SAM HOUSTON STATE UNIVERSITY

CAMPUS MASTER PLAN UPDATE

January 2013


SH
A Great Name
in Texas Education

TABLE OF CONTENTS


Sam Houston
State University

01. Executive Summary

WHY A PLAN UPDATE?

The 2008-2020 Campus Master Plan for Sam Houston State University was approved by the Board of Regents in August 2008. Since that time, the University's building program has been on course; however, new enrollment and academic trends began emerging shortly after the adoption of the 2008 Campus Master Plan. In 2011, a Strategic Plan was designed and implemented by the University's new Administrative team. Several key factors impacting the assumptions underlying the 2008 Campus Master Plan surfaced, such as the growth of online and transfer students, the need for innovative academic and research partnerships, and changing housing, student life and demographic trends. Moreover, the campus infrastructure needed a comprehensive review focusing on the renewal of existing systems and expansion to serve new facilities. The City of Huntsville reevaluated its storm water systems, and city-wide transportation needs were changing. Realizing all of these shifts, a conscious effort was made by the University to update and build on the efforts of the 2008 Campus Master Plan as a planning tool to give the University the flexibility to address these changing dynamics.

Sam Houston State University, aerial view, circa 2010

MASTER PLAN GOALS

The goals of this update remain similar to those in the 2008 Plan, and have been modified to represent the spirit of the 2012 Update.

2012 UPDATED GOALS

1. *Educate the State of Texas workforce.*
2. *Strengthen and expand the academic core.*
3. *Create unique and diverse academic, residential, recreation and athletic districts.*
4. *Identify ideal future locations for campus facilities.*
5. *Meet the needs of academic program requirements for today and tomorrow.*
6. *Develop a nationally recognized research park.*
7. *Provide sustainable and efficient infrastructure.*
8. *Create a clear and integrated street network.*
9. *Enrich the pedestrian environment.*
10. *Balance parking needs with land availability.*
11. *Maintain and extend a unique campus landscape.*
12. *Increase and diversify recreational opportunities.*
13. *Manage storm water as a campus asset.*
14. *Embrace the surrounding community.*

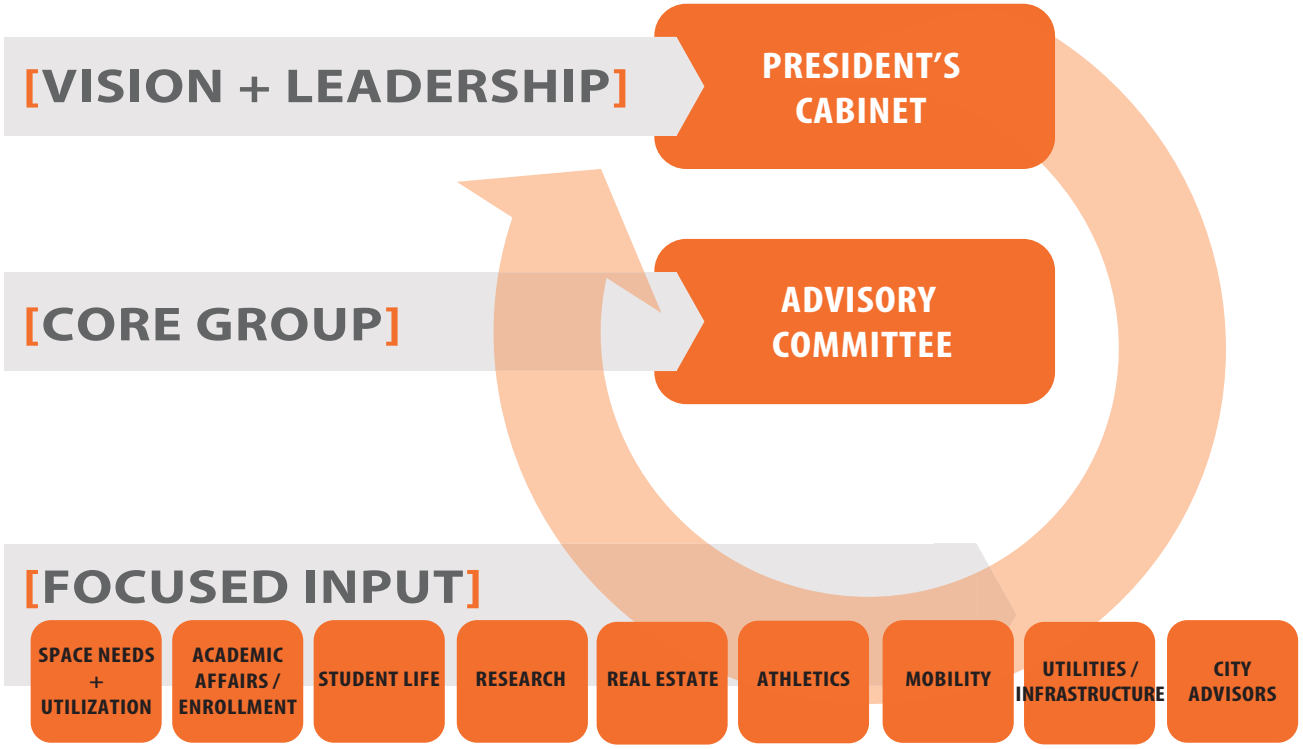
2012 PLAN UPDATE PROCESS

Several focus groups and committees were formed to provide a broad spectrum of input during each task of the Plan Update process. These groups included faculty, staff, students, administrators, regents, and community leaders.

The 2012 Plan Update was conducted over a 6-month time frame and consisted of five major tasks: Discovery, Analysis, Idea Generation, Refinement and Documentation. The Discovery task included the establishment of planning objectives, collecting data, and conducting meetings and interviews to ascertain key campus issues. Some of these issues included academic and research programs, utility infrastructure, storm water infrastructure, athletics and recreational sports, mobility, safety, future real estate acquisitions, and community endeavors. The objective of the analysis task was to evaluate the data collected in the Discovery task, and uncover meaningful relationships for on- and off- campus elements. The Analysis task also assisted in identifying opportunities and constraints that will influence future planning decisions on campus. The Idea Generation phase tested three future alternative scenarios of campus development based on the results of the campus analysis. The Refinement phase combined the best of the alternatives, based on committee input, into a preliminary campus plan. The refinement phase became a foundation for the final plan which reflects the key concepts relating to space needs, pedestrian corridors, open space, building and land use, vehicular circulation and parking, and infrastructure corridors. The final phase, Documentation, included recording the project approach, process, and Plan Update recommendations.

The results of the physical planning process was guided by a demographic and capture rate exercise, future enrollment, a space utilization study, and an understanding of future program opportunities. These tasks were performed by Facility Programming and Consulting. Several steps were taken to evaluate existing and future demands and the pressures of capacity on campus. A summary of the results of this effort are included in Chapter 3 of this report. Please refer to the full report titled *A Demographic and Utilization Study for the Master Plan, November 2012*.

Additionally, an in-depth study of infrastructure needs was examined to align with the future 2012 Plan Update elements. EEA Consulting Engineers performed a thorough analysis of equipment and piping elements within the central chilled and hot water systems and the campus electrical distribution system. The findings from this study can be found in their report titled, *Campus Distributed Utility Master Plan, November 2012*. Future campus growth also impacts storm water runoff in the SHSU community. The civil engineering firm, Klotz Associates, examined existing flow data in the sub-watersheds surrounding campus and the proposed 2012 Plan Update development opportunities to provide necessary future storm water improvements. The findings from this study can be found in a complete report titled, *Sam Houston State University Storm Water Master Plan Update, November 2012*. A brief summary of the infrastructure analysis and recommendations can be found in Chapters 2 and 4 of this report.



Planning Process

Stakeholder Involvement

THE 2008 CAMPUS MASTER PLAN

In order to understand the 2012 Updated Plan, it is important to review the 2008 Plan methodology and overall recommendations.

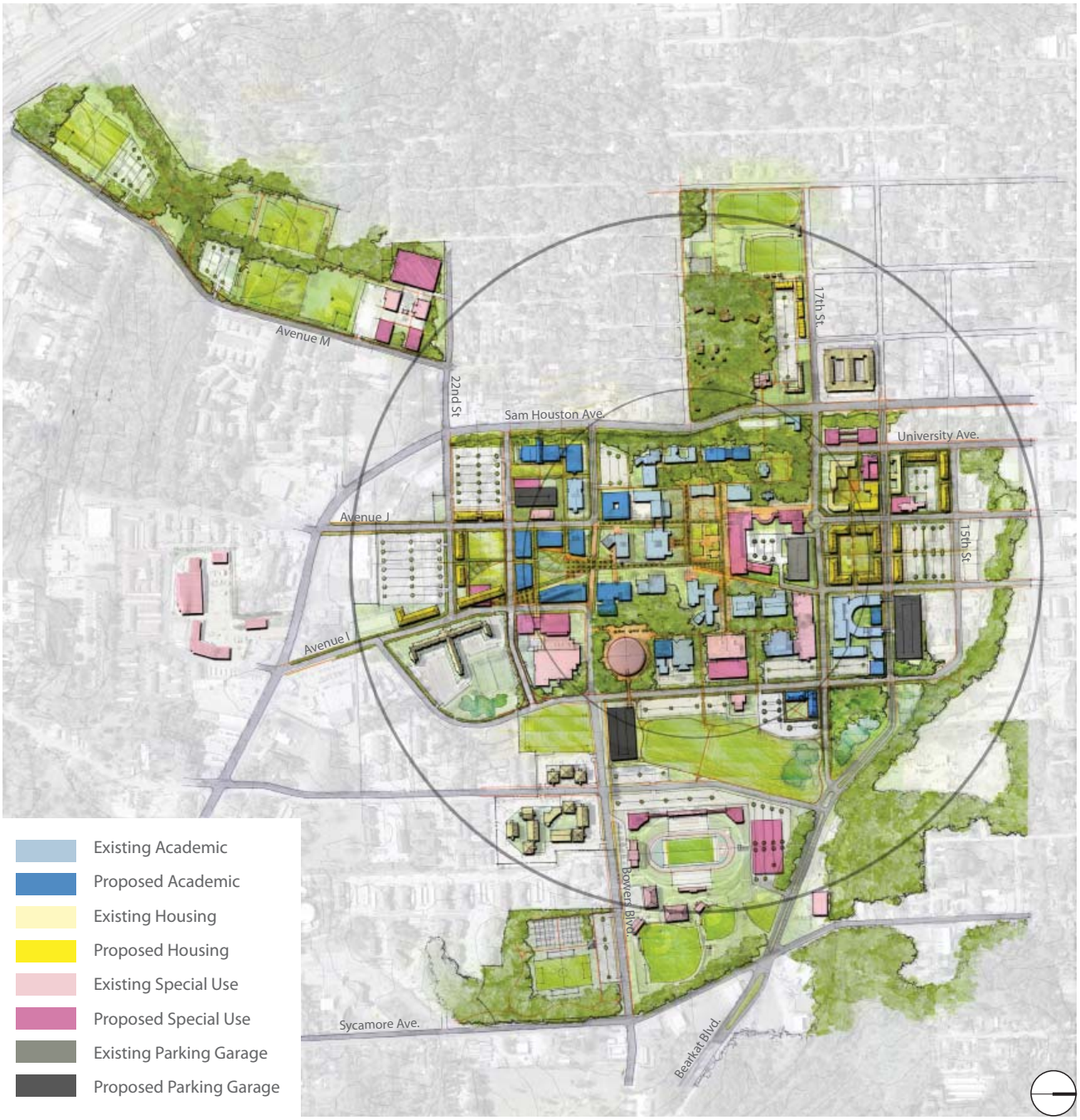
Methodology

The 2008 program outlined the capacity for an additional 1.1 million gross square feet of new and replacement academic facilities, 0.5 million gross square feet of residential uses, 15 acres of surface parking, and 10 acres of recreation fields. The following descriptions explain how each major program element was developed:

- The 2008 Plan embodied a straight-line projection of 2% in student growth per year to the year 2020.
- Academic and Auxiliary space needs included eight sub-categories: Classroom, laboratory, office, library, athletics, special use, general use, and service. Each space category was benchmarked against six state peer institutions. Additionally, the overall needs were compared to the Texas Higher Education Coordinating Board's space model and need projections and confirmed through departmental interviews.
- Residential development was based on a university defined goal of approximately 20% on-campus housing.
- Parking requirements were projected using the overall ratio of spaces per person currently allocated for the projected 2020 population of 21,262.
- Recreation and Athletic field estimates were developed by the SHSU Department of Recreational Sports and are based on National Recreation and Park Association standards. Athletics was determined to not have any major field needs.

Major Recommendations

- Infill the academic core.
- Link the academic core to a new south academic quad.
- Create distinctive residential districts.
- Offer student life amenities in the north, center, and south areas of campus.
- Develop the I-45 property as a recreation center.
- Renovate and expand Student Center.
- Develop additional parking structures.
- Expand science offerings, business, fine and performing arts and library function.
- Provide a consolidated and contiguous Athletics District.



The 2008 Campus Master Plan

2008 & 2012 PLAN COMPARISONS

The 2012 Plan Update utilizes the framework of the 2008 Plan. The Update also recognizes the work that has been accomplished as a result of the 2008 Plan. The list below compares similarities and differences from the 2008 and 2012 plans, lists accomplishments, and describes in-progress projects.

Plan Differences

- A detailed building assessment was performed in 2008, but was not performed as part of the 2012 Update.
- Detailed space utilization, storm water and infrastructure master plans were performed in conjunction with the 2012 Plan Update.
- In 2012, recreational uses proposed in 2008 at the I-45 Complex have been modified.
- In 2012, the functions of CMIT, LEMIT and the University Hotel uses will move to the potential Research Park, opening up existing space for reuse.
- The library was not studied as part of this 2012 Update. A future separate library study is recommended.
- Property north of Town Creek was analyzed for athletics expansion for the 2012 Plan in lieu of expansion to the south.
- The 2012 Update proposes a more conservative parking expansion.
- In 2008, central plant expansion was proposed as a separate facility. In 2012, an addition is recommended to the East Plant.

2012 Update Similarities to The 2008 Plan (numbers correspond to graphic at right)

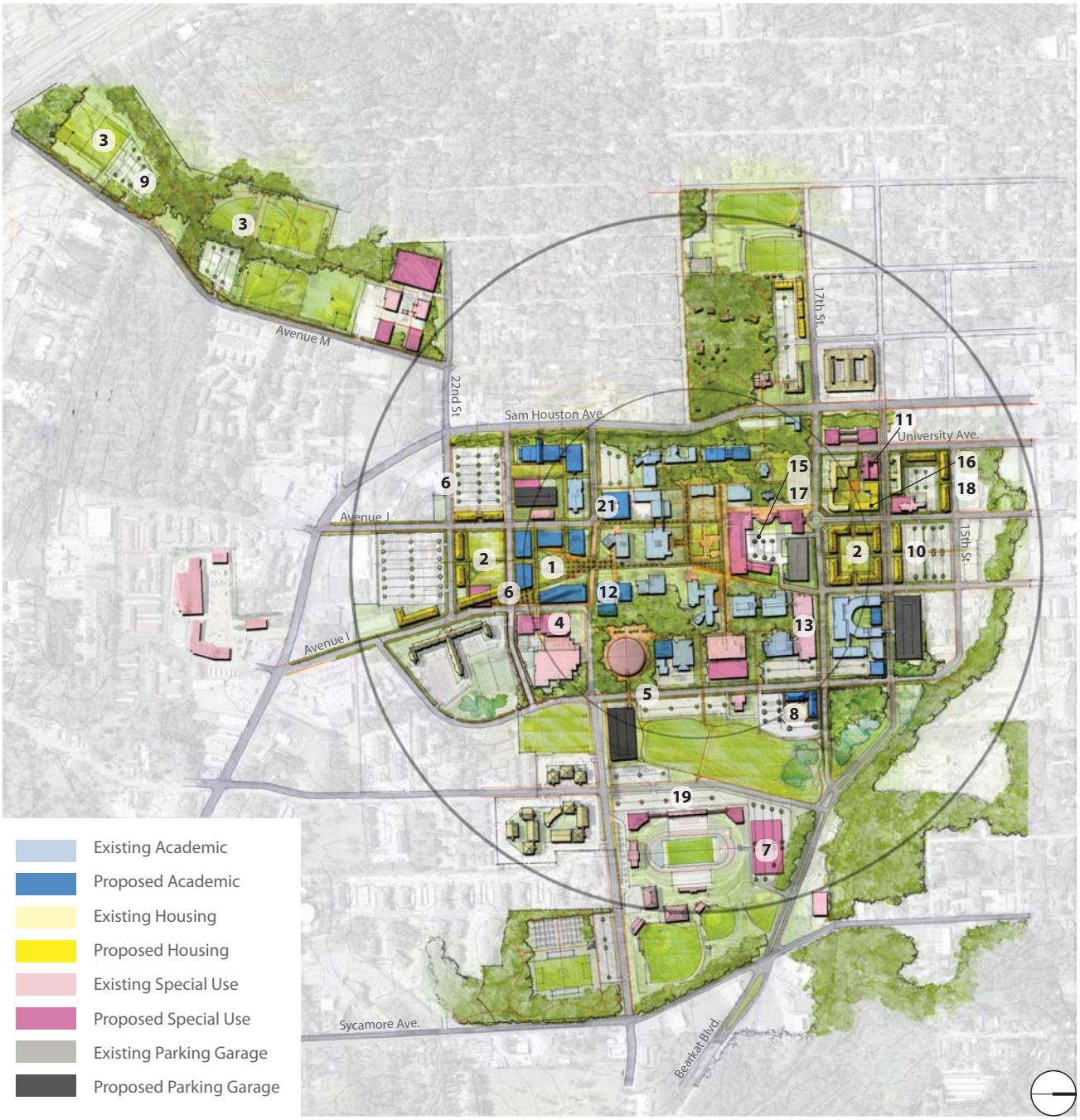
1. Develops a new academic quad to the south which is contiguous to the existing academic core. This new academic quad maintains a science focus.
2. Develops a south and north residential and student life districts.
3. Implementation of recreation fields at the I-45 Complex.
4. Expansion of the indoor recreational sports complex.
5. Improved recommendations for pedestrian and vehicular safety along Bobby K. Marks Drive.
6. Utilizes the same roadway framework to ensure safe and direct access to and within campus.
7. Creates infill opportunities to expand and reinforce a consolidated Athletics District.
8. Relocation of the Fine Arts program south of the Gaertner Performing Arts Center.
9. Captures Agriculture and Horticulture uses from the I-45 Complex for relocation to Gibbs Ranch.

Implemented Projects Since 2008 (numbers correspond to graphic at right)

10. Lone Star Hall and Residential Life Office
11. Old Main Market Dining Facility
12. College of Humanities and Social Sciences
13. Gaertner Performing Arts Center
14. Woodlands Facility (at The Woodlands Center), not illustrated
15. Removal of Smith-Kirkley Hall
16. Removal of King Residence Hall

In-Progress Projects as a Result of The 2008 Plan (numbers correspond to graphic at right)

17. Programming for the Lowman Student Center expansion (proposed at former Smith-Kirkley site)
18. Programming for the Student Health and Counseling Center (proposed at former King Hall site)
19. Programming for the Events Center and Press Box
20. Programming for the Plant Science Field Lab at Gibbs Ranch (not illustrated)
21. Programming for the Nursing / Biology facility.
22. Off-campus planning and programming initiatives for Gibbs Ranch (including a new arena), University Camp, and potential Research Park (not illustrated)



The 2008 Campus Master Plan keyed with plan similarities, implemented projects, and planning efforts.

2012 PROGRAM SUMMARY

As part of the space utilization study for the 2012 Plan Update, the planning team conducted interviews with individual department heads and College Deans. This exercise was performed to understand the programmatic needs of each particular college and department, and more importantly, if those needs had changed since the 2008 Plan. The diagram at the right illustrates the existing and proposed building blocks of campus development.

There were several program differences from the 2008 Plan. A summary of these changes are:

College of Criminal Justice

- In the 2008 Plan, the Criminal Justice Building was to expand for CMIT, LEMIT and Forensic Science. In the 2012 Update, this expansion occurs at the future Research Park to accommodate CMIT and LEMIT off-site. Forensic Sciences moves into the vacated Criminal Justice Building space.

College of Business Administration

- A College of Business Building is no longer needed as per the 2008 Plan. Instead, a 12,000 GSF Business Education Center is needed and is located within a future academic building.

College of Sciences

- The Agricultural and Engineering Technology Building becomes one integrated facility totaling 50,000 GSF, instead of two separate facilities as shown in the 2008 Plan.
- A new Shared Special Instruments Facility avoids equipment duplication amongst several separate facilities and is located within the sciences district.

Residential

- The 2012 Plan Update maintains a target of 21% on-campus housing, which yields approximately 3,800 total beds (including replacement beds).

Other

- The vacated Thomason Building remains and is renovated for faculty and/or administrative offices and thermal infrastructure. The 2008 Plan illustrated that Thomason be removed and replaced with an academic facility.
- The East Plant is expanded to be the exclusive central plant on campus and includes the removal of the West Plant. A data communications expansion is part of the East Plant Expansion. In 2008, the central plant activity was divided between a new South Central plant and the existing East Plant.
- A separate Student Health and Counseling Center is proposed.
- It is recommended that administrative functions and space are evaluated as a separate study as this was not part of this Plan Update.

EXISTING PROGRAMMATIC ELEMENTS

FUTURE PROGRAM OPPORTUNITIES

Academic Facilities

Academic Facilities

366,000 GSF

Residential Facilities

Residential Facilities

496,600 GSF (incl. replacements)

Student Life

Student Life

110,000 GSF

Special Use

Special Use

117,900 GSF

Support/Service

Support/Service

15,000 GSF

Athletics

Athletics

70,000 GSF + 6 acres of fields

Recreation

Recreation

165,000 GSF + 5 acres of fields

Parking

Parking

7 acres of parking

2012 CAMPUS MASTER PLAN UPDATE

The Campus Master Plan Update characterizes a full and realized vision for the University. This updated vision is a culmination of many discussions with the President's Cabinet, Advisory Committee, and Focus Groups during the planning process.

This plan translates the Plan Goals into a visual representation for the future. Both short- and long- term opportunities are represented and locates future buildings, pedestrian and vehicular corridors, open space and parking into the existing campus fabric. Chapter 4 of this report explains in greater detail the elements of the Plan Update and how each campus system is impacted by the proposed building development.

Major recommendations for the 2012 Update include:

1. Develop a compact, uninterrupted, and pedestrian friendly extension of the academic core.
    - Expand and strengthen the existing science-orientated programs.
    - Extend academic function to the front door of campus.

2. Implement residential and student life amenities on the south and north sides of campus.
    - Create new, memorable open spaces and informal recreational opportunities.
    - Expand and renovate the Lowman Student Center to meet current demands and changes in student life trends.

3. Relocate the fine arts program to establish an arts neighborhood and strengthen interdisciplinary collaboration.

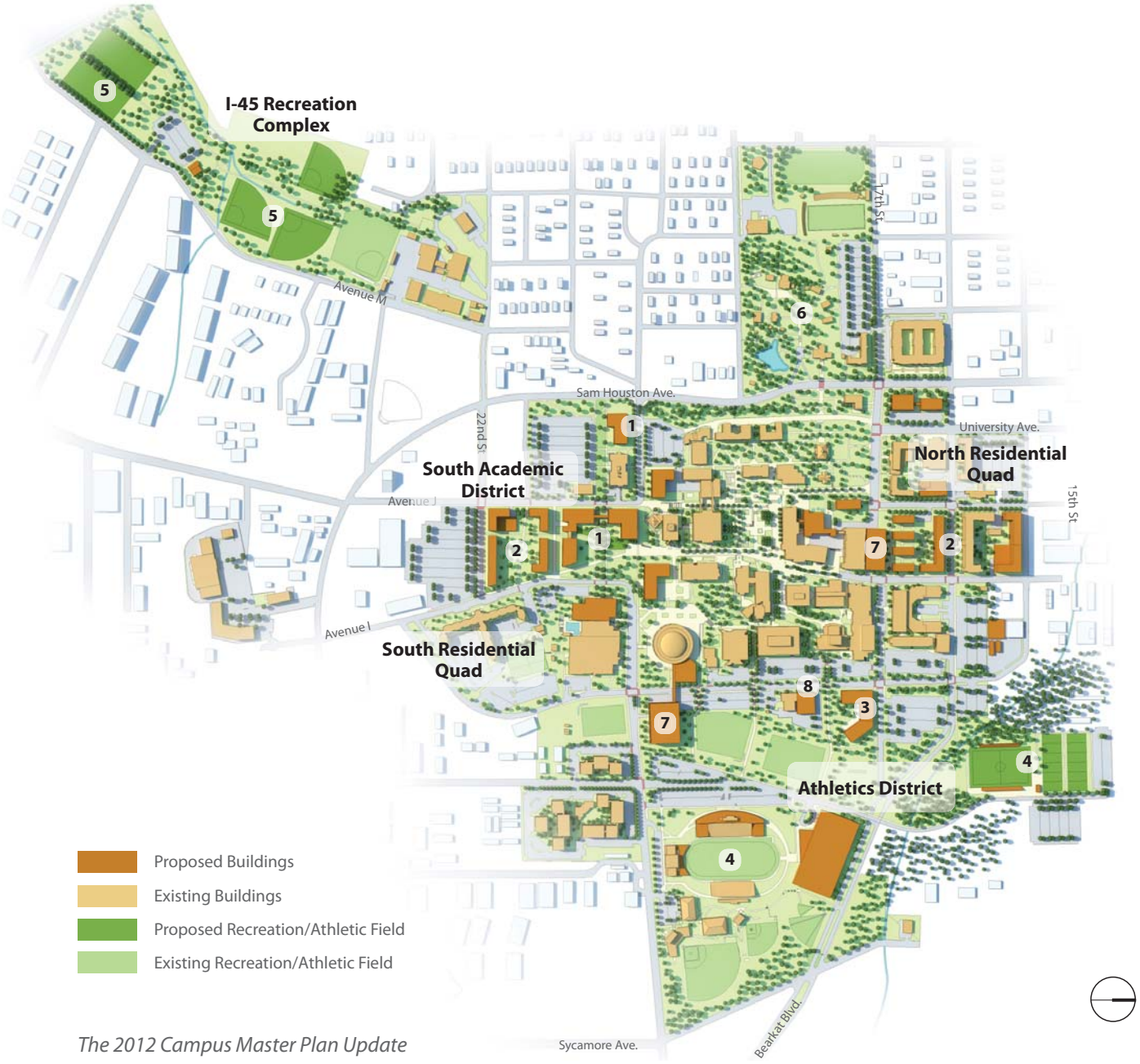
4. Create a consolidated and contiguous Athletics District by relocating outlier programs.

