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STRATEGIC FACILITIES VISIONING

SCENARIO PLANNING PHASE SUMMARY

University of Colorado Boulder

November 2019

Strategic Facilities Visioning
UNIVERSITY OF COLORADO **BOULDER**

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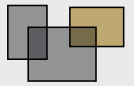

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STRATEGIC FACILITIES VISIONING (SFV)...

...is a campus-wide, year-long process that will inform our future facilities and infrastructure needs and how we plan for an evolving future of education and research. With our goal to create alignment around our infrastructure investments, SFV will culminate in the development of a digital facilities planning tool.

The tool will be designed to help campus leadership make the most meaningful and impactful infrastructure investment decisions in support of the campus mission and priorities emanating from Academic Futures, our individual discussions with all the colleges and major units and other campus-wide planning efforts.

EXECUTIVE SUMMARY

The initial Deep Dive phase culminated in the creation of six Scenario Planning teams: Future Demographics, Portfolio of Pedagogy, Research and Innovation Ecosystem, Federated Flexibility, Resilient Asset Management, and Integrative Facilities. Each team included a broad interdisciplinary mix of “visionaries” from across campus. Their work provided the structure for the campus space prediction methodology used in development of the planning tool. Each Scenario Planning team participated in three workshops that examined the ideal mix of uses for potential future campus environments. These workshops were structured around four key questions that guided the discovery process:

- **What infrastructure do we need to achieve our vision?**
- **How do we apply this to CU Boulder?**
- **How it will be applied in the planning tool?**
- **What are our mixed-use building templates?**

DELIVERABLES

While each team focused on a distinct topic, their proposed strategies and goals all aligned with the Chancellor's Strategic Imperatives for the Boulder Campus and converged on a vision of human-centered campus planning. The result of the Scenario Planning phase yielded three deliverable content areas:

KEY FINDINGS

Key findings across the Scenario Planning teams articulated the spatial components and strategies necessary to achieve university strategic goals. These will help guide development of the planning tool and informed future capital planning discussions and decisions.

BUILDING TEMPLATES

The Scenario Planning phase culminated in the development of building templates for 12 unique building typologies across CU Boulder’s campus. Each building template applies a mixed-use approach to campus programming to facilitate an enhanced experience for all students, faculty and staff.

INPUTS FOR PLANNING TOOL

The Scenario Planning phase identified and defined key components that drove the facilities planning tool, and created the campus makeup on the building, neighborhood, campus and university scale.

SCENARIO PLANNING AT A GLANCE

		WHAT INFRASTRUCTURE DO WE NEED TO ACHIEVE OUR VISION?	HOW DO WE APPLY THIS TO THE CAMPUS SYSTEM?	HOW IT WILL BE APPLIED IN THE PLANNING TOOL?
GROWTH	FUTURE DEMOGRAPHICS	Spaces that support our **growing diverse population**	Student groups and shared/ dedicated and time spent	Ratio of **student support space types by building typology by demographic**
	PORTFOLIO OF PEDAGOGY	Spaces that support our **students educational journey**	Types of learners and learning / time spent by space type	Ratio of **learning space types by building typology**
	RESEARCH & INNOVATION ECOSYSTEM	Spaces that enable a **flourishing research enterprise**	Activities and space types/ general profile by types	Ratio of **research space types by building typology and core facility clusters**
	FEDERATED FLEXIBILITY	Services that enable an **efficient campus**	Service types / optimization solutions and clusters of services	Space **utilization targets and optimization strategies** mix of support services by building typology
APPLICATION	INTEGRATIVE FACILITIES	Spaces that create a world-class **campus experience**	Themes / mixed use types and space makeup	**Programmatic needs by campus neighborhood**
	RESILIENT ASSET MANAGEMENT	Infrastructure that **protects our people and places**	Scale frame work / needs by typology	**Resiliency initiatives and policy recommendations** by facility type

WHAT ARE OUR BUILDING TEMPLATES?

- ADMINISTRATIVE
- ATHLETICS
- COMMUNITY
- CULTURAL
- HOUSING
- LEARNING
- STUDENT LIFE
- WELLBEING
- GENERAL RESEARCH
- PARTNERSHIP FACILITY*
- CORE FACILITY CLUSTER*
- UNIQUE FACILITIES*

Subset of general research building templates

SCENARIO PLANNING TEAMS & KEY FINDINGS:

The following findings are a synthesized report of what we heard in the Scenario Planning sessions and recommendations.

FUTURE DEMOGRAPHICS

The mission of the Future Demographics team was to develop and test scenarios around different student enrollment breakdowns, how to support a diverse range of students, and the associated impacts on space and facilities requirements across campus.

This included not only testing the impact of shifting demographics on space and facility requirements, but also predicting faculty and staff requirements. These scenarios were used to predict the amounts and types of space for learning and associated functions of research, auxiliary, office and support space requirements over time. They also resulted in the ratio of student support space types per building template.

Critical to the process were enrollment and human resources data, and the development of campus wide benchmarks for learning, research, auxiliary, office and support space. Enrollment and demographics data were used to inform how much learning, research, office auxiliary and support space the university needs over time.

KEY FINDINGS INCLUDE

OPEN, COLLABORATIVE CULTURE

Shared, non-scheduled study and lounge space for socializing, coworking, and studying is a top demand in all mixed-use building templates and a key component to creating a culture that supports diverse demographic groups. Open study, communal, and social spaces should be woven across all facilities, taking a foothold in each mixed-use building template.

DEDICATED SPACE

To foster community and support within student groups, spaces identified for a future scenario of shifting demographics are dedicated to specific populations in addition to spaces open to all. Specifically, graduate students, marginalized students and first-generation students require dedicated spaces to create community and receive the right type of specialized support for their particular needs.

SPACE TYPES IN DEMAND

In-demand space types include academic support, bookable study, commuter support, dedicated student home bases, open lounge, café and social spaces, open study and coworking spaces, spaces for student organizations and wellbeing.

SUPPORT SERVICES

Students desire a portfolio of spaces that allow them to maneuver seamlessly between an integrated campus experience to dedicated and specialized support spaces. Deliberate clustering of shared and dedicated support spaces is paramount. Advising and support should be designed to be inclusive for all students, including dedicated service for unique populations with an option to schedule appointments or receive drop-in concierge services.

SCENARIO PLANNING TEAMS & KEY FINDINGS:

PORTFOLIO OF PEDAGOGY

The mission of the Portfolio of Pedagogy team was to develop and test scenarios that investigated the relationship between different learning modalities and their impacts on space and facilities requirements across campus.

Differentiation between undergraduate, masters, and PhD students informed the overall learning profile of space types required. Critical to this analysis was balancing the provision of a variety of digital and physical learning modalities with increases in efficiency and utilization of space and resources. Volume and throughput of the student population was analyzed in relationship to total affordability of space, quality of learning delivery, faculty training and support.

We used the inventory of campus learning spaces, and efficiency and utilization benchmarks to create a new profile of campus learning spaces that align with the new cross section of learning modalities that were desired. As a result, the planning tool will model changes in learning modalities that drive the quality, suitability, type, technology of learning spaces and faculty support services and environments.

KEY FINDINGS INCLUDE

RELATIONSHIPS DRIVE THE LEARNING EXPERIENCE

The value proposition of providing diverse, in-person, and on-campus experiences drive new learning environments. Learning spaces should be flexible, active, and immersive, and non-scheduled study space will grow to support new pedagogies. The most in demand spaces across the mixed-use building templates are active classrooms, immersive environments and seminar rooms (scheduled learning); open lounge, study, café, social and event spaces (non-scheduled learning) and flexible workplace environments (office).

MULTI-MODAL LEARNING

The undergraduate degree is focused around exposure, requiring an ease of access to a variety of high-quality, hands-on educational experiences including research opportunity. Aligning class sections with the appropriate spaces in terms of quality, suitability and technology will enable the university's multi-modal approach to learning at a variety of scales.

DIVERSE ACADEMIC RESIDENTIAL EXPERIENCES

A wide variety of learning environments should be grouped and incorporated into housing to create unique learning ecosystems, forming the basis of residential academic experiences across campus.

FACULTY SUPPORT

Faculty need access and time in content creation studios, practice space, digital recording studios, and VR/simulators to build meaningful course content and continue their professional growth.

SCENARIO PLANNING TEAMS & KEY FINDINGS:

RESEARCH & INNOVATION ECOSYSTEM

The mission of the Research and Innovation Ecosystem team was to develop and test scenarios that investigated the relationship between the diversity and growth of existing and new research areas and their impacts on space and facilities requirements across campus. The team investigated the intersections of basic and applied research, new partnerships, entrepreneurialism and the incorporation of learning in research environments.

Understanding and developing requirements in these areas drove new space types and adjacencies for a variety of research facilities, the extent of shared core research facilities and equipment, the sharing of space with external organizations, and

the provision of embedded learning. As a result, the planning tool will model changes in research growth and diversity that drive the ratio of space types, equipment and space allocations by research intensities.

KEY FINDINGS INCLUDE

RESEARCH NEIGHBORHOODS

Curating meaningful interactions between people and sharing of technology and infrastructure dictates the future design of research facilities; this will be achieved through interweaving research labs, teaching labs, shared core facilities, immersive environments, coworking and social spaces. General research facilities should include offices, collaborative workplaces, learning environments, shared equipment, and research support concierge. Highly specialized lab environments are found in single locations around campus and include secure/classified space, special collections, and unique core facilities. Partnership facilities focus on innovation and entrepreneurship, bringing in public and private partnerships for a multi-layered relationship from collaborative projects, mentorship, and student employment.

COLOCATION & SHARED SPACES

Developing co-working spaces and colocation opportunities will promote interdisciplinary collaboration, foster academic-industry exchange, attract research talent and enrich student research experiences. Leveraging opportunities to share spaces, resources, services and technologies will not only improve efficiency and avoid costs but promote collaborative research culture; the first step in achieving this is undertaking an inventory of facilities and equipment.

CORE FACILITY CLUSTERS

Core facilities should be clustered around common themes and include high performance research environments and specialized support services. The use and function of technology drive placement across the university, where everyday use, lower risk assets are in building neighborhood scales, and storage, high-investment, and invaluable assets centralized in single or campus-based locations.

THEMATIC CLUSTERS

Thematic approaches can be applied to all research building templates as a strategy to integrate disciplines and programs around a common purpose and vertically integrate the research and learning missions. Examples of thematic approaches include Environment, Air & Water; Improving the Human Condition; Wellbeing; Life Sciences; Arts; Aerospace; and Surfaces & Materials.

SCENARIO PLANNING TEAMS & KEY FINDINGS:

FEDERATED FLEXIBILITY

The mission of the Federated Flexibility team was to develop and test various scenarios regarding the degree to which facilities and services could be shared.

Driven by academic units, student life and administrative functions, and with the goal to drive interdisciplinary collaboration and improve operational efficiencies, the team investigated a variety of scenarios in a hub and node model. Conceived as a constellation of university-wide facilities, the model tested the creation of hubs as home bases for academic units and nodes as thematic clusters of generic and specialized spaces, with integrated administrative services collocated in the ways that best serve students, faculty and staff.

We used location data (where people are) and space typology information to inform which resources, facilities and services could be shared and collocated over time. As a result, the planning tool will model changes to the accessibility of services and environments by aggregating and analyzing the services available within a building or neighborhood.

KEY FINDINGS INCLUDE

DISTRIBUTED SUPPORT SERVICES

Services that support students, faculty and staff should be distributed across campus in order to improve access. At the building scale, concierge services should provide support for the most in-demand needs, while more specialized services are clustered at the neighborhood scale. Basic concierge services, flexible workplaces and café spaces should be located within a 5-minute travel; more specialized, shared services should be within a 15-minute travel.

OPTIMIZE FACILITIES THROUGH INCREASED UTILIZATION

Leveraging a prioritized central scheduling system, coupled with providing flexible workplace environments, improved access to facilities and strengthening connectivity between campus locations will drive improved and consistent utilization.

SUPPORTING A MOBILE WORKFORCE

Creating easy, decentralized access to flexible workplace environments is desired across campus. The campus should provide hoteling and coworking spaces and a variety of amenities to flexibly align with the workstyles of diverse users.

ACCESSIBLE CONCIERGE

Concierge support should be found in each building to provide high level support to the most in-demand services for that building's population. IT walk-in, safety, and communications support should be found in each building either via a concierge or departmental representative.

SCENARIO PLANNING TEAMS & KEY FINDINGS:

INTEGRATIVE FACILITIES

The mission of the Integrative Facilities team was to develop and test scenarios that investigated how different learning, research, service and auxiliary functions could be integrated to create various forms and themes for neighborhood development.

The team investigated the intersection of residential academic experiences, learning environments, community facilities, commercial partnerships and other mixed-use typologies to create sustainable and vibrant living, learning, working experiences. We used a series of programmatic variables to create a projected portfolio of mixed-use developments over time. The tool will model different mixed-use developments and drive the ratios of programmatic mixes by themes, residential, retail, cultural, community, and civic functions by campus geography.

KEY FINDINGS INCLUDE

MIXED-USE APPROACH TO DEVELOPMENT

The mixing of uses at the building, neighborhood and campus scales will enrich and diversify experiences, helping to grow, cultivate, and retain talent. Each campus location should be fully built out with mixed-use learning, research, residential facilities that facilitate health, wellbeing, community involvement, and collaboration.

CONNECT CAMPUSES

Physically connect campuses through mixed-use community zones and connected corridors that evoke an enjoyable and direct transit experience.

COMMUNITY ACCESS

Incorporate community mixed-use spaces along the campus periphery in easy to access spaces to improve campus accessibility. Increased access to facilities and event spaces, for students, faculty, staff and external partners are in high demand.

PRESERVE OUR HERITAGE

Continue to leverage the campus' history, heritage, and design aesthetic to create unique outdoor environments that attract students and talent.

SCENARIO PLANNING TEAMS & KEY FINDINGS:

RESILIENT ASSET MANAGEMENT

The mission of the Resilient Asset Management team was to identify and evaluate university buildings and systems based on a fully integrated asset management system as a driver of redevelopment strategies.

In parallel, the team identified critical facilities and infrastructure as a means of both safeguarding the university mission and increasing its sustainability and resiliency. The team also developed strategies for assessing criticality, safety and preparedness, as well as potential community partnership agreements.

Taking into account lifecycle costs, we used facility and infrastructure condition data, capital investment history, and resiliency and sustainability goals to inform how we invest in capital projects over time. One intent of the planning tool is to model a resiliency framework for capital investments.

KEY FINDINGS INCLUDE

ORGANIZING FRAMEWORK FOR RESILIENCY

A three-tiered organizing framework for resiliency includes building operations, facility typologies, and campus system initiatives. A hierarchy of resiliency investments should be adopted campus-wide and include a matrixed approach for the learning and research missions. An asset inventory that maps all critical assets across the university is a necessary next step in setting up a resiliency plan.

MISSION DEPENDENCY INDEX

The campus should create a mission dependency index that assesses criticality for all building functions. A uniform formula to identify high priority facilities can be constructed using a cross section of condition, criticality (protecting our assets) and safety (protecting our people). Assessment of criticality levels could be standardized across the portfolio, but resiliency measures are contingent on facility type.

SAFETY & PREPAREDNESS

Protecting people is the top factor for mission dependency within the resiliency formula, with a direct actionable recommendation for emergency response kits secured across campus and building locations.

RESPONSE TIMELINE & COMMUNICATIONS

Mission disruption occurs on a cascading basis, with severity and disruption occurring immediately in labs, hours for housing, and after days for academic & administrative facilities, requiring a tiered response for campus resiliency. Regardless of facility type, reliable communication systems are a leading factor in campus functionality; from daily WiFi use, to emergency response, to networked campus systems, communication platforms are a launch point for campus resiliency initiatives.

MIXED-USE BUILDING TEMPLATES

The Scenario Planning phase culminated in the development of building templates for 12 unique mixed-use building typologies across CU Boulder's campus. Each building template applied a mixed-use approach to campus programming to facilitate an enhanced experience for all students, faculty, and staff. Mixed-use templates provide a framework of recommended space types and functions to be considered during project planning.

THEY WERE AS FOLLOWS

ADMINISTRATIVE
Administrative department workplaces and home bases

ATHLETICS
Athletic, student-athlete support and external partnership facilities

CAMPUS LIFE
Facilities that focus on dining, support, social, recreation and the overall aspect of being a student in the CU Boulder community

COMMUNITY
On and off campus locations that invite the community in for clinics, classes, workplace, health and other functions

CORE FACILITY CLUSTER
Core facilities are clustered around a common theme and include high performance research environments and specialized support services

CULTURAL
Exhibit, event and auditorium spaces that span from performance to conference to community building

GENERAL RESEARCH
Generic, flexible labs, classrooms and workplaces that enable collaborative research and learning in research

HOUSING
On-campus housing solutions for students, faculty and staff

LEARNING
Shared flexible active classrooms, class labs, immersive and practice spaces, social and study space and workplace environments

PARTNERSHIP
Partnership facilities focus on innovation and entrepreneurship, bringing in public and private partnerships for a multi-layered relationship from collaborative projects, mentorship, and student employment

UNIQUE FACILITIES
Highly specialized lab environments are found in single locations around campus and include secure/classified space, special collections, and unique core facilities

WELLBEING
Counseling, emotional support, and dedicated spaces to focus on personal, mental and physical wellbeing

NEXT STEPS: PLANNING TOOL DEVELOPMENT

The Scenario Planning teams also identified and defined key components that will drive the creation of a facilities planning tool, creating recommendations for space types and desired functions at the building, neighborhood and campus scales. Moving forward, the SFV emphasis will shift from Scenario Planning into Tool Development. The goal of the SFV planning tool is multifaceted. It will enable leadership to understand the true capacity and condition of our campus; forecast facilities needs based on population projections and the scenario planning process; and anticipate and respond to a variety of future facilities requests. In order to achieve these goals, immediate next steps include working with subject matter experts from across the university to assemble existing, public and readily available data into a centralized location.

FUTURE DEMOGRAPHICS

The mission of the Future Demographics team was to develop and test scenarios around different student enrollment breakdowns and their impacts on space and facilities requirements across campus.

*This included not only testing the **impact of shifting demographics, but also predicting faculty and staff requirements**. These scenarios were used to predict the **amounts and types of space** for learning and associated functions of research, auxiliary, office and support space requirements over time.*

*Critical to the process were enrollment and human resources data, and the development of **campus wide benchmarks for learning, research, auxiliary, office and support space**. We used enrollment and demographics data to inform how much learning, research, office auxiliary and support space we needed over time.*

KEY FINDING

OPEN, COLLABORATIVE CULTURE

Shared, non-scheduled space for socializing, coworking, and studying is a top demand in all mixed-use building templates and a key component to creating a culture that supports diverse demographic groups.

FUTURE DEMOGRAPHICS TEAM

The tool will model student demographic projections that drive the ratio of space types and allocations per student demographic.


SP 1


SP 2


SP 3

NAME	POSITION	DEPARTMENT
Armando Pares	Assistant Dean, Continuing Ed.	Continuing Ed.
Brian Groves	Executive Director, Auxiliary Services	Fin. & Bus. Strategy
Ceal Barry	Deputy Athletic Director / SWA	Athletics
Daryl Maeda	Associate Professor / Associate Dean, Student	Arts & Sciences
Dave Kang	Vice Chancellor, Infrastructure & Sustainability	Infra. & Sustain.
David Brown	Divisional Dean, Social Sciences / Professor	Arts & Sciences
Diana Salazar	Director, International Student & Scholar Services	U/G Edu
Doreen Jokerst	CU Police Chief	Integrity, Safety & Comp.
Elizabeth Meyer	Associate Dean, Students / Associate Professor	School of Education
Gretchen O'Connell	Senior Assistant Dean	Graduate School
Gwen Pomper	Assistant Vice Chancellor, Enroll. Management	Enroll. Management
Jack Draeb	U/G Student Representative / Major of Economics	Student Rep
Jimmie Baker	Senior Associate Director, Operations & Services	Student Affairs
John Meister	Director, Disability Services	ODECE
Ken Anderson	Associate Dean / Professor	Engineering
Kevin MacLennan	Assistant Vice Chancellor, Enrollment Management	Enroll. Management
Kirsten Schuchman	Assistant Vice Chancellor, Public Policy & Advocacy	Strat. Relations & Comm
Lorraine Bayard de Volo	Chair, Women & Gender Studies	Arts & Sciences
Myron Gutmann	Director, Institute of Behavioral Science / Professor	Research Institutes
Ryan Chreist	Assistant Vice Chancellor / Executive Director	Advancement
Sandy Jones	Dean of Students	Student Affairs
Sarah Fahmy	Graduate Student Rep./ Masters Theater & Performance Studies	Student Rep
Tom Goodhew	Assistant Director, Facilities Planning	Planning, Design & Construction
Valerie Simons	Executive Director	OIEC

FUTURE DEMOGRAPHICS **FINDINGS**

WORKSHOP 1

WHAT INFRASTRUCTURE DO WE NEED TO ACHIEVE OUR VISION?

Spaces that support our growing diverse population

CENTRALIZED SUPPORT: Co-locating student services with social and support spaces will provide a positive student-centered experience for an increasingly diverse demographic.

IDENTIFIABLE HOME BASE: Students desire an identifiable home where they can get the services they need.

RETURNING LEARNERS: Returning learners are going to become more mainstream and return to campus for shorter periods of time, and take advantage of a wider diversity of program offerings.

COMMUTER STUDENT HOME BASE: Provide touchdown spaces, storage, amenities, and a sense of home for commuter students.

HOUSING DIVERSITY: Offering diverse housing options is necessary to accommodate diverse student needs (e.g., accessibility, affordability, community, support services).

COMMUNITY NETWORK: Facilitate community, peer to peer networking and mentorship through lounges, cafés, and common areas.

WORKSHOP 2

HOW DO WE APPLY THIS TO THE CAMPUS SYSTEM?

Student groups and shared/ dedicated and time spent

SEAMLESS MANEUVERABILITY: Students desire a portfolio of spaces that allow them to maneuver seamlessly between an integrated campus experience to dedicated and specialized support spaces. Deliberate clustering of shared and dedicated support spaces is paramount.

DEDICATED SPACE: Graduate students, followed by marginalized students and first generation students require dedicated spaces to create community and receive the right type of specialized support for their particular needs.

SUPPORT SERVICES: Advising and support should be designed to be inclusive for all students, including dedicated service for unique populations with an option to schedule appointments or receive drop-in concierge services.

TOOL DEVELOPMENT: By understanding time spent in various activities, we can allocate space ratios per demographic group in the tool.

WORKSHOP 3

HOW IT WILL BE APPLIED IN THE PLANNING TOOL?

Ratio of student support space types by building typology by demographic

COLLABORATIVE CULTURE: An open and collaborative culture will create a positive experience for future demographics, and is realized with open study, communal, and social spaces woven across all facilities.

DEDICATED SPACE: To foster community and support within student groups, a third of spaces are dedicated to specific populations while two thirds are open to all.

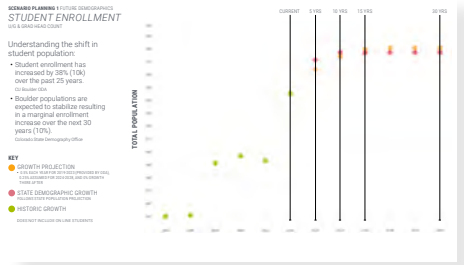
IN DEMAND SPACE TYPES: In demand space types include academic support, bookable study, commuter support, dedicated student home bases, open lounge, café and social spaces, open study and coworking spaces, spaces for student organizations and wellbeing.

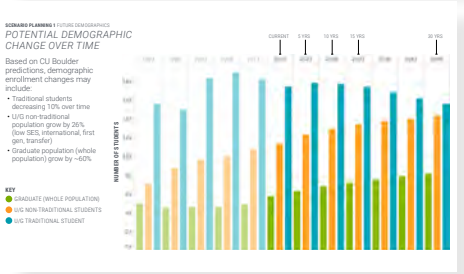
OPEN, SOCIAL CAMPUS: Open study and open social spaces were the most in demand, taking a foothold in each building and spanning over a third of the designated area across each building template.

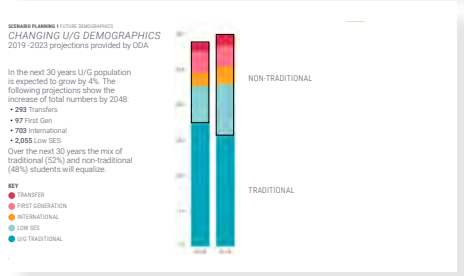
FUTURE DEMOGRAPHICS **WORKSHOP 1**

BASELINE INFORMATION

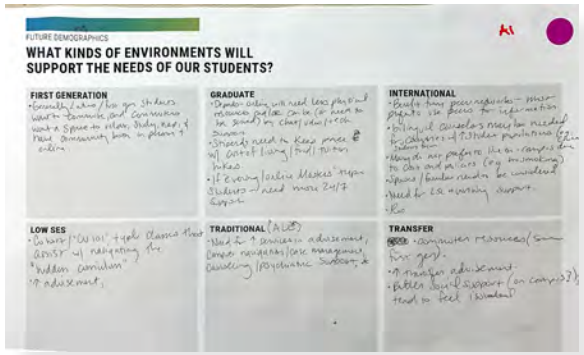
This information was shared at the outset of the workshop as a common base of knowledge for group activities.





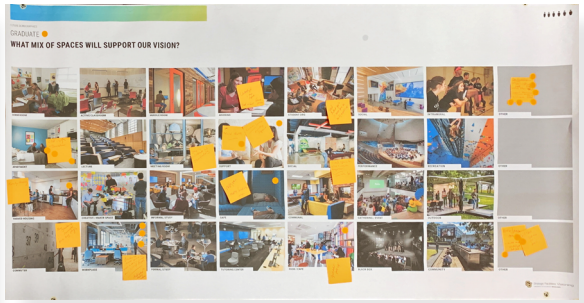


ACTIVITIES



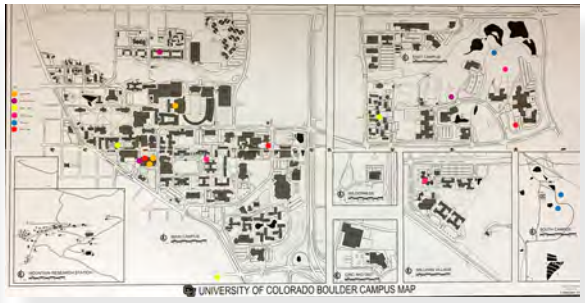
INDIVIDUAL & WITH A PARTNER

Based on CU Boulder's six demographic categories (first generation, graduate, international, lower SES, traditional, transfer), participants answered "what kinds of environments would support the needs of our students?", first individually and then as groups.



SMALL GROUPS *(4-5 PEOPLE)*

Participants discussed the needs identified in the previous exercise and the mix of spaces needed to support the university's vision for each demographic category, voting for their top choices on a vision board.



ALL

Each group received three dots and identified the top places on campus to initiate the discussed interventions.

FUTURE DEMOGRAPHICS **WORKSHOP 1 FINDINGS**

SUPPORTING A DIVERSE RANGE OF STUDENTS

Collocating student services with social and support spaces will provide a positive student-centered experience for an increasingly diverse demographic.

Graduate students, international students and transfer students desire an identifiable home where they can get the services they need

Returning learners are going to become more mainstream and return to campus for shorter periods of time, and take advantage of a wider diversity of program offerings

Provide touchdown spaces, storage, amenities, and a sense of home for commuter students

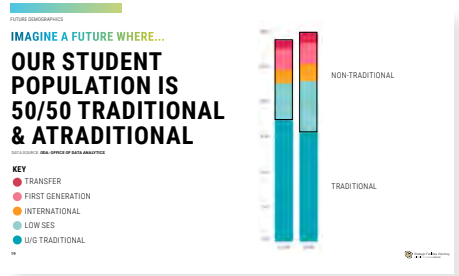
Offering diverse but equitable housing housing options is necessary to accommodate diverse student needs (e.g., accessibility, affordability, community, support services)

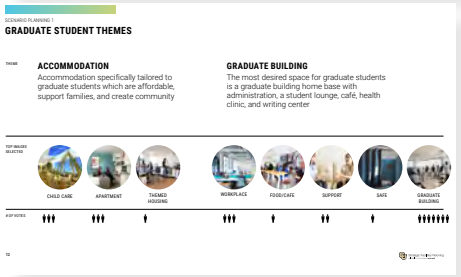
Facilitate community, peer to peer networking and mentorship through lounges, cafés, and common areas

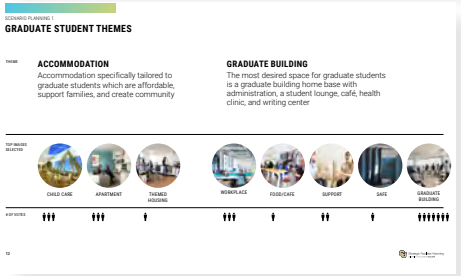
FUTURE DEMOGRAPHICS **WORKSHOP 2**

BASELINE INFORMATION

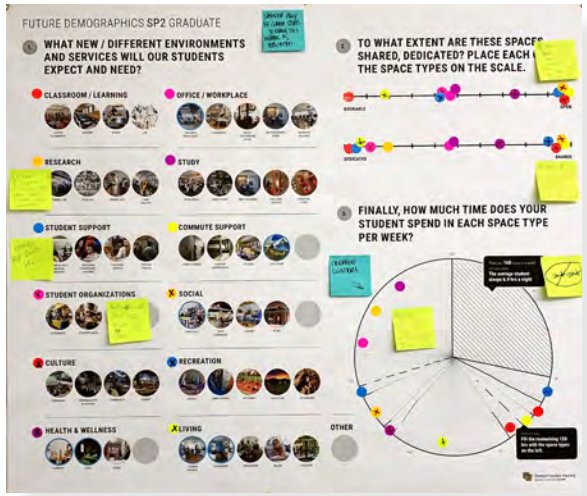
This information was shared at the outset of the workshop as a common base of knowledge for group activities.

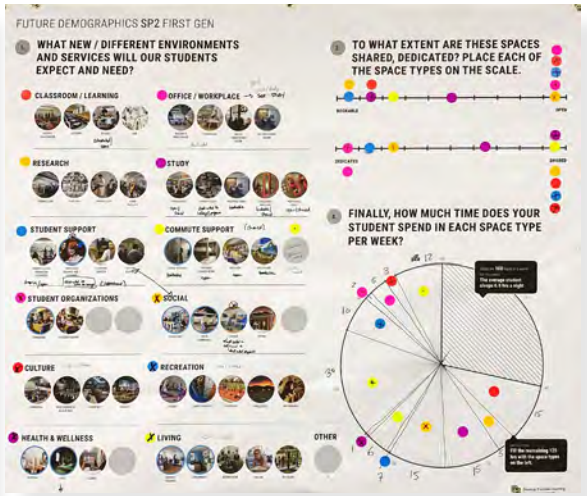


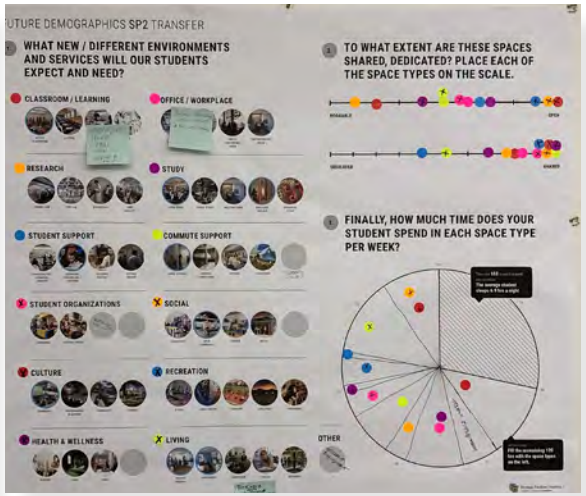




ACTIVITIES







Participants were split into small groups and each group focused on two distinct demographic categories throughout the workshop. Marginalized students and returning learners were added as categories.

VALIDATE SPACE TYPES

Teams examined a variety of proposed spaces by use to assess the fit of these environments for each assigned demographic.

SPACE TYPE SCALES

Groups assessed each space type based on two scales:

- Bookable vs. open
- Dedicated vs. shared

A WEEK IN THE LIFE

Teams then estimated the average time spent in each space type per week for the typical student.

FUTURE DEMOGRAPHICS **WORKSHOP 2 FINDINGS**

SUPPORTING A DIVERSE RANGE OF STUDENTS

Students desire a portfolio of spaces that allow them to maneuver seamlessly from an integrated holistic campus environment to dedicated and specialized community and support spaces.

Cultural and social experiences on campus are anticipated to be a predominant reason students opt for brick and mortar vs. solely online learning

Student studying, networking, socializing, and student organization participation are not stand alone but an interconnected flow of activities

Graduate students, followed by marginalized students and first generation students require dedicated spaces to create community and receive the right type of specialized support for their particular needs

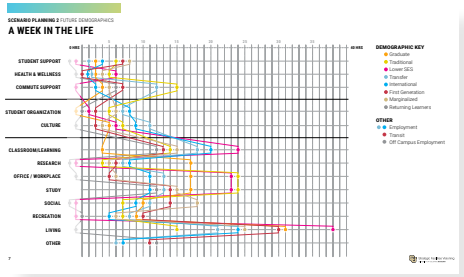
Advising and support should be designed to be inclusive for all students, including dedicated service for unique populations with option to schedule appointments or receive drop-in concierge services

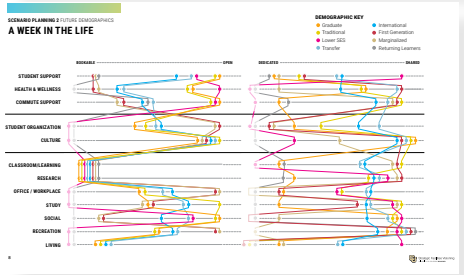
Most demographic groups spend similar amounts of time in support and wellbeing spaces, with the difference being the amount of specialized service to that particular group

FUTURE DEMOGRAPHICS **WORKSHOP 3**

BASELINE INFORMATION

This information was shared at the outset of the workshop as a common base of knowledge for group activities.





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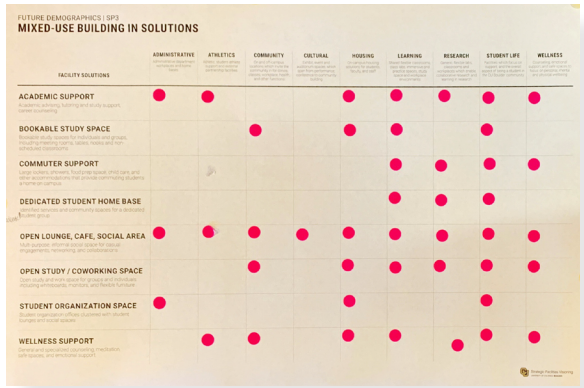


SOLUTIONS MATCHING

Teams matched facility solutions to the applicable building templates. Each building template reflected a commonly understood and cohesive facilities need.

FACILITY DNA

Teams were assigned three building templates and asked to assemble the "DNA" of their ideal buildings using a combination of the nine facility solutions.

DEMOGRAPHIC ALIGNMENT

Groups identified the demographic focus for each facility solution.

FUTURE DEMOGRAPHICS **WORKSHOP 3 FINDINGS**

SUPPORTING A DIVERSE RANGE OF STUDENTS

An open and collaborative culture will create a positive experience for future demographics, and is realized with open study, communal, and social spaces woven across all facilities.

DEDICATED SPACE

To foster community and support within student groups, a third of spaces are dedicated to specific populations while two thirds are open to all

IN DEMAND SPACE TYPES

In demand space types include academic support, bookable study, commuter support, dedicated student home bases, open lounge, café and social spaces, open study and coworking spaces, spaces for student organizations and wellbeing

OPEN, SOCIAL CAMPUS

Open study and open social spaces are the most in demand, taking a foothold in each building and spanning over a third of the designated area across each building template

PORTFOLIO OF PEDAGOGY

*The mission of the Portfolio of Pedagogy team was to develop and test scenarios that investigated the relationship between **different learning modalities and their impacts on space and facilities requirements** across campus.*

*Differentiation between undergraduate, masters, and PhD students informed the overall learning profile of space types required. Critical to this analysis was balancing the provision of a variety of **digital and physical learning modalities with increases in efficiency and utilization of space and resources**. Volume and throughput of the student population was analyzed in relationship to total affordability of space, quality of learning delivery, faculty training and support.*

*We used the inventory of campus learning spaces, and efficiency and utilization benchmarks to create a new profile of campus learning **spaces that align with the new cross section of learning modalities** that were desired.*

KEY FINDING

RELATIONSHIPS DRIVE THE LEARNING EXPERIENCE

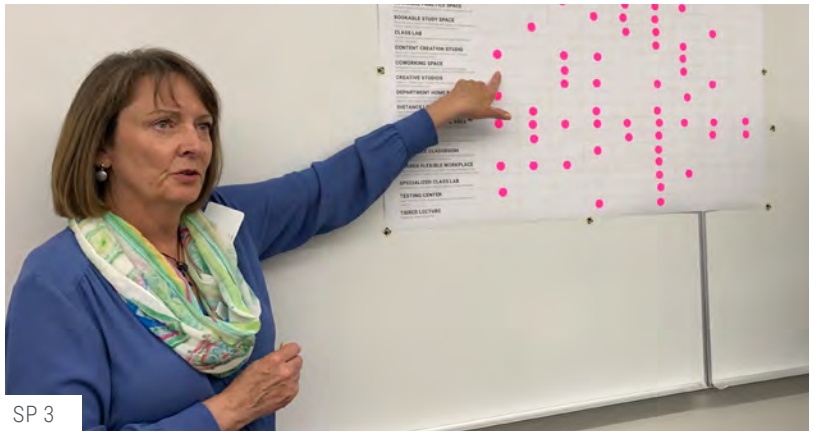
The value proposition of providing diverse, in-person, and on-campus experiences drive new learning environments. Learning spaces should be flexible, active, and immersive, and non-scheduled study space will grow to support new pedagogies.

PORTFOLIO OF PEDAGOGY TEAM

The tool will model changes in learning modalities that drive the quality, suitability, type, technology of learning spaces, and faculty support services and environments.

SP 1

SP 2



SP 3

NAME	POSITION	DEPARTMENT
Andy Martin	Faculty Advisor / Professor, Ecology & Evolutionary Biology	Arts & Sciences
Armando Pares	Assistant Dean, Continuing Ed.	Continuing Ed.
Blake Reid	Associate Clinical Professor	Law
Bud Coleman	Previous Chair, THDN / CU, DC Director / Commencement Marshall	Arts & Sciences
Catherine (Trina) Hicks	Scheduling Coordinator	Office of the Registrar
David Kohnke	Director, IT	Leeds, Business
Elizabeth (Lil) Fenn	Previous Chair, History / 2015 Pulitzer Prize Winner	Arts & Sciences
Grace Maniscalco	Executive Assistant to the Dean	School of Education
Jenny Knight	Associate Professor, Molecular Cellular & Developmental Biology	Arts & Sciences
Jeremy Smith	Professor	College of Music
Kevin Griffin	Director of Space Optimization	Planning, Design & Construction
Merna Jacobsen	Assistant Vice Chancellor & Deputy Chief HR Officer / Director, Organizational & Employee Development	HR
Paul Beale	Professor, Physics	Arts & Sciences
Rebecca Kallemeyn	Learning Experience Designer	OIT
Richelle Reilly	Campus Landscape Architect / Facilities Planner	Planning, Design & Construction
Robert McDonald	Dean, Libraries / Professor	Libraries
Robert McLeod	Professor, Optics, Nanostructures & Bioengineering	Engineering
Roberto Arruda	Director, International Student Academic Success	Academic Affairs
Robin Suitts	Capital Program Administrator	Planning, Design & Construction
Sarabeth Berk	Director, Innovation & Entrepreneurship Initiative	RIO
Tom Goodhew	Assistant Director, Facilities Planning	Planning, Design & Construction

PORTFOLIO OF PEDAGOGY **FINDINGS**

WORKSHOP 1

WHAT INFRASTRUCTURE DO WE NEED TO ACHIEVE OUR VISION?

