



CSUSB

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

PALM DESERT CAMPUS MASTER PLAN
2,000 FTE - 8,000 FTE | 2016

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO

PALM DESERT CAMPUS MASTER PLAN REVISION | 2016

ACKNOWLEDGMENTS

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Note: Acknowledgments are alphabetically ordered by administration or department represented, then by surname



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FOREWARD



To the CSUSB Community,

I am excited to share with you the new 2016 Master Plan for our Palm Desert campus. This plan is visionary for the future of our campus and culminates the collaborative work achieved over the past year with our Master Plan Steering Committee, the extended campus community, our neighbors and partners in the community, and our talented group of professional consultants. Through open forums, presentations, online discussions, and committee meetings, our campus community came together and the result is a bright and inspiring future for university life at the CSUSB Palm Desert Campus. As you review the plan, I have no doubt you will recognize how we listened carefully and have incorporated many of your ideas and inputs.

CSUSB initiated this master plan process in response to anticipated enrollment growth in the Coachella Valley and the generous land gift from the City of Palm Desert to bring the size of the campus to 170 acres. As we approach the limits of our current student capacity, we must look to innovative and advanced ways of funding, while configuring and developing more space for learning, living, and entrepreneurship. This 2016 Master Plan will serve as our roadmap to guide the growth of the university to support 8,000 FTE students in a more collaborative, engaging, and comprehensive setting.

The 2016 CSUSB Palm Desert Campus Master Plan aspires to transform the university from a suburban, commuter campus into a more dense, walkable urban campus with protected outdoor gathering places that are human-scaled, shaded and protected from the heat and seasonal winds of the desert environment. The planned configuration of new mixed-use academic buildings, student housing, food service, athletic playfields and expanded recreational opportunities, and student union facilities will create a Palm Desert Campus that serves as a vibrant 24/7 live-learn-work-play environment. This 2016 Master Plan also showcases our long-held values and remarkable commitment to an ecologically sustainable, resource resilient, and secure campus.

I would like to offer special thanks to our master plan consultants, Callison-RTKL and Assembledge+, as well as a large team of specialized consultants, who have worked collaboratively with our Master Plan Steering Committee to create this consensus master plan that reflects the best elements of each of the alternative scenarios that you commented on at our Town Hall meetings. I personally want to thank all who contributed their time and hard work to create this comprehensive and exciting Master Plan that envisions a bright and inspiring future for our campus. Together, we have created an exemplary plan that offers an inclusive and clear path forward for our campus, one that will secure a real sense of place for the CSUSB Palm Desert Campus, a proud identity, and provide an outstanding environment for higher education that will exceed the expectations of our community.

We are grateful for your participation, this plan belongs to you; the Palm Desert Campus students, faculty, staff, and the communities of the Coachella Valley.

Sincerely,

Tomás D. Morales
President



EXECUTIVE SUMMARY



ENVISIONING AN INNOVATIVE PLAN FOR CHANGING TIMES

LEADING WITH VISION

2016 CAMPUS MASTER PLAN VISION

A PLAN BUILT BY THE CSUSB PALM DESERT CAMPUS COMMUNITY

TRANSFORMATIONAL APPROACH

2016 PDC CAMPUS MASTER PLAN THEMES

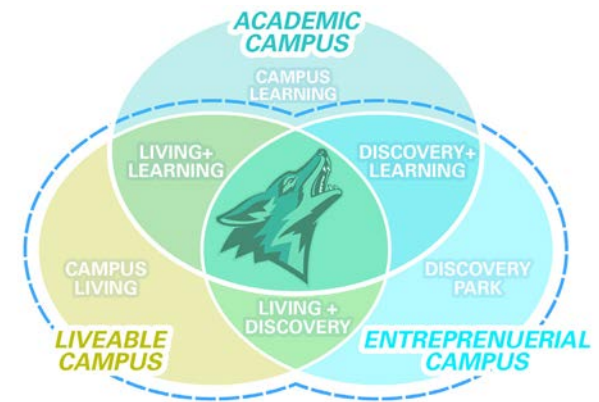
ENVISIONING AN INNOVATIVE PLAN FOR CHANGING TIMES

As an Off-Campus Center of CSUSB, the Palm Desert Campus reinforces the University's brand and maintains the same CSUSB goals for educational excellence delivered from a campus and facilities that foster high levels of student learning and collegiality.

The 2016 Palm Desert Master Plan represents a vision of what the physical campus can become as it grows to reach its stated enrollment goal of 8,000 FTE. It seeks to address the needs of the local community and to achieve sustainable integration with the local desert environment. The plan is a coordinated series of proposals for the development of the CSUSB Palm Desert campus over the next 20 years that are designed to guide and inspire the continued growth of the University to become a more vibrant, expanded-full service, 24/7 campus.

The primary purpose of the physical campus is to serve the mission of California State University San Bernardino and its educational processes. The educational experience in its fullest sense takes place not only in classrooms, but at meals, in residential areas, in the

course of recreational activities, and through informal and casual encounters. The physical campus provides the setting for these experiences to be shared by students, faculty, staff and campus visitors and can be a powerful tool in the educational process. To insure the creation of a supportive and vibrant 24/7 campus that is supportive of the University's educational mission, all of these factors have been considered.



LEADING WITH VISION

A State University is built to prepare future generations to fulfill their dreams. **The 2016 CSUSB Palm Desert Campus Master Plan** represents a major planning effort by the university - the result of intense collaboration within this learning community- provides a renewed campus vision where the Coachella Valley, the State, and the global community will benefit for generations to come.

The CSUSB Palm Desert Campus was initially developed on a 55.3 acre site donated by the City of Palm Desert in September of 2000 to the California State University (CSU) system. In 2015 the City of Palm Desert transferred ownership of an additional 114.1 acres to the CSU creating a total site area of 169.4 acres for PDC development, the basis for preparation of the 2016 PDC Master Plan.

Guided by the PDC Master Plan Steering Committee and based on the Vision and Principles described in Chapter 3, the 2016 PDC Master Plan is described in this document via narrative, diagrams and illustrations that represent the envisioned future physical environment of the campus. This comprehensive plan envisions the creation of a complete University environment that includes the development of new academic, library and student support functions; campus life facilities including new student housing and dining; revised vehicle and pedestrian access, circulation and parking; enhanced open space and landscape; athletic and recreation facilities; and sustainability initiatives.

Capitalizing on the most vivid, character-defining attributes of the campus site—its desert setting with views across the Coachella Valley to the Indian Hills - the 2016 Palm Desert Master Plan establishes an incremental development approach to campus growth over a twenty-year period that integrates the existing campus and builds the majority of new campus facilities towards the east—ultimately transforming the campus into an environment for learning that fits harmoniously with its desert surroundings.

Acknowledging the limited availability of State funding for the construction of new or renovated facilities within the CSU system, the 2016 Palm Desert Master Plan explores potential options to diversify funding resources and work to implement the plan through public/private and public/public partnerships and innovative alternate finance methods, including an aggressive capital campaign in the Coachella Valley where the community has been extremely generous in their support of the campus to date.

All of these efforts will support the growth of the University as an innovative regional economic engine, a center for academic achievement, community interaction and establish a setting for research & development, internship and entrepreneurial opportunities that bring industry, students and faculty together.

The 2016 PDC Campus Master Plan for CSUSB's Palm Desert Campus is the most ambitious and important planning document crafted by the University since its inception in 1994 and envisions a vibrant 24/7 live-learn-work-play environment.



Clockwise from lower left: Groundbreaking ceremony of permanent campus for CSUSB Palm Desert Campus in 2000; Aerial view of Palm Desert Campus looking north towards 10 Freeway; and "The Sign Raising" for the site of California State University, San Bernardino Coachella Valley Campus

2016 PALM DESERT MASTER PLAN VISION

The Palm Desert campus of Cal State University San Bernardino will become a complete 4-year University campus serving as a center of opportunity and enterprise for the Coachella Valley and the State of California. The campus, planned to be a healthy, safe environment, will enable diverse lives to grow and prosper and provide a setting in which the intellectual and creative pursuits of the University and the general community are activated, interconnected, and sustainable.

2016 PDC MASTER PLAN VISION STATEMENT

Cal State University Palm Desert Campus will support the growth of the CSUSB brand and image in Riverside and San Bernardino Counties while serving the unique needs of the Greater Coachella Valley residents, workforce, and community.

2016 PDC MASTER PLAN MISSION STATEMENT

As a healthy environment enabling diverse lives to grow and prosper, the campus will provide a setting in which the intellectual and creative pursuits of the University and general community are activated, interconnected, and sustainable- supporting CSUSB's education mission.



The background of the slide is a photograph of a large crowd of people at night. Many individuals have their hands raised in the air, suggesting a celebratory or enthusiastic event. The scene is illuminated by warm, orange and yellow lights, possibly from stage lighting or street lamps, creating a vibrant and energetic atmosphere. The overall color palette is dominated by these warm tones, with a dark blue gradient overlaying the top and right portions of the image to provide a backdrop for the white text.

CAL STATE UNIVERSITY PALM DESERT CAMPUS

Will become a global learning center of
**OPPORTUNITY AND
ENTERPRISE**

A PLAN BUILT BY THE CSUSB COMMUNITY



The 2016 CSUSB Palm Desert Campus Master Plan was developed to reflect the hopes, aspirations, and objectives of the entire campus community.

The Palm Desert Campus maintains deep connections with its Coachella Valley stake-holders who have strongly supported the campus since its inception. To create a consensus for the future of the University, the 2016 Palm Desert master planning effort enlisted support from campus constituents and the Coachella Valley community.

The 2016 Palm Desert Master Plan reflects the hopes, aspirations, and objectives of the campus community. The Master Planning process was staged to engage the community to ensure collective choices for the campus community are 'built into' the 2016 Master Plan. As a result, the 2016 PDC Master Plan is a combined collaborative effort of the PDC Master Plan Committee-composed of CSUSB/PDC faculty and staff; selected community stakeholders and representation from the CSU Chancellor's Office; students; community stakeholders; and the Master Plan consultant team. A series of work meetings were held with the Master Plan Steering Committee and the Master Plan consultant team- where initiatives and concepts were identified, presented, and discussed. Additional comments were gathered from two campus-wide town meetings. The campus vision and Master Plan concepts were refined- resulting in a 'consensus plan' developed after Master Plan consultants integrated comments from the Campus Town Hall Forum 2 and Master Plan Committee. Informational meetings between individuals and organizations supported development of the Palm Desert Campus in the past and/or expressed interest in future support for campus.

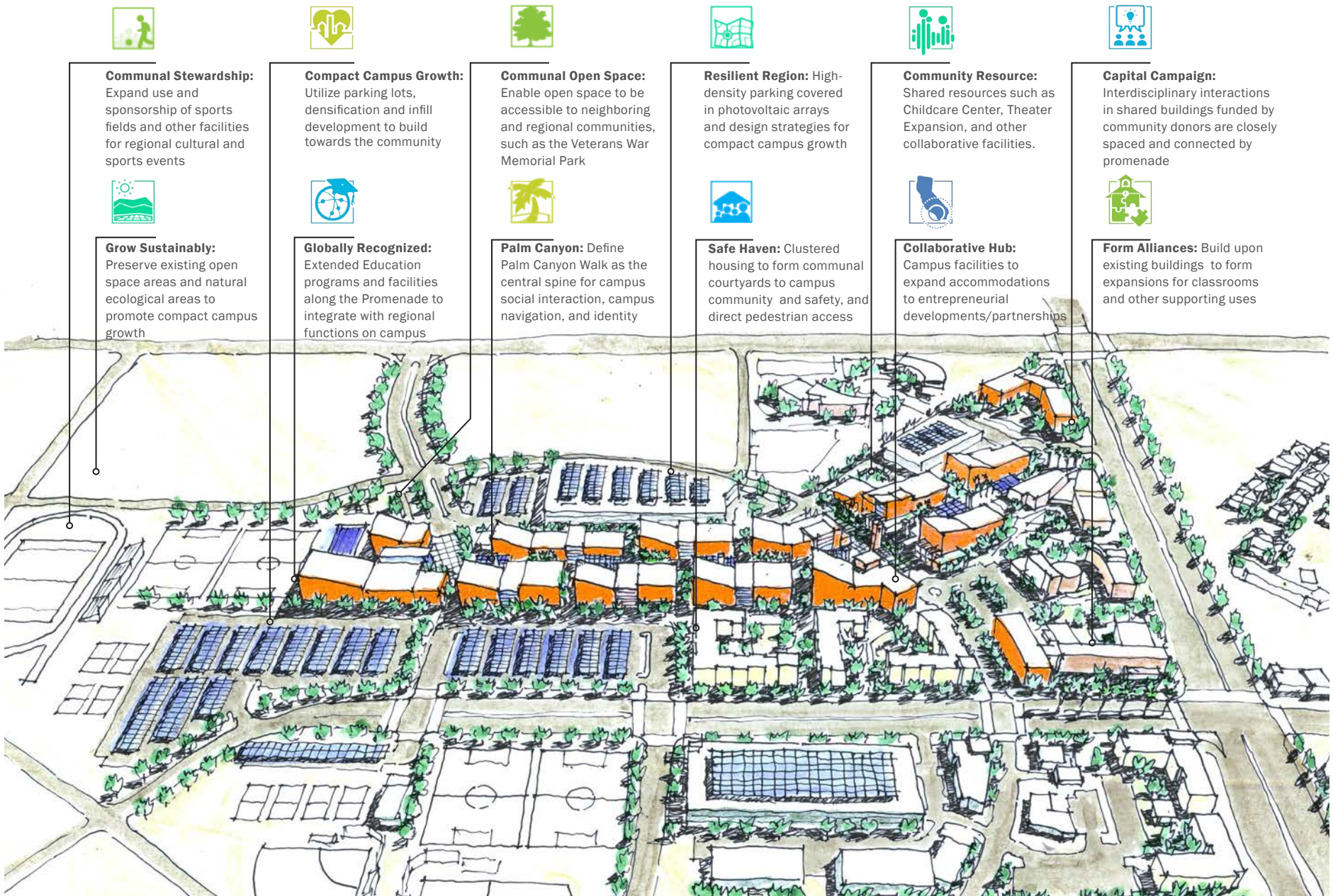
65 COMMITTEE MEMBERS AND PUBLIC PARTICIPANTS LENDING INPUT THROUGH 8 OPEN-DOOR WORKSHOPS AND TOWN-HALL MEETINGS

48% TOTAL VOTES SELECTED A MASTER PLAN SCHEME THAT ENGAGES THE CAMPUS WITH ITS SURROUNDING CONTEXT THROUGH PEDESTRIAN ACCESS

