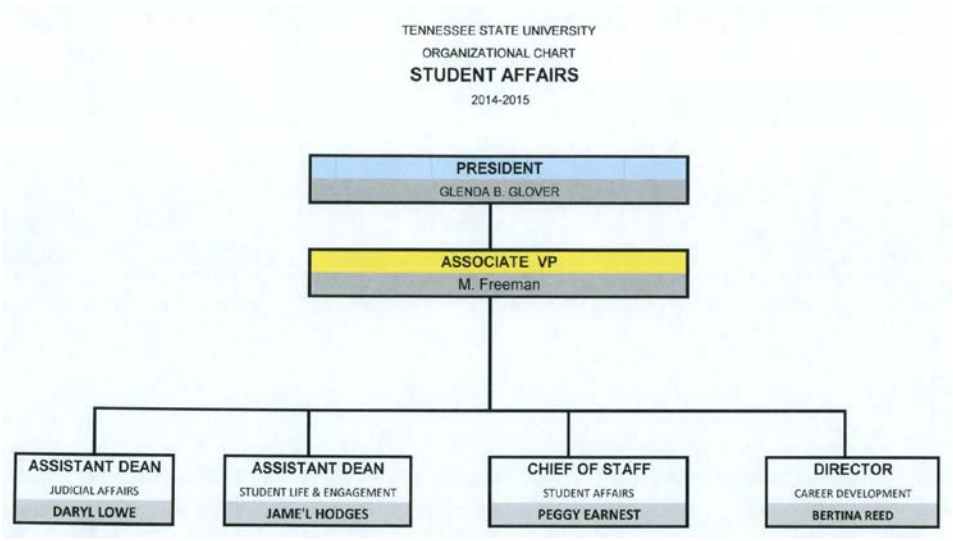
Administration is divided into seven major units:

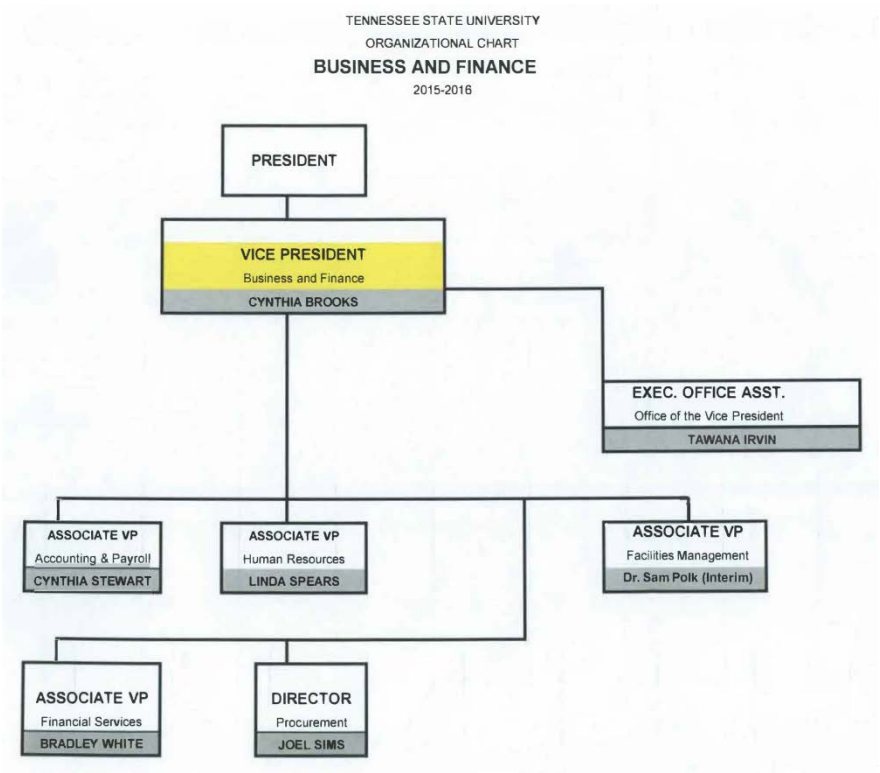
- Office of the President
- Division of Academic Affairs
- Division of Enrollment
- Division of Business and Finance
- Division of Research and Sponsored Programs
- Division of Student Affairs
- Division of Institutional Advancement

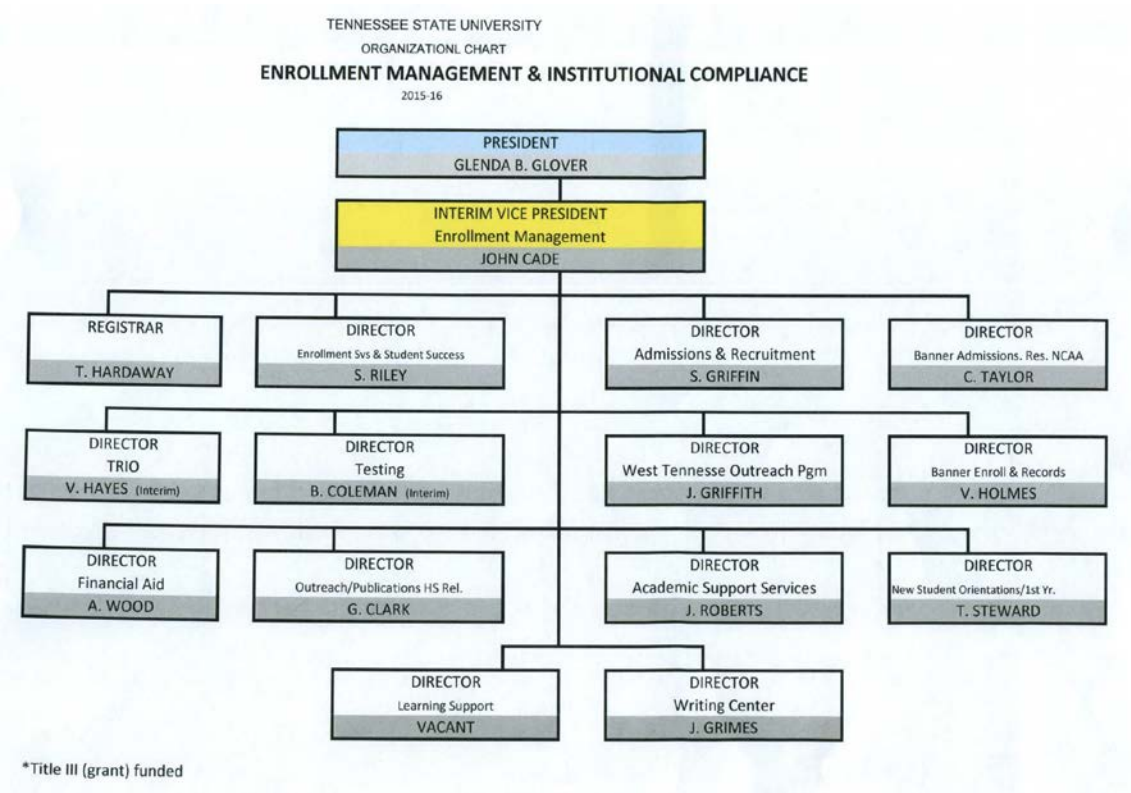


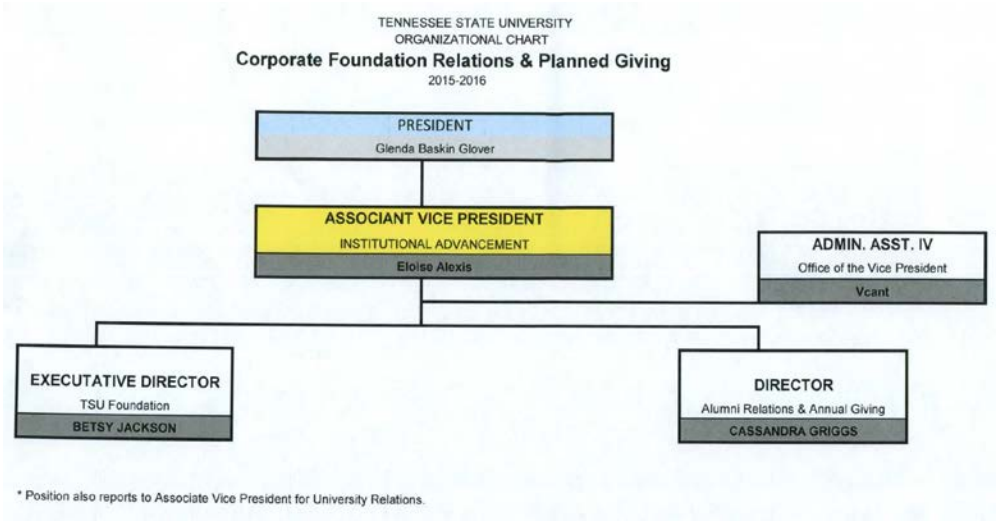

TENNESSEE STATE UNIVERSITY
ORGANIZATIONAL CHART
ADMINISTRATION
2015-16
PRESIDENT
Glenda Baskin Glover
VICE PRESIDENT
Administration
JANE JACKSON
Associate Vice President
Administration
Curtis Johnson
Director
Athletics
Theresa Phillips
Director, EEO/AA
T. Cox
Informaton Technology
Dir. Title III
G. Buch Sims
Dir. One Stop Center
W. Lee

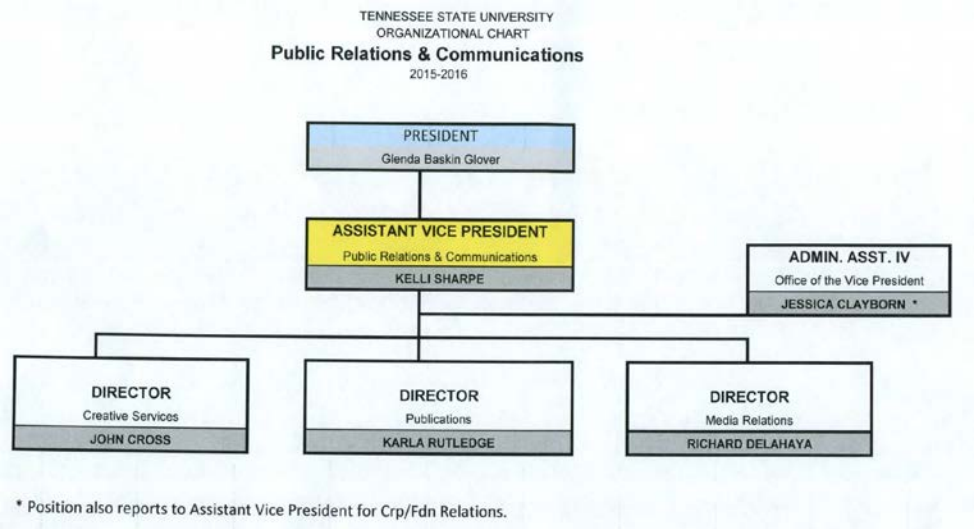

TENNESSEE STATE UNIVERSITY
ORGANIZATIONAL CHART
ACADEMIC AFFAIRS
2015-16
12/1/2015
PRESIDENT
VICE PRESIDENT
Academic Affairs
MARK HARDY
DEAN
Library and Media Services
MURLE KENERSON (Interim)
ASSOCIATE VP
Extended Ed/Avon Wms Campus
EVELYN NETTLES
ASSOCIATE VP
Academic Programs/SACS Liason
ALISA MOSLEY
ASSOCIATE VP
Fiscal Management
PATRICIA CROOK
ASSOCIATE VP
Research & Sponsored Prgms
L. CRUMPTON-YOUNG
DEAN
College of Ag/Human/Natural Sci.
CHANDRA REDDY
DEAN
College of Pub. Sv. Urban Affairs
MICHAEL HARRIS
DEAN
School of Graduate Studies
ALEX SEKWAT
DEAN
College of Health Sciences
STEPHANIE BAILEY
DEAN
College of Education
KIMBERLY KING JUPITER
DEAN
College of Business
MILICENT LOWNES JACKSON
DEAN
College of Engineering
S. KEITH HARGROVE
DEAN
College of Liberal Arts
GLORIA JOHNSON
EXEC DIRECTOR
Entrepreneurship & Econ. Dev.
RUTHIE REOLDS
DIRECTOR
Honors Program
COREEN JACKSON
DIRECTOR
WRITE Program
SAMANTHA MORGAN-CURTIS
EXECUTIVE DIRECTOR
International Affairs
JEWELL WINN
DIRECTOR
Inst'l Research/Title III
G. PAMELA BURCH-SIMS
DIRECTOR
Public Health Initiatives
STEPHANIE BAILEY
COMMANDER
AFROTC
LAVERN CURRY


TENNESSEE STATE UNIVERSITY
ORGANIZATIONAL CHART
STUDENT AFFAIRS
2014-2015
PRESIDENT
GLENDA B. GLOVER
ASSOCIATE VP
M. Freeman
ASSISTANT DEAN
JUDICIAL AFFAIRS
DARYL LOWE
ASSISTANT DEAN
STUDENT LIFE & ENGAGEMENT
JAME'L HODGES
CHIEF OF STAFF
STUDENT AFFAIRS
PEGGY EARNEST
DIRECTOR
CAREER DEVELOPMENT
BERTINA REED


TENNESSEE STATE UNIVERSITY
ORGANIZATIONAL CHART
BUSINESS AND FINANCE
2015-2016
PRESIDENT
VICE PRESIDENT
Business and Finance
CYNTHIA BROOKS
EXEC. OFFICE ASST.
Office of the Vice President
TAWANA IRVIN
ASSOCIATE VP
Accounting & Payroll
CYNTHIA STEWART
ASSOCIATE VP
Human Resources
LINDA SPEARS
ASSOCIATE VP
Facilities Management
Dr. Sam Polk (Interim)
ASSOCIATE VP
Financial Services
BRADLEY WHITE
DIRECTOR
Procurement
JOEL SIMS


TENNESSEE STATE UNIVERSITY
ORGANIZATIONL CHART
ENROLLMENT MANAGEMENT & INSTITUTIONAL COMPLIANCE
2015-16
PRESIDENT
GLENDA B. GLOVER
INTERIM VICE PRESIDENT
Enrollment Management
JOHN CADE
REGISTRAR
T. HARDAWAY
DIRECTOR
Enrollment Svs & Student Success
S. RILEY
DIRECTOR
Admissions & Recruitment
S. GRIFFIN
DIRECTOR
Banner Admissions. Res. NCAA
C. TAYLOR
DIRECTOR
TRIO
V. HAYES (Interim)
DIRECTOR
Testing
B. COLEMAN (Interim)
DIRECTOR
West Tennesse Outreach Pgm
J. GRIFFITH
DIRECTOR
Banner Enroll & Records
V. HOLMES
DIRECTOR
Financial Aid
A. WOOD
DIRECTOR
Outreach/Publications HS Rel.
G. CLARK
DIRECTOR
Academic Support Services
J. ROBERTS
DIRECTOR
New Student Orientations/1st Yr.
T. STEWARD
DIRECTOR
Learning Support
VACANT
DIRECTOR
Writing Center
J. GRIMES
*Title III (grant) funded


TENNESSEE STATE UNIVERSITY
ORGANIZATIONAL CHART
Corporate Foundation Relations & Planned Giving
2015-2016
PRESIDENT
Glenda Baskin Glover
ASSOCIANT VICE PRESIDENT
INSTITUTIONAL ADVANCEMENT
Eloise Alexis
ADMIN. ASST. IV
Office of the Vice President
Vcant
EXECUTATIVE DIRECTOR
TSU Foundation
BETSY JACKSON
DIRECTOR
Alumni Relations & Annual Giving
CASSANDRA GRIGGS
* Position also reports to Associate Vice President for University Relations.



B. Goals and Issues for Future Academic Programs

The Woolpert Master Planning Team (consultant team) conducted a series of interviews with the faculty, staff, students, administrators and community members of TSU to gather fundamental information for the Master Planning process. Interviews were held with the Deans of each College, Directors for Athletics and the Library, the Chief Information Officer, Vice Presidents and the President during the summer of 2014. Formal presentations were made to review the information and Master Planning concepts that resulted from these interviews. Modifications to the original Master Planning alternatives were made in response to the input gained from discussing possible scenarios with campus groups. The changes also incorporated additional concerns from the planning participants.

1. Campus Character and Spatial Organization

Interview participants agreed that the TSU Main Campus has developed a traditional collegiate image that successfully presents TSU to the community in and around Davidson County. The Avon Williams Campus (AWC) presents a more corporate identity and is contained within a single massive building that has none of the open spaces and environmental conditions that are typical of college campuses. The TSU Main Campus was established around a clearly defined campus quadrangle. This planning model should be continued and strengthened as much as is possible with the placement of future buildings and the development of open spaces. The AWC was designed to be highly urban, efficient and convenient to the predominantly non-traditional students it serves.

2. Interview and Focus Group Findings

The following feedback is a summary of the interviews and focus groups the planning team facilitated throughout the planning cycle. Many of the comments and requests cited in the original interviews for the 2008 plan were reiterated in the more recent interviews. Comments and requests, not organized in order of priority, are as follows:

Main Campus

General

- Create a more distinctive “front door” to the Main Campus. Currently, the John Merritt Boulevard/28th Avenue North intersection serves most arrivals, but does not present a positive image. Other arrival points are at the intersections of Albion and 28th Avenue North, Walter Davis Boulevard and 39th Avenue North, and Schroeder Lane and Ed Temple Boulevard.
- Develop a “green” campus vision and strategic plan to provide students, faculty, staff and visitors a means of practicing sustainable energy saving protocols, including developing a curriculum around these principles.

- Strengthen connectivity throughout campus.
- Provide safe and secure access and control; plan and design for security and flexibility.
- Enhance security by limiting campus entry to a few more formally designed gateways with security improvements. Key entries to improve are Walter Davis Boulevard and 39th Avenue North and the entrance to the athletic campus from Walter Davis Boulevard. Consideration should be given to improving access control along Albion.
- Expand and improve student life, recreation and athletic facilities in and around the campus core to better meet student needs during and after typical class times.
- Reconfigure buildings to better manage security and 24-hour access.
- Consider the Schools of Nursing (Health Science), Engineering (STEM) and Business as flagship schools in the development of campus plans.
- Develop a new state-of-the-art facility to accommodate the growth in the Nursing program and related Health Sciences.
- Tailor campus improvements to the goals of each campus. There are fairly well defined academic program focuses within the Main Campus and the AWC. The Main Campus primarily provides undergraduate student offerings while the direction at the AWC is towards graduate programs.
- Resolve deferred maintenance issues. The staff asserted that the buildings need to be adaptable, with reconfigurable space that is right for teaching.
- Provide and organize dedicated public parking that is consistent year round and for events.
- Improve the transition between the 28th Avenue North, Ed Temple Boulevard and the commercial area east of these major vehicular arteries and the TSU Main Campus.
- Maintain the same character of buildings and improve the density of the core campus. Vertical growth should be kept at a 4 story maximum height.
- Utilize multi-level parking facilities to preserve the open spaces on campus while also increasing the quantity of spaces.

Student Life

- TSU has a need for enhanced student life, recreation and athletic facilities proximate to the academic core of campus. These facilities should be programmed to best meet student's out-of-classroom needs during the day and in the evening, when students have more opportunities to utilize the facilities.
- TSU needs a Campus Center that is student-focused. It should include multiple student amenities, such as a one-stop shop, student government space, student organization meeting space, 24-hour student lounges and social space, a bookstore and expanded foodservice offerings.
- The campus should provide students with spaces in which to interact, study and relax both indoors and outdoors. Maintain the commitment to HBCU mission and vision as an access institution—one which is "genetic" in nature, with one generation following another.
- Expand the food court (Memphis State University is a model), student meeting space, dedicated SGA space and computer lounges. Add a ballroom-type facility.
- Create a campus aesthetic that includes seasonal plantings and artwork in the public realm.
- Improve retention of first-year students; potential steps for accomplishing this include the creation of one-stop centers, intrusive advising, simplified financial aid and simplified registration.
- In general, students are not satisfied with the existing residential facilities other than the apartment-style living options. Students expressed an interest in private or semi-private bathrooms (as opposed to community bathrooms), and easy access to laundry and kitchen facilities, if not contained in their residential unit.

- Potential exists to add multipurpose space to any new residence halls, including academic facilities, laboratory space, meeting areas and other group meeting/study spaces.
- To best utilize existing and planned quality-of-life facilities, TSU should consider new housing facilities in clusters, or quads, to create a "critical mass" and help increase the neighborhood/community atmosphere.
- Safety and security are of paramount importance—all residential facilities should be equipped with swipe cards at the building, elevator and individual-unit entrances.
- TSU should consider utilizing a public-private partnership (P3) arrangement for student housing to assist with calendar-year lease terms and to best utilize institutional resources. Additional analysis and evaluation of this methodology is required.
- New residential facilities should be more inviting, with proper lounge spaces and amenities most desired by students. Consideration should also be given to adding small foodservice offerings to the facilities.
- The Health Center, now in Keene Hall, is not ideal. It needs its own ventilation system or should become a standalone facility, not in the same building as food service. It should be relocated, with more marketing and a shuttle to make it convenient; it could be more accessible and inviting.
- It would be good to have club space overlooking the campus for events; such space could generate additional revenue above the parking garage.

Athletics

- Whether actual or perceived, there are issues between former TSU student-athletes and the institution. To help facilitate the future success of the athletic program, efforts should be made to identify and remedy any issues.
- An Athletics Hall of Fame would be a nice addition to campus and bring light to TSU's athletic success and tradition.
- Hale Stadium requires serious capital investment to bring it to campus standards. Consideration should be given to the overall capacity (increased capacity should be +/- 25,000 seats), ADA and code requirements, premium seating options and other complimentary uses. The football team needs dedicated strength and conditioning space with appropriate "smart" meeting rooms for the team's use.
- The Gentry Center needs significant renovations to better utilize space within the facility, including the possible conversion of locker room space to strength and conditioning or training facilities.
- Improvements to the track facilities, such as additional seating and a renovation to the existing support building, should be considered for the University to accommodate large events.
- Due to institutional demographics (higher percentage of women) and the existing athletic programs (namely football), the University cannot add another men's sport without a gender equity issue arising.
- An additional indoor basketball facility is needed to accommodate both the men's and women's basketball teams. The University is required to use adjacent outdoor courts to hold tournaments.
- On-campus trails and running courses (for cross country) and improved bleachers/dugouts (for softball) area improvements should be considered in the near-term.

Recreation

- Students lamented the limited availability and space for recreational programs, both on a drop-in (i.e., weightlifting, cardiovascular) and scheduled (intramural sports) basis. Specific areas for improvement include additional outdoor field space, additional basketball courts, volleyball courts, pool space and group fitness spaces.
- The gymnasium in Keane Hall does not accommodate students due to schedule conflicts with the ROTC program and intercollegiate athletics.

- Indoor facilities need improvements to the equipment, additional space for the dance team and increased and improved locker room space.
- Campus recreation space should be closer to the academic core and the on-campus residential facilities.

Avon Williams Campus

General

- Improve the community spaces in the AWC to be less "corporate."
- Find ways to merge the two cultures of the Main Campus and AWC.
- Evaluate redundant facilities which include the libraries, cafeteria, security, book store and admission/finance offices.
- Develop the AWC into a more traditional, campus quadrangle style configuration by adding a new academic building and relocating the incubator facility downtown.
- Add a parking garage.
- AWC should have access to wellness facilities without travel to Main Campus.

Feedback from the 2008 Planning Process

Alumni Feedback

- Locate a space where dinners can be served to 600-100 people.
- Provide additional parking spaces near alumni offices and event centers.
- Provide showcases for alumni recognition.
- Identify a means by which famous alumni and their achievements can be celebrated.
- Improve the Town/Gown relationship in physical ways by making the campus and its perimeter more pleasant.
- Create a facility that can benefit from on campus sports (principally football), making it a place for pre-game gatherings and programs.

Marketing Group Feedback

- Focus on identifying an appropriate "brand" for TSU and use that brand at both campus locations.
- Increase outreach efforts that raise interest in TSU regarding its research capacity, HBCU status, increases educational standards for applicants and develops partnerships with business organizations.
- Amplify the notion that TSU nurtures students who need it while also projecting an image that the educational outcomes are excellent.
- Communicate that TSU is no longer the "institution of last resort," but the "institution of first choice."
- Improve customer service on campus.
- Improve the global recognition of TSU for research.
- Bring football back to campus.
- Increase summer programs for grade school and high school students.
- Identify and communicate the achievements of current faculty and staff, updating the accomplishments of former students (e.g., astronaut, planetary research, Oprah).
- Increase non-state supported financing.
- Create a Welcome Center.

Business and Finance Feedback

- Assuming a future enrollment of 12,000 it is going to be very difficult to financially support the growth in graduate students.
- Current quality does not support increased number of out-of-state students paying full tuition.
- Fully implement a "one stop" center for student transactions.
- Increase private giving well beyond the current $1.8 Million.
- Analyze impact of the Governor's concept of completing the first two years of college at a community college then transferring to an upper division campus.

Student Feedback

- Most students came to TSU because of family or belief that it was the only place to go.
- Identified with the HBCU mission and TSU was closest to home.
- Attended TSU summer programs or took a tour of campus while in high school.
- Wanted/needed the campus "family" nurturing.
- First year housing is generally in poor condition; many would not return to campus housing during the 2nd year.
- The legacy of football on campus was a childhood experience that needs to be re-created.
- Customer service on campus is poor.
- "Don't walk on the grass" indicates a non-student friendly environment.
- There is no place for students to gather; Floyd Payne does not have substantial student-only program spaces.
- There is no 24/7 eating spot where students can gather.
- Student fees are going up dramatically and for what?
- Present the Master Plan when finished to the entire student body.
- Improve the surrounding Jefferson Street corridor, to make it more safe and pleasant.
- Engagement in student life activities breeds success on campus.
- The "talented 10 Percent" are engaged and highly successful.
- Fix the small stuff first; it will make a big impression on campus.
- Need more recreational facilities on campus.
- Need more parking on campus.

General Feedback

- Campus needs more office space for faculty and administration.
- There are not enough technologically advanced library and computer labs, which currently are crowded and serve as alternative space for students.
- Campus needs a definitive entry for the Library, which is non-descriptive at present.
- Students desire expanded options for residence halls and/or apartments.
- Generally, buildings are in good condition.
- Lack of classrooms labs and office space affects the quality of the faculty at TSU and cause a large turnover of professors at the university.
- Science lab/research space shortage.

3. Space Requests and Proposals

The following information is a compilation of present and future space needs as determined by the faculty and staff based on the interviews.

General

- Build a new Nursing Building to accommodate programs that have outgrown existing facilities.
- Build a new academic building that is primarily classrooms.
- Create better administrative facilities and technology-ready classrooms and labs.
- Develop additional areas for student/faculty activities and interaction both indoors and out.
- Pursue land acquisition options for future facility expansion to meet academic, parking and sports needs.
- Better facilities are necessary for recruiting purposes.
- Expanded food service areas for high use times as well as expanded hours.
- Provide suite-style housing.
- There is a need for a day care facility or Child Development Center near campus
- There is a need for smart classrooms, technology-ready and computer lab space

TSU Main Campus Academic Program Initiatives/Issues

Information and/or data related to the development of expanded or new academic program initiatives or issues related to current programs at the TSU Main Campus were received. Key areas are highlighted below.

- The College of Health Sciences is the highest priority academic area within the University. New facilities for the School of Nursing, along with consolidated facilities to include Physical Therapy, Occupational Therapy and Cardio Respiratory are desired. Modern and additional lab facilities are needed within expansion of simulation facilities. Current conditions, under which the College is located in multiple buildings, create logistical problems.
- The College of Agriculture and Natural Sciences conducts most of the research on campus, and existing research space is limited and was cited by several areas as their highest priority.
- The location of the Department of Biology in two buildings creates a number of logistical problems.
- Larger lecture rooms are needed (>50 students) with smart technology.
- Shortage of faculty offices cited, particularly if enrollment grows with related and additional faculty lines.

Avon Williams Campus Academic Program Initiatives/Issues

Information, data and/or suggestions related to the development of modified or new academic program initiatives or issues related to current programs at the AWC were received and key areas are highlighted below.

- Develop new schools within the existing colleges to provide additional program offerings in: Social Work; Public Health; and Public Administration (including an Executive MPA program).
- Offer a new Doctorate of Nursing Practice degree.
- Create a new department of STEM Education under the College of Education.
- Expect to have more growth/expansion in the School of Graduate Studies.
- The College of Public Service needs to have a more prominent presence within the building.
- Develop Executive in Higher Education programs, which will require additional space.
- There is a shortage of faculty offices, which will become more pronounced if enrollment grows with related and additional faculty lines.

4. College and Campus Needs

The Provost and Department Chairs from each College and Vice President from each administrative unit were interviewed by the consultant team to gather pertinent information about each discipline's space needs, as well as to collect any overall concerns about TSU's future direction.

5. Recurrent Themes

The critical theme at TSU is that there is not enough quality space suited to current needs. There are not enough classrooms and teaching laboratories, research spaces or academic and administrative offices, and student center space is also insufficient. Athletics needs better facilities for campus teams and recruitment purposes. The campus is deficient in recreation facilities for the entire student body.

For specific detail regarding space issues, Section 4.1.4, Space Needs Findings, documents specific space needs.

6. Preliminary Comprehensive Physical Reconnaissance

General

TSU is located just northwest of Nashville at I-40 and 28th Avenue North within Davidson County. The campus is bounded by a decaying commercial district to the east of 28th Avenue North and stable residential communities to the west and south. The original campus was designed and constructed nearly 100 years ago, overlooking the Cumberland River valley. None of the original buildings have survived, although Goodwill Manor is a reconstruction of an original building.

Buildings

TSU has 66 buildings/structures on the Main Campus and two buildings on the AWC at the intersection of Charlotte and McLemore (now YMCA Way) Avenues. From a building use perspective, the general building walk-through deficiency survey revealed the structures to be, generally, in fair to good condition. However, most buildings constructed before the mid-1990s have outgrown their original intended use and are outdated in today's technology-oriented educational environment. Also, it is evident in these older buildings that most departments have reorganized space to serve their particular needs. As an example, in an attempt to use all of the space they have to its best advantage, storage areas have been converted into office use. This practice of "adaptive reuse" without appropriate guidance is, more often than not, inefficient and impractical. These efforts have proven to have had a profound adverse impact on current and future space utilization, and often inhibit adequate to optimum use of existing academic and administrative space. Consequently, it appears that all departments now suffer from a lack of fully adequate educational facilities.

Grounds

The TSU campus is set on an attractive rolling site with sweeping views of the Cumberland River valley. The campus has a charming green landscape with ample open space that is generally well landscaped. The definition of the original central campus core is weakened by lack of buildings in several places, leaving the central green poorly framed. Casual outdoor recreation areas are well distributed, but are not well shaded, making them uncomfortable to use during the late spring, summer and early fall. Team recreation sites: the baseball, softball, and soccer fields and one intramural field are scattered around campus, and not close to residence halls. Additional recreational facilities, including walking and biking trails are needed. The campus would benefit from additional gathering places, and quadrangle-type spaces to anchor the several zones of the campus.

An improving signage and orientation system is beginning to clarify wayfinding on campus, but can still be strengthened. Other than campus entry signs, TSU's directional signs are modest and difficult to follow. Signage, lighting, paving, planting and environmental graphics on a college campus should be coordinated and used to liven the urban context and commemorate special areas of the campus.

Servicing

The campus allows access for large delivery trucks; however, only the bookstore and cafeteria require regular access by 18-wheel delivery trucks in the campus core. TSU is in need of a better defined service corridor that can

handle the delivery of goods without hampering the pedestrian circulation and visual harmony of the campus. Alternately, TSU should explore the use of central warehousing to reduce the occurrence of 18-wheel truck deliveries in the campus core.

Infrastructure

Much of the utility infrastructure is old and deteriorated. Continued monitoring of the systems will be important to anticipate needed repairs and upgrades. The Master Plan will expand the footprint of the TSU campus in many areas. Utilities will require expansion and some relocation to accommodate the Master Plan. These improvements can also replace old and deteriorating components as part of the of the capital improvement expansion projects. Main sizes for new water mains will be increased to 8" and several existing mains will be replaced. Several Electric duct banks will need to be relocated or extended, and the substation monitored to be sure demand does not exceed capacity, in which case alternate sources of power may be needed. Some sanitary and storm sewer mains will have to be relocated to accommodate and serve proposed development, and extend service to expansion areas. Existing pipes should be reviewed to be sure there are no leaks or capacity issues.

Parking

Main Campus

Campus parking areas are distributed around the campus perimeter. Parking is concentrated in three general areas; the greatest concentration is on the north, the second greatest concentration is on the east side of the campus and the third concentration lines the south edge. This pattern of perimeter parking fulfills the goal of emphasizing pedestrian circulation in the center of the campus. The primary visitor parking lot and information center remains in the heart of the campus adjacent to the Student Center near the Library. In addition, there are many smaller surface lots which serve housing and educational purposes. Some of these lots are good candidates for future building sites.

The Master Plan goal is to continue the strategy of strengthening the campus core by filling gaps between buildings with new academic buildings. TSU currently has an overall excess of parking spaces, according to its parking standards, which provides some flexibility in phasing this approach to campus development. Location of the parking spaces leads to shortages of convenient spaces in areas of the campus Classes at TSU run in cycles: the morning peak, the afternoon peak and the night peak. This creates parking space needs that fluctuate throughout the day. The campus will need to gain additional parking spaces before the construction of the future campus facilities begins and existing parking spaces are lost.

An increase in full-time students and a reduction in current parking numbers could become a severe problem for non-traditional students. This is a major concern because the University will not have available overflow parking to cover unexpected shortages in parking resulting from overlapping large scheduled events on campus. The university will need to consider the design and construction of one or more additional parking decks to meet future parking demand. This approach would support both campus needs and community event needs such as baseball games and possible visual and performing arts events. Also, if the campus decides to expand on-campus housing, there will be a greater demand for parking than exists today, and those parking numbers must be accounted for in the construction of any additional housing areas.

Avon Williams Campus

In 2015, the AWC had approximately 340 parking spaces on site, with an additional 270 available on adjacent Lifeway property south of 10th Avenue North. Current observations suggest that parking should be increased. The 2015 total of 610 spaces for a total campus population of 2,576 equates to a ratio of 0.24 spaces per total number of students, faculty and staff. That ratio is well below the Main Campus's ratio of 0.42 spaces per population. The ITE Parking Generation Manual cites an average of 0.33 spaces per population for suburban colleges and 0.22 for urban. This campus serves entirely commuter students, with most activity concentrated into a four to five hour period in the evening. Public transit is also limited. Therefore, the current conditions support a ratio of 0.33, the ITE average for suburban campuses.

Using a ratio of 0.33 per total population, and projected population of 3,200, by 2025, the data suggest that about 1,000 to 1,100 parking spaces will be needed. Even with the potential acquisition of the Lifeway lot, the campus will not be able to accommodate the parking demand without the addition of a parking garage.

Pedestrian Circulation

The built environment at TSU is within a comfortable one-quarter mile or ten-minute walk each way. The pedestrian circulation on campus is acceptable. TSU is typically filled with students and faculty walking to and from class, or congregating in the available open areas to chat and relax between class periods. Circulation is clearly defined, in a continuous network of public areas. The Campus Mall offers the best-landscaped open space on campus. Campus pedestrian circulation can be further improved by reinforcing the pedestrian environment with new building placement, circulation improvements and the addition of multi-use trails.

7. Proposed Changes in Research

Research

TSU currently awards just over $10 million per year in sponsored research. In addition, TSU awards over $16 million in training and nearly $6 million in service. Nearly all of the nearly $32 million is received from the federal government. TSU's goal is to increase external grants and sponsored research by corporations and foundations substantially in the coming years. Between 2013 and 2014, the University submitted $7 million in grant proposals and received $37 million in awards. During FY 2015, TSU was awarded nearly $52M. This amount reflects awards from public and private entities. TSU is also working on a $15 million partnership agreement to go into effect in 2016.

IV. Existing Campus Conditions

A. Existing Campus Grounds

1. Overview

Tennessee State University is comprised of facilities at five locations. The Main Campus, located on John Merritt Boulevard, consists of buildings occupying approximately 290 acres bounded on the south by Albion Street and on the north by the Cumberland River. The Main Campus is augmented by the Avon Williams Campus, located in downtown Nashville. TSU maintains support facilities at Heiman Street, Murfreesboro Road, north of the campus and academic facilities at Cockrill Bend.

Situated within the Northwest Nashville Community, TSU is adjacent to the Hadley Park neighborhood. The exit at 28th Avenue off of Interstate 40 is one of TSU's main points of access. John Merritt Boulevard from 28th Avenue to the gatehouse west of 33rd Avenue is TSU's formal entrance. The Hadley Park neighborhood has continually had a strong connection with TSU, and is considered the first park in the country built within an African-American community. The large park consists of sports fields, an outdoor performance area, picnic shelters and a community center.

The Main Campus of TSU occupies a ridge overlooking the Cumberland River. The campus was developed along the line of a Jeffersonian village green concept similar to the University of Virginia or Peabody College in Nashville. The academic buildings are arranged to create a quadrangle along the ridge with the administration and the old library buildings in the center. Housing facilities were originally located at each end. Conversion of Hankel Hall to Athletics Department offices leaves housing at only the south end (see Table IV-1).

Table IV-1: TSU Property Sizes

Main Campus		
Main Campus Property	290	AC
Heiman Street Compound (Including 5 AC Poultry Research)	55	AC
Farm Only	175	AC
Subtotal	520	AC
Other Sites		
Cheatham County Farm	125	AC
McMinnville	81	AC
Cockrill Bend	25	AC
Avon Williams Campus	4	AC
Business Incubation Center	4	AC
Arizona Observatory (Leased Only)		AC
Subtotal	239	AC
Grand Total	**759 (396)**	**AC (AC Agriculture)**

In the center of the campus, between the administration and old library buildings, the grade drops to create two topographical halves of the campus. At the northern edge of the built campus, the land drops away to flood plain areas below. It is in this terrain, bordered by the river, that the University farm is located.

2. Campus Framework

Regional access to TSU is provided by Interstate 40, approximately 1 mile east of the campus. Exit 207 connects to Jefferson Street and Ed Temple Boulevard; this is the main entry route to the primary campus entrance. The majority of the visitor and student traffic reaches campus along John A. Merritt Boulevard or Albion Street, both of which run perpendicular to Ed Temple Boulevard.

The main vehicular entrances to campus are along 1) John A. Merritt on the east, 2) Walter S. Davis Boulevard on the north, 3) Albion Street on the south, and 4) John L. Driver Avenue on the west. The primary campus arrival is at the terminus of John A. Merritt, with a secondary arrival at Olympic Plaza at the end of the drive that enters the campus from Davis Boulevard.

The center portion of campus contains a mix of building uses, including student residence halls, food service, administrative, academics and student life. All the buildings frame the central campus green, a common open space in a formal rectangular pattern. However, gaps in that framework weaken the structure of the core, and buildings added away from the core are often organized in a much less formal way, with little orientation back to that core. The overall fabric of the buildings, roads and walks does not take full advantage of the central green to center the campus and give it a strong sense of place. Just to the west of the rectangle and amphitheater is the

Power Plant, which detracts from the aesthetic qualities of the campus core; it is not of quality construction and emits substantial noise.

The south side of campus is comprised primarily of older student residence halls and traditional dormitories intermingled with roadways and parking lots with very little common outdoor social spaces.

The north side of campus contains several large surface parking lots and most of the physical education/recreation sporting complexes: the Gentry Center, Hale Stadium, Tennis, Softball, Basketball, Indoor Football Building and the Edward S. Temple Track.

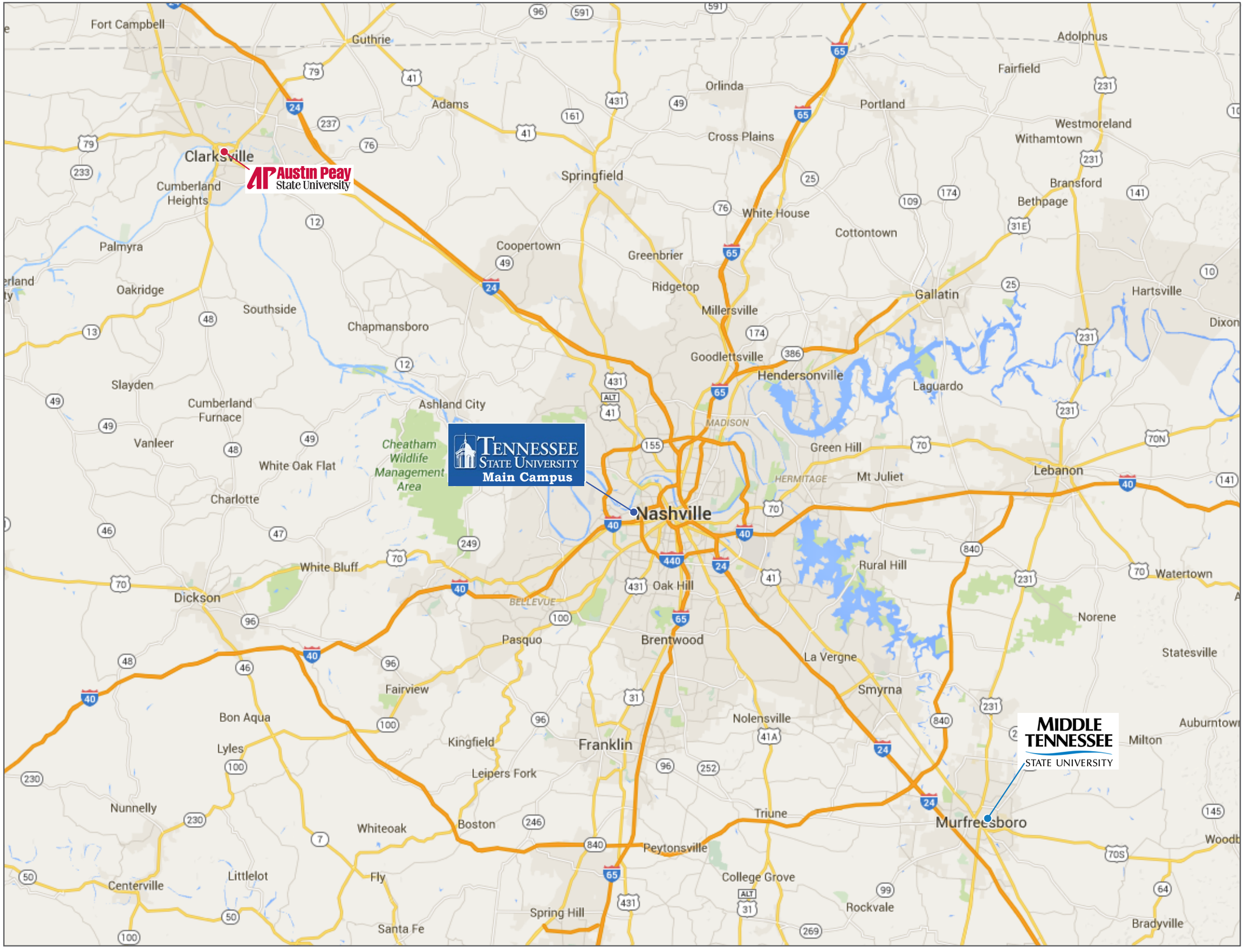
Student apartments occupy the extreme northeast corner of campus. The student apartments are clustered together, creating a sense of community. However, they are somewhat isolated from the Main Campus by physical distance and lack of strong pedestrian connections. The property on which these residential units are located is not connected to the Main Campus. Students must cross a busy street and walk up to 20 minutes to reach the Main Campus facilities.

The Main Campus is set within the city limits of Nashville, Tennessee.

See Figures IV-1 through IV-4.

Regional Map

Figure IV-1



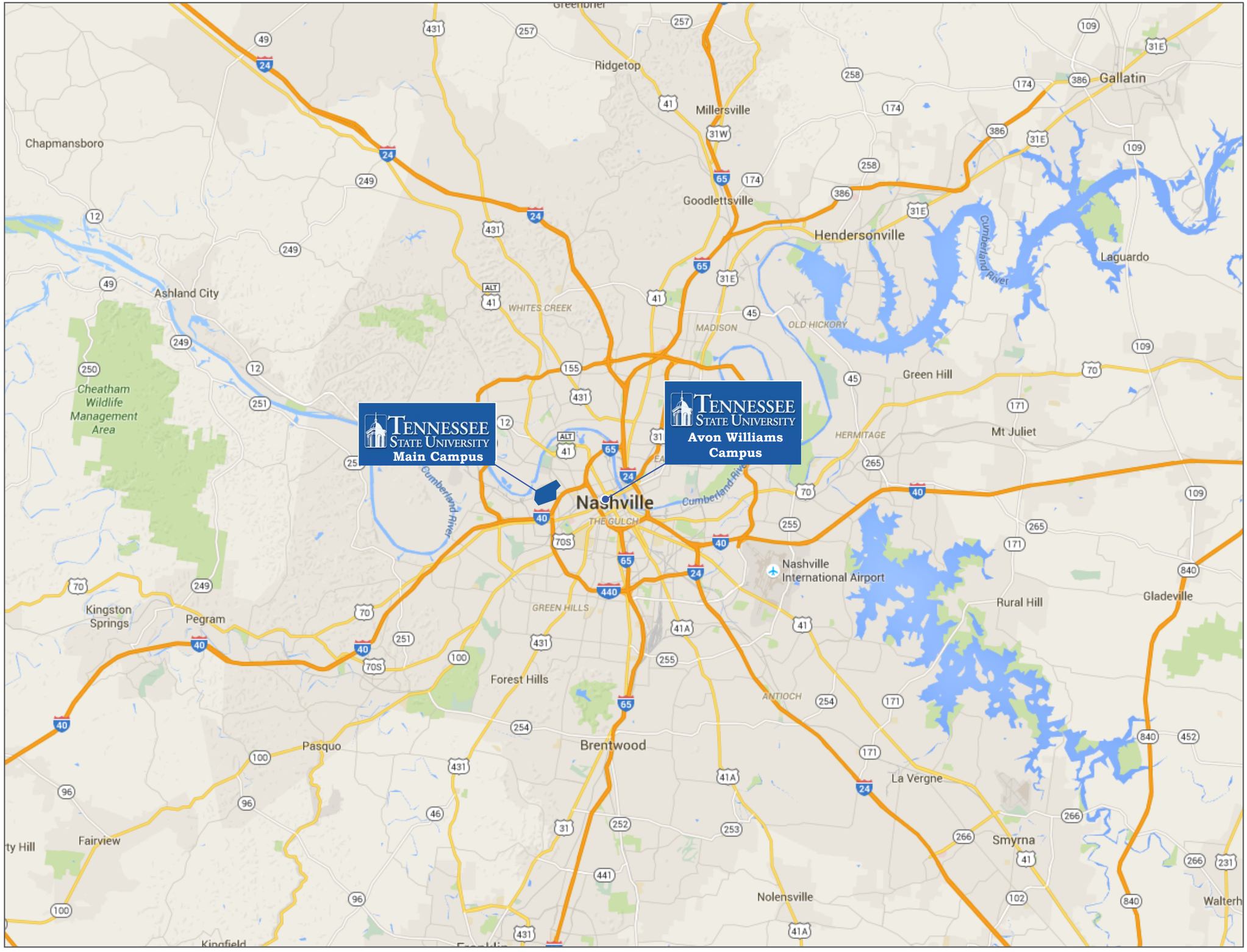
0 2.5 5 10 Miles

Tennessee State University

Campus Master Plan

WOOLPERT

ARCHITECTURE | ENGINEERING | GEOSPATIAL



Vicinity Map

Figure IV-2

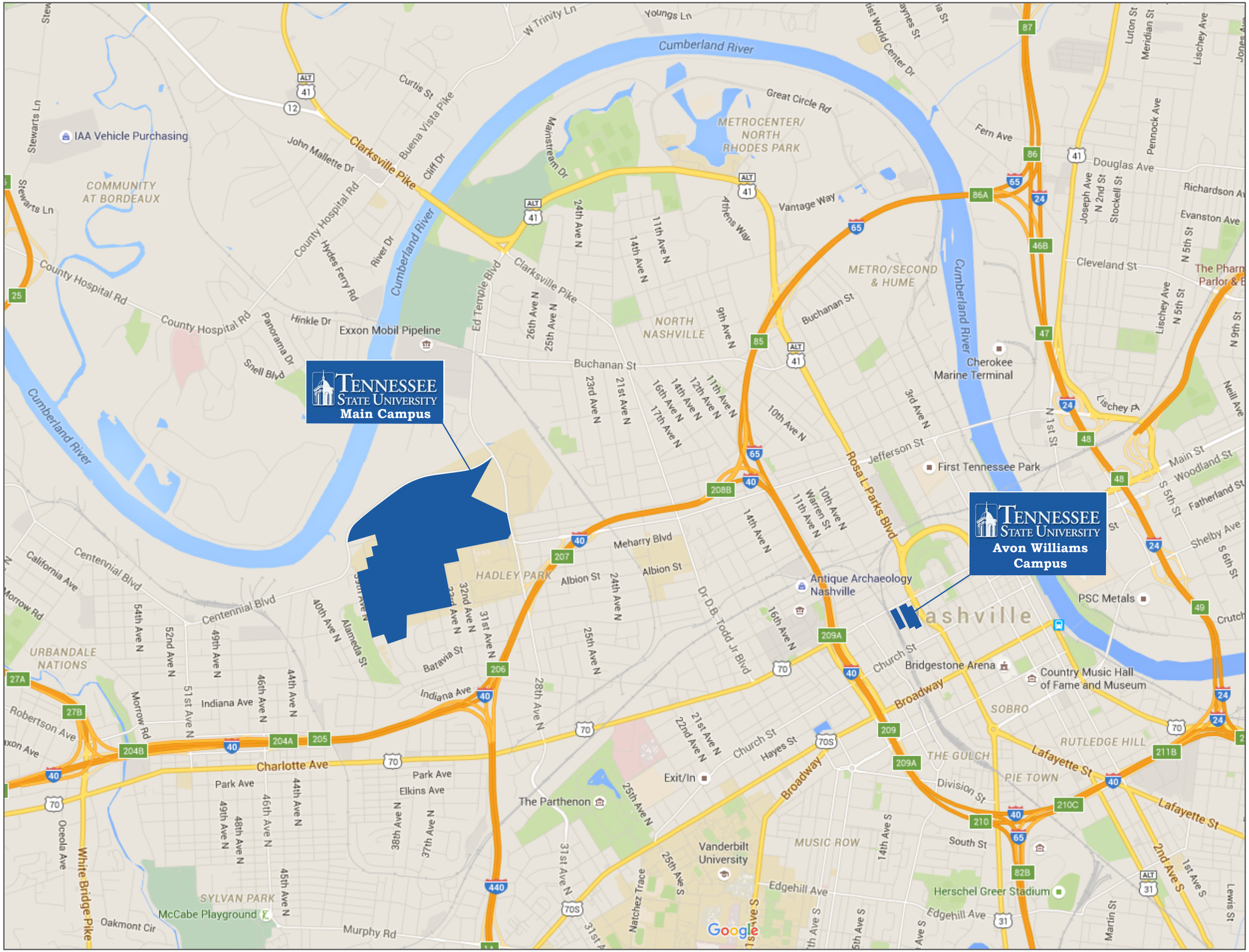
0 2 4 8 Miles

TENNESSEE STATE UNIVERSITY

Campus Master Plan

WOOLPERT

ARCHITECTURE | ENGINEERING | GEOSPATIAL



City Map

Figure IV-3

0 1000 2000 4000 Feet

TENNESSEE STATE UNIVERSITY

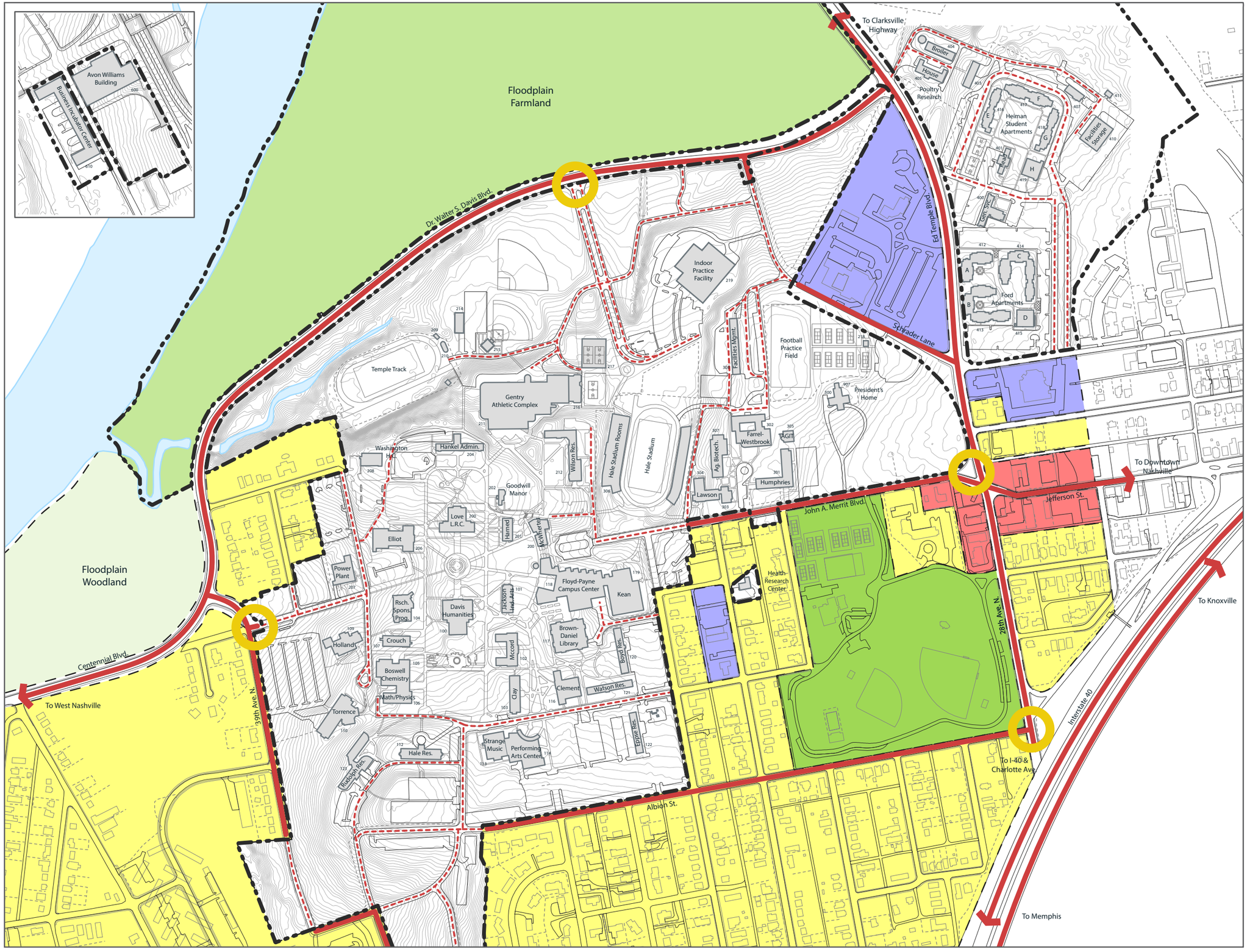
Campus Master Plan

WOOLPERT

ARCHITECTURE | ENGINEERING | GEOSPATIAL

Campus Context

Figure IV-4



- Existing Buildings
- Residential
- Park
- Floodplain Farmland
- Floodplain Woodland
- Commercial
- Church
- Campus Boundary
- Surrounding Roadways
- Campus Roadways
- Campus Entry

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

3. Land Use

This section summarizes the strengths and weaknesses of the existing campus land use pattern, and the associated issues to be addressed in the Physical Master Plan.

The TSU campus includes the land use categories listed in the Table IV-2.

Table IV-2: Campus Land Use Areas

Land Use Element	
Academic	56 Acres
Housing	77 Acres
Student Life	17 Acres
Physical Plant and Maintenance	15 Acres
Recreation/Physical Education	85 Acres
Other	40 Acres
Total	**290 Acres**

Land Use Patterns

In general, the majority of the academic structures are organized around the Jeffersonian rectangular campus green at the center of the campus. The "heart" of the campus green is the Laura M. Averitte Amphitheater and the surrounding Walter Davis historic building district. Student life activities and services are centrally located at the terminus of John A. Merritt Boulevard and directly east of the Averitte Amphitheater. The most active student life buildings are the Floyd/Payne Campus Center and Brown-Daniel Library, with additional student life activities at the south end of the campus green in Strange Music and the Performing arts center. Student housing is located in three zones, two south of the campus core, and one to the northeast. One residence hall remains in the central campus, between the academic zone and the athletics zone. The main cluster of traditional student housing, to the south, is loosely organized, but within an easy walk of the Main Campus. The Apartment-style housing zone is located across the busy Ed Temple Boulevard, in the remote northeast corner of the campus. Most of the campus north of the campus core is a zone of dispersed recreation and physical education facilities and a zone of physical maintenance headquarters. Refer to Figure IV-5.

In addition to adding buildings in the campus core, as the University grows, it will be necessary to expand the perimeter of the Main Campus as well. Two adjacent neighborhoods show signs of being too small to sustain themselves as housing areas. One is the Hadley Park neighborhood between 33rd Avenue and Hadley Park, north of Albion Street. The other lies northwest of the campus along 38th Avenue and Tigerbelle Drive. Acquisition of these neighborhoods could serve the University well for expansion, while removing potential for deterioration and blight on the campus fringe. Absorbing these areas will give the University a more defined and consistent edge, for enhanced identity and security.

Land Use Relationships

Existing land use relationships generally support a pedestrian-oriented campus, but some land uses, such as recreation and residence halls, are separated enough, either by distance or perception, that students will often drive. With the exception of the apartment-style housing to the northeast, all living, learning, and recreational facilities are within a ten-minute walk of the Floyd/Payne Campus Center. Student and faculty parking is primarily situated along the north and west edges of campus, with the largest parking lot just north of the William J. Hale football stadium. Additional student resident parking is located along the south portion of the campus.

The traditional quadrangle and the remainder of the Main Campus core are fairly compact. This land use pattern is favorable for efficient utility distribution, service functions, and security. Open sites remain available in the campus core for in-fill development of new buildings or parking, where required to accommodate future growth while also strengthening the core and maintaining the ten-minute walking parameter from campus edge to edge.

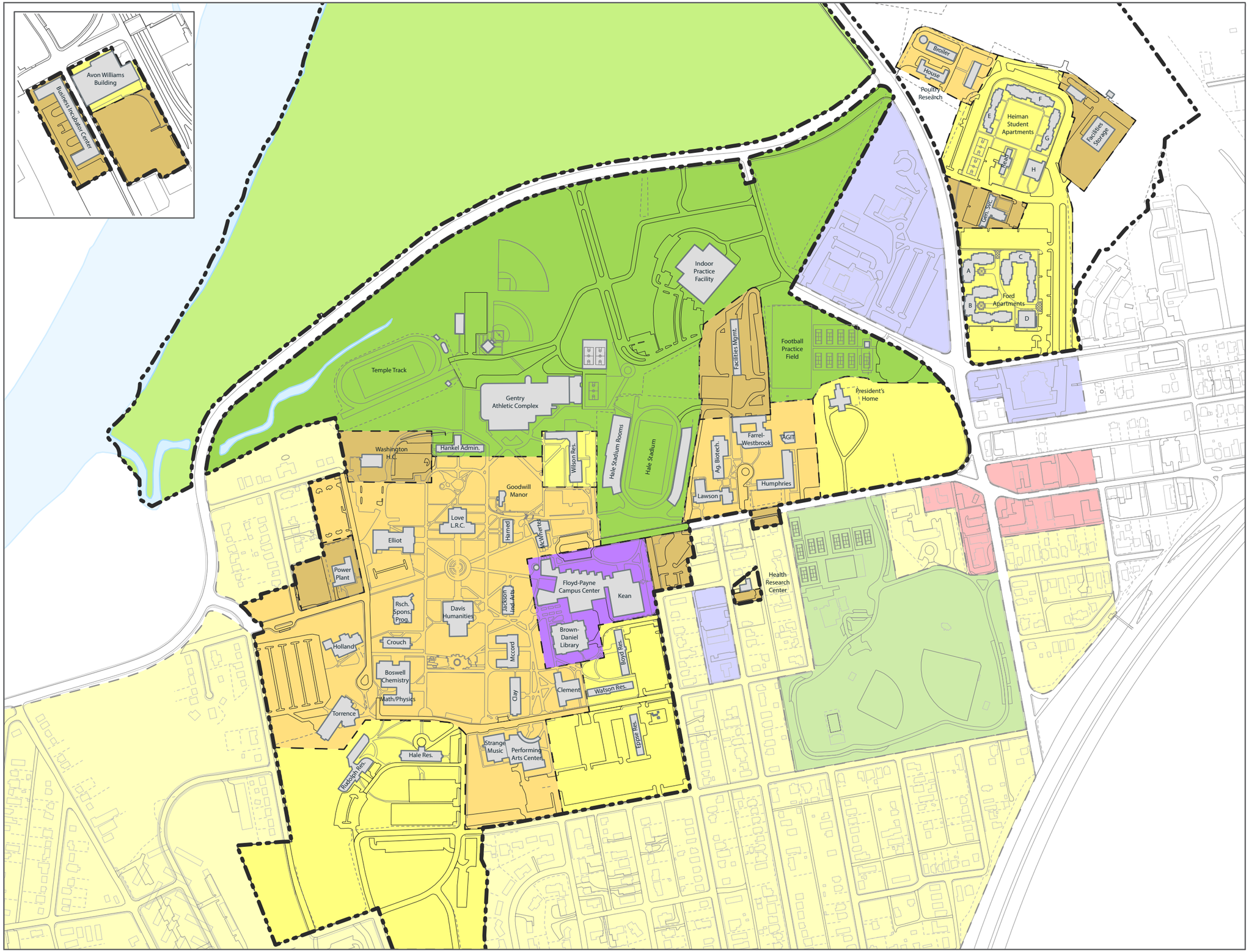
The campus could benefit from a stronger sense of place, defined by stronger framing of the campus green, focal landscape features, more distinct zones of social activity proximate to other activity centers, clearer pedestrian circulation, and consistent campus furnishings, lighting, and signage.

