



USING VISUALIZATIONS AND DATA TO INFORM SPACE PLANNING

SCUP PACIFIC 2019

SMITHGROUP

PAULIEN & ASSOCIATES MERGED WITH SMITHGROUP



AGENDA

An aerial architectural rendering of a university campus. The scene features several large, yellow, rectangular buildings with flat roofs, interspersed with green lawns, trees, and paved walkways. In the background, there are baseball fields and other smaller structures. The overall style is a soft, semi-transparent overlay on a faded aerial photograph of a city street grid.

- ① Campus Overview
- ② Planning Drivers
- ③ Data + Visualizations
- ④ Physical Response

CAMPUS OVERVIEW



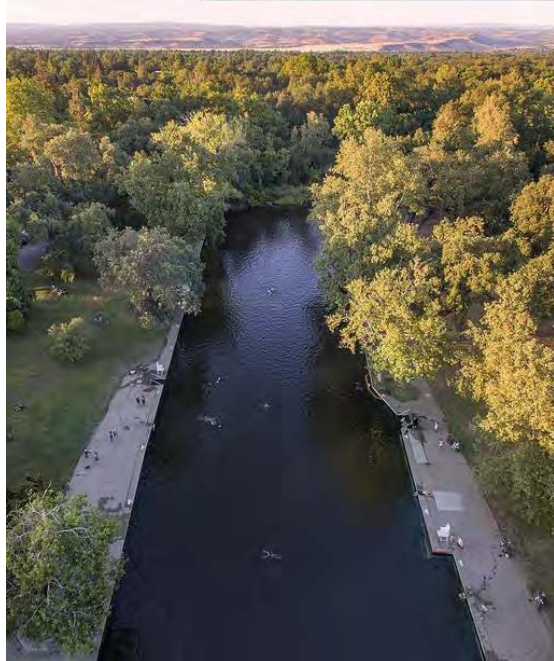
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CALIFORNIA STATE UNIVERSITY SYSTEM

- Is the nation's largest four-year public university system, with 23 campuses and eight off-campus centers.
- Educates approximately 484,300 students and employs more than 52,000 faculty and staff.
- The CSU awards nearly half of the state's baccalaureates.
- The CSU system was created in 1960 under the California Master Plan for Higher Education.



WHERE IS CHICO?



- Total Population of "Chico Urban Area": approximately 100,000.
- Located in the Northern Sacramento Valley of California, 90 miles north of Sacramento.
- Chico is a consummate college town, with an abundance of cultural and recreational resources in combination with a small-town feel. The city has strived to maintain its strong sense of community, while simultaneously establishing itself as a dynamic regional center for business, education, recreation and culture.
- Bidwell Park – One of the largest municipal parks in the country.

CHICO STATE



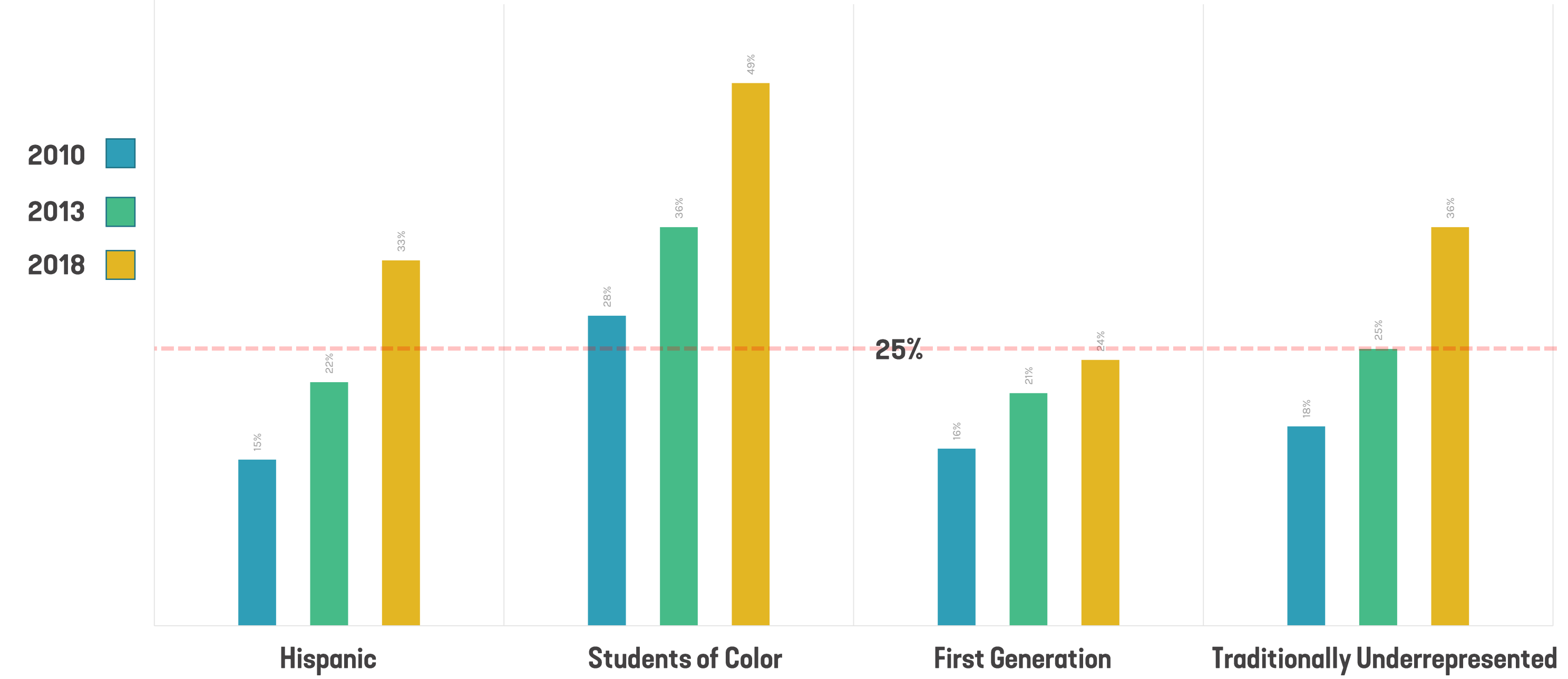
CHICO STATE



- Chico State was founded in 1887, making it the second oldest CSU campus in the state.
- FTES: 16,437 (Fall 2018)
- 119 acre Main Campus + 800 acre University Farm + 2,330 acres of Ecological Reserves
- 3,447,115 GSF (Fall 2018)
- 2,033 faculty and staff (Fall 2018)
- Residential campus with 1,563 student beds on campus and 712 student beds off campus



CHANGING DEMOGRAPHICS



DIVERSITY & UPWARD MOBILITY

HISPANIC SERVING INSTITUTION



33.3%
HISPANIC

48.9%
STUDENTS OF
COLOR

24%
FIRST
GENERATION
STUDENTS



SOCIAL MOBILITY INDEX

SOCIALMOBILITYINDEX.ORG

2018 Social Mobility Index

Opportunity through US Higher Education

LEARN MORE

Rank	SMI	Institution	City	State	Tuition	% Low Income	% Grad Rate	Median Early Career Salary	Endowment (in M)	% Freshman Pell	% Pell to rich 1/2
2	124.365534	California State University-Chico	Chico	CA	\$7,040	35.5	68.5	\$52,700	\$49.34	46	23
201	34.936017	University of Nevada-Las Vegas	Las Vegas	NV	\$7,183	29.8	40.7	\$48,100	\$206.38	41	27.5

