

University of Houston- Clear Lake

MASTER PLAN

NOVEMBER 2017



University
of Houston
Clear Lake

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EXECUTIVE SUMMARY

Executive Summary

The purpose of the master plan for the University of Houston-Clear Lake (UHCL) and the University of Houston-Clear Lake Pearland Campus (UHCL Pearland) is to provide an overall vision and roadmap for the development of the campuses that will allow the university to continue to expand and provide exceptional education opportunities for its students.

The evolution toward a more traditional four-year university from a smaller, upper-division-only institution will shift the demographics and campus culture with growth. This process is known as downward expansion, and it will bring younger students and more daytime activity to the UHCL campus. Amenities such as student housing, campus life facilities, and shared open spaces will need to be provided to accommodate these changes.

The UHCL campus sits at the interface between the urban development of Houston and Pasadena to the west and a vast ecological network to the east. As development has filled in around its boundaries, the campus has remained a largely undeveloped natural area. The natural setting is highly valued by students, faculty, staff, visitors, and alumni. Therefore, campus development and growth must be balanced against the desire to maintain the campus identity in its unique setting.

As a part of an eight-month planning effort with UHCL leadership, students, faculty, and staff, four planning principles were determined to guide future planning. They are:

- I. Celebrate the natural environment
- II. Employ compact development strategies
- III. Enhance campus identity and visibility
- IV. Reinforce a coherent land use and development framework

The Campus Mall will be a dramatic north-south pedestrian and open space corridor, tying the entire campus together. Existing and new buildings will activate the edges of the mall and create a dynamic central campus open space. Concentrating development along the mall will promote a walkable environment and prevent unnecessary sprawl into the natural environment. The overall landscape approach will be to respect and enrich this important resource, preserving the campus character.

The “green jewel” at the center of the UHCL campus, where the mall meets Horsepen Bayou, will be improved to provide better access to the wetland landscape and more opportunities to observe local wildlife. Spaces to gather, relax, and explore will be integrated into the landscape as a complement to the active campus environment along the mall.

Campus life buildings will be located at key locations along the Campus Mall to activate its edges and decrease the perceived distance between destinations. For example, a campus center is proposed just north of the bayou on the mall. It will provide views down the mall and over the bayou landscape. A large activity plaza will be located just outside the campus center on the mall, where large events or activities may take place.

An improved entrance and wayfinding strategy will help to clarify the experience of visiting and navigating the campus. Currently, most campus access occurs from Bay Area Boulevard at Entrance 1, but the master plan proposes redistributing traffic among the campus entrances more evenly. The University Drive entrance (currently Entrance 1) will remain the formal visitor entrance while the Bayou Road entrance (currently Entrance 2) will become a more important commuter entrance. The Bayou Road entrance will bring people directly into a new, active area of campus. Access from Middlebrook Drive is likely to increase as well, with more parking and destinations located nearby.

The mobility strategy for the UHCL campus will be multi-modal, with an emphasis on the pedestrian environment. The compact nature of development, along with improvements to the pedestrian and bicycle network, will encourage students, faculty, staff, and visitors to walk and cycle, rather than drive between different campus destinations. Opportunities to better utilize transit, campus shuttles, and other methods will be explored to minimize the amount of required parking, reducing its impact on the campus environment.



▲ UHCL Campus Illustrative Master Plan

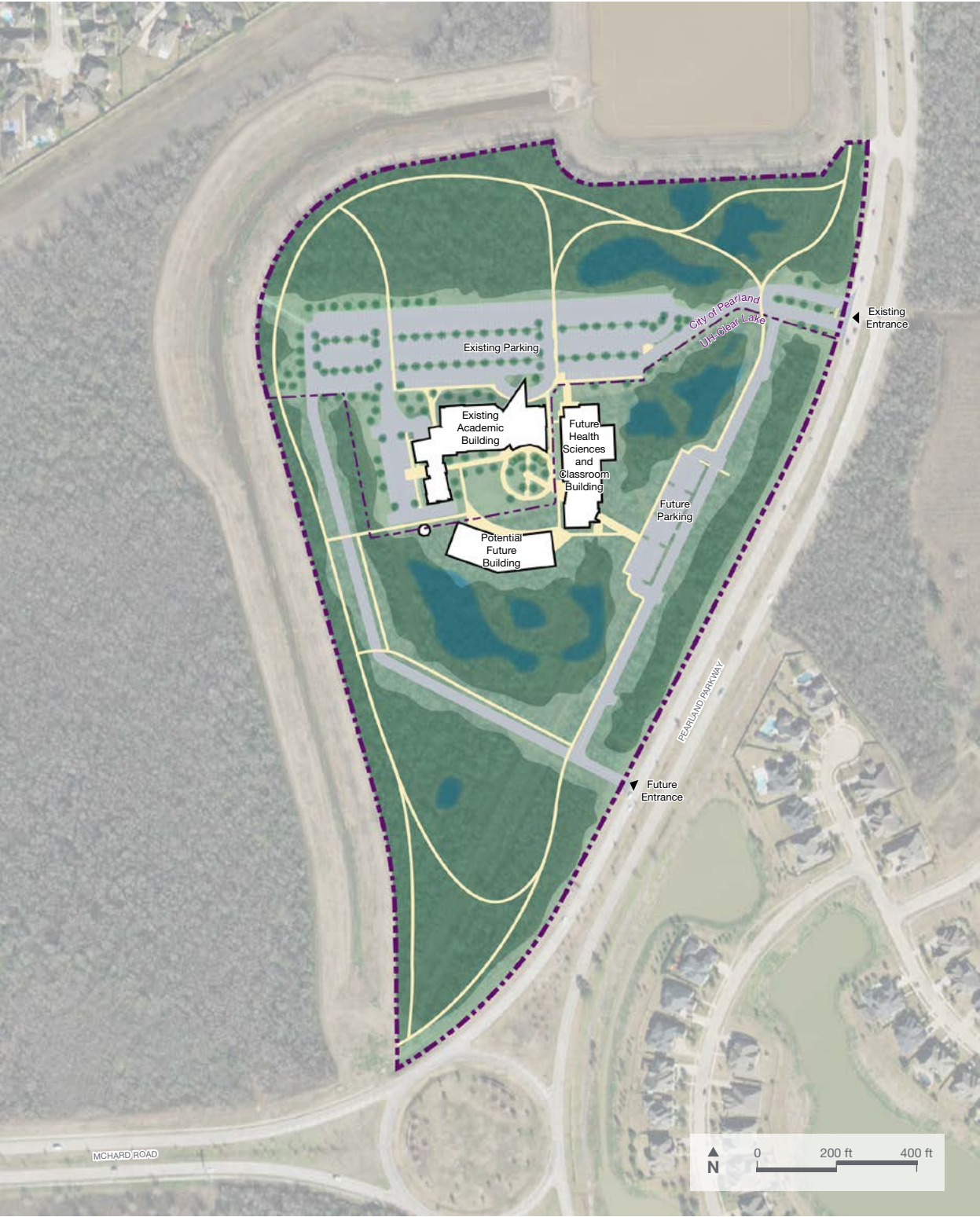
- 1 Campus Mall
- 2 Residential neighborhood
- 3 Gathering/activity plaza
- 4 Outdoor recreation
- 5 Nature trails

The UHCL Pearland Campus is located in the rapidly growing City of Pearland. The purpose of the master plan for the UHCL Pearland Campus is to provide an overall vision and framework for the development of the campus that will accommodate anticipated growth in enrollment, support planned academic program initiatives, and respond to the development potential of the site, including synergies with City of Pearland and nearby medical institutions.

In addition to the existing classroom building, a new Health Sciences and Classroom Building project is currently underway. These two buildings are likely to meet the campus's space needs for the next twenty years, assuming proportional growth to the UHCL campus. However, there is potential for faster growth, considering the desirable location of the campus and the types of academic programs already in place. In anticipation of potentially higher growth, the master plan contains a framework that illustrates how additional development can be accommodated and supports connections and relationships with the surrounding urban context.

The planning principles envisioned for this framework plan are the following:

- I. Organize future development around a central quad
- II. Organize campus development and circulation to prioritize comfortable pedestrian movement, by means of scale, shading, wayfinding, and land use
- III. Create and preserve important future connections to nearby City of Pearland parcels and the regional trail network
- IV. Create intimate “outdoor rooms” to supplement the central quad



▲ UHCL Pearland Campus Framework Plan



1.0 INTRODUCTION

Introduction

Master Plan Purpose

The purpose of the master plan for the University of Houston-Clear Lake (UHCL) and the University of Houston-Clear Lake Pearland Campus (UHCL Pearland Campus) is to provide an overall vision and roadmap for the development of the campuses that will allow the university to continue to expand and provide exceptional education opportunities for its students. The master plan that is documented in this report is the product of an eight-month planning effort that brought together UHCL leadership, students, faculty, and staff in a collaborative process to define this shared vision and identify the steps to realizing it. The key issues to be considered in the plan were highlighted in the university's master plan request for proposals (RFP):

- Assess instructional space utilization and space needs for current and future enrollment
- Confirm an overall land and building use strategy and establish campus capacity
- Define the landscape and open space setting, including areas to be preserved or enhanced, together with opportunities to strengthen the overall open space environment
- Identify opportunities to improve existing vehicular, pedestrian and bicycle circulation systems, parking, transit, and service
- Analyze the capacity and condition of existing water, sewer, stormwater, heating, cooling, and electrical systems, and establish future demand based on campus growth
- Create architectural, landscape, and wayfinding design guidelines
- Outline a logical phasing and sequencing strategy for capital projects and site and infrastructure improvements that supports enrollment growth

The following components comprise the UHCL master plan:

Executive Summary

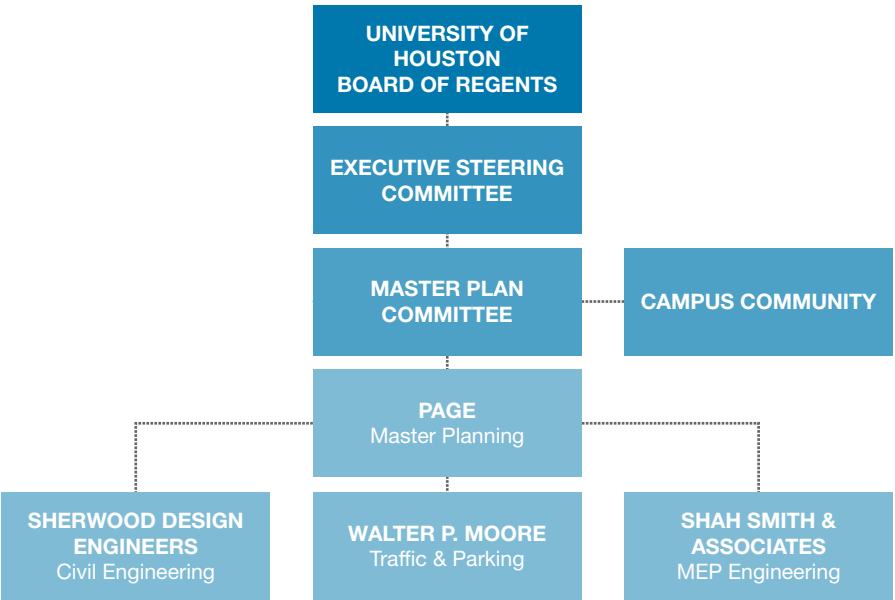
- 1. **Introduction:** Overview of the key steps in the process for developing the master plan
- 2. **Planning Context:** Documentation of the history of campus development, regional context, and analysis of site conditions
- 3. **Space Needs and Program:** Summary of the space needs and facilities program for current and future enrollment
- 4. **Master Plan Framework and Systems:** Documentation of the planning principles that guide the master plan, as well as the physical systems that together form the structure of the campus including:
 - Program accommodation
 - Landscape and open space
 - Mobility
 - Infrastructure
- 5. **Districts:** Vision and strategy for the development of the key districts that together make up the campus
- 6. **Design Guidelines:** Standards that will guide the future design and implementation of campus improvements including:
 - Campus design
 - Architecture
 - Landscape and open space
 - Identity and wayfinding
- 7. **Implementation:** Proposed phasing strategy for campus improvements and potential next steps in the near and long term
- 8. **UHCL Pearland Campus:** Master plan vision and framework for the UHCL Pearland Campus

Project Organization

The UHCL master planning process was led by an Executive Steering Committee comprised of senior university leaders who served as the decision makers for the plan. The Executive Steering Committee met with the consultant team at key milestones during the planning process, provided input and direction on various elements of the plan as it evolved, and provided direction to the consultant team for each phase of work.

The Executive Steering Committee was supported by a Master Plan Committee that included senior UHCL administrators, as well as faculty, staff, and student representatives. The Master Plan Committee was the primary master plan working group, which also met with the consultant team at key milestones. This committee represented campus constituencies in the generation of the plan, conveyed views, ideas, thoughts, and concerns on various elements of the plan, disseminated master plan information to constituents, helped to build support for the plan, and provided recommendations to the Executive Steering Committee.

UHCL partnered with Page Southerland Page (Page), a national architectural and planning firm, to prepare the master plan. Staff from Page's San Francisco office led the consultant team with assistance from Page's Houston, Dallas, and Austin offices. The Page team was supported by Sherwood Design Engineers for civil engineering services, Walter P. Moore for traffic and parking services, and Shah Smith & Associates for MEP engineering services.



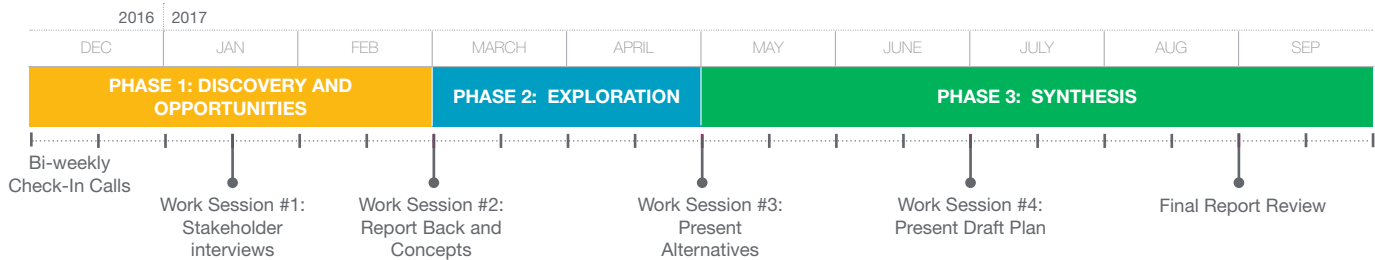
▲ Figure 1: Master Plan Organizational Structure

Planning Process

The UHCL campus master plan was prepared through a collaborative planning process involving UHCL leadership, students, faculty and staff. The process involved the following three phases of work:

- Phase 1: Discovery
- Phase 2: Exploration
- Phase 3: Synthesis

Below is an overview of each of the three phases.



▲ Figure 2: Master Plan Timeline

Phase I: Discovery

The Discovery phase of work involved a review of current UHCL academic and strategic planning data, an analysis of instructional space utilization and overall campus space needs, an analysis of the campus and campus systems, and the beginning of a dialogue with the UHCL community that helped to identify the priority issues to be considered in the plan. The online MyUHCL survey was also conducted during the Discovery phase, to solicit student, faculty, and staff perspectives about the campus.

The findings of the Discovery phase were synthesized into priority issues, goals, and an overall planning and urban design framework. The phase concluded with a work session that included meetings with the Executive Steering Committee and Master Plan Committee, and a campus community forum that was attended by over seventy UHCL faculty, staff, and students.

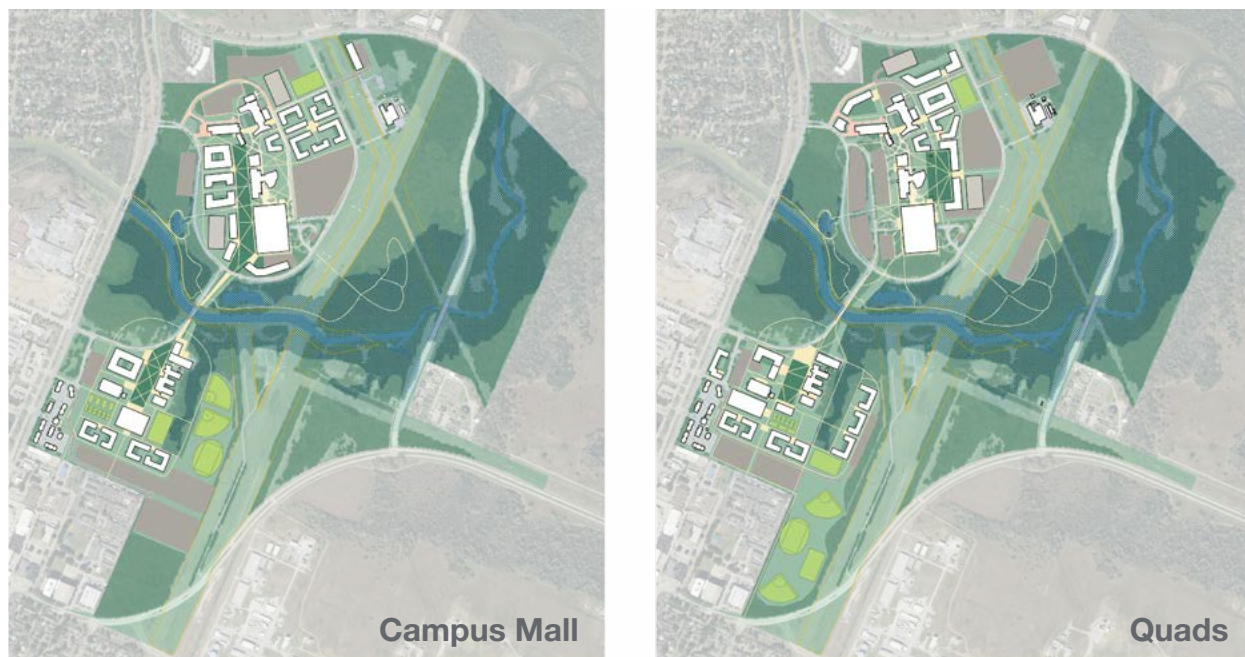
Phase 2. Exploration

The Exploration phase of the planning process examined options for the development of the campus based on the findings of the Discovery phase and guidance from the stakeholder engagement process. The master plan alternatives addressed several key issues, including:

- Accommodating growth while preserving and protecting the unique and valued qualities of the campus environment
- Creating a setting to support lower-division students and enhancing the overall quality of student life
- Clearly defining campus entries and the arrival experience for students, faculty, staff, and visitors
- Strengthening the pedestrian qualities of the campus and connections between the north and south campus cores
- Enhancing overall campus image and identity
- Other technical and functional campus development issues

The alternatives were presented to the Executive Steering Committee, Master Plan Committee, and campus community during another work session in May 2017. A preferred alternative was selected based on the comments conveyed by campus and community constituents and direction from the committees.

The treatment of campus entrances and the siting of a planned welcome center were not fully resolved with the selection of the preferred alternative. To assist in reaching consensus on these elements, the consultant team developed several options for the design of the entrances and the location of the welcome center, which were presented to the Executive Steering Committee through an internet meeting held in June 2017. The meeting concluded with agreement on an overall strategy for the campus entrances and a confirmed site for the welcome center, enabling the consultant team to move forward with the development of the draft plan.



▲ Figure 3: Plan Alternatives, May 2017

Phase 3. Synthesis

The Synthesis phase of the planning process focused on the development and documentation of the draft and final master plans.

The draft master plan was prepared based on the preferred alternative and confirmed direction on the campus entrances and welcome center site. The draft plan documented the overall vision for the campus, program, improvements to campus systems, phasing strategy, and preliminary campus design and wayfinding guidelines. The draft plan was presented at a final work session that included meetings with the Executive Steering Committee and Master Plan Committee, and a campus community forum. The forum was attended by nearly one hundred members of the UHCL community. The final plan is documented in this report.

Campus and Community Engagement

The planning process for the UHCL master plan was informed by an inclusive and interactive stakeholder engagement process involving broad representation and participation from the UHCL community. The engagement process involved several elements: stakeholder interviews, milestone work sessions, the MyUHCL survey, and a master plan website.

Stakeholder Interviews

The Discovery phase began in January 2017 with interviews with the key individuals and stakeholder groups listed below. The purpose of the interviews was to surface the priority issues to be considered in the plan.

- Associate Vice President Academic Affairs
- Associate Vice President Advancement
- Associate Vice President Enrollment Services
- Associate Vice President Facilities Management and Construction
- Associate Vice President Student Services
- Campus police, emergency management, and parking staff
- Deans of Colleges of Business, Education, Human Sciences and Humanities, and Science and Engineering
- Dean of Students
- Director of Campus Operations Pearland Campus
- Director of Student Life
- Facilities and construction infrastructure staff
- Faculty and staff senate representatives
- Library and IT staff
- Provost
- Registrar
- Student government association representatives and other student groups
- Vice President of Administration and Finance

Milestone Work Sessions

The consultant team held a series of work sessions with the Executive Steering Committee and Master Plan Committee at key milestones in the planning process. The work sessions established a shared understanding of planning, design, and technical issues to be considered in the plan and set the direction for subsequent phases of work.

The planning process also included presentations to the UHCL campus community at a series of campus fora. The fora were instrumental in building support for the plan as it evolved.

▼ Work sessions included the campus forum meeting (upper left) and Master Plan Committee meeting (lower), March 2017, and Master Plan Committee meeting, May 2017 (upper right)

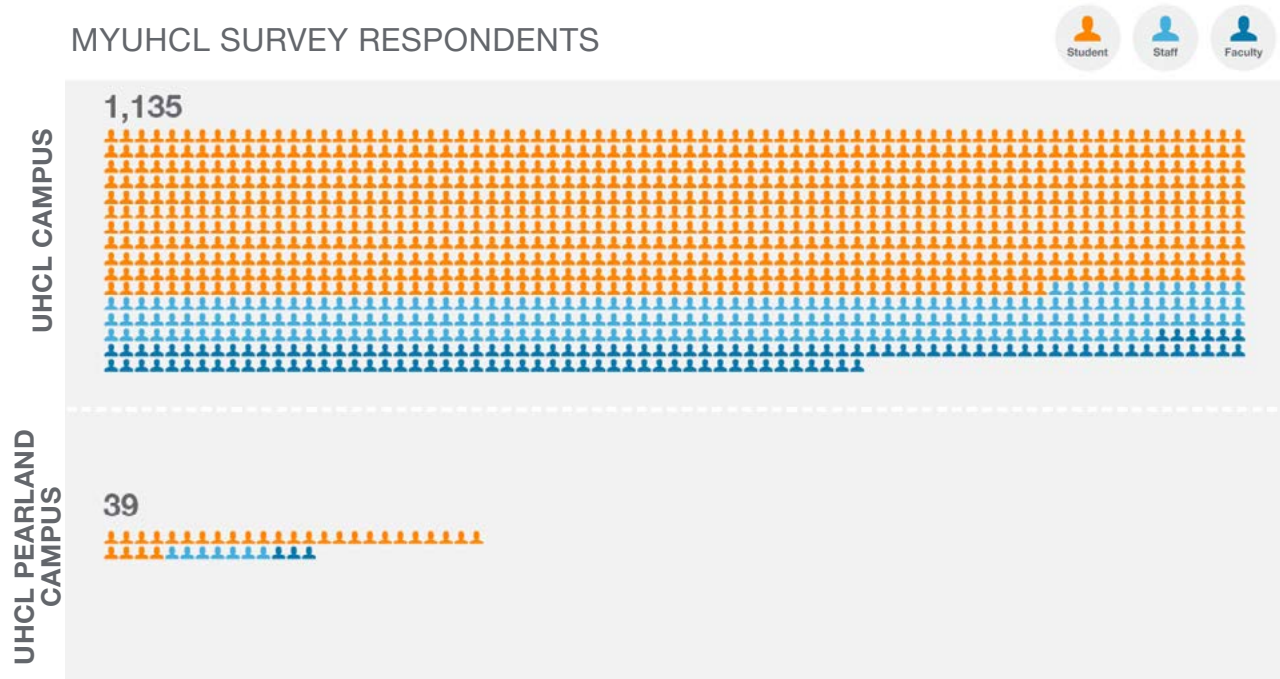


MyUHCL Survey

The consultant team conducted an interactive online survey during the Discovery phase of the planning process. The survey aimed at understanding how students, faculty, and staff experience the campus. The MyUHCL survey contained questions about the campus that participants answered by dragging and dropping icons or tracing lines on maps of the campus. Representative questions included:

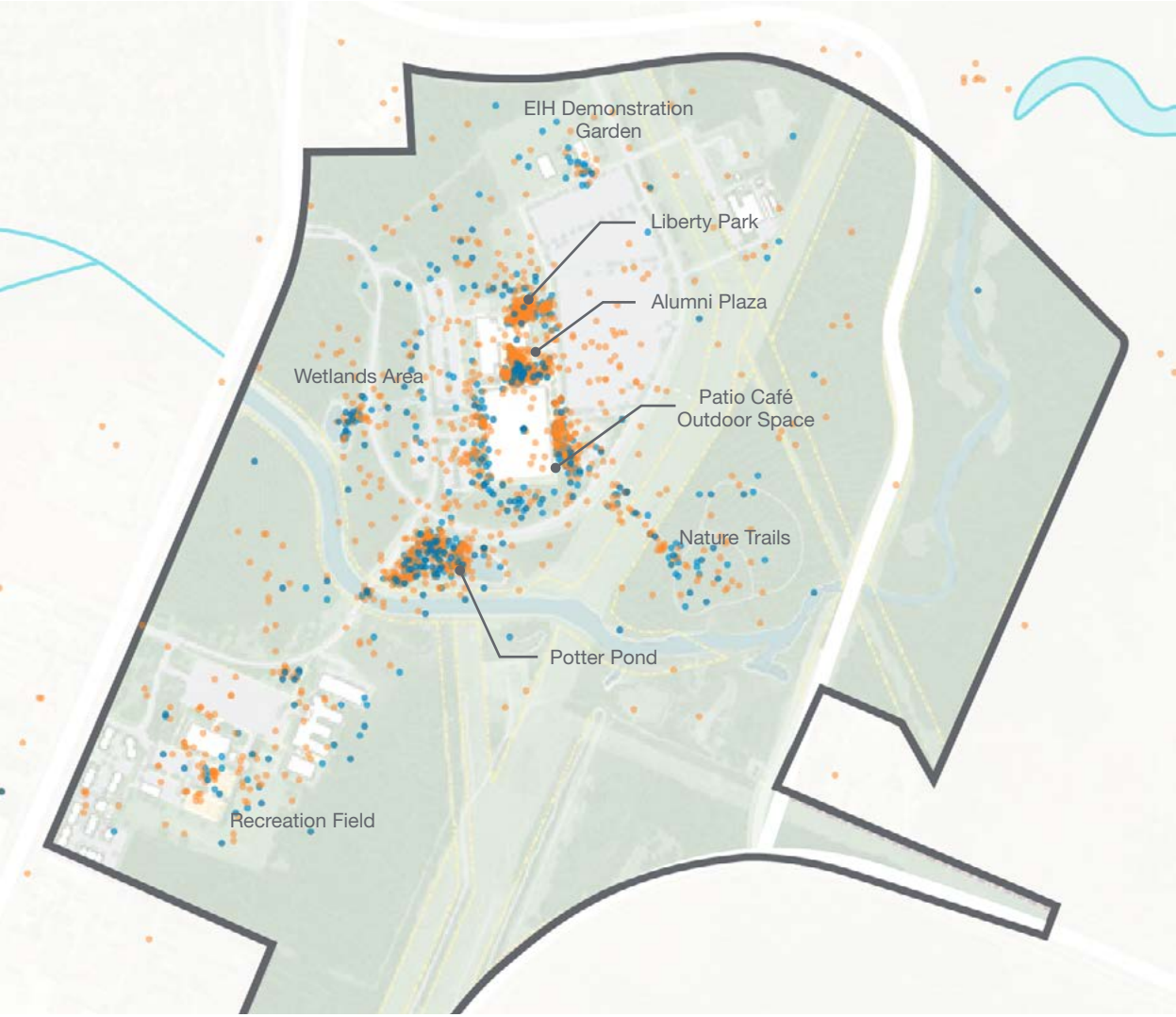
- How do you get to campus?
- Do you cross the Bayou during the day?
- Which outdoor spaces would you like to see?
- Where do you consider to be the heart of campus life?
- Where do you typically study on campus?
- Where do you typically socialize on campus?
- Where do you typically eat on or near campus?
- Which campus life spaces would you like to see?

Nearly 1,200 students, faculty, and staff participated in the survey. Their responses were compiled to reveal patterns of use, providing valuable input to the planning process.