Additional University Properties

Further north of the Main Campus, across Walter S. Davis Boulevard, are the Heiman Street and Farm properties. The Farm properties are very isolated from the Main Campus by the elevation change and busy Walter Davis Boulevard. The four-acre Avon Williams Campus in downtown Nashville is 3.5 miles from the Floyd/Payne Campus Center.

Existing Campus Land Use

Figure IV-5



Campus Land Use

- Existing Buildings
- Academic
- Floodplain
- Recreational / Athletics
- Housing
- Support
- Student Life
- Campus Boundary

Off-Campus Land Use

- Residential
- Park
- Commercial
- Church

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

4. Open Space and Pedestrian Circulation

Open Space Character

The TSU campus has a variety of both formal and informal open green spaces. The Jeffersonian Rectangle, or central green, at the center of campus, is the most formal open space on campus.

Large trees and the significant change in topography from one end of the campus to the other make it difficult to view the entire green. The Walter Davis and Harold M. Love Sr. buildings further block long views through the green. Thus, the Rectangle is broken up into three distinct landscape quadrangles. The middle quadrangle contains the Laura M. Averitte Amphitheater which is centered on both the long axis and the central cross axis of the campus opposite the front entry staircase at the Floyd/Payne Campus Center. This open space is intended to be the most formal center of campus with larger ceremonies and presentations occurring within the amphitheater.

The two other prominent landscape quadrangles, one at the north end and the other at the south end of the campus core, contain more passive plaza and gazebo spaces. The south quadrangle plaza brick walls and exposed aggregate concrete are rapidly deteriorating and need repair. Also, that plaza and the adjoining lawn panel to the south are used very little, suggesting that reprogramming and redesign of the area are needed before significant repairs are made. Although, the north quadrangle is in better physical shape, it too is little used. The landscape and walkway design should be re-evaluated and updated to encourage more student activity.

Equally spaced mature over story trees help reinforce the perimeter of the rectangular design layout. A geometric pattern of brick and concrete perimeter sidewalks further defines and accentuates the Rectangle. Additional sidewalk connections crisscross each quadrangle providing access across the green, but they do not always align with desired circulation paths to current building locations and entrances. The landscape character of the remainder of the Main Campus is fairly informal and undefined. Sidewalks connections among the campus buildings randomly bisect open lawn and trees, weakening focus and sense of place. As buildings are renovated or redeveloped, and new buildings are added, walkways in the central Rectangle should be reevaluated and rerouted to provide improved movement and sense of place.

The open space character along the north side of campus is dominated by sports fields and supporting parking lots. Aside from the large mass of existing trees surrounding the outdoor track, the majority of the north campus is open rolling lawn with only a few scattered trees. This lack of cover reduces comfort for participants in outdoor social, recreational or academic activities during the often hot Tennessee weather. The most prominent feature of this area is the TSU Olympian sculpture highlighting the numerous Olympic medals won by TSU alumni.

Pedestrian Circulation

The campus appears generally to be adequately serviced by its pedestrian system of sidewalks and paths; however changes to buildings and use patterns have left some areas of the system less direct than is desirable, as evidenced by wear patterns in the lawn areas. The majority of the parking and roadways have been moved to the perimeter of the campus, limiting the conflicts between pedestrians and vehicular traffic.

Sidewalks through much of the campus provide access to and from campus facilities, but there are no routes designated exclusively for bicycles. Standard signage and striping for bicycle and pedestrian routes/crossings should be added to encourage bicycle use. Secure bicycle parking and racks should also be sensitively located and designated. Interviews suggest that interest in hiking and bicycle trails on and around the perimeter of the campus is growing and that such trails would be used if built.

With the exception of student apartments, most all of the campus academic and student residencies are within a ten-minute walk of the Campus Center. The compact size of most of the campus means that automobile use is not essential for most of the students. There is evidence, however, of students driving from residence halls to other parts of the campus, especially the recreation and athletics facilities. Interview comments indicate that topography and lack of visual connectivity may contribute to the perception that some facilities are farther than they actually are. Those most likely to drive are student commuters living off-campus or residents of the northeast apartment-style residents.

The link between the campus core and student apartment housing in the northeast corner of the campus is indirect, without a good crossing point along Ed Temple Boulevard, and should be improved. Currently, the apartments feel detached due to the long walking distance and the Ed Temple Boulevard crossing. A safer more pedestrian friendly connection between the apartments and the core of the campus will help unite these two disconnected campus zones. While pedestrian/vehicular crossings are generally safe throughout most of the Main Campus, safer pedestrian conditions along John A. Merritt Boulevard should be added. Refer to Figure IV-6.

Student Gathering Spaces

The most active student gathering spaces on campus are the two plazas located just west of the Campus Center and north of the Brown-Daniel Library. Although these plazas are not very large, they seem to be the center of student outdoor gathering and interaction. Outdoor seat walls have encouraged both contemplative individual moments, as well as the location for more active gatherings of student gatherings. Recent removal of the shade trees, while increasing visual surveillance, has eliminated most of the shade and thereby diminished the quality of the space for sitting and gathering.

Each housing courtyard contains an underutilized wooden gazebo gathering place. Housing courtyard should be studied, with student input to develop enhancements that encourage a greater variety of exterior experiences and social interactions.

Open Space Quality

Although the overall campus open space is attractive and very clean, the landscape elements are generally simple and monotone. Besides trees and grass lawns, the landscape has limited color or multi-season interest, and there are only a few landscape or flower beds on campus. Future planting should reinforce the tree canopy on major walks, while framing and opening vistas that link focal elements and major campus buildings.

While surveillance is important strategic addition, and maintenance, of more garden spaces with a variety of landscape elements, lighting, seating and gathering spaces, would provide a more pleasurable contrast to the dominant lawn open spaces. Maintenance is important. Most of the lawns do not look as good as they should. They are not irrigated and suffer through the dry seasons and do not appear as healthy and green as desired.

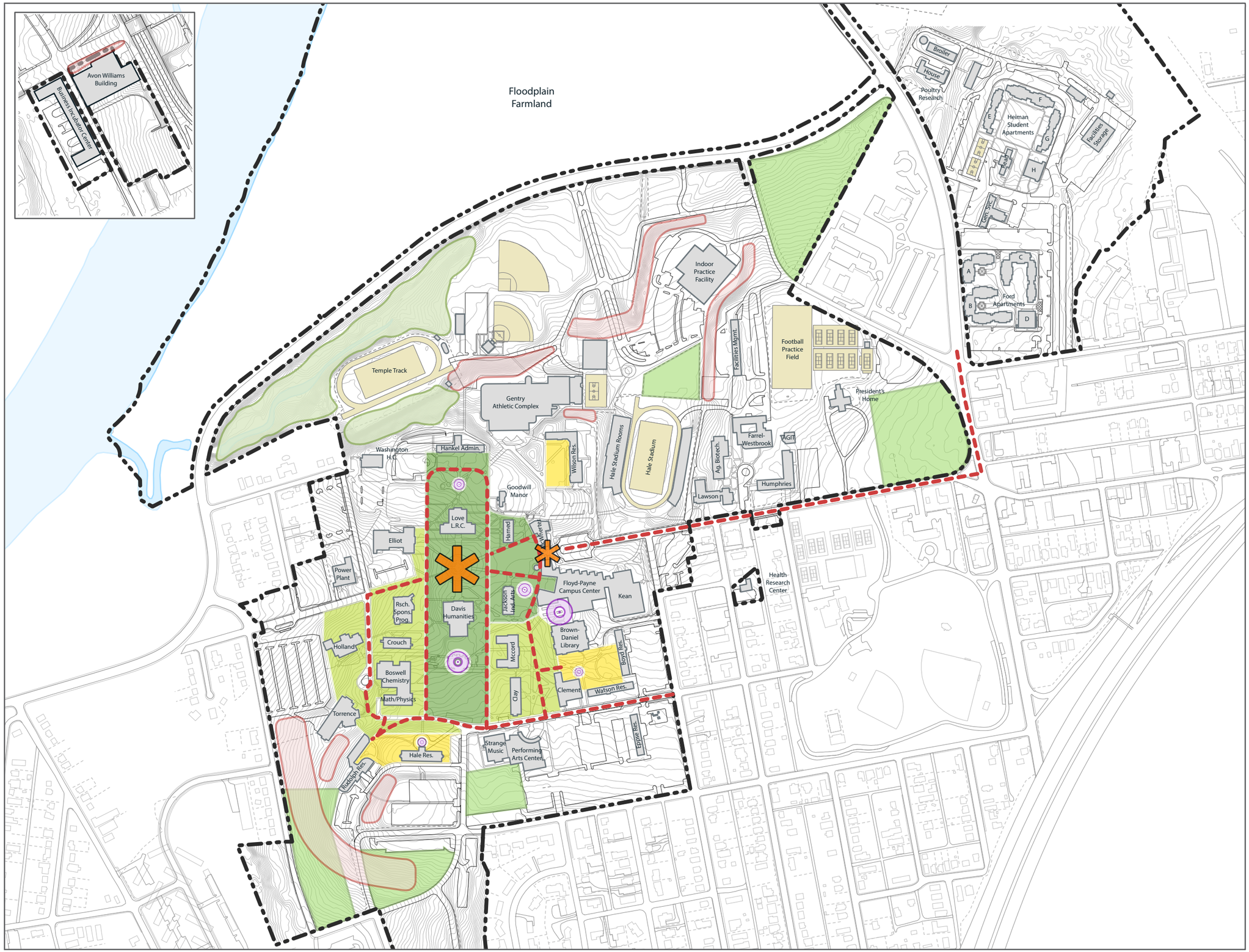
ADA Compliance

TSU utilizes the American with Disabilities Act to guide all campus construction. While most pedestrian and vehicular circulation complies with this act, there remain a few areas which should be redesigned for compliant access. The accessibility of campus buildings is addressed in “B. Existing Building Use and Condition.”

See Figure IV-6 Open Space and Pedestrian Circulation.

Open Space and Pedestrian Circulation

Figure IV-6



- Existing Buildings
- Formal Mall
- Informal Mall
- Housing Courtyards
- Informal Open Space
- Vegetation
- Steep Slopes
- Recreation / Sports Fields
- Campus Boundary
- Busy Pedestrian Routes
- Focal Points
- Gathering Spaces

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

5. Vehicular Circulation and Parking

External Roadways

TSU is located in the city of Nashville, Tennessee. Nashville is located in Davidson County and is centrally located within the state. Nashville is a large urban city that houses the Tennessee state capitol. The city can be reached using Interstates 24, 40 and 65. The nearest interstate access to the campus is Interstate 40, via Exit 207. This exit places commuters on Ed Temple Boulevard, which traverses the southeast edge of the campus.

The formal campus access point is along John A. Merritt Boulevard; however, the street terminates on campus and offers few parking opportunities nearby. Additional vehicular campus entrances are along Walter S. Davis Boulevard, Albion Street, 28th Ave North and 39th Ave North. Albion Street runs east/west and acts as the southern edge of TSU, connecting to the majority of the campus parking lots. Walter S. Davis Blvd forms a northern edge along the athletics and recreation zone of the campus. 39th Street runs north/south along the western edge, providing a secondary access into the campus.

The two major routes to the campus are Ed Temple Boulevard (28th Avenue North) and Jefferson Street. Ed Temple Boulevard runs north and south, connecting Albion Street, John A. Merritt Boulevard, and the eastern housing block. Jefferson Street runs east and west and connects the campus to downtown Nashville.

John A. Merritt Boulevard

The formal campus access drive is along John A. Merritt Boulevard. The street acts as the main access point to the campus for visitors. The right of way is narrow, without any distinguishing landscape or other corridor treatment that would signify entry into a major institution. Additional right-of-way, or landscape easement land along A. Merritt Boulevard developed as an entry corridor, can greatly enhance the arrival experience and the image of the University. The entry street terminates on campus at a guard house and pedestrian drop off loop with limited parking as most of the parking is reserved for administrators. To the east, John A. Merritt Boulevard transitions into historic Jefferson Street at the intersection Ed Temple Boulevard/28th Avenue and then continues to downtown Nashville.

Ed Temple Boulevard/28th Avenue North

Ed Temple Boulevard is a major collector that brings the majority of students and visitors to the campus. It runs north and south, transitioning at the major vehicular intersection of John A. Merritt Boulevard/Jefferson Street from Ed Temple Boulevard to 28th Avenue North, which continues south connecting the campus with Interstate 40, Albion Street, and the residential neighborhoods to the south. Approximately 1 mile south of the campus, 28th Avenue North intersects Charlotte Avenue a major route to downtown Nashville and the Avon Williams Campus. Ed Temple Boulevard connects to Heiman Street, Walter S. Davis Boulevard, which bounds the north side of the Main Campus and further north to the Clarksville Highway, a major access to campus from the north.

Albion Street

Albion is a neighborhood street that defines the southern edge of the campus. It has multiple uncontrolled campus entry points, to a majority of the campus student and faculty parking spaces. The southern side of the street is fronted by a neighborhood of single family homes. The campus and Hadley Park line the northern side of the street. The majority of the vehicular traffic flows from 28th Avenue North to campus. The intersection of 28th and Albion is directly adjacent to Interstate 40 eastbound access. Use of Albion Street is growing.

39th Street

39th Avenue North is a neighborhood street that forms the western edge of the campus. It is a minor campus entry with access to multiple campus parking lots. 39th Avenue North runs a short distance from Walter S. Davis Boulevard to Clare Avenue on the south limit of the campus, and carries little traffic.

Walter S. Davis Boulevard

Walter S. Davis Boulevard forms the northern edge of the recreation zone and of the campus. It is the primary access to the parking lot near the athletic and recreational core. TSU's experimental farmland lies to the north of the Boulevard within the Cumberland River floodplain. To the east, the Boulevard intersects Ed Temple Boulevard. To the west it intersects Tiger Belle Drive and 39th Avenue North before becoming Centennial Boulevard, the main westerly approach to the campus. Walter S. Davis Boulevard could become a major vehicular access to TSU.

Jefferson Street

Jefferson Street is a collector that runs east and west from downtown Nashville to the campus. At the major intersection of Ed Temple Boulevard/28th Avenue North, Jefferson Street becomes John A. Merritt Boulevard. This is the front door of the campus. Jefferson Street is a minor commercial corridor for the North Nashville community. It has a long history of importance for the city, serving one of America's best known jazz, blues, and rhythm and blues districts. In 1994, a group of local merchants created JUMP, the Jefferson Street United Merchants Partnership to create a framework for future advancement of the street. The quality of the Jefferson Street district is vital to the image and security of TSU.

Internal Roadways

Circulation within the TSU Campus is provided by several minor internal roadways. All interior roadways are two lanes and there are no signalized intersections. The roadways are primarily on the periphery, providing access to parking lots. With the roadways and parking along the periphery of campus, the core of the campus operates as a pedestrian-only space. An exception is Alameda Street which crosses east/west through the southern portion of campus. Similarly, 37th Avenue North runs north/south along the west edge of campus. Schrader Lane allows access from Ed Temple Boulevard to Dr. Walter S. Davis Boulevard, and to the large athletic parking lots, tennis facility, and maintenance headquarters. It forms part of the northeast campus boundary and is an additional street crossing between the apartments and the Main Campus. Multiple long unnamed drives connect perimeter roadways to parking lots, building service areas or other facility-based areas. It is unlikely that these roadways could be eliminated although the campus would benefit from having no vehicular traffic within its academic and student core. Refinement of pedestrian circulation and drive locations can further minimize pedestrian vehicular conflicts.

Public Transportation

The Nashville Metropolitan Transit Authority (MTA) operates a public bus system and a commuter rail line. Two bus routes serve the TSU campus, and one passes a few blocks from the campus. One of the routes connects the campus to downtown Nashville via Jefferson. The other route runs down Jefferson Street connecting the campus with the northern edge of downtown and north to a transfer point. No route directly links the Main Campus to AWC. The overall MTA ridership is approximately 8.5 million passengers per year.

On-Campus Parking Facilities

There are approximately 4,323 parking spaces on the TSU campus (source; Hale Stadium – Parking & Traffic Control report by RPM Transportation Consultants, LLD, from June 2012). With a student headcount of 9,196 (2014) and a staff headcount of 1,875 (2014) the campus has a parking ratio of 0.39 parking spaces per person. This ratio is a little high when compared to an average ratio of 0.3 found on other urban campuses across the county (source; 2010 Institute of Transportation Engineers (ITE)–Parking Generations, Fourth Edition). There are also 425 parking spaces at the Avon Williams campus. TSU enjoys a substantial parking advantage, at least in total numbers, and should need only to add sufficient parking for new students and staff as growth occurs. While overall quantity is important, distribution and convenience are very important to faculty, staff and students. It is important to plan now for optimal distribution and convenience as parking is adjusted for campus growth.

Campus parking lots are generally located at, or near, the perimeter of campus. Although , the distance from most parking facilities to any of the surrounding office and classroom destinations is modest and typically less than a ten minute walk door to door, as improvements are made, convenience for visitors, faculty, staff and students should remain a priority. Continued effort should be given to creating an even distribution of parking lots, and to developing a means of informing motorists where open spaces exist. Generally speaking, the campus should consider the gradual elimination of all parking facilities in the "core areas", in preference to larger lots located

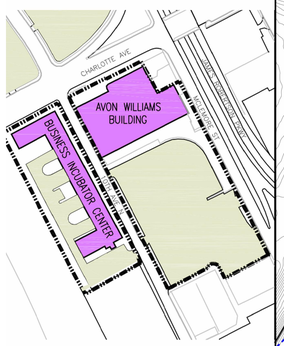
along the periphery. As the campus grows, strategic placement of one or more parking garages will likely be necessary to best balance convenience and optimal land use,

TSU has projected enrollment to increase to a head count of 10,001 by 2020. Assuming an increase in faculty that roughly parallels the enrollment, faculty would increase to 1,875, for total campus population of 12,041. If no additional parking is added, the ratio will drop to 0.4, which remains above the average ratio identified by the ITE. While that ratio suggests that parking should be adequate, it will be a reduction from that to which the campus population is accustomed. Therefore as growth occurs, TSU should maintain a goal of adding up to 500 cars in well distributed parking lots.

During peak periods, 10 AM to 2 PM, campus parking demand exceeds the capacity in several lots, especially those closest to core campus facilities. Outlying lots such as the stadium lot, however, provide excess capacity to accommodate parking overflow during peak periods. During a typical weekday peak period (with no special event traffic) there is available parking on the campus. As is often the case, the most convenient parking spaces fill up first. There is not adequate event parking near Student Center for guests participating in events held there, and parking for football games falls well short of projected demand, even when grass areas are used.. This condition lies outside of the normal visitor expectation. Most visitors are not accustomed to significant walking distances between parking their car and their final destination.

See Figure IV-7 Vehicular Circulation and Parking.

VEHICULAR CIRCULATION AND PARKING
Figure IV-7



Existing Parking Inventory

A	74	(student parking)
B	79	(student parking)
C	134	(student parking)
D	92	(student parking)
E	72	(student parking)
F	5	(student parking)
G	25	(student parking)
H	19	(student parking)
I	19	(handicap parking)
J	360	(stud 216 / fac 102 / res 36 / handi 6)
K	106	(student parking)
L	151	(student parking)
M	3	(student parking)
N	74	(stud 14 / fac 39 / res 13 / handi 8)
O	73	(55 faculty / res 16 / handi 2)
P	60	(student 48 / res 5 / handicap 7)
Q	39	(student 37 / res 2)
R	11	(reserved & handicap parking)
S	119	(student 100 / res 7 / handicap 12)
T	24	(reserved & handicap parking)
U	12	(reserved & handicap parking)
V	66	(student parking)
W	515	(stud 515 / fac 143 / res 18 / handi 23)
X	179	(student parking)
Y	82	(fac 12 / res 46 / handi 6 / visitor 7)
Z	34	(student parking)
AA	44	(fac 25 / res 7 / handi 5 / visitor 7)
BB	59	(student 41 / fac 8 / res 10)
CC	19	(student 7 / res 8 / handi 4)
DD	94	(stud 16 / fac 33 / res 44 / handi 1)
EE	394	(stud 356 / fac 29 / handi 9)
FF	37	(fac 24 / res 1 / handi 12)
GG	95	(stud 91 / handi 4)
HH	343	(stud 326 / res 1 / handi 12)
II	385	(stud 282 / fac 85 / res 5 / handi 13)
JJ	34	(maintenance vehicles)
KK	8	(reserved & handicap parking)
LL	99	(student 95 / handi 4)
MM	16	(handicap parking)
NN	6	(handicap parking)
OO	50	(maintenance vehicles)
PP	17	(reserved 15 / handicap 2)
QQ	12	(shuttle & bus parking)

Total Parking Quantities

3,132	student parking
555	faculty / staff parking
300	reserved parking
215	handicap parking
25	visitor parking
84	maintenance parking
12	shuttle & bus parking
4,323	total parking stalls

Legend:

- Existing Buildings
- Existing Parking
- Municipal Roadway
- Campus Roadway
- Campus Boundary
- Major Intersection
- Campus Entry
- Main Campus Entry

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

6. Athletic and Recreational Facilities

Campus Recreation

An organized program of intramural sports is structured to provide competitive recreational activities for the TSU community. All activities are offered as men's, women's, and co-recreational divisions. Intramural programs include:

- Flag football (team)
- Basketball (team)
- Volleyball (team)
- Softball (team)
- Tennis (individual/dual)

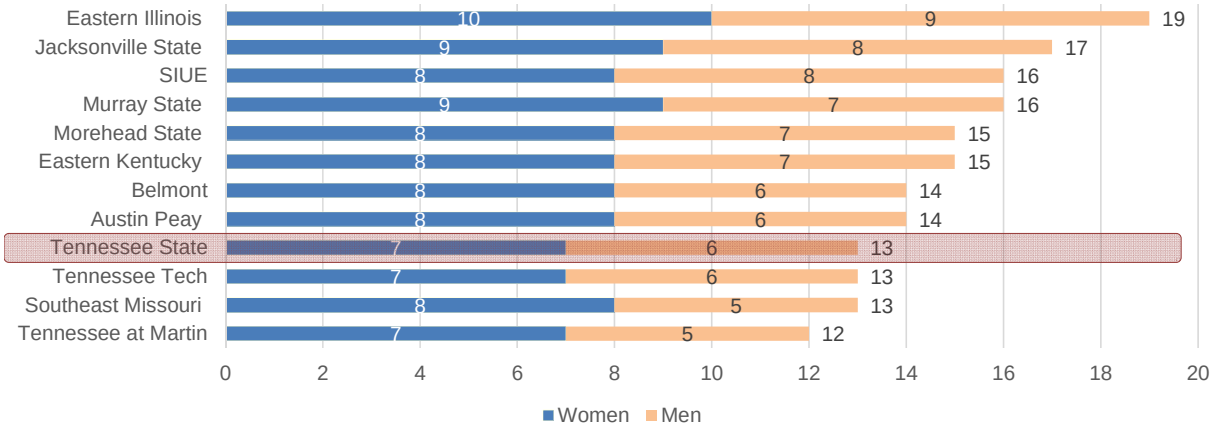
Indoor Campus Recreation facilities are available in the Wellness Center and Kean Hall. With approximately 2.4 square feet (SF) of recreation space per student, TSU falls well short of both the average of its peers (7.4 SF/student) and national planning guidelines (8.5-10.5 SF/student). Using the Fall 2013 enrollment of approximately 8,100 students on TSU's Main Campus, there is a deficit of approximately 60,000 GSF of indoor recreation space. B&D developed a DBP model for campus recreation using student survey responses. Table IV-3 outlines gaps for both indoor and outdoor drop-in activities and facility deficits.

Table IV-3: Recreation Facility Gaps

Indoor Spaces	Type of Space	Existing	Recommendation	Surplus/(Deficit)
1 Weight Training + Fitness	SF	3,071	8,600-9,900	(5,500-6,800)
2 Group Fitness + Mind/	SF	1,435	6,500-7,700	(5,065-6,265)
Body Class Space	Rooms	1	3-4	(2-3)
3 Rock Climbing Wall	Ropes	0	28-35	(28-35)
4 Bowling	Lanes	3	3-4	(1)
5 Indoor Basketball	Courts	0	8-9	(8-9)
6 Volleyball	Courts	0	2-3	(2-3)
7 Pool	Lanes	0	6-8	(6-8)
Outdoor Spaces	**Type of Space**	**Existing**	**Recommendation**	**Surplus/(Deficit)**
1 Outdoor Walking Trials	Lanes	0	7-9	(7-9)
2 Outdoor Bike Trails	Lanes	0	7-9	(7-9)
3 Outdoor Tennis	Courts	7	12-17	(5-10)
4 Sand Volleyball	Courts	1	3-4	(3-4)
5 Multipurpose	Fields	1	3	(2)

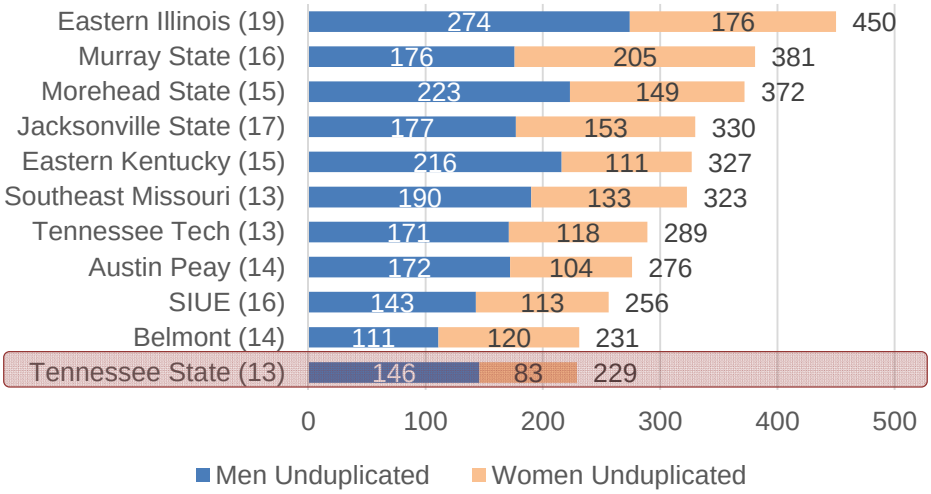
Athletic Programs

The TSU athletic program consists of 13 teams, the majority of which compete in the Ohio Valley Conference (OVC). As seen in Graph IV-1, the 13 sports offered at TSU represent slightly a lower number than the OVC average of 15. TSU offers all conference sports except for men's baseball, women's soccer, and rifle.



Graph IV-1: Number of Intercollegiate Athletic Teams

The average number of student athletes at OVC institutions was 324 for the 2013-2014 academic year, 30% more than TSU's 229 student athletes. TSU has the fewest number of student athletes in the OVC, as illustrated in Graph IV-2.



Graph IV-2: Unduplicated Student Athlete Count

Athletic Benchmarking

Introduction

B&D conducted a benchmarking analysis of TSU's peer and conference institutions selected in conjunction with TSU staff and administration. The analysis consisted of student housing, campus recreation, and athletics facilities and programs to better understand TSU's competitive position. The benchmarking analysis is intended to provide an initial framework in providing recommendations for future student life and athletics facilities.

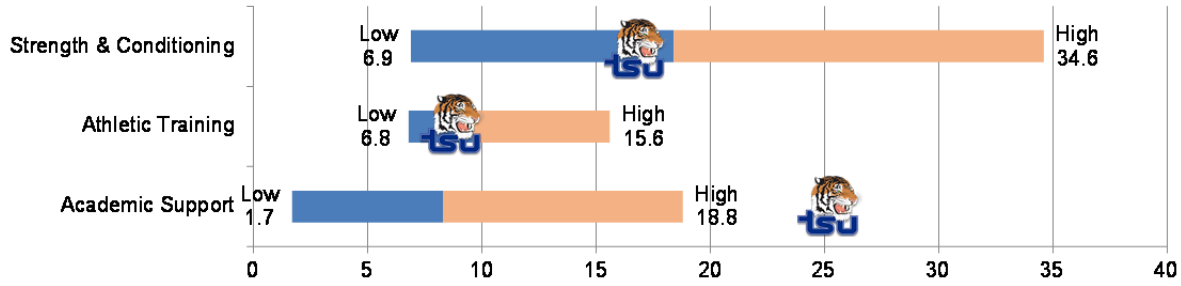
Methodology

Both primary and secondary sources of information were used to compare general institutional characteristics, specific program information, and facility data from each institution. In order to remain consistent with information available to prospective students, B&D used publically available sources, even when minor inaccuracies in the data were evident. While B&D is confident that the information gathered through both phone interviews and Internet research is accurate, it was not validated by physical inspection of the facilities. The institutions used, to benchmark Athletics comprise the Ohio Valley Conference.

Intercollegiate Athletics (Ohio Valley Conference)

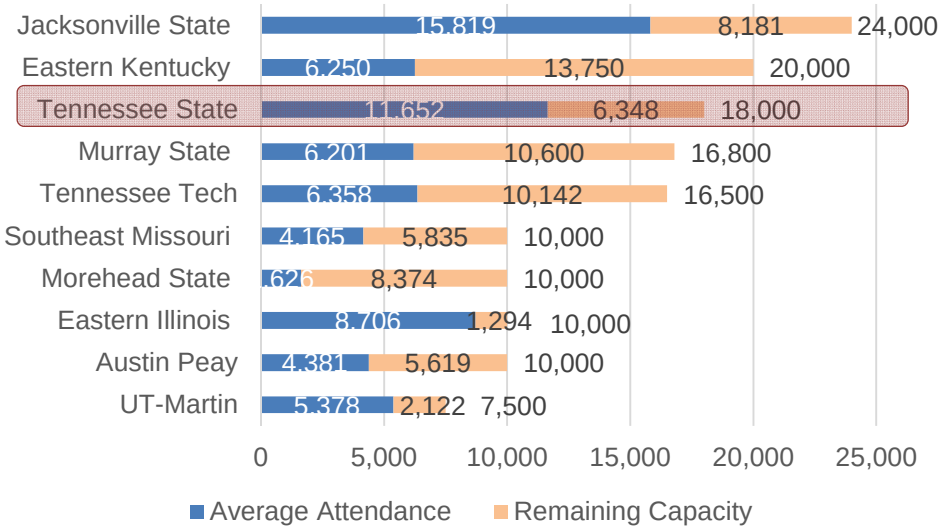
- Austin Peay State University
- Belmont University
- Eastern Illinois University
- Eastern Kentucky University
- Jacksonville State University
- Morehead State University
- Murray State University
- Southeast Missouri State University
- Southern Illinois University - Edwardsville
- Tennessee Technological University
- University of Tennessee at Martin

B&D analyzed support spaces for student athletes at each institution. As seen in Graph IV-3, the average SF per student athlete for strength and conditioning space (18.4 SF/student athlete) is nine percent higher than TSU (16.8 SF/student athlete). TSU offers 8.4 SF/student athlete for athletic training, below the average of 9.6 SF/student athlete of other OVC member institutions. The academic support space per student athlete at TSU is more than triple the average of other conference institutions (25.8 and 8.3, respectively).



Graph IV-3: Support Space Square Foot/Student Athlete

Graph IV-4 illustrates that TSU's Hale stadium is the third largest stadium in the conference. With an average seating capacity of 13,867, Hale Stadium has a capacity nearly 30% above the conference average.



Graph IV-4: Football Seating Capacity

The only institution within the OVC that has a dedicated basketball practice facility is Murray State University; the Gene W. Ray Center opened in 2013. Adjacent to their competition arena, there are entrances from the locker rooms as well as training room.

B. Building Use and Condition

1. Core Academic Building Use

This section summarizes the amount of building space by type; the pattern of its assignment by academic unit, research, continuing education and other; and a comparative analysis of space to other TBR and out-of-state institutions.

The facilities verification and analysis followed a two-step process. First, departments completed a questionnaire to verify existing space assigned to each department, room use and function, and room seating capacities, Second, a summary walk-through of twenty-seven non-residential buildings verified room numbers, room usage, departmental assignments, and square footages (in cases where the room configurations differed from the floor plans). The planning team's best judgment ruled when there was no access to a room, when department assignment was unclear, or when use was uncertain. When departmental assignment was uncertain, the room was assigned to the college or major administrative unit.

Field verification also included counting actual seat numbers in classrooms and teaching laboratories. Classroom and laboratory room types were coded on the basis of whether or not scheduled course activity appeared in the course data supplied by the University. If no course activity registered in the room, then the space received a room use code that matched the physical characteristics inside and the actual use of the room.

In addition to the facilities verification conducted by CFP, representatives from Melvin Gill and Associates and Woolpert, Inc. performed a Physical Quality and Functional Quality Assessment of campus buildings. Details of each facility assessment may be found in the TBR Physical Facilities Inventory Survey database, http://pfis.tbr.edu

Building Area

The University's space inventory reports there are a total of 92 buildings and physical structures on all sites totaling 2,878,349 Gross Square Feet (GSF) and 1,722,985 Assignable Square Feet (ASF). There are 65 buildings on the Main Campus; 2 on AWC; 14 on the Farm and 11 off campus, primarily at McMinnville. The main and Avon Williams campuses have 2,795,582 GSF and 1,646,009 ASF. Tables IV-4 and IV-5 present summary data related to make up of the inventory by age and functional use. The functions are defined as: academic, academic support; library; physical education/recreation and athletics; auxiliary; physical plant, residential (includes the President's Residence); farm; and off site.

Table IV-4: Building Areas by Year Constructed

Year Constructed	Gross SF	Assignable SF	% of Total GSF
Before 1940	300,969	179,540	10.5
Between 1940 and 1959	260,669	161,219	9.1
Between 1960 and 1979	1,086,5463	654,445	37.7
Between 1980 and 1999	906,233	573,834	31.5
After 2000	323,935	153,937	11.3
Total	**2,878,349**	**1,722,985**	**100.0**

Building Use

Table IV-5 lists the buildings located on the Main and Avon Williams campuses with the allocation of assignable square feet by major space type category.

Table IV-5: Existing ASF by Building and Space Type

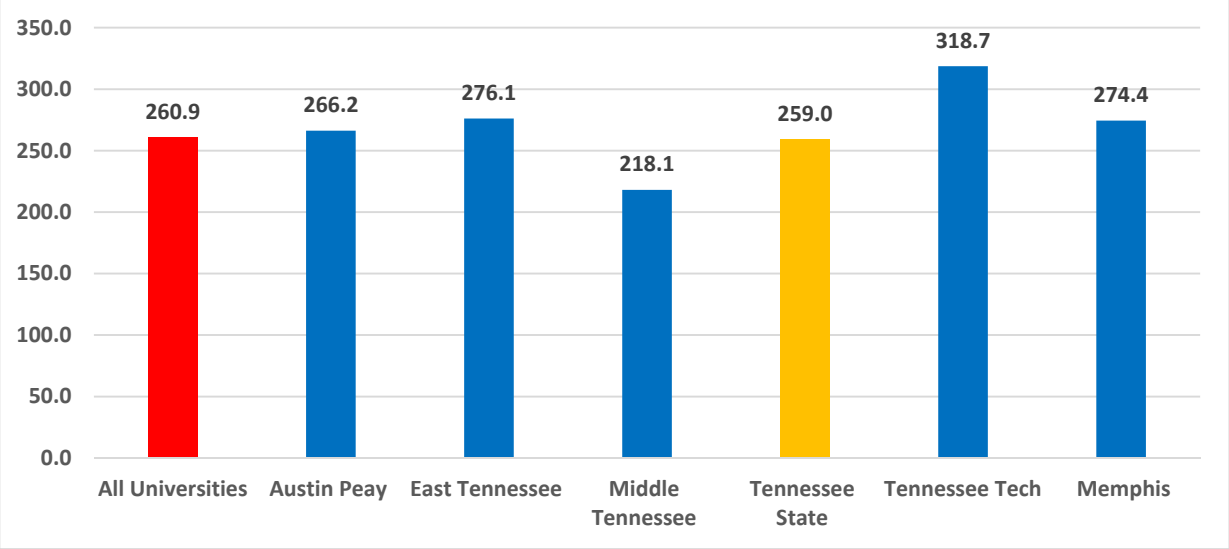
Building	Classrooms (100)	Labs (200)	Offices (300)	Library/Study (400)	Special Use (500)	General Use (600)	Support (700)	Health (800)	Residential (900)	Total by Building
Ag IT Center						4,265				**4,265**
Biotechnology Building	634	7,602	5,344				60			**13,640**
Boswell Chemistry	4,240	25,450	3,835		1,567		16			**35,108**
Boswell Physics/Math	6,479	4,452	5,351			267				**16,549**
Boyd Res Cntr			275	543		1,071			45,305	**47,194**
Brown-Daniel Library			5,012	58,826	2,076	982				**66,896**
CARP Building		3,236	1,854							**5,090**
Clay Education	6,105	3,390	8,923	1,821		219	12			20,470
Clement Allied Health	2,468	10,372	7,472	1,230	5,750	261	252			**27,805**
Crouch Hall	10,465	1,141	9,687			441	748			**22,482**
Davis Humanities	6,498	3,079	11,384			9,292	1,457			**31,710**
Elliott Hall	6,543	12,536	8,920			8,007	619			**36,625**
Eppse Res Cntr			295	2,515		1,725	52		32,634	**37,221**
Fac Mgt Sign Shop							875			**875**
Fac Mgt Veh/Rec			276				15,343			**15,619**
Fac Mgt Waste Stg							360			**360**
Facilities Mgt			5,383			156	13,621			**19,160**
Farrel-Westbrk Ag		5,277	13,095	117	1,870	5,341	320			**26,020**
Floyd-Payne Center		149	19,171		484	51,638	2,275			**73,717**
Ford Apts A									27,768	**27,768**
Ford Apts B									53,808	**53,808**
Ford Apts C									53,808	**53,808**
Ford Apts D									6,134	**6,134**
General Services			7,266	145	1,000	515	1,156			**10,082**
Gentry Athl - PE	2,802	4,515	5,639		104,471	1,489	2,054			**120,970**
Goodwill Manor			2,187							**2,187**
Hale Res Cntr			441						42,215	**42,656**
Hale Stadium Rms			336		9,635	1,248				**11,219**
Hankal Hall			14,149	1,265	370	3,680	1,175			**20,639**
Harned Biology	455	8,345	2,216		456					**11,472**
Health Research							1,735			**1,735**
HM Love SSC	1,921	1,050	13,484	1,202	3,852	6,047	455			**28,011**
Holland Hall	6,381	3,164	8,305		4,243	269	388			**22,750**
Humphries Hall	7,442	16,898	10,638	878	5,160	2,425	446			**43,887**
Indoor Practice Facility					63,527					**63,527**
Jackson Ind Tech	1,535	9,021	3,050	150	1,803	151				**15,710**
Kean Hall St Svc	2,601	1,575	11,937		24,166	15,810	3,198	954		**60,241**
Lawson Agriculture	3,705	7,724	4,300							**15,729**
McCord Bio/CIT	4,999	12,472	5,208	731		245	121			**23,776**
Mcwherter Admin			13,687			280				**13,967**
Murray Power Plant			358				12,846			**13,204**
OD BBall Fac					18,600					**18,600**
Perf Arts Cntr	2,478	8,716	3,845			6,186	40			**21,265**
Prac/Event Bldg					5,824					**5,824**
Pres Res Stg									130	**130**
Presid Residence									3,727	**3,727**
Queen Washington			7,523		104	636	905			**9,168**
Read Hall			1,238			119	3,120			**4,477**
Rsch/Sp Prog Bldg		11,634	12,958		1,796	437	810			**27,635**
Rudolph Res Cntr			815			4,924	544		45,906	**52,189**
SB/Trk Fieldhouse					3,589					**3,589**
Strange Music Bld	2,369	7,909	3,388			2,528	1,645			**17,839**
Temple Track Stg					360					**360**
Temple Trk Fldhs/Ltg					451					**451**
Tennis Fldhs					1,600					**1,600**
Torrence Engineering	2,269	19,041	7,237	1,276		701				**30,524**
Utility Tunnel										**0**
Warehouse			475				3,067			**3,542**
Watson Res Cntr			195				1,576		42,315	**44,086**
Wellness Cntr			429			4,703				**5,132**
Wilson Res Cntr			3,519			9,425	440		67,494	**80,878**
ASF - Main Campus	82,389	188,748	251,100	70,699	262,754	145,483	71,731	954	421,244	1,495,102
Avon Williams Campus	27,327	10,756	37,167	14,783	9,302	11,950	7,324	0	0	118,609
Grand Totals	**109,716**	**199,504**	**288,267**	**85,482**	**272,056**	**157,433**	**79,055**	**954**	**421,244**	**1,613,711**
ASF/FTE	17.2	31.2	45.1	13.4	42.5	24.6	12.4	0.1	65.9	252.3

Note: Totals do not include the Incubation Center, unknown room types, inactive space or space under alteration.

Space per Student/Comparative Analysis

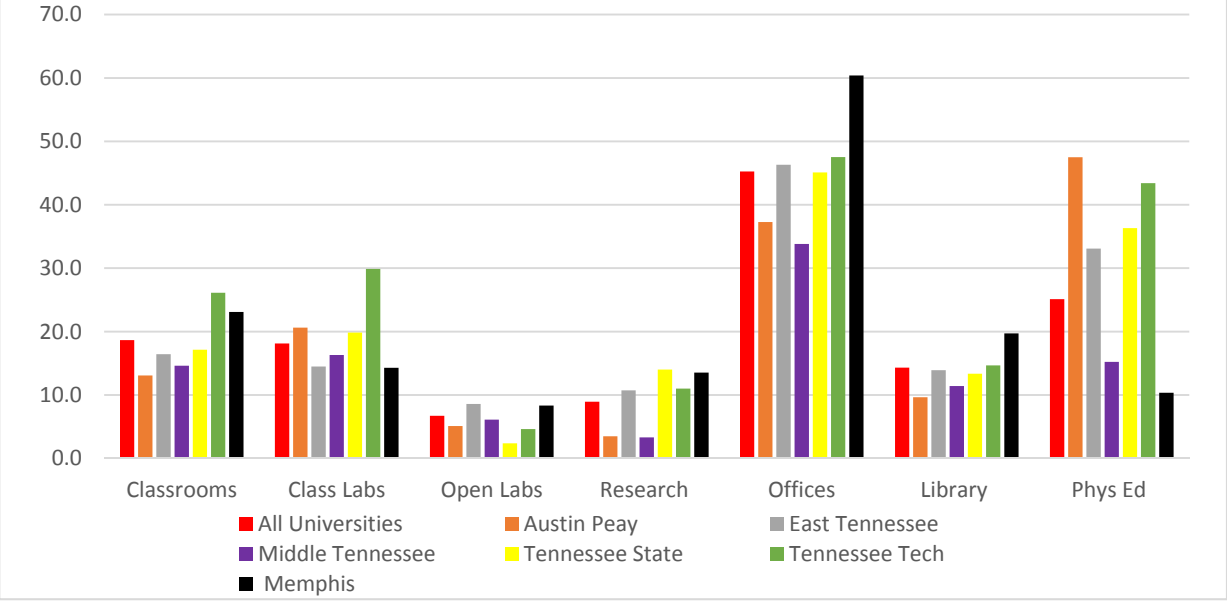
TBR Comparative Analysis

According to the Tennessee Board of Regents Fall 2013 PFI database Tennessee State University's assignable square feet per student FTE ratio was 259 ASF as compared with the overall TBR University average of 260.9 or right at the average for the system. Note: the difference between the total ASF/FTE this ratio and the total ratio shown in Graph IV-5 is the inclusion of the Incubation Center. Only Middle Tennessee State University has a lower ASF/FTE ratio than TSU.



Graph IV-5: ASF per Student FTE-TBR Universities

Graph IV-6 presents a comparative graphical display of the ASF/FTE ratios for the TBR universities by the seven THEC space categories. The TBR average is shown in red while the TSU averages are in yellow. TSU is near or below the state average five of the seven categories. Only in research and physical education space does the University exceed the average.



Graph IV-6: ASF per Student FTE by THEC Space Type Categories

Additional detail data for the TBR comparisons are provided in the Appendix.

A supplemental peer comparative analysis was conducted by CFP for nine peer institutions identified by TSU. Summary results from this analysis are shown in Table V-6.

In the aggregate, TSU has about 16.2% fewer assignable square feet than the average peer institution included in this study. However, when examined on an ASF per FTES basis the University exceeds the peer average by about 29%. When comparing the total space allocation by category to the average it would appear that the University has a shortage of space in all of the categories except Special Use. However, normalizing the data by examining the ASF/FTES ratios and its percentage proportion to total space, validates that the University has sufficient space in these categories.

2. Facility Condition Assessment

The planning team assessed the general physical quality and functional quality (or suitability of a building to support the functions it presently houses) of primary buildings on the main and downtown campuses at Tennessee State University.

Assessment Methodology

The planning team spent several days on the campus visiting each building to perform a Physical Quality Assessment, while also assessing functional quality. Assessment information is based on site observations of buildings, meetings with University administration, facility management and staff. The Facilities Condition Assessment was conducted in accordance with the guidelines established in the Tennessee Board of Regents' (TBR) Physical Facilities Inventory and Survey (PFIS) Database, which was updated at the conclusion of the assessment. That information can be accessed via the TBR Website.

The team, working with TSU Facilities, rated individual buildings using a numeric value, summarized by a letter ranking, which grouped the buildings into priorities for repairs, renovation, redevelopment or demolition. Physical condition was compared to functional quality to determine an overall ranking of buildings relative to their ability to be of productive use as contemporary educational facilities. When compared to space needs determines by the Building Use Assessment, this ranking serves as a guide to prioritize the addition of new buildings, removal of the least usable buildings, and an efficient structure for migration of programs into expanded and improved space sized to meet current and projected needs.

Another important outcome of this assessment is that it will help to prioritize the annual requests for, and application of annual maintenance fund allocations. Following the conclusions of this assessment can help the University combine and balance expenditures for relocation and expansion of programs with maintenance needs to optimize the value of both construction and maintenance funds, by planning to accomplish needed maintenance in concert with improvements needed to expand or relocate programs.

Physical Quality

TSU's building inventory is burdened with aging buildings (see Table IV-7) and their significant components and systems. In addition, University officials state that there is an insufficient budget allocation for a viable preventive maintenance program that will sustain or extend the life of these and the more recently constructed buildings. Twenty-nine (29) of TSU's buildings were constructed prior to the oil embargo and energy crisis of 1973 and 1979, respectively. Another fourteen (14) buildings were constructed prior to the establishment of mandatory guidelines for energy conservation policies by the various building codes and regulatory boards and professional societies. The fact that these buildings have little or no energy conservation features renders them excessive energy users, which places a major utility cost burden on TSU's operations budget. In addition, all of the buildings erected prior to those constructed in compliance with the updated 2009 Americans with Disabilities Act (ADA), must be brought into compliance with current ADA guidelines when undergoing major renovations.

Table IV-7: Building Age Range

Construction Years	Number of Buildings
1920s	2
1930s	4
1940s	0
1950s	6
1960s	12
1970s	5
1980s	5
1990s	9
2000s	11
2010s	2

Table IV-6: Peer Data Comparative Analysis

Space Category	Alabama A&J M	Florida A & M	Fort Valley State	North Carolina (A & T)	South Carolina State	Southern University (LA)	Southeast Louisiana	Texas State	Texas Southern	Tennessee State Current	Average
FTE Students	4,455	11,309	3,261	9,609	3,453	5,577	12,767	29,643	8,449	**6,396**	9,836
Classrooms (100)	123,759	180,246	101,154	145,812	101,963	176,652	192,824	226,329	125,755	**109,716**	152,722
ASF/FTE	27.8	15.9	31.0	15.2	29.5	31.7	15.1	7.6	14.9	**17.2**	15.5
	12%	9%	13%	8%	12%	13%	13%	9%	12%	**9%**	11%
Laboratories (200)	173,158	408,693	104,133	323,964	126,944	216,544	176,308	395,494	176,457	**199,504**	233,522
ASF/FTE	38.9	36.1	31.9	33.7	36.8	38.8	13.8	13.3	20.9	**31.2**	23.7
	17%	20%	13%	18%	15%	15%	12%	16%	17%	**17%**	16%
Offices (300)	220,169	457,435	164,786	426,934	220,439	348,896	347,231	723,832	336,138	**288,267**	360,651
ASF/FTE	49.4	40.4	50.5	44.4	63.8	62.6	27.2	24.4	39.8	**45.1**	36.7
	21%	23%	21%	24%	26%	25%	24%	30%	33%	**24%**	25%
Library (400)	38,590	167,304	42,265	134,733	52,651	122,400	110,465	217,661	109,795	**85,482**	110,652
ASF/FTE	8.7	14.8	13.0	14.0	15.2	21.9	8.7	7.3	13.0	**13.4**	11.2
	4%	8%	5%	8%	6%	9%	8%	9%	11%	**7%**	8%
Special Use (500)	225,832	286,066	200,829	321,214	158,273	186,089	142,719	357,575	88,713	**272,056**	218,590
ASF/FTE	50.7	25.3	61.6	33.4	45.8	33.4	11.2	12.1	10.5	**42.5**	22.2
	22%	14%	25%	18%	18%	13%	10%	15%	9%	**23%**	15%
General Use (600)	190,677	335,291	134,179	229,278	158,917	267,342	248,597	360,390	141,102	**157,433**	229,530
ASF/FTE	42.8	29.6	41.1	23.9	46.0	47.9	19.5	12.2	16.7	**24.6**	23.3
	18%	17%	17%	13%	18%	19%	17%	15%	14%	**13%**	16%
Support (700)	62,899	184,203	41,165	195,441	40,753	90,623	235,625	153,276	44,952	**79,055**	116,549
ASF/FTE	14.1	16.3	12.6	20.3	11.8	16.2	18.5	5.2	5.3	**12.4**	11.8
	6%	9%	5%	11%	5%	6%	16%	6%	4%	**7%**	8%
Total ASF	**1,035,084**	**2,019,238**	**788,511**	**1,777,376**	**859,940**	**1,408,546**	**1,453,769**	**2,434,557**	**1,022,912**	**1,191,513**	**1,422,215**
ASF/FTE	232.3	178.6	241.8	185.0	249.0	252.6	113.9	82.1	121.1	**186.3**	144.6

Note: Excludes Vehicle Storage, Medical Facilities and Residence Halls

Basic construction materials for TSU's buildings are, primarily, reinforced concrete frames, CMU walls and brick veneer exterior skins. Two notable exceptions are the precast concrete panel exterior skin on the Brown-Daniels Library and the basic construction of the Ford Residence Center and the New Residence Center complexes built in 1998 and 2002, respectively. Both of the residence complexes are three-story, slab-on-grade, wood frame buildings with brick veneer on the lower story and cementitious siding with wood trim on the upper stories and breezeways. The breezeways have steel stairs with concrete filled metal pan treads with open risers and concrete on metal deck landings. In general, the construction is of poor quality and as a result, the useful life of some of the buildings' components has been greatly diminished. Of particular concern is the thin gage of the metal pan treads which have rusted-through in numerous locations creating the likelihood of bodily injury if not repaired immediately. In addition, the plumbing walls in the apartments are plagued with leaks and lack of repair, which is resulting in the growth of mildew and mold which is also a liability for the University.

Construction Periods for TSU Buildings

The detailed information recorded in the Physical Facilities Inventory and Survey Database was used, for this Master Plan, to classify each building's condition for the purpose of rating its state of repair and prioritizing the order in which the University would address each building's status relative to replacement or repair.

The state of repair of a building can have an adverse impact on the effective functionality of the building for its intended use, and to a limited extent, functionality is addressed in the TBR Deficiency Survey Database, which can be accessed through the TBR website. Functionality is addressed in more detail in this Master Plan. In addition, current communication and teaching/information technology and its pertinent infrastructure has advanced to the point that even the basic classroom buildings constructed 10-15 years ago can and do challenge, if not diminish, the quality and methods of teaching as well as create a negative image for universities recruiting college bound students in today's arena of colleges and universities that are constructing state-of-the-art buildings based on current classroom design guidelines which are tailored to the emerging and rapidly advancing communication technologies.

TSU's academic buildings are, in general, distressed with original mechanical and electrical equipment and various other building components that have out lived their respective useful lives and the buildings are kept operational with limited and inadequate resources.

The general academic buildings' classrooms were designed as a "one fits all" type classroom. Most were of one general size with several larger classrooms that, in some instances, could be partitioned off for smaller groups or opened up for larger groups.

Several of these buildings have been renovated for uses other than the original intended use. Some of these adaptive reuses were quite successful and others were not. Jackson Industrial Arts is an example of a successful adaptive reuse and Elliott Hall is an example of an adaptive reuse that was unsuccessful.

With the University proposing to build a new nursing/allied health facility, Humphreys Hall will be a candidate for adaptive reuse. Unfortunately, Humphreys will have limited uses because of the width of the bays (column spacing) containing the classrooms and administrative spaces as well as the heights from the top of floor to the underside of the floor above.

A similar physical restriction was encountered in the adaptive reuse of Clement Hall with the structural fame and column spacing being problematic in the areas that are used as learning/teaching "laboratories," such as occupational therapy, physical therapy and the dental hygiene labs. Some of these open-area laboratories have as many as seven (7) exposed columns that obstructs the view of students and instructors and severely limits the functional layout of the these spaces.

The adaptive reuse of Hankal Hall, which has the same basic structural design as Clement, was not as challenging because it was renovated for use as administrative offices which do not require large open spaces. However, inadequate funding for the renovation of Hankal resulted in the original single-pane windows remaining.

Most of TSU's residential buildings are in need of major repairs, upgrade or replacement. Housing is a primary building type that prospective students focus on during their initial tour of the campus. Unfortunately TSU cannot "hide" its archaic dormitories (residence halls) from prospective students. There are only two dormitories (residence halls) that have semi-private rooms with semi-private toilets and showers. These dorms are the ones

favored by the students. In addition, the Ford and New residence complexes with their apartment style housing are also a favorite for students.

TSU's athletics programs have brought it worldwide fame in track and field and national recognition in football and basketball. Yet, the current athletic facilities, with the exception of the new Indoor Practice Facility, are greatly inadequate for the programs, and non-compliant with current building codes and accessibility requirements.

The Gentry Center is not only non-compliant, but it also has insufficient space for the athletic programs that it houses. It was constructed in a location that will render any major renovations impractical.

Hale Stadium has deteriorated to the point that it should be replaced and a new stadium constructed. Only three (3) football games had been played in Hale Stadium within the past 10 years preceding 2015. In 2015, only two (2) games were played. TSU has lost many of its fans and supporters because of its commitment to use of the Titans Football stadium. In order to draw these fans back to Hale Stadium, TSU will have to construct a new football stadium comparable to the stadiums at other state supported colleges and universities of similar size and student population. However, that will likely be a difficult task, considering the fact that TSU has a binding financial agreement to contribute to the support of the Titans' stadium.

Functional Quality

The planning team assessed the primary campus buildings according to their overall physical condition and functional quality, and the ability of the structure to be renovated for improved or optimum functionality.

The buildings' components and functional capability assessed in the TBR Physical Facilities Inventory and Survey (see database on TBR web site) was the basis for the rating to prioritize the repair or removal of the buildings surveyed. The components and functional capabilities surveyed were:

- Foundation
- Basement construction
- Superstructure
- Exterior enclosure
- Roofing
- Interior construction
- Stairs
- Interior finishes
- Conveying
- Plumbing
- HVAC
- Fire protection
- Electrical
- Data and communication
- Equipment and furnishings
- Special construction
- Site conditions
- Safety standards
- Building suitability
- Building adaptability

The team evaluated the buildings' suitability to support the functions they currently house, and flexibility to meet future needs.

Good facilities include newer buildings such as the Agricultural Biotechnology Building, Indoor Practice Facility, Ag IT Building, McWherter Administration, Practice/Event Building, and Rudolph Residence Center; and recently renovated older buildings such as H. M. Love Student Success Center, Avon-Williams, Hankal Hall and Lawson Hall.

Marginal facilities include Brown-Daniel Library, Holland Hall, Keane Hall and Floyd-Payne Campus Center.

Poor facilities include Elliot, Clement, Harned, Carp, Humphries and Torrence Halls, Health Research Center, General Services, and Watson, Eppse, Boyd and Wilson Residence halls.

In summary, TSU has an aged campus with buildings that were designed in accordance with the educational requirements and guidelines of the period in which they were constructed. With changes in program requirements, energy management, health, safety and other codes over the ensuing years, most of the campus buildings are now out of date, and several are not practical to upgrade.

Many of the buildings' envelopes are uninsulated and have single pane windows. Single pane windows can be replaced with insulated systems and roof can be replaced, which may be necessary a number of times during the useful life of a building. Such replacements allow an opportunity for the installation of sufficient insulation. However, it is generally financially impractical to add insulation in the exterior walls.

The advancement of Information Technology (IT) has made it necessary to retrofit the older buildings with current IT infrastructure, resulting in inadequate location or size of data closets, inaccessible cableways or lack of conduit routing. These conditions prevent optimum installation of modern systems and their pertinent infrastructure. In addition, the configuration many existing classrooms is not conducive to current expectations for teaching and learning with the contemporary, state-of-the-art information technology.

Laboratory equipment in some classrooms is non-functional and outdated. In others the equipment is in need of repair or is insufficient to support the level of research and teaching intended.

Fixtures and furnishings in buildings on TSU's campuses span the gamut from poor to good with most being in need of replacement. This is another area in which TSU should plan to replace the old and outdated fixtures and equipment.

All of the existing buildings should have their lighting design assessed, and when appropriate, upgraded to comply with current lighting tasks and energy efficiency. Lighting for all future buildings should be in accordance with the design standards current at the time of construction and as adopted by the Tennessee Board of Regents.

Summary Evaluation

Table IV-8 ranks the buildings on both TSU campuses, based on the condition assessment and maintenance needs. For the most part most of the poorly functioning buildings are also those most in need of repairs. A few exceptions, such as Carp are in relatively good condition, but are functionally obsolete, and should also be considered for removal.

Table IV-8: Condition Rating System

Rating	State of Repair	Action Required	Action Period
A	Good	General preventive maintenance program	On-going
B	Satisfactory	Some building component upgrades, supported by a general preventive maintenance program	On-going
C	Deteriorating	Minor renovations and replacement/upgrades of building components supported by a general preventive maintenance program	On-going
D	Unsatisfactory	Phase-out or major renovations and replacement/upgrades of building components for adaptive reuse supported by a general preventive maintenance program	Phase-out or Renovate in 5-10 years
F	Failing	Removal	Immediately

*This rating system was developed by the University

Evaluating all buildings in light of program space needs, functionality and adaptability to future needs, general condition and needed maintenance yields the following lists of priority buildings for removal, redevelopment or renovation. As programs are moved to accommodate growth and to replace non-functioning space, the migration plans should focus on removing the least usable buildings (list 1). Buildings in list 2 should only be improved and used if renovations needed to meet current standards for the potential program occupants can be made cost effectively. Buildings in list 3 should have renovations planned over the next 10 years to keep them functionally and physically sound and up to contemporary standards.

1. Priority Building Removals near term (1-5 years)

- Elliot Hall
- Boyd Hall
- Eppse Hall
- Wilson Hall
- Watson Hall
- Read Hall
- Torrence Hall
- Carp Hall
- Harned Hall
- General Services
- Broiler House
- Incubation Center at Avon Williams campus

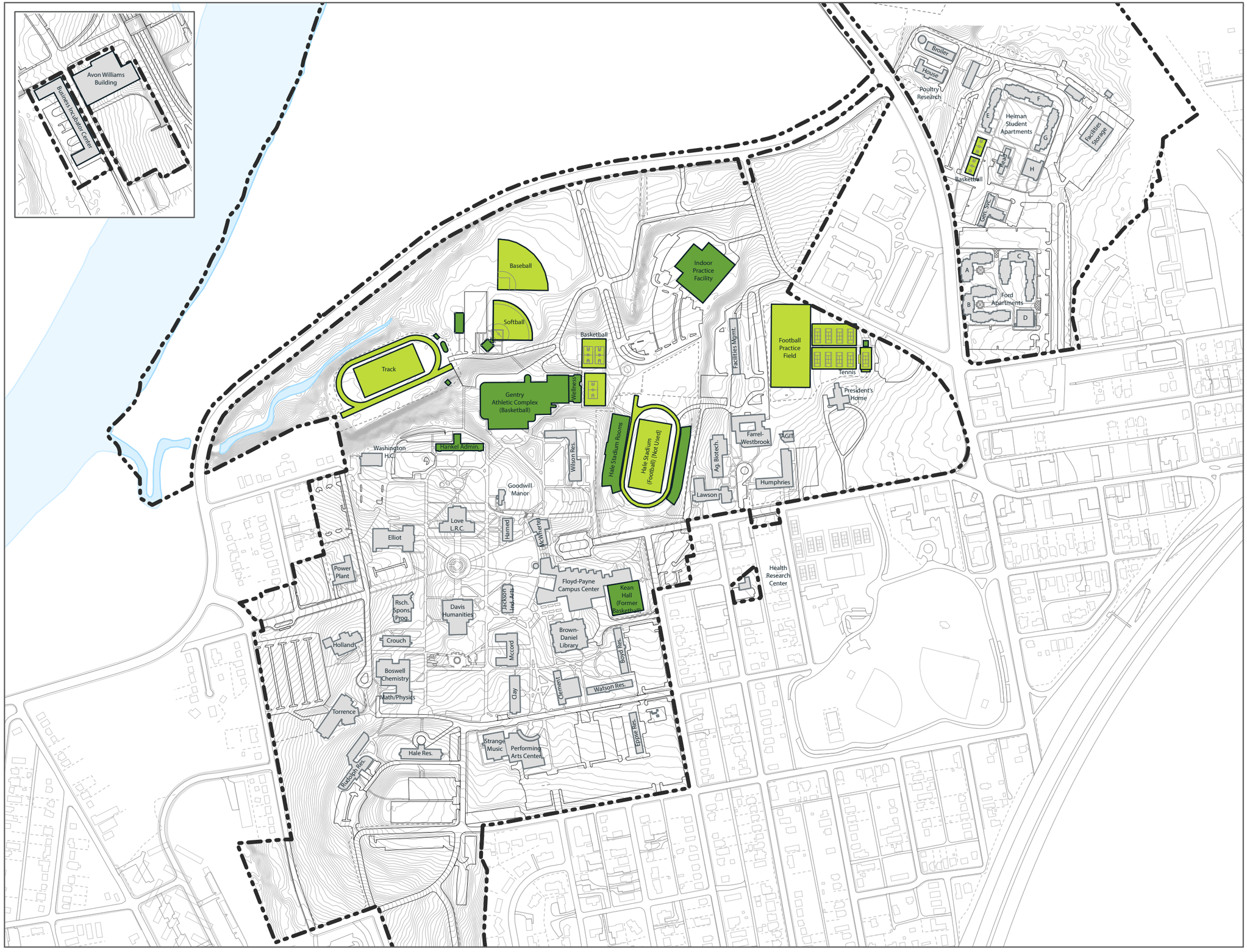
2. Buildings to remove or redevelop long term (up to 10 years)

- Hale Stadium
- McCord Hall
- Holland Hall
- Facilities Management
- Humphreys Hall
- Floyd Payne Center (renovation)
- Brown-Daniel Library (renovation)
- Goodwill Manor

3. Buildings to renovate long term (up to 10 years)

- Wellness Center
- Gentry Center
- Sports Field Buildings

Refer to Figures IV-8, IV-9, IV-10, IV-11 and IV-12 for a graphic depiction of the vehicular circulation and parking.