CAMP FIRE

NOVEMBER 2018





BUTTE STRONG

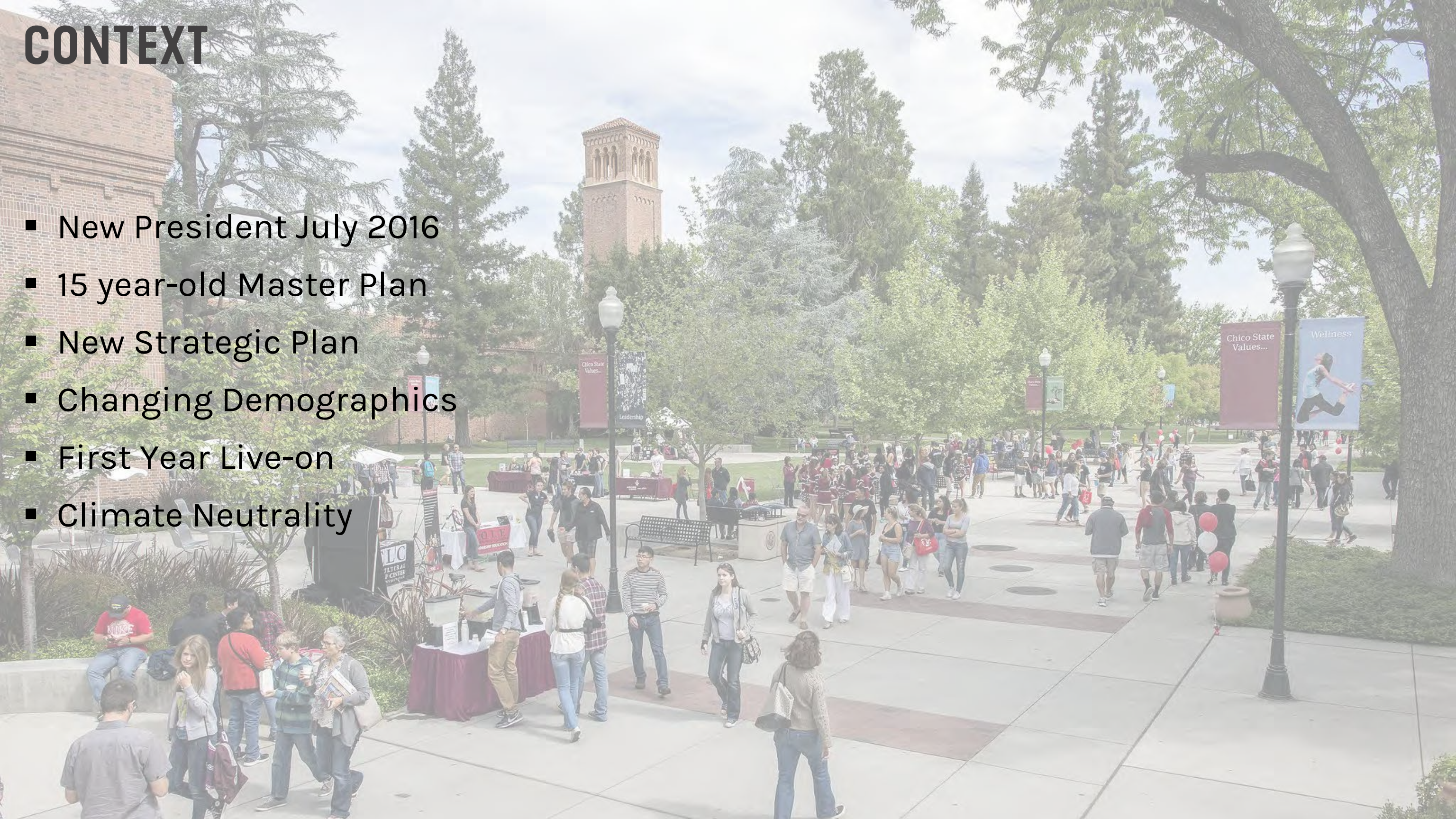


PLANNING DRIVERS

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CONTEXT

- New President July 2016
- 15 year-old Master Plan
- New Strategic Plan
- Changing Demographics
- First Year Live-on
- Climate Neutrality



PLANNING IMPLICATIONS

- Housing Costs [on versus off campus costs]
- Housing Location [proximity to core]
- Socioeconomic Divisions
- Student Resource Needs [cultural, basic needs (food and shelter), learning spaces, hangout, and student success]

