University of Hawai‘i at Mānoa

Mānoa Campus FRAMEWORK FOR THE FUTURE

September 2019

Prepared for
University of Hawai‘i at Mānoa

Prepared by
MKTHINK

University of Hawai'i at Mānoa

Framework for the Future

September 2019

PREPARED BY MKTHINK

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Table of Contents

*Available online on the official Mānoa Framework for the Future website

HAWAIIAN PLACE OF LEARNING

The Mānoa Strategic Plan identifies Mānoa as a premier research institution that celebrates its diversity and uniqueness as a Hawaiian place of learning and strives for excellence in teaching, research, and public service while recognizing our kuleana (responsibility) to honor the indigenous people, culture, and values of our island community. It includes commitments to support advanced research and scholarship on Hawaiian language and culture; promote social justice for Native Hawaiians and an understanding of the Native Hawaiian ahupua'a concept by restoring and managing the Mānoa stream and ecosystem; creating a Hawaiian sense of place on campus through improved landscaping, architectural design, signage, and the creation of gathering spaces; respect indigenous intellectual and cultural property rights; and promote the study of Hawaiian language, culture, and education.

These commitments define and shape the Mānoa Experience for our students, faculty, and staff and communicate that Mānoa seeks to set itself apart from typical research institutions through the adoption of key cultural values and practices unique to its location; Mānoa is a university embedded in a unique environment of key cultural values and practices that are informed by a diverse community that has grown out of the history of Hawai'i.

EXECUTIVE SUMMARY

The UH Mānoa Framework for the Future provides a flexible guide for future development on the UH Mānoa campus by charting an overall structure for future development, new open spaces, and mobility networks.

This Framework embodies UH Mānoa's Core Values - kuleana, hānai, hoʻomalu and mālama - which reflect beliefs and aspirations to become a Hawaiian place of learning.

KULEANA
Right, privilege, concern, responsibility...

HĀNAI
Feeding, fostering, raising as a child, and providing for...

HOʻOMALU
To bring under the care and protection of, to protect...

MĀLAMA
Tend to, take care of, and maintain...

The core values also directly inform the Guiding Principles that are the basis of development and future implementation of the Framework. These were developed by the Steering Committee, and included engagement & review with students, faculty, staff, and the broader campus community.

1. Develop the Whole Student
Provide spaces that are physically, mentally and emotionally safe on a daily basis and in times of need. Retention and enrollment growth are reflective of how well we take care of our students.

2. Ensure Financial Viability
Demonstrate fiscal responsibility and a robust financial plan to make smart decisions which maximize our ability to do more with less. Ensure that capital is deployed efficiently to achieve the mission of the university.

3. Steward our Natural Environment
Optimize existing resources and assets by using what we have as efficiently as possible and adopt sustainable design principles to minimize environmental footprint when we do need to build new.

4. Promote World Class Instruction + Scholarship
Contribute to the advancement of knowledge and help our communities solve the complex and interconnected challenges facing our futures.

5. Foster Inclusivity + Connectivity
Provide access to housing, transit by all types of mobility, and digital technologies for all campus community members.

6. Cultivate Collaboration
Promote interdisciplinary learning and meaningful work so that students and faculty can work together to create the best futures for Mānoa, Hawaiʻi, and the world.

7. Leverage Unique Attributes of Place
Honor indigenous ancestral traditions. Embrace Native Hawaiians and their knowledge systems; learn about caring for each other and the natural world, specifically in Mānoa and more broadly in Hawaiʻi.

To make the Framework resilient and adaptable, a futures and risk assessment was conducted. This was an integral part of the Framework process and was necessary to comprehend the range of unpredictable possibilities that the University might have to potentially adapt to in the future. The findings from this assessment, along with the Guiding Principles, were synthesized into a future-forward Framework Vision for UH Mānoa:

UH Mānoa will serve as a gathering place, celebrating human interaction, and modeling the synergy of cultural, historic, modern and future influences through its flexible, adaptive and responsive environment.

This Vision strives to draw people to campus from near and far, supporting UH Mānoa's long-term academic and financial viability. The goal is not restricted to just increasing the University's retention rates, but to also physically retain all community members on campus for more hours of the day and days of the year. In our increasingly digital world, the UH Mānoa Campus will value and facilitate physical and interpersonal interaction, while at the same time leveraging advances in online and remote learning. By providing beautiful spaces, amenities, dynamic learning programs and civic events, UH Mānoa will serve as a stabilizing force for its diverse learners, supporters and partners. As a continued resource for Hawai'i, will maintain and expand its relevance over time.

To align these long-term strategic objectives with the physical campus, Planning Objectives were articulated. These objectives pinpoint the primary improvements and changes future campus development must address to accomplish the Guiding Principles of the Framework. They are the physical manifestations of the Core Values, Guiding Principles, and the Strategic Goals.

1. Optimize Infrastructure, Facility, Land & Resource Use

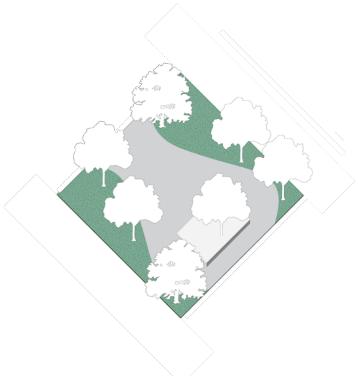
2. Transform Circulation & Mobility

3. Strengthen the Gathering Experience

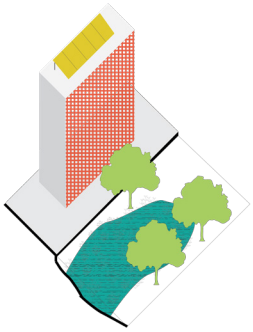
4. Become a Living & Learning Lab

5. Activate Landscape & Campus Character

6. Provide for the Campus 'Ohana



7. Build Resilience

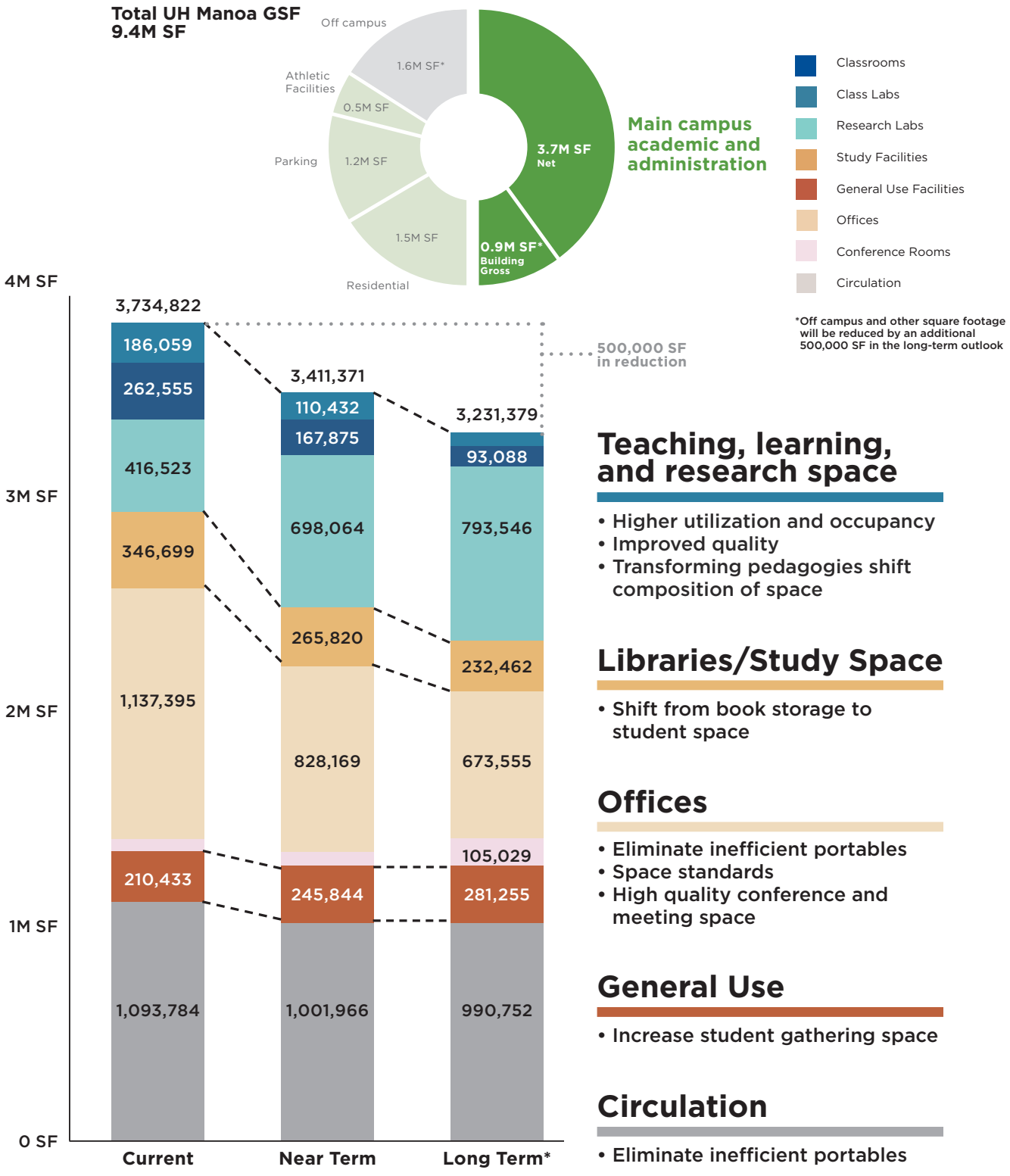


While existing campus space allows the university to meet current demand, there exist opportunities to align the campus space more closely with the core values and mission of the university, as well as develop a plan to adapt to emerging trends and enrollment growth. The Space Needs Forecast informs the physical space planning process to guide future growth and development. The Campus Space Needs Forecast for primary academic facilities is driven by the following improvements:

- Space utilization and efficiency
- An increase in the amount of collaborative space for meetings, study or recreational activities/leisure to enhance on-campus life & student experience
- Enhancements to the quality and quantity of research space
- Improvements to circulation efficiency
- Decreased reliance on portables

In the long term, space for primary academic facilities may decrease up to 500,000 SF, which is approximately a 15% reduction.

Improved efficiency and an emphasis on utilization will reduce total square footage need while increasing high value space



Teaching, learning, and research space

- Higher utilization and occupancy
- Improved quality
- Transforming pedagogies shift composition of space

Libraries/Study Space

- Shift from book storage to student space

Offices

- Eliminate inefficient portables
- Space standards
- High quality conference and meeting space

General Use

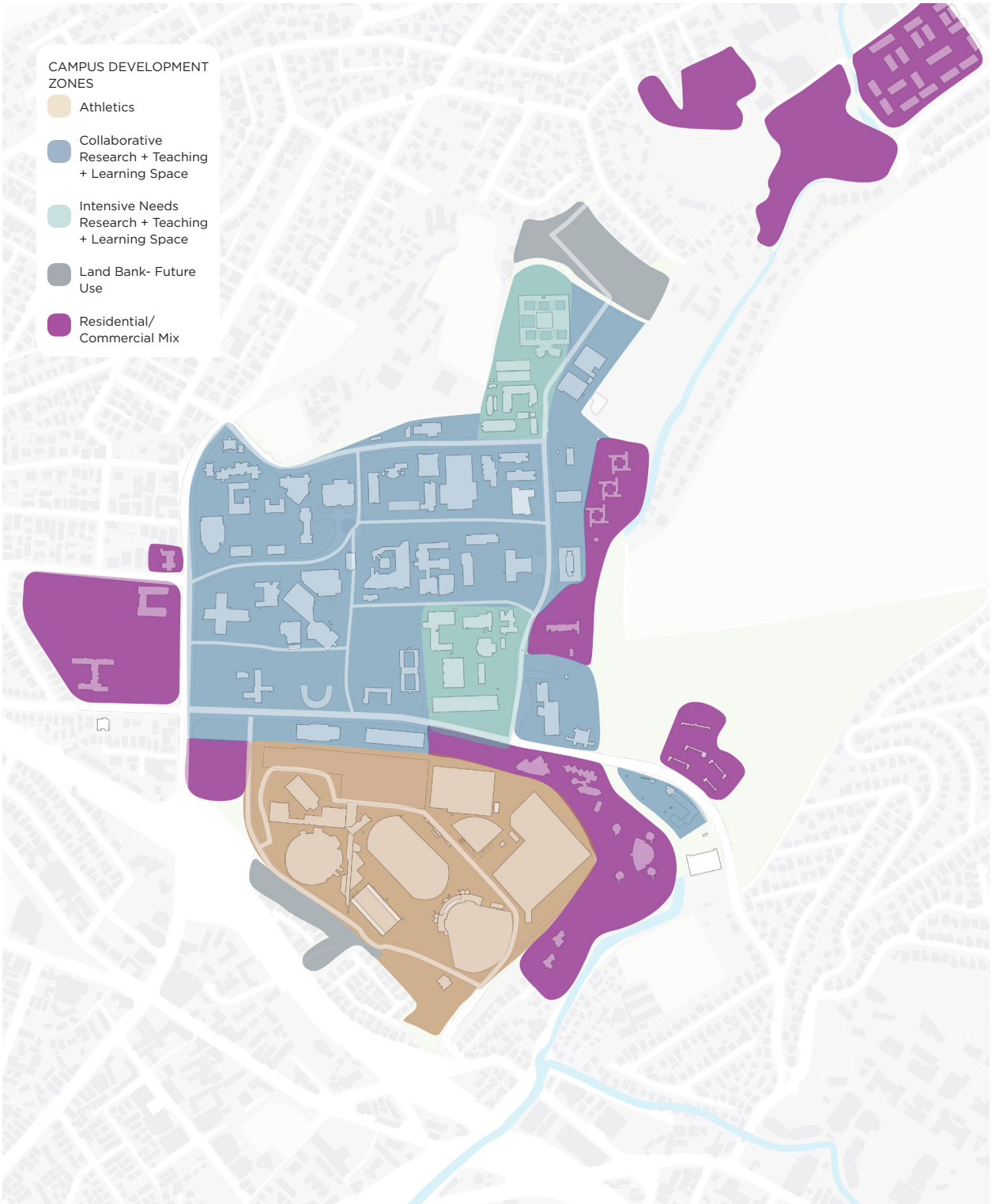
- Increase student gathering space

Circulation

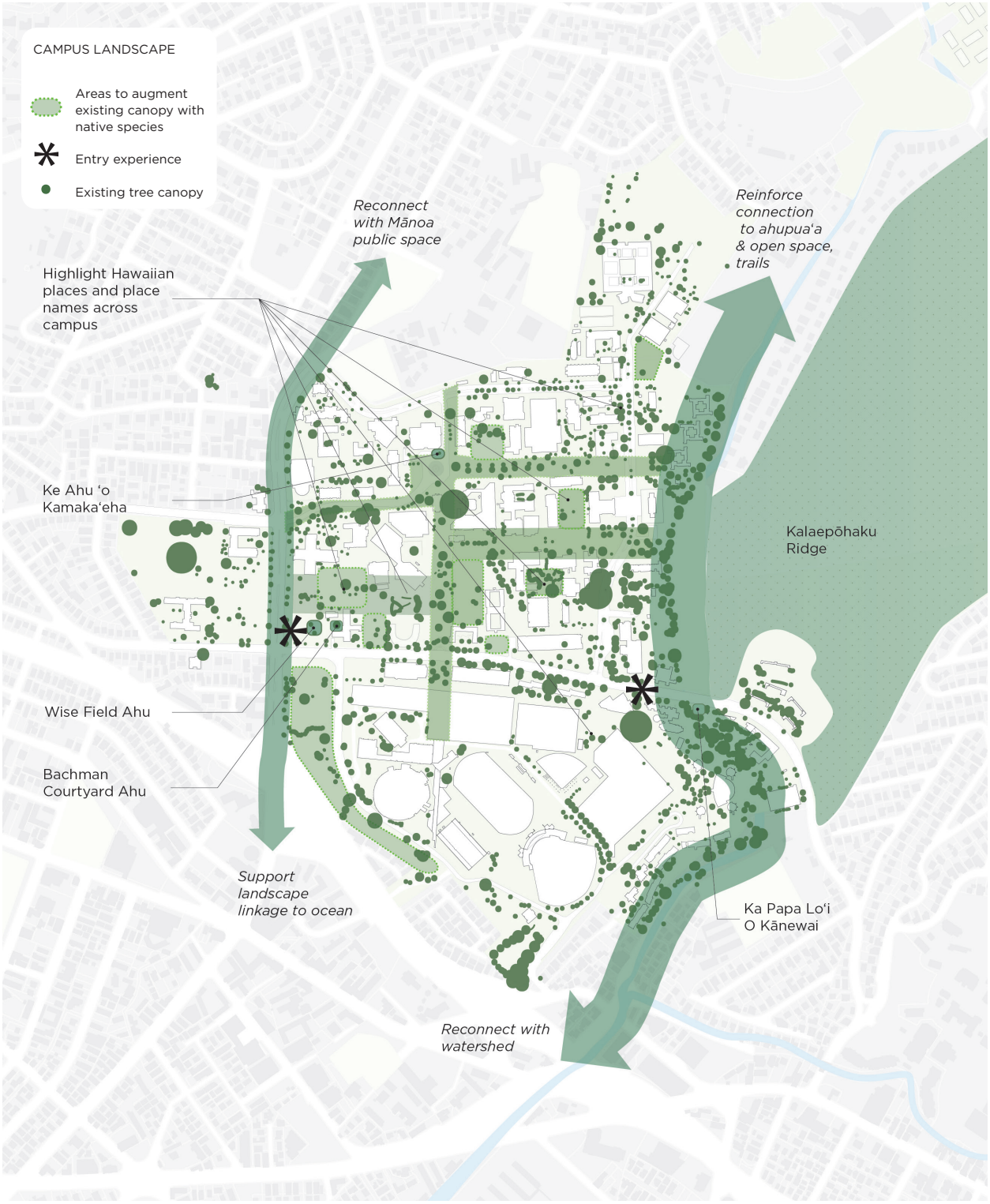
- Eliminate inefficient portables

The following space types are not included in the above diagram: Health care facilities, parking, special use facilities, support facilities

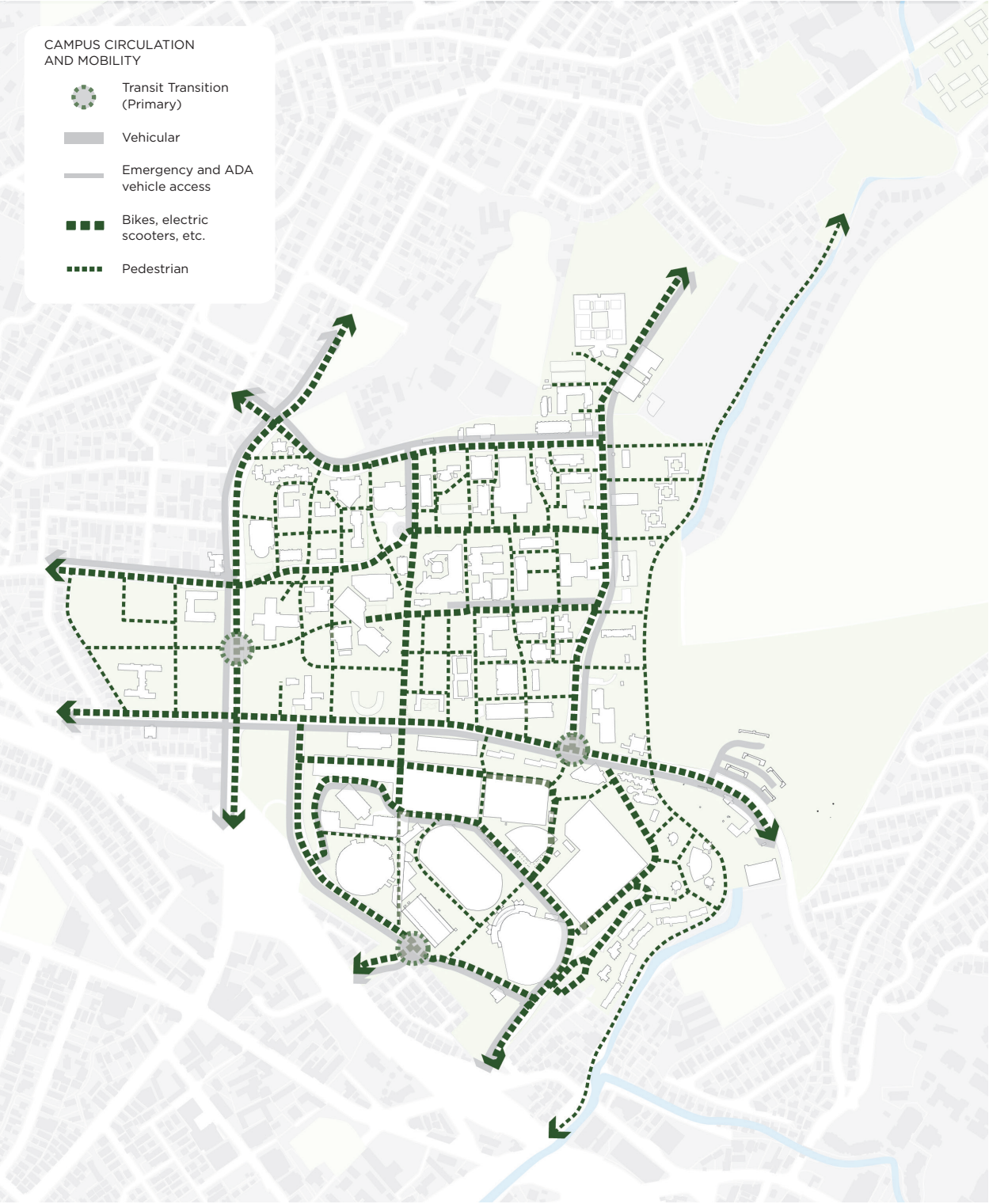
A zone strategy will support more efficient use of resources and create landbanks for future use



Landscape will reconnect the campus with the ʻāina



Pedestrians and low velocity personal transit will replace cars as the primary means for circulating on campus



01

Introduction

PURPOSE: WHAT IS A FRAMEWORK?

INTRODUCTION (FROM THE UNIVERSITY OF HAWAIʻI AT MĀNOA STRATEGIC PLAN, 2020-2025)

Goal: Building a Sustainable and Resilient Campus Environment

The UH Mānoa campus embodies our collective goals and objectives. We recognize the reciprocity of our relationships as individuals and groups with the ʻāina, and the impact that our environment has on our work and our lives. To ensure that near-, medium-, and long-term campus development supports our vision of ka lamakū o ke aloha ʻāina, we have established Guiding Principles that set our expectations for campus transformation.

As the University invests in capital improvements, adherence to these principles for all projects large and small will help create a campus environment that is continuously improving and manifesting aloha ʻāina. Subsequent generations of administrators, faculty, staff, students, planners, and designers will be able to apply their full knowledge and creativity within this framework to continue the ongoing kuleana of mālama ʻāina.

Significant challenges define our resolve to improve both the appearance and performance of our physical campus, not least rapid technological and behavioral change. In view of these changes, our faculty and students will be creating new ways to teach, research, learn and collaborate at a faster and more efficient pace. In response, we have changed our approach to large capital projects by prioritizing flexibility and adaptability, and by deploying new tools and algorithms that optimize our utilization of these expensive assets. We will also invest in campus designs that embrace and integrate outdoor experience, fully optimizing the arboreal treasures and breeze-blessed open urban spaces on our campus. Our core planning objectives describe specific strategies for the campus that enable our fulfillment of the guiding principles:

- Optimize infrastructure, facility, land, and resource use

The health and vibrancy of our campus will be sustained and improved through a more thoughtful approach to how we use, maintain, and protect our assets and resources.

- Transform Circulation and Mobility

Critical to the success of a campus environment that supports collaboration, interaction, and engagement is the prioritization of the pedestrian experience. The UH Mānoa campus is dominated by roads, parking lots, and vehicular traffic. In order to create the campus environment we envision, the UH Mānoa community will need to establish a leadership role in the transition away from personal automobile use as the primary way to access the campus.

- Strengthen the Gathering Experience

While technologies and pedagogies may change, we believe that the fundamental value of in-person interaction will remain vital to the academic experience. Making the campus a place that supports a broad range of interaction and gathering experiences is essential to our identity.

- Become a Living Learning Laboratory

To fulfill our learning and research goals, we will need to expand our vision of learning environments outside of the traditional four walls of the classroom and lab to include the whole campus.

- Provide for the whole campus ‘ohana

We value the physical presence of people on campus. In order to maintain a healthy density of on-campus activity, it is important that we are able to meet the non-instructional needs of our community and increase the diversity of activity happening on campus.

- Build Resilience

Core to our long-term success, a focus on resilience is recognition of the uncertainty that always lies ahead. Rather than attempt to manage to a highly specific plan, we believe that it is imperative that we create a physical campus environment that has the ability to adapt to both anticipated and unexpected change.

By 2025 we will:

- Develop a long-term energy strategy
- Prioritize the pedestrian experience on central campus
- Implement effective multi-lingual and multi-cultural way-finding and navigation systems
- Cultivate campus identity as a Hawaiian Place of Learning through intentional landscape design featuring species native to our region
- Prioritize the design of action landscapes that encourage and support experimentation, learning, and the creation of new knowledge
- Model campus design practices that promote and foster mālama ‘āina
- Support current and future research objectives with high quality, flexible, research environments that accommodate a broad portfolio of research methodologies
- Create and renovate research space that supports the integration of research and teaching
- Transform learning environments and classrooms into flexible environments that can respond to changing instructional technologies and pedagogies
- Increase the quantity and quality of the residential space and experience on and near campus for undergraduate students, graduate students, and faculty
- Secure our energy future with renewable resources

In concert with the UH Mānoa Campus Framework and the 2019–29 Long Range Development Plan, the university is developing a new administrative model for space governance consistent with the aspirations of aloha ‘āina. This updated space governance process will advocate for and apply guiding principles; incorporate new digital tools that help improve and streamline space assessment and allocation; ensure prioritization of campus-wide sustainable practices and energy conservation; and elevate the value of Hawai‘i’s unique geography, climate, and culture. Finally, space governance at UH Mānoa will embrace the ethos of the Hawaiian ahupua‘a, the traditional system of land division that equitably integrates social, natural, and cultural resources in its aspiration to achieve the full potential of both our environment and our community.

Source: Office of the Provost, University of Hawai‘i at Mānoa, Mānoa 2025: Our Kuleana to Hawai‘i & the World—Strategic Plan 2015–2025 (manuscript draft, June 21, 2019)

FRAMEWORK FOR THE FUTURE

The 2019 Mānoa Campus Framework offers UHM a long-range guide to the total campus environment—its space, facilities, landscape, circulation, and infrastructure. The signature of the Framework is data, culled from over two years of analysis. Following a comprehensive inventory of all central campus facilities, project leaders from MKThink, the San Francisco-based architecture and process-design firm, produced research findings that illuminate the ways we actually use and forecast assignable space. The Framework couples this fresh data with interactive feedback that together document both the quantitative and qualitative character of our campus. The Mānoa Framework departs from traditional long-range campus master plans through its integration of customized digital tools, real-time sensing technologies, and dynamic information graphics that together provide the Mānoa leadership with reliable, evidence-driven criteria for the assessment of current and future campus needs. As distinct from a fixed "master plan," the Framework serves as an open-ended knowledge and decision-making tool for future campus development.

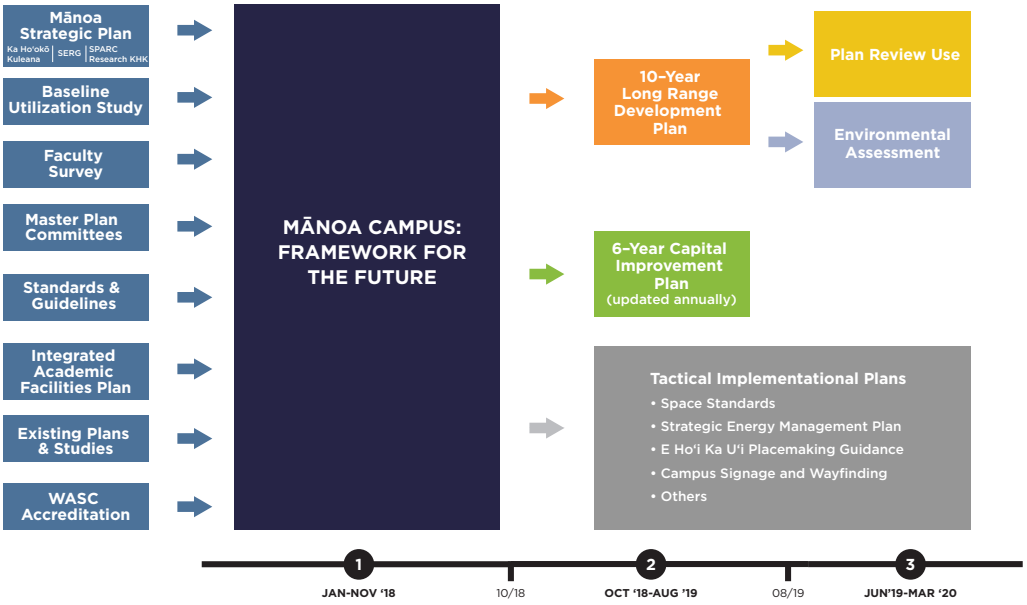
From its inception, the development of the Framework benefitted from regular input and oversight by a Steering Committee comprised of stakeholder representatives from almost every corner of campus life. Working in close collaboration with MKThink, the Steering Committee established guiding principles that integrate Hawai'i's unique cultural and geographic context with best practices shaping twenty-first century campus design, maintenance, and operations. Mindful of climate change and the urgency of new energy and water management protocols, among other environemental measures, the Framework predicates the aesthetic effectiveness of campus space and its experience on its operational efficiency, resilience, and successful transition to a net-zero carbon footprint by 2035. In this spirit, the Framework prioritizes pedestrian amenities, outdoor gathering space, strategic landscapes, and continuously adaptable space for teaching, research, and student success, each strengthening the overall sense of aloha 'āina and the Hawaiian Place for Learning.

We encourage you to share this publication and visit the Framework website, a one-stop-shop containing all the aforementioned documentation—surveys, analyses, space use data, and interactive digital tools designed to help Mānoa achieve the full potential of our campus environment.

Daniel S. Friedman PhD FAIA
UH Mānoa Campus Architect

FRAMEWORK, LRDP & PRU

The UH Mānoa Framework for the Future provides a flexible guide for future development on the UH Mānoa campus. It charts an overall structure for future development, new open spaces, and mobility networks, while allowing for flexibility to enable the university to respond to changing conditions and circumstances. It is intended to have the resilience to withstand stress from a number of sources, while providing a structure based on a shared vision for the future of the campus.



The Framework is the cornerstone of an integrated planning process at UH Mānoa. Previously completed campus analytics on existing use and UH strategic intent were synthesized into the process. The resulting Framework will inform and direct Long Range Development Plans (LRDP) and Plan Review Use (PRU), which will identify key planning and development projects on campus for the coming years.