Existing Athletic and Recreational Facilities

Figure IV-8

Existing Buildings
Playing Fields / Courts
Athletic / Recreation Facilities

0 125 250 500 750 Feet

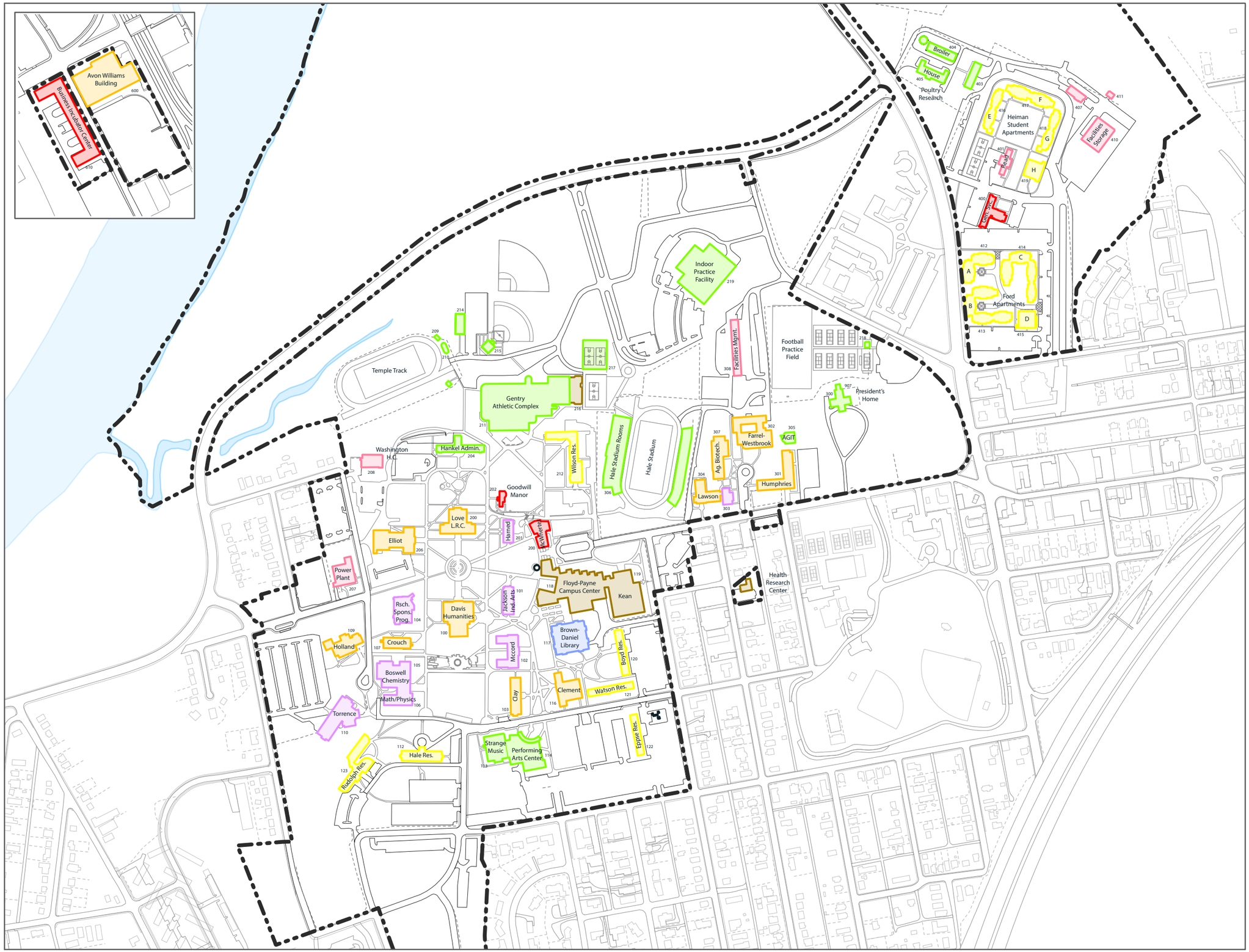
TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015



Building Use Classification

Figure IV-9

Code	Use
100	Classroom
200	Lab
300	Office
400	Library
500	Special Use
600	General Use
700	Support
800	Healthcare
900	Residence
	Campus Boundary

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

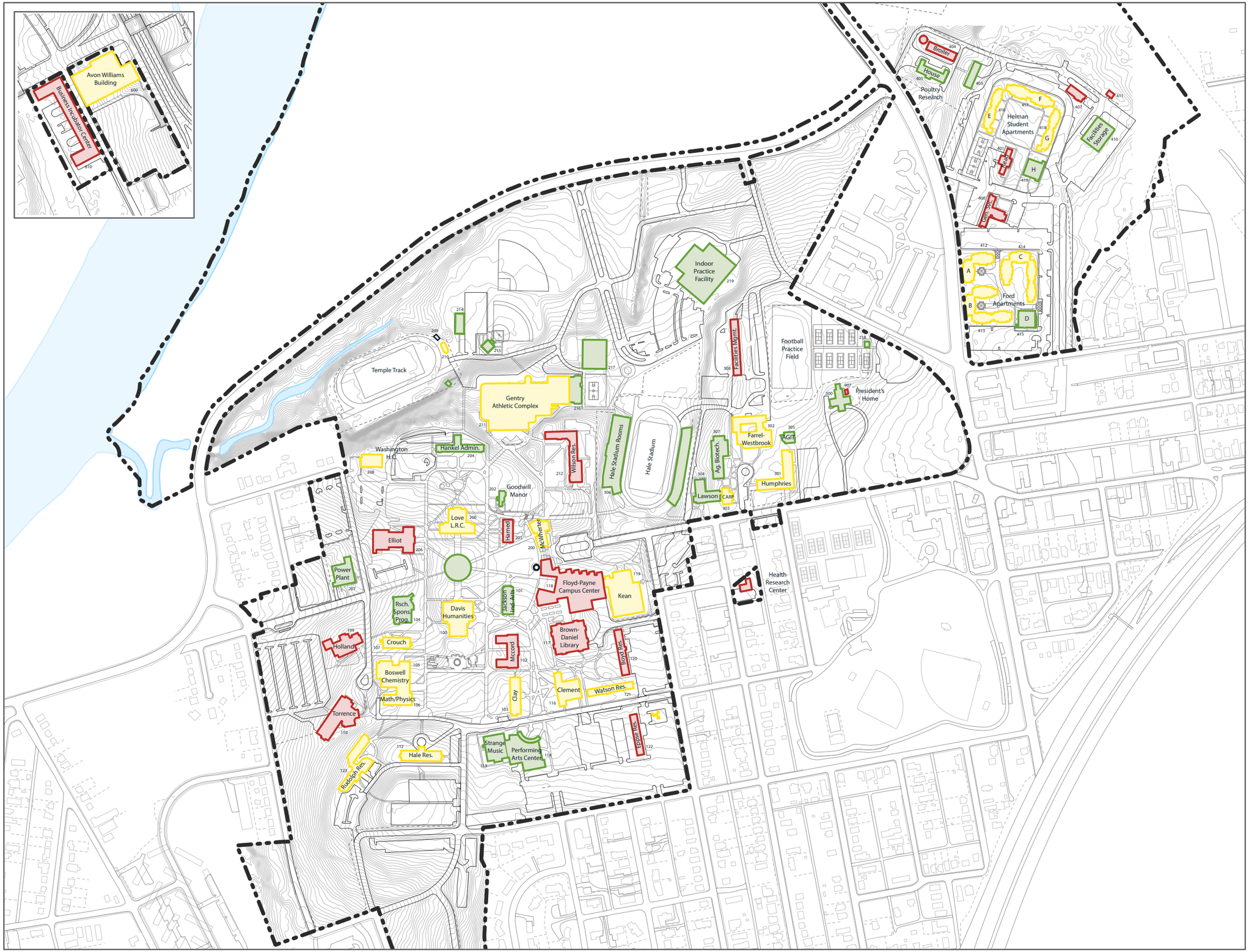
BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

Physical Quality Assessment

Figure IV-10



Satisfactory
Deteriorating
Unsatisfactory
Campus Boundary

0 125 250 500 750 Feet

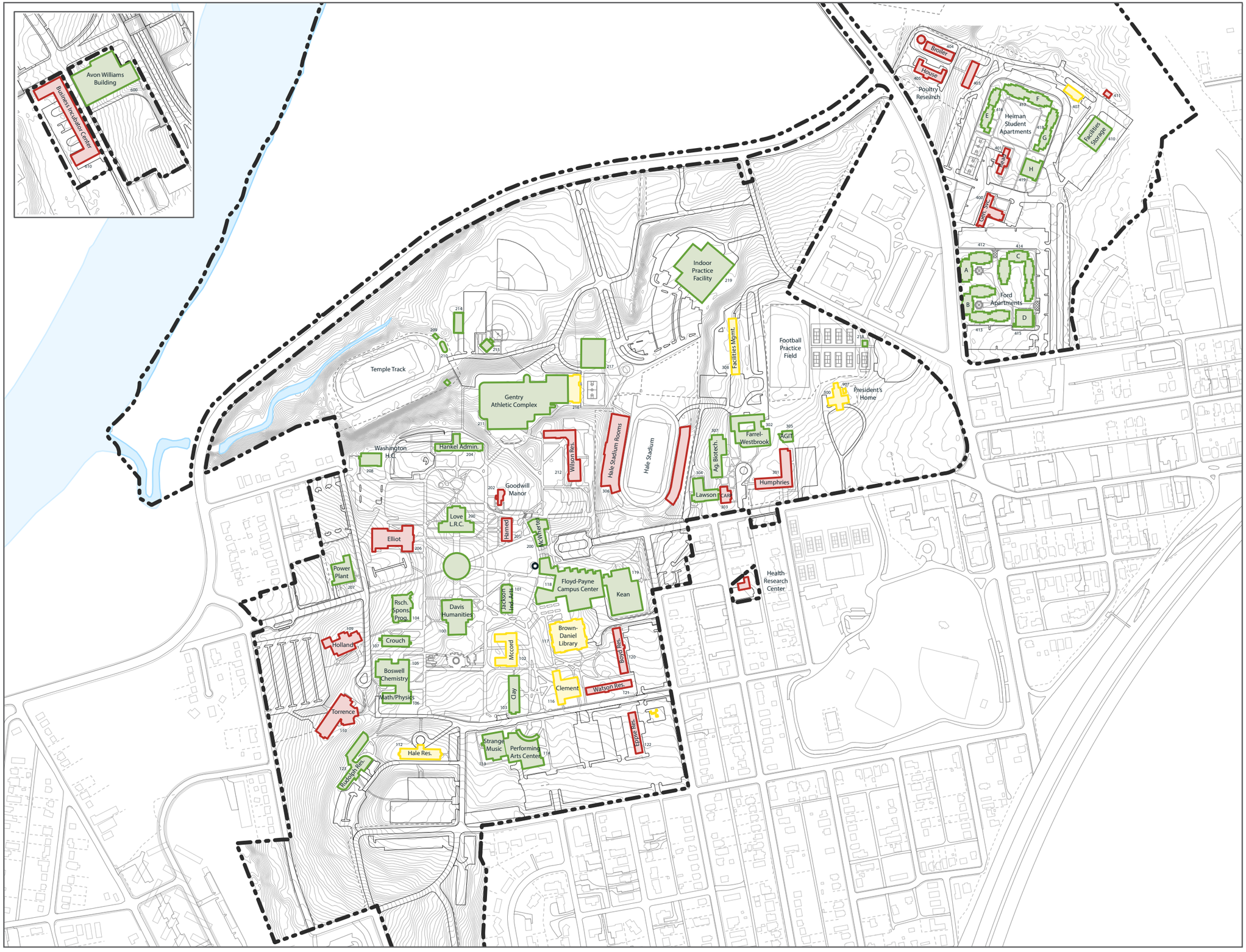
TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015



Functional Quality Assessment

Figure IV-11

- Good
- Marginal
- Poor
- Campus Boundary

0 125 250 500 750 Feet

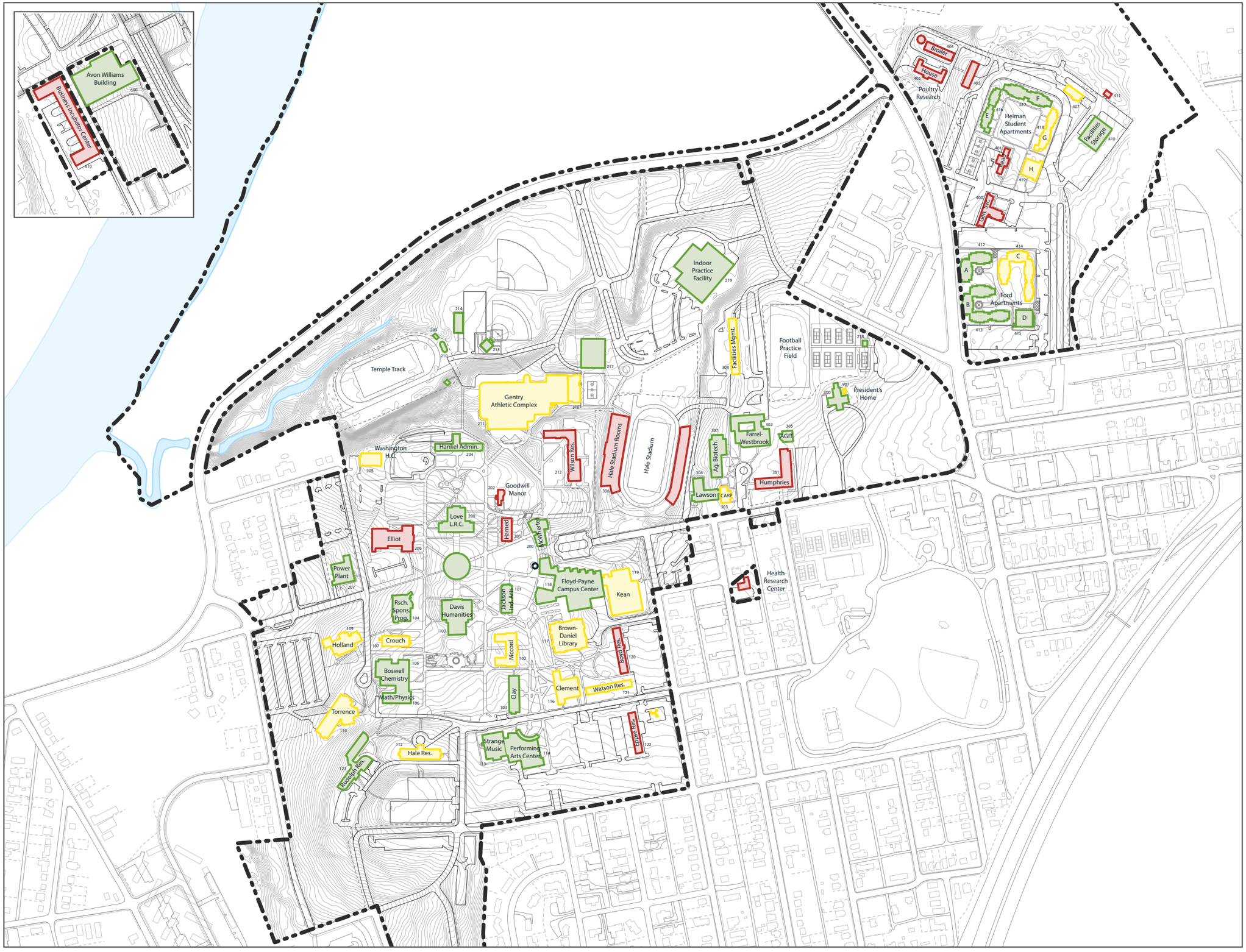
TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015



Combined Physical & Functional Quality Assessment

Figure IV-12

- Satisfactory / Good
- Deteriorating / Marginal
- Unsatisfactory / Poor
- Campus Boundary

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

3. Student Housing and Recreation Facilities Condition Assessment

Off-Campus Housing Market Analysis

Introduction

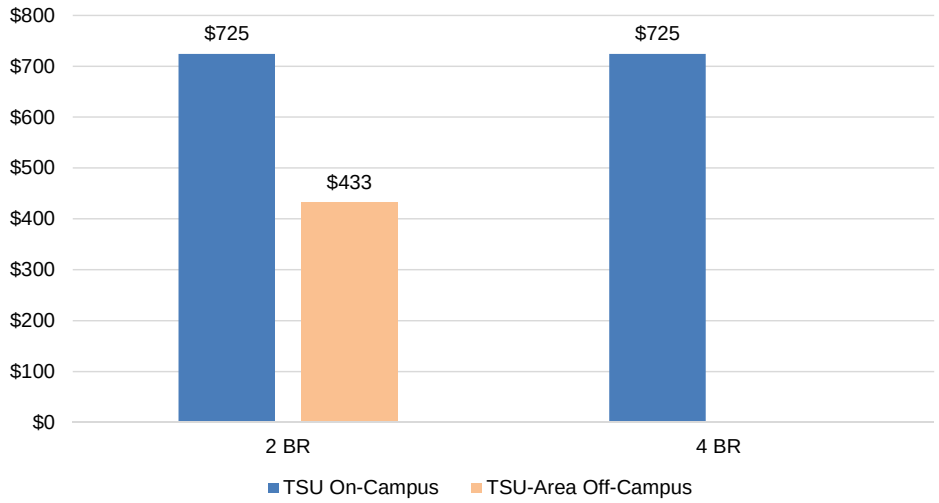
The off-campus housing market analysis serves as a tool to identify the nature and character of the private housing market. An understanding of the market allows for a comparison of the off-campus housing costs, supply, and amenities available to students at TSU.

Woolpert team member B&D conducted an analysis of the off-campus private rental housing market to quantitatively evaluate the housing specifically targeting students around TSU's Main Campus in Nashville, Tennessee. Components of this research included interviews with leasing agents, Internet research, and tours of select properties. B&D's analysis included properties that were adjacent to the TSU Main Campus as well as properties adjacent to the Vanderbilt University (Vanderbilt) area. A total of 11 apartment communities were analyzed.

Summary of Findings

The housing options available to TSU students range from newer, luxury apartments to older buildings that have been converted into student housing and provide students with numerous living options and price points. However, properties adjacent to the TSU campus are older, market rate properties that do not meet the needs of the 21st Century student. Properties closer to Vanderbilt and downtown Nashville are newer, but do not offer student-focused amenities such as by-the-bed leasing, utility inclusive rental rates, or group study spaces. Only four communities offered flexible lease terms.

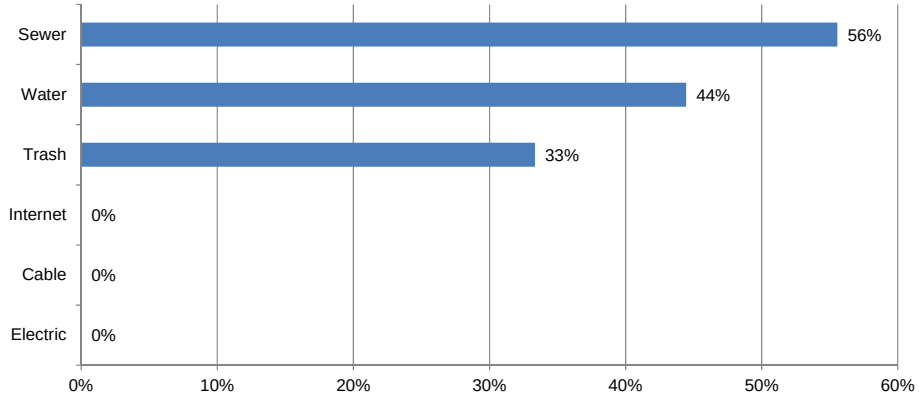
The occupancy rate for the apartment communities researched is 97%. As seen in Graph IV-7, the average cost per bed per month for TSU housing is nearly double that of the properties adjacent to TSU. TSU offers two- and four-bedroom apartments on campus (in the New Residential Center and Ford Apartment Complex), while the off-campus market offers studio, one-, two-, and three-bedroom apartments. When including a $50 per month utility surcharge, the average off-campus rate per bed per month is $433 for a two-bedroom apartment, 40% less than the average on-campus rate of $725 per bed per month.



Graph IV-7: Rental Rates per Bed per Month, Including Utilities

Utility Analysis

As seen in Graph IV-8, 56% of the rentals in the off-campus communities include the cost of sewer, 44% include water, and 33% include trash. None of the researched apartments include the cost of electric, Internet, or cable.

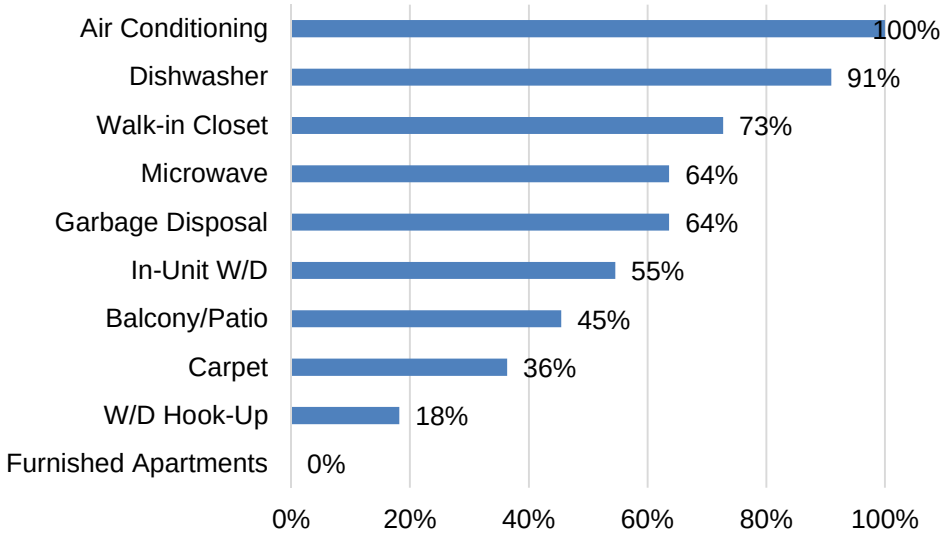


Graph IV-8: Percentage of Utilities Included in Rent

Amenity Analysis

In-Unit Amenities

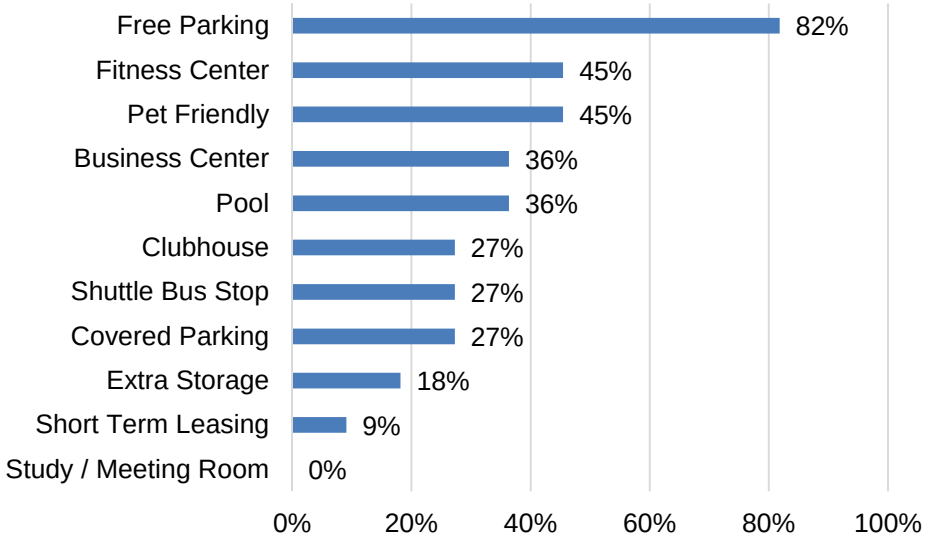
B&D evaluated unit and community amenities to determine the most commonly offered amenities in the marketplace. As seen in Graph IV-9, air conditioning (100%), a dishwasher (91%), walk-in closet (73%), microwave (64%), garbage disposal (64%), and an in-unit washer and dryer (55%) were available in over half of the researched communities.



Graph IV-9: In-Unit Amenities

Community Amenities

As shown in Graph IV-10, free parking (82%) is the only community amenity offered in over half of the communities researched. Forty-five percent of the communities offer a fitness center and are pet friendly.



Graph IV-10: Community Amenities

Benchmarking Analysis

Introduction

Woolpert team member B&D conducted a benchmarking analysis of TSU's peer and conference institutions selected in conjunction with TSU staff and administration. The analysis consisted of student housing, campus recreation, and athletics facilities and programs to better understand TSU's competitive position. The benchmarking analysis is intended to provide an initial framework in providing recommendations for future student life and athletics facilities.

Methodology

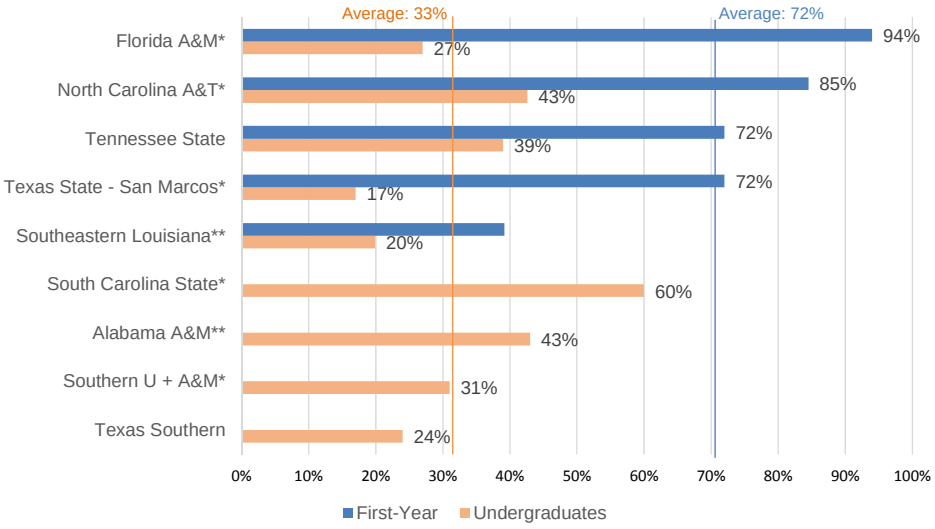
Both primary and secondary sources of information were used to compare general institutional characteristics, specific program information, and facility data from each institution. In order to remain consistent with information available to prospective students, B&D used publically available sources, even when minor inaccuracies in the data were evident. While B&D is confident that the information gathered through both phone interviews and Internet research is accurate, it was not validated by physical inspection of the facilities. One group of institutions was used, for both Housing and Recreation, based on facility uses.

Student Housing and Campus Recreation

- Alabama A&M University
- Florida A&M University
- North Carolina A&T State University
- South Carolina State University
- Southeastern Louisiana University
- Southern University
- Texas Southern University
- Texas State University - San Marcos

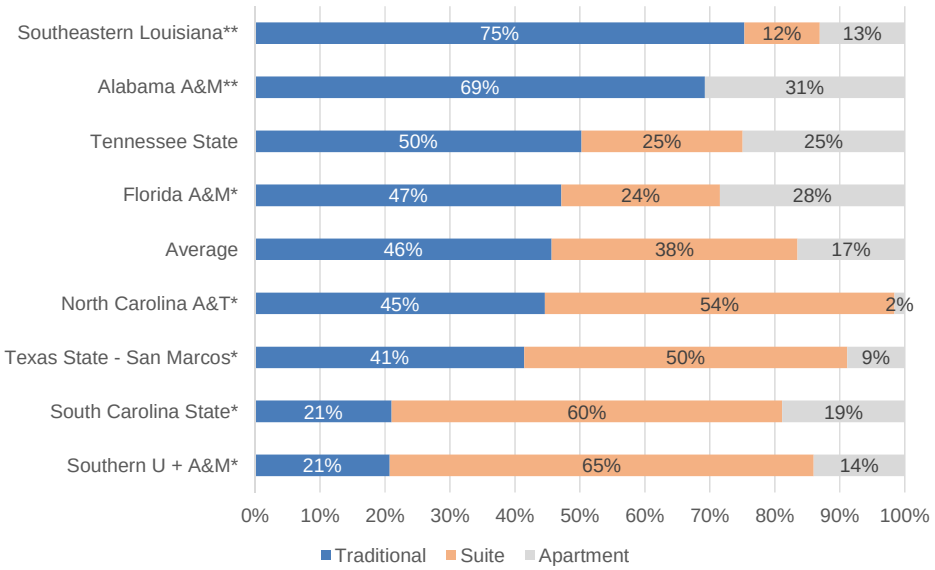
Findings - Student Housing

As seen in Graph IV-11, the percentage of first-year students living on campus at peer institutions aligns directly with TSU (72%). Thirty-three percent of undergraduates live in on-campus housing at peer institutions, six percent fewer than at TSU. The asterisk adjacent to the institution in Graph VI-12 is an indicator of how many years students are required to live on campus; a single asterisk indicates that students are required to live in on-campus housing only as a first-year student, while two asterisks reflect a mandatory two-year live-on requirement. TSU and Texas Southern are the only schools within the peer group that do not have a live-on requirement.



Graph IV-11: Percentage of First-Year and Undergraduate Students Living on Campus

Graph IV-12 illustrates the on-campus bed mix of both TSU and the peer group. Fifty percent of the beds at TSU are traditional-style, while 25% are suite-style and another 25% are apartment-style. The peer group average has slightly fewer traditional beds (46% to 50%), more suite beds (38% to 25%), but fewer apartment beds (17% to 25%).



Graph IV-12: On-Campus Housing Bed Mix

Multiple new on-campus housing facilities are in the development phases at peer institutions. A total of 2,178 beds and $139 million are being spent on new residential facilities scheduled to open within the next 24 months. As seen in Table IV-9, each institution is building semi-suite style rooms.

Table IV-9: New Housing Projects

University	Housing Capacity	Bed Type	Project Cost ($M)	Opening
Florida A&M University	800	Semi-Suite	37.4	2014
Texas State - San Marcos	578	Semi-Suite	60.5	2014
Texas Southern	800	Semi-Suite	41.5	2015

Student Survey Analysis

Objective

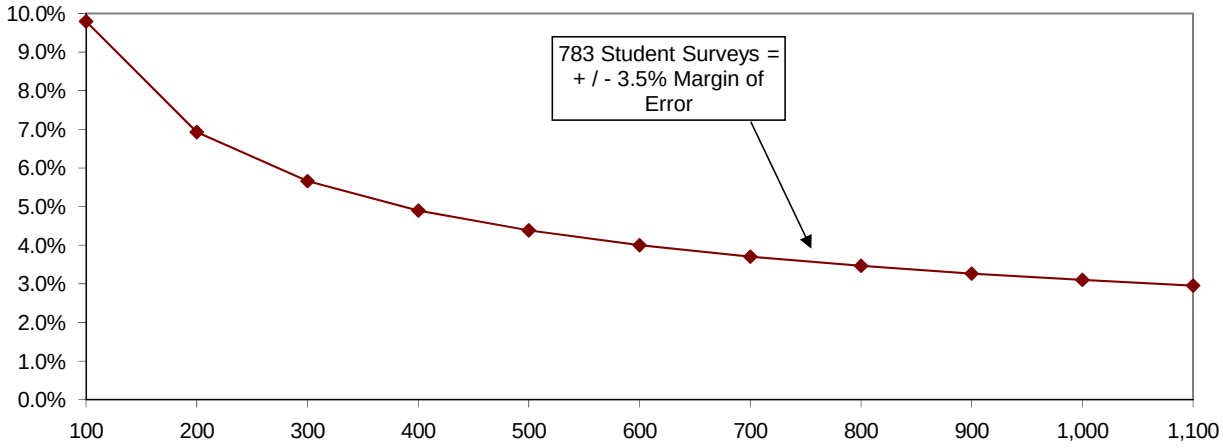
Woolpert team member B&D conducted an Internet survey to test housing and recreation preferences of TSU students in order to project student demand for new/renovated housing and additional/repurposed recreation space on campus. Data collected through the survey formed the basis for B&D's recommendations. Survey questions were designed to assess preferences, selection criteria, amenities, price sensitivity and usage patterns. Response options were structured to maximize information regarding desirable characteristics and demand for specific housing and recreation amenities and policies. Demographic profiles allowed responses to be sorted to identify unique user patterns in demand and preference results.

Methodology

In April 2014, 8,820 TSU students were notified of the survey through an invitation from Ms. Jane Jackson, Vice President for Administration. As an incentive for survey participation, student respondents had the option to enter a drawing for ten $100 gift certificates.

The student survey results are located in Appendix Exhibits G for on-campus residents and Exhibit H for off-campus residents.

A total of 783 students completed the survey, representing an 8.9% response rate and a margin of error of +/- 3.5%, with a 95% confidence interval, as seen in Graph IV-13.

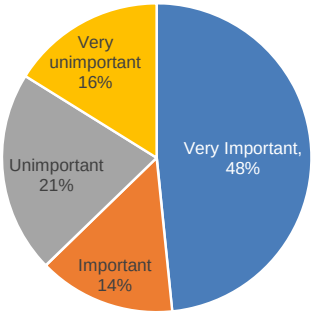


Graph IV-13: Margin of Error

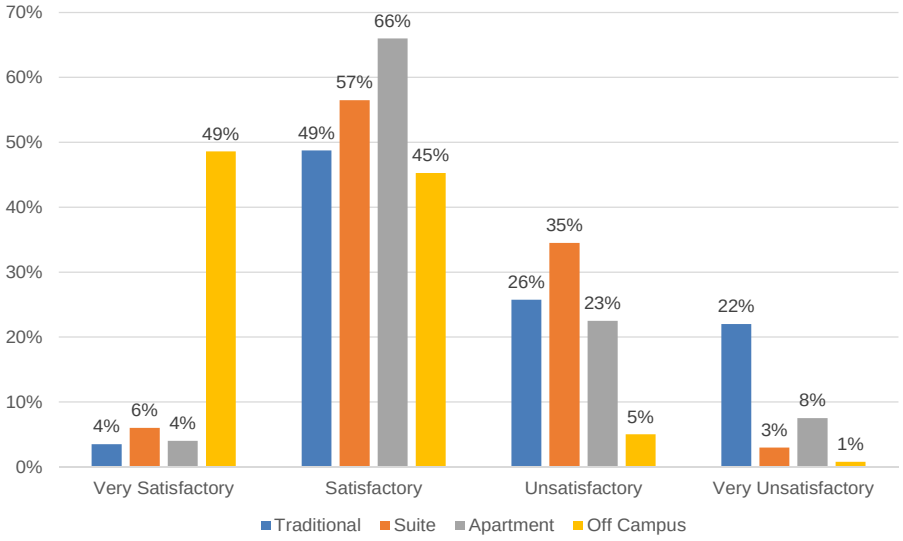
Summary of Findings - Student Housing

Students were asked how important the availability of on-campus housing was in their decision to attend TSU. As seen in Graph IV-14, 62% indicated that it was either very important or important in their decision.

Students were then asked how they would describe their current living conditions. As seen in Graph IV-15, 53% of students who live in traditional units responded that they were either very satisfied or satisfied with their current living condition, while 63% of respondents who live in suite-style units and 70% of respondents who live in on-campus apartment units are either very satisfied or satisfied with their conditions. Ninety-four percent of students living off campus were either very satisfied or satisfied with their living conditions.

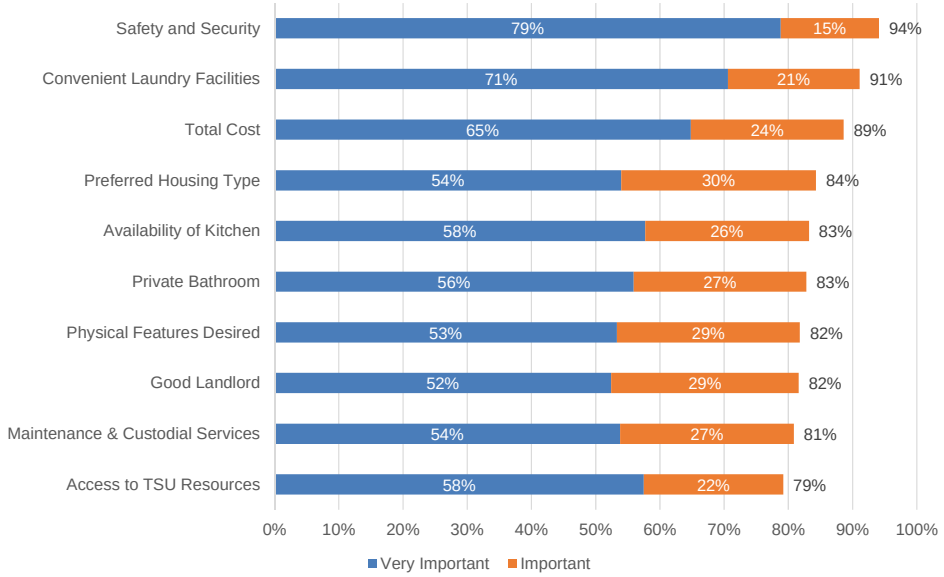


Graph IV-14: How important was the availability of on-campus housing in your decision to attend TSU?



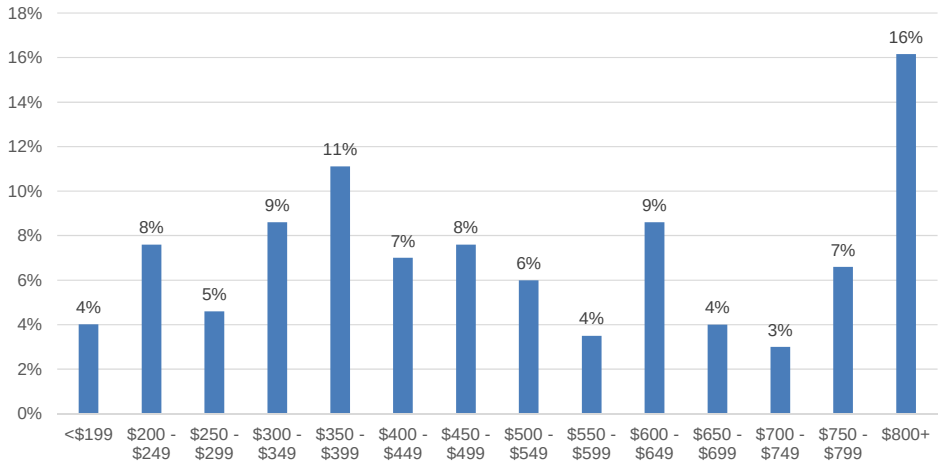
Graph IV-15: How would you describe your current living conditions?

Students were asked how important various factors were in their decision where to live. As seen in Graph IV-16, 94% of students indicated safety and security was either very important or important. Convenient laundry facilities (91%), total cost (88%), preferred housing type (84%), and availability of a kitchen (83%) were the next most important factors.



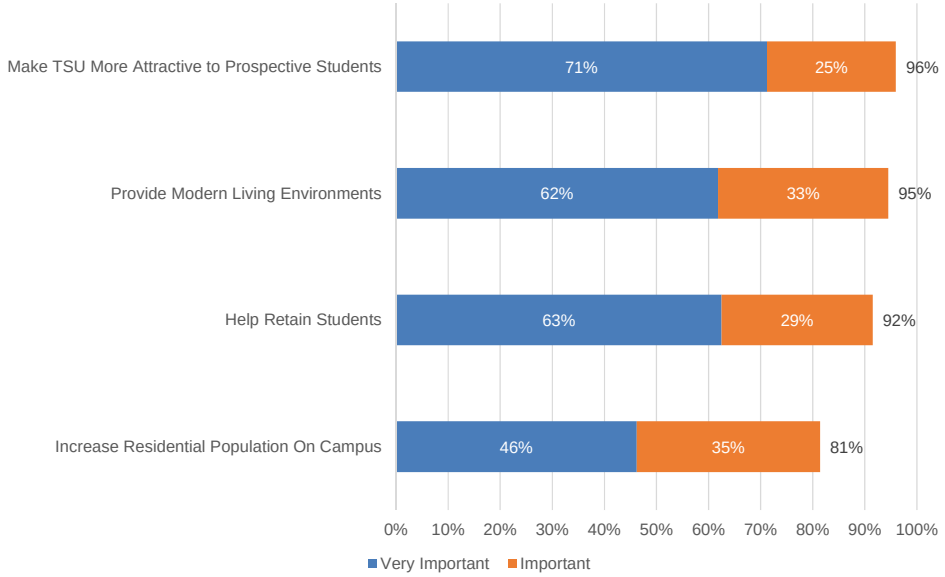
Graph IV-16: How important were the following factors in your decision where to live?

When asked about their personal share of monthly rent, 44% of student responses indicated they paid less than $450/bed/month as seen in Graph IV-17. Approximately 40% indicated that they pay between $450 and $800. Of the 16% that indicated they pay $800 or more, 25% reside in the 37209 zip code and 13% live in the 37013 zip code.



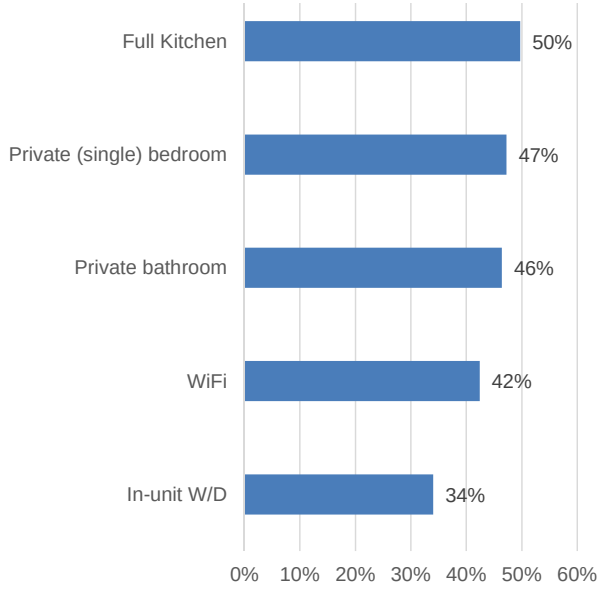
Graph IV-17: What is your personal share of monthly rent/housing costs?

The survey asked students to rate how important each of the following factors should be to TSU as it considers improvements to on-campus housing. Graph IV-18 shows that 96% of students believe making TSU more attractive to prospective students is either very important or important. Students also indicated that providing modern living environments (95%), helping to retain students (92%), and increasing the residential population on campus (81%) were either very important or important for TSU to consider.



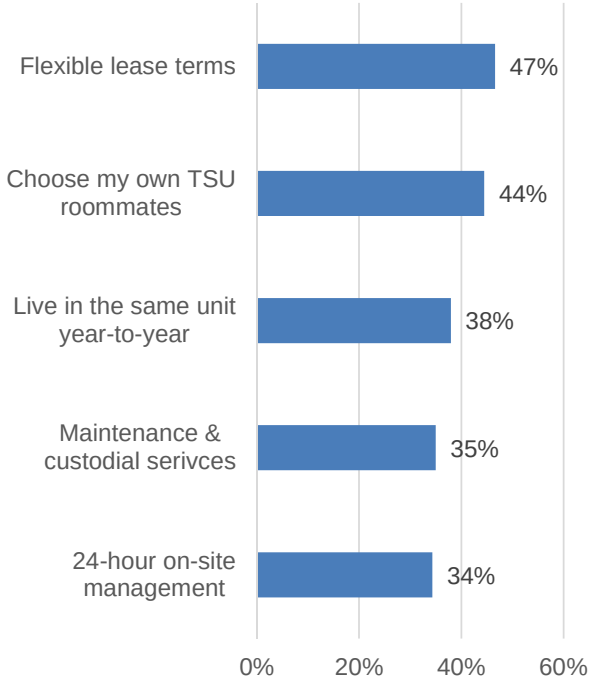
Graph IV-18: How important should each of the listed factors be to TSU as it considers improvements to on-campus housing?

Students selected the top five physical features that would be most important to them if TSU built new housing, as seen in Graph IV-19. Fifty percent indicated a full kitchen was important to them, while 47% selected private bedroom, and 46% responded that a private bathroom was important.



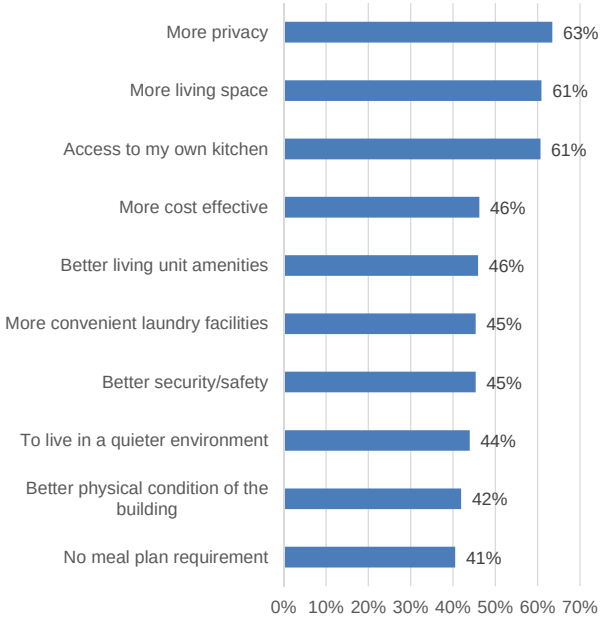
Graph IV-19: If TSU built new housing, which five physical features would be most important to you? (Top 10)

In addition to physical features, students were asked which five personal preferences would be most important to them. As seen in Graph IV-20, flexible lease terms (47%), choosing their own TSU roommate (44%), and live in the same unit year to year (38%) were the top three selected.



Graph IV-20: If TSU built new housing, which five physical preferences would be most important to you? (Top 10)

When asked why students would consider moving off campus for the 2014-15 academic year, additional privacy (63%), additional living space (61%), and access to their own kitchen (61%) were selected by over half of the respondents. Graph IV-21 represents the top ten reasons selected by students.

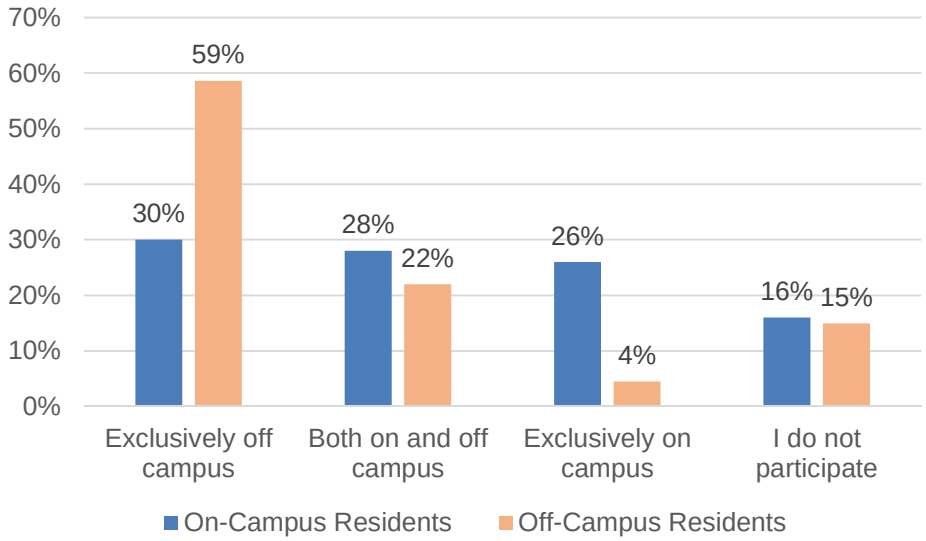


Graph IV-21: Why would you consider living off campus

next year? (Top 10)

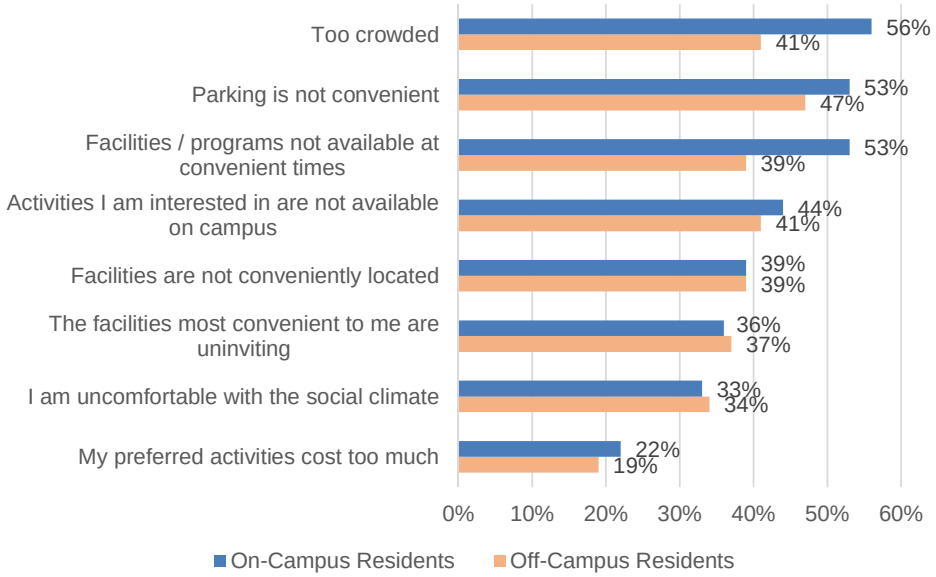
Summary of Findings – Campus Recreation

Students were asked where they participate in either indoor or outdoor recreational sports and/or fitness activities. As seen in Graph IV-22, 30% of on-campus residents and 59% of off-campus residents exclusively use off-campus facilities, while nearly 15% of both on- and off-campus residents do not participate in recreational sports or fitness activities at all.



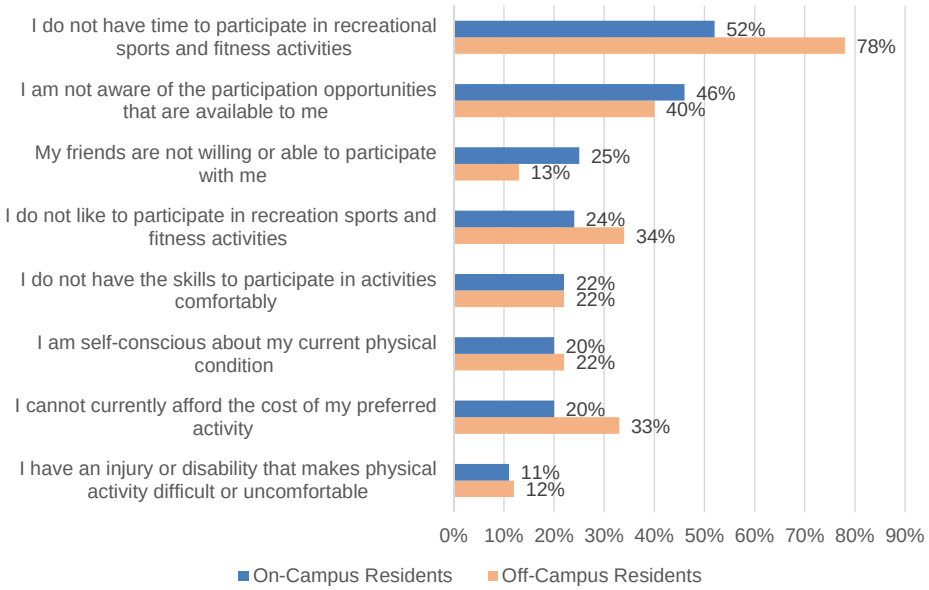
Graph IV-22: Where do you currently participate in recreational sports and fitness activities (indoor and outdoor)?

Students who indicated that they do not participate in recreational sports or fitness activities in Graph IV-23 were asked what precluded them from doing so. As seen in Graph IV-23, students do not feel they have the time to participate and are not aware of the opportunities available to them.



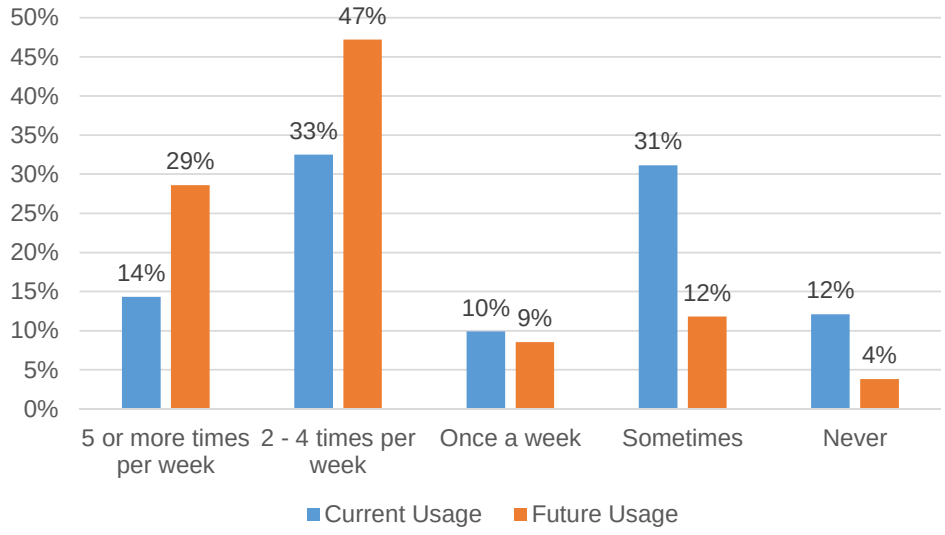
Graph IV-23: Why do you not participate in recreational sports and fitness activities (indoor and outdoor)? (very accurate + accurate responses)

Graph IV-24 outlines the percentage of survey responses that indicated the listed statements were either "very accurate" or "accurate" for not pursuing recreational sports and fitness activities on campus. On-campus residents indicated that the facilities were too crowded, had inconvenient parking, and did not offer programs or operating hours at convenient times. Off-campus residents had similar responses, although inconvenient parking was deemed the biggest reason for not pursuing activities on campus, and off-campus residents feel the activities they are interested in are not offered on campus.

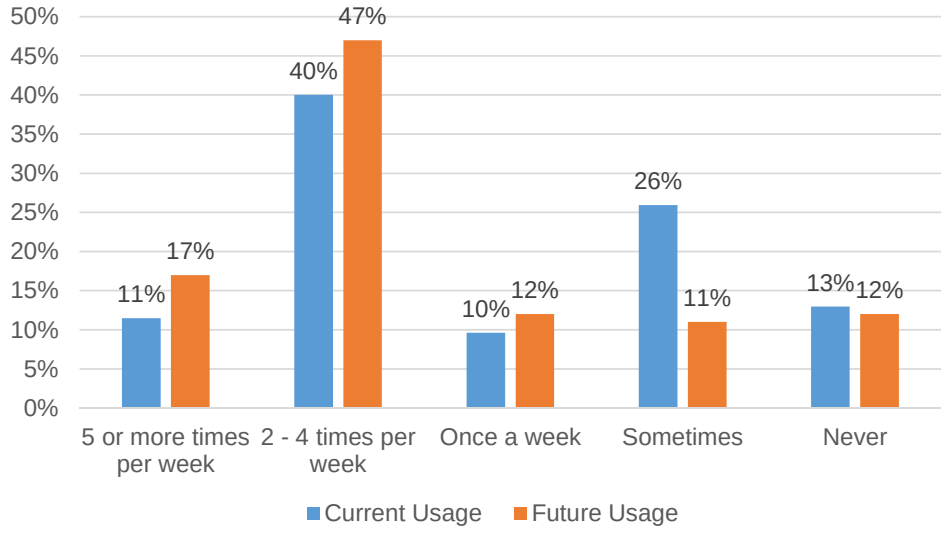


Graph IV-24: How accurate are the following reasons for you not pursuing recreational sports and fitness activities on campus? (very accurate + accurate responses)

As seen in Graphs IV-25 and IV-26, if indoor recreational facilities were improved and met the needs of students, 29% more on-campus residents would participate at least 2x per week, while an additional 13% of off-campus residents would participate 2x per week.

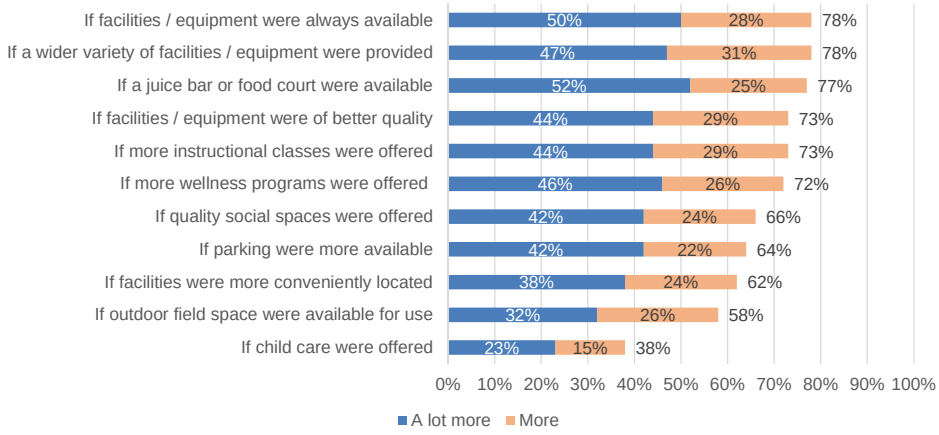


Graphs IV-25: If indoor recreational spaces on campus were improved, how often would you pursue recreational activities per week? (on-campus residents)



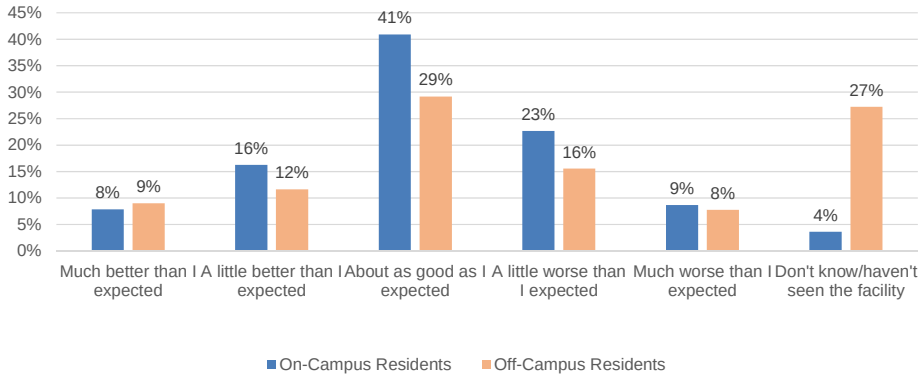
Graphs IV-26: If indoor recreational spaces on campus were improved, how often would you pursue recreational activities per week? (off-campus residents)

Students were then asked if/how much specific improvements to recreational facilities would increase usage levels. As seen in Graph IV-27, consistent availability of facilities and equipment, a wider variety of facilities and equipment, and the addition of a juice bar or food court to the facilities were the three most impactful improvements for students. In contrast to responses in Graphs IV-23, availability of parking ranked seventh for additional usage of recreational facilities.



Graphs IV-27: Compared to your current recreation usage, how much more would you use on-campus recreational sports facilities if the listed improvements were made?

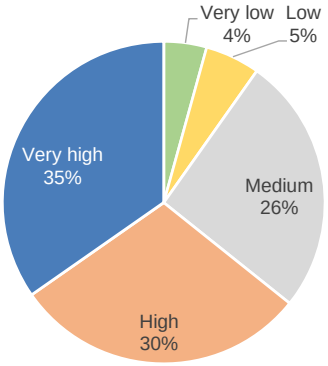
On-campus recreational facilities at TSU exceeded the expectations of 24% of on-campus residents and 21% of the off-campus residents. Four percent of on-campus and 27% of off-campus residents indicated that they were not able to answer the question or that they had not seen the recreation facilities on-campus as seen in Graphs IV-28.



Graphs IV-28: Overall, how well have the recreation facilities met your expectations at TSU?

Nearly two-thirds (65%) of TSU students feel that new recreational sports and fitness facilities should be either a “very high” or “high” priority for TSU. Less than ten percent of respondents indicated that new facilities should be a “very low” or “low” priority, as seen in Graphs IV-29.

Additional data related to this peer assessment is in the Appendix.



Graphs IV-29: How high of a priority should new recreational sports and fitness facilities by for TSU?

C. Existing Campus Infrastructure

1. Domestic Water and Fire Protection

Introduction

The analysis of the existing domestic and fire protection water distribution system covers present infrastructure conditions for both the public and private portions of the water system. The delineation of the public water system from the private water system is generally made at the meter, with the actual meter being a portion of the public water system. This delineation can be uncertain throughout the Tennessee State University (TSU) Campus, thus necessitating the need to analyze both portions of the system. In addition, the domestic and fire protection water distribution systems are analyzed together because of their shared dependency on the public water mains.