163 DOCUMENTED COMMENTS AND SUGGESTIONS ADVISED THE PLANNING TEAM TO IMPROVE CAMPUS COMMUNITY, SERVICES, AND OPEN SPACE

3 MASTER PLAN SCHEMES WERE SHOWN FOR PUBLIC EVALUATION AND SELECTION





OUTREACH-DRIVEN CONSENSUS PLAN AND RESPONSIVENESS TO PLAN OBJECTIVES

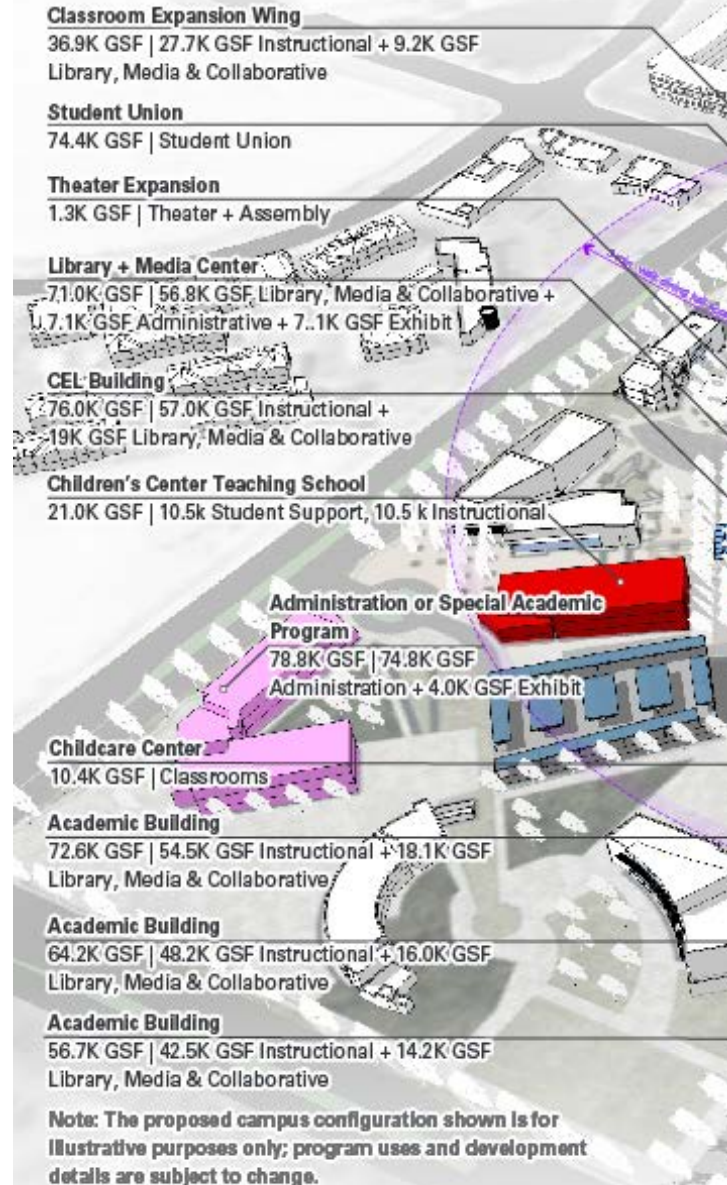
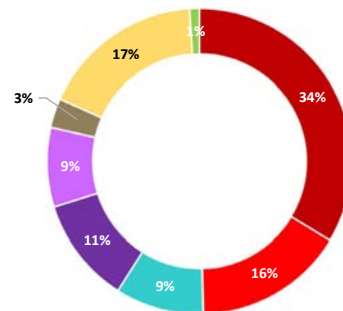
TRANSFORMATIONAL APPROACH

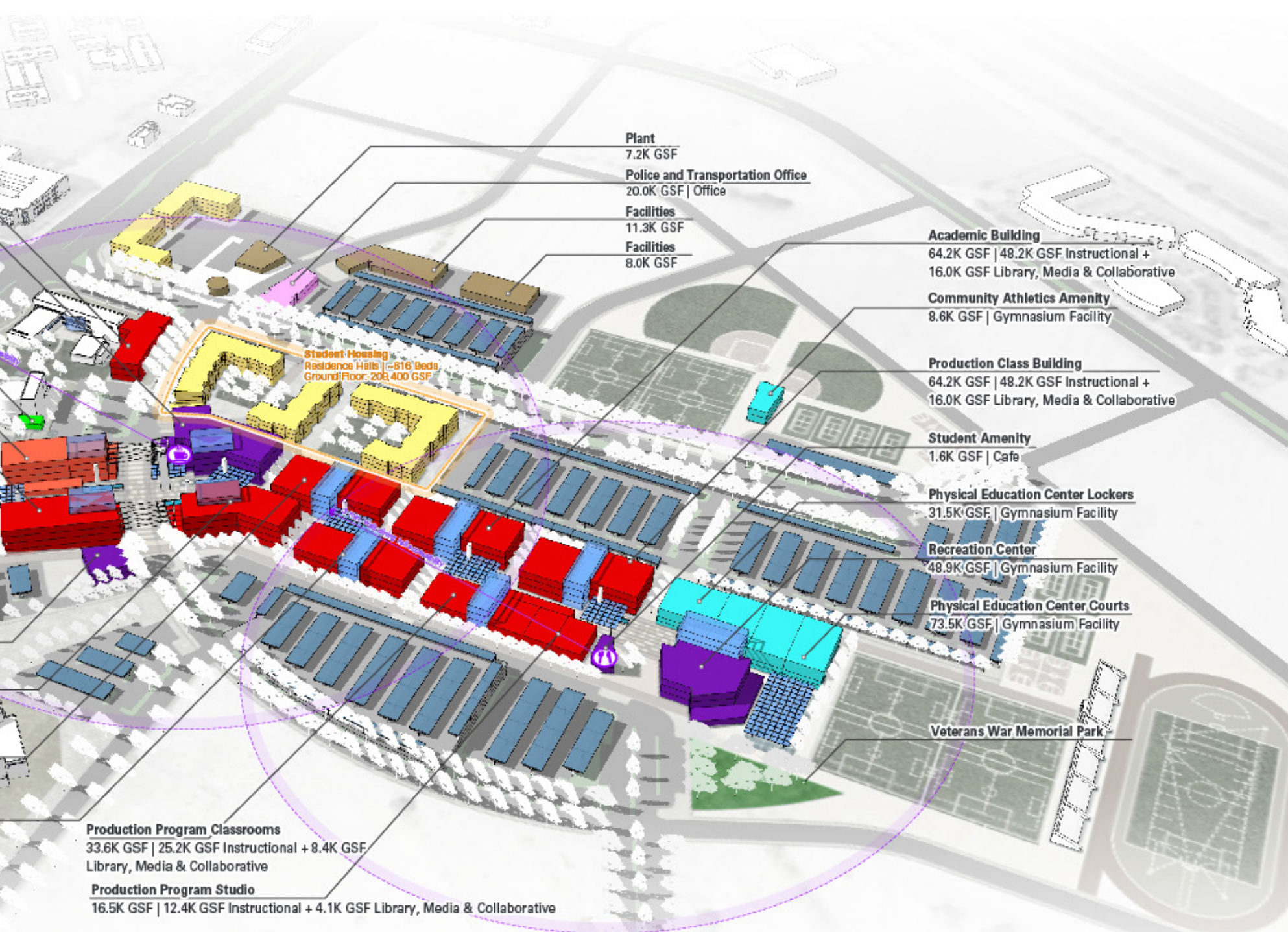
All of these efforts will support the growth of the University as an innovative regional economic engine, a center for academic achievement, community interaction and establish a setting for research & development, internship and entrepreneurial opportunities that bring industry, students and faculty together.

The 2016 Master Plan is an aspirational plan intended to transform the University into a full-service campus community with state of the art academic facilities, student housing, dining, and other amenities that support a vibrant 24/7 LIVE-LEARN-WORK-PLAY campus life.

Trends in campus planning began emphasizing the creation of compact campuses to reduce walking distances, to allow building configurations to form protected courtyards, and to create a sense of place. The 2016 PDC Master Plan concentrates the required development to accommodate 8,000 FTE students within a compact area at the southwestern corner of the PDC owned land, incorporating the existing PDC campus and structuring the bulk of campus growth eastwards. Creating a compact campus footprint, the Palm Desert Master Plan reduces the amount of land required for University development, which allows for future development that is supportive of the CSUSB mission, potential future revenues, and future campus growth that exceeds 8,000 students. The central features of the 2016 PDC Master Plan are as follows: 1) Provide necessary building space and support uses to accommodate 8,000 FTES- including near-term projects; 2) Create a central pedestrian plaza linking the existing campus to new planned development to the east; 3) Organize new academic buildings to form the “Palm Canyon Walk” as the central east-west pedestrian promenade-expanding the academic core; 4) Promote multi-disciplinary shared academic buildings to accommodate future program growth and new pedagogies; 5) Reserve sites for student housing to promote a 24/7 campus environment; 6) Propose new strategically located parking lots surrounding the academic core -facilitating easy transition between parking and campus grounds (planned to accommodate parking structures in the long term); 7) Enhance the main campus entry at Berger Circle Drive West with new signage, landscaping, and campus housing to enhance the campus entry identity; 8) Provide sustainability initiatives to protect and conserve campus and community resources.

DEVELOPMENT SUMMARY:				
ACADEMIC SPACE CATEGORIES	PROPOSED		MIN DEMAND	MAX DEMAND
Instructional	408,075	GSF	350,000	490,000
Library & Collaborative	192,825	GSF	155,000	200,000
Physical Education	113,630	GSF	111,000	115,000
Student Support	135,300	GSF	130,000	150,000
Administration	101,960	GSF	98,000	105,000
Exhibit	12,340	GSF	10,000	15,000
Physical Plant	26,500	GSF	25,000	37,000
ACADEMIC SPACE TOTAL	990,630	GSF	879,000	1,103,000
RESIDENTIAL HALL YIELD SUMMARY	GSF or BEDS			
CAMPUS TOTAL NEW BEDS		616 BEDS		8% of Students
CAMPUS TOTAL NEW HOUSING GSF		209,400 GSF		7,384 remaining commuters





Plant
7.2K GSF

Police and Transportation Office
20.0K GSF | Office

Facilities
11.3K GSF

Facilities
8.0K GSF

Academic Building
64.2K GSF | 48.2K GSF Instructional +
16.0K GSF Library, Media & Collaborative

Community Athletics Amenity
8.6K GSF | Gymnasium Facility

Production Class Building
64.2K GSF | 48.2K GSF Instructional +
16.0K GSF Library, Media & Collaborative

Student Amenity
1.6K GSF | Cafe

Physical Education Center Lockers
31.5K GSF | Gymnasium Facility

Recreation Center
48.9K GSF | Gymnasium Facility

Physical Education Center Courts
73.5K GSF | Gymnasium Facility

Veterans War Memorial Park

Student Housing
Residence Halls | ~816 Beds
Ground Floor: 208,400 GSF

Production Program Classrooms
33.6K GSF | 25.2K GSF Instructional + 8.4K GSF
Library, Media & Collaborative

Production Program Studio
16.5K GSF | 12.4K GSF Instructional + 4.1K GSF Library, Media & Collaborative