5. Establish intramural recreation opportunities to increase the quality and quantity of campus open space.

6. Integrate the Museum Campus into the overall fabric of the University with landscape treatments and wayfinding signage.

7. Develop two new parking structures at key campus locations.

8. Expand the East Plant to increase system capacity and data communications for master planned buildings, while maintaining redundancy.



The 2012 Campus Master Plan Update


Hurley

02. Updated Campus Conditions

REGIONAL CAMPUS CONTEXT

The Sam Houston State University Main Campus is located in Huntsville, Texas, approximately 70 miles north of Houston. Centrally located in the heart of downtown Huntsville, with a 2011 total student population of approximately 17,600 students, this campus provides the widest range of academic, athletic, residential and student life functions of the University. Other campus properties are located throughout the greater Huntsville region, which provide specialized programs or research functions outside of the Main Campus.

CAMPUS COMPOSITION

During the 2008 Campus Master Plan effort, the concentration of planning was performed for the Main Campus. This update to the 2008 Plan addresses the Main Campus and considers the Gibbs Ranch in regards to program moves and planning efforts. Not all of the properties listed below resulted in a program change or future development opportunities.

Main Campus
The historic Main Campus is approximately 316 acres and houses the main academic, student life, housing, athletic and recreation components of campus.

Gibbs Ranch
The Gibbs Ranch complex is a 1,459-acre site serving as a laboratory facility for the agricultural sciences program, a practice site for the ROTC and Rodeo Team, and provides research sites for chemistry, biology and environmental sciences students. A separate master plan by PDG Architects and Gensler studied the placement of the Agricultural Education and Research Facility and Plant Science Field Lab. These studies have been incorporated as part of the Plan Update.

Ravens Nest Golf Course
This 18-hole course is located just southwest of the Main Campus, and is used for recreational purposes by faculty, staff and students. The golf course is also home to SHSU's PGA Golf Management Program.

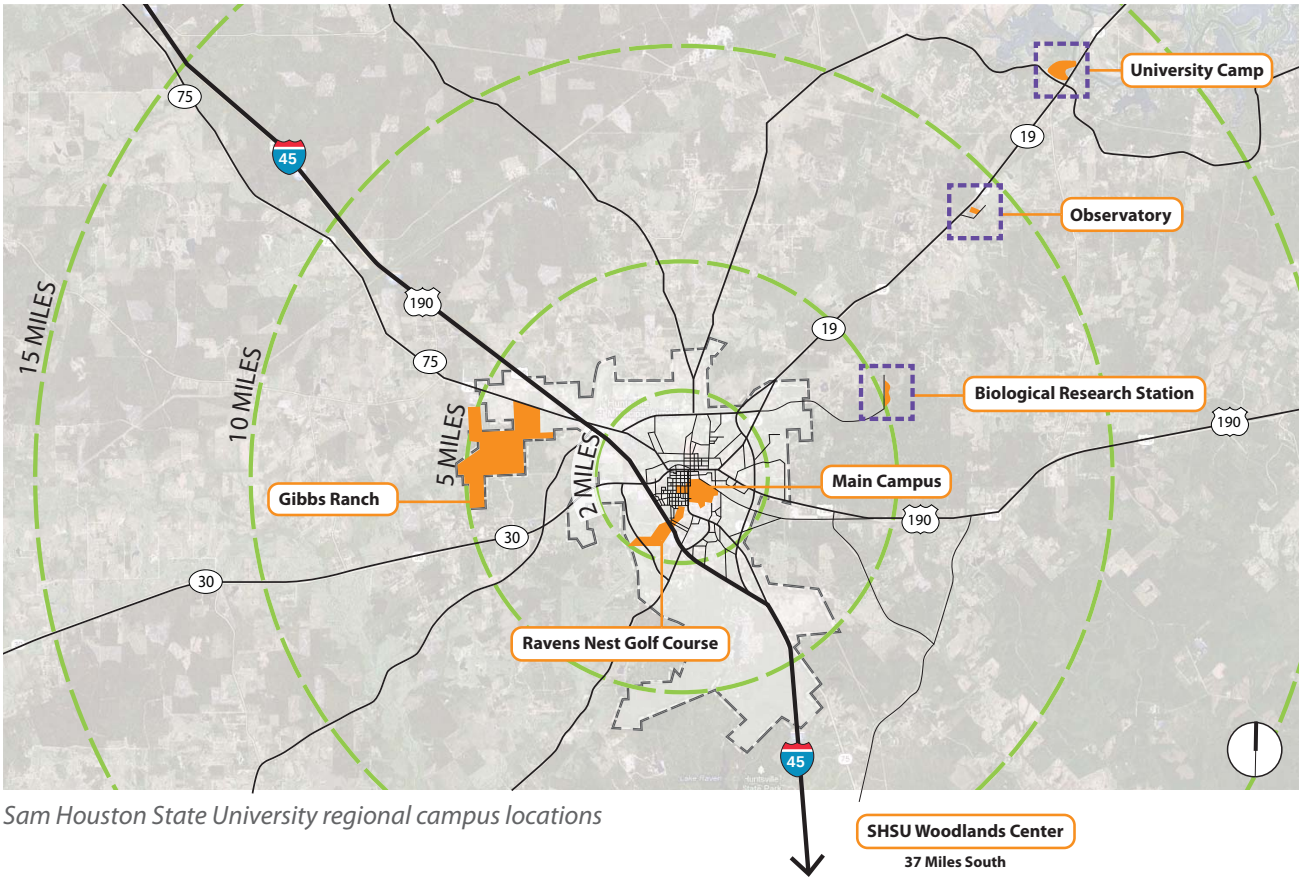
Future Research Park
This will become the future home of the CMIT and LEMIT programs and other research functions. This planning initiative is part of a separate study.

Biological Research Station
Located approximately 5 miles from the Main Campus, the Biological Research Station is a 250-acre site. This site is used for biological teaching and research.

Observatory
The observatory houses the University Planetarium and is located 5 miles northeast of the Main Campus.

University Camp
This 345-acre, wooded facility houses recreation and retreat services for the University and Huntsville community. This site is part of a separate planning study.

The Woodlands Center
The Woodlands Center lies approximately 37 miles south of the Main Campus in The Woodlands, Texas. This campus offers upper level undergraduate and graduate courses in a 145,000 GSF facility.



Sam Houston State University regional campus locations

MAIN CAMPUS EXISTING CONDITIONS

2008 MASTER PLAN ACCOMPLISHMENTS

New Residential Use

1. Lone Star Hall and Residential Life Office (result of 2008 Plan)

New Student Life Use

2. Old Main Market Dining Facility (result of 2008 Plan)

New Academic Use

3. College of Humanities and Social Sciences (construction during 2008 Plan)
4. Gaertner Performing Arts Center (construction during 2008 Plan)

N/S Woodlands Facility (at The Woodlands Center), not shown

Building Removals

5. Smith-Kirkley Hall
6. King Residence Hall

Facilities Currently in Programming

7. Lowman Student Center expansion (result of 2008 Plan), former Smith-Kirkley site
8. Student Health and Counseling Center, at former King Hall site
9. Events Center / Press Box (result of 2008 Plan)

N/S Plant Science Field Lab (at Gibbs Ranch), not shown

Off-Campus Planning Initiatives

N/S Gibbs Ranch

N/S University Camp

N/S Future Research Park

N/S = not shown on illustration


I-45
Avenue M
22nd St.
Sam Houston Ave.
17th St.
University Ave.
Avenue J
15th St
Avenue I
Bobby K Marks Dr.
Sycamore Ave.
Bearkat Blvd.
1
2
3
4
5
6
7
8
9
Land Use
Academic
Residential
Recreation
Athletic
Support/Service
Museum
Building Use
Existing Academic
New Academic (since 2008)
Existing Residential
New Residential (since 2008)
Existing Student Life/Dining
New Student Life/Dining (since 2008)
Existing Special Use
Existing Support/Service
Existing Recreation
Existing Athletic
New Building Removal (since 2008)
Existing Parking Deck

CAMPUS NATURAL SYSTEMS

Open Space

The University is fortunate to have large areas of open space populated with mature trees, centrally located in the heart of the academic campus. The campus has a significant investment in open spaces that successfully define the academic core. Where the open space network is least successful is outside of the core, where little effort has been made to reflect the positive aspects of the middle. Extending the character of the core creates new social gathering spaces and extends the green network ensuring a unified campus fabric.

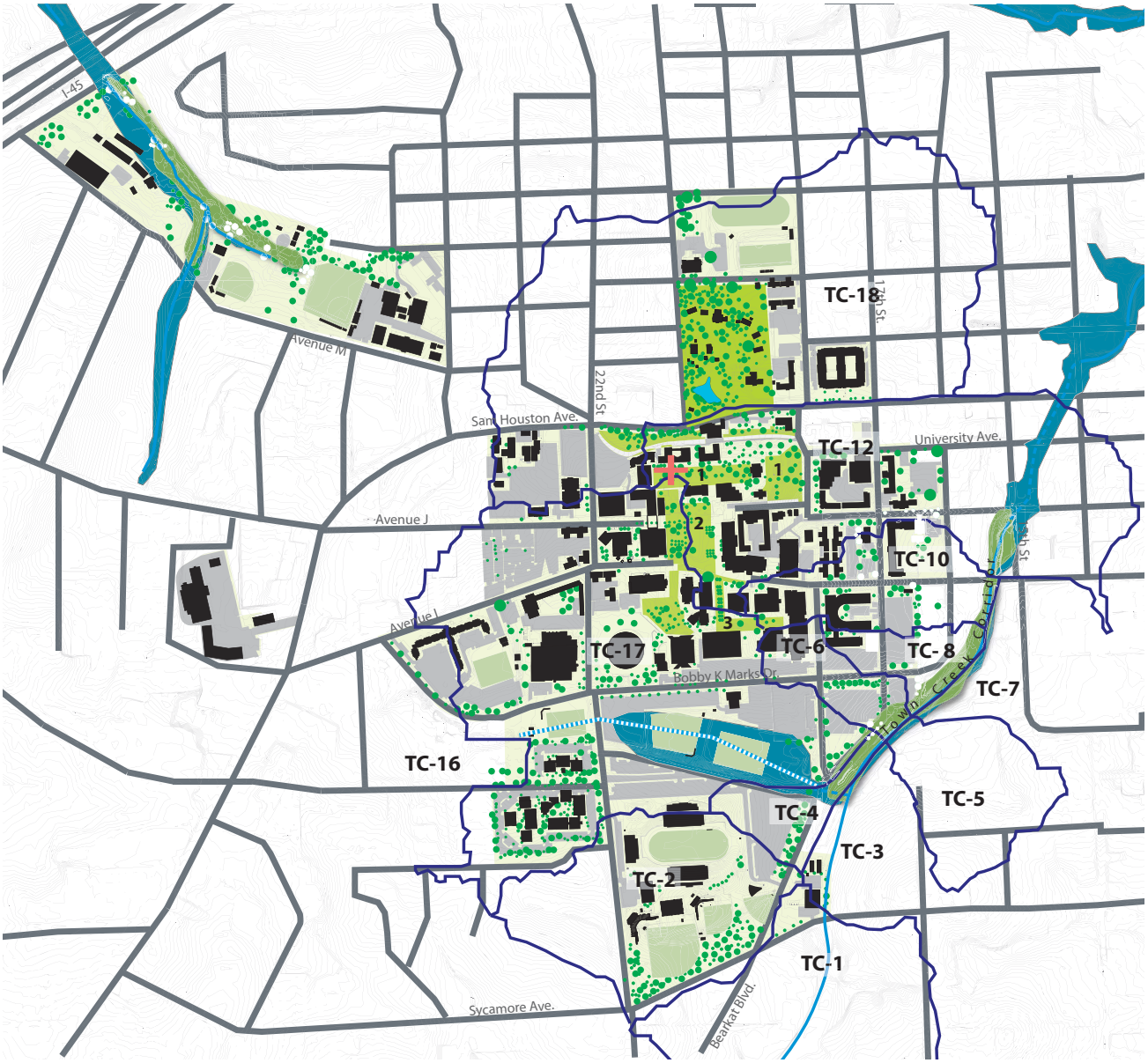
Topography and Surface Flow

SHSU is located atop a hill and maintains relatively steep slopes within the campus boundary. Because of this, stormwater drains at a rapid pace. It is vital to direct the water to appropriate storm drain facilities to avoid flooding of campus and downstream areas and to keep roads safe for pedestrians and vehicles. The planning team took this into account when evaluating the existing sizes and locations of the stormwater system to determine the need and size for existing and future facilities.

Storm Water Facilities

Underneath the recreational fields that are north and south of Bowers Boulevard, 72-inch tanker rail cars serve as a storm sewer trunk line. This trunk line is quite vital since it serves as the outlet to the entire TC-17 (TC = Town Creek sub-watershed) drainage area as well as a large portion of TC-16. This line is also highly deteriorated and needs replacement. The planning team identified the railcar line for abandonment along with the installation of a new, appropriately sized storm drain. There is a smaller section of railcars located near the existing Custodial and Grounds building. It is also highly deteriorated. SHSU further provided input about one specific area on campus grounds that had flooding issues. This location is at Bowers Boulevard and Avenue H (Bobby K. Marks Drive). This area was given special consideration in the analysis process to remedy these issues.

SHSU currently has four main recreation fields that are highly utilized. The lowest field, that is also the northernmost, is the campus' primary flood control detention facility. The field is designed to fill during large rain events and release water in a controlled manner to Town Creek. Smaller, more frequent events drain straight through without ponding. SHSU has established a high priority to maintain and enhance these existing recreational facilities.



Existing Building
Existing Parking
Existing Recreation or Athletic Field
Sacred Open Space
FEMA 100-year Flood Zone
Wooded Area

Water Course
72" Rail Car Storm Water Facility
2' Contour Interval
Campus High Point
Existing Campus Trees
Town Creek Sub-watershed Boundary

CAMPUS MOBILITY

Road Network

Traffic congestion is a concern on several major campus roadways. In particular, key corridors for improvement include: Bobby K. Marks Drive, Sam Houston Avenue, and Bowers Avenue. Bobby K. Marks Drive (a city street) where a large quantity of surface parking flanks both sides of the road, creates a busy traffic thoroughfare during peak times and special events. Bobby K. Marks Drive is a physical barrier separating the academic core of campus from recreation and athletic uses and lacks traffic control devices to curb fast vehicle speeds, which inhibit safe pedestrian crossing. Sam Houston Avenue (a state highway), is a 4-lane thoroughfare and a physical barrier to Sam Houston Village, the Museum Campus, and the I-45 Recreation Complex. Additionally, the intersection of Bowers and Avenue I is a 4-way, misaligned, signaled intersection, which is confusing for users. Improvements need to be made to these corridors to provide direct vehicular passage and safe pedestrian corridors through and around campus.

Parking

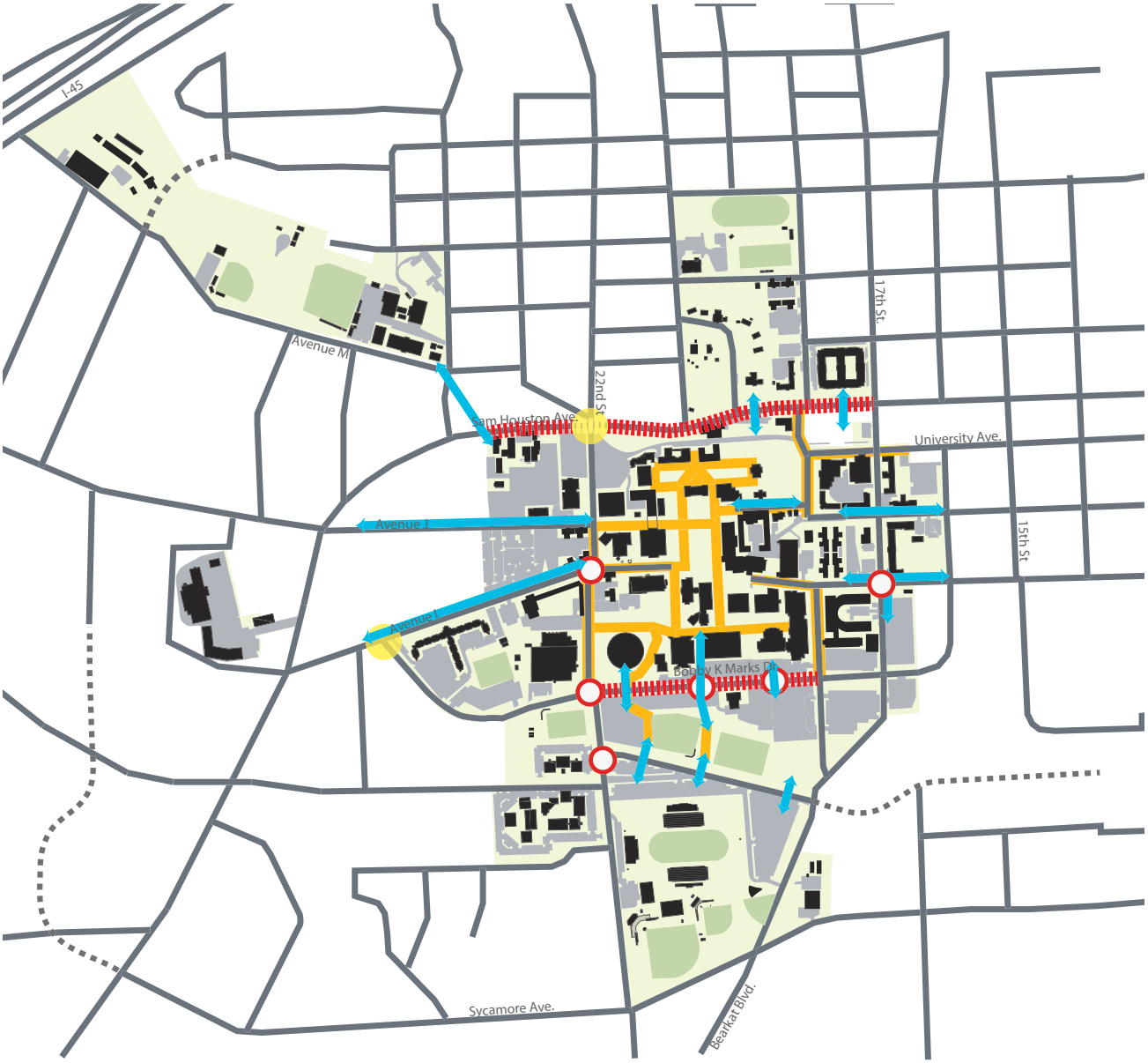
The parking inventory has remained relatively stable in the past 5 years. The University continues to make an effort to remove vehicles from the core of campus and limit parking to the periphery. In 2008, the campus had an inventory of 7,898 spaces on the Main Campus. In 2012, the campus has a slightly lower parking inventory of 7,836 spaces. Surface parking makes up the majority of the inventory with 7,013 spaces. Campus has two decks, one located just north of Lowman Student Center, which serves 505 cars, and another located under the Sam Houston Village parking garage which serves 318 cars. Commuter-type parking lots farther from the core are under-utilized, such as the lots north and west of the Stadium, which do not reach full capacity. This is likely due to the growing number of off-campus housing facilities providing shuttle service to and from campus.

Pedestrian Network

With the lack of vehicles in the core of campus, it is easy to traverse by foot, however, outside of the core there are major deficiencies. Areas outside of the middle need to be addressed, for example, some sidewalks end abruptly before an intersection due to steep grades, while some walks do not exist at all, especially along Avenues I or J leading to Sam Houston Avenue and from campus into the surrounding community. Additionally, a few sidewalks are lacking in the new Lone Star Hall neighborhood along the south side of 16th and at the intersection of Avenue I. Pedestrian improvements need to be implemented to ensure a safe and contiguous network from the core to the outer edges of campus.

Gateways

Gateways remain an important element in the interface with the surrounding community and campus visitors. Not all of the campus gateways are fully realized. The east side of campus, where visitors enter from Highway 19 to Bearkat Boulevard, lacks any visual cues that one is entering campus. Campus gateways at the north and south edges also lack a sense of campus boundary.



- Existing Building
- Existing Parking
- Existing Road
- Future Road
- Existing Recreation or Athletic Field
- Major Pedestrian Walks
- Pedestrian Connection Needed
- Pedestrian Barrier
- Pedestrian / Vehicular Conflict
- Existing Gateway

MAIN CAMPUS EXISTING INFRASTRUCTURE

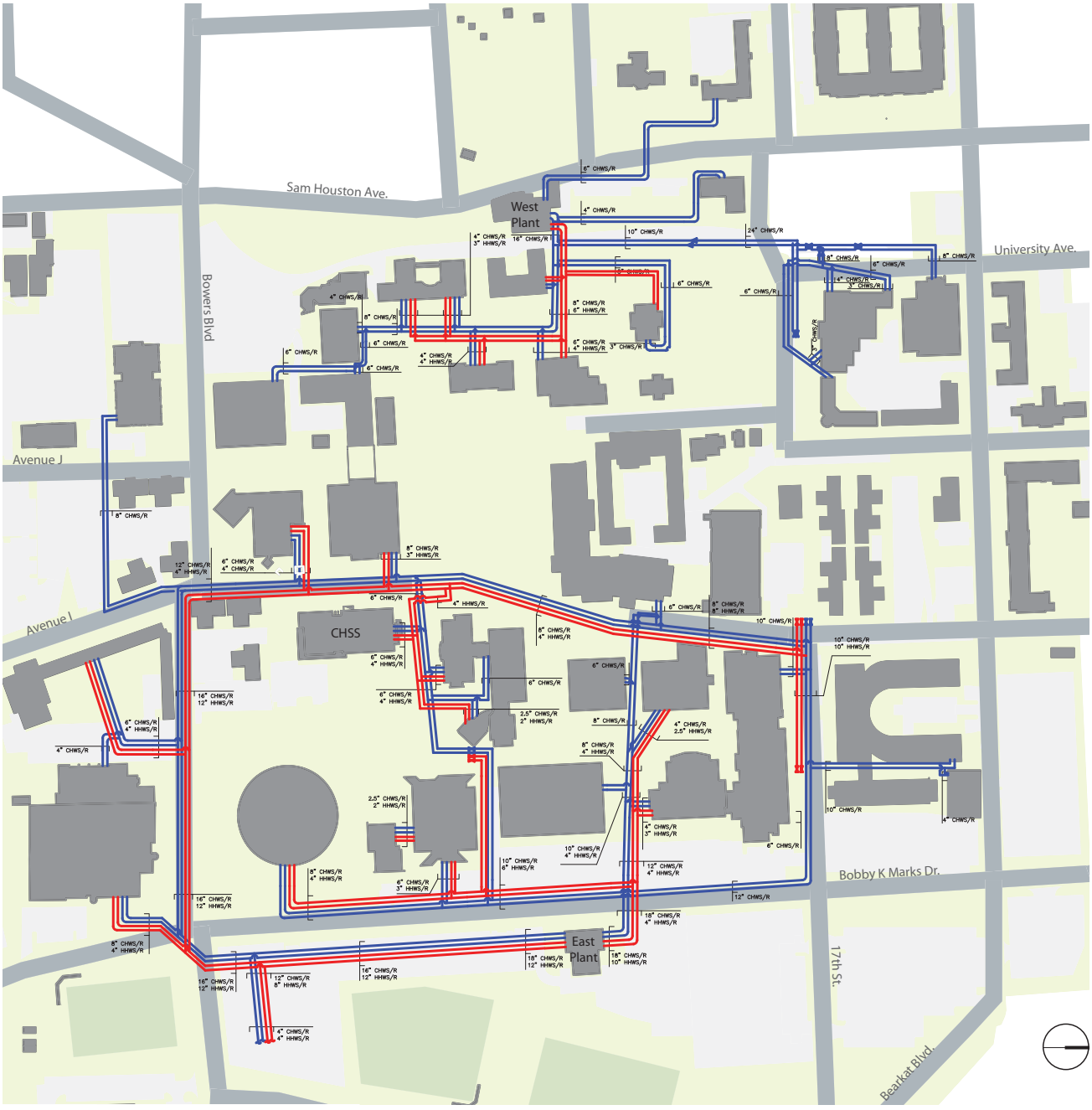
MECHANICAL INFRASTRUCTURE

There are two distributed thermal utility systems on campus – chilled water and hot water. Both are used for general space conditioning and are connected to the served buildings through direct buried and utility tunnel piping. The East and West Plants generate a majority of the chilled and heating water for the campus. There is also a small chiller plant located in the CHSS building, and many buildings have stand-alone modular heating water boilers. The chilled water and heating water distribution loops for the East and West Plants are not currently cross connected. The hot water piping served from the West plant has recently been replaced and is in good condition. Much of the chilled water piping served from both plants, and the hot water piping served from the East plant are original installations of transite (asbestos cement) piping. These systems have developed numerous leaks over the years, have been repaired in piecemeal fashion, and are expected to continue needing repairs.