See Figure V-13 Existing Water System.

Analysis

The Tennessee State University (TSU) water distribution system analysis is based on historical data, field observation, and coordination with various representatives of TSU and local regulatory agencies. The most recent contacts include representatives of Metro Water Services, the TSU Department of Facilities Management and the TSU Campus Planning Design & Construction.

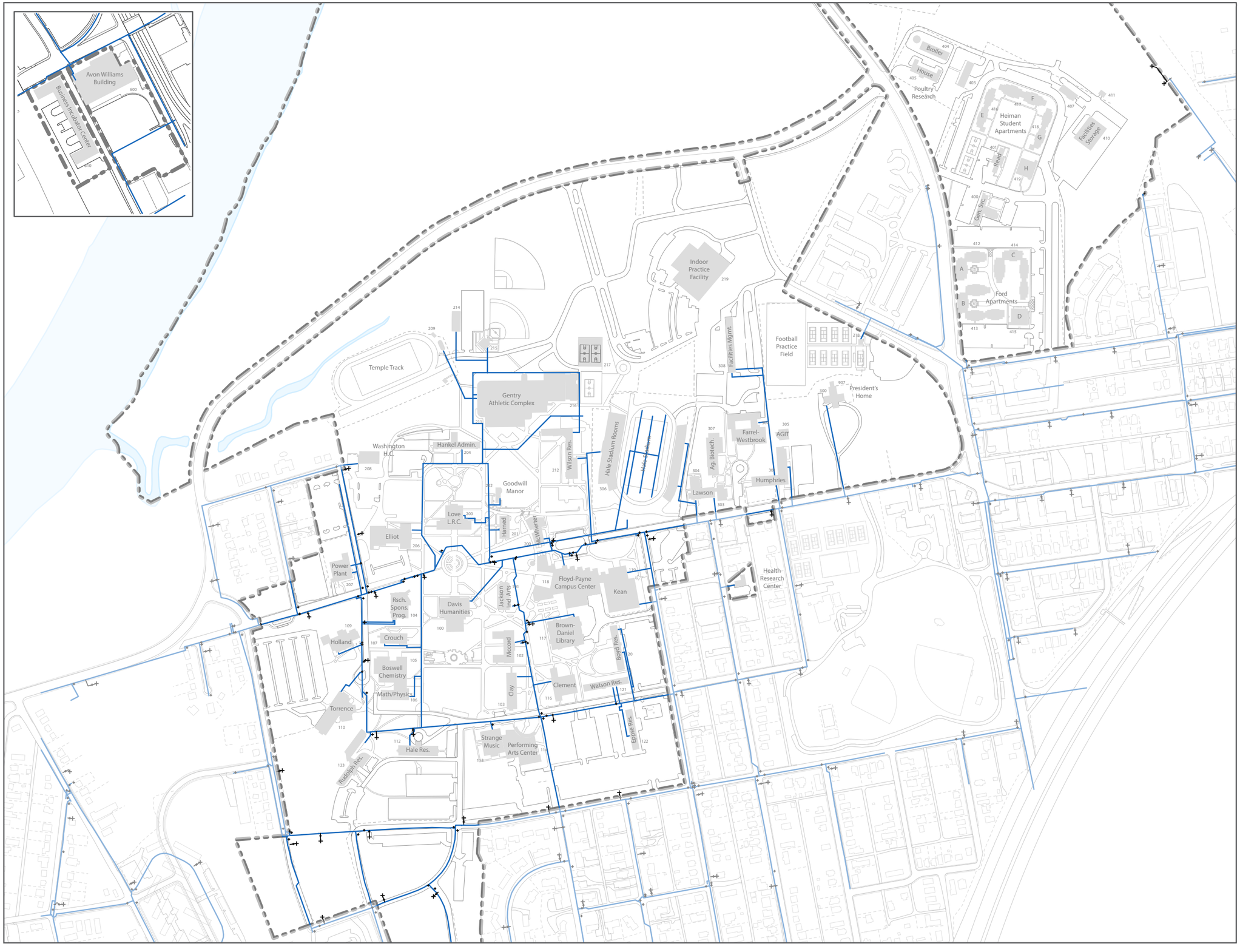
The portion of the TSU campus water distribution system included in this study is served almost entirely from public utility mains, predominantly the moderate volume (12-inch) main that runs through the center of campus in John A. Merritt Boulevard/John L. Driver Avenue. Additional moderate volume mains exist in 33rd Avenue (8-inch), 35th Avenue (8-inch), and Ed Temple Boulevard (10-inch); while the majority of public mains on the TSU campus are 6-inch mains. The Metro Water Services water system in the Tennessee State University campus area is characterized as generally fair to good, for domestic and fire protection volume and pressure. Water distribution is such that booster pumps are only needed in the high-rise buildings.

Items or areas of concern are as follows:

- **Age of Infrastructure:** With age, rust deposits form within the gray cast iron water mains, begin to clog and pit the inside pipe walls of the system, and thus affect volume and pressure characteristics of the pipe.
- **Industrial Arts Building:** The deterioration of the existing Industrial Arts domestic water service due to age has caused volume and flow deficiencies.
- **Love Learning Resource Center Loop:** The water main that loops around the Love Learning Resource Center provides water to a majority of the buildings located on the northwest portion of the campus. The lack of valves and the condition of existing valves poses a maintenance issue. Shutting down this loop to service a single building service or section of pipe effectively shuts off service to the rest of the buildings on this loop.

Existing Water

Figure IV-13



Existing Buildings

Existing Water Line

Campus Boundary

Civil Engineers | Architects | Planners
Landscape Architects

Barge Cauthen & Associates

95 White Bridge Rd, Ste 311
Nashville, Tennessee 37205
615.356.9911 PHONE
615.352.6737 FAX
Job No. 2575-01

0 125 250 500 750 Feet

Tennessee State University

Campus Master Plan

BKV Group

October 2008

Updated by
Woolpert Design
June 2015

2. Electric Power

Introduction

The TSU campus electrical distribution system, owned by TSU, is made up of one continuous perimeter campus loop with two substations rated at 5000 KVA each.

An underground 4.16kV distribution system forms a loop around the Campus extending from the main switchgear at each substation. Pad-mounted switches are installed in the Campus loop to provide isolation and fused protection of the buildings' transformers.

The perimeter campus loop is comprised of 350 MCM conductors, which is a limiting factor in the perimeter loop due to the existing demand on the Campus. These conductors can carry less than 50 percent of the existing campus peak demands. Therefore, the north and south loops are switched using the pad-mounted switches as to not overload the loop conductors.

Figure IV-14 provides a general map of the existing electrical distribution system.

Analysis Substation No. 1 West is located on the east side of 37th Avenue North, across from the central power plant, and has installed the following equipment:

- One each main switch
- One each bypass switch
- One each north feed (power for north campus)
- One each south feed (power for south campus)
- One each power factor correction unit and switch

The electrical power feed from the utility company, Nashville Electric Service (NES), is 13.8kV, 3-phase through three (3) each step-down transformers (owned by NES), with a secondary voltage of 4.2 kV. The voltage for each campus building is from padmount transformers with secondary voltages at either 208Y/120V or 480Y/277V. The West station is sized to carry approximately 70 percent of total campus electrical load at this time.

Substation No. 2 East is located on the west side of 33rd Avenue North south of Alameda Street and has installed the following equipment:

- One each main switch
- One each bypass switch
- One each north feed (power for north campus)
- One each south feed (power for south campus)
- One each power factor correction unit and switch

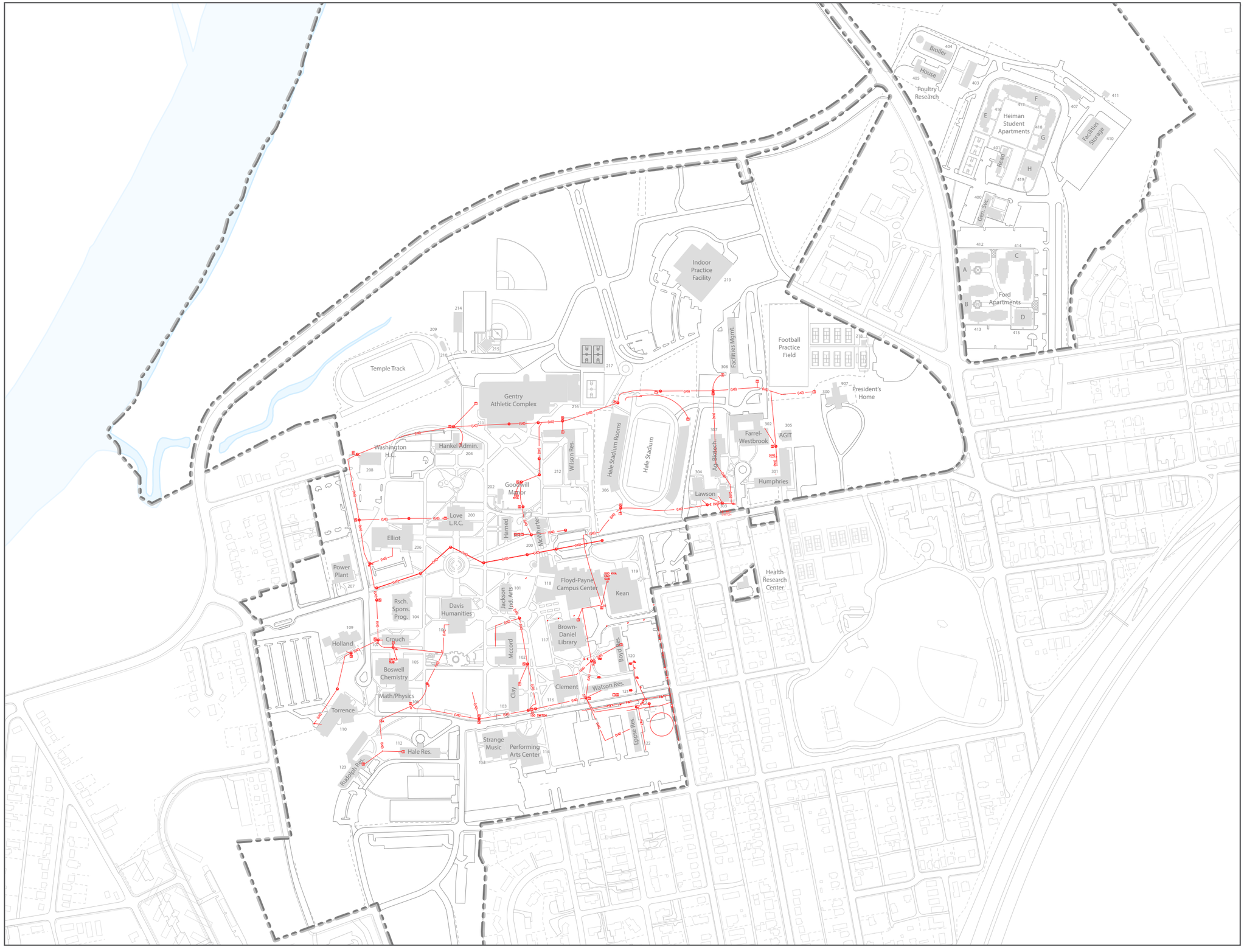
The electrical power feed from NES is 13.8kV, 3-phase through three (3) each step-down transformers (owned by TSU), with a secondary voltage of 4.2 kV. The voltage for each campus building is from padmount transformers with secondary voltages at either 208Y/120V or 480Y/277V. The East station is also sized to carry approximately 70 percent of total campus electrical load at this time.

A recent electrical distribution upgrade project included the addition of nine (9) padmount switches and 1,400 feet of underground distribution cable on the 4.16kV East and West loops. The TSU underground electrical distribution system consists of the following equipment/components:

- Total number of transformers located at buildings is 48.
- Total number of distribution padmount switches installed on campus for the 5 kV system is 28.
- Total number of distribution padmount switches installed on campus for the 13.8 kV system is three.
- Total distance of underground distribution cable installed is 12.7 miles.
- Total number of electrical manholes installed on campus is 48.
- Total electrical campus distribution system is maintained and controlled by Facilities Management personnel.

Existing Electric

Figure IV-14



- Existing Buildings
- (UG) 15 KV Underground Ductbank
- T Transformer
- S 15 KV Padmount Switch
- M Manhole
- G GENSET (Generator Set)
- Campus Boundary

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

3. Sanitary and Storm Sewer

Sanitary Sewer

Introduction

The existing sanitary sewer system analysis reviews present infrastructure conditions for both the public and private portions of the sanitary sewer system. The delineation of the public sanitary sewer system from the private sanitary sewer system is generally made at the point where the sanitary sewer system serves multiple owners. This delineation can be uncertain throughout the Tennessee State University (TSU) Campus, thus necessitating the need to analyze both portions of the system.

Figure IV-15 provides a general map of the existing sanitary sewer system.

Analysis

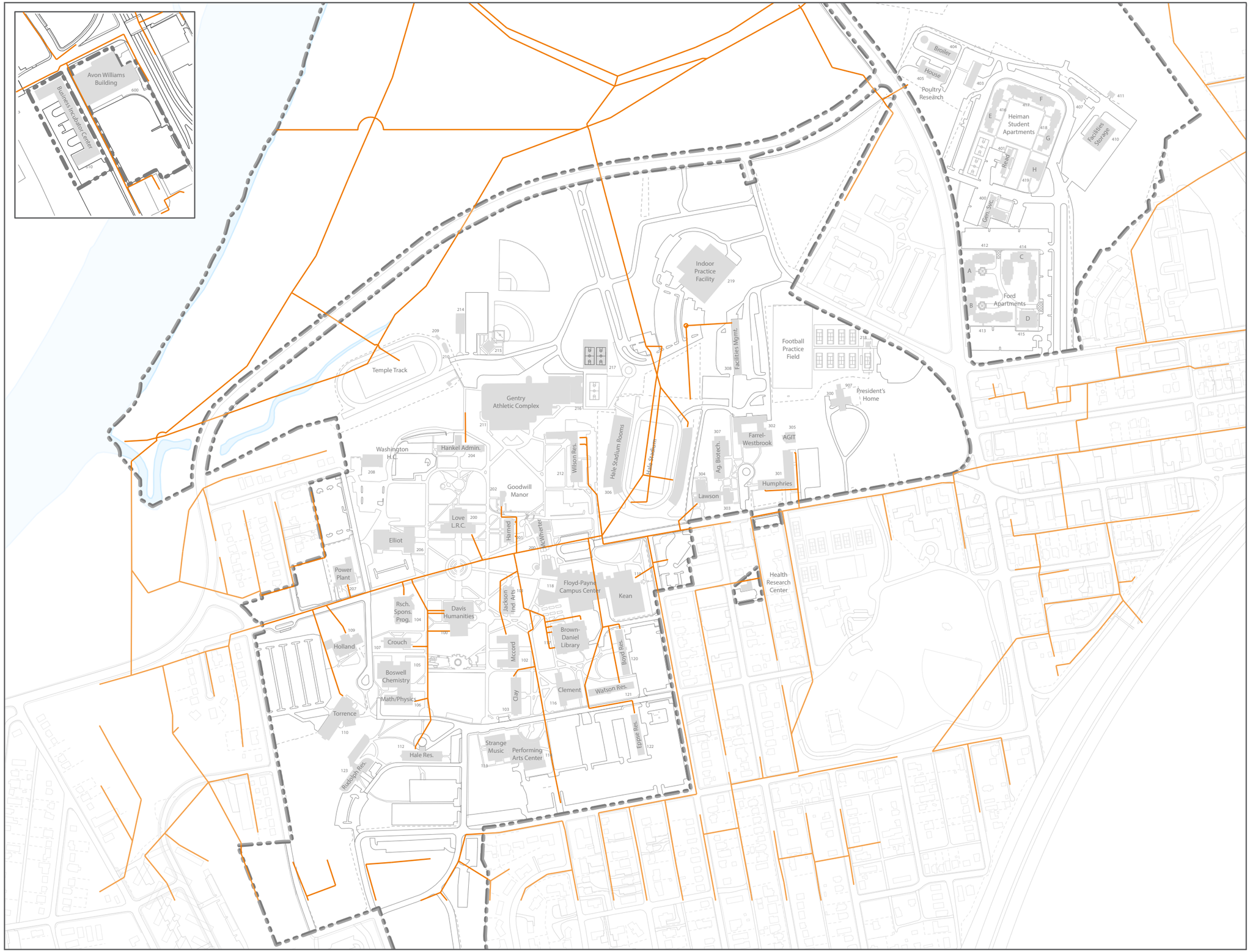
The Tennessee State University (TSU) sanitary sewer system analysis is based on historical data, field observation, and coordination with various representatives of TSU and local regulatory agencies. The most recent contacts include representatives of Metro Water Services, the TSU Department of Facilities Management and the TSU Campus Planning Design & Construction.

The portion of the TSU sanitary sewer included in this study is served by two main public combination sewer branches. Both of these branches run in a northeasterly direction on the north side of campus.

The modern sanitary sewer system in and around the TSU campus area is characterized as generally fair to good.

Items or areas of concern are as follows:

- **Delineation of Public Sanitary Sewer System from Private Sanitary Sewer System:** As with many university campuses, the delineation of the public sanitary sewer system from the private sanitary sewer system is uncertain. This uncertainty is amplified on the north side of the TSU campus.
- **Age of Infrastructure:** With age, the existing clay and brick sewer lines begin to crack and corrode and thus affect flow characteristics and possibly cause failures in the pipe. In addition, other issues, such as infiltration of stormwater and groundwater, and damage to systems due to tree roots and adjacent construction are all likely.
- **Facilities Management Building:** The deterioration of the sanitary sewer manhole west of the Facilities Management Building due to age has caused flow deficiencies.



Existing Sanitary Sewer

Figure IV-15

Existing Buildings
Existing Sanitary Sewer
Campus Boundary

Civil Engineers | Architects | Planners
Landscape Architects

Barge Cauthen & Associates

95 WHITE BRIDGE RD, STE 311
NASHVILLE, TENNESSEE 37205
615.356.9911 PHONE
615.352.6737 FAX

Job No. 2575-01

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

Storm Sewer

Introduction

The existing storm sewer system analysis looks at present infrastructure conditions for both the public and private portions of the storm sewer system.

Figure IV-16 provides a general map of the existing storm sewer distribution system.

Analysis

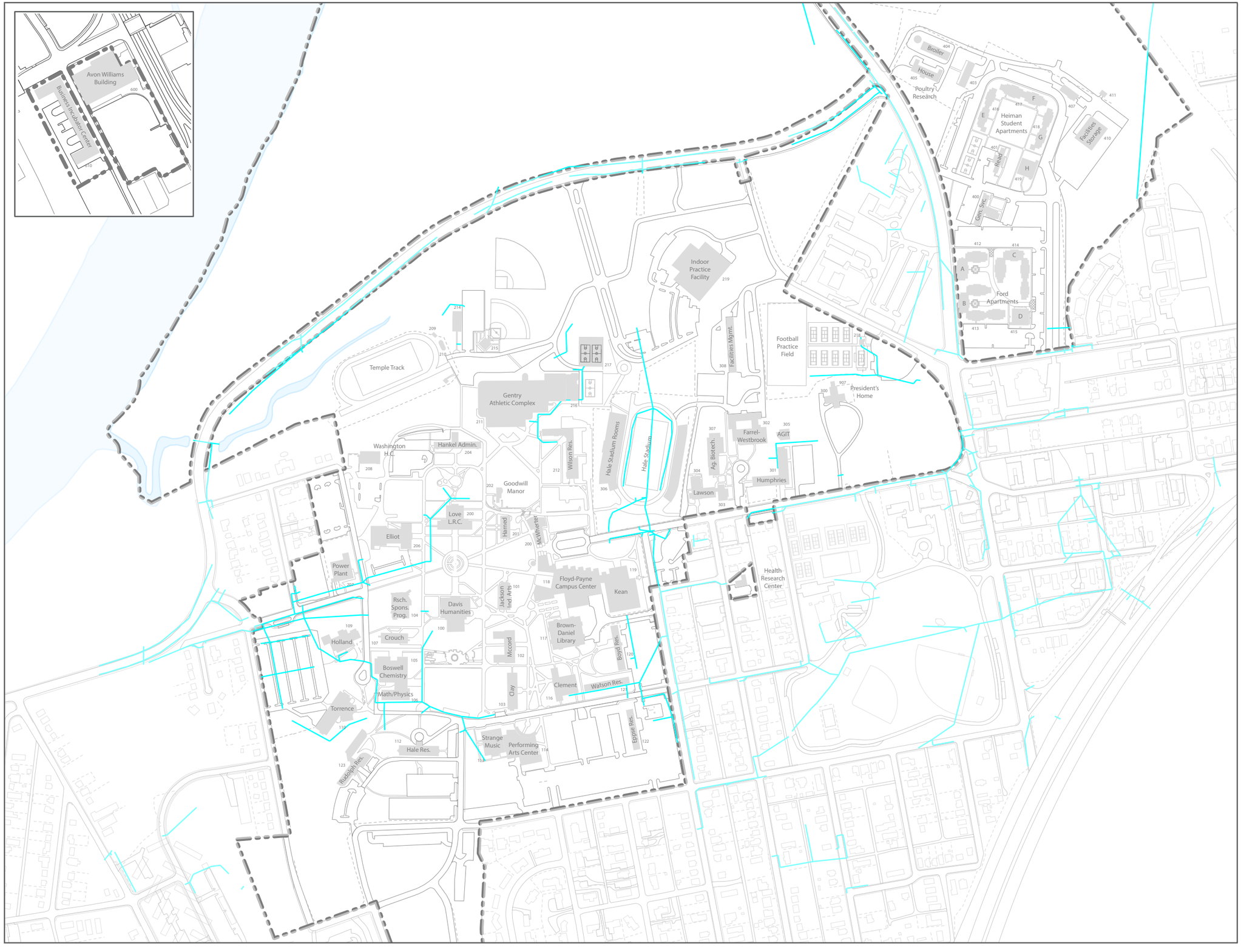
The Tennessee State University (TSU) storm sewer system analysis is based on historical data, field observation, and coordination with various representatives of TSU and local regulatory agencies. The most recent contacts include representatives of Metro Nashville Public Works, the TSU Department of Facilities Management and the TSU Campus Planning Design & Construction.

The portion of the TSU storm sewer included in this study is served by two main storm sewer branches. One of these branches runs in a northerly direction through the campus and discharges north of Hale Stadium. The other branch runs in a westerly direction through John L. Driver Avenue.

The modern storm sewer system in and around the TSU campus area is characterized as generally fair to good.

Items or areas of concern are as follows:

- **Age of Infrastructure:** With age, the existing clay and brick sewer lines begin to crack and corrode and thus affect flow characteristics and possibly cause failures in the pipe. In addition, other issues, such as infiltration of stormwater and groundwater, and damage to systems due to tree roots and adjacent construction are all likely.
- **Gentry Athletic Complex (Elevator Pit):** During rainfall events, stormwater enters the Gentry Athletic Complex elevator pit. In addition, the open channel stormwater conveyance northeast of the Gentry Athletic Complex is a maintenance concern.
- **Gentry Athletic Complex (Northwest Parking):** Standing water occurs at the parking area located at the northwest corner of the Gentry Athletic Complex. The overflow of this standing water has created an erosion and undermining issue with the downhill sidewalk and stairs.
- **Brown-Daniel Library and McCord Hall:** The storm sewer system servicing the Brown-Daniel Library drains to a sump in the basement and causes water problems in the basement and the building's foundation drainage system is inadequate. The storm sewer system servicing McCord Hall has collapsed.
- **Hale Stadium:** Surface stormwater enters the northwest football locker room.
- **Elliot Hall:** Groundwater enters the building at the southeast and northwest elevations.



Existing Storm Sewer

Figure IV-16

Existing Buildings
Existing Storm Sewer
Campus Boundary

Civil Engineers | Architects | Planners
Landscape Architects

Barge Cauthen & Associates

95 White Bridge Rd, Ste 311
Nashville, Tennessee 37205
615.356.9911 PHONE
615.352.6737 FAX
Job No. 2575-01

0 125 250 500 750 Feet

Tennessee State University

Campus Master Plan

BKV Group

October 2008

Updated by
Woolpert Design
June 2015

4. Steam and Chilled Water

The objective of this section is to discuss the condition and capability of the existing steam and chilled water systems.

Steam

Introduction

Figure IV-17 provides a general map of the existing steam and condensate system.

Analysis

Most buildings on campus are served by the campus central steam plant, originally built in the late 1940's and located on the west edge of campus. The existing boilers are listed below:

Boiler Manufacturer	Type	Capacity (PPH)	Pressure (PSIG)	Fuel
Nebraska Cleaver Brooks	Water Tube	57,000	150	Gas/Oil
Cleaver Brooks	Water Tube	75,000	150	Gas/Oil
Vogt	Water Tube	75,000	150	Coal
Total Winter Capacity		**207,000**		
Cleaver Brooks	Fire Tube	19,000	100	Gas

While the gas and gas/oil boilers are in generally good condition, the coal fired boiler has been out of service since 2000.

The capacity of the steam system appears to be adequate for the existing buildings. Based on a typical per square foot heating load of 40 BTU/sf and a diversity of 80%, the total peak campus heating load is calculated at 61,106 pounds of steam per hour (pph). While the boilers have a combined capacity of 207,000 pph, and could easily serve this load, there are other factors that limit the amount of steam actually available for building heat. Without the coal fired boiler the capacity is 132,000 pph, still above the campus peak load. However the deaerator (DA) tank has a capacity of only 90,000 pph. Because all feed water must go through the DA before entering the boilers, the total plant capacity is limited to this 90,000 pph threshold. Losing the 75,000 pph gas/oil boiler would leave the system short if the coal fired boiler remains off-line. In this case the 57,000 pph boiler would be able to keep all buildings above freezing, but not necessarily at a comfortable temperature for the occupants. Note that the Cleaver Brooks "summer boiler" is not included in the total capacity of 207,000 pph because it produces steam at a lower temperature than the other boilers and cannot operate at the same time as the larger boilers unless the temperature of the entire system is decreased. It is reserved for the summer months when the larger boilers would be inefficient at low turn down rates. Finally the plant steam header is sized at 10", which good design would limit to a maximum of 105,000 pph.

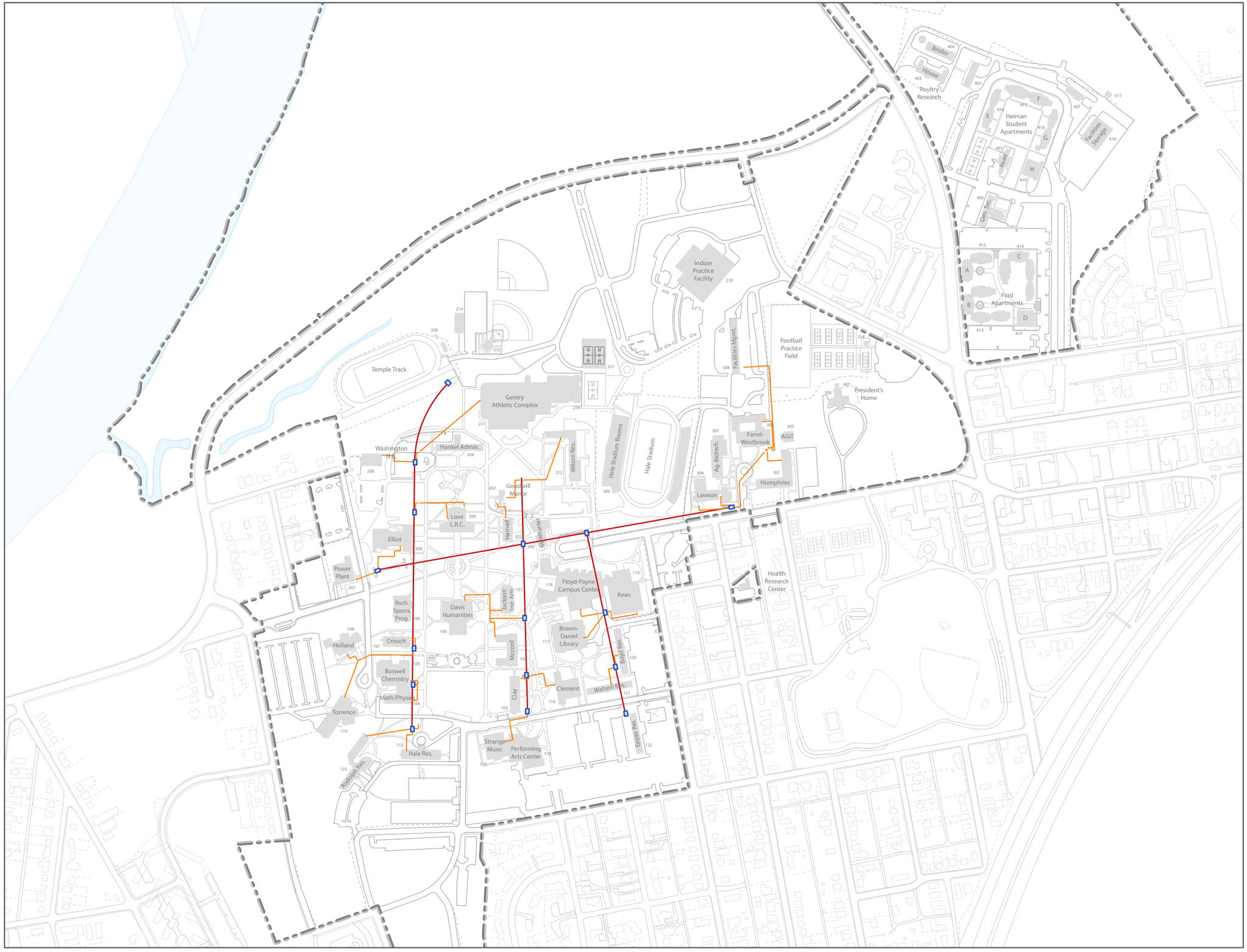
The steam is distributed through a branched system with a central 12" header running east in the rock-bored primary tunnel under John A. Merritt Blvd. Secondary branches run north and south from the primary tunnel. Each branch is intersected by several underground vaults where the piping rises out of the tunnel and continues as direct buried piping to the buildings. This system is shown in Figure IV-17. There are some steam leaks in the tunnel that can cause problems with lights and telecommunications lines in the tunnel.

The condensate return system parallels the steam distribution system. Several areas of the system have experienced insulation and jacket failure. A total of approximately 1,300 linear feet of pipe is in need of repair. In addition, the tunnel needs steel grating installed in the floor of the tunnel and water-tight lighting due to water seepage present throughout the tunnel.

There have also been problems with returning condensate to the central plant. Each building's system is designed to move its condensate into the line in the tunnel. The lines from approximately ten buildings are constantly under backpressure from the static head between the building level and that of the underground vault from which that building is fed. In the case of these ten buildings, the underground vault is higher than the building's piping. From the vaults all piping drops down into the tunnel, which is sloped toward the tunnel intersection at the southeast corner of Elliott Hall. From there the condensate lines rise westward to the underground vault east of the power plant before sloping down again into the central plant condensate return tank. This seems to be causing two separate problems. There is excessive water build-up during system start-up

due to the static head that cannot be overcome by the steam traps, when they are still at low pressure. This leads to water hammer, which is potentially dangerous and very damaging to the piping. Additionally, water treatment consultants indicate that the condensate has a very high iron content. This could be due to the piping staying in a flooded condition. This could be associated with excessive corrosion of the condensate piping, a condition which could lead to early failure of the piping system. Study of the piping profiles indicates that the problem is probably occurring between the buildings and the underground vaults.

Avon Williams Campus is served by the Nashville District Energy System for heating. This system has multiple back-up boilers, but does have occasional outages for maintenance.



Existing Steam & Condensate

Figure IV-17

- Existing Buildings
- Tunnel
- Existing Steam & Condensate
- Campus Boundary
- Underground Vault

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

Chilled Water

Introduction

See Figure IV-18 Existing Chilled Water Distribution System.

Analysis

The central chilled water plant, built in 1989, consists of two York centrifugal chillers sized at 1,500 and 2,250 tons for a total system capacity of 3,750 tons. The total undiversified load is calculated to be 5,871 tons. Since the total installed capacity is only 3,750 tons, and TSU personnel have not indicated that they receive frequent complaints about buildings not being adequately cooled, a building diversity of 60% is assumed. This is on the low side of typical for college campuses. This puts the diversified campus load at 5,871 tons X 60% = 3,523 tons. This is almost equal to the installed plant capacity. Therefore, it appears that the campus has little room for expansion and no back-up capacity.

The primary/secondary pumping system has two B&G vertical split case pumps for distribution sized at 3,450 gallons per minute (gpm) each. TSU personnel report that the actual chilling capacity seems to be adequate, but there is not enough distribution pump capacity to move the chilled water out to the load on a peak day. The flow required is a function of the cooling load as well as the temperature rise (DT) that occurs as the chilled water passes through the cooling coil in each building's air handler. A typical college campus DT should be on the order of 10 to 12 degrees Fahrenheit. For the best case of a 12 degree DT, the system should be capable of pumping 2 gpm/ton or 7,500 gpm. The chilling plant is relatively new, and the condition of the equipment is good.

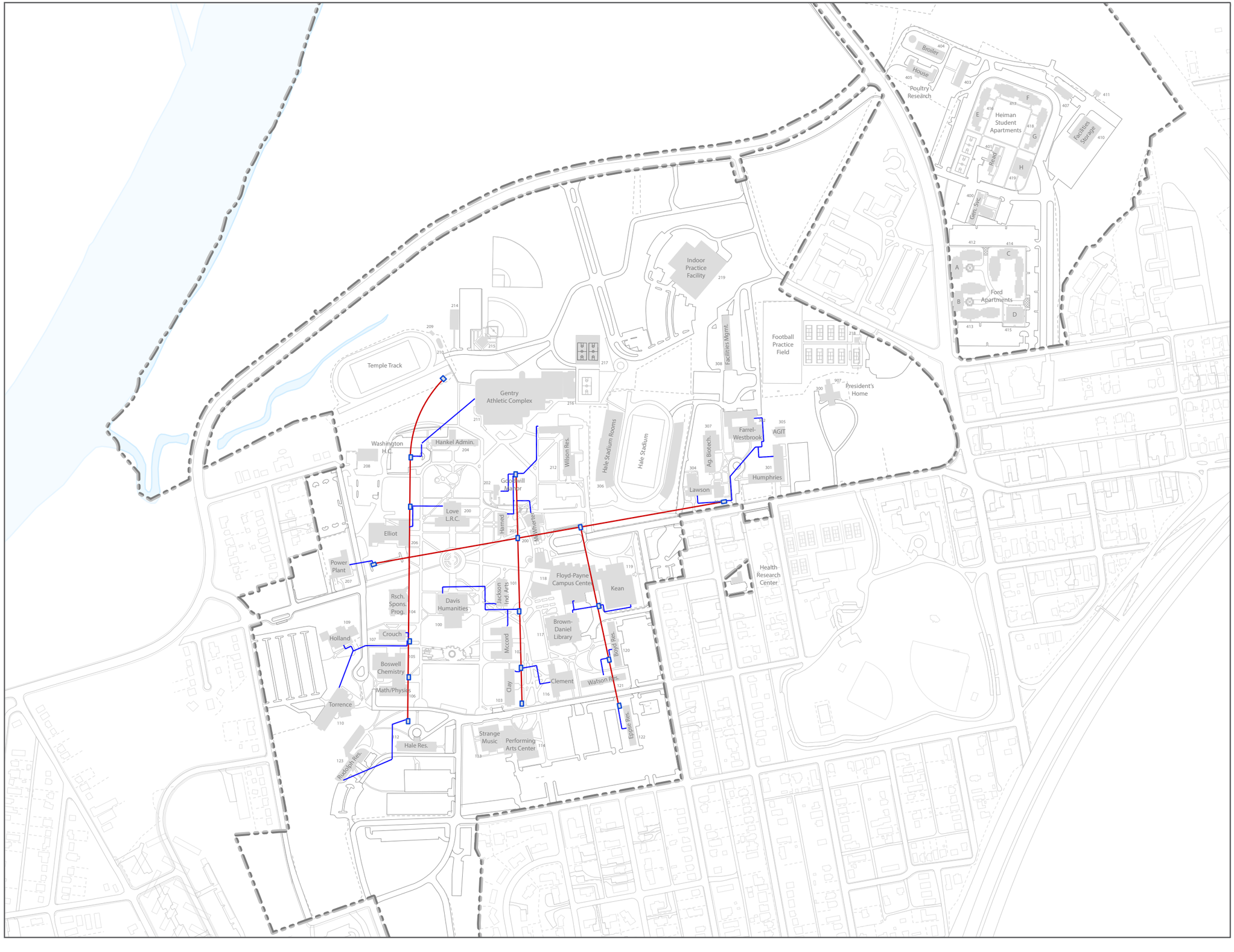
Chilled water is distributed to the buildings through a rock bored tunnel 8 feet in diameter that runs approximately 50 to 90 feet below ground. Building connections are made through manholes at downshafts, from which conventional direct buried piping is run out to the building wall. The distribution system consists of a primary tunnel running east across campus with three secondary tunnels branching off to the north and south. This is illustrated in Figure IV-18.

The condition of the chilled water piping seems to be good.

The Avon Williams campus downtown has its own chiller, a Carrier 500 ton unit installed recently. The condition is generally good, although there are problems with the variable frequency drive (VFD) at low loads. The minimum recommended speed for the drive and/or pump still produces more chilled capacity than the building requires in winter. This leads to overcooling of the building.

Existing Chilled Water

Figure IV-18



Existing Buildings
Tunnel
Existing Chilled Water
Campus Boundary
Underground Vault

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

5. Communications

Introduction

This Section assesses the condition and capability of the existing communications cable plant distribution system.

Analysis

The current telecommunications infrastructure is comprised of large pair count copper cabling and multi-mode fiber optic cable to each of the primary buildings on the campus. Single-mode fiber optic cable is minimally distributed to various buildings across the campus.

The majority of the communications cable plant currently resides in the tunnel system. This tunnel is cohabitated with other campus utilities. When the cable plant is being distributed it leaves the tunnel system and enters into the manhole system and then into the respective buildings. The copper and fiber optic splice cases reside in both the manholes and the tunnel system. All cabling currently originates out of the Floyd-Payne Campus Center and Kean Hall.

A large portion of the copper and fiber optic backbone cabling was installed in 1992-1993.

The existing communications cable plant system is in need of immediate major repair. Both copper and fiber optic splice closures are damaged beyond repair, and conductors are being exposed to the environmental conditions. As identified in the other articles of this study, active steam leaks are evident in the tunnel system. The leaks increase the temperatures in these pathways. The manhole locations are the areas in which the majority of the heat radiates and is unable to escape. These manholes are also the location of the splice points for both copper and fiber optic cabling. The temperatures within the manholes are well over the acceptable range for the product installed, thus degrading the cable jacket and the composition of the splice cases. In one communications manhole, a 182 degree temperature reading was taken at the cover. This exceeds the cable manufactures recommendation by over 25 degrees. The splice cases are not temperature-rated, so this is where the major product breakdown is occurring. The splice cases have become brittle and are detaching from the wall of the manhole.

It is unknown how long the closures have been in this state. The volatility of copper cable plant is evident nearly every week according to the TSU CIT staff. The CIT staff is constantly making repairs to fix the problems but all are minor repairs to a much larger problem. The staff has been utilizing the growth copper pairs and are now close to exhaustion. The fiber optic cabling has some volatility also. Repair of the fiber optic cabling is an urgent matter; however, the telecommunications staff has taken measures to correct the problem. The current state of the communications plant cabling (copper and fiber optic) need to be addressed immediately. An additional study is recommended to specifically identify where the problems occur and what an adequate, long term solution will be.

The current phone private branch exchange (PBX) is a series of Fujitsu 9600's. This system has exceeded its natural life cycle. It is currently reaching capacity and is in need of re-evaluation. With the anticipated growth of the campus, the telecommunications staff continues to struggle with serving the needs of the campus. Currently, the staff has to procure used or reconditioned parts to service the phone switch and the peripheral devices associated with the PBX.

Campus dormitory renovation projects continue to improve on the cabling infrastructure. Upgrading these systems allows the networks to operate more efficiently and provides for a better campus experience for the students.

Code Blue Emergency Phones are typically identified as a security device; however, they also have a telecommunications function. These devices are rendered incapacitated when the phone lines are damaged. The Code Blue Devices are in need of evaluation as several of them currently do not function properly.

The Avon Williams Campus is in good health. The facility recently went through a major renovation project in 2005-06 in which the entire cabling and technical infrastructure had been replaced.

6. Natural Gas

Introduction

This Section assesses the condition and capacity of the existing natural gas system.

Figure IV-19 provides a general map of the existing natural gas distribution system.

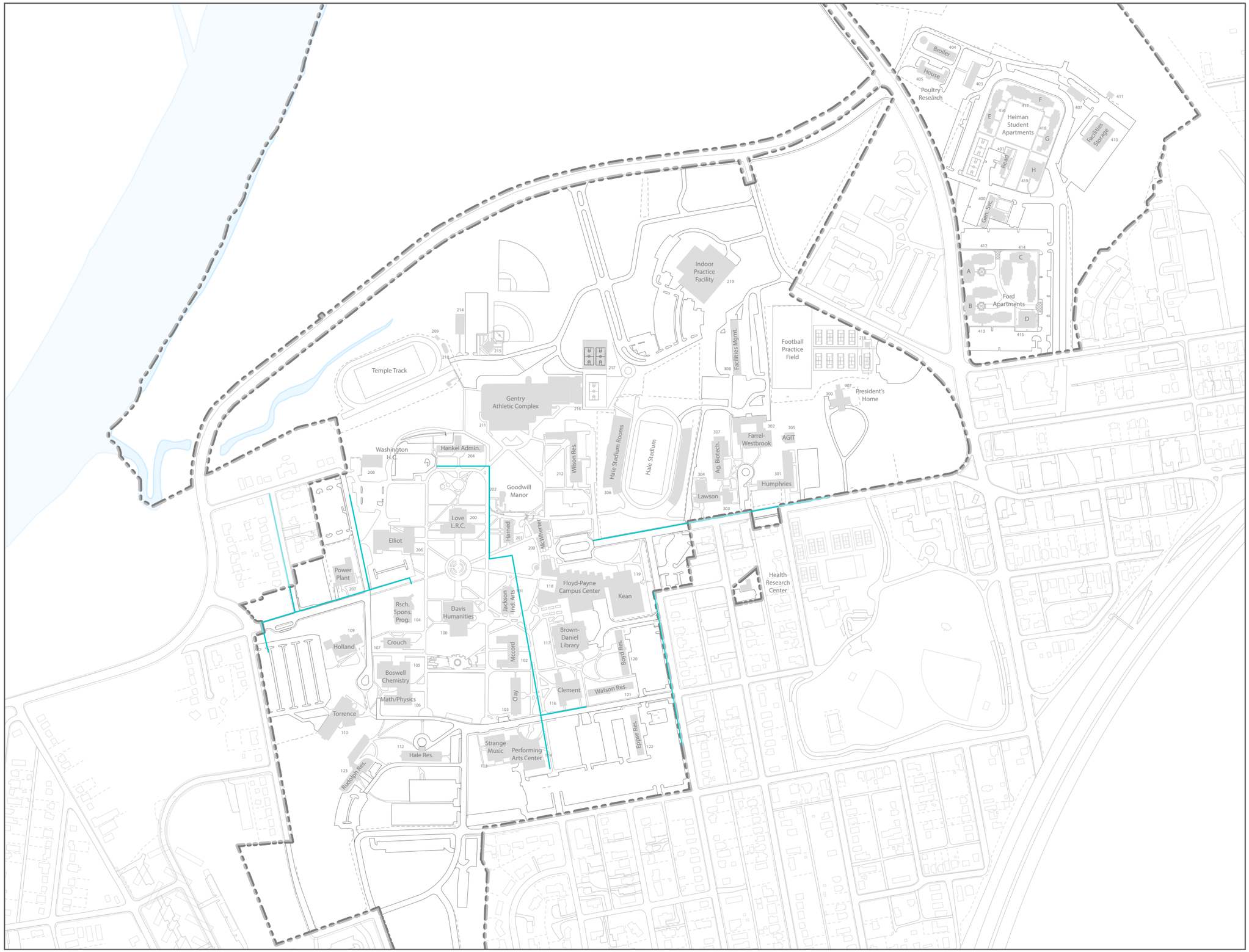
Analysis

The campus is served by a high pressure 14" steel line on the north side, which joins an 8" steel line on the west side of campus. A pressure reducing valve near the intersection of John Merritt Boulevard and 39th reduces the pressure and feeds into a 4" line for the powerhouse. Several low pressure 2" lines enter the campus from the south and east. The distribution system is shown in Figure IV-19. The lines are owned by Piedmont Natural Gas Company up to the meter. The steel lines all have cathodic protection and are repaired by Piedmont as soon as any problems are noted. Therefore, the condition of the system is considered good.

There are no capacity or condition issues for the current load on the system.

Existing Natural Gas

Figure IV-19



Existing Buildings

Existing Gas Lines

Campus Boundary

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

D. Community Setting

1. Regulatory Issues

This section summarizes regulatory issues which should be addressed by the Physical Master Plan or which will influence the form and progress of development of the campus.

Political Boundaries

The consolidated Nashville-Davidson County encompasses approximately 6,868 square miles of land, with a population of 668,347 (2014). The TSU Main Campus is located just west of downtown and southeast of the Cumberland River. The downtown campus is located directly southwest of the State Capitol.

Regulatory Requirements

Board of Regents property is exempt from local zoning and building code regulations and must comply with state codes. The Nashville Planning Commission (NPC) is responsible for recommendations concerning the rezoning of land and the proper subdivision of new developments in the city and county. Construction is governed by the Southern Building Code. Inspections are performed by the building inspector in both the city and county. The building inspector does not review construction at TSU.

Adjacent Properties

The neighborhoods immediately surrounding the TSU campus vary in condition and stability; crime rates above the city average present challenges for campus security. While believing the TSU campus is very safe, Police have said that when something happens in the immediate area surrounding TSU, it draws a lot of attention,

The small neighborhood east of the campus between 33rd Avenue and Hadley Park is characterized by a high percentage of rental properties, some in poor condition. Crime levels are high. South of the University, beyond the immediate perimeter, is a larger, more stable and higher income neighborhood with a higher percentage of owner occupancy and slightly lower crime levels. The neighborhood west of TSU is small enough to be of questionable sustainability, housing is in generally poor condition, and crime presents security challenges to the University.

Land adjacent to TSU that has the most potential to change in terms of land use is the land east of John Merritt and 28th Avenue North. The area, which is zoned commercial, has received development speculation interest, which would convert the area to retail uses, mixed-use developments, and/or private university student housing. This area has also been the subject of the Jefferson Street corridor development plan (JUMP). Future development in this area of campus should take into consideration the surrounding speculative development nature of its commercial land use.

2. Environmental Issues

Natural Resources

Natural systems on campus, topography, water systems, vegetation, and soils, are described in Section 4 above.

Hazardous Environmental Conditions

No known hazardous environmental conditions are within the TSU campuses.

Resource Protection

As discussed in Section II. History of the University, there are no historic structures on campus that are individually listed on the National Register of Historic Places and the Tennessee Historical Commission. However, there are 6 structures that constitute a less rigid designation as historic on the register.

There are no known threatened or endangered species on campus. Logging, agriculture, and development in the past 100 years have disturbed all campus property.

Flood Zones

According to the FEMA Flood Insurance Rate Map for the city of Nashville, Tennessee, the majority of the Main Campus lies within Zone X. Zone X is defined as an area that is determined to be outside the 100-500 year floodplains.

The area of the Main Campus north of Walter S. Davis Boulevard, however, is identified to be within Zone AE. Zone AE is defined as an area inundated by 100-year flooding, for which Base Flood Elevations (BFE) have been determined.

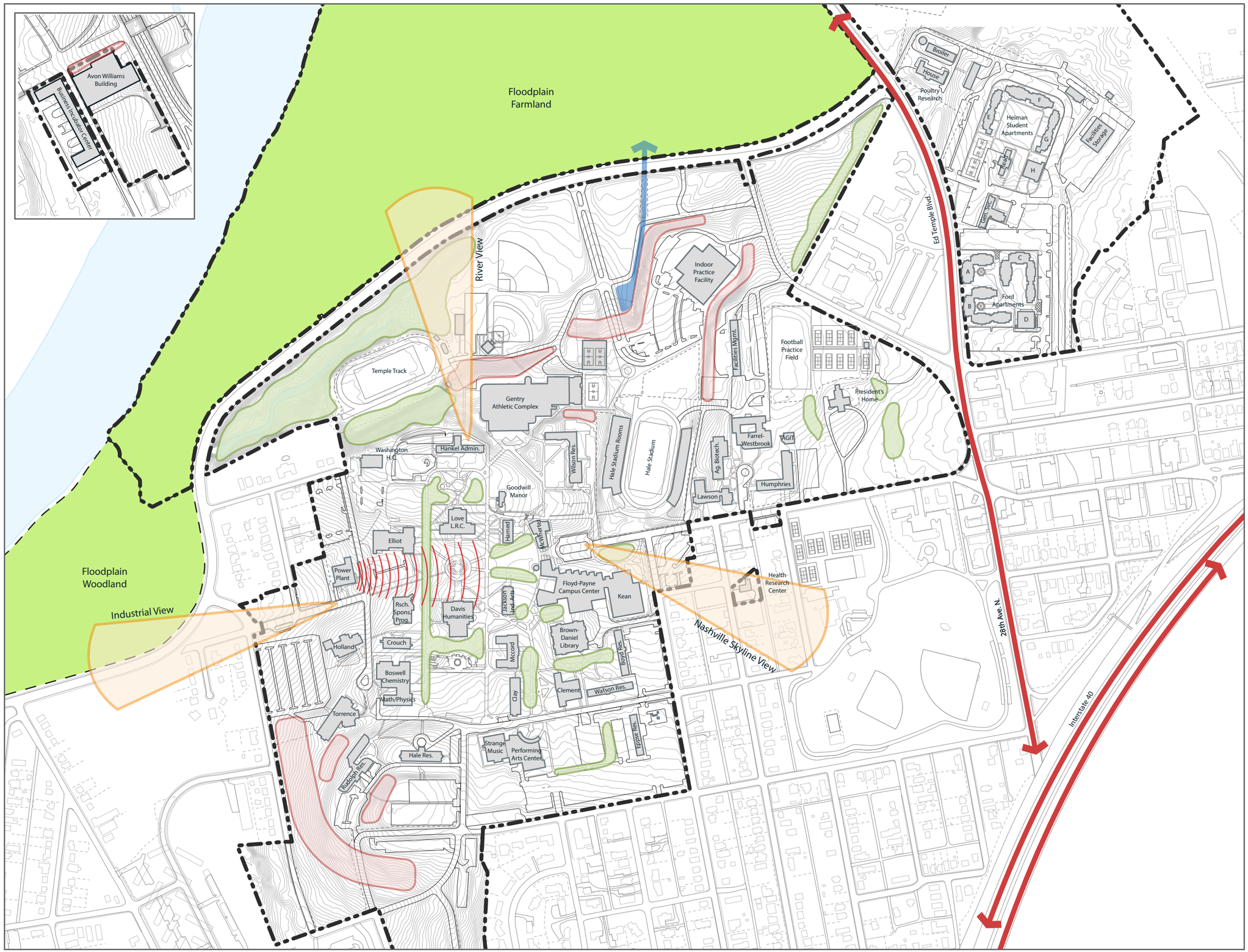
Wetlands

There are no identified wetlands on the TSU Main Campus, as shown on the National Wetlands Inventory. The wetlands have been mapped by aerial photographic interpretation, and no ground-based delineation has been done.

Figure IV-20 provides a general map of the existing environmental features.

Environmental Features

Figure IV-20



- Existing Buildings
- Wooded Areas
- Steep Slopes
- Floodplain
- Views from Campus
- Campus Boundary
- High Volume Vehicular Traffic
- Drainage Channel
- Noise Pollution from Power Plant

0 125 250 500 750 Feet

TENNESSEE STATE UNIVERSITY

Campus Master Plan

BKV GROUP

October 2008

Updated by
Woolpert Design
June 2015

This page intentionally left blank.

V. Future Campus Requirements

A. Space Needs By Target Year

1. Executive Space Summary

Overview

Woolpert team member, Comprehensive Facilities Planning, Inc. (CFP), conducted a space needs analysis of the academic and administrative facilities for the space assessment portion of the TSU Campus Master Plan. The study involved the collection and analysis of data developed on a departmental level for programs and offices housed on the Main Campus and Avon Williams Campus (AWC), primarily using the Fall 2013 term as a baseline.

The development of this assessment included the following tasks:

- Apply applicable Tennessee Higher Education Commission (THEC) space guideline factors and criteria and/or develop alternative guidelines based on the culture of the University and nationally recognized criteria.
- Calculate space needs based on current demands and compare these results with the existing facilities organized by department, college and division.
- Model the future space needs based on projected student enrollments for the academic programs as provided by the Provost's Office.
- Provide data-driven space needs findings to assist the University in establishing capital project priorities.
- Produce results and findings that will inform long-term decision-making concerning the reprogramming/repurposing of existing space, renovations and/or the construction of new space, focusing on the appropriate utilization of existing space.
- Update the *THEC Data Input and Calculation Spreadsheet—UT and TBR Universities* for both campuses.
- Collect relevant physical facilities data from TBR universities and other peer institutions designated by TSU and perform a comparative analysis of this data with TSU's existing conditions.

Key Findings

Results from the calculation of the current and projected space needs for the Main Campus and AWC are presented in the summary Tables V-1 through V-4 at the end of this section. Summary findings are presented below.

- The assessment included 1,493,118 existing assignable square feet (ASF) at the Main Campus, and 117,385 ASF at the AWC. The current calculated needs at both the Main Campus and AWC generate a net surplus of space. The surplus for the Main Campus's surplus is 40,453 ASF (2.7% of existing space), and the surplus at AWC is 18,161 ASF (15.5% of existing existing).
- The current calculations for the Main Campus identify an overall net surplus; however four of the seven academic colleges have space shortfalls. *(Note: the other two colleges, Business and Public Service, are headquartered at AWC but have space assigned to them on the Main Campus).* Support units under Academic Affairs have a net shortfall of 17,973 ASF, primarily due to a deficit of space identified for the main library. The five individual departments with the largest current needs (deficits) include Biology, Nursing, Electrical Engineering, Psychology and Communications.
- Future space needs projections indicate the Main Campus will have an overall net deficit of 149,907 ASF (10% more than existing). This shortfall will result from the planned enrollment growth and significant additional athletic/recreation needs. The AWC surplus will decrease to 4,440 ASF (3.8% more than existing) due to the planned enrollment growth.
- Five of the seven academic colleges will have future space shortfalls at the Main Campus, with Agriculture, Human and Natural Sciences having the largest. Academic Affairs and the campus-wide grouping will have the largest support needs resulting from library and athletic/recreation needs. The five individual departments with the largest projected needs (deficits) include Biology, Nursing, Chemistry, Psychology and Communications.

- Although there currently exists a calculated net space surplus on the Main Campus, space shortages exist in research labs, library space, exhibition and food service space. These categorical shortfalls will increase with future significant deficits in teaching labs, athletic/recreation space and campus support. On the AWC space, shortages exist in student service areas such as exhibition, student lounge and meeting room space. A future deficit in teaching labs is also identified for AWC.

Planning Assumptions/Analysis Criteria

The following planning assumptions and criteria have been applied for the modeling of the University's space needs and established the structure from which these estimates have been developed.

Sources of Data

Basic data used in this study were provided by the offices of Facilities Management (space inventory); Human Resources (personnel); the Registrar's Office (class schedule); Institutional Research (student credit hour data); and Library and Media Services (collections data). Fall 2013 was used as the baseline for this study with the exception of instructional demand data. *Note: for the instructional space needs the Spring 2014 data was determined to provide a more complete file and was used in the modeling process*.

Academic and administrative departments also completed surveys documenting current operations, resources and needs. These surveys also verified current staffing and space data. Modifications were made to the space data where incorrect or limited room type classifications did not accurately reflect the functional use of the space.

Planned/documented new construction or renovation projects that impact the space inventory are included in the comparative space data. For example, the recently completed Biotechnology Building and the Hankal Hall renovation project are reflected in the database.

Limitations of Study

This study was developed through a data-driven modeling process based on a "snapshot in time." Although operations and conditions continued to change during the period when the study was conducted, this snapshot provides a baseline for conducting the assessment. The space needs study calculates and compares the modeled space needs to existing space allocations by department. All usable space was included regardless of its condition or suitability. A separate facility condition analysis was conducted as part of the Master Plan, and the results from this assessment can be found in Section IV

The reliability of the space needs findings depends on several factors, including the accuracy and completeness of the base data, the appropriateness of the planning assumptions used in structuring the model and the validity of any projections used.

This study was limited to space assigned to the academic and administrative departments located on the TSU Main Campus and the AWC. Building support facilities (e.g., mechanical rooms, toilets, corridors, etc.), the farm operations, the Incubator Facility, the Small Business Development Department, the Cooperative Extension and any off site locations were exempt from this analysis.

Athletic/Recreation and residential space were analyzed separately as part of the Master Plan; however, the quantitative results from this separate analysis are incorporated into the overall campus findings identified in this section.

It is assumed non-University operations currently using University-owned space will continue to occupy those facilities for the foreseeable future.

Planning Period

The future planning period for this study is 10 years.

Projected Personnel and Enrollment Assumptions

- **Faculty and Staff Projections**: Future staffing data included in the study were based upon the proportionate growth according to student enrollment projections for units sensitive to enrollments. In addition, selective additions were included in the projected needs by individual units not sensitive to enrollment changes.

These projections were reviewed by the Vice President for Academic Affairs Office, and are assumed to be realistic expectations and achievable future staffing levels.

- **Enrollment Projections**: The Fall 2013 semester term is the base year for current student enrollments. The projected student enrollment numbers were provided by the Provost's Office by college and academic unit. Overall expected growth during the planning period for both campuses is an additional 1,290 full time equivalent students (FTES) or 20.2% (7,687 total future FTE). *Note: the Main Campus enrollment growth expectation is 19.4%, while AWC planned growth is 24.3%*. In addition, it is assumed that any future enrollment growth includes accounts for new program initiatives the University has identified.

General

For planning purposes, shared campus space resources are grouped under the space category entitled "Campus Wide" and include: general purpose classrooms, athletic/recreation space, general assembly space, exhibition space, food service space, merchandising, meeting rooms and campus support space (e.g. physical plant shops, general storage).

The space needs calculations reflected in the tabular results identify the current campus location of the respective departments and not where they may be located in the future.

Space Planning Criteria

General

The space needs calculations were developed at the departmental level according to the THEC space planning guidelines issued in 2013. Supplemental factors and criteria used apply to space category types not covered by the THEC guidelines. Also, the guidelines have been modified, as necessary, to fit the culture and operations of the University and each academic department, and have been augmented using nationally recognized space planning guidelines and the applied experience of CFP.

A separate, companion modeling analysis was completed for the overall campus space needs for each campus using the *THEC Space Planning Guidelines—Revised 2013* methodology, in conjunction with the more detailed, departmental assessment. The THEC modeling process focuses on seven major education and general space categories: Classrooms, Teaching Labs/Studios, Research Labs, Offices, Library and Physical Education.

For space planning purposes, the calculation of full time equivalent students used a conversion factor of 15 credit hours per undergraduate student and 12 credit hours per graduate student.

The instructional day/week for the University ranges from 7 AM until 10 PM, Monday through Friday. For modeling purposes, a peak utilization of 7 AM to 5 PM (daytime) was used for the Main Campus of 7 AM to 5 PM, and 5 PM to 10 PM (evening) was used for the AWC.

For certain types of space needs, the current space allocations were assumed to be sufficient, as formula criteria to develop calculations are unavailable. These were reviewed on a case by case basis. Typically, these types of spaces include: departmental libraries; student lounges assigned to administrative units; training rooms; testing rooms; and interview rooms.

Classrooms

Classroom space analysis applied a uniform set of utilization expectations across the University. Classrooms that were determined to be assigned to a specific department because of scheduling requirements or location are not considered as general use and are classified as departmental rooms. The following THEC utilization goals were used in developing the classroom space needs:

Main Campus–Daytime Use: 30 Weekly Room Hours for scheduled use during an instructional week of 7 AM to 5 PM - Monday through Friday (67% of 45 available hours); 60% station occupancy in scheduled rooms, and average station size ranging from 18 to 26 assignable square feet depending on the number of seats. ***AWC - Evening Use***: 17 Weekly Room Hours for scheduled use during an instructional week of 5 PM to 10 PM - Monday through Friday (68% of 25 available hours); 60% station occupancy in scheduled rooms, and average station size ranging from 18 to 26 assignable square feet depending on the number of seats.

Note: an alternative calculation for classroom needs was also conducted and is presented in detail under Future Academic Space Requirements.

Teaching Laboratories

Instructional laboratory needs are included for individual academic programs as required. Lab calculations/ formulas were modified to reflect the current instructional requirements by program area. Programs that do not generate sufficient weekly student contact hours to calculate a functional lab are provided a minimum square foot allowance, assuming the delivery of the instructional program requires the provision of a functional lab.

In some cases, student credit hour data was used as a source of instructional demand for calculating teaching lab needs where the class file data was deemed to be incomplete.

The calculation of instructional laboratory space is based on utilization factors and square foot lab modules appropriate for each discipline. The teaching lab utilization goals used in the analysis range from 15 to 22 weekly room hours of use and when in use, 80% station occupancy. The square foot per student station varies depending on the discipline and type of laboratory.

Research and Special Use Laboratories

Research laboratory space needs are based on the number of faculty and staff engaged in research that require specialized lab facilities as reported by each academic department. Faculty, research staff and graduate research assistants conducting research in a laboratory facility were included in the research lab calculation. Personnel who conduct their research in offices are not provided any additional space beyond the typical office space needs calculation.