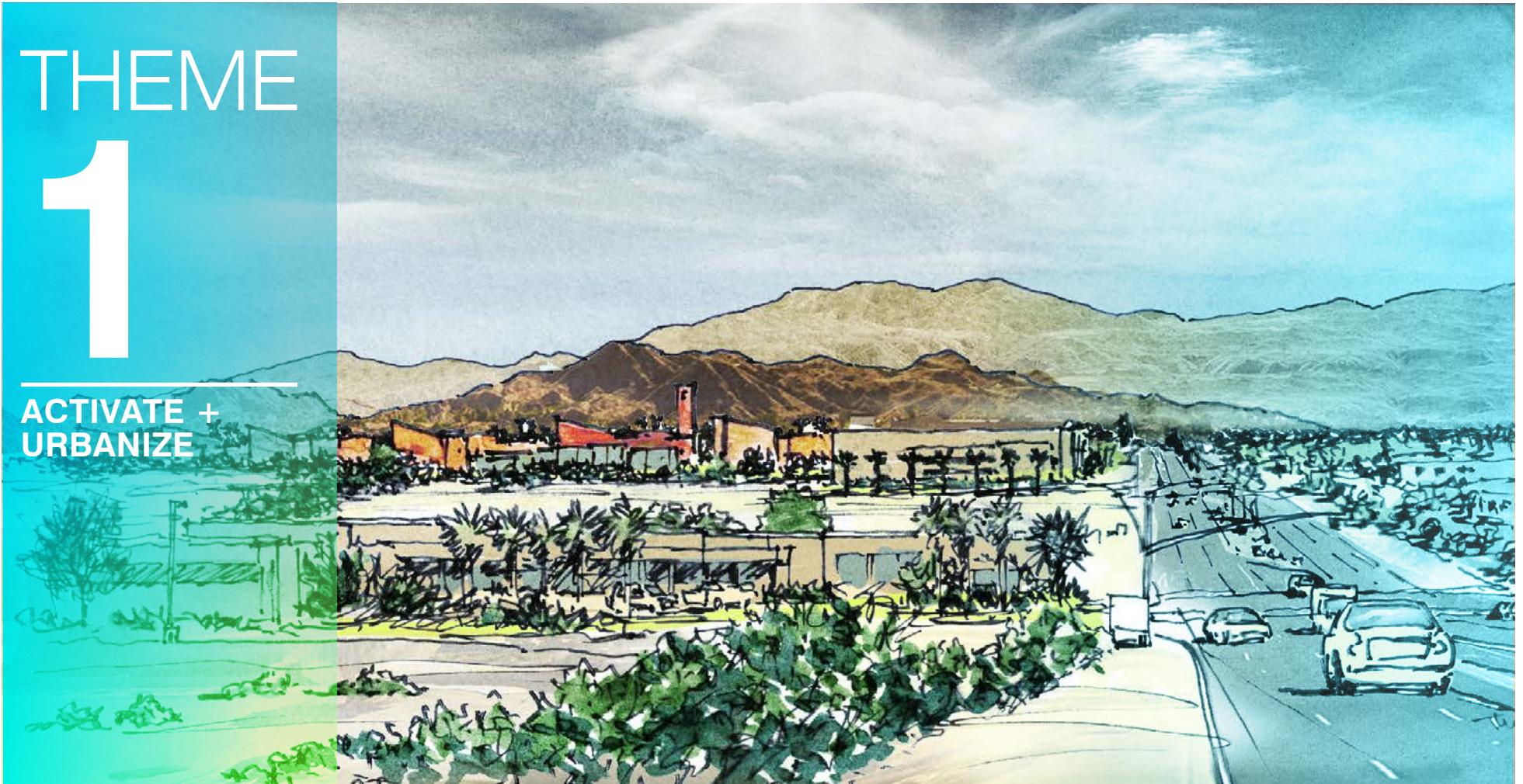
CAMPUS DEVELOPMENT OVERVIEW



THEME

1

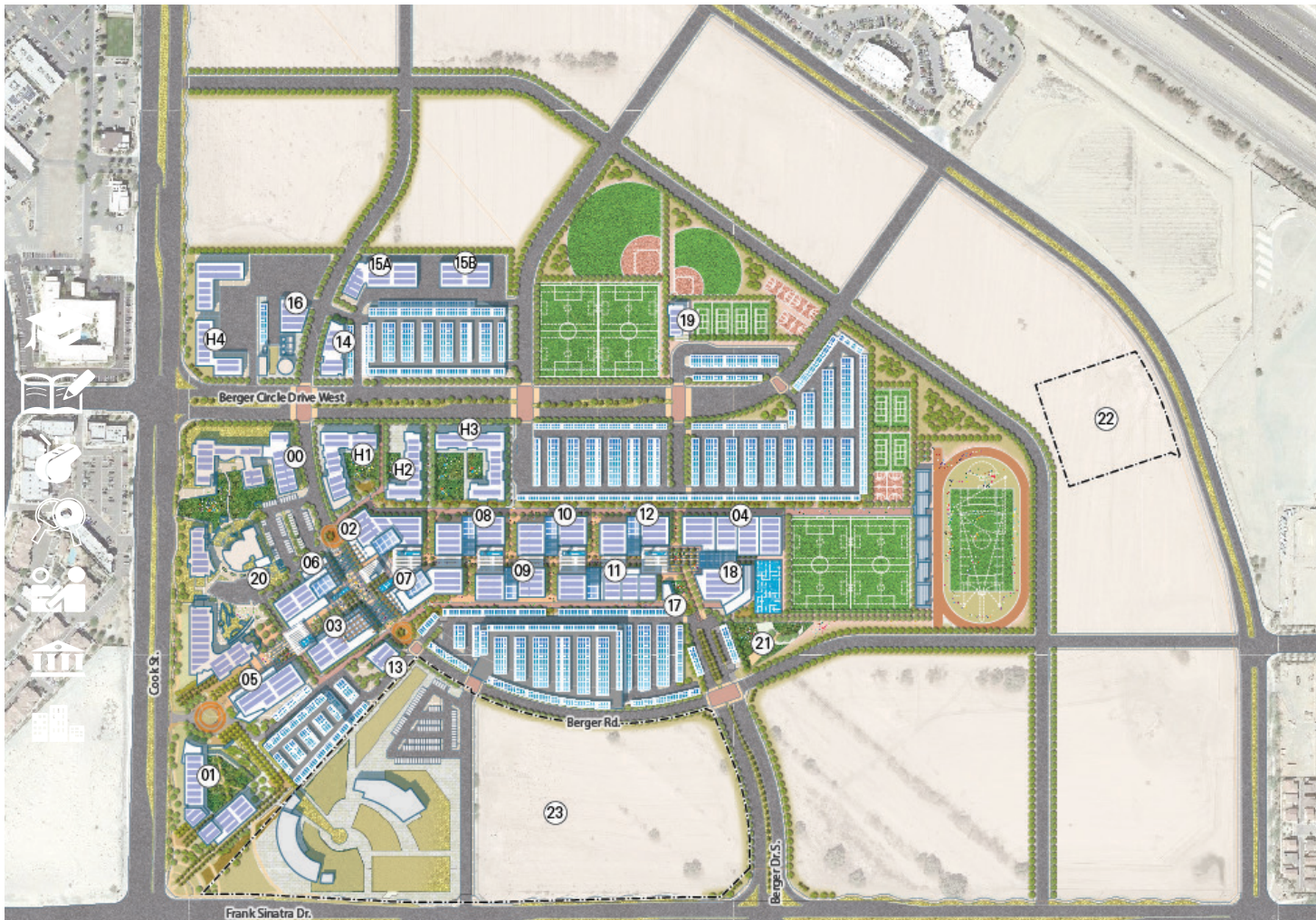
ACTIVATE + URBANIZE



INTENSIFY AND URBANIZE THE CAMPUS AS IT GROWS

With campus growth over time, the 2016 Master Plan is designed to evolve the Palm Desert campus into a denser, more compact urban campus that is easily walkable and contains a series of more human scaled and protected outdoor open spaces. This will be accomplished through strategic placement of new facilities which intensify activities and form pedestrian-friendly outdoor spaces conducive to and comfortable for student gathering.

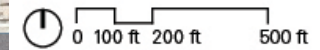
The 2016 Palm Desert Master Plan represents a fundamental shift in how the campus will evolve with a new central pedestrian plaza as the new heart of the PDC, linking existing campus development to new planned development to the east. New academic buildings will be sited to create a new central east-west pedestrian promenade as the organizing element of the expanded academic core. To allow shared accessed and community, the plan strategically locates new campus athletic and student recreation facilities at the eastern terminus of the “Palm Canyon Walk”.



LEGEND

- 00 Classroom Expansion Wing
- 01 Administration or Special Academic Program
- 02 Student Union
- 03 CEL Building
- 04 Physical Education Center Courts + Lockers
- 05 Western Signature Lab Building
- 06 Library + Media Center
- 07 Academic Building
- 08 Academic Building
- 09 Academic Building
- 10 Academic Building
- 11A Production Program Classrooms (Adjoining Stu
- 11B Production Program Studio
- 12 Production Class Building (Across the Promena)
- 13 Childcare Center
- 14 Police and Transportation Office
- 15A Facilities 1
- 15B Facilities 2
- 16 Central Plant (Food Pavilion)
- 17 Student Amenity
- 18 Recreation Center
- 19 Community Athletics Amenity
- 20 Theater Expansion
- 21 Veterans War Memorial Park
- 22 Fire Station *
- 23 UC Riverside Satellite Campus *
- H1 Housing
- H2 Housing
- H3 Housing
- H4 Housing

* Not under CSU ownership



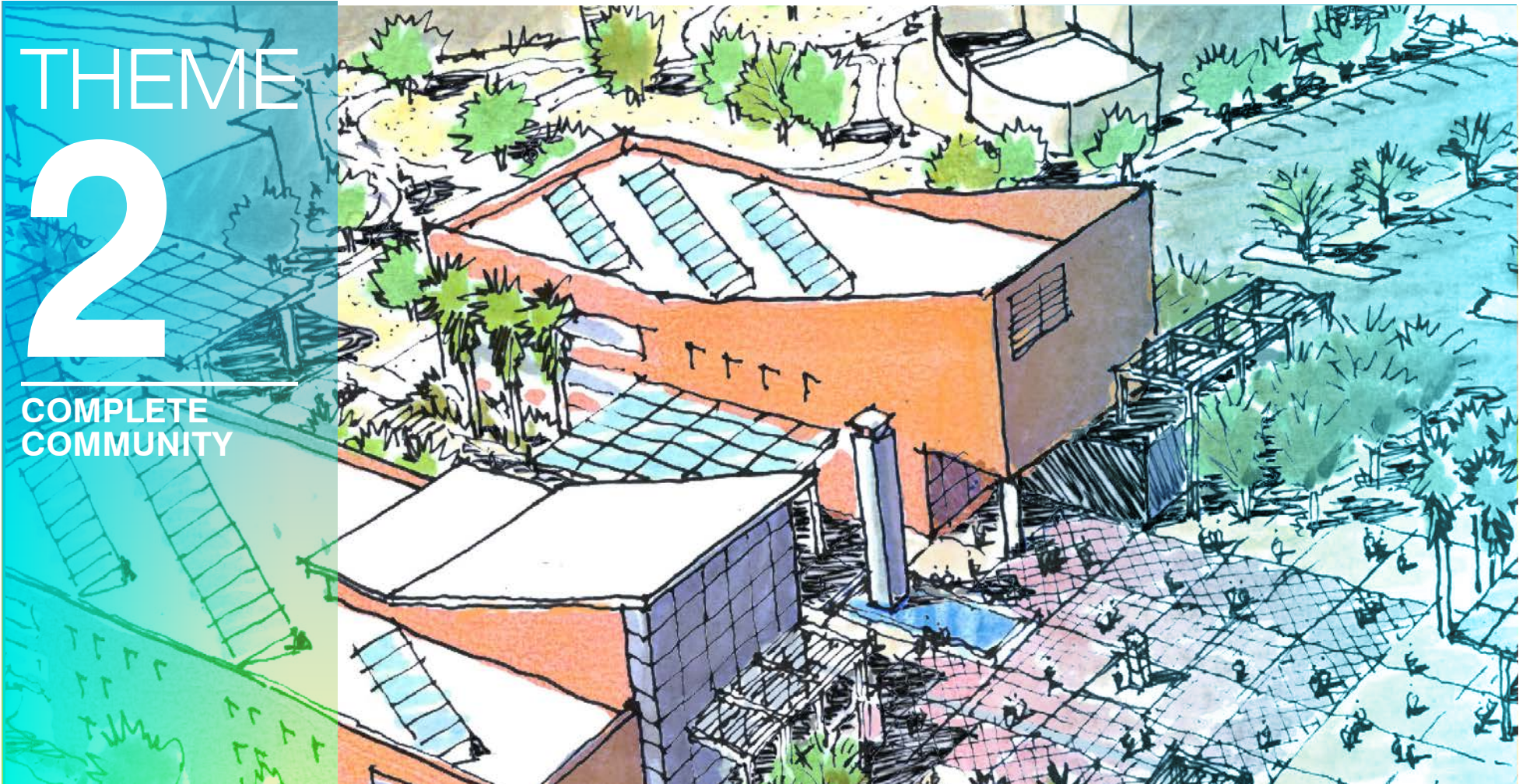
CSUSB PALM DESERT ILLUSTRATIVE MASTER PLAN



THEME

2

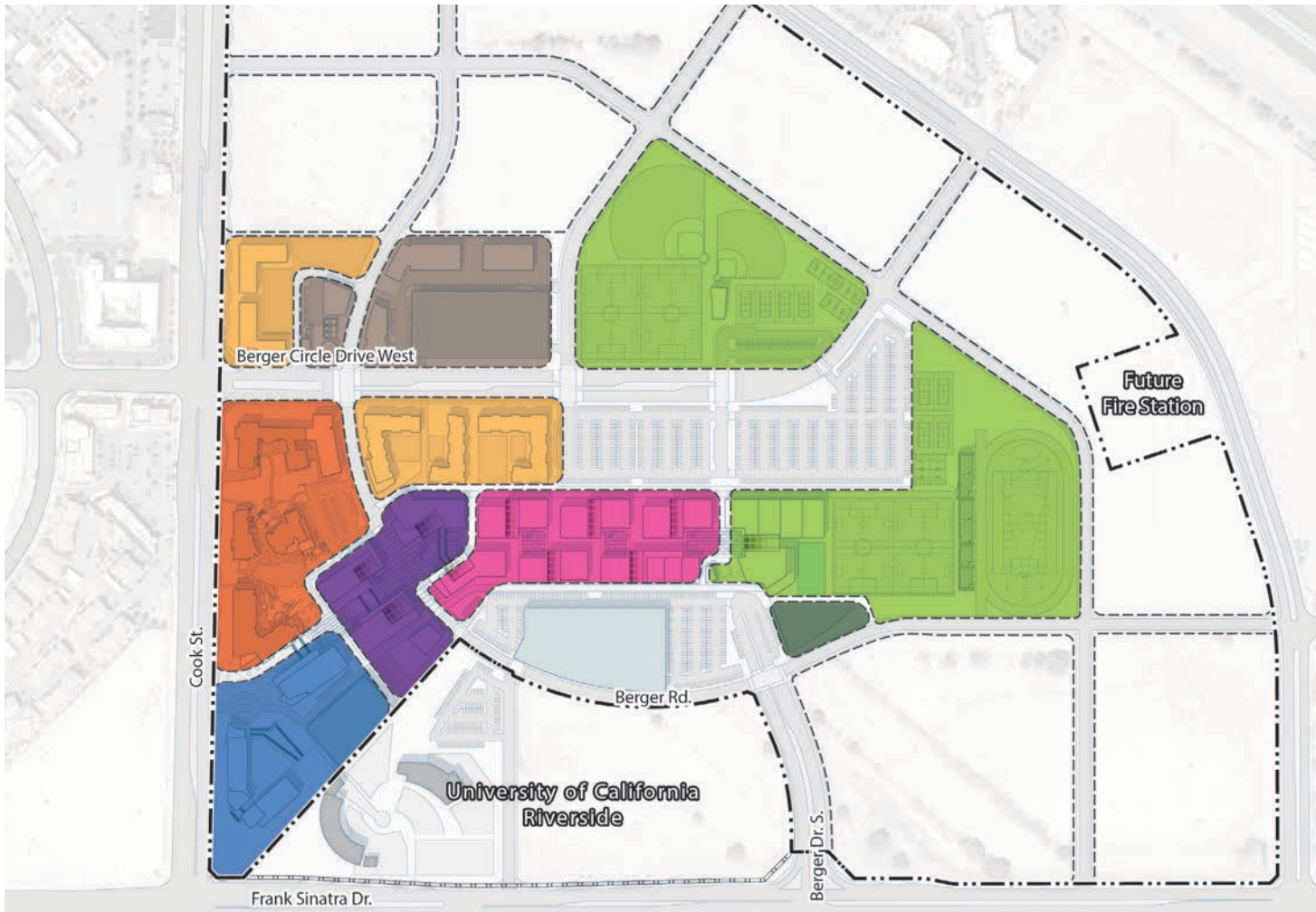
COMPLETE COMMUNITY



BECOME A COMPLETE 24/7 CAMPUS COMMUNITY

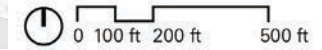
The 2016 Palm Desert Master Plan is an aspirational plan intended to transform the existing Palm Desert campus from a commuter-oriented campus into a complete campus community with the mix of functions appropriate for a 4 year institution of higher education, one that attracts students and faculty and provides for the higher education needs of the Coachella Valley. To accomplish this the plan calls for adding

student housing (approximately 7-800 beds) complete with dining opportunities, providing new student amenities such as a library/media center, wellness and recreation facilities and student union facilities; and a gymnasium/events center and athletic playfields that combine to support a vibrant 24/7 LIVE-LEARN-WORK-PLAY campus life.