Spaces that support our students' educational journey

SPACE-PEDAGOGY ALIGNMENT: Aligning class sections with the appropriate spaces in terms of quality, suitability and technology will enable the university's multi-modal approach to learning at a variety of scales.

SCHEDULED & OPEN SPACES: Balance non-scheduled study space with formally scheduled space, recognizing their equal importance.

FLEXIBILITY & ADAPTABILITY: Design learning environments (labs, classrooms, specialty spaces and meeting spaces) with adaptability and flexibility in mind, so that facilities can be shared across diverse programs.

PERVASIVE WIFI: Provide stable WiFi and power in all indoor and outdoor locations to provide equity of technology.

COLLABORATIVE ENVIRONMENTS: Promote collaboration through agile design and spaces that bridge learning and research.

DISTANCE LEARNING: Distance learning is an important opportunity for development and expansion beyond Boulder to reach a broader, more diverse demographics.

WORKSHOP 2

HOW DO WE APPLY THIS TO THE CAMPUS SYSTEM?

Types of learners and learning / time spent by space type

OPEN & CREATIVE: For all learners, learning spaces should promote relationship building, connection and networking, and therefore occur more often in informal, social spaces and shared workplaces, as well as media and technology rich environments.

EDUCATIONAL NETWORK: Students in higher academic levels have an increased focus on networks and collaborative innovation to create educational success, requiring community-focused study, work, and social spaces.

RELATIONSHIPS: In an increasingly digital world, a brick and mortar institution is justified by the need for human interaction, requiring a relationship-focused balanced with content-focused design of spaces.

FACULTY: Faculty need access and time in community content creators, practice space, digital recording studios, and VR/ simulators to build meaningful course content and continue their professional growth.

UNDERGRADUATE: The undergraduate degree is focused around exposure, requiring an ease of access to a variety of high-quality, hands-on educational experiences including research opportunity.

WORKSHOP 3

HOW WILL IT BE APPLIED IN THE PLANNING TOOL?

Ratio of learning space types by building typology

OPEN & ACTIVE SPACES: The most in demand spaces across the nine building templates are active classrooms, immersive environments and seminar rooms (scheduled learning); open lounge, study, café, social and event spaces (non-scheduled learning) and flexible workplace environments (office).

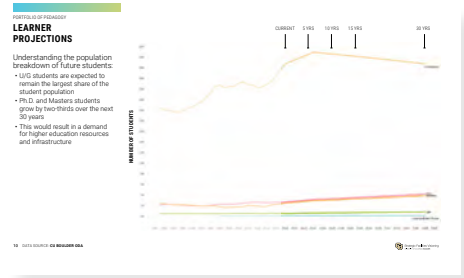
LEARNING BUILDINGS: Learning buildings include all space types in this category, expanding from structured learning to a full spectrum of study, creative, community, and support spaces.

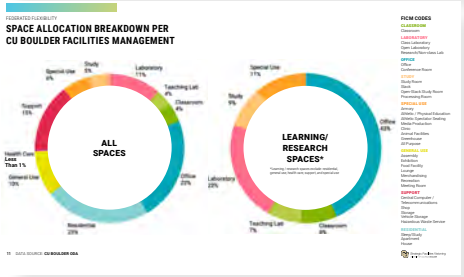
DIVERSE ACADEMIC RESIDENTIAL EXPERIENCES: A wide variety of learning environments should be grouped and incorporated into housing to create unique learning ecosystems, forming the basis of residential academic experiences across campus.

PORTFOLIO OF PEDAGOGY **WORKSHOP 1**

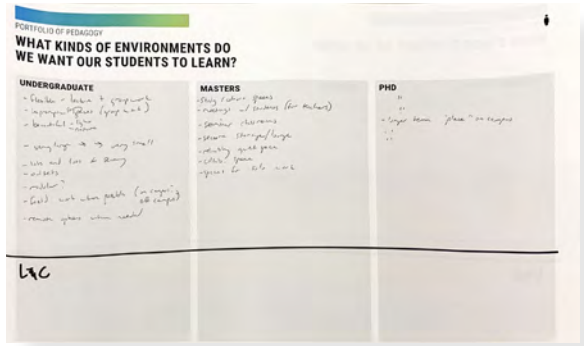
BASELINE INFORMATION

This information was shared at the outset of the workshop as a common base of knowledge for group activities.





ACTIVITIES



INDIVIDUAL & WITH A PARTNER

Based on CU Boulder's four pedagogical categories (undergraduate, masters, PhD, licensure and certificate), participants answered "what kinds of environments would support the needs of our students?", first individually and then with groups.

SMALL GROUPS *(4-5 PEOPLE)*

Participants discussed the needs identified in the previous exercise and the mix of spaces needed to support the university's vision for each pedagogy, voting for their top choices on a vision board.

ALL

Each group received dots and identified the top places on campus to initiate the discussed interventions.

PORTFOLIO OF PEDAGOGY **WORKSHOP 1 FINDINGS**

A SPECTRUM OF SUPPORTIVE LEARNING ENVIRONMENTS

Aligning class sections with the appropriate spaces in terms of quality, suitability and technology will enable the University's multi-modal approach to learning at a variety of scales.

Balance non-scheduled study space with formally scheduled space, recognizing their equal importance

Design learning environments (labs, classrooms, specialty spaces and meeting spaces) with flexibility in mind, so that facilities can be shared across diverse programs

Provide stable WiFi and power in all indoor and outdoor locations to provide equity of technology

Promote collaboration through agile design and spaces that bridge learning and research

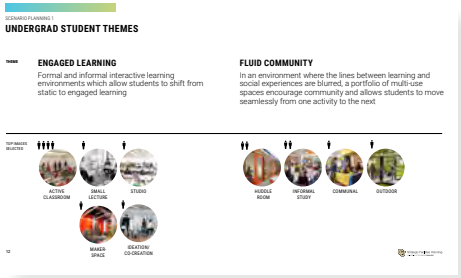
Distance learning is an important opportunity for development and expansion beyond Boulder to reach broader, more diverse demographics

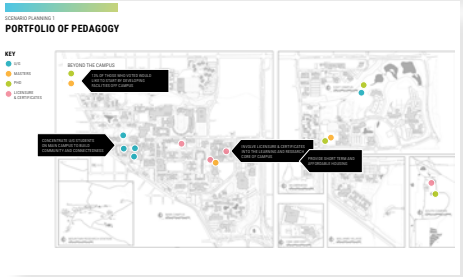
While distance learners are off campus there are on campus space needs for faculty and staff support, which includes recording studios, content creation labs, black box spaces, etc.

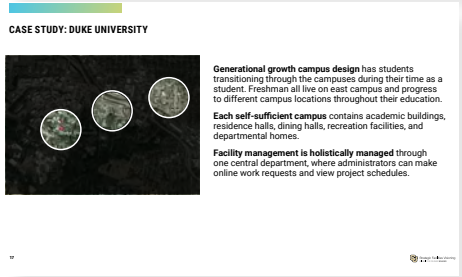
PORTFOLIO OF PEDAGOGY **WORKSHOP 2**

BASELINE INFORMATION

This information was shared at the outset of the workshop as a common base of knowledge for group activities.







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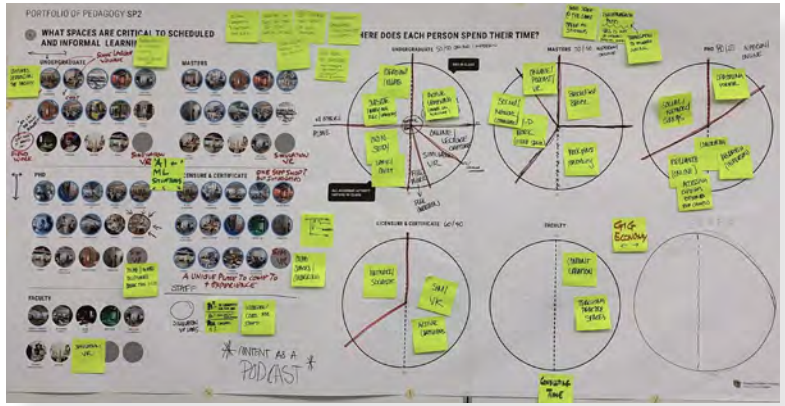
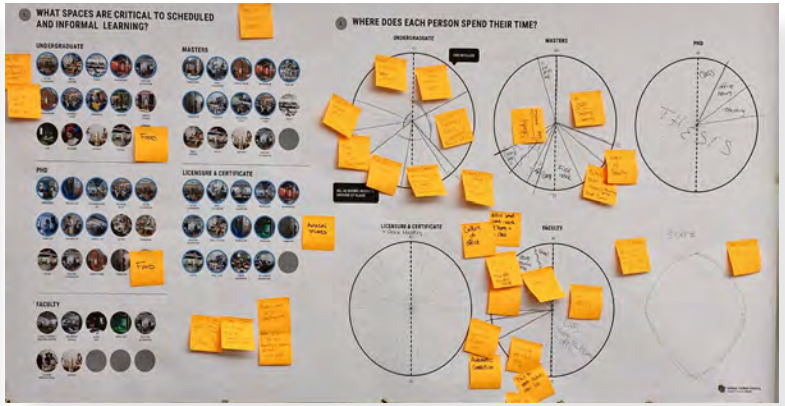


VALIDATE SPACE TYPES

Teams examined a variety of proposed spaces by use to assess the fit of these environments for each assigned degree level and faculty.



A WEEK IN THE LIFE

Teams then estimated the average time spent in each space type per work week for each degree level and faculty.

PORTFOLIO OF PEDAGOGY **WORKSHOP 2 FINDINGS**

A WEEK IN THE LEARNING LIFE

In an increasingly digital world, a brick and mortar institution is justified by the need for human interaction, requiring a relationship-focused design of spaces over content-focused.

Upperclassman have an increased focus on community and innovation to create educational success, requiring an intentional build in connecting and interactive spaces

The undergraduate degree is focused around exposure, requiring an ease of access to a variety of opportunities and experiences

Masters degrees are rooted in immersive experiences and require spaces to interact with their cohort, community, and clients

PhD students are more likely to produce meaningful work when they are pushed to break silos and collaborate across disciplines

License & Certificate students are drawn to campus via a one-stop-shop for convenient, unique, and experience based growth experiences that help them grow their network

Faculty need access and time in community content creators, practice space, digital recording studios, and VR/simulators to build meaningful course content and continue their professional growth

PORTFOLIO OF PEDAGOGY **WORKSHOP 3**

BASELINE INFORMATION

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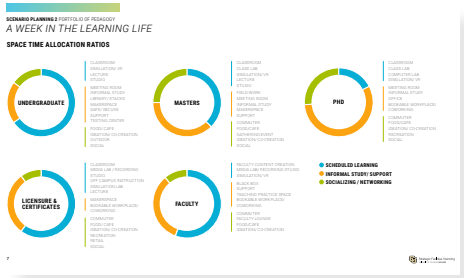

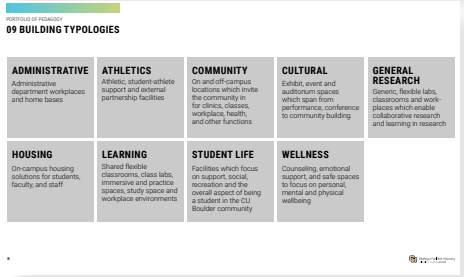

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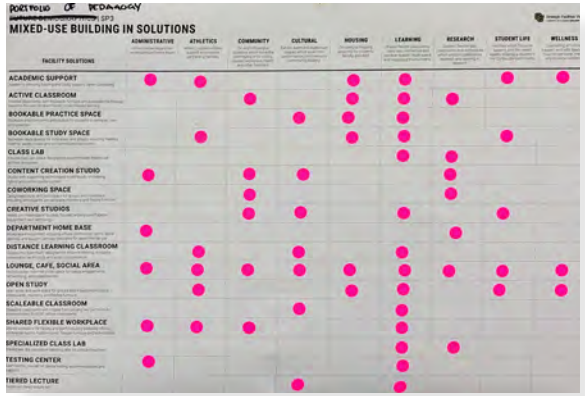

SOLUTIONS MATCHING

Teams matched facility solutions to the applicable building templates. Each building template reflected a commonly understood and cohesive facilities need.

FACILITY DNA

Teams were assigned three building templates and asked to assemble the "DNA" of their ideal buildings using a combination of the nine facility solutions.

PORTFOLIO OF PEDAGOGY **WORKSHOP 3 FINDINGS**

A WEEK IN THE LEARNING LIFE

The most in demand spaces across the nine building templates are active classrooms, immersive environments and seminar rooms (scheduled learning); open lounge, study, café, social and event spaces (non-scheduled learning) and flexible workplace environments (office).

LEARNING BUILDINGS

Learning buildings include all space types in this category, expanding from structured learning to a full spectrum of study, creative, community, and support spaces

DIVERSE ACADEMIC RESIDENTIAL EXPERIENCES

A wide variety of learning environments should be grouped and incorporated into housing to create unique learning ecosystems, forming the basis of residential academic experiences across campus

RESEARCH & INNOVATION ECOSYSTEM

*The mission of the Research Ecosystem team was to develop and test scenarios that investigated the relationship between the **diversity and growth of existing and new research** areas and their impacts on space and facilities requirements across campus.*

*The team investigated the intersections of basic and applied research, new partnerships, entrepreneurialism and the incorporation of **learning in research environments**.*

*Understanding and developing requirements in these areas drove new space types and adjacencies for a variety of research facilities, the extent of **shared core facilities and equipment, the sharing of space with external organizations**, and the provision of embedded learning.*

KEY FINDING

CREATING RESEARCH NEIGHBORHOODS

Curating meaningful interactions between people and sharing of technology and infrastructure dictates the future design of research facilities; this will be achieved through interweaving labs, teaching labs, shared core facilities, immersive environments, coworking and social spaces.

RESEARCH & INNOVATION ECOSYSTEM TEAM

The tool will model changes in research growth and diversity that drive the ratio of space types, equipment and space allocations by research intensities.

SP 1

SP 2

SP 3

NAME	POSITION	DEPARTMENT
Beth Kroger	Chief of Operations	JILA
Bob Boswell	Vice Chancellor	ODECE
Bob McGrath	Director, RASEI	RIO
Denitta Ward	Assistant Vice Chancellor, Research & Director, Office of Contracts & Grants	RIO
Emina Begovic	Director, Finance, Accounting & Operations	SEEC
Jennifer Knievel	Faculty Director, Arts & Humanities / Associate Professor	Libraries
Kathy Ramirez-Aguilar	CU Green Labs Program Manager	Green Labs
Lang Farmer	Divisional Dean, Natural Sciences	Arts & Sciences
Laura Michaelis-Cummings	Chair, Linguistics	Arts & Sciences
Laura Ragin	Assistant Vice Chancellor / Controller	Fin. & Bus. Strategy
Martha Palmer	Professor, Linguistics & Computer Sciences Engineering	RIO
Robert Linz	Associate Director / Head of Public Services	Law
Stephanie Wanek	Assistant Director of Operations, ATLAS (In for Mark)	ATLAS
Tayler Shaw	Student	CMCI Student
Terri Fiez	Vice Chancellor, Research & Innovation	RIO
Thomas Hauser	Director, Research Computing	OIT
Thomas Perkins	Director, JILA / Associate Professor	Research Institutes
Wayne Northcutt	Facilities Planner	Planning, Design & Construction
Tom Goodhew	Assistant Director, Facilities Planning	Planning, Design & Construction

RESEARCH & INNOVATION ECOSYSTEM **FINDINGS BY WORKSHOP**

WORKSHOP 1

WHAT INFRASTRUCTURE DO WE NEED TO ACHIEVE OUR VISION?

Spaces that enable a flourishing research enterprise

RESOURCE EFFICIENCY: The ability to share spaces, services and resources will encourage interdisciplinary research, save money and assist in diversifying the research portfolios.

SHARED SPACES: Leveraging opportunities to share spaces, resources, services and technologies will not only improve efficiency and avoid costs but promote collaborative research culture; the first step in achieving this is undertaking an inventory of facilities and equipment.

FLEXIBLE & MODULAR: Flexible and modular labs promote the ability to share use across multiple programs and collaborations and adapt over time as research needs change.

COLOCATION: Developing co-working spaces and colocation opportunities will promote interdisciplinary collaboration, foster academic-industry exchange, attract research talent and enrich student research experiences.

STUDENT EXPLORATION: Learning in research requires flexible spaces for students to experiment with new ideas, showcase their work, and find and pursue their passions.

RESEARCH SUPPORT: Integrating research support functions (e.g., grant identification and support, contracting, business development, etc.) into a seamless system will allow research teams to focus their time on discovery and improve research productivity.

WORKSHOP 2

HOW DO WE APPLY THIS TO THE CAMPUS SYSTEM?

Activities and space types/ general profile by types

RESEARCH NEIGHBORHOODS: There is a mix of research, learning and co-working spaces that should be located within 5 minutes, while more specialized, shared spaces should be located within a 15-minute travel. The intensity of research defines the need for unique facilities on campus.

GENERAL RESEARCH FACILITIES: General research facilities can be found within a 5-minute travel radius and include offices, collaborative workplaces, learning environments, shared equipment, and research support concierge.

UNIQUE FACILITIES: Highly specialized lab environments are found in single locations around campus and include secure/ classified space, special collections, and unique core facilities.

PARTNERSHIP FACILITIES: Partnership facilities focus on innovation and entrepreneurship, bringing in public and private partnerships for a multi-layered relationship from collaborative projects, mentorship, and student employment.

CORE FACILITY CLUSTER: Core facilities are clustered around a common theme and include high performance research environments and specialized support services.

WORKSHOP 3

HOW WILL IT BE APPLIED IN THE PLANNING TOOL?

Ratio of research space types by building typology and core facility clusters

DESIGNED COLLABORATION: Curating meaningful interactions between people to generate unique collaborative opportunities dictates the future design of research spaces; this will be achieved through interweaving labs, teaching labs, shared core facilities, immersive environments, coworking and social spaces.

THEMATIC CLUSTERS: Thematic approaches can be applied to all research building templates as a strategy to integrate disciplines and programs around a common purpose and vertically integrate the research and learning missions. Examples of thematic approaches include Environment, Air & Water; Improving the Human Condition; Wellbeing; Life Sciences; Arts; Aerospace; and Surfaces & Materials.

CRITICAL MASS APPROACH TO TECHNOLOGY: The use and function of technology drive scale of placement across the university, where everyday use lower risk assets are in building neighborhood scales, and storage, high-investment, and invaluable assets centralized in single or campus-based locations.

RESEARCH & INNOVATION ECOSYSTEM **WORKSHOP 1**

BASELINE INFORMATION

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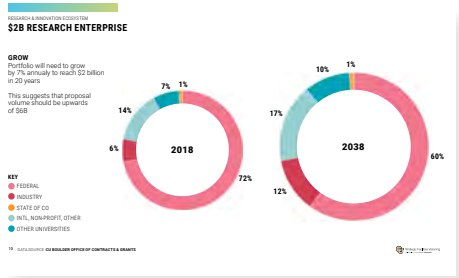
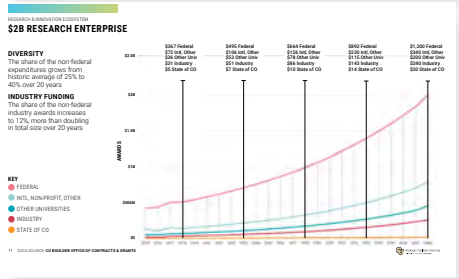
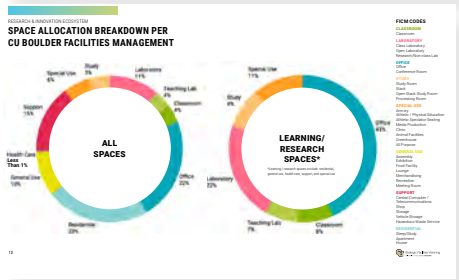
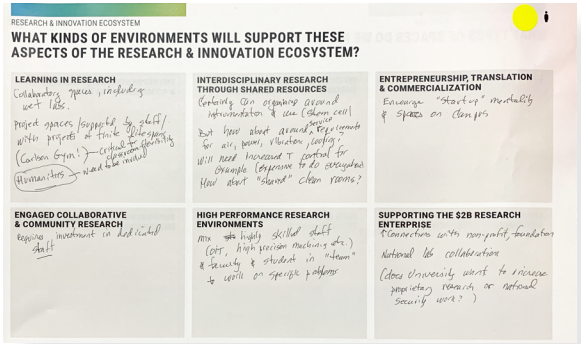






ACTIVITIES



INDIVIDUAL & WITH A PARTNER

Based on the six categories resulting from the Deep Dive Phase (learning in research, interdisciplinary research through shared resources, entrepreneurship, translation and commercialization, engaged collaborative and community research, high performance research environments, and supporting the $2B research enterprise) participants answered "what kinds of environments would support these aspects of the Research & Innovation Ecosystem?", first individually and then with groups.

SMALL GROUPS *(4-5 PEOPLE)*

Participants discussed the needs identified in the previous exercise and the mix of spaces needed to support the university's vision for each category, voting for their top choices on a vision board.

ALL

Each group received dots and identified the top places on campus to initiate the discussed interventions.

RESEARCH & INNOVATION ECOSYSTEM **WORKSHOP 1 FINDINGS**

ENVIRONMENTS WHICH SUPPORT THE RESEARCH ENTERPRISE

The ability to share spaces, services and resources will encourage interdisciplinary research, save resources and assist in diversifying the research portfolios.

Leveraging opportunities to share spaces, resources, services and technologies will not only improve efficiency and avoid costs but promote collaborative research culture; the first step in achieving this is undertaking an inventory of facilities and equipment

Flexible and modular labs promote the ability to share use across multiple programs and collaborations

Develop co-working spaces and colocation opportunities will promote interdisciplinary collaboration, foster academic-industry exchange, attract research talent and enrich student research experiences

Learning in research requires flexible spaces for students to experiment with new ideas, showcase their work, and find and pursue their passions

Integrating research support functions (e.g., grant identification and support, contracting, business development, etc.) into a seamless system will allow research teams to focus their time on discovery and improve research productivity

RESEARCH & INNOVATION ECOSYSTEM **WORKSHOP 2**

BASELINE INFORMATION

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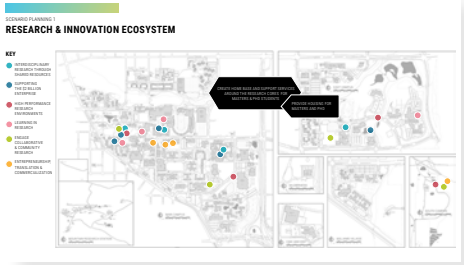
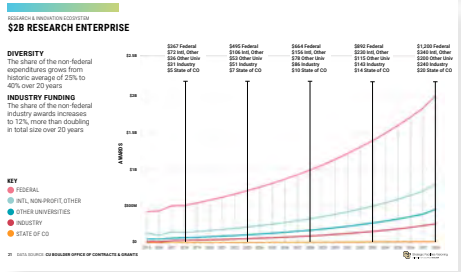
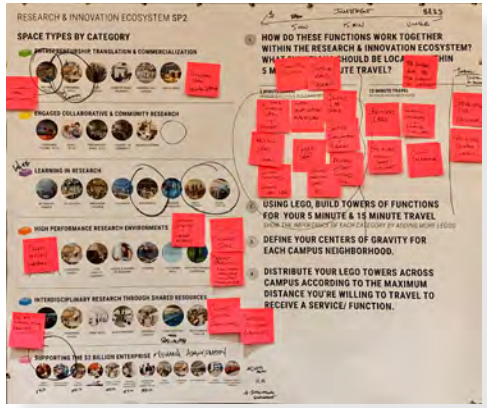


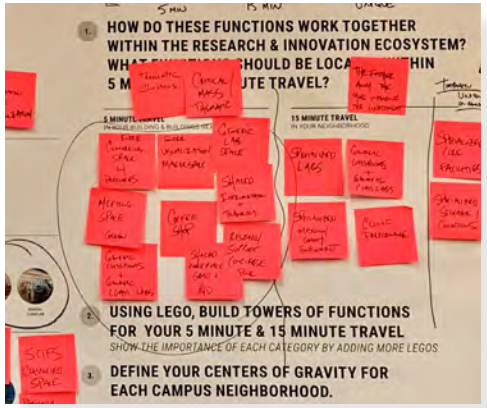


ACTIVITIES



VALIDATE SPACE TYPES

Teams examined a variety of proposed spaces and assessed their fit for each space type category.



IDENTIFYING TRAVEL DISTANCES

Teams identified which spaces should be located within a 5-minute, 15-minute and beyond 15-minutes travel radius.

CREATING RESEARCH NEIGHBORHOODS

Using a campus map with predetermined neighborhoods, teams identified the primary 5-minute radius and 15-minute radius in each neighborhood. They then placed each Lego tower within the 5-minute, 15-minute and beyond 15-minutes circles to indicate the prioritization of functionality.

RESEARCH & INNOVATION ECOSYSTEM **WORKSHOP 2 FINDINGS**

CREATING RESEARCH NEIGHBORHOODS

Research ecosystems centered around a theme bring together diverse disciplines with a common link and encourages multi-disciplinary collaborative work, creativity, and resource efficiency.

Thematic clusters enable critical masses, drawing people together across departments and should be sprinkled densely across campus	The farther dispersed the facility function from the research core, the more specialized and more intensive the investment	All campuses are fully integrated with research, learning, and living spaces
Specialized core facilities should exist across each campus, located adjacent to but outside the core workplace of that research neighborhood	Expose students to research and innovation opportunities starting in their first year at CU Boulder	Research neighborhood cores include a mix of generic spaces that include labs, classrooms, food, and meeting spaces

RESEARCH & INNOVATION ECOSYSTEM **WORKSHOP 3**

BASELINE INFORMATION

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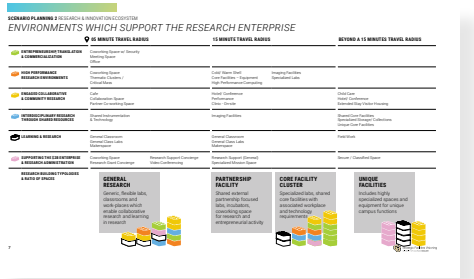
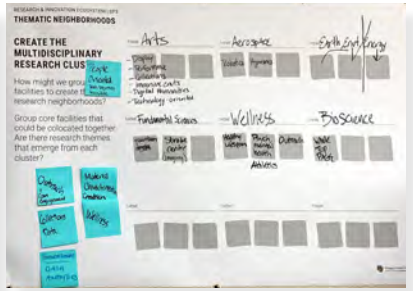


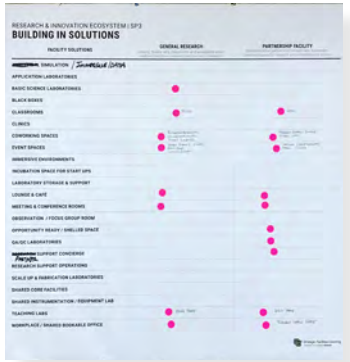
ACTIVITIES



UNIQUE & SHARED RESOURCES

To identify unique and shared research resources, each group identified the ideal density for core facilities across campus (building scale, neighborhood scale, campus location, single location).

Multidisciplinary neighborhood clusters were created by identifying themes from the list of core facilities.



SOLUTIONS MATCHING

Teams matched facility solutions to the applicable building templates. Building templates reflected a commonly understood and cohesive facilities need.

FACILITY DNA

Teams were assigned building templates and asked to assemble the "DNA" of their ideal building using a combination of facility solutions.

RESEARCH & INNOVATION ECOSYSTEM **WORKSHOP 3 FINDINGS**

CREATING RESEARCH NEIGHBORHOODS

Curating meaningful interactions between people to generate unique collaborative opportunities dictates the future design of research spaces this will be achieved through interweaving labs, teaching labs, shared core facilities, immersive environments, coworking and social spaces.

THEMATIC CLUSTERS

Thematic approaches can be applied to all research building templates as a strategy to integrate disciplines and programs around a common purpose and vertically integrate the research and learning missions. Examples of thematic approaches include Environment, Air & Water; Improving the Human Condition; Wellbeing; Life Sciences; Arts; Aerospace; and Surfaces & Materials

CRITICAL MASS APPROACH TO TECHNOLOGY

The use and function of technology drive scale of placement across the university, where everyday use lower risk assets are in building neighborhood scales, and storage, high-investment, and invaluable assets centralized in single or campus-based locations

FEDERATED FLEXIBILITY

*The mission of the Federated Flexibility team was to develop and test various scenarios regarding the **degree to which facilities and services could be shared**.*

*Driven by academic units, student life and administrative functions, and with the goal to drive **interdisciplinary collaboration and improve operational efficiencies**, the team investigated a variety of scenarios in a hub and node model. Conceived as a constellation of university-wide facilities, the model tested the creation of hubs as **home bases for academic units and nodes as thematic clusters of generic and specialized spaces**, with integrated administrative services collocated in the ways that best serve students, faculty and staff.*

We used location data (where people are) and space typology information to inform which resources, facilities and services could be shared and collocated over time.

KEY FINDING

DISTRIBUTED SERVICES

Services that support students, faculty and staff should be distributed across campus in order to improve access. At the building scale, concierge services should provide support for the most in-demand needs, while more specialized services are clustered at the neighborhood scale.

FEDERATED FLEXIBILITY

The tool will model changes to the accessibility of services and environments by incorporating a ratio of non-scheduled space per building or building clusters.

SP 1

SP 2

SP 3

NAME	POSITION	DEPARTMENT
Andrea Straccia	Director, Leeds Residential Academic Program	Leeds, Business
Betsy Johnson	Instructor	ENVD
Bobby Braun	Dean / Professor / Chair, SMEAD Space Technology	Engineering
Chris Ewing	Assistant Vice Chancellor, Planning, Design & Construction	Infra. & Sustain.
Cory Hilliard	Senior Associate Athletic Director / CFO	Athletics
Courtney Fell	Learning Experience Designer	OIT
David Cavalieri	Assistant Director, Endpoint Integration	OIT
Jan Becker	Facilities Planner	Planning, Design & Construction
Jennifer Sullivan	Senior Assistant Dean, Admin. & Program Development	Law
Jessica Doty	Senior Director, Administrative Services	Student Affairs
Jessica Helzer	Assistant Dean, Advancement, Law School	Advancement
Jim White	Interim Dean / Professor, Geological Sciences	Arts & Sciences
Jon Leslie	Associate Vice Chancellor	Strat. Relations & Comm
Karen Regan	Assistant Vice Chancellor	RIO
Katherine Erwin	Chief Human Resources Officer	HR
Kevin Griffin	Director of Space Optimization	Planning, Design & Construction
Kristi Wold-McCormick	University Registrar	Enroll. Management
Leslie Reynolds	Interim Dean/ Associate Professor	Graduate School
Louise Vale	Director, Integrity & Compliance	Integrity, Safety & Comp.
Mark Opp	Chair, IPHY	Arts & Sciences
Nicole Cattin	UG, CMCI Ambassador / CMCI Student Government President	CMCI Student
Roxane Sue Ruggles	Assistant Director, CU Events Planning & Catering & Non-Academic Scheduling	Student Affairs
Rudy Betancourt	Director, Macky Auditorium	College of Music
Shelly Bacon	Assistant Vice Provost, Advising & Academic Services	U/G Edu
Waleed Abdalati	Executive Director, CIRES / Professor	Research Institutes

FEDERATED FLEXIBILITY **FINDINGS BY WORKSHOP**

WORKSHOP 1

WHAT INFRASTRUCTURE DO WE NEED TO ACHIEVE OUR VISION?

Services that enable an efficient campus

INCREASED UTILIZATION: Leveraging a prioritized central scheduling system, coupled with providing flexible workplace environments, improved access to facilities and strengthening connectivity between campus locations will drive improved and consistent utilization.

SCHEDULING TECHNOLOGY: Upgrade and standardize scheduling technology across all units to provide transparency, consistency and better match needs to uses.

SPACE STANDARDS: Develop space standards for all space types that include: offices, classrooms, and labs.

CLASSROOM BASELINE: Standardize classroom technology and provide mobile, flexible furniture in all classrooms for increased room accessibility, efficiency, and adaptability.

MOBILE WORKFORCE: Provide hoteling spaces and a variety of amenities to flexibly align with the workstyles of diverse users.

TRANSPORTATION: Increase connectivity across CU Boulder's campus and community through frequent, reliable, and interconnected transportation systems.

COMMUNITY PARTNERSHIPS: Invite community partners to use underutilized spaces, particularly on evenings, weekends, and summers.

WORKSHOP 2

HOW DO WE APPLY THIS TO THE CAMPUS SYSTEM?

Service types / optimization solutions and clusters of services

SERVICE NEIGHBORHOODS: Basic concierge services, flexible workplaces and café spaces should be located within a 5-minute travel; more specialized, shared services should be within a 15-minute travel.

ACCESSIBLE SERVICES: Creating easy, decentralized access to flexible workplace environments, concierge academic support and shared administrative services is desired across campus.

ADMINISTRATION: Distributing administrative cores throughout the university provides the best quality of service and connection with the university mission.

THEMATIC CLUSTERS: Organizing the university as thematic clusters with neighborhood cores and provision of specialized services based on function will improve access, collaboration, and resource efficiency.

WORKSHOP 3

HOW WILL IT BE APPLIED IN THE PLANNING TOOL?

Space utilization targets and optimization strategies
mix of support services by building typology

ACCESSIBLE CONCIERGE: Concierge support can be found in each building to provide high level support to the most in-demand services for that building's population.

CONSISTENT SERVICES: IT walk-in, safety, and communications support can be found in each building either via a concierge or departmental representative.

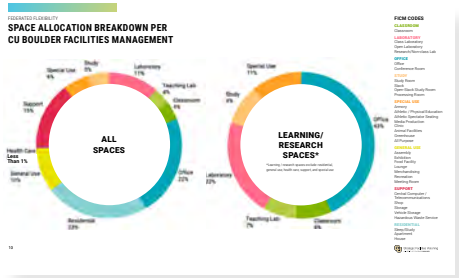
SERVICE DIVISION: General concierge support can be shared across students, faculty and administration; specialized support services are geared to students, faculty and administration.

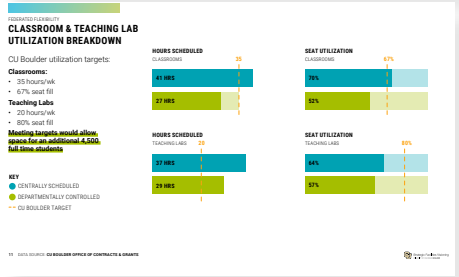
ROLE OF THE CONCIERGE: The concierge role is to facilitate resolution through providing help on the spot or referring individuals to departmental representatives for specialized high touch services.

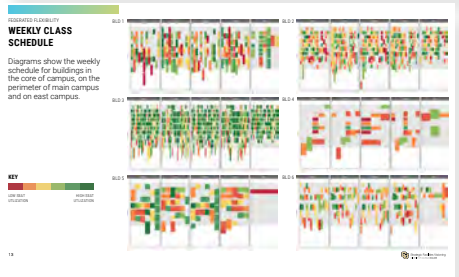
FEDERATED FLEXIBILITY **WORKSHOP 1**

BASELINE INFORMATION

This information was shared at the outset of the workshop as a common base of knowledge for group activities.







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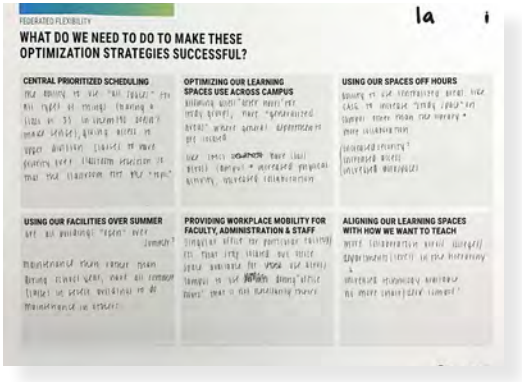
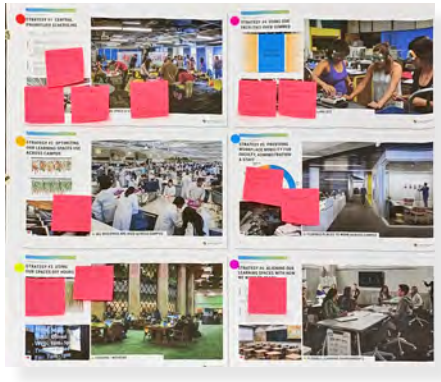


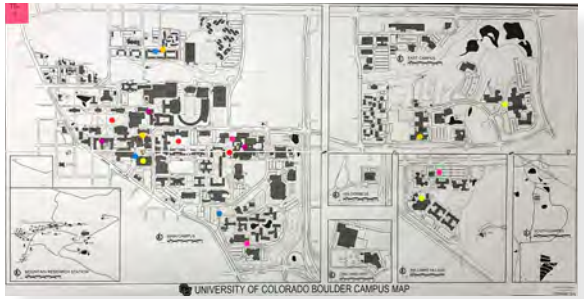
INDIVIDUAL & WITH A PARTNER

Six categories identified in the Deep Dive Phase (learning in research, interdisciplinary research through shared resources, entrepreneurship, translation and commercialization, engaged collaborative and community research, high performance research environments, and supporting the $2B research enterprise) participants answered "what do we need to do to make these optimization strategies successful?", first individually and then with groups.



EFFICIENCY & OPTIMIZATION SOLUTION

Small groups responded to solutions that would increase efficiency and optimization options resulting in increased university efficiency.



ALL

Each group received a campus map and colored dots associated with each a category and identified the top places on campus to initiate the discussed interventions.

FEDERATED FLEXIBILITY **WORKSHOP 1 FINDINGS**

OPTIMIZING OUR FACILITIES

Leveraging a prioritized central scheduling system, coupled with providing flexible workplace environments, improved access to facilities and strengthening connectivity between campus locations will drive improved and consistent utilization.

Upgrade and standardize scheduling technology across all units to provide transparency, consistency and better match needs to uses	Develop space standards that span offices, classrooms, and labs	Standardize classroom technology and provide mobile, flexible furniture in all classrooms for increased room accessibility, efficiency, and adaptability
Provide hoteling spaces and a variety of amenities to flexibly align with the workstyles of diverse users	Increase connectivity across CU Boulder's campus and community through frequent, reliable, and interconnected transportation systems	Invite community partners to use underutilized spaces, particularly on evenings, weekends, and summers

FEDERATED FLEXIBILITY **WORKSHOP 2**

BASELINE INFORMATION

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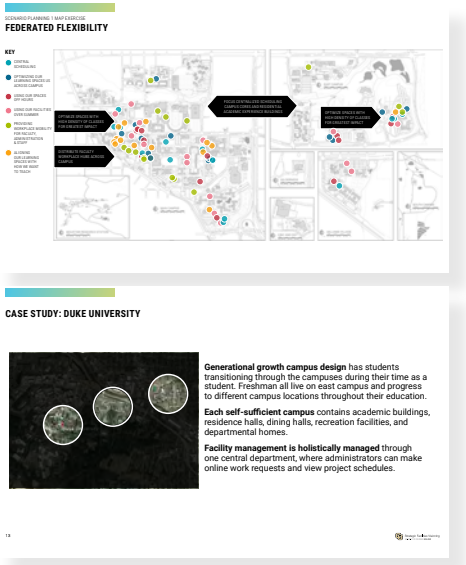
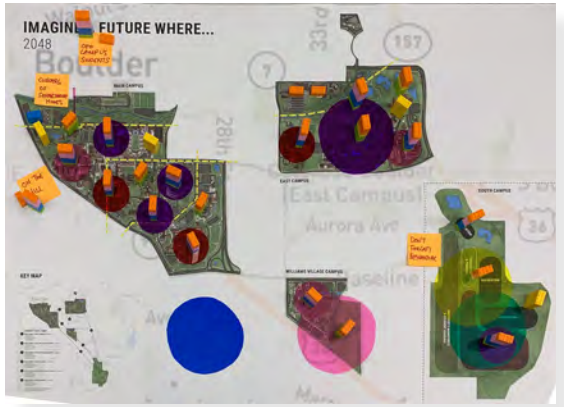


ACTIVITIES

VALIDATE SPACE TYPES

Teams examined a variety of proposed spaces and assessed their fit for each category. Teams then identified which of these spaces should be located within a 5- and 15-minute travel radius.