▲ Figure 4: MyUHCL Discovery Survey Respondents

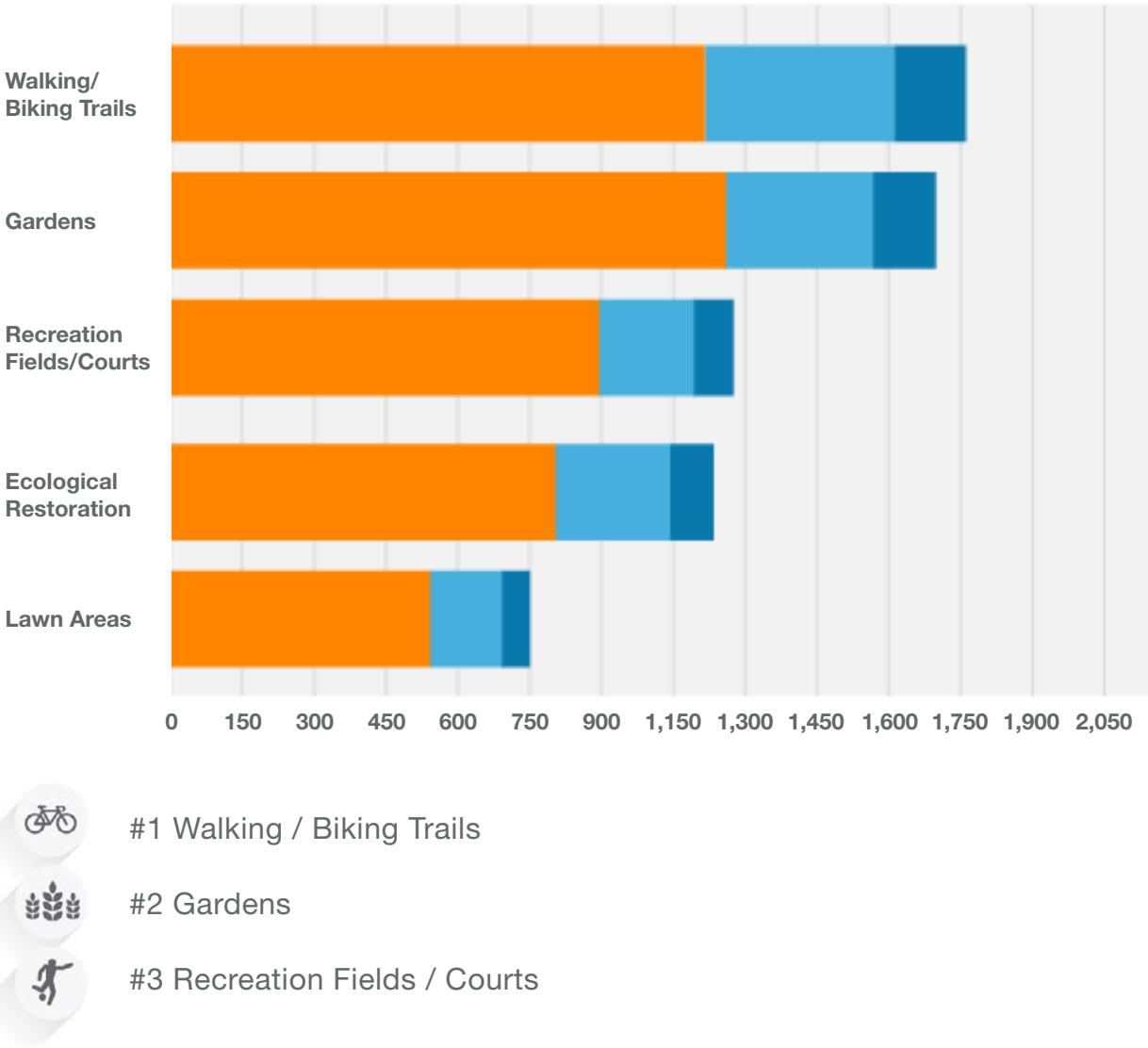
“WHAT ARE YOUR FAVORITE **OUTDOOR SPACES**?”



▲ Figure 5: MyUHCL Discovery Survey Result Map: Favorite Outdoor Spaces



“WHICH **OUTDOOR SPACES** WOULD YOU LIKE TO SEE?”



- #1 Walking / Biking Trails
- #2 Gardens
- #3 Recreation Fields / Courts

▲ Figure 6: MyUHCL Discovery Survey Results: Desired Outdoor Spaces

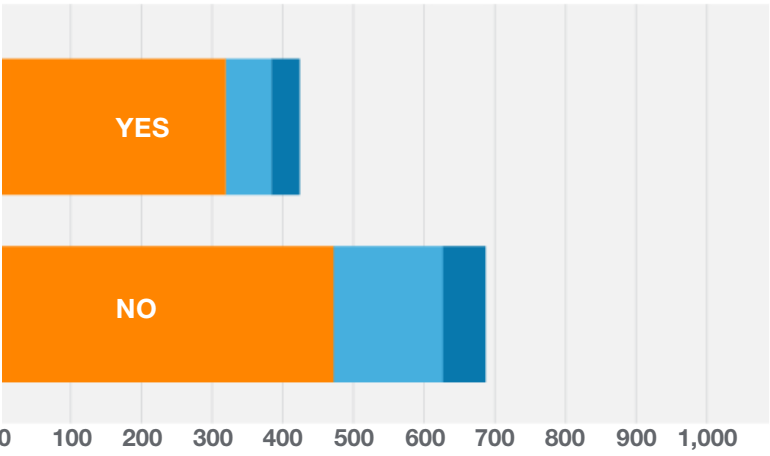
“WHAT DO YOU REGARD AS THE **MAIN CAMPUS ENTRANCE?**”



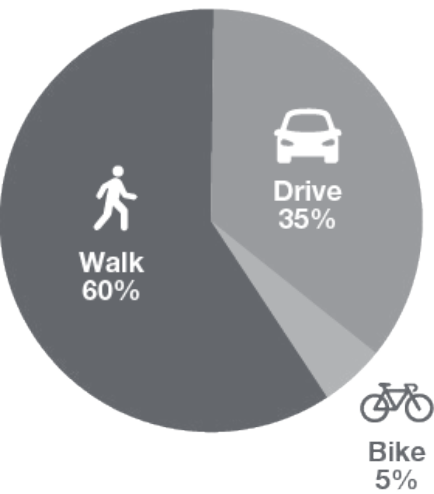
▲ Figure 7: MyUHCL Discovery Survey Result Map: Main Campus Entrance



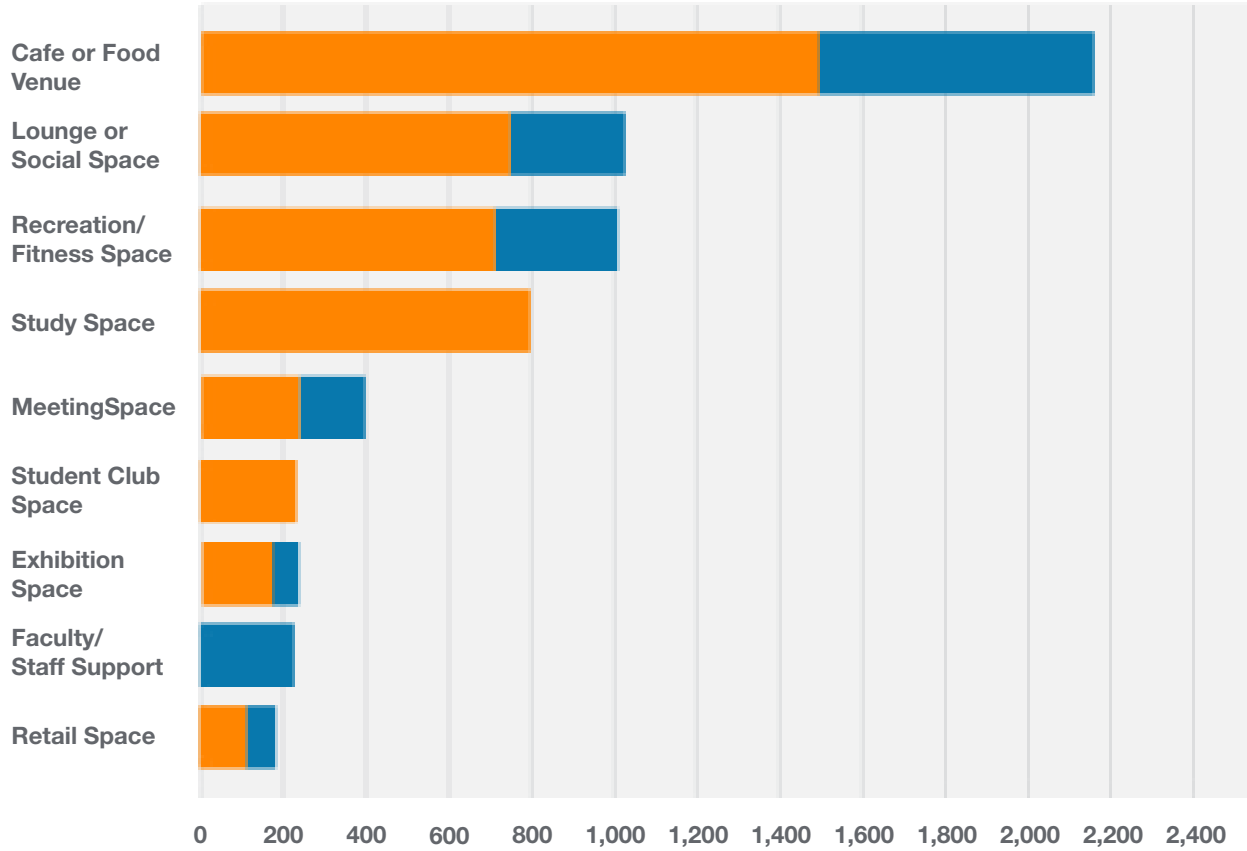
“DO YOU **CROSS THE BAYOU** DURING THE DAY?”



▲ Figure 8: MyUHCL Discovery Survey Results: Crossing the Bayou



“WHICH **CAMPUS LIFE SPACES** WOULD YOU LIKE TO SEE?”



- #1 Café / Food Venue
- #2 Lounge / Social Spaces
- #3 Recreation / Fitness
- #4 Study Spaces

▲ Figure 9: MyUHCL Discovery Survey Results: Campus Life Spaces

Master Plan Website

A master plan website was created as a repository for information on the plan as it evolved, and to facilitate input from the campus community through the duration of the process.



UHCL Master Plan

Building Maintenance

Custodial Services

Emergency Management

General Services

Grounds Services

HVAC

Planning and Construction

Construction Projects

Master Plan

Scheduling

UH-Clear Lake launched a new campus master plan initiative for UHCL and UHCL Pearland Campus. The master plan will link the university's academic mission and strategic priorities with the physical development of the campuses. It will examine a range of issues, such as accommodation of the campus growth, the open space network, mobility and parking, student life, utility infrastructure, energy, sustainability, and connections with the surrounding community.

Planning Process

An Executive Steering Committee made up of senior campus administrators is leading the master planning effort, and a Master Plan Committee with a broad representation from the campus community will be the primary master plan work group. These committees will provide input on the plan as it evolves.

Presentations

January 10-12, 2017

The design team met with the two UHCL committees formed.

- Executive Steering Committee - Summary, January 2017
- Master Plan Committee - Summary, January 2017

▲ UHCL Campus Master Plan Website

Key Stakeholder Themes

The following is a summary of the key themes that emerged through the stakeholder engagement process. These themes helped to set priorities for the overall planning effort:

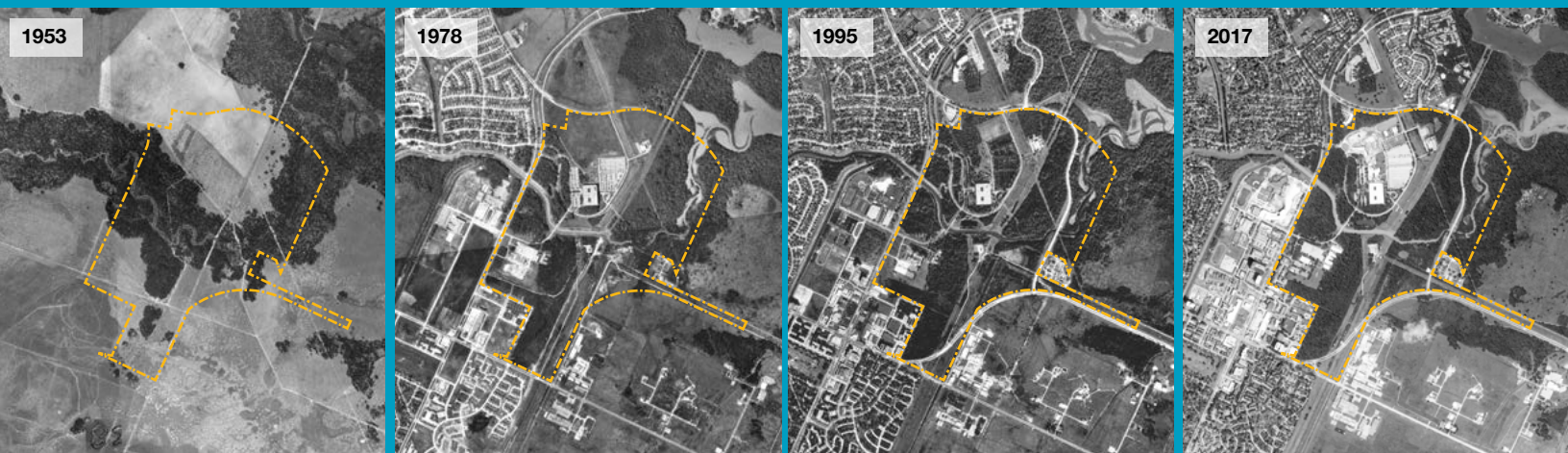
- Leverage the beauty and resources found in the natural environment
- Create a campus identity that supports UHCL's evolution to a four-year institution
- Support student success for all UHCL cohorts
- Create social spaces for campus life and student engagement
- Connect north and south campus cores
- Improve the campus entry sequence



2.0 PLANNING CONTEXT



▲ Bayou Building under construction (top) and shortly after completion (bottom)



▲ Campus evolution: 1953–2017 (Google)

Planning Context

The University of Houston-Clear Lake campus sits within a unique urban and ecological context. Campus development must respect and complement this rich context and support the university's academic mission.

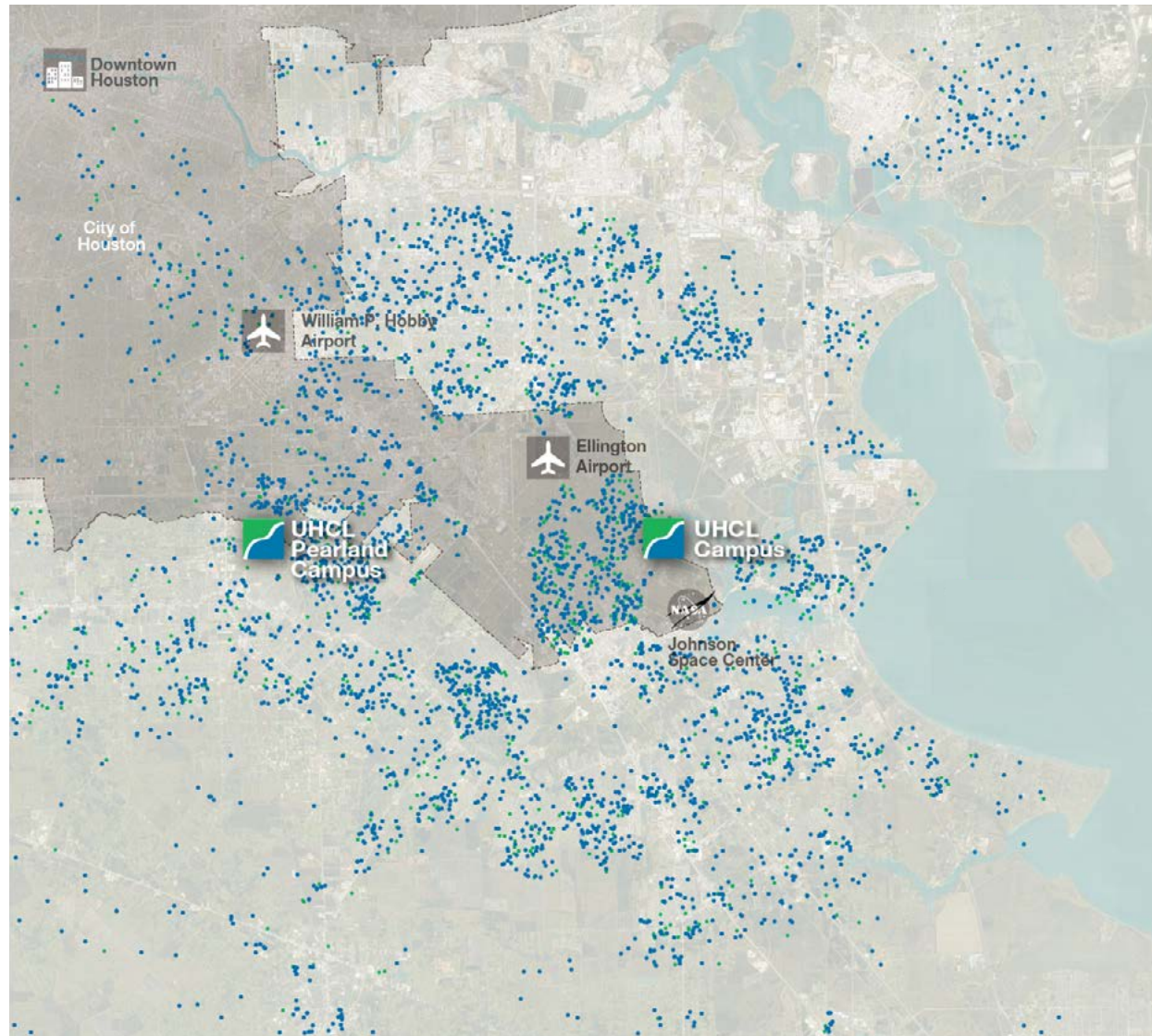
Campus History

Recognizing the need for higher education in the growing Clear Lake area, the sixty-second Texas Legislature authorized the establishment of a second University of Houston campus in 1971. Legislators cited a 1968 report by the Texas College and University System (now the Texas Higher Education Coordinating Board) when approving the new campus. In 1973, the Texas Senate authorized construction of a permanent campus at Clear Lake.

Construction of the UHCL Bayou Building began in 1974. By September, under the leadership of the university's founding chancellor, Alfred R. Neumann, 1,069 students and 60 faculty began classes at an off-site location while waiting for the new building to be completed. The early university served exclusively upper-division and graduate students. It continued this model for the next forty years.

In 2011, UHCL received legislative approval to add freshman and sophomore level courses to its curriculum. In the fall of 2014, UHCL welcomed its first freshman and sophomore students to campus, beginning the evolution of UHCL to a more traditional four-year university¹.

¹ Adapted from "UHCL History" at <https://www.uhcl.edu/about/history>



▲ Figure 10: Regional Context and UHCL Student Residences

Student residence:
 ● Undergraduate
 ● Graduate

Regional Context

The UHCL campus is located in the metropolitan Houston region near Clear Lake, which feeds into Galveston Bay. Within Harris County, the campus straddles the two municipalities of Houston and Pasadena, and is an approximately thirty- to forty-minute drive from downtown Houston via Interstate-45.

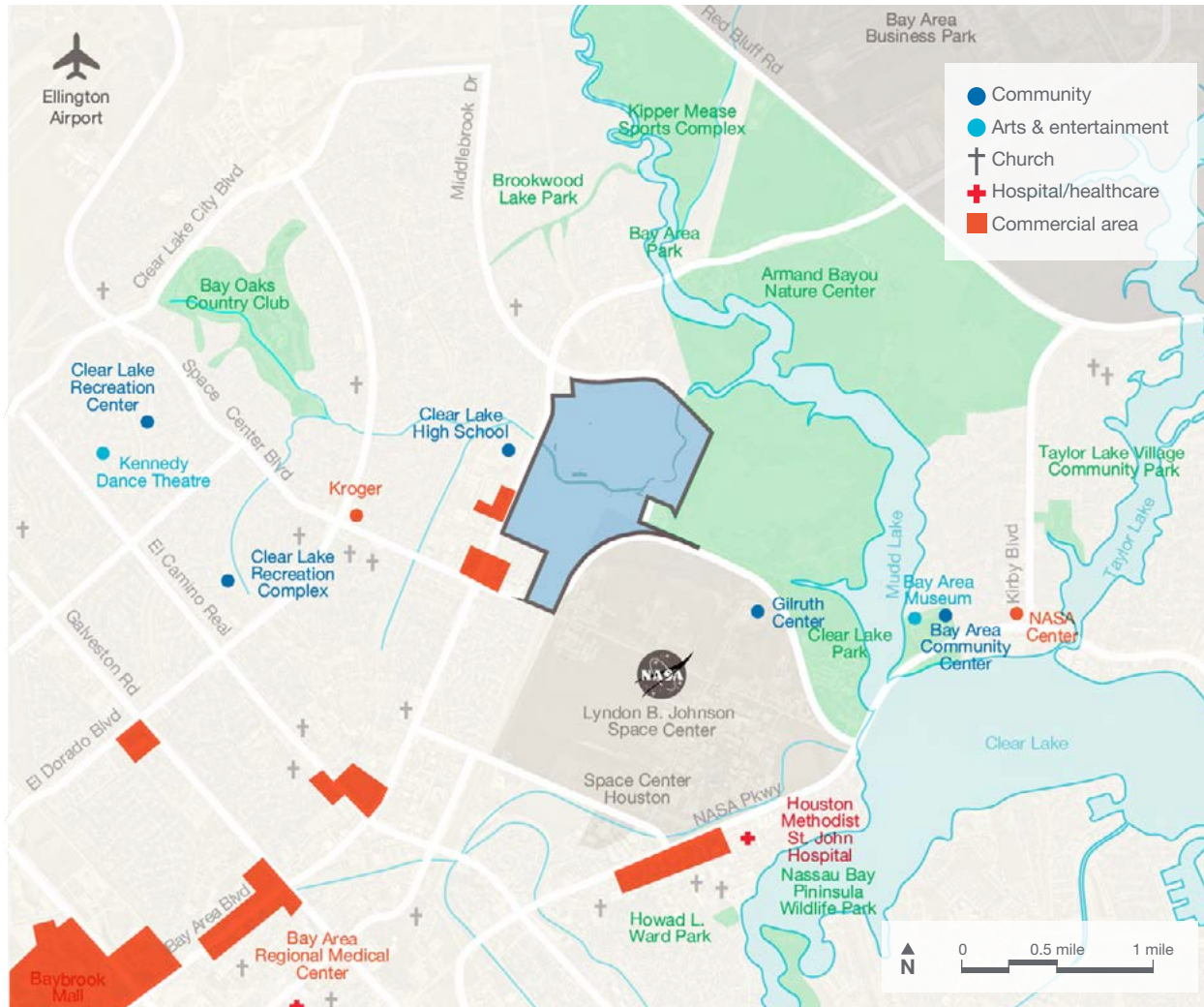
Since the university primarily serves local students, most current students live within ten miles of campus, as is shown in Figure 10. The regional connections to NASA's Johnson Space Center and the oil and gas industries have been integral to the university's success and growth.



▲ Figure 11: Ecological Connections

UHCL boundary

The UHCL campus sits between urban development to the west and an important ecological network to the east, as shown in Figure 11. As development has grown around it, much of the campus has remained in its natural state. The campus bayou is one of the few unchanneled portions of the Horsepen Bayou as it flows to Mudd Lake. As a part of the larger ecological network, the campus is an important habitat for a range of wildlife. In fact, the campus land itself serves as a research subject and interactive learning lab. Students, faculty, researchers, and visitors come to the campus to observe and learn about the native flora and fauna.



▲ Figure 12: Campus Area Context

Existing Site Conditions

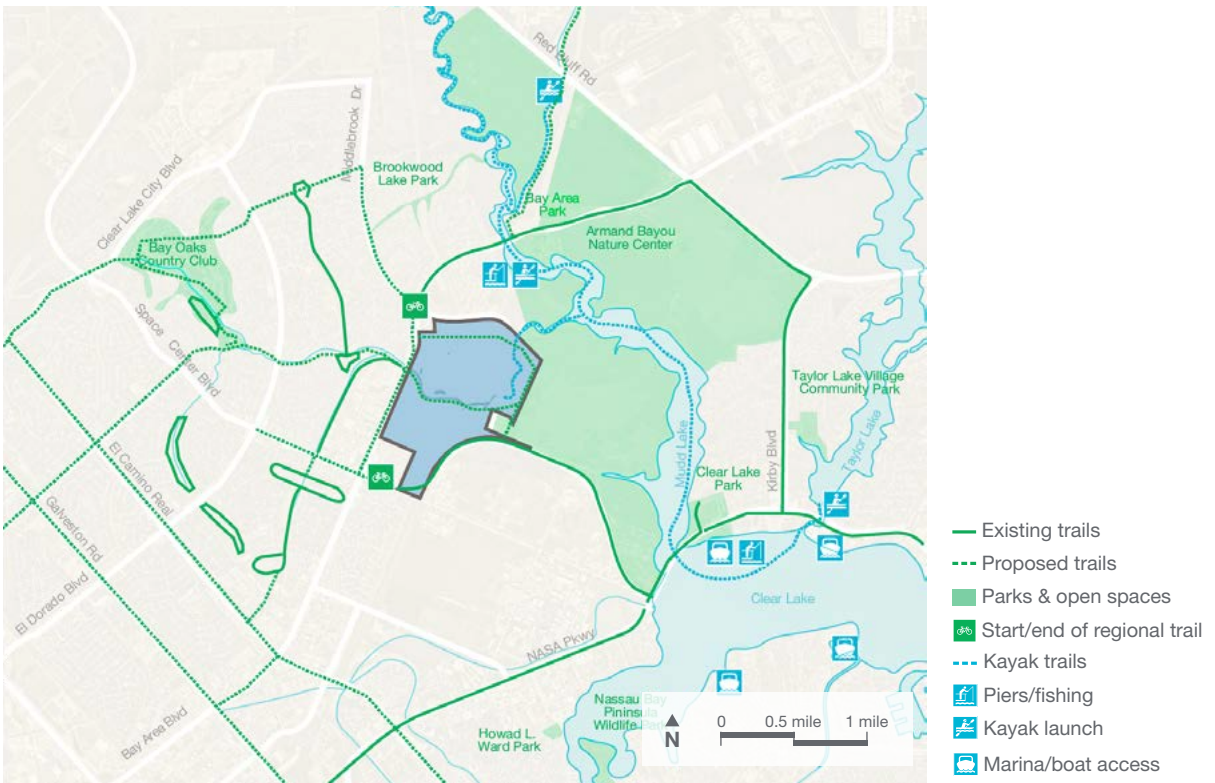
Local Context

The UHCL campus sits adjacent to a primarily residential area, with neighborhoods to the north, south, and west. Natural areas border the campus to the north and east. The NASA Johnson Space Center is located immediately to the southeast of campus, as shown in Figure 12.

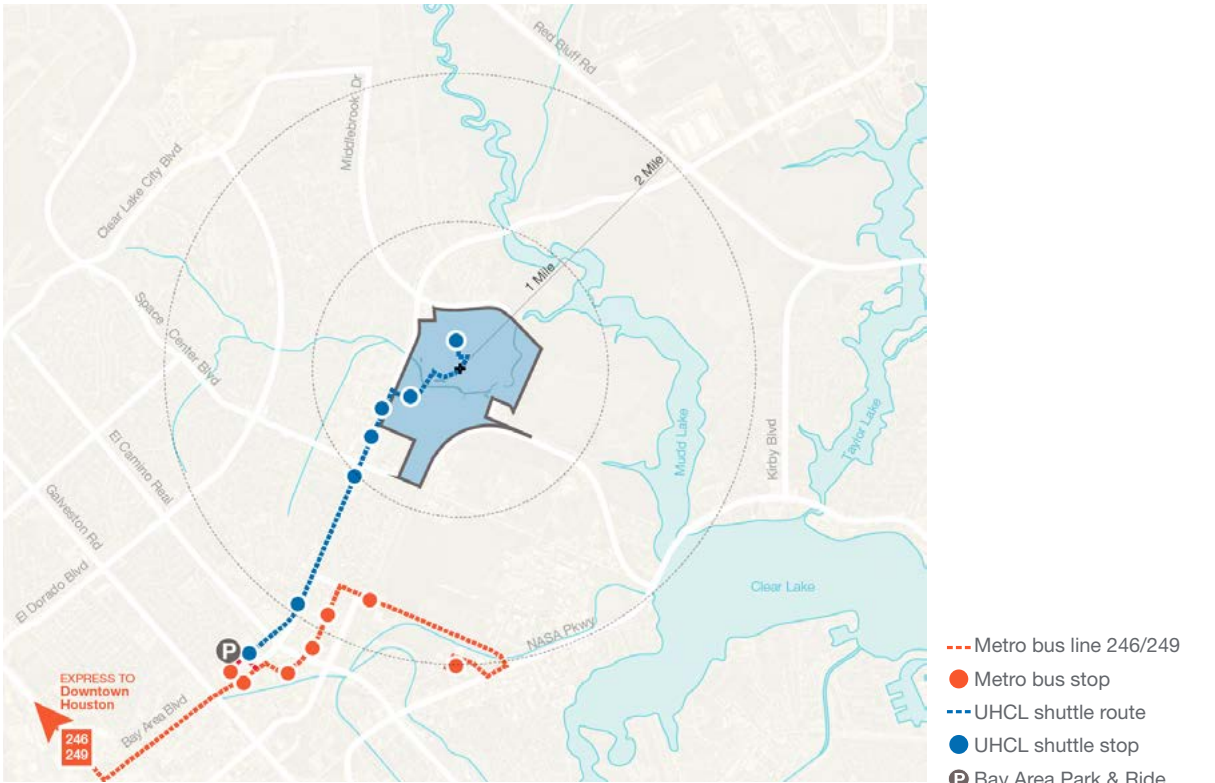
The primary campus access is from Bay Area Boulevard, which is an urban arterial road lined by office, commercial, service retail, and restaurant uses. Clear Lake High School sits immediately across Bay Area Boulevard from the campus.

The campus is well served by nearby open space and recreation amenities, as shown in Figure 13. A regional kayak trail winds along Mudd Lake adjacent to the campus. Harris County is planning a multi-use trail through the campus to connect with other local trails.

The campus is not well served by transit, as shown in Figure 14. There are nearby express buses to downtown Houston, but the nearest park-and-ride lot is over two miles away. The UHCL shuttle system provides occasional trips to this lot to connect it to campus.



▲ Figure 13: Open Space and Recreation



▲ Figure 14: Transit and Shuttle

Site Analysis

The 524-acre UHCL campus is roughly bound by Bay Area Boulevard to the west, Middlebrook Drive to the north, and Space Center Boulevard to the south. The campus contains large natural areas associated with the Horsepen Bayou and adjacent wetland forest. There is additional undeveloped forest land to the east of Middlebrook Drive. In addition, three utility corridors cross the campus with both underground pipelines and overhead wires.

Campus Organization

The campus is organized into two main campus cores on either side of Horsepen Bayou. The north core was developed first with the Bayou Building, and has since expanded to include the Student Services and Classroom Building (SSCB), as well as the central utility plant (CUP). Three additional buildings are in the design or early construction phases. The new Science Technology Engineering and Math (STEM) and Classroom Building, Recreation and Wellness Building, and 300-bed student housing building will be completed in the next two years. With a linear north-south configuration, the north core can be accessed from Bay Area Boulevard through Entrance 1 or Entrance 2.

The south core includes the Delta and Arbor Buildings, together with a temporary modular office building and the University Forest Apartments. These apartments contain 268 beds of student housing delivered through a partnership with third party housing provider. The south core is accessed from Bay Area Boulevard through Entrance 1.

The Central Services Building, new police building, and North Office Annex (NOA I and II) temporary modular buildings are located in the north portion of the campus, somewhat disconnected from the two main cores. The Environmental Institute of Houston is currently located in the NOA I building. Entrance 3 from Middlebrook Drive provides convenient access to this cluster of buildings.