LEGEND

-  North Campus / Facilities Maintenance
-  Housing
-  Gateway + Special Program
-  Central Plaza
-  Academic Core / Promenade
-  Veterans War Memorial
-  Athletics and Physical Education
-  Unlandscaped Open Space
-  Site Boundary



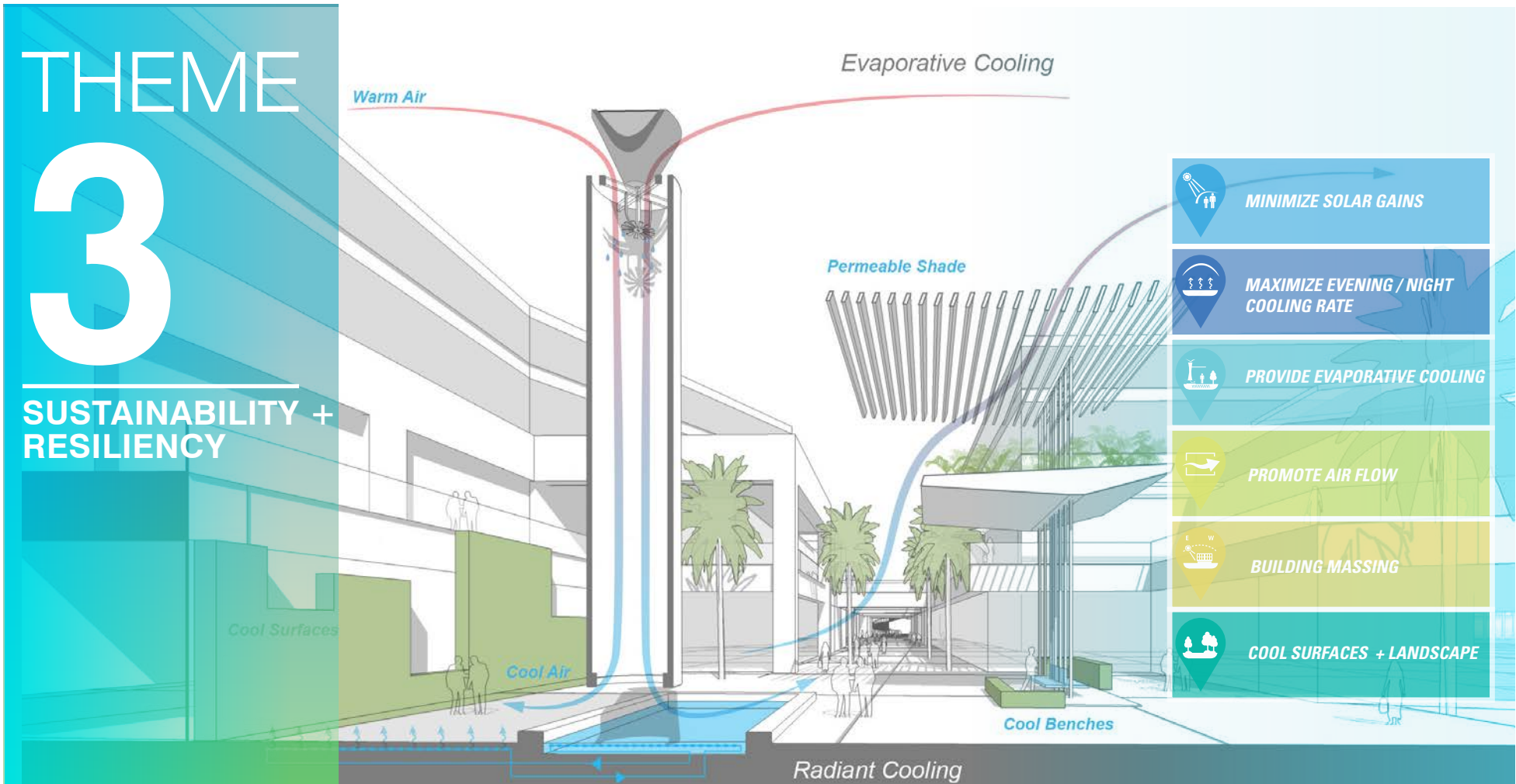
LAND USE PLAN



THEME

3

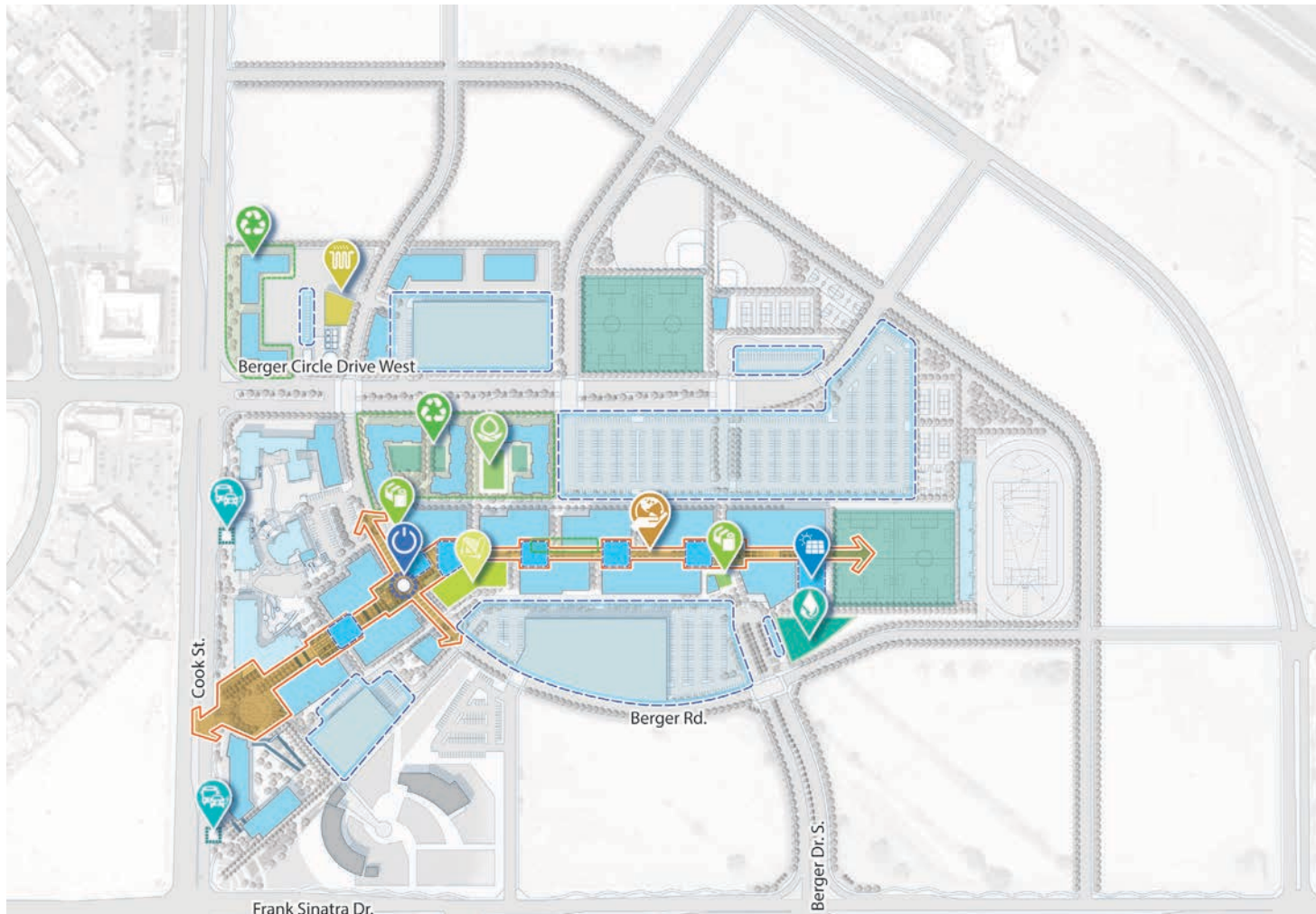
SUSTAINABILITY + RESILIENCY



CREATE A 21ST CENTURY SUSTAINABLE + RESILIENT CAMPUS

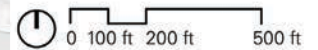
With an unparalleled opportunity to lead-by-example, the 2016 Palm Desert Master Plan recommends policies and practices for sustainable campus development and operations, and establishes new goals and benchmarks for improved performance. The 2016 Palm Desert Master Plan establishes goals, sustainability targets, and metrics to extend campus leadership and commitment towards stewardship of

its resources- such as water conservation, energy independence, and community resiliency. Employing features such as expanded use of photovoltaic systems, high-performance building envelopes, and drought tolerant landscapes, bold Sustainability Initiatives will strategically utilize campus resources, conserve water and energy, and establish the Palm Desert campus as an exemplary institutional leader.

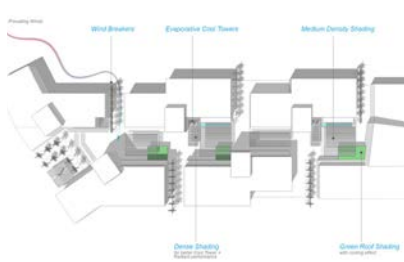


LEGEND

-  **Sustainability Leadership**
Interpretive Signage Focus Area
-  **Energy Conservation**
Performance Dashboard / QR Code
-  **Energy Independence**
Solar PV Shade Canopy
Solar PV Cover Focus Area
-  **Climate Action**
Transportation Options Support
-  **Water Conservation**
Smart Water Demonstration Gardens
Gray Water Irrigation Focus Area
-  **Waste Management**
Resident Waste Diversion Program
-  **Sustainable Procurement**
Reusable Tableware Program
-  **Sustainable Food Services**
Farm-to-Table On-Campus Food Program
-  **Sustainable Building Practices**
LEED Gold Initial Precedent Project
-  **Facilities Operations**
Heat Recovery Chiller Project Sites



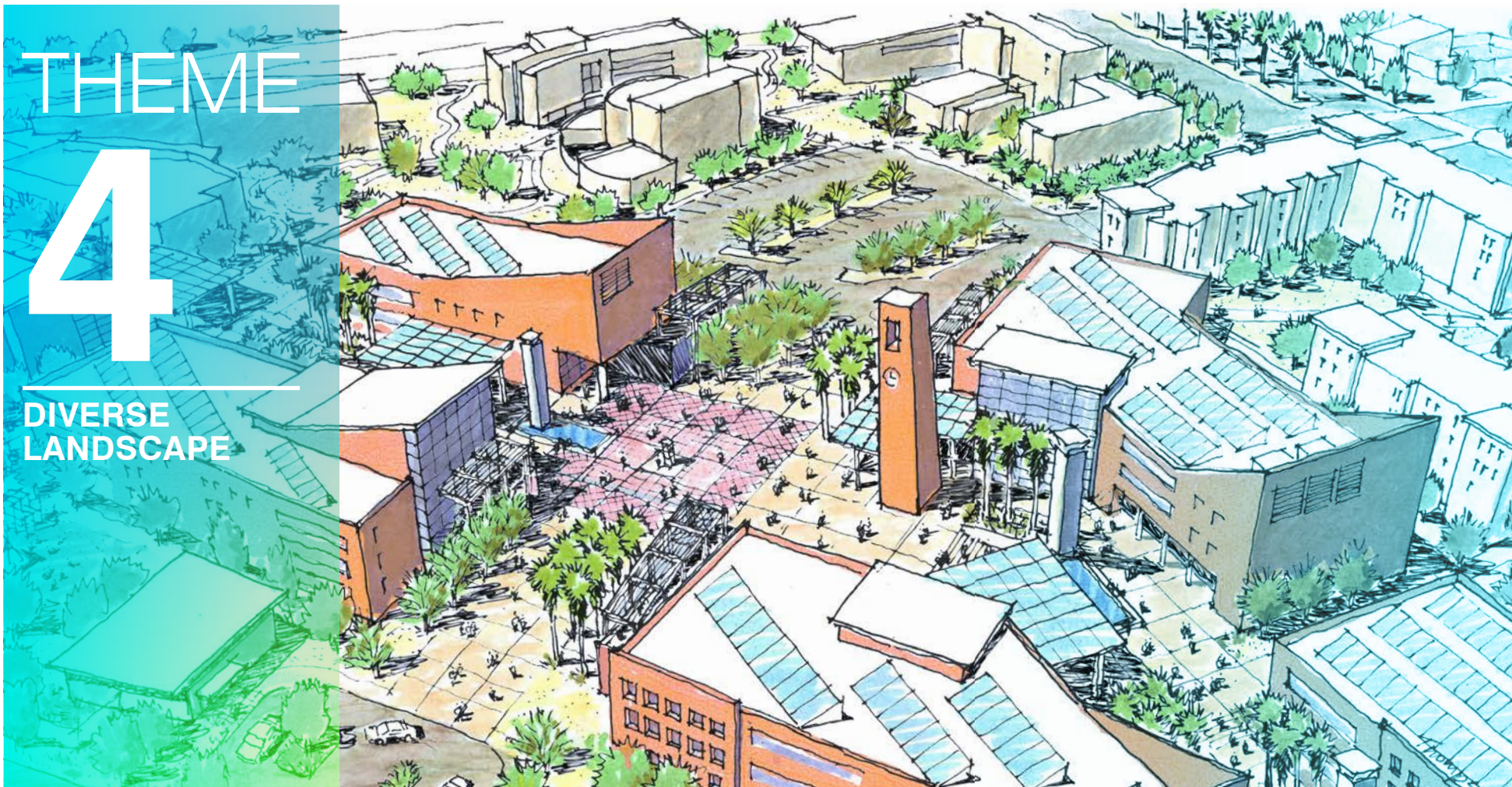
SUSTAINABILITY FRAMEWORK



THEME

4

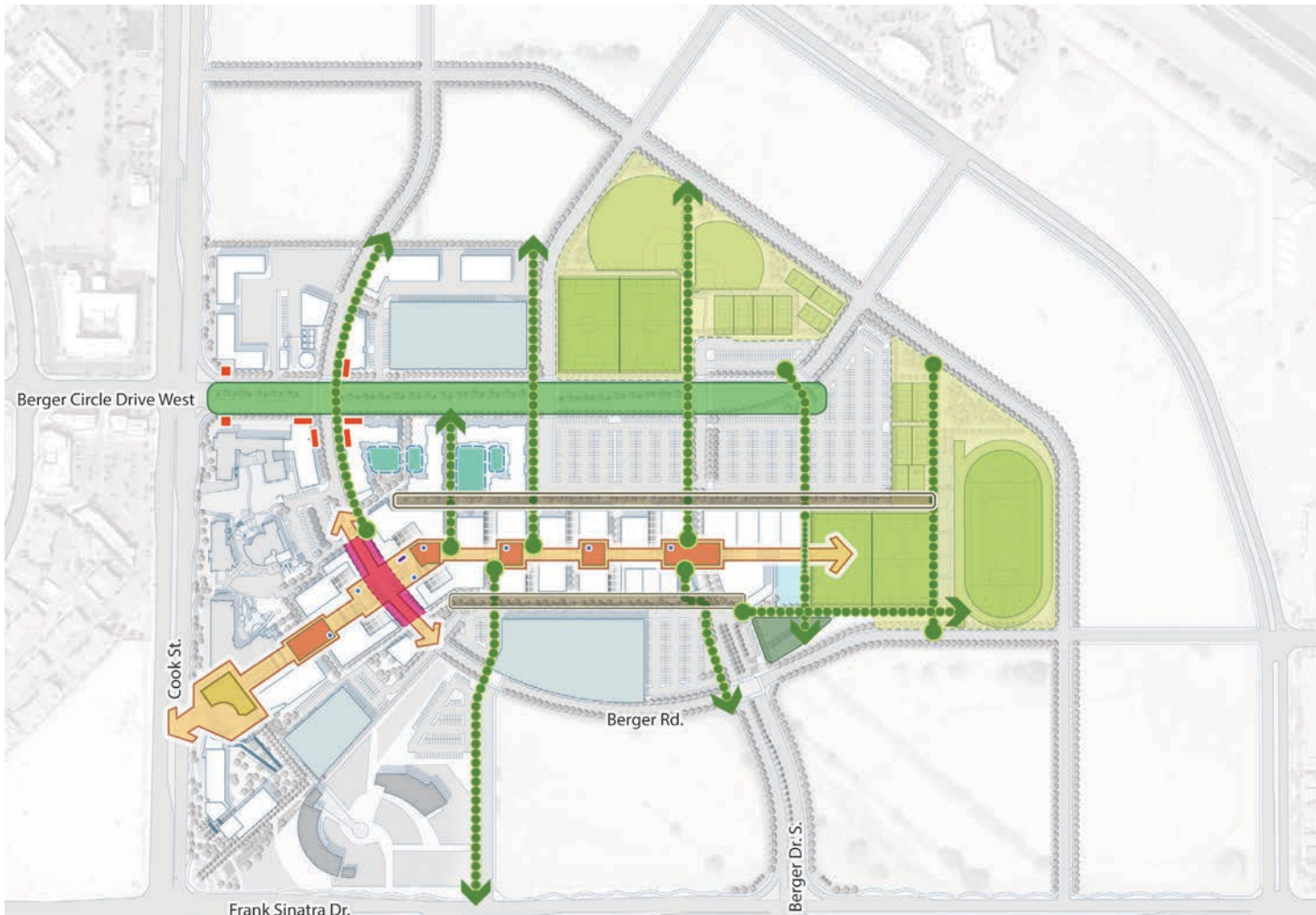
DIVERSE
LANDSCAPE



CULTIVATE A DIVERSE LANDSCAPE THAT IS RESILIENT AND STUDENT FRIENDLY

To enable a more sustainable campus landscape infrastructure, the 2016 Master Plan focuses on landscape improvements in existing outdoor space and in limited areas. The Plan creates a central pedestrian promenade (“Palm Canyon”) framed by buildings that deflects extremities of sun and wind, and user-friendly applications (such as shade devices, landscaping, benches, tables and effective evening lighting). These spaces will facilitate student gathering, learning, passive recreation, and fluent access across campus. The Landscape

Plan sets aside natural desert landscape areas that showcase indigenous plant materials and provides habitat for native species. This area serves as a method of preserving the natural environment as well as a valuable learning resource for the University that facilitates diverse field study courses and student activities. Alternatives to water consuming turf will provide a varied composition of drought tolerant and natural settings. The Plan also updates and establishes proactive guidelines for campus planting, irrigation, site elements, and furnishings.