IDENTIFYING TRAVEL DISTANCES

Using a campus map with predetermined neighborhoods, teams identified the primary 5-minute radius and 15-minute radius in each neighborhood. They then placed each Lego tower within the 5-minute and 15-minute circles to indicate the prioritization of functionality.

FEDERATED FLEXIBILITY **WORKSHOP 2 FINDINGS**

OPTIMIZING OUR FACILITIES

Organizing the university as thematic clusters with neighborhood cores and provision of specialized services based on function will improve access, collaboration, and resource efficiency.

Neighborhood cores should be designed to be human-centric, enabling interaction, community, and security with work, study, meeting and support spaces

Neighborhood outskirts are destination and specialized spaces, including departmental homes, advising, and student housing

Create easy access to services for the most vulnerable populations with services like additional advising & support for first year students in neighborhood cores

More than any other space, food and drink is desired within 5 minutes from any campus location as a base to study, socialize, and replenish

Administration, while not needed in university cores, is best interwoven throughout the university to provide the best quality of service and connection with the university mission

FEDERATED FLEXIBILITY **WORKSHOP 3**

BASELINE INFORMATION

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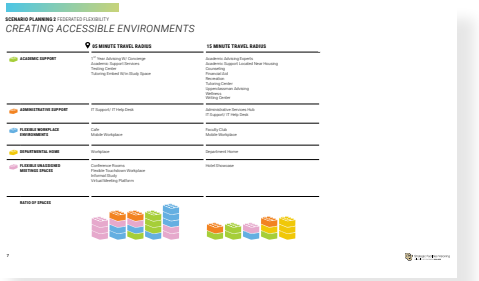

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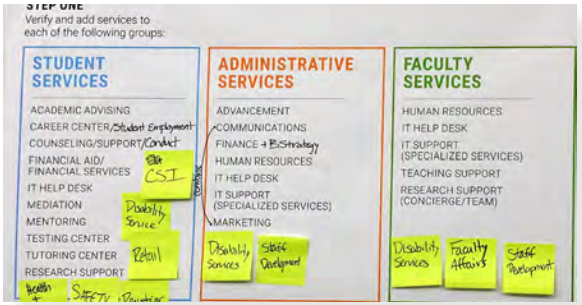

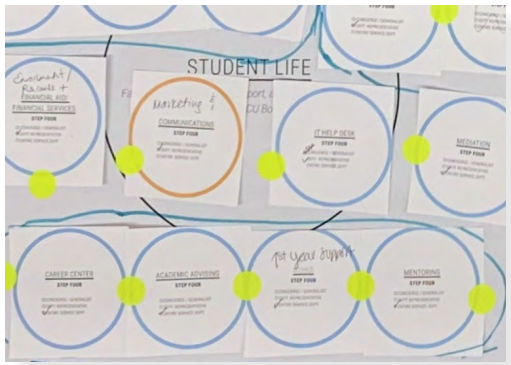

UNIQUE & SHARED RESOURCES

Participants validated the service offerings identified for student, administrative, and faculty services, proposed additional services, and identified crossover opportunities.

CONSTELLATION OF SERVICES

Groups first placed services into the most appropriate building types. They then considered which services might better be clustered in a one-stop shop.

SERVICES ADMINISTERED

Based on the service clusters they developed teams, determined how services should be administered (e.g., concierge/generalist, department representative, service department).

FEDERATED FLEXIBILITY **WORKSHOP 3 FINDINGS**

OPTIMIZING OUR FACILITIES

Concierge support can be found in buildings within a 5-minute radius. They provide high level support to the most in-demand services for that building's population.

CONSISTENT SERVICES

IT walk-in, safety, and communications support can be found in each building either via a concierge or departmental representative

SHARED CONCIERGE SUPPORT

General concierge support can be shared across students, faculty and administration; specialized support services are geared to students, faculty and administration

ROLE OF THE CONCIERGE

The concierge role is to facilitate resolution through providing help on the spot or referring individuals to departmental representatives for specialist high touch services

INTEGRATIVE FACILITIES

*The mission of the Integrative Facilities team was to develop and test scenarios that investigated how **different learning, research, service and auxiliary functions could be integrated to create various forms and themes for development**.*

*The team investigated the intersection of residential academic experiences, learning environments, community facilities, commercial partnerships and other **mixed-use typologies to create sustainable and vibrant living, learning, working experiences**. We used a series of programmatic variables to create a projected portfolio of mixed use developments over time.*

KEY FINDING

MIXED-USE APPROACH TO DEVELOPMENT

The mixing of uses at the building, neighborhood and campus scales will enrich and diversify experiences, helping to grow, cultivate, and retain talent. Each campus location should be fully built out with mixed-use learning, research, residential facilities that facilitate health, wellbeing, community involvement, and collaboration.

INTEGRATIVE FACILITIES TEAM

The tool will model different mixed-use developments and drive the ratios of programmatic mixes by themes, residential, retail, cultural, community, and civic functions by campus geography.

SP 1

SP 2

SP 3

NAME	POSITION	DEPARTMENT
Al Smith	Associate Dean, Undergraduate Affairs	Leeds, Business
Amanda Rochette	Assistant Director, Operations & Finance	Law
Ann Schmiesing	Senior Vice Provost, Academic Resource Management	Academic Affairs
Anthony Price	Director, Recreation Services	Student Affairs
Bobby Schnabel	Department External Chair / Professor	Engineering
Christopher Pacheco	Executive Director, Pre-College Outreach & Engagement	ODECE
Dan Gette	Senior Director, Residential Experience & Services	Student Affairs
David Cavalieri	Assistant Director, Endpoint Integration	OIT
Derek Bellin	Associate Vice Chancellor, Advancement	Advancement
Derek Silva	Executive Director, Real Estate Services	Infra. & Sustain.
Donna Caccamise	Research Professor	Research Institutes
Eric Stade	Professor, Math / Academic Program Director	Arts & Sciences
Frances Draper	Vice Chancellor Strategic Relations	Strat. Relations & Comm
Jeffrey N. Cox	Vice Provost	Faculty Affairs
Jennifer Freeman	Landscape Specialist	Planning, Design & Construction
Julian Kinsman	Associate Director, Academic Technology Services	OIT
Keith Julien	Chair, APPM	Arts & Sciences
Lindsay Schumacher	Facilities Planner	Planning, Design & Construction
Lori Bergen	Dean	CMCI
Mary Kraus	Vice Provost / Associate Vice Chancellor	U/G Edu
Peggy Gordon	Program Support Manager	ENVD
Samantha Martin	Senator	ASSG Student
Zack Tupper	Director, Construction & Space	Arts & Sciences
Heidi VanGenderen	Chief Sustainability Officer	Infra. & Sustain.
Tom Goodhew	Assistant Director, Facilities Planning	Planning, Design & Construction

INTEGRATIVE FACILITIES **FINDINGS BY WORKSHOP**

WORKSHOP 1

WHAT INFRASTRUCTURE DO WE NEED TO ACHIEVE OUR VISION?

Spaces that create a world-class campus experience

MIXED PROGRAMMING: A mixed-use approach to programming facilities, founded around a discernible or thematic identity, will provide a richer level of campus experiences.

RESIDENTIAL ACADEMIC EXPERIENCES: Residential academic experiences should be broadened so that they are accessible to a wide variety of students.

WELLBEING: A holistic offering of wellbeing services, spanning from physical activity to mental health to relaxation and mindfulness, should be integrated with academic and support functions.

OPEN WORKPLACES: An additional workplace options of Informal, lounge "we-work" style spaces cater to students', faculty and staff increasingly mobile needs.

ACCESSIBLITY: Increased access to facilities and event spaces, both for students and external partners are in high demand.

PRESERVE THE HERITAGE: Continue to leverage the campus' history, heritage, and design aesthetic to create unique outdoor environments that attract students and talent.

WORKSHOP 2

HOW DO WE APPLY THIS TO THE CAMPUS SYSTEM?

Themes / mixed use types and space makeup

MIXED-USE CAMPUSES: The mixing of uses at the campus location and at the building scale will enrich and diversify experiences, helping to grow, cultivate, and retain talent. There is a desire to diversify campus locations to improve connectivity between campuses.

CONNECT CAMPUSES: Physically connect campuses through mixed-use community zones and connected corridors that evoke an enjoyable and direct transit experience.

COMMUNITY ACCESS: Incorporate community mixed-use spaces along the campus periphery in easy to access spaces to improve campus accessibility.

BUILT OUT CAMPUS: Each campus across CU Boulder is fully built out with mixed-use learning, research, residential facilities that facilitate health & Wellbeing, community involvement, and collaboration.

WORKSHOP 3

HOW WILL IT BE APPLIED IN THE PLANNING TOOL?

Programmatic needs by campus neighborhood

GROWTH DIRECTION: Priority mixed use developments have been identified for each of the eight neighborhoods across campus, creating recommendations and planning direction for the type of buildings and programs best suited for each area of campus.

IN DEMAND MIXED USE BUILDINGS: Student life, wellbeing and community buildings are the most in demand type of mixed use buildings in every campus location, emphasizing the growth of well rounded experiences that go beyond the classroom to form an inclusive culture.

HOUSING: Housing is the only building type selected to belong in each campus neighborhood by at least one group.

INTEGRATIVE FACILITIES **WORKSHOP 1**

BASELINE INFORMATION

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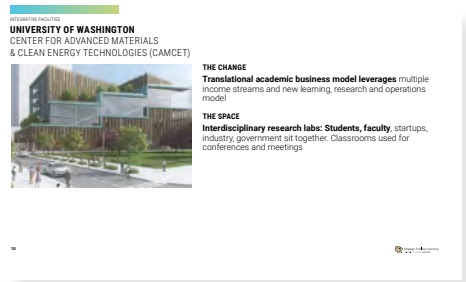
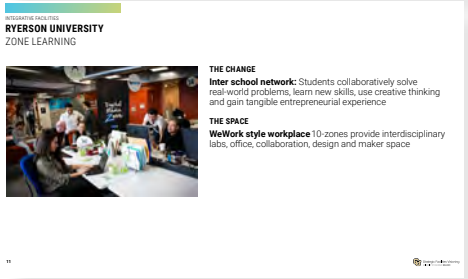
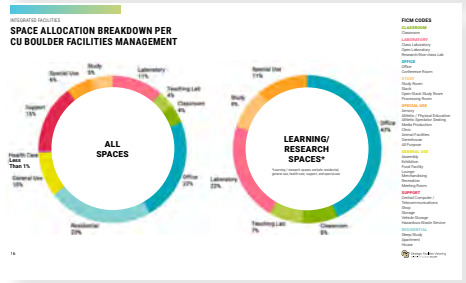
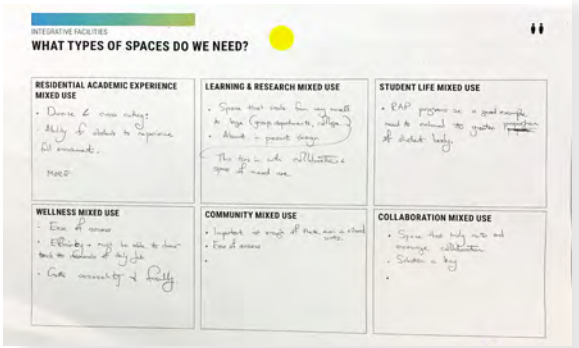






ACTIVITIES



INDIVIDUAL & WITH A PARTNER

Six categories identified in the Deep Dive Phase (residential academic experience, learning and research, student life, wellbeing, community, collaboration) participants answered "what types of spaces were needed?", first individually and then with groups.

SMALL GROUPS *(4-5 PEOPLE)*

Participants discussed the needs identified in the previous exercise and the mix of spaces needed to support the university's vision for each category, voting for their top choices on a vision board.

ALL

Each group received dots and identified the top places on campus to initiate the discussed interventions.

INTEGRATIVE FACILITIES **WORKSHOP 1 FINDINGS**

VIBRANT FACILITIES & ENHANCED EXPERIENCES

A mixed-use approach to programming facilities, founded around a discernible or thematic identity, will provide a richer level of campus experiences.

Residential academic experiences should be widened so that they are accessible to a wide variety of year-long students, but also include short term experiences for graduates and returning learners

A holistic offering of wellbeing services, spanning from physical activity to mental health to relaxation and mindfulness, should be integrated with academic and support functions

Informal, lounge "we-work" style spaces cater to students', faculty and staff increasingly mobile needs

Increased access to facilities and event spaces, both for students and external partners are in high demand

Continue to leverage the campus's history, heritage, and design aesthetic to create unique outdoor environments that attract students and talent

INTEGRATIVE FACILITIES **WORKSHOP 2**

BASELINE INFORMATION

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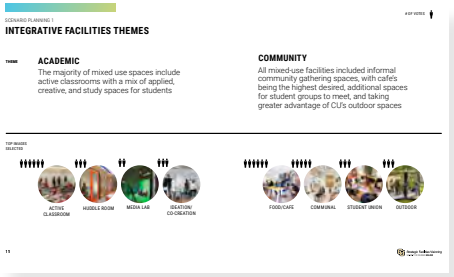
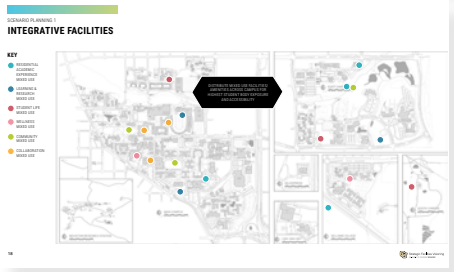
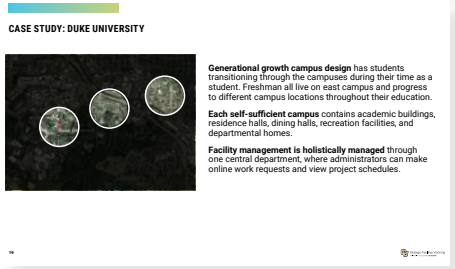






ACTIVITIES

IDENTIFYING PROGRAMMATIC NEEDS

First, teams identified programmatic needs for each of the nine areas on campus.

IDENTIFYING TRAVEL DISTANCES

Teams identified which spaces should be located within a 5-minute and 15-minute and beyond 15-minutes travel radius. Using a campus map with predetermined neighborhoods, teams identified the primary 5-minute radius and 15 -minute radius in each neighborhood. They then placed Lego tower within the 5-minute and 15-minute circles to indicate the prioritization of functionality.

INTEGRATIVE FACILITIES **WORKSHOP 2 FINDINGS**

VIBRANT FACILITIES & ENHANCED EXPERIENCES

Each campus across CU Boulder is fully built out with mixed-use learning, research, residential facilities that facilitate health & Wellbeing, community involvement, and collaboration.

More than anything other space, food & drink is desired within 5 minutes from any campus location as a base to study, socialize and replenish

Maintaining a brick and mortar institution is justified by the need for human interaction, necessitating a relationship-focused design of spaces

Physically connecting campuses through mixed-use community zones and connected corridors evokes an enjoyable and direct transit experience while encouraging pedestrian mobility

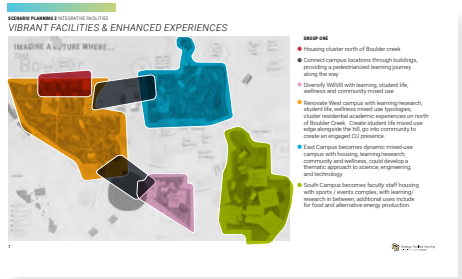
Develop themed neighborhoods and unique campus identities while providing students, faculty, and staff equal access across all university spaces

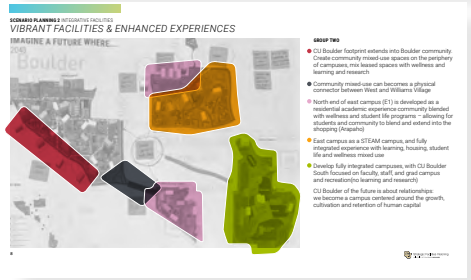
Incorporate community mixed-use spaces along the campus periphery in easy to access spaces to improve campus accessibility

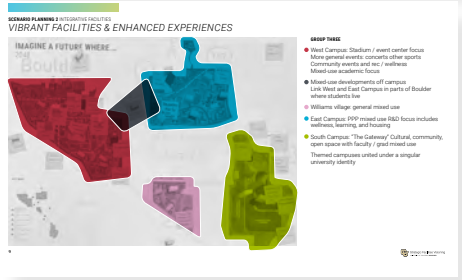
INTEGRATIVE FACILITIES **WORKSHOP 3**

BASELINE INFORMATION

This information was shared at the outset of the workshop as a common base of knowledge for group activities.







ACTIVITIES

NEIGHBORHOOD NEEDS

Teams identified the top five typology needs for each of the nine neighborhoods. Then they identified any clear themes that emerged for each neighborhood.

INTEGRATIVE FACILITIES **WORKSHOP 3 FINDINGS**

VIBRANT FACILITIES & ENHANCED EXPERIENCES

Priority mixed use developments have been identified for each of the eight neighborhoods across campus, creating recommendations and planning direction for the type of buildings and programs best suited for each area of campus.

IN DEMAND MIXED USE BUILDINGS

Student life, Wellbeing and community buildings are the most in demand type of mixed use buildings in every campus location, emphasizing the growth of well rounded experiences that go beyond the classroom to form an inclusive culture

HOUSING

Housing is the only building type selected to belong in each campus neighborhood by at least one group

RESILIENT ASSET MANAGEMENT

*The mission of the Resilient Asset Management team was to identify and evaluate university buildings and systems based on a **fully integrated asset management system** as a driver of redevelopment strategies.*

*In parallel, the team identified critical facilities and infrastructure as a means of both **safeguarding the university mission and increasing its sustainability and resiliency**. The team also developed alternative strategies for facilities and infrastructure delivery which recognized a range of available forms of state, campus and other funding sources.*

*Taking into account lifecycle costs, we used facility and infrastructure condition data, capital investment history / projections, and resiliency and sustainability goals to inform **how we invest in capital projects over time**.*

KEY FINDING

ORGANIZING FRAMEWORK FOR RESILIENCY

A three-tiered organizing framework for resiliency includes building operations, facility typologies, and campus system initiatives; a mission dependency index to identify high priority facilities can be constructed using a cross section of condition, criticality (protecting our assets) and safety (protecting our people).

RESILIENT ASSET MANAGEMENT

The tool will model a resiliency framework by incorporating a percentage of capital construction costs for resiliency investments based on building typology.

SP 1

SP 2

SP 3

NAME	POSITION	DEPARTMENT
Amy Kirtland	Facilities Planner	Planning, Design & Construction
Brandon Boger	Director, EH&S	Infra. & Sustain.
Brian Lindoerfer	Assistant Vice Chancellor, Facilities Operations & Services	Infra. & Sustain.
Cherie Summers	Assistant Dean, Administration	Engineering
Chris Evans	Program Manager, Construction & Renovation	OIT
Dan Jones	Associate Vice Chancellor	Integrity, Safety & Comp.
Heather Bowden	Assistant Professor / Faculty Director, Special Collections, Archives & Preservation	Libraries
Heidi VanGenderen	Chief Sustainability Officer	Infra. & Sustain.
Jack Draeb	U/G Student Representative / Major of Economics	Student Rep
Jason DePaepe	Senior Associate Athletic Director / Internal Operations	Athletics
Jon Reuter	Research Associate Professor / Institutional Veterinarian / Director, Animal Resources	RIO
JT Allen	Director, Facilities, Planning, & Operations	Student Affairs (HDS)
Kathy Ramirez-Aguilar	CU Green Labs Program Manager	Green Labs
Kym Calvo	Director, Compensation & Talent Acquisition	HR
Lee Silbert	Director, Operations & Financial Management, BioFrontiers	Research Institutes
Randy Siders	Executive Associate Director, Finance & Operations, LASP	RIO
Tom Thibodeau	Chair, Global Real Estate Capital Markets / Professor	Leeds, Business
Zack Tupper	Director, Construction & Space	Arts & Sciences
Tom Goodhew	Assistant Director, Facilities Planning	Planning, Design & Construction

RESILIENT ASSET MANAGEMENT **FINDINGS BY WORKSHOP**

WORKSHOP 1

WHAT INFRASTRUCTURE DO WE NEED TO ACHIEVE OUR VISION?

Spaces that create a world-class campus experience

INITIATIVE PRIORITIZATION: A hierarchy of resiliency investments should be adopted campus-wide and include a matrixed approach for the learning and research missions.

RESILIENCY TIERS: Daily operations, mission-critical and unplanned events is a viable organizing framework for resiliency and will be enhanced by learning, research and business operations subcategories.

SAFETY: Continue to prioritize and enhance safety and security for campus users.

STRONG FOUNDATION: Build resilience by starting with the campus' basic functions, including ensuring critical building systems are up-to-date and adequately maintained.

COMMUNICATION: Update and enhance telecommunication systems, from reliable WiFi across campus to rapid emergency response. networks

FACILITY PRIORITIZATION: Use a resiliency prioritization index to determine which facilities and assets need to be equipped with backup or enhanced systems.

WORKSHOP 2

HOW DO WE APPLY THIS TO THE CAMPUS SYSTEM?

Scale frame work / requirements by typology

MISSION DEPENDENCY INDEX: The campus should create a mission dependency index that assesses criticality for all building functions. Assessment of criticality levels could be standardized across the portfolio, but resiliency measures are contingent on facility type.

COMMUNICATIONS: Reliable communication systems are a leading factor in campus functionality; from daily WiFi use, to emergency response, to networked campus systems, communication platforms are a launch point for campus resiliency initiatives.

RESPONSE TIMELINE: Mission disruption occurs on a cascading basis, with severity and disruption occurring immediately in labs, hours for housing, and after days for academic & administrative facilities, requiring a tiered response for campus resiliency.

FRAMEWORK: A three-tiered organizing framework to view asset management on an all building, building typology, and campus system level is a viable approach to campus resiliency.

WORKSHOP 3

HOW WILL IT BE APPLIED IN THE PLANNING TOOL?

Resiliency initiatives and policy recommendations by facility type

ASSET INVENTORY: An asset inventory that maps all critical assets across the university is a necessary next step in setting up a resiliency plan.

CRITICALITY METHODOLOGY: A uniform formula to identify high priority facilities can be measured using a cross section of condition and mission dependency criticality (protecting our assets) and safety (protecting our people).

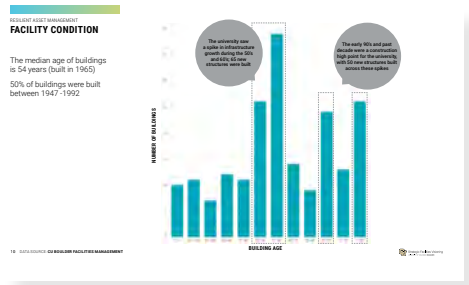
SAFETY & PREPAREDNESS: Protecting people is the top factor for mission dependency within the resiliency formula, with a direct actionable recommendation for emergency response kits secured across campus and building locations.

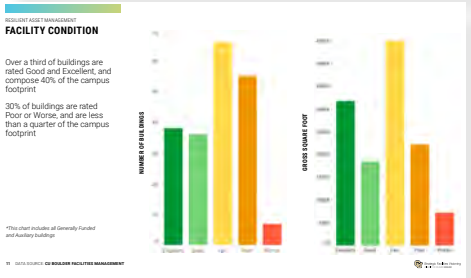
COMMUNITY PARTNERSHIP AGREEMENTS: It is vital to develop partnerships and agreements with community and municipal agencies for two-way service aid agreements in times of emergency.

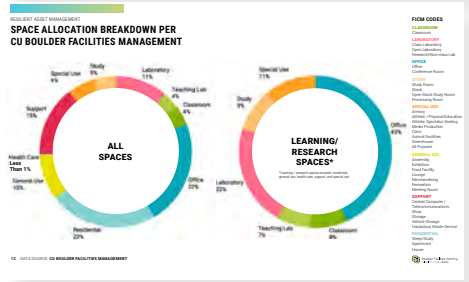
RESILIENT ASSET MANAGEMENT **WORKSHOP 1**

BASELINE INFORMATION

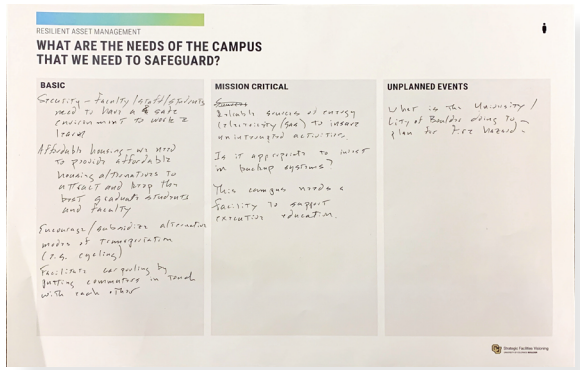
This information was shared at the outset of the workshop as a common base of knowledge for group activities.







ACTIVITIES



INDIVIDUAL & WITH A PARTNER

Based on the three categories identified in the Deep Dive phase (basic, mission critical, unplanned events), participants answered "what were the needs of the campus that we needed to safeguard?", first individually and then with partners.

SMALL GROUPS *(4-5 PEOPLE)*

Participants discussed the needs identified in the previous exercise and the mix of spaces needed to support the university's vision for each category, voting for their top choices on a vision board.

ALL

Each group received dots and identified the top places on campus to initiate the discussed interventions.

RESILIENT ASSET MANAGEMENT **WORKSHOP 1 FINDINGS**

SAFEGUARDING THE UNIVERSITY MISSION & ASSETS

A hierarchy of resiliency investments should be adopted campus-wide and include a matrixed approach for the learning and research missions.

Daily operations, mission-critical and unplanned events is a viable organizing framework for resiliency and will be enhanced by learning, research and business operations subcategories

Continue to prioritize and enhance safety and security for campus users

Build resilience by starting with the campus's basic functions, including ensuring critical building systems are up-to-date and adequately maintained

Update and enhance telecommunication systems, from reliable WiFi across campus to rapid emergency response networks

Use a resiliency prioritization index to determine which facilities and assets need to be equipped with backup or enhanced systems

RESILIENT ASSET MANAGEMENT **WORKSHOP 2**

BASELINE INFORMATION

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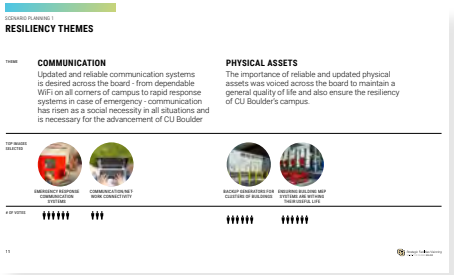
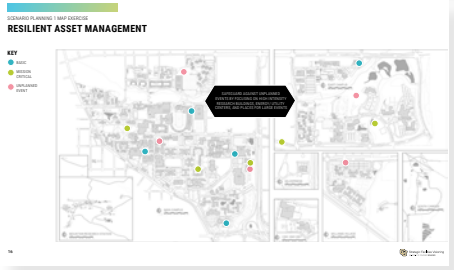
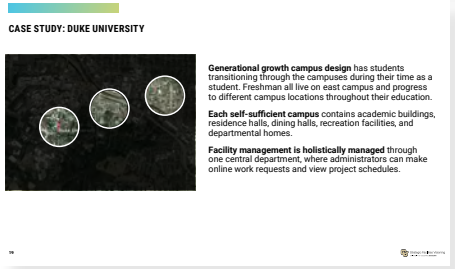


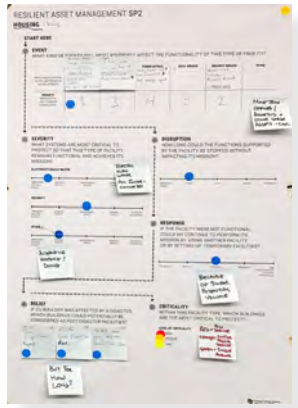




ACTIVITIES

ORGANIZING FRAMEWORK FOR RESILIENCY

As partners, participants reviewed the organizing framework for resiliency and added or removed content and categories.



CREATING A MISSION DEPENDENCY INDEX

Each team received one of five buildings types (laboratories, athletics/ performance / recreation, housing, general learning / student services / administration, and campus support), and ranked:

- What events would most likely adversely affect the functionality of the facility
- Level of severity
- Length of disruption caused to campus
- Level of complexity in bringing the building back on line or ability to temporarily relocate
- What buildings could be considered post-disaster facilities?
- Lastly, each group ranked the level of criticality of their topics buildings using red (high), orange (medium) and yellow (low) criticality dots.

RESILIENT ASSET MANAGEMENT **WORKSHOP 2 FINDINGS**

SAFEGUARDING THE UNIVERSITY MISSION & ASSETS

A three-tiered organizing framework to view asset management on an all building, building typology, and campus system level is a viable approach to campus resiliency.

Buildings can be assessed and prioritized based on a combined factor of deferred maintenance, utility costs, work orders, a safety risk factor, and a criticality of loss factor

Reliable communication systems are a leading factor in campus function-ality; from daily WiFi use, to emergency response, to networked campus systems, communication platforms are a launch point for campus resiliency initiatives

Mission disruption occurs on a cascading basis, with severity and disruption occurring immediately in labs, hours for housing, and after days for academic & administrative, requiring a tiered response for campus resiliency

Floods, followed by security threats post the largest risk to facilities due to the likelihood of the event happening and the criticality of the result

Disruption in a lab facility creates immediate effects; detailed prevention and response protocols are necessary to mitigate loss in priceless artifacts, data, and revenue

RESILIENT ASSET MANAGEMENT **WORKSHOP 3**

BASELINE INFORMATION

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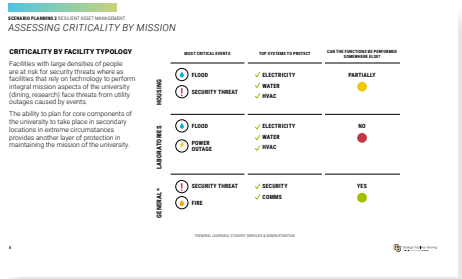
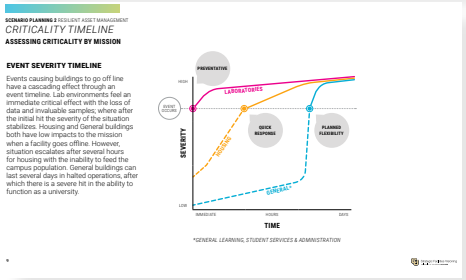
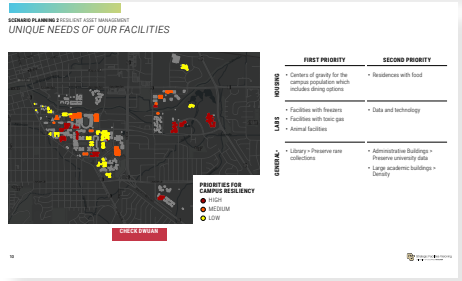
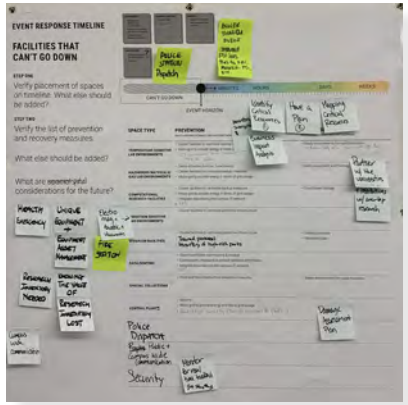




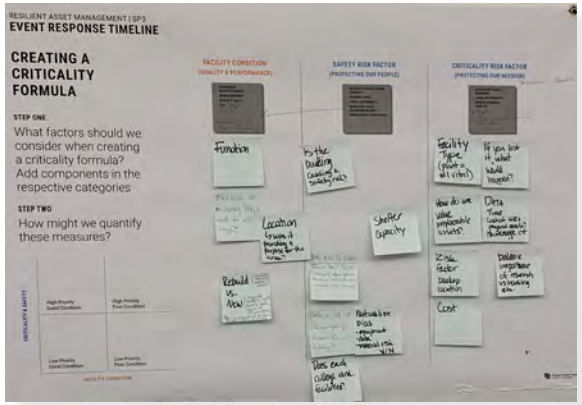


ACTIVITIES



EVENT RESPONSE TIMELINE

Small groups identified specific solutions and recovery measures based on event timelines and the space types involved. They added additional response actions and measures as needed.



CREATING A UNIFORM ASSESSMENT

Small groups identified the components necessary to create a quantifiable criticality formula.

RESILIENT ASSET MANAGEMENT **WORKSHOP 3 FINDINGS**

SAFEGUARDING THE UNIVERSITY MISSION & ASSETS

An asset inventory that maps all critical assets across the university is a necessary next step in setting up a resiliency plan.

CRITICALITY METHODOLOGY

A uniform formula to identify high priority facilities can be measured using a cross section of condition and mission dependency criticality (protecting our assets) and safety (protecting our people)

SAFETY & PREPAREDNESS

Protecting our people is the t op factor for mission dependency within the resiliency formula, with a direct actionable recommendation for emergency response kits secured across campus and building locations

COMMUNITY PARTNERSHIP AGREEMENTS

It is vital to develop partnerships and agreements with community and municipal agencies for two-way service aid agreements in times of emergency

12 MIXED-USE BUILDING TEMPLATES

12 MIXED-USE BUILDING TEMPLATES

ADMINISTRATIVE
Administrative department workplaces and home bases

ATHLETICS
Athletic, student-athlete support and external partnership facilities

CAMPUS LIFE
Facilities that focus on dining, support, social, recreation and the overall aspect of being a student in the CU Boulder community

COMMUNITY
On and off campus locations that invite the community in for clinics, classes, workplace, health and other functions

CORE FACILITY CLUSTER
Core facilities are clustered around a common theme and include high performance research environments and specialized support services

CULTURAL
Exhibit, event and auditorium spaces that span from performance to conference to community building

GENERAL RESEARCH
Generic, flexible labs, classrooms and workplaces that enable collaborative research and learning in research

HOUSING
On-campus housing solutions for students,
faculty and staff

LEARNING
Shared flexible active classrooms, class labs, immersive and practice spaces, social and study space and workplace environments

PARTNERSHIP
Partnership facilities focus on innovation and entrepreneurship, bringing in public and private partnerships for a multi-layered relationship from collaborative projects, mentorship, and student employment

UNIQUE FACILITIES
Highly specialized lab environments are found in single locations around campus and include secure/classified space, special collections, and unique core facilities

WELLBEING
Counseling, emotional support, and dedicated spaces to focus on personal, mental and physical wellbeing

SCENARIO PLANNING END OF PHASE KEY FINDINGS

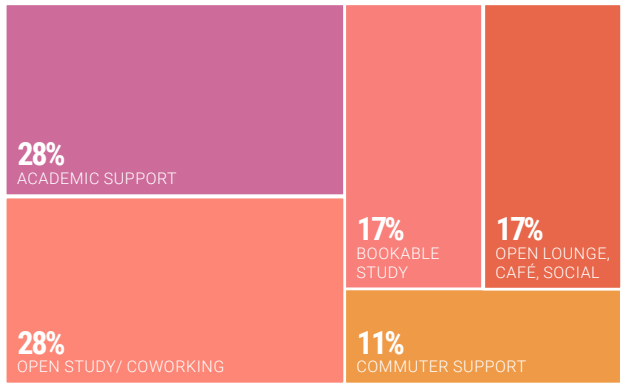
ADMINISTRATION BUILDING TEMPLATE

Administrative department workplaces and home bases

FUTURE DEMOGRAPHICS

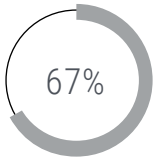
Provide a mix of dedicated and open academic support offices for students and expand commuter support to university staff.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Coworking**

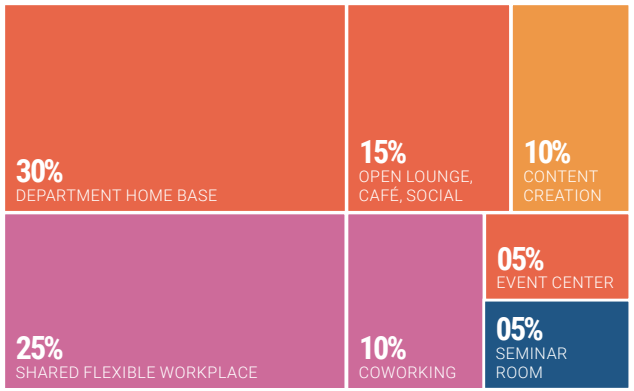
PARTICIPANT AGREEMENT



PORTFOLIO OF PEDAGOGY

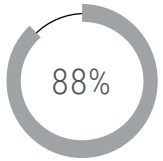
Open lounges, café, and social spaces are distributed throughout the heart of the building, with a variety of workspaces and content creation hubs as part of teach support for faculty.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Academic Support**

PARTICIPANT AGREEMENT

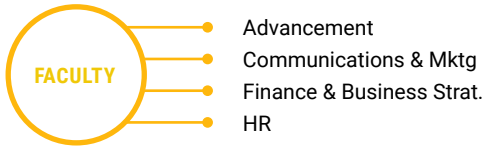


FEDERATED FLEXIBILITY

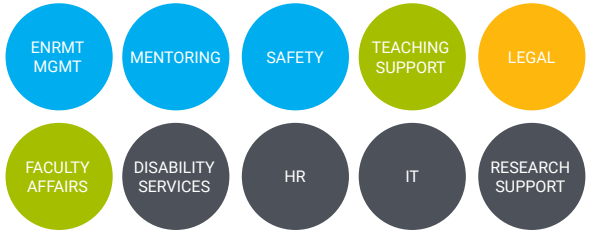
Concierge & departmental representatives in other buildings send students to administrative facilities to receive a larger spectrum of services. Administrative units use a concierge to navigate their service needs.

ALLOCATION OF SERVICES

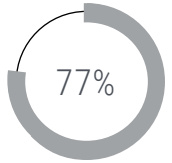
CONCIERGE



ENTIRE DEPARTMENT



PARTICIPANT AGREEMENT



- Multiple Units
- Students
- Faculty
- Administration

SCENARIO PLANNING END OF PHASE KEY FINDINGS

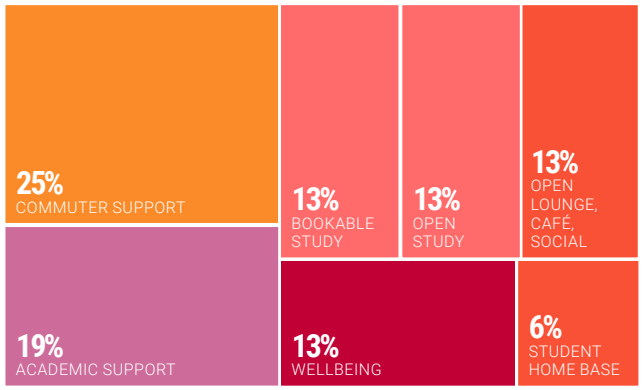
ATHLETIC BUILDING TEMPLATE

Athletic, student-athlete support and external partnership facilities

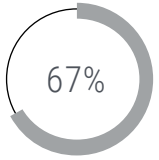
FUTURE DEMOGRAPHICS

Provide an avenue to bring the greater campus community into athletic facilities to share commuter support and top-tier Wellbeing spaces. Academic support is a mix of both dedicated and shared services.