▲ Figure 15: Existing Campus Map

- Site boundary
- Utility parcel
- Utility easement

Circulation

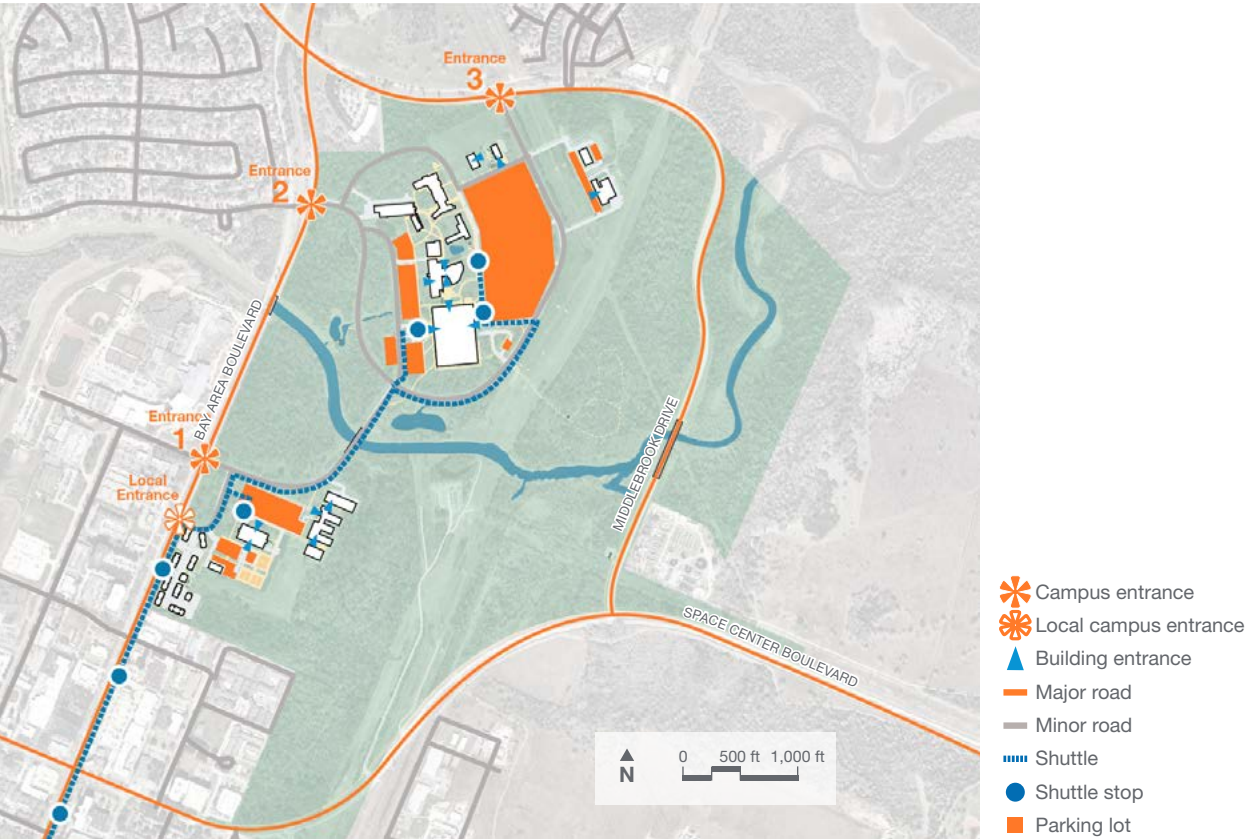
The UHCL campus is primarily accessed by private vehicle because of its location within the Houston metro area, where there is little convenient public transit. There are pedestrian and bicycle paths within the campus but few convenient ways to walk or cycle to reach the campus path network. In addition, since the only on-campus housing is found at the University Forest Apartments, most students are commuters. The completion of the planned student housing project in the north campus core is expected to reduce vehicle trips to the campus and increase the number of students that walk, cycle, or use the campus shuttle system.

The existing mobility network on the UHCL campus could be improved with more clear and consistent wayfinding, better connectivity between pedestrian paths, increased lighting, and more separation between bicycles, pedestrians, and vehicles.

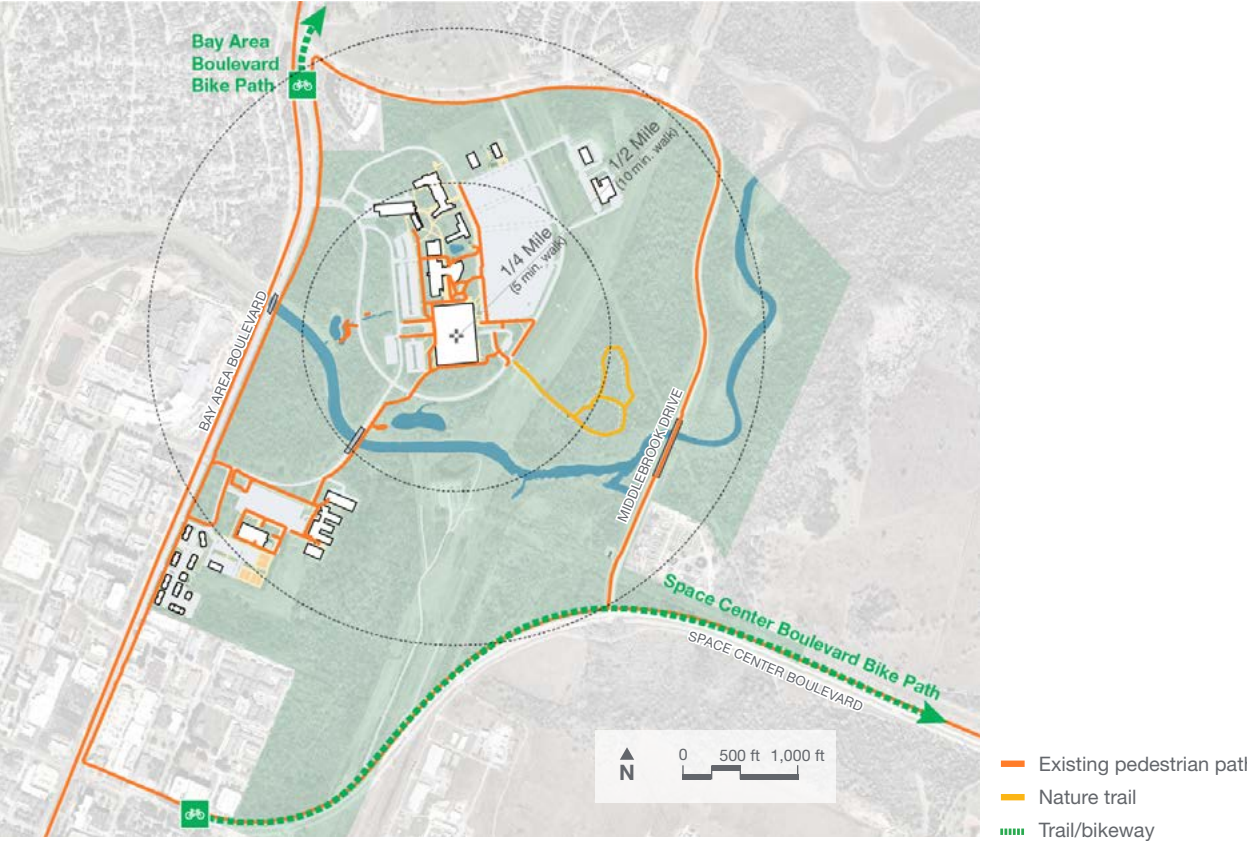
The campus has three official entrances:

- *Entrance 1* is the primary campus entrance for most commuters and visitors. It is the first entrance to the campus from the south and the main route to the campus from Interstate-45, the closest major highway. Entrance 1 leads to University Drive, which is a tree-lined road that crosses the bayou to the north core of campus.
- *Entrance 2* is a secondary, less frequently used entrance to the campus. It brings vehicles onto Bayou Road, which is a partial loop road around the north core area. The northern portion of the Bayou Road loop will be completed with the new buildings under construction or planned in this area of the campus. Entrance 2 is located directly across Bay Area Boulevard from Brook Forest Drive, which leads into a residential neighborhood.
- *Entrance 3* is the least frequently used campus entrance. It is accessed from Middlebrook Drive and brings vehicles onto Bayou Road. Entrance 3 is primarily used by those arriving from the northeast.

There is a local entrance to the University Forest Apartments from Bay Area Boulevard that connects to Graduate Drive. This entrance facilitates access to the campus but does not serve as a formal entrance.



▲ Figure 16: Existing Streets and Campus Access



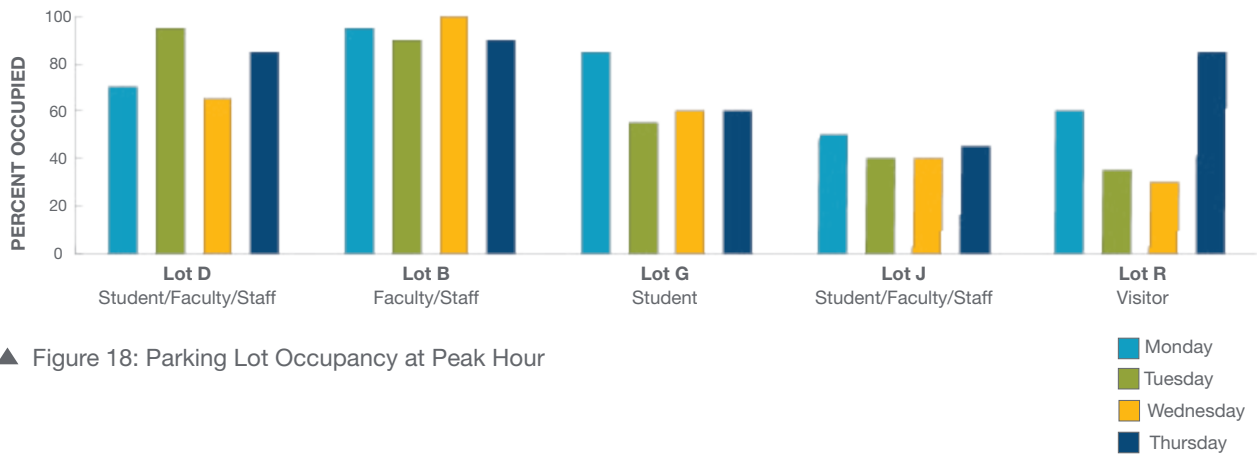
▲ Figure 17: Existing Paths and Trails

Parking

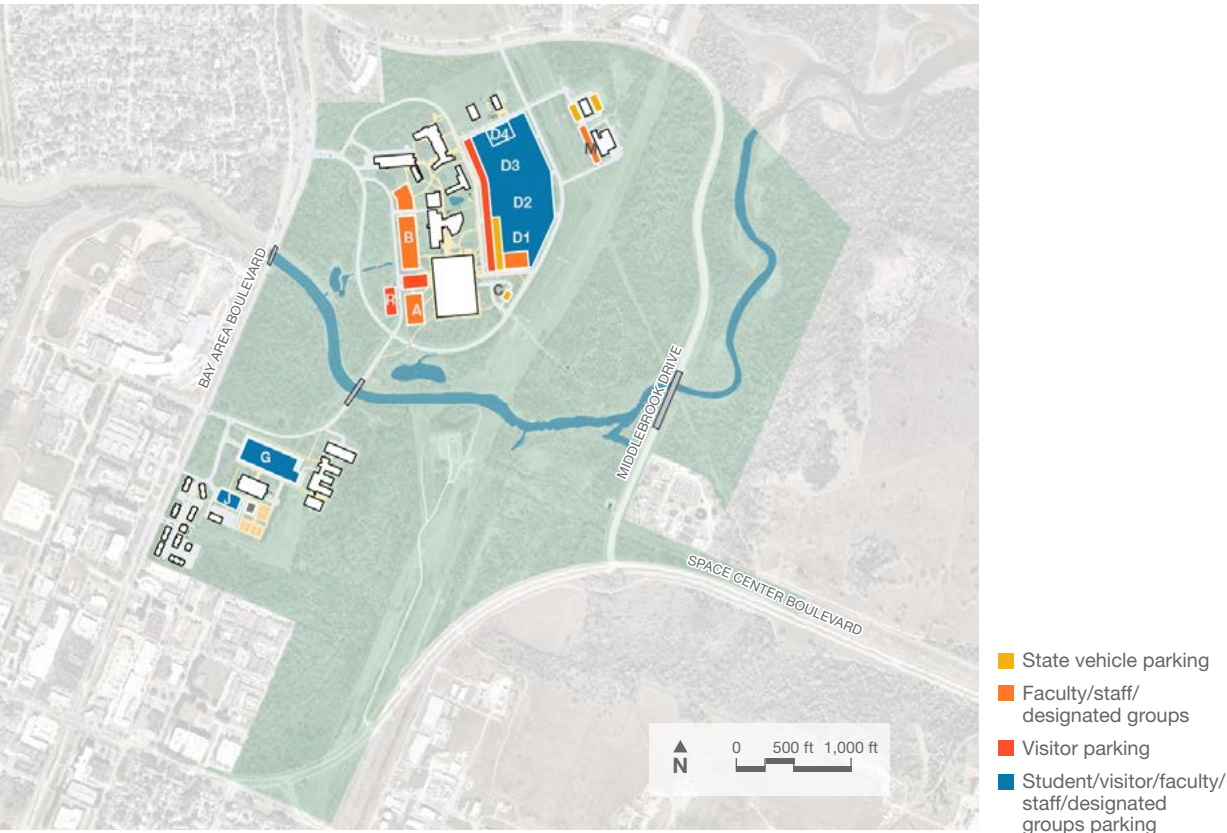
The campus currently contains 3,217 parking spaces. Most parking is located in the northern core in the D lots east of the Bayou Building, SSCB, and the new buildings under construction and planned. Some spaces in the D lots are over 1,000 feet from the closest building entrance, an uncomfortable walk through the lots during hot or inclement weather.

Faculty and staff primarily park on the west side of the northern core at the original entrance of the Bayou Building. The other parts of campus have small areas of parking adjacent to the buildings they serve. Visitors may obtain a parking pass and park in most areas. There is also a designated visitor lot near the intersection of University Drive and Bayou Road, to the west of the faculty and staff parking areas, as well as designated visitor parking spaces in lot G and to the east of the Bayou Building and SSCB, along the western edge of the D lots.

The peak demand for parking occurs during weekday evenings when most of UHCL's classes are scheduled. Given that special events are also frequently scheduled in the evening, several of the campus parking lots reach capacity during this period – in particular lot B, a faculty and staff lot, and lot D, a primarily student lot. However, lots G and J in the southern core, and lot R, a visitor lot, are all under capacity at peak time. Thus, while an analysis of parking demand across the campus suggests the campus contains sufficient spaces overall, parking spaces are not well distributed relative to the areas they serve.



▲ Figure 18: Parking Lot Occupancy at Peak Hour



▲ Figure 19: Existing Campus Parking

UHCL	PARKING TYPE	TOTAL	RESERVED	EXISTING ADA
Lot A	Faculty/Staff	103	102	0
Lot B	Faculty/Staff	281	3	11
Lot C	Police Vehicles	22	22	0
Bayou Circle	Visitor/President	13	4 (president)	0
Houston Drive	Visitor	35	0	0
Lot D1	Faculty/Staff	158	8	33
Lot D1	Student	497	0	33
Lot D2	Student	628	0	21
Lot D3	Student	311	0	0
Lot D4	Student	384	0	2
Lot G	Student	422	0	10
Lot J	Student	203	25	4
Lot J	Faculty/Staff	40	0	4
Lot M	Faculty/Staff	56	0	2
Lot R	Visitor	64	0	0
Total		3,217	164	83

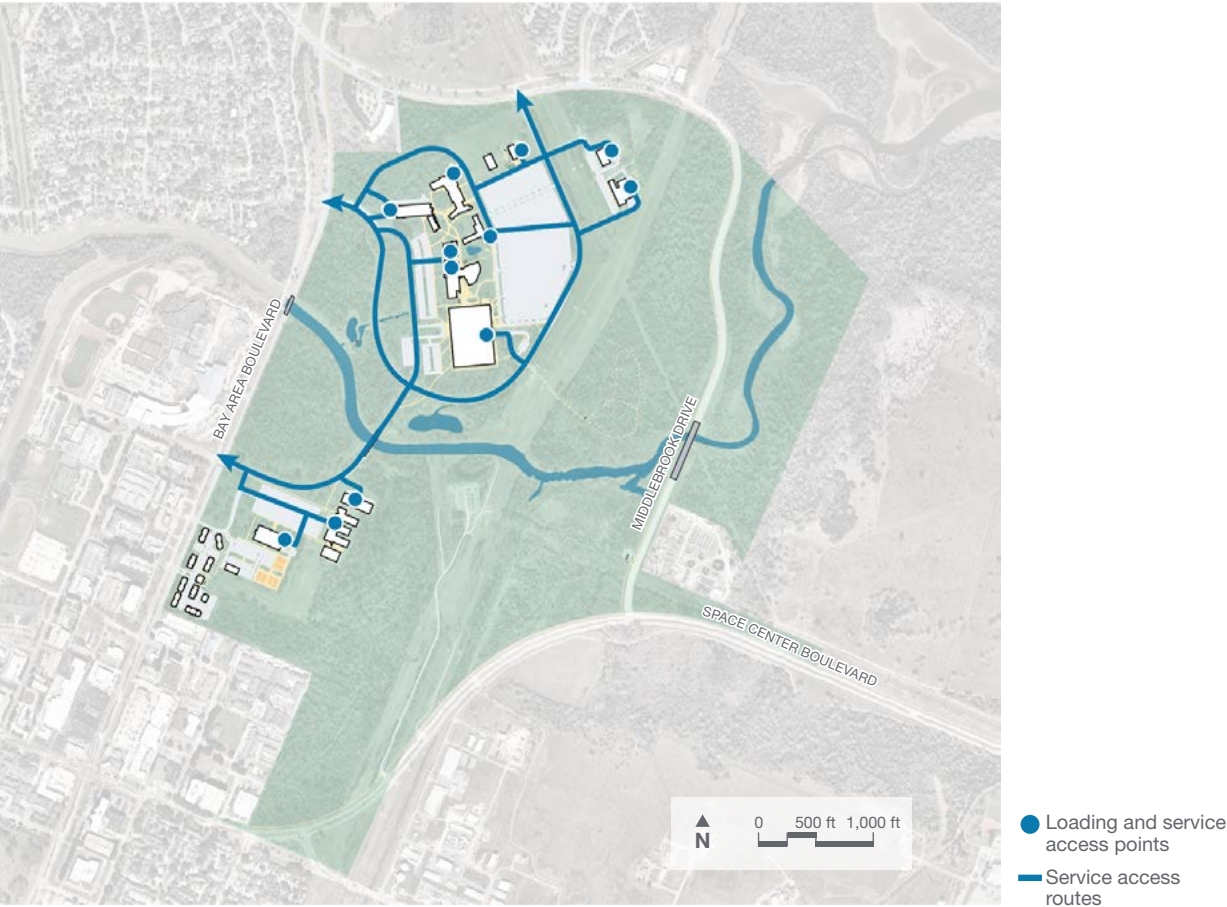
▲ Table 1: Parking Supply

Service and Loading

Within the northern core of the campus, service and loading is distributed across several buildings. The Bayou Building has a major loading dock and service drive off Bayou Road on the east side of the building. The loading dock adjacent to the main building entrance from lot D and the Patio Café outdoor seating area detracts from the quality of these areas. The SSCB and the CUP are serviced through lot B, to the west of the buildings. The new STEM and Classroom Building will have a loading dock directly off Bayou Drive, just beyond Entrance 2.

The other buildings in the northern core have smaller loading and service zones that are accessed directly from the closest driveway or parking area, as shown in Figure 20.

Within the southern core of the campus, service and loading for both the Arbor Building and Delta Buildings occur through lot G. The Arbor Building has an additional service and loading access directly off University Drive between the building and the bayou.



▲ Figure 20: Existing Service and Loading

Landscape and Open Space

The UHCL campus landscape is largely defined by extensive natural forested areas and the Horsepen Bayou and its floodplain, which pass through the center of the campus. These areas provide important habitat within the regional ecosystem, and they are appreciated by students, faculty, staff, and visitors to the campus. Nature trails provide access to the natural areas to the west of the developed portion of campus.

Major utility corridors cross the campus, carrying both underground gas lines and overhead electric transmission wires. The grassy areas that define these corridors separate portions of the natural landscape, and create partially fragmented forest areas.

The UHCL campus has several formal landscape areas, including Alumni Plaza and the Pat and Wendell Wilson Park Area. Alumni Plaza links the Bayou Building and SSCB, facilitating pedestrian navigation between these buildings. The Pat and Wendell Wilson Park area contains pathways, seating areas, and large shade trees that create an inviting setting for studying and relaxation.

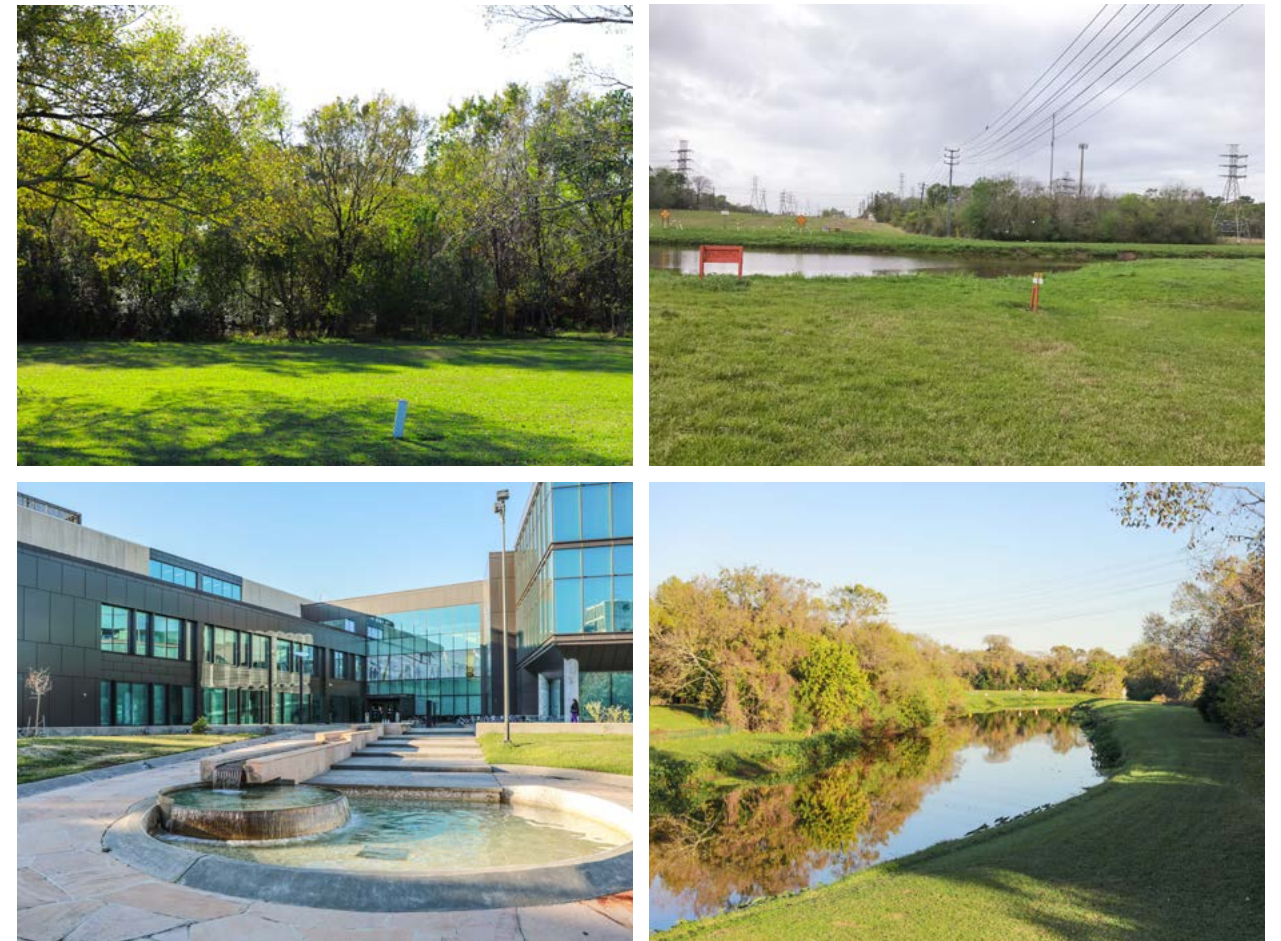
Two informal recreation fields are currently located on campus, one north of the North Annex buildings and another southeast of the Delta Building. The northern recreation field is designed to serve as a detention area during extreme storm events. The southern recreation field is popular with students and often used for cricket, among other sports. Just to the west of this field is a small fenced area with tennis and basketball courts.

The various elements of the campus landscape are illustrated in Figure 21.



▲ Figure 21: Existing Landscape and Open Space

- | | |
|-------------------|---------------------|
| Forest | Utility parcel |
| Lawn | Utility easement |
| Water | Sidewalk/plaza area |
| Hardscape/streets | Play court |
| Floodplain | Recreation field |



▲ Forested edge (top left), utility corridor (top right), Alumni Plaza (bottom left), and Horsepen Bayou (bottom right)

Site Hydrology

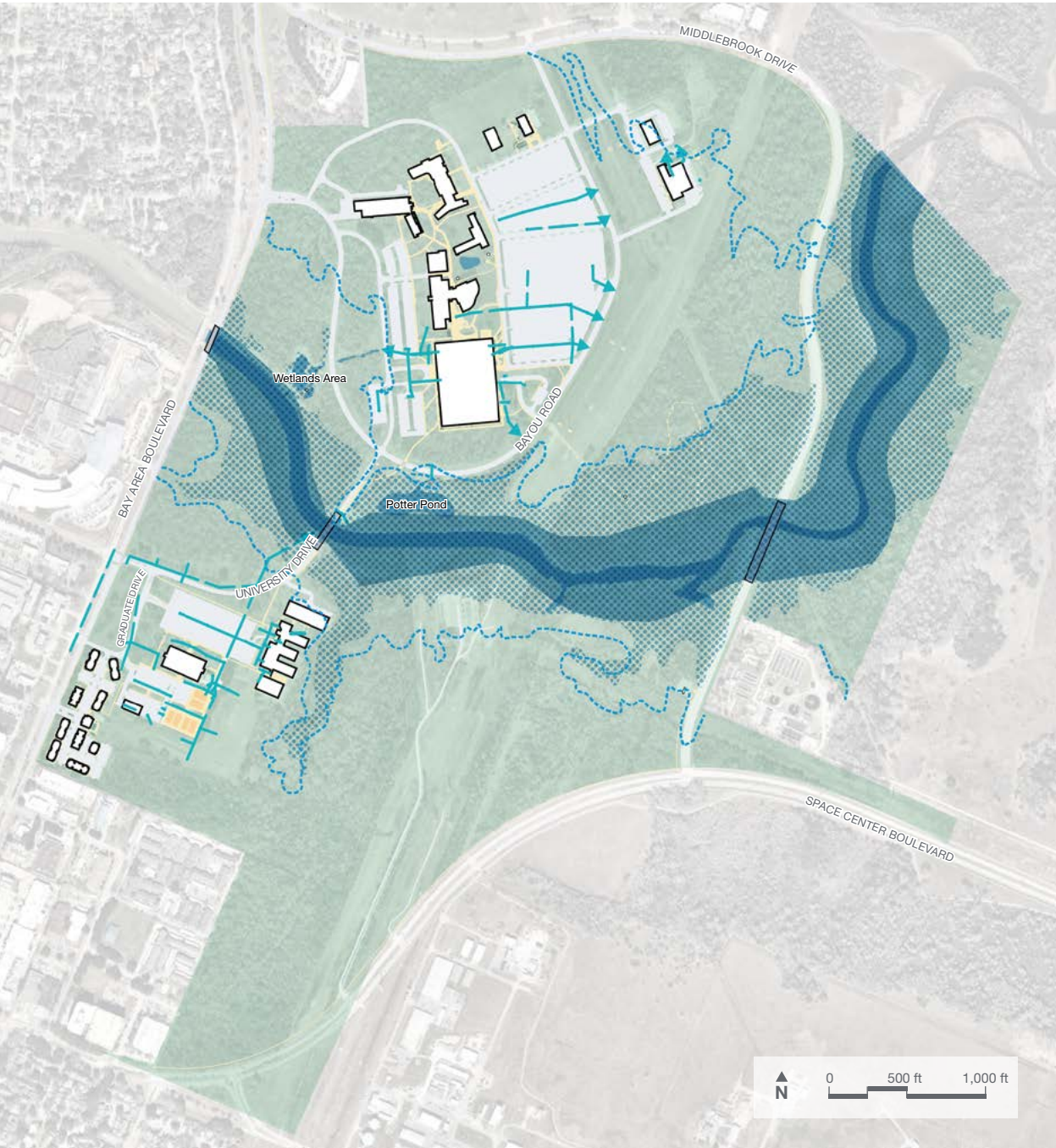
The hydrology of the UHCL campus is defined by Horsepen Bayou. The area surrounding the bayou is under the jurisdiction of the Harris County Flood Control District. This zone and the FEMA 100-year and 500-year floodplain zones are delineated in Figure 22.

Several detention areas are located throughout the campus, including Potter Pond and the Wetlands Area, which filter stormwater before it is discharged into Horsepen Bayou.

The UHCL campus contains one of the few areas of Horsepen Bayou that has not been channelized with concrete infrastructure. Campus stormwater is either infiltrated on site or carried via pipes or swales into the bayou, where it is conveyed to Mudd Lake and eventually to the Gulf of Mexico.



▲ On-campus detention areas include the Wetlands Area (top) and Potter Pond (bottom). The pond is shown as it looks normally (bottom left) and after flooding from Hurricane Harvey in 2017 (bottom right).



▲ Figure 22: Existing Campus Hydrology

- FEMA 500-yr floodplain
- FEMA 100-yr floodplain
- Harris County flood zone
- Storm sewer

Campus Development Constraints

While the UHCL campus is relatively large, several factors constrain the development of significant portions of the campus.