LEGEND

- Plazas + Promenades
 - Collabration Plaza
 - Palm Canyon Promenade
 - Palo Verde Corridor
 - West Gateway Landscape Corridor
 - Administration Court
 - Central Plaza
- Quads + Green Corridors
 - Pedestrian / View Corridor
 - Veterans War Memorial Park
 - Residential Quads
 - Sports Fields
- Key Signage + Public Art
 - Key Signage
 - Cooling Towers
 - Signature Clock Tower

0 100 ft 200 ft 500 ft

PRINCIPAL LANDSCAPE SYSTEM COMPONENTS





THEME

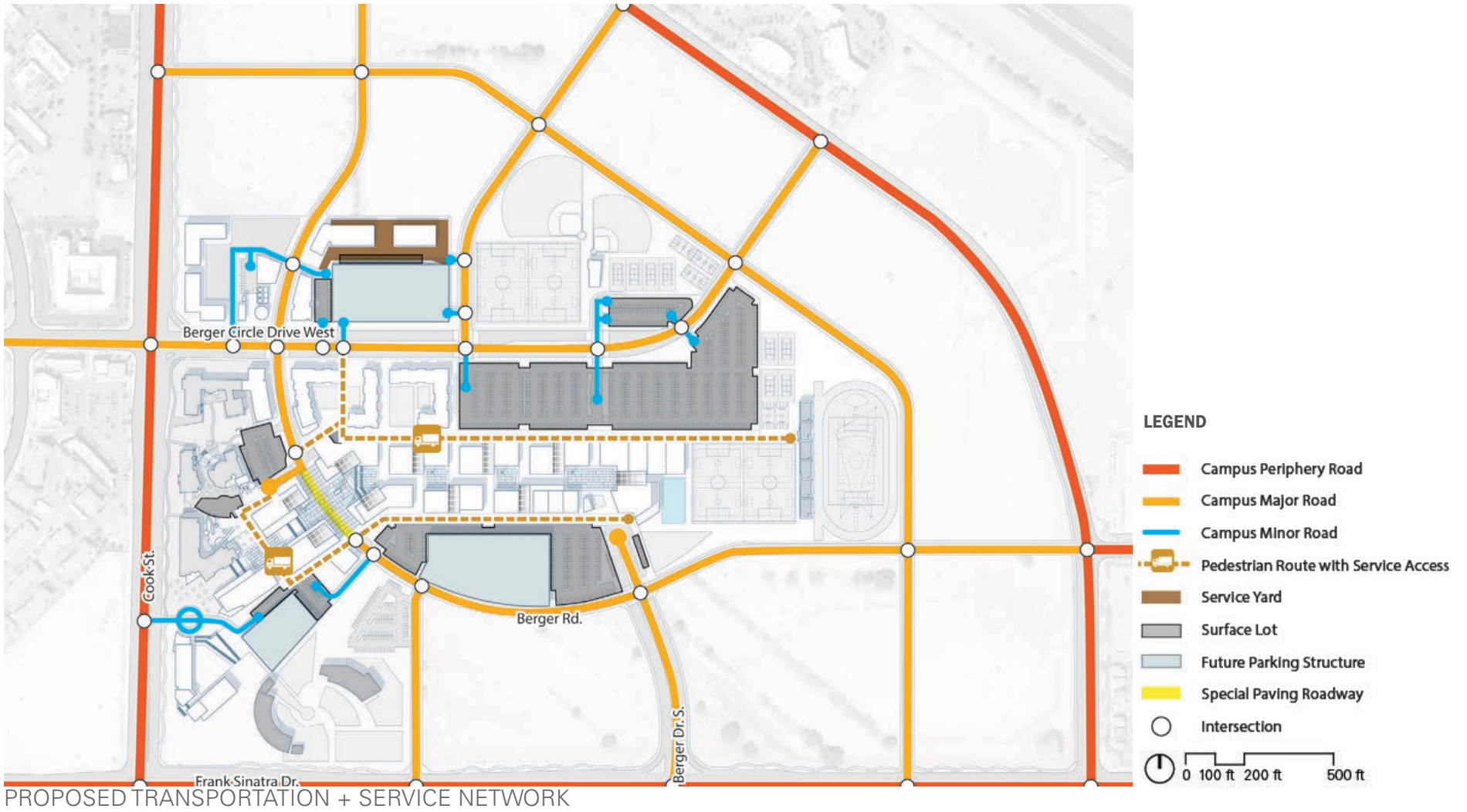
5

MULTI-MODAL CAMPUS

ENHANCE PEDESTRIAN ACCESSIBILITY AND SUPPORT ALL MODES OF TRAVEL

Future growth will require increased roadway and parking capacity, alternative modes of transportation, and organized interaction between pedestrians, cyclists, private vehicles and public transportation. To optimize future sustainability, CSUSB should take measures to promote use of alternative modes of transportation. Specifically the 2016 Master Plan recommends the following: 1) The 2016 PDC Master Plan is to follow the City of Palm Desert University Specific Plan- promoting street networks on the PDC, future campus growth, and connectivity to surrounding neighborhoods; 2) Enhance main campus access with road

extensions on Berger Circle Drive, Berger Road, and other links to Gerald Ford Drive; 3) Refine and redirect roadway system to improve access and reduce vehicle intrusion into the campus core; 4) Locate parking lot and future structures to distribute traffic and connect major pedestrian pathways towards the campus; 5) Locate new parking lots surrounding the core to facilitate easy transition from parking to the campus, and to accommodate to future parking structures; 6) Emphasize future transit use and other traffic demand management strategies as alternatives to auto for campus access; 7) Designate bicycle pathways and bicycle parking facilities to support increased bicycle use.



THEME

6

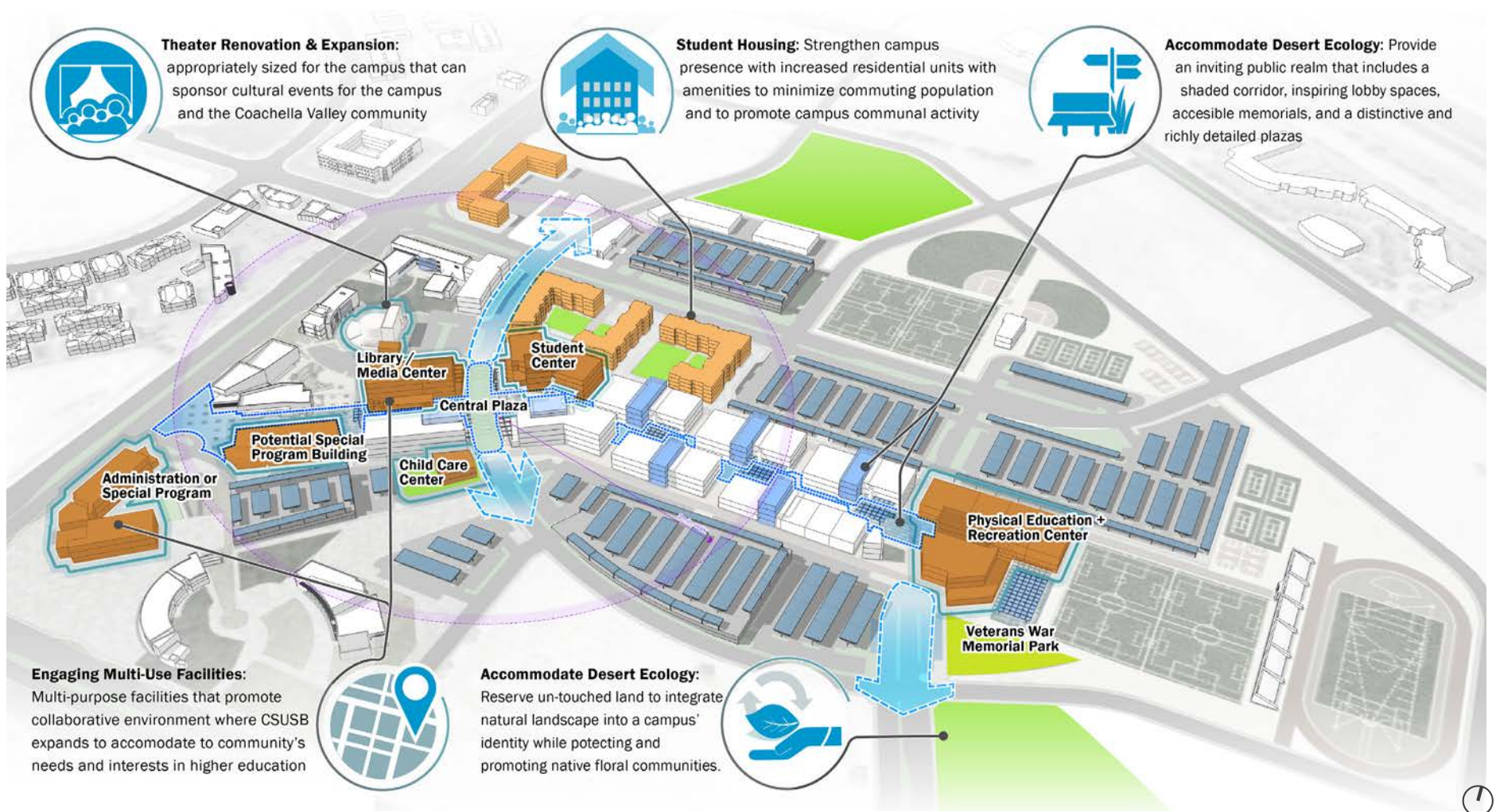
INTERNATIONAL HUB



ENHANCE THE CAMPUS AS AN INTERNATIONAL ENTREPRENEURIAL + CULTURAL HUB

As the only 4-year institutions of higher education within the Coachella Valley, the Palm Desert campus has a responsibility to play a vital role in enhancing the intellectual, cultural and personal development of its students and community as a whole. In response, the 2016 Palm Desert Master Plan recommends a series of new venues as well as enhancing existing cultural assets, including:

1) Renovation and expansion of the existing theater; 2) Addition of a Physical Education/Events Center that serves campus needs and sponsors campus and regional cultural/sports events; 3) Provision of desert ecological areas for the protection of native plant material and habitat; and 4) Expansion for Extended Education programs that continuously serve the wide-spread community's interest in higher education within the Coachella Valley.



INTERCONNECTED ENTREPRENEURIAL + CULTURAL INFRASTRUCTURE IN THE MASTER PLAN

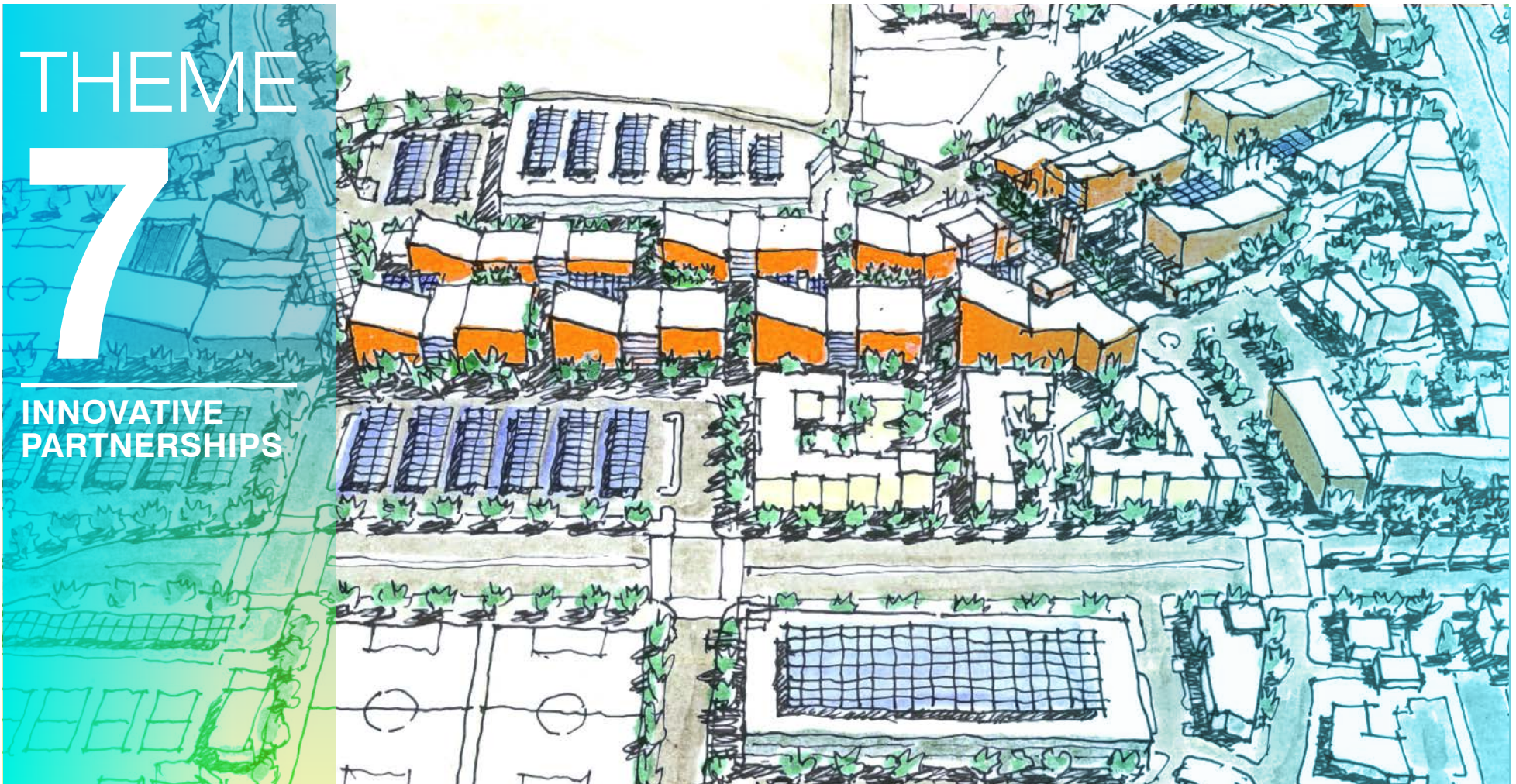


- LEGEND**
- Facilities Supporting Multi-Use/Collaboration
 - Student Housing Facilities
 - Recommended Indoor Study / Lobby Access
 - Open Space and Ecological Areas
 - Central Plaza (Major Event Area)
 - Athletic Fields (Major Event Area)
 - ⬄ Key Campus Cultural Areas / Linkages
 - ⬄ Campus Drop-off Areas
 - ⬄ Campus Cultural Facility Project Vicinity