The East Plant contains three chillers totaling 4,800 tons of capacity and provides chilled water to 21 campus buildings. The chilled water capacity of this plant is currently maximized. The existing chillers will eventually need replacement but will likely be replaced with chillers of the same or slightly larger capacity. The East Plant contains six heating water boilers totaling 10,300 MBtu/hr of heating capacity, though all boilers never run at the same time. The plant provides heating water to 12 buildings, and there is room available in the plant for significant addition to the heating water system.

The West Plant contains two chillers totaling 2,200 tons of capacity and provides chilled water to 14 campus buildings. The current configuration of the plant only allows one of the chillers to operate at a time, for a maximum plant operating capacity of 1,200 tons. The West Plant contains one large heating water boiler with a total capacity of 8,370 MBH and serves 6 buildings with heating water.

The peak load on both plants' chilled water systems is at or near the current installed capacity. A failure of any large single piece of equipment during peak loads will likely result in insufficient capacity to meet demand. The peak load on both plants' heating water systems are between 35-50%, and while the East Plant's system does have boiler redundancy, failure of the West Plant's single boiler would cause a heating water outage to that portion of campus.



Existing Chilled Water Piping

Existing Heating Hot Water Piping

Existing Campus Building

X" CHWS/R Chilled Water Supply / Return Piping

X" HHWS/R Heating Hot Water Supply / Return Piping

ELECTRICAL INFRASTRUCTURE

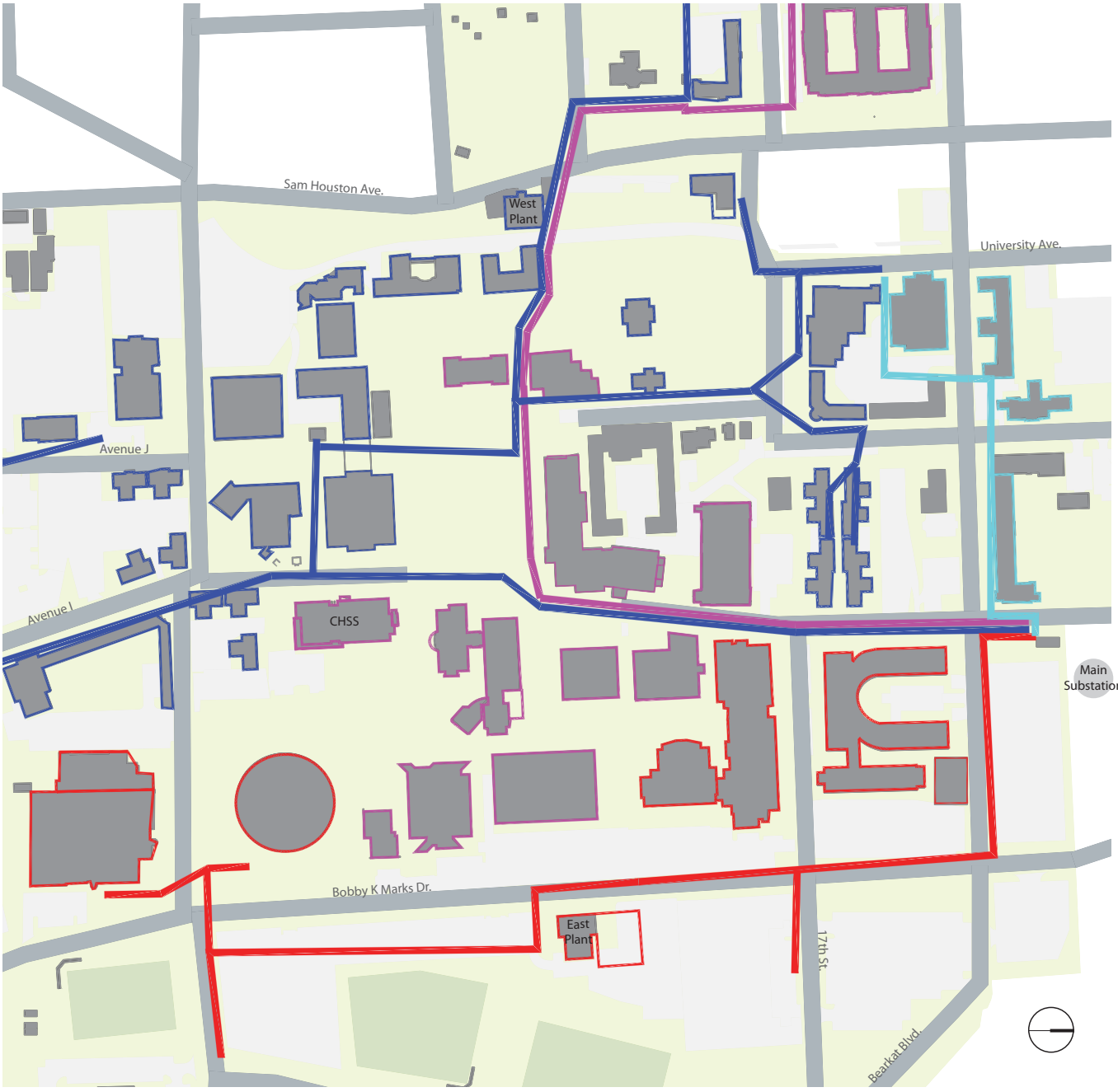
The main campus of Sam Houston State University is provided with electrical power from Entergy, the local service provider. Entergy supplies 138kV into a Main Substation on the north end of campus near the intersection of 15th Street and Avenue I. This substation then steps the voltage down to 13.2kV for campus distribution. On the south edge of the Entergy substation is a building which houses ten (10) 13.2kV, 1200A circuit breakers in a medium voltage switchgear lineup. Currently 8 circuit breakers are in use. These 8 circuit breakers provide power to all of the buildings on campus via circuits numbered 1 through 8.

The current campus electrical load is about 8 Megawatts (MW) with a peak of 12 MW in the summer. Each circuit pair has a capacity for roughly 5MW. The 5MW cap is based on the size of the underground conductors. The current master plan calls for a removal of about 3MW through building demolition and building expansions and additions totaling 17MW.

Circuits 1-8 work in pairs to serve electrical power to each building. Circuits 1+2, 3+4, 5+6, and 7+8 are routed underground around the campus. For example, the Newton Gresham library is currently served by Circuit 2, but if necessary, could be switched over to Circuit 1 if something were to happen to Circuit 2. This is the case for almost all buildings around campus. If the primary circuit were to fail, there is a backup circuit. This switchover can occur in less than one hour.

Using this pair methodology provides very reliable power to almost every building and can minimize downtime. It is important to never load the circuit pair to more than the capacity of one circuit. In the event the main circuit breaker of Circuit 1 was to fail, Circuit 2 should be able to handle the load for Circuits 1+2 in an emergency. The design intent of the master plan is to maintain the circuit pairs and allow redundancy in the event of a failure. Currently the Sam Houston electrical department has done an excellent job of maintaining balance between all of the circuits. There is at least 23% spare capacity on each circuit pair for future expansion.

Because of the way the electrical infrastructure is constructed, there are not any critical electrical projects that would stand in the way of the short term campus growth plan as outlined in the master plan program requirements. The projects listed in the master plan provide an extra level of redundancy in case of a failure. However, that does not mean that there will not be electrical projects in the short term for future growth. Circuit extensions as part of the 20 year plan for new buildings will be required. Also, there are a few mechanical projects that require digging some long and deep trenches. This is an excellent opportunity to install electrical conduit for any future growth.


Sam Houston Ave.
West Plant
University Ave.
Avenue J
Avenue I
CHSS
Main Substation
Bobby K Marks Dr.
East Plant
17th St.
Bearkat Blvd.
Existing Electrical Circuits 1 & 2
Existing Electrical Circuits 3 & 4
Existing Electrical Circuits 5 & 6
Existing Electrical Circuits 7 & 8
Existing Campus Building


A Great Name
in Texas Education

03. Demographics & Space Utilization

The 2008 Plan resulted in, and was driven by, the need for more building expansion and growth due to program needs. At that time, a thorough evaluation of existing space and demographics was not performed. However, as part of the 2012 Plan Update, and due to changing campus trends, a more in-depth examination of demographics, future enrollment and space utilization was performed to understand the future needs of campus. The goal of this study was to understand the anticipated future direction of enrollment typologies which yields a result providing a leaner approach to campus physical development.

INTRODUCTION TO DEMOGRAPHICS

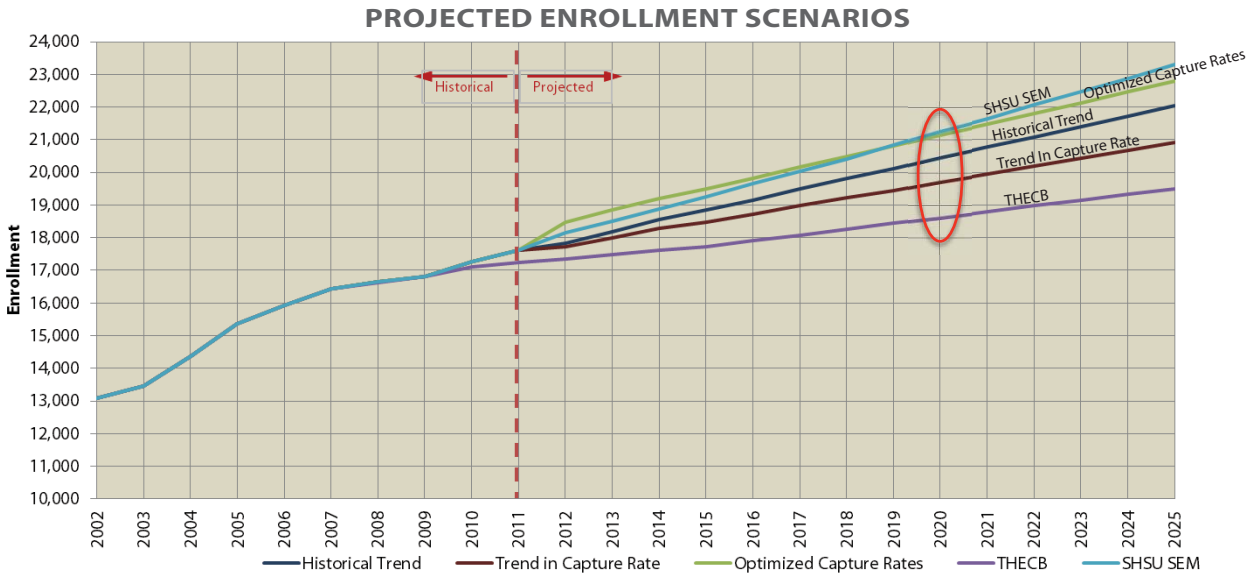
In order to plan for the future, the trends in enrollment and projected population growth need to be analyzed. The demographics of the surrounding communities must also be understood and can offer valuable insight regarding population projections, capture rates, utilization, and enrollment projections. A demographic study was conducted as part of the Master Plan Update and encompassed Sam Houston State's historic trends from 2002 to 2011 and included projections through 2025. The data was analyzed and used to establish the foundation for "building blocks" that will aid the university in assessing current conditions and realizing future expansion. By analyzing this data, a campus development plan can begin to address the needs of the current population and plan for future utilization. In order to analyze enrollment, historical data must be collected. A thorough review must be conducted of past trends and new department initiatives and planned programs.

In this study, five scenarios were developed based on the following:

- Enrollment Historical Trends per least squares best fit based on 2007-2011
- Capture Rate Trends per least squares best based on 2007-2011
- Optimized Capture Rate based on optimizing the capture rate in primary and secondary counties
    - Primary Counties: Walker, Montgomery and Harris counties based on students by residence
    - Secondary Counties: Grimes, San Jacinto, Liberty and Waller counties based on students by residence
- SHSU internal Strategic Enrollment Management (SEM) Committee goals
- The Texas Higher Education Coordinating Board (THECB) projection model

ENROLLMENT SCENARIOS

Student enrollment is expected to exceed 21,000 by 2020 through optimizing capture rates and meeting the SHSU SEM Committee goals. THECB has developed their own enrollment projections for Sam Houston State University which are viewed as conservative for the purposes of this planning exercise.



KEY	DESCRIPTION	2011	2015		2020		2025	
	Historical Trend	17,617	18,837	(7%)	20,450	(9%)	22,050	(8%)
	Trend in Capture Rate	17,617	18,488	(5%)	19,701	(7%)	20,912	(6%)
	Optimized Capture Rates	17,617	19,502	(11%)	21,151	(8%)	22,786	(8%)
	THECB	17,234	17,731	(3%)	18,617	(5%)	19,503	(5%)
	SHSU SEM	17,617	19,258	(9%)	21,262	(10%)	23,293	(10%)

ENROLLMENT PROJECTIONS

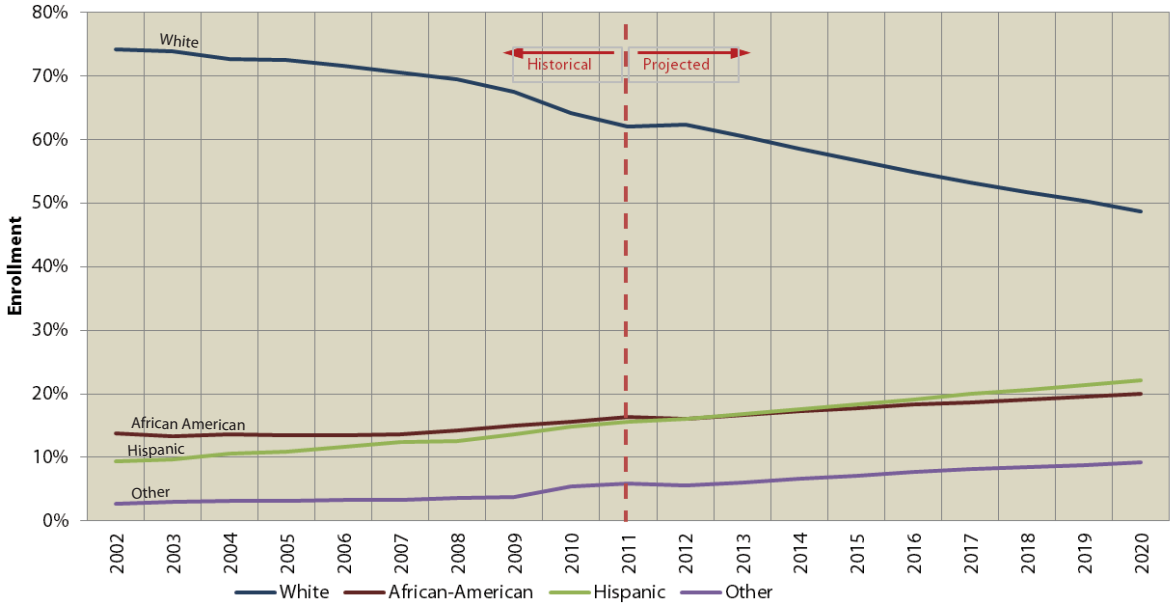
- Area population continues to grow but at a declining rate of change
- Enrollment Scenarios (by 2020)

Trend in Capture Rate	19,700
Optimized Capture Rate	21,200
SHSU SEM	21,262

- Another option for growth is target the service area of the Lone Star College System.

The two capture-rate based scenarios suggest demographic factors will provide growth between 20,000 and 21,000. Aggressive promotion, such as outlined in the SEM report, suggest enrollment of 22,000 by 2020 is achievable but will require effort to acheive target enrollment.

PROJECTED ENROLLMENT SCENARIO: ETHNICITY PERCENTAGES



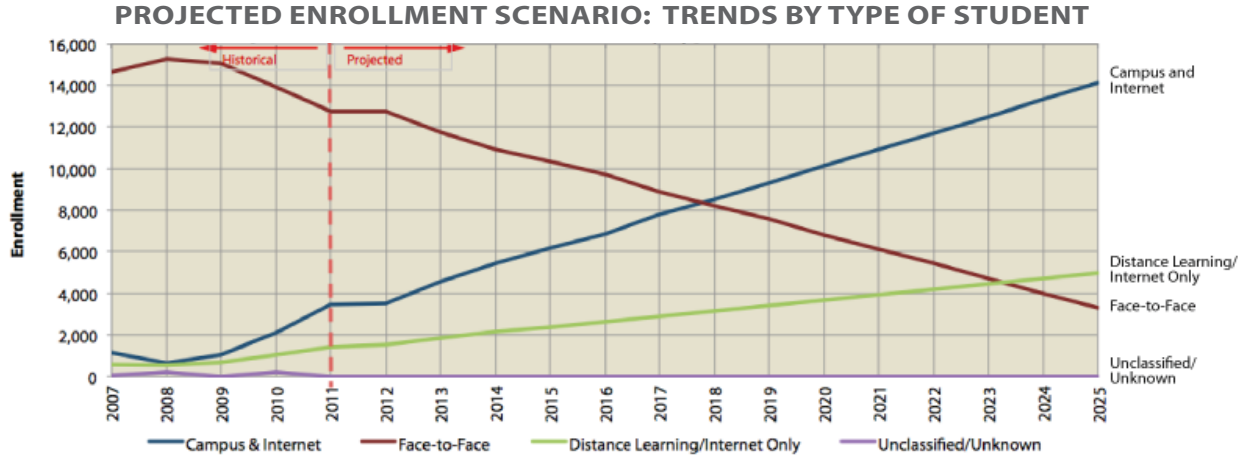
KEY	ETHNICITY	2011	2015	2020
	White	62%	57%	49%
	African-American	16%	18%	20%
	Hispanic	16%	18%	22%
	Other	6%	7%	9%

Projected Ethnic Enrollment

The graph on the opposite page illustrates that by 2020 the white student population will decline to approximately half of the total student population. As is true across much of Texas, african american, hispanic, and other (largely asian) student populations will grow more rapidly. To achieve the projected enrollment, the university will have to continue to assimilate and recruit an increasingly diverse student body.

Distance Learning Projection Scenarios

The following graph illustrates trends in students who are enrolled both in-person and distance learning, face-to-face only and distance learning only. The data show the number of traditional face-to-face only students will decrease as students chose distance learning only and "swirling"—combining campus and distance learning—as their primary enrollment options.



KEY	DESCRIPTION	2011	2015		2020		2025	
	Campus & Internet	3,458	6,180	(79%)	10,130	(64%)	14,094	(39%)
	Face-to-Face	12,736	10,358	-(19%)	6,822	-(34%)	3,300	-(52%)
	Distance Learning/Internet Only	1,413	2,361	(67%)	3,675	(56%)	4,978	(35%)
	Unclassified/Unknown	10	0		0		0	

SPACE UTILIZATION STUDY

This section will cover the following subjects:

- Existing Space Utilization
    - Overview & Space Utilization Analysis
    - Classroom Utilization
    - Laboratory Utilization

OVERVIEW

The space analyzed as part of this study examined the academic campus space. In most cases, the current space needs are represented in assignable square feet (ASF) which describes the amount of space between walls. Assignable square feet does not include corridors, restrooms, and other building support spaces or structural elements such as walls and columns. This is in contrast to gross square feet (GSF) which encompasses the total enclosed area of a building. An efficiency factor of 65% was used to convert from GSF to ASF in this study.

Before planning new facilities it is important to understand how effectively existing academic space is being utilized. in this section overall utilization data are presented for planning purposes and specific areas of under-utilization are presented to provide tools for the University to improve the performance of existing space.

SPACE UTILIZATION ANALYSIS

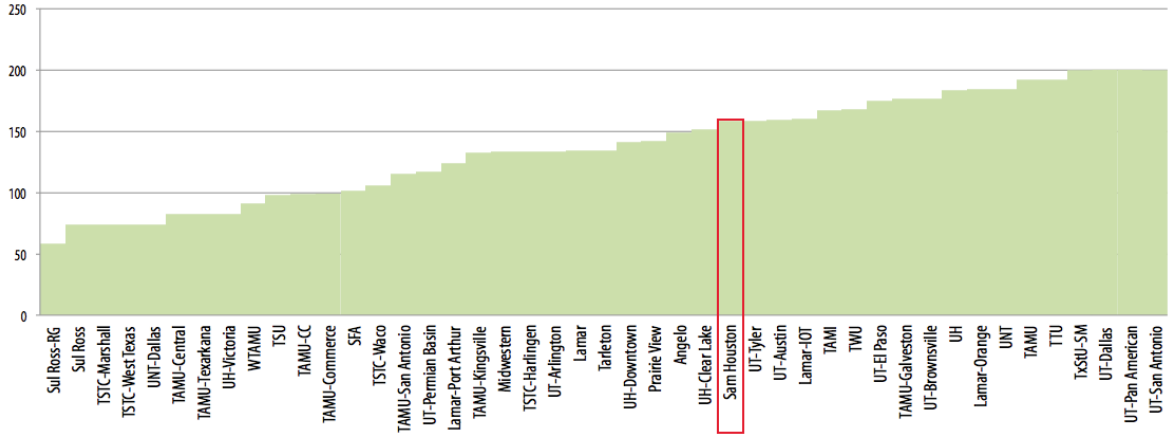
Utilization measures the current use of existing facilities, benchmarked against THECB standards. A thorough understanding of the university's space utilization serves as an analytical tool to determine space requirements and measure the viability of existing or proposed alternatives. The process also assists in identifying where deficiencies exist in scheduling practices or where facility shortages occur. The intent of the analysis is to survey the efficiency of existing space.

Determining efficiency is accomplished by exploring usage trends and evaluating patterns by multiple factors. The factors which were considered are scheduling, occupancies, and space functionality. The current inventory of space was reviewed alongside the Fall 2011 class schedule to determine the weekly usage of classrooms and lab. Utilization was determined for Fall 2011 classes and lab. There are currently classrooms and laboratories in 40 buildings across the Sam Houston State University Campus.

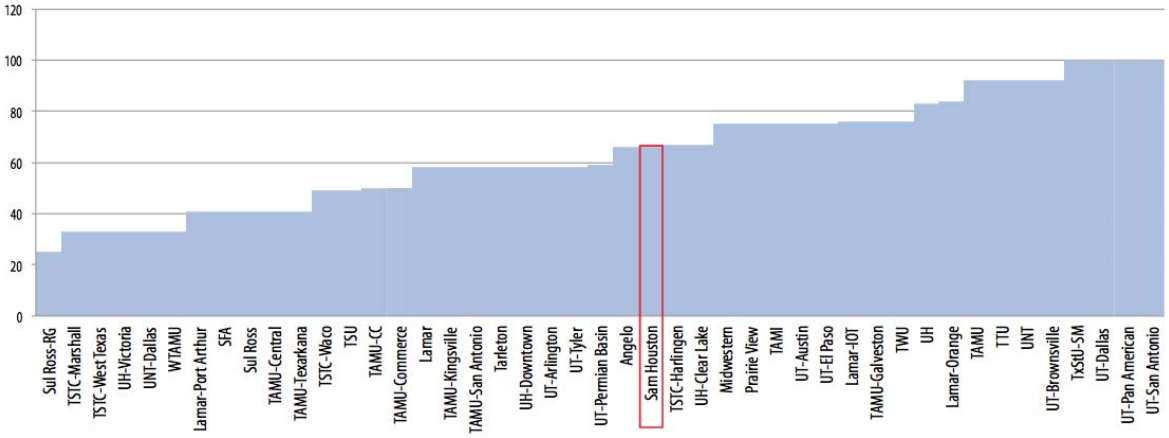
Current space was analyzed and a utilization study was undertaken for classrooms and lab spaces. For utilization benchmarks, the Texas Higher Education Coordinating Board (THECB) guidelines on classroom and laboratory utilization were consulted. Currently, Sam Houston State University has an overall SUE (Space Usage and Efficiency) score

SPACE UTILIZATION EFFICIENCY (SUE) FOR TEXAS UNIVERSITIES

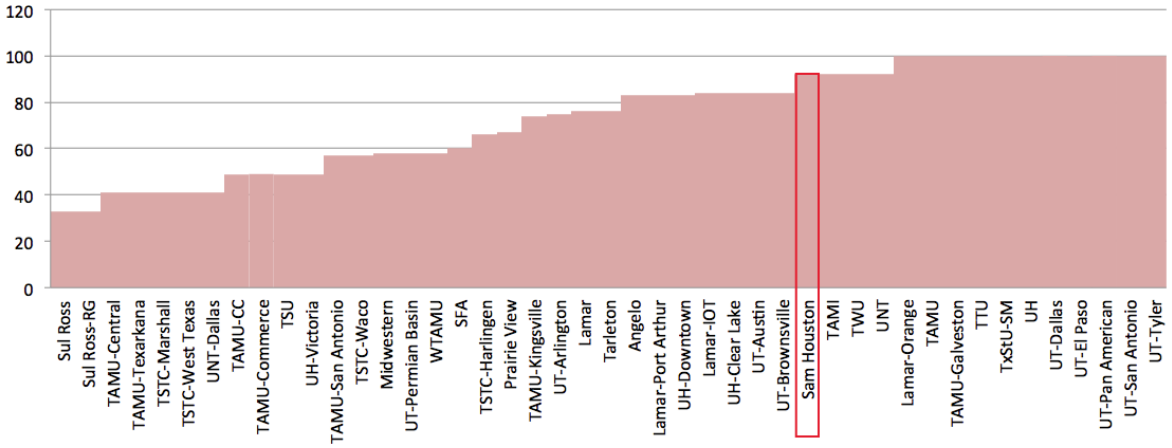
OVERALL SUE SCORE (2011)



CLASSROOM SUE SCORE (2011)



LAB SUE SCORE (2011)



of 158 which relates to a Classroom Score of 66 and a Class Lab Score of 92. This indicates that as defined by the THECB SUE guidelines in aggregate there is currently sufficient classroom and lab space to accommodate demand. However, as highlighted later in the section, this aggregate measure does not mean all specific instructional requirements are met, optimized or appropriate to support instructional requirements.