SPACE MAKEUP RATIO



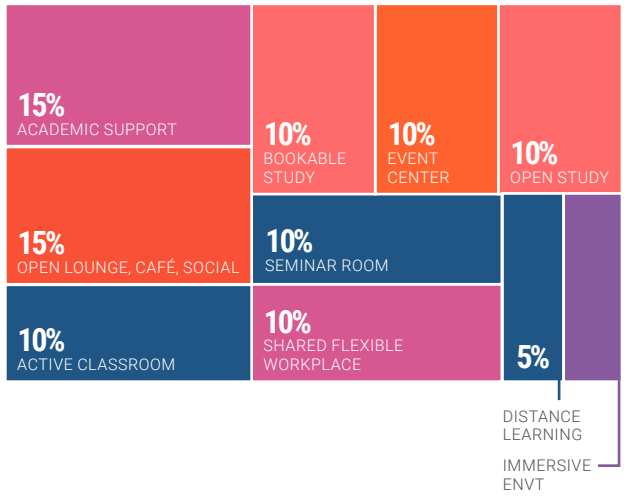
PARTICIPANT AGREEMENT



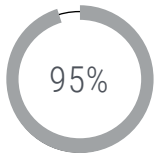
PORTFOLIO OF PEDAGOGY

Provide a full spectrum of academic services, including distance learning to accommodate students traveling for athletic events, robust academic support, and a variety of spaces to congregate for studying and networking.

SPACE MAKEUP RATIO



PARTICIPANT AGREEMENT



FEDERATED FLEXIBILITY

An entire spectrum of academic and student services can be found in athletic buildings, including a concierge that assists students with social support and a team of representatives to assist in academic excellence.

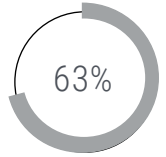
ALLOCATION OF SERVICES

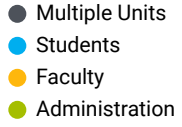
CONCIERGE

DEPARTMENTAL REPRESENTATIVE

ENTIRE DEPARTMENT

PARTICIPANT AGREEMENT





SCENARIO PLANNING END OF PHASE KEY FINDINGS

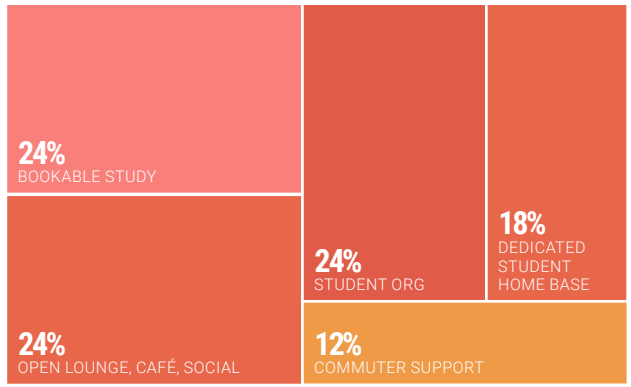
COMMUNITY BUILDING TEMPLATE

On and off-campus locations that invite the community in for clinics, classes, workplace, health, and other functions

FUTURE DEMOGRAPHICS

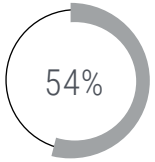
Half of the community building footprint is dedicated to spaces that engage the community in social and bookable workplaces. Student organizations that have a community engagement focus are housed in these facilities.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Academic Support, Open Study, Wellbeing**

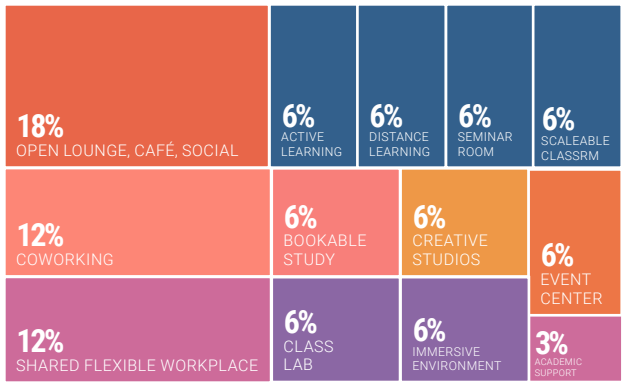
PARTICIPANT AGREEMENT



PORTFOLIO OF PEDAGOGY

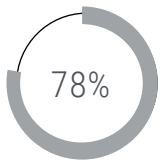
Open lounges, café, and social spaces are distributed throughout the heart of the building, with a variety of workspaces and content creation hubs as part of teach support for faculty.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Tiered Lecture**

PARTICIPANT AGREEMENT



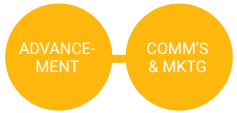
FEDERATED FLEXIBILITY

The externally facing services of advancement, marketing & communications have a large presence in community facilities, while other services are administered through a multi-purpose concierge.

ALLOCATION OF SERVICES

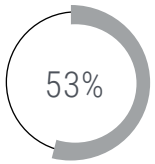
CONCIERGE

DEPARTMENTAL REPRESENTATIVE



ENTIRE DEPARTMENT

PARTICIPANT AGREEMENT



- Multiple Units
- Students
- Faculty
- Administration

SCENARIO PLANNING END OF PHASE KEY FINDINGS

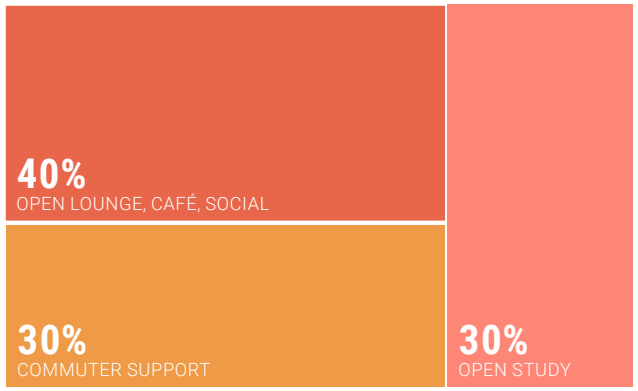
CULTURAL BUILDING TEMPLATE

Exhibit, event and auditorium spaces that span from performance, conference to community building

FUTURE DEMOGRAPHICS

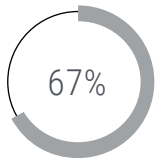
Cultural buildings act as a student home base, providing unscheduled needs throughout the day with commuter support, social, and study spaces.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Student Org**

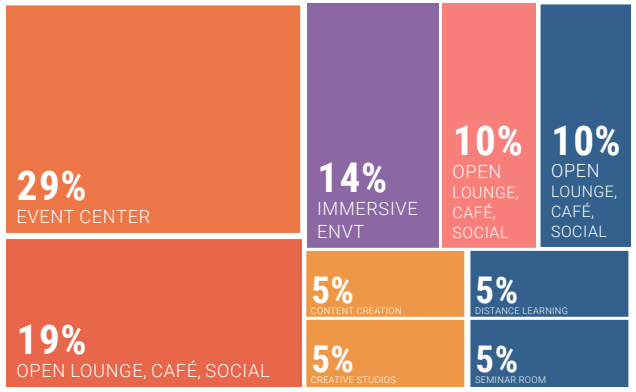
PARTICIPANT AGREEMENT



PORTFOLIO OF PEDAGOGY

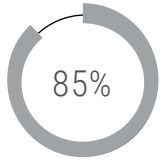
Cultural buildings host the lifecycle of creativity, from practice space and studios, content creation, immersive environments, and up to event space.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Tiered Lecture**

PARTICIPANT AGREEMENT

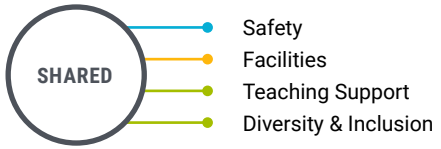


FEDERATED FLEXIBILITY

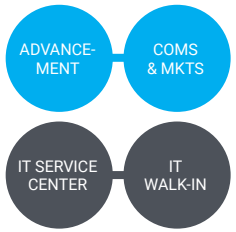
Concierge & departmental representatives in other buildings send students to administrative facilities to receive a larger spectrum of services. Administrative units use a concierge to navigate their service needs.

ALLOCATION OF SERVICES

CONCIERGE

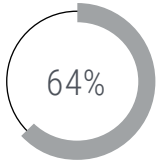


DEPARTMENT REPRESENTATIVE



ENTIRE DEPARTMENT

PARTICIPANT AGREEMENT



- Multiple Units
- Students
- Faculty
- Administration

SCENARIO PLANNING END OF PHASE KEY FINDINGS

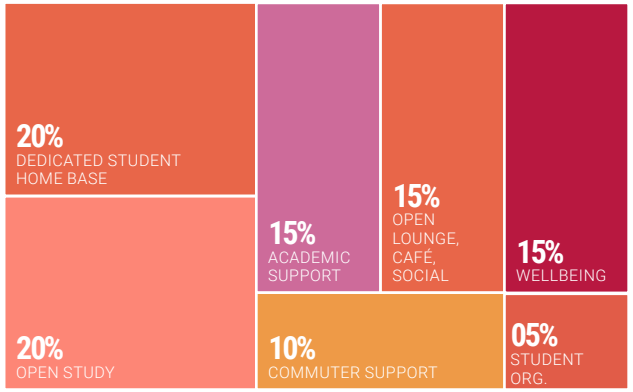
HOUSING BUILDING TEMPLATE

On-campus housing solutions for students, faculty, and staff

FUTURE DEMOGRAPHICS

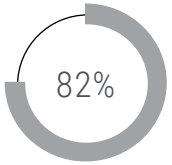
Commuter support and student services are in publicly accessible areas to provide commuting students an on-campus experience. Advising services are integrated into student home bases.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Bookable Study**

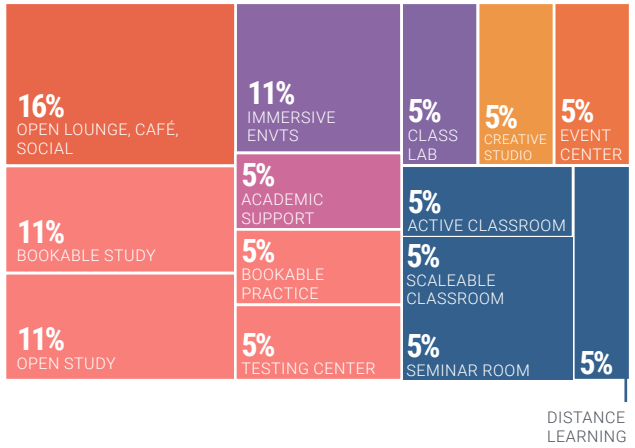
PARTICIPANT AGREEMENT



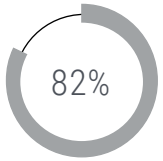
PORTFOLIO OF PEDAGOGY

Immersive environments are distributed between study and classroom space. A large open lounge, café, and social area is centrally located to create an internal community.

SPACE MAKEUP RATIO



PARTICIPANT AGREEMENT

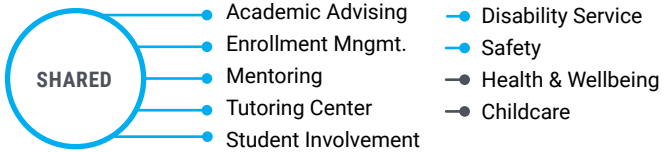


FEDERATED FLEXIBILITY

Concierge services placed directly in campus housing provide students with a variety of information in a convenient manner, and provide dual services for faculty and staff that reside in these areas as well.

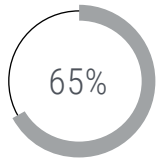
ALLOCATION OF SERVICES

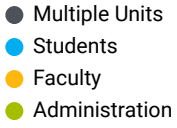
CONCIERGE



DEPARTMENT REPRESENTATIVE

PARTICIPANT AGREEMENT





* *Additional space type identified by workshop group: Bookable study*

SCENARIO PLANNING END OF PHASE KEY FINDINGS

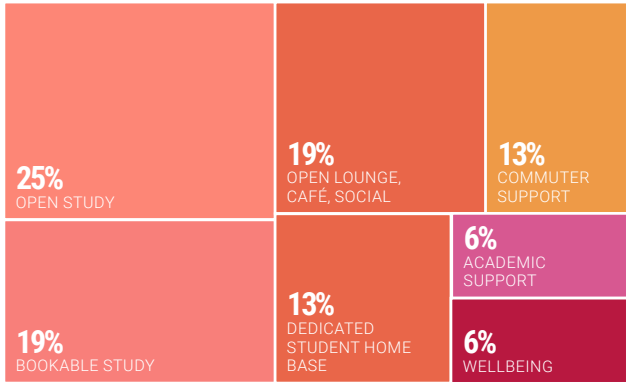
LEARNING BUILDING TEMPLATE

Shared flexible classrooms, class labs, immersive and practice spaces, study space and workplace environments

FUTURE DEMOGRAPHICS

Open study and social areas are easily accessible after class, can be found on each floor, and create a culture around a learning community.The extent of dedicated space is based on degree/program within the building.

SPACE MAKEUP RATIO



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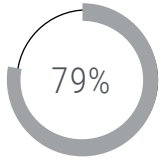
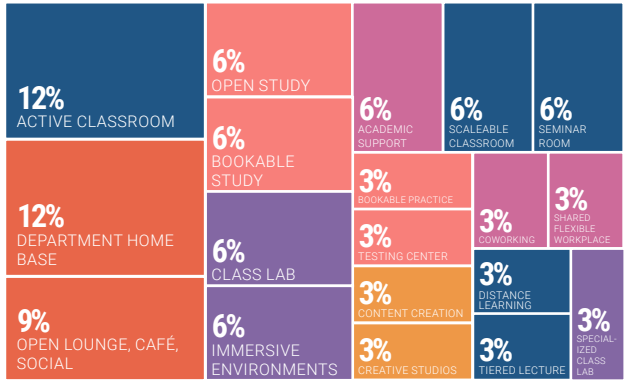


PORTFOLIO OF PEDAGOGY

Learning facilities hold the entire spectrum of learning environments, where structured classrooms hold a smaller footprint compared to the wide array of study, creative, and support spaces available to round out a student's learning experience.

SPACE MAKEUP RATIO



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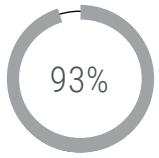


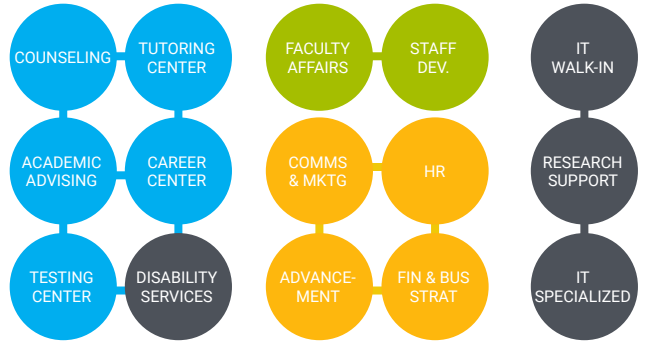
FEDERATED FLEXIBILITY

Academically related services are provided to students through departmental representatives who work together in a cohesive team. Likewise, administrative and faculty services are clustered and provided on site for easy accessibility.

ALLOCATION OF SERVICES

CONCIERGE

DEPARTMENTAL REPRESENTATIVES



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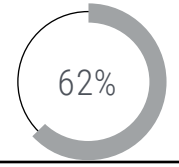


Multiple Units
Students
Faculty
Administration

SCENARIO PLANNING END OF PHASE KEY FINDINGS

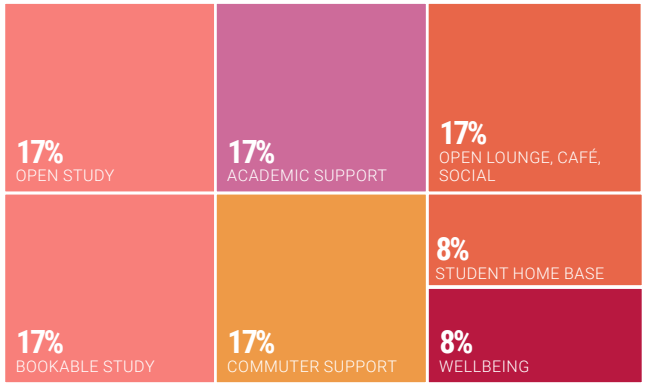
GENERAL RESEARCH BUILDING TEMPLATE

Generic, flexible labs, classrooms and work-places that enable collaborative research and learning in research

FUTURE DEMOGRAPHICS

A café is centrally placed with study and workspace surrounding to encourage a culture of collaboration and networking. Student home bases are provided for graduate and undergrad students.

SPACE MAKEUP RATIO



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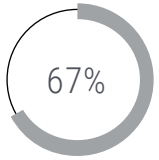
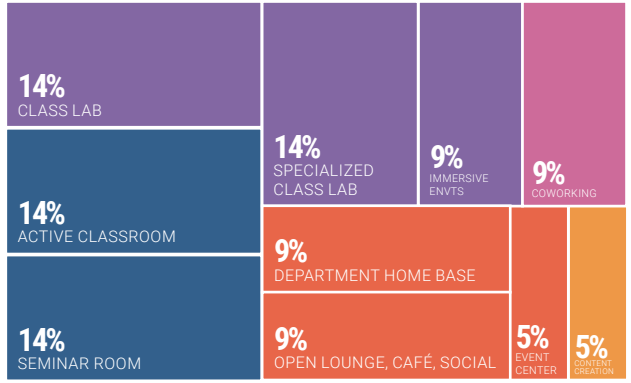


PORTFOLIO OF PEDAGOGY

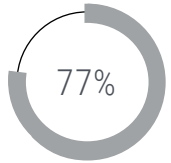
Research buildings include an equal amount of teaching lab and classroom space, and are coupled with immersive environments to bring new experiences to education. Event centers are available for research showcases.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Bookable Study, Creative Studios, Distance Learning, Open Study, Scaleable Classroom, Shared Flexible Workplace, Testing Center, Tiered Lecture**

PARTICIPANT AGREEMENT



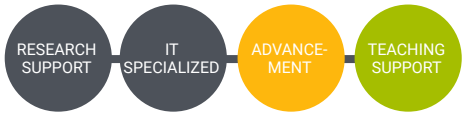
FEDERATED FLEXIBILITY

Concierges supply facility inhabitants with a variety of services in an efficient manner, while higher-demand research services receive a department representative.

ALLOCATION OF SERVICES

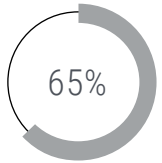
CONCIERGE

DEPARTMENT REPRESENTATIVE



ENTIRE DEPARTMENT

PARTICIPANT AGREEMENT



- Multiple Units
- Students
- Faculty
- Administration

SCENARIO PLANNING END OF PHASE KEY FINDINGS

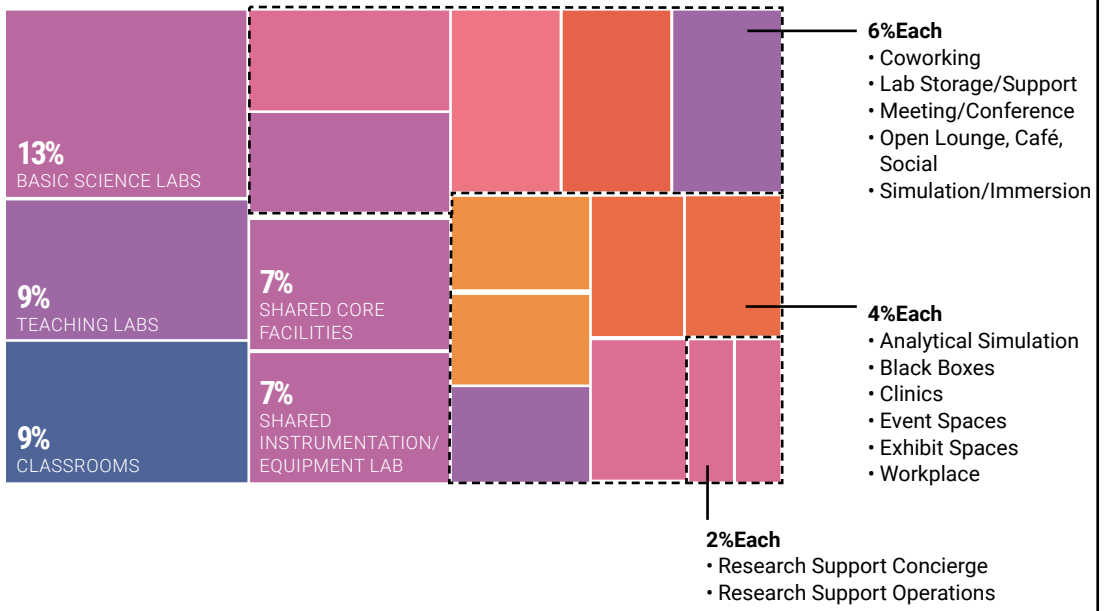
GENERAL RESEARCH BUILDING TEMPLATE

Generic, flexible labs, classrooms and work-places that enable collaborative research and learning in research

RESEARCH & INNOVATION ECOSYSTEM

Colocate learning spaces together while interspersing research facilities to expose students to experiences in research.

SPACE MAKEUP RATIO



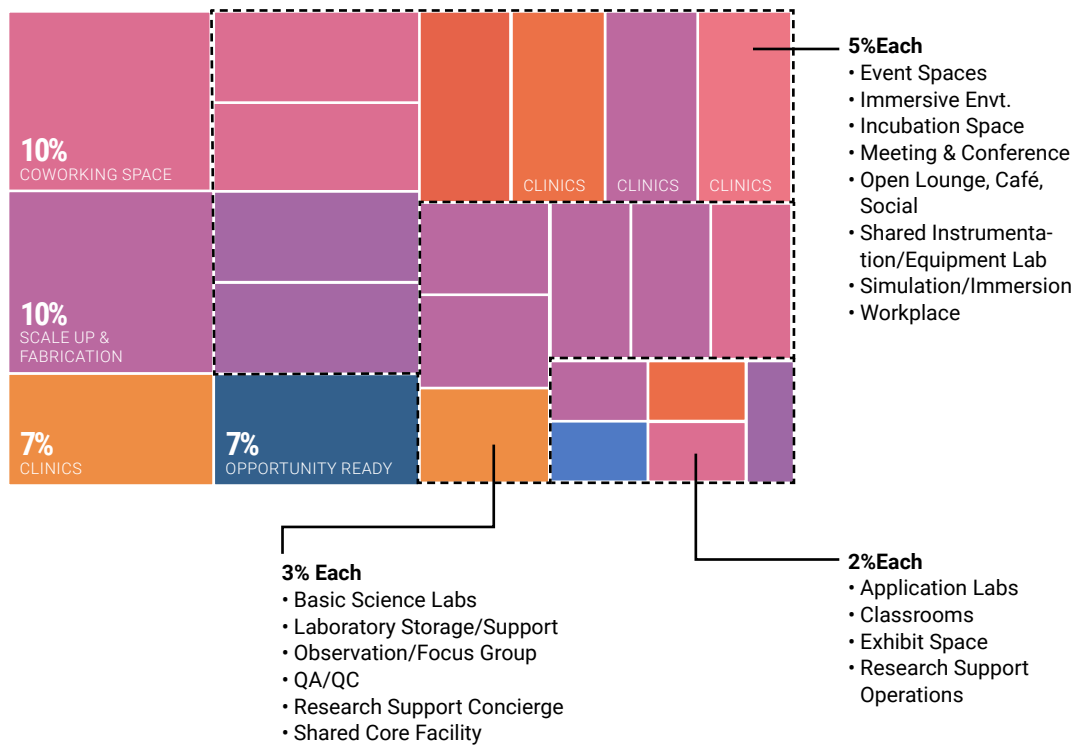
PARTNERSHIP RESEARCH BUILDING TEMPLATE

Shared external partnership focused labs, incubators, coworking space for research and entrepreneurial activity

RESEARCH & INNOVATION ECOSYSTEM

Partnership facilities include the entire spectrum of research spaces to bring projects from concept through business development.

SPACE MAKEUP RATIO



SCENARIO PLANNING END OF PHASE KEY FINDINGS

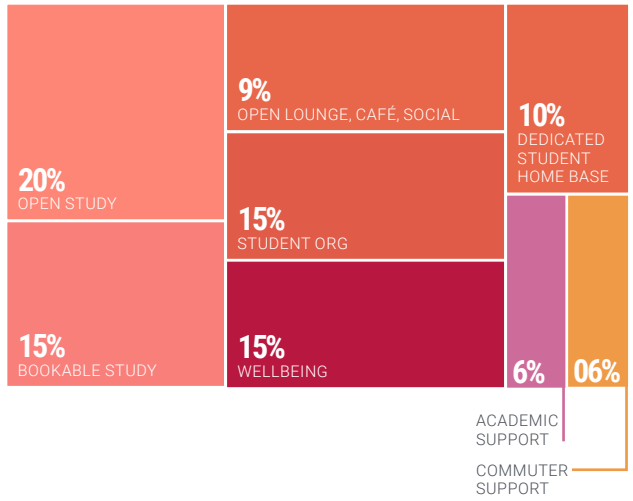
CAMPUS LIFE BUILDING TEMPLATE

Facilities that focus on support, social, recreation and the overall aspect of being a student in the CU Boulder community

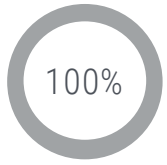
FUTURE DEMOGRAPHICS

Campus Life has everything inside of it, with a third designated as dedicated space to particular student groups. Bookable and open study spaces are interwoven around social areas to enable a seamless flow of activities.

SPACE MAKEUP RATIO



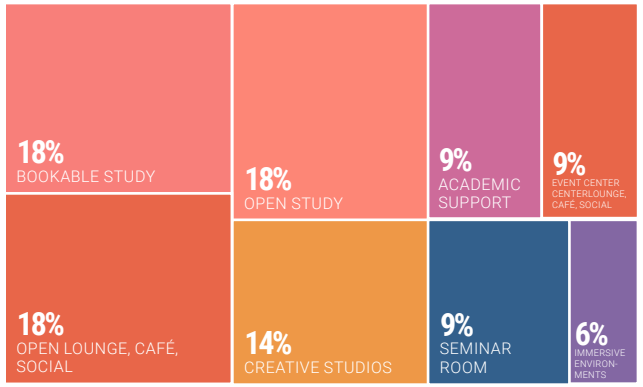
PARTICIPANT AGREEMENT



PORTFOLIO OF PEDAGOGY

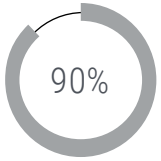
Spaces that support an academic experience can be found in Campus Life buildings. The largest footprint is composed of social, bookable, and open study, complimented by creative studios and academic advising.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Bookable Practice, Scaleable Classroom**

PARTICIPANT AGREEMENT

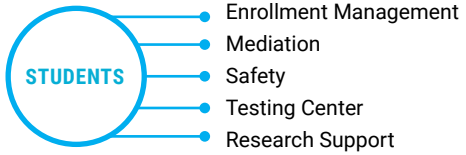


FEDERATED FLEXIBILITY

Academically related services are provided to students through departmental representatives who work together in a cohesive team. Likewise, administrative and faculty services are clustered and provided on site for easy accessibility.

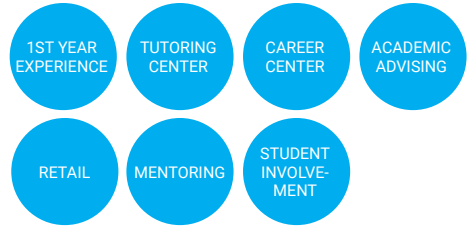
ALLOCATION OF SERVICES

CONCIERGE



DEPARTMENT REPRESENTATIVE

ENTIRE DEPARTMENT



PARTICIPANT AGREEMENT

- Multiple Units
- Students
- Faculty
- Administration

SCENARIO PLANNING END OF PHASE KEY FINDINGS

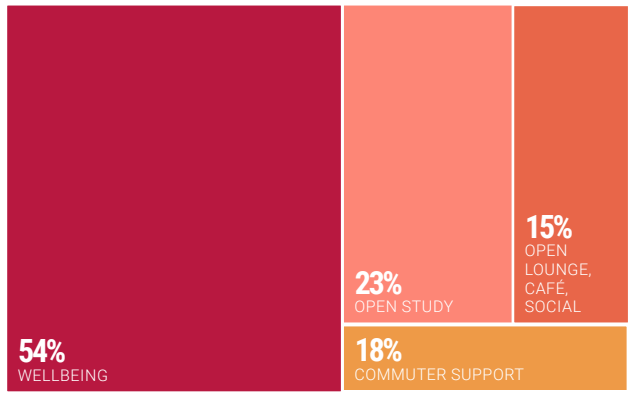
WELLBEING BUILDING TEMPLATE

Counseling, emotional support, and safe spaces to focus on personal, mental and physical wellbeing

FUTURE DEMOGRAPHICS

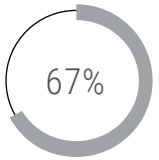
Incorporate social, study, and commuter home bases into Wellbeing facilities to create a culture of Wellbeing over these spaces as well.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Academic Support, Student Organization**

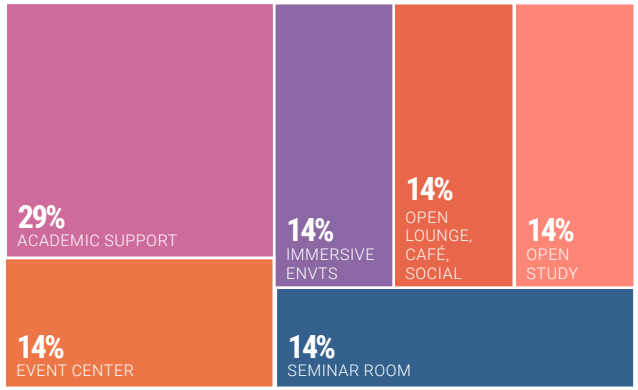
PARTICIPANT AGREEMENT



PORTFOLIO OF PEDAGOGY

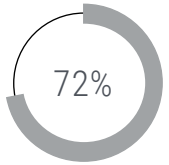
Incorporate academic advising into Wellbeing facilities to create a one-stop-shop for all services a student might need.

SPACE MAKEUP RATIO



* *Additional space type identified by workshop group:* **Bookable Study**

PARTICIPANT AGREEMENT

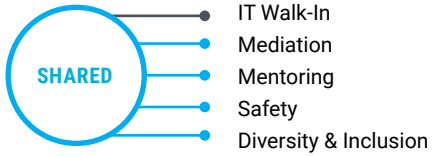


FEDERATED FLEXIBILITY

Wellbeing services are expanded to include everything associated with physical and mental well being with a concierge office.

ALLOCATION OF SERVICES

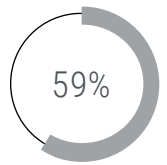
CONCIERGE



DEPARTMENT REPRESENTATIVE

ENTIRE DEPARTMENT

PARTICIPANT AGREEMENT



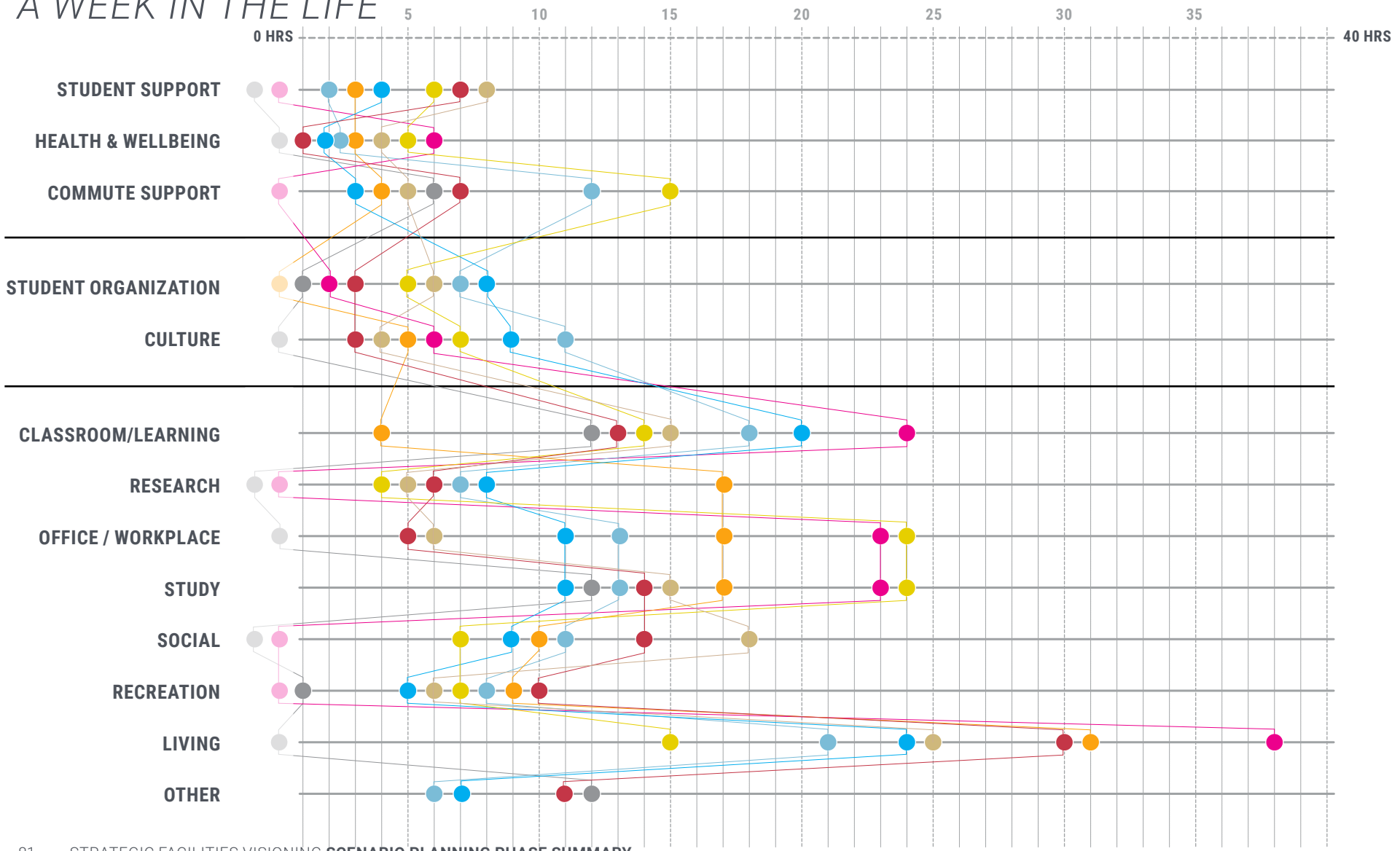
- Multiple Units
- Students
- Faculty
- Administration

INSIGHTS DRIVING TOOL DEVELOPMENT

FUTURE DEMOGRAPHICS

SCENARIO PLANNING 2

A WEEK IN THE LIFE



DEMOGRAPHIC KEY

- Graduate
- Traditional
- Lower SES
- Transfer
- International
- First Generation
- Marginalized
- Returning Learners

Strategic Facilities Visioning
UNIVERSITY OF COLORADO BOULDER

FUTURE DEMOGRAPHICS **SCENARIO PLANNING 2**

A WEEK IN THE LIFE

DEMOGRAPHIC KEY

- Graduate
- Traditional
- Lower SES
- Transfer
- International
- First Generation
- Marginalized
- Returning Learners

PORTFOLIO OF PEDAGOGY

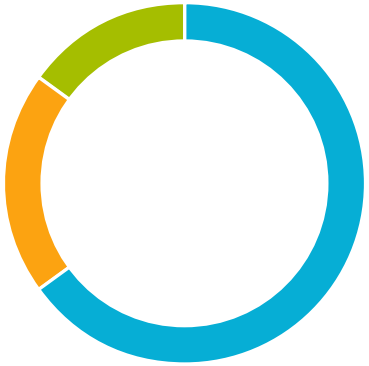
SCENARIO PLANNING 2

A WEEK IN THE LEARNING / TEACHING LIFE

- SCHEDULED LEARNING
- INFORMAL STUDY/ SUPPORT
- SOCIALIZING / NETWORKING

SPACE TIME ALLOCATION RATIOS

UNDERGRADUATE

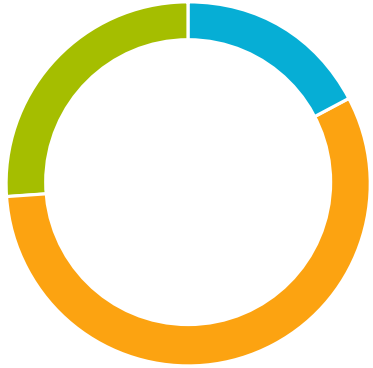


- Classroom
- Simulation/ VR
- Lecture
- Studio
- Meeting Room
- Informal Study
- Library/ Stacks
- Maker Space
- Safe/ Secure
- Support
- Testing Center
- Food/ Café
- Ideation/ Co-Creation
- Outdoor
- Social

MASTERS

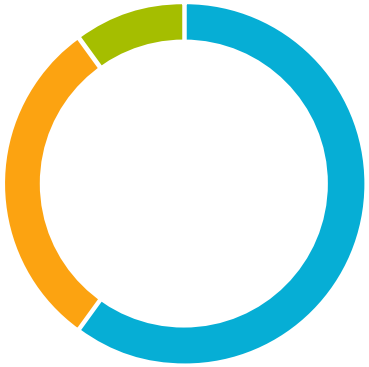
- Classroom
- Class Lab
- Simulation/ VR
- Lecture
- Studio
- Field Work
- Meeting Room
- Informal Study
- Maker Space
- Support
- Commuter
- Food/Café
- Gathering Event
- Ideation/ Co-Creation
- Social

PHD



- Classroom
- Class Lab
- Computer Lab
- Simulation/ VR
- Meeting Room
- Informal Study
- Office
- Bookable Workplace/ Coworking
- Commuter
- Food/Café
- Ideation/ Co-Creation
- Recreation
- Social

LICENSURE & CERTIFICATES

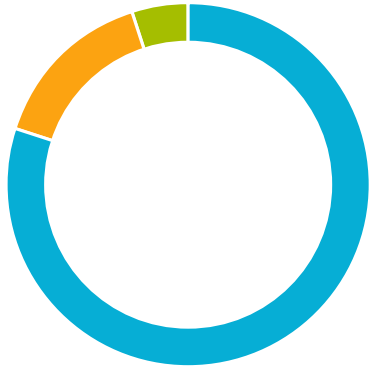


- Classroom
- Media Lab / Recording
- Studio
- Off Campus Instruction
- Simulation Lab
- Lecture
- Maker Space
- Bookable Workplace/ Coworking
- Commuter
- Food/ Café
- Ideation/ Co-Creation
- Recreation
- Retail
- Social

FACULTY

- Faculty Content Creation
- Media Lab/ Recording Studio
- Simulation/ VR
- Black Box
- Support
- Teaching Practice Space
- Bookable Workplace/ Coworking
- Commuter
- Faculty Lounge
- Food/Café
- Ideation/ Co-Creation

STAFF



- Media Lab/ Recording
- Simulation/ VR
- Black Box
- Support
- Teaching Practice Space
- Bookable Workplace/ Coworking
- Commuter
- Faculty Lounge
- Food/Café
- Ideation/ Co-Creation

Ratio indicates staff time designated to learning

PORTFOLIO OF PEDAGOGY **SCENARIO PLANNING 2**

A WEEK IN THE LEARNING

SPACE TIME ALLOCATION RATIOS

- SCHEDULED LEARNING
- SOCIALIZING / NETWORKING
- INFORMAL STUDY/ SUPPORT

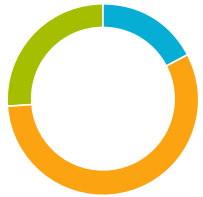
UNDERGRADUATE

CU Boulder's largest population spends their time in learning spaces (i.e., active classrooms, hands-on lecture spaces, labs and simulation/ VR spaces). Individual work is performed in diverse settings, from cafés to libraries to meeting rooms, and is mixed with social, recreational, and cultural activities due to increased emphasis on group projects and network building.