THEME

7

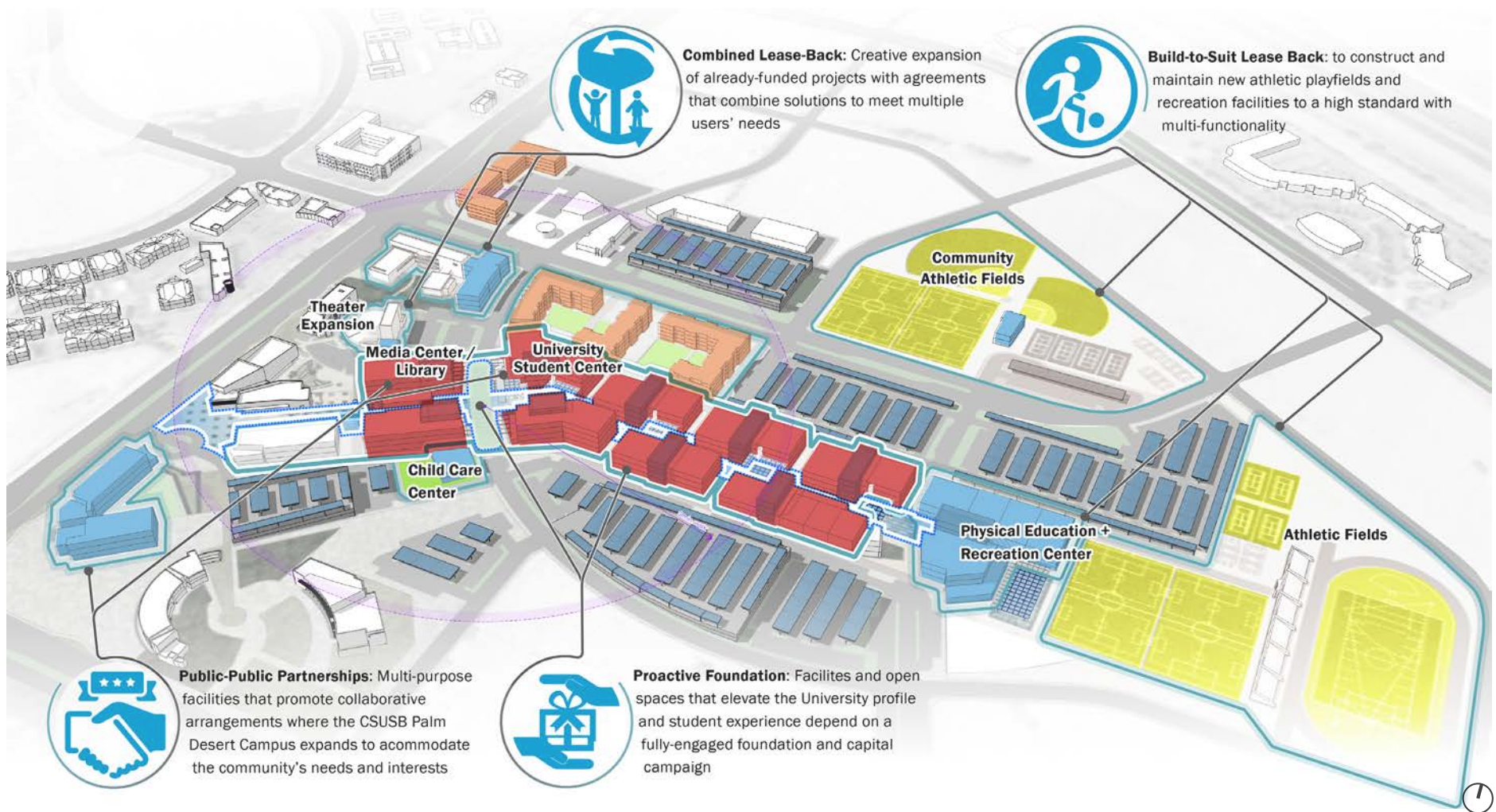
INNOVATIVE PARTNERSHIPS



CULTIVATE PARTNERSHIPS AND INNOVATIVE CAPITAL CAMPAIGN TO IMPLEMENT THE PLAN

The 2016 CSUSB Strategic Plan challenges the University to cultivate a system for entrepreneurship and innovation, to incubate business and social enterprises, and to create potential sources of revenue and talent. In keeping with these strategies, the 2016 Palm Desert Master Plan encourages partnerships with the greater business community, the public and institutional community through Public-Private Partnerships (P3s) and Public-Public Partnerships. This will foster educational, social, economic, and cultural opportunities to engage cooperative

arrangements that will benefit the Palm Desert campus and its community, such as: 1) Creating a Capital Campaign to capture multiple opportunities for donor funded academic and other needed campus functions; 2) Designate areas within the University owned land for future entrepreneurial developments/partnerships that support the CSUSB/ Palm Desert educational mission; 3) Specifically capitalize opportunities for partnerships with the private sector; and 4) Build-to-suit/lease back potentials for construction and maintenance of new athletic/ events center and playfields that can be shared with the community.



CREATIVE FUNDING AND INNOVATIVE PARTNERSHIP IDEAS EXPLORED IN THE MASTER PLAN



- LEGEND**
- Library, Media & Collaborative Facilities
 - Student Housing Facilities
 - Expanded Facilities for Partnerships
 - Central Plaza (Major Event Area)
 - Athletic Fields (Major Event Area)
 - Potential Capital Project Vicinity

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PLEASE REFER TO THE LIST OF FIGURES + TABLES WITHIN THIS DOCUMENT UNDER SEPARATE COVER



1

PART

PROJECT BACKGROUND + FRAMEWORK



INTRODUCTION + PURPOSE
EXISTING CONDITIONS
PALM DESERT CAMPUS PLAN VISION + PLANNING PRINCIPLES
OUTREACH + ALTERNATIVES EVALUATION



1

INTRODUCTION + PURPOSE

1.1 INTRODUCTION + PURPOSE

The 2016 PDC Master Plan defines future land uses, building locations and a sustainable development pathway for the total campus acreage of 169.4 acres. Serving the greater Coachella Valley, the PDC Master Plan can accommodate 8,000 Full-Time Equivalent students becoming a full service campus.

the campus to meet the needs for growth and change in the rapidly evolving higher education environment of California and the greater Coachella Valley. The 2016 PDC Master Plan anticipates these changes by focusing on the space needed by future academic programs; by campus life programs including housing, recreation, athletics and facilities maintenance; and by the requirements of campus infrastructure including roadways, parking and utilities.

The 2016 PDC Master Plan offers guidance for future development that is intended to maintain and enrich the existing campus while creating a future campus this is an attractive, accessible, safe and functional environment for learning, living, recreation and culture to serve PDC students, faculty, staff and visitors as well as the surrounding Coachella Valley communities. To address specific topics, this 2016 PDC Master Plan report includes chapters on Transportation, Circulation and Parking, Sustainability, Landscape, Signage and Security. Implementation and Phasing, and Technical information concerning campus utilities, infrastructure and campus design guidelines are included in the Appendix or under separate cover.

PURPOSE

The purpose of the CSUSB Palm Desert 2016 PDC Master Plan is to support and advance the CSUSB's educational mission by providing a guide for the development of the physical campus and its facilities over the next twenty to twenty five years to meet an enrollment goal of 8,000 Full Time Equivalent (FTE). This plan provides a description of all of the specific components of the physical campus: its buildings, grounds, fields and support infrastructure needed to reach that enrollment goal. As a new plan it increases the campus' student capacity by providing facilities that offer enhanced student learning opportunities, student support, faculty support, student housing, campus operational efficiencies and environmental sustainability. Further, the new 2016 PDC Master Plan represents a major update to the earlier official Master Plan for the PDC adopted in May 2000 based upon a master plan capacity of 2,500 FTE.

INTRODUCTION

In 2015 California State University, San Bernardino celebrated fifty years of service to the Inland Empire community as offered from both its campuses in San Bernardino and Palm Desert. The 2016 CSUSB Master Plan addresses both campuses, Volume 1 the San Bernardino campus and this document, Volume 2 the Palm Desert campus.

The 2016 Palm Desert Campus (PDC) Master Plan provides a roadmap for the future that addresses the natural and built environments by identifying the requirements for maintaining and enhancing the physical aspects of



1.2 CONTEXT OF THE MASTER PLAN

The 2016 PDC Master Plan guides the development of CSUSB's satellite center serving the greater Coachella Valley further solidifying CSUSB's role as the primary California State University serving the larger San Bernardino and Riverside Counties of Southern California.

STATE OF CALIFORNIA MASTER PLAN FOR HIGHER EDUCATION

Opening for instruction in 1995, the CSUSB Palm Desert Campus is part of the California State University system, the largest system of higher education in the country. Its 23 campuses and four off-campus centers, serve more than 400,000 students across the state. The CSUSB Palm Desert Campus is one of the system's off-campus centers serving the rapidly growing Coachella Valley areas of Riverside County.

The State of California Master Plan for Higher Education was adopted in 1960 to help guide the expansion of California's public higher education system. The Plan represents a pact between the government of California and its citizens to support higher education through tax dollars. The Plan seeks to guarantee that all California high school graduates who qualify have access to higher education through a tripartite system:

- University of California – Open to the top 12.5% of statewide high school graduates, it is designed as the primary academic research institution in the system, covering undergraduate, graduate and professional education. It also holds exclusive jurisdiction within the public higher education system for instruction in law, medicine, dentistry, veterinary medicine, and doctoral programs.
- California State University – Open to the top 33.3% of statewide high school graduates, its main mission is to provide undergraduate education and graduate education through masters' degree programs. Doctorates can only be awarded jointly with UC.
- California Community Colleges – Open to everyone capable of benefiting from instruction, the mission of the community colleges is to provide academic and vocational instruction through the first two years of undergraduate education, and to provide remedial instruction such as language courses, workforce training, and community service courses.

As the population of California has increased exponentially over the past 45 years, the state systems have worked to keep pace by expanding existing campuses and establishing new ones. The pressure from population growth and the demands placed on higher education for a well-trained workforce, as well as the significant economic pressures on state resources over the past eight to ten years, have strained the state's educational systems, prompting all campuses to re-evaluate their resources and potentials.

1.3 RELATIONSHIP TO CSUSB MAIN CAMPUS

Responsibility for the California State University is vested in its Board of Trustees, whose members are appointed by the governor of California. The trustees appoint the chancellor, who is the chief executive officer of the system, and the presidents, who are the chief executive officers of their respective universities. The 2016 Palm Desert Master Plan requires approval from the Board of Trustees.

The CSU offers more than 1,800 bachelors and masters degree programs in some 240 subject areas. A number of doctoral degrees are now offered by several campuses including CSUSB, as well as some offered jointly with the University of California and with private institutions. The system offers about half of the bachelor's degrees and a third of the master's degrees granted in California. Nearly 2 million people have been graduated from California State University campuses since 1960.

Over time as the PDC student body grows and as a full complement of campus facilities are built, the campus will become more of a destination campus with the ability to increasingly attract students from within and outside the area.

As noted in the discussion of the Palm Desert Campus history (Chapter 2), the PDC was originally promoted and founded through the efforts of local community leaders in order to fill the need for a four-year institution of higher education in the growing Coachella Valley. The CSU Board of Trustees approved the development of the campus as a satellite of the California State University San Bernardino campus based on the proposal by local communities to provide the land and privately fund/build the first campus facilities. While this gave the campus a unique beginning within the CSU system, the Palm Desert Campus operates and is classified as an “Off-Campus Center” of CSU San Bernardino with resources such as some faculty, administrative and maintenance functions shared with the main CSUSB campus. Similarly, many CSUSB students now attend classes at both campuses in order to complete the coursework of their declared majors. This dependency relationship between the “home” campus (CSUSB) and the Palm Desert Campus will gradually lessen over time as enrollment grows and the campus matures.



Cal State University San Bernardino



Cal State University San Bernardino - Palm Desert Campus

1.4 SCOPE OF THE 2016 MASTER PLAN

Intentionality is the quality of clearly identifying the set of PDC goals needed to transform it into a destination 4-year institution of higher learning for the greater Coachella Valley community and beyond.

GOALS OF THE PALM DESERT CAMPUS PLAN

The intent of the 2016 CSUSB Master Plan is to map out a trajectory for growth and change that will enhance the physical campus, reinforce the University's strengths and support the University's mandate to provide high-quality education to a larger student body. Specific goals for the 2016 CSUSB Palm Desert Campus Master Plan will facilitate the University's ability to:

- Provide academic facilities and accommodate campus growth to a capacity of 8,000 FTE;
- Support students, faculty and staff with appropriate learning, research recreation and administrative facilities;
- Serve as a regional center for intellectual, cultural and life-long learning;
- Reinforce the CSUSB's active learning focus by providing opportunities for interactions and collaborations among students, faculty, staff and the greater community;

- Support the creation of a range of student learning/research/business incubator type spaces through public-private and public-public partnerships;
- Continue to collaborate with local institutions to fully integrate the campus into the physical, social, economic fabric of the local community.
- Attract international students to the PDC;
- Reinforce positive intrinsic features of the CSUSB site including views to the Indio Hills to the northeast and views of the campus from the I-10 freeway and from surrounding neighborhoods;
- Make efficient use of developable campus land and preserve a balance between built-up areas and open space;
- Create a series of campus outdoor spaces framed by buildings and protected from extremes of sun and wind that facilitate student interaction, student learning and passive recreation.
- Provide appropriate facilities for informal and organized recreation and intercollegiate athletics;
- Provide facilities for campus-based and campus controlled student housing to support the campus life and learning experiences for the full range of university students;
- Support the creation of residential learning communities on the campus; support the continued use of the campus by commuting students;
- Serve as an accessible, safe and attractive campus for students, staff, faculty and the community;
- Promote social and economic equity, provide for a range of ways for students and the community to

access the campus and its facilities including public transportation and distance learning;

- Conserve natural resources while creating and fostering an environmentally, socially and economically sustainable physical and operational campus;
- Through a comprehensive approach to sustainability, deepen the stewardship of Palm Desert Campus landscape resources and the local natural environment;

SCOPE OF THE MASTER PLAN

- Document and evaluate existing campus conditions;
- Analyze projected enrollment growth and identify the required expansion of campus facilities;
- Analyze and document future campus space needs and requirements;
- Identify appropriate locations for development of new facilities;
- Specify safe and functional pedestrian and vehicle circulation routes and patterns;
- Quantify parking requirements and identify sites for adequate parking facilities;
- Incorporate sustainable landscape concepts and materials;
- Specify campus design guidelines
- Recommend a phasing strategy for new facilities that preserves campus functions, identifies appropriate funding sources and recognizes institutional constraints.