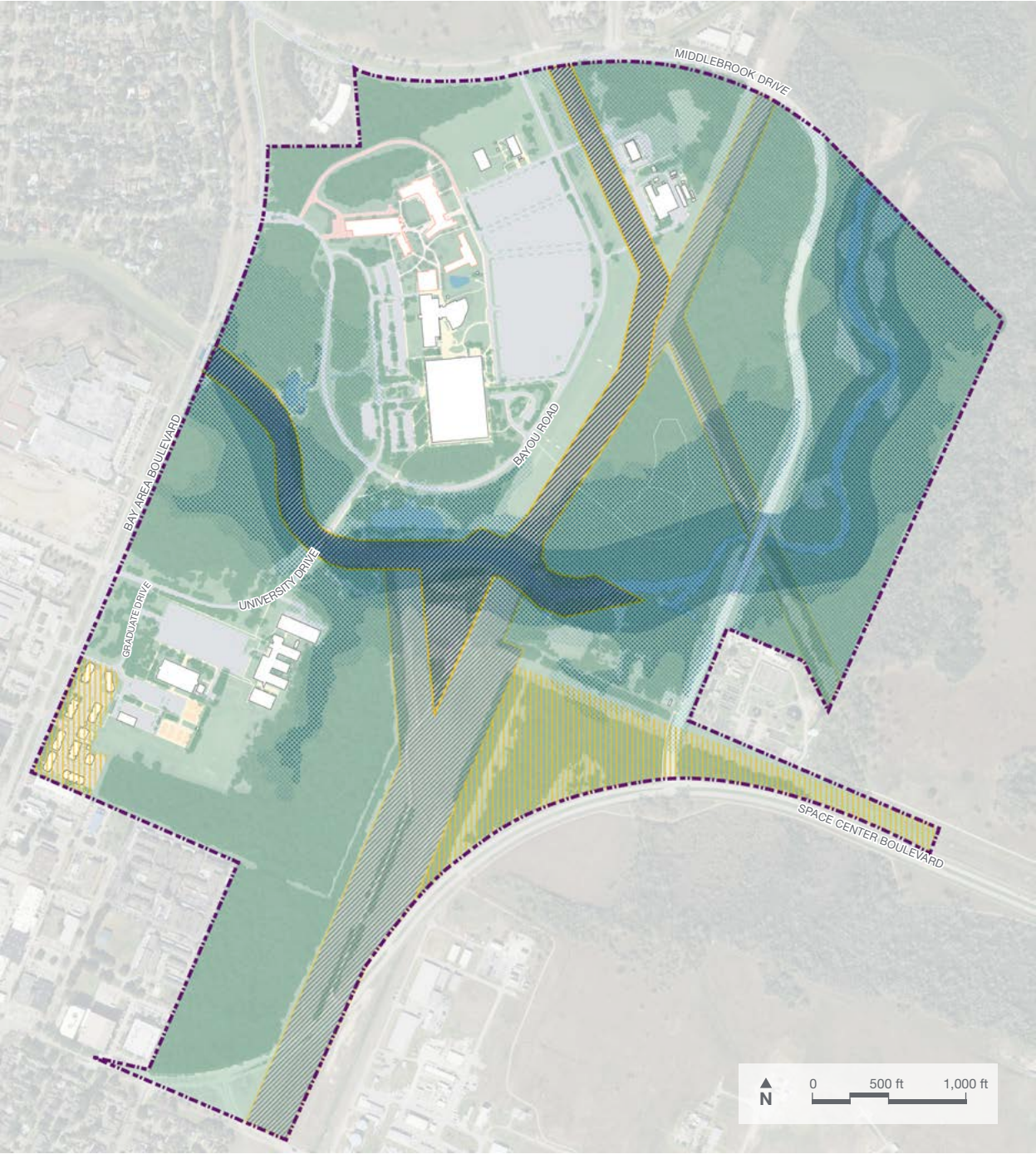
Areas around the bayou are restricted by regulations around the Harris County flood zone and the FEMA 100-year floodplain zone. The FEMA 500-year floodplain zone is not regulated, but flooding is an important consideration, and development within this area should be avoided to the extent possible.

Some areas within the campus boundaries, such as the Harris County Flood Control District parcel along the bayou and a parcel belonging to Centerpoint Energy that is adjacent to Bayou Drive, are not legally buildable. Utility easements also restrict development to very limited uses, such as driveways or surface parking.

The University Forest Apartments are currently ground leased to a third party but will eventually revert to university ownership and could be considered for redevelopment in the future. A parcel conveyed to the university from NASA is restricted to educational uses.

Perhaps most important, however, is the aesthetic, experiential, and ecological value of the campus natural environment. Development within currently forested areas should be carefully assessed to ensure that the forested landscape can continue to perform its ecological function and support the identity and character of the campus.

These constraints are mapped in Figure 23.



▲ Figure 23: Campus Development Constraints

FEMA 500yr floodplain	Utility parcel
FEMA 100yr floodplain	Utility easement
Harris County flood zone	Temporary development restriction
Forest	



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3.0 SPACE NEEDS AND PROGRAM

Space Needs and Program

Purpose and Methodology

The purpose of the space needs analysis and program element is to identify the high-priority space needs for the university's current enrollment as well as the additional space required to support planned enrollment growth. It also establishes a long-term program to test campus capacity.

UHCL is currently undergoing a downward expansion process, which began by enrolling freshmen and sophomore students for the first time in 2014. This evolution toward a more traditional four-year institution model will impact not only the demographics of the university but also the future space needs.

The space needs analysis involved both an instructional space utilization assessment and an overall analysis of space needs for a range of institutional space types, including classrooms, teaching labs, research labs, office space, library and study space, recreation space, campus life space, healthcare space, housing, and campus support space. The analysis applied Texas Higher Education Coordinating Board (THECB) space planning guidelines, where available, and Council for Education Facility Planners International (CEFPI) (now the Association for Learning Environments) space planning guidelines for space types not addressed by the THECB guidelines. The analysis integrated demographic and other data supplied by UHCL, to ensure that the resulting space projections reflect UHCL's unique mission and vision. The principal data inputs provided by the university included current full-time equivalent (FTE) and headcount enrollment, current faculty and staff headcount and FTE, weekly student contact hours (WSCH) for classrooms and labs, the current course schedule, and existing space inventory.

The analysis assessed space needs for UHCL’s 2016 enrollment of approximately 8,600 headcount students (6,700 FTE) and a long term enrollment target of 15,000 headcount students (11,800 FTE). The analysis also assessed several student housing scenarios, including housing for ten, fifteen, twenty, and twenty-five percent of student enrollment. The data applied in the analysis is summarized in the following table:

▼ Table 2: Data Applied in Campus Program Analysis

	CURRENT HEADCOUNT	CURRENT FTE	FUTURE HEADCOUNT	FUTURE FTE
Enrollment	8,594	6,720	15,000	11,849
Faculty		378		661
Staff		608		1,065

Instructional Space Utilization Findings

The consultant team analyzed UHCL’s instructional space to understand how classrooms and teaching labs are currently used, their capacity to accommodate enrollment growth, and the room sizes that the university should plan for. The analysis was based on the university’s fall 2016 course schedule for daytime and evening periods. It included seminar rooms, classrooms, lecture halls, and teaching labs, but excluded research labs and other rooms not used for scheduled instruction, such as open computer labs and art studios.

Classroom Utilization

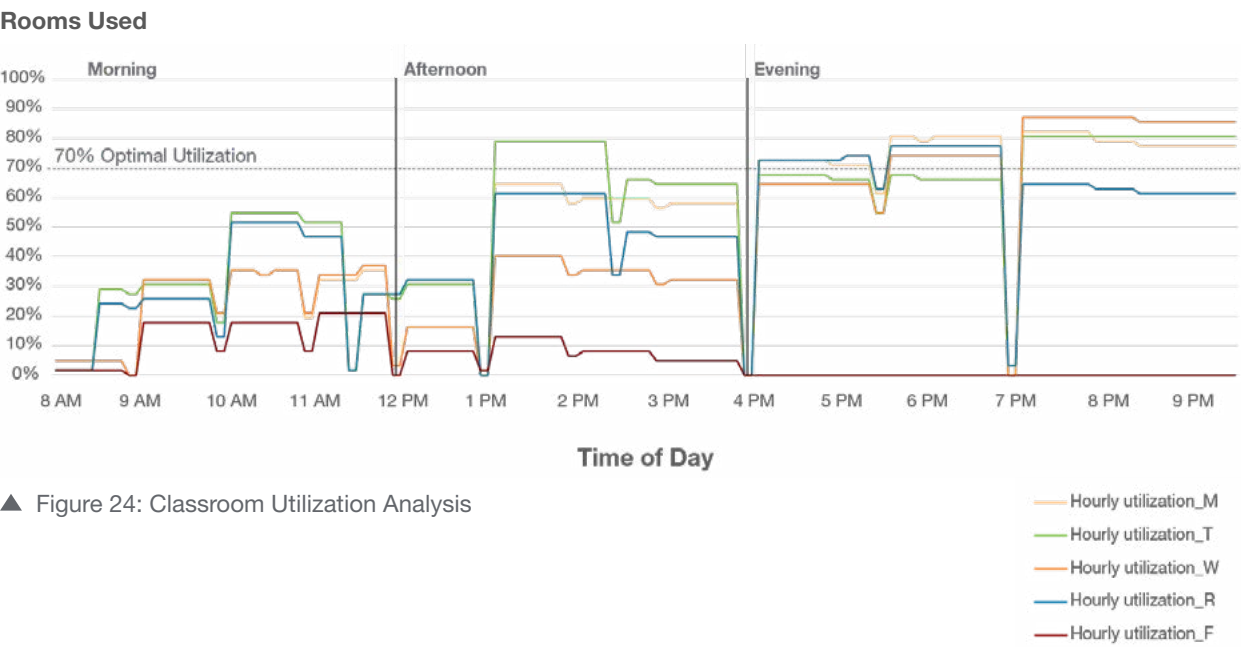
UHCL currently has sixty-two rooms that are used for scheduled classes, although several of these rooms are defined in the university’s space inventory as conference or meetings rooms.

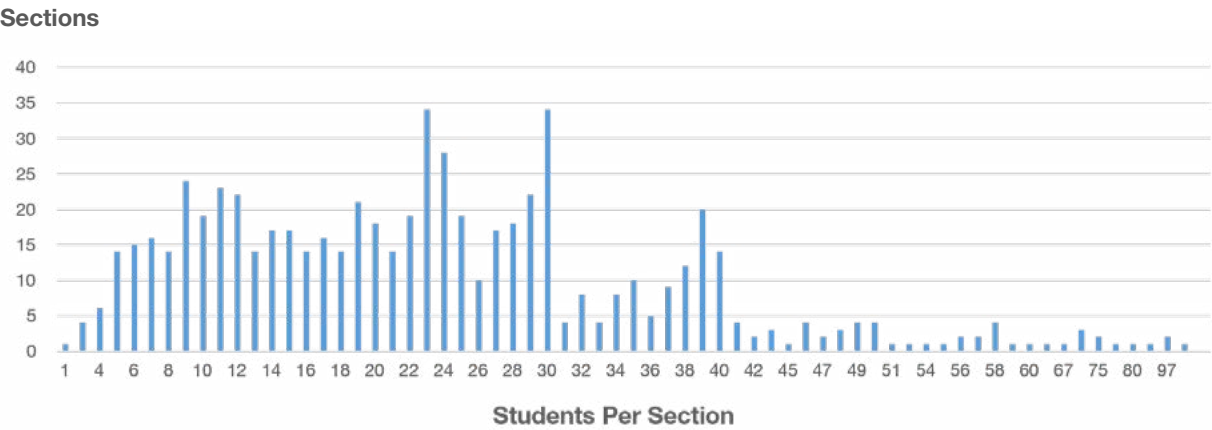
Classroom utilization refers to the percentage of time a classroom is used relative to the time it is available during a given period. UHCL schedules classes throughout the day, from 8:00 a.m. to 10:00 p.m. Because of UHCL’s history serving upper-division and graduate students, the university offers many evening classes; therefore, for the purposes of the analysis, classroom utilization was assessed over two periods: 8:00 a.m. to 4:00 p.m. (the daytime period) and 4:00 p.m. to 10:00 p.m. (the evening period), Monday through Friday.

Higher education industry standards recommend an average utilization rate of 65 to 70 percent for general purpose classrooms. The classroom utilization analysis found the following:

- Average utilization rates during the daytime period were below the 70 percent target, with morning utilization rates ranging from 30 to 50 percent and afternoon utilization rates from 40 to 60 percent. This suggests there is some capacity within the classroom inventory to accommodate additional daytime sections, including those required by the university’s downward enrollment expansion.
- Average utilization rates during the evening period generally met or exceeded the 70 percent target. This suggests there is little capacity to add additional evening sections.
- Given these findings, it is likely that the university will need to create additional classrooms as enrollment grows, once it has maximized opportunities to add daytime sections.
- A parallel analysis of section sizes, as shown in Figure 25, found that the majority of class sections were in the 21-30, and 31-40 student range. This suggests the university should prioritize classroom sizes of 30 and 40 seats when adding new rooms.

The following charts illustrate average weekly classroom utilization and the current distribution of course section sizes.





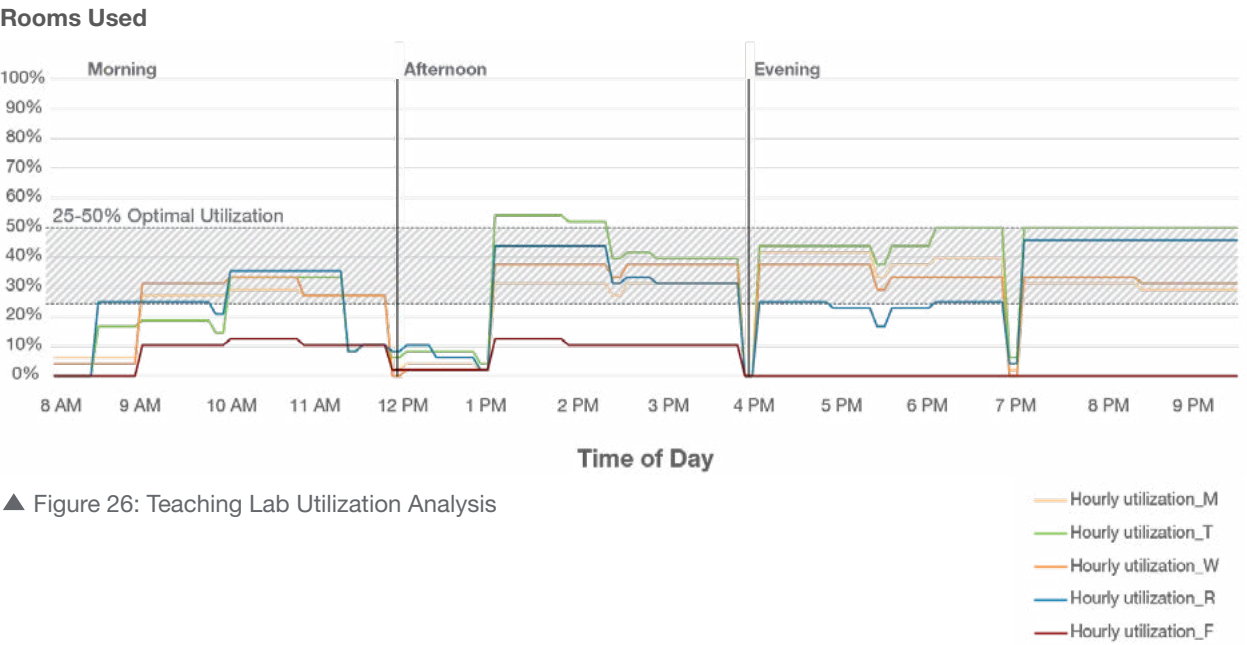
▲ Figure 25: Classroom Section Sizes

Teaching Lab Utilization

Teaching labs are defined in the *National Center for Education Statistics Postsecondary Education Facilities Inventory and Classification Manual* as “A space used primarily for formally or regularly scheduled instruction (including associated mandatory but non-credit-earning laboratories) that require special purpose equipment or a specific space configuration for student participation, experimentation, observation, or practice in an academic discipline.” UHCL currently has forty-eight rooms that are used for lab courses, according to the university’s course schedule.

Teaching lab utilization was assessed over the same 8:00 a.m. to 4:00 p.m. and 4:00 p.m. to 10:00 p.m. periods established for the classroom analysis. Lab utilization rates are lower than classrooms because of the specialized use of the rooms and the additional preparation and clean-up time required for lab courses. The CEFPI guidelines recommend an average utilization target of 35 to 50 percent for labs. However, in the consultant team’s experience, the utilization rate of highly specialized labs, such as science or engineering labs, is often as low as 20 or 25 percent, as these rooms can only be used for a limited number of different course types.

The analysis of UHCL’s teaching labs found that the average overall utilization was generally within the 25 to 50 percent range during both the daytime and evening periods, although utilization was at the lower end of the range in the morning. This suggests there is little capacity within the existing lab space inventory to support additional lab sections and reinforces the need for additional space to support enrollment growth.



▲ Figure 26: Teaching Lab Utilization Analysis

Stakeholder Space Requests

Conversations with UHCL stakeholders and comments in the MyUHCL survey highlighted the need for the following space types on the campus:

- Student engagement and campus life space
- Food venues
- Gathering and interaction spaces
- Welcome center
- Interactive learning space
- Twenty-first century library space
- Faculty research space
- Faculty resource space
- Blended academic and student life space
- Replacement space for temporary offices

These observations assisted in further defining the master plan program from the space needs analysis.

Campus Space Needs

The space needs generated by the THECB and CEFPI guidelines for current and future enrollment are summarized in the following tables and illustrated in the accompanying charts. The analysis includes additional space that will be created in the university's new STEM and Classroom Building, Recreation and Wellness Building (both currently under construction), and student housing, which is currently in the design phase.

The analysis illustrates that while it appears there will be sufficient classroom, teaching lab, and office space for current enrollment once new facilities are completed, there will be ongoing shortages in most other space use categories, in particular campus life. These findings are consistent with comments shared by UHCL stakeholders in both the stakeholder interviews and MyUHCL survey.

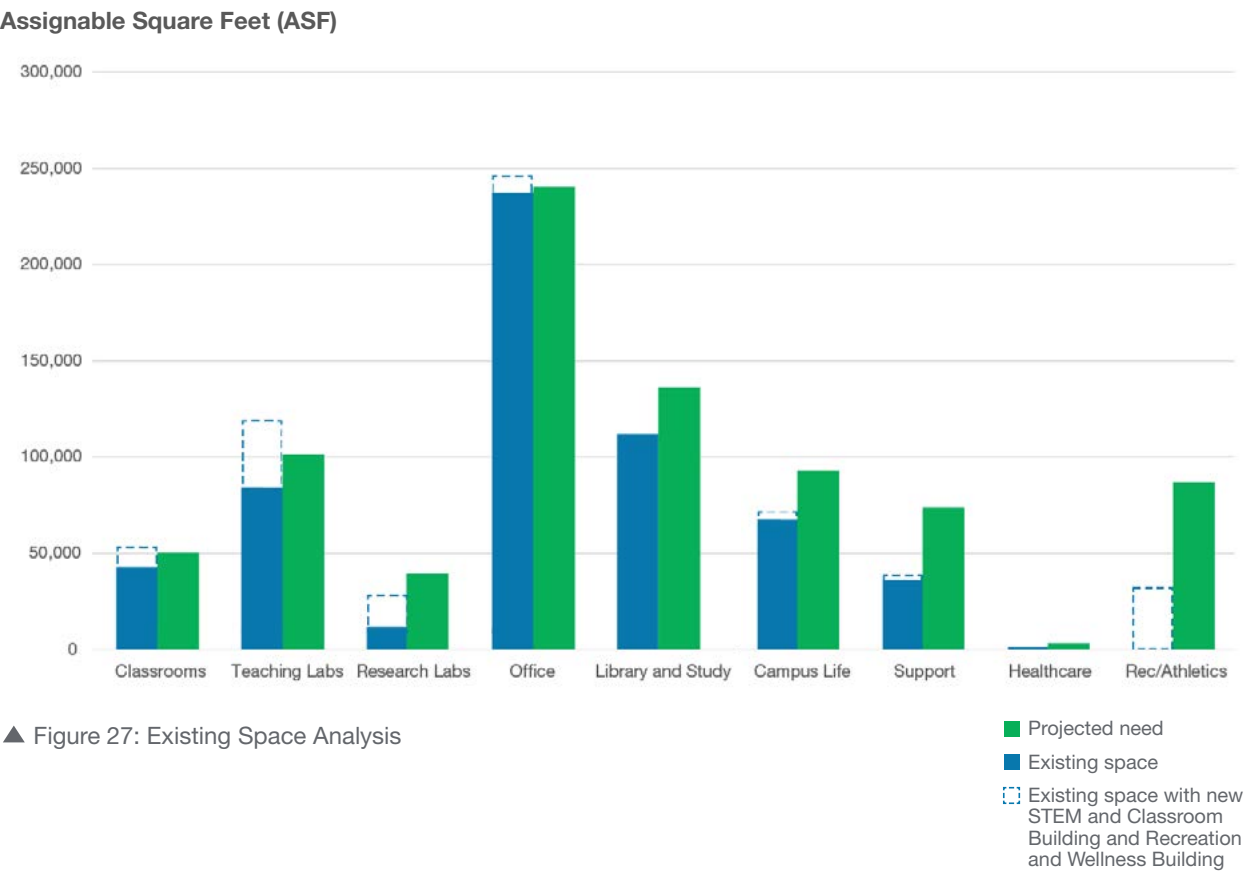
For future enrollment, additional space will be needed within all space use categories.

The following tables and charts summarize UHCL’s current and future space needs, in assignable square feet (ASF).

▼ Table 3: Current UHCL Space Needs (Approx. 8,600 Headcount Students)

	EXISTING SPACE* (ASF)	SPACE NEED (ASF)	SURPLUS/DEFICIT (ASF)
Classrooms	53,252	50,200	3,000
Teaching Labs	118,781	101,500	17,300
Research Labs	28,224	39,500	(11,300)
Office	245,928	240,400	5,500
Library and Study	111,930	136,300	(24,400)
Campus Life	71,417	92,900	(21,400)
Support	38,343	73,800	(35,500)
Healthcare	1,193	3,400	(2,200)
Rec/Athletics	31,700	87,200	(55,500)
Total	700,844	825,200	(124,500)

*Includes space within new STEM and Classroom Building and Recreation and Wellness Building

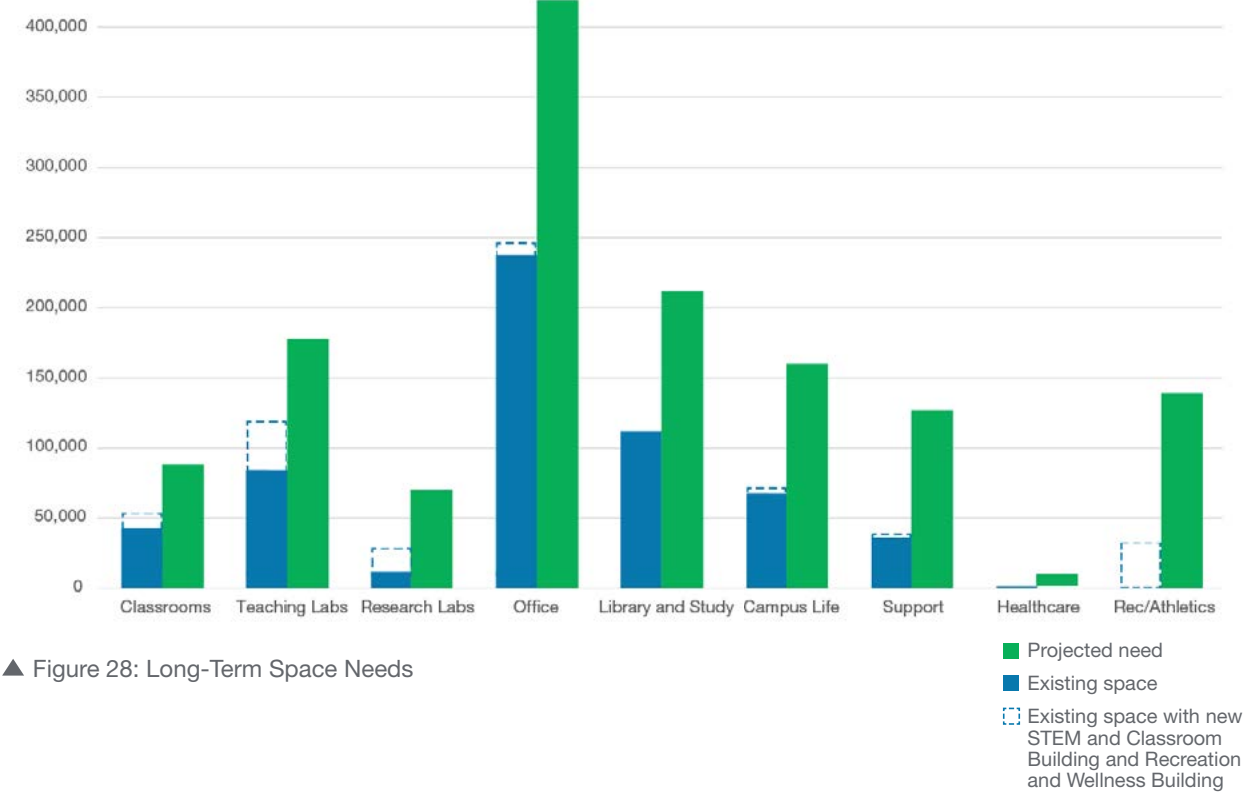


▼ Table 4: Future UHCL Space Needs (Approx. 15,000 Headcount Students)

	EXISTING SPACE*(ASF)	SPACE NEED (ASF)	SURPLUS/(DEFICIT) (ASF)
Classrooms	53,252	87,800	(35,000)
Teaching Labs	118,781	177,600	(59,000)
Research Labs	28,224	69,000	(41,000)
Office	245,928	420,700	(175,000)
Library and Study	111,930	211,800	(100,000)
Campus Life	71,417	159,500	(88,000)
Support	38,343	126,400	(88,000)
Healthcare	1,193	5,000	(4,000)
Rec/Athletics	31,700	138,500	(107,000)
Subtotal	700,768	1,396,300	(697,000)

*Includes space within new STEM and Classroom Building and Recreation and Wellness Building

Assignable Square Feet (ASF)



▲ Figure 28: Long-Term Space Needs

Student Housing

UHCL is currently constructing 300 beds of student housing that will add to the existing 268 beds located in the University Forest Apartments, adjacent to the campus. The goal of this initiative is to create a more traditional undergraduate student experience that will attract lower-division students as part of the university's downward expansion. In addition, evidence from other institutions indicates that a carefully considered student housing strategy can help engage students, improve retention, and enhance student success.

UHCL will monitor the success of its student housing initiative over time and may add additional housing if there is sufficient demand. To that end, the consultant team was asked to test the impact on campus development of providing housing for up to 25 percent of students, although this amount of housing is not likely to be needed for at least another two decades.

A planning assumption of 350 gross square feet (GSF) per bed was used to test the campus capacity for housing and allow for flexibility in the types of housing and amenities provided. This space factor can accomodate a variety of unit types, including apartments or more traditional residence halls. It is expected that much of the new housing will be apartment-style for upper-division students and may contain amenities such as individual bedrooms and in-unit kitchens. The 350 GSF per bed space factor also provides shared spaces to support residential life in residence halls, such as lounges and study areas, small shared dining spaces, meeting rooms, and fitness rooms.

The total beds and related space need under different housing scenarios are documented in Table 5.

▼ Table 5: Student Housing Scenarios

PERCENTAGE OF STUDENTS HOUSED AT 15,000 HEADCOUNT	NEW BEDS*	NET NEW GSF AT 350 GSF / BED
10%	930	326,000
15%	1,680	589,000
20%	2,430	851,000
25%	3,180	1,114,500

* In addition to the 268 beds existing in the University Forest Apartments and 300 beds currently under construction

Master Plan Facilities Program

The space needs generated by the analysis were converted to building GSF, then grouped into the several building types as the basis of the overall master plan facilities program. Support space needs were added to the program for each building type on a proportional basis. Replacement space for existing temporary buildings was also factored into the program. The following table summarizes the master plan facilities program that was generated through this effort.

▼ Table 6: Master Plan Facilities Program for 15,000 Students

BUILDING TYPE	NET NEW GSF	TYPICAL NO. OF FLOORS	TYPICAL FOOTPRINTS (GSF)	NO. OF BUILDINGS
Academic Buildings: Classrooms, teaching labs, research labs, offices, library and study space	746,000	3	30,000	8
Student Center: Healthcare, campus life	162,000	3	28,000	1
Recreation and Athletics: Campus recreation and intercollegiate athletics space	188,000	2	75,000	1
Student Housing (3,180 beds): Undergraduate and graduate student housing	1,114,500	4	22,000	13

Additional Campus Spaces

The following additional spaces were identified by UHCL stakeholders as potential program elements to be considered in the plan.

Research Park

- Partner office space
- Co-working space, business incubator
- Shared academic and industry research space

Environmental Institute of Houston (EIH) interactive learning facilities

- Training, lecture, and event space
- Outdoor storage and work space
- Wet lab
- Outdoor classrooms and demonstration spaces

Outdoor recreation facilities

- Multi-purpose recreation fields
- Athletic fields for sports such as baseball, softball, soccer, lacrosse, and cricket, and possibly football
- Courts for tennis, basketball, and volleyball

Community facilities

- Auditorium or theatre/event space
- Arts program



4.0 MASTER PLAN FRAMEWORK AND SYSTEMS

Master Plan Framework and Systems

Planning Principles

Four campus planning principles emerged from the consultant team's analysis of campus conditions and from input from the stakeholder consultation process. The principles, which reflect the values of the campus community as well as the community's vision for the UHCL campus, were used to guide campus planning decisions and evaluate trade-offs in the design process.

The planning principles are as follows:

- I. Celebrate the natural environment
- II. Employ compact development strategies
- III. Enhance campus identity and visibility
- IV. Reinforce a coherent land use and development framework

I. Celebrate the Natural Environment

The natural environment is one of the most beloved features of the UHCL campus. The experience of entering the campus through wooded areas, crossing the bayou, and witnessing animals in their natural habitat is integral to the campus culture. Students, faculty, and staff report that they deeply value this natural setting and encourage the university to preserve the function and aesthetics of the forest and wetland landscape as it expands. Community members come to the campus on evenings and weekends to take in the natural beauty and enjoy the serenity and respite the campus offers.