MASTERS

Masters students divide their time equally between learning, informal study/support spaces, and socializing/recreational spaces. Master's students spend a third of their time in a variety of classrooms settings, both as students and as teachers/ teaching assistants. Informal study and support spaces mimic real-world settings with coworking and bookable workplaces. Social activities take place off hours in clubs, cafés, and open lobbies.

PHD



Research projects drive Ph.D. students to divide their time between individual and group activities. Personal work is conducted in open and collaborative workplace environments, whereas online research and data gathering can take place in enclosed drop-in offices/ research spaces. Broadening social and professional networks is encouraged in cafés, ideation/ co-creation environments, and lounges.

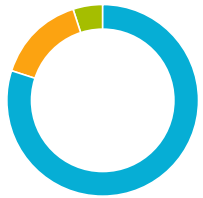
LICENSURE & CERTIFICATES

Micro term learners spend the bulk of time in learning environments (i.e., active classrooms, lectures, labs, etc.). Study spaces such as coworking zones, meeting rooms, and maker spaces inspire ad-hoc collaborations or individual work. The university's conference center and hotel function as a home base, offering space for accommodations and professional networking and peer socializing.

FACULTY

Faculty spend nearly half their time in workplace settings, labs, student meeting spaces, and content creation spaces (i.e., studios, teacher practice centers, and simulation/ VR spaces). The remainder of their time is spent teaching in active and dynamic spaces and socializing with colleagues and faculty lounges, common areas, and cafés.

STAFF



Staff members spend the majority of their time in workplace settings (i.e., open/ bookable workplaces, offices, meeting rooms, etc.). To identify with the university mission, social activities such as lunch/ coffee breaks, recreational activities, and larger meetings/events take place in the campus community.

CRITICAL SPACES TO SCHEDULED & INFORMAL LEARNING

U/G	MASTER	PHD	L&C	FACULTY	STAFF	
●	●	●	●			CLASSROOM (VARYING)
	●	●				CLASS LAB
		●				APARTMENT
				●	●	BLACK BOX
		●				COMPUTER LABS
	●	●	●	●	●	COMMUTER
				●	●	FACULTY CONTENT CREATION
				●	●	FACULTY LOUNGE
	●					FIELD WORK
●	●	●	●	●	●	FOOD/Café
	●					GATHERING/EVENT
●	●	●				MEETING ROOM
●	●	●	●	●	●	IDEATION/ CO-CREATION
●	●	●				INFORMAL STUDY
●						LIBRARY/ STACKS
●	●		●			MAKER SPACE
			●	●	●	MEDIA LAB / RECORDING STUDIO
			●			OFF CAMPUS INSTRUCTION
		●				OFFICE
						ONE-STOP-SHOP
●						OUTDOOR
		●	●			RECREATION
			●			RETAIL
●						SAFE/ SECURE
●	●	●	●	●	●	SIMULATION/ VR
●	●		●			LECTURE
●	●	●	●			SOCIAL
●	●					STUDIO
●	●			●	●	SUPPORT
				●	●	TEACHER PRACTICE SPACE
●						TESTING CENTER
		●	●	●	●	BOOKABLE WORKPLACE/ COWORKING

RESEARCH & INNOVATION ECOSYSTEM **SCENARIO PLANNING 2**

ENVIRONMENTS THAT SUPPORT THE RESEARCH ENTERPRISE

5 MINUTE TRAVEL RADIUS

- Café
- Coworking Space
- Collaboration Space
- General Classroom & Class Labs
- Makerspace
- Meeting Space
- Office
- Partner Co-working Space
- Research Grant Concierge
- Research Support Concierge
- Shared Instrumentation & Tech
- Shared Workplace (Grad/ PHD)
- Thematic Clusters / Critical Mass
- Video Conferencing

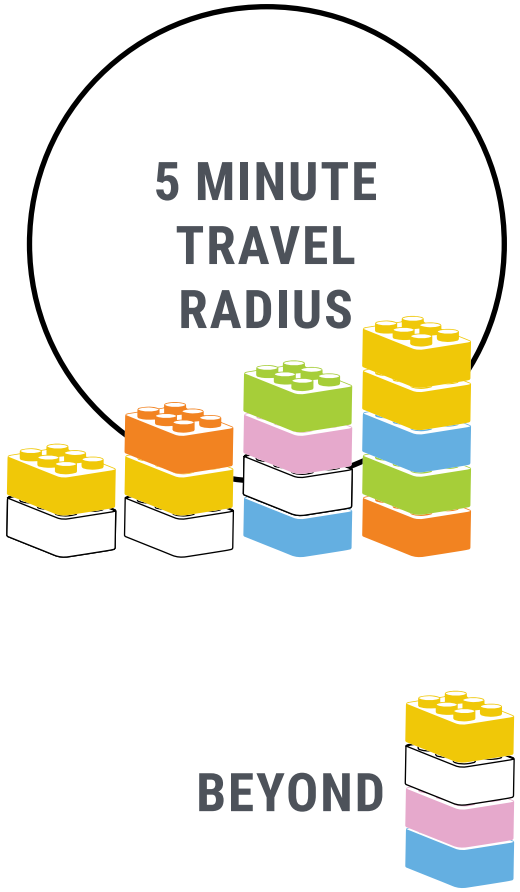
15 MINUTE TRAVEL RADIUS

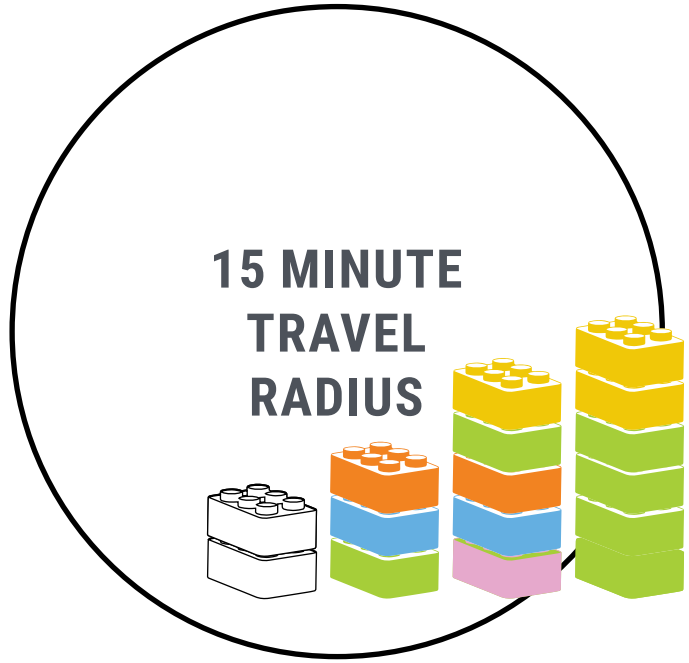
- Cold/ Warm Shell
- Core Facilities – Equipment
- General Classrooms & Class Labs
- High Performance Computing
- Hotel/ Conference
- Imaging Facilities
- Maker Space
- Performance / Clinic - On-site
- Research Support (General)
- Specialized Labs
- Specialized Mission Space

BEYOND A 15 MINUTE TRAVEL RADIUS

- Child Care
- Conference & Hotel
- Extended Stay Visitor Housing
- Field Work
- Secure / Classified Space
- Shared Core Facilities
- Specialized Storage/ Collections
- Unique Core Facilities

- **ENTREPRENEURSHIP, TRANSLATION & COMMERCIALIZATION**
- **HIGH PERFORMANCE RESEARCH ENVIRONMENTS**
- **ENGAGED COLLABORATIVE & COMMUNITY RESEARCH**
- **INTERDISCIPLINARY RESEARCH THROUGH SHARED RESOURCES**
- **LEARNING & RESEARCH**
- **SUPPORTING THE $2B ENTERPRISE & RESEARCH ADMINISTRATION**





RESEARCH & INNOVATION ECOSYSTEM **SCENARIO PLANNING 2**

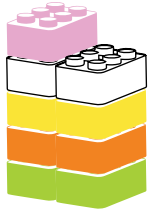
ENVIRONMENTS THAT SUPPORT THE RESEARCH ENTERPRISE

SPACE TYPE PRIORITIZATION

	PRIMARY	SECONDARY
	5 MINUTE TRAVEL RADIUS	
●	MEETING SPACE	Flexible Space, Partnership Space
●	COWORKING SPACE	Quiet Workplace, Thematic Clusters
●	CAFÉ	Research Support Concierge, Shared Inst. / Tech
●		Research Support Concierge, Shared Inst. / Tech
○	GENERAL CLASSROOM GENERAL CLASS LAB	Core Facilities, Immersion Program/ Tech, Maker Space, Simulation/ VR Learning
	15 MINUTE TRAVEL RADIUS	
●	CORE FACILITIES	Cold/ Warm Shell, High Performance Computing, Imaging Facilities
●		Performance / Clinic
●		Research Support Concierge, Shared Inst. / Tech
○		General Classroom, Maker Space
●		Conf. Center/ Hotel, Grant / Research Support
	BEYOND A 15 MINUTE TRAVEL RADIUS	
●	SPECIALIZED SPACES	Secure Specialized Space
●		Child Care
○		Field Work
●		Conf. Center/ Hotel

5 MINUTE TRAVEL RADIUS

Thematic clusters emerge around campus. Pockets of drop-in coworking spaces with bookable meeting rooms are colocated with social areas such as cafés and flexible spaces. Thematic clusters accommodate students and faculty with shared flexible spaces, general classrooms and labs, research support concierge services and shared instrumentation/ technology labs.

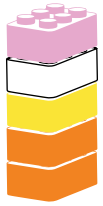


15 MINUTE TRAVEL RADIUS

Pedestrian pathways between west and east campus become pathways for exploration and respite. Centralized core facilities provide opportunities for unintentional collaborations and knowledge share. Support spaces and services are housed within the core facility buildings to advance project and research work.

BEYOND A 15 MINUTE TRAVEL RADIUS

Single buildings providing specialty services such as public-private partnership facilities, childcare, and the conference and hotel center are distributed around the periphery of campus.



SPACE TYPE BY CATEGORY

ENTREPRENEURSHIP, TRANSLATION & COMMERCIALIZATION

- Flexible space
- Meeting space
- Partnership space
- Pop-up space
- Presentation space
- Quiet office
- Research lab-applied
- Secure coworking space
- Startup space/ incubator
- Tech transfer

HIGH PERFORMANCE RESEARCH ENVIRONMENTS

- Access & sharing of research
- Cold/ warm shell
- Core facility - equipment
- Coworking space
- Dedicated labs
- High performance commuting
- Imaging facilities
- National security/ quantum research
- Outdoor
- Quiet workplace
- SCIFS classified space
- Secure classified space
- Specialized spaces*
- Thematic clusters

ENGAGED COLLABORATIVE & COMMUNITY RESEARCH

- Café
- Child care
- Classes - office, community
- Clinic - on-site
- Consumer testing - on-site
- Online platform
- Performance / clinic - on-site

INTERDISCIPLINARY RESEARCH THROUGH SHARED RESOURCES

- Centralized bio - sample repositories
- Collocating specializations
- Core facilities - specialized
- Coworking space
- Neighborhoods
- Pinup space
- Project display
- Research support concierge
- Shared instrumentation / technology

LEARNING & RESEARCH

- Co-located core facilities
- Field work
- General class lab
- General classroom
- Immersion program
- Immersive tech
- Internship/ shadow
- Maker space
- Proximity of lab to classroom
- Simulation/ VR learning

SUPPORTING THE $2B ENTERPRISE & RESEARCH ADMINISTRATION

- Business dev. & marketing
- Contracting & legal administration
- Core facilities
- Coworking space
- Data management
- Entrepreneurial
- Financial models for collaborative research
- Grant / research support
- Hotel & conference center
- International engagement
- Lab operations management
- License/ patent dev.
- Tech transfer
- Video conferencing

**DARK SPACE, TEMPERATURE, CAGE, VISUALIZATION, ETC.*

Strategic Facilities Visioning
UNIVERSITY OF COLORADO BOULDER

FEDERATED FLEXIBILITY **SCENARIO PLANNING 2**

CLASSROOM & TEACHING LAB UTILIZATION BREAKDOWN

CU Boulder utilization targets:

Classrooms:

- 35 hours/wk
- 67% seat fill

Teaching Labs

- 20 hours/wk
- 80% seat fill

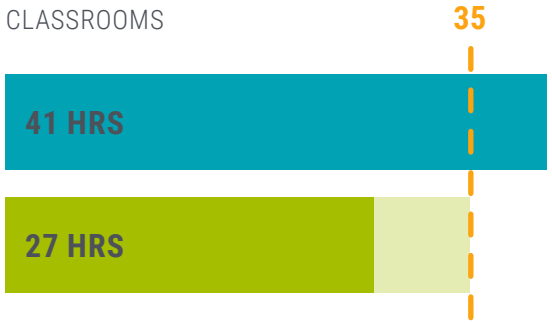
~~**4,500 full time students could fit in the underutilized classroom spaces**~~

KEY

- CENTRALLY SCHEDULED
- DEPARTMENTALLY CONTROLLED
- CU BOULDER TARGET

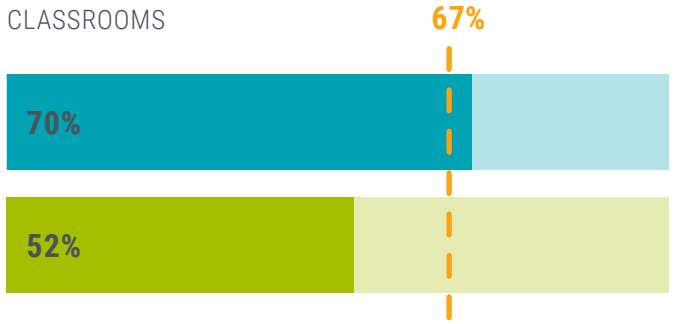
HOURS SCHEDULED

CLASSROOMS



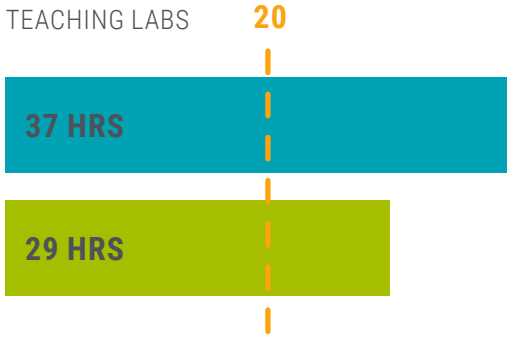
SEAT UTILIZATION

CLASSROOMS



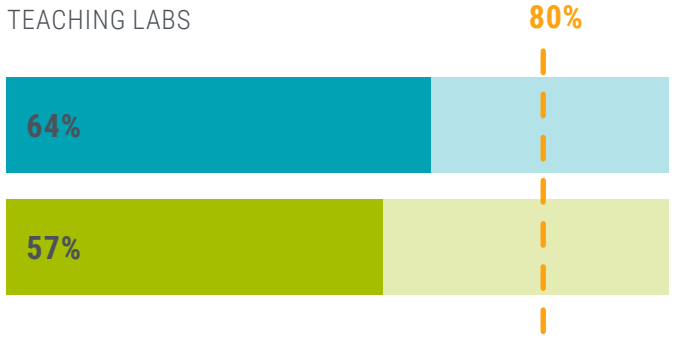
HOURS SCHEDULED

TEACHING LABS



SEAT UTILIZATION

TEACHING LABS



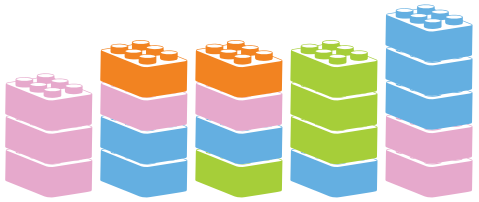
FEDERATED FLEXIBILITY

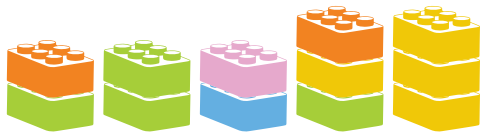
SCENARIO PLANNING 2

CREATING ACCESSIBLE ENVIRONMENTS

	05 MINUTE TRAVEL RADIUS	15 MINUTE TRAVEL RADIUS
ACADEMIC SUPPORT	1ST Year Advising W/ Concierge Academic Support Services Testing Center Tutoring Embed W/in Study Space	Academic Advising Experts Academic Support Located Near Housing Counseling Financial Aid Recreation Tutoring Center Upperclassman Advising Wellness Writing Center
ADMINISTRATIVE SUPPORT	IT Support/ IT Help Desk	Administrative Services Hub IT Support/ IT Help Desk
FLEXIBLE WORKPLACE ENVIRONMENTS	Cafe Mobile Workplace	Faculty Club Mobile Workplace
DEPARTMENTAL HOME	Workplace	Department Home
FLEXIBLE UNASSIGNED MEETINGS SPACES	Conference Rooms Flexible Touchdown Workplace Informal Study Virtual Meeting Platform	Hotel Showcase

RATIO OF SPACES





FEDERATED FLEXIBILITY **SCENARIO PLANNING 2**

CREATING ACCESSIBLE ENVIRONMENTS

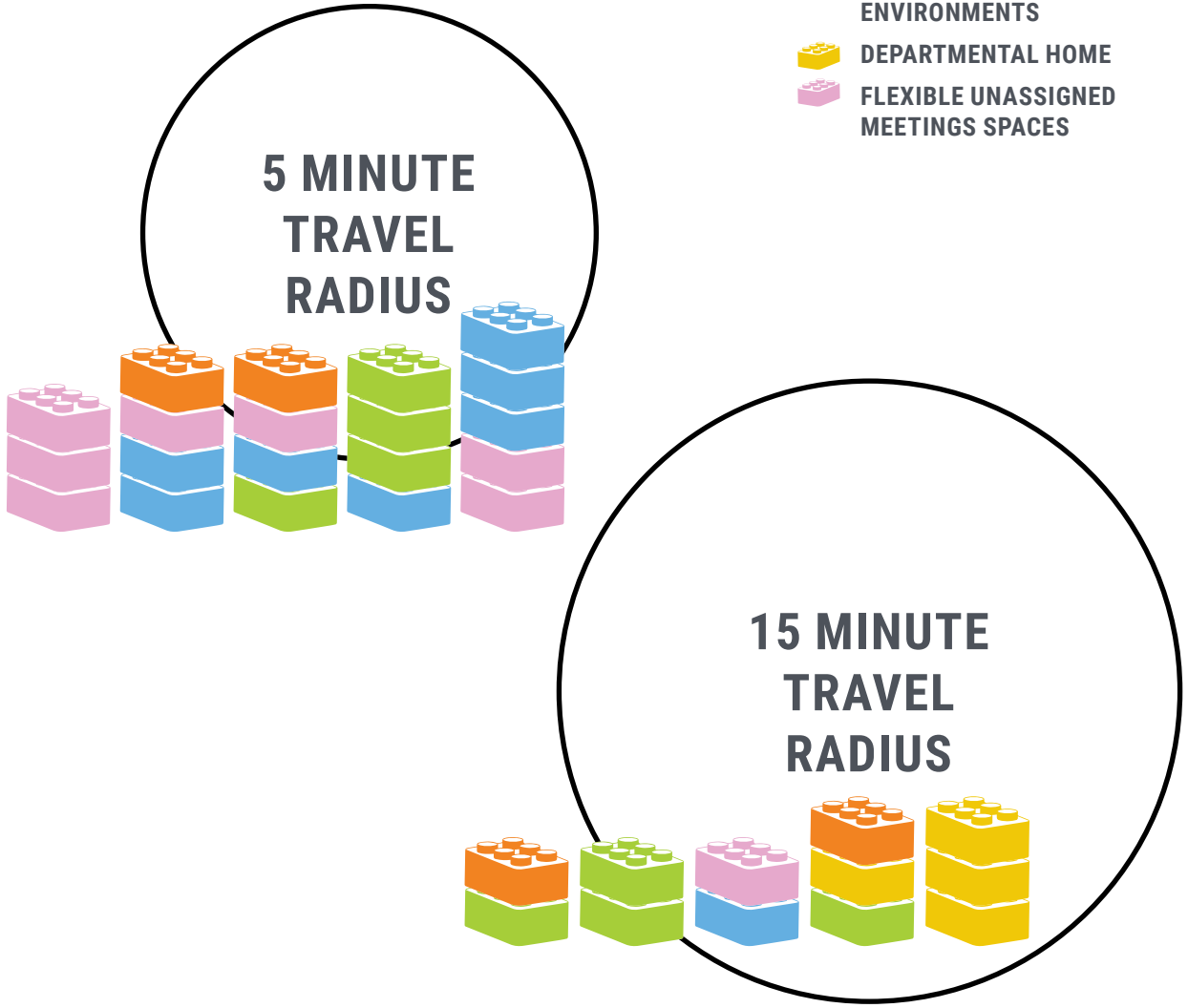
5 MINUTE TRAVEL RADIUS

- 1ST Year Advising W/ Concierge
- Academic Support Services
- Café
- Flexible Touchdown Workplace
- Informal Study
- IT Support
- Meeting Rooms
- Mobile Workplace
- Testing Center
- Transportation
- Tutoring Embed W/in Study Space
- Virtual Meeting Platform
- Workplace

15 MINUTE TRAVEL RADIUS

- Academic Advising Experts
- Academic Support Located Near Housing
- Administrative Services Hub
- Counseling
- Department Home
- Faculty Club
- Financial Aid
- Hotel Showcase
- IT Support/ IT Help Desk
- Mobile Workplace
- Recreation
- Torturing Center
- Upperclassman Advising
- Wellbeing
- Writing Center

- **ACADEMIC SUPPORT**
- **ADMINISTRATIVE SUPPORT**
- **FLEXIBLE WORKPLACE ENVIRONMENTS**
- **DEPARTMENTAL HOME**
- **FLEXIBLE UNASSIGNED MEETINGS SPACES**



FEDERATED FLEXIBILITY **SCENARIO PLANNING 2**

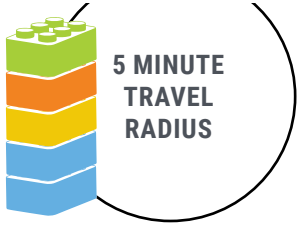
CREATING ACCESSIBLE ENVIRONMENTS

SPACE TYPE DISTRIBUTION

	PRIMARY	SECONDARY
5 MINUTE TRAVEL RADIUS		
●	TUTORING CENTER	Individual Counseling, Testing Center, Wellbeing, IT Support
●	CAFÉ	
●	CONFERENCE ROOM FLEXIBLE TOUCHDOWN WORKPLACE	
●	CONFERENCE ROOM INFORMAL STUDY	
15 MINUTE TRAVEL RADIUS		
●	ONE-STOP-SHOP	Admissions, Residential Academic Life, Mentoring/ Faculty Peer, Career Center, New Student Programs/ Orientation
●		Development, Communications, HR, Finance, Marketing
●		Faculty Club
●		Community Space, Lounge, Public Welcome/ Reception

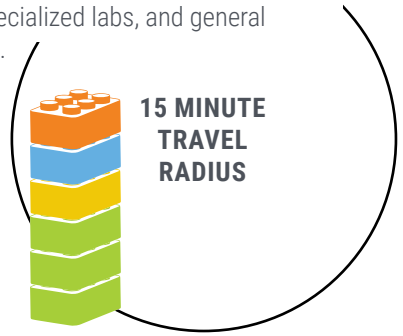
5 MINUTE TRAVEL RADIUS

Support spaces within the building or 5-minute travel proximity offer a plethora of flexible workplace settings with ad-hoc and bookable meeting spaces and cafés. The most frequently sought after support functions (i.e., couching, testing centers, IT support and Wellbeing centers) are easily accessible around campus.



15 MINUTE TRAVEL RADIUS

Spaces located within the neighborhood (15-minute travel radius) include shared environments such as maker spaces, high-performance computer labs, core facilities, specialized labs, and general classrooms/ labs.



SUPPORT SPACE CLASSIFICATION

ACADEMIC SUPPORT

- Admissions
- Career Center
- Individual Counseling
- IT Support
- Mentoring/ Faculty Peer
- New Student Programs/
- Orientation
- One-Stop-Shop For Financial Aid/ Financial Services
- Residential Academic Life
- Testing Center
- Tutoring Center
- Wellbeing

ADMINISTRATIVE SUPPORT

- Communications
- Development
- Finance
- HR
- IT Support
- Marketing
- Safety

FLEXIBLE WORKPLACE ENVIRONMENTS

- Café
- Coworking
- Faculty Club
- Huddle Room
- IT Support
- Mobile Workplace
- Office Hours in (RAE's)

DEPARTMENTAL HOME

- Community Space
- Flexible Touchdown Workplace
- Identity
- Lounge
- Public Welcome/ Reception
- Workplace

FLEXIBLE UNASSIGNED MEETINGS SPACES

- Conference Room
- Informal Study

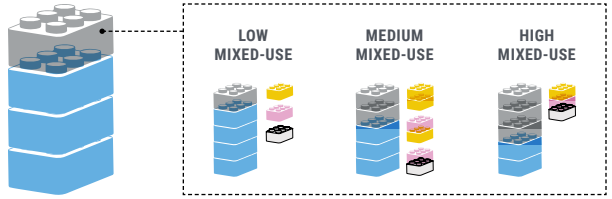
INTEGRATIVE FACILITIES **SCENARIO PLANNING 2**

VIBRANT FACILITIES & ENHANCED EXPERIENCES

THE ANATOMY OF A MIXED USE FACILITY

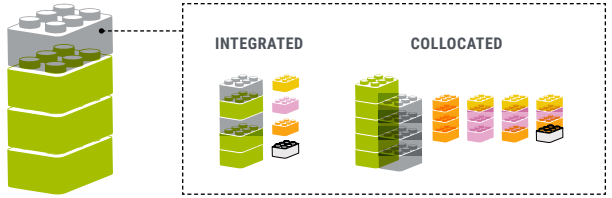
WELCOMING THE COMMUNITY

Mixed-use facilities encourage the community to take an active role as CU Boulder's partner in research, events, and recreation. Designing facilities with open/public spaces on lower levels and CU Boulder only access on upper floors provides safety and security for students while giving community access to collaborative spaces (i.e., active classrooms, meeting rooms, maker spaces, and cafés).



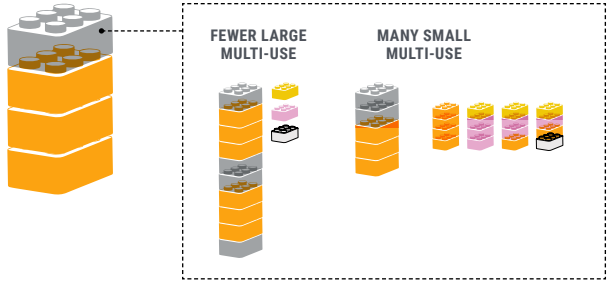
DIVERSE RESIDENTIAL ACADEMIC EXPERIENCES

Co-locating Residential Academic Experiences (RAE) with student life, learning & research, and Wellbeing provides the students with 24/7 access to learning, social, and recreation/support environments.



DISTRIBUTED STUDENT LIFE

Student life is equally represented throughout campus and colocated with Wellbeing, collaboration, and learning and research spaces.



MIXED USE TYPOLOGY MAKEUP

RESIDENTIAL ACADEMIC EXPERIENCES

- Active classroom
- Apartment
- Communal
- Faculty/ staff housing
- Food retailer
- Food/café
- Huddle room
- Informal study
- Media lab
- Outdoor
- Recreation
- Retail

LEARNING & RESEARCH

- Active classroom
- Advising/ support
- Communal
- Food/ café
- Library
- Maker space
- Media Lab
- Medium lecture
- Startup/ partnership
- Tutoring center

STUDENT LIFE

- Active classroom
- Commuter
- Food/ café
- Gathering/ event
- Huddle room
- Informal study
- Night event
- Outdoor
- Retail
- Social
- Student union
- Tutoring center

WELLBEING

- Active classroom
- Advising/ support
- Community
- Computer
- Food/ café
- Formal study
- Huddle room
- Ideation/ co-creation
- Informal study
- Project classroom
- Recreation
- Social
- Student union
- Wellbeing

COMMUNITY

- Athletics
- Center for teaching & learning
- Conference
- Coworking
- Food/ café
- Hotel
- Ideation/ co-creation
- Library
- Maker space
- Outdoor
- Startup/ partnership
- Town

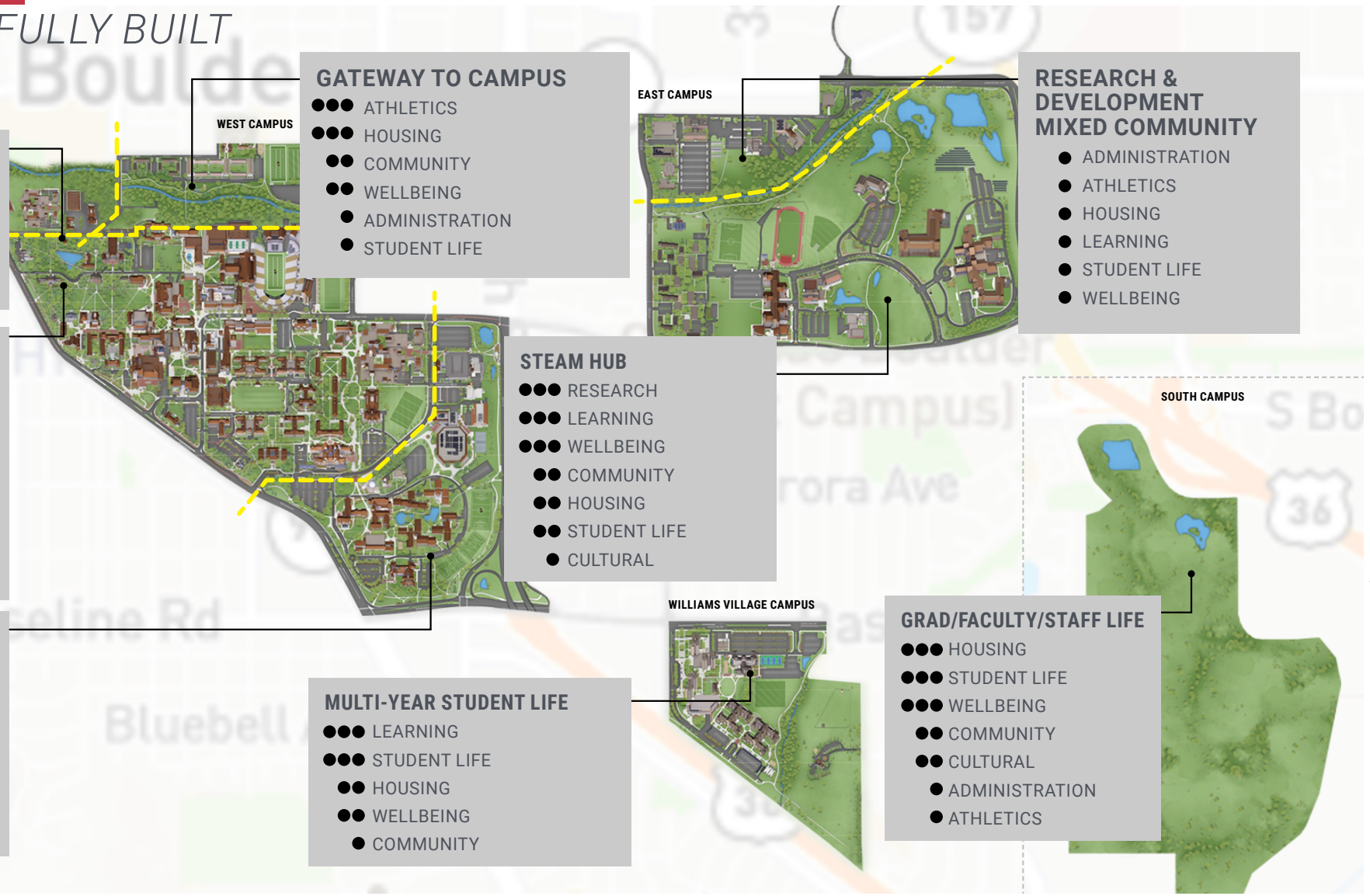
COLLABORATION

- Active classroom
- Black box
- Communal
- Food/ café
- Gathering/ event
- Huddle room
- Ideation/ co-creation
- Maker space
- Retail
- Student union
- Studio
- Telepresence

INTEGRATIVE FACILITIES

SCENARIO PLANNING 2

PLANNING A FULLY BUILT OUT CAMPUS



LIFE LONG LEARNING
- ●●● COMMUNITY
- ●● CULTURAL
- ●● LEARNING
- ● HOUSING

WEST CAMPUS
- ●●● COMMUNITY
- ●●● LEARNING
- ●● RESEARCH
- ●● STUDENT LIFE
- ●● WELLBEING
- ●● ADMINISTRATION
- ● ATHLETICS
- ● CULTURAL

CAMPUS BRIDGE
- ●●● CULTURAL
- ●●● LEARNING
- ●● WELLBEING
- ● ADMINISTRATION
- ● COMMUNITY
- ● HOUSING
- ● STUDENT LIFE

GATEWAY TO CAMPUS
- ●●● ATHLETICS
- ●●● HOUSING
- ●● COMMUNITY
- ●● WELLBEING
- ● ADMINISTRATION
- ● STUDENT LIFE

STEAM HUB
- ●●● RESEARCH
- ●●● LEARNING
- ●●● WELLBEING
- ●● COMMUNITY
- ●● HOUSING
- ●● STUDENT LIFE
- ● CULTURAL

MULTI-YEAR STUDENT LIFE
- ●●● LEARNING
- ●●● STUDENT LIFE
- ●● HOUSING
- ●● WELLBEING
- ● COMMUNITY

RESEARCH & DEVELOPMENT MIXED COMMUNITY
- ● ADMINISTRATION
- ● ATHLETICS
- ● HOUSING
- ● LEARNING
- ● STUDENT LIFE
- ● WELLBEING

GRAD/FACULTY/STAFF LIFE
- ●●● HOUSING
- ●●● STUDENT LIFE
- ●●● WELLBEING
- ●● COMMUNITY
- ●● CULTURAL
- ● ADMINISTRATION
- ● ATHLETICS

*The results of this workshop were documentation of a brainstorming session with many diverse constituents from the CU Boulder campus and no way constitute a land planning process or commitment from the university for any future development on the property.

RESILIENT ASSET MANAGEMENT

SCENARIO PLANNING

ORGANIZING FRAMEWORK FOR RESILIENCY

BASIC RESILIENCY
ALL BUILDINGS


BUILDING SECURITY PROTOCOLS


BUILDING SECURITY SYSTEMS


BUILDING MEP ARE WITHIN THEIR USEFUL LIFE


HEATING, LIGHTING, WATER & AIR CONDITIONING


COMMUNICATION SYSTEMS


NETWORKED MAINTENANCE REPORTING

MISSION DEPENDENCY INDEX FOR BUILDING TYPOLOGIES

MISSION CRITICAL RESILIENCY
INDIVIDUAL BUILDING LEVEL
Unique resiliency needs dependent on building typologies


LABORATORIES


ATHLETICS, PERFORMANCE & RECREATION


HOUSING


GENERAL LEARNING, STUDENT SERVICES & ADMINISTRATION


CAMPUS SUPPORT

CAMPUS RESILIENCY
SYSTEMS LEVEL

EMERGENCY RESPONSE


Centralized command center, campus surveillance & security


Emergency response communication systems, plans and app


Central sheltering plan to accommodate large populations


Natural disaster/ extreme weather responsiveness & facility recovery plans (storm, flash floods, fire)


Develop emergency response team familiarity with campus facilities for efficient response

2

DIGITAL INFRASTRUCTURE & COMMUNICATION SYSTEMS


Integrate redundancies into campus it networks


Universal, campus wide wi-fi and network connectivity


Cloud-based data warehousing & storage


Cybersecurity measures to protect sensitive information


Smart monitoring for real time feedback to solve problems early

1

PHYSICAL INFRASTRUCTURE


Cluster vulnerable facilities to centralize backup generators & measures to provide emergency power


Micro-grid to provide energy in times of grid outage


Increase local-grid-tied renewable energy generation and storage to strengthen energy security


Centralized campus loading dock for logistics and distribution


Centralized materials management, storage & distribution

ONGOING RESILIENCE


Zero emissions transportation systems


Science based target for ghg reduction


Renewable energy sources and storage


Multi-modal transportation including bike, care, ride and bus share programs


Food security


Water efficiency programs


Zero waste generation systems

RESILIENT ASSET MANAGEMENT **SCENARIO PLANNING 2**

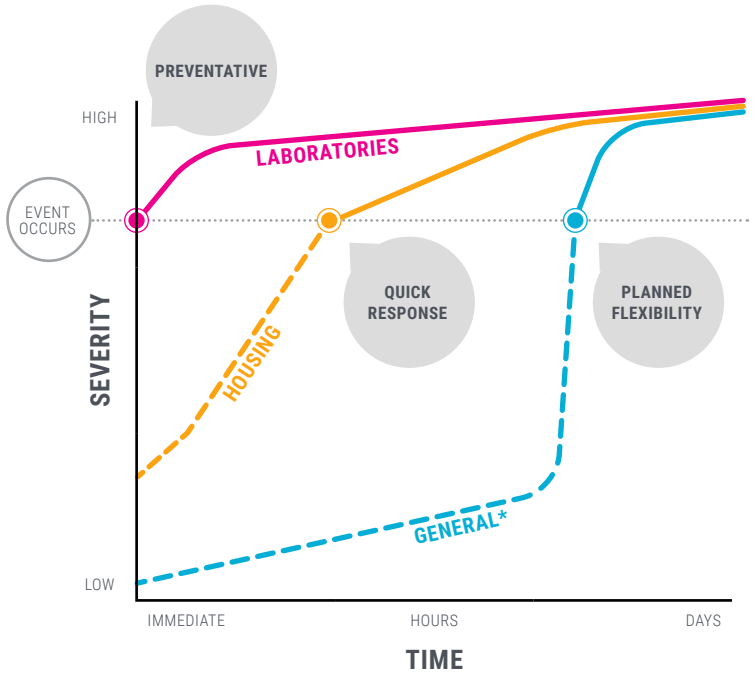
ASSESSING CRITICALITY BY MISSION

ASSESSING CRITICALITY BY MISSION

EVENT SEVERITY TIMELINE

Events causing buildings to go off line have a cascading effect through an event timeline. Lab environments feel an immediate critical effect with the loss of data and invaluable samples, and after the initial hit the severity of the situation stabilizes. Housing and General buildings both have low impacts to the mission at an event onset, but within a matter of hours the situation escalates for housing with the inability to feed or house people. General buildings can last several days in halted operations, after which is a severe hit in the ability to function as a university.

CRITICALITY TIMELINE



**GENERAL LEARNING, STUDENT SERVICES & ADMINISTRATION*

	MOST CRITICAL EVENTS	TOP SYSTEMS TO PROTECT	CAN THE FUNCTIONS BE PERFORMED SOMEWHERE ELSE?
HOUSING	FLOOD SECURITY THREAT	ELECTRICITY WATER HVAC	PARTIALLY
LABORATORIES	FLOOD POWER OUTAGE	ELECTRICITY WATER HVAC	NO
GENERAL*	SECURITY THREAT FIRE	SECURITY COMMS	YES

BUILDINGS CRITICAL TO PROTECT

	FIRST PRIORITY	SECOND PRIORITY
HOUSING	• UMC > Food • C4C > Food • Williams Village > Density	• Residences with food
LABORATORIES	• Facilities with freezers • Facilities with toxic gas	• Data and technology
GENERAL*	• Library > Preserve rare collections	• Administrative Buildings > Preserve university data • Large academic buildings > Density

Deferred Maintenance
X
Utility Cost
X
Work Orders
X
Safety Risk Factor
X
Criticality of Loss

BUILDING PRIORITIZATION FORMULA

APPENDIX

FUTURE DEMOGRAPHICS
Baseline Information

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

STUDENT ENROLLMENT

U/G & GRAD HEAD COUNT

Understanding the shift in student population:

- Student enrollment has increased by 38% (10k) over the past 25 years.