1.5 THE PLANNING PROCESS

The entire PDC and Coachella Valley community whether through direct participation on the PDC Master Plan Steering Committee, in campus forums or by other direct contact were invited to participate in the development of the 2016 PDC Master Plan.

MASTER PLAN PROCESS

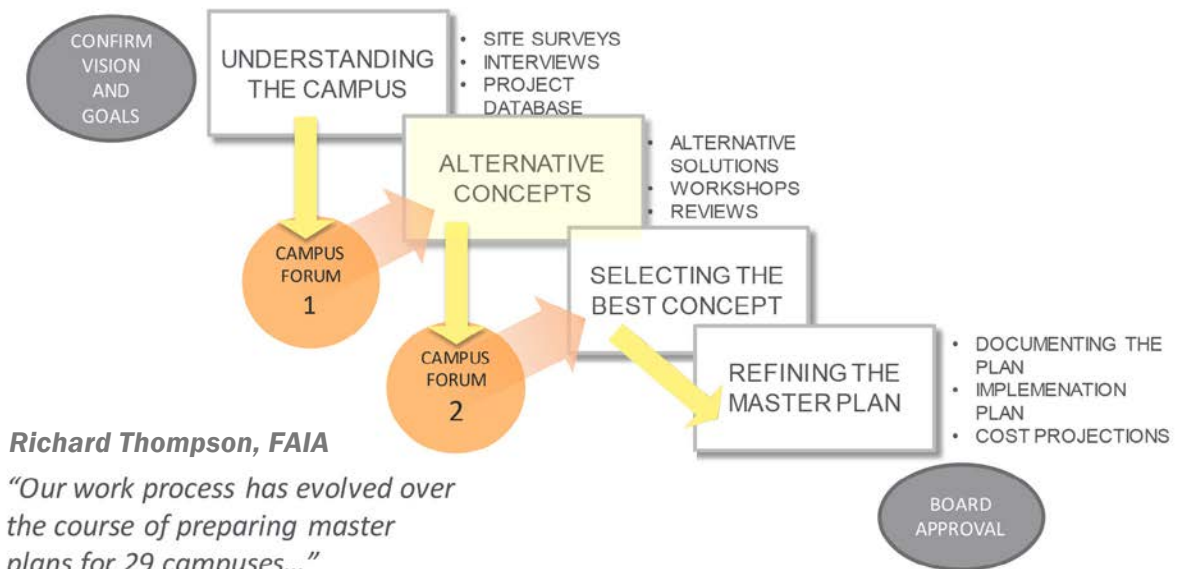
Led by key members of the CSUSB Master Plan Steering Committee, campus leaders from the PDC and Coachella Valley community leaders all with the support of the President and his cabinet, came together in a series of PDC planning meetings to provide overall guidance for the development of the 2016 PDC Master Plan, giving feedback and evaluating proposals at various stages of the planning process.

The planning process extended over a 7-month time period and was accomplished in four sequential phases:

- Phase I: Understanding the Campus (Data Collection, Planning Analysis and Visioning);
- Phase II: Development of Alternate Campus Plan Concepts;
- Phase III: Development of a Consensus Plan;
- Phase IV: Final Master Plan Document

To fully inform the development of the PDC Master Plan two Master Plan forums were held in the Indian Wells Theater during the Spring of 2016. The entire campus community—students, faculty and staff—were invited to participate. Aligned with the University’s commitment to be an active participant in the larger Coachella Valley community, the process also included a public outreach component inviting community stakeholders to the forums. Additionally, CSUSB/PDC leadership held separate talks with various community donors who had expressed an interest in supporting the University.

As with the CSUSB main campus, CSUSB contracted with a professional planning team, led by two Los Angeles-based consulting firms, Assembledge+ and CallisonRTKL, to serve as Master Plan architects for development of the 2016 Palm Desert Master Plan—the first comprehensive update to the official campus Master Plan since the more conceptually-oriented Palm Desert Campus Master Plan was adopted by the CSU Board of Trustees in 2000. The Master Plan architects were responsible for leading the planning process, helping the University to create and refine an evolved campus vision, identify planning goals, and illustrate and articulate the various detailed 2016 PDC Master Plan proposals.





2

EXISTING CONDITIONS



2.1 REGIONAL + COMMUNITY SETTING

The CSUSB Palm Desert Campus is the major 4-Year institution of higher learning serving the Coachella Valley region which is poised to grow as an important component of the growth of Riverside County.

REGIONAL + COMMUNITY SETTING

The Palm Desert Campus is located within the City of Palm Desert some 100 miles east of Los Angeles and 65 miles southeast of the CSU San Bernardino main campus. The PDC lies within the Coachella Valley a desert area composed of several communities the most prominent of which is Palm Springs an early nucleus of regional resort development and which now hosts an international airport. In 2010 the greater Coachella Valley, based upon US Census data as represented by 14 ZIP codes covering the desert community areas from Palm Springs-Desert Hot Springs in the northwest

to Indio-Mecca in the southeast, had an estimated population of over 417,000 people (Paulien and Associates, July 2016). Many of these communities have large populations of older retired Americans as well as seasonal winter visitors from colder parts of the United States and Canada who enjoy the warm weather afforded by the desert. With this population and profile the area hosts a range of cultural attractions and destinations including numerous museums, theaters, spas, golf courses and natural scenic and recreational sites. The desert area is also home to at least four Native American groups who own significant portions of reservation land throughout the area and who sponsor some five major casinos as well as being involved in other local economic development activities.

Educationally, the greater Coachella Valley is divided into three major K-12 school districts and is served by the College of the Desert (COD) community college, which operates out of a main campus in Palm Desert with outreach campus centers in Indio and Mecca/Thermal and the Desert Energy Enterprise Center in northern Palm Springs. COD has a student enrollment of about 14,000 students, 65 percent of whom are Hispanic. In addition to the PDC, University of California Riverside (UCR) maintains a campus in Palm Desert, the UCR Palm Desert Graduate Center immediately adjacent to the PDC offering a limited number of programs including those highlighting desert ecology, non-profit management, UCR Extension and the Osher Lifelong Learning Institute (OLLI). Finally, the local business college, Santa Barbara Business College (SBBC) located in Rancho Mirage offers a limited number of bachelor's degree programs that compete with those of the PDC.

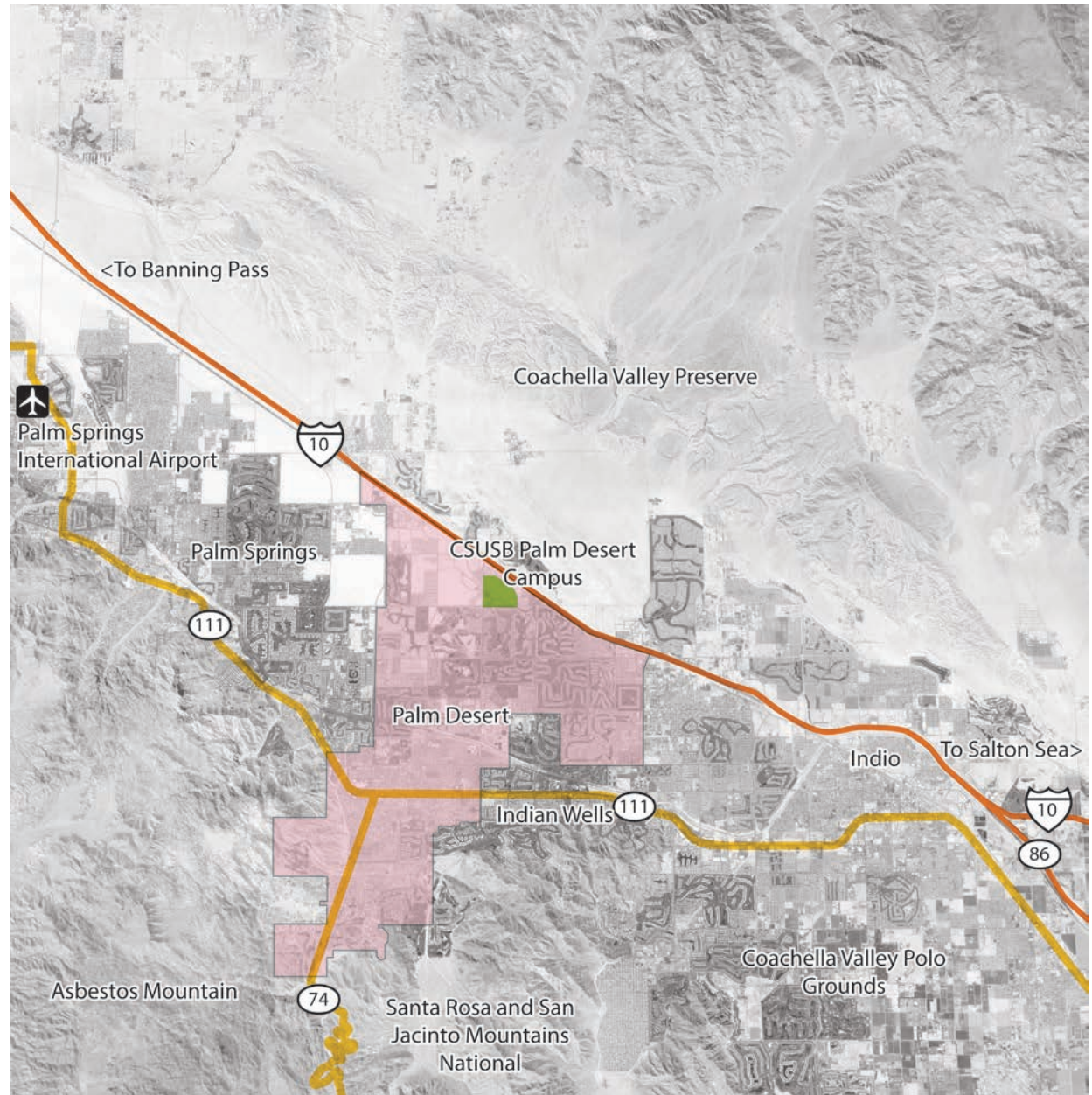


FIGURE 2-1: REGIONAL CONTEXT



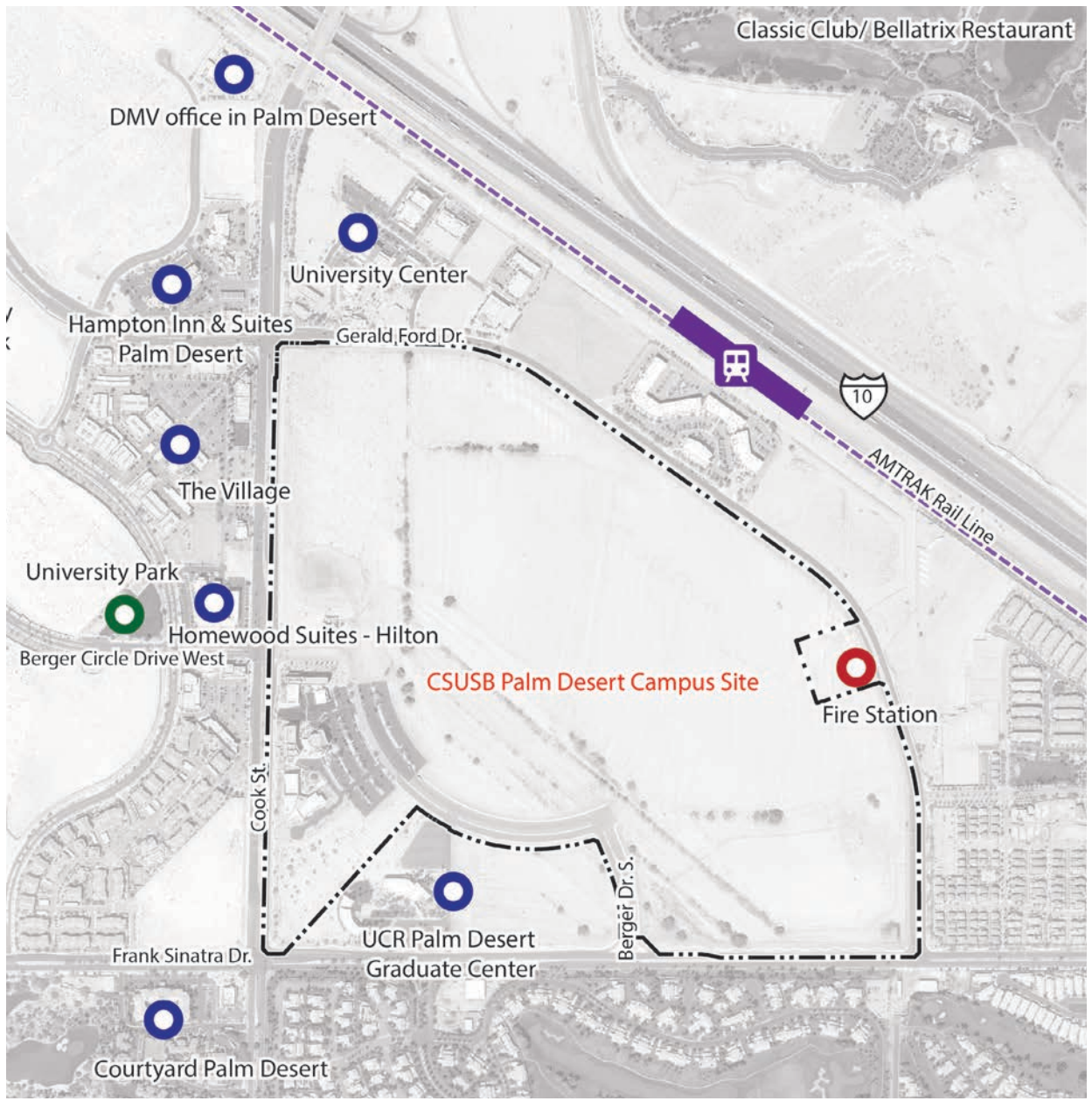
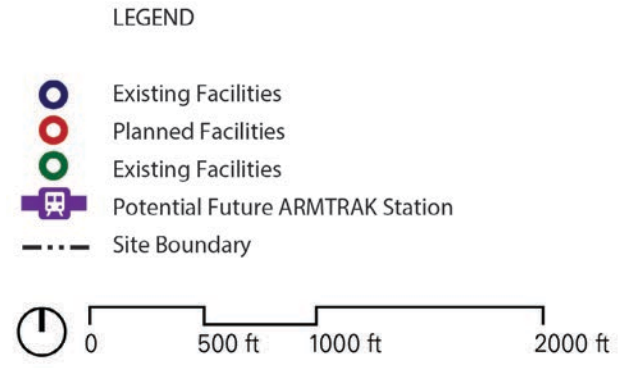


FIGURE 2-2: EXISTING LAND USE



2.2 ENVIRONMENTAL CONDITIONS + CONSTRAINTS

The dry PDC site considered part of the Sonoran Desert, receives strong seasonal winds from the northwest and southeast; and is located in a blowsand area of the Coachella Valley. The site is home to the Coachella Valley Fringed-toed Lizard a species listed as “threatened” under the federal Endangered Species Act. The San Andreas Fault capable of generating a 7.4 magnitude earthquake lies some 4.5 miles to the northeast.