To produce the research space needs, the number of researchers are multiplied by a discipline specific square foot space allocation or module. The modules used relate to the position type of the researcher (Faculty, Post Doc, Non-Faculty, GRA and undergraduates) and vary in size by position type. Further, a uniform lab service factor of 25% of the calculated research lab need was used rather than the THEC prescribed sliding scale for service space.

Unless otherwise specified by the respective college, the projected research space needs assume the same proportionate ratio of personnel conducting lab-based research as the current staffing profile identified by the departments.

For departments that primarily conduct office-based research but have a need for collaborative or group space to conduct research activities, one or more project rooms may be provided.

Undergraduate student research space is provided based on the average number of students engaged in lab-based research, and are assigned a uniform space module across all disciplines.

Certain laboratory spaces have been classified as “special use” labs that may not be assigned to a specific faculty or researcher. These are typically shared spaces that are functionally unique—usually because of specialized equipment. The need for these types of spaces are not directly related to the number of researchers engaged as prescribed by the standard model. Unless otherwise noted, these existing spaces are assumed to be sufficient.

Office Space

Office space needs identify all personnel who require office space—private or shared—and multiply a uniform set of office square feet module guidelines by the appropriate position type. The office module sizes comply with the THEC space planning guidelines and have been modified as necessary to provide an allocation of office space to accommodate the responsibilities of the position type. *Note: larger office modules are provided for faculty in departments who use their office as studio space (e.g., art and music faculty).*

The office space modules used are listed below.

Position Description	SF Module
President	350
Vice-President	240
Dean	180

Position Description	SF Module
Associate/Assistant VP or Dean	150
Director/Chair	150
Assistant Director	130
Faculty	150
Instructors/Lecturers	100
Adjunct Faculty[1]	35
Studio Faculty[1]	225-250
Professional Staff	130
Research Staff	130
Part Time Staff[1]	65
Clerical/Technical Staff	110
Graduate Teaching Assistants	40
Graduate Research Assistants	60
Post Docs[1]	100
Student Organization[1]	150
Student Worker	10

[1]Modified from or supplemental to THEC criteria.

- Adjunct faculty are provided shared office space as reflected in a modified THEC module.
- Office space is provided for contract employees who have administrative duties.
- Office space is not provided for inactive emeriti faculty.
- Unless specified by the department, it is assumed that 50% of student workers require an office workspace.
- Conference room space is allocated at 18 SF per full time faculty and administrative staff.
- Office lounge space is allocated at 5 SF per for all personnel.
- Typical office service needs are determined using a sliding scale ranging from 10% to 20% of the total calculated office space need. Certain offices were provided a supplemental allocation for:
    - Reception and waiting space
    - Processing space
    - Long term departmental storage

Library Space

Library space needs are calculated using prescribed criteria for developing the needs for stack, study and technical services support space. Library stack space is based on collections data provided by the University and are converted to bound volume equivalents. For study space, 10% of FTE students and 5% of FTE faculty require seating at any one time. Space for different seating types, such as casual seating and computer stations, are provided. The station size used to calculate these needs varies depending on the type of station. An allocation of 15% of the calculated need for reading/study and stack space is added to the total need for technical services and office circulation.

The following categories of space are not included in the THEC modeling process, but are included in the modeling of the University's overall campus space needs.

Other Special Use Space

Several categories of special use space are included in the modeled space needs, including: Media, Demonstration, Clinics, Animal Quarters, Greenhouses and other space. Student credit hours and related space factors are typically used in generating these needs. *Note: the Athletic space typically a part of this category is included in the overall campus needs identified in Tables V-1 through V-4 to present a complete campus space profile. The analysis and quantification of this space type, however, was completed as a separate section of the Master Plan.*

General Use Space

Several categories of general use space are included in the modeled space needs: Assembly, Exhibition, Food Service, Merchandising and Meeting Rooms. A square feet per student FTE factor was applied to generate these

needs. *Note: the Recreational space type typically a part of this category is included in the overall campus needs identified in Tables V-1 through V-4 to present a complete campus space profile. The analysis and quantification of this space type, however, was completed as a separate part of the Master Plan.*

Student Lounge

Student lounge space is calculated within the Campus Wide shared space category. It is assumed that each academic department should contribute to a student lounge need that would be distributed within the buildings they occupy. A factor of 2 ASF per FTE student was used.

Support Space

The Support Space category provides centralized space for various support systems and services for the campus (shops, general storage, central services and telecommunication operations). The need is determined as a percentage allocation based on the calculated needs for the entire campus.

Note: *Residential Space is a category that was not included in the general University space assessment. However, a calculated need for Residential Space is included in the overall campus needs identified in Tables V-1 through V-4 to present a complete campus space profile. The analysis and quantification of this space type was completed as a separate part of the Master Plan.*

Tables V-1 through V-4 provide additional details of the calculated space needs. These needs summaries are grouped by major division/college and major space type category. Additional results tables by department are presented in the Appendix.

Campus Summaries: Space Needs by Division

Table V-1 summaries present the space needs by major division for each campus.

Table V-1: TSU Main Campus Space Needs by Division

		Current Need		Projected Need	
Subdivision/College/Department	Existing Space-ASF	Assignable SF	Difference From Existing	Assignable SF	Difference From Existing
Academic Affairs	99,093	117,066	(17,973)	123,200	(24,107)
College of Agriculture, Human and Natural Sciences	127,650	128,077	(427)	149,878	(22,228)
College of Business	2,916	1,495	1,421	1,495	1,421
College of Education	14,361	21,022	(6,661)	23,481	(9,120)
College of Engineering	62,014	65,196	(3,182)	75,344	(13,330)
College of Health Sciences	47,677	49,018	(1,341)	64,683	(17,006)
College of Liberal Arts	69,870	69,689	181	78,977	(9,107)
College of Public Service and Urban Affairs	4,148	2,592	1,556	3,100	1,048
Administration	17,547	15,666	1,881	15,666	1,881
Auxiliary Services	3,077	3,653	(576)	3,963	(886)
Advancement	3,788	4,278	(490)	4,278	(490)
Business and Finance	21,182	21,775	(593)	21,775	(593)
Campus Wide	526,802	467,078	59,724	587,209	(60,407)
Enrollment Management	27,983	25,931	2,052	28,287	(304)
President	24,718	20,595	4,123	20,595	4,123
Student Affairs	440,292	439,537	755	441,097	(805)
Totals	**1,493,118**	**1,452,665**	**40,453**	**1,643,025**	**(149,907)**

Table V-2: AWC Space Needs by Division

Subdivision/College/Department	Existing Space-ASF	Current Need Assignable SF	Current Need Difference From Existing	Projected Need Assignable SF	Projected Need Difference From Existing
Academic Affairs	29,455	22,097	7,358	23,246	6,209
College of Agriculture, Human and Natural Sciences	3,774	1,856	1,918	2,533	1,241
College of Business	17,551	15,370	2,181	17,308	243
College of Education	1,754	1,713	41	1,903	(149)
College of Health Sciences	12,836	12,933	(97)	14,848	(2,012)
College of Public Service and Urban Affairs	3,712	4,459	(747)	5,118	(1,406)
Graduate Studies	1,497	1,887	(390)	1,887	(390)
Campus Wide	45,873	36,292	9,581	43,484	2,389
Enrollment Management	933	933	0	933	0
Totals	**117,385**	**97,539**	**19,846**	**111,260**	**6,125**

Campus Summaries: Space Needs by Major Space Type

Table V-3: TSU Main Campus Space Needs by Space Type

Room Type	Existing Space-ASF	Current Need Assignable SF	Current Need Difference From Existing	Projected Need Assignable SF	Projected Need Difference From Existing
Classrooms	82,389	71,360	11,029	84,728	(2,339)
Instructional Laboratories	130,477	123,304	7,173	150,978	(20,501)
Research Laboratories	58,331	66,653	(8,322)	78,840	(20,509)
Offices	259,883	234,486	25,397	259,890	(7)
Library Space	70,699	95,588	(24,889)	99,280	(28,581)
Special Use Facilities	30,531	29,559	972	30,409	122
Athletic/PE/Recreation Space	253,634	253,634	0	337,634	(84,000)
Other General Use Space	529	529	0	529	0
Assembly Facilities	27,518	16,513	11,005	17,521	9,997
Exhibition Space	2,683	7,982	(5,299)	8,990	(6,307)
Food Facilities	38,895	40,404	(1,509)	47,943	(9,048)
Lounge Space	12,594	10,597	1,997	12,615	(21)
Merchandising Space	19,791	7,948	11,843	9,461	10,330
Meeting Rooms	22,062	11,532	10,530	12,694	9,368
Support Facilities	62,948	63,439	(491)	71,951	(9,003)
Health Care Facilities	954	1,462	(508)	1,885	(931)
Residential Space	417,676	417,676	0	417,676	0
Non-Assignable Space	1,524	0	1,524	0	1,524
Totals	**1,493,118**	**1,452,665**	**40,453**	**1,643,025**	**(149,907)**

Table V-4: AWC Space Needs by Space Type

Room Type	Existing Space-ASF	Current Need Assignable SF	Current Need Difference From Existing	Projected Need Assignable SF	Projected Need Difference From Existing
Classrooms	27,327	16,132	11,195	19,910	7,417
Instructional Laboratories	10,756	11,564	(808)	13,684	(2,928)
Offices	36,450	28,544	7,906	32,004	4,446
Library Space	14,783	11,250	3,533	12,200	2,583
Special Use Facilities	9,302	9,404	(102)	9,404	(102)

Table V-4: AWC Space Needs by Space Type

Room Type	Existing Space-ASF	Current Need Assignable SF	Current Need Difference From Existing	Projected Need Assignable SF	Projected Need Difference From Existing
Other General Use Space	753	753	0	753	0
Assembly Facilities	4,445	3,610	835	3,893	552
Exhibition Space	0	1,777	(1,777)	1,848	(1,848)
Food Facilities	5,007	2,851	2,156	3,554	1,453
Lounge Space	502	3,330	(2,828)	4,180	(3,678)
Merchandising Space	1,156	1,665	(509)	2,090	(934)
Meeting Rooms	87	1,986	(1,899)	2,440	(2,353)
Support Facilities	6,817	4,674	2,143	5,300	1,517
Totals	**117,385**	**97,539**	**19,846**	**111,260**	**6,125**

THEC Space Calculations

A companion calculation based on the methodology prescribed in the *THEC Space Allocation Guidelines—Revised 2013* is presented in Tables V-5 and V-6 for each campus. *Note: The comparative space data presented in the tables are based on the designation of Education and General (E&G) space from the University's inventory*.

The THEC model is limited to the following space categories and does not encompass the entire University, as described above: Classrooms, Teaching Labs/Studios, Research Labs, Offices, Library and Physical Education.

Table V-5: THEC Fall 2013 Space Needs Summary—Main Campus

Part	Modeled ASF	Existing E&G ASF	Difference
I - Classrooms	70,358	82,389	12,031
II - Lab/Studio	109,996	117,011	7,015
III - Open Lab	26,945	22,395	(4,550)
IV - Research	71,849	57,439	(14,410)
V – Office	234,006	231,847	(2,159)
VI - Library	91,906	66,376	(25,530)
VII - Physical Education	127,279	210,292	83,013
Totals	**732,339**	**787,749**	**55,410**

Table V-6

Part	Modeled ASF	Existing E&G ASF	Difference
I - Classrooms	15,940	27,327	11,387
II - Lab/Studio	12,678	9,910	(2,768)
III - Open Lab	4,450	846	(3,604)
IV - Research	0	0	0
V - Office	29,413	36,890	7,477
VI - Library	9,292	14,309	5,017
VII - Physical Education	0	0	0
Totals	**71,773**	**89,282**	**17,509**

Main Campus: Explanations for Differences between the THEC and Master Plan Needs

Classrooms: Included within the master plan assessment is an uncalculated need for a 1,002 ASF distance education classroom located in the Lawson Agriculture Building Room 202.

Lab/Studio and Open Lab: The master plan assessment summary space needs for Instructional Labs combines teaching and open labs. A breakdown of the current calculated need identifies 106,550 ASF for teaching labs and 17,646 ASF for open labs. This is contrasted with the THEC calculations of 109,996 ASF for teaching labs and 26,945 ASF for open labs.

The difference in teaching labs is mainly attributed to the larger THEC lab support or service space factor that ranges between 25% and 40%. The master plan assessment service factors range between 10% and 25%.

The difference in the open lab needs relates to the THEC process, which calculates a total campus ASF based on a factor of 5 ASF per FTE students. The master plan assessment calculated the needs for individual academic departments using the THEC factor, where associated FTE students could be identified; however, for non-academic units with open labs it was assumed their current space allocations are sufficient.

Research Labs: The master plan assessment used a modification to the THEC research service space factor and applied a 25% service factor for all disciplines. This uniform factor differs from the THEC sliding scale, which ranges from 40% for disciplines requiring the most space per researcher to 20% for those requiring the least. The research space need included in the master plan assessment is about 6,000 ASF less than the THEC calculation; about 50% of this difference is attributed to this support space adjustment.

The other major difference is that THEC includes a calculation for research offices of 2,400 ASF. The modeling process used in the assessment does not include a research office calculation, as no special need for this type of space was identified.

Offices: There are several differences within the two models for office needs, even though the calculations are nearly identical. Some of these differences are highlighted below:

- The master plan model uses office module sizes that are significantly lower than THEC for adjunct faculty and part time staff, which results in the THEC model providing over 10,400 ASF more office space.
- The equivalent office service percentage factor used in the master plan model is 35% rather than the THEC factor of 30%, which yields an additional 9,450 ASF in office service space in the master plan model.

Library: The THEC model is intended to capture all Library space, including departmental libraries. The calculation displayed in Table V-6, however, relates only to the main Library operation. Collections and other data required to do this calculation were not available. The THEC calculation of 91,906 ASF for the main Library differs from the Master Plan's estimate of 84,555 ASF. The difference in the total estimated needs is based on the inclusion of all departmental Library space in the master plan assessment "as is," assuming the existing space is adequate.

Physical Education: The THEC model includes only the E & G portion of the space classified as Athletic/ Recreation, and excludes auxiliary operations such as intercollegiate athletics. The comparative space data in the THEC model reflects square feet that are shared between the E & G and auxiliary functions, but only calculates a space need related to physical education. The master plan assessment combined the two and the needs reflected in the assessment encompass both.

AWC: Explanations for Differences between the THEC and Master Plan Needs

Classrooms: Included within the master plan assessment is an uncalculated need for a 392 ASF distance education classroom located in the Room 276.

Lab/Studio and Open Lab: The master plan assessment summary space needs for Instructional Labs combines teaching and open labs. The master plan assessment does not include a calculation for open labs for AWC. This is contrasted with the THEC calculations of 12,678 ASF for teaching labs and 4,450 ASF for open labs.

The difference in teaching labs is mainly attributed to the larger THEC lab support or service space factor that ranges between 25% and 40%. The master plan assessment service factors range between 10% and 25%.

Offices: There are several differences within the two models for office needs, even though the calculations are almost exactly the same. Some of these differences are highlighted below.

- The master plan model uses office module sizes that are significantly lower than THEC for adjunct faculty and part time staff, which results in the THEC model providing over 1,044 ASF more office space.
- The equivalent office service percentage factor used in the master plan model is 35% as compared with the THEC factor of 30%, which yields an additional 9,450 ASF in office service space in the master plan model.

Library: The primary difference between the two library calculations is due to different reading/study space user factors. The THEC model applies a 5% factor of the student FTE for calculating the number of reading/study stations that should be in the Library. The master plan model used 10%. Because the AWC is primarily a commuter satellite campus, the higher factor may be considered more appropriate.

Physical Education: Because the AWC is a commuter satellite campus, the physical education space need in both models has been excluded.

The detailed THEC spreadsheet calculations are presented in the Appendix.

2. Student Enrollment Projections

Over the past ten years TSU's enrollment trend has been erratic, increasing then declining and rising again. Overall, during this period the University's student FTE enrollment has declined by 4.5%. However, since completion of the 2008 Master Plan, enrollments have increased by 9.3%. The enrollment goal for the planning period is 7,687 FTE students—an increase of 20.2% on ground students. Variable enrollment goals have been identified by academic departments, with expectations that some programs will grow at greater rates than others and some will remain stable. Enrollment goals have also been identified by campus, with the main an goal of +19.4% at the Main Campus and +24.3% at AWC.

The overall University student FTE enrollment projections by academic college and department are presented in Table V-7. Projections for the programs at each campus are presented in the Appendix. ***The enrollment projections are the foundation for all projected classroom and laboratory space needs and any other space needs based upon total number of headcounts or FTE's.***

Table V-7: TSU Main Campus Space Needs by Division

College/Department	Current FTE	Projected FTE	Difference	Percent Difference
Academic Affairs				
Honors Program	8.7	8.7	0.0	0.0
Vice President for Academic Affairs	214.2	214.2	0.0	0.0
Academic Affairs Total	**222.9**	**222.9**	**0.0**	**0.0**
College of Agriculture, Human and Natural Sciences				
Agriculture and Environmental Sciences	103.2	117.3	14.1	13.7
Biology	429.2	570.3	141.1	32.9
Chemistry	206.7	254.2	47.5	23.0
Family and Consumer Sciences	121.1	133.2	12.1	10.0
College of Agriculture, Human and Natural Sciences Total	**860.2**	**1,075.1**	**214.9**	**25.0**
College of Business				
Accounting	83.8	102.2	18.4	22.0
Business Administration	176.0	216.5	40.5	23.0
Business Information Systems	90.0	109.1	19.1	21.3
Economics and Finance	102.8	114.6	11.8	11.5
College of Business Total	**452.6**	**542.4**	**89.8**	**19.9**
College of Education				
Education Administration	63.3	76.7	13.4	21.2
Psychology	438.0	538.7	100.7	23.0
Teaching and Learning	282.9	282.9	0.0	0.0
College of Education Total	**784.2**	**898.3**	**114.1**	**14.6**
College of Engineering				
Aeronautical and Industrial Engineering	33.3	41.0	7.7	23.0
Civil and Architectural Engineering	38.1	46.8	8.8	23.0
Computer Science	91.9	122.3	30.3	33.0%
Dean, College of Engineering	70.0	70.0	0.0	0.0%
Electrical and Computer Engineering	43.8	48.6	4.8	11.0%
Mathematical Sciences	546.2	600.8	54.6	10.0%
Mechanical and Manufacturing Engineering	20.4	27.1	6.7	33.0%
College of Engineering Total	**843.7**	**956.6**	**112.9**	**13.4%**
College of Health Sciences				

Table V-7: TSU Main Campus Space Needs by Division

College/Department	Current FTE	Projected FTE	Difference	Percent Difference
Cardio Respiratory and Health Information	105.2	157.8	52.6	50.0%
Dental Hygiene	35.9	47.8	11.9	33.0%
Human Performance and Sports Sciences	241.5	297.0	55.5	23.0%
Occupational Therapy	56.6	62.7	6.1	10.8%
Physical Therapy	121.8	150.2	28.3	23.2%
Public Health, Health Administration and Health Sciences	113.3	169.1	55.8	49.3%
School of Nursing	294.0	411.6	117.6	40.0%
Speech Pathology and Audiology	60.3	80.2	19.9	33.0%
College of Health Sciences Total	**1,028.7**	**1,376.4**	**347.7**	**33.8%**
College of Liberal Arts				
Art	128.2	141.0	12.8	10.0%
Communications	405.1	538.7	133.7	33.0%
Criminal Justice	128.1	164.9	36.9	28.8%
History, Political Science, Geography and Africana Studies	373.2	421.7	48.5	13.0%
Language, Literature and Philosophy	659.3	745.0	85.7	13.0%
Music	184.0	202.4	18.4	10.0%
College of Liberal Arts Total	**1,877.8**	**2,213.8**	**336.0**	**17.9%**
College of Public Service and Urban Affairs				
Public Administration	59.0	72.6	13.6	23.0%
Sociology, Social Work and Urban Professions	267.0	328.4	61.4	23.0%
College of Public Service and Urban Affairs Total	**326.0**	**401.0**	**75.0**	**23.0%**
Grand Total	**6,396.0**	**7,686.5**	**1,290.5**	**20.2%**

3. Faculty/Staff Projections

On average, faculty and staff growth will be consistent with student growth. Key assumptions include:

- No change in the percentage of part-time Faculty to full-time Faculty.
- Maintain existing Faculty/Student ratios.

Enrollment projections were provided by each department. If existing Faculty/Student ratios are to be maintained, then Faculty will need to grow at the same rate as student enrollments. The growth percentages were applied at a detailed level to the personnel file supplied by the University. Because there are specific employee positions/titles that are not projected to grow, the overall staff growth rate may be lower than the student growth rate. These positions are in the executive/administrative classification and include the President, Vice Presidents, Deans, Chief Officers, Chairs and Directors.

Position Type	Current	Projected
Main Campus		
President	1.0	1.0
Vice President	5.0	5.0
Dean	7.0	8.0
Associate/Assistant VP or Dean	17.0	18.0
Director/Chair	96.0	96.0
Assistant Director	37.0	36.0
Faculty	290.0	348.3
Instructors, Lecturers, Visiting Faculty	72.0	82.1
Adjunct Faculty	165.0	197.6
Research Faculty	14.0	14.0
Staff	332.3	365.2

Position Type	Current	Projected
Research Staff	28.0	30.0
Part Time Staff	13.7	15.8
Clerical Staff	174.4	188.3
Main Campus Total	**1,252.4**	**1,405.3**
AWC		
Dean	3.0	3.0
Associate/Assistant VP or Dean	4.0	4.0
Director/Chair	15.0	15.0
Assistant Director	2.0	2.0
Faculty	66.0	83.0
Instructors, Lecturers, Visiting Faculty	3.0	3.0
Adjunct Faculty	23.0	25.0
Staff	22.5	23.0
Research Staff	2.0	2.0
Part Time Staff	0.9	0.9
Clerical Staff	14.5	14.5
AWC Total	**156.0**	**175.4**

4. Academic Space Requirement by Major Space Category

The tables and findings in this section present the academic space needs by college and by major space type category. The tables in this section compare the existing ASF to the modeled ASF for Fall 2013 and Spring 2014 terms for the current condition and projected enrollment growth scenarios. A surplus or deficit is identified for each space category under each scenario. Further, this study only analyzed space needs and did not evaluate the quality of existing space nor the suitability of the space.

Classrooms

Classrooms are defined as rooms used primarily for instructional classes that are not tied to a specific subject or discipline by equipment in the room or the configuration of the space. This includes rooms that are generally used for scheduled instruction that may be called lecture rooms, lecture-demonstration rooms, seminar rooms and general purpose classrooms. The space needs for this type of space has been estimated by applying both the THEC criteria and an alternative methodology as detailed below.

Classroom Analysis Overview

An assessment of the TSU's existing classrooms used for scheduled instruction was conducted. The following purposes for this assessment were identified:

1. Examine the utilization of classrooms from the Spring 2014 class file.
2. Compare the Spring 2014 classrooms supply and utilization to typical guidelines and the THEC classroom calculation methodology to determine classroom need.

Utilization Overview

Classroom utilization was analyzed using the Spring 2014 course and facilities data. The analysis includes scheduled classrooms by day and time of day, as well as utilization analyzing weekly room hours of use and student station occupancy percentages. This type of information is used to guide the classroom space needs analysis component of the study. The room utilization was determined using the following factors:

- **Peak Week of the Term:** The peak week of the term is identified by adding up the total class hours scheduled for each week of the term. Class hours scheduled during a given week can vary dependent on classes offered that do not meet the entire length of the term. The analysis identified the week of the term courses generated the maximum number of instructional contact hours, based on the beginning and end dates.
- **Average Weekly Room Hours (Avg. WRH):** The sum of class hours scheduled for a given time period (e.g., 8am to 5pm), divided by the numbers of rooms for a given size range room group. For example, a class

meeting Tuesday and Thursday from 8 AM to 9:30 AM will generate 3 hours WRH (including 15-minutes for class change). A comparison of Avg. WRH against the Avg. WRH goal the institution expects will determine the scheduling efficiency of the classroom spaces.

- **Station Occupancy (SO):** The hours a class meets times the number of students enrolled is summed and then divided by the sum of the hours a class meets times the seats in the room. The summing of the hours and seats is done for groups of rooms as noted above. The SO is then compared against a Station Occupancy goal to determine how well classroom instructional seats are used.
- **Seats and Weekly Student Contact Hours (WSCH):** WSCH is the sum of the hours a class meets times the enrollment in the class. The WSCH are used to calculate the number of seats that are needed by dividing the WSCH by the product of the Avg. WRH goal times the Station Occupancy Goal.
- **Assignable Square Feet (ASF):** Square footage needed is calculated by multiplying the number of seats required times a square foot per seat goal.

Weekly Room Hours (WRH) = No of Class Hours per Week per Room or the Average of a Group of Rooms
Weekly Student Contact Hours (WSCH) = No of Students Enrolled x Weekly Room Hours
Weekly Student Contact Hour Capacity = Student Seats x Weekly Room Hours
Student Station Occupancy% = Enrollment Divided by Room Capacity

Findings Summary

- **Classroom Utilization—Main Campus:** TSU's classroom demand occurs primarily during the daytime hours. The evening programs use only about half of the daytime peak demand for classrooms. Therefore, 8 AM to 5 PM Monday through Friday, or 45 available hours, served as the basis for the classroom utilization analysis on the Main Campus.
  - The current supply of 107 classrooms is utilized at 22.7 Avg. WRH (WRH-average of hours classrooms are scheduled from 8 AM to 5 PM, M-F, or 45 available hours) for Spring 2014 compared to typical guidelines, which range from 27 to 31.5 WRH for daytime usage. A goal of 27 Avg. WRH out of 45 hours available (or 60% usage), is considered a minimum utilization goal, and 31.5 Avg. WRH out of 45 hours available (or 70% usage), is considered maximum capacity. The Spring 2014 rate of 22.7 Avg. WRH is only 50.3% of the available hours. While some buildings show very high usage, such as the 11 classrooms in Davis scheduled at 31.4 Avg. WRH, other buildings, such as the 18 rooms in Crouch, were only scheduled at 21.4 Avg. WRH.
  - The distribution of classes across time blocks throughout the class day, 8 AM to 5 PM, is very good—especially on Tuesdays and Thursdays. The MWF classes drop off considerably in the afternoon.
  - Station Occupancy (SO), which indicates how well seats are filled, was 70.2% for the 107 classrooms. This exceeds the recommended SO goal of 65%, which allows for class enrollment pattern fluctuations. However, 70.2% falls within limits and indicates that overall classrooms are "right sized" on the TSU Main Campus.
- **Classroom Utilization—AWC:** The AWC classroom demand exists primarily during the evening hours. Most of the classes meet from 5:30 PM to 8:30 PM with very few hours in the evening outside of this time frame. Therefore, this study focused on the 5:30 to 8:30 PM, Monday through Friday timeframe for utilization analysis on the AWC.
  - The current supply of 32 classrooms is utilized at 10.5 Avg. WRH, or 70% of the 15 available hours compared to a guideline range of 9 to 10.5 Avg. WRH for the evening usage. The 70 percent use rate works at AWC because classes follow similar meeting patterns of one day per week from 5:30 to 8:30 PM. This eliminates inefficiencies caused by varying class meeting patterns (e.g., MWF, TR, single day, different start and stop times) like those found on the Main Campus. However, 70% utilization also indicates AWC may soon reach peak or maximum capacity for the number of classes offered.
  - The SO at AWC was 52.2% for the 32 classrooms. This falls well below the recommended goal of 65%. A rate of only 52.2% indicates that there are excess seats available to accommodate more students enrolled in the current classes offered.

- **Classroom Needs—Main Campus:** Classroom needs for the Main Campus were calculated based on a goal of 27 Avg. WRH and 65% SO for the 8 AM to 5 PM timeframe. This calculation only includes hours scheduled between 8 AM and 5 PM (e.g., a class that starts at 5 PM is excluded and a class that starts before 5 PM, but crosses into the evening will only have the hours counted up until 5 PM). A similar calculation was also performed using the THEC Daytime formula. This calculation applies a goal of 30 Avg. WRH and a rate of 60% SO. The THEC calculation includes any class hours with class start times from 7 AM through 5 PM (e.g., a class which starts at 5 and runs through 8 PM will have all those hours included). *Note: the THEC Day calculation is favorable to the Main Campus since there are many classes that begin at 4:40 and 5 PM and run into the evening.* The goals in both these formulas impact the results regarding the number of rooms, seats, and square feet (ASF) required. For example, if the current Avg. WRH is below the goal but the current Station Occupancy is above the goal, less rooms may be calculated but the number of seats required could be the same or even higher than the current seats in the supply.
    - The 8 am to 5 pm calculation resulted in a need for 90 classrooms, 3,274 seats, and 65,478 assignable square feet (ASF). The THEC calculation identifies a need for 95 classrooms and 70,358 assignable square feet (Note: the THEC methodology does not calculate seats required). These calculations compare to the current supply of 107 classrooms, 3,614 seats, and 69,397 ASF. In either case, the current supply is sufficient to meet the instructional demand of the Main Campus.
    - As an option, some flexibility exists to re-purpose the least desirable or least used rooms. Another option to removing some rooms might instead grow enrollments that will fill the vacant or excess rooms.
- **Classroom Needs—AWC:** Classroom needs at AWC were calculated based on a goal of 9.6 Avg. WRH and 65% SO for the 5:30 to 8:30 PM timeframe. The calculation was also performed using the THEC Evening formula. This calculation used a goal of 17 Avg. WRH and 60% SO. The THEC calculation includes any class hours with class start times from 5 PM and beyond. *Note: THEC is not favorable to AWC because of the goal of 17 Avg. WRH for the 5 to 10 PM timeframe (25 available hours). Since AWC schedules almost exclusively between 5:30 and 8:30 PM (or 15 available hours), the THEC goal exceeds to total available hours.*
    - The result for the 5:30 PM to 8:30 PM calculation is a need of 35 classrooms, 821 seats, and 19,706 ASF. The THEC calculation indicates a need of 25 classrooms and 15,940 ASF (THEC does not calculate seats required). These calculations compare to the current supply of 32 classrooms, 1,092 seats, and 25,330 ASF. In either case, the current supply is sufficient to meet the instructional demand of the downtown campus.
    - The 5:30 to 8:30 PM utilization statistics for AWC reinforces the finding that the classrooms are at capacity with the current course offering patterns; however, there are extra seats available.
- **Enrollment Growth Potential:** The current supply of classrooms and seats are used to estimate an enrollment growth potential assuming the recommended Avg. WRH and station occupancy goals can be achieved.
    - **Main Campus:** By applying the goals of 27 Avg. WRH and 65% SO, in contrast with the current use rates of 22.7 Avg. WRH and 70.2% SO, the Main Campus has an enrollment growth potential 10.4%. Since the current Avg. WRH is below the goal and the current SO is above the goal, most of the enrollment growth potential may be realized by offering more classes or class sections.
    - **AWC:** Using goals of 9.6 Avg. WRH and 65% SO, compared to the current rates of 10.5 Avg. WRH and 52.2% SO, AWC has a 14% enrollment growth potential. Since the current Avg. WRH is above the goal and the current SO is below the goal, most of the enrollment growth may be realized by enrolling more students in the current classes offered.
- **Planned Enrollment Growth Projections**: Ten year enrollment growth targets were established by TSU of 19% for Main Campus and 24% for AWC. These overall growth rates were applied in estimating future classroom needs.
    - **Main Campus—Seats and Square Feet (ASF)**: At a goal of 27 Avg. WRH and 65% SO, the Main Campus will need 3,896 seats and 77,919 ASF to accommodate the 19% growth. This is an increase of 282 seats

and 8,522 ASF above the current supply. *Note: much of the increase in square footage is caused by the current average station size of 19.2 ASF as compared to the 20 used in the calculation.* Raising the Avg. WRH goal to 28.5 would require 3,691 new seats or an increase of just 77 seats.

- **Main Campus—Number of Rooms**: It is difficult to determine the rooms needed since it is unknown how many new classes will be offered compared to how much of the enrollment growth will be absorbed into the current class offerings. However, with the calculated need of 282 additional seats and assuming the average classroom size would be 35 seats, then 8 new classrooms would be needed (282 new seats/35 seats per room).
- **AWC Campus:** At a goal of 9.6 Avg. WRH and 65% SO, 1,188 seats are needed to accommodate a 24% growth or an increase to the supply of 105 seats. Using the same assumption as above would result in a need of about 3 more rooms (105 new seats/35 seats per room).

Classroom Summary

Terms in this Study	
WRH	Weekly Room Hours–Total hours a room is scheduled per week.
Avg. WRH	Average WRH–Average of hours scheduled per week.
SO	Station Occupancy–How well seats are filled while a room is in use. There are times when SO may exceed 100%. This is caused by enrollments in a class exceeding the capacity of the room.
ASF	Assignable Square Feet
WSCH	Weekly Student Contact Hours (Hours in class times students)
Max Scheduling Limit	Expected class enrollments limits set at the time of classroom scheduling. This is used in combination with actual class enrollments to determine classroom needs by size of room.
ACAD	Academic Affairs
CAHNS	College of Agriculture, Human and Natural Sciences
CHS	College of Health Sciences
CLA	College of Liberal Arts
COB	College of Business
COED	College of Education
COEG	School of Engineering
CPSUA	College of Public Service and Urban Affairs

- Table V-8 shows the supply of classrooms in the space inventory. The rooms "In Study" form the basis for demand, current utilization rates, and time spreading. The rooms listed as not in the study included either new rooms not yet ready for Spring 2014, had no usage, or rooms designated as a distance education room that recorded low usage. The rooms are listed in Appendix B for Main Campus and Appendix D for AWC and should be verified and possibly re-coded to reflect functional use (e.g., room is really a conference room, tutoring space, etc.).

Table V-8: Classroom Summary

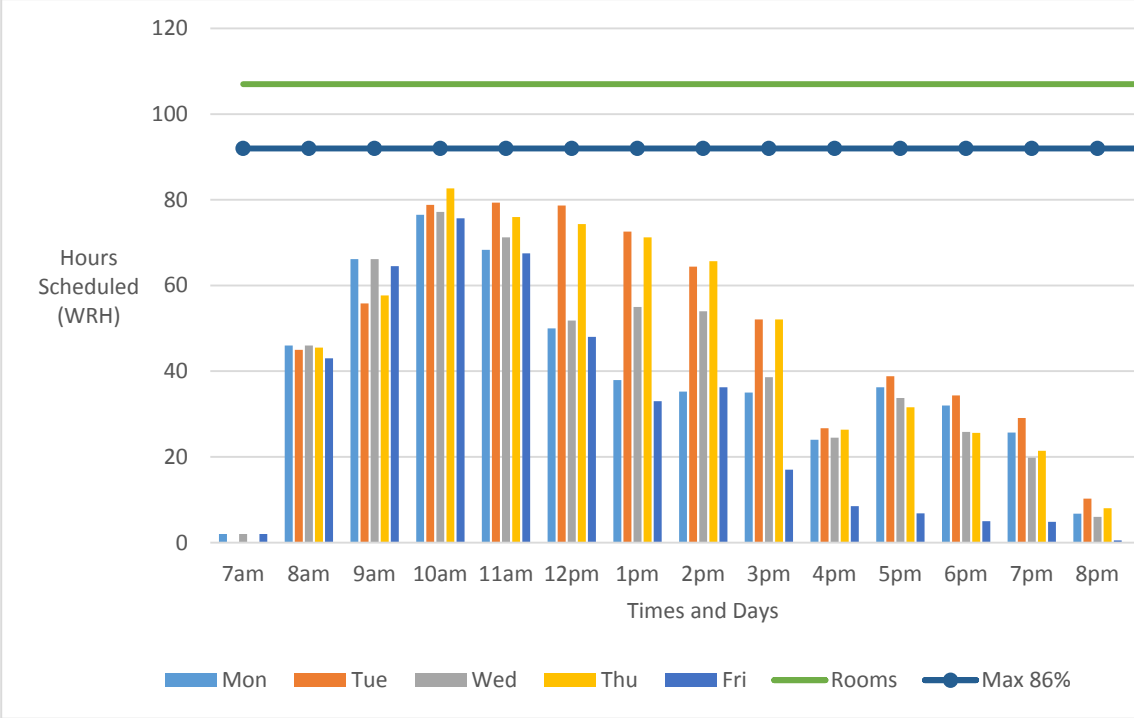
Campus	In Study	Description	Rooms	Seats	ASF	ASF/Seat
Main	Yes	Classroom	107	3,614	69,397	19.2
	No	Classroom-Not Used	17	514	11,078	21.6
	No	Classroom Service	17	-	1,914	
		Main Campus Totals	141	4,128	82,389	
AWC	Yes	Classroom	32	1,092	25,330	23.2
	No	Classroom-Not Used	5	55	1,677	30.5
	No	Classroom Service	17	-	1,914	
		AWC Totals	54	1,147	28,921	

- The 107 scheduled classrooms identified on the Main Campus had an average ASF per seat of 19.2 which is only slightly below the recommended guideline range of 20 to22 ASF/Seat. The 32 AWC classrooms have an

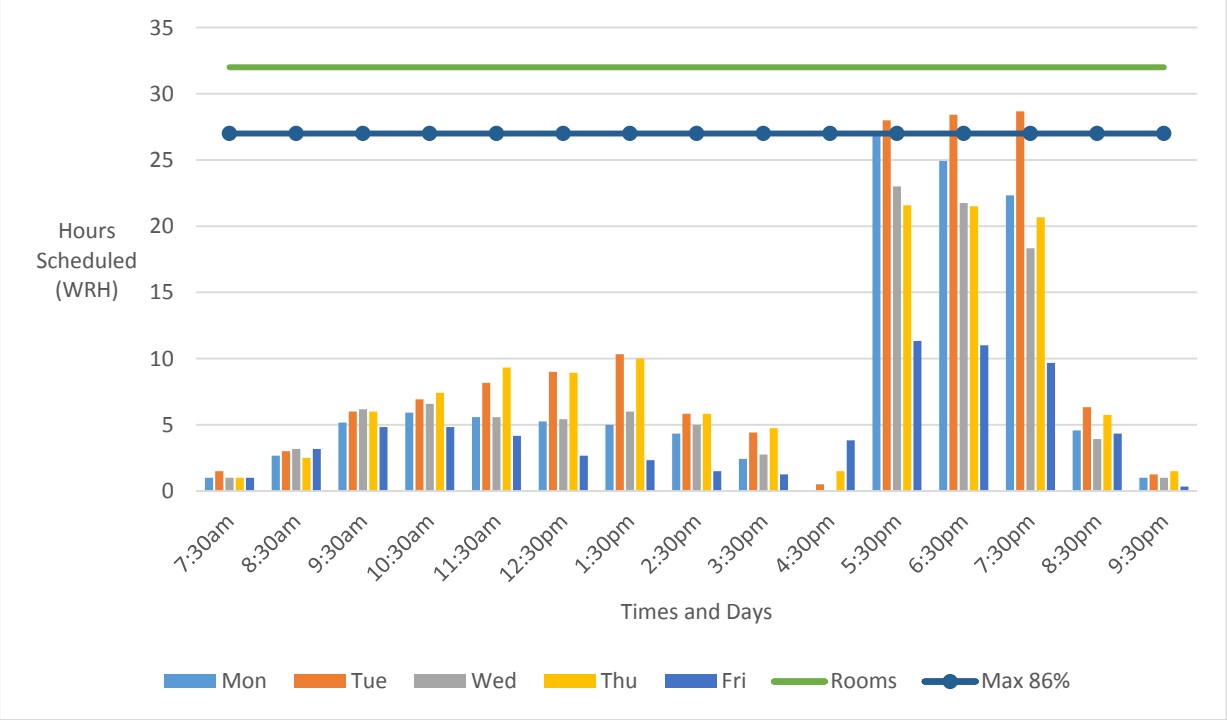
average ASF/Seat of 23.2 which is expected for a smaller campus which does not have a large variety of classroom sizes such as lecture halls which affects square foot areas.

Time by Day Distribution

- Graphs V-1 and V-2 and Table V-9 show how class hours are currently distributed across days and times.



Graph V-1: Time by Day—Main Campus All Day (107 Classrooms—Spring 2014)



Graph V-2: Time by Day—AWC All Day (107 Classrooms—Spring 2014)

Table V-9: Time by Day Percentages: Main Campus 8 am to 5 pm—Spring 2014

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Hour Total	Hour %
8 am	46.0	45.0	46.0	45.5	43.0	**225.5**	9.3
9 am	66.2	55.8	66.2	57.7	64.5	**310.3**	12.8
10 am	76.5	78.8	77.2	82.7	75.7	**390.8**	16.1
11 am	68.3	79.3	71.3	76.0	67.5	**362.4**	15.0
12 pm	50.0	78.7	51.8	74.3	48.0	**302.8**	12.5
1 pm	37.9	72.6	55.0	71.3	33.0	**269.8**	11.1
2 pm	35.3	64.4	54.0	65.7	36.3	**255.6**	10.6
3 pm	35.0	52.1	38.6	52.1	17.0	**194.7**	8.0
4 pm	24.0	26.7	24.5	26.3	8.5	**110.0**	4.5
Day Total	**439.2**	**553.4**	**484.5**	**551.5**	**393.4**	**2,422.0**	**100.0**
Day %	18.1	22.8	20.0	22.8	16.2	**100.0**	

Note: Cells are WRH (class hours) plus class change time.

- The hours shown in the Table V-9 are calculated by summing all individual class hours including class change times. Based on the beginning and end times, the summarized hours for all classes are then distributed into the appropriate bars for the bar chart and cells for the grids.
- The hours in the bars/cells can be compared to the number of rooms available to examine capacity.
- The Max 86% line means 86% of the total rooms available. This typically represents the point where classroom demand exceeds the supply. Inefficiencies caused by variant class times, single day classes, undesirable classrooms, etc., drops the Max 86% below the available rooms.
- Graph V-1 for the Main Campus shows hours of classes meeting in classrooms from 7 AM through 10 PM. This graph presents an overall profile of how classes are scheduled.
- The time spread of classes shows that TSU classroom demand is driven by the daytime hours which are significantly higher than the evening hours. Distribution of classes is quite good from 8 AM through to 5 PM, showing an expected normal curve (peaks during the middle of the day). However, a large discrepancy exists between MWF and TR classes in the afternoon.
- Classroom usage does not reach the Max 86% line during any hour or day, which indicates a surplus of rooms even during the peak times.
- Table V-10 shows the distribution of classes for Spring 2014 daytime to provide a comparative measure against some “best practice” policies.

Table V-10: Classroom Utilization Summary (Spring 2014)

Campus	Rooms	WRH	Avg. WHR	WRH %	SO %	Timeframe	Guidelines Avg. WRH
Main	107	2,423.9	22.65	50.3	70.2	8 am to 5 pm	27.0-31.5
AWC	32	335.8	10.49	69.9	52.2	5:30 pm to 8:30 pm	9.0-10.5

- In order to maximize classroom usage, many universities have established time spreading policies Some of the best, and simplest are:
  - No more than 12.5% of classes at any given hour. Since this policy is typically measured at the time of room scheduling, it is expected that after enrollments take place some unpopular times (8 AM, 4 PM, etc.) may be cancelled and thereby making an acceptable post registration peak of 14% at any given hour.
  - At least 15% of class meetings on Friday.
- The peak class hours of 10 am to 11 am exceeds the 14% policy, partly because of the decrease in MWF classes during the afternoon.
- Friday usage of 16.2% is above the policy of 15% on Friday.

- The unequal distribution of MWF versus TR is caused by the sharp decrease of MWF type classes in the afternoon.
- Graph V-2 for the AWC displays half-hour intervals, since the majority of classes begin at 5:30 PM and end at 8:30 PM.
- The time spread of classes shows that AWC classroom demand is primarily in the evening hours, with few hours scheduled outside of the 5:30 PM to 8:30 PM timeline. Thus, utilization and classroom needs should focus on this time frame.
- Classroom use exceeds the Max 86% threshold on Tuesday evenings, which indicates classrooms are "maxed out" for these days and times.

Classroom Utilization

The following methods were used to determine classroom utilization and needs:

- **Main Campus: Daytime 8 am to 5 pm, Monday through Friday:** This method most accurately measures institutions, such as TSU, where the Monday through Friday daytime hours' drive the classroom need. The method considers two factors: Weekly Room Hours (WRH) and Station Occupancy (SO). For the WRH measurement, typical state guidelines suggest classroom utilization rates should fall between 60% and 70% of the available hours where 70% is considered maximum capacity. By taking the available 45 hours in the daytime period (8 AM to 5 PM, M-F) and multiplying by the guideline rates, yields a utilization expectation goal ranging from 27 (60%) to 31.5 (70%) Avg. WRH (i.e., on average classrooms should be used between 27 to 31.5 hours per week). In contrast, the THEC goal is 30 WRH. This calculation also includes class change times so that, for example, a 55 minute class will be counted as one hour and ten minutes incorporating a fifteen minute class change time. SO, a measurement of how many seats are filled while a room is in use, is the second metric for this method. The THEC guideline for station occupancy is 60%, while the alternative metric applied is 65%.
- **AWC: Evening 5:30 to 8:30 PM, Monday through Friday:** This method most accurately measures campus locations that cater to evening program students which drives the classroom need. A more typical evening measurement may be from 5 to 10 PM, Monday through Thursday (Friday evenings are often not scheduled). However, the AWC evening program is obviously 5:30 to 8:30 PM, Monday through Friday. The THEC WRH guideline for evening utilization is 17.
- Overall daytime utilization of 22.65 Avg. WRH for the 107 Main Campus classrooms is below the minimum recommended guideline of 27 Avg. WRH (60% of the 45 available hours) and well below maximum capacity of 31.5 Avg. WRH (70% of the 45 available hours) indicating a surplus of classrooms.
- The Daytime Station Occupancy (SO) of 70.2% for the 107 Main Campus classrooms is above the guideline of 65%. These rates show that seats are well used and that the sizes of classrooms are well distributed to meet demand.
- The AWC classrooms are scheduled at 10.49 Avg. WRH which matches the 70% capacity guideline. The station occupancy rate of 52.2% at AWC is below guidelines of 65% and indicates there are extra seats available.
- Table V-11 shows the distribution of classrooms around the Main Campus and how well each building is utilized. *Note: Clement, McCord, and PAC station occupancy rates are greater than 100%, which is caused by one room in each building where enrollments exceeded seat capacity. The seating capacity listed in appendix A should be checked for accuracy for these rooms.*

Table V-11: Classroom Utilization by Building—Main Campus (Spring 2014)

Building	Rooms	WRH	Avg. WHR	WRH %	SO %	Seats	ASF	ASF/Seat
Boswell CHM	5	107.4	21.47	47.7	54.8	270	4,240	15.7
Boswell PHYS	9	253.6	28.18	62.6	75.8	231	4,091	17.7
Clay	9	197.2	21.91	48.7	78.9	333	5,997	18.0
Clement	2	48.6	24.29	54.0	112.4	59	1,530	25.9
Crouch	18	385.0	21.39	47.5	91.0	441	9,983	22.6

Table V-11: Classroom Utilization by Building—Main Campus (Spring 2014)

Building	Rooms	WRH	Avg. WHR	WRH %	SO %	Seats	ASF	ASF/Seat
Davis	11	345.2	31.38	69.7	59.4	409	6,498	15.9
Elliot	11	214.5	19.5	43.3	79.7	297	6,525	22.0
Gentry	4	91.0	22.74	50.5	92.4	145	2,802	19.3
Harned	1	18.7	18.66	41.5	62.4	36	455	12.6
HM Love	2	40.7	20.32	45.2	85.5	56	1,348	24.1
Holland	4	79.6	19.91	44.2	52.8	264	6,199	23.5
Humphries	5	81.5	16.3	36.2	63.1	257	3,797	14.8
IND Tech	3	52.7	17.58	39.1	64.4	74	1,347	18.2
Kean	2	28.5	14.26	31.7	10.2	120	2,481	20.7
Lawson	4	65.4	16.34	36.3	45.2	134	2,060	15.4
McCord	6	71.6	11.92	26.5	103.5	198	3,412	17.2
Pac	4	133.9	33.48	74.4	100.4	92	2,478	26.9
Strange	4	140.3	35.07	77.9	68.4	110	2,353	21.4
Torrence	3	68.7	22.88	50.8	55.9	88	1,801	20.5
Total	**107**	**2,423.9**	**22.65**	**50.3**	**70.2**	**3,614**	**69,397**	**19.2**

- Boswell Physics, Davis, Performing Arts, and Strange Music all exceed the minimum 27 Avg. WRH recommendation, and three of the four meet or exceed the maximum of 31.5 Avg. WRH. However, Crouch Hall, which has the most classrooms with 18, is only scheduled at 21.39 Avg. WRH.
- Table V-12 shows the distribution of classrooms on the Main Campus by the sizes of rooms and how well each size range is utilized. The Min and Max WRH columns show in each size range the lowest and highest used room (see the room list in the appendix for individual rooms).

Table V-12: Classroom Utilization by Size—Main Campus (Spring 2014)

Size	Rooms	WRH	Avg. WHR	WRH %	SO %	Min. WRH	Max. WRH	Seats	ASF	ASF/ Seat
1-19	6	118.5	19.7	43.9	78.5	0.0	34.3	100	2,356	23.6
20-29	42	902.9	21.5	47.8	85.1	3.2	42.3	1,004	22,063	22.0
30-39	32	786.2	24.6	54.6	66.6	3.2	41.0	1058	20,085	19.0
40-59	19	468.8	24.7	54.8	69.1	6.5	37.5	818	13,478	16.5
60-79	5	83.3	16.7	37.0	36.8	13.2	19.5	316	5,977	18.9
80-99	2	42.0	21.0	46.7	51.1	20.7	21.3	176	3,713	21.1
100-149	1	22.2	22.2	49.2	32.2	22.2	22.2	142	1,725	12.1
Total	**107**	**2,423.9**	**22.7**	**50.3**	**70.2**			**3,614**	**69,397**	**19.2**

Note: Guidelines for Avg. WRH 25 to 31.5.

- The classrooms with 30-59 seats have the highest usage overall.
- There are 9 rooms with less than 10 WRH scheduled (see appendix). These rooms should be investigated to determine the reasons for the low use.

Room Needs

Tables V-13 and V-14 shows the current rooms, seats, and ASF. Need calculations for these three items are performed for an 8 AM to 5 PM time frame for the Main Campus, 5:30 to 8:30 PM for the AWC, and the THEC method.

Table V-13: THEC Day Classroom Calculation—Main Campus

Class Size	Sections	Hours per Week: Weekly CR Hours	Stations	ASF/ Station	NASF per CR	30 Number of CR	Total NASF	Current NASF
1-8	81	246.94	12	26	312	9.0	2,808	
9-14	100	317.24	20	25	500	11.0	5,500	594
15-20	187	628.17	30	21	630	21.0	13,230	4,908

Table V-13: THEC Day Classroom Calculation—Main Campus

		Hours per Week:				30		
Class Size	Sections	Weekly CR Hours	Stations	ASF/ Station	NASF per CR	Number of CR	Total NASF	Current NASF
21-26	251	820.02	40	18	720	28.0	20,160	14,982
27-32	100	319.21	50	18	900	11.0	9,900	12,246
33-47	100	358.33	60	18	1,080	12.0	12,960	22,503
48-74	17	52.57	100	17	1,700	2.0	3,400	8,726
75-126	2	6.58	150	16	2,400	1.0	2,400	3,713
>=127	0	0.00	275	14	3,850	0.0	-	1,725
Total Classrooms and NASF						**95.0**	**70,358**	**69,397**

Table V-14: THEC Evening Classroom Calculation—AWC

		Hours per Week:				17		
Class Size	Sections	Weekly CR Hours	Stations	ASF/ Station	NASF per CR	Number of CR	Total NASF	Current NASF
1-8	22	70.57	12	26	312	5.0	1,560	-
9-14	33	108.44	20	25	500	7.0	3,500	-
15-20	20	59.23	30	21	630	4.0	2,520	2,815
21-26	26	77.16	40	18	720	5.0	3,600	1,920
27-32	4	13.68	50	18	900	1.0	900	8,638
33-47	7	22.02	60	18	1,080	2.0	2,160	6,064
48-74	1	3.17	100	17	1,700	1.0	1,700	2,442
75-126	0	0.00	150	16	2,400	0.0	-	3,451
>=127	0	0.00	275	14	3,850	0.0	-	-
Total Classrooms and NASF						**25.0**	**15,940**	**25,330**

- 8 am to 5 pm Calculation:
  - **Rooms:** The total WRH is divided by the expected WRH utilization goals to determine how many classrooms are needed. The calculation is performed for a standard 8 AM to 5 PM time frame for the Main Campus. Only the hours between 8 AM and 5 PM are included (e.g., a class which meets from 4 to 6 PM would only have the 4 to 5 PM portion counted in the WRH). This same method is used for the AWC using the 5:30 to 8:30 PM timeframe. The calculation is performed for both a 60% and 64% utilization expectation.
  - **Seats:** The WSCH is divided by the product of SO Goal (65%) times the WRH Goal.
  - **ASF:** The seat calculation times 20 (an average ASF per seat goal) for Main Campus and 24 for the AWC.
- THEC Calculation:
  - **Rooms:** The total WRH for classes that start between the hours of 7 AM to 5 PM are included. For example, a class that starts at 5 PM and runs for 3 hours is included. The total WRH are divided by the expected WRH utilization goal of 30 to determine how many classrooms are needed.
  - **ASF:** ASF is calculated by multiplying the rooms needed by an average square foot per room dependent on the size of the room needed. The detail is shown in the THEC Classroom Calculation table which follows the summary table.
- **Main Campus 8 am to 5 pm**: At the 60% WRH goal (27.0 Avg. WRH), 90 classrooms, 3,274 seats, and 65, 478 ASF is required compared to the current supply of 107 classrooms, 3,614 seats, and 69,397 ASF. If the Avg. WRH goal is increased to 64% (28.5 Avg. WRH) 85 classrooms, 3,102 seats, and 62,032 ASF are required.
- **Main Campus THEC**: The THEC calculation includes additional WRH beyond 5pm and assumes a goal of 30 Avg. WRH. This model calculates a need for 95 classrooms and 70,358 ASF. Therefore, the 8 AM to 5 PM/ 27 Avg. WRH model and the THEC model suggests a need of 90 to 95 classrooms for the current enrollment and class hours scheduled at the Main Campus.

- **AWC 5:30 pm to 8:30 pm**: By applying the 60% WRH goal (9.0), 38 classrooms, 876 seats, and 21,019 ASF would be required compared to the current supply of 32 classrooms, 1.092 seats, and 25,330 ASF. If the Avg. WRH goal is increased to 64% (9.6 Avg. WRH) the needs are reduced to 35 classrooms, 821 seats, and 19,706 ASF. In both modeling scenarios, the reduction in calculated seats and ASF as compared with the existing supply is a result of the current SO rate of only 52.2% in contrast to the goal of 65%.
- **AWC THEC**: The THEC calculation for the evening includes all WRH for classes starting at and after 5 PM, and assumes a goal of 17 Avg. WRH. This model calculates a need for 25 classrooms and 15,940 ASF. The calculation assumes a 5 to 10 PM evening program or 25 available hours with an expectation of 17 Avg. WRH (67%), whereas AWC offers primarily a 5:30 to 8:30 PM schedule or 15 available hours. This condition is illustrated in the table above by the current 336 WRH scheduled between 5:30 to 8:30 PM and only 354 WRH totally scheduled at 5 PM and beyond for the THEC calculation.
- The THEC classroom calculation sums the total WRH by the size of the class based on enrollment. The WRH is divided by a goal of 30 hours per week for the day calculation (all hours with class start times from 7 AM to 5 PM) and 17 hours per week for an evening calculation (all hours with class start times from 5 PM and beyond) to determine how many rooms are needed in each size range. The average square footage of each classroom size is prescribed by multiplying an ASF/Station factor times the number of stations per room. The number of stations needed in each size range is based on the SO goal of 60% (e.g., maximum class size of 8 requires a room of 12 seats; 8/60%). The square foot size per room is then multiplied by the number of rooms needed to estimate the square footage required for each size range. The results are shown and discussed in the Classroom Needs Summary table above.
- The THEC calculation was also performed for the AWC. The results are shown and reviewed in Table V-15.

Table V-15: Classroom Needs Summary

Campus		Seats	Avg. WRH	SO %	WSCH	Growth %
Main	Current Conditions	3,614	22.7	70.2	57,457	
	Growth		27.0	65.0	63,246	10.4
	Potential		28.5	65.0	66,949	16.5
AWC	Current Conditions	1,092	10.5	52.2	5,977	
	Growth		9.0	65.0	6,388	6.9
	Potential		9.6	65.0	6,814	14.0

- Table V-16 displays the potential increase in Weekly Student Contact Hours (WSCH-class length times students enrolled) that could be accommodated with the existing supply of classrooms and seats if Avg. WRH and station occupancy recommended goals could be met.
  - **Main Campus**: At a goal of 27 Avg. WRH and 65% station occupancy the current supply of classrooms could accommodate an increase of 10.4% in WSCH. Raising the Avg. WRH goal to 28.5 increase the growth potential to 16.5%. Since the current Avg. WRH of 22.7 is well below the recommended goals, higher utilization rates will allow for more classes to be offered.
  - **AWC**: At a goal of 9 Avg. WRH and 65% station occupancy an increase of 6.9% in WSCH could be accommodated with the current supply of classrooms at AWC. Raising the WRH goal to 9.6 allows for a 14% increase in WSCH. Since the current Avg. WRH is already above the recommended goal but the current SO of 52.6% is well below the goal of 65%, this increase would allow more students to be enrolled in existing classes.

Table V-16: Growth—Enrollment Projections

				Hours Used			Factors Used		
Campus		Seats	ASF	Current WSCH	Growth %	New WSCH	Avg. WRH	SO %	ASF/ Seat
Main	Current	3,614	69,397	57,457	19%	68,374	22.65	70.2%	19.2
	8 am to 5 pm (60%)	3,896	77,919				27.00	65.0%	20.0
	8 am to 5pm (64%)	3,691	73,818				28.50	65.0%	20.0

Table V-16: Growth—Enrollment Projections

Campus		Seats	ASF	Hours Used: Current WSCH	Hours Used: Growth %	Hours Used: New WSCH	Factors Used: Avg. WRH	Factors Used: SO %	Factors Used: ASF/ Seat
AWC	Current	1,092	25,330	5,977	24%	7,411	10.49	52.2%	23.2
	5:30 pm to 8:30 pm (60%)	1,267	30,406				9.00	65.0%	24.0
	5:30 pm to 8:30 pm (64%)	1,188	28,506				9.60	65.0%	24.0

- Table V-16 identifies the increase in WSCH based on 19% enrollment growth for Main Campus and 24% enrollment growth for AWC campus, and subsequently the number of seats and square foot requirements to accommodate these growth levels if the Avg. WRH and SO recommended goals could be met.
    - **Main Campus - Seats and Square Feet (ASF)**: with goals of 27 Avg. WRH and 65% station occupancy, 3,896 seats and 77,919 square feet would be needed to accommodate the 19% growth in WSCH. The result is a net increase of 282 seats and 8,522 ASF. *Please note that the increase in square footage is primarily caused by the current ASF/Seat of 19.2 compared to the 20 used in the calculation.* Raising the Avg. WRH goal to 28.5 would require 3,691 seats or an increase of just 77 seats more than existing.
    - **Main Campus - Number of Rooms**: It is difficult to determine the rooms needed since it is unknown how many new classes might be offered as compared with how much of the enrollment growth will be absorbed into current class offerings. However, based on 27 Avg. WRH and 65% SO goals, if 282 new seats are required and we assume the average classroom size might be 35 seats, then 8 new classrooms would be needed (282 new seats/35 seats per room).
    - **AWC Campus - Seats and Square Feet (ASF)**: At a goal of 9.6 Avg. WRH and 65% SO, 1,188 seats are needed to accommodate a 24% growth in WSCH. This is an increase of 105 seats. Using the same assumption as above would result in a need of about 3 more rooms (105 new seats/35 seats per room).

Classroom Needs Detail—How It Works

- **Current Rooms**: The Current Rooms column in Table V-17 below shows how many classrooms are in the existing supply by room seating capacity size range for Spring 2014.
- Not displayed in Table V-17 is the baseline data that drives this calculation which are the Weekly Room Hours (WRH) that are summarized and grouped by nine size ranges. The WRH are summarized in two categories: by enrollments and the Maximum Scheduling Limits (the expected enrollment set at the time of room scheduling and before registration). Also, whereas the THEC model has three size ranges from 1 to 20 seats, this model only has one size range for classrooms of less than 20 seats. This difference in the grouping for small classrooms is because these rooms are often the least utilized/desirable and departments rarely set the maximum scheduling limit below 20. The WRH of all the classes in each size range are then used to generate the Required Rooms described below.
- **Required Rooms:** These columns show how many rooms are needed based on demand (WRH) and the expected WRH utilization goals for both actual enrollments and the max scheduling limits. The total WRH for classes in each size range, based on actual class enrollment and maximum scheduling limits (i.e., not the size of the room the class was scheduled in), are divided by the expected WRH goal to yield the number of rooms needed. Using the 8 AM to 5 PM timeframe, a goal of 27 Avg. WRH is used to determine room needs.
- **Best Fit:** In the detailed computation (not shown) a cascading factor is applied to each size range to allow some portion of the demand for a range to flow into a larger classroom (i.e., a 60% cascade factor is applied to the 1-19 size range, therefore 60% of the demand for 1-19 seat rooms “cascades” into the demand for the next size range, or in this example, the 20 range). The cascading factor is applied to recognize that classrooms are usually scheduled based on maximum enrollment limits, which many times are greater than actual enrollments. This adjustment factor provides a more realistic operational profile of the number and sizes of rooms needed reflected in the Best Fit column. Cascading factors decrease through the size ranges so that all demand is met.