  CU Boulder ODA

- Boulder populations are expected to stabilize resulting in a marginal enrollment increase over the next 30 years (10%).

  Colorado State Demography Office

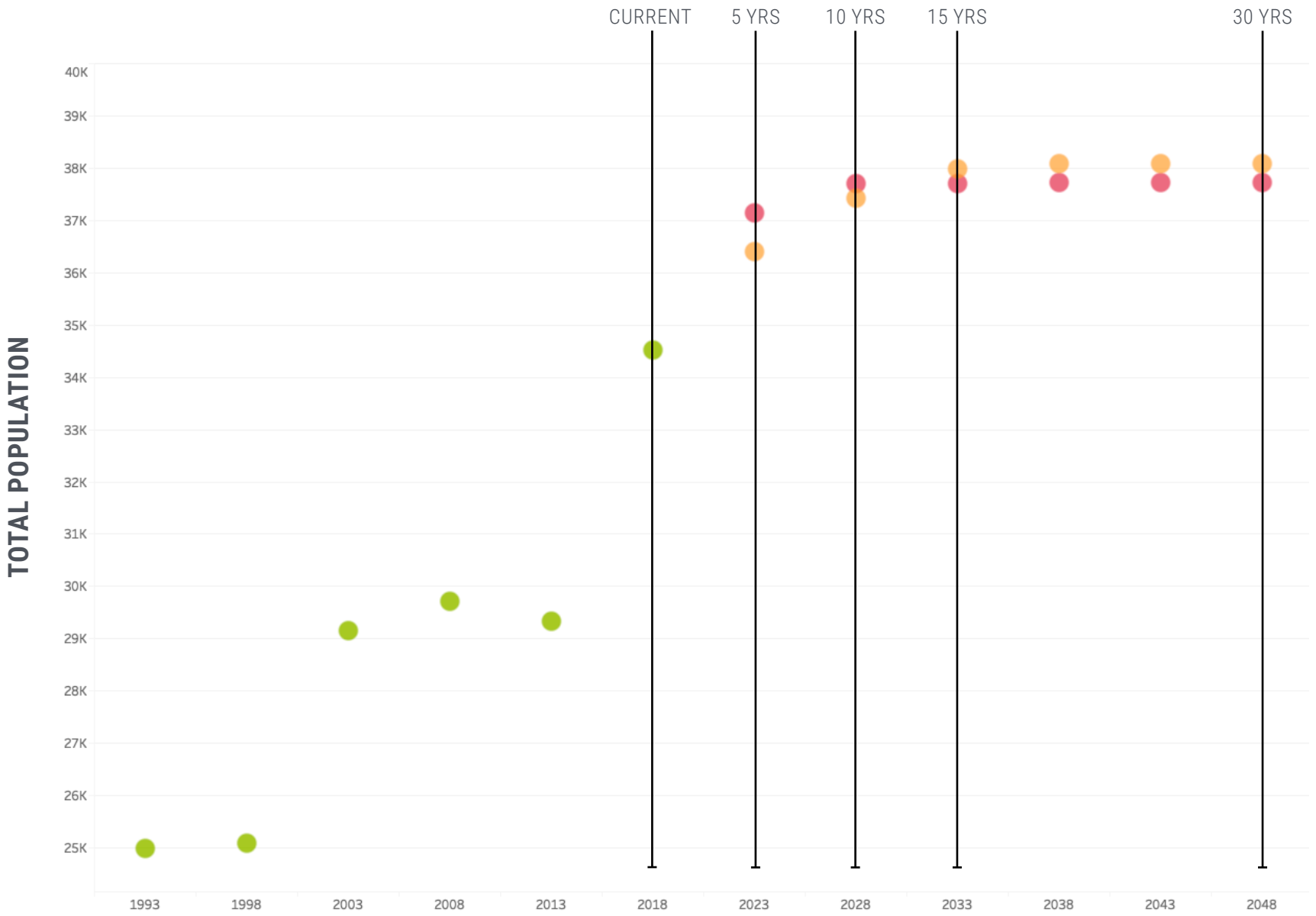
KEY

GROWTH PROJECTION
- 0.5% EACH YEAR FOR 2019-2023 (PROVIDED BY ODA), 0.25% ASSUMED FOR 2024-2028, AND 0% GROWTH THERE AFTER

STATE DEMOGRAPHIC GROWTH
FOLLOWS STATE POPULATION PROJECTION

HISTORIC GROWTH

DOES NOT INCLUDE ON LINE STUDENTS

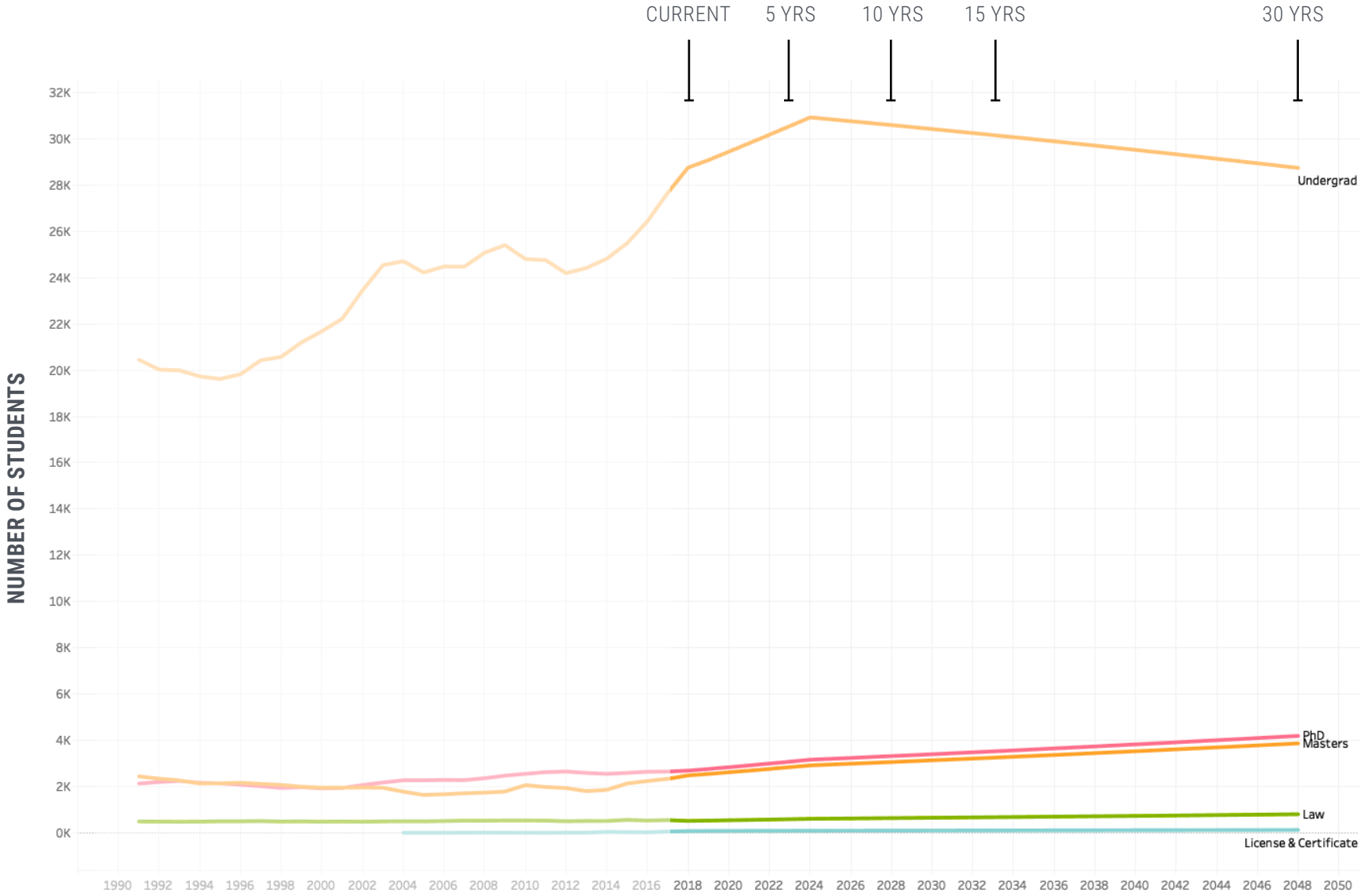


SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

LEARNER PROJECTIONS

Understanding the population breakdown of future students:

- U/G students are expected to remain the largest share of the student population
- Ph.D. and Masters students are expected to see the largest rates of growth over the next 30 years
- This would result in a demand for graduate education resources and infrastructure



SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

CHANGING U/G DEMOGRAPHICS

2019 -2023 projections provided by ODA

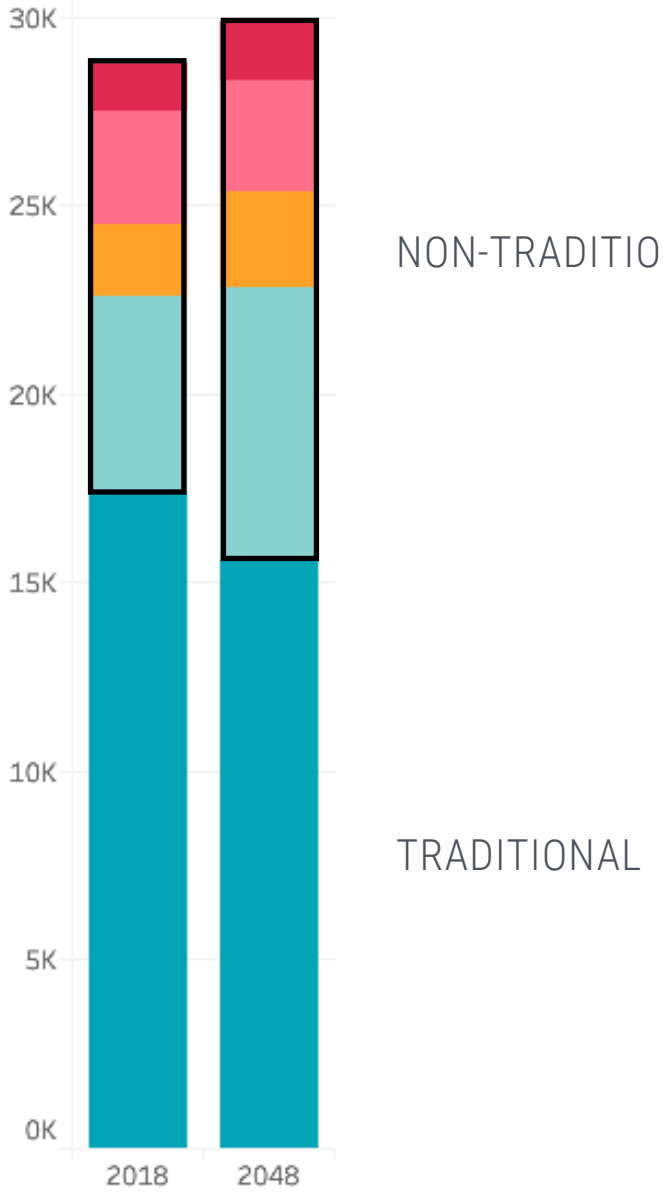
In the next 30 years U/G population is expected to grow by 4%. The following projections show the increase of total numbers by 2048:

- **293** Transfers
- **97** First Gen
- **703** International
- **2,055** Low SES

Over the next 30 years the mix of traditional (52%) and non-traditional (48%) students will equalize.

KEY

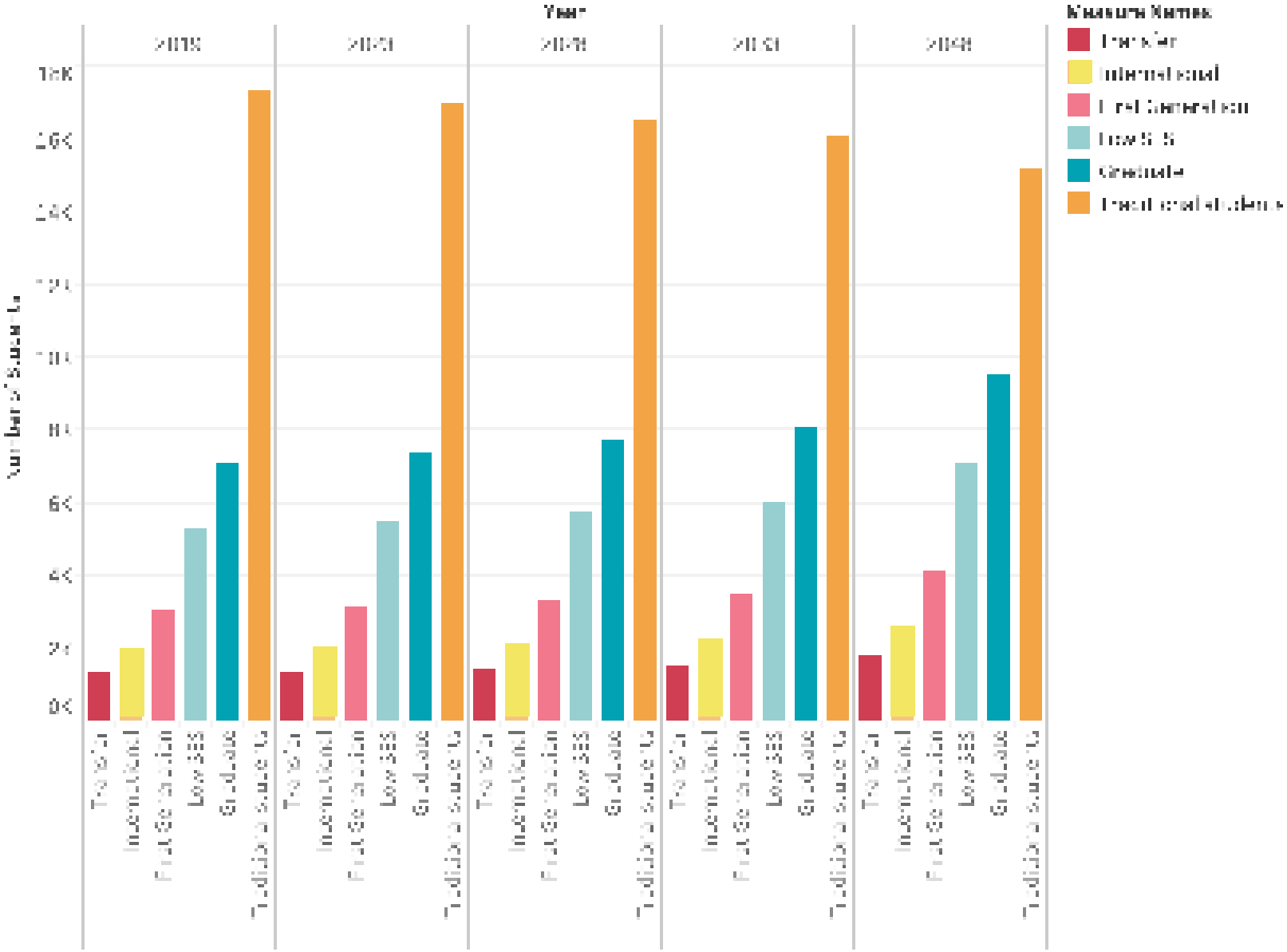
- TRANSFER
- FIRST GENERATION
- INTERNATIONAL
- LOW SES
- U/G TRADITIONAL



SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

DEMOGRAPHIC GROWTH OVER TIME

Increased non-traditional growth over time

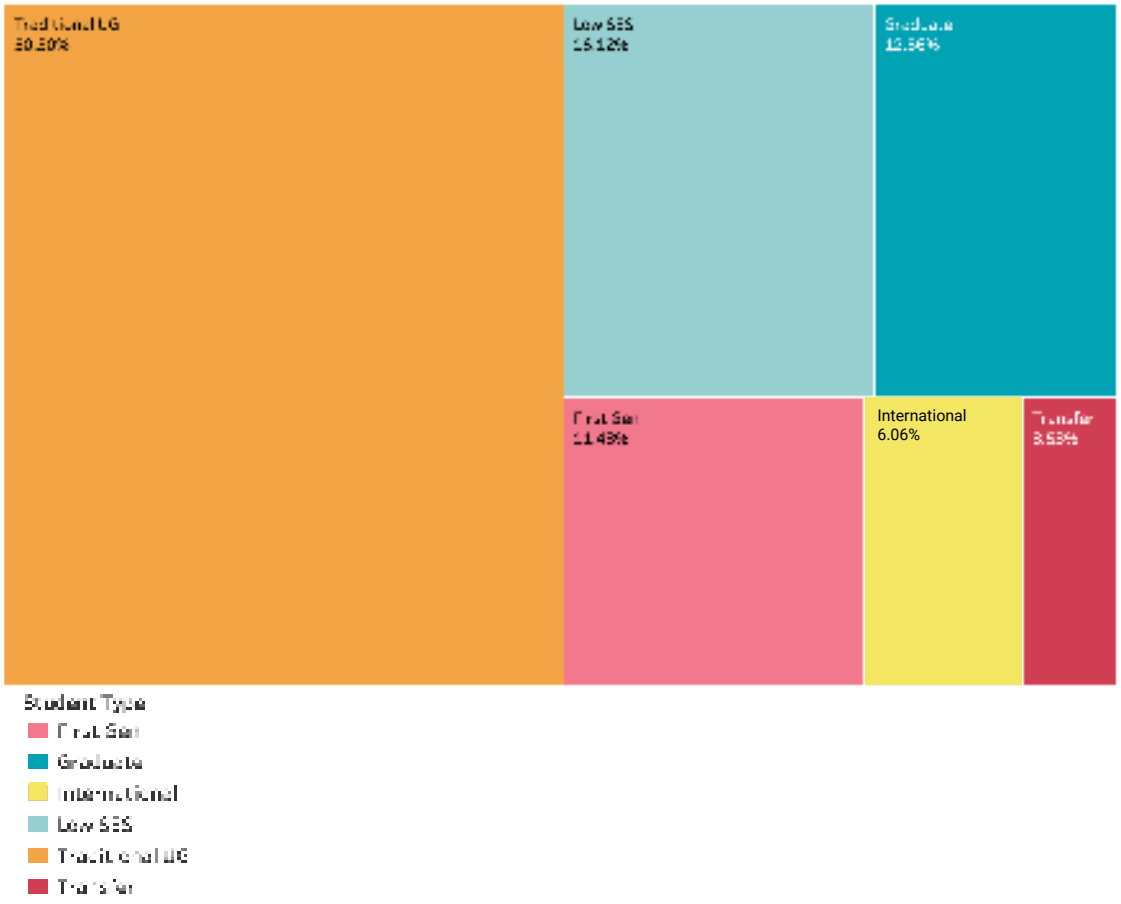


Strategic Facilities Visioning
UNIVERSITY OF COLORADO BOULDER

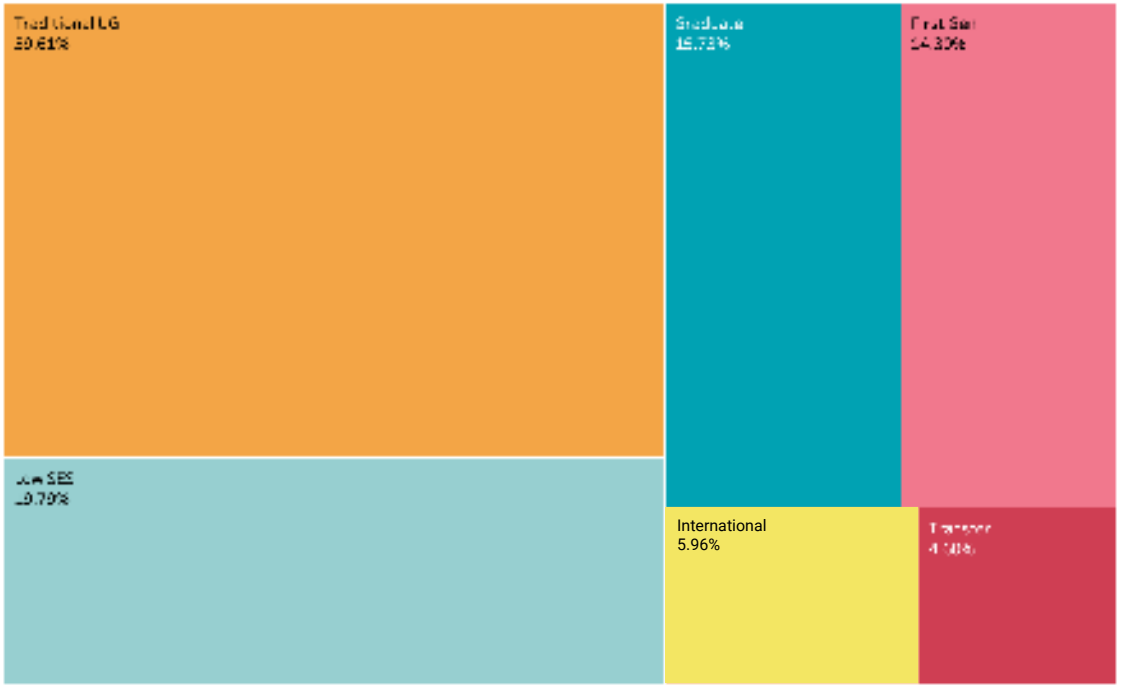
SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

CHANGING DEMOGRAPHICS

2018



2048



Strategic Facilities Visioning
UNIVERSITY OF COLORADO BOULDER

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

NEW DEMOGRAPHIC THEMES

THEME	**COMMUNITY**	**ACCOMMODATION**	**SUPPORT**
	Informal gathering spaces were desired across all demographics, with a particular emphasis on food as a community activity	Commuter hubs were an overwhelming desire across groups, followed by custom housing solutions including family, RAE, and upperclassmen housing	A combination of support, advising, and safe spaces were selected across all minority demographic groups

TOP IMAGES SELECTED							
						
FOOD/CAFÉ	SOCIAL	COMMUTER	THEMED HOUSING	ADVISING	SUPPORT	SAFE
# OF VOTES	7	11	8	5	6	9	7

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

GRADUATE STUDENT THEMES

THEME

ACCOMMODATIONS

Accommodations specifically tailored to graduate students which are affordable, support families, and create community

GRADUATE BUILDING

The most desired space for graduate students is a graduate building home base with administration, a student lounge, café, health clinic, and writing center

TOP IMAGES SELECTED

CHILD CARE

APARTMENT

THEMED HOUSING

WORKPLACE

FOOD/CAFÉ

SUPPORT

SAFE

GRADUATE BUILDING

OF VOTES

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

INTERNATIONAL STUDENT THEMES

THEME	**ACCOMMODATIONS**	**SUPPORT SERVICES**	**SUPPORT**
	High quality living environments give international students a balance between the comforts of home and ties to the local community	Support services designed to aid international students with the challenges of a US lifestyle, including visa and tax assistance, health insurance, child care, and English proficiency	Community spaces facilitate cultural affiliations, peer-to-peer networks, and safe spaces to pray and meditate

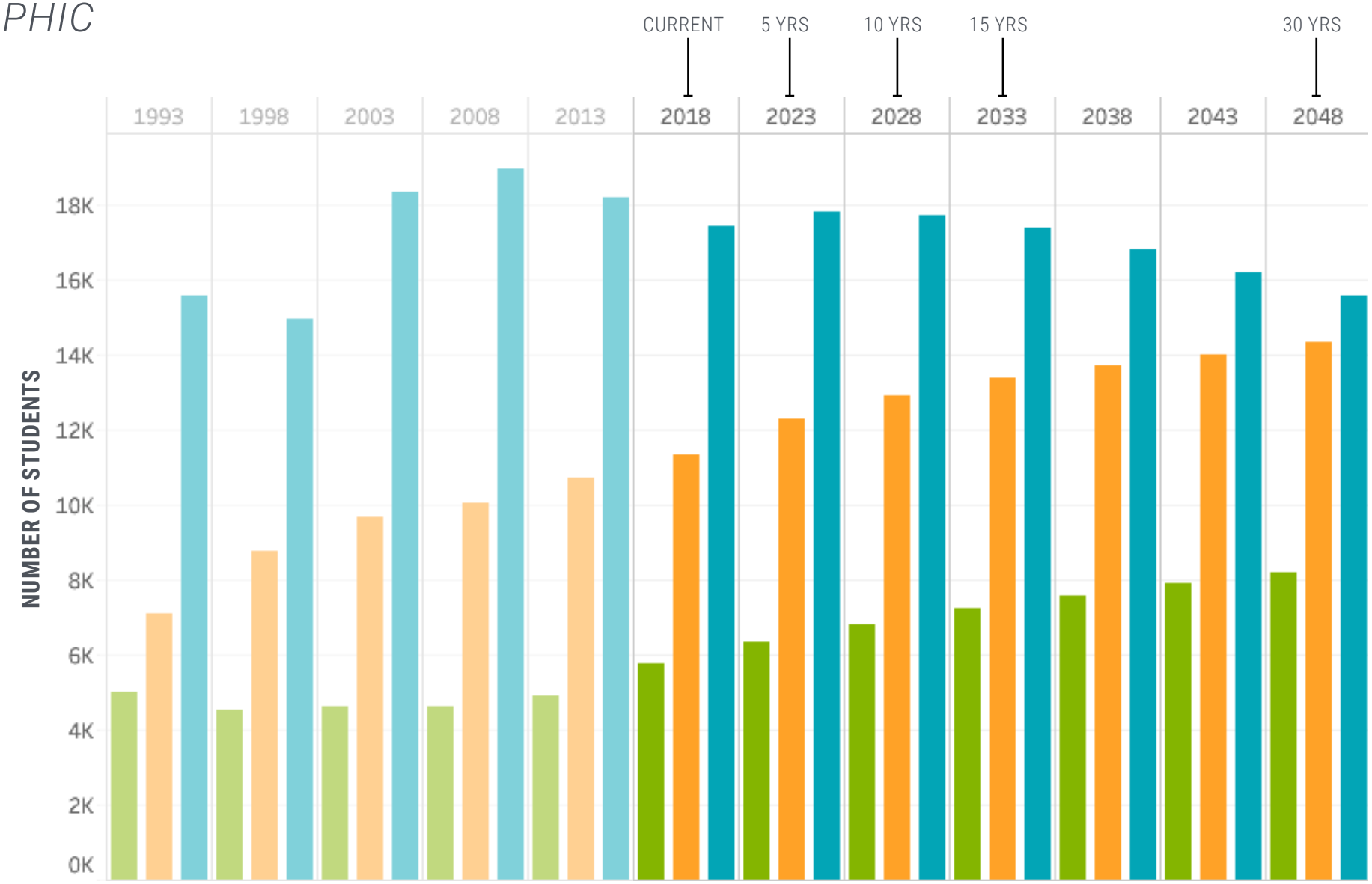
TOP IMAGES SELECTED	 CHILD CARE	 APARTMENT	 COMMUTER	 DORM ROOM	 ADVISING	 SUPPORT	 TUTORING CENTER	 SOCIAL	 COMMUNAL	 FOOD/CAFÉ	 SAFE
# OF VOTES	2	2	2	1	1	4	1	3	4	1	1

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

POTENTIAL DEMOGRAPHIC CHANGE OVER TIME

Based on CU Boulder predictions, demographic enrollment changes may include:

- Traditional students decreasing 10% over time
- U/G non-traditional population grow by 26% (low SES, international, first gen, transfer)
- Graduate population (whole population) grow by ~60%



KEY

- GRADUATE (WHOLE POPULATION)
- U/G NON-TRADITIONAL STUDENTS
- U/G TRADITIONAL STUDENT

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

LOW SOCIOECONOMIC STUDENT THEMES

THEME

CAMPUS HOME BASE

Touchdown and rest spaces for commuter students as well as affordable housing for upperclassmen allow students to maintain a home on campus

NETWORKED CAMPUS

Facilitate supportive work environments with bookable meeting rooms, café's with extended hours, and social hubs for student groups

TOP IMAGES SELECTED

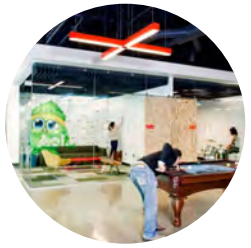
COMMUTER

SAFE

THEMED HOUSING

MEETING ROOM

FOOD/CAFÉ



SOCIAL

OF VOTES

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

TRANSFER STUDENT THEMES

THEME

SOCIAL INTEGRATION

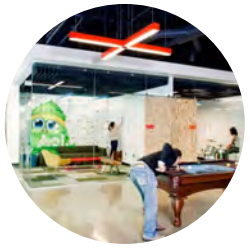
Enable transfer students to develop their sense of community on a new campus

ACADEMICS

Create an exciting academic culture that feels personal and lets students maximize every credit hour

TOP IMAGES SELECTED

COMMUTER



SOCIAL

GATHERING/ EVENT

ACTIVE CLASSROOM

HUDDLE ROOM

INFORMAL STUDY

ADVISING

OF VOTES

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

FIRST GENERATION STUDENT THEMES

THEME

PEER NETWORKS

Create spaces for students to find their home on campus and develop peer to peer networks

CAMPUS SUPPORT

Develop a networked approach to services, resources, and advising for first generation students and families

TOP IMAGES SELECTED

COMMUTER


SOCIAL


FOOD/ CAFÉ


COMMUTER


INTERACTION WITH FACULTY


ON-CAMPUS EMPLOYMENT


SUPPORT


SAFE


ADVISING

OF VOTES

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

TRADITIONAL STUDENT THEMES

THEME

ACADEMIC EXCELLENCE

Learning environments that students enjoy spending time in and a suite of study spaces that facilitate independent and group work

COMMUNITY AFFILIATION

Provide a home on campus that extends beyond the academic to include ample social and recreational spaces

TOP IMAGES SELECTED


ACTIVE CLASSROOM


LECTURE


INFORMAL STUDY

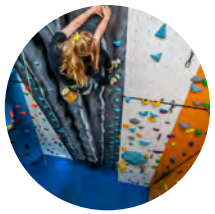

FORMAL STUDY


MEETING ROOM


DORM


SOCIAL


THEMED HOUSING


RECREATION


OUTDOOR

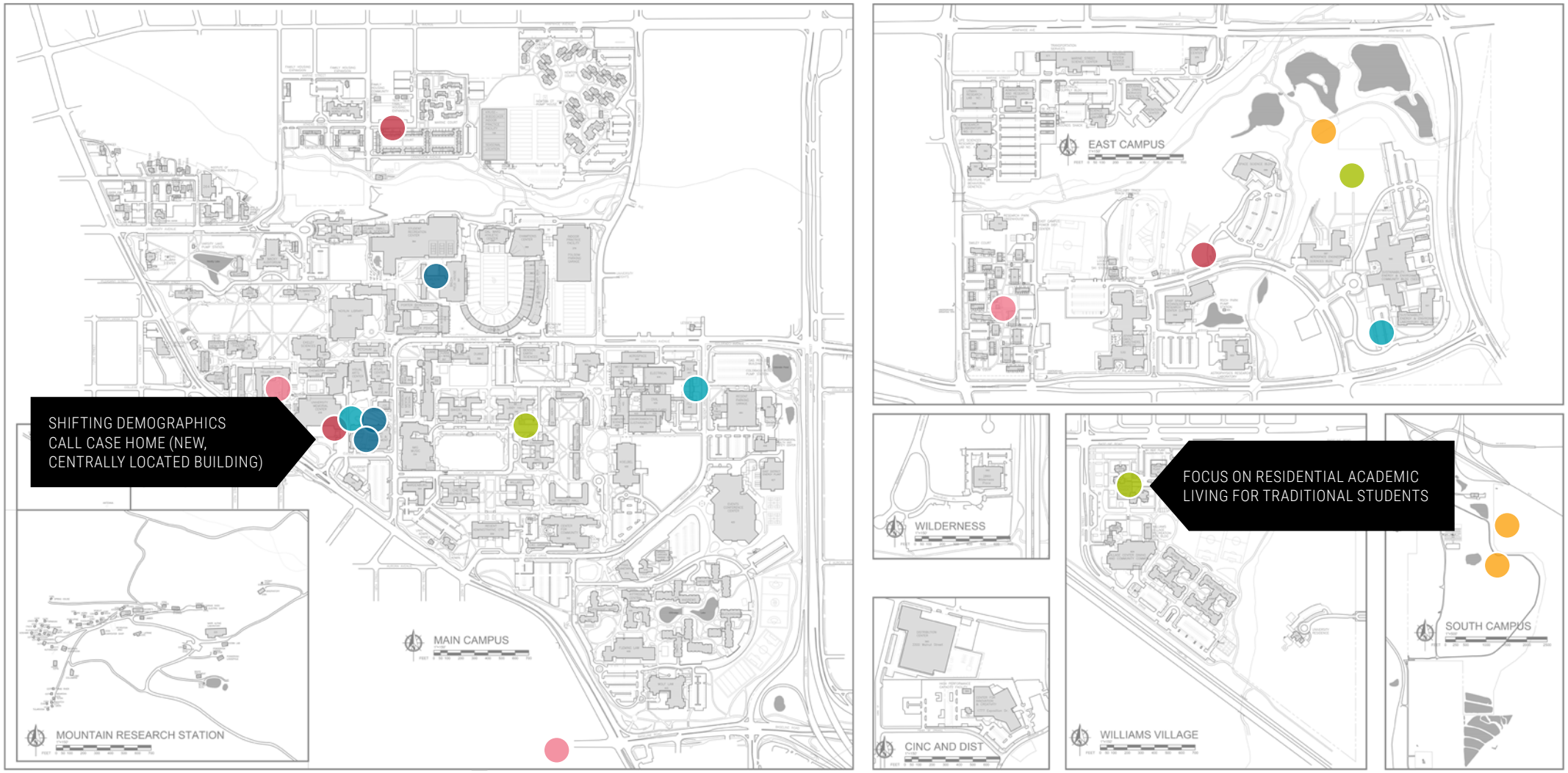
OF VOTES

SCENARIO PLANNING 1 FUTURE DEMOGRAPHICS

FUTURE DEMOGRAPHICS MAP

KEY

- FIRST GEN
- GRADUATE
- INTERNATIONAL
- LOW SES
- TRADITIONAL
- TRANSFER



PORTFOLIO OF PEDAGOGY

Baseline Information

SCENARIO PLANNING 1 PORTFOLIO OF PEDAGOGY

PORTFOLIO OF PEDAGOGY THEMES

THEME

ENGAGED LEARNING

Interactive & hands on learning experiences that immerse students in new areas of interest and encourage self exploration

STUDY

Increased study spaces allow students to work in groups in both quiet & focused and informal & interactive environments

---

TOP IMAGES SELECTED

ACTIVE CLASSROOM

SMALL CLASSROOM

MAKERSPACE

HUDDLE ROOM

INFORMAL STUDY

SCENARIO PLANNING 1 PORTFOLIO OF PEDAGOGY

UNDERGRAD STUDENT THEMES

THEME

ENGAGED LEARNING

Formal and informal interactive learning environments that allow students to shift from static to engaged learning

FLUID COMMUNITY

In an environment where the lines between learning and social experiences are blurred, a portfolio of multi-use spaces encourage community and allows students to move seamlessly from one activity to the next

---

TOP IMAGES SELECTED

ACTIVE CLASSROOM

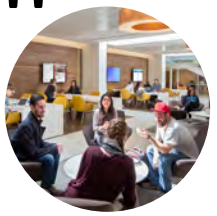
SMALL LECTURE

STUDIO

MAKER-SPACE

IDEATION/ CO-CREATION

HUDDLE ROOM



INFORMAL STUDY

COMMUNAL

OUTDOOR

SCENARIO PLANNING 1 PORTFOLIO OF PEDAGOGY

MASTERS STUDENT THEMES

THEME

WORKPLACE

Small classrooms designed to dive into complicated ideas, with writable walls and co-creation space, private, reservable meeting rooms, and spaces for hands-on work and real-world experiences

COMMUNITY BUILDING

Spaces that cultivate community both within a discipline and in the greater graduate student community with informal and flexible spaces for both social and study

---

TOP IMAGES SELECTED

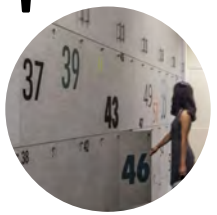
FIELD WORK

SMALL CLASSROOM

HUDDLE ROOM

MAKER-SPACE

FLEX LAB



COMMUTER

FOOD/CAFÉ

GATHERING/ EVENT

INFORMAL STUDY

SCENARIO PLANNING 1 PORTFOLIO OF PEDAGOGY

PHD STUDENT THEMES

THEME

LIVING

Affordable housing and recreation spaces close to campus, allowing students to easily get to work, and also get away from work

WORKPLACE

Provide PhD students with a spectrum of workplaces, from individual assigned to informal collaborative spaces

ACTIVE EDUCATION

Education spaces that best enable PhD students to work hands on in their field

TOP IMAGES SELECTED

APARTMENT

RECREATION

WORKPLACE

INFORMAL STUDY

ACTIVE CLASSROOM

COMPUTER

SHARED LAB

FORMAL LAB

SCENARIO PLANNING 1 PORTFOLIO OF PEDAGOGY

LICENSURE & CERTIFICATE STUDENT THEMES

THEME

ACADEMIC INTEGRATION

Provide licensure and certificate students the same portfolio and quality of spaces as the larger university