Over the years, the area around the campus has continued to be developed, but the campus landscape remains an important component of the ecological network. The campus sits at the interface between developed neighborhoods at its west, south, and north edges and the wetland forest ecosystem to its east. The natural areas of the campus are important to the local hydrology and together with adjacent natural areas, form key habitat for native species.

In addition to the experience and ecology of the natural environment, students, researchers, and outside organizations use different areas of the campus for academic study. This natural “learning lab” is an important asset to the academic mission of the university, and it differentiates this campus from others where these resources are often far away from classrooms.

Campus development should support and enrich the surrounding natural landscape and capitalize on its unique and beautiful assets. Providing strategic access to natural areas through trails or other elements can foster a stronger sense of connection between the campus community and the natural environment. In addition, dramatic vistas to the bayou and native landscape treatments can bring the benefits of the natural surroundings into developed areas of the campus.



▲ The UHCL campus character is defined by the unique and beautiful surrounding landscape.

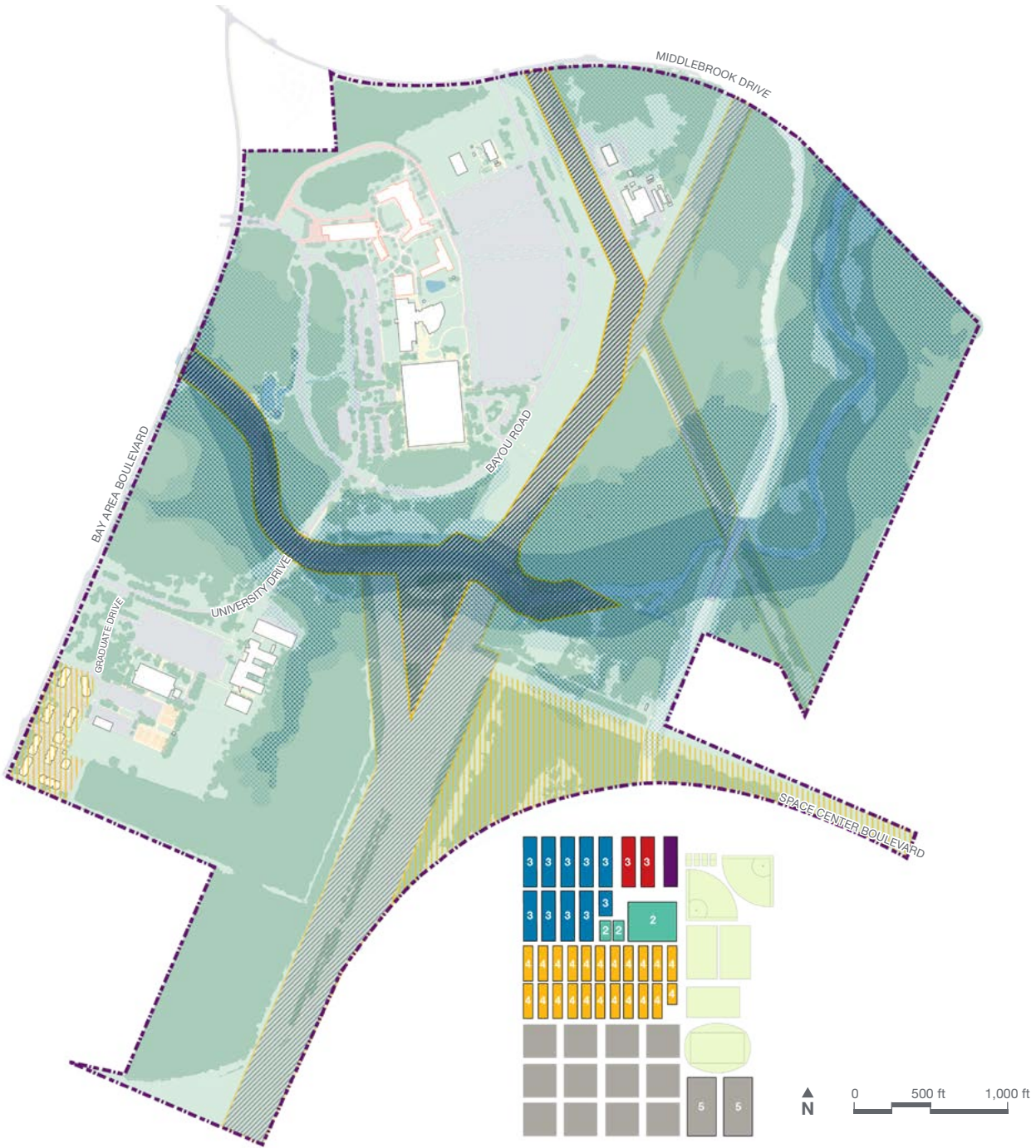
II. Employ Compact Development Strategies

Employing a compact development strategy will reinforce the principle of celebrating the natural environment. A compact development strategy can be achieved by constructing multiple-floor buildings and clustering buildings together. This will also promote walkability and facilitate programmatic connections. Mitigating parking demand by providing viable alternatives to driving and stacking parking in structures, where possible, will reduce the impact of large surface lots on the campus landscape.
















Increasing the overall density of the campus and improving connections between the two campus cores on either side of the bayou will also create a more cohesive campus setting. Focusing campus growth in the area between the cores will reduce the real and perceived distance between the two sides of campus, making walking or cycling more inviting and a viable alternative to driving.

A compact campus will also promote an active campus life. Clustering dynamic ground floor uses such as cafés, lounges, and exhibit spaces along key pedestrian corridors or open spaces can activate these spaces and create physical connections between buildings. As the demographics of UHCL shift toward a more traditional four-year university model, a high-quality campus life will become increasingly important in attracting and retaining lower-division undergraduates and residential students. Creating a campus development framework that supports campus life will be imperative to the university's growth and vision for the future.

As shown in Figure 29, the campus has many physical constraints to development. Therefore, the amount of estimated future program to be accommodated will require constructing buildings that are multiple stories in height and clustered close together.



▲ Figure 29: Compact Development Strategy

DEVELOPMENT CONSTRAINTS				PROGRAM			
 FEMA 500yr floodplain	 Utility parcel	 Academic/administration	 Partnership organizations				
 FEMA 100yr floodplain	 Utility easement	 Student housing	 Fields and courts				
 Harris County flood zone	 Temporary development restriction	 Indoor recreation	 Parking garage				
 Forest		 Student life	 Parking lot				

III. Enhance Campus Identity and Visibility

The university's identity is changing with the downward enrollment expansion and related demographic shift. Its role in the region will evolve as it becomes a more traditional four-year university, rather than a commuter institution. The image, identity, and visibility of the campus will need to evolve with these changes as the campus is developed over time.

The experience of arriving on campus should express the university's vision for a high-quality, student-centered environment that is located within the context of a beautiful and serene natural landscape. This highlights the need to create active places through new campus life functions and thoughtful open space connections, while preserving the natural landscape.

The entrances to UHCL are important features of the campus arrival experience, and contribute to the image of the campus from the surrounding urban setting. Establishing and reinforcing distinct identities for each entrance will reinforce the arrival experience and assist in wayfinding. While the campus will remain within a forested buffer, selected views into the campus from the street and clear signage at entrances will announce the university's presence.



▲ The entry and arrival experience to the UHCL campus creates the opportunity to promote a strong university identity.

IV. Reinforce a Coherent Land Use and Development Framework

Establishing a framework that organizes land uses, open space, and campus systems into a coherent structure will form the basis of a roadmap to implement the long-term campus vision over time. This framework will also assist the university in phasing campus growth and determining priorities for infrastructure investment.

Connecting the north and south areas of the campus was a priority articulated during the stakeholder engagement process. Therefore, a framework for the UHCL campus must better integrate the north and south campus cores to reinforce the experience of a single, contiguous campus. The open space network can also be used to structure development of the campus.

To that end, the master plan introduces a new linear open space—the “Campus Mall”—as the main organizing element of the campus. The mall, along with its integrated circulation and open space systems, will connect a series of land use zones. These zones will, in turn, reinforce the campus framework and promote a coherent campus experience.

The mall consists of a linear open space system that connects major buildings and open space elements within both the north and south campus cores, while reducing the perceived distance across Horsepen Bayou. Academic and campus life spaces will be clustered along the mall’s edges to activate the central open space. Recreation and residential uses will be located at either end of the mall, where they will benefit from proximity to the natural areas of the campus. Parking will generally be positioned on the outside edges of the mall to facilitate convenient access to the campus core areas from several locations and to preserve a pedestrian-oriented campus core.



▲ Figure 30: Campus Land Use Concept

- Academic/administration
- Student housing
- Recreation
- Student life

Master Plan Vision

UHCL's potential long-term growth to an enrollment of 15,000 students will require significant investment in new buildings and infrastructure that will transform the campus environment over time. The master plan provides a framework for the development of the campus that accommodates growth, while preserving and extending the special qualities of the campus setting. The plan addresses all major campus systems, including land use, open space, mobility, and infrastructure.

The vision for the campus is illustrated in Figure 31, and the strategies for the campus systems are described on the following pages.



▲ Figure 31: UHCL Campus Illustrative Master Plan

- 1 Campus mall
- 2 Residential neighborhood
- 3 Gathering/activity plaza
- 4 Outdoor recreation
- 5 Nature trails

Program Accommodation

The master plan program is organized within the following five categories, as illustrated in Figure 32.

- Academic/administrative
- Housing
- Recreation
- Campus life
- Potential partnership

Academic and administrative space is clustered near existing academic uses and is primarily positioned along the Campus Mall. This structure will facilitate movement between buildings and enhance collaboration among academic disciplines. Campus life space will be integrated on the ground floors of academic and administrative buildings to complement the activity along the mall. The next phase of the STEM building will be located immediately south of the new STEM and Classroom Building that is currently under construction. A welcome center/one stop building that will house enrollment services, assembly space, and other related student service needs will be located just north of the bayou on the west side of the mall. A new campus center will be located immediately across the mall from the welcome center/one stop building; this location will allow shared use of publicly-oriented facilities and enhanced programmatic connections. New academic buildings and possibly a new library will be located on the west side of the mall opposite the existing Bayou Building and SSCB.

South of the bayou, additional space for future academic programs will be accommodated on the west side of the mall, opposite the Arbor Building.

Housing will be clustered into two zones. Lower-division housing will be located in the north core of campus, near the new Recreation and Wellness Building, new student housing project, and future campus life facilities. Three residence halls containing approximately 1,000 beds are shown in this scenario. The balance of potential student housing, accommodating up to twenty-five percent of future student enrollment, will be sited at the south edge of campus, east of the University Forest Apartments. Housing in this area is envisioned to be apartment-style units for upper-division undergraduates, graduate students, and students with families.



▲ Figure 32: Primary Building Use

- Academic/administration
- Student housing
- Recreation
- Student life
- Partnership organization

Recreation is also divided between the north and south cores of campus. The new Recreation and Wellness Building will serve the campus for the foreseeable future. However, with significant residential growth and the potential introduction of intercollegiate athletics programs, an additional recreation center may eventually be needed. The master plan sites this facility on the south side of campus, near the planned student residential neighborhood. Recreation fields and courts will be located adjacent to student housing and recreation buildings in both the north and south areas of campus.

A new campus center will be located at the southerly terminus of the north mall overlooking the bayou, creating a major student destination at the geographic center of campus. The campus center will contain a range of student life uses, potentially including a central campus dining facility. At the northerly terminus of the south mall, a café or gallery addition to the Arbor Building will create another student life destination near the center of campus. These two buildings will help to activate the mall's north-south corridor and shorten the perceived distance across the bayou.

On the south mall, a small campus life building will be located between the proposed recreation center and a proposed academic building. This building can provide dining or gathering space to activate the south mall and create another student hub for the south campus. Additional campus life functions such as student lounges and collaboration spaces will be integrated throughout the campus to support campus community.

The plan introduces a potential new site for the Environmental Institute of Houston (EIH) to the east of Entrance 3. The site will contain more indoor and outdoor space for the organization and academic and research ties with the university. This site allows a larger footprint than EIH currently needs, in order to provide capacity to accommodate any potential partner organizations that may co-locate with EIH in the future to collaborate on education, research, and outreach efforts.

Landscape and Open Space

The campus landscape and open space system establishes a hierarchy of landscape and open space elements at a range of scales. The system includes the following elements:

- The Campus Mall
- Courtyards and plazas
- Recreation fields and courts
- Campus natural areas

Campus Mall

The Campus Mall will provide the primary north-south axis through the campus. It will contain major pedestrian pathways along the east and west edges, supported by connections that crisscross the central landscape. Trees and shade structures will line the pathways and provide relief from the sun and harsh weather. Buildings fronting the mall will contain active ground floor uses to create energy along the mall.

The mall will be divided into several “outdoor rooms” to break down the scale of the space and create a variety of landscape conditions. Stormwater gardens will be integrated into lawn panels to provide stormwater management, as well as visual, educational, and ecological value.

Courtyards and Plazas

Smaller, more intimate open spaces will complement and reinforce the mall. These courtyards and plazas will lead to building entrances and provide quiet, shaded spaces separated from the mall.

The key courtyards and plazas shown in the master plan include the following:

- The existing Alumni Plaza that connects the Bayou Building and SSCB
- The future connecting plaza that will link the campus center and the welcome center/one stop building
- The entry plaza to the south portion of the Campus Mall from University Drive, adjacent to the new campus life addition to the Arbor Building
- The terminal plaza to the south mall and entry plaza to the future recreation center



▲ Figure 33: Landscape Types

- | | |
|--------------------------------|---------------------|
| ■ Campus Mall | ▨ Bayou floodplain |
| ■ Courtyards and plazas | ■ Forest |
| ■ Recreation fields and courts | ▨ Utility corridors |
| — Paths and trails | |

Recreation Fields and Courts

With planned enrollment growth, there will be a need for additional outdoor recreation fields and hard surface courts, which could include tennis, volleyball, or basketball courts. Recreation fields can also be designed to supplement the campus stormwater management system, accommodating stormwater during extreme storm events.

On the north side of campus, three multi-purpose recreation fields and several hard surface courts will be located near the new Recreation and Wellness Building. South of the bayou, softball, baseball, and multi-purpose recreation fields will be accommodated in the undeveloped area near Space Center Boulevard, and additional hard surface courts will be located adjacent to the proposed recreation center. All multipurpose recreational fields will also serve as detention areas, including the existing field/detention area by the entrance at Middlebrook Drive. While normally dry, these areas will accommodate stormwater when there is high rainfall.

Because UHCL does not currently offer any intercollegiate athletics programs and has no specific plans to introduce them, it is assumed that fields and courts will be used as recreational amenities. If intercollegiate athletics are added in the future, supplemental facilities, such as seating and a small field house for locker rooms, concessions, and storage, may be needed.

Campus Natural Areas

The natural landscape of the UHCL campus is highly valued and contributes to its character and identity. The master plan recommends careful stewardship of campus natural areas to preserve their aesthetic, recreational, ecological, and educational function.

The campus development strategy emphasizes compact development to preserve as much of the forested area as possible. Minimizing unnecessary forest fragmentation helps to preserve habitat value. The university should have a forest management plan prepared to preserve the long-term health of these areas, address the impacts of invasive vegetation, and better support local wildlife habitat.

The wetland area around Horsepen Bayou floods periodically as part of its natural hydrological function, helping to mitigate flood impacts within the developed portions of campus. The master plan locates additional stormwater detention ponds and wetlands within the floodplain zone to reinforce this natural process.

The master plan extends the campus pathway system to include boardwalks along the bayou and over surrounding wetlands to facilitate access to the unique wetland resource, creating opportunities for the campus community to walk between classes, study, or observe the local species that inhabit this ecosystem. Linking these boardwalks and paths to the existing nature trails will create many routes to explore the natural areas of campus.

Mobility

A goal of the master plan is to reduce the need for single occupancy vehicle travel to the campus and expand alternative transportation options over the long term. The university should continue to explore viable transportation demand management strategies as the campus grows.

Access and Streets

The master plan preserves the three main entrances to the campus and introduces several improvements to better define their function and identity.

The University Drive entrance (Entrance 1) will serve as the primary visitor entrance and formal arrival to the campus. Intersection improvements and new signage will reinforce the arrival experience, which will extend from the Bay Area Boulevard to Bayou Road. The existing tree-lined drive will be preserved, offering scenic views over the bayou landscape. The drive will terminate at the new welcome center/one stop building, which will be supported by convenient visitor parking.

The entrances at Bayou Road (Entrance 2) and Middlebrook Drive (Entrance 3) will continue to serve as commuter entrances. It is anticipated that the Bayou Road entrance will become more active over time, given its proximity to the newly developed STEM and Classroom Building, Recreation and Wellness Building, and new student housing. Increased traffic through the Bayou Road entrance may trigger the need for intersection improvements and coordination with the City of Pasadena.

The master plan introduces two additional entrances to access new parking areas that will be required over time. These will include a new access from Middlebrook Drive, west of the existing Entrance 3, and another entrance from Space Center Boulevard. The Middlebrook Drive entrance will provide access to the proposed parking along the campus's northern edge. Creation of this entrance will require coordination with the City of Pasadena to break the existing median and introduce a left turn lane into the campus. The Space Center Boulevard entrance will provide access to the parking area adjacent to the south campus recreation fields and upper-division housing. Vehicles using this entrance can avoid driving through the campus from Bay Area Boulevard to access these areas.

The master plan preserves the campus road network but introduces several new access drives to new parking areas, particularly in the south portion of the campus. The parking allocation strategy is designed to distribute vehicular traffic more evenly among entrances and avoid overburdening the University Drive entrance. Keeping vehicular traffic to the edges of campus and reducing travel across the bayou will enhance the pedestrian character at the center of campus.



▲ Figure 34: Access and Streets

Bicycle and Pedestrian Circulation

The master plan establishes a primary pedestrian and bicycle corridor between the north and south campus cores to improve overall connectivity through the campus. The corridor will extend through the Campus Mall and will be supported through a system of landscape pathways that connect the mall to other areas of the campus. The west side of the mall will contain the primary north-south bicycle route, and the east side will serve as the primary pedestrian route, potentially lined with shade structures for outdoor comfort.

The master plan also introduces a multipurpose pathway next to University Drive to separate pedestrian and bicycle circulation from vehicle traffic. The pathway will include a separated bridge crossing over the bayou. A bicycle path will be introduced along Bayou Road to encourage and accommodate bicycle travel on this important circulation route. Where the path meets Bayou Road, a separated and raised crosswalk area will ensure a safer street crossing for pedestrians and bicycles traveling along the Campus Mall.

The university should consider introducing bicycle share stations at key locations along the mall to encourage bicycle travel through the campus as an alternative to driving.

Secondary pedestrian pathways will connect campus destinations with the primary pedestrian and bicycle corridor through the mall. Tree-lined paths will be integrated into parking areas to provide a more comfortable walking experience during hotter months of the year.

A robust nature trail system will augment the existing campus trail system. The trails can be integrated with the Harris County hike and bike trail that is proposed to run along the bayou through the UHCL campus. Since the nature trails are routed through wetlands, boardwalks and lookout platforms may be integrated to access marshy areas.



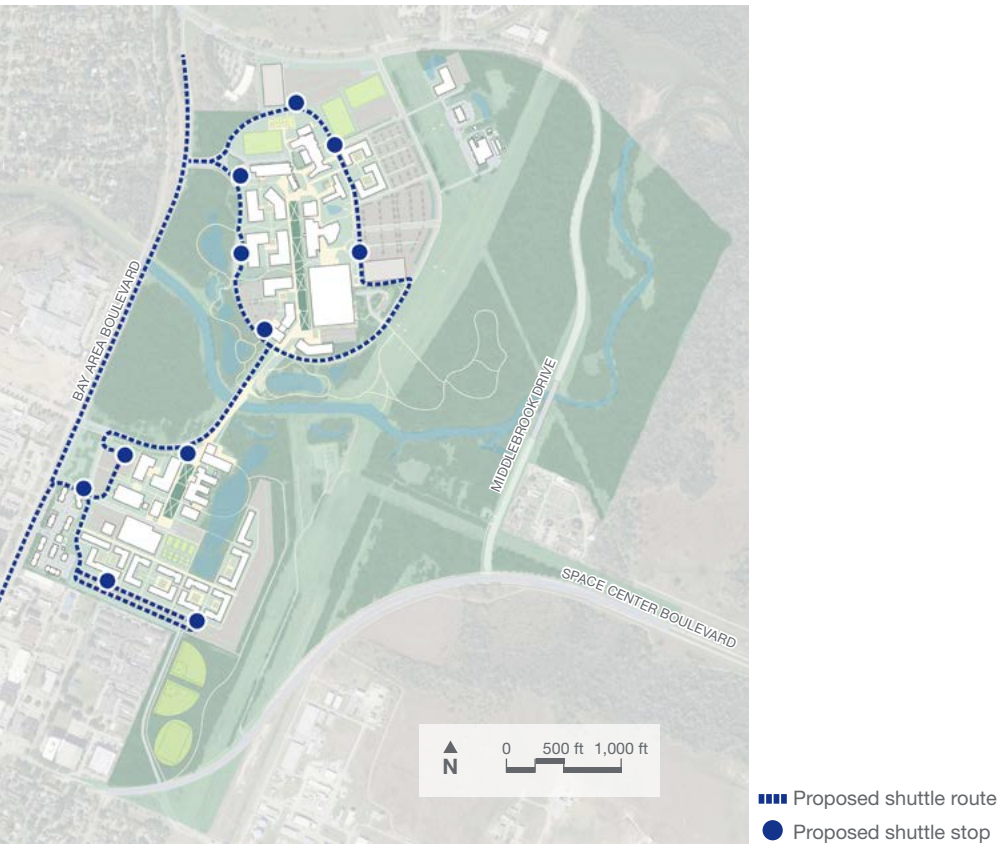
▲ Figure 35: Bicycle and Pedestrian Circulation

- Bicycle route
- Primary pedestrian path
- Secondary pedestrian path
- ... Nature trail

Shuttle and Transit

While UHCL is not currently served by convenient public transit, bus service may become feasible as enrollment grows and more students live on campus. The university is encouraged to coordinate with METRO to explore options for future transit service.

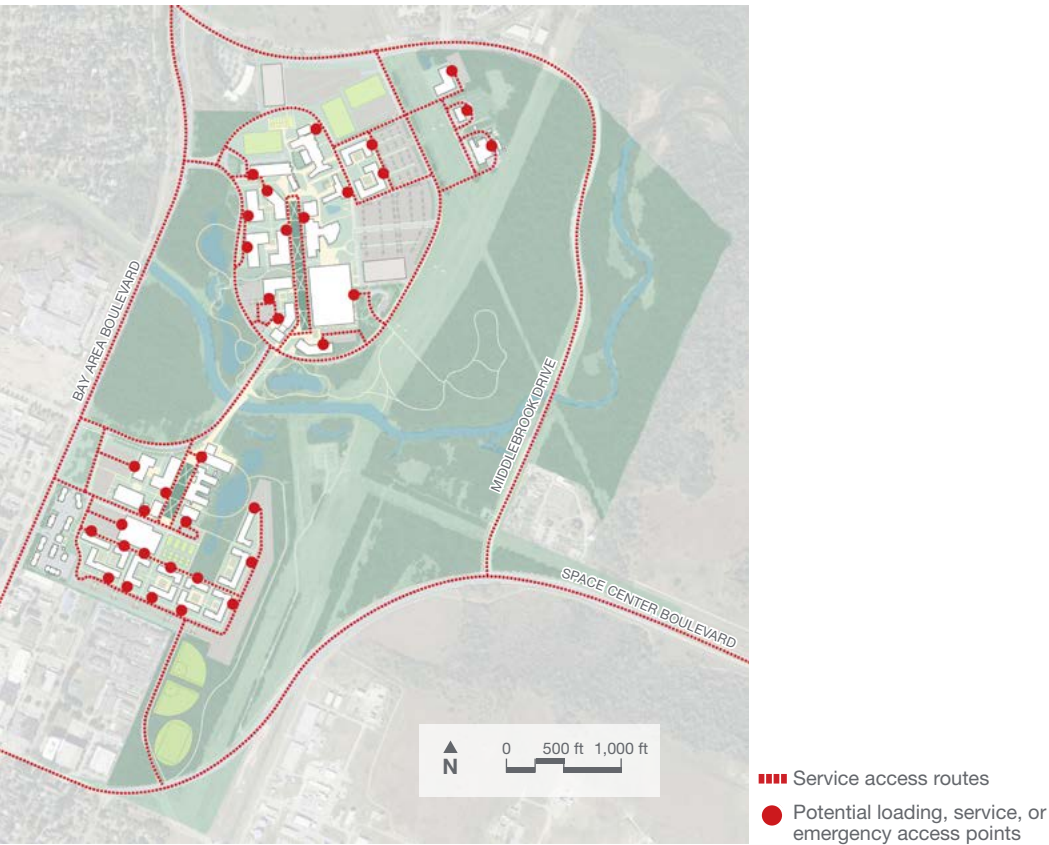
UHCL’s shuttle service will become increasingly important as the university grows, and as parking is sited in more peripheral areas of the campus. Enhanced shuttle service can also provide access to the METRO park-and-ride system, offering an alternative to travel by private vehicle. A proposed shuttle route is shown in Figure 36.



▲ Figure 36: Proposed Shuttle Route

Service, Loading, and Emergency Access

Campus logistics are an important planning consideration. While only a few buildings will require a dedicated loading dock, each building will need nearby service and loading, as well as emergency vehicle access. Most buildings will be accessed via service drives or adjacent parking areas. Wherever possible, adjacent buildings should share a loading area to reduce the need for each individual building to have its own. Loading and service should be accommodated away from pedestrian paths as much as possible. Pedestrian paths and plaza areas within the mall will be designed to accommodate the weight of emergency vehicles, where necessary.



▲ Figure 37: Service, Loading, and Emergency Access

Parking

An estimated 5,400 parking spaces will be needed to support the future growth of the campus, based on current travel patterns and parking ratios. While parking will be accommodated in surface lots to the extent possible, parking structures will eventually be needed to satisfy overall demand. The master plan sites the structures at the north edge of campus off Middlebrook Drive and to the east of the Bayou Building, where they will provide convenient access to key campus destinations. Both structures will contain five levels of parking.

Over the long term, alternative transportation options may reduce the number of parking spaces needed for growth. Strategies to manage or reduce parking demand include the following:

- Provide safe and inviting bicycle and pedestrian routes to promote alternatives to driving within the campus
- Increase on-campus housing and implement policies to limit students bringing cars to campus
- Provide reliable and convenient shuttle service, especially to major parking areas and campus destinations
- Introduce adequate pick-up and drop-off space for ride-hailing vehicles or taxis
- Coordinate transit service with METRO and provide free or reduced-cost transit passes to the campus community
- Work with a car sharing company to provide cars on campus, especially for students living in campus housing who may not have their own vehicles
- Increase parking fees, especially for premium locations or during peak times
- Create incentives for carpooling, such as priority parking areas, decreased parking fees, or METRO vanpool sign-ups
- Implement flexible work schedules for staff, including options to work from home



▲ Figure 38: Parking

Approximate parking capacity
Surface parking lot
Structured parking

Infrastructure

Stormwater

Stormwater on the UHCL campus flows toward the bayou, either through underground pipes, as surface drainage, or through swales. Detention areas provide places for water to collect before draining into the bayou. Applying best management practices, new detention areas will be designed to provide habitat for local species, enhance natural systems, and filter contaminants before water enters the bayou.

The master plan integrates stormwater management elements throughout the campus landscape to mitigate flooding, while adding aesthetic, microclimate comfort, and ecological value to the campus. Stormwater gardens can be integrated into panels of the Campus Mall and in building courtyards and landscape frontage areas. All multipurpose recreation fields will also serve as detention areas and will accommodate stormwater during extreme storms.

The master plan also introduces stormwater management swales within major pedestrian circulation routes through large surface parking lots. Swales will include planted islands that filter, convey, and absorb stormwater without the need for extensive underground infrastructure. These strategies will improve water quality, mitigate flooding, and reduce the heat island effect of large surface parking lots.



▲ Figure 39: Stormwater Infrastructure

- Detention area
- Swale
- Watershed
- ➔ Flow direction

Water Infrastructure

Potable water and sanitary sewer lines will be extended to reach each building. A potable water line will connect an existing water line near the Bayou Building to the existing water line in Middlebrook Drive, creating a loop. This loop will be located under the Campus Mall and extend through the planned new student housing to Bayou Road.

Sanitary sewer lines will also extend through the Campus Mall to serve proposed buildings located along the mall. Additional sanitary sewer connections will be needed for the proposed housing within the north and south areas of the campus and the proposed recreation center in the south area of campus.

Reclaimed water from the Clear Lake Water Authority will continue to be used for irrigation on the UHCL campus. A new irrigation line will connect to the line located at Bayou Road to extend north through the Campus Mall.



▲ Figure 40: Water Infrastructure

- | | |
|------------------------|-------------------------|
| Existing potable water | Existing sanitary sewer |
| Proposed potable water | Proposed sanitary sewer |
| Existing irrigation | |
| Proposed irrigation | |

Energy Infrastructure

Chilled water from a central utility plant (CUP) is the most efficient way to cool campus buildings. The existing CUP north of the SSCB will serve new buildings within the north area of the campus with a chilled water line extending east to the lower-division housing and south through the Campus Mall to the proposed buildings along the mall. On the south side of campus, a new CUP will be constructed to replace the individual systems within the Delta and Arbor Buildings and support future development in this area of the campus. The CUP will be located just west of the future recreation center, with lines connecting to each new building.

Electrical service to the campus is supplied by Centerpoint Energy, with overhead lines through the utility corridor on the north side of campus and from Bay Area Boulevard on the south side of campus. Connections from overhead lines transition to underground lines to serve individual buildings. Coordination with Centerpoint Energy will be needed to convert existing overhead lines serving the Arbor and Delta Buildings to underground connections. Underground lines are more resilient as they are less vulnerable to damage from high winds or storms. They also eliminate the negative visual impact of utility poles and overhead lines.