Table V-17: Classroom Needs Detail—Main Campus (8 am to 5 pm, 27.0 WRH Expected)

Size	Current Rooms	Required Enroll	Rooms Limit	Cum. Rooms	Cum. Enroll	Required Limit	Best Enroll	Fit Limit
1-19	6	28.6	9.0	6	28.6	9	10	3
20-29	42	39.2	47.3	48	67.9	56.3	46	39
30-39	32	15.4	22.5	80	83.2	78.8	22	30
40-59	19	5.5	6.9	99	88.7	85.7	9	12
60-79	5	0.9	2.9	104	89.7	88.5	2	3
80-99	2	0.2	0.5	106	89.8	89.1	0	1
100-149	1	0.0	0.3	107	89.8	89.4	1	1
150-249	0	0.0	0.1	107	89.8	89.5	0	0
>=250	0	0.0	0.3	107	89.8	89.8	0	1
Total	**107**	**89.8**	**89.8**				**90**	**90**

- Table V-18 shows how many rooms are needed to satisfy demand by size range with a utilization expectation of 27 WRH (60% utilization of the 8 AM to 5 PM time frame).

Table V-18: Classroom Utilization by Building—Main Campus (Spring 2014)

Building	Rooms	WRH	Avg. WHR	WRH %	SO %	Seats	ASF	ASF/Seat
Boswell CHM	5	107.4	21.47	47.7	54.8	270	4,240	15.7
Boswell PHYS	9	253.6	28.18	62.6	75.8	231	4,091	17.7
Clay	9	197.2	21.91	48.7	78.9	333	5,997	18.0
Clement	2	48.6	24.29	54.0	112.4	59	1,530	25.9
Crouch	18	385.0	21.39	47.5	91.0	441	9,983	22.6
Davis	11	345.2	31.38	69.7	59.4	409	6,498	15.9
Elliot	11	214.5	19.5	43.3	79.7	297	6,525	22.0
Gentry	4	91.0	22.74	50.5	92.4	145	2,802	19.3
Harned	1	18.7	18.66	41.5	62.4	36	455	12.6
HM Love	2	40.7	20.32	45.2	85.5	56	1,348	24.1
Holland	4	79.6	19.91	44.2	52.8	264	6,199	23.5
Humphries	5	81.5	16.3	36.2	63.1	257	3,797	14.8
IND Tech	3	52.7	17.58	39.1	64.4	74	1,347	18.2
Kean	2	28.5	14.26	31.7	10.2	120	2,481	20.7
Lawson	4	65.4	16.34	36.3	45.2	134	2,060	15.4
McCord	6	71.6	11.92	26.5	103.5	198	3,412	17.2
Pac	4	133.9	33.48	74.4	100.4	92	2,478	26.9
Strange	4	140.3	35.07	77.9	68.4	110	2,353	21.4
Torrence	3	68.7	22.88	50.8	55.9	88	1,801	20.5
Total	**107**	**2,423.9**	**22.65**	**50.3**	**70.2**	**3,614**	**69,397**	**19.2**

  - The 1-19 size range shows a demand of 28.6 rooms based on enrollments with only 6 actual rooms available. However, limits for this range showed only a demand for 9 rooms which indicates the limits for these classes are typically set at or above 20.
  - The 40-59 seat range has 19 rooms with a demand for only 5.5 rooms based on enrollments and 6.9 rooms based on maximum scheduling limits. However, the current rooms in this range helps "catch up" with the demand from the smaller ranges. This can be seen under the cumulative columns which show the supply of rooms now matches or exceeds the required rooms. The surplus in this range also provides flexibility to handle changes made by departments to the configuration of section offerings and class sizes.

- A comparison of the Current Rooms with the results shown in the Best Fit and Required Rooms columns provides information useful in making future adjustments to the sizes of classrooms that will be built, remodeled, or repurposed.
- Overall, there is a very good mixture of classroom size ranges to meet the demand of classes.

- Table V-18 shows how many rooms are needed for each college by size range based on an expected Avg. WRH of 27. Please note that this table only uses actual enrollments (not max scheduling limits) and does not apply any cascading factors to allow small classes to migrate to larger classrooms. This table provides a resource to understand where the classroom demand is originating.
- Table V-19 is provided as a resource to see how classes by college are distributed across the buildings.

Table V-19: Distribution of WRH by Building and College-Main Campus

Building	Rooms	Avg WRH	ACAD	CAHNS	CHS	CLA	COB	COED	COEG	CPSUA	Total
Boswell CHM	5	21.5	2.0	81.6					23.8		107.4
Boswell PHYS	9	28.2							253.6		253.6
Clay	9	21.9	14.0			44.1	3.3	132.4	3.3		197.2
Clement	2	24.3			48.6						48.6
Crouch	18	21.4	9.3		3.3	368.8		-	3.5		385.0
Davis	11	31.4	8.7		3.3	332.8		0.3			345.2
Elliot	11	19.5	3.3			101.6				109.5	214.5
Gentry	4	22.7			91.0						91.0
Harned	1	18.7		18.7							18.7
HM Love	2	20.3	19.3			3.5		17.8			40.7
Holland	4	19.9		18.3	4.7		47.8		8.8		79.6
Humphries	5	16.3	2.0	29.3	50.2						81.5
IND Tech	3	17.6			39.4				13.3		52.7
Kean	2	14.3							28.5		28.5
Lawson	4	16.3		65.4							65.4
McCord	6	11.9		46.8					24.7		71.6
Pac	4	33.5				133.9					133.9
Strange	4	35.1				140.3					140.3
Torrence	3	22.9							68.7		68.7
Total	**107**	**22.7**	**58.6**	**260.1**	**240.4**	**1,125.1**	**51.1**	**150.6**	**428.4**	**109.5**	**2,423.9**

Class Labs

Teaching Laboratories are defined as rooms used primarily for formally or regularly scheduled instruction that require special purpose equipment or a specific space configuration to serve the needs of a particular discipline for group instruction, student participation, observation, experimentation, or practice. Station sizes in teaching laboratories vary by discipline. Space requirements are calculated with a formula similar to that used to determine classroom space requirements.

The THEC space per student station guideline has 76 different subject areas that are grouped into five discipline groups (A through E), which provides a common station size within each group ranging from 40 ASF to 150 ASF. A lab service percentage factor for each group is identified to provide support space for the labs. THEC guidelines also indicates a student station occupancy guideline of 80% for lower division and 75% for upper division labs. The model uses a weekly room hour utilization expectation of 20 for lower division classes and 15 for upper division.

The master plan process applies similar criteria as THEC, with the exception of the lab service factor percentage. The master plan criteria ranges from 10% to 25% rather than the THEC range of 20% to 40%. These two service factor ranges were contrasted with the University's current teaching lab service space, which indicates it is about 15% of the teaching lab inventory. The former was therefore determined to be more reasonable. Furthermore, the instructional demand was determined from weekly student contact hours rather than weekly room hours

which produces a more precise ASF calculation. These modifications account for the 3% difference between the two methods. The results are displayed in Tables V-21 and V-22.

Table V-21: Teaching Lab Space Needs Summary—Main Campus

College	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
College of Agriculture, Human and Natural Sciences	39,711	37,035	2,676	45,300	(5,589)
College of Education	2,686	1,850	836	2,195	491
College of Engineering	25,752	23,797	1,955	27,887	(2,135)
College of Health Sciences	20,480	21,220	(740)	29,805	(9,325)
College of Liberal Arts	27,101	22,648	4,453	27,256	(155)
Total	**115,730**	**106,550**	**9,180**	**132,442**	**(16,712)**

Table V-22: Teaching Lab Space Needs Summary—AWC

College	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
College of Agriculture, Human and Natural Sciences	3,464	1,475	1,989	1,963	1,502
College of Business	5,676	4,213	1,463	4,965	711
College of Health Sciences	770	5,030	(4,260)	5,660	(4,890)
Total	**9,910**	**10,718**	**(808)**	**12,588**	**(2,678)**

Summary Findings

- The existing inventory of teaching lab space is sufficient to address the current instructional demand for the University at the Main Campus. The Nursing and Cardio Respiratory have relatively small deficits which constitute the 740 ASF shortfall in Health Sciences.
- Although there is a calculated current net surplus of teaching labs, five departments have deficits: Teaching and Learning, Communications, Psychology, Biology and Chemistry (in the order of greatest to least).
- The projected space needs indicate that three of the five colleges will have significant deficits (over 1,000 ASF). Health Sciences will have the largest shortage of 9,325 ASF or 45.5% of their existing space.
- Six departments will have significant future space deficits (over 1,000 ASF): Communications, Nursing, Biology, Psychology, Teaching and Learning and Chemistry (in the order of greatest to least).
- The existing inventory of teaching labs totals 9,910 ASF. The current needs indicates a deficit of just over 800 ASF. The projected needs increase the deficit to 2,678 ASF.
- The College of Agriculture, Human and Natural Sciences lab space is for Biology. If the intent of the University is to consolidate the Biology lab instruction on the Main Campus, then the Main Campus deficit would increase to a current need for 4,794 ASF and over 8,000 ASF in the future. The existing AWC lab space would then be available for repurposing.
- The College of Business labs are sufficient to address current and future needs.
- The current and projected needs (deficits) in the College of Health Sciences are for the departments of Public Health, Health Administration and Health Sciences and Speech Pathology and Audiology. Neither of these programs have existing teaching labs but their program requirements indicate there is a need for dedicated space.
- The College of Health Science's projections do not include a calculation for a Nursing lab. This need has been incorporated into the Main Campus calculations.

Open Labs

The category of open laboratory space (220's) consists of rooms that are used primarily for individual or group instruction that are informally scheduled, unscheduled or open. The size of these laboratories is based on equipment dimensions and/or on the station size and student count desired and should be determined on an individual basis. Types of rooms included in this category are computer laboratories, language laboratories and music practice rooms.

Open laboratories are addressed by the THEC guidelines by providing 5 ASF per FTE student. For departments that have FTE students and an open lab assigned, a calculation was developed. For certain space types, such as music practice rooms a separate calculation has been developed based on a space factor of 1.35 ASF per student credit hour for students using practice rooms. *Note: the scope of the THEC open lab guideline encompasses an array of unscheduled spaces. Included in this category are computer labs, writing labs, language labs, art studios, practice studios and informal collaboration areas. The master plan assessment addresses this open lab need, in part, as displayed below and picks up other elements of the open use need through other calculations such as teaching labs* (see Table V-23).

Table V-23: Open Lab Space Needs Summary—Main Campus

College	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
College of Agriculture, Human and Natural Sciences	646	1,035	(389)	1,270	(624)
College of Business	583	650	(67)	780	(197)
College of Education	0	350	(350)	350	(350)
College of Engineering	835	952	(117)	1,102	(267)
College of Health Sciences	1,099	2,370	(1,271)	2,940	(1,841)
College of Liberal Arts	4,706	6,427	(1,721)	7,254	(2,548)
Total	**7,869**	**11,784**	**(3,915)**	**13,696**	**(5,827)**

Summary Findings

- The current space needs calculation for open labs indicates the academic colleges need 11,784 ASF, a shortfall of 3,915 ASF of 49.8% of the existing space.
- The College of Liberal Arts has needs identified for a language lab and music practice rooms. Needs in the other colleges are primarily open computer labs.
- The projected space needs calculation indicates a need of 13,696 ASF, a shortfall of 5,827 ASF of 74% of the existing space.
- The AWC has two rooms classified as open labs totaling 846 ASF, both are available for general campus use. These labs are assumed to be adequate with no corresponding need calculated. However, the THEC model calculates a need for 4,450 ASF.

Research Laboratories

Research laboratories (room type 250's) are rooms used for laboratory experimentation; research or training in research methods; professional research or observation; or structured creative activity within a specific program or for sponsored research. These activities are generally conducted by faculty, staff and assigned graduate students. Research may be conducted for both funded and non-funded projects.

The University has 58,331 ASF in research space allocated among the Colleges of Agriculture, Human and Natural Sciences; Engineering; Education; and Health Sciences. The Center of Excellence for Information Systems also has space assigned. The AWC does not have any assigned research space.

The THEC guidelines provide two options for the calculation of research space: using either research expenditures or the number of personnel engaged in research. The methodology tested by the consultants in previous studies and used in this assessment is the space per researcher in line with the THEC process. The model identifies the number of faculty, staff and graduate students engaged in lab-based research and allocates an ASF module per

researcher depending on position type. The research module sizes are further differentiated based on a space use intensity grouping which list similar program types. Disciplines are grouped into one of four categories: highly space intensive, space intensive, moderately space intensive and office based. The space modules vary depending on the space intensity grouping and researcher position type. *Note: this study assumes office based research is accommodated through the office space needs calculation. Any supplemental office research calculation, such as prescribed by THEC, has been excluded.*

Table V-24 below presents the results of the calculations for the research space needs.

Table V-24: Research Space Needs Summary—Main Campus

College	Existing Space—ASF	Current Needs Assignable Square Feet	Current Needs Difference from Existing	Projected Needs Assignable Square Feet	Projected Needs Difference from Existing
Academic Affairs[1]	1,174	1,494	(320)	1,494	(320)
College of Agriculture, Human and Natural Sciences	40,314	46,544	(6,230)	54,658	(14,344)
College of Education	704	2,800	(2,096)	3,360	(2,656)
College of Engineering	15,557	15,565	(8)	18,628	(3,071)
College of Health Sciences	582	250	332	700	(118)
Total	**58,331**	**66,653**	**(8,322)**	**78,840**	**(20,509)**

[1]Space assigned to the Center of Excellence for Information Systems

Summary Findings

- The University currently has a deficit in research labs of over 8,300 ASF or 14.2% of the existing space.
- The Agriculture and Environmental Sciences and Chemistry departments have the greatest current need (deficit), followed by Civil and Architectural Engineering, Biology, Electrical Engineering and Psychology.
- Part of the deficits in the natural sciences and engineering disciplines needs are mitigated by space located in the RASP Building that is assigned to the respective college dean for this assessment.
- Although the College of Engineering's net need almost exactly matches its existing space, Civil and Architectural Engineering and Electrical Engineering have deficits of 3,282 ASF and 2,992 ASF respectively.
- The projected research space need (deficit) will exceed 20,500 ASF (or 35.2% of the existing space).
- Although there is no existing research lab space on the AWC, it is recommended that 250 ASF be provided in the future for Speech Pathology and Audiology.

Offices

The office space category includes two components: offices (310) and office service (315). Offices are defined as a space housing faculty, staff or students working at one or more desks, tables or workstations. The office service component is a space that directly serves an office or group of offices as an extension of the activities of those spaces, and includes file rooms, break rooms, copy rooms supply rooms, etc.

The office space needs calculations are based on personnel position types with the application of an office space square foot module, which is sized to accommodate the duties and responsibilities of the particular position. The THEC office guidelines have been applied to each position type to generate the calculated need, with a few exceptions. For example, the consultants have identified certain programs to receive an additional allocation (75 to 100ASF) of office space to accommodate studio space functions; these departments include Art and Music. The office service/support criteria used has been modified to identify specific needs for things like conferencing space, filing and work areas and long term storage as contrasted to the THEC percentage allocation of 30% of the calculated office need.

It is important to note that with many older buildings on campus, the average office size is larger than many of the module sizes specified by the THEC guidelines. Campus wide the average office size is 172 ASF. When using the THEC office modules to generate the office needs, the comparative analysis of measuring against existing space in some cases indicates a surplus of space even though the number of offices required may be insufficient. It

is therefore necessary to balance the guideline calculation against the reality of the average size of existing offices when interpreting the results of this analysis for use in detailed program planning in new construction or renovation (see Tables V-25 and V-26).

Table V-25: Office Space Needs Summary—Main Campus

College	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
College of Agriculture, Human and Natural Sciences	36,844	32,794	4,050	37,981	(1,137)
College of Business	1,866	445	1,421	445	1,421
College of Education	9,150	14,201	(5,051)	15,755	(6,605)
College of Engineering	16,011	21,023	(5,012)	23,868	(7,857)
College of Health Sciences	17,643	17,637	6	22,847	(5,204)
College of Liberal Arts	27,706	30,257	(2,551)	34,110	(6,404)
College of Public Service and Urban Affairs	4,148	2,592	1,556	3,100	1,048
Total	113,368	118,947	(5,579)	138,106	(24,738)

Table V-26: Office Space Needs Summary—AWC

College	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
College of Agriculture, Human and Natural Sciences	310	381	(71)	571	(261)
College of Business	10,691	9,973	718	11,159	(468)
College of Education	1,754	1,713	41	1,903	(149)
College of Health Sciences	8,478	4,213	4,265	5,248	3,230
College of Public Service and Urban Affairs	3,712	4,459	(747)	5,118	(1,406)
Graduate Studies	1,497	1,886	(389)	1,887	(390)
Total	26,442	22,624	3,818	25,886	556

Summary Findings

- The current office space need calculation is 118,497 ASF which is deficient by 5,579 ASF or about 5% of the existing space. This shortfall is almost equally split between offices and office service/support space.
- Current shortages in office space are concentrated within the College of Education and the College of Engineering. The College of Liberal Arts also has a deficit primarily in Music. Teaching and Learning is the department with the greatest need (deficit).
- The projected office space need will be over 138, 100 ASF, a deficit of 24,738 ASF or about 22% of the existing space.
- All of the colleges, with the exception of Business and Public Service and Urban Affairs, will have significant (greater than 1,000 ASF) office deficits in the future. *Note: the two colleges without shortages are headquartered on the AWC and have satellite offices on the Main Campus for faculty teaching on both campuses.*
- The current office space need calculation is 22,624 ASF, a surplus of 3,818 ASF or 16.8% of the existing space.
- Although there is an overall net surplus, the Department of Public Administration has a shortfall in offices and Graduate Studies has a deficit of office support space.
- The College of Health Sciences has a significant surplus of space. This is attributed to large average office sizes (192 ASF) for Speech Pathology; over 1,100 ASF for satellite Nursing offices with no permanent

occupants; and Public Health, Health Administration and Health Sciences having eight more offices than staff.

- The projected office space need will be 25,886 ASF, a surplus of 556 ASF or 2% of the existing space.
- With the exception of the College of Health Sciences, all of the units will have a calculated deficit of office space in the future.

Other Academic Space Types

Other academic department space consists of a variety of room types. No guidelines are included in the THEC modeling process for these types. The consultants have developed formula calculations for most of these, which in many cases is based on student credit hours. For other space types, no formula exists. In these cases, the existing space assigned was assumed to be adequate unless indicated otherwise by the department. The room types in this group include (see Table V-27):

- *Departmental study/reading/resource rooms (400s)*—No formula
- *Media production space (530s)*—Formula: .1 ASF per credit hour
- *Clinic space (540s)*—Formula: 350 ASF minimum plus additional space based on number of participants
- *Demonstration rooms (550s)*—Formula: 1,000 ASF minimum plus .5 ASF per credit hour
- *Animal quarters (570s)*—Formula: 400 ASF minimum plus .25 ASF per credit hour
- *Greenhouses (580s)*—Formula: 400 ASF minimum plus .1 ASF per credit hour
- *Departmental exhibition space (620s)*—Formula: 500 ASF minimum plus .1 ASF per credit hour
- *Departmental meeting rooms (680s)*—Formula: .5 ASF per FTE

Table V-27: Other Space Type Needs Summary—Main Campus

College/Space Type	Existing Space—ASF	Current Needs		Projected Needs	
		Assignable Square Feet	Difference from Existing	Assignable Square Feet	Difference from Existing
College of Agriculture, Human and Natural Sciences					
Library Space					
Special Use Facilities					
Exhibition Space					
Meeting Rooms					
College of Agriculture, Human and Natural Sciences Total					
College of Business					
Special Use Facilities					
College of Business Total					
College of Education					
Library Space					
College of Education Total					
College of Engineering					
Library Space					
Special Use Facilities					
Exhibition Space					
College of Engineering Total					
College of Health Sciences					
Library Space					
Special Use Facilities					
Other General Use Space					

Table V-27: Other Space Type Needs Summary—Main Campus

College/Space Type	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
College of Health Sciences Total					
College of Liberal Arts					
Assembly Facilities					
Exhibition Space					
College of Liberal Arts Total					

5. Academic Support Facility Requirements

Tables V-28 and V-29 and findings present the academic support and administrative space needs by division and major space type category. The summary tables in this section compare the existing ASF to the modeled ASF for the current condition and projected enrollment growth scenarios. A surplus or deficit is identified for each space category under each scenario. Further, this study only analyzed space needs and did not evaluate the quality of existing space nor the suitability of the space.

Additional detailed calculations by department are presented in the Appendix.

Open Labs

The category of open laboratory space (220s) assigned to administrative units consists of rooms that are used primarily unscheduled or open for use by the general University population. The size of these laboratories is based on equipment dimensions and/or on the station size and student count desired and should be determined on an individual basis. Types of rooms included in this category are computer laboratories and reading/writing centers (see Table V-28).

Table V-28: Open Lab Space Needs Summary—Main Campus

Subdivision	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
Academic Affairs	625	625	0	625	0
Administration	1,574	1,574	0	1,574	0
Campus Wide	2,153	1,051	1,102	1,051	1,102
Enrollment Management	1,889	1,889	0	1,889	0
Student Affairs	248	248	0	248	0
Total	**6,489**	**5,387**	**1,102**	**5,387**	**1,102**

Offices

The office space needs calculations are based on personnel position types with the application of an office space square foot module, which is sized to accommodate the duties and responsibilities of the particular position. The THEC office guidelines have been applied to each position type to generate the calculated need, with a few exceptions. For example, the consultants have identified certain programs to receive an additional allocation (75 to 100 ASF) of office space to accommodate studio space functions; these departments are Art and Music. The office service/support criteria used has been modified to identify specific needs for things like conferencing space, filing and work areas and long term storage.

It is important to note that with many older buildings on campus, the average office size is larger than many of the module sizes specified by the THEC guidelines. Campus wide the average office size is 172 ASF, and focusing on administrative offices the average increase to 192 ASF. When using the THEC office modules to generate the office needs, the comparative analysis of measuring against existing space in some cases indicates a surplus of space even though the number of offices required may be insufficient. It is therefore necessary to balance the guideline calculation against the reality of the average size of existing offices when interpreting the results of this analysis for use in detailed program planning in new construction or renovation (see Tables V-29 and V-30).

Table V-29: Administrative Office Space Needs Summary—Main Campus

Subdivision	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
Academic Affairs	30,910	24,438	6,472	26,881	4,029
Administration	14,410	13,552	858	13,552	858
Advancement	3,788	4,278	(490)	4,278	(490)
Auxiliary Services	3,077	3,653	(576)	3,963	(886)
Business and Finance	19,522	20,115	(593)	20,115	(593)
Campus Wide	16,523	0	16,523	0	16,523
Enrollment Management	20,104	18,052	2,052	20,408	(304)
President	20,309	16,186	4,123	16,186	4,123
Student Affairs	17,872	18,631	(759)	19,767	(1,895)
Total	**146,515**	**118,904**	**27,611**	**125,149**	**21,366**

Table V-30: Administrative Office Space Needs Summary—AWC

Subdivision	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
Academic Affairs	11,242	7,656	3,586	7,855	3,387
Campus Wide	263	0	263	0	263
Total	**11,505**	**7,656**	**3,849**	**7,855**	**3,650**

Summary Findings

- The current administrative office space need calculation on the Main Campus is 118,904 ASF, a surplus of 27,611 ASF or 18.8% of the existing space.
- The current office space surplus is concentrated in offices. The office support space calculation indicates the current inventory just meets the overall need and there are significant deficits (over 1,000 ASF) in three divisions. It is presumed that the support needs are, in part, addressed through the office space surplus.
- Institutional Advancement is the only division with an office space shortage.
- A significant portion of the office space surplus is from 16,523 ASF of unassigned space (12,937 ASF in offices and 3,586 ASF in office support). Most of the unassigned office space is located in Hankal Hall (currently programmed as swing space) and Kean Hall (future home for One Stop and the Welcome Center). Other areas include inactive and unusable space. If the unassigned space is excluded the current surplus is reduced to 11,088 ASF.
- The average existing office size is 192 ASF. This is significantly greater than most of the THEC office size modules and accounts for most of the surplus in office space.
- If the unassigned offices are excluded, the current ratio of the number of staff to the number of offices is approximately 1.2. This ratio is in line with what may be expected for office space.
- The projected office space need will be 125,149 ASF, a surplus of 21,366 ASF or 14.6% of the existing space. If the unassigned space is excluded the surplus is reduced to 4,844 ASF.
- Four of the eight divisions indicate a significant deficit (over 1,000 ASF) of support space.
- The AWC has 11,505 ASF of office space assigned to the administrative units. Current needs calculations indicate a surplus of 3,849 ASF or 33.5% of the existing space. The projected needs reduces the surplus to 3,650 ASF.
- There is 263 ASF of unassigned office space on the AWC.

Library

Most of the methods for estimating library space needs utilize one set of factors for collections, another for readers, and a third for service space. This approach is used by the THEC methodology and used in the master planning process. The library analysis is based on collections data reported to the consultants by the University. A growth factor of 6% for the collection was identified for the ten year planning period. The analysis includes only

space classified as library (room use codes 400's). Offices and other space types, such as training rooms, are included with those respective space categories.

The THEC guidelines for calculating library stack space for housing collections assumes a sliding scale starting with .10 ASF per volume to .05 ASF per volume. Reader space calculations are based on a percentage of total student and faculty population that may utilize the library at any one time as follows: 10% factor for student FTE and 5% to the total fulltime equivalent faculty. The THEC guidelines for reader station sizes are prescribed at 25 ASF for standard seating and 35 ASF for all other types (group and reserved). The consultants applied a composite factor of 29.5 ASF per reader station.

THEC prescribes that 12.5% of the total collection and reader station calculated space need be allocated for service space for areas like processing and technical services. The consultants applied the 12.5% factor. Also, a café/lounge space is calculated using a recommendation of two (2) ASF per user. The results for the main library space needs are displayed in the tables below. *Note: departmental libraries are included under the academic space needs; see Technical Memorandum 4.2.3* (see Tables V-31 and V-32).

Table V-31: Main Library Space Needs—Main Campus

Space Type	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
Stack Space	54,008	59,075	(5,067)	60,532	(6,524)
Reading/Study Space	1,734	14,972	(13,238)	17,819	(16,085)
Lounge Space	0	1,114	(1,114)	1,326	(1,326)
Support Space	3,546	9,395	(5,849)	9,960	(6,414)
Total	**59,288**	**84,555**	**(25,267)**	**89,637**	**(30,349)**

Table V-32: Main Library Space Needs—AWC

Space Type	Existing Space—ASF	Current Needs: Assignable Square Feet	Current Needs: Difference from Existing	Projected Needs: Assignable Square Feet	Projected Needs: Difference from Existing
Stack Space	12,772	6,015	6,757	6,015	6,757
Reading/Study Space	312	3,105	(2,793)	3,891	(3,579)
Lounge Space	0	231	(231)	290	(290)
Support Space	968	1,169	(201)	1,274	(306)
Total	**14,052**	**10,519**	**3,533**	**11,469**	**2,583**

Summary Findings

- The Brown-Daniel Library on the Main Campus has 59,288 ASF of existing space classified under the library space category. The current calculations indicate a need (deficit) of 25,267 ASF or 42.6% of the existing space.
- All four of the library space subcategories indicate a significant space deficit (greater than 1,000 ASF). Reading/Study space has the greatest need.
- The projected need calculation for the main library increases the deficit to 30,349 ASF or 51% of the existing space.
- The AWC library has 14,052 ASF of space classified as library. A net overall space surplus is indicated for both current and projected scenarios. However, deficits are noted in three of the four subcategories with the reading/study space being the greatest.

Campus Wide Space

The Master Plan includes a group of shared space types that supports the entire campus operation and therefore may be shared by multiple users. Assigning these spaces to a specific unit could present misleading findings and therefore this grouping is used. This space category, entitled Campus Wide, includes a variety of areas used by all students, faculty and staff. The THEC modeling process does not address these types of space, which include areas that are typically considered to be general use, student services areas, auxiliary areas or physical plant

operations areas. The space needs results are summarized in the tables below with narrative findings following. *Note: athletic/recreation and Residential space are also space types that would be included in this grouping, however these have been analyzed separately as part of the Master Plan. Please Sections C and D below* (see Tables 33 and V-34).

Table V-33: Campus Wide Space Needs—Main Campus

Subdivision	Existing Space—ASF	Current Needs		Projected Needs	
		Assignable Square Feet	Difference from Existing	Assignable Square Feet	Difference from Existing
Assembly	18,804	7,799	11,005	8,807	9,997
Exhibition	0	5,299	(5,299)	6,307	(6,307)
Food/Dining	38,895	40,404	(1,509)	47,943	(9,048)
Merchandising	19,791	7,948	11,843	9,461	10,330
Meeting Room	17,081	6,551	10,530	7,713	9,368
Student Lounge	12,594	10,597	1,997	12,615	(21)
Support Facilities	62,948	63,439	(491)	71,951	(9,003)
Total	**170,113**	**142,036**	**28,077**	**164,797**	**5,316**

Table V-34: Campus Wide Space Needs—AWC

Subdivision	Existing Space—ASF	Current Needs		Projected Needs	
		Assignable Square Feet	Difference from Existing	Assignable Square Feet	Difference from Existing
Assembly	4,445	3,610	835	3,893	552
Exhibition	0	1,777	(1,777)	1,848	(1,848)
Food/Dining	5,007	2,851	2,156	3,554	1,453
Merchandising	502	3,330	(2,828)	4,180	(3,678)
Meeting Room	1,156	1,665	(509)	2,090	(934)
Student Lounge	0	1,899	(1,899)	2,353	(2,353)
Support Facilities	6,817	4,672	2,145	5,300	1,517
Total	**17,927**	**19,804**	**(1,877)**	**23,218**	**(5,291)**

Assembly and Exhibition Space

Assembly is defined as any room designed and equipped for the assembly of large numbers of people (610's). This includes auditoriums, arenas, and chapels. *Note: assembly space such as theaters and concert halls that are a part of an academic program are covered in the academic space needs section*. Exhibition spaces (620's) are used for exhibition of materials, works of art, or artifacts and specimens intended for use by students and the campus community.

The master plan guideline for assembly space uses a core allowance of 2,500 ASF plus an additional one ASF per FTE student FTE. The guideline applied to the exhibition space calculation is 1 ASF per FTE student.

The space in this category includes facilities at Floyd-Payne Campus Center, the Davis Humanities Building, H.M. Love Center, as well as the AWC auditorium.

Summary Findings

- Assembly space on both campuses is sufficient to address current and future needs.
- Neither campus has exhibition space that is not assigned to an academic unit. In both cases, needs have been identified for this type of space.

Food/Dining

Facilities used for food and dining are defined as space used for eating or that directly serves a food facility (dining area) as an extension of the of the activities in that facility, including kitchens and other preparation areas, cold storage and freezers, refrigeration rooms, dishwashing rooms, food serving areas, etc. (Room Use Codes 630's). Space included is located in the Floyd-Payne Campus Center and the Rudolph and Wilson residence halls.

The master plan guideline for food/dining space assumes that 20% of the FTE students and 12.5% of the faculty and staff at any one time. This user rate is then multiplied by a space factor of 12 ASF per FTE.

Summary Findings

- The Main Campus has 38,895 ASF of existing space classified as Food/Dining. The current space calculations indicate a shortfall of just over 1,500 ASF (or 3.9% of the existing).
- The projected needs identify a deficit of over 9,000 ASF or 23.3% of existing space.
- The AWC food service space is sufficient.

Other Student Services Space

This group of space categories provide space for the various functions and the room use code designations that are typically related to other student services such as student lounge (650's), merchandising areas like the bookstore (660's), and meeting space (680's). Student government office space is covered in the office space category.

The master plan guidelines use an ASF/FTE factors for student lounges of 2 ASF/FTE student and 1.5 ASF/FTE for merchandising. Meeting room space includes core areas of 2,500 ASF plus .5 ASF per FTE.

Summary Findings

- The amount of student lounge space on the Main Campus is adequate; however at the AWC a significant need (deficit) was identified.
- Merchandising and meeting room space was determined to be sufficient on the Main Campus. Needs (deficits) were identified at the AWC. Note: AWC does not have any designated meeting room space.

Campus Support Space

This category of space includes support facilities, which provides centralized space for various auxiliary support systems and services of a campus to help keep all programs and activities operational. Included are areas for central computing/telecommunications (Room Use Codes 710's) and physical plant space that include room use codes 720 through 765 but excludes parking decks. If storage space (730's) is not space assigned to and controlled by physical plant operations, it is counted in other space categories such as other department space, library, or athletics.

Most guidelines for support space calculations apply a percentage of all square footage on campus. The master plan guidelines use this same methodology and apply factors of 5% for the sum of the calculated need for room types 100 through 600, and a 4% factor for room types 800 and 900.

Summary Findings

- The Main Campus has 62,948 ASF of space classified as Support. The current calculated need indicates a very small shortage of just under 500 ASF. However, the future needs indicate a deficit of over 9,000 ASF.
- Support space on the AWC is sufficient.

B. Student Housing Demand Analysis

1. Overview

The planning team developed a student housing demand model utilizing proprietary demand-based programming methodology to quantify market demand by unit type. The model projects demand under the assumption that residential facilities would be renovated or developed to match student preferences. The model derives demand based on the student survey responses and projects demand onto the current enrollment.

2. Methodology

B&D identified a target market of students most likely to be both interested in and able to reside in student housing, given the appropriate housing accommodations and rental rates. The target market includes students whose survey responses matched the following criteria:

- 18-24 years old

- Single, without children
- Enrolled full-time
- Non-homeowners
- Renting an apartment, condominium, or house and paying $350+ per month in rent
- Living in an apartment, condominium, or house owned by someone other than a spouse or family member

Using these criteria, B&D identified a target market sample from the survey respondents that was extrapolated across the total TSU student population. Using the survey results and TSU enrollment as inputs, B&D used the demand-based programming model to develop the market demand for student housing.

3. Findings and Recommendations

Unit Types and Rates

Eight unit-type options were tested in the survey, as shown in Table V-35 All monthly rents are per person rates. Students were also given the option of selecting "I would prefer to live elsewhere off campus." Information was provided about the number of bedrooms, number of bathrooms, sample floor plans and monthly rates.

Table V-35: Unit Types Surveyed

Unit Type	Occupancy	Rate / Semester
Traditional	Single	$2,100 - $2,200
Traditional	Double	$1,900 - $2,000
Semi-suite	Single	$2,200 - $2,300
Semi-suite	Double	$2,000 - $2,100
Suite	Single	$2,400 - $2,500
Suite	Double	$2,200 - $2,300
2BR 1BA Apartment	Single	$3,320 - $3,420
4BR 2BA Apartment	Single	$3,160 - $3,260

Occupancy Coverage Ratio

Occupancy coverage ratios ("OCR") measure the market risk of a project. A 1.0:1 ratio means that 100% occupancy can be achieved, but specific market factors or modest decreases in enrollment will likely lead to immediate vacancy problems. A range of 1.05 to 1.20:1.00 has been applied to the demand model, depending on unit configuration, to mitigate development risk due to potential enrollment fluctuations, potential for new student-focused housing developments to open, or to potential alterations in University policies that may have a direct impact on housing demand.

Student Housing Demand

Table V-36 illustrates the demand for student housing using the Fall 2014 enrollment of 9,196. The model projected a maximum demand (demand ceiling) of 3,429 student beds, approximately 37% of the total enrollment. B&D has applied an OCR of 1.05:1.00 to the demand for traditional-style units, 1.10:1.00 for semi-/full-suite-style units and 1.20:1.00 for apartment-style units. The recommended bed count (highlighted in orange) is 3,129 beds, representing a 147 bed deficit based on the 2,982 on-campus beds currently available at TSU. The existing mix (50% traditional-, 25% suite-,25% apartment-style) does not align with the bed demand from students, after applying a filter to survey responses so first-time first-year students are placed only in traditional-style rooms, while sophomores are placed in either traditional- or semi-/full-suite-style beds.

Table V-36: Student Housing Demand—Fall 2014 Enrollment

Current Enrollment	Current Enrollment	Maximum Potential Capture Rate	Maximum Potential Demand	Traditional	Semi-/ Full-Suite	Apartment
First-time First-Year	1,399	75%	1,049	1,049	0	0
Sophomores	2,053	58%	1,181	278	902	0
Junior	1,282	47%	608	35	184	388
Seniors / Special Undergraduates	2,513	19%	485	76	143	266
Graduate / Other	1,949	5%	106	29	51	26
TOTAL	9,196	37%	3,429	1,468	1,280	680
OCCUPANCY COVERAGE RATIO				1.05	1.10	1.20
RECOMMENDED BED COUNT			3,129	1,398	1,164	567
EXISTING BED COUNT			2,982	1,498	740	744
NET DEMAND (SURPLUS/(DEFICIT))			(147)	100	(424)	177
RECOMMENDED BED MIX			100%	45%	37%	18%
EXISTING BED MIX			100%	50%	25%	25%

Table V-37 illustrates the demand for student housing using enrollment projections provided by TSU using identical filters, occupancy coverage ratios, and policies outlined in the preceding paragraphs. The increase of approximately 800 students (total enrollment = 10,001) at TSU results in a maximum demand of 3,736 beds with a recommended bed count of 3,394, and a deficit of 412 student beds. The recommended bed mix includes fewer traditional- and apartment-style beds and more suite-style beds than the existing housing program and the above Fall 2014 demand.

Table V-37: Student Housing Demand—Future Enrollment

Future Enrollment	Projected Future Enrollment	Maximum Potential Capture Rate	Maximum Potential Demand	Traditional	Semi-/ Full-Suite	Apartment
First-time First-Year	1,300	75%	975	975	0	0
Sophomores	2,340	58%	1,346	246	1,100	0
Junior	1,790	47%	848	49	257	542
Seniors / Special Undergraduates	2,300	19%	444	69	131	244
Graduate / Other	2,271	5%	123	34	59	30
TOTAL	10,001	37%	3,736	1,373	1,547	816
OCCUPANCY COVERAGE RATIO				1.05	1.10	1.20
RECOMMENDED BED COUNT			3,394	1,308	1,406	680
EXISTING BED COUNT			2,982	1,498	740	744
NET DEMAND (SURPLUS/(DEFICIT))			(412)	190	(666)	64
RECOMMENDED BED MIX			100%	39%	41%	20%
EXISTING BED MIX			100%	50%	25%	25%

Recommendations

Based on the housing demand analysis and the condition of the residential facilities the Master Planning Team recommends reducing the number of traditional-style beds from the on-campus housing stock and replacing/renovating existing facilities with suite-style beds. To guide implementation, TSU should develop a phasing plan, system-wide financial analysis and detailed schedule for replacing and upgrading housing

C. Campus Recreation Demand Analysis

1. Overview

B&D developed a campus recreation demand model utilizing proprietary Demand-Based Programming (DBP) methodology to translate survey-measured demand for various recreation activities into spatial requirements. The main objectives of the model are to prioritize these activities and recommend sizes for a variety of spaces based on their importance to the TSU student population.

2. Methodology

The DBP model first projects the survey results for the frequencies and times of use of various recreational facilities onto the student population. The model then discounts the results by using a discount factor to project total actual demand for each activity (the average difference between respondents' stated activity levels and their expected actual activity levels, based on the planning team's past experience with similar surveys). Finally, the model translates these demand numbers into quantities of spaces, depending on the type of activity and the space required. The Demand-Based Programming model's output was combined with information gathered from interviews, discussions with TSU staff members and B&D's professional judgment gained through experience on numerous other projects. The DBP is used to develop specific recommendations for the types and quantities of spaces that accurately reflect recreational sports demand.

The final output of the DBP analysis outlines total activity space demand based on the relative priority of different activity types among survey respondents. These priorities are classified by both "Depth of Demand," which represents the number of people who participate in an activity at least twice a week, and "Breadth of Demand," which represents the number of people who participate in an activity, even if only occasionally. Therefore, Depth of Demand illustrates the extent to which each activity is integral to the lifestyles of survey respondents, while Breadth of Demand illustrates the general popularity of the activity throughout the total respondent population.

Table V-38: Depth and Breadth of Demand, by Activity

Activity	Depth	Breadth	Priority
Cardiovascular Equipment	53%	78%	1st
Weight Machines	46%	69%	2nd
Free Weights	45%	71%	2nd
Indoor Running or Walking	43%	71%	2nd
Group Fitness	41%	70%	2nd
Mind, Body Instructional Classes	39%	67%	2nd
Outdoor Walking Trails	31%	63%	3rd
Rock Wall Climbing	28%	62%	3rd
Bowling	25%	58%	3rd
Recreation Swimming	25%	59%	3rd
Martial Arts	25%	49%	3rd
Outdoor Bike Trails	24%	53%	3rd
Water Aerobics	24%	53%	3rd
Basketball	22%	49%	3rd
Open Green Space	21%	51%	3rd
Lap Swimming	20%	45%	3rd
Volleyball	19%	44%	4th
Sand Volleyball	18%	43%	4th
Ultimate Frisbee	15%	40%	4th
Outdoor Tennis	14%	46%	4th
Badminton	13%	36%	4th
Indoor Soccer	12%	34%	4th
Racquetball	11%	37%	4th
Roller/floor Hockey	10%	29%	5th
Squash	8%	25%	5th

3. Findings and Recommendations

Overall, self-directed fitness activities emerged as the indoor activity spaces that are core to student recreational routines. Cardiovascular equipment, weight machines, and free weights are the activities most preferred by TSU students. These activities provide students with the most flexibility in terms of ease of use because they do not require scheduling and can be done on an individual basis. Students indicated that outdoor walking trails would be the most utilized outdoor spaces.

When both Depth and Breadth of Demand were analyzed, the indoor (black font) and outdoor (red font) survey-tested activities ranked as follows in Table V-38.

The Priority Reconciliation of Demand represents the total peak demand for facilities for each activity with the prioritization of the activities given by the Depth and Breadth of Demand analyses. The highest priority spaces are accommodated to a greater extent than lower priority spaces in the final program recommendations: the first priority activities are accommodated at 75% to 85% of peak demand, second priority activities at 55% to 65%, third priority activities at 40% to 50%, fourth priority activities at 25% to 35% and the fifth priority at 10% to 20% of peak demand.

Table V-39 combines the depth, breadth, and prioritization of activity spaces into spatial recommendations. Due to the nature of space types and based on B&D's experience in similar projects, cardiovascular equipment, free weights and weight machine spaces have been combined and the square footage reduced based on survey responses for activity overlap. Additionally, group fitness and mind/body/instructional class spaces have been combined and the resultant square footage reduced.

Table V-39: Demand by Activity

Activity	Priority	Accommodation of Peak Demand			Peak Demand	Space Type	Allocation		
Cardiovascular Equipment	1st	75%	to	85%	3,300	SF	2,500	to	2,800
Weight Machines	2nd	55%	to	65%	5,400	SF	3,000	to	3,500
Free Weights	2nd	55%	to	65%	5,600	SF	3,100	to	3,600
Indoor Running or Walking	2nd	55%	to	65%	6	lanes	3	to	4
Group Fitness	2nd	55%	to	65%	5,800	SF	3,200	to	3,800
Mind, Body Instructional Classes	2nd	55%	to	65%	6,000	SF	3,300	to	3,900
Outdoor Walking Trails	3rd	40%	to	50%	18	lanes	7	to	9
Rock Wall Climbing	3rd	40%	to	50%	71	ropes	28	to	35
Bowling	3rd	40%	to	50%	9	lanes	3	to	4
Recreation Swimming	3rd	40%	to	50%	8	lanes	3	to	4
Martial Arts	3rd	40%	to	50%	6,100	SF	2,400	to	3,100
Outdoor Bike Trails	3rd	40%	to	50%	17	lanes	7	to	9
Water Aerobics	3rd	40%	to	50%	10,300	SF	4,100	to	5,200
Basketball	3rd	40%	to	50%	19	courts	8	to	9
Open Green Space	3rd	40%	to	50%	13,300	SF	5,300	to	6,700
Lap Swimming	3rd	40%	to	50%	8	lanes	3	to	4
Volleyball	4th	25%	to	35%	7	courts	2	to	3
Sand Volleyball	4th	25%	to	35%	11	courts	3	to	4
Ultimate Frisbee	4th	25%	to	35%	11	courts	3	to	4
Outdoor Tennis	4th	25%	to	35%	50	courts	12	to	17
Badminton	4th	25%	to	35%	18	courts	4	to	6
Indoor Soccer	4th	25%	to	35%	4	courts	1	to	1
Racquetball	4th	25%	to	35%	21	courts	5	to	7
Roller/floor Hockey	5th	10%	to	20%	4	courts	0	to	1
Squash	5th	10%	to	20%	11	courts	1	to	2

Cardio + Free Weights + Weight Machines					14,300	SF	8,600	to	9,900
Group Fitness + Mind / Body					11,800	SF	6,500	to	7,700

The facility gap analysis in Table V-40 assesses the student demand for facility spaces in comparison to what is currently offered on campus. The gap analysis shows that large gaps exist between current facility offerings and the true recreational needs of students. Indoor spaces for weight and fitness, multi-purpose rooms, rock climbing wall, basketball and volleyball courts, and recreational pool space have deficits. Outdoor spaces, such as walking/biking trails, outdoor tennis courts, sand volleyball courts and multi-purpose outdoor fields, also do not meet the demand needs of TSU students.

Table V-40: Gap Analysis

Indoor Spaces	Type of Space	Existing	Recommendation	Surplus / (Deficit)
1 Weight Training + Fitness	SF	3,071	8,600 - 9,900	(5,500 - 6,800)
2 Group Fitness + Mind/Body Class Space	SF	1,435	6,500 - 7,700	(5,065 - 6,265)
	rooms	1	3 - 4	(2 - 3)
3 Rock Climbing Wall	ropes	0	28 - 35	(28 - 35)
4 Bowling	lanes	3	3 - 4	(1)
5 Indoor Basketball	courts	0	8 - 9	(8 - 9)
6 Volleyball	courts	0	2 - 3	(2 - 3)
7 Pool	lanes	0	6 - 8	(6 - 8)
Outdoor Spaces	**Type of Space**	**Existing**	**Recommendation**	**Surplus / (Deficit)**
1 Outdoor Walking Trails	lanes	0	7 - 9	(7 - 9)
2 Outdoor Bike Trails	lanes	0	7 - 9	(7 - 9)
3 Outdoor Tennis	courts	7	12 - 17	(5 - 10)
4 Sand Volleyball	courts	1	3 - 4	(3 - 4)
5 Multi-Purpose	fields	1	3	(2)

Recommendations

Based on the recreation demand analysis and the capacity of existing recreation facilities the Master Planning Team recommends reducing building an additional 60,000 GSF of indoor recreation space, along with outdoor fields. The University should prepare an outline program, including a phasing schedule, detailed programming, financial analysis, and fee tolerance assessment to support the recommended improvements.

D. Athletics Need Analysis

In order to continue to provide support to student athletes, remain competitive within the OVC, and meet the mission and vision outlined by TSU, the Master Planning Team recommends development of the following athletic facilities:

- +/- 25,000 seat on-campus football stadium;
- 5,000 square feet of additional support facilities;
- 1,750 GSF Athletic Training Center;
- 3,250 GSF Strength & Conditioning Center;
- Indoor basketball/volleyball practice facility, adjacent to the Gentry Complex;
- Facility upgrades to the locker rooms, athletic training, and strength and conditioning spaces in the Gentry Complex;
- Permanent seating, renovated dugouts, and completion of deferred maintenance in and around the Softball facility; and
- Resurfacing of both the indoor and outdoor tracks.

To support the Athletics facility recommendations outlined, the Master Planning Team recommends that the following tasks be performed:

- Outline program development for reuse/renovation of spaces within the Gentry Complex; and
- Detailed analysis for an on-campus football stadium, including analysis of seating capacity, premium seating mix, site selection and capacity, market demand for additional events, implementation options and a detailed funding and operations analysis.

E. Parking Space Projections

1. Parking Generation Rates

Generation rates are used to determine parking demand. The Institute of Transportation Engineers (ITE), in its Parking Generation (Third Edition, 2004) provides a source for generation rates for a variety of land uses. Colleges and universities are included in these land uses.

In order to determine the anticipated future number of spaces needed for the TSU campus, the planning team reviewed the parking ratios contained in the Parking Generation Manual. In the manual, an average rate of 0.33 spaces per total number of students, faculty, and staff (school population) is given for college campuses in suburban areas and 0.22 spaces per school population in urban areas. Based on the location of campus, TSU may be categorized someplace between the suburban and urban ratios. The range of vehicles per school population was between 0.22 and 0.38 for suburban campuses and 0.14 and 0.19 for urban campuses. The ITE data for suburban universities/colleges was obtained from eight (8) samples described as four-year institutions and the data for urban campuses was obtained from three (3) samples. This data setis the basis for the recommended future parking rate for campus.

2. Parking Generation Rate Development

The current parking ratio on campus is 0.42. This master plan proposes to maintain the existing parking ratio for determining future requirements, based on the recommended parking ranges as discussed above. The recommended ratio is on the high side of the national average but, due to the non-traditional student body makeup and community events held on campus. It could be argued that, based on the national data, TSU already supports more than sufficient parking on campus to meet its current demand. In fact, TSU might be able to support a small reduction in spaces by eliminating some of the smaller lots. This would bring TSU into alignment with national standards. However, the number of parking spaces and their location with respect to office and classroom destinations provides fuel for one of the most hotly debated issues on campus.

The Main Campus provides approximately 4,445 parking spaces. Parking lots are generally found on the periphery of campus, allowing the campus core to be relatively free of vehicular traffic. As the campus grows to the 12,000 headcount enrollment, unless mass transit and shuttle systems are developed, TSU will need to increase parking by a similar percentage to continue to provide 42% of headcount. When TSU reaches 12,000 headcount, it will need to provide approximately 5,000 parking spaces; a 1,200 car increase. There are several strategies which TSU can employ to ease parking congestion.

- During the traditional teaching day (8:00 AM to 3:00 PM) it is difficult to find parking on the Main Campus. During the evening hours (5:00 PM to 10:00 PM) it is difficult to find parking at the AWC. Both locations, however, are virtually empty during their non-traditional hours. If, as a part of the academic Master Plan, more courses were offered during the evening at the Main Campus and during the day at AWC, little or no additional parking would be required (the same is true for academic and office facilities as well).
- Additional parking can be constructed on the TSU Main Campus in a variety of locations which are indicated on the accompanying map. These new parking sites could be surface lots or multi-level parking ramps. If sustained growth is anticipated, especially beyond the 12,000 headcount number, TSU should consider building at least one multi-level parking garage. This will undoubtedly require charging a fee for parking and probably doing so on a graduated basis (i.e., monthly parking rates are higher the closer the parking space is to the core of campus). On the AWC, there is no alternative other than building multi-level parking ramps.

F. Utility Infrastructure Requirements

1. Domestic Water and Fire Protection

Introduction

The TSU domestic and fire protection water distribution system analysis reviews the present infrastructure conditions and proposed Master Plan campus flow characteristics and capacities. This analysis is used to identify system vulnerabilities that exist in terms of water volumes and pressures and propose possible future improvements to alleviate problems arising from these vulnerabilities. As in the Existing Campus Conditions section of this Master Plan, the water distribution system analysis includes both the public and private portions of the water system.

Analysis

The proposed Master Plan values are broken up into two planning periods (Short Range and Long Range). As such, the Short Range Planning Period will include the New Health Sciences building. The Long Range Planning Period will include the remaining proposed buildings.

All standard building improvements (domestic and fire protection water service lines) necessitated by TSU capital improvement projects are assumed to be designed and financially planned for within the associated project schedule and budget. Therefore, these proposed improvements and their corresponding costs have not been included in this Master Plan.

Items or areas of concern are as follows:

- Requirements (flow, installation of backflow prevention devices, installation of master and MXU (radio read) meters on domestic services and/or fire services) of local governing authorities on future development. In general, the local jurisdiction having authority (i.e., Metro Fire Marshall, Metro Water Services) is an unknown variable on future development. Requirements for flows, backflow prevention devices, meters, etc. may play a role in the water distribution system, but cannot be predicted. Finally, open channels of discussion should be maintained with Nashville Fire Department Fire Marshall and Metro Water Services employees concerning metering and backflow prevention.
- The proposed future replacement of Hale Football Stadium (Long Range Planning Period) lies on an existing major utility corridor extending along The 33rd Avenue corridor from Albion Street to John A. Merritt Boulevard and north to Dr. Walter S. Davis Boulevard. One of these utilities is an 8-inch water main that could be rerouted, but rerouting the existing utilities in this corridor would be a large scale, costly project. The Master Plan recommends that the football field be built over this corridor to work around these existing utilities.
- *See Table V-41 for a general summary of availability and required improvements of the existing utility systems for master planned build-out of facilities.*

2. Electrical Distribution

Electrical System Capacity and Growth

The existing TSU electrical power distribution system is at approximately 70% redundancy between its two (2) substations. Additional demand can be added to the distribution system without exceeding the two (2) substations' capacity, but the redundancy will obviously decrease. A change in the distribution system operating procedures may also be required if certain sections of the Campus become more heavily loaded than others (i.e., distribution switching may be required during heavy loading periods). New buildings can be fed from the following methods of distribution:

- Use existing padmount switches that have spare switch compartments;
- Use existing padmount switches that become available due to demolition of building; and
- Install new padmount switches into the existing underground loop system by splicing into existing manholes and extending the underground loop and use the new padmount switches to feed the new buildings.

Table V-41: Utility Infrastructure Matrix

	bldg #	Description	Sanitary sewer	Water	Gas	chilled water	steam	electric	storm
Northwest Quadrant	1	IRC/RBP		relocation required	existing available				
	2	Tower	existing available; minor	existing available	extension required				stormwater detention and water
	3	Wireless	relocation/removal may be	existing available	existing available	tunnel extension required;	tunnel extension required; proposed	main line extension required, services	quality required; discharge point
	G1	Parking garage	required;	existing available	existing available	proposed services required	services required	required	available to the northwest
	4	Future academics	may require minor extensio	existing available	extension required	building siting driven by tunnel location; tunnel available, service	building siting driven by tunnel location; tunnel available, service	main line available, service required	stmwtr det and WQ required, extension required to discharge
	5	health sciences	may require minor extensio	existing available	existing available	tunnel and service available	tunnel and service available	main line and service available	stmwtr det and WQ required, discharge point available to south
Northeast Quadrant	6	future academics	existing available	existing available	existing available	tunnel available, service required	tunnel and service available	main line available, service required	stmwtr det/WQ required,
	7	future academics	existing available	existing available	extension required	tunnel available,service required	tunnel and service available	main line and service available	stmwtr det/WQ required, discharge point available to north
	8	future admin	existing available	existing available	minor extension required	tunnel available, service required	tunnel available, service required	main line available, service required	stmwtr det/WQ required, extension required to discharge
	9	Hale Stadium	significant relocation required at north building addition	extension likely required; may want to close loop	extension required	tunnel and/or service required	tunnel and/or service required	main line available, but may require relocation; service required	stmwtr det/WQ required, discharge point available to north, relocate main line storm sewer
Southwest Quadrant	10	academic bldg	existing available	existing available	extension required	tunnel and service available	tunnel and service available	main line and service available	stmwtr det/WQ required,
	11	engineering/STEM	existing available	existing available	extension required	tunnel and service available	tunnel and service available	main line and service available	stmwtr det/WQ required, discharge point available to west
	12	Future academics or special use	existing available	existing available	extension required	tunnel available, service required	tunnel available, service required	main line available, service required	stmwtr det/WQ required, discharge point available to west
	13	future education	existing available	existing available	extension required unless it's an expansion of Clay (pending Clay has ex. adequate gas	same as gas	same as gas	same as gas	stmwtr det/WQ required, discharge point available to west
	14	residential	extension required	existing available	extension required	tunnel and/or service required	tunnel and/or service required	main line extension required, service required	stmwtr det/WQ required, extension required to discharge
Southeast Quadrant	15	Clement Hall	existing available	existing available	existing available	tunnel and service available	tunnel and service available	main line and service available	stmwtr det/WQ required, discharge point available to east
	16	residential quad	relocation/extension require	existing available, though it may require off-site source	extension required for east half of quad	building siting driven by tunnel location; tunnel available, service	building siting driven by tunnel location; tunnel available, service	main line extension required, services required	stmwtr det/WQ required, discharge point available to east
	17	rec center	existing available	existing available	existing available	tunnel available, service required	tunnel available, service required	main line available, service required	stmwtr det/WQ required, discharge point available to west
	18	student/visitors center	relocation required	existing available	existing available	tunnel available, service required	tunnel available, service required	main line available, service required	stmwtr det/WQ required, discharge point available to
	G2	parking garage	existing available	existing available	extension may be required; availability unknown off-	tunnel and/or service required	tunnel and/or service required	main line extension required, services required	stmwtr det/WQ required, extension required to discharge

NOTES GENERAL

1. VERIFY AVAILABLE CAPACITY OF ANY AND ALL UTILITIES PRIOR TO MOVING FORWARD WITH DESIGN.
2. VERIFY CONDITION OF UTILITY IN WHICH PROPOSED BUILDING IS PROPOSED TO CONNECT. IT MAY REQUIRE IMPROVEMENT OR REPLACEMENT.
3. DISCUSS POSSIBLE COST-SHARING WITH PUBLIC UTILITY AGENCIES OR DEVELOPERS (ESPECIALLY IN SOUTHEAST QUADRANT).
4. EXPLORE OPPORTUNITIES TO GENERATE EXCESS POWER AND SELL TO PUBLIC UTILITY AGENCIES.
5. VERIFY THAT SITE WILL DISCHARGE TO EXISTING STORM SEWER OR COMBINED SEWER.
6. STUDY STORMWATER DETENTION/WATER QUALITY REQUIREMENTS. EXPLORE OPPORTUNITIES FOR REGIONAL TREATMENT TO MINIMIZE SMALLER SYSTEMS. EXPLORE OPPORTUNITIES FOR LOW IMPACT DEVELOPMENT TO REDUCE REQUIRED VOLUMES.
7. EXPLORE OPPORTUNITIES TO CAPTURE AND STORE RAINWATER FOR REUSE.
8. STUDY DRAINAGE REGIME TO ENSURE THAT DEVELOPMENT CAN FLOW IN PREFERRED DIRECTION. IT MAY BE REQUIRED TO GO DIFFERENT DIRECTION.

New Building Demand

Total new building area for near term development is projected to be approximately 100,000 square feet. The area of existing buildings to be demolished (Elliot Hall and a portion of Clement Hall) is 75,300 square feet. The overall difference between new and demolished buildings is 24,700 square feet.

There are many factors that determine a building's power demand, such as building purpose, type of heating, LEED certification, etc. In the near term, the increase in demand will have little impact to the existing distribution system due to the minimal amount of additional building square footage.

Electrical System Capacity Recommendations

The two limiting factors in the TSU electrical distribution system are the substation transformers and the distribution loop cable. The substation capacity will not be exceeded by the near term construction demands. However, the projected long term development cannot be accommodated by the existing distribution system. Once the existing system's capacity is exceeded, improvements to the existing system are no longer feasible. Overhaul of the system would be required, and this would include replacement of both substations (with larger transformers) and replacement of all underground cabling.

The projected northeast housing and support expansions are located far from the underground distribution system. Therefore, it is recommend to have a separate service from the utility for this area and not feed these buildings from the existing underground distribution system.

Electrical System Improvement Recommendations

Six projects have been proposed in previous studies and are listed as follows:

- **Project #1:** Complete underground ductbank connection between Substations No. 1 West and No. 2 East.
- **Project #2:** Replace switchgear in West and East substations with motor operated switches; add motor operators to eight (8) existing S&C loop switches.
- **Project #3:** Add additional roof top units (RTUs) and motor operators at thirteen (13) existing S&C loop switches and connect into existing supervisory control and data acquisition (SCADA) system.
- **Project #4:** Add a standby generator at the East substation.
- **Project #5:** Install miscellaneous loop switches for more flexibility and reliability.
- **Project #6:** Replace structures and transformers in the West substation.

See Table V-41 for general summary of availability and required improvements of the existing electrical distribution system for master planned build-out of facilities.

3. Sanitary and Storm Sewer

Introduction

The TSU sanitary and storm sewer systems analysis looks at present infrastructure conditions and proposed Master Plan campus flow characteristics and capacities. This analysis is used to identify system vulnerabilities that exist in terms of condition and capacity and propose possible future improvements to alleviate problems arising from these vulnerabilities. As in the Existing Campus Conditions section of this Utility Master Plan, the systems analysis includes both the public and private portions of the sanitary and storm sewer systems.

Analysis

All standard building improvements (sanitary sewer service and storm sewer lines) necessitated by TSU capital improvement projects are assumed to be designed and financially planned for within the associated project schedule and budget. Therefore, these proposed improvements and their corresponding costs have not been included in this Master Plan.

Note, however, that there may be infrastructure improvements required such as regional stormwater detention facilities, main line extensions or relocations.

See Table 4-41 for general summary of availability and required improvements of the existing sanitary and storm sewer systems for master planned build-out of facilities.

4. Steam and Chilled Water

Analysis

Steam

In the near term, approximately 100,000 square feet of new building development is proposed. Without taking diversity into account, this is within the capacity of the existing equipment in the central plant as well as the distribution system.

Adding all the proposed new buildings and removing the indicated buildings results in a load that exceeds the limiting capacity of the DA. This load would also be exceed the capacity of the plant, if the largest working boiler were to be out of service on a peak day. The distribution system has adequate capacity in the main line and the branches for the proposed load.

Thus, there is capacity for the addition of a number of buildings on the TSU campus. The distribution system is adequate in any direction, so there is no restriction as to where new buildings can be added. Before the last third of the proposed buildings could be added, a renovation of the boiler house to replace or enlarge the DA would be necessary. Furthermore, if the University requires back-up capacity, an additional boiler would be required. This could be provided by renovating the existing coal fired boiler or by installing another gas fired package boiler. According to TSU personnel, the permit for the facility has been kept current.

Chilled Water

The total chiller capacity is adequate for the existing campus cooling load. However, the chilled water pumps are not always able to distribute enough water to serve the buildings due to inadequate DT on the chilled water. Some pump capacity can be recaptured by changes made at building air handlers and in building operation schemes. It is recommended that TSU proceed with planned DT improvements in the central plant. They should also initiate a study of the building systems to identify equipment that can be modified to utilize the chilled water more effectively. Even with building improvements, however, there is little capacity remaining for new buildings at the existing chiller plant. Therefore, changes will be required before additional load can be added to the system.