HOME BASE

Enable students to feel a sense of comfort through touchdown and community areas

DISTANCE LEARNING

Reach a larger number of students with distance learning capabilities

TOP IMAGES SELECTED

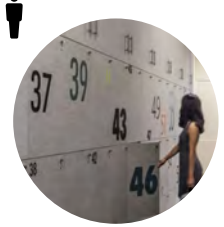
ACTIVE CLASSROOM

SMALL CLASS-ROOM

PROJECT CLASS-ROOM

WORKPLACE

MAKER SPACE



COMMUTER

SOCIAL

HYBRID CLASSROOM

IDEATION/ CO-CREATION

SMALL LECTURE

RECREATION

MEDIA LAB

FOOD / CAFÉ

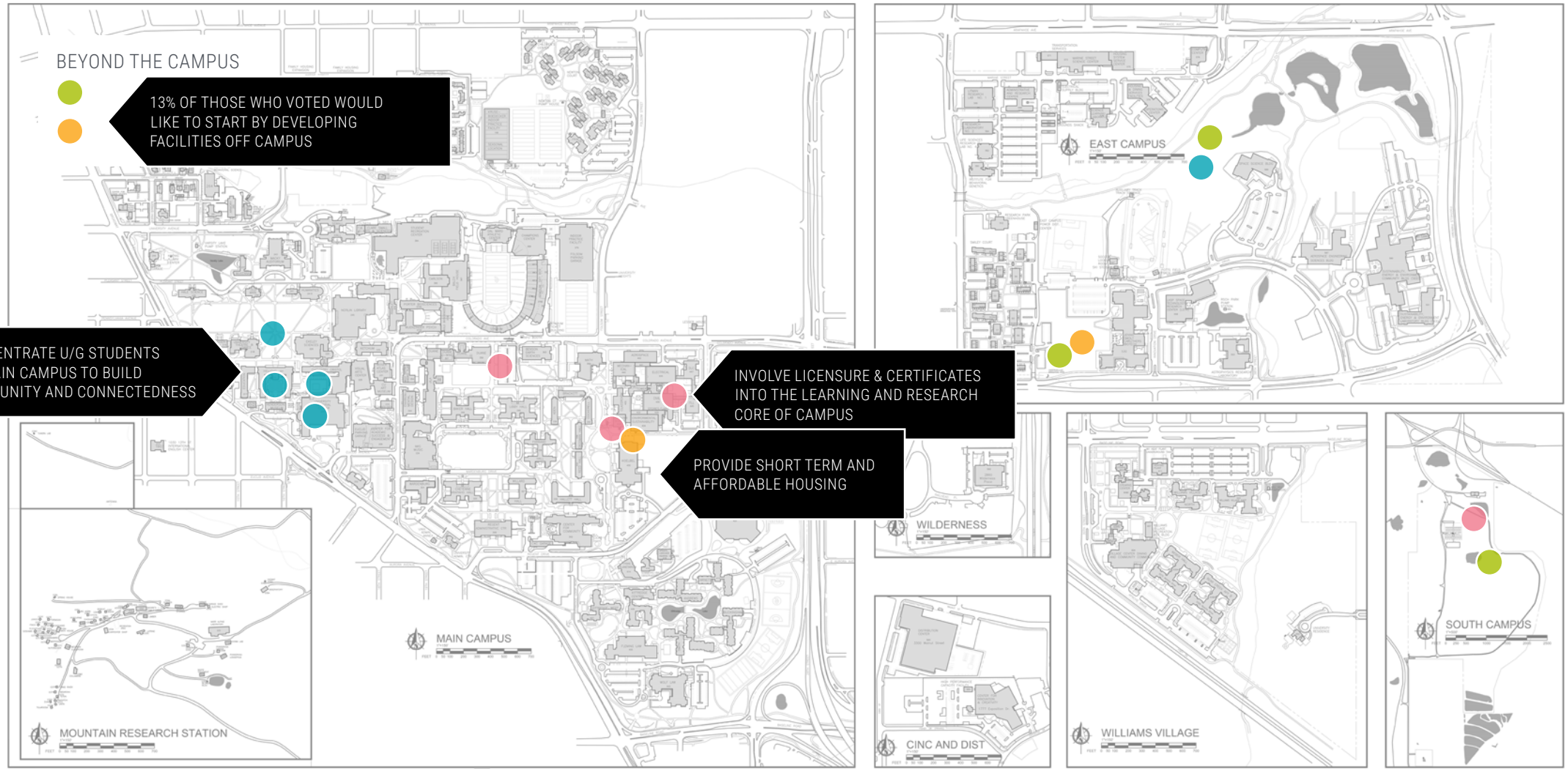
OFF CAMPUS INSTRUCTION

SCENARIO PLANNING 1 PORTFOLIO OF PEDAGOGY

PORTFOLIO OF PEDAGOGY

KEY

- U/G
- MASTERS
- PHD
- LICENSURE & CERTIFICATES



RESEARCH & INNOVATION ECOSYSTEM

Baseline Information

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

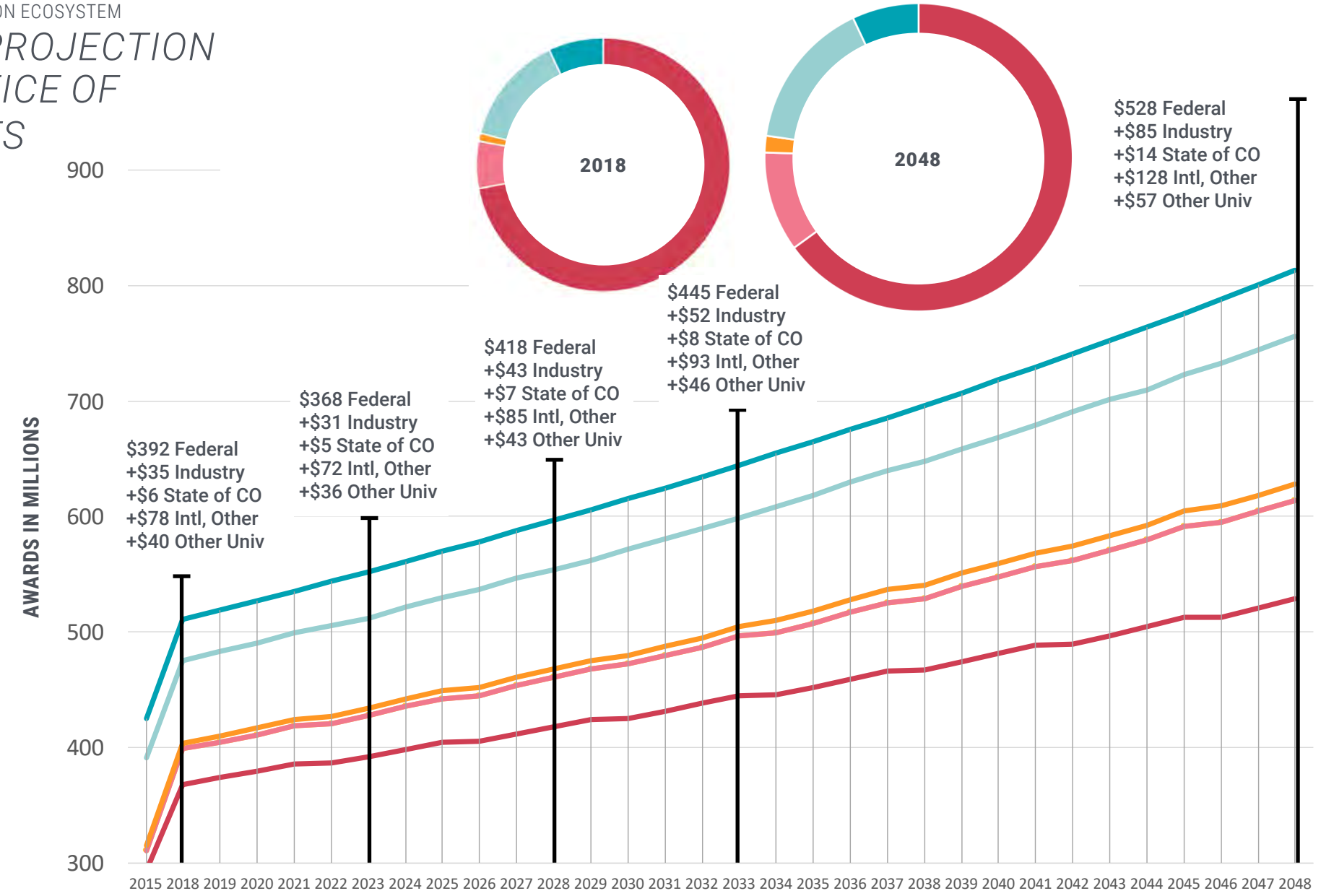
RESEARCH AWARDS PROJECTION PER CU BOULDER OFFICE OF CONTRACTS & GRANTS

GROWTH
The overall portfolio grows at 1.5% per year, adjusted for 4% inflation on an annual basis for 30 years

DIVERSITY
The share of the non-federal expenditures grows from historic average of 25% to 35% over 30 years

INDUSTRY FUNDING
The share of the non-federal industry awards increases to 10%, more than doubling in total size over 30 years

KEY
- FEDERAL
- INDUSTRY
- STATE OF CO
- INTL, NON-PROFIT, OTHER
- OTHER UNIVERSITIES



SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

RESEARCH & INNOVATION ECOSYSTEM THEMES

THEME

SYSTEMS APPROACH

Campus wide research infrastructure that supports opportunities and help them flourish, including available startup, pop-up, and lab space, research support systems with grant identification, translation, business development, and campus-centered home bases for researchers and labs

COLLABORATIVE STRUCTURE

Facilitate interdisciplinary research through thematic neighborhoods of shared core facilities, coworking spaces, and colocation

---

TOP IMAGES SELECTED

ENTREPRENEURIAL

SHELLS & POPUPS

CU COMMUNITY CORES

RESEARCH SUPPORT

CORE FACILITIES

COWORKING SPACE

NEIGHBORHOODS

CO-LOCATION

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

ENTREPRENEURSHIP, TRANSLATION & COMMERCIALIZATION THEMES

THEME

WORKPLACE

A variety of working environments including bookable rooms, thematic coworking space, and high quality quiet workplaces

APPLIED RESEARCH

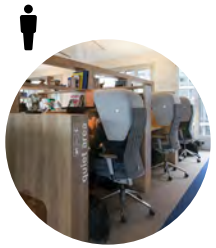
Dedicated, flexible spaces available to take advantage of opportunities, including an incubator for spin-offs and pop-ups for spontaneous opportunities

---

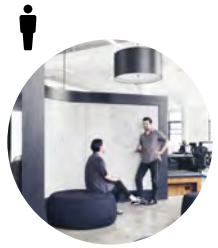
TOP IMAGES SELECTED

MEETING SPACE

COWORKING SPACE



QUIET OFFICES



STARTUP SPACE/ INCUBATOR

RESEARCH LAB - APPLIED

POP-UP SPACE

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

ENGAGED COLLABORATIVE & COMMUNITY RESEARCH

THEME

CU ENGAGEMENTS

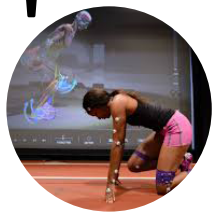
There is a preference for creating research engagements on campus as opposed to external locations, and pairing on-campus engagements with multi-media collaborations to engage at a distance

COMMUNITY ENGAGEMENTS

Community and online engagements to help increase access to the university, with an additional online component such as, “tinder for research projects”, to increase research collaborations with external entities

---

TOP IMAGES SELECTED



CONSUMER TESTING - AT CU

CLINIC - AT CU

PERFORMANCE SPACE - AT CU

CLASSES - IN COMMUNITY

ONLINE PLATFORM

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

LEARNING IN RESEARCH

THEME

PARTNERSHIPS

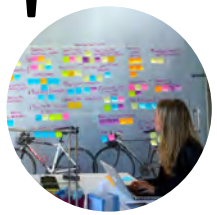
Tie industry work to the classroom with projects, visits, skill shares, & co-location adjacent to classrooms

SELF-GUIDED LEARNING

Draw students in with organic communities that encourage hacking and curiosity, enabling students to find their passion where they were not initially looking

---

TOP IMAGES SELECTED



INTERNSHIP/ SHADOW

CO-LOCATION

IMMERSION PROGRAM

FIELD WORK

MAKERSPACE

IMMERSIVE TECHNOLOGY

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

HIGH PERFORMANCE RESEARCH ENVIRONMENTS

THEME

COLLABORATIVE SPACES

Spaces to intentionally share resources and ideas with fellow researchers, particularly on a day to day working basis

READY ENVIRONMENT

Portfolio of environments that enable high -touch, high performance research the moment opportunities arise

---

TOP IMAGES SELECTED

HOTEL/ CONFERENCE

COWORKING SPACES

CORE FACILITY-EQUIPMENT

ACCESS & SHARING OF RESEARCH

OUTDOOR

COLD/WARM SHELL

HIGH PERFORMANCE COMPUTING

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

INTERDISCIPLINARY RESEARCH THROUGH SHARED RESOURCES

THEME

CORE SPACES

Bring together different disciplines through centralized thematic neighborhoods designed around high-performance coworking spaces, outfitted with a variety of shared tools & services for project success

PERIPHERY SPACES

Core lab & instrumentation facilities are placed adjacent to workplace neighborhoods for increased research collaboration and efficient use of resources

TOP IMAGES SELECTED

PROJECT DIS-PLAY

COWORKING SPACES

PINUP SPACE

NEIGHBORHOODS

RESEARCH SUPPORT

CORE FACILITIES (ALL)

INSTRUMENTATION LAB

125

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

SUPPORTING THE $2 BILLION ENTERPRISE

THEME

SUPPORT SYSTEMS

Integrate support functions into a seamless system that supports research endeavors across the university, taking the PI out of the administrative equation and increasing productivity

COLLABORATIVE WORKPLACE

Develop innovative financial models that connect funding silos into a collaborative research system, realized in space by shared core facilities, coworking space, and start-up support

TOP IMAGES SELECTED


GRANT SUPPORT


LAB OPERATION MANAGEMENT


TECH TRANSFER


GRANT IDENTIFICATION


LICENSE / PATENT DEVELOPMENT


BUSINESS DEVELOPMENT & MARKETING


CONTRACTING & LEGAL ADMINISTRATION


CORE FACILITIES


COWORKING SPACE


FINANCIAL MODELS FOR COLLABORATIVE RESEARCH


ENTREPRENEURIAL

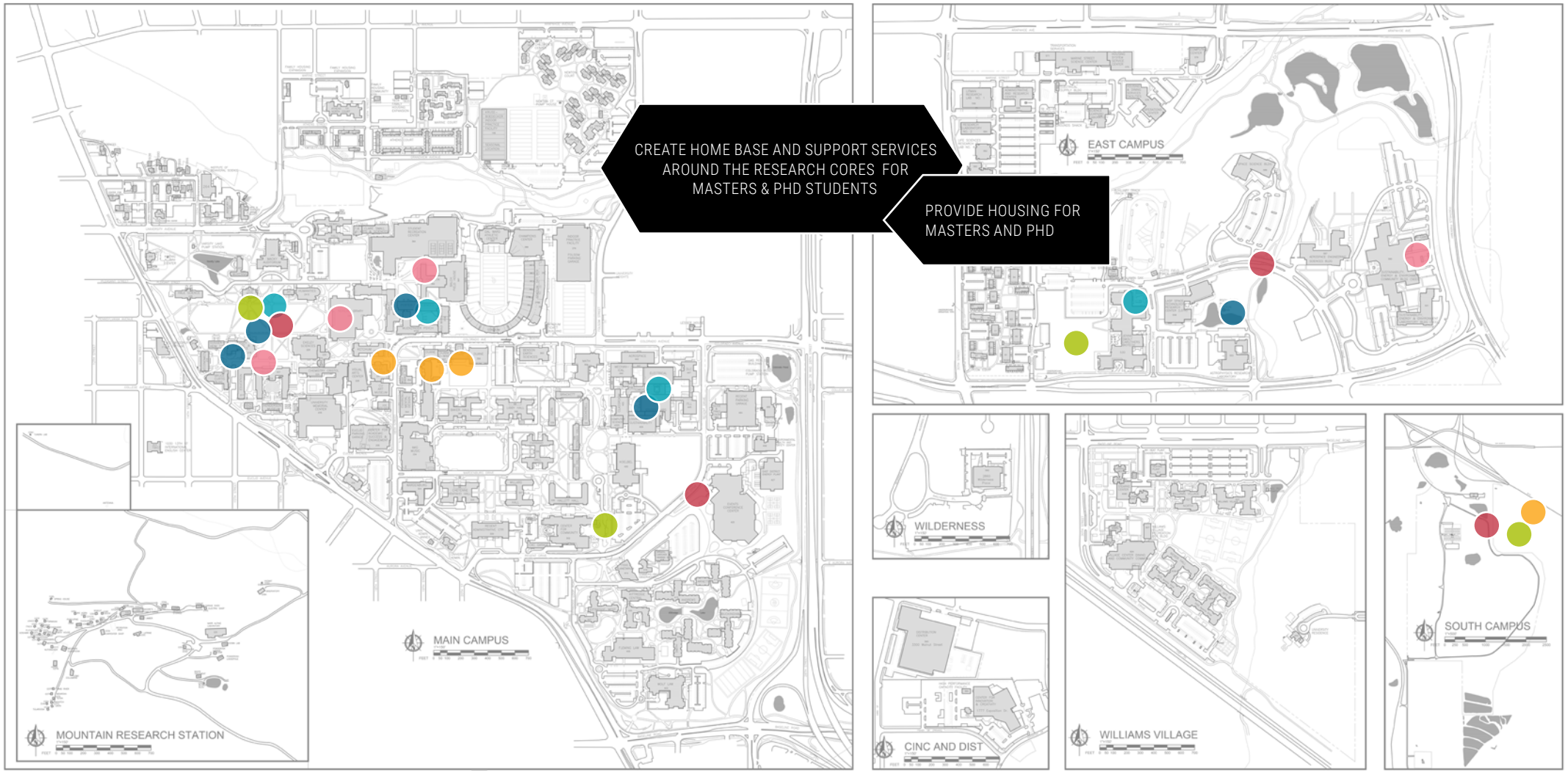

VIDEO CONFERENCING

SCENARIO PLANNING 1 RESEARCH & INNOVATION ECOSYSTEM

RESEARCH & INNOVATION ECOSYSTEM

KEY

- INTERDISCIPLINARY RESEARCH THROUGH SHARED RESOURCES
- SUPPORTING THE $2 BILLION ENTERPRISE
- HIGH PERFORMANCE RESEARCH ENVIRONMENTS
- LEARNING IN RESEARCH
- ENGAGE COLLABORATIVE & COMMUNITY RESEARCH
- ENTREPRENEURSHIP, TRANSLATION & COMMERCIALIZATION



RESEARCH & INNOVATION ECOSYSTEM

UNIQUE & SHARED RESOURCES

	BUILDING	NEIGHBORHOOD	CAMPUS	SINGLE LOCATION
CRYOGENICS	●	●	●	●
CLEAN ROOM 3	●	●		●
FREEZER	●	●		●
MACHINING/FABRICATION/WELDING	●	●		
ROBOTICS	●	●		
TISSUE/CELL CULTURE	●	●		
DIRTY ROOMS	●			
LASERS	●			●
SAMPLE PROCESSING	●			
ANIMAL		●	●	
BLACK BOX PERFORMANCE/THEATER		●	●	
CLINICS		●	●	
DISPLAY		●	●	
MASS SPECTROMETRY		●	●	
ART FACILITIES		●		
BIOREPOSITORY LONG TERM		●		●
CLEAN ROOM CHIP		●		
GENOMIS/SEQUENCING		●		
IMAGING		●		
IMMERSIVE ENVIRONMENTS		●		
LIBRARY COLLECTIONS		●		●
LIGHT MICROSCOPY		●		
MUSEUM ARCHIVAL		●		●
PROTEIN PRODUCTION		●		
VISUALIZATION		●		
X-RAY CRYSTALLOGRAPHY			●	●
TELESCOPE				●

THEMATIC HUBS

IN ALL THEMATIC HUBS

- Analytics
- Exhibit Space
- Research on Display
- Outreach & Community Engagement
- Material Characterization & Creation
- Collections & Data Storage
- Wellbeing
- Foundational Data Analytics

ARTS

- Display
- Performance
- Collections
- Immersive Environments
- Digital Humanities
- Technology-oriented programs

ENVIRONMENT

- Clean Room
- Analytics
- Data Visualization

LIFE SCIENCES

- Culture
- General bio tools
- Imaging
- Geonomics
- Econ Cytometry
- Freezers

STUDENT EXPOSURE

- Robotics
- Performance
- Machining
- Bio work
- Museums

SURFACE MATERIALS

- Electron Microscopes
- Mass Spec
- Lasers
- Nano-fabrication
- Clean Room

WELLBEING

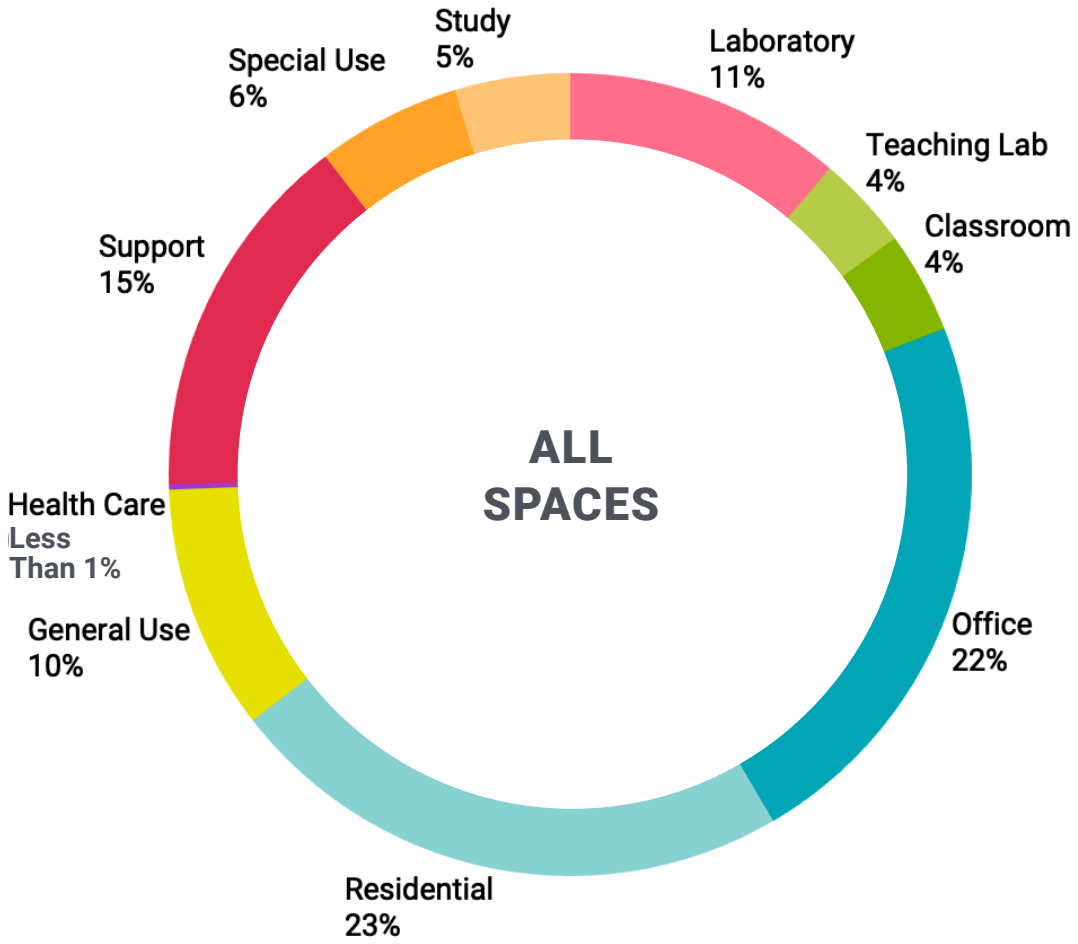
- Healthy Lifespan
- Psychology
- Mental Health
- Athletics
- Outreach
- Clinics
- Geonomics
- Art
- Exhibit

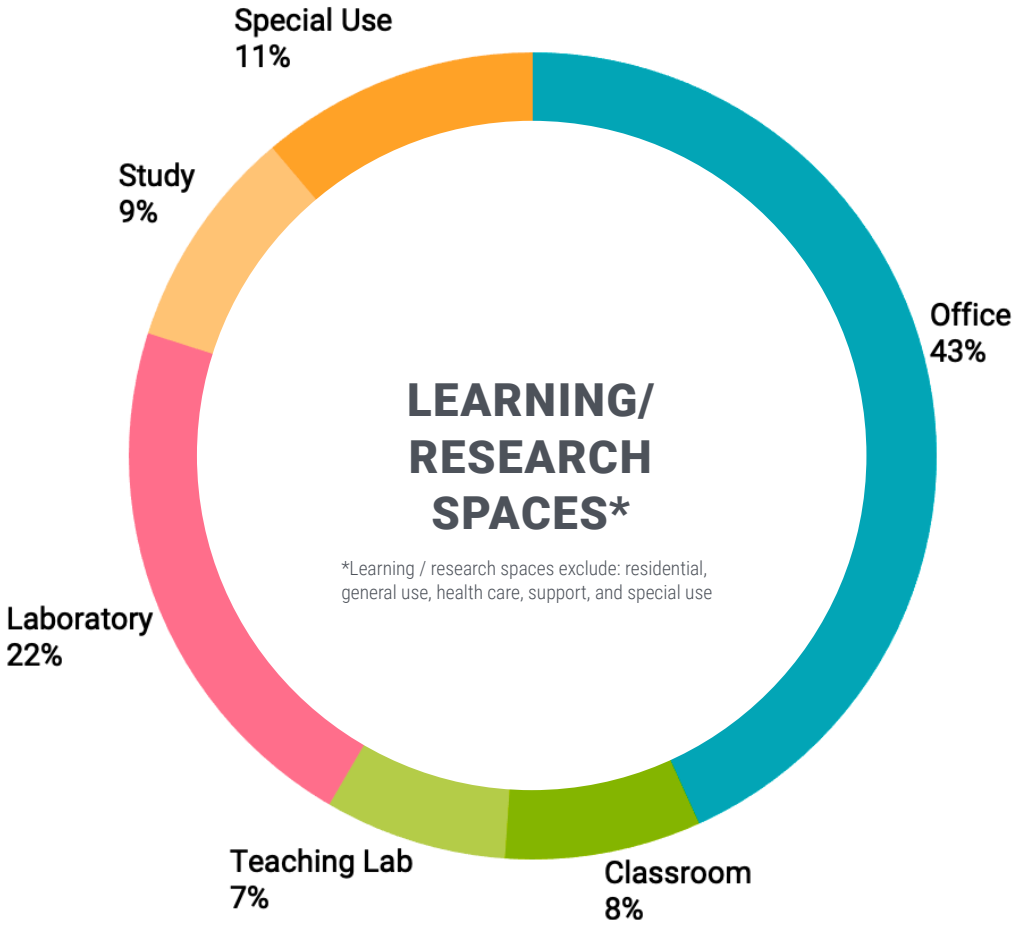
FEDERATED FLEXIBILITY

Baseline Information

SCENARIO PLANNING 1 FEDERATED FLEXIBILITY

CAMPUS SPACE ALLOCATION BREAKDOWN PER CU BOULDER FACILITIES MANAGEMENT





FICM CODES

CLASSROOM
Classroom

LABORATORY
Class Laboratory
Open Laboratory
Research/Non-class Lab

OFFICE
Office
Conference Room

STUDY
Study Room
Stack
Open-Stack Study Room
Processing Room

SPECIAL USE
Armory
Athletic / Physical Education
Athletic Spectator Seating
Media Production
Clinic
Animal Facilities
Greenhouse
All Purpose

GENERAL USE
Assembly
Exhibition
Food Facility
Lounge
Merchandising
Recreation
Meeting Room

SUPPORT
Central Computer / Telecommunications
Shop
Storage
Vehicle Storage
Hazardous Waste Service

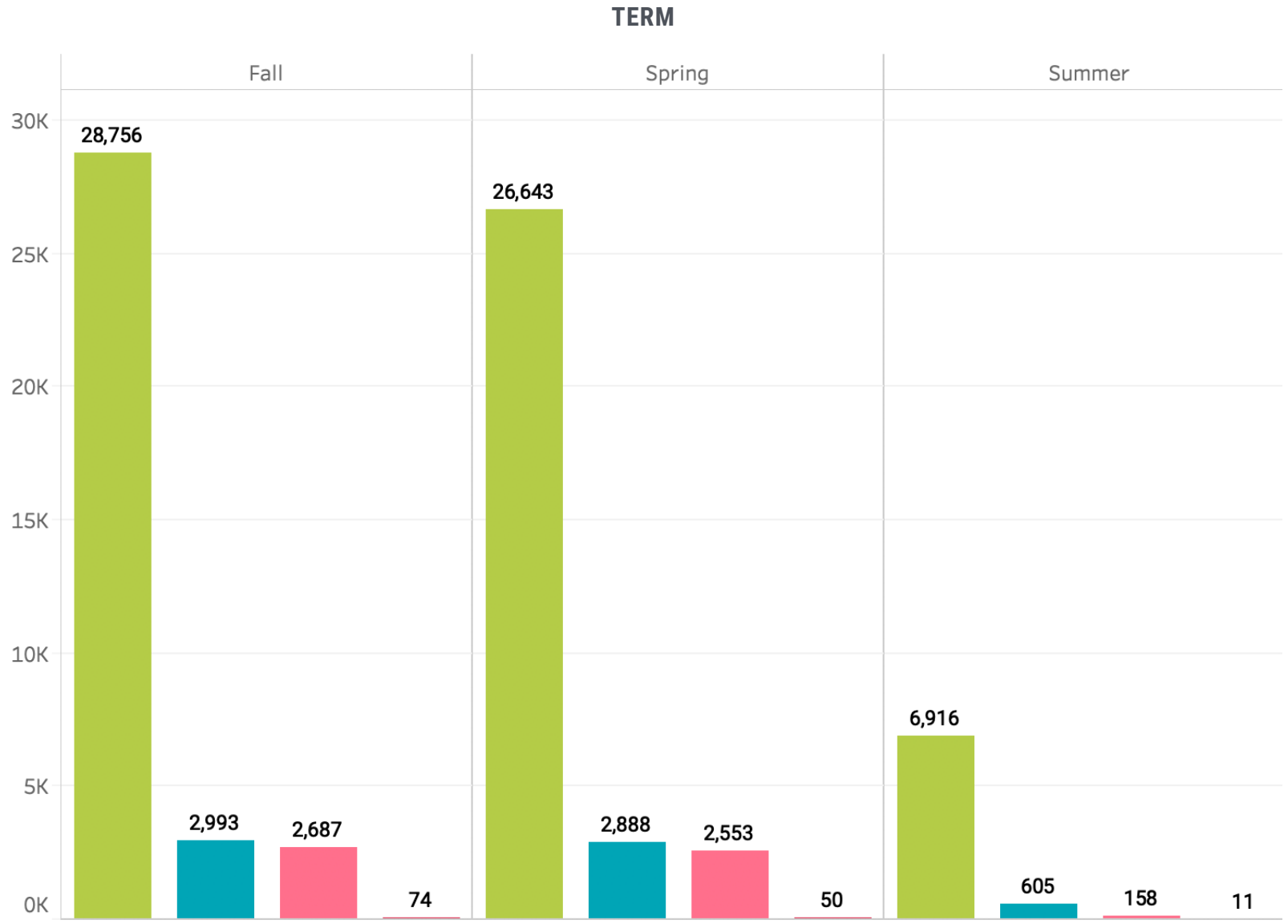
RESIDENTIAL
Sleep/Study
Apartment
House

Strategic Facilities Visioning
UNIVERSITY OF COLORADO BOULDER

SCENARIO PLANNING 1 FEDERATED FLEXIBILITY

USING OUR FACILITIES OVER SUMMER

Just under a quarter of students are taking at least one summer class at CU Boulder.

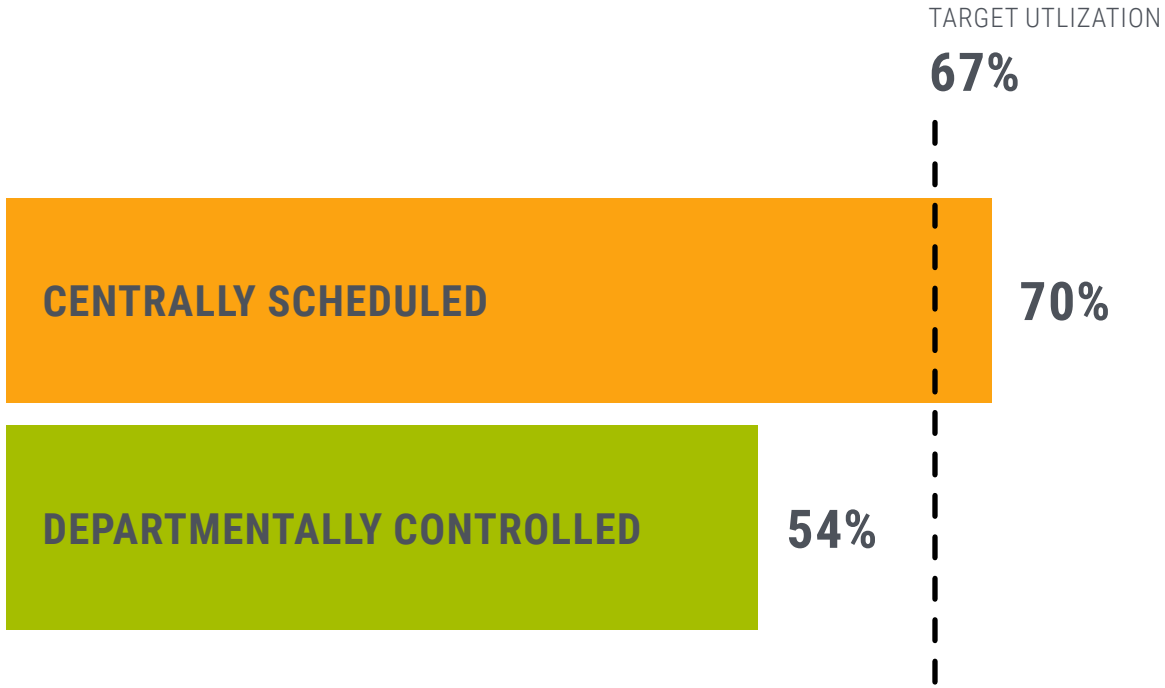


SCENARIO PLANNING 1 FEDERATED FLEXIBILITY

CLASSROOM UTILIZATION BREAKDOWN

CU Boulder utilization targets:

- Classrooms: 35 hours @ 67% utilization per week
- Teaching Labs: 20 hours @ 80% utilization per week
- Classroom sized 0-24 have the highest utilization in both centrally scheduled and departmentally controlled
- Meeting targets would allow space for an additional 6,000 full time students



SCENARIO PLANNING 1 FEDERATED FLEXIBILITY

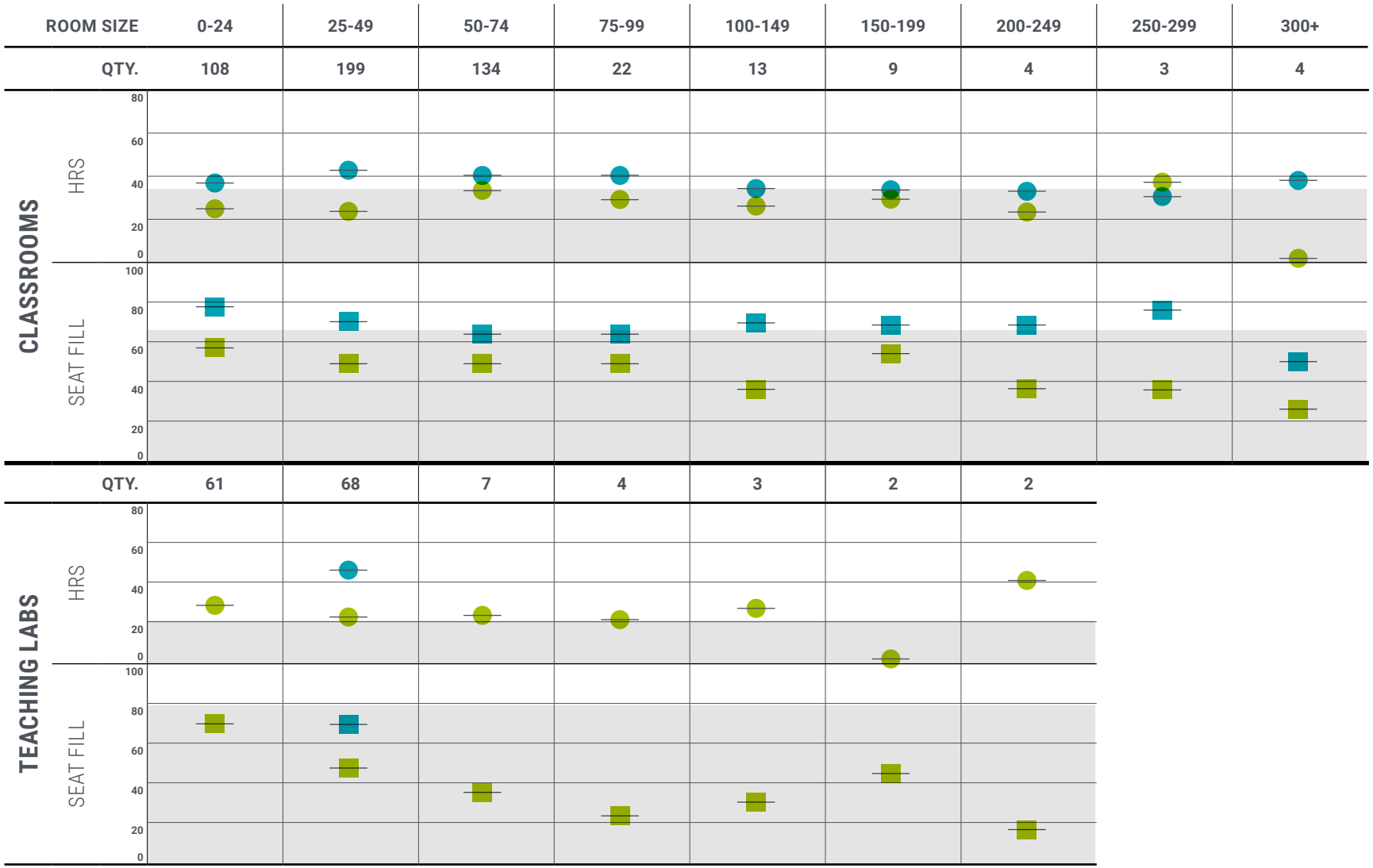
CLASSROOM & TEACHING LAB UTILIZATION BREAKDOWN

CU Boulder utilization targets:

- Classrooms sized 0-24 have the highest efficiency in both centrally scheduled and departmentally controlled
- The greatest utlization increase is classrooms sized 25-49 due to the quanity of classrooms
- Teaching labs tend to be over scheduled yet have low seat fill

KEY

- CENTRALLY SCHEDULED
- DEPARTMENTALLY CONTROLLED

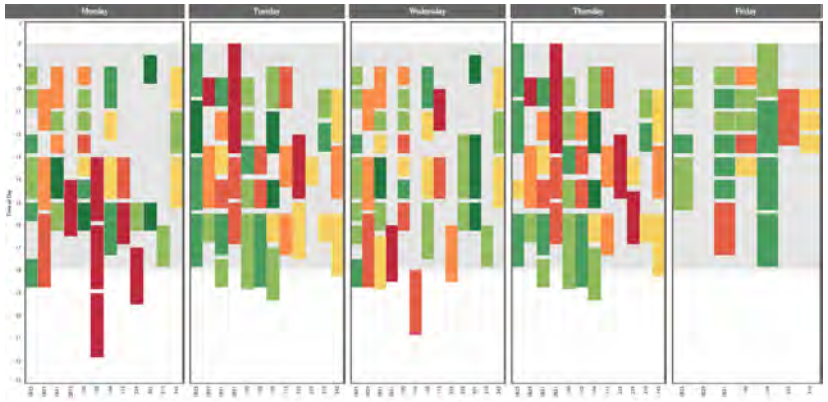


SCENARIO PLANNING 1 FEDERATED FLEXIBILITY

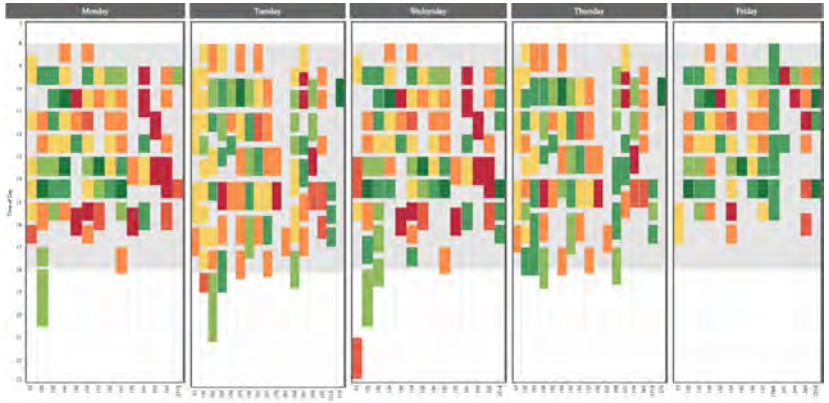
WEEKLY CLASS SCHEDULE

Diagrams show a sample of a weekly schedule for buildings in the core of campus, on the perimeter of main campus and on east campus.