THE PROCESS

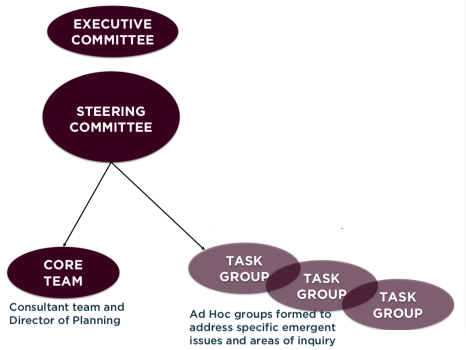
The process for creating the Framework included the following:

- Getting direction from the university's strategic planning efforts

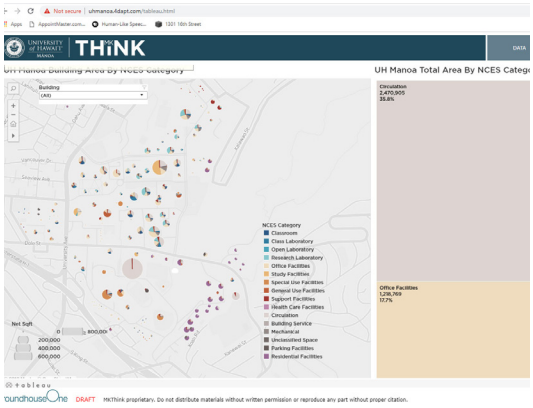
- Leveraging prior & current work, including plans, studies, coursework, initiatives and committees, working with numerous stakeholders

Source: UH Community Design Center

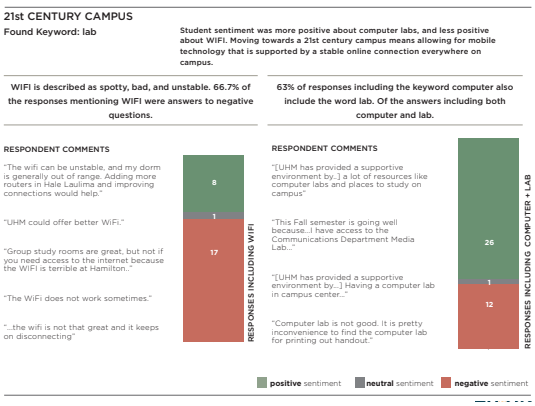
- Regular meetings with range of stakeholders



- Developing a quantitative baseline of campus use

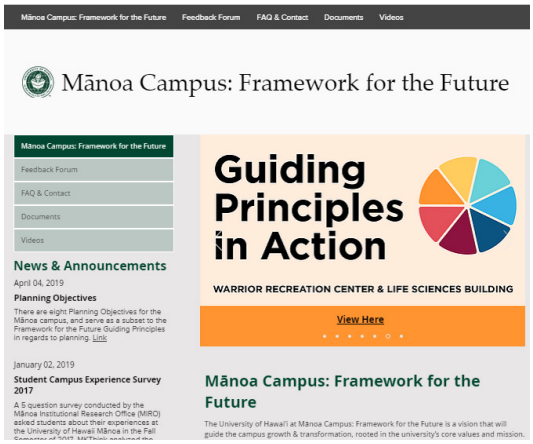


- Conducting a Faculty Survey and evaluating the Student Experience Survey



- Online Campus Engagement & Campus Impressions Assessment

- Developing a website to increase public awareness of and stakeholder engagement in the framework development process



HOW FRAMEWORK INFORMS LRDP & PRU

The Framework serves as the foundation for subsequent work on the Long Range Development Plan (LRDP) and Plan Review Use (PRU). The LRDP will focus on generating nearer term, tactical projects that are consistent with the Framework and will reflect the highest and best use of funds in service of the university's goals and objectives and will serve as the basis for capital project budgeting. Periodic updates should be conducted, should changes in underlying conditions occur and specifics of projects described in the LRDP require refinement as a result. The Framework provides the context to ensure the LRDP projects align with and execute the University's broader priorities.

In turn, the LRDP will support an updated PRU with the goal of completing the approval process by 2021 when the current PRU is set to expire. The City and County of Honolulu must approve the PRU to permit capital planning projects by the University of Hawai'i for the next 10 years.

PROCESS FOR FRAMEWORK UPDATES & REVISION

The Framework for the Future is intended to function as a living document. UH must revisit it periodically as changes occur in University Strategy or other major influencing factors.

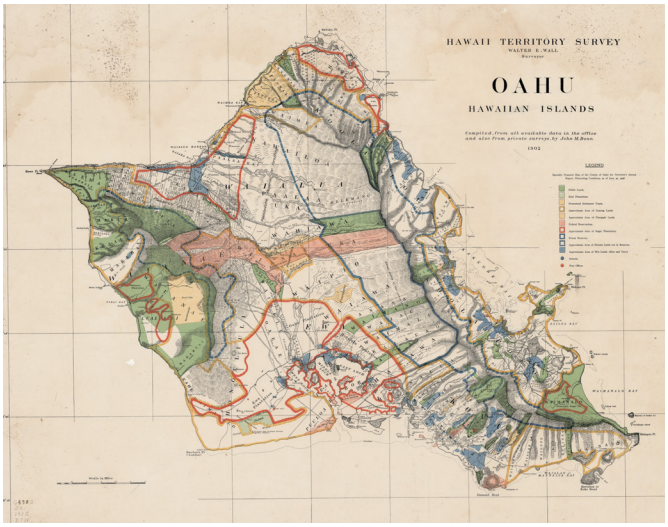
PLANNING CONTEXT & ASSUMPTIONS

The UH Mānoa campus is located in the city of Honolulu, on the island of Oʻahu. Named for the Mānoa Valley, the campus sits in a beautiful neighborhood between the beaches of Waikīkī and the green hillside of the koʻolau mountains.

HISTORIC

UH Mānoa is part of the Kona ahupuaʻa on the Southeastern side of the Oʻahu island.

- Historically, the Mānoa Valley's rich land supported a large population who cultivated taro, a staple food source of the islands.
- The University was founded in 1907 under the Morrill Act as a land-grant college of agriculture and mechanic arts



HISTORIC OʻAHU 1902
Source: Walter E. Wall

ECOLOGICAL

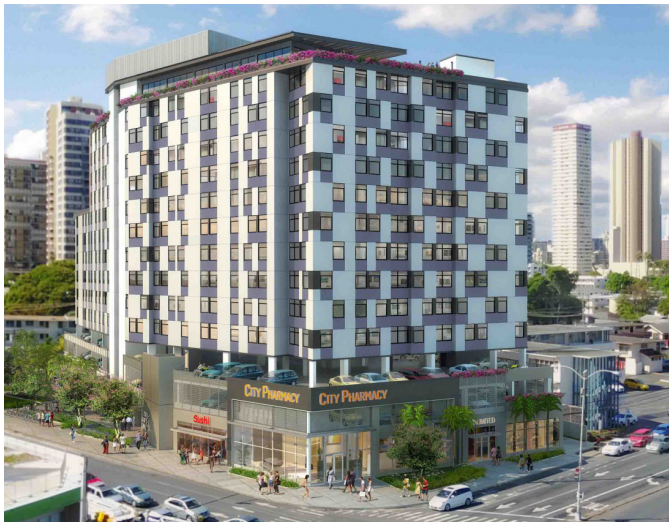
With frequent rains, the Mānoa Valley hosts lush vegetation and a diverse ecology. As such, the UH campus is its own arboretum.

- Mānoa Stream runs along the eastern edge of campus, originating in the preserved hills at Mānoa Falls and flowing out to the ocean through the Mānoa-Palolo drainage canal; the stream holds meaning among the Native Hawaiian community
- Lyon Arboretum, a valued part of UH Mānoa and a resource for the Honolulu community, is located at the north end of the Mānoa Valley
- The campus is susceptible to flooding from Mānoa Stream
- The rare Manu o Kū, fairy tern or white tern, nests in the large trees at UH Mānoa, throughout Mānoa valley and other parts of greater Honolulu; the campus comprises one of the few sites where these rare, native birds nest

FAIRY TERNS IN MĀNOA VALLEY
Source: Hui Manu-o-Kū photo gallery

URBAN

- The Mauka / inland side of the campus is surrounded by low-density residential development and preserved areas of green, open space
- Mānoa Valley is a desirable and expensive neighborhood north of campus
- The Makai / ocean side of the campus is bordered to the south by the Interstate H-1 Highway, the Mōʻiliʻili neighborhood and a concentration of high-density commercial and mixed-use developments, including grocery, retail and dining
- New developments are planned for several areas close to UH Mānoa, including Mōʻiliʻili neighborhood



HALE MAHANA APARTMENTS, CONSTRUCTED IN MŌʻILIʻILI 2017-2018

Source: Skyscraperage online Forum

TRANSPORTATION

- Adjacent to major freeways and secondary roads, the campus is accessible by car and bus from downtown Oʻahu and the tourist hub of Waikīkī
- Some also commute to and from campus on foot or by bike
- Honolulu routinely lands in 'worst traffic in USA' lists, frequently experiencing extreme traffic at rush hour
- Honolulu and state governments are implementing a regional rail system. When completed, it will have significant impact on Oʻahu transit, and may reach Mānoa in future phases
- The region also has a bus system, with high rates of ridership.
- The Rainbow shuttle is a public transit system on campus and in adjacent areas
- "Biki" bike sharing was introduced to campus in 2018

BICYCLES OFFER AN OPPORTUNITY TO REDUCE DEMAND ON CARS

Source: Hawaiʻi Bicycling League

UH STRATEGY

The UH Strategic Plan was developed to achieve actionable results on campus. According to the plan document availble on the university website:

The new Mānoa Strategic Plan was designed from the start with a pronounced bias towards action: we want to identify the work that needs to get done, get on it, and get it done. To be the world-class university Hawai'i needs Mānoa to be, it must excel in all three components of its mission -- education, research and service. We are where the future of the state will be forged, through educating its future leaders, through research that addresses key issues, and through an engagement with the state that gives us our home and our name.

Mānoa Initiatives	Metrics	Planning & Implementation Task Force
Being a Native Hawaiian Place of Learning & Indigenous-Serving Institution	• % of NH Students, Faculty, and Administrators • NH Representation in Programs	Native Hawaiian Advancement Taskforce (2.0)/ Kuali'i Council
Defining Mānoa's Structure & Role in the UH System		VP/VC Work Group
Enhancing Student Success	• First-Year Retention • Graduation Rates • Time-to-Degree • Number of Degrees Granted	SERG (Committee on Student Engagement, Retention, & Graduation)
Recruiting a Vibrant, Prepared Student Body	• Enrollment • New Students • Diversity (NH, Filipino, Pacific Islander) • New Student Characteristics • Financial Support	SPARC (Strategic Planning Admissions and Recruitment Committee)
Advancing the Research Enterprise	• Extramural Funding • Research Focused Graduate Degrees Conferred • Postdocs • Invention Disclosures, Patents and Licenses	Research Advisory Council
Fostering Excellent Faculty and Shared-use Facilities	• Faculty Scholarly Productivity • International Rankings • Shared Instrumentation Funding	Research Advisory Council
Creating 21st Century Facilities	• Deferred Maintenance • Research Space Renovation (e.g. NSF Survey of Science and Engineering Research Facilities)	CFPB (Campus Facilities Planning Board)
Becoming a Sustainable Campus	• Utility Use (Energy and Water)	Energy Taskforce

STRATEGIC PLAN INITIATIVES MATRIX
Source: UH Mānoa

PHYSICAL BOUNDARIES

The Framework for the Future addresses the following areas on campus:

- Upper (Mauka) campus
- Central campus
- Lower (Makai) campus
- The College of Education (COE)
- Magoon Campus

While UH Mānoa has many properties throughout O'ahu, the only site beyond the core Mānoa campus areas addressed in the Framework are the Magoon campus.

UH MĀNOA SITE

02

Guiding Principles

CORE VALUES

The Core Values reflect the UH Mānoa community's deeply held beliefs and aspirations to become a Hawaiian place of learning, and directly inform the Guiding Principles.

KULEANA
Right, privilege, concern, responsibility...

HĀNAI
Feeding, fostering, raising as a child, and providing for...

HOʻOMALU
To bring under the care and protection of, to protect...

MĀLAMA
Tend to, take care of, and maintain...

STRATEGIC PLAN ALIGNMENT

The purpose of the following Guiding Principles is to align with UH's Mānoa strategic planning efforts. The process comprised key collaboration with representatives of the UH Mānoa staff and faculty, and integrating related work that has been performed. Building off of this valuable preceding work and coordinating with the Mānoa Strategic Plan ensures a continuity of logic and values in university development.

Guiding Principles were developed at the Steering Committee level, and included engagement & review with University leadership and faculty. They form the basis of development and future implementation of the Framework.

Develop the Whole Student

Provide spaces that are physically, mentally and emotionally safe on a daily basis and in times of need. Retention and enrollment growth are reflective of how well we take care of our students.

Ensure Financial Viability

Demonstrate fiscal responsibility and a robust financial plan to make smart decisions, which maximize our ability to do more with less. Ensure that capital is deployed efficiently to achieve the mission of the university.

Steward our Natural Environment

Optimize existing resources and assets by using what we have as efficiently as possible and adopt sustainable design principles to minimize environmental footprint when we do need to build new.

Promote World Class Instruction + Scholarship

Contribute to the advancement of knowledge and help our communities solve the complex and interconnected challenges facing their futures.

Foster Inclusivity + Connectivity

Provide access to housing, transit by all types of mobility, and digital technologies for all campus community members.

Cultivate Collaboration

Promote interdisciplinary learning and meaningful work so that students and faculty can work together to create the best futures for Mānoa, Hawai‘i, and the world.

Leverage Unique Attributes of Place

Honor indigenous ancestral traditions. Care for and learn from Native Hawaiians and their knowledge systems about caring for each other and the natural world, specifically in Mānoa and more broadly in Hawai‘i.

03

Future Conditions & Risk Assessments

DRIVERS OF CHANGE

The university can make informed predictions about a range of potential futures by evaluating a range of future scenarios by looking at anticipated changes in specific focus areas.

FOCUS AREAS

PEDAGOGICAL

How do students learn?

- Teaching methods
- Teaching technologies (i.e. white boards, smart boards)
- Teaching spaces

GOVERNANCE

How do the governing institutions work?

- University organization
- Broader city, county and national governance

ECONOMIC

How is the university sustained?

- Revenue streams
- Funding (i.e. research grants)
- Potential alternative sources of revenue

MOBILITY

How do people get around?

- Transit types to and from campus
- Circulation across campus
- Alternative transportation modes

ENVIRONMENTAL

What is the climate like?

- Typical climate conditions
- Extreme weather risks
- Climate change & sea level rise

DEMOGRAPHIC

Who are the students?

- Student population
- Residents/Commuters
- Transfer students

ENERGY

How does the university use, manage & innovate energy?

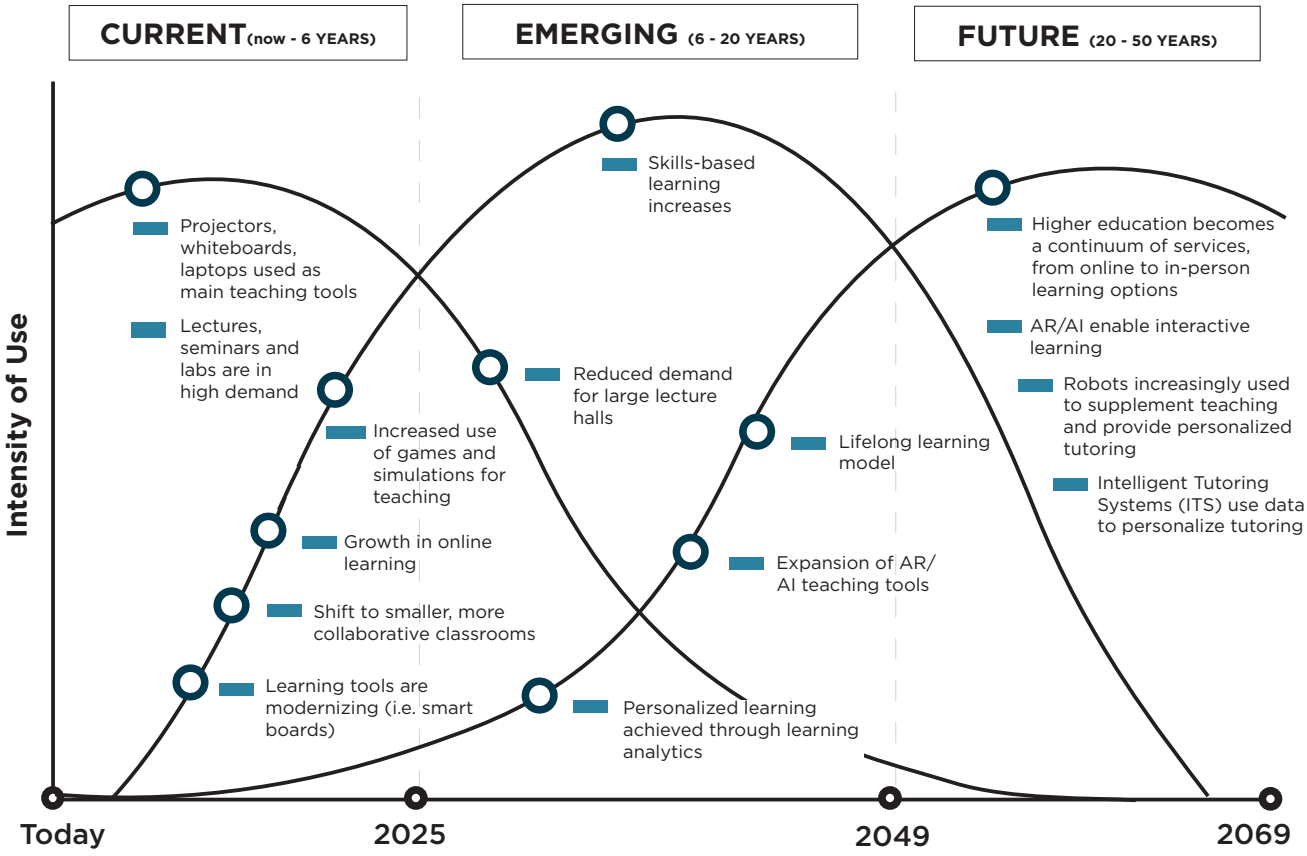
- Consumption rates
- Generation sources
- Storage systems

PEDAGOGICAL

Demand for flexible learning opportunities is on the rise, driven by shifting student demographics and technological improvements.

Local Trends

- UH Mānoa faculty anticipate that they will use tablets, video conferencing and smart boards more in the next 10 years
- Many UH Mānoa courses are moving online, or partially moving online
- Flexible, innovative learning spaces are important
- UH Mānoa is already embracing digitized learning analytics



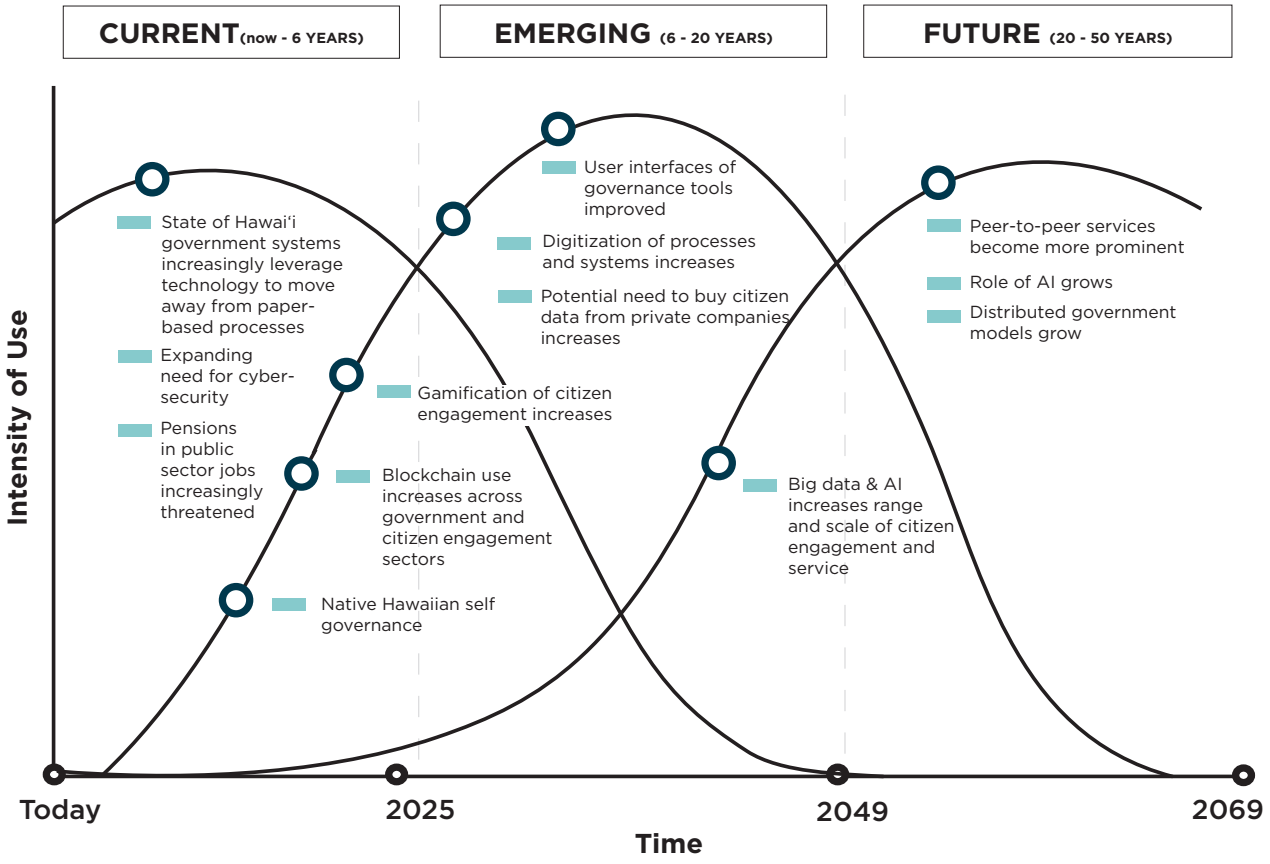
Sources: Faculty Survey on Facilities 2017; Stanford University 2016; Johnson et al. 2016; Jamieson et al. 2000; University of Hawai'i News 2016; National Center for Education Statistics (NCES) 2012; ICEF Monitor 2016

GOVERNANCE

Digitization of citizen communication and municipal service provision will continue to increase, creating both opportunities for engagement as well as potential security threats.

Local Trends

- Mobile citizen engagement is on the rise
- Government service and management tools increasingly streamlined with digitization, reducing paper-based processes
- There is a need for improved cyber security and this will continue to be of concern in the future
- Distributed governance models grow



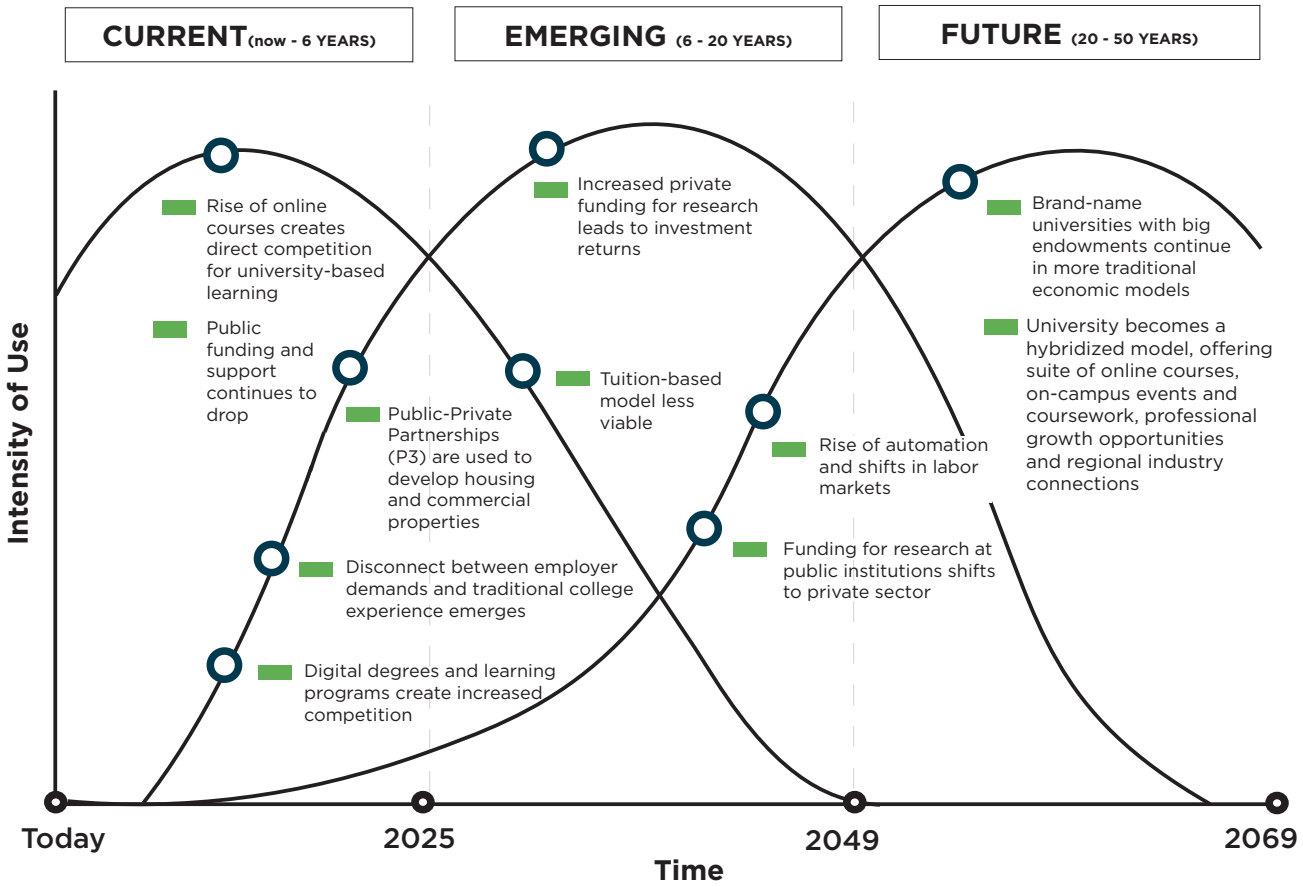
Sources: Schank & Hudson 2018; Brookings Institution 2015; Conway 2009; Deloitte 2015; Transform Hawai'i Government 2018; U.S. Department of the Interior (DOI) 2016; Anderson et al. 2013

ECONOMIC

With tuition-based funding increasingly under pressure, universities are moving towards more diverse economic models.

Local Trends

- Public-Private Partnerships (P3) are increasingly used for development of land at public institutions
- There is a rise in demand for trade-learning and certificate degrees
- Digital degrees and learning programs enhance competition for campus-based universities



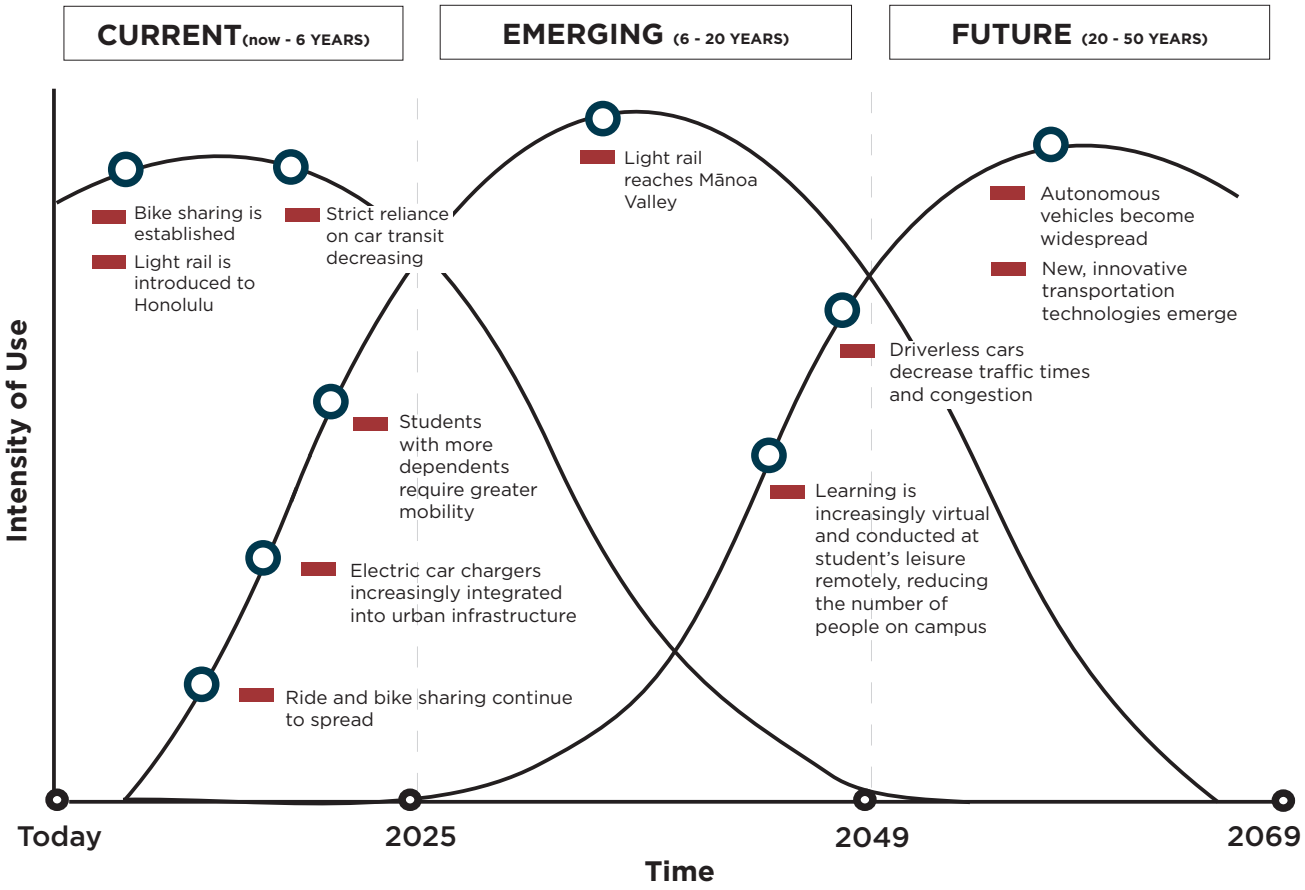
Sources: Mitchell et al. 2017; Chatlani 2018

MOBILITY

Various forms of transit are more widely adopted, from bike and ride-sharing, rail transport to mobility as a service.