The near-term building proposals in this plan will add little new building area. However, adding all of the new buildings shown in this plan can be expected to load the system beyond the limits of the existing chillers as well as the pumps. As additional buildings are added, the system should be analyzed in detail for both current condition and capacity, and determination should be made as to when the system would need expansion. Possible solutions include:

- Installing additional chillers and pumps in the existing chiller plant;
- Installing new chillers and pumps in a satellite plant; and
- Installing new chillers in each individual building.

There is limited room available for new chillers at existing plant. Implementing the requested improvements to the boiler plant could further limit space.

The merits of these options depend on issues pertaining to the chilled water distribution system. The chilled water header leaving the plant is already beyond its ideal capacity. Most of the proposed buildings are located to tie to an existing branch of the distribution system by utilizing the existing downshafts and manholes. The distribution system was designed with a trunk line that runs the length of campus without any reduction in size. This is ideal for installing a second chiller plant on the opposite end of the system from the existing plant. This new chiller plant could be stand-alone, or it could be housed in a proposed building near the intersection of John Merritt and 33rd Avenue, such as the Recreation/Wellness Center.

Installing chillers in each new building is the simplest short-term solution, but the central plant advantages of load diversity, economy of scale, and centralized maintenance would be lost. In addition, each building would be saddled with the aesthetic and acoustic burden of a cooling tower. A compromise might be to install one large chiller on each branch that feeds into the system and partially unloads that part of the distribution system. For example, the library could serve as a mini-plant for the east branch if a chiller were installed there.

No expansion is currently planned at AWC. Therefore, there are no capacity issues to address there.

Infrastructure improvements may be required.

See Table V-43 for general summary of availability and required improvements of the existing steam and chilled water systems for master planned build-out of facilities.

5. Communications

Analysis

The existing infrastructure cabling is completely scalable, provided some repairs are made. The cabling can be distributed through the tunnel system. Each of the proposed buildings will require copper and fiber optic cable backbone extended to their respective head end rooms. Each shall have different requirements based on its size and function of the buildings.

Any expansion to the Heiman Street area will require additional conduit from the Main Campus, as there is not adequate space to deliver any other cabling.

The network server room will require expansion based on the large expansion effort projected in the Master Plan.

The Phone PBX is currently near its capacity limits. The phone system will need to be replaced, partially or in whole, in order to meet the demand of the growth efforts.

See Table V-41 for general summary of availability and required improvements of the existing communications for master planned build-out of facilities.

6. Natural Gas

Analysis

Because new buildings can be put on the campus central heating plant, there is no plan to expand the natural gas infrastructure. The line to the central plant appears to be adequate to provide for increased load there. If additional capacity is required, it will be the responsibility of Piedmont Gas to upgrade gas piping, and no cost would be incurred by TSU.

See Table V - 8 for general summary of availability and required improvements of the existing gas distribution system for master planned build-out of facilities.

This page intentionally left blank.

VI. Preliminary Physical Master Plan

A. Alternative Concepts

The objective of creating and evaluating alternatives is to test how the land and existing buildings can accommodate future program requirements and to evaluate alternative configurations for the arrangement of facilities on the campus, consistent with the goals and issues identified in previous Sections.

1. Campus Character

The overall TSU campus character is in large part defined by those physical elements, both building and landscape, which make the University special or unique, and those that foster a sense of authentic human attachment and/or belonging. Study of alternatives helps to define these place-making characteristics to create beneficial patterns that solidify the University's location, history, culture, and physical form. The alternatives also document valid possibilities that have been considered, so that future adjustments to the Master Plan are informed by the thought process that produced the plan. The Master Planning process identifies many important physical features and relationships, but additional design standards for campus land use, landscape, building aesthetics and/or furnishings and way-finding systems are recommended to provide consistency of implementation over time. Future campus growth should build upon these characteristics using them as guides to accentuate the sense of place and belonging on campus.

2. General Planning Concepts

The TSU Main Campus has developed around a compact ordered central core defined by the buildings that frame and define a central green space, now shaded by mature trees. The larger campus extends out from the central core with varying degrees of organization around green space or corridors. The historic central core is a preferred model for refinements to the campus structure as new buildings and facilities are added in the future. The campus has both urban and suburban characteristics, and these basic land use forms can be applied to create a progression of places on the campus that progress out from the central core to engage the surrounding community and the adjacent river valley occupied by the University's agricultural facilities. Emphasis on the landscape, both land form and plantings to frame views and define places, will be an important compliment to the basic layout of buildings and circulation.

The Avon Williams Campus (AWC) is a true urban environment, not yet configured into a true campus. Future additions of buildings and parking can draw on the central core of the Main Campus, applying the quadrangle open space character of the core, framed by structures, in a more compact form to the smaller site of the urban campus.

3. Alternative Concepts

The planning team developed two alternative plans each for the Main Campus and the AWC that the alternatives encompass the opportunities for TSU to meet anticipated demands consistent with the University's strategic goals. Each alternative applies the needs identified during the assessment phase of planning to the existing campuses, taking into consideration outmoded or low functioning facilities. Both Main Campus alternatives build on the basic organization and direction set in the 2008 Campus Master Plan. The AWC was not covered by the alternatives provided in the 2008 Campus Master Plan. An important direction of that plan was guidance on how the Main Campus can become more effective by concentrating new construction around the current central core quadrangle, thereby increasing the density, without eliminating the landscape organization of exterior spaces.

Main Campus

The Main Campus alternatives layout potential configurations for academic and support facilities, housing, recreation and athletics, as well as roads, parking walkways and gathering places. The alternatives consider both buildings that meet current needs as identified in the needs assessments and locations for future buildings or facilities that will reinforce the plan over the long term. The locations for future buildings represent concepts for how the campus core can be strengthened in the future as enrollment grows and additional space is needed. The intent is to identify the value of these locations, so that they can be reserved for the highest future use.

A new Research and Sponsored Programs Corridor (RASP Corridor), composed of several buildings is proposed as a new quadrangle or corridor on the campus. Potential buildings include a new Research Tower, Institute for Research and Creativity building (IRC), Research Partnership Building (RPB), secure proprietary Wireless Center, new STEM building to replace the current Engineering building and a Research Corridor Parking Structure. The location and layout of this corridor will ultimately be determined by the program as it develops.

A basic premise of all of the alternatives is that proposed buildings frame quadrangle spaces, strengthening a sense of connectivity. They are served by perimeter parking areas that provide easy access, while separating vehicles from the enriched pedestrian environment. The layout of needed and future buildings around central quadrangles or promenades creates a hierarchy of spaces and sense of campus unity. The campus core is an open space reserved exclusively for pedestrians, with virtually no public vehicular access. The campus core acts as the hub from which corridors radiate out to the campus periphery. The corridors establish clear routes and wayfinding for pedestrians and vehicles. The aesthetic imagery of the corridors is vital, since they serve as the front door and unifying green heart of the campus and academic buildings.

Each of the alternatives reflects the need, identified in the housing assessment, to replace four existing residence halls, Boyd, Eppse, Watson and Wilson. The alternatives suggest different potential layouts of new residence halls to not only replace the old halls but also accommodate the additional beds that will be needed at such time as the University achieves its projection of 10,000 students. Each of the alternatives concentrates housing in three locations: the current area occupied by Boyd, Eppse and Watson, the area of Hale and Rudolph and the apartments northeast of the campus.

Each alternative proposes a new Recreation Center near Keane, at the southeast corner of 33rd Avenue and John Merritt Boulevard. This location is at the heart of the student services zone of the campus, convenient to residential and commuting students, as well as campus visitors participating at programs that may use the new facilities. While this is the best location on the campus for a recreation center, it is also the site of the Wesley center. Since location of this facility is highly important to its success in meeting student and faculty needs, the proposed location should be strongly considered as the preferred site. Final development of the facility should consider relocating the Wesley Center to a comparably accessible location, as well as options to design around the center, integrating it into the design of the area.

Main Campus Alternative One

General Summary

This option emphasizes defining new building sites around the existing academic core, which stretches from Hankel Hall to the north to Hale Residence Hall to the south. Alternative One continues the process of migrating all parking to the perimeter, to support the enrichment of a pedestrian-friendly inner core. Emergency and systems service to all core buildings would be maintained. Alternative One enhances John Merritt Boulevard as the primary vehicular access to the campus core. The formal gateway to campus remains at the intersection of 28th Avenue North, Ed Temple Boulevard and John Merritt. This intersection is currently less than attractive, and presents an undesirable first impression of the TSU campus.

Improvement of the gateway can be enhanced significantly by improving the southwest corner of 28th Avenue and John Merritt Boulevard, either by acquiring the property or through collaboration with a private developer can create a more attractive area, representative of the campus. The Jefferson corridor development plan (JUMP), could also contribute to the quality of the gateway. A full upgrade of John Merritt Boulevard would include:

- Removal and relocation of the power poles and communication cables.
- Creating a wider tree lined promenade along John Merritt, using easements on non-university property will also establish a strong entry experience.
- Planting of seasonal landscaping at accent locations.
- Introduction of new lighting standards, which support banners celebrating TSU alumni or faculty who have contributed to the campus history.
- Enhanced wayfinding systems directing visitors to their immediate destination.

The gatehouse would be moved east of 31st Avenue, to contain the proposed acquisition land and sites of the Future Student Services building and the Recreation Center. The official arrival point to the campus would be a new arrival court at the intersection of what is now 33rd Avenue, at the entrance to the new proposed Hale Stadium. With construction of a new Recreation Center, this will become a new campus focal point at the center of the visitor and student services precinct of campus. A new parking lot would be south and east of the Recreation Center site, along with a garage beneath the entrance plaza to the rebuilt Hale Stadium. Alternative One suggests new gated entries at the intersection of Walter Davis Boulevard and 39th Avenue North as well as at the entrance to the Olympic Plaza, Gentry Athletic Center and the parking lots on the north side of campus.

The focus for new buildings identified in the needs assessment, is the proposed Health Sciences building to house nursing and other related programs. Alternative One proposes to locate that building along the northwest edge of the campus core, in the green space between Elliot and Queen Washington. That location helps to reinforce the framework that defines the core, and places the new building close to Queen Washington, which could provide overflow office space for the new building if needed. This plan includes removal of Elliot to balance the added academic space with removal of outmoded, low functioning space that the facilities assessment has identified as high priority for replacement. Once Elliot is removed, its location would become a prime site for a future academic building, a time such as enrollment and program development would generate a demand for additional academic building space. Other identified needs are for a Recreation Center, separate Student Services and visitors Center, and new, modern Residence Halls to replace several of the existing facilities.
This alternative shows one potential layout for the RASP Corridor that incorporates the existing RASP building and is centered on the western arrival by the Power Plant and adjacent to a proposed site for the new Health Sciences building. While forming an important part of the framework for the campus core, this corridor also provides secure space with easy access from off campus for partnering entities using space in the RPB.

Alternative One suggests two possible locations for the needed recreation fields. One is at the campus gateway, in the northeast corner of John Merritt Boulevard and Ed Temple Drive. This location places the large green expanse of recreation fields, with the color and motion of their sports activity at the front door of the campus, but somewhat separated from the proposed Recreation Center. The other location, shown on Alternative One-B, proposes to locate the recreation fields between the existing 32nd Avenue and 31st Avenue adjacent to the residence halls and closer to the Recreation Center. In this location, the fields expand the visual impact of Hadley Park, while separated from it. Alternative One-B shows the existing church removed. This option would afford the University more parking close to both the proposed Recreation Center and recreation fields located in the southeast quadrant of the campus. Alternative One illustrates the possibility of creating a Living Learning opportunity within the larger residential zone, adjacent to the academic core. This alternative shows a location for two buildings, which could accommodate academic space, meeting and support space in addition to residence halls. Alternative One and Alternative One-B show two variations on potential residence hall layout. One works around the existing church, the other presumes acquisition of the church site.

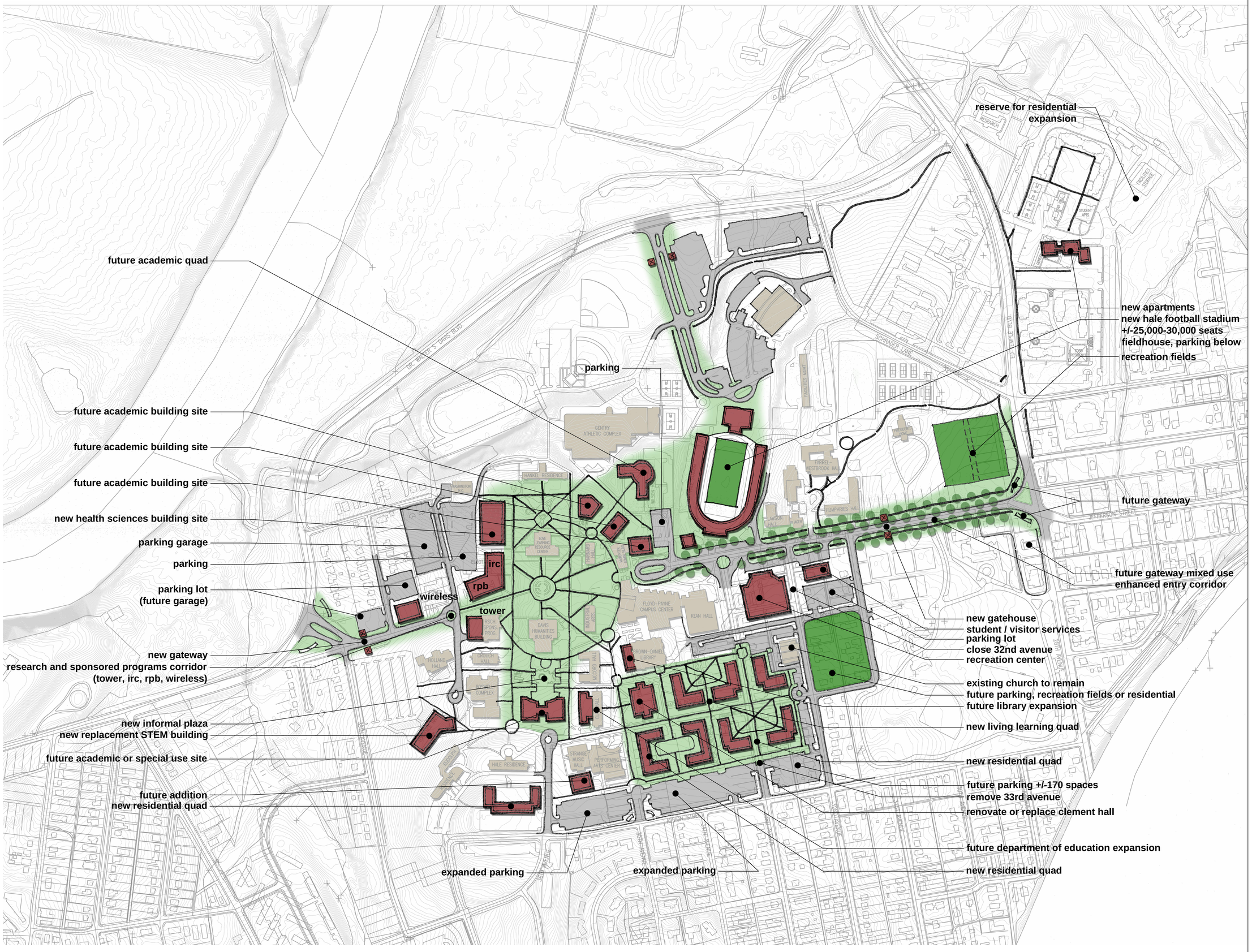
General Effects

- **Effect on Existing External Roads:** The existing roadway network is altered by absorption of 32nd and 33rd Avenues into the campus. The concept suggests that 31st Avenue could remain, or be replaced by an internal road that provides access between John Merritt Boulevard and Albion Street. Some of the existing streets could be retained as part of internal campus circulation. This concept would eventually incorporate the entire neighborhood between TSU and Hadley Park. Other external roads would remain unaltered.
- **Effect on Existing Parking:** Parking along the periphery and/or roadway corridors permits easy access to all portions of campus. This alternative increases parking proportionately with projected increase in enrollment to 10,000, however, greater concentration of parking close to the proposed Recreation Center, similar to that shown in Alternative One-B better distributes parking close to the key destination point of the Recreation Center and Hale Stadium. Adding a parking garage as part of the Research and Sponsored Programs Corridor will improve parking access to the west side of campus, especially with the expanded demand suggested by the proposed RASP program.
- **Roadway Closure:** No existing on campus roads are proposed to be closed. The campus core, as well as the expansion area to the southeast, will still accommodate access for maintenance, shipment and safety related vehicles.

- **Impact on Pedestrian/Vehicular Conflicts:** The restriction of the central core for pedestrians reduces the potential for pedestrian/vehicle conflicts. Conflicts along the corridors should be minimized with careful attention given to the design and layout.
- **Impact on Campus Functional Organization:** Alternative One provides opportunity to consolidate programs and organize the campus by program compatibilities. It also reorganizes housing by redeveloping the housing in the southeast quadrant of campus into a new state-of-the-art residential community of new residence halls with opportunity for a sub-area with a living learning environment. It also provides for important recreation needs with a new Recreation Center, located within the student services core, at the Main Campus arrival plaza, close to a major concentration of housing. Adding controlled gateways at David Boulevard (north), and 39th Avenue and Davis (west) and expanding the campus to the east to 31st Avenue, moving the gatehouse to the east as well, consolidates the campus boundary improving security.
- **Access to High Use Facilities:** The proposed parking layout locates parking and roadway access close to the high use facilities, while keeping vehicles out of the center of campus.

See Figure VI-1, Alternative 1 Main Campus.

MAIN CAMPUS MASTER PLAN ALTERNATIVE 1



Legend:

- Existing Buildings
- Roadway Improvements
- New Building

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VI - 1

WOOLPERT

Main Campus Alternative Two

General Summary

This option also emphasizes defining new building sites around the existing academic core and also continues the process of migrating all parking to the perimeter, to support the enrichment of a pedestrian-friendly inner core. Emergency and systems service to all core buildings would be maintained. Alternative Two creates a secondary campus core framed by the Research and Sponsored Programs Corridor in the northwest corner, establishing it as a more defined precinct, with more direct access from off campus. Alternative Two enhances John Merritt Boulevard as the primary vehicular access to the campus core, in a very similar way as shown in Alternative One. The formal gateway to campus remains at the intersection of 28th Avenue North, Ed Temple Boulevard and John Merritt. This alternative includes gaining control of the entire intersection to create a major gateway that improves the first impression of the TSU campus.

Major differences in Alternative Two are the separate RASP Corridor precinct, a smaller concentration of housing in the southeast corner and greater concentration of parking near the proposed Recreation Center. The RASP Corridor extending from the Central Core to the northwest will require acquisition of the adjacent neighborhood. In Alternative Two the new Health Sciences building proposed overlaying the current site of Elliot Hall. That location would require removal of Elliot Hall prior to construction of the new building, unless the Health Sciences building is built in phases, in which case the initial phase could be built in the parking lot south of Elliot Hall. Elliot Hall could then be removed, leaving the balance of the building area for a subsequent phase or phases of the Health Sciences building. That location helps to maintain the framework that defines the core, and places the new building close to Queen Washington, which could provide overflow office space for the new building if needed. The green space between Elliot and Queen Washington is reserved as a prime site for a future academic building, at such time as enrollment and program development generate a demand for additional academic building space.

While the residential neighborhood in the southwest corner is smaller, Alternative Two proposes expanding the residential area at Rudolph and Hale by adding two new residence halls, to create a larger neighborhood there. Both new residence halls can be built without having to remove an existing building, allowing minimal disruption in transferring students from existing halls to new. This alternative also focuses recreation fields in the southeast corner of the campus close to housing and relatively close to the Recreation Center.

General Effects

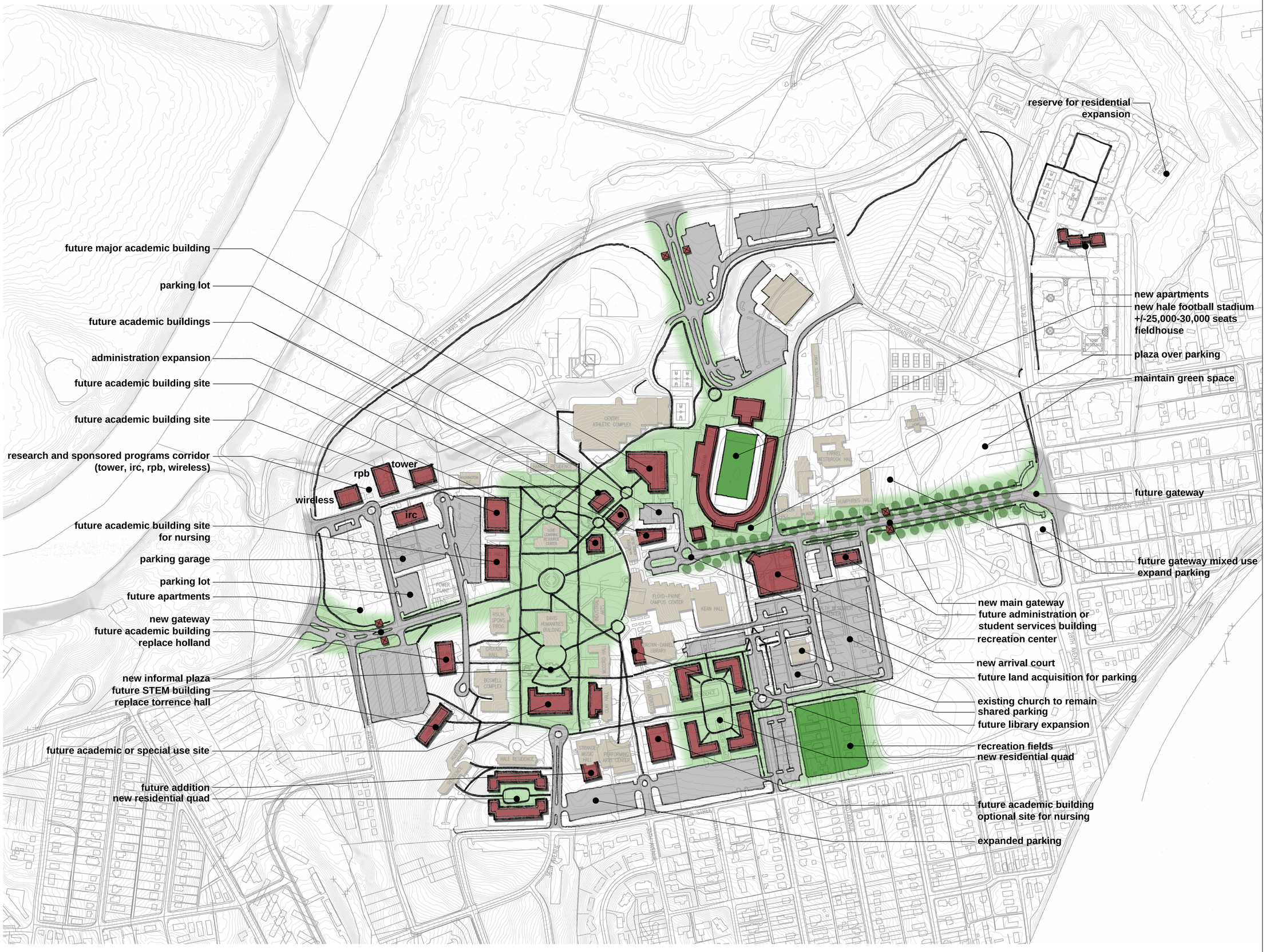
- **Effect on Existing External Roads:** The existing roadway network is altered by absorption of 32nd and 33rd Avenues into the campus. As in Alternative One, 31st Avenue could remain, or be replaced by an internal road that provides access between John Merritt Boulevard and Albion Street. Some of the existing streets could be retained as part of internal campus circulation. This concept would also incorporate the entire neighborhood between TSU and Hadley Park; other external roads would remain unaltered.
- **Effect on Existing Parking:** Parking along the periphery and/or roadway corridors permits easy access to all portions of campus. This alternative increases parking proportionately with projected increase in enrollment to 10,000. Alternative Two provides a significant amount of parking close to the proposed Recreation Center and Hale Stadium. Adding a parking garage as part of the Research and Sponsored Programs Corridor will improve parking access to the west side of campus, especially with the expanded demand suggested by the proposed RASP program.
- **Roadway Closure:** No existing on campus roads are proposed to be closed. The campus core, as well as the expansion area to the southeast, will still accommodate access for maintenance, shipment, and safety related vehicles. The paving of 32nd Avenue would remain in place, as a campus roadway, two blocks south to provide access to parking and the recreation fields.
- **Impact on Pedestrian/Vehicular Conflicts:** The restriction of the central core for pedestrians reduces the potential for pedestrian/vehicle conflicts. Conflicts along the corridors should be minimized with careful attention given to the design and layout.
- **Impact on Campus Functional Organization:** Alternative Two provides opportunity to consolidate programs and organize the campus by program compatibilities. It also reorganizes housing by redeveloping the

housing into two neighborhoods on the south side of campus. A new state-of-the-art residential community of new residence halls replaces Boyd, Watson and Eppse, while two new residence halls are added south of Rudolph and Hale, creating a more substantial neighborhood there. A new Recreation Center located within the student services core provides for important recreation needs, at the Main Campus arrival plaza, close to a major housing area and recreation fields. Adding controlled gateways at David Boulevard (north), and 39th Avenue and Davis (west) and expanding the campus to the east to 31st Avenue, moving the gatehouse to the east as well, consolidates the campus boundary improving security.

- **Access to High Use Facilities:** The proposed parking layout locates parking and roadway access close to the high use facilities, in particular Hale Stadium and the proposed new Recreation Center, while keeping vehicles out of the center of campus.

See Figure VI-2, Alternative 2 Main Campus.

MAIN CAMPUS MASTER PLAN ALTERNATIVE 2



Legend:

- Existing Buildings
- Roadway Improvements
- New Building

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VI - 2

WOOLPERT

Avon Williams

AWC is a simple campus currently composed of one building and associated parking. The assessment data for both academic space needs and building condition do not document the need for any additional space, and in fact show some surplus space. However, long term goals for this campus, and proposals for future program additions suggest a long term potential need for additional building space and parking. Therefore, the alternatives illustrate the potential to add one building to the AWC, either with addition of land for parking, or without any additional land. Both alternatives illustrate possibilities for developing a small central campus open lawn and tree area, or quadrangle, to create a sense of campus and a focal social place between the buildings.

Based on the assessment and priorities expressed by University officials, both alternatives assume that the incubation center will be relocated off campus to an office or office/warehouse area with more compatible land use and access.

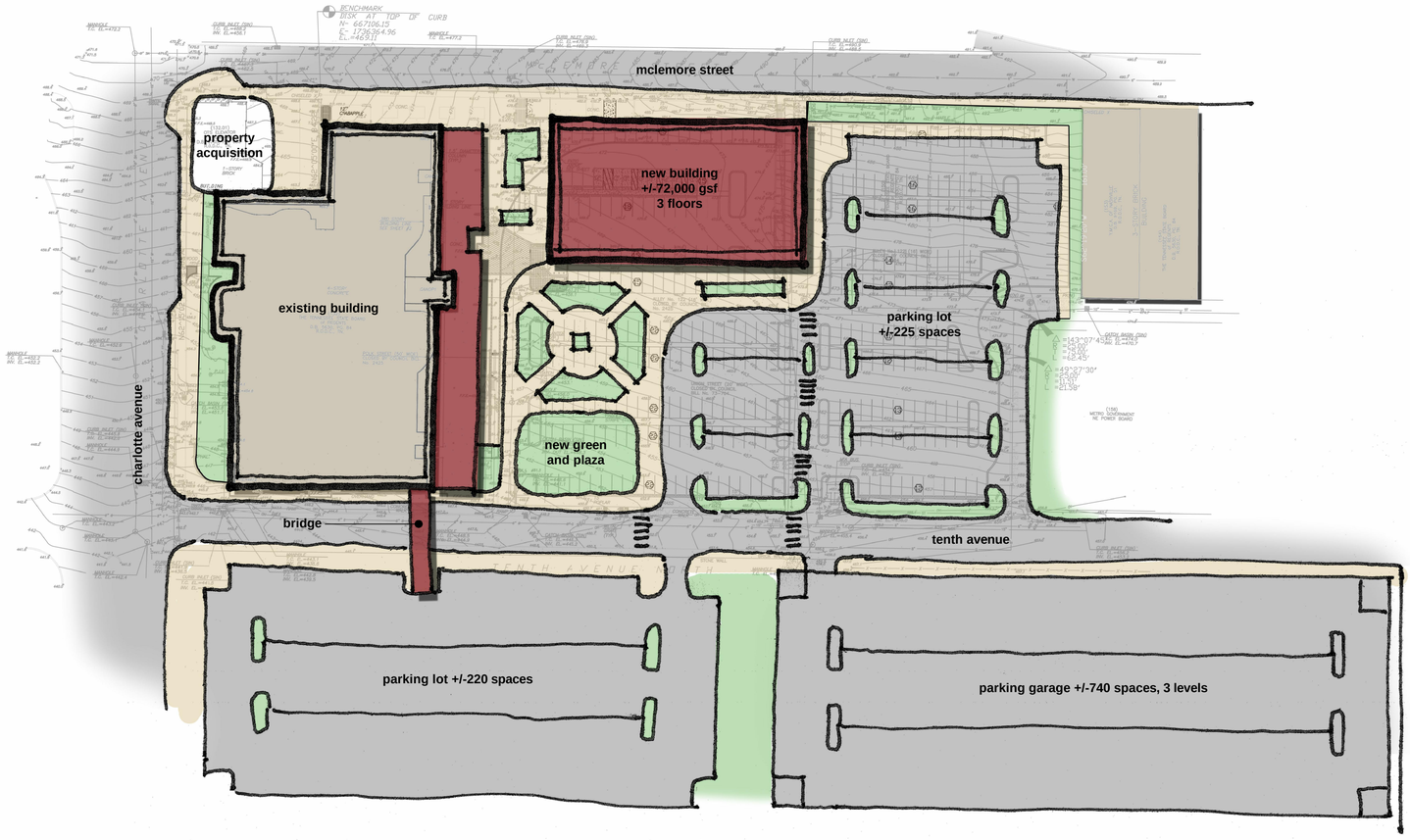
Avon Williams Alternative One

Alternative One illustrates the potential for development if the University acquires an adjacent parking lot currently owned by Lifeway Church. That parking area provides adequate land for either surface parking, or as the alternative shows, a seven-hundred and fifty car parking garage. Alternative One illustrates the potential for a future building to bridge the vertical separation between McLemore Street and the parking area, strengthening the streetscape and framing a small courtyard that connects the entry of the existing building with that of a future building. A substantial amount of parking is provided north of Tenth Avenue, with the bulk of the parking south of Tenth. An elevated walkway crossing over Tenth Avenue is shown, but will have to be above the ground elevation of the parking lot to provide adequate overhead clearance for the roadway. The green quadrangle space being open on two adjacent sides to parking is only partially contained.

Alternative One also proposes acquisition of the corner lot at Charlotte Avenue and McLemore Street o make it part of the campus. While that lot may have limited potential, it could accommodate a small addition to the existing building, and a much stronger presence for the University on the intersection.

See Figure VI-3, Alternative 1 Avon Williams.

AVON WILLIAMS ALTERNATIVE 1



Legend:

- Existing Buildings
- Roadway Improvements
- New Building

NORTH

0 50 100 150

GRAPHIC SCALE IN FEET

TSU

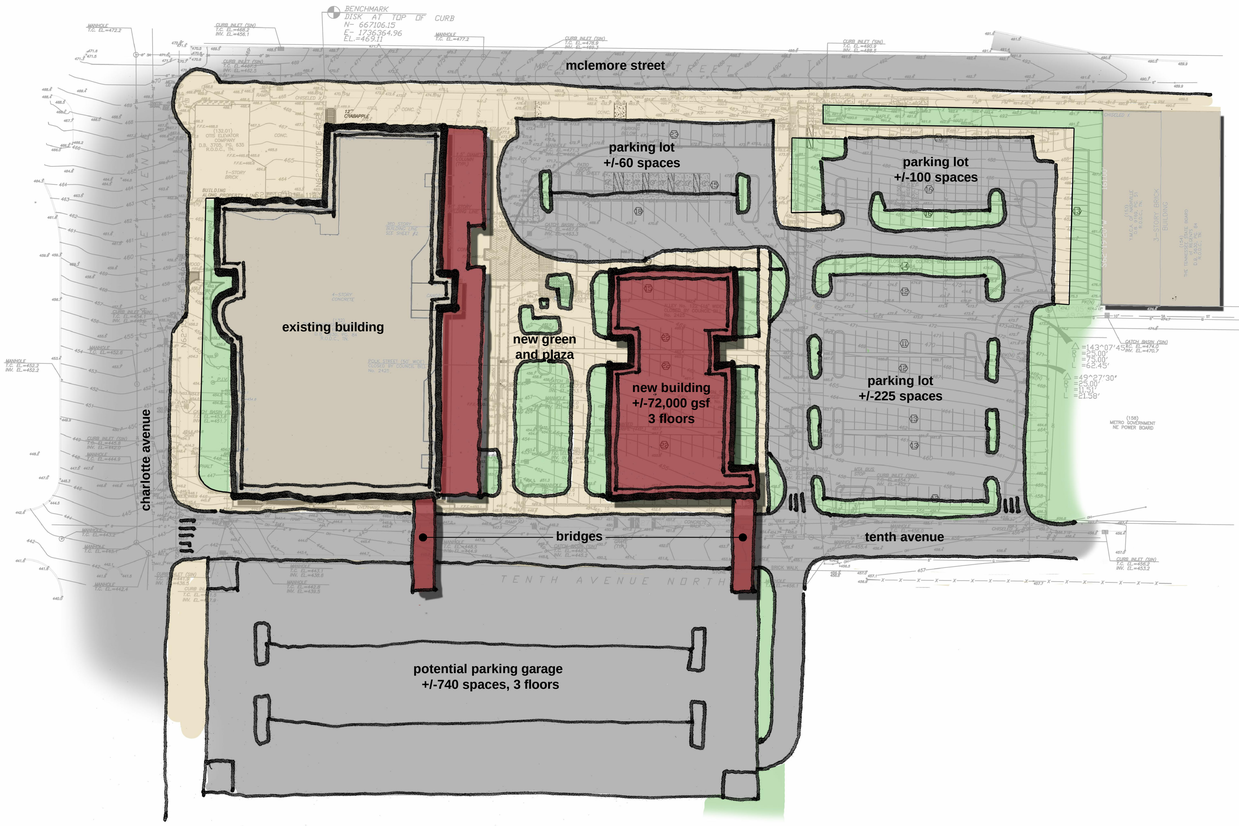
Tennesse State University
Campus Master Plan

May 2016

Figure VI - 3

WOOLPERT

AVON WILLIAMS ALTERNATIVE 2



Legend:

- Existing Buildings
- Roadway Improvements
- New Building

NORTH

0 50 100 150

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VI - 4

WOOLPERT

Avon Williams Alternative Two

Alternative Two retains most of the existing parking on the site, locating the site for a future building, on what is now parking, to frame a small quadrangle green plaza space that is also framed at the south end by a proposed parking garage. This alternative provides less total parking than Alternative One, but is more compact, optimizing currently owned land. Also, a parking garage on current University land south of Tenth Avenue can be connected to the existing building, and the future building site, by more convenient elevated walkways.

See Figure VI-4, Alternative 2 Avon Williams.

B. Preferred Plan

The Alternative Master Plan Options were reviewed and discussed with representatives of TSU, to identify priorities and components of the Preferred Physical Master Plan. The Preliminary Master Plan combines concepts from several alternatives. The plan emphasizes four key governing concepts:

- Strengthen the Main Campus arrival experience, from the ceremonial gateway at John Merritt Boulevard and Ed Temple Boulevard, through an enhanced entry corridor along Merritt, to an expanded arrival court at Merritt and 33rd Avenue.
- Reinforce the academic core of the campus by making it the priority location for new and future academic buildings.
- Invest in student life improvements that will make TSU more competitive in housing, recreation and student services and encourage improved enrollment and retention.
- Acquire two adjacent land areas to enable expansion of housing and recreation and future programs, while stabilizing the University's perimeter, improving security.

The Preferred Master Plan translates the programmatic and space needs assessment and recommendations into physical facilities concepts to meet short term needs, as well as to frame the long term growth and sustainability of the campus. The Preferred Plan identifies locations for the facilities identified as current and near term needs, as well as locations that should be reserved for future facilities.

See Figure VI-5, Preferred Plan Main Campus, and Figure VI-6 Preferred Plan Avon Williams.

MAIN CAMPUS PREFERRED MASTER PLAN

Legend:

- Existing Buildings
- Roadway Improvements
- New Building

north gate #3
service gate #5
future undergrad apartments
future facilities or graduate and married housing
typical service & emergency gate #1
potential family apartments
Health & Wellness Center to be reused for athletics
renovate
parking
pedestrian gate #2
pedestrian gate #1
perimeter fence
future academic building site
renovate
tennis facility access drive
future hale football stadium
future administration expansion
future ACAD building
future academic building site
research and sponsored programs corridor (tower, irc, rpb, wireless)
parking lot
new health sciences building site
future ceremonial gateway
enhanced mixed use widened & enhanced entry corridor
demolish stack and bag room parking lot
new gatehouse
student / visitor services
parking garage
arrival plaza
new recreation center
close 32nd avenue
research and sponsored programs corridor (tower, irc, rpb, wireless)
west gate #2
replace Holland Hall with new academic building
future parking garage
future parking lot or garage
service gate #2
2 multi-purpose fields
future academic building
new informal plaza
replace Torrence Hall with new engineering or STEM building
new restricted loop drive
buses, weekend
residential quad
4-6 buildings / 1200-1600 beds
traditional or suite
potential for living learning quad
future academic or special use site
new residential quad
suite style
remove 33rd avenue
renovate or replace clement hall
future department of education expansion
service gate #3
service gate #4
south gate #4
expanded parking

NORTH

0 200 400 600
GRAPHIC SCALE IN FEET

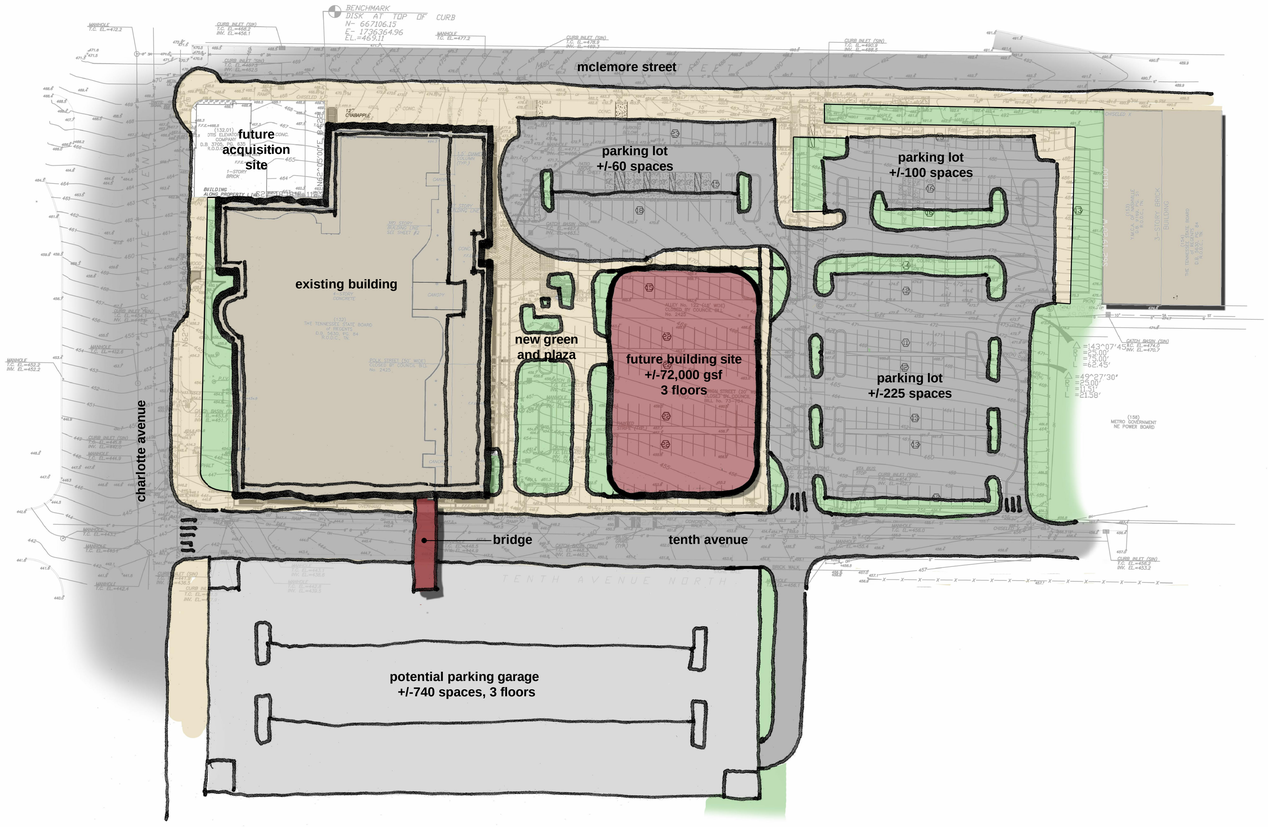
TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VI - 5

WOOLPERT



AVON WILLIAMS PREFERRED PLAN

Legend:

- Existing Buildings
- Roadway Improvements
- Potential Building

NORTH

0 50 100 150

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VI - 6

WOOLPERT

1. Acquisition

A major recommendation of the Preferred Master Plan is acquisition of property on the east side of campus and the northwest corner.

- The **Eastern Acquisition Area** extends from 33rd Avenue to Hadley City Park and from John A Merritt Boulevard to Albion Street.
    - The Friendship Missionary Baptist Church, on 32nd Avenue and its parking could be excluded from the purchase and a possible shared parking agreement considered.
    - All other properties should be acquired to expand and significantly upgrade housing and provide vitally needed recreation fields and facilities, including a new Recreation Center.
    - This area would also house a future Student Services building and provide additional parking at the main entrance to campus.
    - The acquisition, supplemented by an access easement along the south side of Merritt Boulevard, will help to enhance and strengthen the campus arrival experience by adding a tree lined promenade on either side of Merritt.
- The **Northwestern Acquisition Area** is a small neighborhood along Tigerbelle Drive and 39th Avenue North, bounded by Davis Boulevard on the west and John. L Driver Avenue on the south.
    - This neighborhood is small and isolated, and sits adjacent to a key secondary campus entrance.
    - It is a good potential location for the future Research and Sponsored Programs (RASP) Corridor, envisioned as a group of research buildings that house university research and partner companies collaborating with TSU on research.
    - The property is close to other science programs, with good access to the academic core. It also has direct access for partners from off campus. Excellent views are conducive to attracting the specialized users of the RASP Corridor.

2. Recommended Facility Additions and Improvements

Short term improvements are new facilities, additions or major improvements to existing facilities that have been identified as immediate needs through the assessment and planning process. Short term improvements are planned to be initiated within the next five years. Long Term improvements are planned for implementation within the next ten years and future improvements are potentials that can be anticipated to come on line after 10 years.

The Space Needs Assessment documented space surpluses and shortages in academic and support building space. The Facility Condition Assessment documented the physical condition and functional utility of the existing buildings, focusing on those least conducive to continued use. The Housing, Recreation and Athletics Assessments documented the adequacy of housing, recreation and athletic facilities to meet current and future student needs. Inspections of the buildings and facilities, as well as faculty, staff and student input contributed to the recommended prioritized list facility improvements.

Short Term Additions, Changes and Improvements

- **Allied Health Building:** The most immediate need is a new building to house the Nursing program, but the building location is sited to allow future expansion to bring together allied health programs in Cardio Respiratory/Health Information Management, Physical Therapy, Occupational Therapy, Speech Pathology/Audiology, along with the Health Sciences Dean's Office.
- **Elliot Hall:** Vacate and demolish Elliot, distributing current occupants to other existing buildings, prior to opening the Health Sciences Building.
- **New Residence Halls:** Begin a program to build up to five new traditional and suite style residence halls to replace out dated halls in poor physical condition (complete within ten years).

- **Boyd, Wilson, Eppse and Watson Residence Halls:** Begin a program to vacate and demolish up to four existing residence halls, transferring students to new facilities (complete within ten years). Priority order for removal is:
  - Boyd Hall
  - Eppse Hall
  - Wilson Hall
  - Watson Hall
- Athletic Facilities Renovations:
  - **Wellness Center:** Upon completion of the new Recreation Center, renovate the current Health and Wellness Center to meet future needs of Athletics for meeting room space, training space, and additional strength and conditioning facilities.
  - **Gentry Center:** Renovate to meet the current and future needs of Athletics.
  - **Sports Field Buildings:** Renovate the small building at Temple Track, and the small building at the Softball Field
  - **Hale Stadium**: Renovate the press box, and initiate planning, programming and feasibility assessment of a replacement stadium on campus.
- **Student Center:** Initiate planning and programming study of the Student Center to determine financially feasible programming and renovations to meet future student needs.
- **New Recreation Center:** Construct a new 75,000 to 80,000 SF Recreation Center to provide the additional 55,000-60,000 SF of indoor recreation space needed, as well as to replace the current 20,000 SF Health and Wellness Center. This building could be one floor or could include a partial second floor of 15,000 to 20,000 SF.
- **Recreation Fields:** Construct two new recreation fields in the southeast corner of the campus upon acquisition of the properties in that area.
- **Building Removal:** Remove or replace low functioning buildings that are in poor condition. According to the assessments, the following buildings are priorities for removal over the next five years, listed from highest priority to lower:
  - Read Hall
  - Torrence Hall
  - Harned Hall
  - General Services
  - Broiler House
  - Incubation Center at AWC
- **Security Improvements:** Completer the ornamental campus security perimeter fence, adding four new gates that can be manned to control access to the campus. Other improvements should be considered for building access control, closed circuit television, trouble buttons and blue light phones and visitor management, along with policies and procedures, signage and maintenance.

Long Term Additions, Changes and Improvements

- Replace Hale Stadium with a new 20,000 to 25,000 seat stadium, including club rooms or other amenities and a field house.
- Remove, redevelop or replace low functioning buildings that are in poor condition. According to the assessments, the following buildings are priorities for removal over the next five years, listed from highest priority to lower:
  - McCord Hall
  - Holland Hall
  - Facilities Management

- Humphreys Hall
- Floyd Payne Center (renovation)
- Brown-Daniel Library (renovation)
- Goodwill Manor

- **Security Improvements:** Continue to monitor and reinforce Short Term measures and improvements.

Future Building Sites

The Preferred Master Plans for both the Main Campus and AWC identify locations for future buildings. On Main Campus, these sites will reinforce the form and order of the campus core. Locating future buildings on these sites will also facilitate aggregating related and allied programs close to each other, with improved connectivity and communication. Strengthening the core will also increase the vibrancy and sense of community on the campus.

The importance of documenting these future sites and the scale of potential buildings is that they can be retained for their most valuable use as the campus grows. Also, repairs and upgrades to circulation and utility infrastructure can be guided by the potential demand and designed to accommodate that future demand, thereby reducing development costs into the future.

Future uilding sites with some level of existing infrastructure include:

- Elliot site
- Torrence site
- Holland site
- Wilson site
- Harned site, and the open land north of it
- Incubation Center site at AWC
- Existing parking lot at AWC (future building site)

Several buildings could be expanded in the future to accommodate growth of the programs they currently house or other future needs:

- Clay
- Clement (also potential for replacement)
- Mcwherter Administration Building

The Preferred Master Plan for the Main Campus also illustrates opportunities to expand and improve connectivity in the campus pedestrian system, with significant, new multi-use trails at the perimeter of the campus. As the Main Campus grows, parking will need to expand to keep pace. The Preferred Master Plan shows parking areas that maintain and improve the parking ratio from that which is currently provided. While some of the parking depends on land acquisition, the phasing plan will illustrate the progression from current parking layout to the future as shown on the plan.

The Preferred Master Plan for AWC recommends relocation of the Incubation Center to a light industrial or office/warehouse site more suitable to Incubation Center uses. The current Incubation Center site is proposed as the location for a new multi-story parking garage to meet the parking needs of that campus into the future. The plan also proposes acquisition of the narrow strip of land between the Incubation Center and the railroad to the south. This parcel, if made available by the railroad, would add valuable property width from Tenth Avenue to the railroad, for the future construction of the parking garage. The Preferred Master Plan also shows a site that should be reserved for a building in the future, at such time as added programs and enrollment in the AWC programs increases space needs beyond the capacity of the existing building.

This page intentionally left blank.

LONG RANGE CAMPUS MASTER PLAN

Legend:

- Boundary Fence
- Existing Building
- Proposed Building
- Future Building
- Athletic Field / Court

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

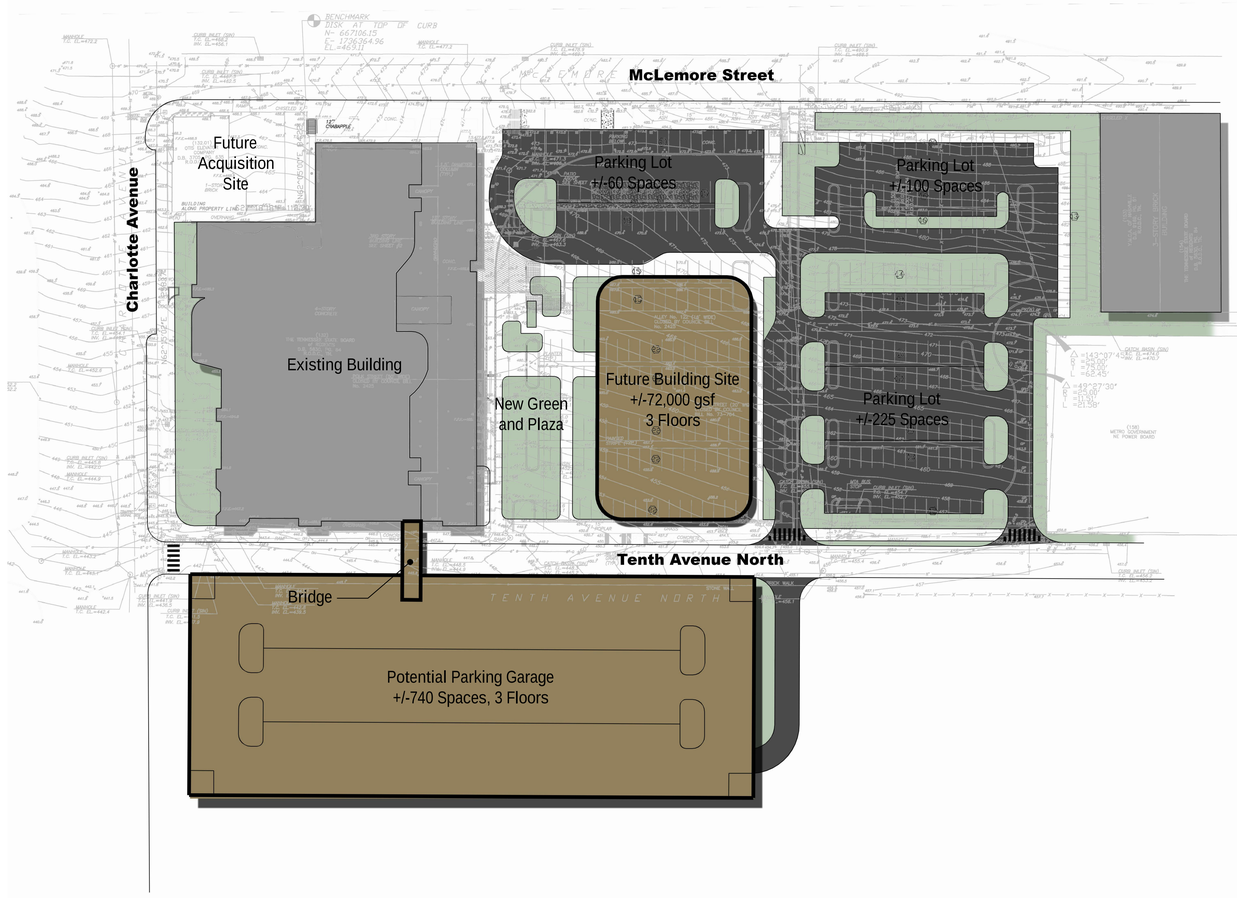
Tennesse State University
Campus Master Plan

May 2016

Figure VII - 1

WOOLPERT

MASTER PLAN
AVON WILLIAMS



Legend:

- Existing Buildings
- Roadway Improvements
- New Building

NORTH

0 50 100 150

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VII - 2

WOOLPERT

VII. Physical Master Plan

The campus Master Plan retains the emphasis of the previous Master Plan on strengthening the structure and density of the campus core. In addition to strengthening the core, this Master Plan also describes how the campus can expand in two important areas to accommodate new programs and update student housing and recreational facilities to competitive levels. The plan also balances retaining existing functional buildings with replacing obsolete structures with newer, more cost effective structures.

A. Land and Building Use

The Master Plan strengthens and further defines current land use patterns, reorganizing some uses to strengthen and better define current precincts. The plan illustrates significant changes in seven areas of the campus surrounding the core:

1. The focus of this master plan is a new Health Sciences building to accommodate Nursing and allied programs. It will be located on the general site of the existing Elliot Hall, which will be demolished to make way for the new building. This building will reinforce the Academic Core and consolidate several related programs that are now distributed in several locations.
2. The campus arrival and entry is enhanced, and anchored by a new recreation center and Student/Visitor Center, backed up by a parking garage along John A. Merritt Boulevard.
3. A new residential precinct, comprised of two quads and a recreation field, replaces the existing residential facilities along 33rd Avenue, and expands the ultimate campus boundary east to Hadley Park
4. The concept for expansion of the existing housing cluster in the southeast corner of the campus is retained from the 2008 Master Plan.
5. In the southwest corner of the campus, locations are given for several future buildings that can replace obsolete buildings and reinforce the core.
6. A new initiative in sponsored research is located in an area of campus expansion in the northwest corner of the campus, anchored by the proposed Health Sciences building. This new sub campus precinct takes advantage of the campus perimeter to provide direct access to facilities that can be shared by the University and private research partners.
7. Locations for future academic and administrative buildings are shown at the northeast corner of the core area, reinforcing that part of the core and strengthening the connection to the athletic zone of the campus.
8. The new Football Stadium proposed in the 2008 Master Plan is also retained.

The Health Sciences building is an important step in consolidating and enhancing the several health science programs under one roof, replacing inferior out of date facilities. While this new building will not add overall Academic space to the campus, it will replace existing space with new state of the art space and equipment that will help TSU compete in a segment of education that is growing rapidly. The program and space for this building is described in the space needs discussion in Section V, but the building's siting anticipates the potential for expanding it to as much as double its initial size to accommodate the growth that projections suggest is possible. The building size was established based on the current and projected needs of the several programs. Should other smaller programs compatible with the Health Sciences programs need space, and the University considers them to by appropriate to Health Sciences building, and if funding can be obtained they should be added to the building program. This concept emphasizes the importance of flexibility of space and design in the new building. It will be appropriate to add smaller compatible programs into the Health Sciences building than to build additional small (2,000 to 10,000 GSF) buildings on the main campus. This though process should apply to other future buildings, such as Engineering.

A significant addition to the overall campus structure is a more clearly defined and secured perimeter. The long-term plan frames the entire campus by an ornamental security fence, with limited controlled access points. This perimeter is planned to be installed around the existing campus, and expanded incrementally as additional land is acquired and developed. A key to this secured perimeter is that all persons coming to the campus, from

students and faculty to visitors, vendors and delivery personnel, will pass through a controlled gate, greatly increasing surveillance, and establishing a positive definition of the campus environment.

Athletics and Physical Education complexes remain clustered along the north side of campus. The physical plant is located in an appropriate space to the north of the academic core. Campus maintenance service is proposed to remain on the northeast side of campus.

This Master Plan furthers the goal, set forth in the 2008 Master Plan, of concentrating parking on the perimeter of the Main Campus, reserving the center as a pedestrian environment encompassing new and existing buildings, as well as open space. The goal is to keep the parking convenient and at the same time create a secure pedestrian campus.

See Building Use, Figure VII-3.

B. Student Housing

The Physical Master Plan housing recommendations are based on an analysis of the housing demand analysis and the condition of the residential facilities. That analysis supports reducing the number of traditional-style beds from the on-campus housing stock and replacing it with new facilities or renovating existing facilities with suite-style beds. As a follow up to the Master Plan and initial implementation step, the University should develop a phasing plan, system-wide financial analysis and detailed schedule guide to support implementation of the housing component of the Master Plan. This plan includes the recommendation to build up to five new traditional and suite style residence halls to replace outdated halls in poor physical condition. The feedback from the assessments indicates the importance of upgrading the housing to both recruiting and retention. Therefore, the housing replacement and upgrade program should be complete within ten years.

The housing upgrade program should vacate and demolish up to four existing residence halls, transferring students to new facilities (complete within ten years). Priority order for removal is:

1. Boyd Hall
2. Eppse Hall
3. Wilson Hall
4. Watson Hall

The Master Plan illustrates how the new residence halls can be constructed to form new residential quads integrated into an enlarged housing precinct. The plan allows for up to three new residence halls to be built on land that is currently used for parking or green space, allowing new halls to be built before the existing structures are removed.

Development of the proposed residence halls will allow reconfiguration of pedestrian circulation to create a spine through the new residential precinct in the southeast area of campus, which ties the new quads together, linking them to the academic core, a new recreation field and the proposed recreation center. While most of the residence halls can be built on land currently owned by the University, additional land east of 33rd Avenue, and eventually 32nd Avenue, will be needed to accommodate the necessary parking.

MASTER PLAN
BUILDING USE

Legend:

	100	Classroom
	200	Lab
	300	Office
	400	Library
	500	Special Use
	600	General Use
	700	Support
	800	Healthcare
	900	Residence

NORTH

0 200 400 600
GRAPHIC SCALE IN FEET

TSU
Tennesse State University
Campus Master Plan

May 2016

Figure VII - 3

WOOLPERT

C. Circulation and Parking

The circulation component of the Master Plan organizes the vehicular circulation, pedestrian circulation, parking and open space systems to unify the campus, reinforce the campus organization and provide safe and convenient access to all portions of the campus—with an open space landscape that enhances the quality of the campus experience.

1. Vehicular Circulation

This Master Plan takes a new approach to campus access and circulation, limiting vehicular access to four secured gates, with distribution to all campus destinations from within the gateways. Vehicular access to the campus is organized around four new secured gates, which may be manned or operated through electronic links. Internal vehicular circulation is structured to distribute traffic to parking, garages and surface lots, service and loading areas and drop-offs points for key destinations. As in the 2008 Master Plan, general vehicle traffic and parking is kept to the perimeter of the campus, while service access is maintained to all buildings, either over service drives or on occasion for special needs, over limited sections of walkway.

John Merritt Boulevard: This will remain the primary campus arrival corridor and campus access through the **Main Gateway**. The arrival experience will be enhanced by streetscape and boulevard improvements which will connect 28th Avenue North to the main campus gateway, in front of the Visitors' Center. Ultimately, this gateway will be just west of 31st Avenue, to place all access to all buildings and parking within the secured perimeter. The boulevard improvements—including landscape, lighting and signage—are planned to better define the campus entry and enrich the aesthetic appearance of the campus while improving way finding and directing visitors to the Visitors' Center.

John L. Driver Avenue: As the campus develops, the west gateway on John L. Driver Avenue will become more important, especially with construction of the Health Sciences Building and future development of the proposed Research Corridor. This road will continue to provide the access, through **Gateway #2**, to the western half of the campus core. As the Research Corridor develops, it will receive increased non-university traffic, increasing its importance to the identity of the University, while also taking on a more important gateway and security function. The road will be improved to reflect the design of John A Merritt, with flanking trees, lighting and signage that match that on Merritt.

North Entry Drive: The drive from Dr. Walter S. Davis Boulevard will continue to provide access to the athletic complex and north side parking areas, through **Gateway #3**, arriving at the Olympiad Plaza. This drive will also have a gateway; because it receives less traffic except during athletic events, it may not require full time manned attendance. The gateway for this drive will be close to Davis Boulevard, which, with the perimeter fence, will become the longest continuous public street-front edge of the campus. A simple landscape of canopy and accent trees within the fenced perimeter will present an enhanced image of the University.

Clare Avenue: The South Campus entrance, **Gateway #4**, will be on Clare Avenue, slightly north of Albion Street. This entry will serve primarily the residential side of the campus, but also the fine arts building and its parking. Generally lower traffic volumes could allow this gateway to be un–manned, and operated remotely. Adjoining a residential neighborhood, this campus entry will be more residential in scale, with an enhanced streetscape of street trees, perimeter fence, and lighting and signage to match the other campus entries.

Internal Roadways: As the campus expands to the southeast, from 33rd Avenue to 31st Avenue, closing and absorbing 32nd and 33rd Avenues, the existing rights-of-way will serve to provide an internal circulation loop from the Main Gateway on Merritt Boulevard to the south Gateway, on Clare Avenue, and through a restricted drive to the West Gateway on Driver Avenue. The restricted connection would be designed to support vehicular traffic, but would be restricted to buses and service vehicles, allowing pedestrian use to dominate. Three of the four main access roads into the campus terminate at roundabouts at nodes in the walkway system. The north drive configuration is planned to remain as currently configured.

MASTER PLAN VEHICULAR CIRCULATION AND PARKING

Legend:

- Existing Buildings
- Proposed Buildings
- Existing Parking
- New Parking Lot
- Parking Garage
- Primary Roadway
- Secondary Roadway
- Special Use Road / Walk
- Service Drive
- Service Court
- Gateway
- Service / Emergency Access

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VII - 4

WOOLPERT

2. Public Transit

The TSU campus is served by the University shuttle, as well as three public bus routes. The shuttle loops the campus and apartment area and also travels to the Avon Williams Campus (AWC) downtown. The Master Plan relies on this transportation system to link the two campuses and to supplement private vehicle access for students, faculty and staff.