CLASSROOM UTILIZATION

The following is an overview of the findings from the classroom utilization study:

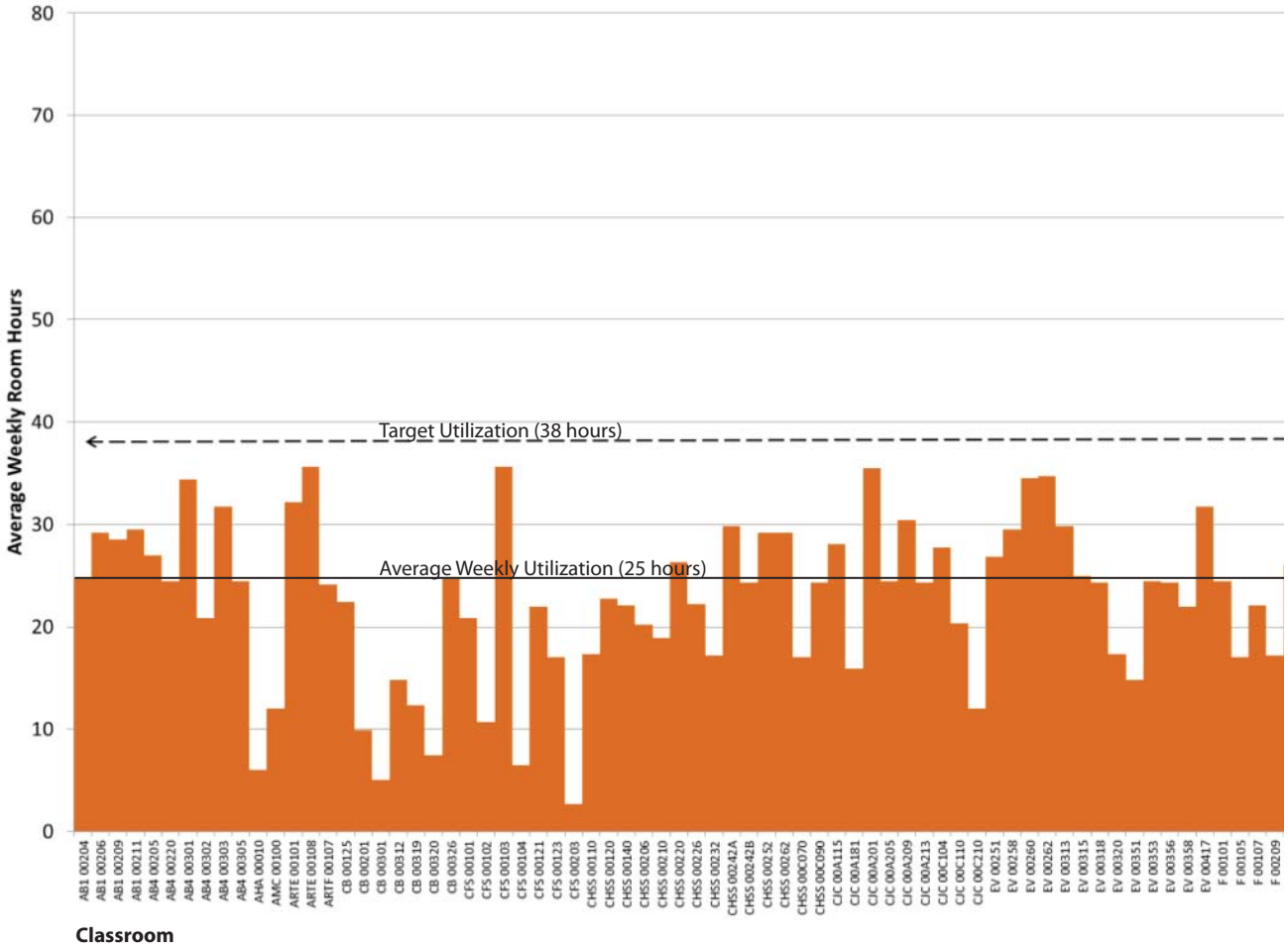
- Overall utilization is 25 periods/week.
- There are currently 142 classrooms at Sam Houston State University, the majority of which have a class size of 14 to 40 students.
- The largest classroom being at 250 student capacity and the smallest being at 20 student capacity (3 classrooms).
- Based on an analysis of "fit" there is a need for two additional classrooms with a seating capacity of 110 students.
- Peak utilization occurs on Tuesday and Thursday at 9:00 AM where nearly 100% of classrooms are scheduled.
- Bringing the maximum capacity and the classroom station counts into parity would result in increasing the average % fill for the SUE score. (SUE average % fill currently stands at 67%.)
- Decreasing the number of available classrooms that are scheduled would also increase the classroom utilization rate. The inventory points to a surplus of smaller classrooms. Conversion of these to larger classrooms or other types of space (e.g. office or support) would increase the overall periods/week utilization component of the SUE score.
- Repurposing of classroom space creates an opportunity to provide space to meet shortages in administrative and faculty office space.

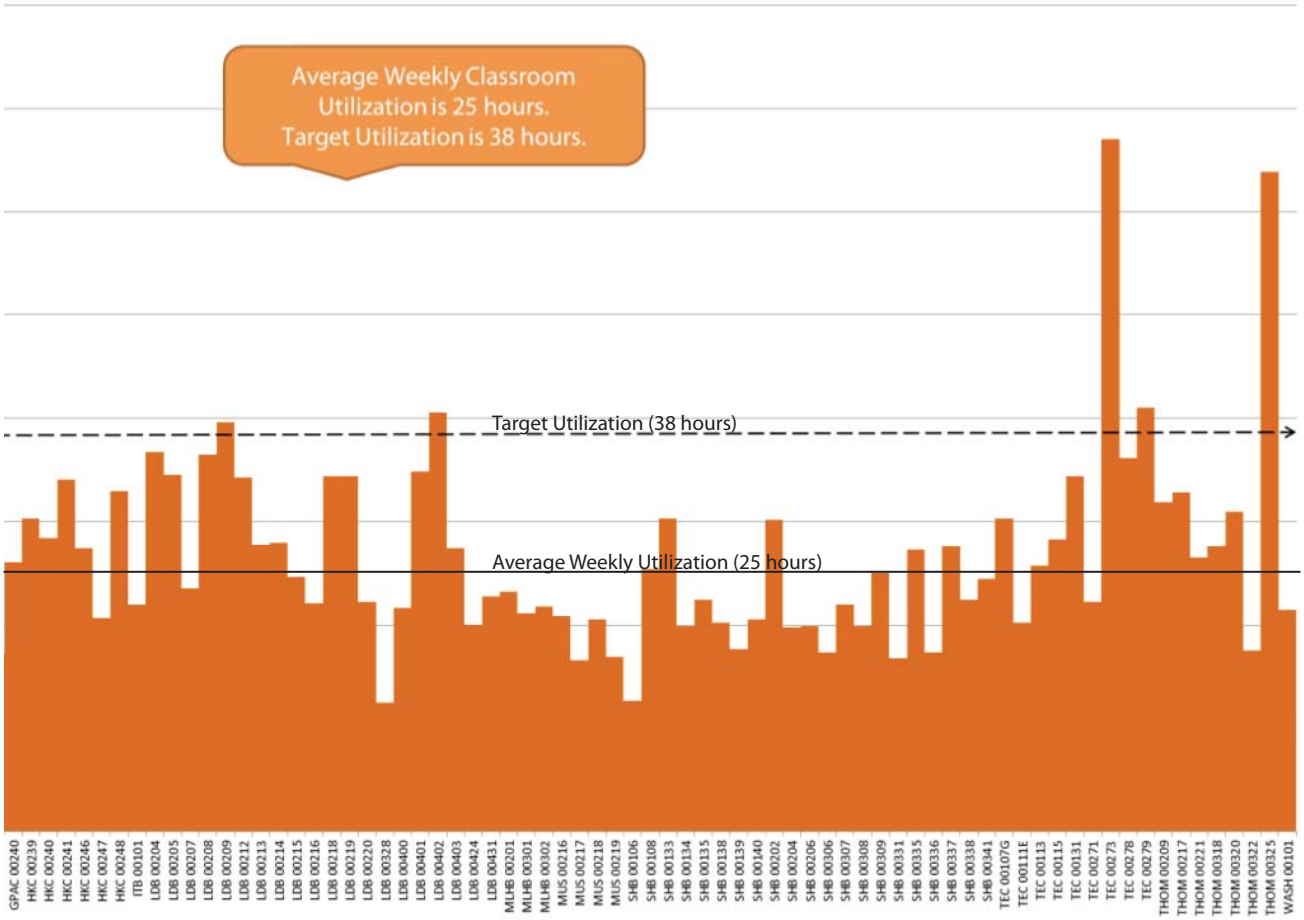
The following graphs illustrate the classroom utilization through each day of the week and the average utilization of each classroom.

Room utilization was studied to measure how often rooms are being scheduled for use. Section occupancy was also analyzed as a measure of how full the scheduled sections are.

THECB targets a utilization of 38-45 periods a week for classrooms, with credit also given for classes with high fill rates. The average weekly classroom utilization is 25 periods/week at Sam Houston State University.

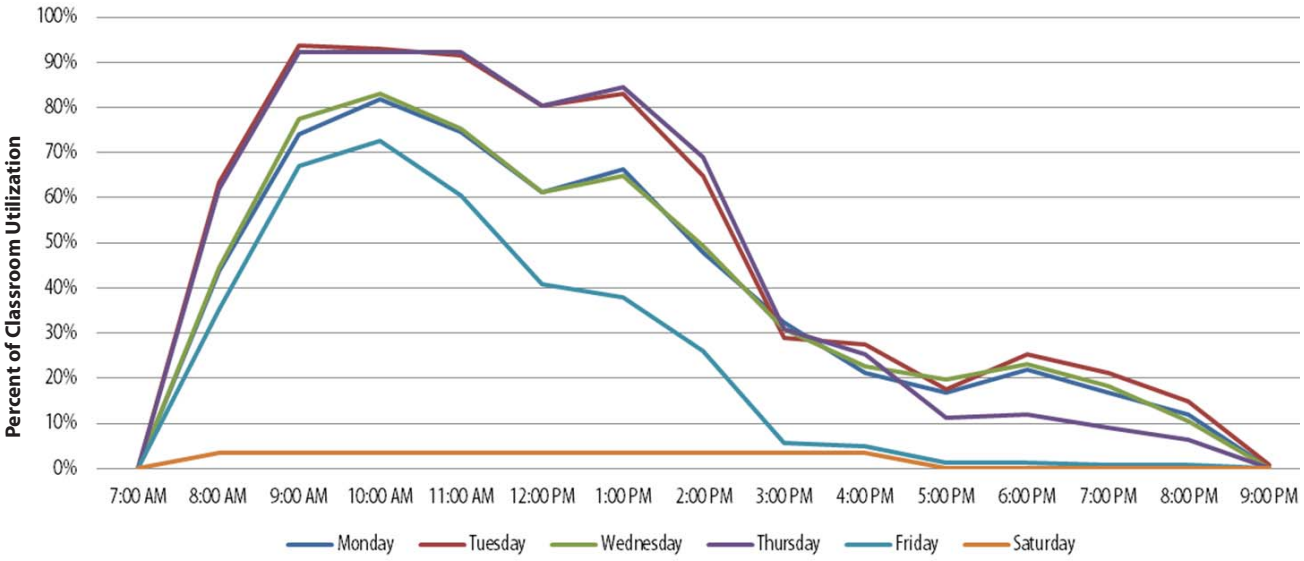
AVERAGE CLASSROOM UTILIZATION




Average Weekly Classroom Utilization is 25 hours. Target Utilization is 38 hours.
Target Utilization (38 hours)
Average Weekly Utilization (25 hours)
GPAC 00240
HKC 00239
HKC 00240
HKC 00241
HKC 00246
HKC 00247
HKC 00248
ITB 00101
LDB 00204
LDB 00205
LDB 00207
LDB 00208
LDB 00209
LDB 00212
LDB 00213
LDB 00214
LDB 00215
LDB 00216
LDB 00218
LDB 00219
LDB 00220
LDB 00328
LDB 00400
LDB 00401
LDB 00402
LDB 00403
LDB 00424
LDB 00431
MLHB 00201
MLHB 00301
MLHB 00302
MUS 00216
MUS 00217
MUS 00218
MUS 00219
SHB 00106
SHB 00108
SHB 00133
SHB 00134
SHB 00135
SHB 00138
SHB 00139
SHB 00140
SHB 00202
SHB 00204
SHB 00206
SHB 00306
SHB 00307
SHB 00308
SHB 00309
SHB 00331
SHB 00335
SHB 00336
SHB 00337
SHB 00338
SHB 00341
TEC 00107G
TEC 00111E
TEC 00113
TEC 00115
TEC 00131
TEC 00271
TEC 00273
TEC 00278
TEC 00279
THOM 00209
THOM 00217
THOM 00221
THOM 00318
THOM 00320
THOM 00322
THOM 00325
WASH 00101

Classroom

PERCENT OF CLASSROOM UTILIZATION BY TIME OF DAY | TOTAL 142 CLASSROOMS



DEMAND ANALYSIS

In the chart on the following page, the "Section Size Range" column categorizes the range of students in the course-sections. The number of sections according to the size range, requiring the use of general assignment classrooms, is listed under the "Total Sections" column. The "Total Required Room Periods" pertains to the cumulative number of scheduled weekly full-time equivalent (FTE) teaching periods of all sections included in the range. The normal teaching period is considered to be 50 minutes. Thus, 50 minutes of class time equals 1 weekly room period. The "Max Room Capacity" is the number of seats that must be in the room in order to accommodate the largest section to be scheduled in the room, the upper limit of the section size range, and must take into consideration the margin for scheduling variations. A "cushion" is applied in planning by intentionally sizing the seating capacities per room to exceed measured demand in scheduling. The "cushion" serves as a sliding scale that affords smaller rooms with a greater margin and larger rooms with less of a margin. This variable margin results in better utilization of space by over sizing larger rooms. The "Total Required Rooms" is the necessary amount of rooms required to accommodate the total number of periods in the section size range. The THECB goal of efficiency is achieved when a room is used a minimum of 38 periods per week. The "No. of Available Rooms" is the current number of rooms providing tablets or tables and chairs in the section size range. The "Balance" column indicates the current deficit or surplus of each room capacity category.

An integral step in classroom planning is to determine the need and number of classrooms for any given capacity. The chart on the following page contains a profile of current class section sizing patterns and is indicative of the classroom sizes necessary to support all of the current departments. The Fall 2011 schedule was used to determine the demand for contact hours. By determining the required number of rooms based on the room capacities, classroom demand is generated and deficiencies are revealed. Using a target utilization of 38 periods per week, the demand analysis indicates the need for approximately 99 classrooms for the current student enrollment. This is currently being met by a supply of 142 available classrooms. While there is an overall surplus of classrooms, it is important to gauge the section sizes demanded to the sizes of the classrooms. Therefore, further attention must be paid to the surplus and deficit of specific capacity classrooms. For example, the balance column in the table below shows a surplus of 43 classrooms overall. Maximum section sizes "demand" only 99 of the 142 classrooms on campus. However, this overall surplus masks the need for an additional 2 classrooms with a capacity of 110 as well as additional classrooms with a capacity of 196.

New and renovation classroom construction should focus on building classrooms that are sized appropriately.

CLASSROOM DEMAND ANALYSIS REPORT

Institution:	Sam Houston State University		CLASSROOM USE STANDARD
ACADEMIC TERM:	FALL 2011		
DATE:	July 16, 2012	38	:PERIODS/WEEK
	USING MAXIMUM SECTION SIZES:		

SECTION SIZE	TOTAL SECTIONS	TOTAL REQUIRED ROOM PERIODS	MAXIMUM ROOM CAPACITY	TOTAL REQUIRED ROOMS	NO. OF AVAILABLE ROOMS	BALANCE
001 - 013	22	60	20	2	3	1
014 - 027	525	1343	40	36	53	17
028 - 040	461	1147	55	31	53	22
041 - 053	190	492	70	13	11	(2)
054 - 068	41	101	90	3	11	8
069 - 088	90	198	110	6	3	(3)
089 - 131	50	122	150	4	4	0
132 - 174	11	27	200	1	1	0
175 - 196	1	2	225	1	0	(1)
197 - 218	3	7	250	1	2	1
219 - 253	2	5	290	1	1	0
TOTALS	**1,396**	**3,504**		**99.0**	**142.0**	**43.0**

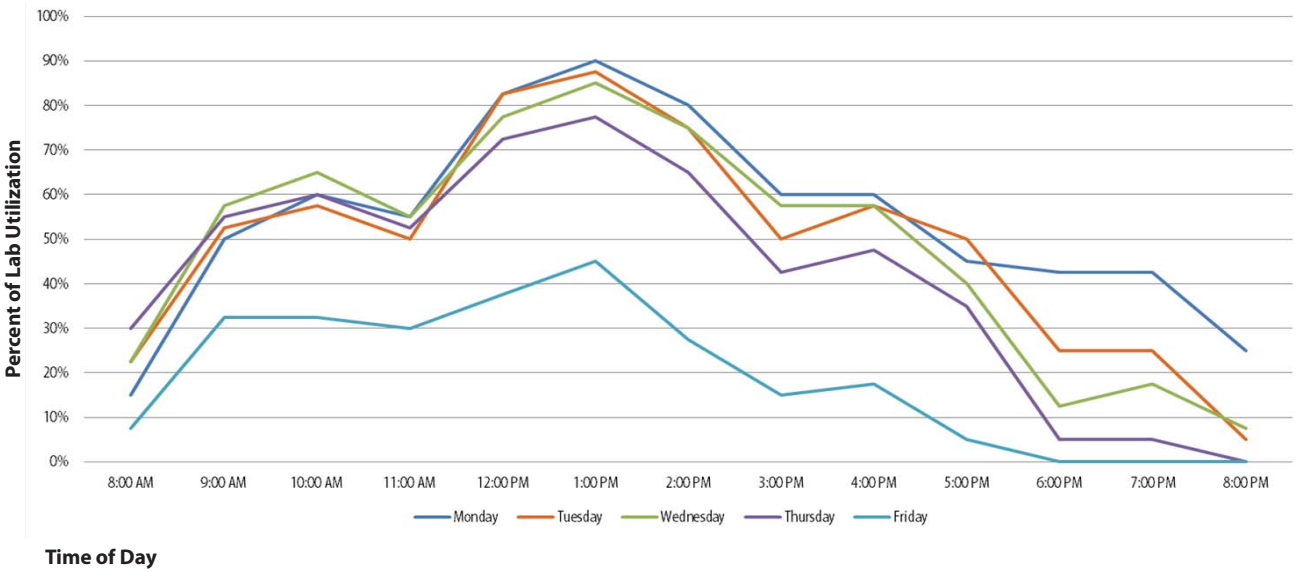
LABORATORY UTILIZATION

The following is an overview of the findings from the class lab utilization study:

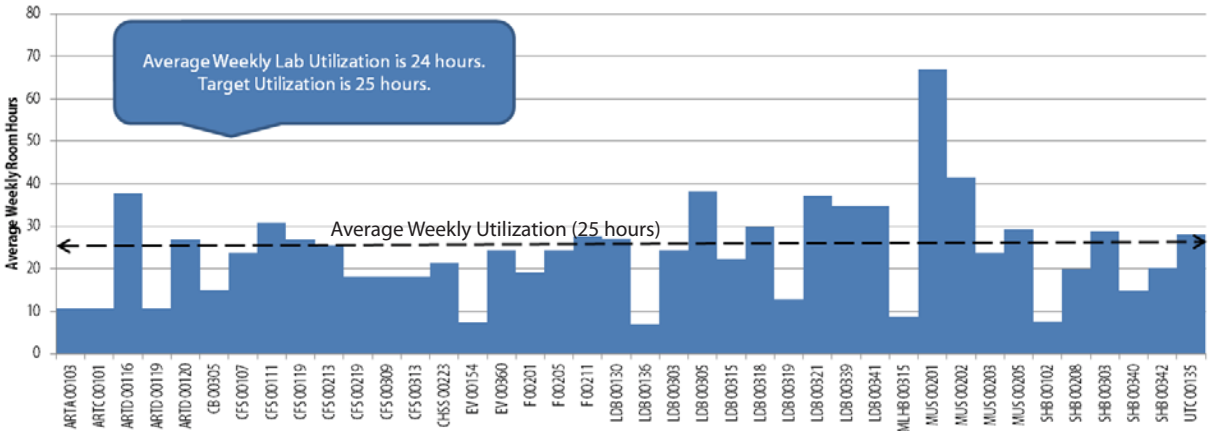
- There are currently 40 class labs being scheduled at an average of 24 periods/week.
- Peak utilization occurs on Monday and Tuesday at 1:00 PM where 90% and 88% of labs are scheduled.
- Average section enrollment to maximum capacity is 83%. SUE % fill is at 70% (average section enrollment to lab stations). This indicates the need to set maximum capacities to lab capacities (where lab capacities cannot be adjusted) or to reduce the number of lab stations (in labs where capacities can be adjusted).
- Natural science lab sizes indicate that there is "disconnect" between the capacity and maximum section size which will continue to lower the lab SUE score. "Spare" lab stations could possible be removed or used as undergraduate/graduate research space.
- Average lab scheduled periods/week indicate demand for additional natural science labs.

THECB targets a utilization of 25 hours a week for class labs, with credit also given for classes with high fill rates. The average weekly laboratory utilization is 24 periods/week. Projected growth in enrollment combined with unmet demand for additional sections indicates a need for more instructional labs in the natural sciences.

% OF CLASS LAB UTILIZATION BY TIME OF DAY | TOTAL 40 CLASS LABS



AVERAGE LAB UTILIZATION



Lab

04. Plan Update

DEVELOPMENT FRAMEWORK PLAN

The Development Framework Plan serves to organize the future University growth. This material is a result of site inventory analysis findings and represents opportunities for physical development on and adjacent to campus.

The areas highlighted in yellow indicate on-campus building development opportunities. These areas are available for re-purposing because they contain buildings that are either slated for removal, exist as large areas of surface parking, or are adjacent to academic and residential uses. These areas typically are devoid of steep topography, flood plains, sacred open spaces, and significant wooded areas.

The University needs additional land resources to meet future demands. Land acquisition is divided into two major growth zones: Near-term and long-term growth zones. Near-term growth zones are areas that have already been identified for acquisition to help meet the planned and anticipated projects of the 2012 Plan Update. Long-term expansion zones are needed to realize development beyond the plan horizon update. Larger parcels to the south and north of the Town Creek corridor should be considered for future development strategies due to campus adjacency.


I-45
Avenue M
22nd St
17th St.
Sam Houston Ave.
University Ave.
Avenue J
Avenue I
15th St
Town Creek Corridor
Bobby K Marks Dr.
Montgomery Rd.
Sycamore Ave.
Bearkat Blvd
Existing Building
Existing Parking
Existing Recreation or Athletic Field
Sacred Open Space
Future Road
Development Opportunity Area
Near -Term Growth Zone
Long-Term Growth Zone
Building Removal Candidate
Water Course
Campus Gateway

PROPOSED BUILDING ELEMENTS

Early in the planning process, the team conducted interviews with individual department heads and College Deans. This exercise was performed to understand the programmatic needs of each particular college and department, and more importantly, if those needs had changed since the 2008 Plan. The critical building projects are listed below:

Residential Building Opportunities
Based on the projected on-campus (Main Campus) student population for 2020 of 17,110, and interviews with SHSU Residential Life, it was determined the total housing target goal for 2020 is 3,800 beds (22% on-campus housing). A total of 496,000 GSF (including replacement beds) is needed to meet demand.

Student Life
Dining Facilities: Incorporate new dining facilities to support a larger residential population. A 25,000 GSF dining hall space is planned for both the north and south residential districts.

Lowman Student Center Expansion: Renovate and expand to incorporate a 60,000 GSF addition that meet the needs of the campus population.

Recreational Sports Complex: Expand the existing facility to accommodate a 70,000 GSF expansion which includes additional multipurpose space, and six indoor basketball courts.

Special Use
Events Center / Press Box: Enhance and provide a 60,000 GSF events center venue in the stadium vicinity. Planned improvements also include press box renovations.

Student Health and Counseling Center: A separate 28,900 GSF facility is proposed.

Athletics
Basketball Practice Facility: Provide a 20,000 GSF practice facility expansion to ease Coliseum programming pressure.