Local Trends

- Light rail is being introduced to Honolulu
- Parking is currently in high demand
- Introduction of ride and bike (Biki) sharing
- Traffic problems will likely persist for some time due to Honolulu's high levels of service sector jobs, which demand in-person presence
- Rise of remote learning could decrease numbers of cars on campus



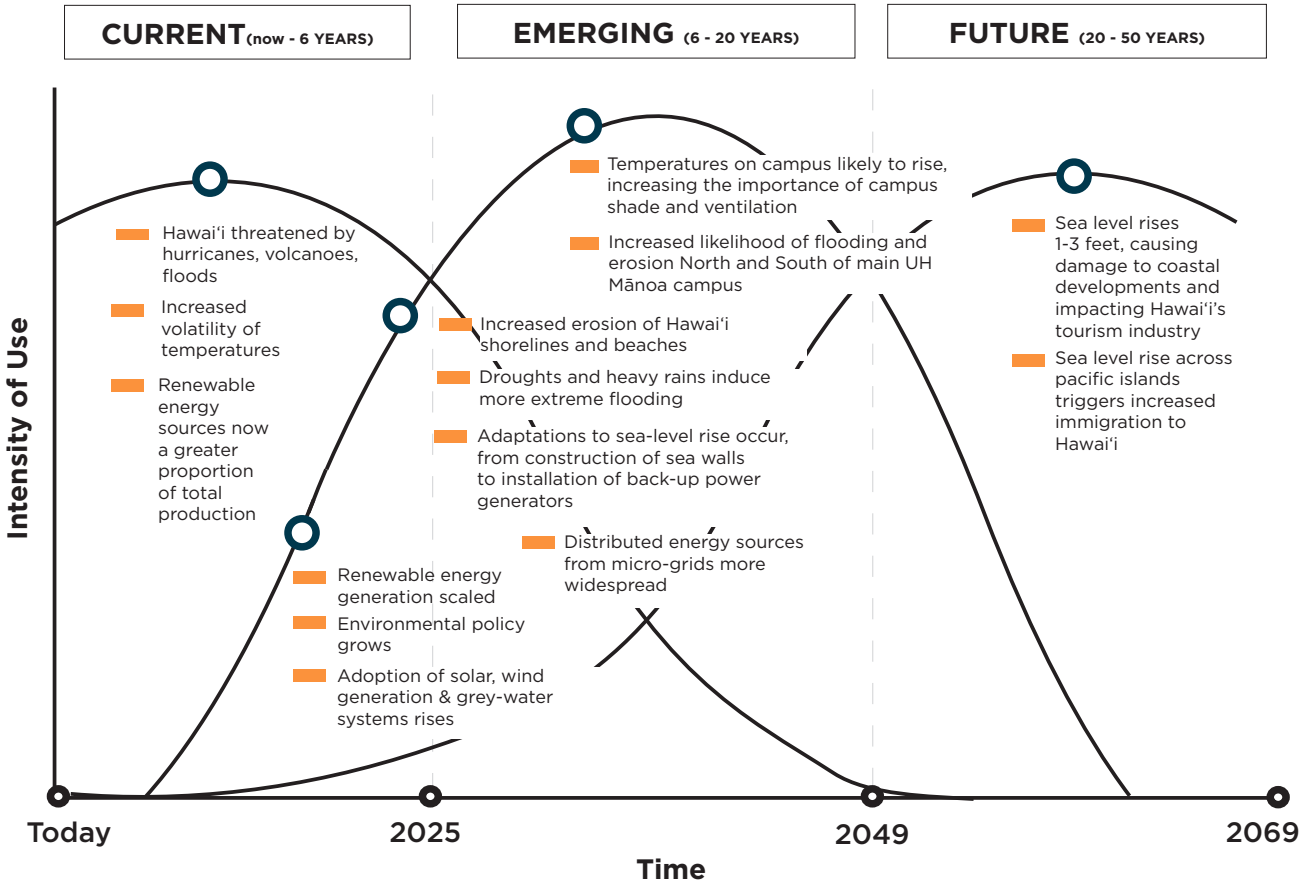
Sources: Brookings Institution 2015; Lyte 2017; American Association of State Highway and Transportation Officials (AASHTO) Journal 2017; Goodall et al. 2017; CityLab 2017; Seagram et al. 2015; Disruptive Geo 2017

ENVIRONMENT

Higher temperatures, increased storm volatility and sea-level rise from climate change are expected to impact existing infrastructure.

Local Trends

- O‘ahu’s daily temperature changing more rapidly than globalized mean
- Long-term storms, drought and heavy rains increasingly volatile and frequent, causing more flash flooding, harm to infrastructure, runoff & sedimentation
- Sea level rise projected to increase, resulting in a 1-3 foot rise by the end of century



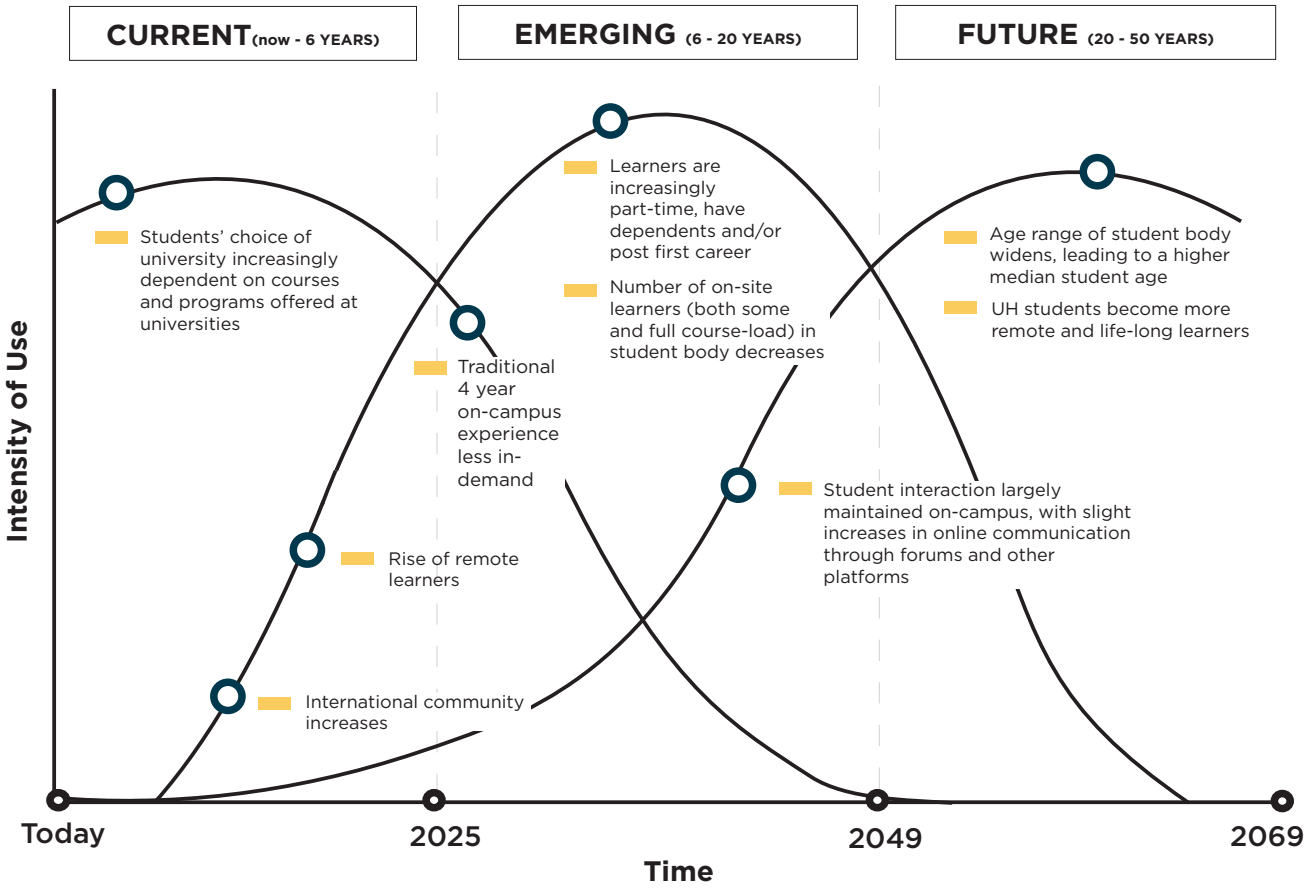
Sources: Brookings Institution 2015; King et al. 2017; Campisi 2018

DEMOGRAPHIC

Universities will increasingly need to cater to a wider range of students seeking part-time enrollment, a more skill-based curriculum and non-traditional university experiences.

Local Trends

- Honolulu's population will grow to over 1 million in coming years
- Neighborhoods such as Mōʻiliʻili will grow with increased private development
- Number of students taking online, distance courses expected to increase

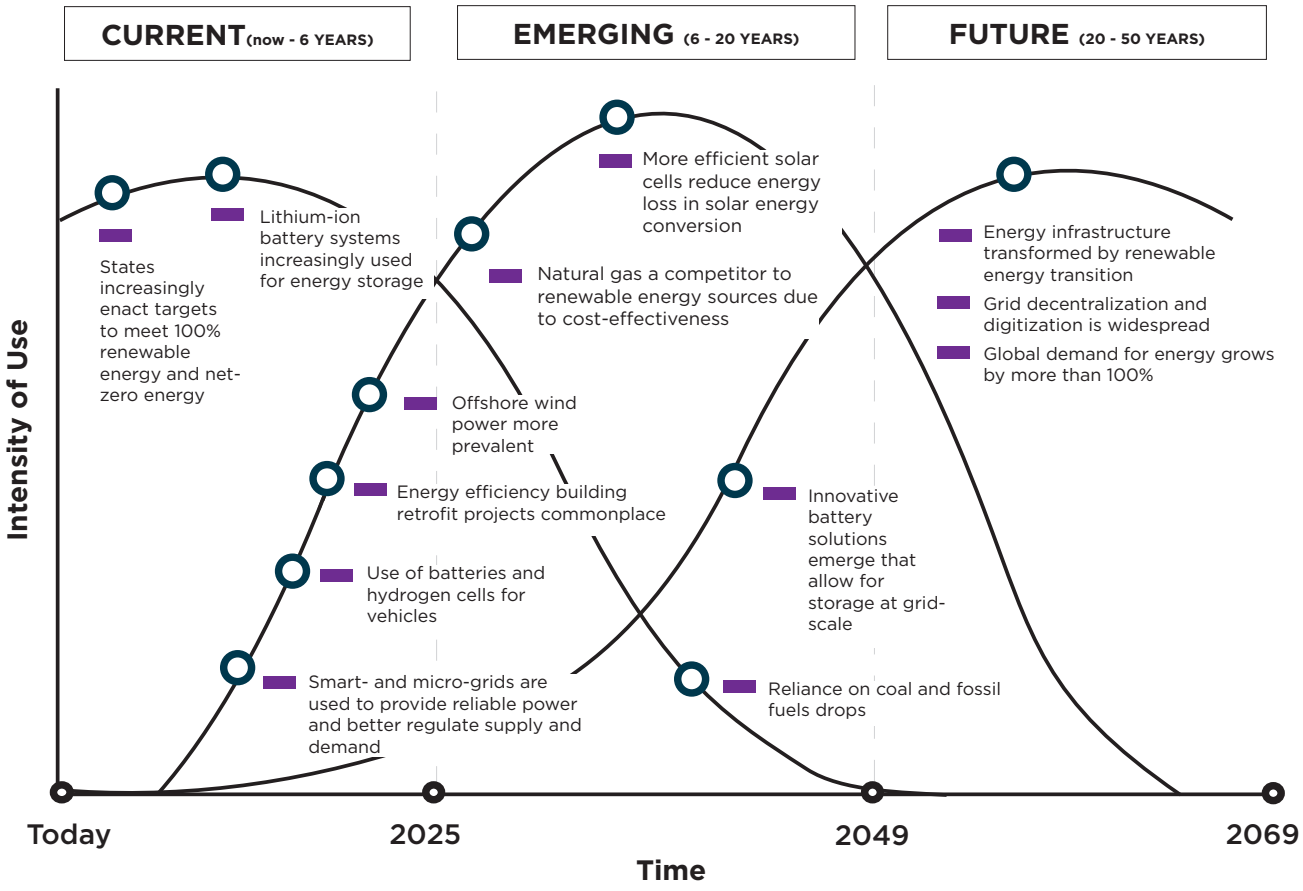


ENERGY

Industry is responding to the demand for less-carbon intensive alternatives and renewable energy. The future of energy involves innovations in grid-management and energy conversion and storage systems.

Local Trends

- Legislation was passed by the State of Hawai'i Legislature to generate 100% of its electricity from renewable sources by 2045
- The University of Hawai'i System is committed to meeting a net-zero energy goal by 2035 and a carbon neutral goal by 2050.



Sources: State of Hawai'i 2015; UH Systemwide Policies and Procedures Information System 2015; Coren 2011; Scott 2018; MIT Energy Initiative 2018; MIT Energy Initiative 2011; Deign 2018

TAKEAWAYS

PEDAGOGICAL

How do students learn?

- Online or distance learning increases
- Learning tools modernize to include AI & AR
- Project-based learning emphasizing interaction and simulation increases
- Personalized learning grows
- Demand for large lecture halls falls

GOVERNANCE

How do the governing institutions work?

- Increasing digitization of processes and systems
- Role of AI grows
- Mobile citizen engagement is on the rise
- In the long term, distributed governance models become more widespread

ECONOMIC

How is the university sustained?

- Financial support of higher education increasingly compromised
- Digital degrees and learning programs change university economic model
- University models become hybridized through Public-Private Partnerships (P3)

MOBILITY

How do people get around?

- Growth in alternative forms of transit reduces parking demand
- Light rail is introduced to Honolulu
- Remote learning reduces need for university parking
- In the long term, rise of autonomous vehicles reduce traffic congestion

ENVIRONMENTAL

What is the climate like?

- More humid and hot base weather
- Increasing frequency of extreme weather and sea-level rise
- Renewable energy generation scaled
- Sea-level adaptation strategies on the rise, such as sea walls and back-up power generators

DEMOGRAPHIC

Who are the students?

- More diversified, non-traditional student body
- More online learning students
- More part-time students
- Median student body age likely to increase with the rise of life-long learners
- International community on the rise

ENERGY

How does the unviersity use, manage & innovate energy?

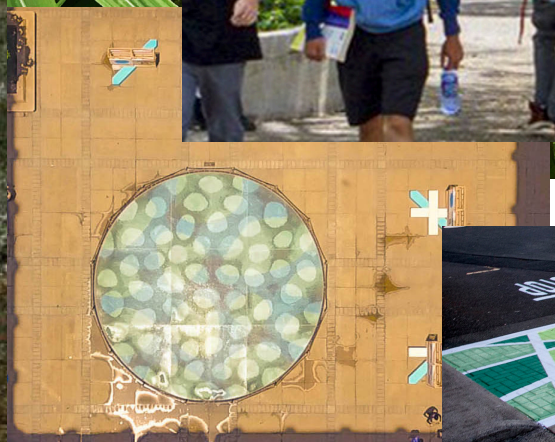
- Increased reliance on renewable energy
- States pass more stringent efficiency targets
- Increased digitization and decentralization of grids
- Innovations in back-up battery storage and solar cells occur
- Global energy demand grows

04

Campus Vision

The Framework Vision will re-invest in the ancient connection between the mountains, Mānoa valley and the sea. The Central campus will be the hub of academic, adminstrative and student life activity, and gathering spaces will celebrate the natural landscape and provide hands-on learning and research environments.

UH Mānoa will serve as a **gathering place** celebrating **human interaction**, and modeling the **synergy** of cultural, historic, modern and future influences through its **flexible, adaptive and responsive environment**.



05

Planning Objectives

OVERVIEW

These objectives pinpoint the primary improvements and changes future campus development must address to accomplish the Guiding Principles of the Framework. They are the physical manifestations of the Core Values, Guiding Principles, and Strategic Goals.

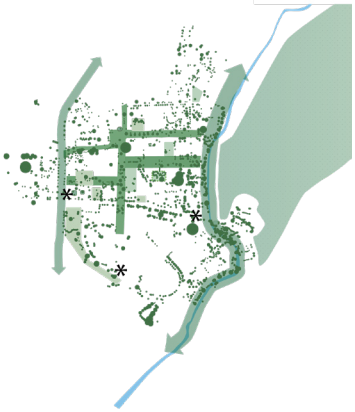
1 OPTIMIZE INFRASTRUCTURE FACILITY, LAND & RESOURCE USE

2 TRANSFORM CIRCULATION & MOBILITY

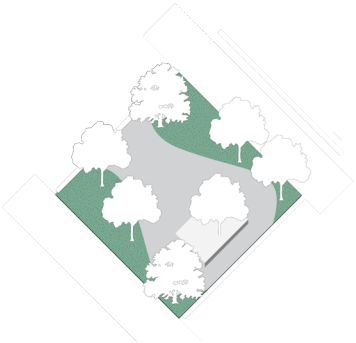
3 STRENGTHEN THE GATHERING EXPERIENCE

4 BECOME A LIVING & LEARNING LAB

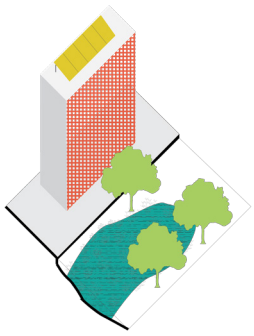
5 ACTIVATE LANDSCAPE & CAMPUS CHARACTER



6 PROVIDE FOR THE CAMPUS ʻOHANA



7 BUILD RESILIENCE



OPTIMIZE INFRASTRUCTURE FACILITY, LAND & RESOURCE USE

GOAL

Organize campus space & investments to optimize utility, density & economic performance.

STRATEGIES

QUANTITATIVE

- Improve building occupancy & utilization rates

PHYSICAL

- Establish zones driven by unique infrastructure needs
- Improve overall facility portfolio effectiveness
- Create land banks for future use
- Develop long-term strategic energy management plan
- Pursue revenue-generating development & partnerships

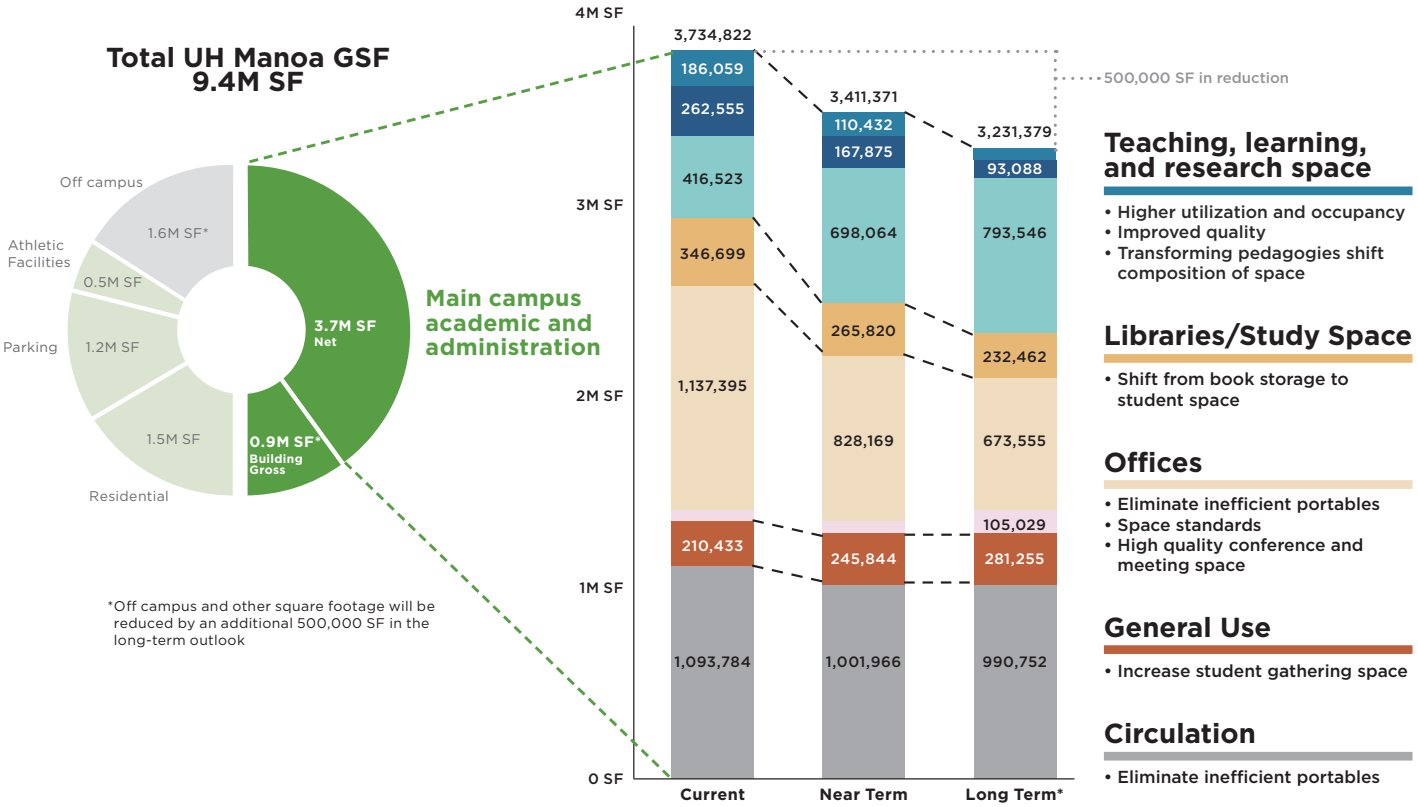
Establish zones driven by infrastructural needs & concentrate academic activity on central campus

QUANTITATIVE

REDUCE TOTAL SQUARE FOOTAGE BY IMPROVING BUILDING OCCUPANCY & UTILIZATION RATES

- Increased space utilization and efficiency of class scheduling
- Increase in the amount of collaborative space for meetings, study or recreational activities to enhance on-campus life & student experience
- Enhancements to the quality and quantity of research space
- Improvements to circulation efficiency
- Decreased reliance on portables
- Reduction of deferred maintenance

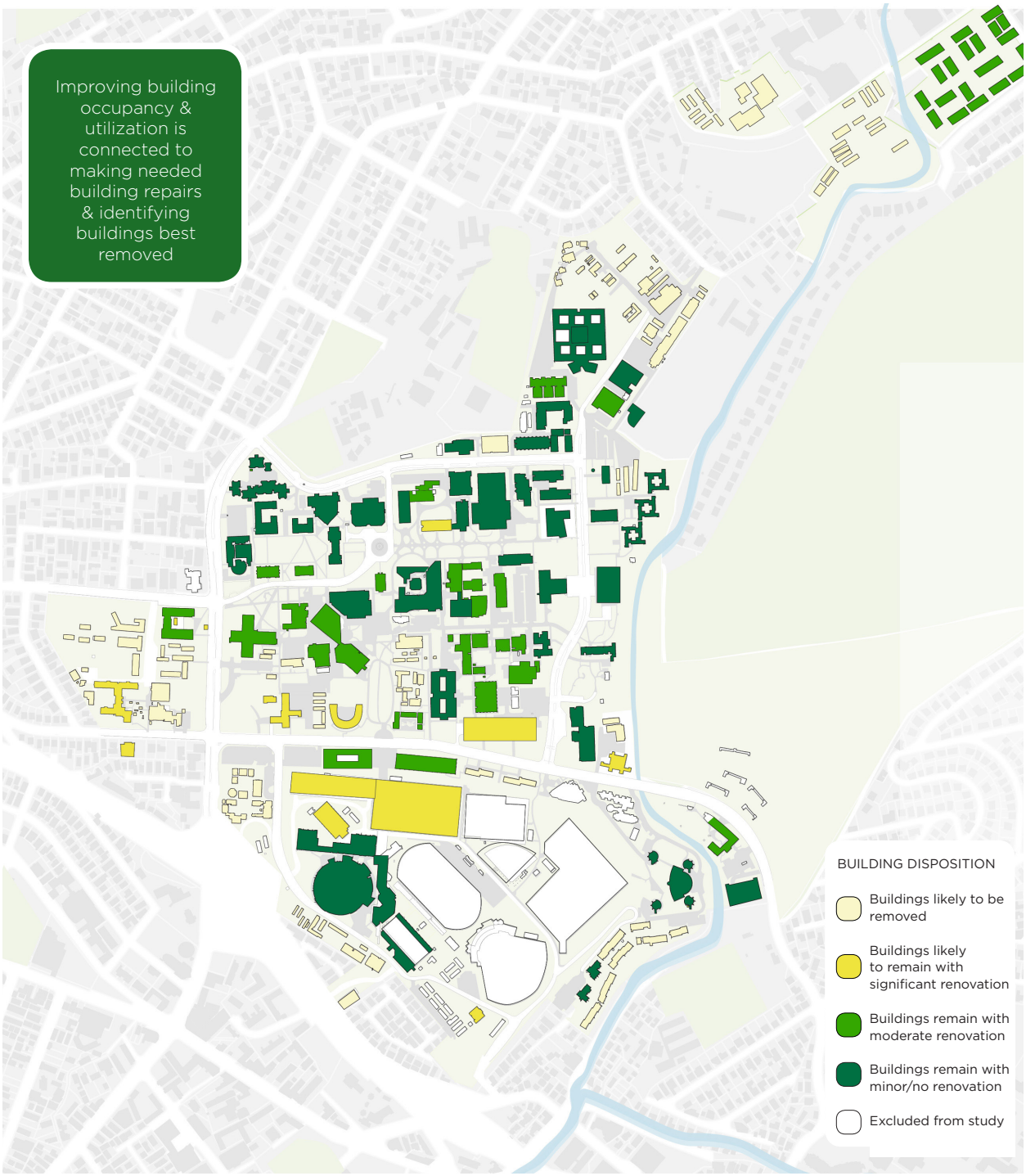
In the long term, space for primary academic facilities may decrease up to 500,000 SF, which is about a 15% reduction. The Core Team made assumptions about how each space type might change in the future informed by research and discussions between the Core Team and several specialized Task Forces at UH Mānoa. The assumptions are used to calculate targets for each space type.



PHYSICAL

IMPROVE OVERALL FACILITY PORTFOLIO EFFECTIVENESS

- Larger, more efficient buildings
- Higher density and more open space by concentrating academic activity on central campus



PHYSICAL (CONT.)

CREATE LAND BANKS FOR FUTURE USE

Removing underutilized portables creates land banks for range of future uses

Current

- remove current portables

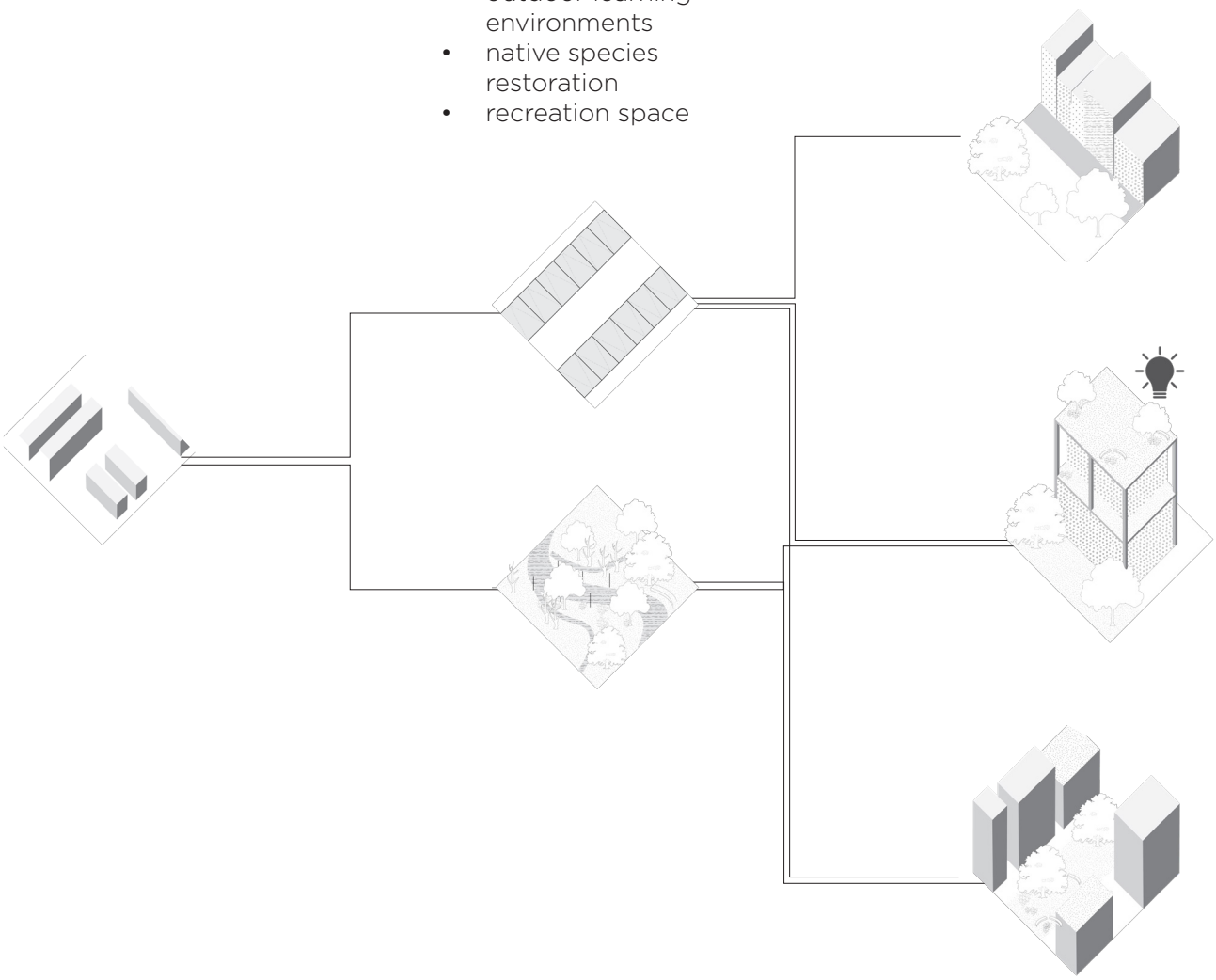
Near Term

Land Banks can be used for number of interim uses

- temporary parking
- outdoor learning environments
- native species restoration
- recreation space

Long Term

- mixed use housing
- R&D spaces
- open space plazas



DEVELOP LONG-TERM STRATEGIC ENERGY MANAGEMENT PLAN

Effective energy management is essential for UH Mānoa's future. Being in control of the University's energy use is crucial to sustained prosperity and growth. Forthcoming energy plans must address the following:

1. Strategies for long-term energy efficiency
2. Diversified and clean energy generation options
3. Plans for storage

Technologies and approaches that UH Mānoa should be ready to embrace include increased storage opportunities and alternative energy generation strategies such as cogeneration.

The long-term Strategic Energy Management Plan will create a framework from which to make strategic decisions regarding the campus' energy use and production that directly align with the University's sustainability goals. The Plan will integrate work from the UH Office of Sustainability to develop implementable, technical strategies to solve key asset management questions. Below are example projects that may emerge out of the Strategic Energy Plan in the near and far-off future.