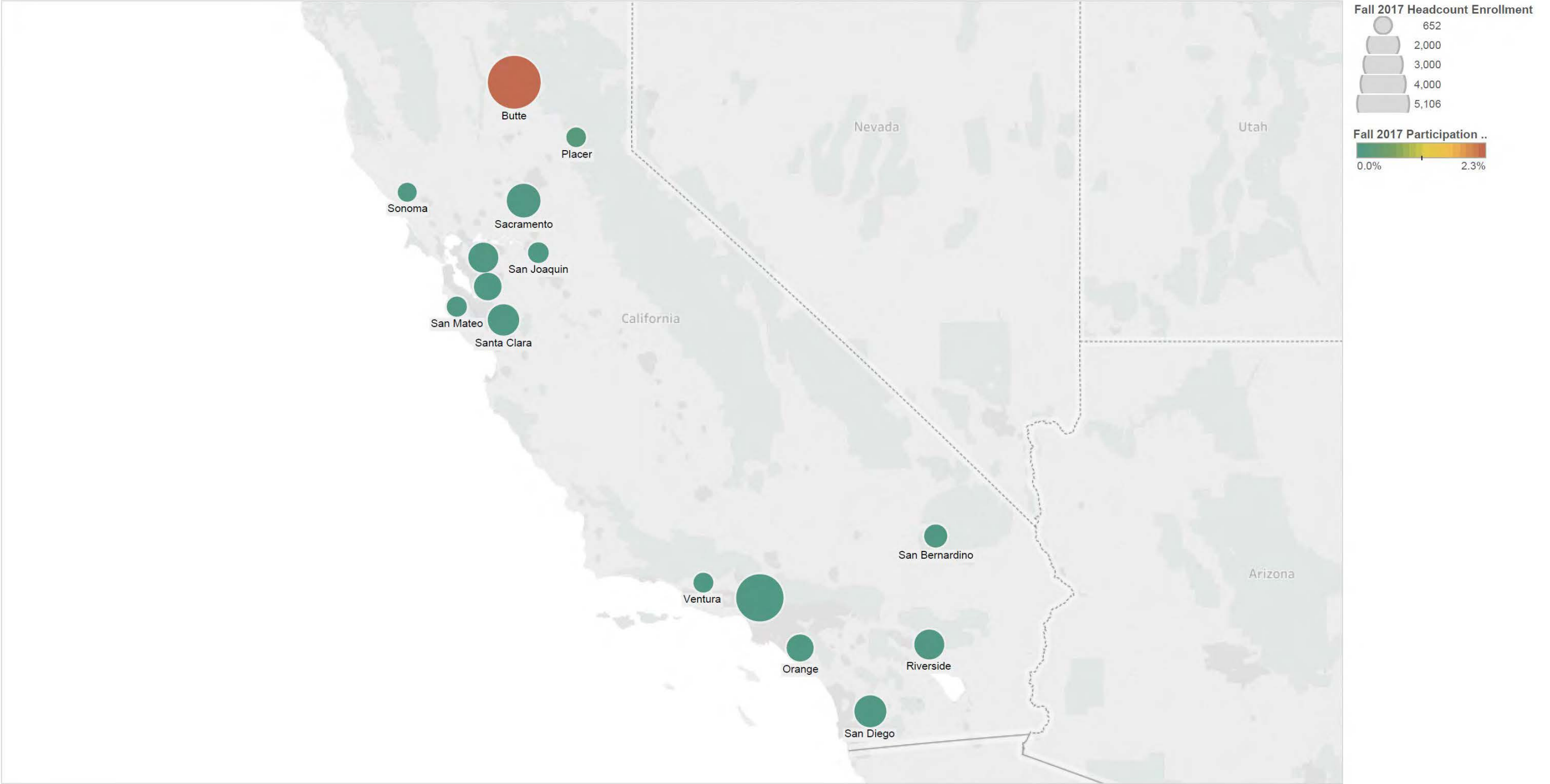


DATA + VISUALIZATION



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PARTICIPATION RATES



GAP ANALYSIS



CSU SYSTEM OF SPACE CLASSIFICATION

- Instructional space needs are calculated in conformity with space and utilization standards from the 1960s with very little updating since then.
- Overly proscriptive space standards
- Significant amounts of space classified as other than classroom or class laboratory is used to teach lecture and laboratory classes.

CSU SYSTEM OF SPACE CLASSIFICATION

SUAM GUIDELINES



1966 CALLED, THEY WANT THEIR SPACE STANDARDS BACK

SPACE MEASUREMENT

- SFDB Data shows inconsistency in application across institutions
- Space Categories not current:
 - No student study outside library
 - No health care
 - Storage is generic
 - Use of “Other” space categories
 - No planning stds for many space types

0029 Spec Instruction	0085 Spec Inst Sup	0091 Student Use	0099 Otr-Gen Misc	1008 Misc NASF
1,786	17,998	12,325	19,614	1,331
717	253		1,108	
5,565	924	15,521	29,312	228
60,382	8,912	5,961	245,744	56,939
1,196	4,991	25,852	48,483	735
33,343	4,751	5,964	140,750	3,981
36,620	86,331	34,935	74,803	62,277
39,696	38,069	93,703	44,808	17,012
3,952	14,462	14,425	70,676	7,744
30,714	38,133	130,625	30,534	1,430
53,262	14,016	90,265	29,724	15,684
11,853	11,579	3,318	1,156	
17,753	4,966	27,702	21,807	6,646
1,442	3,246			
32,376	38,218	25,549	149,600	
17,572	88,316	73,085	71,834	13
38,891	47,248	16,630	106,284	17,966
14,156	30,472	42,433	62,675	2,507
37,362	79,485	221,523	140,472	45,105
44,186	51,115	199,974	126,648	
60,028	45,786	6,748	134,502	156
130,022	29,471	40,445	238,512	
5,135	7,026	75,645	15,666	6,895
27,436	40,242	9,814	37,330	9,874
6,175	5,850	45,336	69,493	2,641

SPACE MEASUREMENT

FICM = NATIONAL STANDARD



NEEDS ANALYSIS

SPATIAL DEMAND

Space Category	2017 <i>Student FTE = 16,647</i>				2028 (1% annually; 11.57%) <i>Student FTE = 18,573</i>			
	Existing ASF	Guideline ASF	Surplus/ (Deficit)	Percent Surplus / (Defici	Projected Existing ASF	Guideline ASF	Surplus/ (Deficit)	Percent Surplus / (Defici
Academic Space								
Lecture Classroom & Service	113,307	162,115	(48,808)	(43%)	119,072	171,172	(52,100)	(44%)
Teaching Laboratories & Service	184,767	236,113	(51,346)	(28%)	217,858	257,062	(39,204)	(18%)
Unscheduled Instructional Activity	68,028	86,082	(18,054)	(27%)	74,996	96,041	(21,045)	(28%)
Research Laboratories & Service	22,532	34,312	(11,780)	(52%)	24,003	44,003	(20,000)	(83%)
Physical Education	86,137	90,060	(3,923)	(5%)	86,137	99,366	(13,229)	(15%)
Academic Space Subtotal	474,771	608,682	(133,911)	(28%)	522,066	667,644	(145,578)	(28%)
Academic Support Space								
Offices & Service	339,949	337,760	2,189	1%	349,033	359,990	(10,958)	(3%)
Library	199,381	199,764	(383)	0%	199,381	244,063	(44,682)	(22%)
Auditoria & Museum	87,811	87,730	81	0%	87,811	97,880	(10,069)	(11%)
Student Center	94,107	141,500	(47,393)	(50%)	94,107	153,227	(59,120)	(63%)
Corporation Yard	64,046	66,156	(2,110)	(3%)	64,981	83,523	(18,542)	(29%)
Health Care Facilities	8,215	11,653	(3,438)	(42%)	8,215	13,001	(4,786)	(58%)
Recreation & Athletics	116,752	122,023	(5,271)	(5%)	116,752	134,654	(17,902)	(15%)
Academic Support Space Subtotal	910,261	966,584	(56,323)	(6%)	920,280	1,086,338	(166,059)	(18%)
CAMPUS TOTAL	1,385,032	1,575,266	(190,234)	(14%)	1,442,345	1,753,982	(311,637)	(22%)
Inactive/Conversion Space	2,131				0			
Residence Life	440,591				440,591			

“ELEVATOR PITCH”