Indoor Multipurpose Facility: Provide a facility to include an indoor track and practice football field.

Mafrige Field House Expansion: Expand the existing fieldhouse to accommodate a 20,000 GSF addition.

Support/Service

Central Plant: Expand the existing East Plant to accommodate a 15,000 GSF expansion. This expansion also includes a data communications addition. Remove the West Plant once expansion is completed.

Custodial and Grounds: Relocate this facility to provide an ideal area for storm water facilities and lessen detention requirements at the existing intramural recreation fields.

DELTA / CE Building: Replace the existing SHSU Online facility.

Academic

Agricultural & Engineering Technology Building: Consolidate the agricultural sciences and engineering programs into one 50,000 GSF facility.

Nursing / Biology Building: Provide the nursing and biology program with a new 100,000 GSF facility.

Shared Special Instruments Building: Provide a 29,000 GSF facility to house a vivarium, microscopy functions, and clean rooms for shared use among various academic programs.

Allied Health Building: Incorporate the non-nursing allied health programs into one 60,000 GSF building.

Academic Building and Business Education Center: Provide a general academic building to serve as a multi-disciplinary classroom use. Accommodate the proposed 12,000 GSF Business Education Center within this facility.

Fine Arts Complex: Replace the fine art program with a new 50,000 GSF facility. Incorporate the W.A.S.H. (Workshop in Art Studio and History) into this new building.

UPDATED ILLUSTRATIVE PLAN

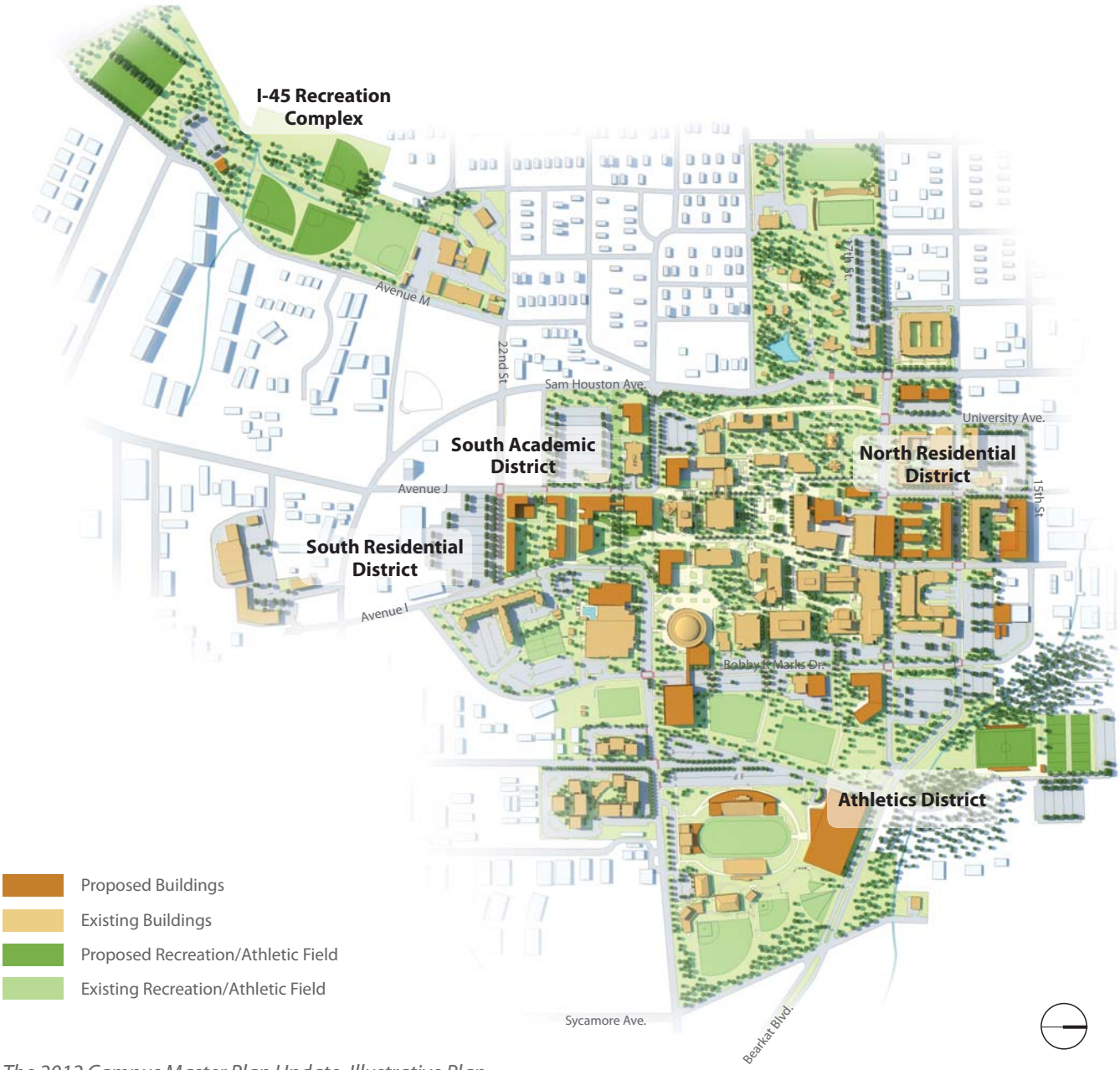
CAMPUS MASTER PLAN UPDATE: ILLUSTRATIVE PLAN

The updated Illustrative Plan characterizes a full and realized vision for the University. This updated plan is a culmination of many discussions and refinements with the President's Cabinet, Advisory Committee and Focus Groups during the Refinements task of this process.

The Illustrative Plan translates the Plan Goals into a visual representation for the future. Both short- and long- term opportunities are represented and locates specific features such as future buildings, pedestrian and vehicular corridors, open space and parking into the existing campus fabric.

As SHSU continues to grow, several areas on campus are developed. The South District, located primarily between Avenues I and J, south of Bowers Boulevard, extends into a new academic quad and residential zone directly adjacent to the existing central campus academic area. The North District, which also is between Avenues I and J and south of 15th Street, is an extension of the existing residential district where Lone Star Hall and several other residences are located. Additionally, recreation and athletics uses are enhanced and consolidated.

Further into this chapter, each campus district and campus system is described and diagrammed with major elements for improvement based on the proposed changes represented in this illustrative graphic.



The 2012 Campus Master Plan Update, Illustrative Plan

UPDATED BUILDING PROJECTS

Key	Proposed
1	Agricultural & Engineering Technology Building
2	Nursing / Biology Building
3	Shared Special Instruments Building
4	Fine Arts Complex
5	Allied Health Building
6	Communications & Central Plant Expansion
7	Academic Building
8	Future Opportunity
9	Recreational Sports Expansion
10	Basketball Practice Facility
11	Multiuse Complex
12	Indoor Multipurpose Facility
13	Recreational Fields
14	Lowman Student Center Expansion
15	North Residential District
16	South Residential District
17	Dining Facility
18	Student Health and Counseling Center
19	DELTA / CE Building
20	Events Center / Press Box
21	Mafrige Field House Expansion
22	Parking Deck
23	Surface Parking
24	Custodial & Grounds Relocation

- Proposed Buildings
- Existing Buildings
- Proposed Recreation/Athletic Field
- Existing Recreation/Athletic Field

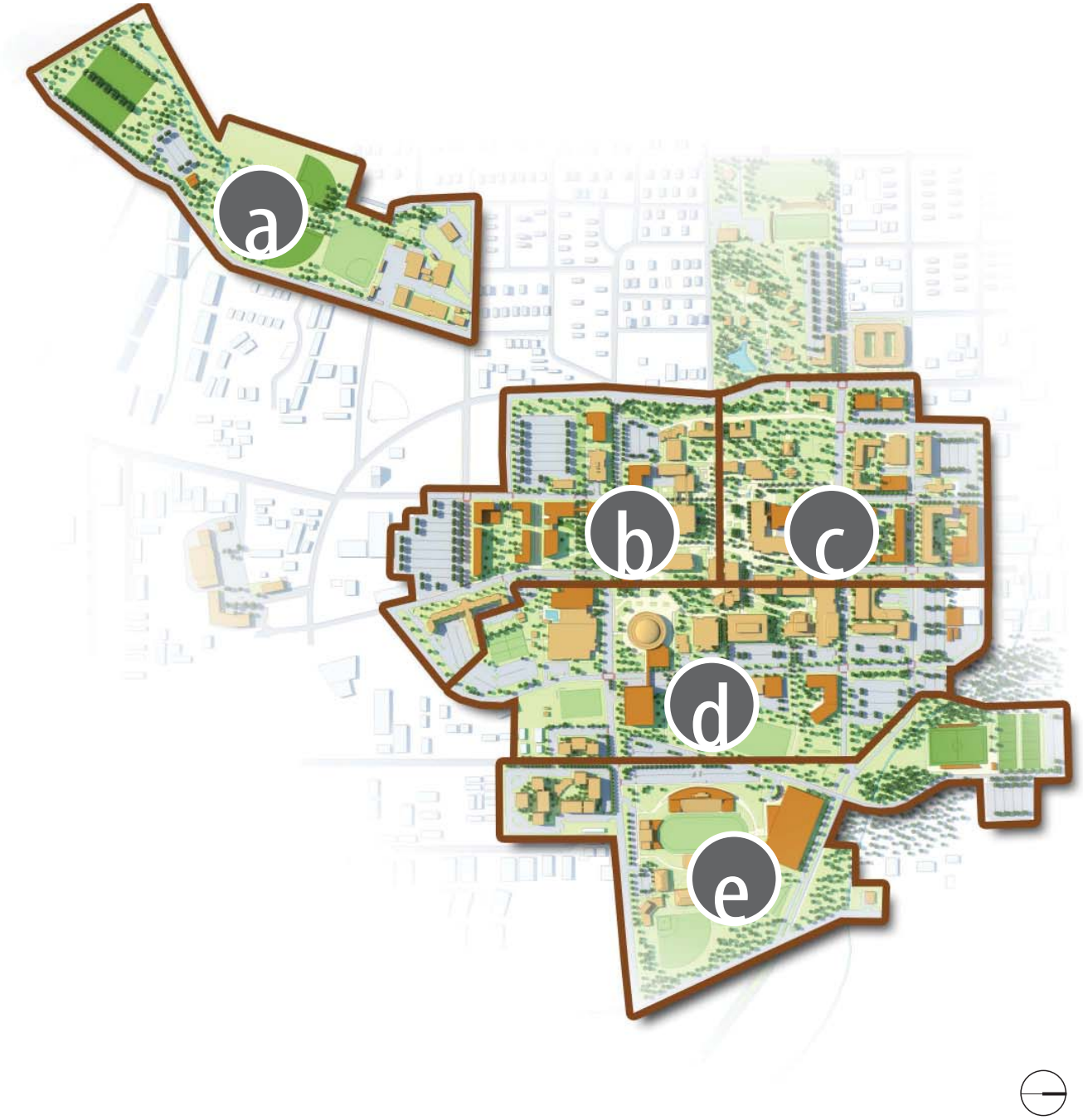

17th Street
Sam Houston Avenue
Bobby K Marks Dr.
Montgomery Road
Bearkat Boulevard
Bowers Boulevard
Sycamore Avenue
1
2
3
4
5
6
7
8
9
10
11
12
14
15
16
17
18
19
20
21
22
23
24

CAMPUS DISTRICTS

Sam Houston State University is currently organized into a series of neighborhood districts, each with a distinctive character. For ease of discussion within this report, the subsequent pages refer to six Campus Districts and the recommended changes within each.

Listed below are the six Campus Districts:

a. Recreation District
b. South District
c. North District
d. East District
e. Athletics District
f. Gibbs Ranch (off-campus, not shown on illustration)


a
b
c
d
e

RECREATION DISTRICT

Currently, SHSU does not have enough outdoor recreational facilities to support the existing campus community. The relocation of existing agriculture and horticultural programs to Gibbs Ranch provides an opportunity for new recreational fields within this portion of campus.

- Establish intramural recreation opportunities to increase the quality and quantity of campus open space.
- Develop general recreation and softball fields to provide a variety of program opportunities.
- Place site elements to enhance views from Interstate 45.
- Add surface parking incrementally, when needed.
- Develop a pedestrian and bike path to connect back to the SHSU Main Campus and Huntsville community neighborhoods.

SOUTH DISTRICT

The Master Plan locates a large portion of future building development within the South District. The proposed quad contains a mix of academic and student life uses which further strengthen and extend the central campus core.

- Extend the open space corridor from the north as a unifying element.
- Concentrate buildings to create new, memorable open spaces and informal recreation opportunities.
- Enhance the presence of Raven Village by the addition of a new intimate residence quad.
  - Model future residence halls after the suite style of Lone Star Residence Hall.
- Celebrate the topographic change by incorporating terraced open spaces and storm water amenities.
- Extend the pedestrian network by removing a portion of Bowers Boulevard between Avenue I and Avenue J.
- Strengthen the Bowers Boulevard / Sam Houston Avenue gateway with the addition of a signature building, landscape setback, and streetscape improvements.
- Enhance surface parking by adding site elements such as pedestrian walkway corridors and planting islands.

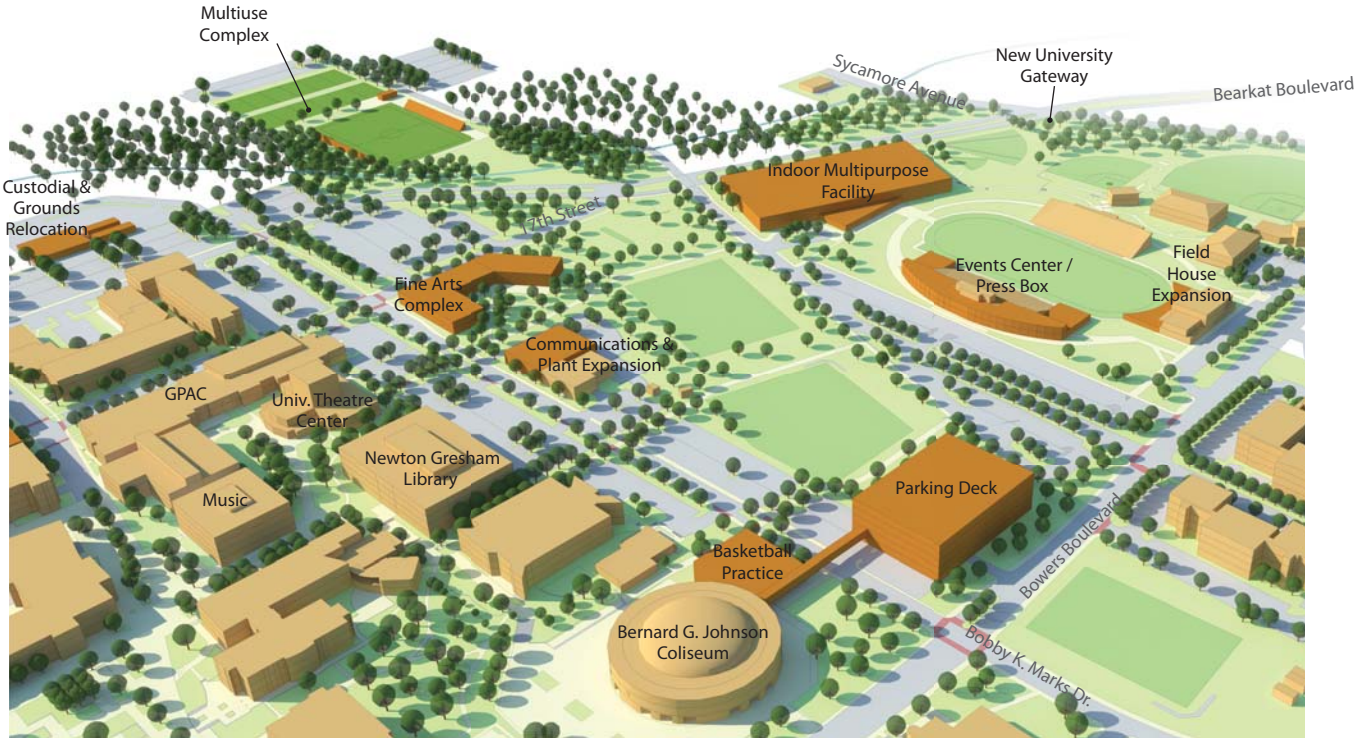
NORTH DISTRICT

The North District is the heart of campus residential and student life. Reinvest in this portion of campus with additional housing, an expansion of student life, memorable open spaces, and additional parking.

- Enhance the existing north residential area with new residential housing stock.
  - Replace the Sorority Hill Complex with a small-house typology.
- Create informal recreation opportunities with the strategic placement of new residential buildings.
- Extend pedestrian networks from the campus core into the existing community.
- Consider opportunities for adjacent surface parking in relation to new residential halls. Below-grade parking facilities are another option that warrant further exploration.
- Expand the existing parking deck to absorb additional demand generated from the Lowman Student Center and Gaertner Performing Arts Center.
- Expand the Lowman Student Center to service the growing campus population with additional outdoor social space, indoor event spaces, and food service.
- Provide a new facility for student health and counseling services.
- Extend the service walk and open space corridor from Sam Houston Plaza to the expansion of the Lowman Student Center.
- Enhance streets in this district with the addition of urban streetscape elements.

Proposed expansion of the Lowman Student Center (Rendering courtesy of Gensler)

Proposed Student Health & Counseling Center (Rendering courtesy of Brave Architecture)



EAST AND ATHLETIC DISTRICTS

East District

The East District houses many event-driven facilities that bring community visitors onto campus. These facilities include the Gaertner Performing Arts Center, the University Theatre Center, the College of Music, and the Bernard G. Johnson Coliseum. Utilize new building placement and additions to generate excitement, and create a strong sense of campus.

- Relocate new arts facilities within this district to create a concentrated campus art center.
- Place the relocated fine arts center to establish a close proximity and interdisciplinary collaboration of fine arts and performing arts.
- Incorporate a sculpture garden and gallery as a gateway feature of the new fine arts complex.
- Expand the Coliseum to ease programming conflicts.
- Enhance 17th Street and Bobby K. Marks Drive with urban streetscape design elements including improved pedestrian walkways and crossings.

Athletics District

This district is home to a majority of the intercollegiate athletic programs at SHSU such as football, softball, and baseball, however, some competitive sports are located outside of this district. Create a consolidated and contiguous Athletics District by relocating outlier programs.

- Relocate soccer and tennis to a multiuse complex north of the Town Creek corridor.
  - Selectively remove vegetation to establish visual connectivity to Main Campus.
  - Add surface parking incrementally, when needed.
  - Connect the new complex with a vehicular and pedestrian bridge across the Town Creek.
- Improve stadium functions to include an events center, press box and athletic offices.
- Incorporate an indoor multipurpose facility to house indoor sports opportunities.
- Utilize a parking deck to concentrate displaced surface parking. Incorporate an elevated walkway from the deck to the Coliseum to promote safe pedestrian passage.
- Add a combination of hardscape and softscape gathering spaces to enhance the campus landscape.
- Enhance existing pedestrian networks by extending walkways to new building developments.
- Develop a new University gateway at the corner of Bearkat and Sycamore to signal campus arrival.

Bobby K. Marks Drive Improvements

Bobby K. Marks Drive, a City of Huntsville street, is a cross-campus corridor on the east side of campus and provides access to a significant parking supply. Heavy pedestrian traffic traverses this road, at various points, to access existing recreation fields, the library, and performance venues.

- Implement mid-block crossings to control vehicular speed and provide deliberate pedestrian crossing points.
- Utilize simple strategies immediately to help mitigate pedestrian conflicts by installing clear wayfinding signage and applying road paint.
- When major infrastructure improvements occur along this corridor, implement a permanent and aesthetically pleasing solution by following the complete streets design philosophy to control traffic, provide safe bicycle routes and pedestrian crossings.

Blinker signs can provide a temporary solution to pedestrian crossing issues on Bobby K. Marks Drive.
image: www.tapconet.com

Bump-outs provide a permanent solution to slow vehicular traffic at deliberate pedestrian crossings.
Image: www.peopleforbikes.org/Dan Burden

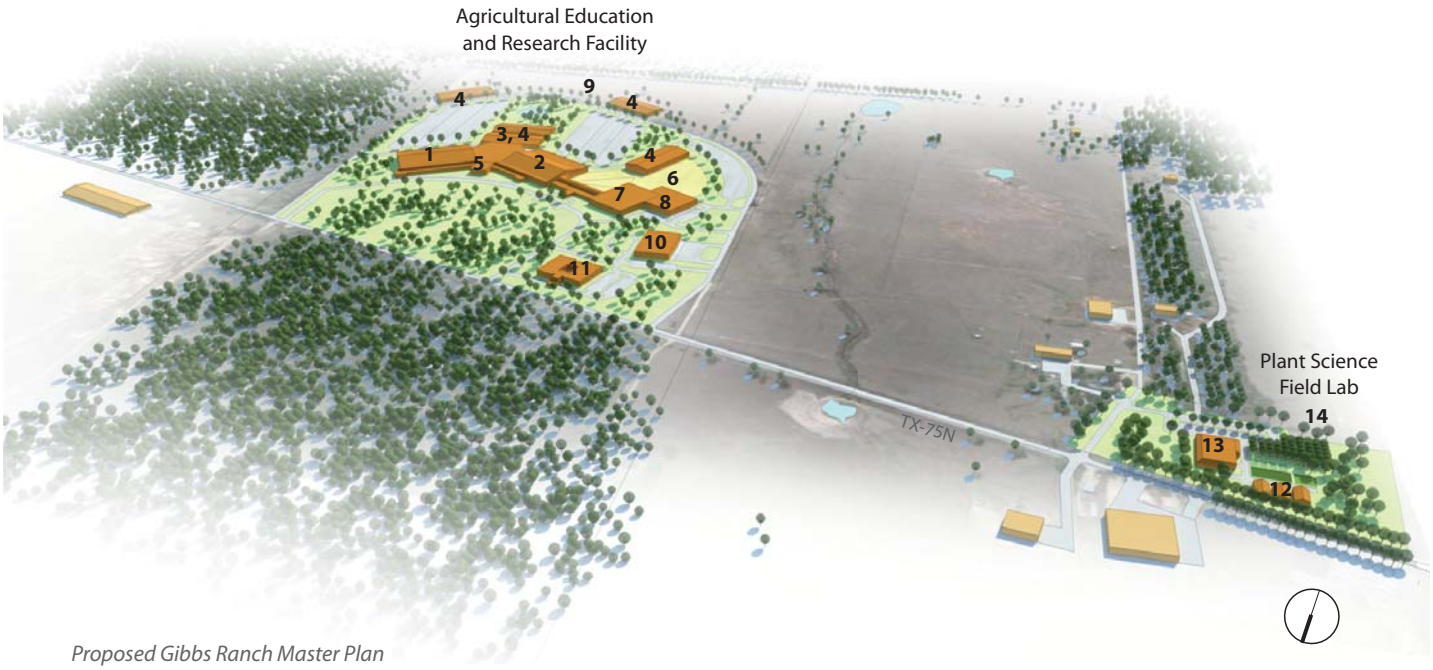
Refuge islands provide a place for pedestrians to wait out on-coming traffic within wider right-of-ways
Image: www.peopleforbikes.org/Lyubov Zuyeva

GIBBS RANCH

The goal of the Gibbs Ranch Master Plan is to create one of the premier agricultural teaching, exhibition and research facilities, not only in the State of Texas, but in the United States. Gibbs Ranch is an off-campus 1,459-acre facility located approximately 5 miles west of the Main Campus. The parcel provides an adequate amount of land resources to consolidate the agriculture and horticultural functions from Main Campus' I-45 Complex.

Future development of the Gibbs Ranch parcel contains two programs. The first is the Agricultural Educational and Research Facility. Program use for this complex includes performance arenas, equine teaching facilities, and a conference center. The second program is the implementation of a Plant Science Field Lab. A greenhouse, labs, and exterior gardens are planned. This replaces, and dramatically improves, all horticulture functions that currently exist at the I-45 Complex.

Key	Proposed
1	Main Arena
2	Warm-up Arena
3	Stalls
4	Future Stalls
5	Entry and Ticketing
6	Pasture Area
7	Equine Center
8	Equine Stalls
9	Future RV Expansion Area
10	Meat and Food Science Complex
11	Conference Center
12	Greenhouses
13	4 West Complex
14	Exterior Gardens / Amenities



Proposed Gibbs Ranch Master Plan

Proposed Plant Science Field Lab Site Plan (Rendering courtesy of Gensler)

CAMPUS SYSTEM RECOMMENDATIONS

The campus master plan includes individual system networks that allow the campus function as a whole. This section provides specific recommendations for each of these campus systems. The updated master plan systems include:

- Program Relocations and Improvements
- Proposed Buildings and Land Use
- Building Demolition Candidates
- Parking Removal Candidates
- Vehicular Circulation
- Parking Facilities
- Open Space
- Pedestrian Circulation
- Bicycle Circulation
- Storm Water Infrastructure
- Mechanical Infrastructure
- Electrical Infrastructure

PROGRAM RELOCATIONS AND IMPROVEMENTS

The adjacent diagram illustrates the major program relocations and improvements.