1 

Distributed Back-Up Systems
Concentrating research activities requiring back-up power in specific areas of the UH Mānoa power grid reinforces the energy distribution system

2 

Co-Generation Plants
Co-generation plants distributed across campus in a zone-approach require strategies for capital investment, space clearance and add-on technologies

3 

Power-Purchase Agreements (PPA)
A 20-30 year financing agreement designed to allow institutions to purchase solar electricity at a fixed rate from a provider with no-upfront capital cost, PPA's provide stable supply and costs while minimizing campus ownership

4 

Energy Savings Performance Contracting (ESPCs)
ESPC's involve partnerships with an Energy Service Company (ESCO) that help identify energy-savings opportunities and implement efficiency upgrades, with project costs paid for by the guaranteed savings

5 

Public-Private Partnerships (P3)
Public-private partnerships (P3) can be used to fund, source and operate energy-efficiency projects, specifically for solar leasing and energy-efficiency retrofits

6 

Energy Efficiency Retrofits
Energy efficiency projects span from improving the efficiency of lighting systems to optimizing the operation of lighting and HVAC systems through lighting control and variable air flow projects

TRANSFORM CIRCULATION & MOBILITY

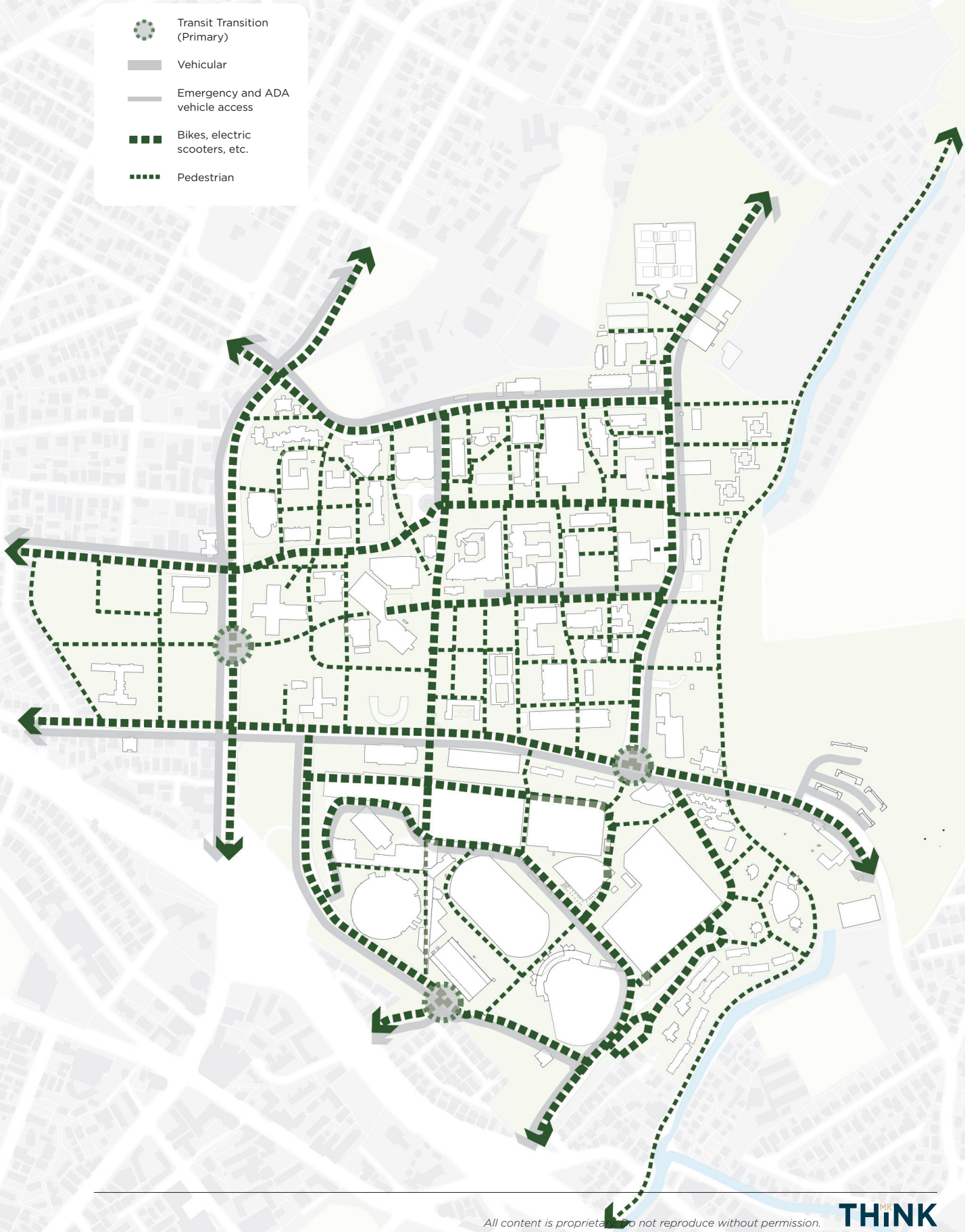
GOAL

UH Mānoa will transition from a commuter campus to a pedestrian-centered place of learning

STRATEGIES

QUANTITATIVE
- Parking

PHYSICAL
- Prioritize pedestrian experience & wayfinding on central campus
- Develop alternative transit solutions to one-driver-one-car
  - *Transit hub*
  - *Develop off-campus parking strategy*
  - *Anticipate future mobility changes*
- Create velocity-based on-campus hierarchy of circulation

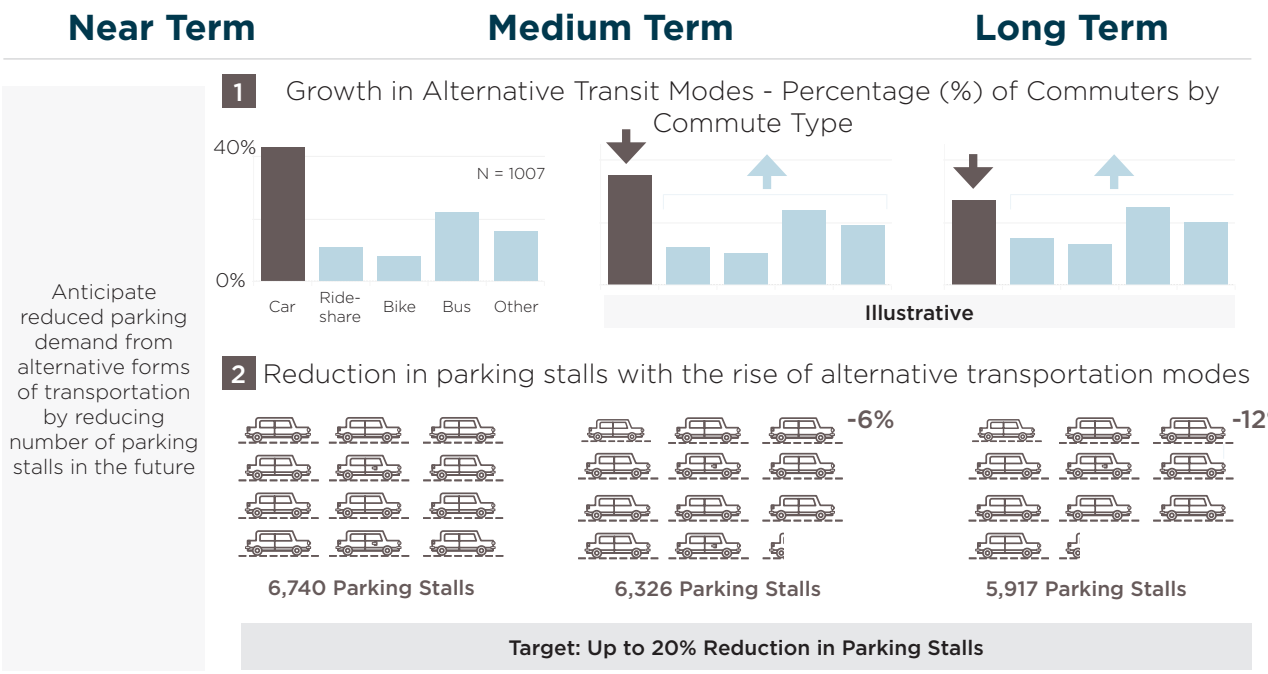


QUANTITATIVE

At present, UH Mānoa is difficult to navigate for pedestrians, cyclists and automotive drivers. With limited available parking, driving is often frustrating and time consuming. With inefficient and ineffective wayfinding tools, moving from place to place in a timely manner is difficult. A more effective hierarchy of movement on-campus would transform mobility in much-needed ways. A key priority is increasing housing so there is less need to commute to campus.

PARKING

Over time, the campus is likely to see a shift in transit-modes and the University should aim to respond by reducing total parking stalls for parking structures and surface parking. With such changes, the overall efficiency of circulation can be improved and parking demand can be reduced by encouraging alternative forms of transit.

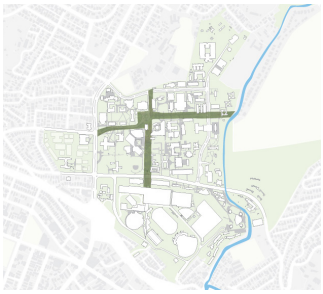


Source: MKThink AIM Database n.d.; UH Mānoa Campus Transportation Demand Management Plan 2012; Victoria Transport Policy Institute 2018; UH Mānoa Parking Demand & Supply Study 2007; Google Earth n.d.

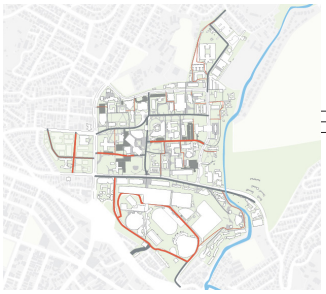
PHYSICAL

PEDESTRIAN PRIORITY ZONE IN CENTRAL CAMPUS

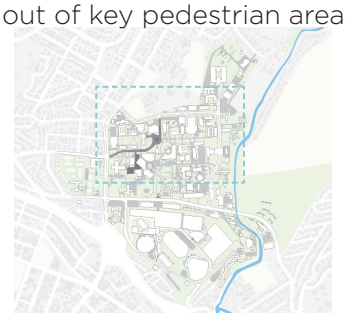
Near Term



Improve Legacy Path, Varney Circle and McCarthy Mall



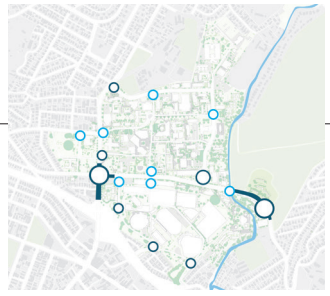
Move service operations out of key pedestrian areas



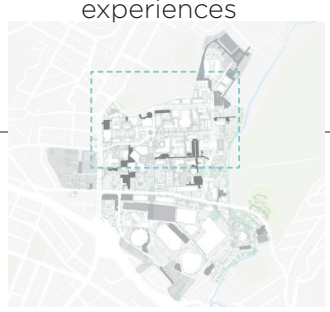
Begin removing parking from central campus

Medium Term

Improve pedestrian access from neighboring areas

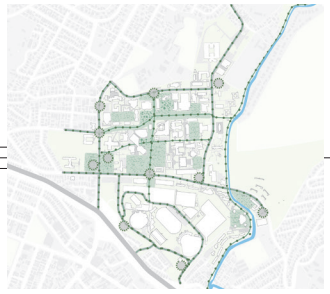


Enhance entry experiences



Remove all parking from central campus

Long Term



Increasingly pedestrian- and gathering-focused campus

Improve Legacy Path & organize streets / paths according to mode

Solidify central campus as pedestrian priority zone

Adapt major thoroughfares to changing transporatation needs

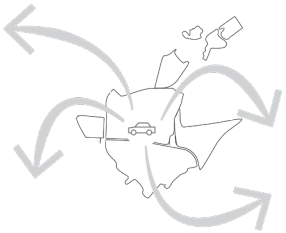
DEVELOP ALTERNATIVE TRANSIT SOLUTIONS TO ONE-DRIVER-ONE-CAR

Near Term

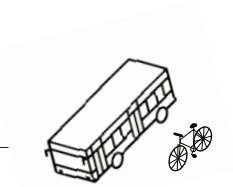
Re-allocating parking creates wealth of new pedestrian-friendly spaces in central campus

Move parking off central campus

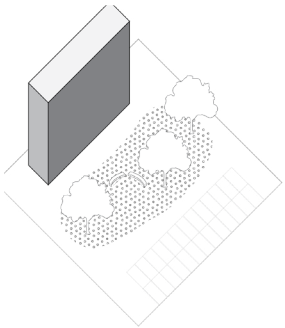
Medium Term



Improve off-campus parking options

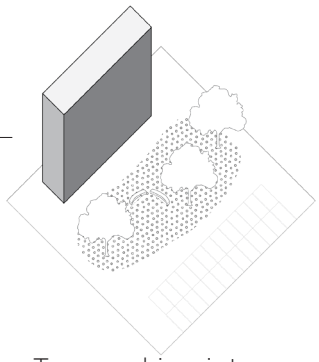


Invest in Public Transit systems

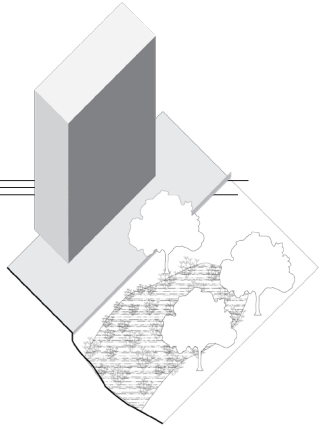


Adapt former parking for alternative uses

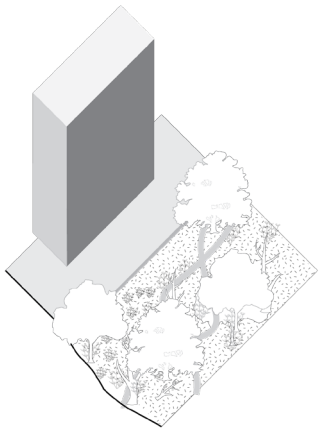
Long Term



Turn parking into gathering spaces



Water detention basins



Outdoor arboretums

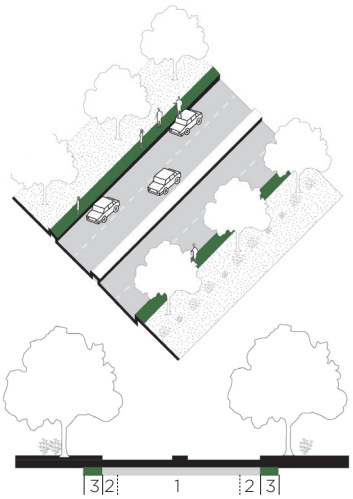
No new on-campus parking

Investment in public transit & car shares

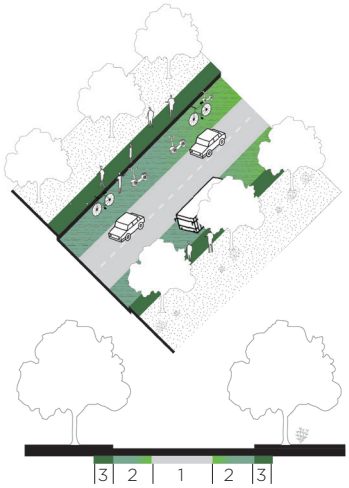
Growing use of autonomous vehicles + remote learning

CREATE MODE-BASED CIRCULATION HIERARCHY

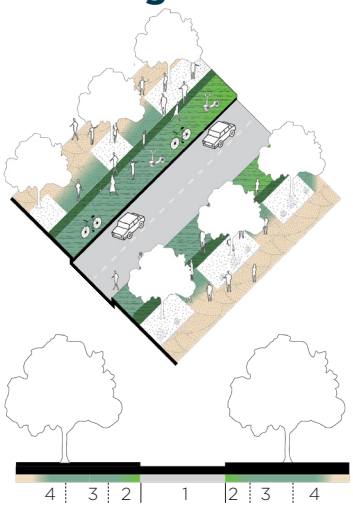
Near Term



Medium Term



Long Term



1: cars, buses, motorcycles, mo-peds 2: bikes, scooters, skateboards 3: pedestrian paths

STRENGTHEN THE GATHERING EXPERIENCE

GOAL

Make vibrant gathering spaces the foundation of campus development

STRATEGIES

PHYSICAL

- Support gathering at all scales
  - *One-to-one*
  - *Small to large groups*
  - *Large events*
- Formal and informal
- Indoor and outdoor

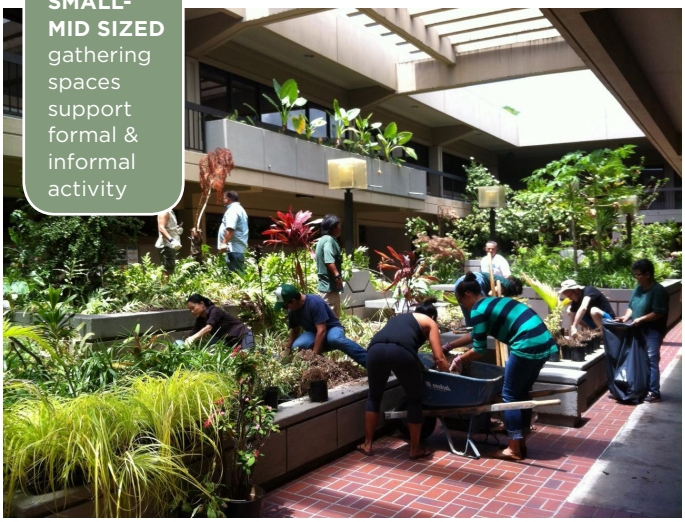
PROGRAMMATIC

- Embedded digital capabilities (digital learning)
- Local & international connections:
  - *Integration of Mānoa/Oʻahu community into campus gathering experience*
  - *Host to international gathering events*

INFORMAL spaces for all scales of gathering

Source: UH Mānoa website

SMALL-MID SIZED gathering spaces support formal & informal activity



Source: UH Mānoa website

LARGE gathering spaces across campus to support a wide variety of key formal events.

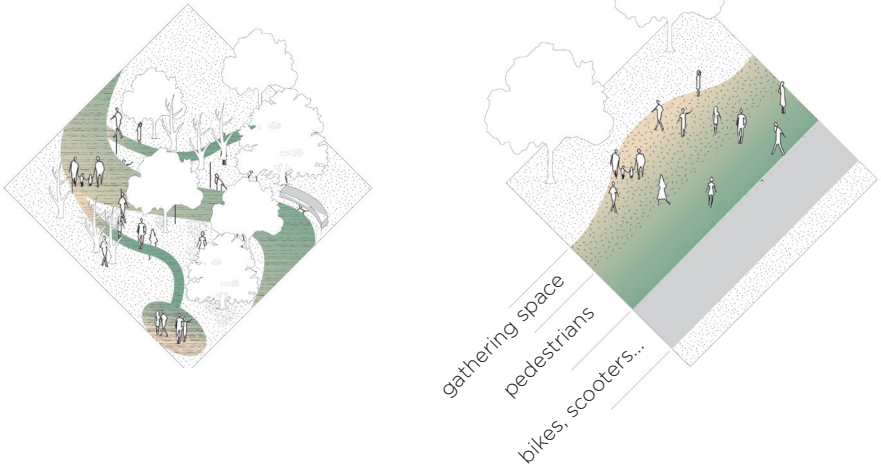
Source: UH Mānoa Flickr

PHYSICAL

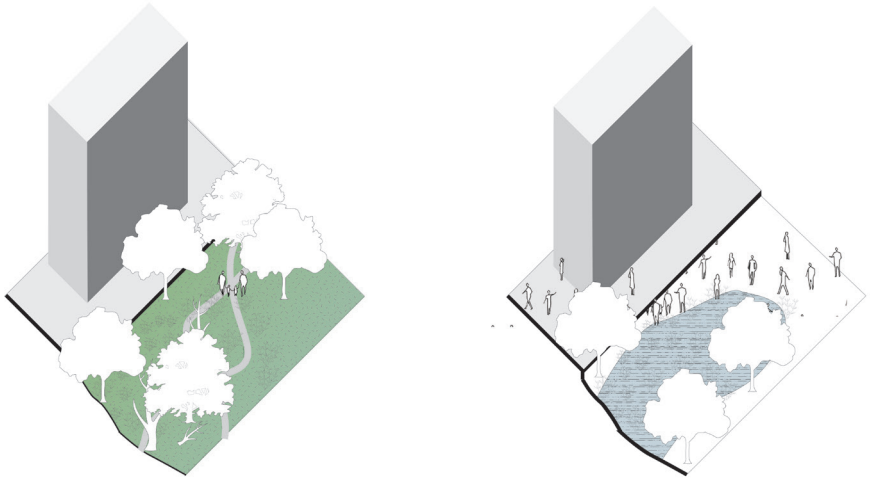
UH Mānoa has great outdoor spaces, but not enough. Existing heavily used gathering spaces are concentrated in the area around the student center, along McCarthy Mall and in certain courtyards on the Diamond Head side of campus. Given the climate and natural beauty of Mānoa valley, the UH Mānoa campus could and should host a greater diversity of gathering spaces. Increasing the amount, type and character of gathering space on campus is of paramount importance to UH Mānoa's continuing success.

GATHERING AT ALL SCALES | FORMAL & INFORMAL | INDOOR & OUTDOOR

Pathways serve double duty as compelling public space for gathering and spontaneous interactions.



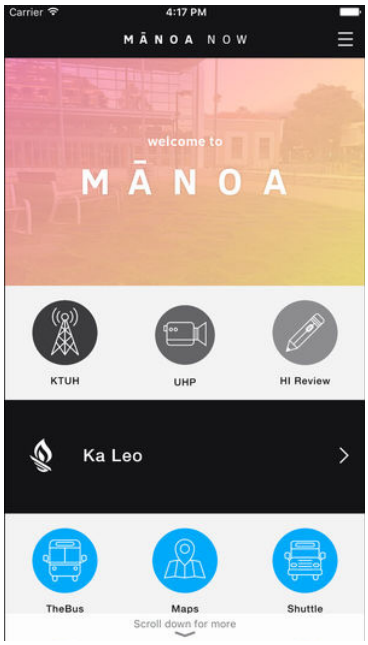
Gathering spaces are designed to be flexible, serving multiple programmatic uses & demographics



PROGRAMMATIC

EMBEDDED DIGITAL CAPABILITIES

As digital technologies continue to improve, the ways faculty, staff and students communicate with each other will incorporate more and more digital interfaces. As such, gathering spaces should be designed to accommodate digital engagement interfaces, including but not limited to WiFi, digital screens, and dynamic lighting. Initiatives such as the Mānoa Now app are a great step in the right direction and should be supported and built upon in the future.



MĀNOA NOW INTERFACE

LOCAL & INTERNATIONAL CONNECTIONS

Host to Global Initiatives

UH Mānoa serves as an important nexus of learning in the Pacific region, with research that has profound implications for the greater global community. As such, its gathering spaces must accommodate opportunities to host international connections and conferences, through digital communication as well as in-person.

Integrate Local Community

In addition to welcoming international connections to UH Mānoa endeavors and conferences, the campus must be dedicated to integrating O‘ahu community members into campus learning and cultural events. Identifying key venues for hosting on-campus events that welcome both local and international partners will be a significant part of this work. Activating underutilized outdoor spaces like Andrews Theater is a straightforward way to start achieving these goals.

BECOME A LIVING & LEARNING LABORATORY

GOAL

Establish & develop UH Mānoa as a center for scalable research and experiential learning

STRATEGIES

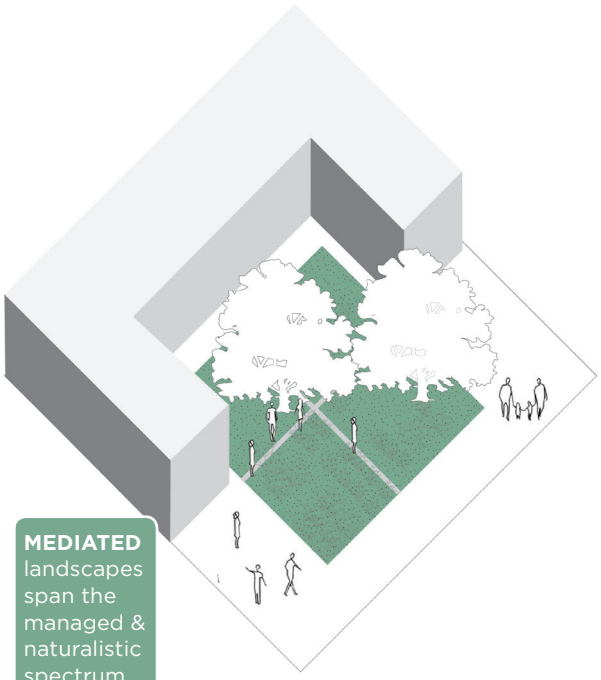
QUANTITATIVE

- Address anticipated research-driven space needs

PROGRAMMATIC

- Campus landscape becomes part of experimentation, learning, and the creation of new knowledge
- Campus models best practices for mālama ʻāina
- Support current and future research objectives with high quality, flexible research environments across a broad portfolio of research methodologies
- Research space supports integration of research and teaching
- Learning environments are flexible and respond to changing pedagogies

MANAGED landscapes are crafted for research purposes



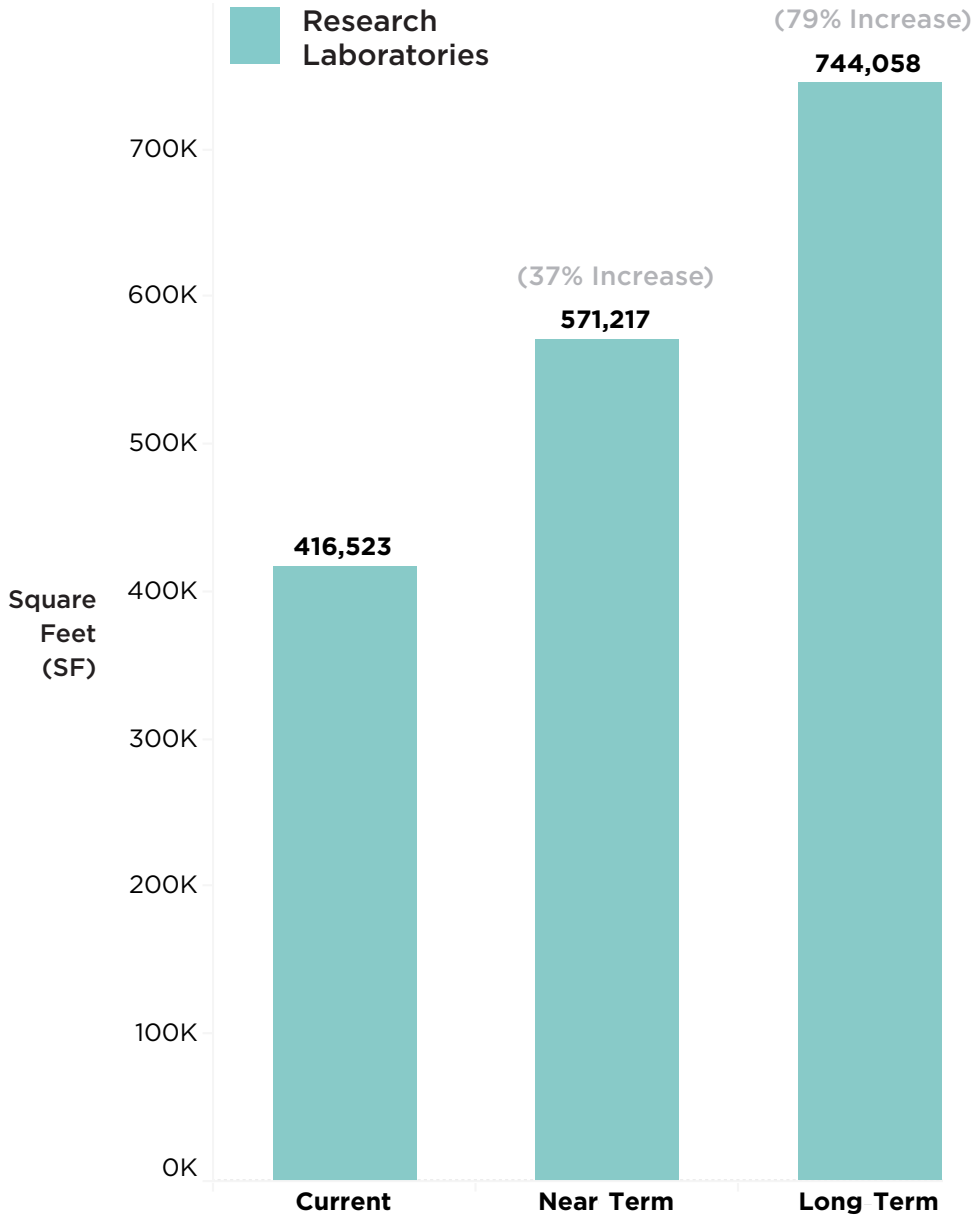
MEDIATED landscapes span the managed & naturalistic spectrum as deemed appropriate for purpose and setting

NATURALISTIC landscapes are cultivated to embody natural growth patterns

QUANTITATIVE

RESEARCH LABORATORIES

UH Mānoa's goal of promoting world-class instruction and scholarship is successfully embodied in its consistent status as a top-ranked research institutions. Primary future goals are supporting the existing research arm of the institution, retaining current faculty and attracting new faculty and researchers in the future by adding more research space and ensuring distribution is similar to other prominent research institutions. Given these goals, space needs are articulated below:



Assumptions include:

1. 5% growth in research programs to promote the university's strong research arm
2. Industry-wide standard for proportion of total campus SF dedicated to research space is adopted to attract new prominent faculty and researchers from prominent research institutions
3. Target proportion of research space to total assignable square feet (ASF) is 15%

PROGRAMMATIC

CAMPUS LANDSCAPE BECOMES PART OF EXPERIMENTATION, LEARNING & CREATION OF NEW KNOWLEDGE

UH Mānoa has a rich and vital natural landscape, where a host of important natural processes take place. Celebrating that landscape and weaving its functions into research activities whenever possible is key to both celebrating Hawai‘i’s natural resources and cultivating a richer, place-based approach to university research practices.

CAMPUS MODELS BEST PRACTICES FOR MĀLAMA ‘ĀINA

Mālama ‘āina means to care for and nurture the land so it can give back all we need to sustain life for ourselves and our future generations. (http://www.sustainablemeasures.com/Training/Indicators/Def-Hawi.html)

Modeling best practices for mālama ‘āina means honoring the traditionally sacred spaces on the Mānoa campus and supporting traditional practices to nurture stewardship of the land in the Mānoa community. A strong example is the lo‘i taro patches and fields near the Hawaiian Studies Center. These spaces represent uses of the Mānoa stream that are in strong alignment with traditional Native Hawaiian practices. Other examples include the ahu at Bachman Courtyard, which is used in ceremonies honoring ancestral spirits and delivering blessings.

HIGH QUALITY, FLEXIBLE RESEARCH ENVIRONMENTS THAT SUPPORT A BROAD PORTFOLIO OF RESEARCH METHODOLOGIES

To facilitate UH Mānoa’s current and future research goals, it needs to support adapting and evolving research methodologies. Ensuring that all learning spaces have high-level facilities is a critical goal for UH Mānoa.

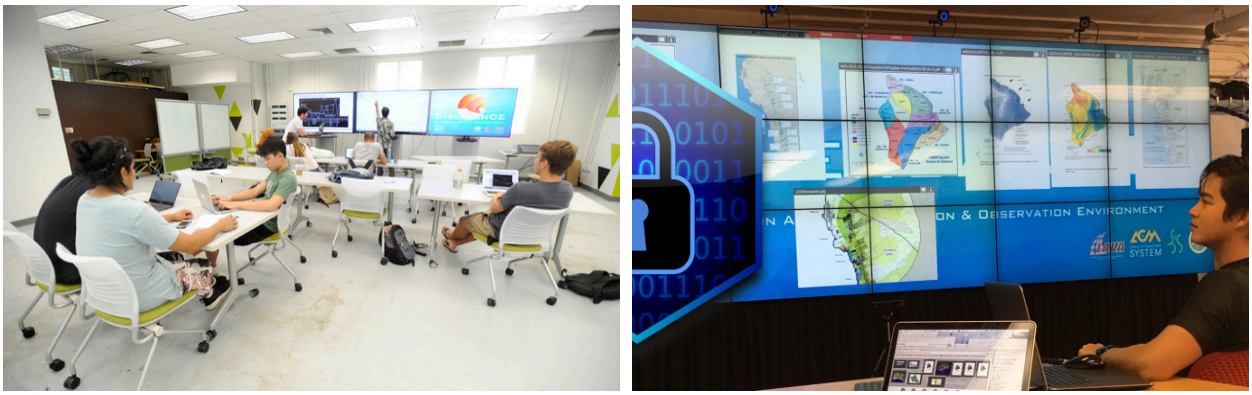
RESEARCH SPACE SUPPORTS INTEGRATION OF RESEARCH & TEACHING

Increasingly, universities are seeing the value of integrating research and teaching activities. Particularly in light of the increasingly fast advances in many professional and career fields, it is increasingly important to prepare students for a life of ongoing learning, and to continue investing in developing new skills after graduation. Exploring ways of enhancing the links between research and teaching activities both improves research methods and prepares students for a more dynamic, adaptable career life.