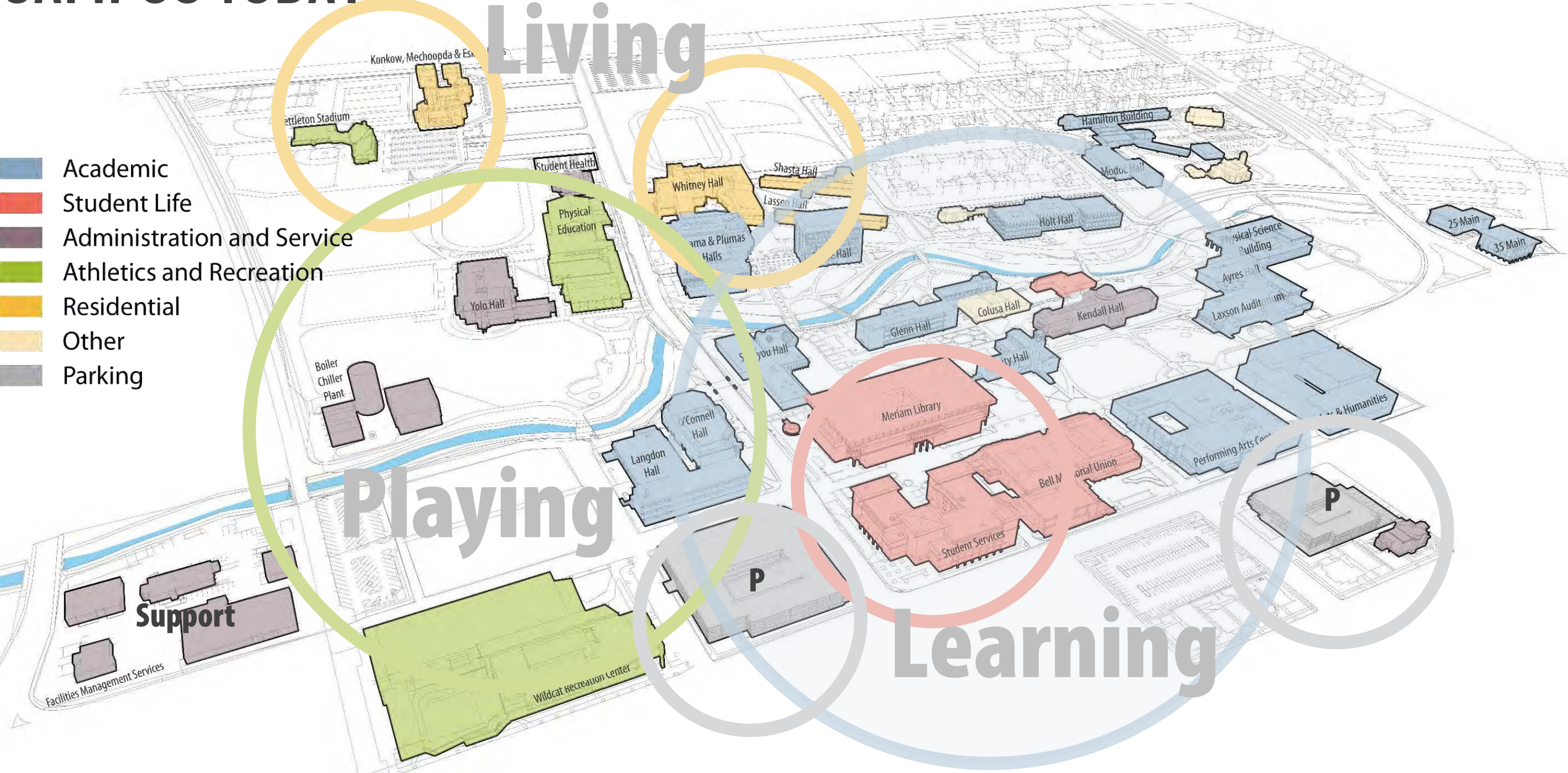
- Business School
- Engineering Expansion
- Classroom and Teaching Labs
- Structured Parking
- 4,000 Seat Arena*
- Health & Wellness Facility
- Union Expansion
- Recreation Center Expansion
- First Year Live On (+1,500 Beds)

PHYSICAL RESPONSE



CAMPUS TODAY

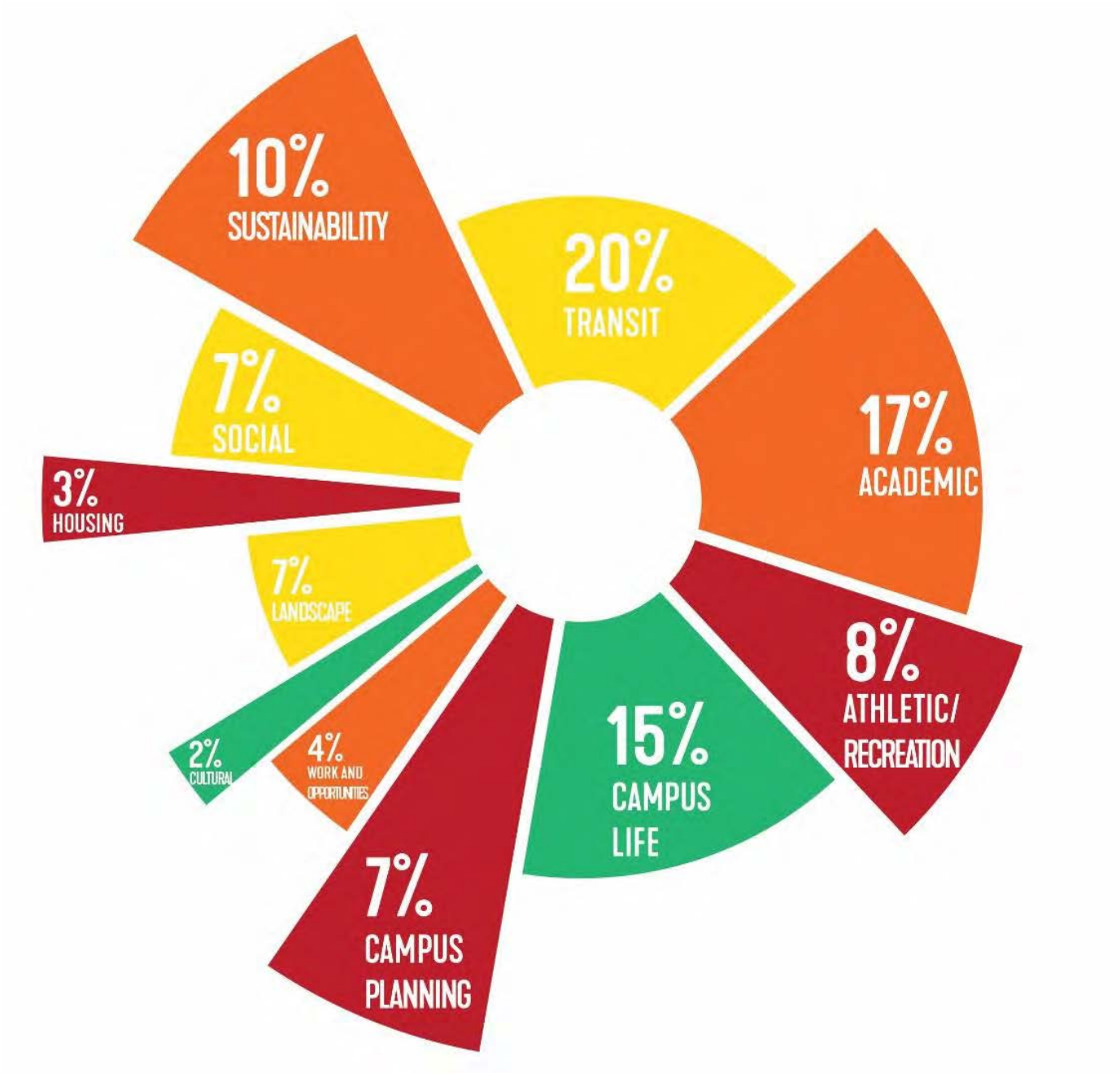
- Academic
- Student Life
- Administration and Service
- Athletics and Recreation
- Residential
- Other
- Parking



PLANNING THEMES

FRAMEWORKS

- A LEARNING CHICO STATE
- AN EXPERIENTIAL CHICO STATE
- A MOBILE CHICO STATE
- A CONNECTED CHICO STATE
- A SUSTAINABLE CHICO STATE
- AN INCLUSIVE CHICO STATE