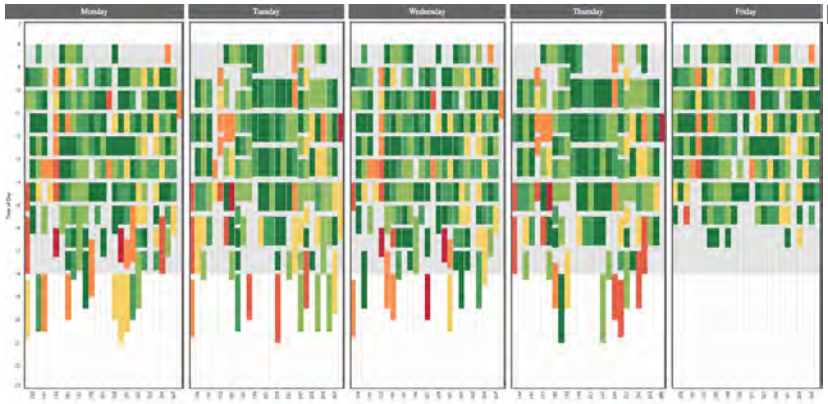
BLD 1



BLD 2



BLD 3



BLD 4

BLD 5

BLD 6

KEY

LOW SEAT UTLIZATION

HIGH SEAT UTLIZATION

FEDERATED FLEXIBILITY / SCENARIO PLANNING 2

FEDERATED FLEXIBILITY THEMES

Quality space standards in technology & furniture across all classrooms

Reliable transportation to access all of campus efficiently

Partner with external entities to increase space utilization

Space matching based on workstyle & teaching style

CENTRAL PRIORITIZED SCHEDULING THEMES

STANDARDIZED QUALITY

Universally incorporate updated & standardized technology for class scheduling

All classrooms have a standard technology baseline

PROCESS

Prioritized scheduling in “home” building

Enhanced transparency of the scheduling process and procedures

Incentivize opening departmentally owned space to the central pool

OPTIMIZING OUR LEARNING SPACE USE ACROSS CAMPUS THEMES

TECHNOLOGY/PROCESS UPGRADES

Real time data showing utilization, allowing for real time flexibility

All classrooms have a standard technology baseline and flexible furniture

OFFERING EXPANSION

Consider Friday only classes to maximize space use

Incentivize hybrid & online courses

Use underutilized space for burgeoning interdisciplinary degrees

USING OUR SPACE OFF HOURS THEMES

INFRASTRUCTURE

Transportation service offered during evening hours to safely access campus facilities

Increased security in off hour utilized spaces

After hours parking allotment to enable campus access

OFFERING EXPANSION

Expand working hours to split a morning & evening shift - enabling longer hours of service and with less office space

Bring community organizations and non-profits on campus for off hour space use

USING OUR FACILITIES OVER SUMMER

STUDENT NEEDS

Financial aid & tuition incentive applied over summer term

Residence halls and student services open year round

OFFERINGS

Offer short, intensive micro-credential courses during the summer semester

Focus on bottleneck courses

Partner with community organizations, non-profits, and the city of Boulder during legacy events

Partner with other academic institutions for resource sharing

PROVIDING WORKPLACE MOBILITY FOR FACULTY, ADMINISTRATION & STAFF THEMES

OFFICING

Mobile workplace will not negate the need for a home base

WeWork style hotelling space when working across campus locations

Pop-up workplaces for unique projects and initiatives

Ability to notify if an office will be vacant for a day/week/month for use by others

TOOLS & INCENTIVES

High quality amenities including dual monitors, printers, etc.

Reliable transportation to access all campus locations

Incentives for opting into full mobile officing

FEDERATED FLEXIBILITY / SCENARIO PLANNING 2

ALIGNING OUR LEARNING SPACES WITH HOW WE WANT TO LEARN THEMES

QUALITY SPACE

A standard baseline of technology across all learning spaces

Flexible, standardized furniture across all learning spaces

OPTIMIZED SPACE

Match classes to classrooms based on a teaching/learning assessment

Take advantage of exterior spaces for learning opportunities

Incorporate mobile dividers in large classrooms for flexible sizing

INTEGRATIVE FACILITIES
Baseline Information

SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

INTEGRATIVE FACILITIES THEMES

THEME

ACADEMIC

The majority of mixed use spaces include active classrooms with a mix of applied, creative, and study spaces for students

COMMUNITY

All mixed-use facilities included informal community gathering spaces, with café's being the highest desired, additional spaces for student groups to meet, and taking greater advantage of CU's outdoor spaces

---

TOP IMAGES SELECTED


ACTIVE CLASSROOM


HUDDLE ROOM


MEDIA LAB


IDEATION/ CO-CREATION


FOOD/CAFÉ


COMMUNAL


STUDENT UNION


OUTDOOR

SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

STUDENT LIFE MIXED-USE THEMES

THEME

ATTRACTIONS

Points of interest and events that draw students in, including mixed-use retail, social events, and café's

COMMUNITY

Touchdown space as a home base and informal places for students to gather and work on student projects and extracurriculars

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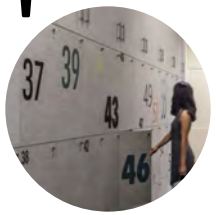
TOP IMAGES SELECTED

GATHERING/ EVENT

RETAIL

NIGHT EVENT

FOOD/CAFÉ



COMMUTER

OUTDOOR

STUDENT UNION

INFORMAL STUDY

SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

WELLBEING MIXED-USE THEMES

THEME

ACADEMIC

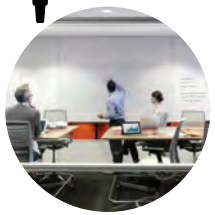
Flexible formal and informal education and study spaces that support learning and innovation

SPECTRUM OF WELLBEING

A spectrum of engagement or withdraw spaces for introverted/extroverted students to mentally regenerate

TOP IMAGES SELECTED


ACTIVE CLASSROOM


PROJECT CLASSROOM


HUDDLE ROOM


INFORMAL STUDY


FORMAL STUDY


COMPUTER


IDEATION/ CO-CREATION


ADVISING/ SUPPORT


SOCIAL


WELLBEING


STUDENT UNION


RECREATION


COMMUNITY

SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

COMMUNITY MIXED-USE THEMES

THEME

INDEPENDENT LEARNING

Invite the community to freely use creative learning spaces

ENVIRONMENT

Involve the community in CU Boulder's wonderful campus atmosphere for informal leisurely interactions, which includes opening athletic facilities for general access

PARTNERSHIPS & EVENTS

Capitalize on legacy events in Boulder and create physical ties to community establishments

---

TOP IMAGES SELECTED

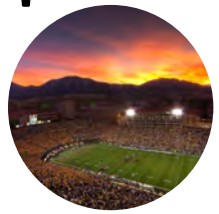
MAKERSPACE

LIBRARY

CENTER FOR TEACHING & LEARNING

OUTDOOR

FOOD/CAFÉ



ATHLETICS

CONFERENCE

STARTUP/ PARTNERSHIP

TOWN

SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

LEARNING & RESEARCH MIXED-USE THEMES

THEME

FORMAL LEARNING

Spaces for engaged learning and easily accessible library services for group study and research

APPLIED LEARNING

Encourage creativity and exploration across all disciplines with student driven and partnership lead experiences

SUPPORT SPACES

Informal spaces for students to gather and study paired with easily accessible student support services

---

TOP IMAGES SELECTED

ACTIVE CLASSROOM

MEDIUM LECTURE

LIBRARY

MAKERSPACE

MEDIA LAB

STARTUP/ PARTNERSHIP

ADVISING/ SUPPORT

WELLBEING

FOOD/CAFÉ

COMMUNAL

SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

RESIDENTIAL ACADEMIC EXPERIENCE MIXED-USE THEMES

THEME

ACADEMIC

Learning experiences are focused around the active classroom with quiet huddle rooms available for quiet and group study

RESIDENTIAL

Home-style living, including apartment-style residences with communal areas to serve as residence living rooms

---

TOP IMAGES SELECTED

ACTIVE CLASSROOM

HUDDLE ROOM

MEDIA LAB

APARTMENT

COMMUNAL

FOOD/CAFÉ

OUTDOOR

SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

COLLABORATION MIXED-USE THEMES

THEME

EDUCATION

Collaborative education environments that include telepresence to collaborate with top universities across the world

RETAIL

Collaborate with industry on campus, strengthening the partnership with retail locations

COMMUNITY

Foster collaboration with community-focused spaces aimed at bringing people together for projects and experiences

---

TOP IMAGES SELECTED

ACTIVE CLASSROOM

IDEATION/ CO-CREATION

HUDDLE ROOM

TELEPRESENCE

RETAIL

FOOD/CAFÉ

STUDENT UNION

GATHERING/ EVENT

COMMUNAL

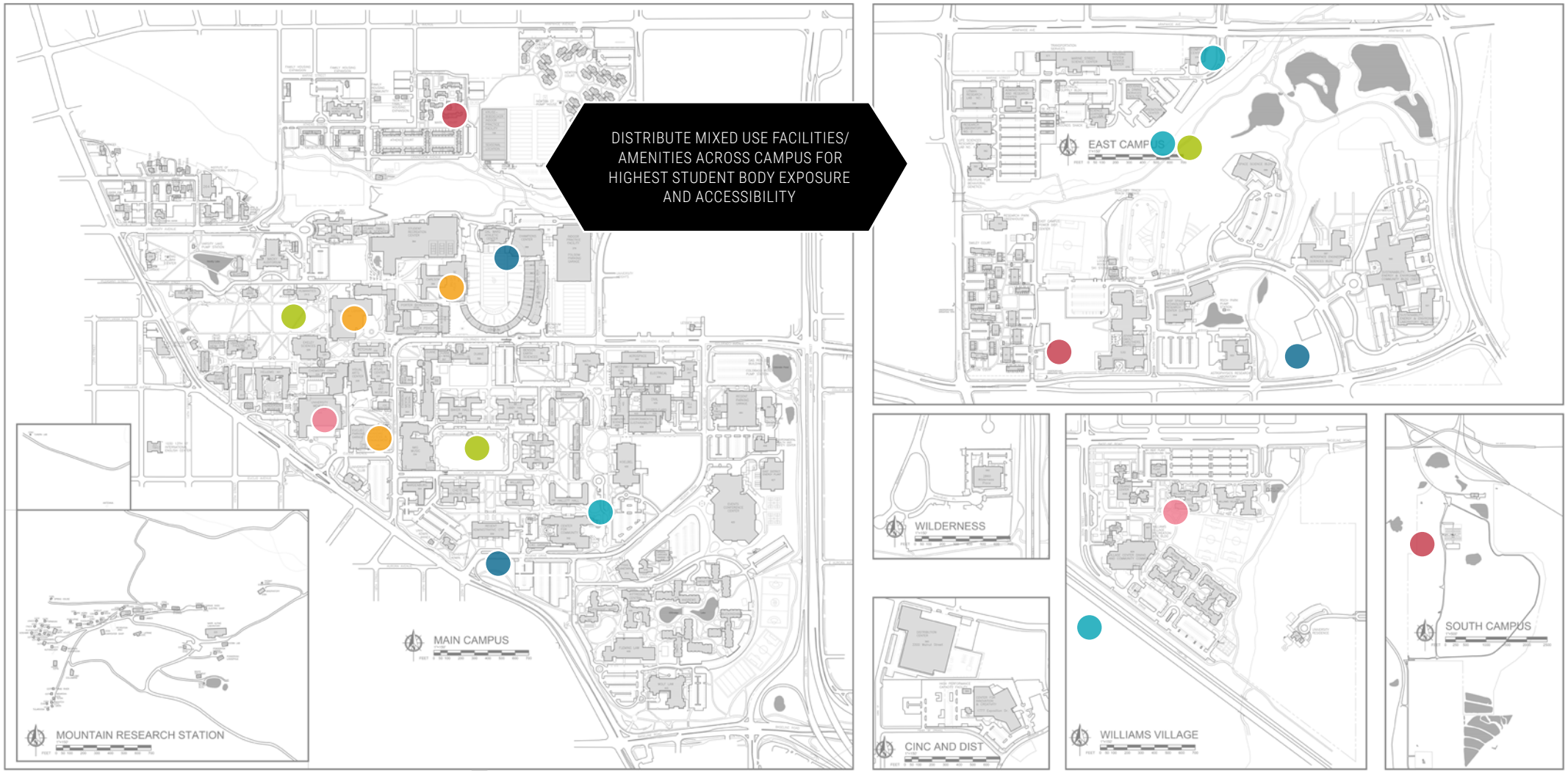
SCENARIO PLANNING 1 INTEGRATIVE FACILITIES

INTEGRATIVE FACILITIES

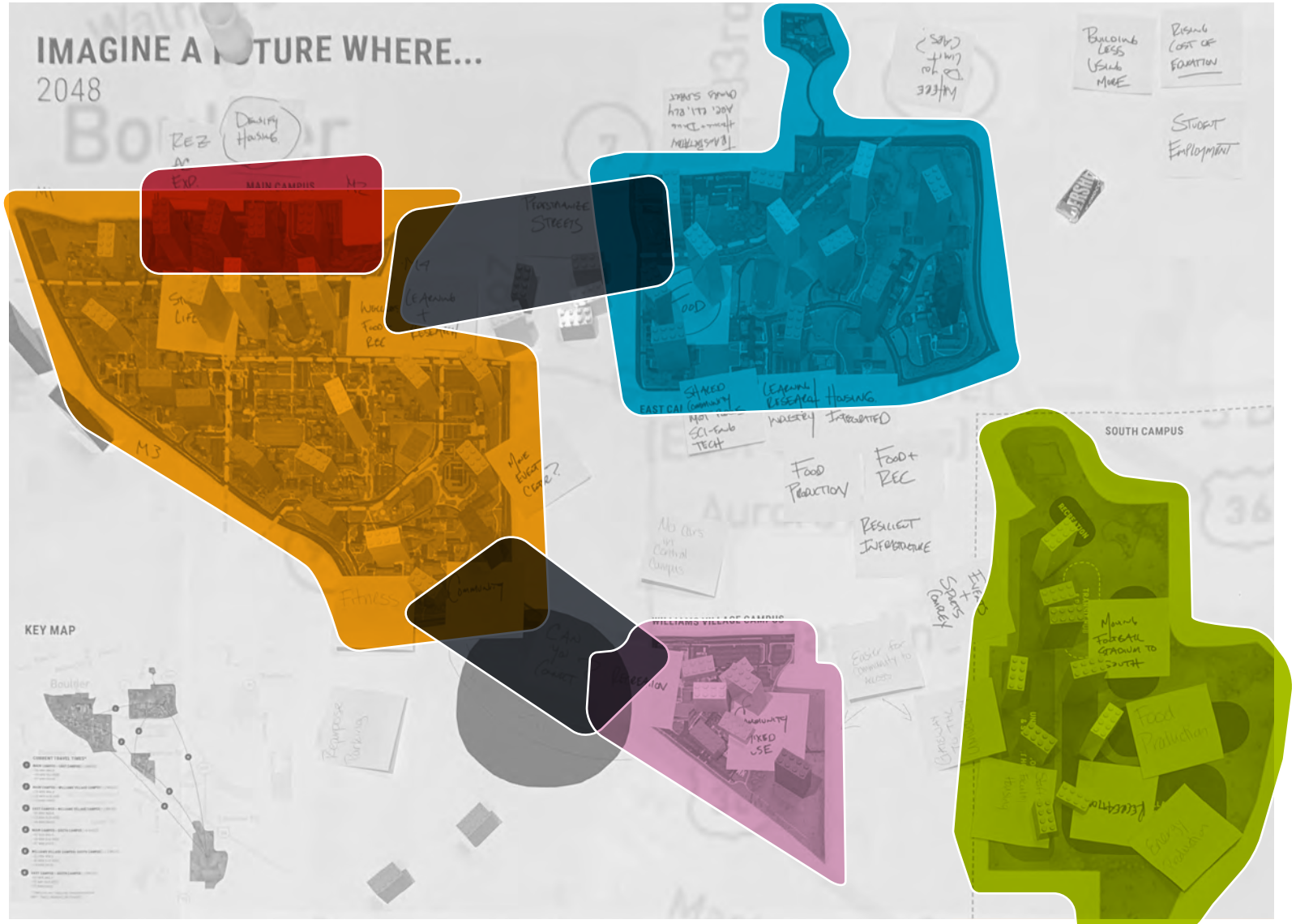
KEY

- RESIDENTIAL ACADEMIC EXPERIENCE MIXED USE
- LEARNING & RESEARCH MIXED USE
- STUDENT LIFE MIXED USE
- WELLBEING MIXED USE
- COMMUNITY MIXED USE
- COLLABORATION MIXED USE

DISTRIBUTE MIXED USE FACILITIES/ AMENITIES ACROSS CAMPUS FOR HIGHEST STUDENT BODY EXPOSURE AND ACCESSIBILITY



VIBRANT FACILITIES & ENHANCED EXPERIENCES

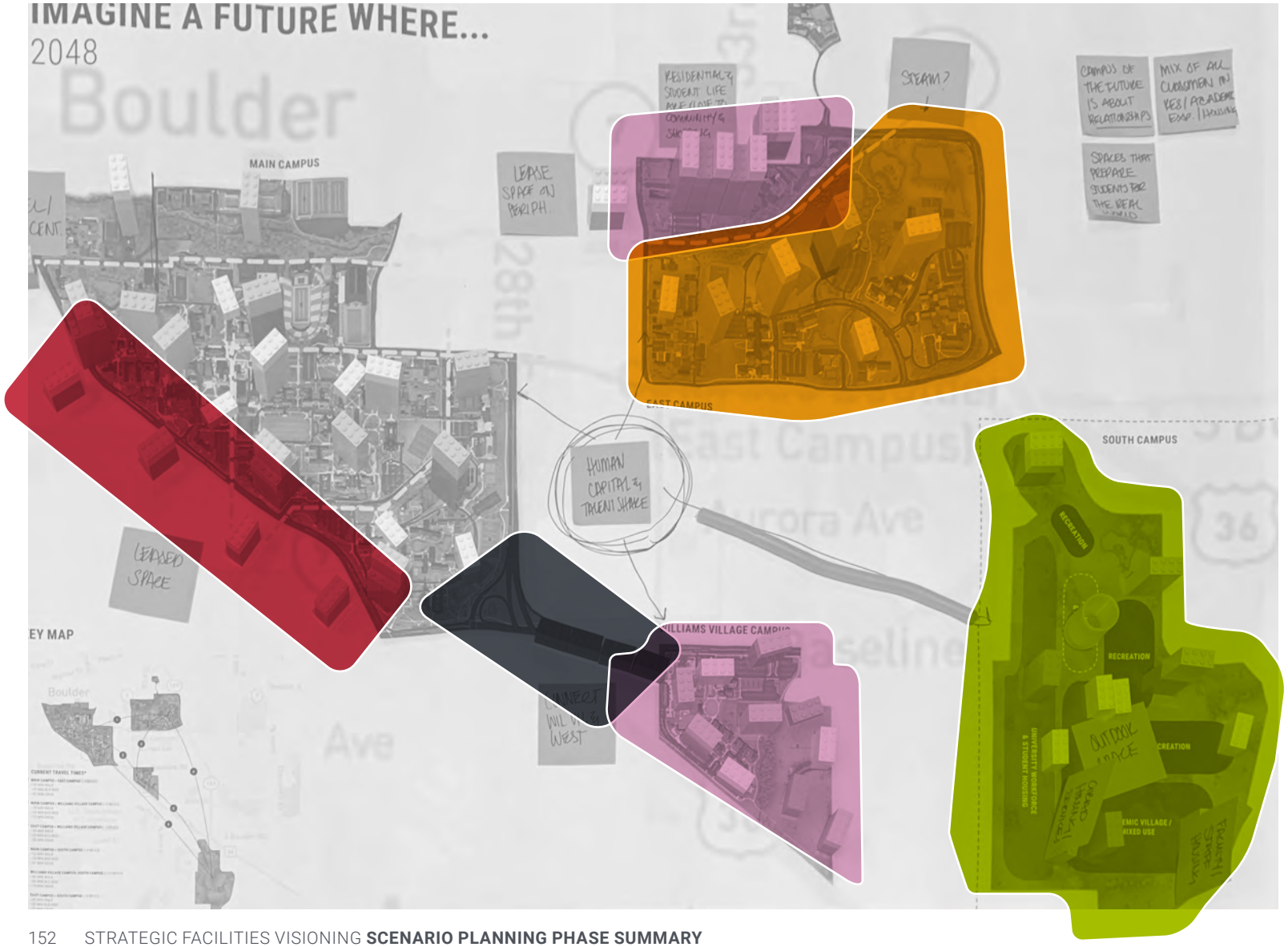


GROUP ONE

- Housing cluster north of Boulder creek.
- Connect campus locations through buildings, providing a pedestrianized learning journey along the way.
- Diversify WillVill with learning, student life, Wellbeing and community mixed use.
- Renovate West campus with learning/research, student life, Wellbeing mixed use typologies, cluster residential academic experiences on north of Boulder Creek. Create student life mixed use edge alongside the hill, go into community to create an engaged CU presence.
- East Campus becomes dynamic mixed-use campus with housing, learning/research, community and Wellbeing, could develop a thematic approach to science, engineering, and technology.
- South Campus becomes housing for faculty, staff and upper-classmen/graduate students with playing fields, with some learning/research spaces and possible uses for food and alternative energy production.

*The results of this workshop were documentation of a brainstorming session with many diverse constituents from the CU Boulder campus and no way constitute a land planning process or commitment from the university for any future development on the property.

VIBRANT FACILITIES & ENHANCED EXPERIENCES



GROUP TWO

- CU Boulder footprint extends into Boulder community. Create community mixed-use spaces on the periphery of campuses, mix leased spaces with Wellbeing and learning and research.
- Community mixed-use can become a physical connector between West and Williams Village.
- North end of east campus (E1) is developed as a residential academic experience community blended with Wellbeing and student life programs – allowing for students and community to blend and extend into the shopping (Arapahoe).
- East campus as a STEAM campus, and fully integrated experience with learning, housing, student life and Wellbeing mixed use.
- Develop CU Boulder South for faculty, staff and upper-classmen, graduate housing, and recreational fields.

CU Boulder of the future is about relationships.
We become a campus centered around the growth, cultivation and retention of human capital.

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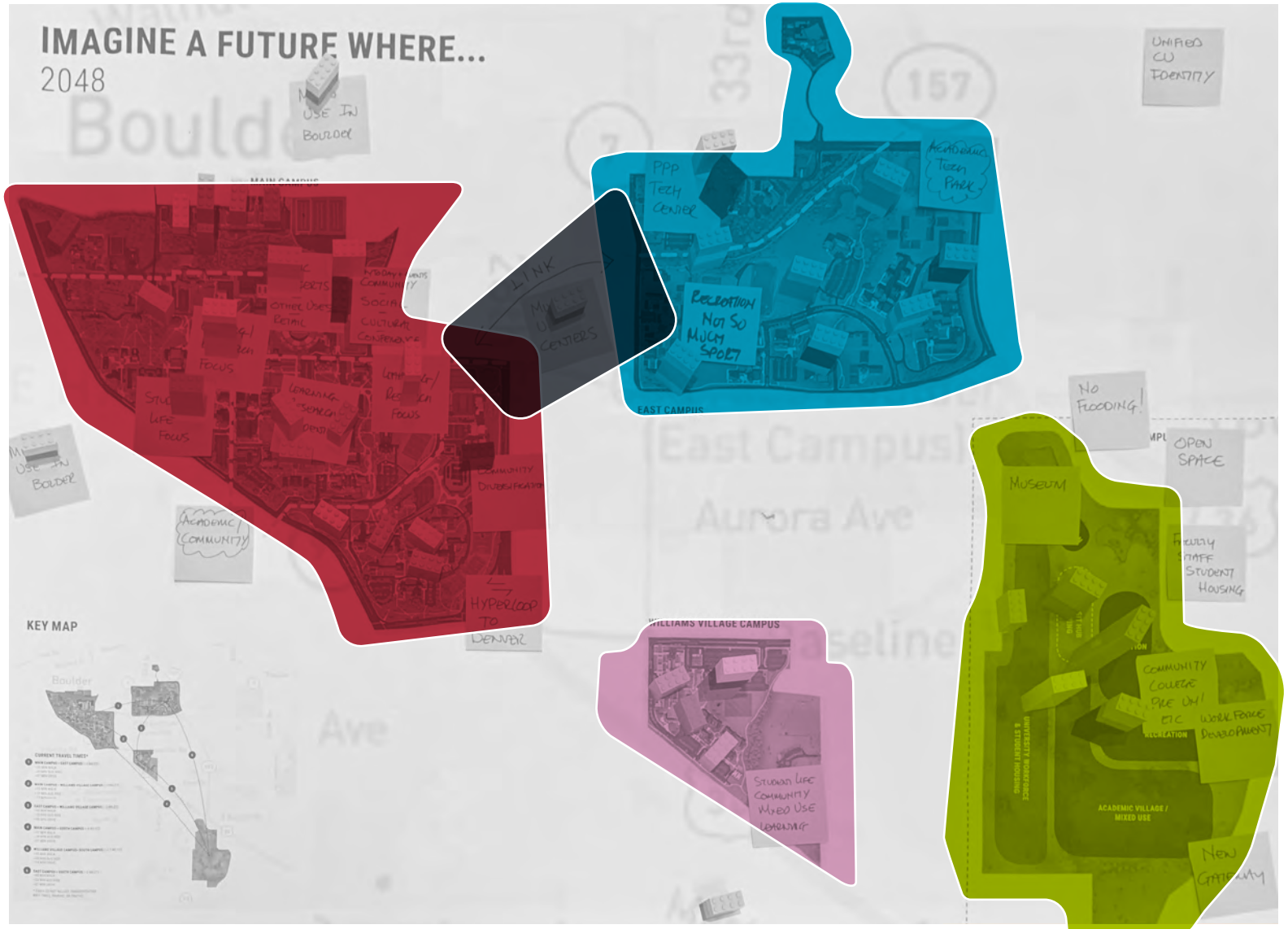
VIBRANT FACILITIES & ENHANCED EXPERIENCES



GROUP THREE

- West Campus: Stadium / event center focus
  More general events: concerts other sports
  Community events and rec / Wellbeing
  Mixed-use academic focus.
- Mixed-use developments off campus
  Link West and East Campus in parts of Boulder where students live.
- Williams village: general mixed use.
- East Campus: PPP mixed use R&D focus includes Wellbeing, learning, and housing.
- South Campus: “The Gateway” Cultural, community, natural areas, with faculty /staff/upper classmen and grad mixed use housing.

Themed campuses united under a singular university identity.

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RESILIENT ASSET MANAGEMENT

Baseline Information

SCENARIO PLANNING 1 RESILIENT ASSET MANAGEMENT

RESILIENCY THEMES

THEME

COMMUNICATION

Updated and reliable communication systems is desired across the board - from dependable WiFi on all corners of campus to rapid response systems in case of emergency - communication has risen as a social necessity in all situations and is necessary for the advancement of CU Boulder

PHYSICAL ASSETS

The importance of reliable and updated physical assets was voiced across the board to maintain a general quality of life and also ensure the resiliency of CU Boulder's campus.

TOP IMAGES SELECTED

EMERGENCY RESPONSE COMMUNICATION SYSTEMS

COMMUNICATION/NET-WORK CONNECTIVITY

BACKUP GENERATORS FOR CLUSTERS OF BUILDINGS

ENSURING BUILDING MEP SYSTEMS ARE WITHING THEIR USEFUL LIFE

OF VOTES

SCENARIO PLANNING 1 RESILIENT ASSET MANAGEMENT

BASIC RESILIENCY

THEME

COMMUNICATION

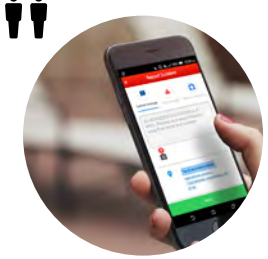
Reliable and modern communication systems that extend to every corner of campus, including high speed WiFi that could be reached indoors and outdoors, rapid emergency communication systems, and using the most advanced and technologically relevant systems to cover our most basic communication needs

BASIC SAFETY

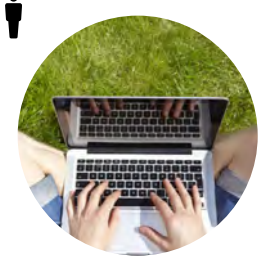
Safeguard people with well known safety standards and protocols across campus, with a focus on where our people spend the most time

TOP IMAGES SELECTED

EMERGENCY RESPONSE COMMUNICATION SYSTEMS

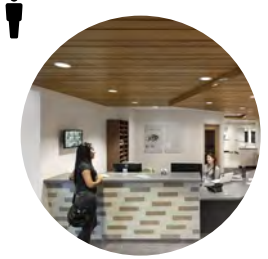


EMERGENCY RESPONSE COMMUNICATION APP



NETWORK CONNECTIVITY

CAMPUS LOCKDOWN PROTOCOLS IN RESPONSE TO THREATS



BUILDING SECURITY PROTOCOLS FOR STUDENT HOUSING

BUILDING SECURITY PROTOCOLS FOR ACADEMIC & ADMIN BUILDINGS

SCENARIO PLANNING 1 RESILIENT ASSET MANAGEMENT

BASIC RESILIENCY

THEME

LOGISTICS

Prioritize systems that enable access to people, places, and things, including campus access regardless of weather and accessing physical and digital materials

NETWORKED SYSTEM

Expand the campus approach from a building focus to a network focus to develop a holistic & prioritized system in building upgrades and maintenance

---

TOP IMAGES SELECTED

SNOW PLOWING & DEICING

CLOUD BASED DATA WARE-HOUSING & STORAGE

LOGISTICS, DELIVERY & STORAGE OF FOOD & SUPPLIES

BACKUP GENERATORS FOR CLUSTERS OF BUILDINGS

ENSURING BUILDING MEP SYSTEMS ARE WITHING THEIR USEFUL LIFE

CRITICAL FACILITY IDENTIFICATION

SCENARIO PLANNING 1 RESILIENT ASSET MANAGEMENT

MISSION CRITICAL RESILIENCY

THEME

TECHNOLOGY

Preserve the CU Boulder brand with modern technology that both maintains a quality of life and ensures safety

SAFETY

Maintain the mission critical goal of protecting our people with advanced security protocols in all campus environments

INFRASTRUCTURE

Ensure campus activities can continue with centralized & clustered management, updated systems, and maintenance

TOP IMAGES SELECTED

EMERGENCY RESPONSE COMMUNICATION SYSTEMS

ENSURING SAFE ENVIRONMENTS THROUGH DISTRIBUTED CAMPUS TECHNOLOGY

CAMPUS LOCK DOWN PROTOCOLS IN RESPONSE TO THREATS

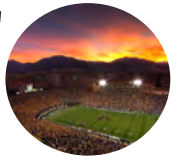
BUILDING SECURITY PROTOCOLS FOR STUDENT HOUSING

SNOW PLOWING & DE-ICING

BACKUP GENERATORS FOR CLUSTERS OF BUILDINGS

REDUNDENT WATER & GAS UTILITIES FOR CLUSTERS OF BUILDINGS

COMMUNICATION



BRAND & MARKETING

BUILDING SECURITY PROTOCOLS FOR RESEARCH ENVIRONMENTS

BUILDING SECU-RITY PROTOCOLS FOR ACADEMIC & ADMIN BUILDINGS

ENSURING BUILDING MEP SYSTEMS ARE WITHING THEIR USEFUL LIFE

CENTRALIZED MATERIALS MANAGEMENT, STORAGE & DISTRIBUTION

SCENARIO PLANNING 1 RESILIENT ASSET MANAGEMENT

EVENT RESILIENCY

THEME

DIGITAL SECURITY

Safeguard our sensitive personal and research data with physical and digital solutions

ONGOING PREVENTION

Mitigate event occurrences through surveillance, building & communication upgrades, and emission reductions

EVENT MITIGATION

Promote preparedness plans for our most likely situations and have systems in place to enable rapid response and recovery

---

TOP IMAGES SELECTED

BUILDING SECURITY PROTOCOLS FOR RESEARCH ENVIRONMENTS

CYBERSEURITY MEASURES TO PROTECT SENSITIVE INFORMATION

ZERO-EMISSION TRANSPORTATION SYSTEMS

ENSURING SAFE ENVIRONMENTS THROUGH DISTRIBUTED CAMPUS SURVEILLANCE

LOGISTICS, DELIVERY & STORAGE OF FOOD & SUPPLIES

BACKUP GENERATORS FOR CLUSTERS OF BUILDINGS

EMERGENCY RESPONSE COMMUNICATION SYSTEMS

CLOUD BASED DATA WAREHOUSING & STORAGE

CLUSTERING CORE FACILITIES: HIGHPER-FORMANCE COMPUT-ING, DATA CENTERS, FREEZERS

ENSURING BUILDING MEP SYSTEMS ARE WITHING THEIR USEFUL LIFE

FLASH FLOOD MITIGATION PLANS

FIRE RISK

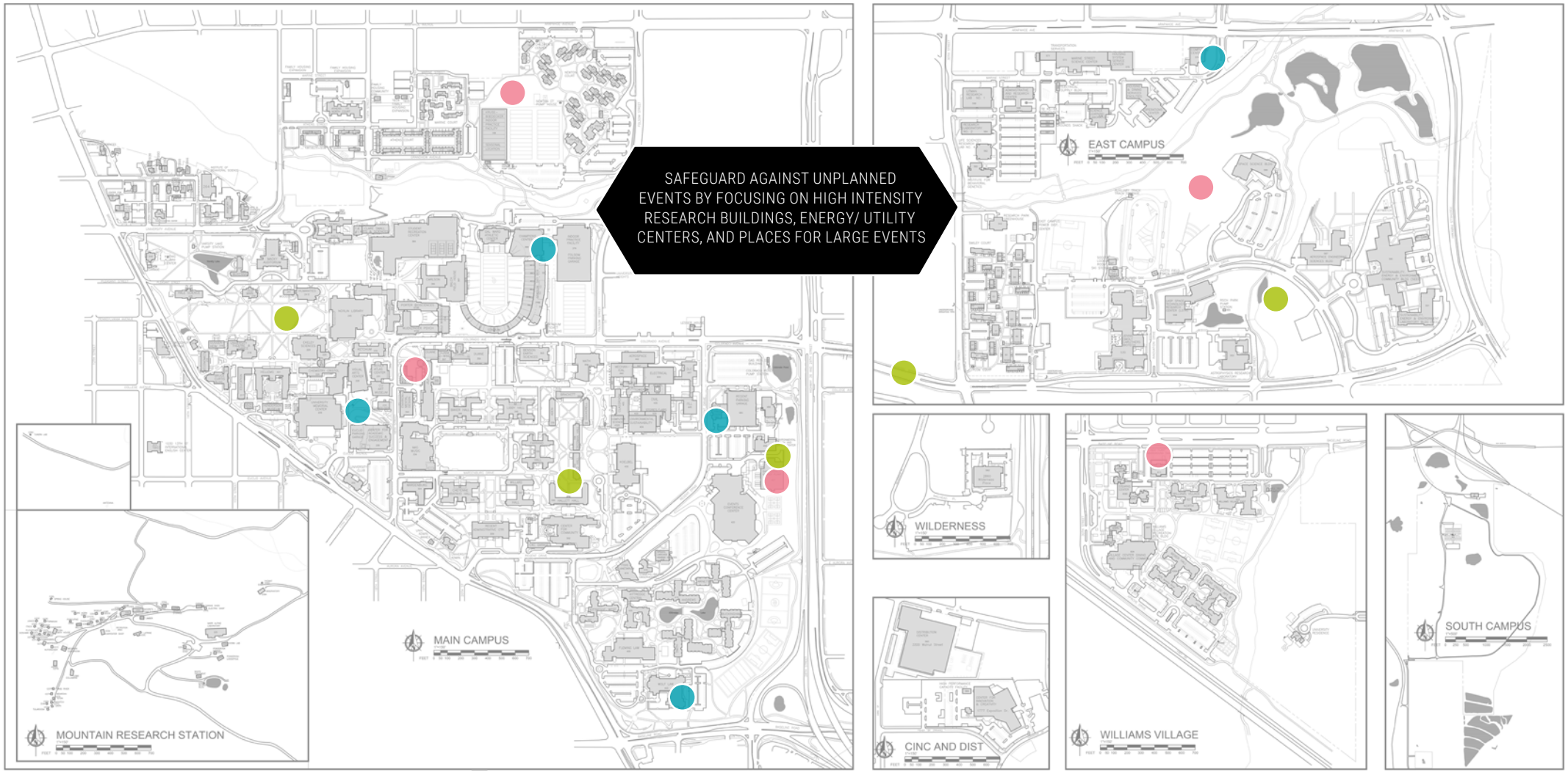
GOVERNMENT SHUTDOWN

SCENARIO PLANNING 1 RESILIENT ASSET MANAGEMENT

RESILIENT ASSET MANAGEMENT

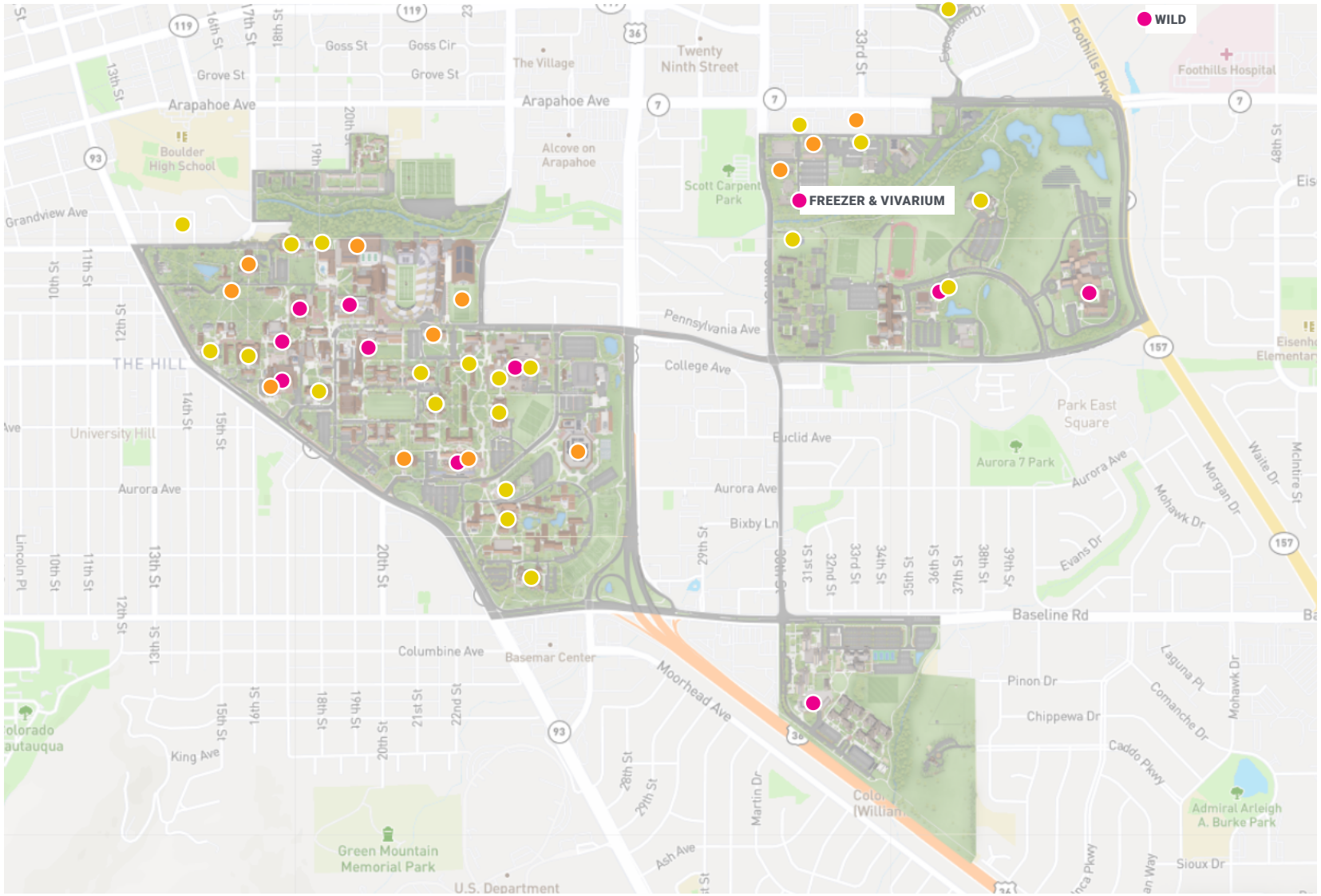
KEY

- BASIC
- MISSION CRITICAL
- UNPLANNED EVENT



SCENARIO PLANNING 2 RESILIENT ASSET MANAGEMENT

UNIQUE NEEDS OF OUR FACILITIES



HIGH

MEDIUM

LOW