College of Business Administration

1. Reclaim under-utilized small classrooms in Smith-Hutson and re-purpose to faculty office clusters.

College of Criminal Justice

2. Move CMIT and LEMIT functions to the future Research Park from the Criminal Justice Building.
3. Relocate Forensics into the LEMIT building from the Chemistry Building.
4. In the Criminal Justice Building:
    - Consolidate faculty offices.
    - Construct a 100-150 seat classroom from multiple adjacent classrooms.
    - Construct flexible computer labs with movable partitioning as multiple 30-seat class sizes or 60-90 seat instructional seminars.

College of Education

5. Re-purpose the 1st floor space in Health and Kinesiology for exercise labs, offices, or storage.
6. Re-purpose small classrooms in the Garrett Teacher Education Center as faculty offices and incorporate library science faculty.

College of Fine Arts and Communication

7. Relocate Fine Arts and W.A.S.H. Complexes to a new facility.
8. Continue Rather Building technology improvements.
9. Renovate 1st floor of the Music Building for faculty / graduate student offices and seek infill opportunities.

College of Humanities and Social Sciences

10. Relocate administrative / student success functions out of AB IV and CHSS buildings.
11. Backfill AB IV and CHSS space to accommodate CHSS academic needs.

College of Sciences

12. Relocate the I-45 Agriculture facilities to Gibbs Ranch.
13. Move the Plant Science Field Lab to Gibbs Ranch.
14. Backfill vacated Forensics space in the Chemistry Building.
15. Relocate the Nursing and Biology program from Lee Drain Building to a new facility.
16. Backfill vacated Nursing and Biology space in the Lee Drain Building to accommodate:
    - A Geology / Geography split, Physics, Mathematics and Statistics, and Computer Sciences.

Non Academic Space

17. Replace space for office and support functions with demolition of Allen, Adams, Smith-Kirkley, and AB III.
18. Use the University Hotel for faculty offices and / or potential surge space.
19. Relocate Psychological Services to the existing Health Center.
20. Conduct a future study to review library space to accommodate student success functions.
21. Move ROTC to former the TDCJ space.


I-45
12
13
7
Avenue M
Sam Houston Ave
7
3, 14
Bowers Blvd
17
21
8
University Ave
19
17th St
Avenue J
15
16
17
10,11
17
15th St
10,11
9
20
2, 4
18
3
Avenue I
5
6
Bobby K Marks Dr
7
Montgomery Rd
Bowers Blvd
Sycamore Ave
Bearkat Blvd
College of Sciences
College of Humanities and Social Sciences
College of Fine Arts and Mass Communications
College of Education
College of Criminal Justice
College of Business Administration
Proposed Buildings
Near-term Land Acquisition

PROPOSED BUILDINGS & LAND USE

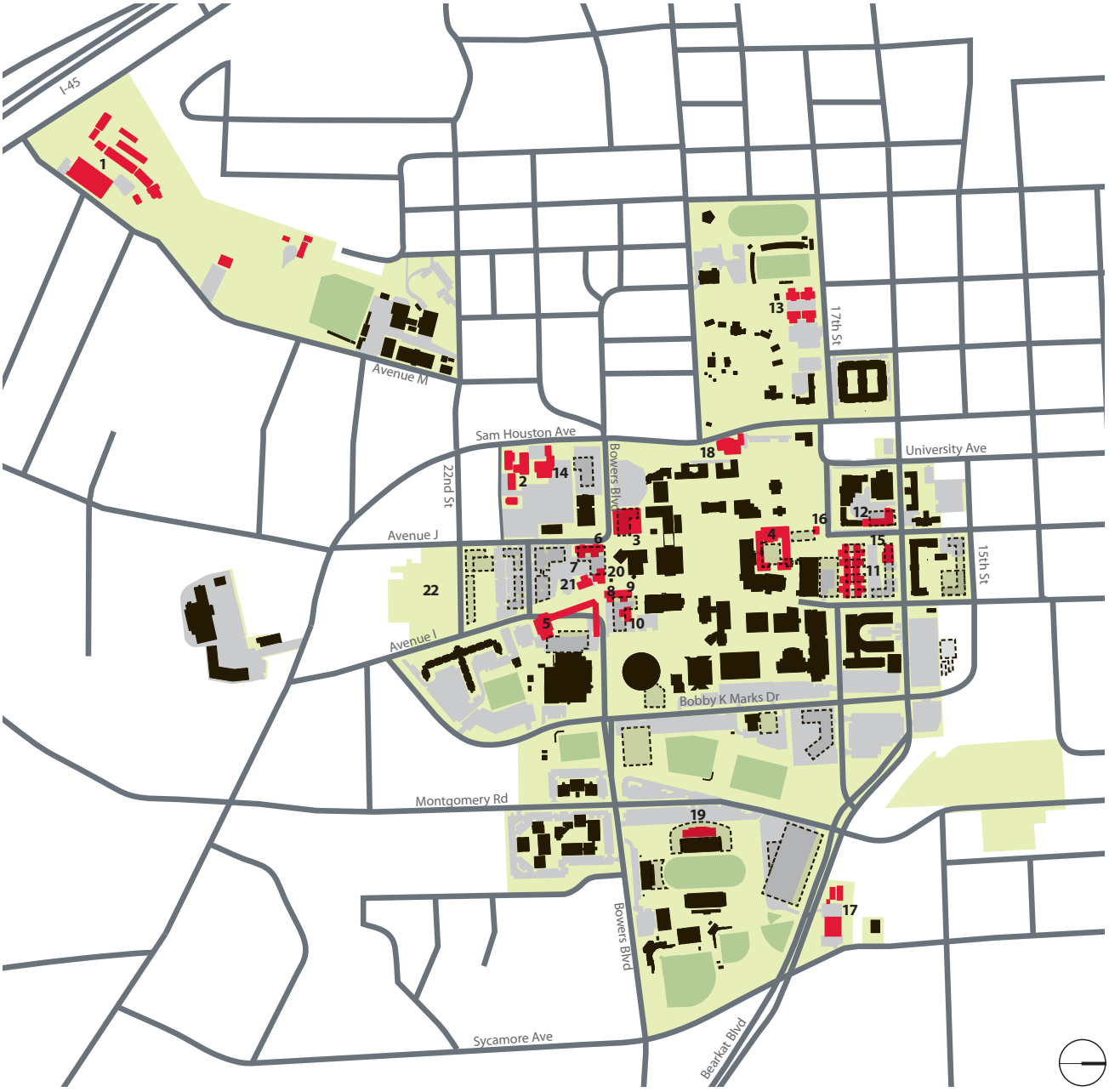
Key	Proposed	GSF	Floors	Beds
1	Agricultural & Engineering Technology Building	50,000	3	
2	Nursing / Biology Building	100,000	4	
3	Shared Special Instruments	28,000	2	
4	Fine Arts Complex (includes W.A.SH.)	50,000	2	
5	Allied Health Building	60,000	4	
6	Academic Building	75,000	3	
7	Recreational Sports Expansion	70,000	2	
8	Basketball Practice Facility	20,000	1	
9	Indoor Multipurpose Facility	125,000	1	
10	Lowman Student Center Expansion	60,000	3	
11	South Dining Facility	25,000	1	
12	North Dining Facility	25,000	1	
13	South Residence (R1)	103,900	4	335
14	South Residence (R2)	105,000	4	335
15	North Residential (R3)	108,900	4	335
16	North Residential (R4)	75,000	4	187
17	North Residential (R5)	103,900	4	335
18	DELTA / CE Building	29,000	3	
19	Student Health and Counseling Center	28,900	2	
20	Events Center / Press Box	60,000	2	
21	Mafrige Field House Expansion	20,000	2	
22	Communications & Central Plant Expansion	15,000	1	
23	Custodial & Grounds Relocation	18,151	1	
24	Parking Deck	225,000	5	
25	Parking Deck	216,720	7	


I-45
Avenue M
Sam Houston Ave
22nd St
Bowers Blvd
17th St
University Ave
15th St
Avenue J
Avenue I
Bobby K Marks Dr
Montgomery Rd
Sycamore Ave
Bearkat Blvd
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
Land Use
Academic Land Use
Residential Land Use
Recreation Land Use
Athletic Land Use
Support/Service Land Use
Museum Land Use
Building Use
Proposed Academic
Proposed Residential
Proposed Student Life/Dining
Proposed Special Use
Proposed Support/Service
Proposed Recreation
Proposed Athletic
New Parking Deck
Future Opportunity
Existing Building

BUILDING DEMOLITION CANDIDATES

Based on recommendations from the facilities condition audit, previous recommendations from the 2008 Plan, and a review with SHSU facilities staff, the adjacent diagram represents the proposed building demolition candidates. These buildings are under demolition consideration for the life of the plan. Each of the buildings should remain on campus until it is necessary for removal.

Key	Demolition Candidate	Primary Building Use	GSF	Beds
1	I-45 Agriculture Complex*	Academic	64,974	
2	Art Buildings A-F*	Academic	39,033	
3	AB III*	Academic	54,876	
4	Smith-Kirkley Hall* (demolished 2012)	Academic	112,619	
5	White Hall*	Residential	85,270	144
6	Barrett House*	Residential	8,161	46
7	Parkhill House*	Residential	8,161	46
8	Vick House*	Residential	8,161	46
9	Spivey House*	Residential	8,161	38
10	Randel House*	Residential	8,161	42
11	Sorority Hill Complex*	Residential	63,000	288
12	King Hall* (demolished 2012)	Residential	33,654	200
13	4 West Complex *	Residential	32,362	142
14	Temporary Post Office*	Service/Support	1,747	
15	Psychological Services Center*	Service/Support	6,183	
16	SHSU Online* (former Res. Life)	Service/Support	5,600	
17	Custodial & Grounds	Service/Support	18,151	
18	West Plant*	Service/Support	10,629	
19	Press Box	Service/Support	9,349	
20	Roy Adams House*	Service/Support	8,161	
21	Allen House*	Service/Support	8,161	
22	Richmond Apartments	Non-academic		
*	*Demo candidate in 2008 Plan*			



Building Demolition Candidate

Existing Building to Remain

Proposed Building

Proposed Roadway Framework

PARKING REMOVAL CANDIDATES

As the future SHSU campus expands to the south and north, existing surface parking is developable for new campus buildings. In order to maintain an optimized and connected campus core, surface parking migrates to the outer boundaries of campus to allow for future academic and residential adjacencies. At the full realization of the Plan, new buildings displace 3,101 spaces. This removed parking is accounted for, as discussed later in this chapter.

Key	Removal Candidate	Spaces
1	Lot 24	507
2	Lot 25	5
3	Lot 23	659
4	Lot 16	92
5	Lot 10	92
6	Lot 44, 45	248
7	Lot 28	5
8	Lot 38	66
9	Lot 33	42
10	Lot 34, 35	128
11	Lot 31, 32	101
12	Lot 58	50
13	Lot 12	250
14	Lot 7	375
15	Lot 14	370
16	Lot 8	43
17	Lot 50, 53	68

Parking Removal

Parking to Remain

Existing Building

Proposed Building

Proposed Roadway Framework

VEHICULAR CIRCULATION

The campus road network is essential to providing easy travel around and within campus. The network integrates the existing campus roadway system with the City of Huntsville and provides direct and easy access to major parking areas, major campus public destinations, downtown Huntsville, and surrounding neighborhoods. This system must also maintain emergency and service corridors and accessible campus routes.

Key vehicular improvements are:

- Bobby K. Marks Drive: This city of Huntsville roadway, between Bearkat Boulevard and Avenue I, carries a significant volume of local traffic. Implement clear signage, road markings and pedestrian improvements to slow drivers and protect pedestrians. Study permanent and long-term complete street solutions for future implementation, such as bicycle lanes, continuous sidewalks on both sides of the street and pedestrian refuge islands.
- Montgomery Road: Extend this roadway to the proposed athletic use north of Bearkat Boulevard.
- Bowers Boulevard: Remove a portion of Bowers Boulevard between Avenue I and Avenue J to allow an uninterrupted extension of the academic core to the south. Create a boulevard entry at the Sam Houston Avenue entrance to enhance this gateway.
- Bearkat Boulevard: Create a new University gateway at the intersection of Bearkat and Sycamore to strengthen arrival from Highway 19 and Interstate 45.
- Avenue J: Remove Avenue J from the core of campus from 17th Street south to the Lowman Student Center; incorporate a service walk to enhance the pedestrian experience.
- Avenue I: Remove a portion of Avenue I just south of the existing parking deck to enhance the pedestrian experience. Realign Bowers Boulevard at Avenue I.
- 22nd Street: Extend and connect to the I-45 Complex.

Key	Proposed
1	City Connection
2	City Connection
3	Extension of 22nd Street
4	Realignment of Avenue I
5	Montgomery Road Extension
6	Removal of Bowers Boulevard
7	Removal of Avenue J, addition of Service Walk
8	Removal of Avenue I, addition of Service Walk

Key	Proposed
9	Service Walk, maintains access to parking
10	Service Walk
11	Enhance Campus Gateway, boulevard entry
12	Enhance Campus Gateway


I-45
Avenue M
Sam Houston Ave
University Ave
17th St
22nd St
Bowers Blvd
15th St
Avenue J
Avenue I
Bobby K Marks Dr
Montgomery Rd
Sycamore Ave
Bearkat Blvd
1
2
3
4
5
6
7
8
9
10
11
12
Proposed Road
Removed Road
Existing Road
Proposed Service Walk
Existing Building
Proposed Building
Proposed Gateway
Future Gateway
Recommended Passenger Drop-off

PARKING FACILITIES

Today, the campus has 7,836 parking spaces, which translates into a ratio of 2.23 to 1 (people to parking spaces). The proposed parking need for the fully realized plan is 8,667 spaces for the target campus population of 19,160 by 2020 (17,110 students plus 2,050 faculty and staff). With this population increase, the parking inventory adds 831 spaces to meet the needs of students, residents, faculty, staff, visitors and commuters. With the removal of several surface lots to accommodate new buildings, the parking inventories are replaced in addition to the new required spaces. The parking system is designed to encourage a higher utilization, better distribution, and more efficient parking density. The parking demand model generated for this study was based on the Eno Foundation for Transportation ratios for Colleges and Universities.

Key plan elements include:

- Surface parking: Surface parking is an important component for the SHSU community. Locate surface parking at high demand areas and remain outside of the academic core. For this planning exercise, one space is equal to 300-350 square feet of land area, where 1 acre can yield between 125 and 145 parking spaces. As illustrated, several large surface lots are planned.
- Structured parking: As land is optimized within campus boundaries and parking need increases, a need for structured parking in high demand areas becomes a necessity. Two parking structures are proposed, one in the Athletics District, just south of the stadium and another adjacent to the existing parking structure, west of the Gaertner Performing Arts Center.

Implementation considerations:

- Build parking incrementally, on an as needed basis, balancing supply and demand.
- Minimize large, expansive parking areas with the use of landscape treatments.
- Separate loading and service areas from vehicular and pedestrian uses with screening or landscape treatment.
- Incorporate safe pedestrian walks within and around vehicular parking zones.
- Incorporate bicycle facilities, transit stops, and office uses in parking structures.
- Provide easily accessible parking areas within a 5 minute radius (1250') of popular campus destinations.
- Coordinate utilities upgrades with parking resurfacing, relocation or new parking lot construction.
- Balance parking facilities within the north and south residential districts.

In the key below, proposed parking includes replacement parking.

Key	Proposed	Spaces	Floors	Key	Proposed	Spaces	Floors
1	Surface	500		8	Surface	30	
2	Surface	630		9	Surface	20	
3	Surface	40		10	Deck	1050	7
4	Deck	500	5	11	Surface	360	
5	Surface	420		12	Surface	20	
6	Surface	170		13	Surface	170	
7	Surface	20		14	Surface	75	


I-45
Avenue M
Sam Houston Ave
22nd St
Bowers Blvd
17th St
University Ave
15th St
Avenue J
Avenue I
Bobby K Marks Dr
Montgomery Rd
Sycamore Ave
Bearkat Blvd
5' walking radius
5' walking radius
5' walking radius
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Existing Surface Lot
Existing Parking Deck
Proposed Surface Lot
Proposed Parking Deck
Existing Building
Proposed Building

OPEN SPACE

SHSU has unique open spaces within the campus core, such as the Historic Quadrangle, Sam Houston Plaza, and the Coliseum Greenbelt. These areas are examples of how open space should be extended to the proposed residential and academic quads of campus. Open spaces such as these create memorable spaces, enhance the pedestrian experience, enrich university traditions, and improve the overall SHSU landscape character.

Key plan elements include:

- South Academic Quad: Create a new academic quad to serve the south expansion of campus. Incorporate plaza spaces and courtyards where appropriate within these areas as formal and informal gathering spaces.
- Residential Quads: Implement multipurpose open spaces to serve as casual recreation areas and extend outdoor living rooms for residential neighborhoods.
- Pedestrian Malls: Extend existing malls with the same character and intent to proposed malls.
- Sam Houston Avenue Edge Enhancement: Develop a wide and continuous landscaped setback along the eastern edge of this main campus boundary road. Extend the edge as the campus develops to the north and south.
- Storm Water / Natural Corridor: Preserve and enhance storm water detention and confluence areas. These areas lend themselves to be part of a recreational pathway that could be coordinated with regional or city proposed trail systems.
- Museum Campus: Preserve this open space for the educational benefit and historic significance of Sam Houston.
- Recreation Fields: Develop intramural recreation fields when the agricultural and horticultural elements are relocated to Gibbs Ranch.
- Athletics Complex: Enhance the complex by growing programs to the north to allow a contiguous and consolidated Athletics District.

Key	Existing Open Space
1	Historic Quadrangle
2	Old Main Memorial
3	Sam Houston Plaza
4	Athletics District
5	Recreation Fields
6	Pritchett Field Complex
7	Sam Houston Memorial Museum Campus
8	Natural Corridor
9	West District Campus Edge
10	Coliseum Greenbelt
11	Sycamore / Bearkat Blvd. Landscape Edge
12	Colony Park

Key	Proposed Open Space
13	I-45 Recreation Complex
14	South Academic Quad
15	South Residential Quad
16	North Residential Quads
17	Multiuse Complex
18	Sam Houston Avenue Edge Improvements
19	Storm Water / Natural Area Corridor
20	Fine Arts Complex Gallery / Department Work Space
21	South Quad Pedestrian Mall
22	Lowman Student Center Social Space and Pedestrian Mall
23	Bobby K. Marks Drive Pedestrian Access Routes


I-45
Avenue M
Sam Houston Ave
University Ave
22nd St
Bowers Blvd
17th St
15th St
Avenue J
Avenue I
Bobby Marks Dr
Montgomery Rd
Sycamore Ave
Bearkat Blvd
Existing Open Space
Proposed Open Space
Existing Recreation Field
Proposed Recreation Field
Existing Athletic Field
Proposed Athletic Field
Pedestrian Mall
Natural Corridor

PEDESTRIAN CIRCULATION

The intention of the Plan Update is to improve the overall walkability within campus and into the surrounding Huntsville community. The central core of campus has a robust pedestrian system in place. Future campus walks are proposed to extend and align with these major thoroughfares. Pedestrian volumes are highest in the core of campus and walk hierarchy should reflect high volume use where appropriate. The addition of walk segments where walks are missing, or terminate abruptly, is important for continuity and safety, as is the implementation of accessible walks and pathways to all areas of campus. The University should also work with the City of Huntsville to coordinate improvements on walks that lead into campus from surrounding neighborhoods.

Key plan elements include:

- Primary Walks: Establish a system of major walks through the campus core that connect all major academic destinations. These types of walks can be incorporated with campus pedestrian malls and service walks.
- Secondary Walks: Establish a system of secondary walks that connect all potential pedestrian destinations on and off the campus. Work with the City of Huntsville to develop the system into the surrounding neighborhoods.
- West Trail: Create a shared trail that connects the campus to the I-45 Recreation Campus and beyond.
- Mid-Block Crossings: Incorporate properly delineated pedestrian crossings with a combination of special markings, pavements and signage to ensure the safety of both vehicles and walkers. Limit mid-block crossings to locations that are clearly defined as safe pedestrian crossing points. Crossings should have adequate safety measures commensurate to the scale and design speed of the street.
- Convert several existing roads, as shown on the diagram, to service walk corridors, emphasizing the pedestrian experience, while allowing access for service and emergency vehicles.

Key	Major Improvements
1	West Trail
2	Improved Crossing to Museum Campus
3	Extend Walks into Surrounding Neighborhoods
4	Pedestrian Crossing Upgrades along Bobby K. Marks Drive
5	22nd Street Pedestrian Extension to I-45 Complex
6	Josey Street Pedestrian Extension to I-45 Complex
7	Pedestrian Bridge to Multiuse Complex
8	Pedestrian Bridge to Coliseum from Parking Deck


I-45
10' walking radius
5' walking radius
Avenue M
Sam Houston Ave
University Ave
17th St
15th St
22nd St
Bowers Blvd
Avenue J
Avenue I
Bobby K Marks Dr
Montgomery Rd
Sycamore Ave
Bearkat Blvd
1
2
3
4
5
6
7
8
Road Network
Pedestrian Network
Proposed Service Walk
Mid-block Crossing
Campus Buildings

BICYCLE CIRCULATION

The University should encourage additional bicycle use by enhancing existing facilities. Additional facilities such as designated bike lanes, dedicated or shared paths, adequate bicycle parking, signage, lighting, and bicycle maintenance stations are required to provide an overall and complete bicycle system and need to be in place for the system to function effectively.

Key plan elements include:

- Striped bicycle lanes: Create these types of lanes for major routes into campus. Striped bike lanes are 5' wide and signed. Future road improvements need to include bicycle facilities.
- Shared bicycle lanes: Implement shared lanes within minor routes into campus. Shared bike lanes are wider vehicular lanes that are signed for bicycle use.
- West Trail: Create a bicycle trail that extends through the I-45 Recreational Complex and connects to city bicycle routes.
- Bicycle parking: Enhance existing parking areas by adding loops in high volume areas such as residence halls and major academic centers.
- Bicycle Centers: Implement bicycle centers in at least two locations. These stations can be relatively simple, such as a place to fill tires with air and tighten brakes, or be very elaborate and include locker rooms and shower facilities.

Key	Major Improvements
1	West Trail
2	Bike Center within the South District
3	Bike Center near Lowman Student Center

Road Network

Bicycle Network

Bicycle Center

Campus Buildings

INFRASTRUCTURE RECOMMENDATIONS

STORM WATER INFRASTRUCTURE

The recommendations for storm water is the result of a study completed by Klotz Associates, Inc. (*Storm Water Master Plan Update*, November 2012). This is a summary of those findings. The goals of the storm water portion of the study are:

- Manage storm water as a campus asset
- Manage storm water detention regionally where necessary
- Manage water quality as close to the source as possible
- Minimize impervious surfaces, and
- Integrate storm water into the campus open space fabric

Detention Facilities

In order to minimize the need for detention at the recreational fields, other existing detention and potentially new detention facilities were identified in conjunction with the other planning elements of the Plan Update. Approximate storage volumes were determined for each location. Through this effort, 13.6 acre-feet of existing/proposed detention was identified at several locations across the main campus; 4.3 acre-feet of this being existing detention that the University has already implemented. Through the assistance of SHSU personnel, existing underground detention facilities were identified and their storage volumes quantified. New detention facilities include surface detention basins and chamber storage underneath new parking facilities. The amount of detention left of the original 47 acre-feet that is still required at the recreational fields will continue to allow them to serve as multiuse facilities and will only impact play at them during major rain events. In order to achieve the detention capacity required at these facilities, the fields can be designed to distribute the detention that best suits SHSU and the use of the recreational fields. The main goal is to achieve the required detention, regardless of which combination of fields accomplish this.