▲ Figure 41: Energy Infrastructure



5.0 CAMPUS
DISTRICTS



▲ Figure 42: Campus Districts

Campus Districts

The Campus Mall will be a signature new open space that integrates the north and south cores of the UHCL campus. The mall will consist of three principal districts, each with its distinct character:

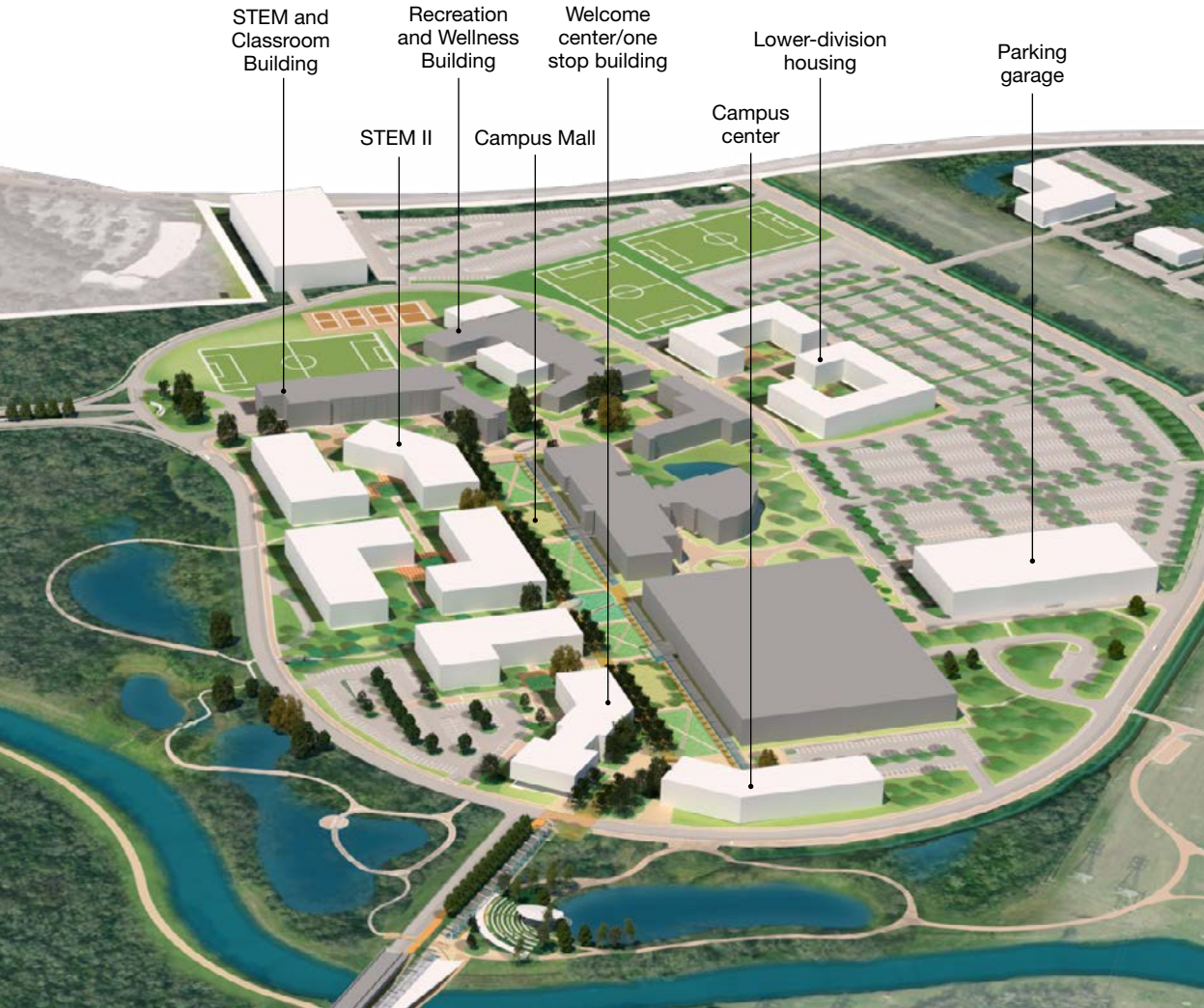
- North Mall
- Bayou Crossing
- South Mall

The districts are illustrated in Figure 42.

North Mall

The North Mall district, located north of the bayou, will be the most active area of the UHCL campus and the focus of undergraduate student life. The mall will form the primary organizing element of this district, bringing together academic and campus life uses, including the existing Bayou Building and SSCB, as well as the new STEM and Classroom Building and Recreation and Wellness Building. Major student life destinations, including the new welcome center/one stop building and campus center buildings, will be located in this area of the campus, southwest of the Bayou Building.

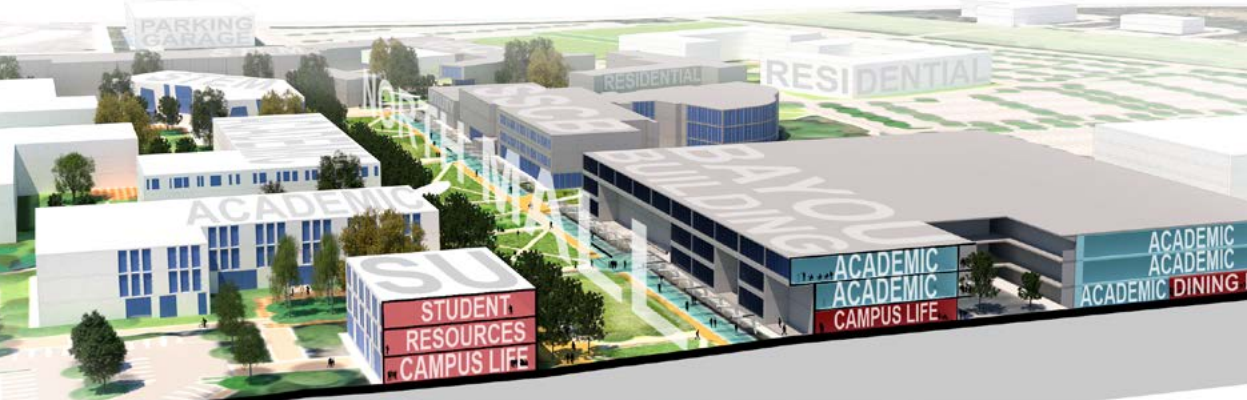
The North Mall district will also contain approximately one thousand beds of lower-division student housing and the necessary amenities to support residential students such as dining, recreation, and other campus life uses.



▲ Figure 43: North Mall Bird’s Eye View



▲ Figure 44: North Mall District Plan



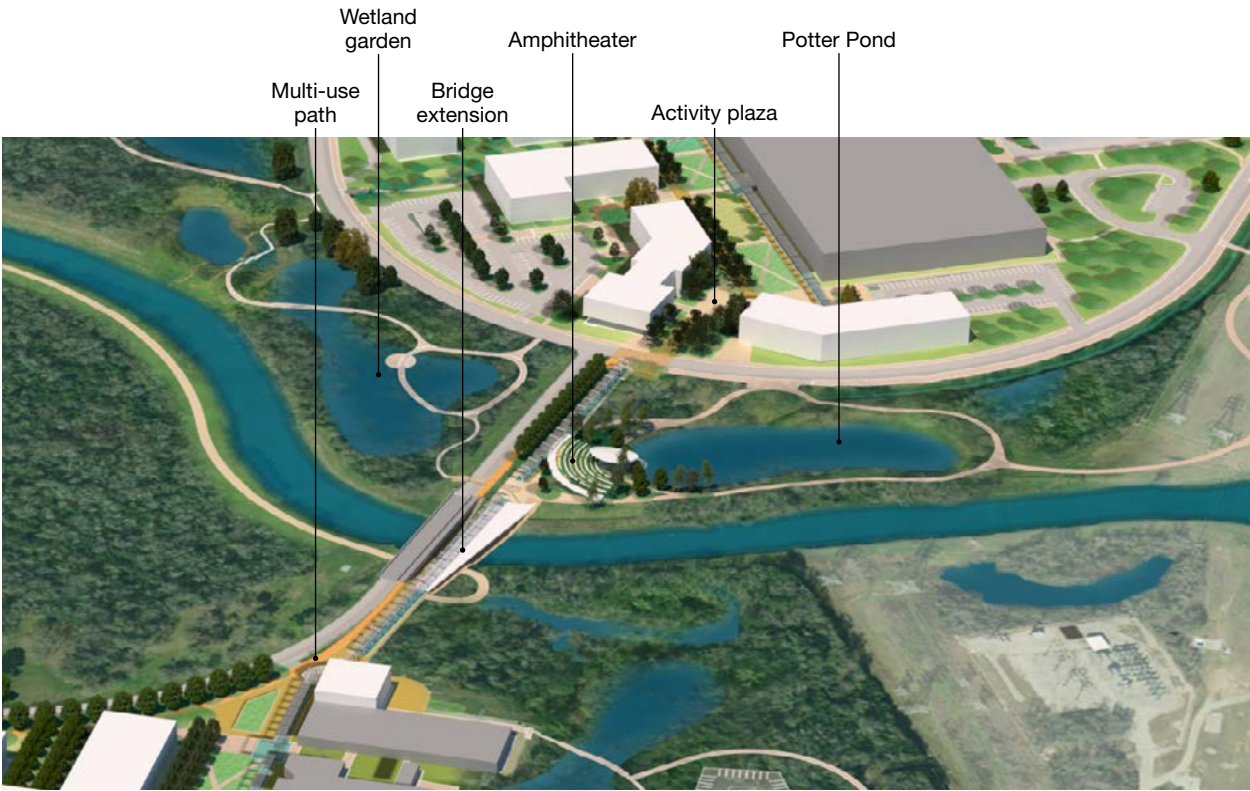
▲ Figure 45: North Mall Section

Bayou Crossing

The Bayou Crossing district is located between the north and south campus cores. It is formed by the nexus of the Campus Mall and Horsepen Bayou landscapes. The University Drive bridge, which crosses the bayou, will be expanded with a boardwalk to separate pedestrian from vehicular movements and to provide an overlook area. Relocating pedestrian travel to the boardwalk will facilitate the replacement of pedestrian sidewalks with a two-way bicycle lane over the bridge.

Pat and Wendell Wilson Park and Potter Pond are important features of the campus landscape that are well used and enjoyed by the UHCL community. The master plan proposes several improvements to these areas to further enhance their value, including additional paths and an amphitheater that will be integrated into the landscape. The amphitheater, which will include an overlook and shade structure, may be used for events or as a quiet retreat. The view over Potter Pond and the bayou will be an impressive feature at the center of the campus that will also enhance the arrival experience from University Drive.

The area next to Horsepen Bayou will need to accommodate significant stormwater detention facilities as the campus is developed over time. The detention areas will be integrated into a wetland landscape with pathways, overlooks, and views into the landscape setting. When designing this landscape, the university can collaborate with the Environmental Institute of Houston to identify opportunities to improve habitat for local species and support campus wildlife.



▲ Figure 46: Bayou Crossing Bird's Eye View



▲ Figure 47: Bayou Crossing District Plan

South Mall

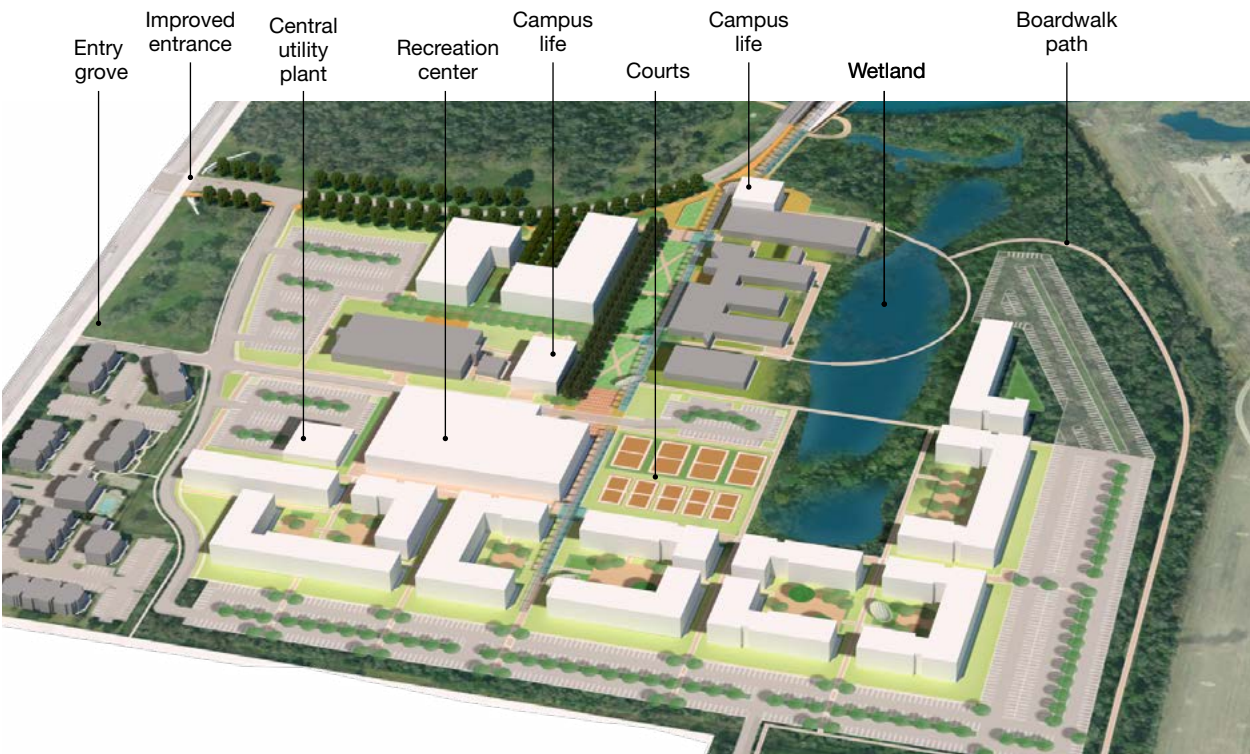
The South Mall district will consist of a smaller academic core, together with most of the university's housing and recreation uses. It includes the existing Arbor and Delta Buildings, as well as several planned new buildings: two academic buildings, two small campus life buildings, a recreation building, a central utility plant, and approximately 2,500 beds of upper-division housing.

The academic and campus life uses will be organized around the mall. To support campus life in this area of the campus, an addition is proposed to the Arbor Building, and a new campus life building is proposed between the recreation center and the academic building along the mall. The addition to the Arbor Building could include a café and gallery space to display the artwork produced by students in the adjacent studios. The space could include an attached outdoor patio with views over the bayou.

The campus life building on the mall could include additional dining options, lounges, collaboration areas, and other campus life uses to supplement the campus center in the North Mall district.

The proposed recreation center will become necessary as campus enrollment grows over time. The recreation center will supplement the recreation, wellness, and fitness uses in the North Mall district; it may also house uses with larger footprints, such as competition courts or a pool. Outdoor play courts will be located immediately adjacent to the recreation center, and recreation fields will be located further south, toward Space Center Boulevard.

A new upper-division housing neighborhood will be located in the southerly portion of the South Mall district. Courtyards and paths will connect the buildings and create a sense of community. If needed over the long term, additional housing will be provided to the east of the wetland area, at the east edge of the district. In addition to stormwater management, the wetland landscape will include paths and boardwalks with access to the natural setting, which provide convenient pedestrian or bicycle connections to the academic core.



▲ Figure 48: South Mall Bird's Eye View



▲ Figure 49: South Mall District Plan



6.0 DESIGN GUIDELINES

Design Guidelines

1.0 Campus Development Guidelines

Design Principles

Campus development should be informed by the following design principles:

- Establish a continuous, linear open space—the Campus Mall—to connect the north and south cores of campus.
- Concentrate academic uses along the Campus Mall.
- Organize campus development and circulation to prioritize comfortable pedestrian movement.
- Create and preserve important view corridors down the mall to Horsepen Bayou, and to other surrounding natural areas.
- Locate key campus life functions at the nexus of the bayou and Campus Mall to provide high visibility and accessibility to the entire campus.
- Site and configure buildings to create “outdoor rooms” to provide intimate courtyards to supplement the larger, more active Campus Mall.

Building Orientation and Placement

Buildings should be oriented when possible with the long axis east-west to maximize northern and southern exposures, which are optimal for solar orientation. Buildings or building segments may occasionally need to be oriented north-south to achieve urban design objectives, such as framing an open space or pedestrian area, but this orientation should be avoided as much as possible. In these cases, façade treatments and shading devices should be used to mitigate solar gain.

Academic and campus life buildings should be organized to frame and define the Campus Mall. In addition, buildings should be designed to shape smaller-scale open spaces, such as courtyards and plazas.

Height and Massing

Building heights should balance the need to develop at a relatively high density while maintaining a pedestrian scale with well-defined open spaces. Minimizing the development footprint will help to preserve a compact campus and avoid excessive disturbance of natural areas. For these reasons, buildings should be primarily three or four stories.

Academic and campus life buildings should be three stories to maintain the ease of vertical circulation. Residential buildings should average four stories, with the potential for some variation in building height. Recreation buildings may need to be two stories because of the programmatic needs of recreational space types, though portions of these buildings may be higher.



▲ Figure 50: Proposed Campus Massing —North Mall



▲ Figure 51: Proposed Campus Massing —South Mall

Ground Level Treatment

Active edges are building edges along primary pedestrian routes and key open spaces such as the Campus Mall. These are ground floor spaces where active and public uses should be located. Transparent materials should be used to create visual connections between building interiors and exteriors.

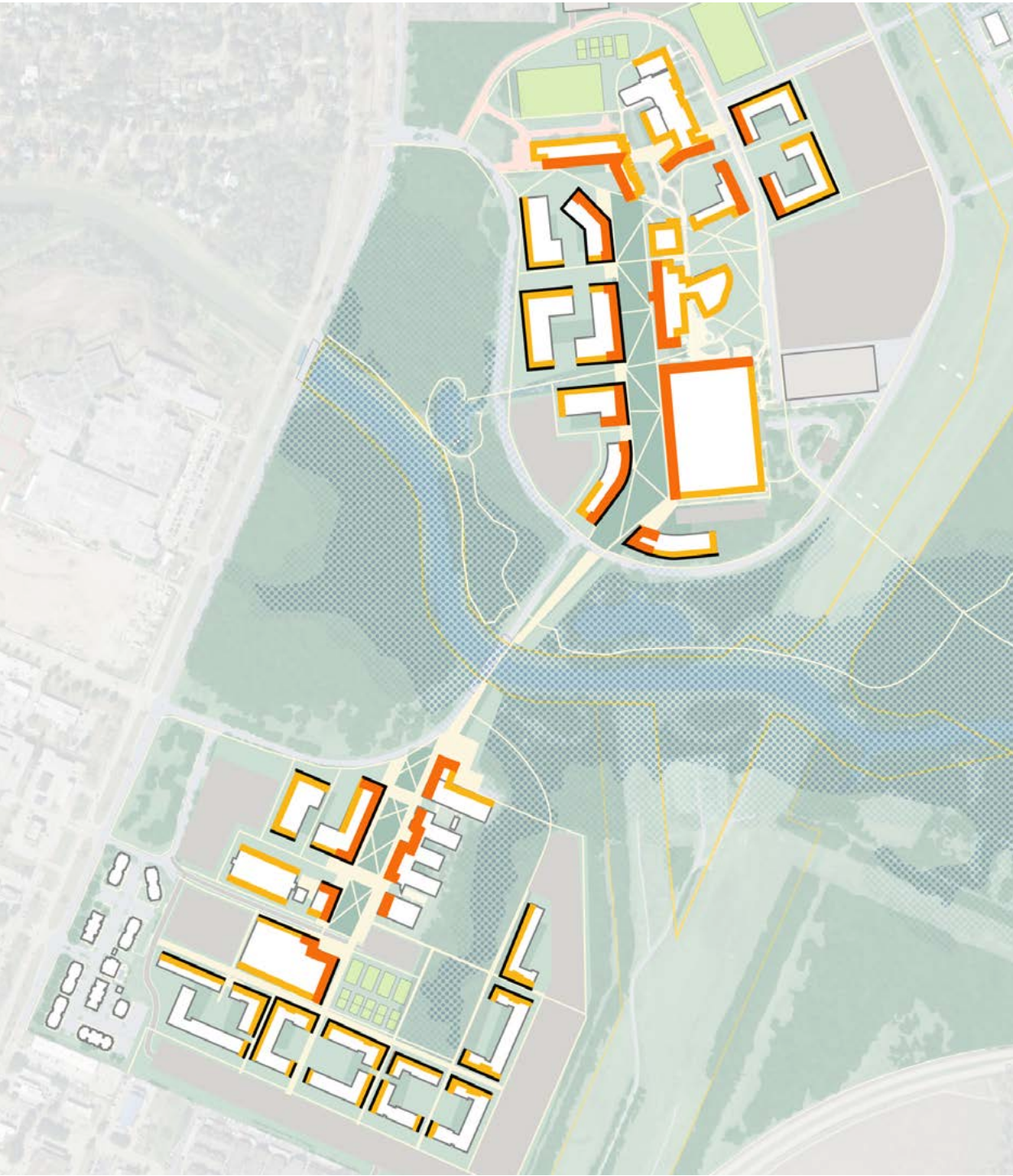
Contributing edges are building edges that shape key open spaces and pedestrian routes without the high degree of permeability between the indoor and outdoor space that active edges have. These ground floors should also have some transparency into indoor spaces, as well as human-scaled and interesting façade and landscape treatments.

Setbacks and Build-to Lines

The plan introduces a twenty-foot building setback from streets and parking lots to allow for a landscape buffer and pedestrian circulation. Where the setback includes swales or bio-retention elements, a thirty-five-foot setback is recommended.

Build-to lines along the Campus Mall maintain an approximate width of 150 feet for the mall landscape. Build-to lines also define key pedestrian pathways, open spaces, and key building clusters.

To promote human-scaled and interesting building edges, unarticulated façades should extend no more than eighty feet before they are interrupted with façade changes such as a setback, window, or doorway.



▲ Figure 52: Active Edges and Build-to Lines

- Build-to line
- Active edge
- Contributing edge

Site Development Impact

Campus development must occur with consideration for the ecological and hydrological context of the site. Development should be compact to minimize negative impacts on the natural environment. Low-impact development techniques, such as green infrastructure, should be applied where cost effective, to minimize impacts on campus hydrology.

To the extent possible, major construction and site-disturbing activities should be scheduled to protect sensitive habitats, taking into consideration factors such as breeding and nesting seasons.

Sustainability and Resiliency

The UHCL campus should be designed and developed with a view to the long-term resilience and stewardship of the university's land resources.

Site utilities should be constructed with durable materials and designed to create redundancy, such as potable water and chilled water loops, which will avoid service interruptions and allow for future development.

Renewable energy resources should be explored, particularly solar energy. Photovoltaic panels may be installed on roofs, in ground arrays, or as parking shade structures. Local energy companies, research partners, and grants can help to implement this technology.

Outdoor shading devices are encouraged on building elevations to mitigate solar gain, filter direct sunlight, create shade, and allow controlled natural light into buildings. Canopies and shading devices can extend over sidewalks or be free-standing to shade pedestrians.

To protect the campus against flooding and hurricane storm surge, development will avoid the 100-year floodplain and locate buildings with finished floor elevations at a minimum elevation of twenty-one feet above sea level for additional protection.



▲ Figure 53: Flooding as Measured During Hurricane Harvey, 2017

Flood area
(Within 16 feet
above sea level)

2.0 Architecture Guidelines

Design Principles

Campus development should abide by the following architecture design principles:

- Promote a simple and timeless design aesthetic.
- Employ sustainable architectural techniques for healthy and resilient buildings.
- Establish active ground floors and welcoming entries, particularly along key corridors and open spaces, through building program, transparency, and façade treatments.
- Respect and complement the natural environment of the campus.

Entrances

Primary building entrances should be oriented toward the primary pedestrian circulation routes, and secondary building entrances should open onto less public courtyard spaces and parking areas. Clear sightlines should be created between internal corridors and outdoor spaces. Lobbies should be welcoming, well lit with natural light, and contain clear signage.

Façades and Fenestration

Façade treatments should reflect the overall context and orientation of the district in which the building is located. Subject to solar orientation, at least 70 percent of the ground floor façades that face pedestrian paths and key open spaces should be transparent glass between the heights of three and seven feet.

Façades should be carefully designed to respond to their orientation and employ appropriate treatments to minimize heat gain. Where appropriate, internal building activities should be made visible through the use of glass to increase the sense of vibrancy and connection to the outdoors. Mirrored and darkly tinted glass is discouraged; if used, it must be authorized by the facility authority. Glass should be adequately shaded by architectural shading devices or by trees and landscape elements.



▲ Welcoming building entrance, Colorado State University



▲ Façade shade elements, Colorado State University

Covered Walkways

The master plan recommends options for covered pedestrian walkways in several areas, including the major north-south pedestrian axis of the mall. Shade structures should be visually light, elegant, and integrated with, or complementary to, building architecture. Overhead screening and shading structures may be used to shelter pedestrians and buildings from the sun and other elements. Shade structures should be constructed with permanent, durable materials that can withstand harsh climate conditions.

Shaded pedestrian walkways should create a strong sense of connection between indoor and outdoor environments and tie the district together through an integrated system of indoor and outdoor spaces.

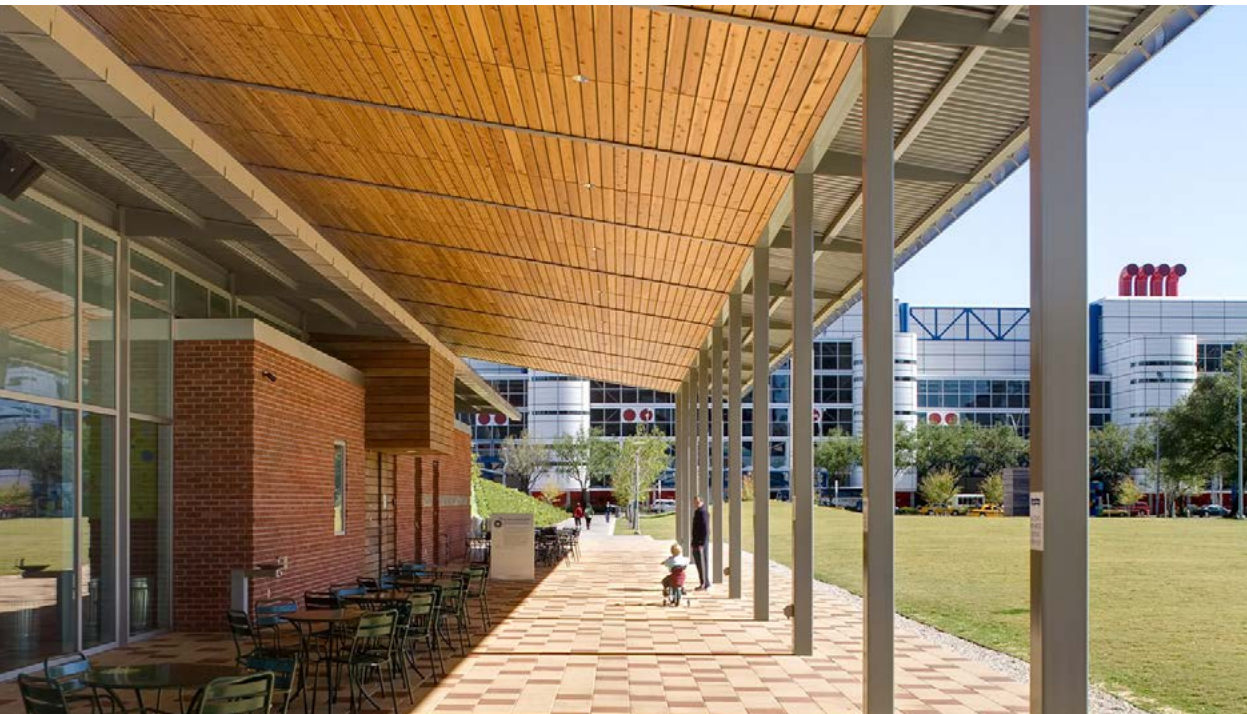
Roofs

Roof coverings should be light, neutral in tone, or reflective to reduce heat island effect and lower operations costs. Roof overhangs should be expressive and provide shade to building façades when the sun is directly overhead. In planning for new buildings, energy-saving and renewable energy options on rooftops should be explored. In accordance with Texas state requirements for roofs 10,000 square feet or greater, runoff from rooftops should be captured and reused or gradually released to natural treatment systems, if cost effective.

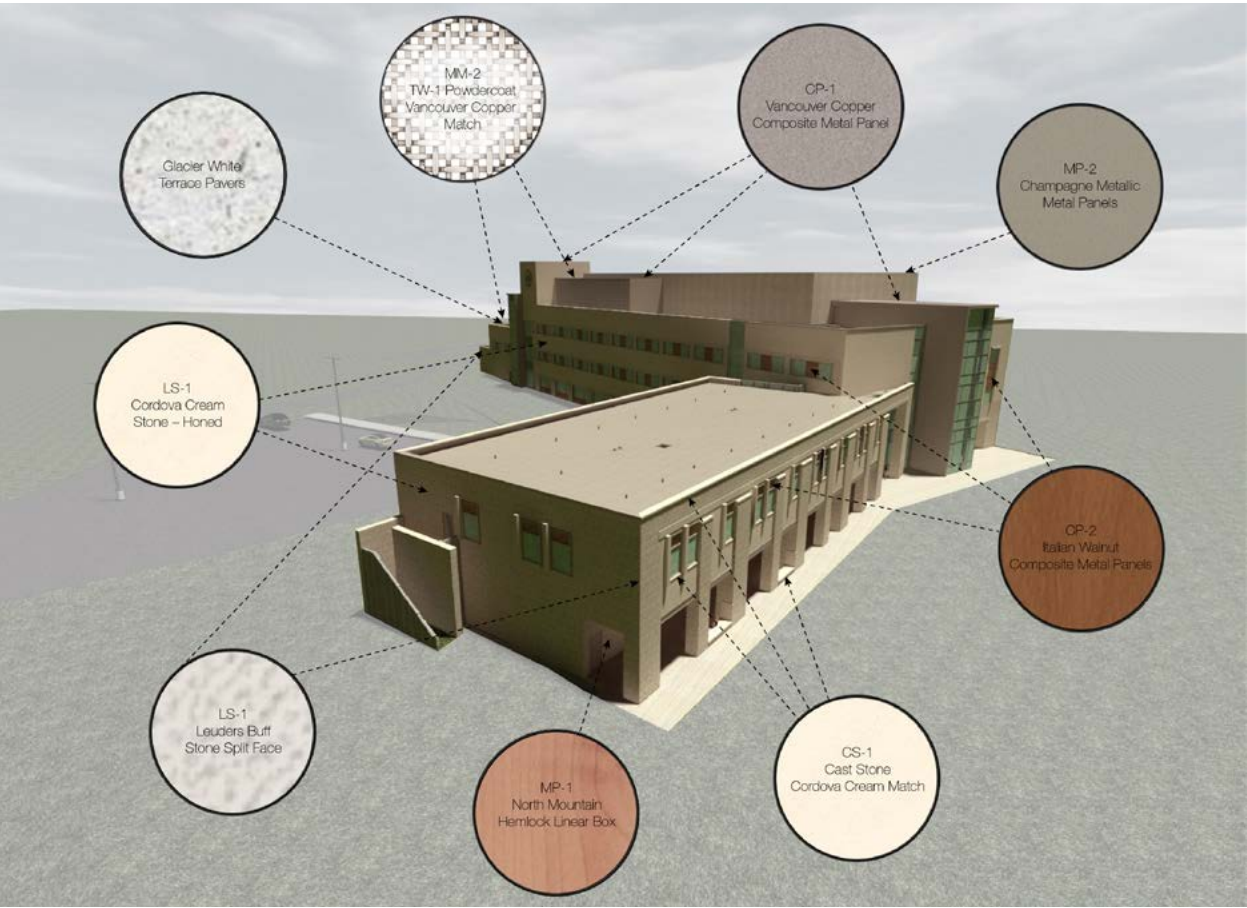
Building Materials

Locally sourced materials are preferred for all building purposes. Permitted materials include local stone, metal, and glass in accordance with the university's approved material and color palette. Mirrored and darkly tinted glass should be avoided and must be authorized by the facility authority. The use of tactile materials, such as wood, should be used selectively to lend interest and scale to elements such as entrances.