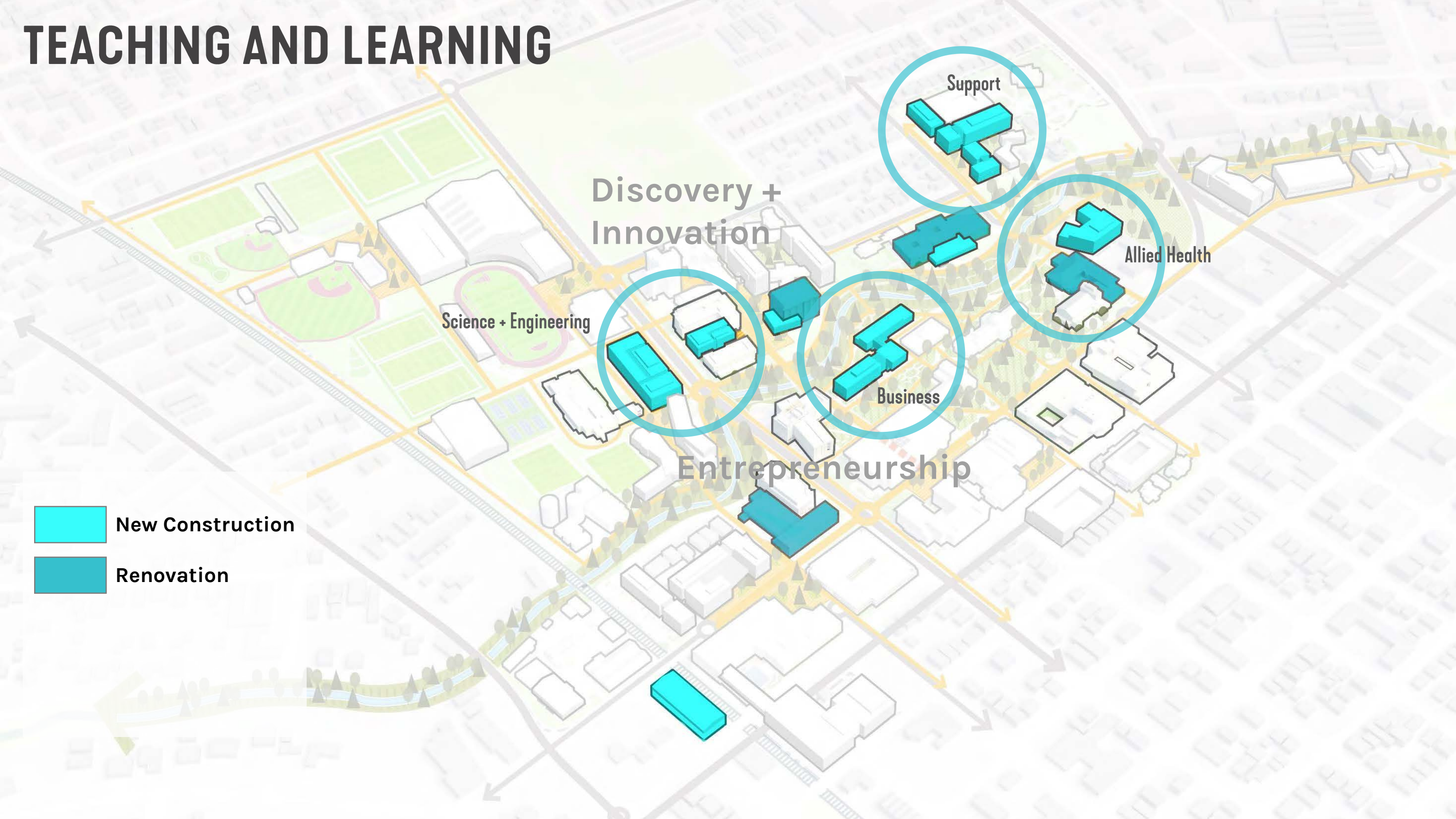
FRAMEWORK

A LEARNING CHICO STATE

Enrich the academic and research environment thru targeted building renovations and expansions, combined with strategic investment in new facilities.



TEACHING AND LEARNING



FRAMEWORK

AN EXPERIENTIAL CHICO STATE

Elevate the student experience by increasing the number of students living on campus and ensure all students have access to robust dining, recreation, and support options.





HOUSING EQUITY

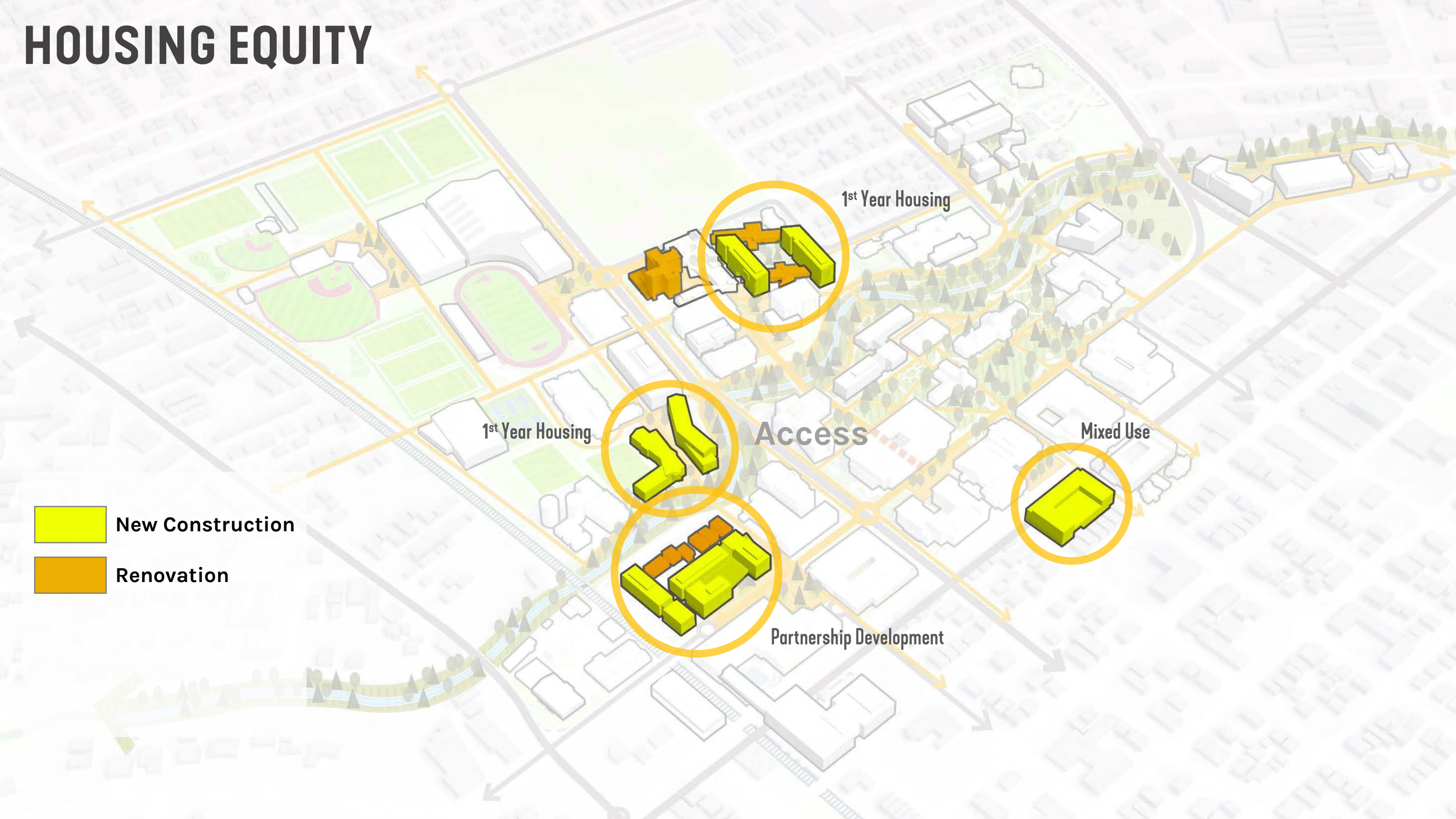
**Lower Housing Cost
Safety Concerns
Poor Access to Services**