LEARNING ENVIRONMENTS THAT ARE FLEXIBLE & RESPOND TO CHANGING PEDAGOGIES

High quality, flexible research environments mean investing in spaces that can accommodate the innovative types of research being conducted at UH Mānoa, both in the hard sciences as well as in other fields. This calls for concentrating lab research efforts in certain parts of campus where more intensive infrastructure needs can be condensed, and enhancing shared and common-use learning spaces where appropriate.

The UH iLab and the Laboratory for Advanced Visualization and Applications (LAVA) are strong examples of these approaches, which should be embraced and adopted across campus.



UH iLab (LEFT) AND LAVA (RIGHT)
Source: Honolulu Star Advertiser (left), UH Mānoa website (right)

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ACTIVATE LANDSCAPE & CAMPUS CHARACTER

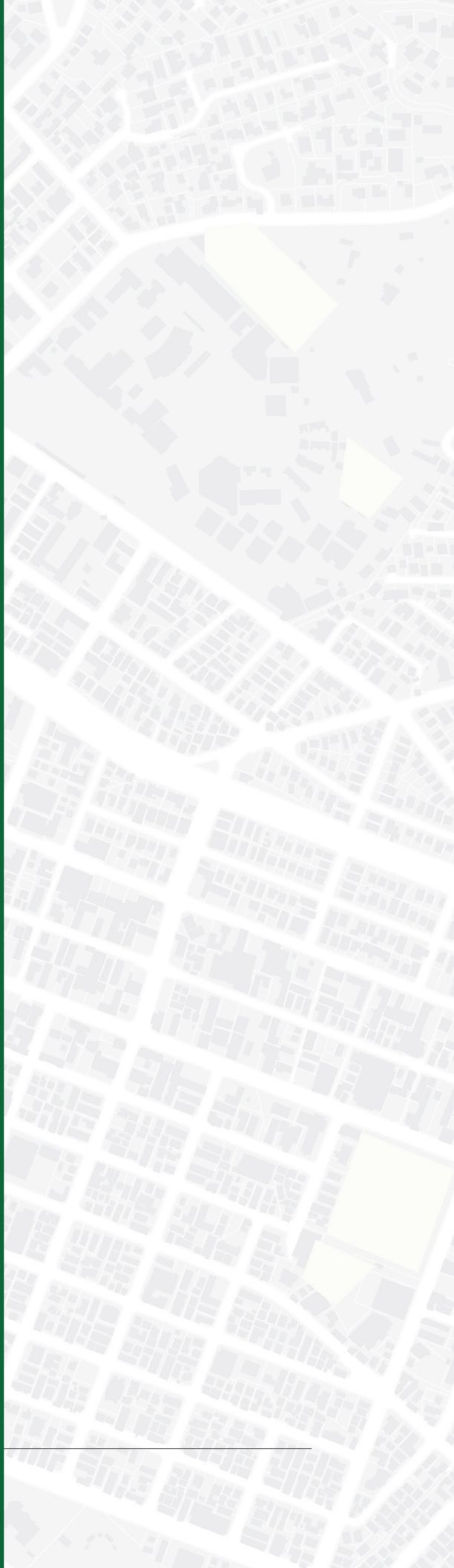
GOAL

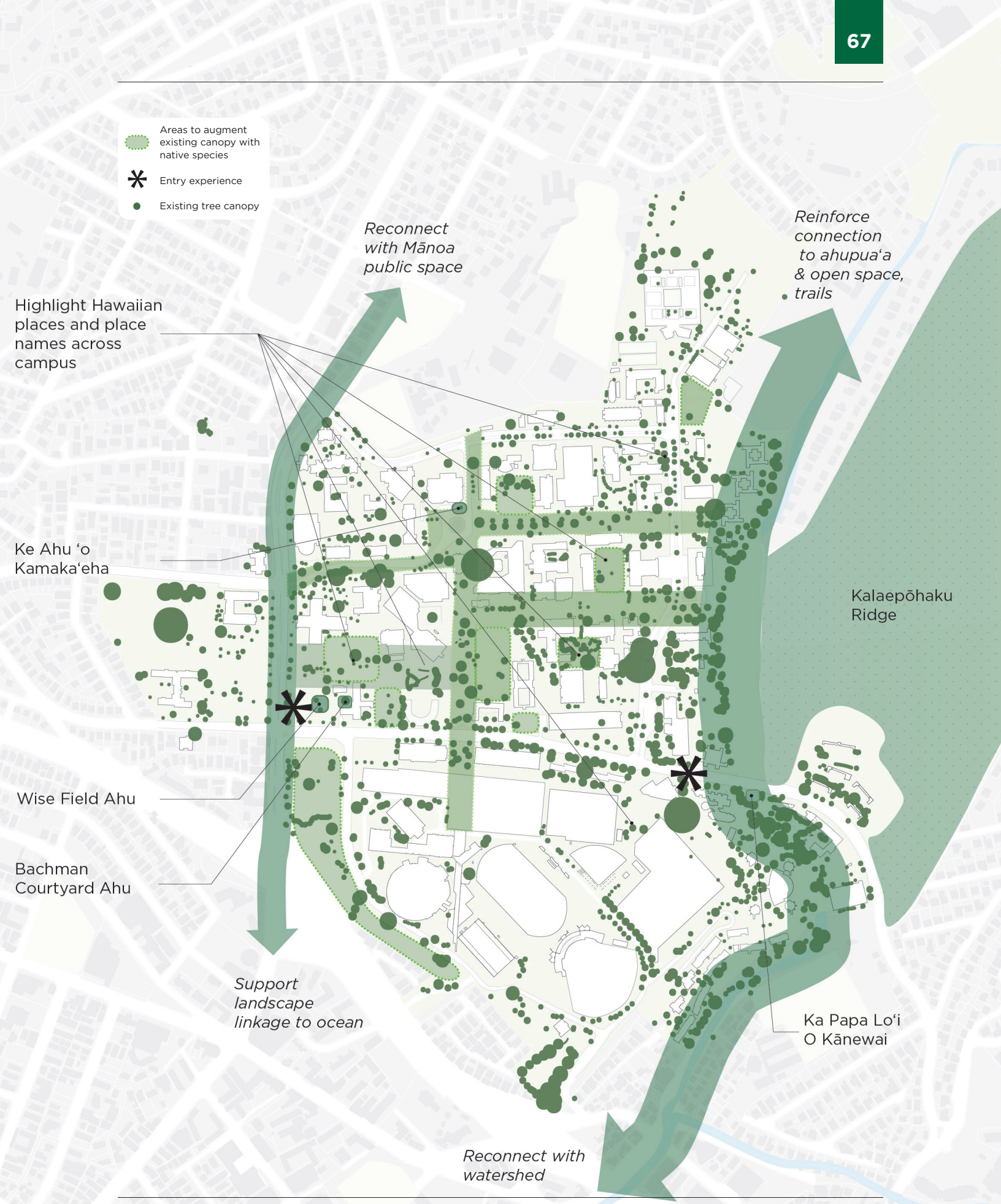
Enhance & increase landscape spaces to create a robust sense of connection to place

STRATEGIES

PHYSICAL

- Cultivate strong campus as a Hawaiian place of learning through intentional landscape design
- Strengthen campus arrival experience
- Incorporate natural elements into everyday experience
- Increase diversity of open space types & multi-functional landscapes
- Emphasize tree canopy & native species
- Connect campus to adjacent open space trails & resources





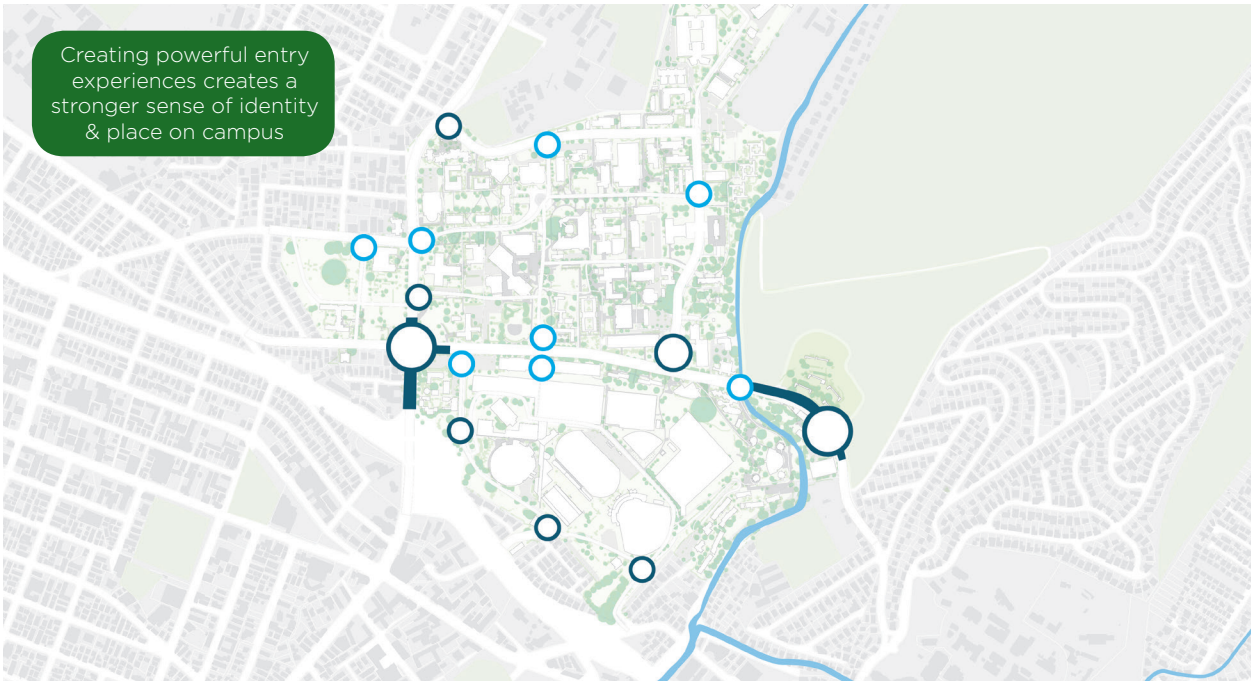
PHYSICAL

CULTIVATE STRONG CAMPUS AS A HAWAIIAN PLACE OF LEARNING THROUGH INTENTIONAL LANDSCAPE DESIGN

While the UH Mānoa campus is lush and verdant, much of the campus is allocated to parking and paved surfaces. Given that the campus' landscape is one of its most valuable and distinctive attributes, UH Mānoa should celebate is unique natural assets and reduce paved surfaces.

An important part of this process is cultivating greater campus understanding of the land as the ahupua'a -- approaching the highlands, valley and the coast as an integrated unit that work together and must be treated as such. Appreciating the campus as part of that broader whole is another important way in which the campus can model best practices for mālama 'āina and cultivate a stronger identity as a Hawaiian place of learning.

STRENGTHEN CAMPUS ARRIVAL EXPERIENCE



By improving entry experiences, UH Mānoa can give a stronger, unique character to the 'ewa side entrance on University Avenue and a distinctive design to the Diamond Head side entrance on Dole Street. Strong pedestrian and gathering space connections will likewise be made to re-connect to Mānoa Stream.

INCORPORATE NATURAL ELEMENTS INTO EVERYDAY EXPERIENCE

Natural elements have a relaxing effect on the body, mind and spirit. Emphasizing the Mānoa campus' natural qualities throughout everyday spaces will cultivate a stronger sense of unique campus character and improve quality of life for students, faculty and staff.

INCREASE DIVERSITY OF OPEN SPACE TYPES & MULTI-FUNCTIONAL LANDSCAPES

Source: Easterday Design Landscape Architecture website

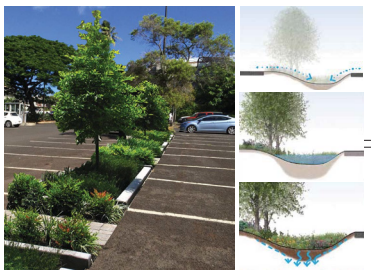
EMPHASIZE TREE CANOPY & NATIVE SPECIES

The campus is an arboretum; a living museum with a wealth of beautiful tree specimens. Treating it as such and further investing in UH Mānoa's tree canopy will create a greater wealth of naturally shaded spaces that maximize the utility and pedestrian experience of the campus' outdoor areas. More native species should be cultivated across campus to celebrate Hawai'i's rich natural heritage and provide learning opportunities to faculty, staff, students and visitors.

PHYSICAL (cont.)

TIMELINE

Near Term

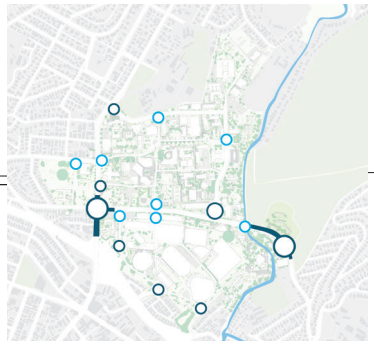


Source: UH Community Design Center

Introduce low impact development (LID) to parking & paved areas

Legacy path becomes heart of UH Mānoa landscape

Medium Term



Introduce connections to Mānoa stream & expand native/edible planting program

Enhance entry identities & begin engaging Mānoa stream

Long Term

Access to Mānoa stream becomes key campus attribute & experience

Mānoa campus reconnected to Mānoa ecosystem

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PROVIDE FOR THE WHOLE CAMPUS ‘OHANA

GOAL

Create a living campus that supports community & student wellbeing

STRATEGIES

QUANTITATIVE

- Address anticipated student and faculty residential space needs

PHYSICAL

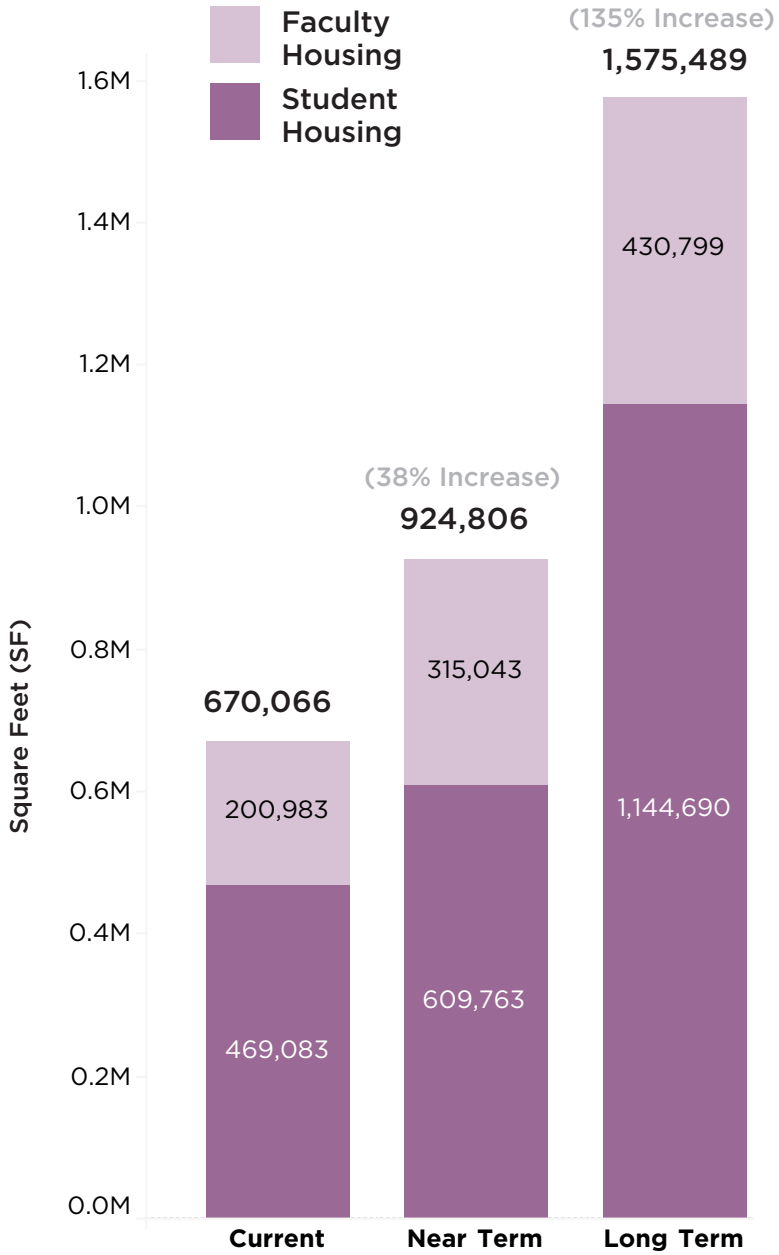
- Improve the quantity and quality of the residential experience for undergraduate students, graduate students, and faculty
- Ensure the campus provides for the overall wellness of its citizens

PROGRAMMATIC

- Leverage campus as recreational opportunity
- Introduce social environments to campus that can also serve the Mānoa community and public

QUANTITATIVE
STUDENT & FACULTY RESIDENTIAL

Primary goals are improving on-campus student experience and student retention rates by growing total housing stock to support current and future demand. Given these goals, space needs are articulated below:



Assumptions include:

1. To match student housing demand and enhance the physical presence of students on-campus, increase number of students living on-campus
2. Assume number of students living on campus grows from today's 21% to 34% in the long term
3. To support current faculty and attract new faculty and researchers, provide more on-campus housing options for faculty
4. Assume number of students living on campus grows from today's 10% to 21% in the long term
5. Provide sufficient space by enlarging the SF / student for any new developments
6. Increase SF / student from 125 SF to 257 SF / student, the value for new developments determined by consultants in UHM housing study

PHYSICAL

IMPROVE THE QUANTITY AND QUALITY OF THE RESIDENTIAL EXPERIENCE FOR UNDERGRADUATE STUDENTS, GRADUATE STUDENTS, AND FACULTY

Increasing housing stock for students and faculty on and/or close to campus is a key part of improving the campus experience and cultivating a more dynamic quality of student life. At present, housing around UH Mānoa is relatively pricey and hard to come by, particularly for faculty with families. Alleviating those pressures is a priority for the University.

Findings from the 2017 Campus Experience survey found that residential experiences were high on the list of factors that influence students' perspectives of the campus.

"A great university experience means that the education and housing is worth the money students pay for."

CAMPUS EXPERIENCE SURVEY

ENSURE THE CAMPUS PROVIDES FOR THE OVERALL WELLNESS OF ITS CITIZENS

Designing facilities and programs to support all aspects of student wellbeing will be increasingly essential in years to come. As student demographics diversify, accounting for the importance of activities and resources beyond the classroom will become more important.

Child care and on-site health services are an important aspect of that work. Facilities must support programs like the UH Mānoa Children's Center that provides early childhood education for children 2-5 years old.

University Health Services Mānoa is open on campus Monday through Friday from 8am to 4pm, with physicians, nurse clinicians and other support staff available.

UH MĀNOA CHILDREN'S CENTER
Source: UH Mānoa website

PROGRAMMATIC

LEVERAGE CAMPUS AS RECREATIONAL OPPORTUNITY

Investing in the quality of campus life and citizenship means investing in a range of recreational opportunities: everything from spaces such as loʻi and athletic fields, to hiking trails and outdoor eating areas.

> *"[The Fall 2017 semester is going well because...] There are a lot of fun events & things that make college fun."*
>
> CAMPUS EXPERIENCE SURVEY

Given its compelling natural beauty, the entire UH Mānoa campus can and should be approached and designed as a range of recreational opportunities. The Mānoa Stream provides a range of opportunities for students, staff, faculty and community members to enjoy the sound of fresh running water and shaded outdoor space. The McCarthy Mall, with its ample tree canopy and spacious shaded walkways can double as social spaces for casual meetups and relaxation.

INTRODUCE SOCIAL ENVIRONMENTS TO CAMPUS THAT CAN ALSO SERVE THE WIDER PUBLIC

As a significant employer in the region, a point of attraction for international talent and a convener of important research and thought-practice, UH Mānoa holds an important role within the greater Honolulu community. However, few of its campus spaces are openly welcoming to the wider public. Creating key areas and zones that serve the wider public as well as the immediate campus community will serve to heighten regional appreciation and awareness of UH Mānoa's research pursuits and increase the University's civic value for decades to come.

Under-utilized campus spaces like Andrews Theater have significant potential for bringing in outside communities, as do places like the East-West Center. Looking to existing examples, such as the Greek Theater at UC Berkeley in Berkeley, California, can be instructive in articulating ways that event spaces can be used to create stronger ties between campus communities and the wider public.

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BUILD RESILIENCE

GOAL

Build flexibility & resilience through climatological foresight, multi-functional landscapes & operational preparedness

STRATEGIES

PHYSICAL

- Flexibility to allow for uncertainty and mitigate risk associated with large capital projects
- Agile campus that can anticipate and adapt to change
- Redundant systems to ensure continuity of operations in case of emergency situations

Source: Easterday Design Landscape Architecture, website

PHYSICAL

FLEXIBILITY TO ALLOW FOR UNCERTAINTY AND MITIGATE RISK ASSOCIATED WITH LARGE CAPITAL PROJECTS

Given the growing uncertainty of climatic shifts and more intense storm events associated with climate change, large scale capital projects will increasingly be subject to delay and/or significant revision in the time between project initiation and final completion. As such, UH Mānoa must adopt a more flexible approach to development and capital improvement plans, ranging from increased adaptability in overarching development strategy to spreading greater resilience in infrastructural and operating systems across campus.

Implementation of a more resilient approach to projects across the Mānoa campus requires a coordinated effort to incorporate both renewable and efficiency initiatives. The types of renewable and efficiency initiatives that may occur in the future at UH Mānoa include:

- Energy efficiency retrofits
- Renewable energy projects
- Co-generation plants
- Distributed back-up systems
- Grid management technologies
- Building design standards

AGILE CAMPUS THAT CAN ANTICIPATE AND ADAPT TO CHANGE

As the impacts of climate change become more marked and intense in coming years, being proactive and preparing for greater degrees of uncertainty in climate, weather events and resource access is essential for our continued institutional success.

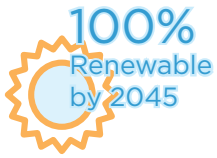
It is advisable for the campus to be as self-sufficient as possible and reduce dependence on external water and energy supply by being strategic about power storage, grey water recycling and water retention for reuse and storage. For any new construction, retrofits, etc., UH Mānoa must start proactively (from early phases such as the building assessment phase) taking into consideration the building's survival in extreme weather events; priority for funding towards building improvements might be significantly altered. Additionally, parts of the Mānoa campus are in the floodplain of the Mānoa stream and hence, are high flood risk areas. Proactively identifying vulnerable areas on site and subsequently channeling funds towards buildings/topography that must be prioritized for reinforcing or regrading, building new pathways etc. will prevent more serious damage in the future.

Progressive targets have been set forth by the UH System which motivate the sustainability efforts of UH Mānoa, such as becoming a Net-Zero campus.

Over-arching targets include an energy bill passed in 2015, which required the University of Hawai'i System to establish a goal to become net-zero, or produce as much energy as it consumes by 2035. In that same year, the University of Hawai'i system adopted an executive policy to achieve carbon neutrality through the use of renewable energy sources or carbon offset credits by 2050. These targets are driven by the State's goal to produce 100% of its energy from renewable sources by 2045.

Net Zero Energy

The State of Hawai'i and University of Hawai'i System have set forth ambitious sustainable energy policies. Below are the Goals & Objectives for UH Mānoa:



- **State of Hawai'i Goal of 100% Renewable Energy by 2045**:
  In 2015, the State of Hawai'i legislature passed an energy bill committing to generate 100% of its electricity from renewable sources such as wind, water, solar or biomass by 2045.
  Source: State of Hawai'i 2015

- **University of Hawai'i System Net-Zero Energy Goal by 2035:**
  In the energy bill passed in 2015, the State of Hawai'i required the University of Hawai'i System to produce as much energy as it consumes by 2035.
  Source: University of Hawai'i News 2015

- **University of Hawai'i System Carbon Neutral Goal by 2050:**
  In 2015, the University of Hawai'i System adopted an executive policy to achieve carbon neutrality through the use of renewable energy sources or carbon offset credits by 2050.
  Source: UH Systemwide Policies and Procedures Information System (PPIS) 2015

Multi-functional Landscapes

UH Mānoa can leverage its abundant natural landscape assets for resiliency purposes to mitigate the effects of extreme weather events and rising temperatures. The purpose of multi-functional landscapes are manifold -
1. Identifying opportunities to reduce hardscape and introduce softscape and tree canopies increases shade and shelter, combats urban heat island effect and provides a more comfortable microclimate on campus.
2. In terms of water, multifunctional landscapes can help

- leverage extreme weather events as an opportunity for rainwater harvesting

- proactively reduce damage caused by flooding through retention and detention of water
- grey water recycling

3. Creating awareness:
The very presence of multifunctional landscapes on campus can be used to create awareness in campus citizens and the local Mānoa community. This helps build capacity for the University as a whole to withstand future shocks.

In addition, UH Mānoa will continue to build on existing programs and initiatives to expand campus awareness of and investment in resilience issues, to serve as a resource for the campus and local Mānoa community. These include:

- Ongoing standardization of sustainability focused courses and programs across the UH System
- Work with P-20 to develop sustainability- and resilience-focused early college credit pathways
- Work with HECO and other agencies to develop a holistic energy resource management strategy that benefits both the university and the state
- Work with students to develop student-driven outreach using the effective, field-tested Community-Based Social Marketing (CBSM) method
- Engagement with students to prompt projects revolving around the following topics: recycling, energy efficiency, waste reduction, and composting
- Invest in energy savings and energy performance monitoring initiatives

REDUNDANT SYSTEMS TO ENSURE CONTINUITY OF OPERATIONS

In the event of disasters such as hurricanes or extreme flooding, UH Mānoa must be prepared to continue serving its students, faculty and staff. Redundant systems are critical to both human safety as well as operations. Campus citizens rely on critical infrastructure for health and safety as well as to support and maintain the world-class research being conducted on campus. Investing in redundant infastructural systems, particularly our power sources, is a strong step towards building a resilient campus.

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06

Space Needs Forecast

INTRODUCTION

The UH Mānoa campus is composed of 15 different space types, which amount to almost 7 million (6,901,980 ASF) of assignable square footage (ASF), and 7.5 million ASF (7,519,705 ASF) with all indoor and outdoor parking.

While existing campus space allows the university to meet current demand, there exist opportunities to align the campus space more closely with the core values and mission of the university, as well as develop a plan to adapt to emerging trends and enrollment growth. The Space Needs Forecast presented here informs the physical space planning process to guide future growth and development. More broadly, the objectives of the Space Needs Forecast are the following:

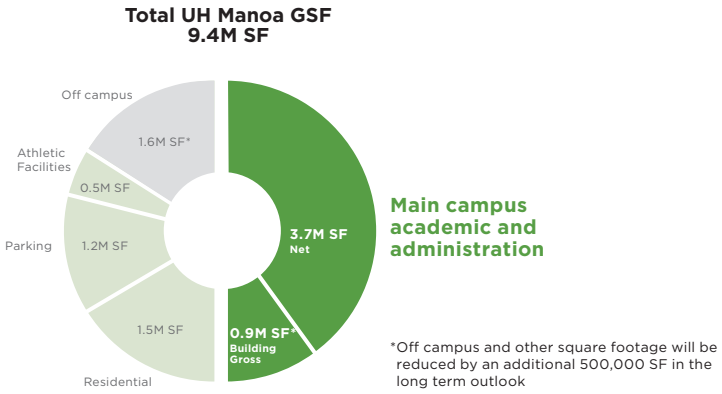
OBJECTIVES

- Plan for UH Mānoa's future growth
- Ensure the campus is flexible and can adapt to emerging and future trends
- Optimize existing assets and improve space efficiencies with space standards
- Ensure campus space reflects broader values and objectives of UH Mānoa
- Improve campus experience by providing adequate academic and recreational spaces for students and faculty members

HOW MIGHT CAMPUS SPACE SHIFT IN THE FUTURE?

Currently, Mānoa controls 9.4M GSF. Of this, 4.6M GSF are in main campus academic and administrative environments. Space types are defined by the National Center for Education Statistics (NCES), and data on current space use is from MKThink's AIM Database.

To assess this question, future trends and guiding principles were evaluated across three future timelines, or potential scenarios. These potential scenarios include the Current State, the Near-Term and the Long term.