Buildings should be constructed of durable materials that can withstand many years of normal wear-and-tear, as well as extreme weather producing rain, wind, and flying debris.



▲ Covered walkway integrated with architecture, Discovery Green



▲ Building materials for the STEM and Classroom Building

Service and Mechanical Screening

Service buildings, such as central utility plants, should adhere to the simple, timeless aesthetic of the campus. Shade structures, textures, material changes, and other façade details should be used to make these buildings visual assets.

Where possible, buildings and landscape should be used to screen site infrastructure and equipment from view of major roads, pedestrian paths, and open spaces. Mechanical equipment should be concealed by plantings, architectural screens, or set back from view of adjacent properties, buildings, pedestrian walkways, open spaces, roads, or other public spaces. The visual and noise impacts of mechanical equipment should be minimized by locating equipment away from primary building entrances, pedestrian paths, and open spaces. All rooftop equipment should be painted or coated with an appropriate color to blend in with rooftop materials, consistent with the university's approved color palette.

Parking Structures

The master plan introduces two parking structures to accommodate the parking need attributable to campus growth. Parking structures will be four stories in height, with parking on the top level. It is recommended that if cost effective, shade structures, with or without solar panels, be included to shield top-level parking from the elements. Parking structure design should be compatible with adjacent building architecture and provide adequate visual screening of cars. Where parking structures face pedestrian spaces, façade treatments should be carefully designed and of high architectural quality.



▲ A green wall or interesting screen can obscure mechanical equipment or parking, Christ Church Cathedral

3.0 Landscape and Open Space Guidelines

Design Principles

Campus development should abide by the following landscape and open space design principles:

- Promote an attractive and ecologically functional campus landscape through native and context-sensitive landscape design.
- Create an interconnected network of different scales for campus open spaces—from large and iconic, to small and intimate.
- Establish a clear, contiguous, and, where practical, shaded pedestrian and bicycle network throughout the campus.
- Provide visual and physical access to the natural environment.
- Use green infrastructure techniques to collect, filter, and store stormwater run-off before discharging water to Horsepen Bayou.
- Maintain and create new opportunities for outdoor learning and research in the natural environment.

Campus Mall

The continuous, linear Campus Mall will be framed with shaded north-south pedestrian paths, using shade structures or allées of shade trees. The mall will establish a campus “main street” that clarifies circulation and concentrates activity.

Openness and visual connectivity will be emphasized across and along the mall. The landscape will be planted with shade trees and attractive native or drought-tolerant shrubs, perennials, and grasses.

The portion of the mall north of the Horsepen Bayou will be the primary iconic landscape of the campus where large campus gatherings, events, and informal recreation can occur. Large areas of lawn will provide gathering spaces and will be framed by denser plantings that will also direct circulation. The portion of the mall south of the bayou will extend the established open space character of the north.

Where the mall crosses Horsepen Bayou, the landscape changes from a large, contiguous campus lawn to a more natural and marshy landscape. Generous pedestrian pathways with continued shade along this walk will clarify the circulation and improve the experience of moving between the northern and southern portions of campus. A new bridge addition will be added to the existing vehicular crossing. This addition will accommodate both pedestrians and bicycles in a safe and pleasant environment. Opportunities to widen the crossing and provide locations for pedestrians to pause and appreciate views of the bayou should be prioritized. The edges of the bayou and new detention ponds should be softened with a natural edge to support this important regional ecological and hydrological system.

Boardwalks, paths, and seating areas will connect with a proposed amphitheater. The amphitheater and associated paths will take advantage of the site’s topography and existing vegetation. This area will provide access to natural landscapes, creating potential learning opportunities and space for a range of activities and gatherings away from the center of campus activity, from quiet reflection to small events.



▲ Figure 54: Campus Mall Section

Courtyards and Plazas

Smaller-scale intimate open spaces will complement and connect to the Campus Mall. Courtyards and plazas will contain shaded seating opportunities for outdoor dining, working, and resting. Seating areas within the plazas and courtyards should be scaled to support a range of activities, from a single student studying or eating, to small groups. They will consist of appropriately scaled paved areas for outdoor gathering adjacent to major building entrances, as well as landscape areas planted with native plant material, shrubs, and trees. Building façades framing courtyards and plazas should be as transparent as possible to encourage the visual connection between indoor and outdoor environments. These smaller scale open spaces may be designed to collect and convey stormwater to wetland detention areas or to recycle and display stormwater in basins as a visual and educational amenity. Courtyard paving materials may include permeable concrete, permeable pavers, local stone, and other sustainable, durable materials.



▲ Courtyards and plazas create gathering spaces and landscapes that form the heart of the campus. Christ Church Cathedral (left) and Manassas Park Elementary School, Siteworks (right)

Natural Areas and Buffers

A low-maintenance, native forested wetland should be maintained and preserved in the undeveloped areas of the campus. Where possible, habitat for native species should be protected by maintaining existing forest and wetland areas. Sensitively placed recreation trails will be provided through natural areas to allow people to engage with the natural landscape, while minimizing negative habitat impact.

Development, paths, and infrastructure should be located to maintain key, existing drainage patterns.

To the extent possible, a 100-foot-wide north-south wildlife corridor of forest cover should be maintained along the west side of the utility easement south of the bayou. This forested buffer will allow local species to move through the corridor to access essential habitat resources along the bayou.

Naturalistic tree plantings should be concentrated along the perimeter of the site to enhance natural ecosystems, create a green backdrop for campus views, and screen service areas.



▲ Paths can be integrated into natural buffers to make these natural areas more accessible. (Buffalo Bayou)

Paths and Trails

Pedestrian walkways along the mall should be a minimum of twenty feet wide and reinforced to support emergency vehicles, while other walkways not rated for vehicles should be a minimum of ten feet wide. Where feasible, paths should provide weather protection with shade trees, building elements, or shade structures. Shade structures should be constructed with permanent, durable materials that can withstand harsh climate conditions.

Plantings along pedestrian paths should include native, adaptive, and locally appropriate plant material, shrubs, and trees.

Primary paths off vehicular roads should be designed to accommodate both pedestrians and bicycles, where appropriate, with careful attention to avoid conflicts between bicycles and pedestrians. Where space allows, pedestrian and bicycle circulation should be separated. Bicycle racks should be provided on paved surfaces adjacent to building and parking structure entrances, contiguous to walks or plazas.

Nature trails may be unpaved but should be maintained to allow safe passage. Where practical, decomposed granite should be used for higher traffic paths and trails through natural areas.

Streets and Driveways

University Drive will serve as the primary visitor entrance, with a formal allée of trees framing views towards Horsepen Bayou when traveling from the University Drive entrance. Campus intersections at the entrances as well as at University Drive and Bayou Road should be improved for safety and to accommodate increased traffic with campus growth. This will include clarifying turn lanes and signage, as well as providing pedestrian and bicycle infrastructure.

New driveways will be required in several areas of the campus to provide access to buildings for service and loading. To ensure that pedestrians have priority in all areas of the campus, sidewalks should be provided along driveways and through parking lots to connect to major pedestrian destinations. Driveways should be as narrow as possible, while still accommodating service and emergency vehicle movements and the loading requirements of each building. This economy in paving will reduce heat island effects, enhance the pedestrian environment, minimize impermeable surfaces, and reduce cost.

Shuttle drop-off locations should be placed at major building entrances and at the termini of primary pedestrian paths, such as key destinations along the mall and University Drive.



▲ Simple gravel trail through a natural area, Northern Central Railroad Trail



▲ Complete street with space for vehicles, bicycles, pedestrians, and vegetation, 28th Avenue Connector in Nashville (Hawkins Partners)

Surface Parking Lots

Surface parking lots are a major source of heat island effect and contaminated runoff. They can also detract from the visual quality of the campus environment and create uncomfortable pedestrian environments. To mitigate these ecological and experiential effects, parking lots should incorporate generous landscape features and pedestrian pathways. Where possible, vegetated landscape swales should be integrated to collect, filter, temporarily store, and convey stormwater. Deciduous and evergreen (including live oak) trees help to shade parking lots and improve pedestrian comfort. A goal of approximately fifty square feet of landscape should be provided for every twelve parking spaces. Parking rows should have landscaped islands a minimum of every twelve spaces. The landscaped areas should maximize the amount of shade provided for paved surfaces. Pedestrian pathways should be shaded and well lit with clear visibility to create well defined, comfortable, and safe routes.

Stormwater Management

Low-impact development (LID) techniques should be used at both the individual site and overall campus scales to provide an integrated approach to stormwater management. Landscape elements such as bio-swales and rain gardens designed to store and treat the first one inch of rainfall runoff and provide stormwater conveyance should be integrated throughout the campus. This will help to reduce flooding, runoff contaminants, and the size of required downstream stormwater pipes and swales. LID stormwater features should be located as close to roof and pavement runoff sources as possible.

The UHCL campus must include the required detention volume areas negotiated with the Clear Lake Water Authority or City of Pearland, depending on the campus location. Some of the detention volume area can be provided with LID landscape elements such as bio-swales, with the remaining requirement incorporated into naturalized ponds with wetland features and open water, which improve water quality and habitat value.



▲ Parking lot with vegetated rain gardens and shade trees, providing stormwater managment, shade, and visual amentities.



▲ The Wetlands Area on the UHCL campus is a good example of stormwater management that increases habitat and educational value.

Plant Palette

Low-maintenance plant material appropriate to the region and microclimates within the site should be selected. The plant palette was derived from the Houston Chapter of the Native Plant Society of Texas recommended native plant list. Any additional plant material should be evaluated for performance before being specified for use on the UHCL campus.

Trees

Large Trees:

- Swamp chestnut oak, *Quercus michauxii*
- Live oak, *Quercus virginiana*
- Willow oak, *Quercus phellos*
- American elm, *Ulmus americana*
- White (upland) ash, *Fraxinus americana*
- Green (swamp) ash, *Fraxinum pennsylvanica*
- Drummond red maple, *Acer rubrum var. drummondii*
- Water oak, *Quercus nigra*
- River birch, *Betula nigra*
- Black gum, *Nyssa sylvatica*

Small Trees:

- Mexican plum, *Prunus mexicana*
- American holly, *Ilex opaca*
- American fringe tree, *Chionanthus virginicus*
- Laurel cherry, *Prunus laurocerasus*
- Eastern redbud, *Cercis canadensiscyriul*
- Green hawthorn, *Crataegus viridis*
- Carolina buckthorn, *Frangula caroliniana*
- Rusty black-haw viburnum, *Viburnum rufidulum*
- Farkleberry, *Vaccinium arboreum*
- Texas persimmon, *Diospyros texana*
- Sweetbay magnolia, *Magnolia virginiana*
- False indigo, *Amopha fruticosa*
- Snowbell, *Styrax americanus*

Shrubs

Large Shrubs:

- Southern wax myrtle, *Myrica cerifera*
- Deciduous holly, *Ilex verticillata*
- Yaupon holly, *Ilex vomitoria*
- Rough leaf dogwood, *Cornus drummondii*
- Elderberry, *Sambucus nigra*
- Flameleaf sumac, *Rhus lanceolata*
- Parsley hawthorn, *Crataegus marshallii*
- Ohio buckeye, *Aesculus glabra*
- Red buckeye, *Aesculus pavia*
- Buttonbush, *Cephalanthus occidentalis*
- Possumhaw holly, *Ilex decidua*
- Titi, *Cyrilla racemiflora*
- Possumhaw viburnum, *Viburnum nudum*

Small Shrubs:

- American beautyberry, *Callicarpa americana*
- Texas lantana, *Lantana urticoides*
- Arrowwood viburnum, *Viburnum dentatum*
- Virginia sweetspire, *Itea virginica*
- Red chokeberry, *Aronia abutifolia*
- Coralberry, *Symphoricarpos orbiculatus*
- Fragrant sumac, *Rhus aromatica*
- Narrow leaf yucca, *Yucca angustissima*
- Yellow sophora, *Sophora tomentosa*
- Dwarf palmetto, *Sabal minor*
- Salt marsh mallow, *Kosteletzkyia virginica*

Perennials

Sun:

- Purple coneflower, *Echinacea purpurea*
- Scarlet sage, *Salvia splendens*
- Maximilian sunflower, *Helianthus maximiliani*
- Kansas gayfeather, *Liatris pycnostachya Michx.*
- Eastern gamagrass, *Tripsacum dactyloides*
- Switchgrass, *Panicum virgatum*
- Indian grass, *Sorghastrum nutans*
- Pink evening primrose, *Oenothera rosea*
- Guara, *Gaura spp.*
- Giant coneflower, *Rudbeckia maxima*

Shade:

- Turk’s cap, *Lilium superbum*
- Strawberry bush, *Euonymus americanus*
- Cardinal flower, *Lobelia cardinalis*
- Farkleberry, *Vaccinium arboreum*
- Blue mistflower, *Conoclinium coelestinum*
- Big thicket hibiscus, *Hibiscus aculeatus*
- Gulf Coast penstemon, *Penstemon tenuis*
- Spring obedient plant, *Physostegia intermedia*
- Fall obedient plant, *Physostegia virginiana*
- Arkansas yucca, *Yucca arkansana*

Vines

Sun:

- Coral honeysuckle, *Lonicera sempervirens*
- Purple passion flower, *Passiflora incarnata*
- Carolina jessamine, *Gelsemium sempervirens*
- Carolina snailseed, *Cocculus carolinus*
- Globeberry, *Ibervillea lindheimeri*
- Common greenbrier, *Smilax rotundifolia*
- Mustang grape, *Vitis mustangensis*
- Prairie rose, *Rosa arkansana*
- Trumpet creeper, *Campsis radicans*
- Curly clematis, *Clematis crispa*

Shade

- Virginia creeper, *Parthenocissus quinquefolia*
- Cross vine, *Bignonia capreolata*
- Yellow passionflower, *Passiflora lutea*
- Saw greenbrier, *Smilax bona-nox*
- Wooly pipevine, *Aristolochia tomentosa*
- Texas Dutchman's pipe, *Aristolochia reticulata*
- Pitcher clematis, *Clematis pitcheri*
- Leather clematis, *Clematis viorna*
- Climbing milkweed, *Cynanchum laeve*
- Virginia Dutchman's pipe, *Aristolochia macrophylla*

Groundcover and Grasses

Sun:

- Frog fruit, *Phyla nodiflora*
- Knotroot bristlegrass, *Setaria parviflora*
- Gulf Coast muhly, *Muhlenbergia capillaris*
- Prairie verbena, *Glandularia bipinnatifida*
- Little bluestem, *Schizachyrium scoparium*
- Indian blanket, *Gaillardia pulchella*
- Winecup, *Callirhoe involucrata*
- Powderpuff, *Mimosa strigillosa*
- Creeping spotflower, *Acmella decumbens*
- Carolina ponysfoot, *Dichondra carolinensis*
- Big bluestem, *Andropogon gerardii*
- Sugarcane plumegrass, *Saccharum giganteum*
- Sideoats grama, *Bouteloua curtipendula*

Shade:

- Pigeonberry, *Rivina humilis*
- Coralberry, *Symphoricarpos orbiculatus*
- Wood fern, *Dryopteris expansa*
- Spiderwort, *Tradescantia virginiana*
- Cherokee sedge, *Carex cherokeensis*
- Horseherb, *Calyptocarpus vialis*
- Carolina elephant's foot, *Elephantopus carolinianus*
- Partidgeberry, *Mitchella repens*
- White avens, *Geum canadense*
- Missouri violet, *Viola sororia*
- Inland sea oats, *Chasmanthium latifolium*

4.0 Identity and Wayfinding Guidelines

Design Principles

Campus development should abide by the following identity and wayfinding design principles:

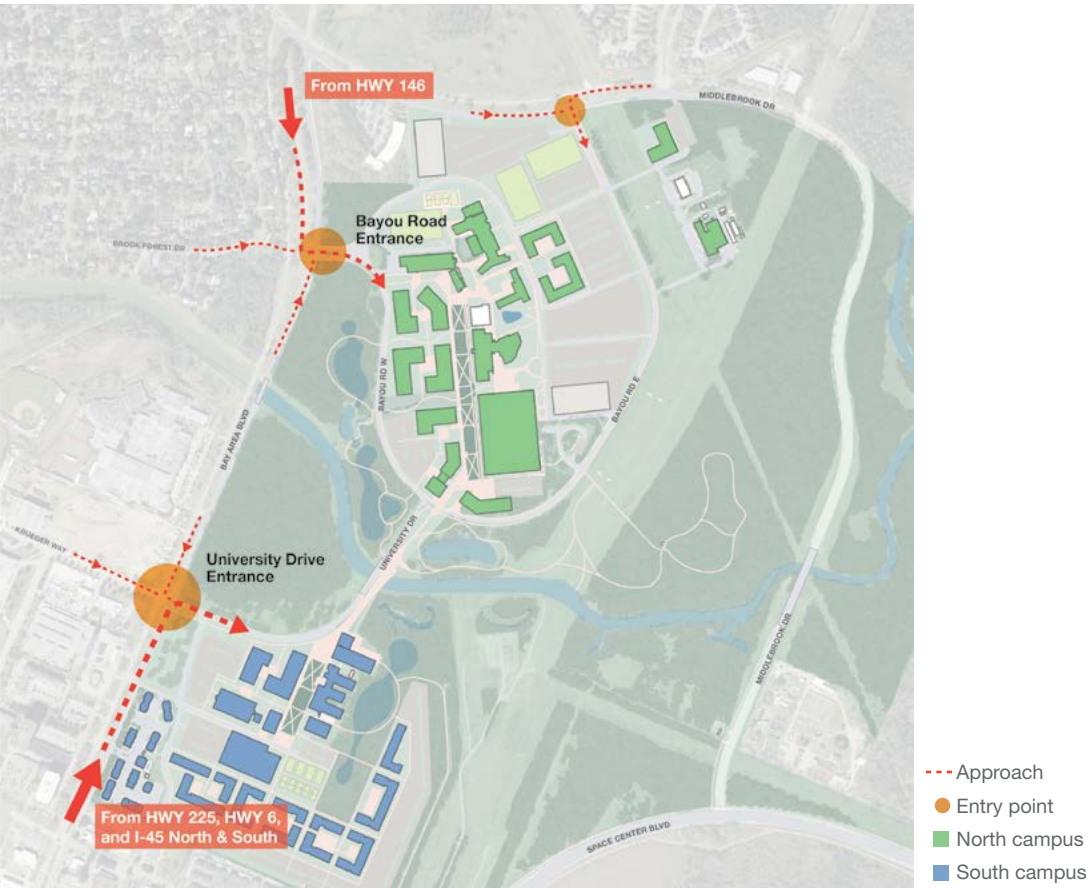
- Design the wayfinding system as a coordinated family of elements.
- Establish hierarchy and nomenclature for clarity and consistency.
- Provide useful information when and where it is needed.
- Create a memorable and iconic arrival experience to the campus that celebrates the unique qualities of the site, visually engaging Bay Area Boulevard to promote the university's presence.
- Promote campus legibility to all campus users—visitors, students, faculty, staff, and the broader community.
- Design for ease of implementation and maintenance.



▲ Signs do more than just provide information. They also help to establish a sense of place and campus pride.

Campus Entrances and Arrival Experience

Each campus entrance will have a different character. The University Drive entrance will serve as the more formal entrance, affording scenic views over Horsepen Bayou. The Bayou Drive entrance will serve as the day-to-day entry for commuters; it should be designed to enhance the identity of the university. The Middlebrook Drive entrance character will serve as a more functional entrance to the campus.



▲ Figure 55: Campus Entrance and Arrival Experience

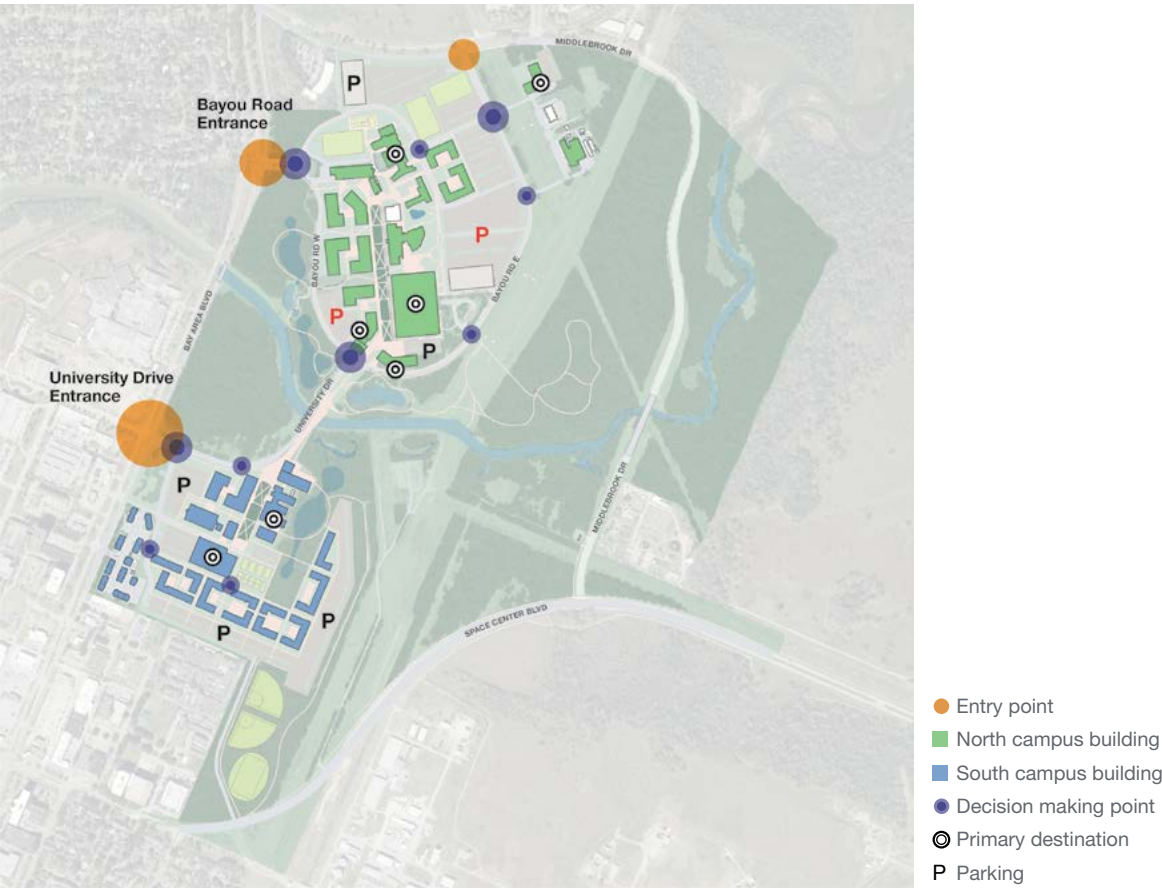
Internal Campus Wayfinding

Vehicular Wayfinding

Vehicular wayfinding will provide clear guidance at multiple decision-making points within the campus. It will clarify navigation to defined parking zones and reinforce visibility of primary campus destinations.

The content for vehicular directional signs will highlight visitor destinations and include simple, prioritized information about key parking areas, geographic locations, roadways, and visitor destinations. However, vehicular signs will not include individual building or donor-named locations to keep signs relevant over time.

Wayfinding should direct visitors to visitor parking areas associated with key visitor destinations.



▲ Figure 56: Vehicular Wayfinding

Pedestrian Wayfinding

Most pedestrian traffic originates from parking areas and on-campus housing, and in the future, shuttle or other transit stops. Pedestrian wayfinding will support clear orientation and direction for pedestrian travel, including foot traffic along the Campus Mall, and the connection of the north and south campus cores.

Pedestrian wayfinding can carry a variety of information with different levels of density, including quick reference directional cues, as well as detailed information for further study. Signage can include orientation maps and travel distances to major destinations, while also supporting recreation and exploration functions. Wayfinding measures should also support increased pedestrian safety at traffic intersections.



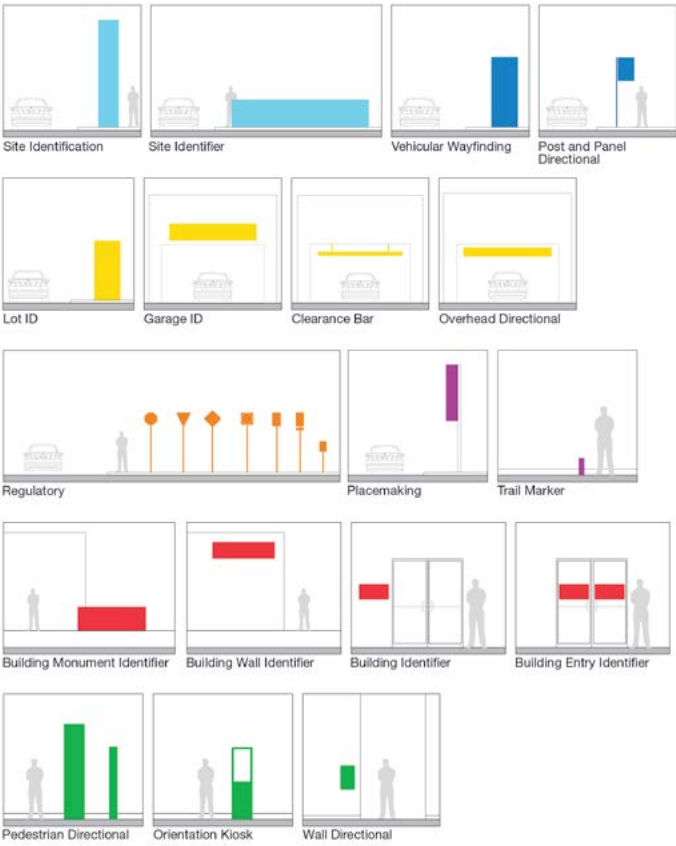
▲ Figure 57: Pedestrian Wayfinding

System Scale / Sign Type Families

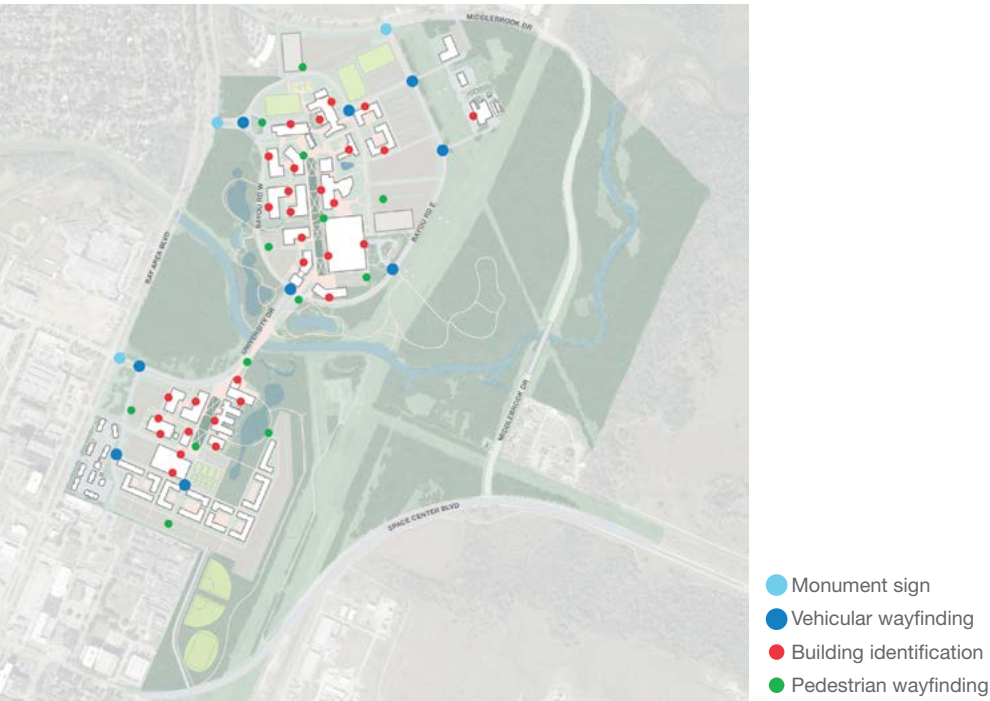
Multiple sign types make up a comprehensive system. The minimum program requirements include site identification, vehicular wayfinding, pedestrian wayfinding, and building identification signs. These sign types address the campus identity and arrival experience from surrounding roads, support top-level vehicular and pedestrian wayfinding needs, and highlight building identification.

A fully unified, integrated system defines the campus clearly and visibly, promoting a sense of place and the UHCL brand. An increase in human-scale elements extends the usability of pedestrian wayfinding and offers further clarity for new students and visitors. Unified regulatory signage makes the campus a defined zone, separate from the city surroundings. Placemaking signage and installations create a welcoming experience while enhancing campus identity.