**Higher Housing Cost
Fewer Safety Concerns
Good Access to Services**

HOUSING EQUITY

New Construction

Renovation



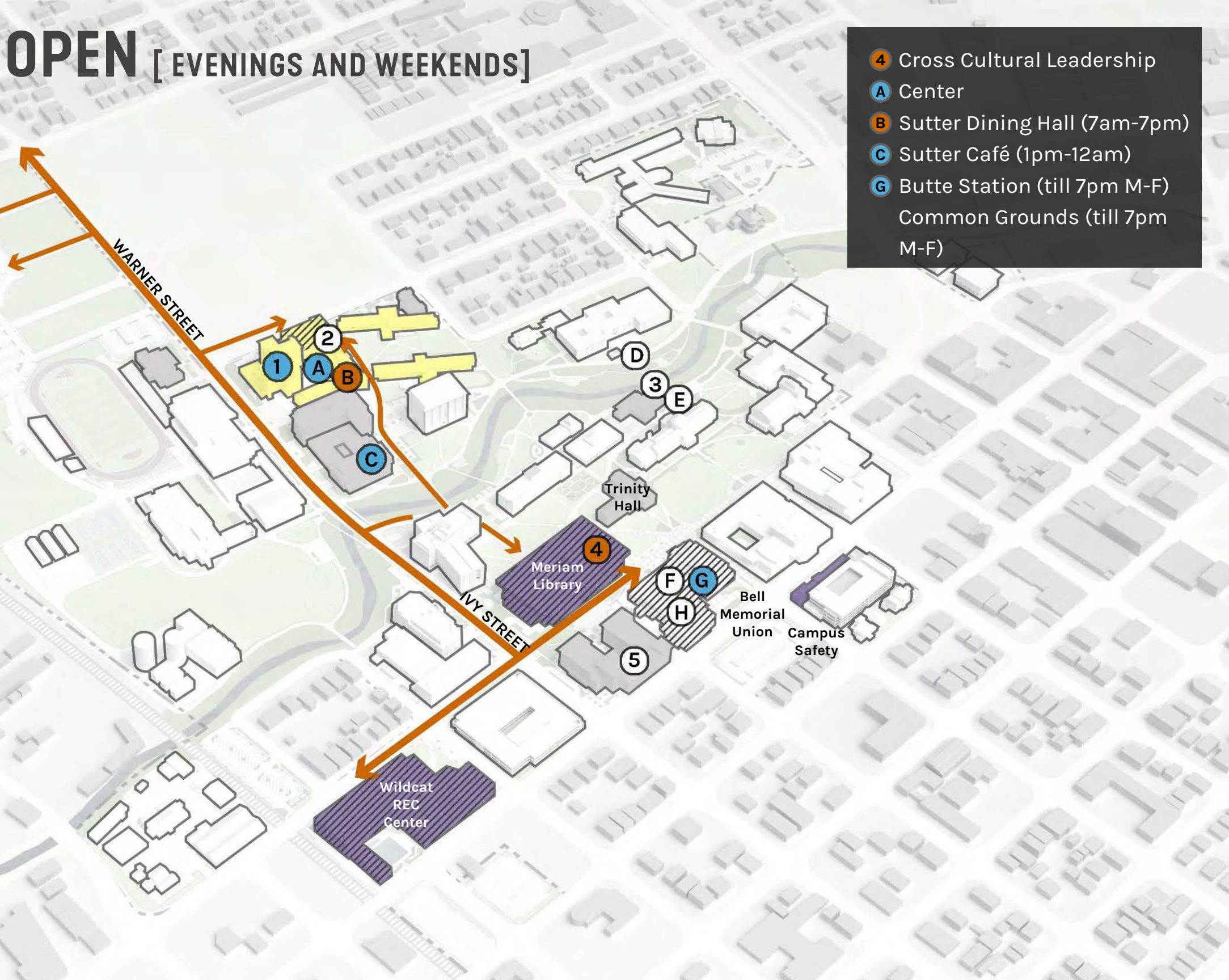
LIGHTS ON. DOORS OPEN [EVENINGS AND WEEKENDS]

- 4 Cross Cultural Leadership
- A Center
- B Sutter Dining Hall (7am-7pm)
- C Sutter Café (1pm-12am)
- G Butte Station (till 7pm M-F)
- Common Grounds (till 7pm M-F)