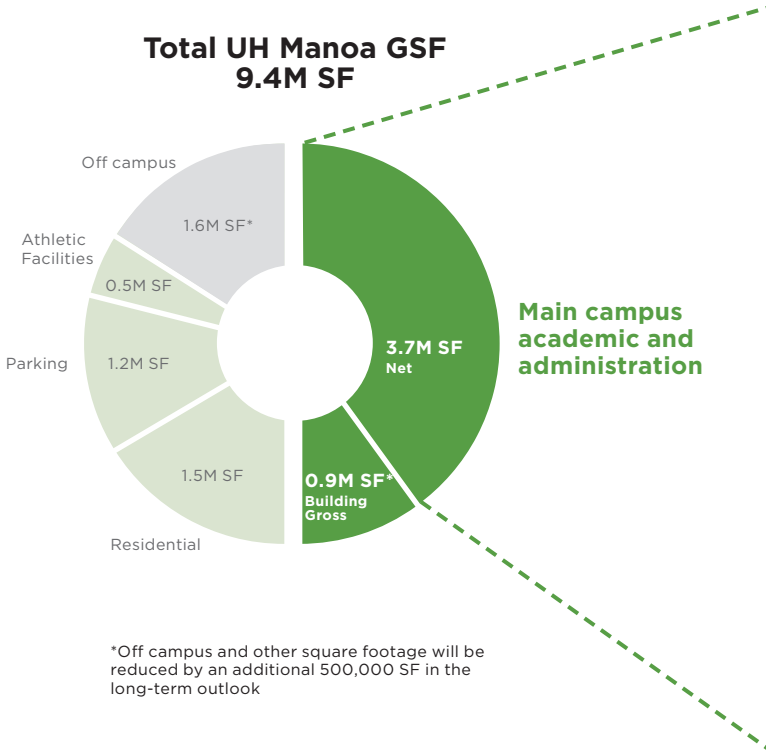


OVERVIEW

The Campus Space Needs Forecast for primary academic facilities is driven by the following improvements:

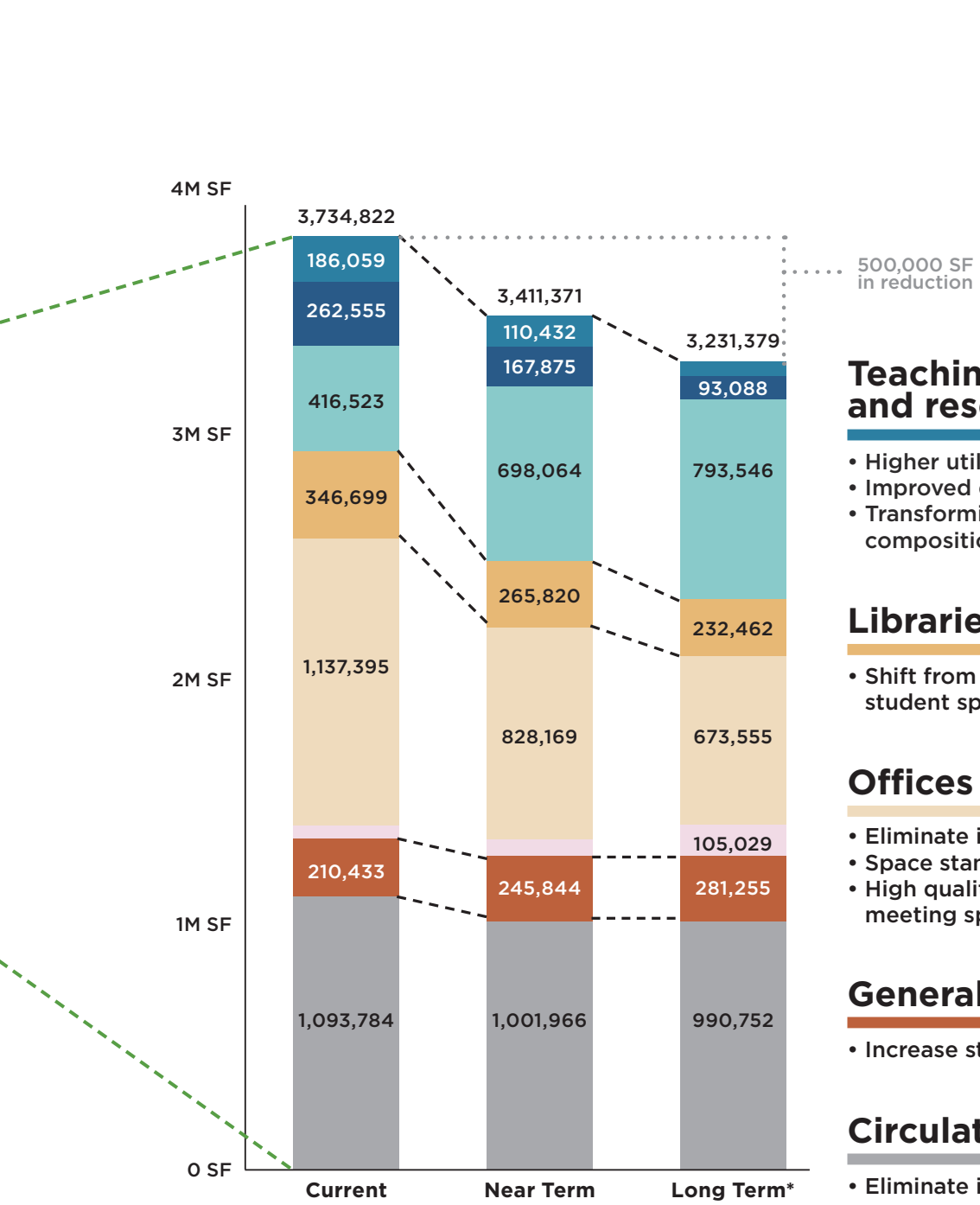
- Space utilization and efficiency
- Increases in the amount of collaborative space for meetings, study or recreational activities/ leisure to enhance on-campus life & student experience
- Enhancements to the quality and quantity of research space
- Improvements to circulation efficiency
- Decreased reliance on portables

In the long term, space for primary academic facilities may decrease up to 500,000 SF, which is about a 15% reduction.



*Off campus and other square footage will be reduced by an additional 500,000 SF in the long-term outlook

Improved efficiency and an emphasis on utilization will reduce total square footage need while increasing high value space



Teaching, learning, and research space

- Higher utilization and occupancy
- Improved quality
- Transforming pedagogies shift composition of space

Libraries/Study Space

- Shift from book storage to student space

Offices

- Eliminate inefficient portables
- Space standards
- High quality conference and meeting space

General Use

- Increase student gathering space

Circulation

- Eliminate inefficient portables

The following space types are not included in the above diagram: Health care facilities, parking, special use facilities, support facilities

CLASSROOMS & CLASS LABS
ACADEMIC & ADMINISTRATIVE SPACE

OVERVIEW

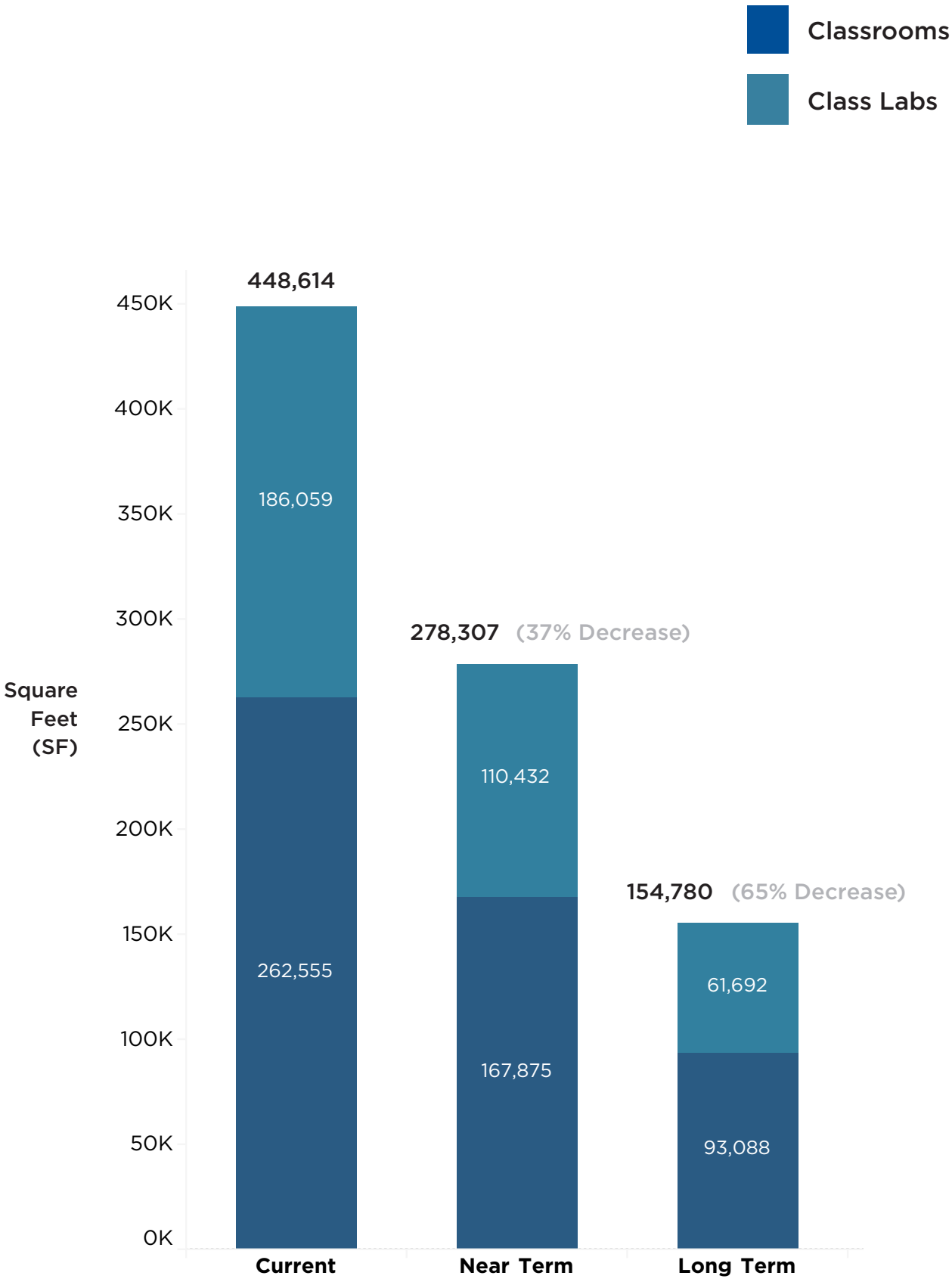
Improve space efficiencies through utilization and occupancy targets and accommodate emerging trends, such as the increase in digital service delivery of lecture content.

ASSUMPTIONS

1. Improve space and resource efficiencies by applying utilization targets:
- Classroom: 30 of 45 hours (67%)
- Class Laboratories: 15 of 30 hours (50%)

2. Improve space and resource efficiencies by applying occupancy targets:
- Classroom: 80%
- Class Laboratories: 70%

3. Plan for increased digital learning and reduced need for medium/large lecture halls
- Assume proportion of students with online credits increases in the long term to meet National average of 72% no online credits, 18% with at least one course and 10% exclusively online



RESEARCH
ACADEMIC & ADMINISTRATIVE SPACE

OVERVIEW

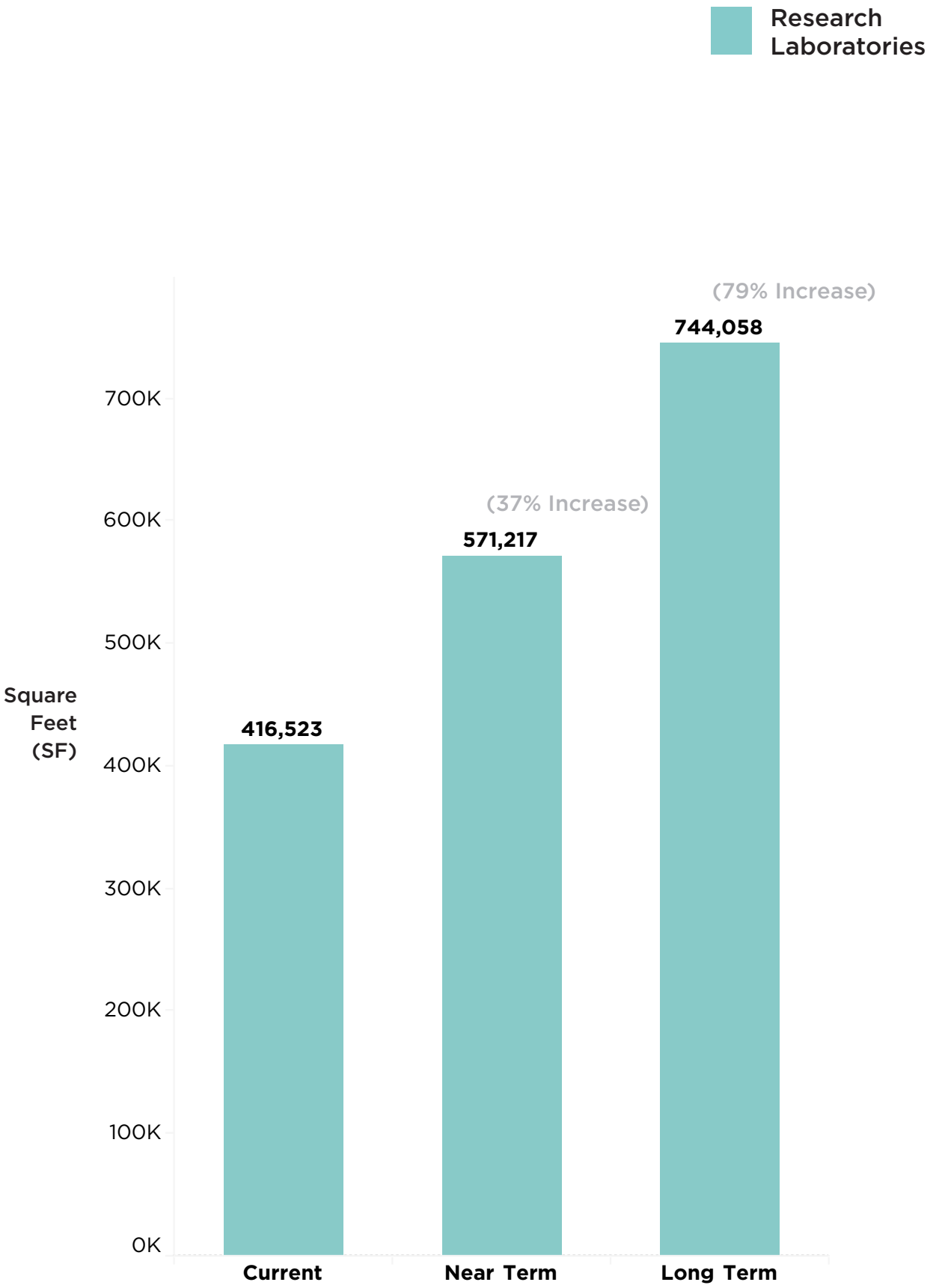
Support the existing research arm of the institution, retain current faculty and attract new faculty and researchers in the future by adding more research space and ensuring distribution is similar to other prominent research universities.

ASSUMPTIONS

1. Promote the university's strong research arm by planning for growth in research programs by assuming a 5% increase

2. Attract new prominent faculty and researchers by reflecting the industry-wide standard for proportion of total campus SF dedicated to research space among prominent research institutions

Assume target proportion of research space to total assignable square feet (ASF) is 15%



STUDY & COLLABORATIVE SPACE
ACADEMIC & ADMINISTRATIVE SPACE

OVERVIEW

Enhance on-campus student experience by increasing the amount of collaboration space and improving the efficiency of library storage space or stack areas.

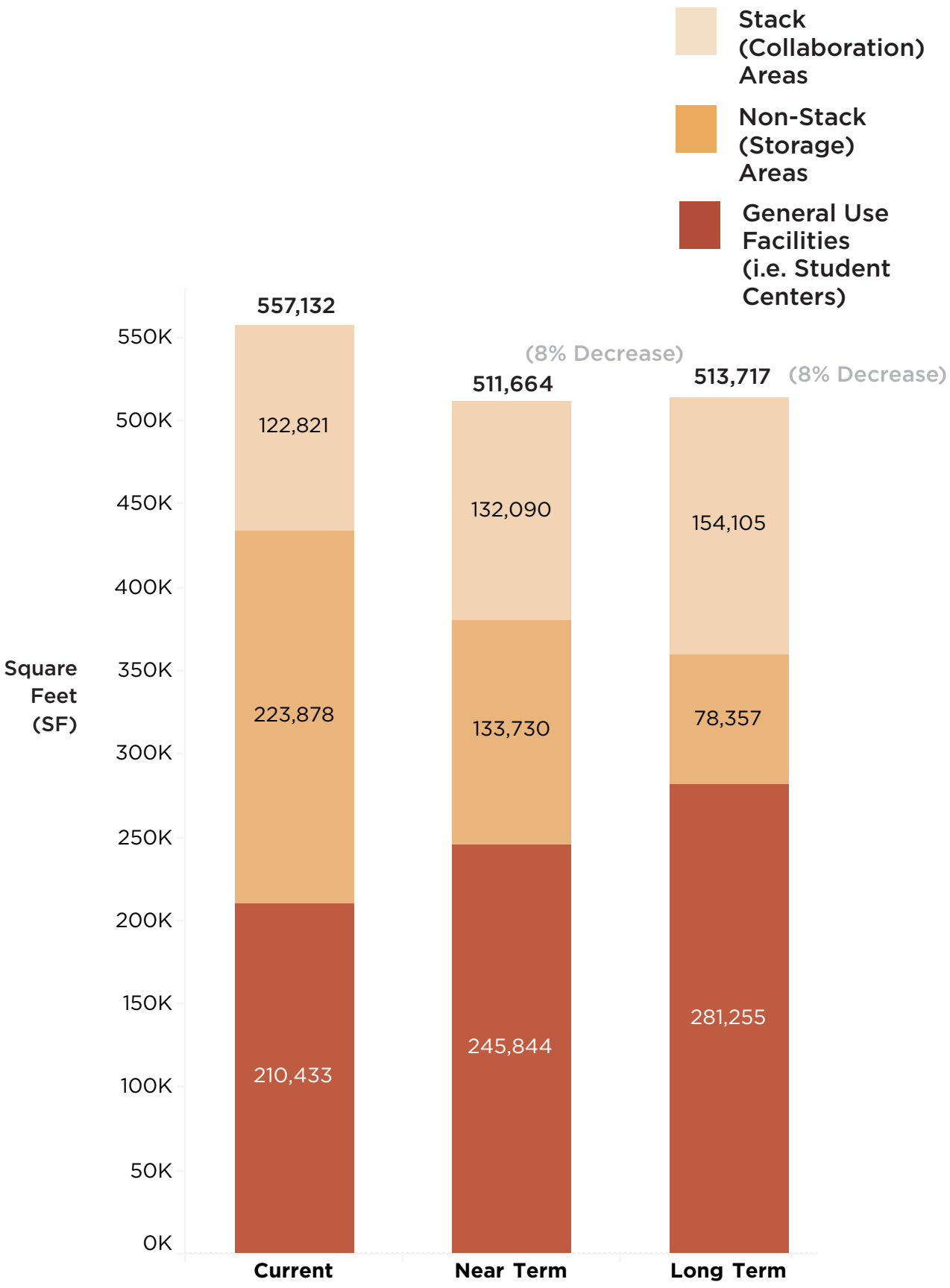
ASSUMPTIONS

1. Promote on-campus student life by increasing collaboration space through study space standards

- Assume target study space is 25 SF / Student for 30% and 35% of total student body (17,612 students)
- *% of student body varies per scenario

2. Improve space and resource efficiencies by reducing volume of stored materials and increasing efficiency of storage methods:

- Assume target is a 30% reduction in total stack space from off-site storage and an additional decrease from high-density storage



OFFICE ENVIRONMENTS
ACADEMIC & ADMINISTRATIVE SPACE

OVERVIEW

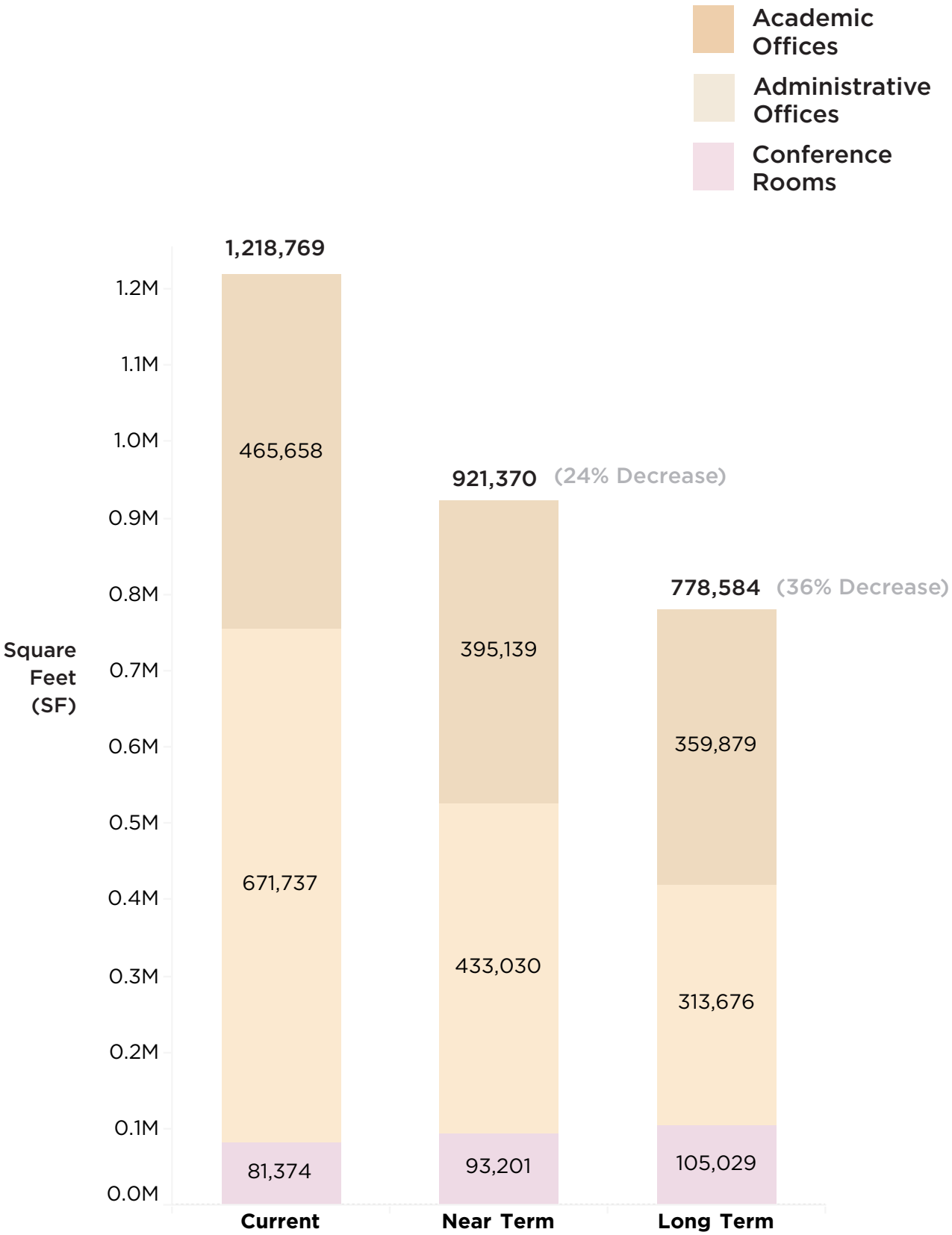
Improve space efficiencies and enhance faculty experience by right-sizing offices to meet UH Mānoa space standards and providing sufficient conference rooms.

ASSUMPTIONS

1. Improve space efficiencies by applying UH Mānoa office space standards based on employee type/ function

2. Enhance faculty experience by improving the size of conference rooms by applying UH Mānoa conference room space standards of 25 SF of conference room per user (i.e. faculty, administrative staff)

3. Promote faculty collaboration by providing sufficient meeting rooms by accounting for current utilization of conference rooms (14 hours of 40 available hours)



*Current academic/administrative data is determined by calculating the office area of academic & administrative departments

STUDENT & FACULTY RESIDENTIAL

OVERVIEW

Improve on-campus student experience and student retention rates by growing total housing stock to support current and future demand.

ASSUMPTIONS

1. To match student housing demand and enhance the physical presence of students on-campus, increase number of students living on-campus

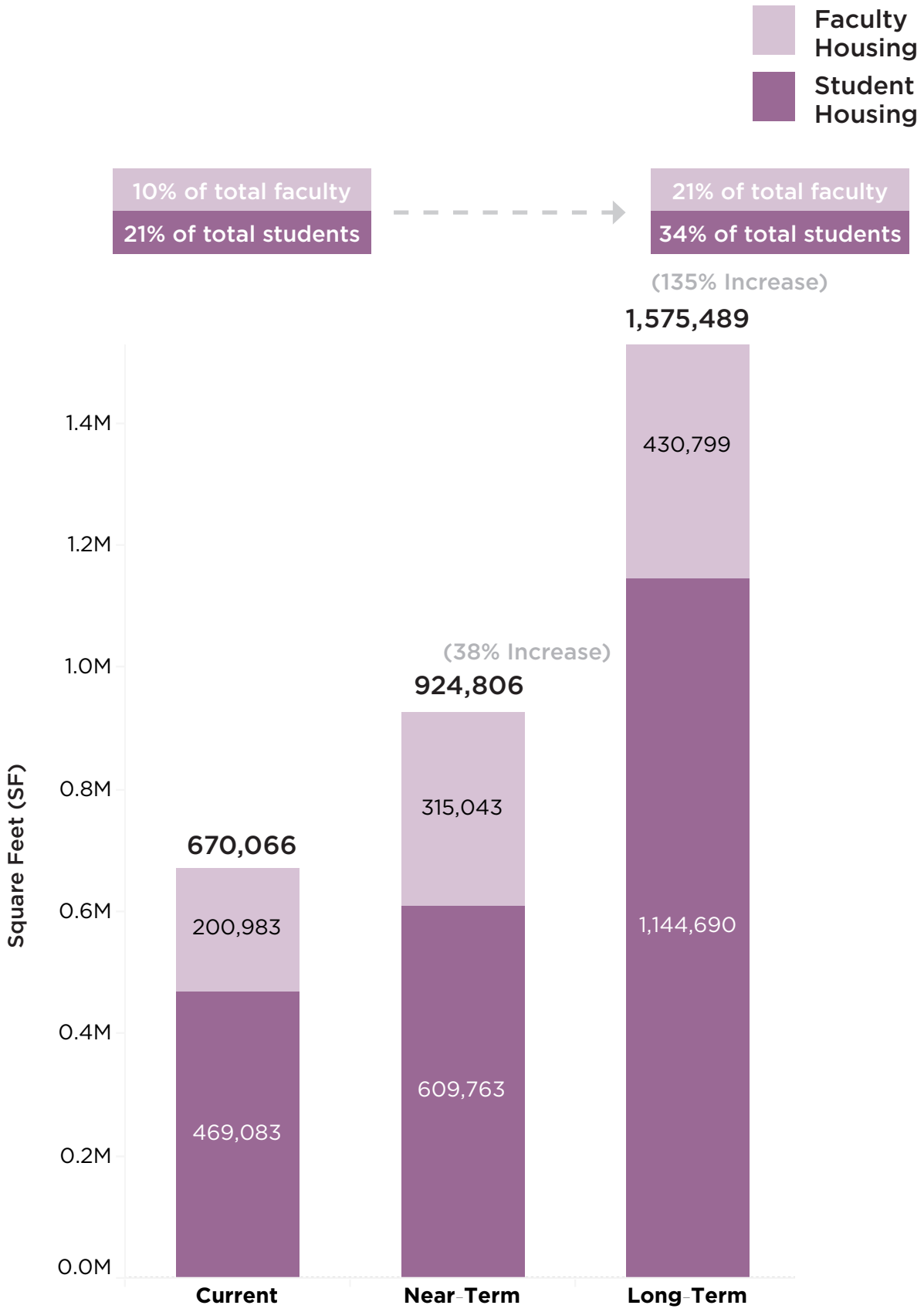
Assume number of students living on campus grows from today's 21% to 34% in the long term

2. To support current faculty and attract new faculty and researchers, provide more on-campus housing options for faculty

Assume number of students living on campus grows from today's 10% to 21% in the long term

3. Provide sufficient space by enlarging the SF / student for any new developments

Increase SF / student from 125 SF to 257 SF / student, the value for new developments determined by consultants in UHM housing study

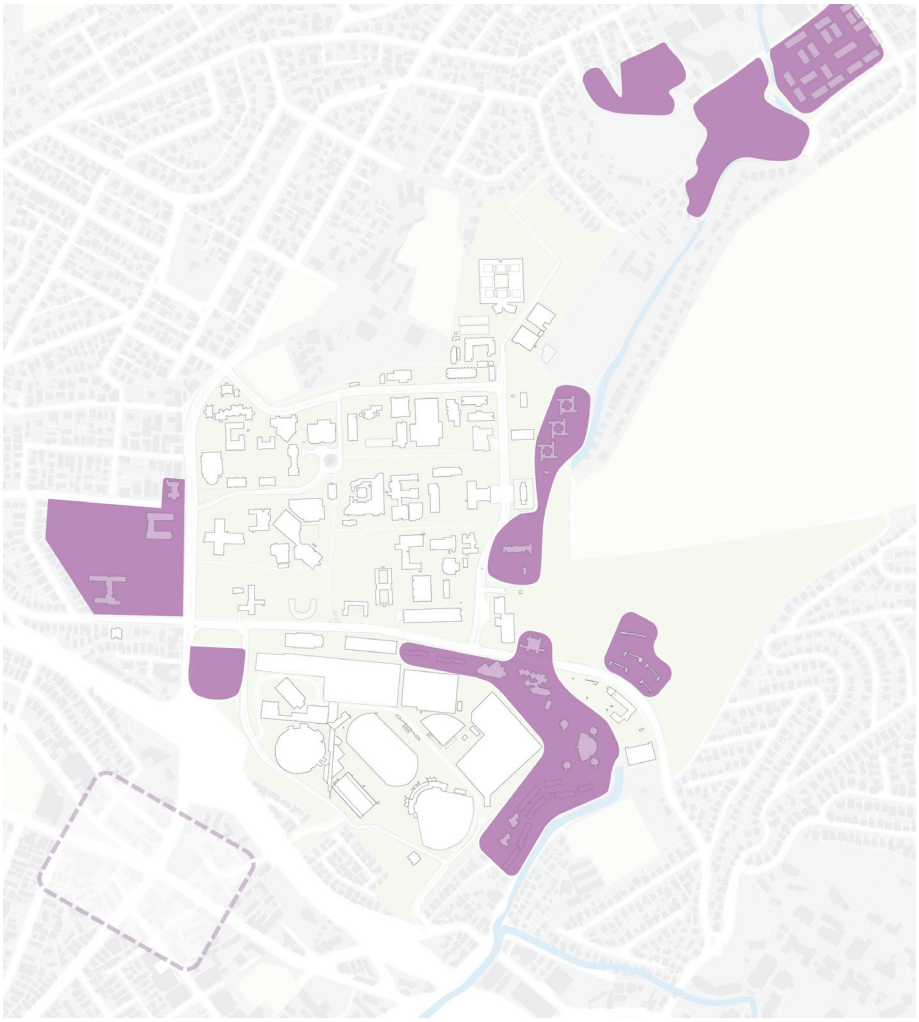


UH MĀNOA HOUSING OPPORTUNITIES

UH Mānoa currently houses 21% of students and 10% of faculty in on-campus housing. In total, the net area of residential facilities amounts to 670,066 SF. With growing demand for on-campus housing from both students and faculty and a need to enhance the quality of campus housing, the University is considering options to improve housing in the future.

Public-Private Partnership (P3) developments are increasingly seeing traction for the campus housing market, along with other non-core campus facilities. The UC system, Texas A&M University along with others are utilizing P3s to build housing and other facilities to meet campus needs. P3 agreements can be structured differently and with varying benefits for the university.

LOOKING FORWARD: POSSIBILITIES



Residential/ Commercial Mix Zone

Mōʻiliʻili Development Area

PURSUE REVENUE-GENERATING DEVELOPMENT THROUGH PUBLIC-PRIVATE PARTNERSHIPS (P3)

The University owns the land, while a non-profit holds a 32-year ground lease on it, for the Park West residential development at Texas A&M. The university system has picked a developer to enter a contract with the non-profit and will own Park West at the end of the ground lease. Through this contract, the university will receive upfront and annual payments eventually totalling $600M. The university provides campus security and a bus stop for the units.

PARK WEST, TEXAS A&M UNIVERSITY

Source: https://www.bisnow.com/austin-san-antonio/news/student-housing/what-happens-to-50-acres-of-horse-pasture-when-developer-and-university-meet-78367?utm_source=CopyShare&utm_medium=Browser
Image source: Veritas

07

Appendix

*Available online on the official Mānoa Framework for the Future website, https://www.manoaframeworkfuture.info

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QUANTITATIVE SPACE ANALYSIS

The UH Mānoa campus is composed of 15 different space types, which amount to almost 7 million (6,901,980 ASF) of assignable square footage (ASF). The primary facilities include Academic & Administrative Space, Residential Space and Athletic Space.

In this quantitative analysis, each primary space type is evaluated against key performance indicators. The indicators are used to assess whether the current campus space is performing to its potential. These indicators evaluate for space optimization, adaptability to emerging trends, adherence to industry or university space standards and benchmark universities, and assess whether current space reflects the core mission of the university and the guiding principles of the Mānoa Framework for the Future.