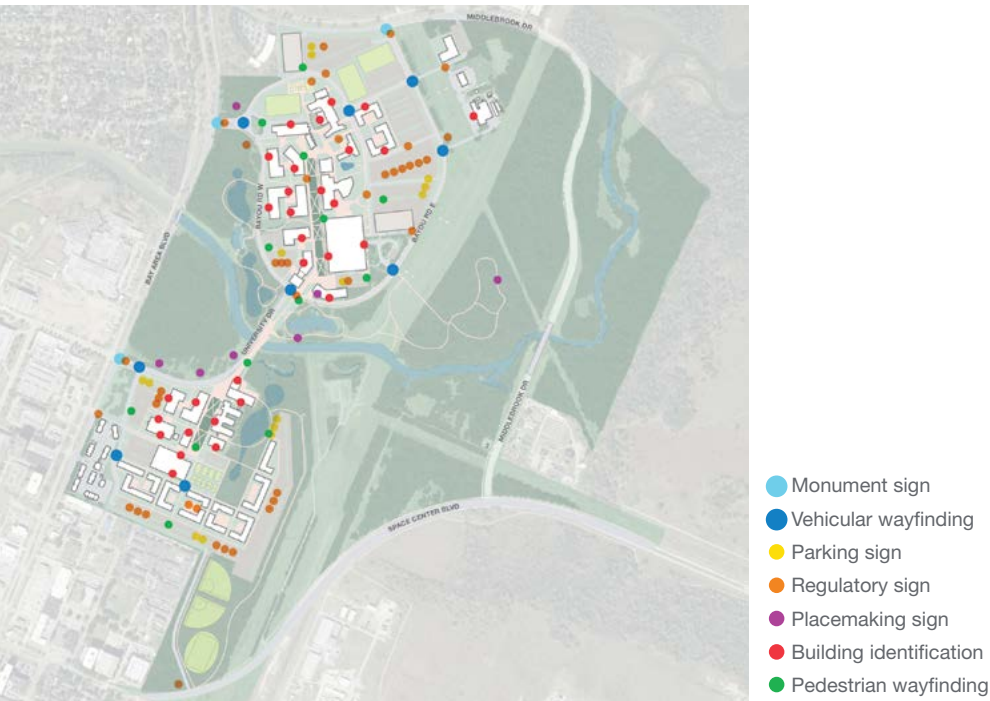
Buildings will include identification for both vehicular and pedestrian approaches. A variety of building-mounted and ground-mounted signage will respond appropriately to different contexts using material, aesthetics, and scale. Donor names and donor recognition will be standardized.



▲ Figure 58: Sign Types



▲ Figure 59: Potential Sign Locations (Minimum Requirements)



▲ Figure 60: Potential Sign Locations (Unified Integrated System)

Information Hierarchy and Nomenclature

Clear and consistent messaging should be used throughout all campus signage and wayfinding communications. Where possible, campus zones, entrances, parking areas, and public destinations should be given distinct names to improve orientation and better serve direction sets.

To allow for legibility at a distance, vehicular wayfinding should carry minimal information, with between three to five destinations per sign. Alternatively, pedestrian wayfinding can carry a variety of information with different levels of density. This may include quick reference directional cues, as well as detailed information to study.

Design Considerations

Wayfinding System

The wayfinding system should be created as a modular and scalable system that can be extended to many types of signs, while maintaining a consistent aesthetic. Size and proportions will be appropriate to sign use and placement. Signs should integrate with, rather than compete with, the landscape.

The system will use timeless materials that are durable and informed by the environment. The color palette used should be primarily neutral, relating to the campus architecture while complementing the natural setting. Color can help visually unify an area at a glance, and secondary colors can be used to highlight specific wayfinding components.

The system will use type styles that are readable and best suited for conveying information while considering use of the university's brand fonts. UHCL's identity and brand can be integrated into the signage elements, helping to define a sense of place expressed through color, font choice, logo, graphics, or form. Signage will also use a consistent icon system with easy-to-read information.

Entrance Signage

The University Drive entrance is the formal entrance for visitor arrival. Its signage will have a stately and timeless quality, utilizing a neutral palette and materials that share a common vocabulary with UHCL buildings.

The Bayou Road entrance will primarily be used by commuting students, faculty, and staff. This entrance will demonstrate university spirit to engage a younger user group, while sharing a similar aesthetic language with the University Drive entrance.



▲ Potential design inspiration for pedestrian wayfinding signage



▲ Potential design inspiration for University Drive entrance signage



▲ Potential design inspiration for Bayou Road entrance signage



7.0 IMPLEMENTATION

Implementation

The UHCL campus master plan will be implemented incrementally over time. Setting in place an implementation strategy will help the university allocate resources and adequately prepare for this transformation.

Preliminary Sequencing Concept

The following table describes three general phases that campus development may follow and an estimated time-frame for each phase. The phases will likely occur as several sub-phases.

▼ Table 7: Potential Campus Phasing Sequence

	TOTAL ESTIMATED STUDENT ENROLLMENT	NEW ACADEMIC AND CAMPUS LIFE (GSF)	NEW BEDS / TOTAL BEDS	NEW PARKING / TOTAL PARKING
Phase One (0–5 yrs)	10,200	278,000	800 / 1,360	560 / 3,770
Phase Two (5–10 yrs)	11,800	278,000	800 / 2,160	560 / 4,330
Phase Three (10–20 yrs)	15,000	556,000	1,590 / 3,750	1,110 / 5,440



▲ Figure 61: Potential Phasing

- Phase one (0–5 years)
- Phase two (5–10 years)
- Phase three (10–20 years)

Phase One

In the next five years, the first phase of campus development is likely to be concentrated along the Campus Mall to establish and reinforce this key campus corridor. The envisioned scenario for this phase includes the campus center, welcome center/one stop building, STEM II building, and another academic building. In addition, the projected enrollment growth will necessitate adding student housing. Therefore, a cluster of upper-division student housing is proposed south of the existing Delta Building.

A potential breakdown of this first phase is detailed on the following page.

Phase Two

The second phase of development is envisioned to be implemented in five to ten years. The Campus Mall edge will be completed with another academic building. Additional student housing is also proposed, with both lower-division student housing and a second additional upper-division housing cluster. This phase two scenario also establishes the southern portion of the mall, with an academic building and a campus life addition to the Arbor Building. This phase will also include the recreation center and adjacent central utility plant. Until this plant is constructed, all buildings will have stand-alone chillers. However, with the significant development occurring in the southern core in this phase, a new central utility plant will likely be necessary. Once the central utility plant is constructed, the stand-alone chillers may be removed in favor of more efficient district chilled water.

Phase Three

This phase three scenario, which may be implemented in ten to twenty years, will complete the proposed master plan projects. Because the university is expected to have a much larger residential population at that time, the remainder of the student housing will be included in this phase. One additional lower-division housing building and the balance of the upper-division housing are proposed to be completed in phase three. Three academic buildings will complete the west edge of the mall, on the north and south sides. The Recreation and Wellness Building will likely require small building additions to support additional demand with growth. Finally, a small campus life building will complete the southern portion of the mall and bring additional amenities to the south area of campus.

Short-Term Proposed Sequencing

The first phase of campus development will require thoughtful sequencing because of the infrastructure and landscape improvements needed to prepare for future phases.

Several steps are proposed within this phase:

Phase 1A

The recommended first step is to improve the campus entrances at Bayou Drive and University Drive. Signage and intersection improvements are proposed at each of these locations. This phase will require some coordination with public agencies because these campus roadways intersect with public streets. These improvements will prepare the campus entrances for expected increases in traffic with growth.

In addition to the campus entrances, the entirety of University Drive should be improved during Phase 1A. Implementing a multi-use path along its southern edge and separating vehicular, bicycle, and pedestrian traffic over the bayou bridge will provide safer facilities that prepare the campus for an increase in north-south bicycle and pedestrian movement.

Phase 1B

Phase 1B will begin to establish the Campus Mall and bring much-needed campus life space. The campus center and welcome center/one stop buildings and their associated parking areas are proposed in this phase. A large connecting plaza located just south of the original Bayou Building entry area can be implemented with these buildings. Therefore, most of the existing faculty and staff parking will still be available until the land is needed for future buildings. A chilled water line will need to be extended from the central utility plant, south through the mall to these two new buildings. If feasible, other utilities should be located in this utility trench at this time. As new buildings are constructed along the mall in future phases, they can tie into the utilities provided in the trench during phase 1B, reducing overall construction impacts and infrastructure costs.



▲ Figure 62: Potential Phase 1A



▲ Figure 63: Potential Phase 1B

Phase 1C

Phase 1C will complete the mall landscape in the North Mall district. All existing faculty and staff parking in this location will need to be removed. Two academic buildings, including STEM II, will anchor the west side of the mall. Temporary parking can be constructed between the new academic buildings and Bayou Road to serve these buildings until the sites are needed for development and new permanent parking areas can be provided.

Phase 1D

Phase 1D will address three separate locations on campus. First, improvements are recommended to parking lot D with the addition of pedestrian paths and shade trees. The Environmental Institute of Houston will be relocated to the east side of the utility corridor. This relocation will provide more space for EIH's programs, and it will minimize impacts from construction at their current location. Recreation fields and parking will be constructed on the existing EIH site. Upper-division housing and associated parking will be developed within the south area of campus. Depending on the condition of the chillers in the Delta and Arbor Buildings, the central utility plant may also be constructed during this phase to replace the chillers in these buildings and provide required chilled water to serve the new housing. However, this housing may include a temporary stand-alone chiller, if construction of the central utility plant is postponed.



▲ Figure 64: Potential Phase 1C



▲ Figure 65: Potential Phase 1D

Next Steps

There are several recommended studies and coordination efforts that the university may consider in the near term:

- Study and implement intersection and entrance improvements at Bayou Road and University Drive, including coordination with applicable entities
- Complete a campus-wide transportation and transit master plan, including a traffic impact analysis, more specific strategy for pedestrian, bicycle, and shuttle systems, and transportation demand management plan
- Coordinate with METRO to determine potential UHCL ridership and transit expansion opportunities
- Coordinate with Harris County on the hike and bike trail network through campus
- Coordinate with the City of Houston BCycle program to implement a bike share program on the UHCL campus
- Complete a comprehensive signage and wayfinding master plan
- Develop a natural landscape management plan and a forest management plan
- Complete a campus dining study to more specifically determine current and future campus dining needs



8.0 UHCL PEARLAND CAMPUS

UHCL Pearland Campus

Introduction

Background

The University of Houston-Clear Lake partnered with the City of Pearland to bring career-building higher education to the Pearland community. Through the UHCL Pearland Campus, area residents have access to exceptional academics and professionally active faculty. In fall of 2010, UHCL Pearland Campus opened its doors, sharing the 30,659-square-foot facility with the Pearland Economic Development Corporation, which initially occupied 8,043 square feet of the building. The university's space includes classrooms, a library, a student lounge, teaching labs, offices, and a faculty suite¹.

Mission

The mission of University of Houston-Clear Lake (UHCL) Pearland Campus is to offer the Pearland community convenient access to nationally accredited, career-building education opportunities. The UHCL Pearland Campus offers a variety of programs with emphasis in business, nursing, criminology, education, and behavioral sciences. Program subjects are in high demand and are available to junior, senior, and graduate-level students. All instructors are leaders in their fields and know what their students need to learn to be attractive and beneficial to employers².

¹ Source: UHCL Pearland HSCB Final Program REVISED 10 20 2015

² Source: UHCL Pearland HSCB Final Program REVISED 10 20 2015

Master Plan Purpose

The purpose of the master plan for the UHCL Pearland Campus is to provide an overall vision and framework for the development of the campus that will accommodate anticipated growth in enrollment, support planned academic program initiatives, and respond to the development potential of the site, including synergies with City of Pearland properties adjacent to and across from the campus. Key objectives of the plan include:

- Assess space needs for current and future enrollment.
- Establish campus capacity as well as opportunities and constraints for development.
- Define the overall campus development framework and relationships with adjacent City of Pearland properties.
- Establish design guidelines to follow as the campus continues to develop.
- Outline a phasing and sequencing strategy for capital projects and site and infrastructure improvements.

Stakeholder Engagement

During the Discovery phase of the planning process, the consultant team met with UHCL Pearland stakeholders to identify the key issues to be considered in the plan. Stakeholders were also asked to respond to the MyUHCL survey, which asked a range of questions specific to the UHCL Pearland Campus. The following are highlights of the key themes that emerged through the stakeholder interviews and MyUHCL survey. These themes helped to guide the planning effort:

- There is a need for more student service and student life space on the campus.
- There are no significant meeting areas for students.
- More shaded areas and outdoor seating are needed.
- An option to make a left turn from the campus to Pearland Parkway would be desirable in order to access Beltway 8.



▲ The UHCL Pearland Campus currently has a single building but is expected to grow into a more active campus in the future.



▲ Figure 66: UHCL Pearland Campus Area Amenities

- Community
- † Church
- ✚ Hospital/healthcare
- Commercial area
- Recreation/sports

Existing Conditions

Area Context

The UHCL Pearland campus is located in the City of Pearland, approximately fifteen miles west of the main UHCL campus. The campus occupies a forty-acre site located northwest of the Pearland Parkway and McHard Road traffic circle. The City of Pearland owns a roughly seventeen-acre portion of the site, which it leases to the university and will transfer at the termination of the lease. The city owns the site immediately to the west of the campus and a thirteen-acre parcel to the east of Pearland Parkway. Together, the city and university parcels hold significant long-term development potential.



▲ Figure 67: UHCL Pearland Campus Analysis and Opportunities

The UHCL Pearland Campus benefits from access to several regional amenities. It is approximately three miles east of downtown Pearland and has convenient access to Houston's regional medical institutions. Plans to extend the Clear Creek Trail will connect the campus to the broader regional trail network, El Franco Lee Park, and Green Tee Terrace Trail.

Existing Site

The current entrance to the campus from Pearland Parkway leads to a parking lot containing 399 spaces and a single-story, approximately 30,000 GSF academic building. The balance of the site contains natural areas with dense vegetation and stormwater management facilities.

In 2015, funding was approved for a new three-story 69,000 GSF Health Sciences and Classroom building, which is currently being designed. Given the relatively small current enrollment at the UHCL Pearland Campus, only the first two floors of the building will be completed until there is sufficient demand for the unfinished third floor shell space. The new building will be supported by several site improvements, including a 66-space parking lot expansion and the introduction of another campus entrance from Pearland Parkway.



▲ Existing UHCL Pearland Campus

Campus Space Needs and Program

The space needs analysis element of the overall UHCL master plan included an assessment of current and future space needs for the UHCL Pearland Campus. The analysis examined the space needs for the UHCL Pearland Campus's 2016 enrollment of approximately 725 headcount students (250 FTE) and a future enrollment of 1,270 headcount (436 FTE) students. This increase is consistent with the anticipated growth rate at the main UHCL campus over approximately twenty years. The demographic data applied in the analysis is summarized in Table 8:

▼ Table 8: UHCL Pearland Campus Demographic Assumptions

	CURRENT HEADCOUNT	CURRENT FTE	FUTURE HEADCOUNT	FUTURE FTE
Enrollment	725	250	1,270	435
Faculty		19		33
Staff		38		67

Stakeholder Space Requests

Conversations with UHCL stakeholders and comments in the MyUHCL survey highlighted several space needs at the UHCL Pearland Campus:

- Overall space for student service departments
- More student lounge space and areas for students to congregate
- Meeting areas for students
- An on-campus fitness room

These observations were consistent with the findings of the space needs analysis.

Campus Space Needs

The space needs generated for current and future enrollment are summarized in Table 9 and Table 10 and illustrated in the accompanying charts. The analysis includes the additional finished space that will be created on the first two floors of the new Health Sciences and Classroom Building.

The analysis highlights the need for campus life space both today and in the future, which is consistent with stakeholder input. It also suggests that the third floor of the building will be needed to accommodate future enrollment growth on the campus but that no additional space will be needed in that time frame, unless enrollment grows beyond current projections.

▼ Table 9: Current UHCL Pearland Space Needs (725 Headcount Students)

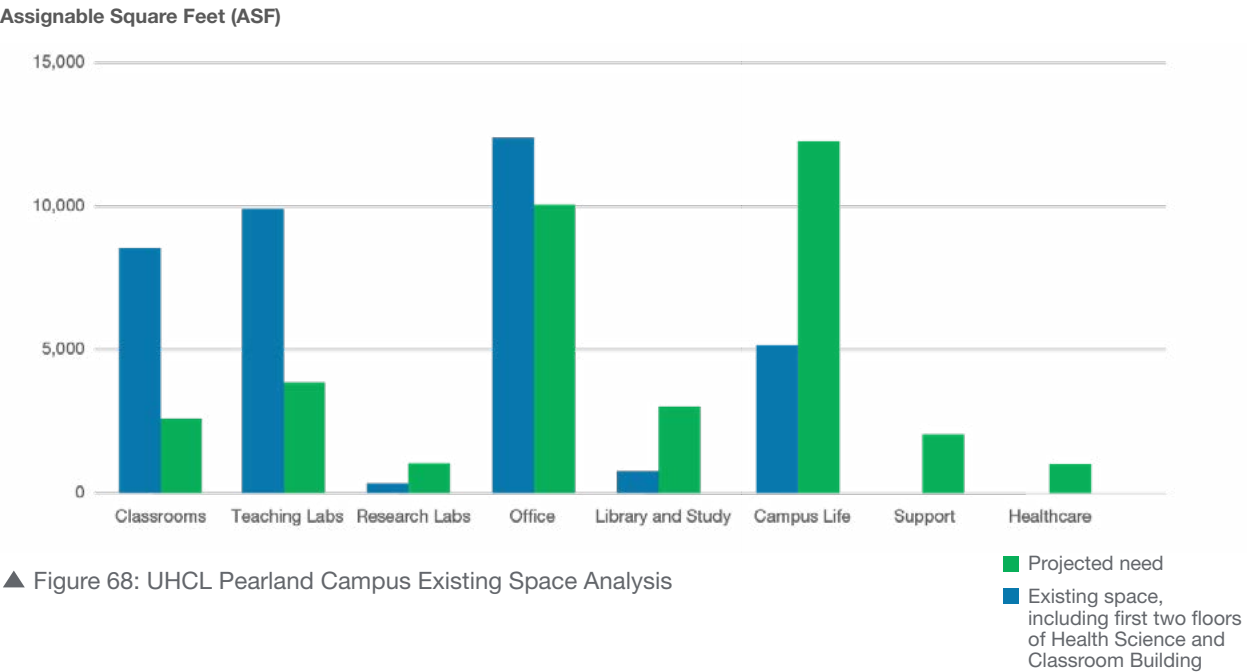
	EXISTING SPACE* (ASF)	SPACE NEED (ASF)	SURPLUS/(DEFICIT) (ASF)
Classrooms	8,546	2,600	5,900
Teaching Labs	9,909	3,800	6,000
Research Labs	320	1,000	(700)
Office	12,383	10,000	2,300
Library and Study	754	3,000	(2,300)
Campus Life	5,164	12,300	(7,100)
Support	-	2,000	(2,000)
Healthcare	-	1,000	(1,000)
Total	37,076	35,700	1,100

*Includes space on the first and second floors of the new Health Sciences and Classroom Building

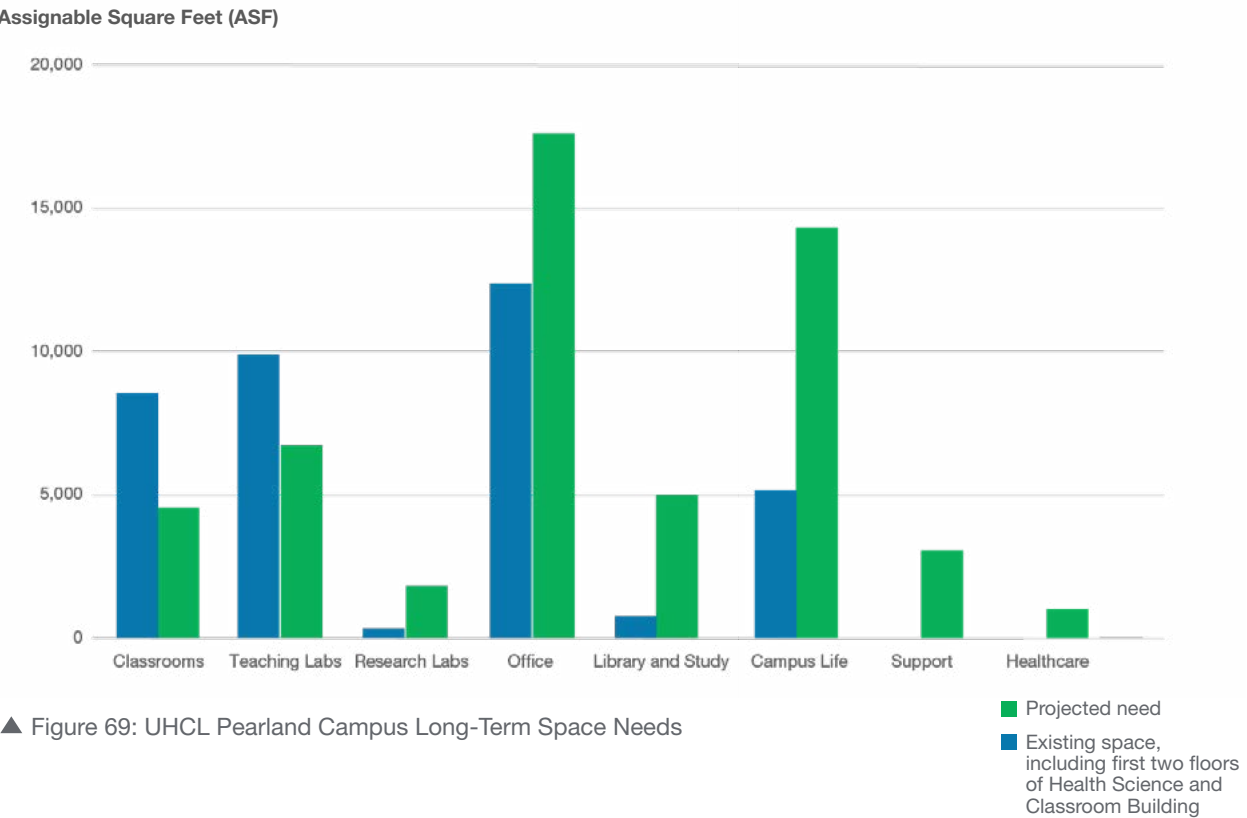
▼ Table 10: Future UHCL Pearland Space Needs (1,270 Headcount Students)

	EXISTING SPACE* (ASF)	SPACE NEED (ASF)	SURPLUS/(DEFICIT) (ASF)
Classrooms	8,546	4,500	4,000
Teaching Labs	9,909	6,700	3,200
Research Labs	320	1,800	(1,500)
Office	12,383	17,600	(5,200)
Library and Study	754	5,000	(4,200)
Campus Life	5,164	14,300	(9,200)
Support	-	3,100	(3,100)
Healthcare	-	1,000	(1,000)
Total	37,076	54,000	(17,000)

*Includes space on the first and second floors of the new Health Sciences and Classroom Building



▲ Figure 68: UHCL Pearland Campus Existing Space Analysis



▲ Figure 69: UHCL Pearland Campus Long-Term Space Needs

Potential Future Program

The long-term vision for the UHCL Pearland Campus continues to evolve as the university assesses the academic programs that will best serve the Pearland community. The campus is currently considering programs that will support nearby medical institutions, as well as executive and continuing education and other community resource functions. Potential programs identified for the new Health Sciences and Classroom Building include the following:

- Registered Nurse–Bachelor of Science in Nursing B.S.N.
- Health service psychology (combined clinic/school)
- Public health
- Master of Health Informatics program
- Licensed Professional Counselor program

While the Health Sciences and Classroom Building has the capacity to absorb enrollment growth to the 1,270-student enrollment target, the introduction of additional academic programs beyond those currently contemplated or a higher long-term enrollment may generate a need for more space. As a result, the master plan program includes an additional building for planning purposes.

Campus Capacity

During the analysis phase of the planning process, the consultant team tested the overall development capacity of the UHCL Pearland Campus. The capacity assessment assumed a .33 FAR, which is consistent with the relatively low density of the existing campus and the need to accommodate required parking in surface lots. Given an overall site area of approximately 39 acres, this generated a potential site capacity of 556,000 GSF, or 457,000 GSF net new space, taking into account the 99,000 GSF in the existing building and planned new Health Sciences and Classroom Building.

It should be noted that the capacity assessment was based on the total area of the site. However, portions of the site will likely be set aside to preserve the open space character of the campus and to accommodate stormwater detention. As a result, a preferred development scenario is likely to be lower density.

Site capacity data for the Pearland Campus is summarized in Table 11.

▼ Table 11: UHCL Pearland Campus Potential Site Capacity

	GSF
Approximate Site Area (40 Acres)	1,742,400
Potential Site Capacity at .33 FAR	575,000
Existing and Planned Buildings	99,000
Remaining Site Capacity	476,000

Planning Principles

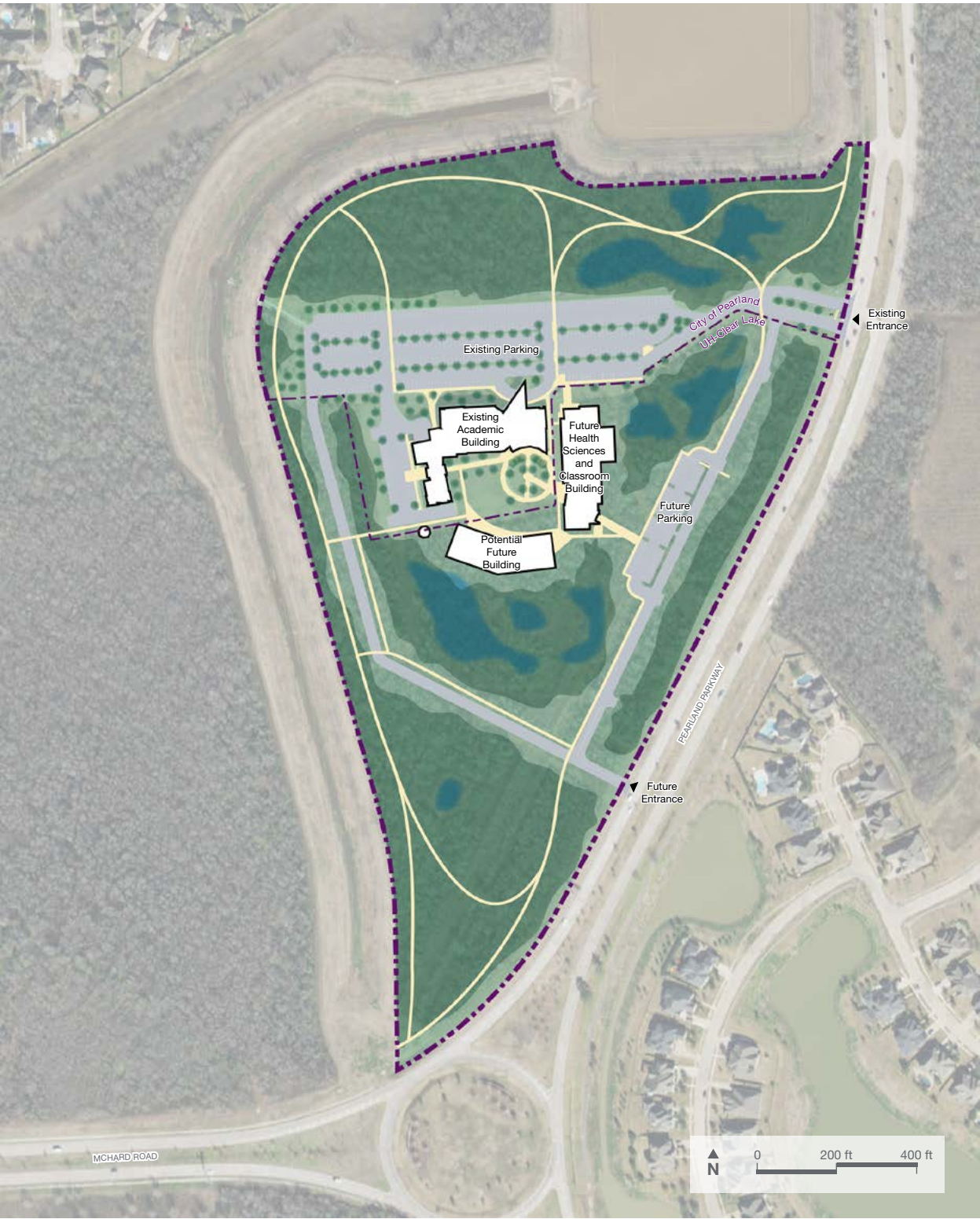
The following planning principles were established to guide the development of the UHCL-Pearland Campus:

- Organize future development around a central quad.
- Organize campus development and circulation to prioritize comfortable pedestrian movement through scale, shading, wayfinding, and land use.
- Create and preserve important future connections to nearby City of Pearland parcels and the regional trail network.
- Create intimate “outdoor rooms” to supplement the central quad.

Framework Plan

As the academic vision for UHCL Pearland Campus continues to evolve, and development plans for adjacent City of Pearland-owned properties have yet to be determined, the framework plan for the campus illustrates a general development concept that builds on the existing site plan, as well as the consultant team's analysis of site conditions and development capacity and opportunities. The framework plan is intended to illustrate the potential development of the campus for the planned enrollment target of 1,270 students and future growth. Future development beyond what is shown in the framework plan would occur to the south of the existing and proposed buildings shown in Figure 70. The expansion of the existing detention pond creates enough stormwater detention capacity to support additional development without the need for more stormwater detention. Key features of the framework plan include:

- Siting of the planned Health Sciences and Classroom Building and expansion of campus parking with another 66-space lot to the east of the building, as currently proposed
- Accommodation of a future academic building to support additional enrollment growth
- Creation of a new quad at the heart of the campus through the placement of the future building
- Integration of open space buffers along the east and west campus edges, together with enhanced open space areas within the northerly and southerly portions of the site to preserve the natural character of the campus setting
- Delineation of a potential pedestrian pathway system as a site amenity that could also connect with the future regional trail system
- Introduction of a second campus entrance from Pearland Parkway, together with a campus loop road that connects the two entrances and facilitates potential future connections with adjacent City of Pearland-owned property



▲ Figure 70: UHCL Pearland Campus Framework Plan



APPENDIX

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