Metropolitan Transit Authority (MTA) route 19 passes the west side on the campus on 39th Avenue with stops serving Meharry Medical College, Metro Central Hospital, Fisk University, but passes several blocks away from AWC. Route 21 loops through the TSU campus, passing Vanderbilt University and Belmont University, as well as the Mall at Green Hills. Route 29 wraps around the TSU campus following Jefferson to downtown.

As the campus perimeter is secured and expanded, these routes may have to be adjusted to function optimally with the new circulation plan.

3. Parking

The existing campus parking concept of parking at the perimeter is maintained and advanced in the Master Plan. Surface parking is supplemented by a parking garage near the main gate, which is convenient to the proposed visitors' center, the site of the existing and proposed football stadiums and the proposed recreation center. Additional parking is proposed along 31st Avenue as well as on the north side along Davis Boulevard to accommodate projected increases in enrollment. Consistent with the 2008 Master Plan, the proposed parking plan simplifies parking layout and access, to reduce confusion and increase capacity.

See Vehicular Circulation and Parking Figure VII-4.

D. Open Space and Pedestrian Circulation

Open space is the outdoor environment that unifies and connects the campus. Framed by buildings, the open space contains the circulation, outdoor gathering and use areas, topography and vegetation. Open space is the key component in establishing balance, order and character for the campus. The combination of connections through the campus with the layout and arrangement of new buildings is key to creating the open space structure and a strong sense of place.

The Master Plan relies on open space at the center of campus and its building framework to be the central attraction and foundation of an overall sense of place. It should be the place for community gathering and it should stimulate interaction and scholarly contemplation. The open space defines a pedestrian precinct that connects walkways, gathering areas, recreation areas and buildings. Open space provides a unifying stage to tie together the setting of historic buildings and features with new development.

The Master Plan refines and expands the existing open space system, strengthening the focus on the formal mall at the center of the academic core. The mall is the heart of the campus to which most of the connecting open space corridors, quadrangles and gathering areas connect. As important as the formal open space and gathering areas are, the informal and casual open spaces and natural areas that frame the campus are also valuable and integral parts of the campus environment. The Master Plan describes the open space structure as well as the types of areas and their function on the campus. The open space system can be described in teams of several types of outdoor use area:

- The Central Campus Green (campus core)
- Secondary Campus Green (secondary core)
- Main Gateway and Entry Corridor
- Plazas and Gathering Places
- Academic Quads
- Residential Quads
- Framing Green Space
- Natural Woodlands
- Sports Fields

Central Campus Green: The formal mall, surrounded by the historic campus core buildings, remains the heart of the campus. It has great value for its large expanse of shaded open space, yet it could be designed to encourage more gathering and use by redesigning the existing gathering spaces in the central green and those adjacent to it. Spaces that combine room for small events or gatherings that also have comfortable shaded seating, backed up by trees or buildings, could draw more students and faculty, increasing the focus of the campus on the core. Many of the places in the central green that could serve as social places by their location are rendered less attractive due to lack of shade and overhead canopy. Strategic tree planting can improve the attraction of these areas for gathering and interaction. The amphitheater has historic importance, but is underused. The campus would benefit from improvements created through a design study to explore design modifications and enhancements that will revitalize its use.

Priority should be given to locating new academic buildings around the edges of this vitally important open space to better define it and bring more activity to the core and energize the green with added population.

Secondary Campus Green: A secondary campus green has developed along the former alignment of 35th Avenue, providing an important organizing framework for a portion of the academic core and a transition to the performing arts and residential precincts of the south side of the campus. Defining a hierarchy of open spaces, which scale down from the large central green to the residential quads, helps to reinforce the overall campus organization. This green or mall should be retained and strengthened with any new or replacement buildings and canopy tree planting. It could be terminated with an internal gateway from the parking area into the pedestrian zone of the campus.

Main Gateway and Entry Corridor: Heightened emphasis on defining and enhancing the appearance of the campus perimeter, lends special importance to the Main campus entry along John A. Merritt Boulevard. This open space is different from the rest of the campus open spaces in that it is dominated by circulation. This linear space, defined more by landscape treatment than buildings, leads deep into the center of the campus, distributing arriving traffic to most major destinations. The Master Plan recommends treating this corridor as a focal open space that introduces Tennessee State University and establishes the quality and character of the campus. A strong landscape framework, such as a double row of canopy trees leads visitors from an enhanced ceremonial gateway at Ed Temple Boulevard to the main campus gateway, and Visitor's Center, then on to a terminus in front of Floyd-Payne Campus Center.

Plazas and Gathering Places: These social spaces are located in locations that are created either by the confluence of major circulation routes or element placements that generate activity. They are the social spaces at connecting points of campus circulation and entries to major campus buildings, and should be designed to a scale, and appearance that invites stopping and social interaction. The Master Plan proposes retaining the existing plazas and gathering areas, redeveloping the existing plaza south of Davis, and the one north of Love to make them more inviting. It also proposes new plaza development in the area of the new Recreation Center, and Football Stadium.

Academic Quads: A goal of the Master Plan is to, over time, physically consolidate programs into precincts, so that allied programs, and their associated classrooms, labs, offices and administrative services are all in close proximity in sectors of the Academic core. This programmatic organization is strengthened by establishing quads within clusters of buildings that can serve as centerpieces, informal gathering areas, and where appropriate, outdoor classrooms, that can serve a variety of functions compatible with and supportive of the programs in the surrounding buildings. Each quad is linked by the walkway system to the Central or Secondary Green, the primary campus walkways and perimeter parking.

Residential Quads: The Master Plan recommends eventual replacement of all of the residence halls except Hale and Rudolph. The new residence halls are organized around a series of quads that give identity to each of three subareas of the residential precinct in the southeast corner of the campus. Proximity of a recreation field to these quads can add variety to the to the precinct environment. While similar to academic quads, these areas should be more residential in scale and materials, and invite unstructured individual use as well as gathering and socializing.

MASTER PLAN PEDESTRIAN CIRCULATION AND OPEN SPACE

Legend:

- Gateway
- Primary Pedestrian Paths
- Focal Points
- Central Campus Green
- Secondary Campus Green
- Main Gateway Corridor
- Secondary Entry Corridor
- Plazas & Gathering Places
- Academic Quads
- Resident Quads
- Framing Greenspace
- Natural Woodlands
- Athletic & Recreation Fields
- Campus Edge Streetscape
- Campus Signage

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VII - 5

WOOLPERT

Framing Green Space: The Master Plan retains several large, mowed open areas, dominated by grass, on the perimeter of the campus. They provide an open relief form the adjacent urban fabric while opening long views into the campus from adjacent streets. The large sweep of open land also offers surveillance of large portions of the campus perimeter.

Natural Woodlands: Several areas of relatively natural wooded land survive on the northern portion of the campus. These areas form an attractive green backdrop for a large portion of the athletic complex, buffer the campus from the roadway, and conserve valuable natural upland and wetland habitat. The plan proposes retaining these areas as they are, with the possible introduction of a trail on the northern edge, where it is visible from Davis Boulevard.

Sports Fields: Outdoor recreation and athletic fields provide valuable open space, and while often heavily programmed, the recreational fields also offer opportunity for informal recreational use. A new recreation field proposed for the southern portion of the expanded campus will improve the distribution and balance of open space as the campus grows in the southeast.

See Pedestrian Circulation and Open Space Figure VII-5.

E. Athletic and Recreational Facilities

The athletic fields are concentrated in the north portion of the campus and consist of controlled access athletic spaces (baseball field, softball field, football field and practice fields, track and field, and tennis courts). The Master Plan proposes to supplement the existing multi-purpose recreational fields in the northern portion of the campus with a new rectangular field between the proposed new Recreation Center and new residential quads. This field will provided much needed informal recreation space in a location that is central to much of the student life facilities, and contained within the campus by surrounding parking facilities.

1. Athletics

In order to continue to provide support to student athletes, remain competitive within the OVC, and meet the mission and vision outlined by TSU, the following athletic facilities should be developed or improved:

- New 25,000 seat football stadium.
- Additional support facilities 5,000 GSF.
- Athletic training Center, 1,750 GSF.
- Strength and conditioning Center, 3,250 GSF.
- Indoor basketball/volleyball practice facility, adjacent to the Gentry Complex.
- Facility upgrades to the locker rooms, athletic training, and strength and conditioning spaces in the Gentry Complex.
- Permanent seating, renovated dugouts, and deferred maintenance in and around the Softball facility.
- Resurfacing of both the indoor and outdoor tracks.

Support for on-campus football has made a new stadium a high priority for implementation of the Master Plan. The new stadium is planned to replace the existing Hale Stadium, in approximately the same location, with the site adjusted to create a plaza at each end of the new stadium. This new facility will provide the University with a new field, field house, VIP boxes, press boxes, training and locker room facilities for TSU and visitors.

The plan for the new stadium includes a new field house on the north side of the stadium, with locker room and training room facilities for athletic teams and events. This location serves both the new stadium and the current football practice field. The south end of the stadium will house concessions, restrooms and other support facilities, facing a plaza, all built over a parking garage. The existing valley will allow the plaza to be at street grade on Merritt Boulevard, with the garage below.

MASTER PLAN ATHLETIC AND RECREATION FACILITIES

Legend:

- Athletic Facilities
- Athletic Fields
- Recreation Facilities
- Recreation Fields
- Courts

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VII - 6

WOOLPERT

To support the Athletics facility plan outlined, the Master Planning Team recommends that the following tasks be performed:

- Outline program development for reuse/renovation of spaces within the Gentry Complex.
- Detailed analysis for an on-campus football stadium, including analysis of seating capacity, premium seating mix, site selection and capacity, market demand for additional events, implementation options, and a detailed funding and operations analysis.

2. Recreation

A new Recreation Center, which would add a net of 60,000 GSF of indoor recreation space, is proposed for the center of campus, east of Kean, along Merritt. This prominent location at the main arrival point on campus puts it close to concentrations of both resident and day students, with good roadway access for events, adjacent to the site of a proposed parking garage. This location also allows development of a new recreation field between the Recreation Center and Residential quads, where it can support programs at the Recreation Center, and become a focal point of student life.

Final design and development of these expanded and enhanced recreational facilities and programs should be based on more detailed evaluation of costs and revenues. The University should undertake development of an outline program, including a phasing schedule, detailed programming, financial analysis, and fee tolerance assessment.

See Athletic and Recreation facilities Figure VII-6.

F. Campus Security

A supplemental effort of the Campus Master Plan was a Security Master Plan, initiated in response to incidents on and near the campus that occurred during the preparation of the Campus Master Plan. The Security Master Plan is attached as Appendix A to this plan report. The Security Master Plan makes a number of recommendations about improvements to equipment and strategies to improve both the perception and the effectiveness of campus security. Among those recommendations are

- Control of access to campus—the perimeter security system (fence and gates)
- Control of access to buildings—locking and monitoring and checkpoint staffing
- Campus-wide emergency notification
- Closed circuit television—placement and type of cameras and effective monitoring
- Trouble buttons in key locations
- Blue light phones—maintenance and image
- Visitor management

The recommendations of the Security Master Plan, where they affect the physical campus, have been considered in the final recommendations of the Campus master Plan.

See Secure Perimeter Figure VII-7.

MASTER PLAN SECURE PERIMETER

Legend:

- Boundary Fence
- Main Gate
- Secondary Gate
- Service / Limited Access Gate
- Pedestrian Gate

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VII - 7

WOOLPERT

G. Utility Infrastructure

The Master Plan proposes expanding the footprint of the TSU campus in many areas. Utilities will require expansion and some relocation to accommodate the Master Plan. The utility discussion is set up based on breaking campus into four quadrants. The dividing lines are approximately Driver Avenue/Merritt Boulevard and the Central Campus Green/35th Avenue.

In all cases, the following should apply:

- Verify the available capacity of any and all utilities prior to moving forward with design.
- Verify the condition of the existing utility in which the proposed building is anticipated to connect. It may require improvement or replacement.
- Discuss possible cost-sharing with public utility agencies or private developers.
- Explore opportunities to generate excess power to sell to public utility agencies or private developers.
- Utilize proposed tunnels for conveyance of other utilities such as gas, water and electric.

The following are applicable specifically for storm water:

- Determine if the development site discharges to existing storm sewer or combined sewer.
- Study stormwater detention/water quality requirements. Explore opportunities for regional treatment to minimize smaller systems. Explore opportunities for low impact development (such as pervious pavement) to reduce required volumes.
- Explore opportunities to capture and store rainwater for reuse.
- Study drainage regime to ensure that development can discharge to the preferred direction. What may seem logical may not be permitted.

1. Domestic and Fire Protection Water

Generally, water mains sized 6” or smaller are obsolete and inadequate to provide fire service. Where development is occurring, 6” mains should be replaced with 8” mains. Recommended improvements, should development occur, are as follows:

- **Northwest Quadrant:** Replace 6” main in Davis (north of Driver) and 37th with an 8” main. Locate 8” main between proposed building footprints.
- **Northeast Quadrant:** Replace 6” main between Hankel and Hale Stadium with an 8” main. Install 8” main between Wilson and Hale Stadium from Gentry to Merritt to close the 8” water loop.
- **Southwest Quadrant:** Replace 6” main in 37th (south of Driver) with an 8” main. Replace 6” main in Alameda (between 37th and 35th) with an 8” main.
- **Southeast Quadrant:** Replace 6” main in Alameda (35th and 33rd) with an 8” main.

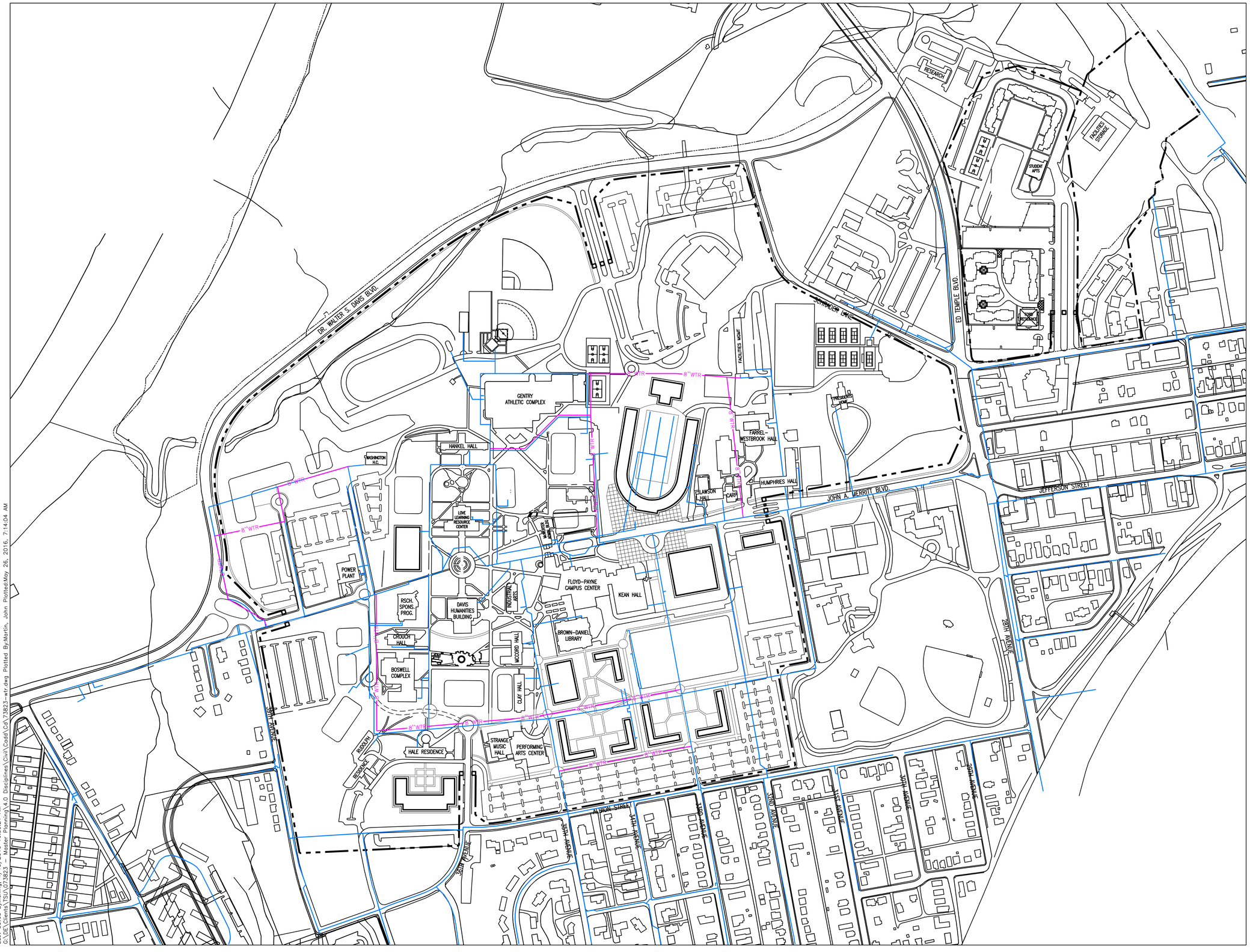
See Water Figure VII-8.

2. Electric

The substation will require strict tracking to ensure its capacity is not exceeded. As existing buildings are demolished and taken off line, new buildings can take their place, with the stipulation that electric usage is similar. Otherwise, other sources of power will be required. In fact, perimeter development areas should be studied to determine if other sources of power are more cost-effective. Assuming capacity is available from the substation, recommended improvements, should development occur, are as follows:

- **Northwest Quadrant:** Extend duct bank westward from 37th to the two northwesternmost development sites.

MASTER PLAN WATER



Legend:

Existing Water

Proposed Water

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University

Campus Master Plan

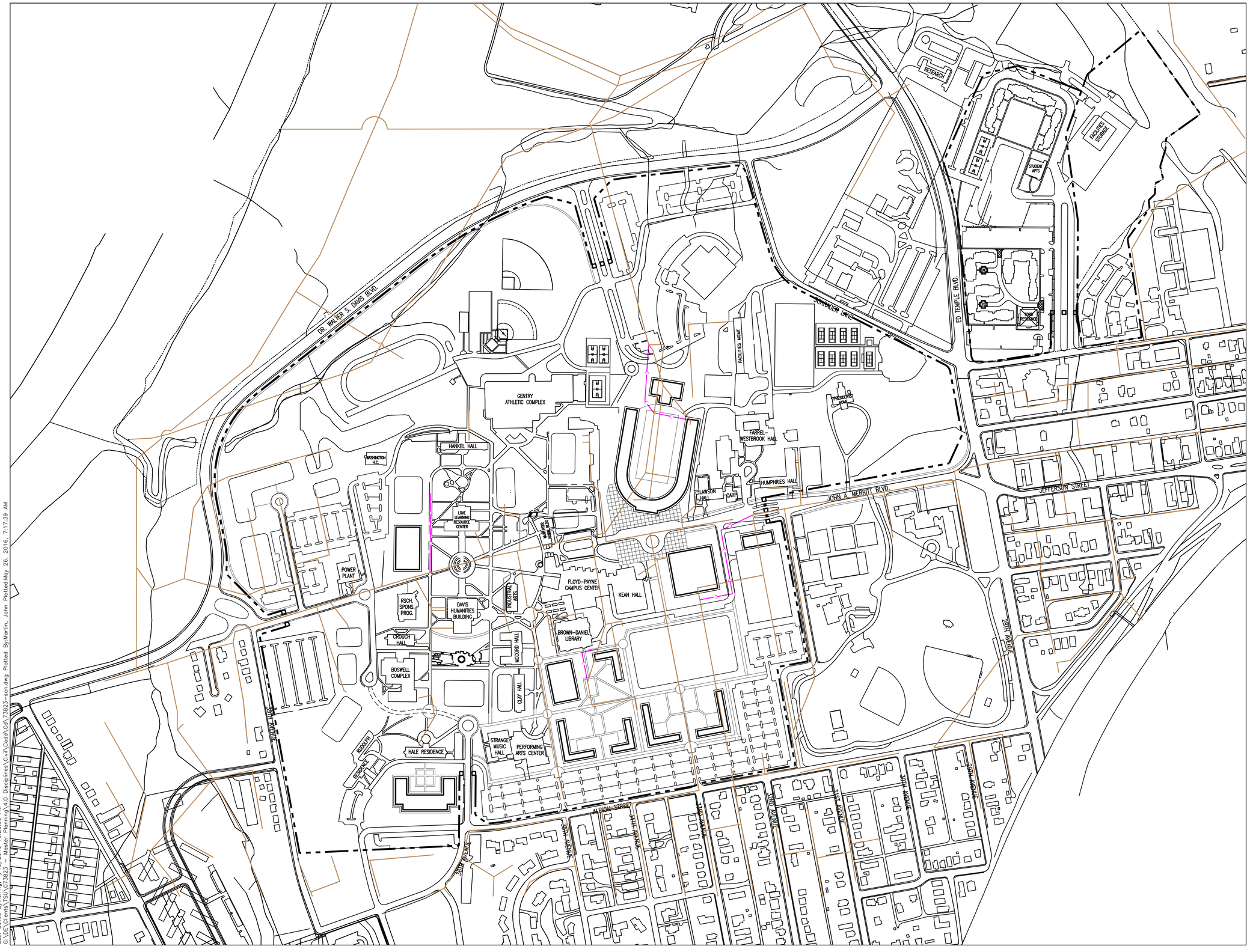
May 2016

Figure VII - 8

WOOLPERT

Images: Master Plan_Preferred.jpg; aerial.jpg; Woolpert Logo WHITE.jpg.jpg; , Xrefs: TSU_TBLK.dwg; 73823-p-utl.dwg; tsu-masterplan-ebase.dwg; TSU_Final_Plan.dwg; 73823-x-utl.dwg
Layout Tab Name: Layout 1
Last Saved By:liening, 4/15/2016 10:30:21 AM
Plotted By:Martin, John Plotted:May 26, 2016, 7:14:04 AM
G:\DE\Clients\TSU\073823 - Master Planning\4.0 Disciplines\Civil\Cadd\Cd\73823-wtr.dwg

MASTER PLAN SANITARY



Legend:

Existing Sanitary

Proposed Sanitary

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University

Campus Master Plan

May 2016

Figure VII - 9

WOOLPERT

Images: Master Plan_Preferred.jpg; aerial.jpg; Woolpert Logo WHITE.jpg.jpg; , Xrefs: TSU_TBLK.dwg; 73823-p-utl.dwg; tsu-masterplan-ebase.dwg; TSU_Final_Plan.dwg; 73823-x-utl.dwg
Layout Tab Name: Layout 1
Last Saved By:liening, 4/15/2016 10:28:08 AM
Plotted By:Martin, John Plotted:May 26, 2016, 7:17:39 AM
G:\DE\Clients\TSU\073823 - Master Planning\4.0 Disciplines\Civil\Cadd\Cd\73823-san.dwg

MASTER PLAN
STORM SEWER

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VII - 10

WOOLPERT

Images: Master Plan_Preferred.jpg; aerial.jpg; Woolpert Logo WHITE.jpg.jpg; , Xrefs: TSU_TBLK.dwg; 73823-p-utl.dwg; tsu-masterplan-ebase.dwg; TSU_Final_Plan.dwg; 73823-s-utl.dwg
Layout Tab Name: Layout 1
Last Saved By:mmiller, 5/26/2016 7:21:21 AM
CAD Operator: Operator (Woolpert)
OS: MS Windows 10 (build 9200), Model: Precision T1650, Master Drawing\4.0 Disciplines\Civil\Cadd\Cad\73823-stm.dwg Plotted By:Lanning, Doug Plotted:May 31, 2016, 4:42:38 PM

- **Northeast Quadrant:** Relocate duct bank out of proposed development site on north side of Hale Stadium. If possible, utilize another source of power to reduce usage of substation. Similarly, utilize another source of power for the future housing development along Ed Temple.
- **Southwest Quadrant:** Relocate duct bank out of future development site between Holland and Torrence Halls.
- **Southeast Quadrant:** Relocate duct bank out of proposed development site adjacent to Boyd and Watson Halls.

3. Sanitary Sewer

The existing sanitary sewer system on campus is composed of 8" mains, which is typical and appropriate. However, existing pipe conditions should be reviewed to ensure there are no leaking or capacity issues. Assuming capacity is available, recommended improvements, should development occur, are as follows:

- **Northwest Quadrant:** Remove existing main running through westernmost development sites. Install 8" main northward from Merritt on the west side of Love.
- **Northeast Quadrant:** Relocate three sewer mains out of the proposed development site on the north side of Hale Stadium. Capture all three and route around the south and west sides of the site.
- **Southwest Quadrant:** No known improvements are required.
- **Southeast Quadrant:** Relocate the existing mains out of the proposed recreation center and visitor center sites. Relocate the mains to the west and north of the proposed development site near Boyd and Watson Halls. Remove the main from the proposed development site southeast of the intersection of 33rd and Alameda.

See Sanitary Figure VII-9.

4. Storm Sewer

Similarly to sanitary sewer, existing pipe conditions should be reviewed to ensure there are no major issues. All storm sewer designs should abide by the Metropolitan Nashville-Davidson County Stormwater Management Manual for stormwater quantity and water quality requirements. Assuming capacity is available, recommended improvements, should development occur, are as follows:

- **Northwest Quadrant:** None are required at this time.
- **Northeast Quadrant:** There is potential to construct a building at the north end of a new stadium, above the existing storm trunk line. The existing line can remain in place, provided the University takes responsibility for the line after constructing a building upon it. A cost study should be performed to determine the preferred course of design.
- **Southwest Quadrant:** Relocate the existing storm sewer out of the proposed development site between Holland and Torrence Halls. An extension will be required to serve the proposed development site south of Hale Hall.
- **Southeast Quadrant:** Relocate the existing storm sewer out of the proposed recreation center site. Extend storm sewer westward and southward to proposed development site east of the Performing Arts Center.

See Storm Figure VII-10.

5. Steam

The power plant currently has adequate output capacity. However, there are factors that limit the peak capacity. The coal-fired boiler is not currently functional and requires major renovation. The current deaerator is too small to handle the peak capacity. Even so, current capacity is adequate to accommodate additional buildings. Should new buildings come on line to the system, it will require review to ensure capacity does not become an issue. Assuming capacity is available, recommended improvements, should development occur, are as follows:

- **Northwest Quadrant:** Install tunnel from power plant northwestward to serve the northwestern future development sites. Extend services to each development site as necessary.
- **Northeast Quadrant:** Extend service northward and eastward from the Goodwill Manor vault to the proposed development site at the north side of Hale Stadium.
- **Southwest Quadrant:** Extend services from the Hale Hall vault to the proposed development site south of and the future development site northeast of Hale Hall.
- **Southeast Quadrant:** Extend service from the CARP vault southward to the proposed recreation center and the visitor center sites. Extend service to the future development west of Clay Hall. Extend services from the vaults north and east of the Performing Arts Center to the proposed development sites on the south side of Alameda Drive.

See Steam Figure VII-11.

6. Chilled Water

Chilled water capacity may become an issue, and in the long term a second chiller plant is planned. Until then, capacity of the current chiller plant should be monitored. Assuming there are no capacity issues, recommended improvements, should development occur, are as follows:

- **Northwest Quadrant:** Install tunnel from power plant northwestward to serve the northwestern future development sites. Extend services to development sites west of Love.
- **Northeast Quadrant:** Extend service northward and eastward from the Goodwill Manor vault to the proposed development site at the north side of Hale Stadium.
- **Southwest Quadrant:** Extend services from the Hale Hall vault to the proposed development site south of and the future development site northeast of Hale Hall.
- **Southeast Quadrant:** Extend service from the CARP vault southward to the proposed recreation center and the visitor center sites. Extend service to the future development west of Clay Hall. Extend services from the vaults north and east of the Performing Arts Center to the proposed development sites on the south side of Alameda Drive.

See Chilled Water Figure VII-12.

7. Gas

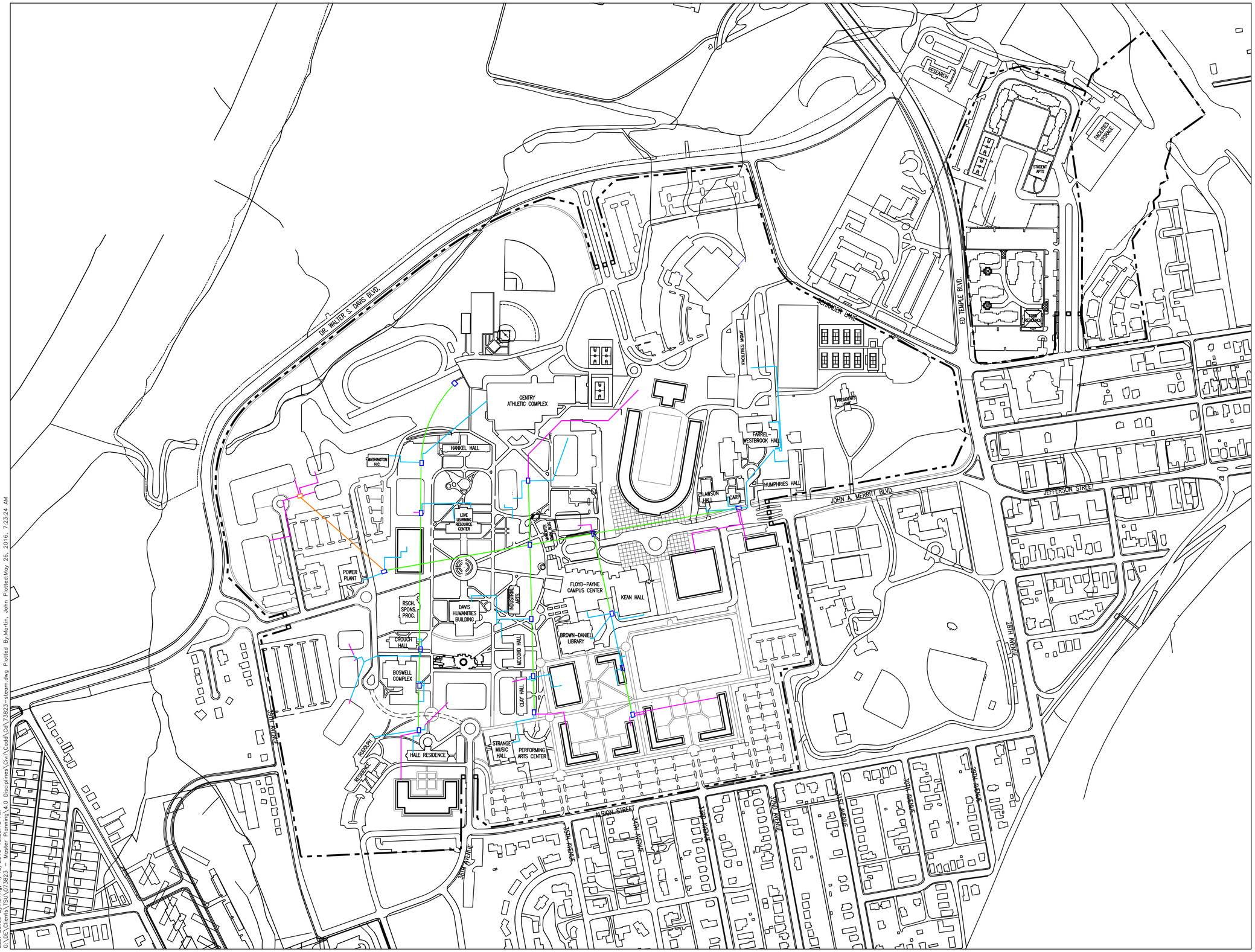
Assuming there are no issues with capacity, recommended improvements, should development occur, are as follows:

- **Northwest Quadrant:** Extend main eastward from the terminus at the north end of 38th to the future development sites west of Washington Hall.
- **Northeast Quadrant:** Extend main northeastward from Goodwill Manor to the future development site at Wilson Hall and to the proposed development site north of Hale Stadium.
- **Southwest Quadrant:** Install main on 37th between Driver and Alameda to serve future development on west side of 37th. Install main on Alameda between 37th and 35th to serve future development sites west of Clay Hall and the proposed development site south of Hale Hall. Extend service from new main southward to proposed development site south of Hale Hall.
- **Southeast Quadrant:** Install main on Alameda between 35th and 33rd to serve proposed development sites adjacent to Watson and Epps Halls.

8. Communications

Significant improvements are required to bring the University's communications system to adequacy; an increased server room is necessary, a replacement telephone system is required and a VoIP should be considered. These improvements are especially important with the increased necessity for current technology. Other recommended improvements, should development occur, will be similar to the electric improvements as they will be installed in the same trenches.

MASTER PLAN STEAM



Legend:

- Existing Steam & Condensate
- Existing Tunnel
- Existing Underground Vault
- Proposed Steam & Condensate
- Proposed Tunnel
- Proposed Underground Vault

NORTH

0 200 400 600
GRAPHIC SCALE IN FEET

TSU
Tennesse State University
Campus Master Plan

May 2016

Figure VII - 11

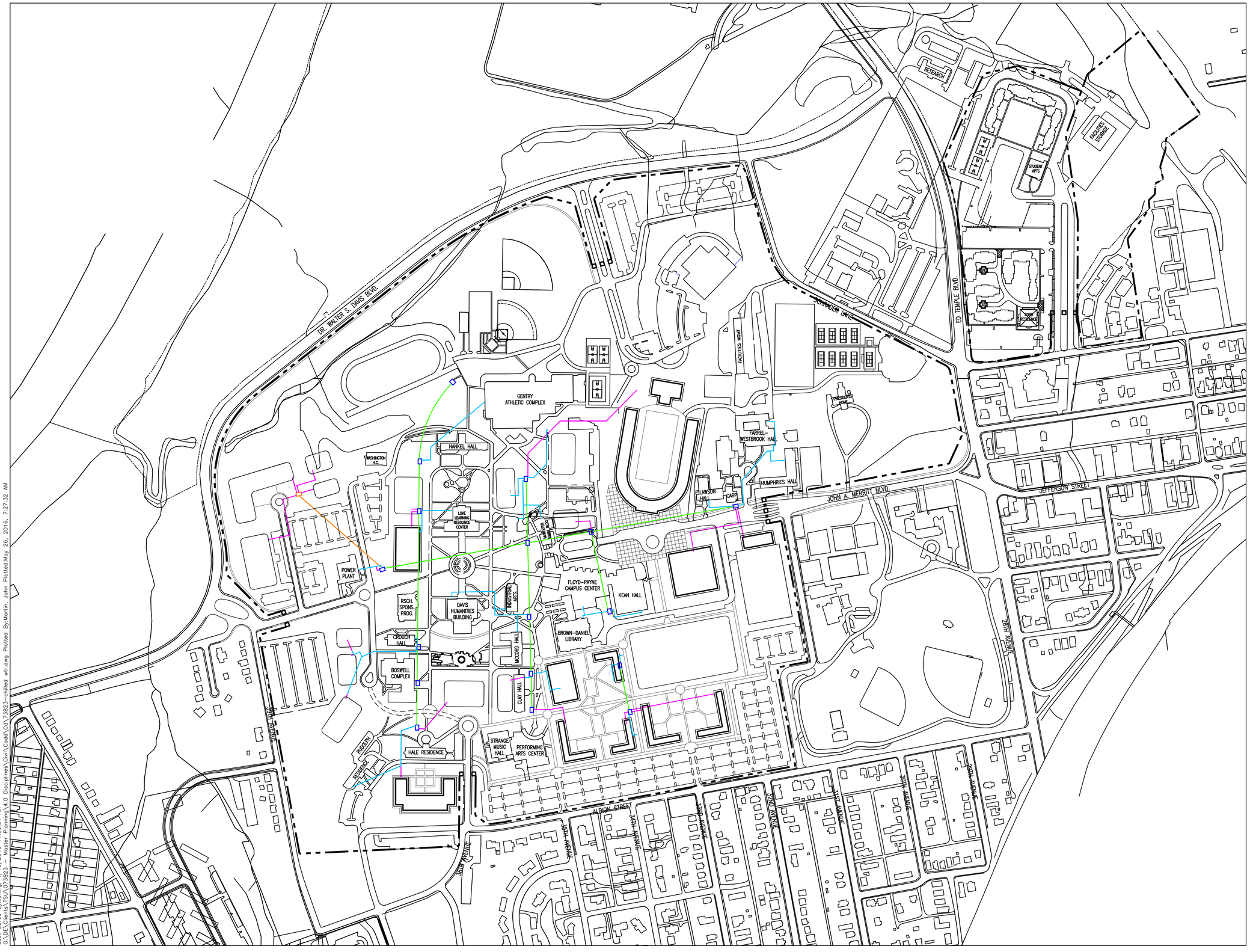
WOOLPERT

Images: Master Plan_Preferred.jpg; aerial.jpg; Woolpert Logo WHITE.jpg.jpg; , Xrefs: TSU_TBLK.dwg; tsu-masterplan-ebase.dwg; TSU_Final_Plan.dwg; 73823-x-utl.dwg; 73823-p-utl.dwg
Layout Tab Name: Layout 1
Last Saved By:liening, 4/15/2016 10:55:13 AM
G:\DE\Clients\TSU\073823 - Master Planning\4.0 Disciplines\Civil\Cadd\Cd\73823-steam.dwg Plotted By:Martin, John Plotted:May 26, 2016, 7:23:24 AM

MASTER PLAN
CHILLED WATER

Legend:

- Existing Chilled Water
- Existing Tunnel
- Existing Underground Vault
- Proposed Chilled Water
- Proposed Tunnel
- Proposed Underground Vault



NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VII - 12

WOOLPERT

Images: Master Plan_Preferred.jpg; aerial.jpg; Woolpert Logo WHITE.jpg.jpg; ; Xrefs: TSU_TBLK.dwg; 73823-p-util.dwg; tsu-masterplan-ebase.dwg; TSU_Final_Plan.dwg; 73823-x-util.dwg
Layout Tab Name: Layout 1
Last Saved By: Herring, Kelly 5/25/2016 11:00:31 AM
CS: DEFAULT Drawing Scale: 1:2.7432 Master Planning\4.0 Disciplines\Civil\Cadd\Cad\73823-chilled wtr.dwg Plotted By: Martin, John Plotted: May 26, 2016, 7:27:32 AM

VIII. Phasing and Implementation Plan

A. Introduction

The phasing of campus improvements outlined in this Implementation chapter is intended to begin with immediate needs for which funding is either secured or anticipated. Following the Initial Phase, the implementation plan is a conceptual strategy for accomplishing the long term plan objectives in a flexible manner that can both support and adapt to enrollment and program growth and funding opportunities. The plan includes not only new and renovated buildings but also the parking, circulation and infrastructure changes needed to support those changes. The summary cost opinion includes order of magnitude budgets for building demolition and renovation, as well as infrastructure for each phase. The initial phase also includes costs associated with the program migration plan that will be necessary to vacate Elliot Hall and move programs to backfill space vacated by Health Sciences programs moving to the proposed new Health Sciences building.

The implementation plan envisions an approach to build the campus out to the full potential condition described in the Physical Master Plan. Three phases are described; an Initial Phase describes development of facilities to meet immediate needs over the next 1-3 years. The Near Term Phase looks out five years beyond the initial improvements to projects that could be brought on line 3 to 8 years from the completion of the plan. The Long Term Phase anticipates that completion of the place of the campus improvements will take up to 20 years to complete. The priority order is conceptual, based on current assessment of space needs and facilities conditions.

An important element of the plan is the perimeter security. The Initial Phase retains the Main Gate at its present location, which leaves the access points along 33rd Avenue outside the gate, which is not ideal. The Near Term suggests how the Main Gate can be moved to its final location, and with all properties facing 33rd Avenue under university ownership, 33rd Avenue could be closed, making access to all university parking and service areas accessible through the Main Gate, a much improved security scenario. There are secveral incremental options that could attain the desirable level of security sooner, without the necessity of acquiring the church properety or all of the property along the west side of 32nd Avenue.

- During the Initial Phase, the Main Gate could be moved to the east edge of the Wesley Foundation property. With acquisition of the northern most two lots on the east side of 33rd Avenue, access to the service areas behind Kean, Floyd Payne and the Library could be brought inside the perimeter. The north end of 33rd Avenue could be closed, and terminated with a cul-de-sac, and the fence extended to the new gate.
- During Near Term Phase development, once all properties along 33rd Avenue are acquired (the top Acquisition Plan priority), the boundary fence could be moved east to the west side of the mid-block alley. The initial Main Gate could remain where it is, or, if the Wesley Center is acquired, that would allow the gate to be moved to its final location.

The following phasing strategy is a plan that outlines a general course of action and priorities. It should be used as a guide, but not an absolute directive, since there are a number of options within the general plan that will achieve most of the priorities and benefits of the phasing plan. Opportunities to grow the campus should be considered in light of the overall long term goals and used to adjust the specific details of the phases as they are implemented.

B. Land Acquisition/Disposition

Campus Growth

Future growth of campus property should be based on protecting the campus perimeter, supporting the growth requirement for future program facilities or reducing the negative impacts of commercial enterprises on TSU's students, faculty, administration, staff and visitors. The proposed acquisition will both protect the campus perimeter, and allow development of new Residence Halls, the Recreation Center and Recreation Field, all vital to campus life, and recruiting and retention. The expansion in the northwest, opens the opportunity for the Research Corridor to add a new dimension to the academic environment.

A major recommendation of the Preferred Master Plan is acquisition of property on the east side of campus and the northwest corner.

- The **Eastern Acquisition Area** extends from 33rd Avenue to Hadley City Park and from John A Merritt Boulevard to Albion Street.
- The Friendship Missionary Baptist Church, on 32nd Avenue and its parking could be excluded from the purchase and a possible shared parking agreement considered.
- All other properties should be acquired to expand and significantly upgrade housing and provide vitally needed recreation fields and facilities, including a new Recreation Center.
- This area would also house a future Student Services building and provide additional parking at the main entrance to campus.
- The acquisition, supplemented by an access easement along the south side of Merritt Boulevard, will help to enhance and strengthen the campus arrival experience, by adding a tree lined promenade on either side of Merritt.
- The **Northwestern Acquisition Area** is a small neighborhood along Tigerbelle Drive and 39th Avenue North, bounded by Davis Boulevard on the west and John. L Driver Avenue on the south.
- This neighborhood is small and isolated, and sits adjacent to a key secondary campus entrance.
- It is a good potential location for the future Research and Sponsored Programs (RASP) Corridor, envisioned as a group of research buildings that house university research and partner companies collaborating with Tennessee State University on research.
- The property is close to other science programs, with good access to the Academic Core. It also has direct access for partners from off campus. Excellent views are conducive to attracting the specialized users of the RASP Corridor.

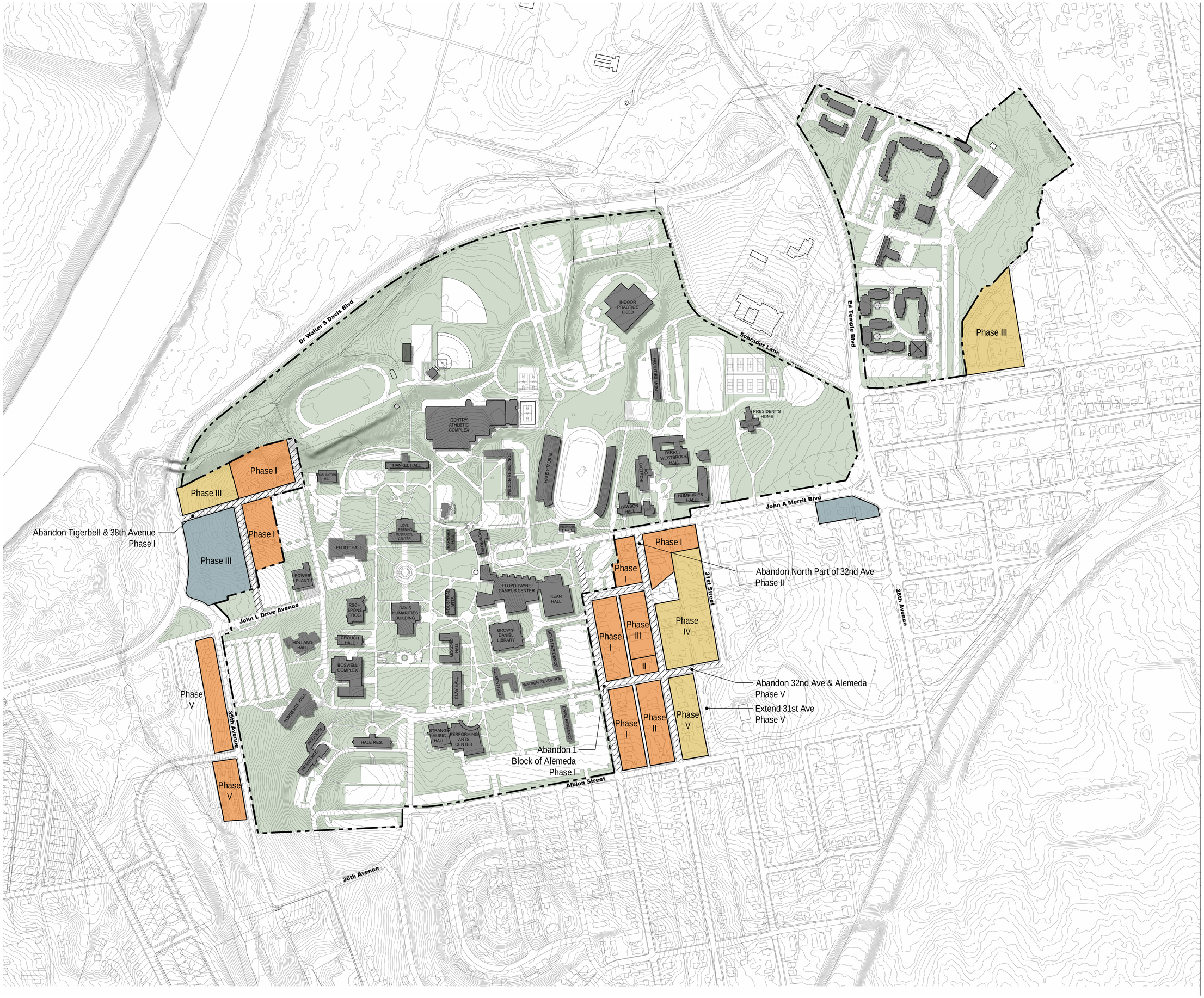
The property expansion and growth of the campus recommended in this Master Plan are based on two primary factors.

- First is the need to accommodate expanded facilities to meet increased enrollment, and improved modern facilities for the University's programs. Additional land will be needed for modern residence halls and quads, added, competitive recreational facilities, and expanded research facilities.
- Second is the advisability of acquiring adjacent property in two neighborhoods that are no longer large enough to sustain themselves, and are therefore declining in value. Conditions have developed that raise concerns for the safety and security of the campus. Acquiring that property can help stabilize the neighborhood and secure the perimeter of the University.

The expansion east is primarily to accommodate new up to date residence halls, many of them suite style, a future Recreation Center and recreation field, and a Visitor center and large parking garage. All of these improvements will be valuable to both recruitment and retention of both faculty and students, while freeing up space in the Academic Core for future academic buildings as the need develops.

Growth to the north east will house a new Research Corridor, bringing new learning and research opportunitied to TSU, while also attracting funding. The location of this area near the west gateway on a major thoroughfare, makes the site convenient for partnering organizations to locate on the edge of campus.

See Figure VIII-1, Proposed Land Acquisition.



MASTER PLAN PROPOSED LAND AQUISITION

Legend:

- Existing Buildings
- Campus Footprint
- High Priority (Level 1)
- Desired (Level 2)
- Future (Level 3)
- Abandon Street

NORTH

0 200 400 600
GRAPHIC SCALE IN FEET

TSU
Tennesse State University
Campus Master Plan

May 2016

Figure VIII - 1

WOOLPERT

C. Phased Implementation

1. Initial Phase: 1-3 Years

Facilities:

- Vacate and demolish of Elliot Hall.
- Design and Construct a new Health Sciences Building, with associated access drives and parking, to initially house the Nursing program, and ultimately be expandable to include allied health programs.
- Migrate programs out of Elliot and into space vacated by Health Sciences.
- Modify Jackson Hall interior and exterior to accommodate the Art program.
- Complete the ornamental perimeter security fence with new north, west and south gateway, enhance the Main Campus gateway, and Service/Emergency Gateways.
- Install roundabouts at the ends of John B. Driver, and 36th Avenues, with a connecting walkway designed to accommodate bus and emergency and service vehicles, to complete an internal access drive around the south side of the campus.

See Figure VIII-2, Initial Phase.

2. Near-Term Phase: 3-8 Years

- Build a new residence hall and additional parking south of Hale Hall to complete a housing quadrangle.
- Begin a new Student Housing Precinct, by adding one new residence hall east of the Performing Arts Center.
- Begin a perimeter road around the south boundary of the university and expand the parking around that boundary.
- Demolish Wilson Residence Hall and Boyd Residence Hall
- John Merritt Boulevard Streetscape Improvements and new gateway.
- Secure Perimeter Expansion:
    - Upon completion of property between 32nd Avenue and 33rd Avenue, close 33rd Avenue and relocate the perimeter fence to the west side of 32,nd Avenue and build a new, permanent main gateway on John A. Merritt Boulevard between 32nd Avenue and 33rd Avenue.
    - Upon acquisition of properties at the east end of Tigerbelle, and along the east side of 38th Avenue, close the east block of Tigerbelle and relocate the perimeter security fence to the east side of 38th Avenue.
    - Close Alameda and install walks and planting to make Alameda a pedestrian corridor.
- Build a new Recreation Center North of Kean facing John A. Merritt
- Build a new Recreation Field straddling 33rd Avenue adjacent to the south side of the proposed Recreation Center
- Build one to two new research buildings at the east end of Tigerbelle to house new and expanding research program and partnerships.
- Renovate and further define the Central Core Open Space using landscaping, lighting, site furnishings and walkway refinements.
- Introduce the TSU Walk of Fame for Academics, Athletics and along John A. Merritt Boulevard

See Figure VIII-3, Near-Term Phase.

MASTER PLAN IMPLEMENTATION INITIAL PHASE 1-3 YEARS

Legend:

- Existing Buildings
- Roadway Improvements
- New Building
- Building to be Demolished
- Perimeter Ornamental Fence
- Campus Gateway
- Pedestrian Gateway
- Service / Emergency Access

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

Connecting Limited Use Drive / Walk

Phase I Perimeter Road

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VIII - 2

WOOLPERT

MASTER PLAN IMPLEMENTATION NEAR TERM PHASE 3-8 YEARS

Legend:

- Existing Buildings
- Roadway Improvements
- New Building
- Building to be Demolished
- Perimeter Ornamental Fence
- New Ceremonial Main Gate
- Service / Emergency Access

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VIII - 3

WOOLPERT

3. Long-Term Phase: 9-20 Years

- Build a new Football Stadium and Field House, with plaza above underground parking
- Build an expanded plaza surrounding the intersection of the closed 33rd Avenue and John A. Merritt Boulevard as a central activity and gathering place at the front door of the campus.
- Complete the new housing precinct with new suite-style housing east of Performing Arts
- Demolish the Watson and Eppse Residence Halls
- Build a new Alumni/Visitor's Center on the south side of John A. Merritt Boulevard at the main Gateway
- Build a new Parking Garage between 31st Avenue and 32nd Avenue
- Build new Academic buildings on five potential sites surrounding and reinforcing the Campus Core and setting up a new Academic Core north of McWherter
- Demolish Torrence and replace with a new expanded Engineering Building, to consolidate all engineering within one structure
- Demolish Holland and goodwill Manor.
- Build new Apartment Style Housing for graduate students in the Apartment Complex northwest of campus
- Extend the perimeter road around the south boundary of the university to connect the main gateway to the south gateway and the west gateway and expand the parking around that boundary.
- Upon acquisition of the remaining properties along 38th and 39th Avenues and Tigerbelle, develop the Proposed Research Corridor.
- Build a Nature/Bike Trail that loops the north portion of the campus
- Reconfigure parking and access drives on the north and east side of campus around the Athletic Precinct and new Academic Quad.
- Expand McWherter Administration Building as necessary to meet administration space needs
- Move Operations to the Property north of Heiman Street and convert the existing Operations Building to Athletic Offices and Football team Rooms
- Extend the Utility Tunnel from the Downshaft at the Elliot site to the Central Power Plant
- Add two Generators, one at the east substation and one at the west substation

See Figure VIII-4, Long-Term Phase.

MASTER PLAN IMPLEMENTATION LONG TERM PHASE 9-20 YEARS

Legend:

- Existing Buildings
- Roadway Improvements
- New Building
- Building to be Demolished
- Perimeter Ornamental Fence
- Service / Emergency Access

NORTH

0 200 400 600

GRAPHIC SCALE IN FEET

TSU

Tennesse State University
Campus Master Plan

May 2016

Figure VIII - 4

WOOLPERT

D. Migration Plan

1. Initial Phase

The removal and Elliot Hall to add a new Health Sciences building will require relocation of some programs to consolidate Health Sciences in one building. This migration of programs will also be an opportunity to move other programs, such as Art, Mechanical and Aero Industrial Engineering into upgraded space that is configured for current and projected needs of the migrating programs. The following migration plan will move programs out of Elliot, back filling space vacated by Health Sciences or otherwise under used.

2. Near- and Long-Term Migration

As future academic buildings come on line, the approach to migrating programs that became a consensus preference during the master planning process is to strive to consolidate programs geographically, so that each program can have a clear identity within the overall framework of the university. By bringing all of a program's classrooms, labs, offices and support areas into close proximity, internal program communication and support can be enhanced.

An additional consideration in the long term plan is to locate general purpose classroom and lab spaces in strategic locations that allow them to effectively serve several programs in close proximity to the flexible spaces.

Whenever programs are moved, the plan should be to renovate and update the facility to as close to contemporary standards as possible. Another goal should be to build as much flexibility into both new and repurposed/renovated buildings as possible to make renovations necessary for future migrations less costly. In addition, by maintaining up to date documentation of maintenance and deferred maintenance needs, maintenance projects can be coordinated with repurposing or program moves so that capitol funds allocated for the moves can also accomplish maintenance needs, or conversely budget maintenance funds can offset and reduce capital expenditures for program relocations.

E. Opinion of Probable Construction Cost

The following summary outlines the order of magnitude costs that can be anticipated to accomplish the recommended Master Plan improvements. The Opinion of Probable Construction Cost is presented in order of the proposed phases. Costs for the Initial Phase are most accurate, since they are based on more detailed space criteria. Costs for later phases are more general, as program for the facilities is less specific and future construction costs are less certain.

Budget costs for the major building, open space and utility projects represent construction costs only. Any indirect project design and management costs along with building furnishings and other soft costs should be evaluated and added to these budgets as appropriate. Typically, soft costs range from 20% - 30% of construction costs. These cost projections are for the year 2016 and include no escalation for rising costs of materials or labor. Escalation should be applied to each project from 2016 to the actual period of construction. These budgets are derived using dollar-per-square-foot calculations based on past project data and experience with similar types of buildings. Variances from these budgets may occur for various reasons including programming and design changes, market conditions, general economic conditions, financing etc.

Approx. Funding Year	Priority Construction Projects	Floorplate (SF)	Floors	Building Gross SF	Estimated Cost	Funding Source	Notes	Cost/SF
	Planned Improvements							
2017 - 2019	**Initial Phase; 1 - 3 Years**							
	Academic Buildings							
	New Health Sciences Building	39,700	3 - 4	119,000	$30,800,000	TBR	On TBR funding list	$300
	Renovate Jackson for Art		3	25,665	$3,849,750	TBR	Includes 3,000SF outdoor work area	
	Migration Plan							
	Demolition							
	Demolish Elliot Hall				$800,000			
	Security							
	Complete Perimeter Fence & 4 Gates			16,700 lf	$1,600,000			$20 lf
	Roadways							
	Roundabouts with Bus Connecton			3,800 sy	$1,350,000			$30 sy
2019 - 2024	**Near Term Phase; 3 - 8 Years**							
	Academic Buildings							
	New Research Building		2 - 3	30,000	$9,000,000	Research		$300
	Housing							
	New Residence Hall South of Hale		3 - 4	300 beds	$8,400,000			
	New Residence Hall East of Performing Arts		3 - 4	350 beds	$9,800,000			
	Demolition							
	Demolish Wilson Hall				$350,000			
	Demolish Boyd Hall				$350,000			
	Demolish Part of Clement Hall				$350,000			
	Athletics and Recreation							
	New Recreation Center		2	80,000	$22,000,000			$300
	New Recreation Field				$10,000,000			
	Security							
	Expand Perimeter and move Main Gate				$200,000			
	Roadways							
	John Merritt Blvd. Streetscape Improvements				$750,000			
	Begin Perimeter Road South Side				$150,000			
	Parking							
	Expand Parking South Side				$200,000			
	Open Space							
	Convert Alameda to Pedestrian				$200,000			
	Campus Core walk and landscape				$250,000			
	TSU Walk of Fame				$200,000			
	Property Acquisition							
	Acquire Properties between 33rd and 32nc				TBD			
	Begin Tigerbelle Acquisition				TBD			
2025 - 2036	**Long Term Phase; 9 - 20 Years**							
	Academic Buildings							
	New expanded Engineering Building		3 - 4	70,000	$17,500,000		Replace Torrence	$300
	New Academic Building		2 - 3	40,000	$10,000,000		Between Torrence and Holland	$300
	New Academic Building		2 - 3	40,000	$10,000,000		Replace Holland	$300
	New Academic Building		3 - 4	100,000	$25,000,000		Next to Health Sciences	$300
	New Academic Building		3	50,000	$12,500,000		northeast side of Core	$300
	New Academic Building		3 - 4	80,000	$20,000,000		Wilson Site	$300
	New Research Tower Building		6	60,000	$15,000,000			$300
	New Research Building		2 - 3	50,000	$12,500,000			$300
	New Research Building		2 - 3	50,000	$12,500,000			$300
	Administrative							
	New Alumni/Visitor's Center		1 - 2	20,000	$5,000,000		Merritt at 31st	$300
	Expand McWherter		2 - 3	25,000	$6,250,000			$300
	Move Operations north of Helman Street		1	50,000	$12,500,000			$300
	Housing							
	New Residence Hall		3 - 4	400 beds	$11,200,000			
	New Residence Hall		3 - 4	400 beds	$11,200,000			
	New Residence Hall		3 - 4	300 beds	$8,400,000			
	New Residence Hall		3 - 4	300 beds	$8,400,000			
	Add Apartments northwest		2 - 3	25 units	$750,000			
	Demolition							
	Demolish Eppse				$300,000			
	Demolish Watson				$300,000			
	Demolish Torrence				$300,000			
	Demolish Holland				$300,000			
	Demolish Goodwill Manor				$300,000			
	Athletics and Recreation							
	New Football Stadium				$35,000,000			
	Convert Old Operations Bldg. to Football		2	40,000	$6,000,000		Repurpose Operations Building	$150
	Security							
	Expand PerimeterSecurity Fence				$240,000			
	Roadways							
	Extend Perimeter Road on Southeast				$350,000			
	Parking							
	New Parking Garage							
	Reconfigure Parking North Campus							
	Infrastructure							
	Extend Utility Tunnel - Elliot Hall to Central Plant				$425,000			
	Open Space							
	New Central Plaza at Merritt and 33rd				$1,750,000			
	Nature/Bike Trail around North Perimeter				$1,000,000			
	Property Acquisition							
	Acquire Properties between 32nd and 31st				TBD			
	Acquire balance of Tigerbelle area properties				TBD			

Table 7-X: TSU Migration Plan

Current Condition/Occupants			Proposed Moves											
Building	Current Occupant	Proposed ASF to Be Released	Art	Music Inst. Shop	Events Mgmt	Sociology	History	WRITE Ctr	Trio Programs	Banner Testing	Ctr Acad. Learning	Aero and Industrial Engin.	Mech Engin.	Backfill Totals
Jackson Technology Building	Cardio Respiratory Therapy	4,385												
	Mechanical Engineering	4,600												
	Aero Industrial Engineering	2,739												
	Unknown	361												
	WRITE Center	1,943												
	Total Vacated ASF Jackson	**14,028**	**14,200**											**14,200**
Humphries Hall	School of Nursing	15,480		1,750	900	4,000	1,100	2,200	2,900	750	2,200			15,800
Holland Hall	Academic Support Center	3,149												
	Ctr for Service Learning	3,363												
	University Call Center	823												
	Banner Testing Center	683												
	Total Vacated ASF Holland	**8,018**										**3,400**	**4,600**	**8,000**
Demolition	Elliot Hall	56,700 GSF												
	Part of Clement Hall	23,300 GSF												

Main Campus Migration Plan Notes:

1. Construct new Nursing/Health Sciences Bldg. and move PT, OT and Cardio out of Clement and Jackson Tech. Nursing moves from Humphries Hall.
2. Relocate History, Sociology, Events Mgmt. and Music Instrument Shop from Elliot Hall to Humphries
3. Relocate Academic Support Ctr., Ctr. For Service Learning, University Call Ctr., and Banner Testing Ctr. From Holland to Humphries Hall.
4. Move WRITE Center from Jackson to Humphries.
5. Move Aero and Mechanical Engineering from Jackson to Holland.
4. Renovate Jackson Industrial Tech and relocate the Art Department from Elliot.
5. Demolish Elliot
6. Demolish Part of Clement.

F. Next Steps

Several more detailed fiscal and physical planning activities will be very valuable in defining the potential and feasibility of specific elements of the proposed improvements outlined in the Master Plan. These specific studies center on programs that are driven by market and other economic forces, such as housing, recreation and athletics. The following studies should be considered as follow-up to this Master Plan.

- Housing: Prepare a phasing plan, system-wide financial analysis, and detailed schedule to more precisely implement the housing recommendations, which include reducing the number of traditional-style beds from the on-campus housing stock and replacing/renovating existing facilities with suite-style beds.
- Student Recreation: Create an outline program, including a phasing schedule, detailed programming, financial analysis, and fee tolerance assessment as the basis for programming and design of new facilities.
- Athletics:
  - For the Gentry Complex, develop an outline program for reuse/renovation of spaces
  - For the Football Stadium, conduct a detailed analysis of seating capacity, premium seating mix, site selection and capacity, market demand for additional events, implementation options, and a detailed funding and operations analysis