Key findings and a performance overview for each space type are presented below and on the right.

KEY FINDINGS

- Space utilization of classrooms and class labs is low
- The proportion of research space to total campus space is only slightly lower than other prominent research institutions
- Research space is dispersed across campus
- Storage areas represent a majority (76%) of designated libirary space
- Office sizes vary widely across work functions
- On-campus housing is available for 21% of the student body and demand for student housing has increased over time, despite no enrollment growth
- There is sufficient athletic space on campus and the unique space requirements of athletic facilities are met

KEY FINDINGS

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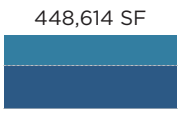
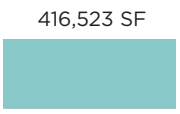
PERFORMANCE OVERVIEW PER SPACE TYPE

Academic & Administrative Space

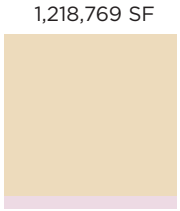


Classrooms & Class Labs



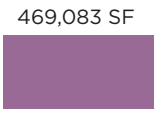
Research Labs

Study Space

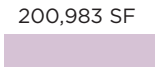


Office Environments

Residential Space



Student Housing



Faculty Housing

Athletic Space

Athletic Space

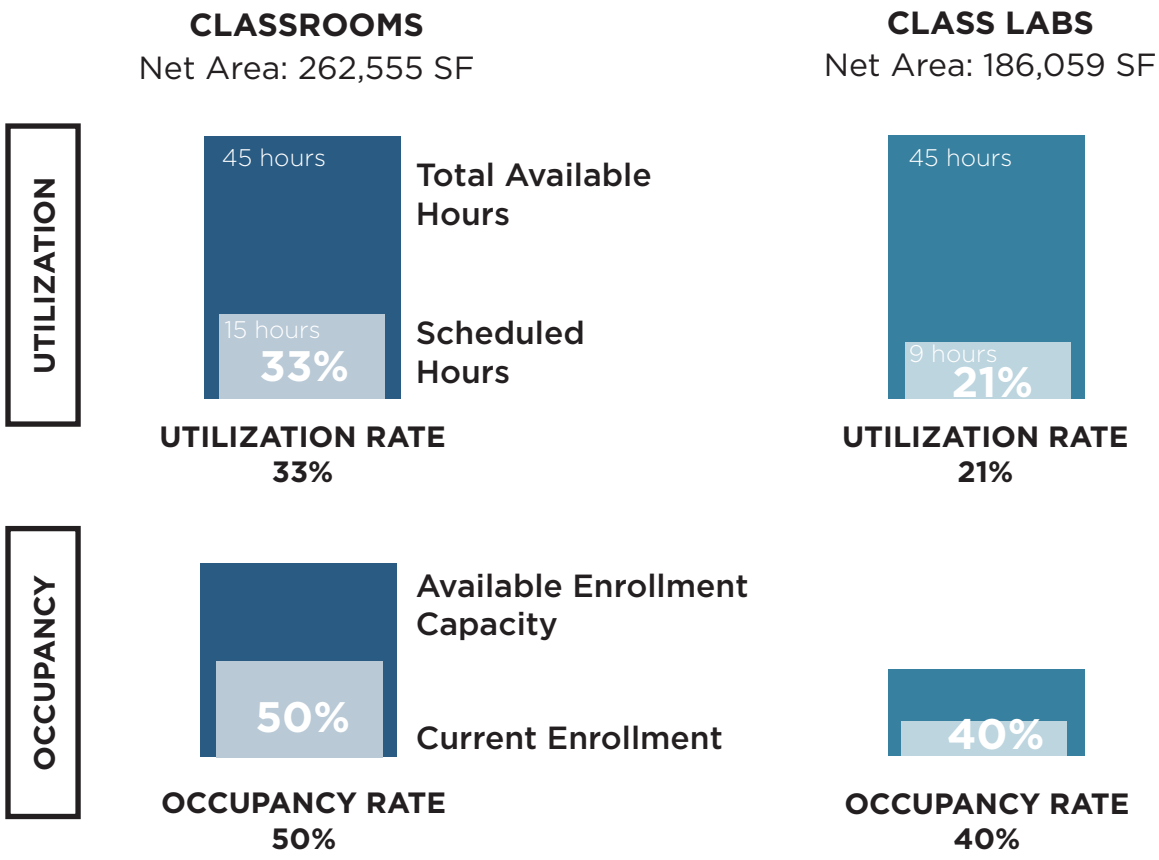
CLASSROOMS & CLASS LABS

ACADEMIC & ADMINISTRATIVE SPACE

Space Efficiencies

Finding: Current utilization & occupancy rates reveal opportunities to right-size spaces to improve space efficiencies and optimize resource use.

Utilization and Occupancy Rates at UH Mānoa
2016-17 Academic Year



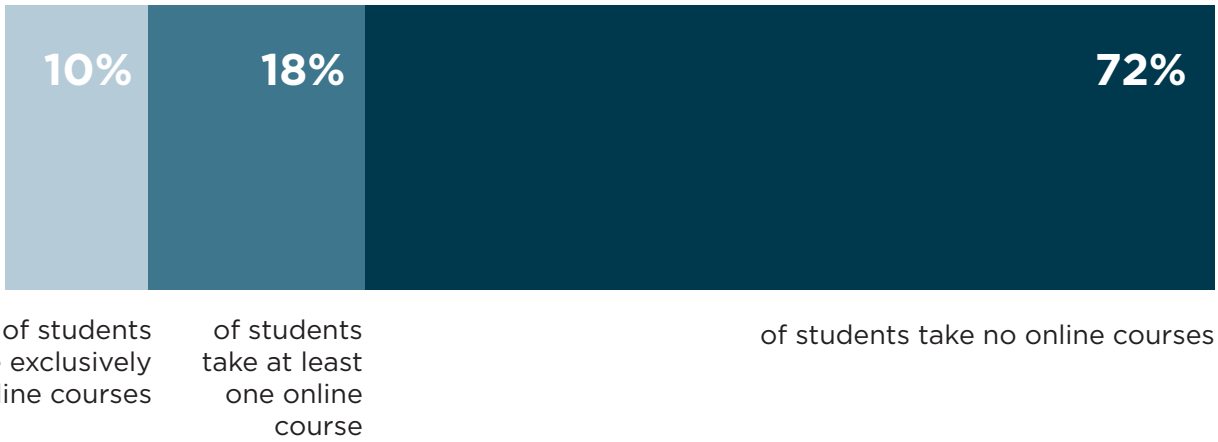
Source: Utilization & Occupancy Database (MKThink), 2016-17 Academic Year

Remote Learning Trends

Finding: Remote learning is on the rise and digital service delivery of lecture content will need to be accommodated for in the future.

Nation-Wide Remote Learning Trends

Remote Learning Across Public Higher-Ed Institutions, Fall 2015 (National Center for Education Statistics (NCES))



RESEARCH LABS

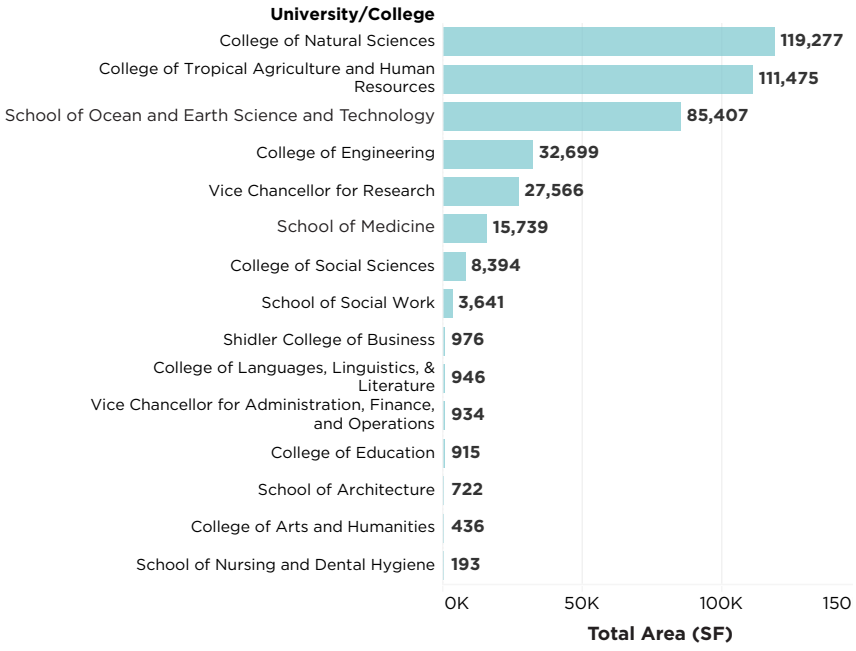
ACADEMIC & ADMINISTRATIVE SPACE

Distribution of Research Space on Campus

Finding: Research space is distributed across several zones on the Mānoa campus, with 55% of space located on the Central Campus and 45% located on the Upper Campus. Additionally, total research area is greatest in the College of Natural Sciences, College of Tropical Agriculture & Human Resources, and School of Ocean & Earth Science & Technology.

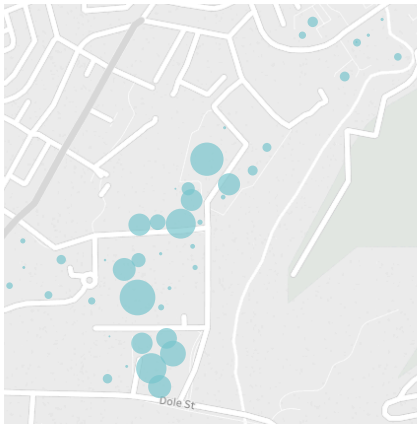
Research Space by School/College

Total Research Area (SF) by School/College



Research Space Across Campus

Total Area: 497,936 SF

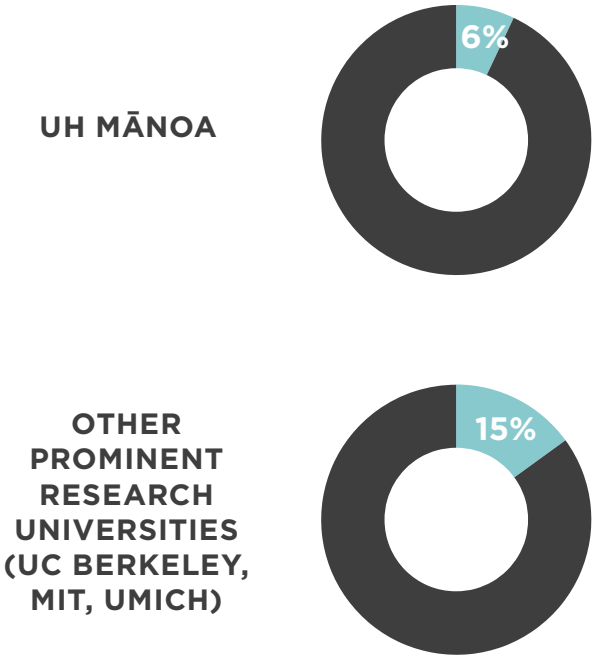


Central Campus: 227,936 SF (55%)
Upper Campus: 187,534 SF (45%)
COE: 1,053 SF (0%)

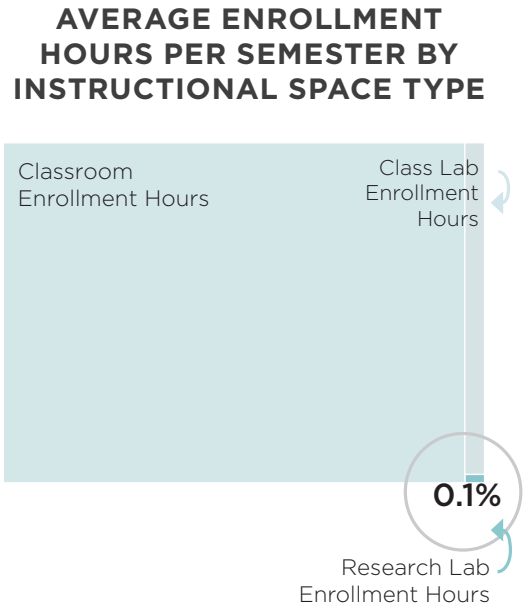
Research Labs: Space & Enrollment Hours

Finding: 6% of total campus assignable space (ASF) is dedicated to research labs, as opposed to 15% among other prominent research institutions. In an average semester, 0.1% of total instructional time is spent in research labs.

Research Space to Total Campus
Proportion of Research Area (SF) to Total Campus ASF



Instructional Time Spent on Research
Percentage of Instructional Time Spent in Research Labs (data from FA15-SP17)

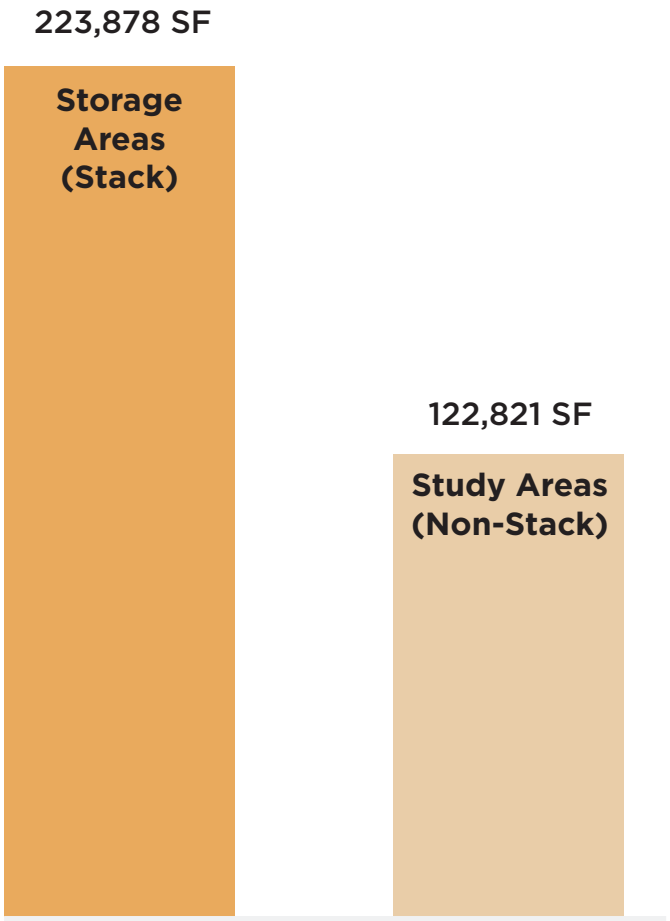


STUDY SPACE

ACADEMIC & ADMINISTRATIVE SPACE

Library Space Distribution

Finding: There is about two times more storage space than collaborative study space in on-campus libraries. Improving storage efficiencies allows for an increase in collaboration space, enhancing on-campus student life.



Storage areas represent 65% of library space

Opportunities for improvement include:

1. Improve storage efficiency

2. Redistribute space to increase student study space

More Collaboration Space through Digitization

Finding: There is currently 12 SF of general use space (i.e. student centers, recreational areas) per student. The amount of collaboration space can increase by optimizing storage of library collections and increasing the amount of online collections.

Key Facts

Study Facilities

Current Area (SF)
346,699 SF

Total Students
17,612

Current Area (SF) per Student
20 SF / Student

General Use Facilities

Current Area (SF)
210,433 SF

Total Students
17,612

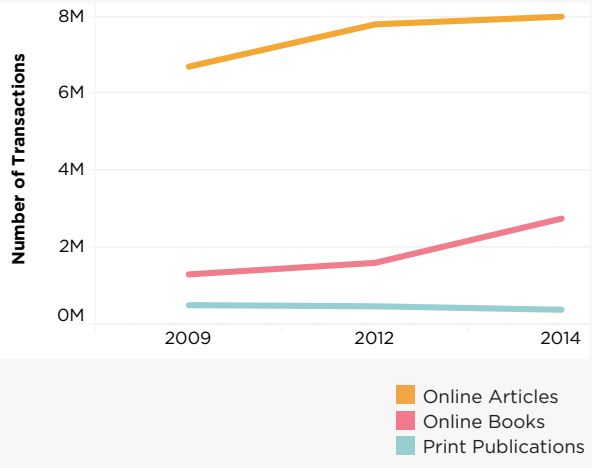
Current Area (SF) per Student
12 SF / Student

Use of digital collections is on the rise.

In a study of Yale Universities' Academic Research libraries, it was found that the use of electronic collections far outweighs that of print publications. In 2014, there were more than 8 million article downloads, 2.75 million book/chapter downloads, and 0.4 million total use of print collections.

Source: Linden et al. 2018

Use of Collections, Yale Library
Transactions per Collection Type



OFFICE ENVIRONMENTS - OFFICES

ACADEMIC & ADMINISTRATIVE SPACE

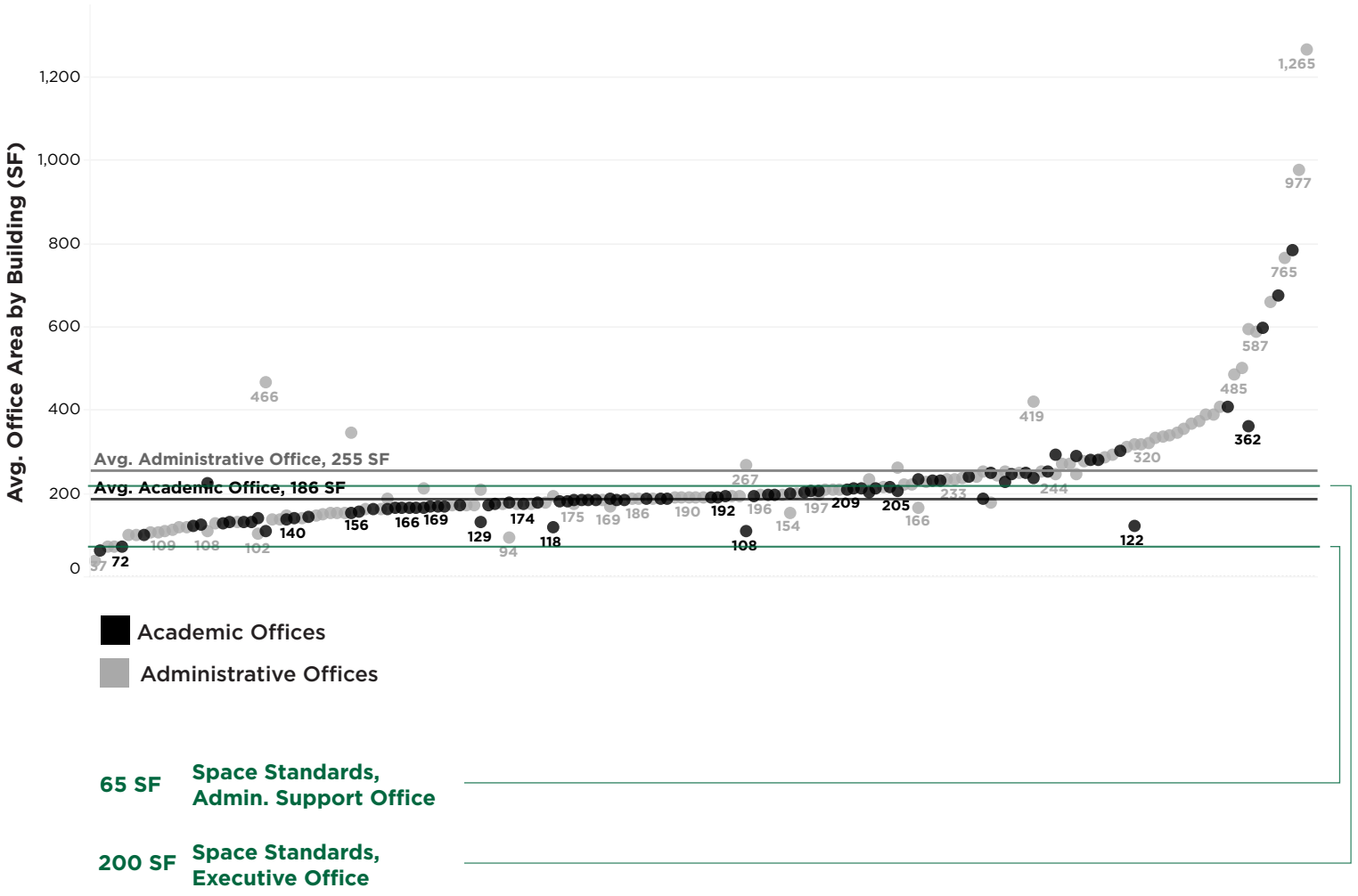
Variability in Office SIzes

Finding: There is significant variability in current office sizes, for both academic and administrative offices. The average office size per employee is 205 SF. For academic offices, the average office size is 255 SF, while for administrative offices, the average office size is 186 SF.

Office Size Variability

Average Office Size (SF) per Building & Type

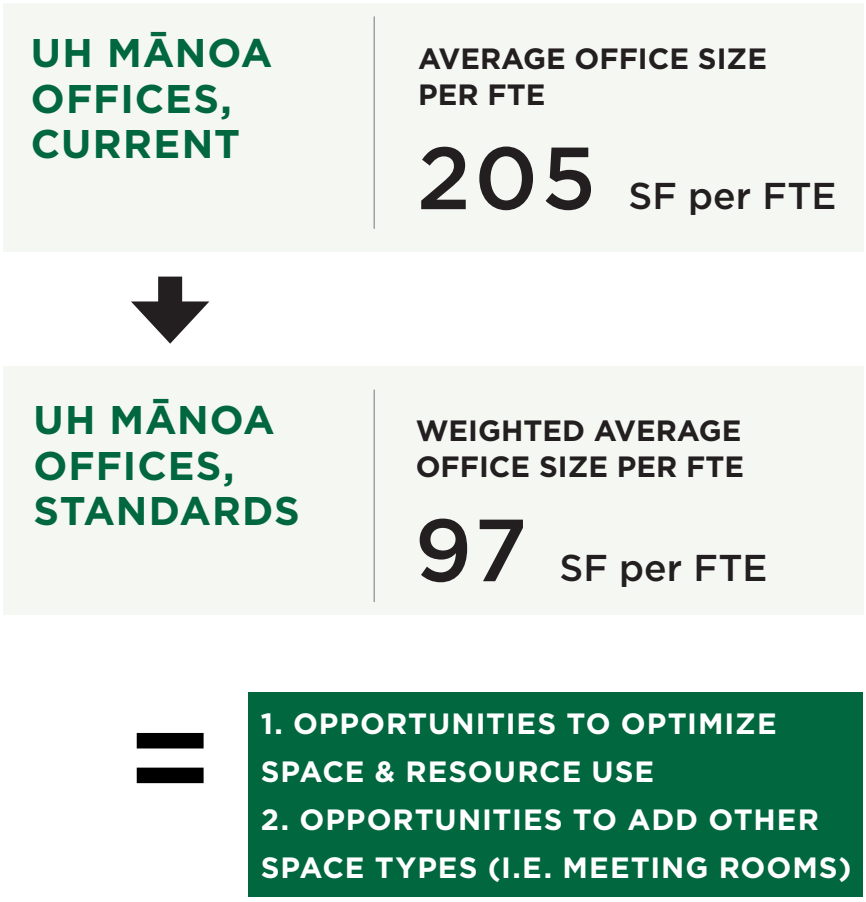
*On the chart, UH Space Standards are shown in green for reference



Offices Sizes, Standardized

Finding: Applying UHM office space standards by employee function can help reduce variability and lead to space gains that open up room for other space types.

Office Size Standardized
Average Office Size (SF) per FTE employee



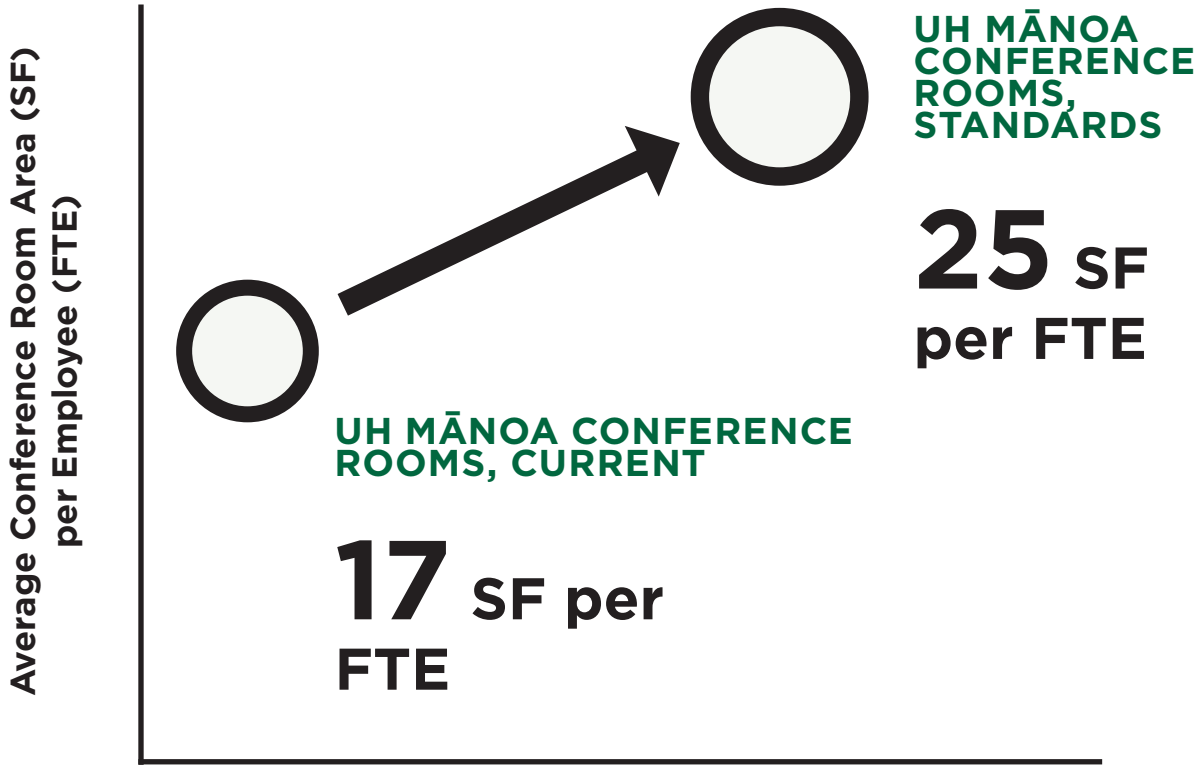
OFFICE ENVIRONMENTS - MEETING ROOMS

ACADEMIC & ADMINISTRATIVE SPACE

Limited Formal Meeting Rooms & Collaborative Spaces

Finding: The current quantity of conference rooms falls short of the university's space standard. The current conference room area (SF) per employee (FTE) ratio is 17 SF/ FTE, as compared to the UHM conference room standard of 25 SF/FTE.

Average Conference Room Area (SF) per Employee (FTE)
*Note that Employee FTE considers only employees assumed to use conference rooms



Opportunities for improvement include:

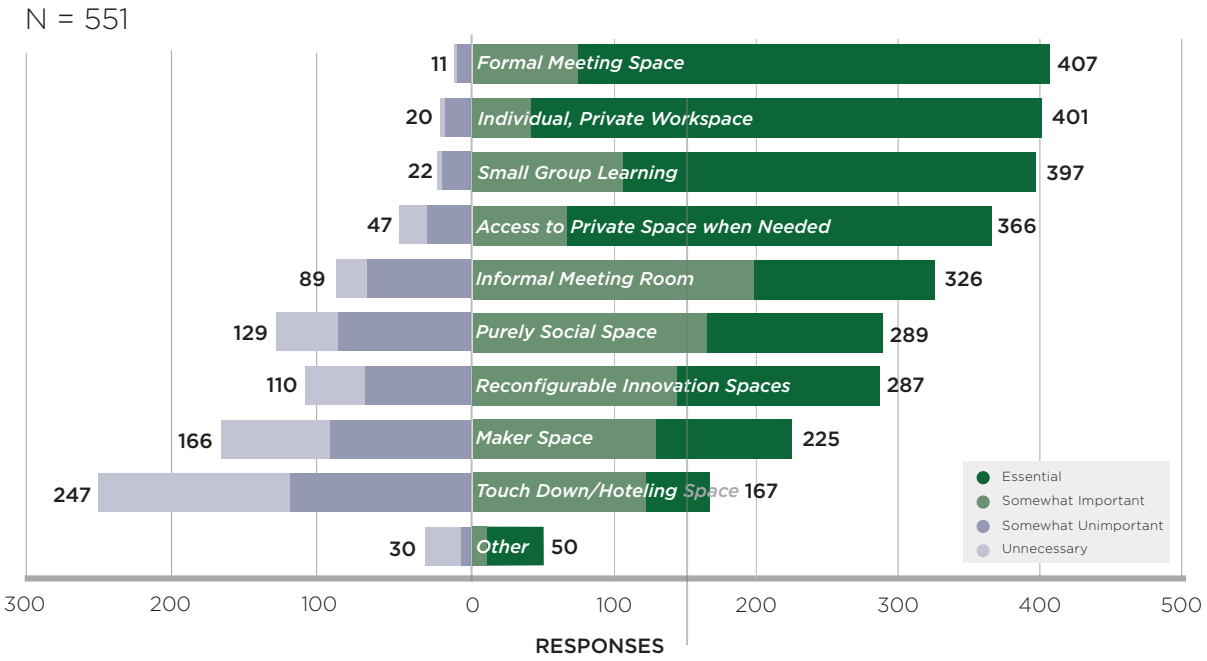
1. Increase collaboration space by strategically redistributing space gains from optimizing other space types

Demand for Meeting Rooms

Finding: Meeting rooms are highly valuable to faculty. According to the UHM Faculty Survey, formal meeting spaces were the favored workplace typology, with 407 respondents claiming that they are essential or somewhat important.

Future Workplace Typologies

Faculty Ranking of Future Workplace Typologies *from UHM Faculty Survey of Facilities, 2017



Formal Meeting Space, Individual/Private Workspaces, and Small Group Learning Spaces are the most favored workplace typologies

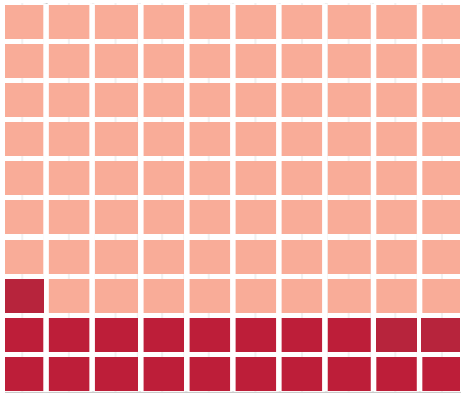
STUDENT & FACULTY RESIDENTIAL SPACE

Opportunities to Increase On-Campus Student Living

Finding: Today, on-campus residential space accommodates 21% of the total student body. Additionally, housing demand has increased over time, with a 23% growth in applications for student housing from 2009 to 2014, despite no growth in enrollment.