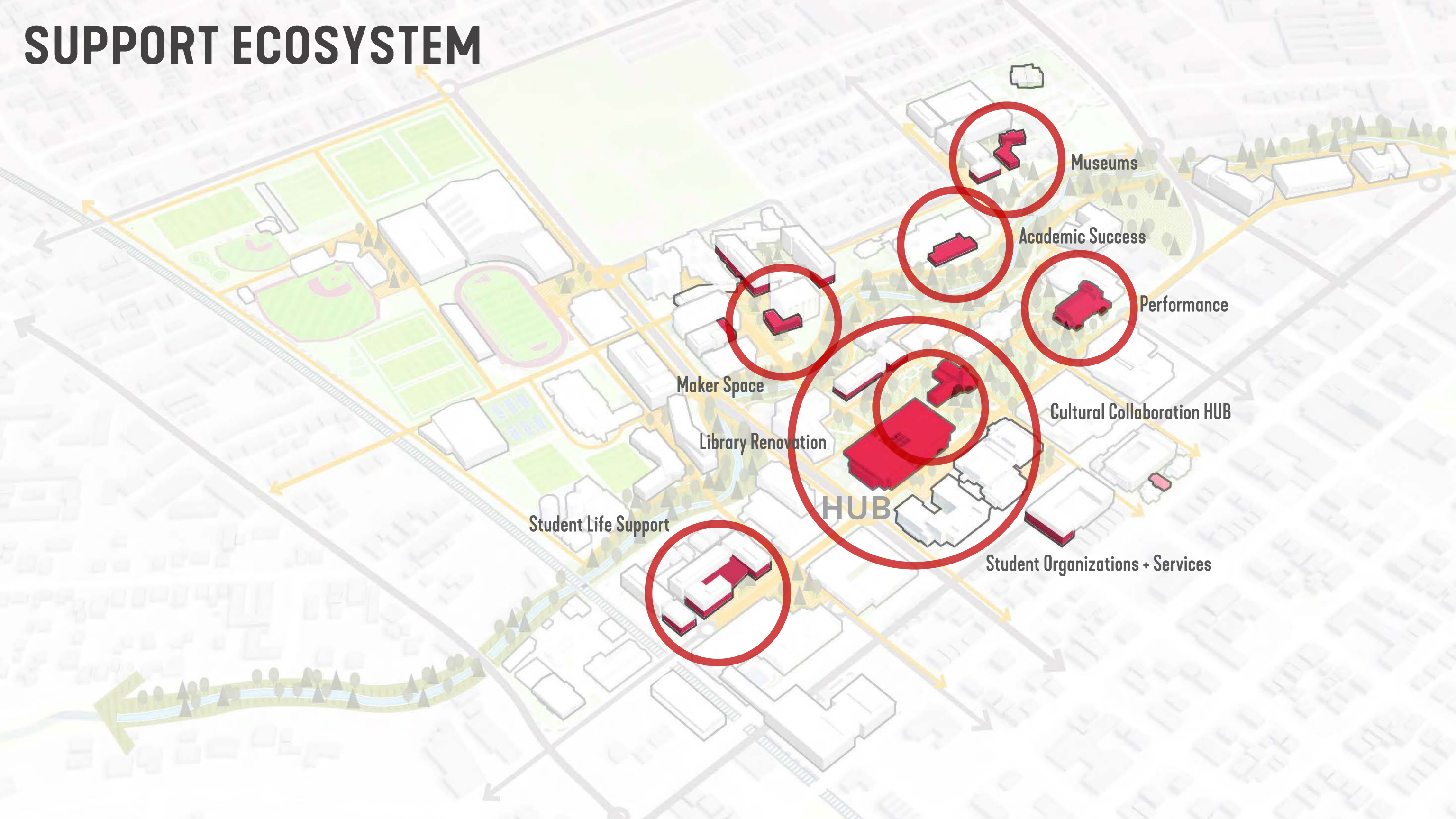
LEGEND

- STUDENT HOUSING
- WEEKDAY EVENINGS (5-7PM)
- WEEKDAY EVENINGS (7-12PM)
- WEEKENDS*
- OPEN ON EVENINGS/WEEKENDS
- WEEKEND PEDESTRIAN PATTERN

*Reflects Typical Operating Hours



SUPPORT ECOSYSTEM



SUPPORT ECOSYSTEM



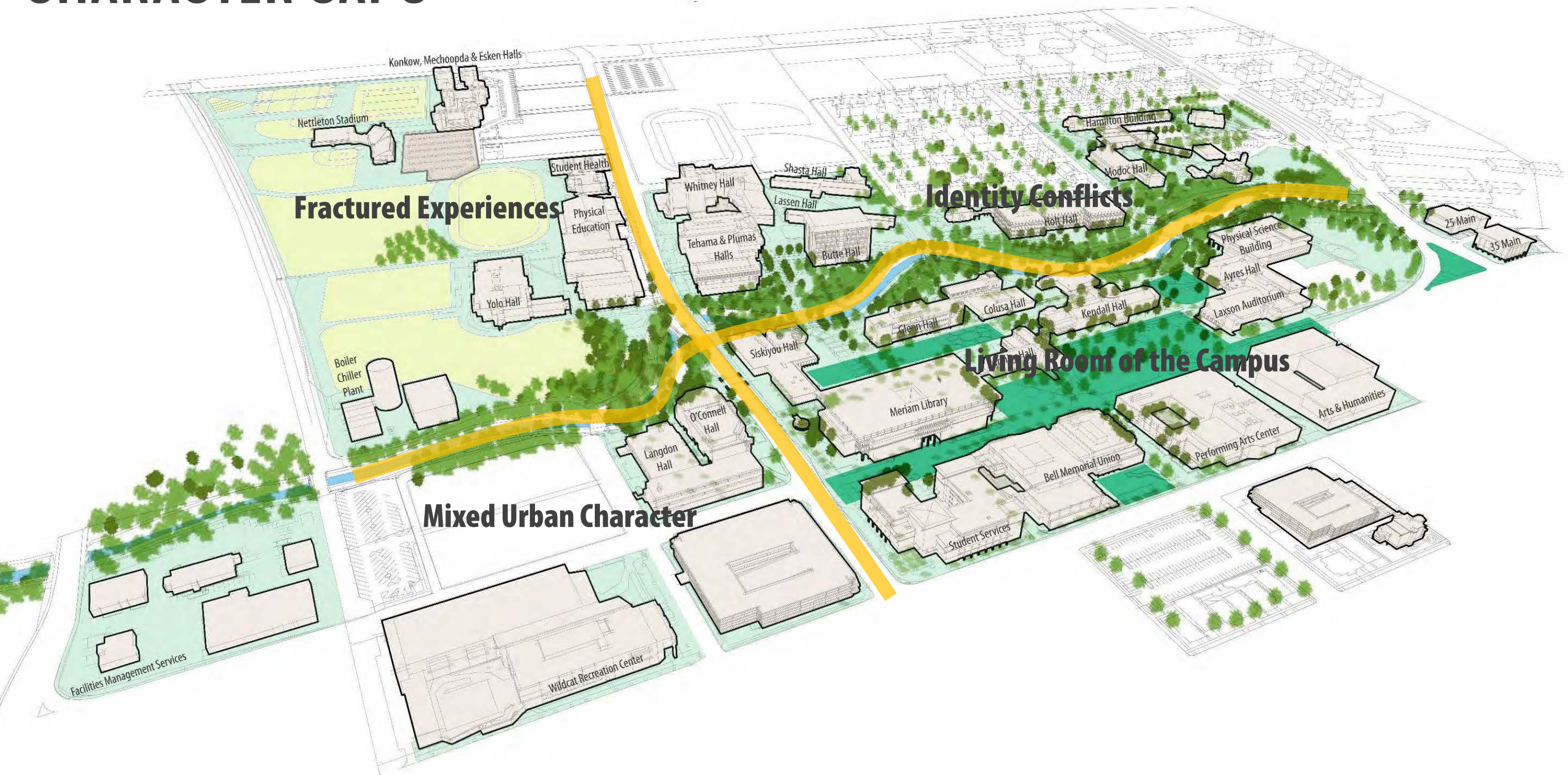
FRAMEWORK

A MOBILE CHICO STATE

Provide safe and accessible pedestrian routes across all of campus. In key areas, expand bicycle access and support facilities to encourage sustainable modes of transit.



CHARACTER GAPS





OWNERSHIP [NORTH]



OWNERSHIP [SOUTH]