Pervious Surfaces

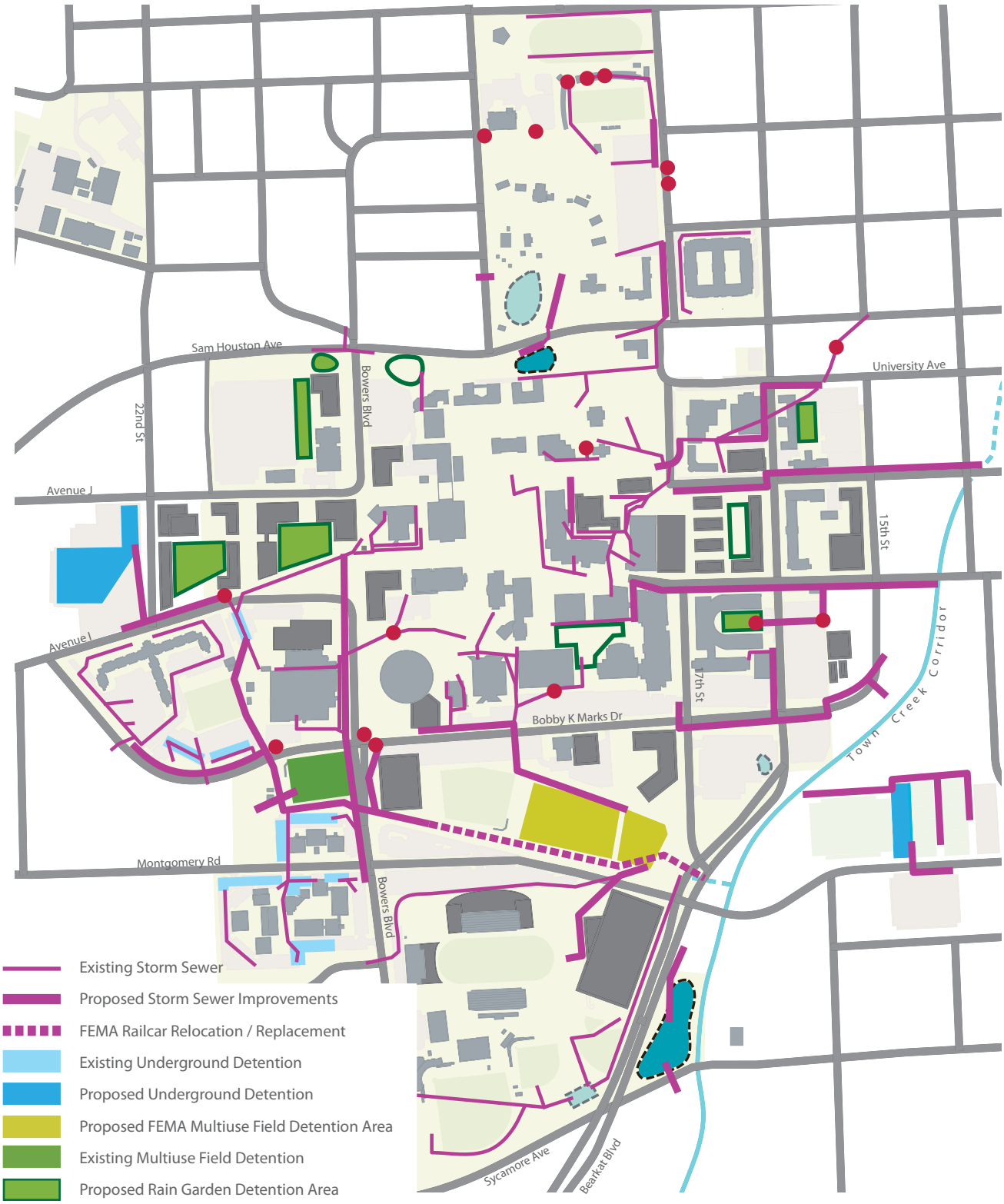
To further improve the quantity of pervious area on campus, all new sidewalks and parking lots should be evaluated during design to determine the benefits of pervious pavement systems. If green roof systems are applicable, they should be evaluated in order to increase the pervious area on campus.

Stream Corridors

The stream corridors on campus including Town Creek and any of its tributaries should be protected and enhanced. These areas can become campus amenities through thoughtful landscaping and design coordination with adjacent buildings.

Water Quality Opportunities / Rain Gardens

Water quality needs can be met as new buildings and open spaces are developed throughout campus. Rain gardens are considered as part of the effort to maintain water quality. Rain gardens are landscape features that offer benefits of infiltration, volume reduction, and flow rate reduction as well as scenic improvements. These coincide with the goals of managing the water quality as close to the source as possible, reducing impervious surfaces, and integrating stormwater into the campus open space fabric. Rain garden locations are recommended based on future building placement and available open space, topography, and the 2008 Master Plan recommendations. To further improve water quality, water treatment features should be analyzed as an option for any proposed detention basin or underground chambers. This option can also examined for existing detention facilities.


Sam Houston Ave
University Ave
22nd St
Bowers Blvd
Avenue J
Avenue I
15th St
17th St
Bobby K Marks Dr
Town Creek Corridor
Montgomery Rd
Bowers Blvd
Sycamore Ave
Bearkat Blvd
Existing Storm Sewer
Proposed Storm Sewer Improvements
FEMA Railcar Relocation / Replacement
Existing Underground Detention
Proposed Underground Detention
Proposed FEMA Multiuse Field Detention Area
Existing Multiuse Field Detention
Proposed Rain Garden Detention Area
Proposed Rain Garden Detention w/ Channel
Existing Basin
Proposed Basin
Existing Campus Buildings
Proposed Campus Buildings
Manhole Rehabilitation Needed

MECHANICAL INFRASTRUCTURE

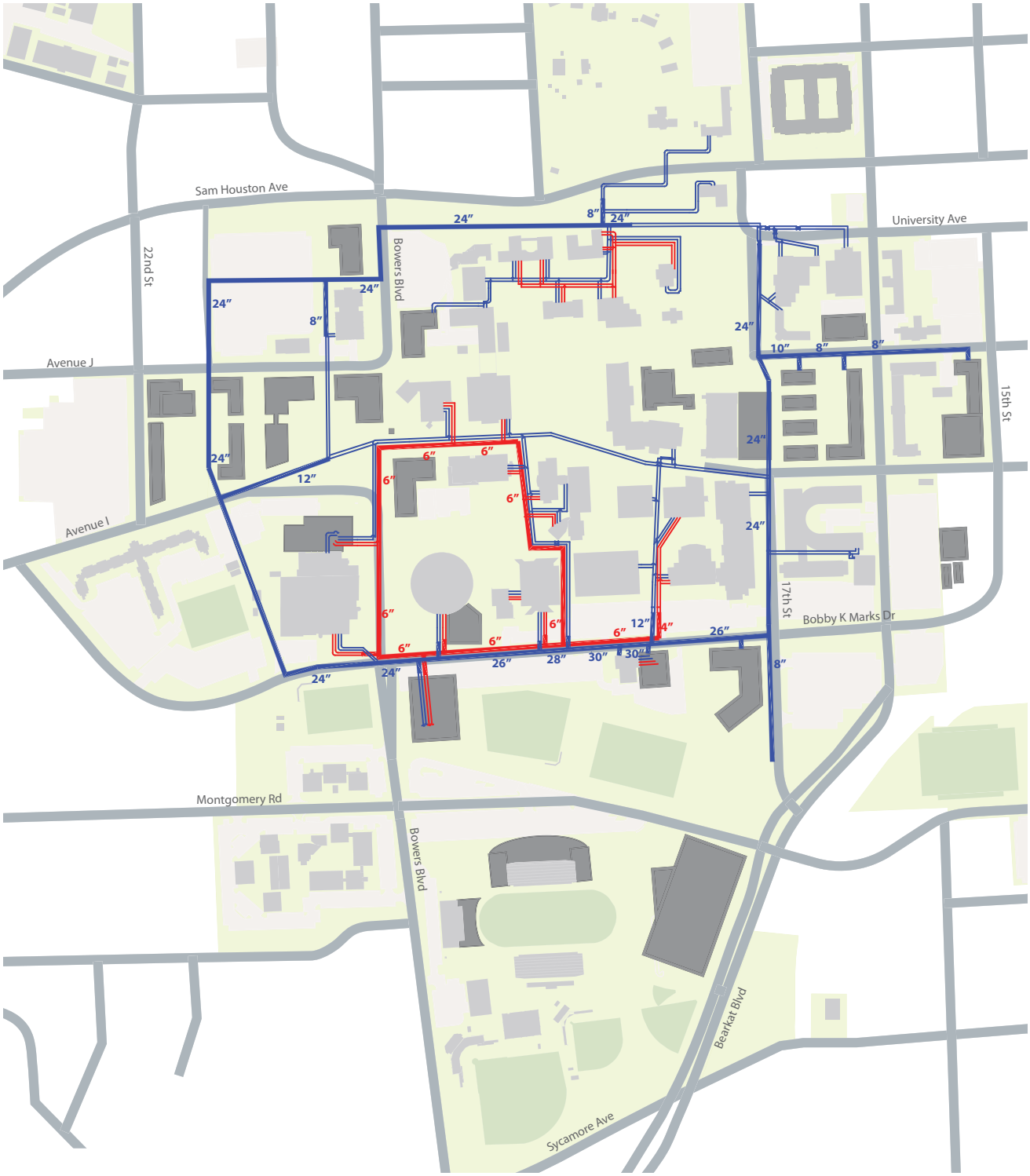
The mechanical recommendations are the result of a study completed by EEA Consulting Engineers. This is a summary of those findings. Please refer to the EEA report titled, *Campus Distributed Utility Master Plan, November 2012* for detailed recommendations.

To increase the capacity and reliability of the chilled water system, the utility master plan for chilled water combines the two existing distribution loops into one larger loop, and combines two existing plants into one larger plant. Consolidating the chilled water generating plants localizes maintenance and also minimizes the area of campus used for facilities operations. Combining the two chilled water loops, and replacing existing pipes with larger pipes where necessary, allows all buildings on campus to be served from two directions should a piping failure or shutdown on one portion of campus occur.

One major component of the chilled water master plan is a new 5,400-ton East Plant Expansion, located adjacent to the existing East Plant. This new plant would increase total system capacity to a point that could support all master planned buildings while still maintaining chiller redundancy. The construction of this plant and interconnection of distributed piping loops would allow for eventual demolition of the West Plant.

The other major component of the chilled water master plan is the distribution piping. A large amount of direct buried piping will be required to serve all master-planned buildings with chilled water and connect the two existing loops. This approach will provide an efficient and reliable system for the SHSU Main Campus. Appropriate sizing of the distribution piping will also allow for expansion of the system beyond the master plan.

Given the efficiency available using small local hot water boilers, expansion of the heating water distribution system is not recommended with the exception of several future buildings that are planned to be located near existing distribution piping. Relocation of the West Plant heating water generation to the basement of Thomason Hall will be required for eventual demolition of that plant.



Existing Chilled Water Piping

Existing Heating Hot Water Piping

Existing Campus Building

X″ Proposed Chilled Water Piping

X″ Proposed Heating Hot Water Piping

Proposed Campus Building

ELECTRICAL INFRASTRUCTURE

The electrical recommendations are the result of a study completed by EEA Consulting Engineers. This is a summary of those findings. Please refer to the EEA report titled, *Campus Distributed Utility Master Plan, November 2012*.

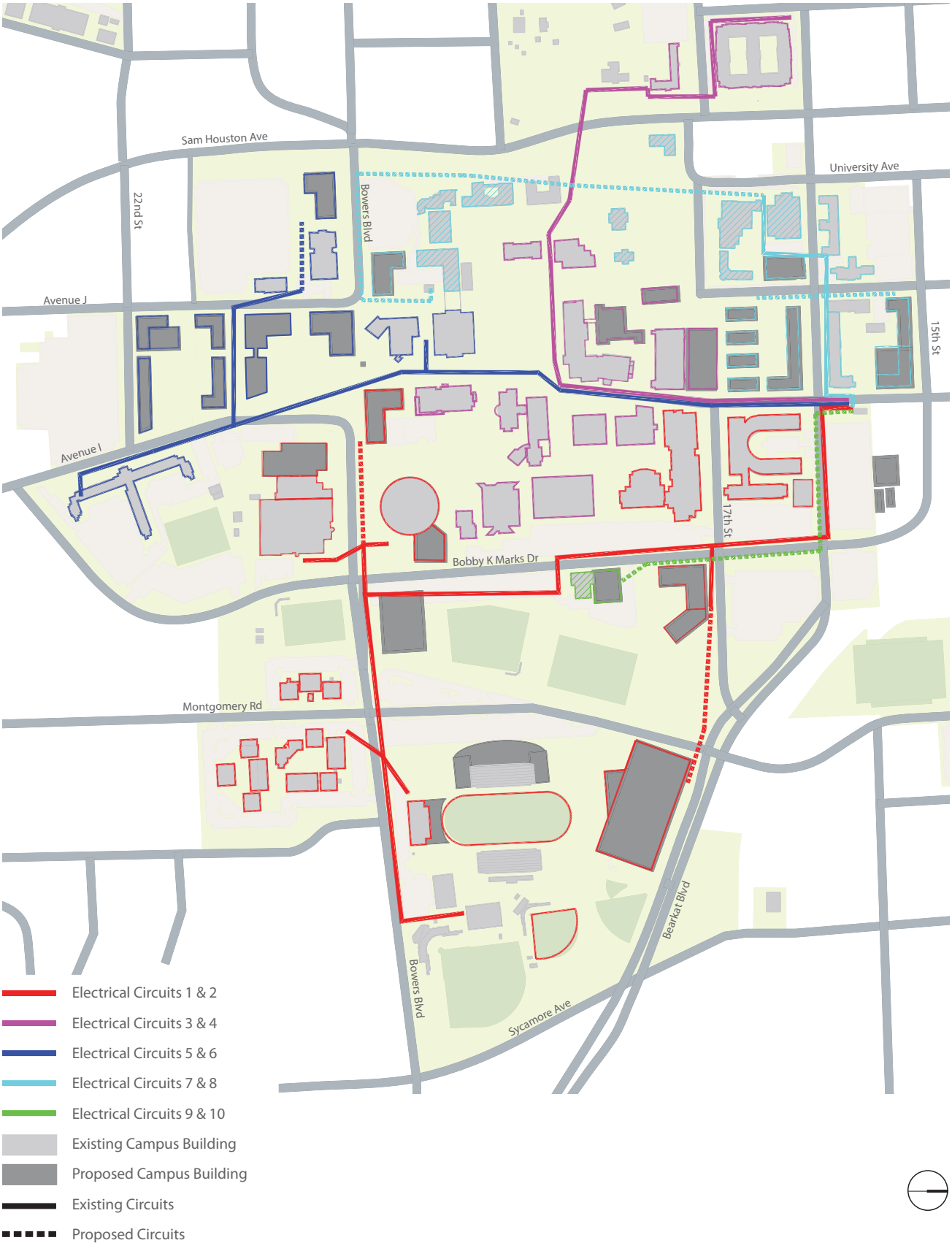
A major electrical infrastructure concern is the first manhole leaving the main switchgear building (Manhole #1). This manhole contains all 8 circuits from the campus. If a short circuit occurred in that manhole, it has the potential to take out all 8 circuits at one time. A project that has been identified is to provide a physical barrier in the manhole between the odd circuits (1,3,5,7) and the even circuits (2,4,6,8). If something were to happen on the even side of the barrier, the odd side would be protected. In theory this works well, but trying to install a barrier in a manhole full of 13.2kV circuits will be challenging because the campus will need to be shutdown for worker safety.

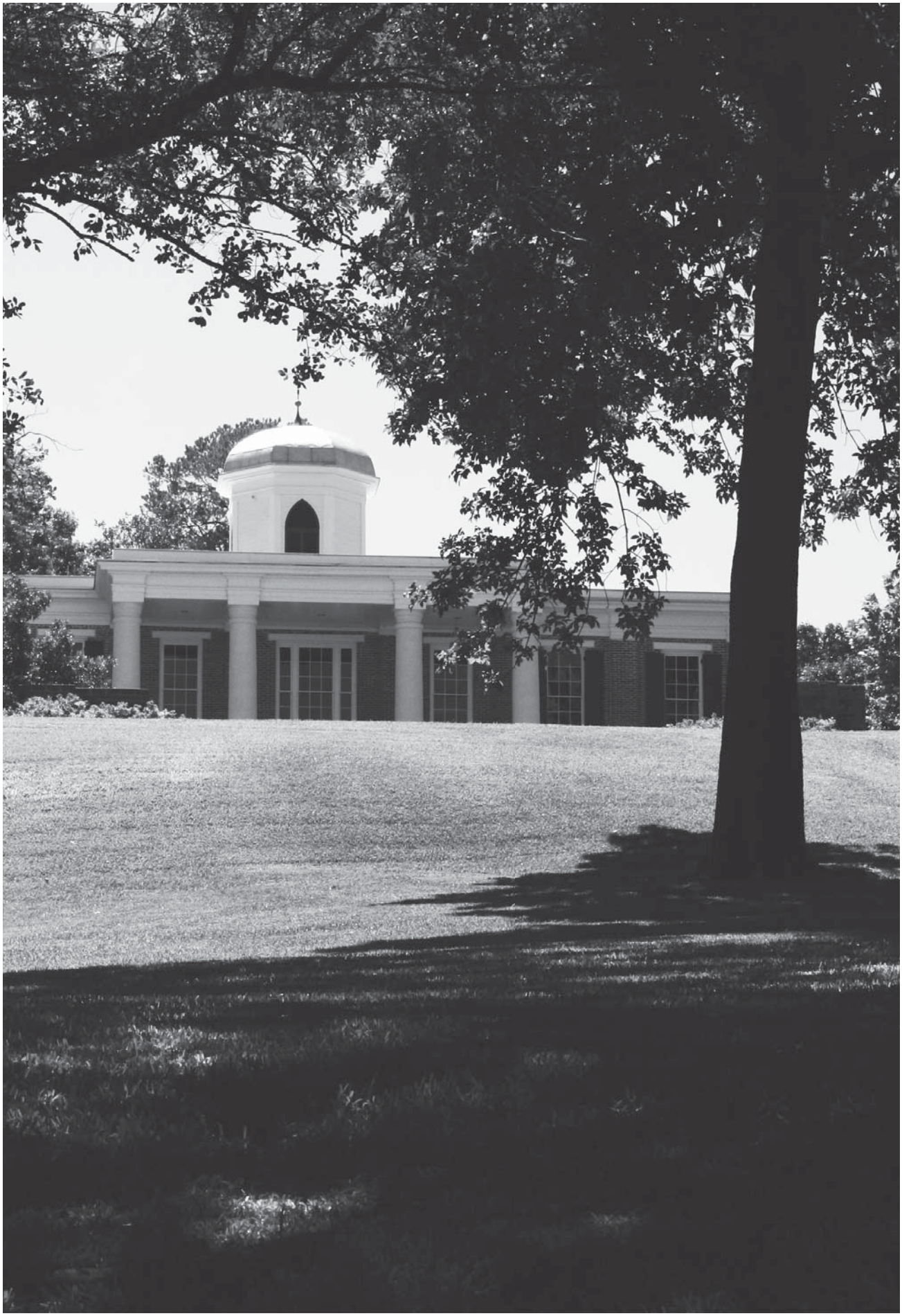
Other items of concern are the "Farrington Switches". The Farrington Switches are eight 4.16kV switches located in a small building to the east of Farrington Hall. The concern is the age of the switches (40 years) and the availability of spare parts. When the campus was originally constructed, the buildings on campus were provided with 4.16kV service from the local utility provider. When the change was made to provide the growing campus with 13.2kV power, the existing building transformers couldn't handle the new voltage. The solution was to install two 13.2kV:4.16kV transformers near the west side of the Lee Drain Building. These transformers would take the new voltage (13.2kV) and change it to the existing voltage (4.16kV). This solution would allow the existing buildings to keep their transformers. Currently this doesn't provide a source of redundant power to 22 buildings. The exception is the West Plant. This building has a backup 4.16kV feeder in case of a failure. Another goal of this master plan is to migrate all of the existing buildings off of the Farrington Switches and onto one of the main 13.2kV Circuits. Not only will this provide reliable power to the buildings, but it also has an added benefit of removing the overhead power lines on Avenue J and 17th Street and University Avenue between 16th and 17th Street.

There are a few buildings served by the underground circuits that do not have redundant power. The Coliseum and the Recreational Sports facility are only served with Circuit 2. One project in the master plan is to provide those buildings with redundant power.

In the past few years, Circuits 7 and 8 have been added to the north side of the main campus. They currently provide power to Lone Star Hall, Estill Dorm, Health Center, and Old Main Market. The circuits runs north along 16th street and terminate in a medium voltage switch in the common area between Belvin-Buchanan Hall and Old Main Market. Circuit 7 and 8 should be continued south along University Avenue to the corner of the Evans Complex and around to Farrington. While adding some pad mounted intermediate medium voltage switches along the way, this will allow the removal of Peabody/Austin Hall, Elliott Hall, Belvin Buchanan Hall, Margaret Lea Houston, Thomason, Evans, Visitors Center, Farrington, and Estill Building from the 4160V circuits and onto Circuits 7 and 8. There are a few building transformers that have the ability to accept 13.2kV as well as 4.16kV. These transformers can be reused. Four buildings (Elliott Hall, Belvin Buchanan, Margaret Lea Houston, and Visitors Center/Evans) will need new transformers. Sorority Hill, Parkhill, Barrett, Adams, Allen, Vick, Spivey, Randel, and the West Plant are all fed from the 4160V service as well, but are indicated as demolition candidates.

The buildings on the west side of campus including the Museum, Pritchett Field, and Walker Education are also fed from the 4160V service. However, there is a 13.2kV circuit in the area of Jackson Shaver. Installing a 13.2kV:4.16kV transformer will keep all of the buildings at 4.16kV, but allow them to be fed from the main substation circuits and off of the Farrington Switches without the addition of new transformers. Once the above projects are complete, the Farrington Switches can be removed.


Sam Houston Ave
University Ave
22nd St
Bowers Blvd
Avenue J
15th St
Avenue I
17th St
Bobby K Marks Dr
Montgomery Rd
Bearkat Blvd
Bowers Blvd
Sycamore Ave
Electrical Circuits 1 & 2
Electrical Circuits 3 & 4
Electrical Circuits 5 & 6
Electrical Circuits 7 & 8
Electrical Circuits 9 & 10
Existing Campus Building
Proposed Campus Building
Existing Circuits
Proposed Circuits



05. Implementation

PRIORITIES FOR STRATEGIC IMPLEMENTATION

The following section provides the University with an implementation guide for the projects presented within this Plan Update. While this overall Plan is a road map for the future, new building projects are presented as a series of phases (or priorities) in which they should be implemented. In some cases, the implementation of a new building must be preceded by building demolition, infrastructure upgrades, and program moves. Additional considerations to include during building or infrastructure projects are open space, pedestrian, street and parking improvements as described within this document. It is important to plan and design for future campus systems and integrate these into the existing campus fabric. Refer to the concurrent Plan Update studies for detailed project descriptions in regards to storm water, mechanical and electrical infrastructure recommendations.


San Houston State University - The Woodlands Center


DEERE


RESIDENCE LIFE OFFICE

PHASE 1, YEARS 0-6

Key	Proposed Building Project
1	Agricultural & Engineering Technology Building
2	Nursing / Biology Building
3	Shared Special Instruments Building
4	Fine Arts Complex
5	Allied Health Building
6	Communications & Central Plant Expansion
7	Academic Building
8	Future Opportunity
9	Recreational Sports Expansion
10	Basketball Practice Facility
11	Multiuse Complex
12	Indoor Multipurpose Facility
13	Recreational Fields
14	Lowman Student Center Expansion
15	North Residential District
16	South Residential District
17	Dining Facility
18	Student Health and Counseling Center
19	DELTA / CE Building
20	Events Center / Press Box
21	Mafrige Field House Expansion
22	Parking Deck
23	Surface Parking
24	Custodial & Grounds Relocation

- Phase 1 Proposed Buildings
- Existing Buildings
- Proposed Recreation/Athletic Field
- Existing Recreation/Athletic Field


17th Street
Sam Houston Avenue
18
14
24
1
2
3
16
17
6
20
Bearkat Boulevard
Montgomery Road
Bowers Boulevard
Sycamore Avenue

PHASE 2, YEARS 7-13

Key	Proposed Building Project
1	Agricultural & Engineering Technology Building
2	Nursing / Biology Building
3	Shared Special Instruments Building
4	Fine Arts Complex
5	Allied Health Building
6	Communications & Central Plant Expansion
7	Academic Building
8	Future Opportunity
9	Recreational Sports Expansion
10	Basketball Practice Facility
11	Multiuse Complex
12	Indoor Multipurpose Facility
13	Recreational Fields
14	Lowman Student Center Expansion
15	North Residential District
16	South Residential District
17	Dining Facility
18	Student Health and Counseling Center
19	DELTA / CE Building
20	Events Center / Press Box
21	Mafrige Field House Expansion
22	Parking Deck
23	Surface Parking
24	Custodial & Grounds Relocation

- Phase 2 Proposed Buildings
- Existing Buildings
- Proposed Recreation/Athletic Field
- Existing Recreation/Athletic Field


23
17th Street
Sam Houston Avenue
23
15
17
19
15
15
22
23
23
11
23
4
5
10
21
Bearkat Boulevard
Montgomery Road
Bowers Boulevard
Sycamore Avenue