On-Campus Student Housing

Total Students Living On-Campus
(UH Mānoa Student Housing Study 2015)



79% of students live off campus

21% of students live on campus

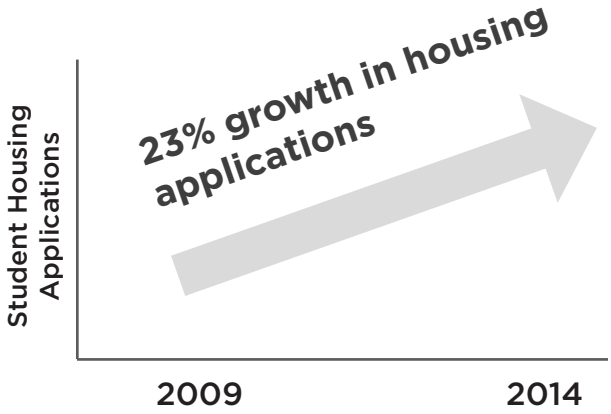
Total Number of Students: 17,612
Live On Campus: 3,743
Live Off Campus: 13,869

Of those who live on campus
- 62% are lower classmen
- 36% are upper classmen
- 2% are graduate/family

Student Housing Demand

Total Student Applications Over Time
(UH Mānoa Student Housing Study 2015)

Between 2009 and 2014, application for student housing increased 23% with no significant changes in student body size

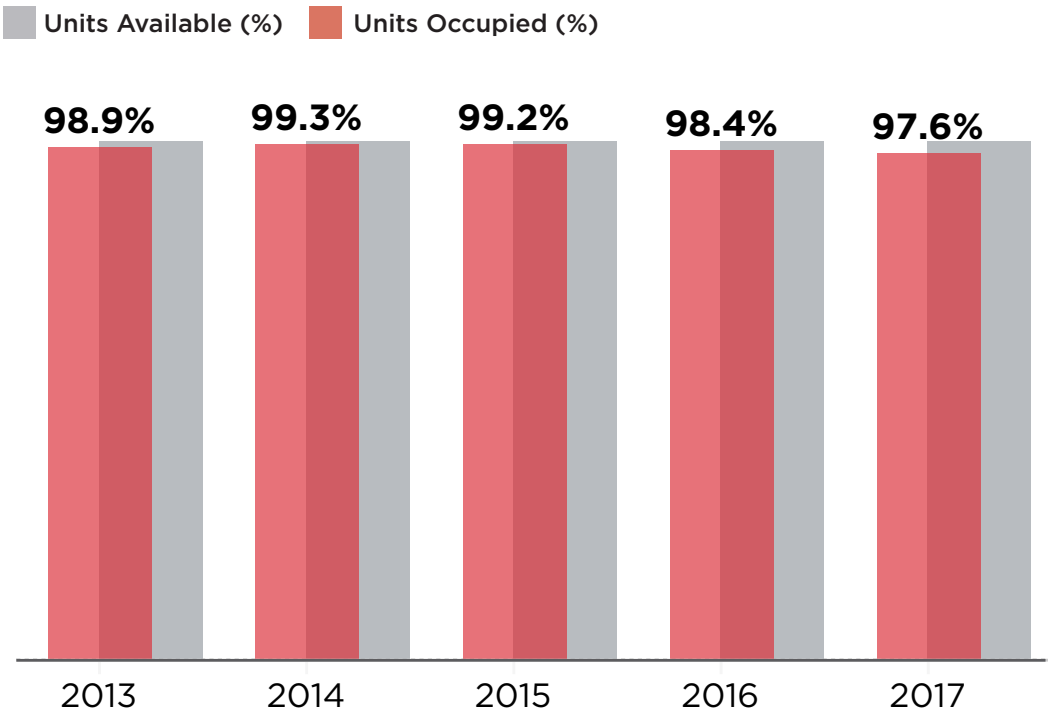


Faculty Housing

Finding: Faculty housing is almost fully occupied. From 2013 to 2017, faculty housing occupancy has remained above 97.5%, revealing that any additional housing demand cannot be adequately supported with the current faculty housing stock.

Faculty Housing Occupancy

Units Occupied vs. Units Available



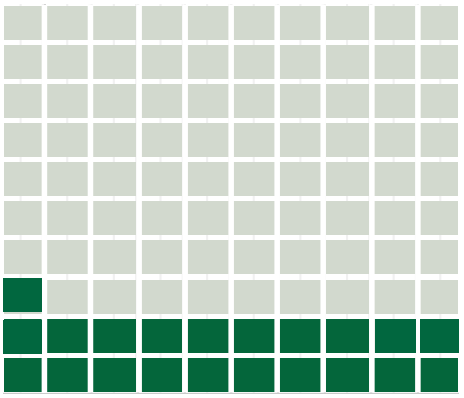
STUDENT & FACULTY RESIDENTIAL SPACE

Student Housing Benchmark Comparisons

Finding: The university campus currently accommodates 21% of total students, where a majority of students living on-campus (98%) are undergraduates. In comparison, the University of California (UC) system-wide average for total students living on-campus is 34%. The proportion of students living on-campus also varies for other benchmark universities, ranging from 27% at UC Santa Barbara (UCSB) to 73% at Stanford University.

On-Campus Student Housing
Total Students Living On Campus
(UH Mānoa Student Housing Study 2015)

University of Hawai'i at Mānoa



79% of students live off campus

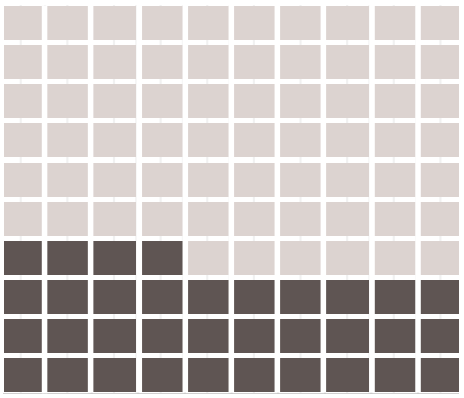
21% of students live on campus

Total Number of Students: 17,612
Live On Campus: 3,743
Live Off Campus: 13,869

Of those who live on campus,
- 98% are undergraduates
- 2% are graduate/family

On-Campus Student Housing
Total Students Living On Campus - UC-System Wide Average

UC System-Wide Average



66% of students live off campus

34% of students live on campus

Total Number of Students: 273,022
Live On Campus: 93,610
Live Off Campus: 179,411

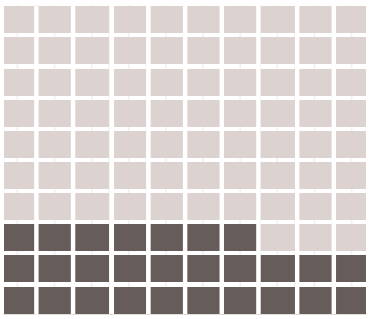
Of those who live on campus,
- 88% are undergraduate
- 12% are graduate

On-Campus Student Housing

Total Students Living On Campus - Other Benchmark Universities

*To note, total students on-campus only includes university-supported housing

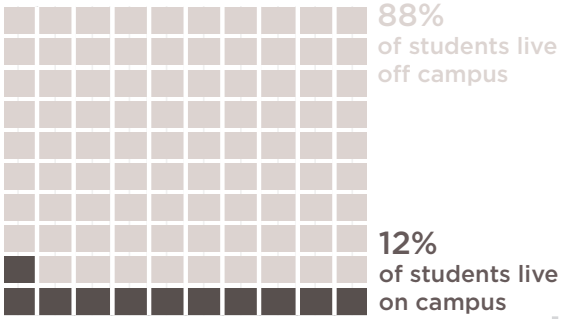
UC Santa Barbara (UCSB)



Of those who live on campus,

- 92% are undergraduate
- 8% are graduate

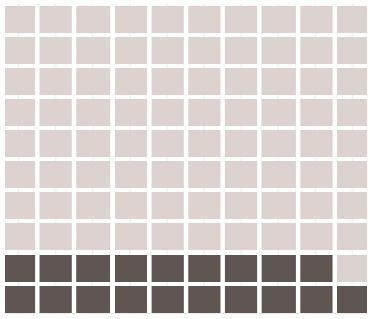
San Diego State University (SDSU)



Of those who live on campus,

- 100% are undergraduate

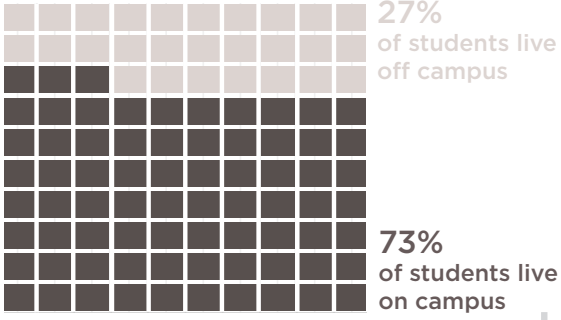
Louisiana State University (LSU)



Of those who live on campus,

- 98% are undergraduate
- 2% are graduate

Stanford University



Of those who live on campus,

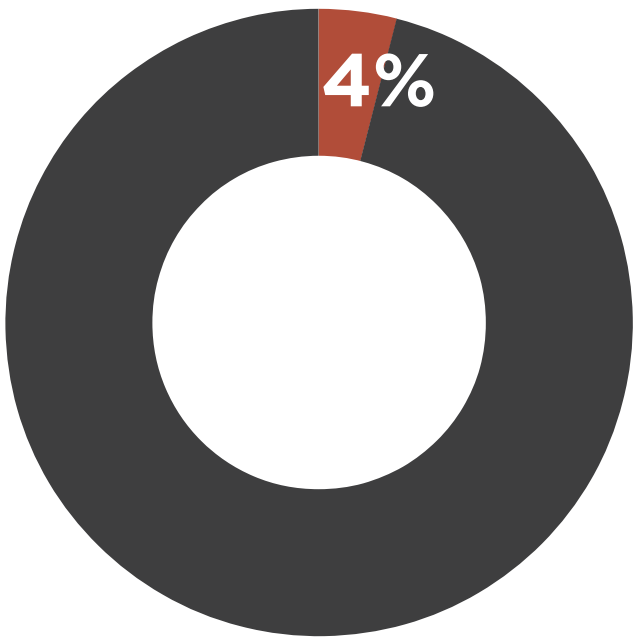
- 57% are undergraduate
- 43% are graduate

ATHLETIC SPACE

Satisfactory Athletic Space

Finding: With 17 SF of athletic space per student, the current quantity of athletic facilities is sufficient to support ongoing athletic activities on campus. Additionally, the breakdown of athletic facilities by space type reveals that the current university space adequately caters to the different space requirements, such as fields, spectator seating, and service areas.

Research Space to Total Campus
Proportion of Research Space to Total Campus Space



Key Facts:
Athletic Space

Current Area (SF)	300,438 SF
Total Students	17,612
Current Area (SF) per Students	17 SF / Student

Athletic Space Type Breakdown
Area (SF) per Athletic Space Type

- Spectator Seating
- Athletic or Physical Education Spaces
- Athletic Service Areas

There is sufficient variety in the types of athletic spaces available to meet the unique space needs of athletic activities

VIGNETTES

FORM FOLLOWS FRAMEWORK

The Mānoa Campus Framework aims to guide decisions about the program, design, and performance of university facilities and space—old and new, existing and proposed, interior and exterior, instructional and administrative, social and cultural.

The following vignettes aim to demonstrate the application of the Framework to four critical sites selected based on their potential to improve and enrich the campus experience in all categories of use. These are strictly speculative sketches of alternative capital development scenarios rather than actual projects. Their purpose here is to help frame future conversations about the role that well-designed, high-performing places and spaces play in recruitment, retention, reputation, and identity—both as a Hawaiian Place of Learning, and as the University of Hawai‘i’s flagship Carnegie RI doctoral campus.

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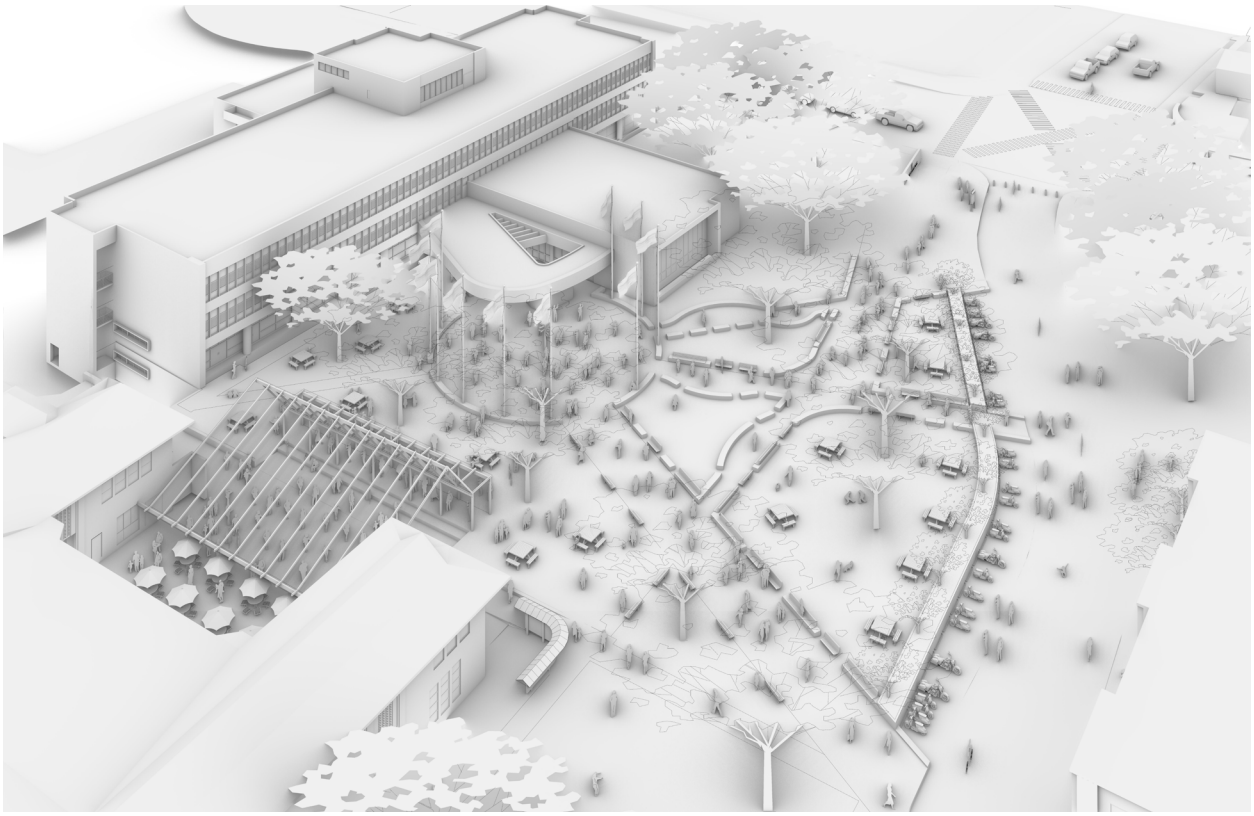
1. SINCLAIR HEMENWAY SITE

As UH Mānoa continues planning the transformation of Sinclair Library into a state-of-the-art 24/7 student success center, the pathways and spaces connecting Sinclair, Hemenway, Campus Center, and Warrior Rec Center become increasingly vital. This vignette imagines a simple intervention that strengthens the physical and spatial connection between Hemenway—in particular the Mānoa Gardens courtyard—to Sinclair, through the skillful design of landscape and outdoor amenities that support gathering, performance, and social activity.

This vignette explores the removal of the enclosure and vegetation currently separating the Mānoa Gardens courtyard from Sinclair's front lawn, replacing it with a resurfaced ground plane that crosses the sidewalk, directly connecting the courtyard and Sinclair's front lawn. A lightweight, translucent shed roof both shades and redefines this refreshed intermediate space, bounded on its Ewa-facing edge with gently stepped seating cut into the retaining wall, scaled for small gatherings, conversation, and outdoor events and performances. Durable, low-maintenance tables and benches populate the Sinclair frontage, providing UHM students with fresh air and respite from group work and study inside the newly reprogrammed and renovated student success center.



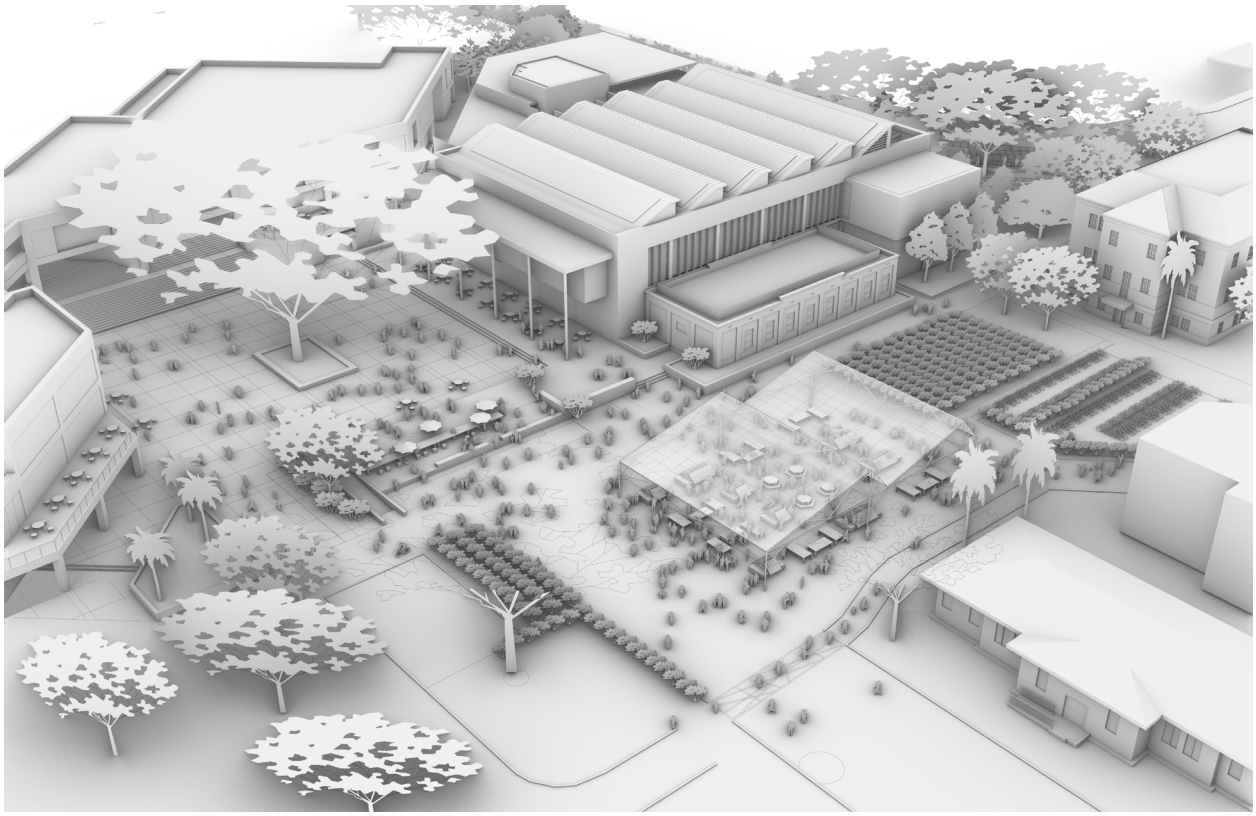
2. SNYDER-MCCARTHY MALL SITE

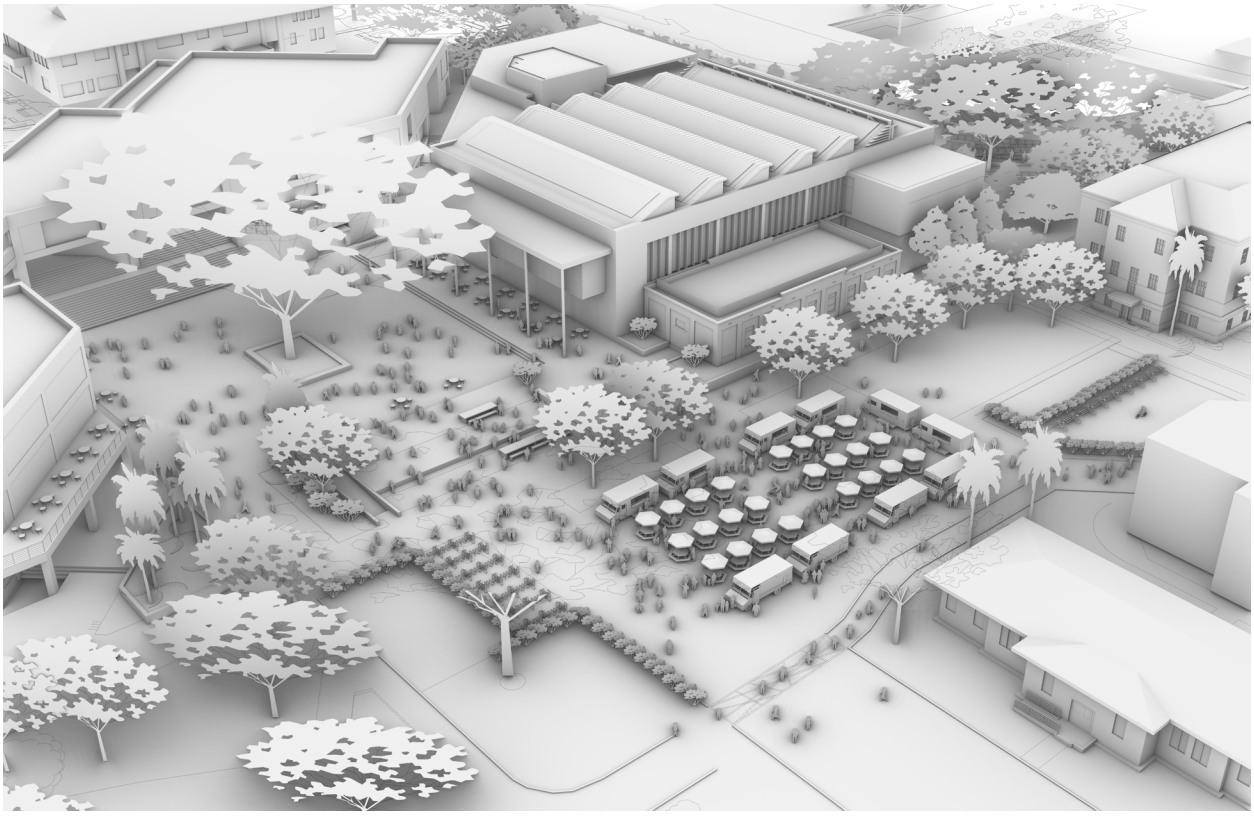
This vignette reimagines Snyder Hall as a high-performance, site-responsive, six-story general classroom building featuring a raised base and open ground floor, full-face solar screens, an edge-to-edge roof-mounted PVC array, and a commodious second-floor lanai. A low sitting wall defines ground level flow-through space that supports ventilation above and storm water infrastructure below. The raised podium provides partially shaded gathering space that connects McCarthy Mall to a newly landscaped courtyard between Snyder and Saunders. Abundant seating supports a satellite café; and the second-floor lanai overlooking McCarthy Mall offers students and faculty additional shaded space for informal meetings, group work, and study.

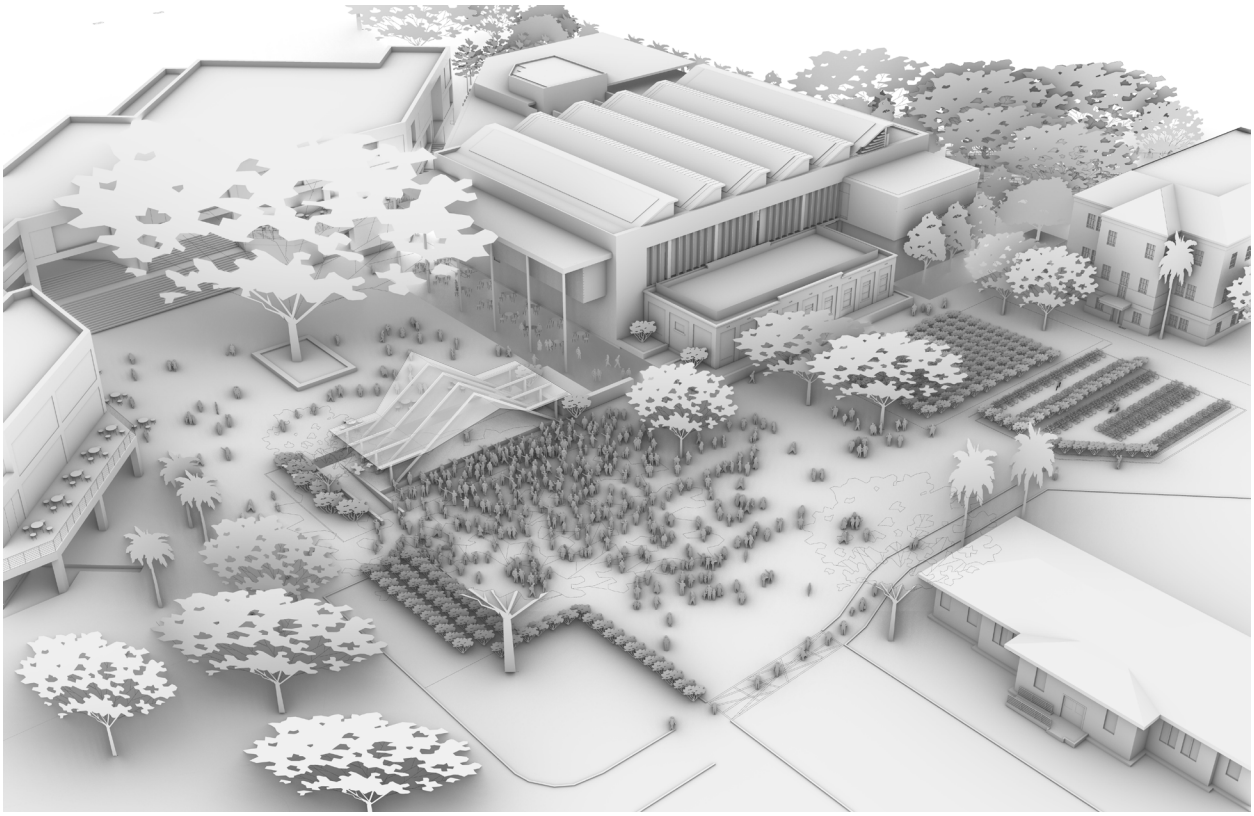
3. CAMPUS CENTER- LEGACY PATH SITE

Campus Center is the heart of Mānoa student life, diagonally connecting the university's historic quad with the Legacy Path and Warrior Rec Center. Campus Center houses Mānoa dining services; Starbucks; meeting and event spaces; a large, open-air student lounge; the campus ID, information, and ticket booth; student life facilities; ASUH offices; and the university bookstore, among other resources and amenities. It resides along an axis that includes Sinclair Library (the future Student Success Center), Hemenway Hall (home of Ba-Le and the campus watering hole), and the well-appointed Warrior Rec Center, whose spacious, two-story-high, covered lanai steps down to benches and seating encircling Campus Center courtyard's giant Monkeypod.

Just Diamond Head of this U-shaped courtyard, across a paved service drive, is a misplaced patch of asphalt parking. Cars and motor scooters use this road and surface lot seeking access to Warrior Rec and the Krauss complex, makai of Correa Road and the Kuykendall annex. The following three vignettes reimagine this critical intersection as a fully pedestrianized, open urban space offering the campus new options for public gathering, performance, and events, including amenities that promote health and well-being—a farmer's market and space for small-scale organic urban agriculture, for example—also new culinary choices in food trucks that diversify dining options appealing to every member of the campus community.

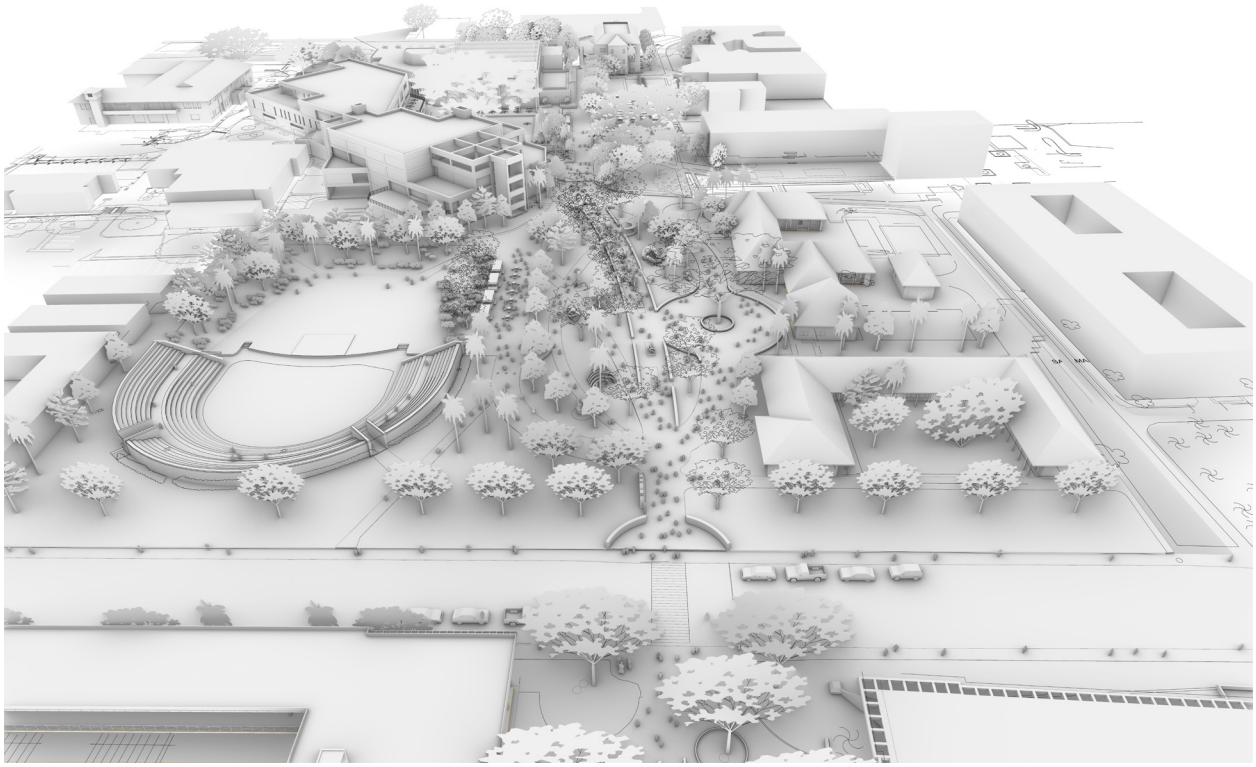






4. LEGACY PATH SITE

This vignette explores the potential of the Legacy Path to elevate UH Mānoa experience along the crucial circulation corridor linking upper and lower campus, terminating in the semi-circular neoclassical gate at Dole Street, where the Path crosses into the Law School plaza, past George Segal's "Chance Meeting" (1991) and onward, towards parking, the Stan Sheriff Center, and athletic facilities. This vignette proposes a pedestrianized mauka-makai axis restricted to emergency and utility vehicles, thereby enhancing the value of important but underutilized campus assets resIding along this line, including the John Young Museum in Krauss and Andrews Outdoor Theater, which are ripe for renewal. Segal's sculpture suggests one of many possible campus enhancements along the Legacy Path. By demarcating this axis from the Law School plaza all the way past Campus Center to Miller Hall and the Art Building, Mānoa could create a new arts corridor set into the tropical landscape—indoor exhibitions at the Young on the Diamond Head side complementing outdoor art exhibitions along the deep edge of the Ewa side, enriching the walkway with novel environmental installations that would help bring Mānoa's already significant inventory of outdoor sculpture into the twenty-first century.



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