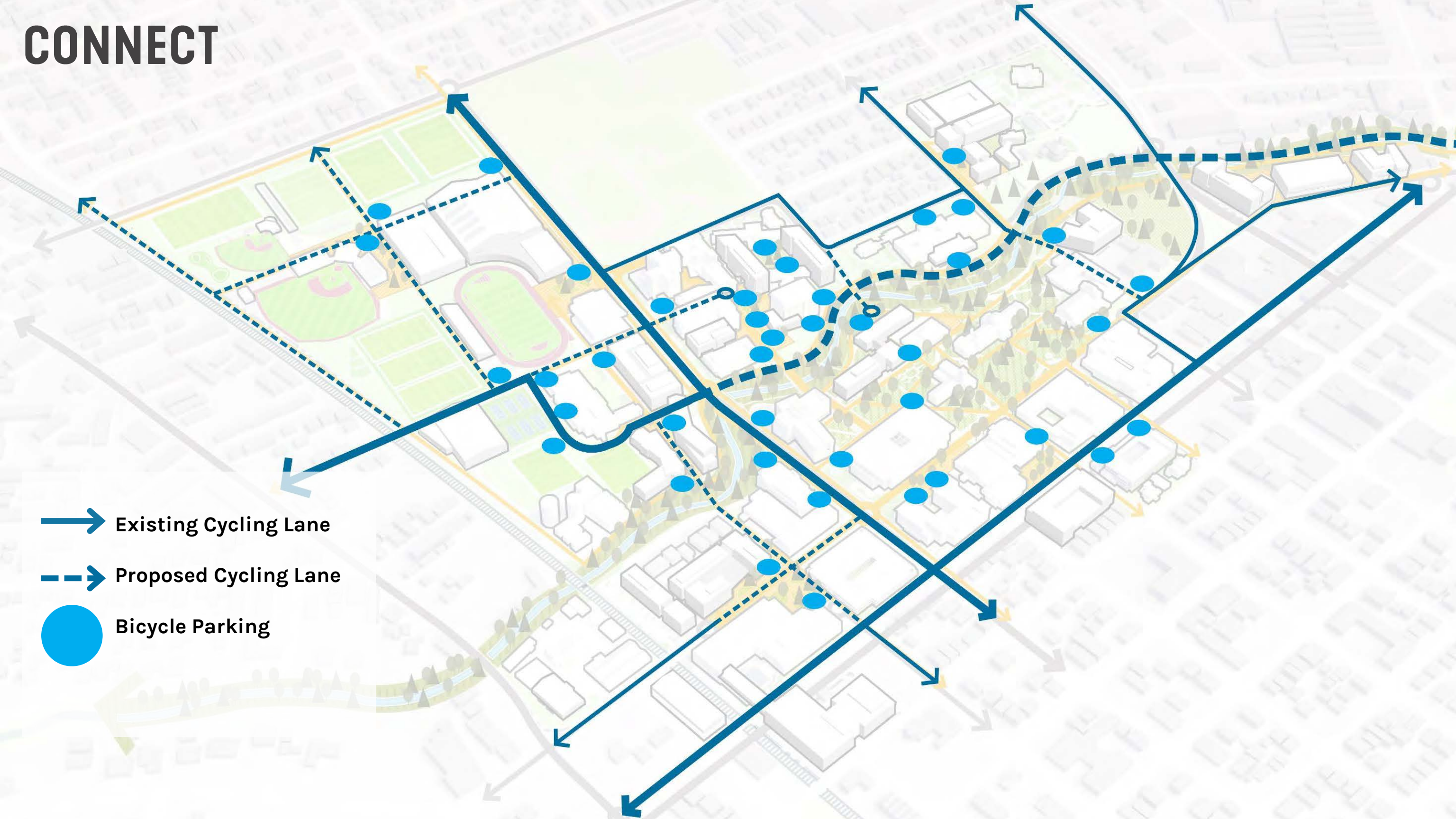
CONNECT

- Existing Walk
- Proposed Walk
- Plaza / Gathering Space
- Strategic Walk
- Enhanced Crossing



CONNECT

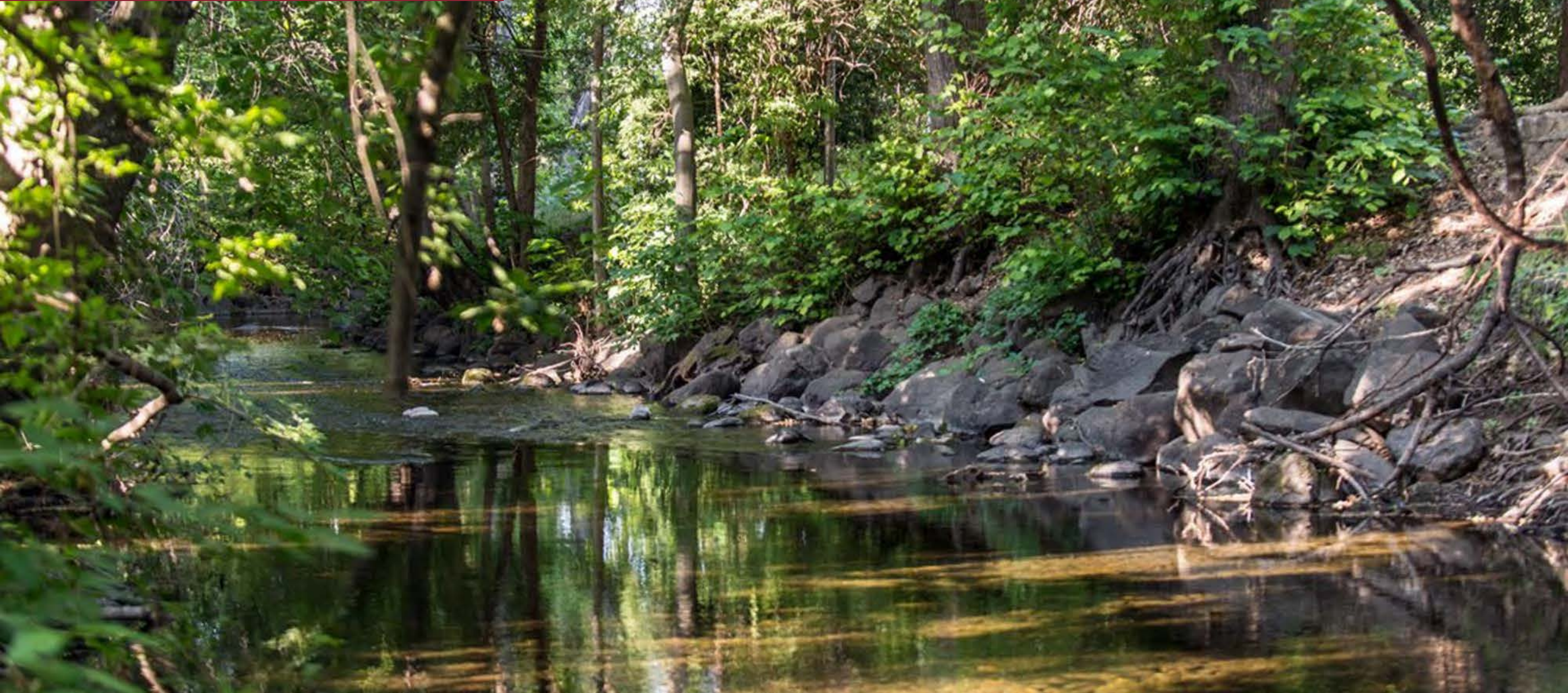
- Existing Cycling Lane
- - -> Proposed Cycling Lane
- Bicycle Parking



FRAMEWORK

A SUSTAINABLE CHICO STATE

Invest in sustainable strategies such as on-site renewable energy production to achieve net zero. Enhance existing natural amenities such as Big Chico Creek.



GOALS



Achieve carbon neutrality by 2030, with interim target of reaching 1990 levels by 2020



Continue to work towards a resilient campus as recognized by Second Nature’s criteria



Achieve Platinum rating by 2020.



System Sustainability

Continue to lead the CSU system in sustainability.

Campus-Scale Goals

Establish physical planning overlays to ensure Climate Goals are accelerated and enhanced through effort.

Integrate best practices into Master Plan to address regional vulnerabilities

Align physical planning principles across disciplines to achieve STARS points.

Ensure plan meets or exceeds goals set by CSU system.

How the physical masterplan should be advancing the campus-scale goals

CLIMATE NEUTRALITY

1. **Eliminate combustion** (no new fossil fuel use in buildings)
 - Phase off natural gas and steam networks
 - Electrify new buildings
2. All new buildings (and major reno) designed as **NZE buildings**
 - Utilizing on site renewable generation where viable
 - Offset at scale
3. Capitalizing on **passive first**
 - daylighting and solar orientation for energy and indoor/outdoor comfort
4. Look for **centralization opportunities** for cooling/microgrids
 - similar intensity/critical loads for centralization
 - clustering systems for economies of scale
 - Locating highest need closest to infrastructure

DRAFT PLAN

SUMMER 2019 COMPLETION





CONVERSATION

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