PHASE 3, YEARS 14+

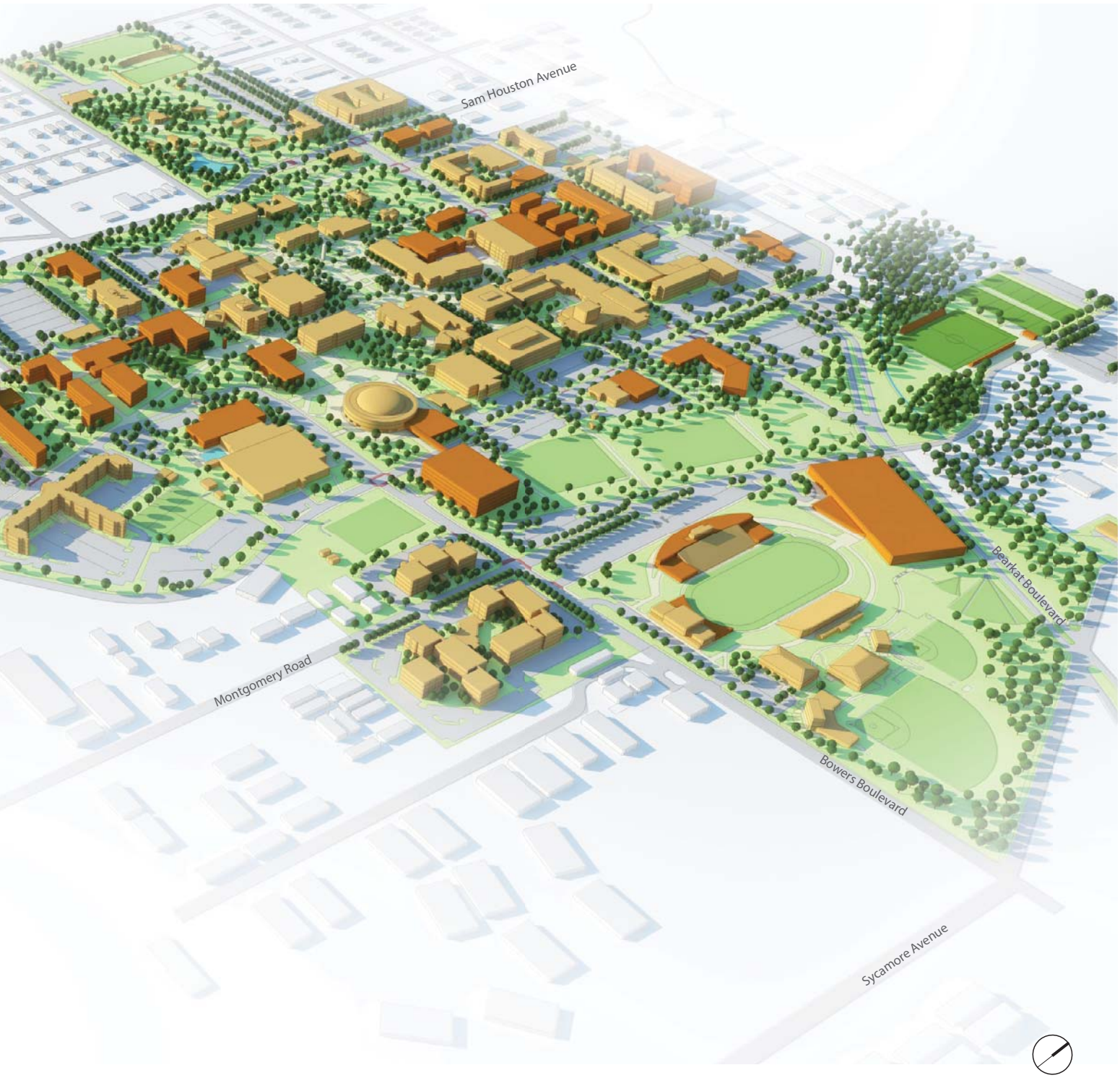
Key	Proposed Building Project
1	Agricultural & Engineering Technology Building
2	Nursing / Biology Building
3	Shared Special Instruments Building
4	Fine Arts Complex
5	Allied Health Building
6	Communications & Central Plant Expansion
7	Academic Building
8	Future Opportunity
9	Recreational Sports Expansion
10	Basketball Practice Facility
11	Multiuse Complex
12	Indoor Multipurpose Facility
13	Recreational Fields
14	Lowman Student Center Expansion
15	North Residential District
16	South Residential District
17	Dining Facility
18	Student Health and Counseling Center
19	DELTA / CE Building
20	Events Center / Press Box
21	Mafrige Field House Expansion
22	Parking Deck
23	Surface Parking
24	Custodial & Grounds Relocation

- Phase 3 Proposed Buildings
- Existing Buildings
- Proposed Recreation/Athletic Field
- Existing Recreation/Athletic Field


17th Street
Sam Houston Avenue
8
8
7
9
22
12
Bearkat Boulevard
Montgomery Road
Bowers Boulevard
Sycamore Avenue

PLAN REALIZATION

- Proposed Buildings
- Existing Buildings
- Proposed Recreation/Athletic Field
- Existing Recreation/Athletic Field


Sam Houston Avenue
Bearkat Boulevard
Montgomery Road
Bowers Boulevard
Sycamore Avenue

PHASE 1 PROJECT LIST

PH #	Type	Campus	Project Name	Cost $
1	UT	Main	CHW-Increase West Plant Usable Capacity (project 1.00)	320,000
1	UT	Main	CHW-Connect CHSS Chillers to East Plant Chilled Water Loop (project 1.05)	110,000
1	AC	Main	Agriculture & Engineering Technology Building	19,650,000
1	UT	Main	STM-New Line for Lowman Student Center Expansion (project 1I)	19,441
1	SL	Main	Lowman Student Center Expansion	18,900,000
1	SI	Main	Lowman Student Center Terrace / Open Space and Avenue J Road Conversion	1,395,000
1	SI	Main	Gateway Improvements at Sam Houston Ave. and Bowers Blvd.	500,000
1	UT	Main	CHW-Extend Piping from West Plant to Agri. Eng. & Tech. Bldg. and Extend Circuits 7 & 8 (project 1.10)	2,280,000
1	UT	Main	CHW & ELE-Extend Piping form Agri. Eng. & Tech. Bldg. to Chemistry Building (project 1.15)	230,000
1	UT	Main	CHW-17th Street Piping Project to Connect East Plant and West Plant Loops (project 1.20)	950,000
1	UT	Main	CHW-Extend Piping to Student Health and Counseling Center (project 1.25)	180,000
1	UT	Main	CHW & ELE-Communications and East Plant Expansion and Bobby K Marks Improvements (project 1.30)	13,170,000
1	DE	Main	Demo Existing Custodial & Grounds Facility	200,000
1	SU	Main	Relocate Custodial & Grounds Facility	4,000,000
1	SI	Main	Gateway at Sycamore Ave. and Bearkat Blvd.	300,000
1	UT	Main	STM-New Line to Replace Railcar / New Detention Basin (project 1A)	335,822
1	UT	Main	STM-Stadium Upgrade / Inlet / Stadium Flow Upgrades (project 1B)	144,585
1	UT	Main	STM-Railcar Upgrades / Field Detention / Bowers Blvd. (project 1J)	795,815
1	RS	Main	South District Residences (R1)	24,208,700
1	RS	Main	South District Residences (R2)	24,465,000
1	SL	Main	South District Dining Facility	7,825,000
1	MO	Main	Move Bakery from Belvin Buchanan Hall to South Paw	
1	SI	Main	South Residential District Open Space	1,530,000
1	UT	Main	STM-17th St. / Avenue J Upgrades; 16th New Lines (project 1G)	206,187
1	SU	Main	Student Health and Counseling Center	11,502,200
1	MO	Main	Move Existing Counseling to new Student Health and Counseling Center	
1	UT	Main	CHW-South Campus Piping Project #1 (project 1.35)	2,150,000
1	DE	Main	Demo Allen House	81,610
1	DE	Main	Demo Roy Adams House	81,610
1	DE	Main	Demo Parkhill House	81,610
1	DE	Main	Demo Barrett House	81,610
1	UT	Main	CHW-South Campus Piping Project #2 (project 1.40)	320,000
1	UT	Main	HHW-Relocate West Plant Heating Water System to Thomason Hall (project 1.45)	1,360,000
1	UT	Main	STM-Avenue H / Library / Montgomery Rd. (project 1K, 1L)	249,213
1	UT	Main	STM-Bobby K Marks Dr. / 17th St. New Lines, Outlet and Upgrades (project 1D, 1E)	156,552
1	SI	Main	Bobby K Marks Dr. Streetscape and Pedestrian Crossing Improvements	925,200
1	AC	Main	Nursing / Biology Building	36,400,000
1	AC	Main	Shared Special Instruments Facility	13,552,000
1	RP	Main	Lee Drain Building - Repurpose Vacated Space from Biology	
1	SI	Main	South Academic Quad Open Space	2,800,000
1	AC	Res Pk	CMIT and LEMIT Facilities	39,300,000
1	MO	Res Pk	Move CMIT / LEMIT / Hotel Function from Criminal Justice to Research Park	
1	RP	Main	Criminal Justice Building-Renovate Vacated Space	
1	MO	Main	Move Military Science from ABIII to Criminal Justice Building	
1	MO	Main	Move Forensic Science from Chemistry to LEMIT Building	
1	MO	Main	Move Computer Science Program from White Hall to Criminal Justice Building	
1	RP	Main	Renovate University Hotel for Surge / Swing Space	14,995,250
1	DE	Main	Demo White Hall	857,200
1	UT	Main	STM-New Line, Avenue H / Detention Chamber under Parking (project 1M)	741,369
1	SI	Main	Avenue I Realignment btw Bobby K Marks Dr. and Bowers Blvd. (includes Bowers Closure)	560,000
1	PG	Main	Surface Parking Lot at Avenue I / 22nd St.	3,175,000
1	SI	Main	Gateway Improvements at Avenue I / 22nd St. (South Residential District)	112,500
1	SI	Main	Pedestrian Crossing to Cement Plant (future Multiuse Complex)	1,500,000
1	UT	Main	STM-New Line / Detention for Temporary Parking at future Multiuse Complex Plant (project 1C)	483,569
1	PG	Main	Temporary Parking at future Multiuse Complex	2,500,000
1	PA	Main	2 Small Parcels at Sam Houston Ave. between Bowers Blvd. and 21st St.	
1	DE	Main	Demo Existing Press Box	93,490
1	SU	Main	Events Center / Press Box	24,120,000
1	MO	Res Pk	Move Small Business Center from Sam South to Research Park	
1	RP	Sam S	Repurpose Former Small Business Center to Expand UPD	
1	AC	Gibbs	Equine Center	19,360,000
1	AC	Gibbs	Meat and Food Science Complex	14,036,000
1	AC	Gibbs	Plant Science Field Lab / Greenhouses / Exterior Gardens	17,859,600
1	AC	Gibbs	Main and Warm-up Indoor Arena, Ticketing and Entry, Stalls	66,732,000
1	MO	Gibbs	Move I-45 Agriculture and Horticulture Function to Gibbs Ranch	
1	DE	Main	West Plant Demolition	106,290
1	UT	Main	STM-Museum Lake Rehab / West Plant Detention/Upgrades (project 1H)	80,712
1	SU	Main	Newton Gresham Library Utilization Study	
1	UT	Main	STM-New Line from TC16 / Montgomery Rd. (project 1N)	73,696
1	UT	Main	STM-Manhole Rehab / Cleaning (project 1O)	55,000
1	UT	Main	ELE-Manhole #1 Circuit Segregation study	

Notes:
1. Building costs are from The Higher Education Coordinating Board project costs.
2. Utility, infrastructure and site improvement include hard and soft costs.
3. Projects in parenthesis (project xx), refer to concurrent master plan reports for detailed project descriptions.
4. Projects are listed in sequential order. Some projects may occur concurrently.

Proj. Bldg. GSF	*Triggers*
50,000	consolidate and expand existing program into one facility
	before or concurrent with Lowman Student Center expansion
60,000	expansion to resolve underutilization and congestion
	before FEMA upgrades, to allow for stormwater mitigation
	moves Custodial & Grounds
	FEMA
	FEMA/before Recreational Sports Complex expansion
103,900	
105,000	
25,000	
	before/concurrent with Student Health and Counseling Center
28,900	
	to allow for construction of Nursing/Biology and Shared Special Equip. Bldgs.
	to allow for construction of Nursing/Biology and Shared Special Equip. Bldgs.
	to allow for construction of Nursing/Biology and Shared Special Equip. Bldgs.
	to allow for construction of Nursing/Biology and Shared Special Equip. Bldgs.
	FEMA, Bobby K Marks reconstruction (CHW and Streetscape improvements)
	before or concurrent with Bobby K Marks reconstruction and utility work
100,000	
28,000	
100,000	
	before/concurrent with construction of surface parking on Ave I/22nd Street
60,000	
40,000	
29,000	
36,900	
166,000	
	after demolition of West Plant, except for work at Museum area

Key

AC	Academic Building
SI	Site
UT	Utilities
PA	Property Acquisition
SL	Student Life
SU	Special Use
RS	Residential
AT	Athletic Use
RC	Recreational Use
PG	Parking
DE	Building Demolition
MO	Move
RP	Repurpose
FT	Future Building, use unknown

Utilities Abbreviations

CHW	Chilled Water
ELE	Electrical
HHW	Heating Hot Water
STM	Storm Water

PHASE 2 PROJECT LIST

PH #	Type	Campus	Project Name	Cost $
2	DE	Main	Demo of Psychological Services Building	61,830
2	PA	Main	Property Acquisition at 15th St. and Avenue I (for Residential Hall)	
2	UT	Main	STM-Avenue I / 16th St. New Lines and Upgrades (project 1F)	250,266
2	UT	Main	STM-New Lines 15th St. / 16th St., Outlet to Creek (project 2B, 2C)	61,843
2	UT	Main	STM-New Lines Avenue J (project 2D)	390,328
2	UT	Main	CHW & HHW-17th Street East Piping Project (project 2.00)	700,000
2	UT	Main	CHW & ELE-North Residence Hall Piping (project 2.05)	380,000
2	RS	Main	North District Residence Hall (R3)	25,350,400
2	RS	Main	North District Residence Hall (R5)	24,208,700
2	SL	Main	North Residential Dining Facility	7,825,000
2	DE	Main	Demo Sorority Hill	630,000
2	RS	Main	North District Residences (Sorority Hill Replcmt, R4)	12,750,000
2	SI	Main	North Residential District Open Space	480,000
2	DE	Main	Demo 4 West (Crawford, Mallon, Craeger, Baldwin)	323,620
2	PG	Main	Surface Parking Lot at Former 4 West Site	1,800,000
2	PG	Main	Parking Deck #1 (Adjacent to Existing Parking Deck)	9,579,000
2	AC	Main	Fine Arts and W.A.S.H. Complex	19,650,000
2	MO	Main	Relocation W.A.S.H. Function to new Fine Arts Complex	
2	RC	Main	Recreational Fields I-45 Complex	17,800,000
2	SI	Main	Recreational Paths at I-45 Complex	320,000
2	PG	Main	Surface Parking Lots at I-45 Complex	850,000
2	SU	Main	Creation of Library Depository at former W.A.S.H Complex (needs humidity control)	
2	DE	Main	Demo of Existing Arts Complex	400,000
2	PG	Main	Surface Parking Lot South of Agri. Engineering Technology / Chemistry	2,500,000
2	PA	Main	Property Acquisition Baptist Student Ministry	
2	PA	Main	Property Acquisition Kats for Christ	
2	SU	Main	DELTA/CE Building	7,514,000
2	MO	Main	Move Existing DELTA/CE Function to New DELTA/CE Building	
2	DE	Main	Demo of Existing SHSU Online Building (Building 83)	56,000
2	UT	Main	ELE-Redundant Electrical Feed to HKC and Coliseum (project 2.10)	80,000
2	AC	Main	Allied Health Building	36,400,000
2	AT	Main	Basketball Practice Facility	6,300,000
2	RP	Main	Repurpose 1st floor in Health and Kinesiology for exercise labs, offices, storage	
2	RP	Main	Repurpose Small Classrooms in Garrett TEC to Faculty Offices	
2	RP	Main	Repurpose Small Classrooms in Smith-Hutson to Faculty Offices	
2	RP	Main	Repurpose 1st Floor Music Building for Faculty / Graduate Offices	
2	SI	Main	Pedestrian Mall / Service Drive Conversion West of Evans (parking to remain)	
2	DE	Main	Demo AB III Building	548,760
2	UT	Main	STM-New Line to Multiuse Complex and Parking (project 2A)	86,293
2	AT	Main	Mafrige Field House Expansion	5,200,000
2	AT	Main	Multiuse Complex	14,450,000
2	SI	Main	Permanent Surface Parking at Multiuse Complex	1,900,000
2	UT	Main	ELE-Migrate existing buildings from overhead electrical to buried (project 2.15)	1,230,000
2	UT	Main	STM-17th Street Upgrades / Stream Rehab (Project 2E, 2F)	93,229

PHASE 3 PROJECT LIST

PH #	Type	Campus	Project Name	Cost $
3	PG	Main	Parking Deck #2	19,530,000
3	UT	Main	CHW & ELE-Piping at Indoor Multipurpose Facility (project 3.00)	770,000
3	AT	Main	Indoor Multipurpose Facility	39,375,000
3	DE	Main	Demo Vick House	81,610
3	DE	Main	Demo Spivey House	81,610
3	DE	Main	Demo Randell House	81,610
3	RC	Main	Recreational Sports Complex Expansion	22,050,000
3	SI	Main	Vehicular Crossing to Multiuse Complex	3,500,000
3	UT	Main	STM-New Lines to Future Building #1 and #2 (project 3A, 3B)	49,817
3	AC	Main	Academic Building and Business (at former Vick / Spivey site)	26,250,000
3	FT	Main	Future Building #1 (at former AB III site), use unknown	
3	FT	Main	Future Building #2 (at Sam Houston Ave. / between 17th St. and 18th St.), use unknown	
3	PA	Main	Property Acquisition on 15th St. between Avenue I and Avenue J (2 parcels)	
3	PG	Main	Surface Parking reconfiguration north of Estill Residence Hall	1,425,000

Notes:
1. Building costs are from The Higher Education Coordinating Board project costs.
2. Utility, infrastructure and site improvement include hard and soft costs.
3. Projects in parenthesis (project xx), refer to concurrent master plan reports for detailed project descriptions.
4. Projects are listed in sequential order. Some projects may occur concurrently.

Proj. Bldg. GSF	Notes
	before or concurrent with Residence Hall R5 and Sorority Hill replacement (R4)
	before or concurrent with Residence Hall R5 and Sorority Hill replacement (R4)
	before or concurrent with Sorority Hill replacement (R4) and new Parking Deck #1
108,800	
103,900	
25,000	
75,000	
50,000	
28,900	
100,000	
20,000	
	incorporate Library Science faculty
20,000	

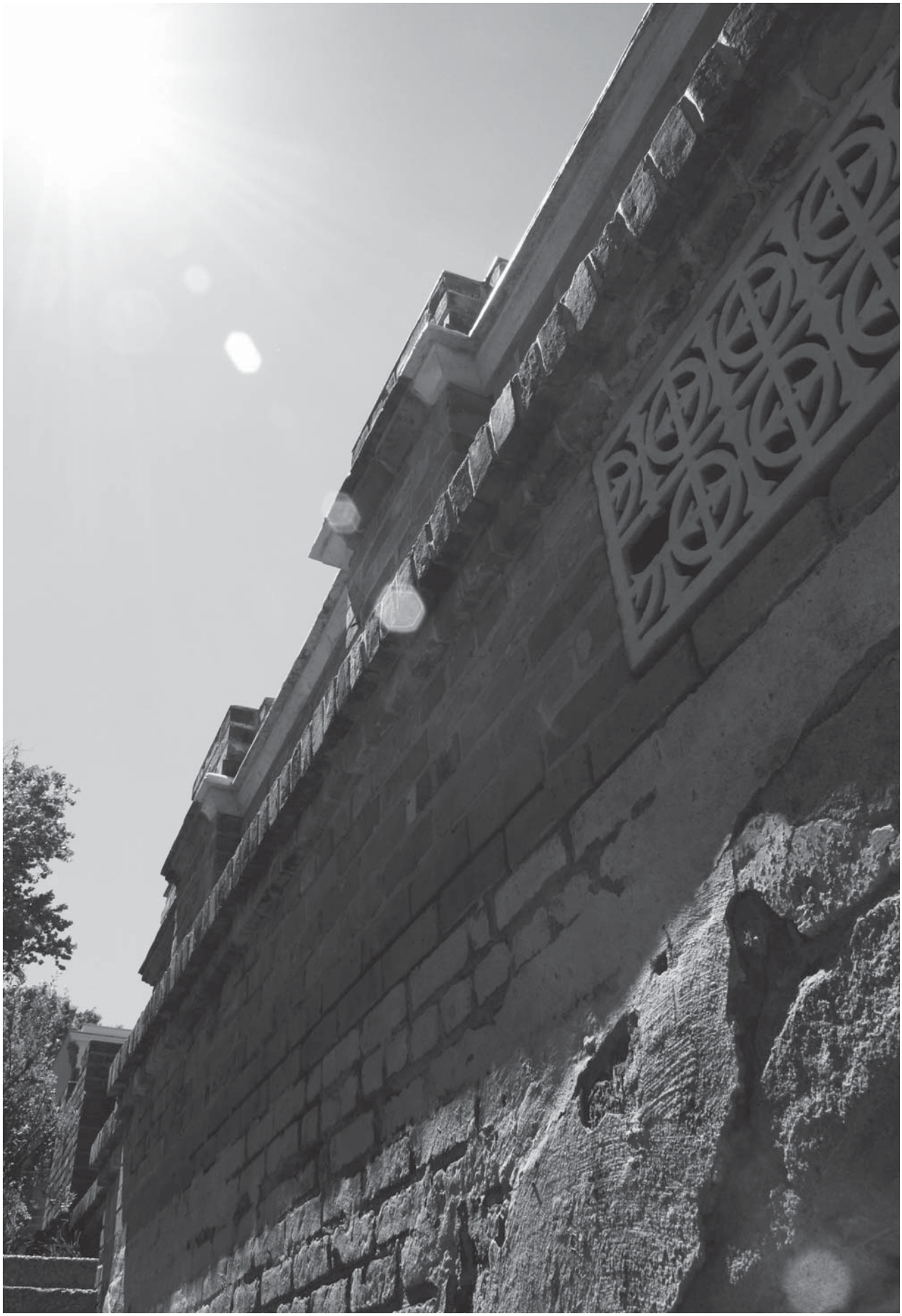
Proj. Bldg. GSF	Notes
125,000	
70,000	
75,000	

Key

AC	Academic Building
SI	Site
UT	Utilities
PA	Property Acquisition
SL	Student Life
SU	Special Use
RS	Residential
AT	Athletic Use
RC	Recreational Use
PG	Parking
DE	Building Demolition
MO	Move
RP	Repurpose
FT	Future Building, use unknown

Utilities Abbreviations

CHW	Chilled Water
ELE	Electrical
HHW	Heating Hot Water
STM	Storm Water



Acknowledgements

THANK YOU

In addition to the committee members listed on this page, the planning team would like to express their gratitude to all of the faculty, students and staff who participated. The pride that everyone at SHSU has in their campus continues to inspire us.

EXECUTIVE COMMITTEE

Dana L. Gibson	President
Mark Adams	Associate Vice President for Information Technology
Kathy Gilcrease	Chief of Staff to the President
Jaimie Hebert	Provost and Vice President for Academic Affairs
Frank R. Holmes	Vice President for University Advancement
Alvin Hooten	Vice President for Finance and Operations
Heather Thielemann	Vice President for Enrollment Management
Frank Parker	Vice President for Student Services
Bobby Williams, Jr.	Athletic Director

ADVISORY COMMITTEE

Mark Adams	Vice President for Information Technology
Donna Artho	Exec Director for Institute Effectiveness
Brad Blackburn	Aramark
Jerry Cook	Associate Vice President for Research and Special Programs
Scott Dolezal	Manager of Custodial & Grounds
Dick Eglsaer	Associate Provost of Academic Affairs
Donna Gilbert	Assistant Director of Alumni Relations
Kathy Gilcrease	Chief of Staff, President's Office
Marcus Gillespie	Associate Professor, Geography
Doug Greening	Associate Vice President for Facilities Management
Al Hooten	Vice President for Finance and Operations
Keith Jenkins	Associate Vice President for Student Services, Facilities & Operations
Kris Kaskel-Ruiz	Associate VP Marketing & Communication
Diane McCormick	Academic Program Marketing Assistant Director, Admissions/Recruitment
Dan McDaniel	Director, Lowman Student Center
Drew Miller	Executive Director Student Counseling/Health Services
Kevin Morris	Director of Public Safety Services
Gordon Morrow	Director of Plant Operations
Leah Mulligan	Executive Director Activities
Denise Neu	Director of Facilities Planning and Construction
Dana Nicolay	Associate Professor, Theater and Dance
Trisha Pollard	Regent, The Texas State University System
Teresa Ringo	Registrar
Joellen Tipton	Director Resident Life
Tamara Waggener	Associate Professor, Political Science
Bobby Williams	Athletics Director
Jimmy Williams	SGA Student Representative

CONSULTANTS

SMITHGROUPJJR | CAMPUS PLANNING, ARCHITECTURE, & LANDSCAPE ARCHITECTURE

Mary Jukuri	Lead Campus Planner
Doug Kozma	Lead Campus Planner
Clare Jagenow	Project Manager and Landscape Architect
Hillary Hanzel	Site Designer
Kathleen Gymrek	Landscape Architect Intern
Tyler Murph	Architect

FACILITY PROGRAMMING & CONSULTING | CAMPUS DEMOGRAPHICS, SPACE NEEDS & UTILIZATION

Terry Phillips	Director
Stacey Guney	Director, Master Planning and Utilization Analysis
Jay Hrivnatz	Architect / Senior Programmer
Tim McGreger	Senior Programmer

Concurrent Plan Update Report: *A Demographic and Utilization Study,* November 2012

KLOTZ ASSOCIATES | CAMPUS STORM WATER PLAN UPDATE

Steve Byington	Professional Engineer
Mike Bagstad	Professional Engineer
Natalie Weiershausen	Associate Engineer

Concurrent Plan Update Report: *Storm Water Master Plan Update*, January 2013

EEA CONSULTING ENGINEERS | CAMPUS INFRASTRUCTURE PLAN UPDATE

Todd Schmidt	Professional Engineer
David Bacorn	Professional Engineer
Mark Mikulin	Professional Engineer
Mike Gath	Professional Engineer

Concurrent Plan Update Report: *Campus Distributed Utility Master Plan*, January 2013

BRANDT ENGINEERING | CAMPUS INFRASTRUCTURE PLAN UPDATE

John Dunn	Professional Engineer

Concurrent Plan Update Report: *Campus Distributed Utility Master Plan*, January 2013

"THE BENEFITS OF EDUCATION AND OF USEFUL KNOWLEDGE, GENERALLY DIFFUSED THROUGH A COMMUNITY, ARE ESSENTIAL TO THE PRESERVATION OF A FREE GOVERNMENT."

- SAM HOUSTON

SMITHGROUP JJR