MAJOR ENVIRONMENTAL CHARACTERISTICS

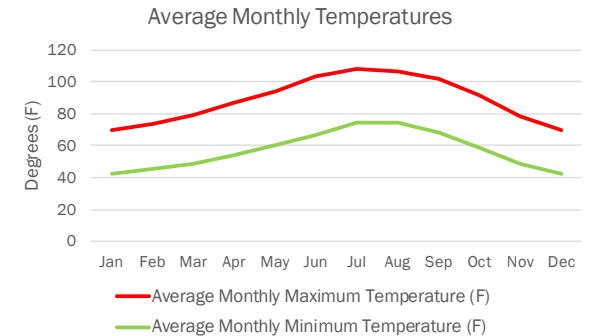
Figure 2-4, “opportunities + constraints analysis” summarizes various major environmental characteristics of the PDC campus.

The Palm Desert Campus site is situated on an area that over the millennia has been covered multiple times by ancient Lake Cahuilla, a fresh water lake that had been created by the Colorado River as its channel moved and discharged into the Salton Basin. The latest filing of Lake Cahuilla could have occurred as recently as 1500

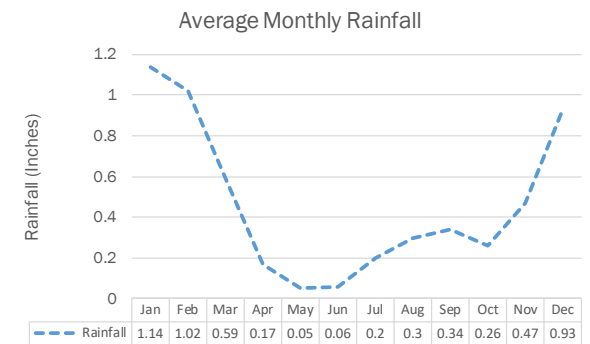
CE (Waters 1983). As evidence of this former lake, small freshwater clam shells can be found on the PDC site. As a product of Lake Cahuilla lakebed sedimentation, the current PDC site and surrounding areas are covered with soils comprised of various fine to medium-grained silt and sand materials that when combined with locally strong winds, past grading activities and a general lack of vegetative cover, create the conditions for blowsand generation. Ground water is estimated at a depth in excess of 100 feet under the local surface (Converse Consultants 2006).

THE LOCAL PDC CLIMATE, VEGETATION + WILDLIFE

The PDC is located in the Sonoran Desert of California and as such is an extremely dry climate experiencing yearly extremes of very hot summer days reaching temperatures of over 115 degrees F to cool winter nights dipping below freezing. Average annual precipitation/rainfall measures about 5.5 inches with slight snowfall being a very rare event. Winds directions are concentrated from the northwest and east-southeast attaining average maximum monthly wind speeds in the late spring and early summer of 32 to 34 mph. Throughout the year high maximum wind speeds are possible ranging on average from 43 mph (November) to 59 mph (June). The Coachella Valley Water District (CVWD) estimates that the Potential Evapotranspiration for the area is estimated at about 93.9 inches (CVWD ETo Map, 2009). Average climate figures given in the accompanying tables and graphs are for long-term



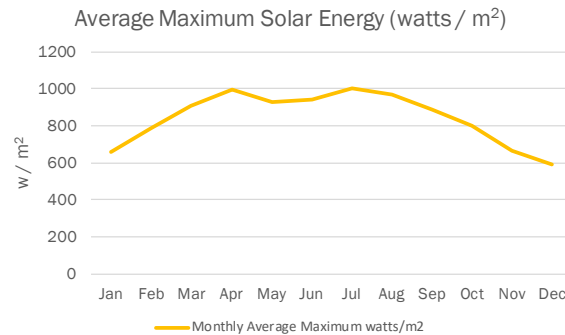
Source: Western Regional Climate Center; <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caplms+sca>
(Period of Record: 1/ 1/1927 to 12/31/2005)



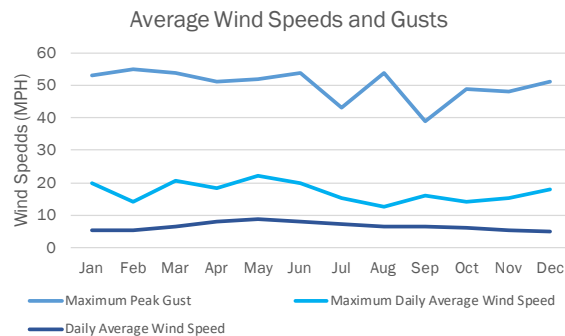
Source: Western Regional Climate Center; <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caplms+sca>
(Period of Record: 1/ 1/1927 to 12/31/2005)

reporting stations in Palm Springs, CA and vary as to period of record.

Given the soil and precipitation conditions of the site natural vegetation is sparse. The general local plant association is classified as Sonoran Creosote Bush scrub represented by the major plants species creosote bush, burro bush, brittlebush and desert Brickellia (Biological Resources Element 2004). Although altered by previous vineyard plantings and wind rows, the PDC site apparently was part of the Coachella Valley Sand Dune community/"blowsand" habitat, which have high levels of endemic species including the Coachella Valley fringed-toed lizard (http://www.fws.gov/saltonsea/Coachella/CV_History.html). This lizard, found on the PDC site, is listed as a threatened species under the Endangered Species Act, and has received special protection in the multi-square mile Coachella Valley National Wildlife Refuge located some 3 miles northeast from the PDC. In years of high rainfall, annual flowers such as the sand verbena and dune primrose bloom in the area.

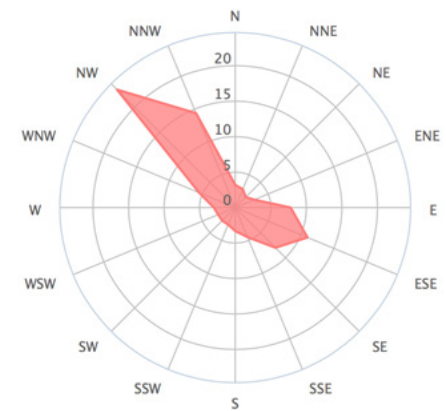


Source: DesertWeather.com; <http://www.desertweather.com/solarsummary.php?r=solarsummary.php>
 (Period of Record: 2009-2016)



Source: Copyright ©2009 Western Regional Climate Center/Desert Research Institute, Reno, NV.
<http://www.wrcc.dri.edu/summary/psp.ca.html>
 (Period of Record: 1998-2008)

Wind direction distribution in (%)
 Year



Source: https://www.windfinder.com/windstatistics/palm_springs_airport
 (Period of Record: 03/2011 - 06/2016)

2.3 PALM DESERT CAMPUS HISTORY + PREVIOUS CAMPUS MASTER PLAN

The 2016 PDC Master Plan represents the next major stage of campus planning since the Palm Desert Campus was established at its current site in 1994.

PALM DESERT CAMPUS HISTORY AND PLANNING PRECEDENTS

In 1984 leaders in the Coachella Valley recognizing the long-term need for a local four-year public university serving the greater Valley community, identified CSU San Bernardino, which was already serving the area, as a likely candidate to establish a local satellite center somewhere in the Coachella Valley. With limited funding available through the California State University system (CSU), these leaders approached the CSU Board of Trustees with an offer to build the campus with private funds if the CSU would adopt such a facility as a satellite campus of CSUSB. The offer was accepted and three local cities proposed donating building sites for the project. A 200-acre site within the City of Palm Desert was selected having the advantage of being located near the I-10 Freeway and Cook Street, where a new on-off ramp was proposed. The City of Palm Desert Redevelopment Agency made an initial donation of

55.325 net acres to the CSU Board of Trustees in November of 1999 stipulating that the name of the campus be “California State University, Palm Desert.” The original thinking was that ultimately the new campus utilizing the larger site could accommodate an enrollment of about 10,000 to 12,000 Full Time Equivalent (FTE) students.

Based on this site and apparently drawing from a ‘circle-plan’ concept that had been used at the University of California Irvine, a campus architect working for the CSU developed a circle plan for the proposed new campus. This plan put forth the building locations and parking for a ‘first phase’ of the campus but also illustrated the ultimate plan for a larger campus anticipating an additional grant of 145 acres of land from the city in the future. The circle plan anticipated multi-floor classroom/lab buildings placed in the inner pedestrian-oriented circle with a loop road and parking at the perimeter. A clock tower for orientation was planned for the center. The Palm Desert Campus Master Plan, known more specifically as the California State University, San Bernardino Palm Desert Off-Campus Center was approved in May of the year 2000 for an enrollment of 2,500 FTE on 55 acres of property then owned by the CSU. At about the same time as this dramatic progress in creating a new campus was realized by the CSU/CSUSB effort, a successful business program at the University of California, Riverside (UCR) was emerging. Leaders at UCR saw the potential of creating an innovative “International Center for Entrepreneurial Management (ICEM)” in the Coachella Valley and entered into a Memorandum of Understanding (MOU) with the CSU to acquire 20 acres of the original 200 acres from the City of Palm Desert Redevelopment Agency immediately adjacent to the Palm Desert Campus as the building site for the ICEM. The CSU was to “include facilities that will be available for joint use by UCR and CSU...” The agreement and arrangement for the construction of the ICEM project

was to be funded by the Richard J. Heckman Foundation. The center was built but the original vision for the center faltered under new UCR leadership and today UCR operates a limited educational program from the facility now called the UCR Palm Desert Graduate Center.

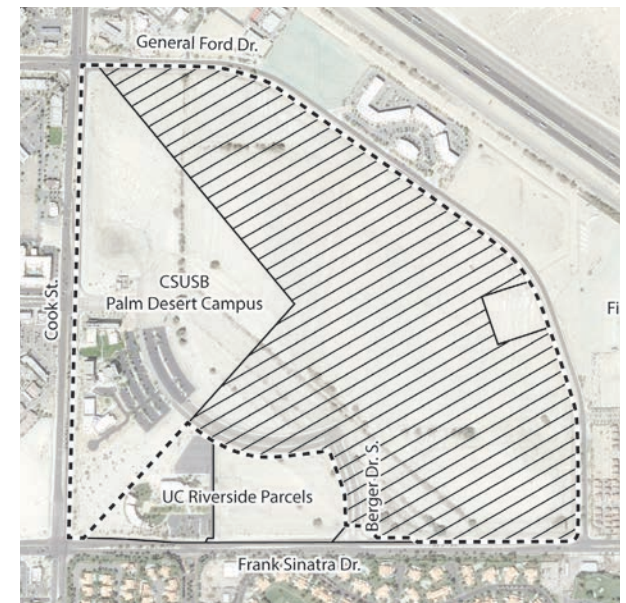
The first two buildings for the Palm Desert Campus (PDC), the Mary Stuart Rogers Gateway Building and the Indian Wells Center for Education known more completely as the Indian Wells Center for Educational Excellence, were completed by March of 2002, followed by the Indian Wells Theater and Utility Substation in July of 2005. A Health Sciences Building housing the highly demanded Nursing and Health Science/Nutrition/Food Sciences Programs, biology and chemistry labs as well as serving as the location for the PDC library (Helene A. Hixon Information Resource Center) was opened in 2008. Multiple individuals, charitable foundations, institutions, businesses, several local cities and the County of Riverside worked together to fund the initial grouping of four buildings. These facilities were placed in a group along the southwestern edge of the site along Cook Street accessible by an entry road, Berger Circle Drive named after one of the major PDC benefactors, the Berger Foundation. This first phase of campus development included construction of a portion of the proposed circular ‘ring road’ and related parking facilities extending south from Berger Circle Drive. Basic utility infrastructure to support the campus was installed in the major site roadways and the power substation was constructed near the entry. Additionally, anticipating an important trend in higher education, broadband cable connections were laid near the substation, giving the campus the ability to deliver and receive distance educational programming. To the south adjacent to the PDC, the UCR Palm Desert Graduate Center complex consists of two multi-room buildings hosting several flexible-seating classrooms, a large lecture hall, a 299-seat theater and several offices. In 2016, the PDC

anticipated entering into a lease agreement with UCR to utilize several of the UCR Palm Desert Graduate Center classrooms and faculty offices.

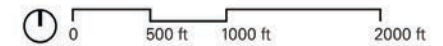
By the Fall of 2015 over 1,000 students were attending the PDC many of whom also attended the CSUSB main campus to complete their curricula. At the same time it was understood that new programs such as hospitality management were intrinsically demanded in the Coachella Valley, that additional courses needed to be offered at the PDC to support articulation of student curricula, that the PDC lacked the centralized nucleus of student amenities desired by today's students and that the campus could benefit from on-site student housing to support both international students and those who might desire a traditional residential-based university experience. These factors led CSUSB leadership to again work closely with the Coachella Valley community in developing a new phase of campus development based upon a re-envisioned master plan, the 2016 PDC Master Plan.



The California State University, San Bernardino Palm Desert Off-Campus Center Campus Master Plan adopted in May 2000.



Campus Configuration



Legend

- Palm Desert Campus Property Boundary



Officials from the City of Palm Desert break ground on the land donated by the city for the PDC campus first called the Coachella Valley Campus.

2.4 PALM DESERT CAMPUS PROPERTY + SURROUNDING CONTEXT

The Palm Desert Campus lies within a rapidly developing area of the City of Palm Desert and has begun to exert its positive social and economic influence upon the local area.

SURROUNDING LAND USES + ACTIVITY

The Palm Desert Campus is both part of and a major contributor to a rapidly developing portion of the City of Palm Desert. The PDC site in part chosen for its rapid accessibility to the I-10 Freeway at Cook Street, is bordered by a mix of land uses but predominantly residential development in the south and south east and commercial uses in the north and northwest. To the northeast, a strip of light industrial land fronting on Gerald Ford Drive separates the campus from the I-10 Freeway. Area residential developments are typically anchored by golf courses whereas the commercial areas to the north, northwest and west serve local neighborhoods, the PDC, the UCR Graduate Center and travelers along the I-10 Freeway. To the northeast immediately north of the I-10 Freeway is the regionally important Classic Club golf course and the elegant Bellatrix Restaurant.

Recognizing the importance of the Palm Desert Campus to the area, the City of Palm Desert has recently drafted of the University Neighborhood Specific Plan, which defines a series of local neighborhoods knitted together by a graceful network of local streets, sidewalks and bike paths ultimately interlinked with the PDC. Finally, a regional Amtrak/commuter rail station has been identified for a site accessible to the northeast of the PDC located on the rail line adjacent to the south side of the I-10 Freeway.

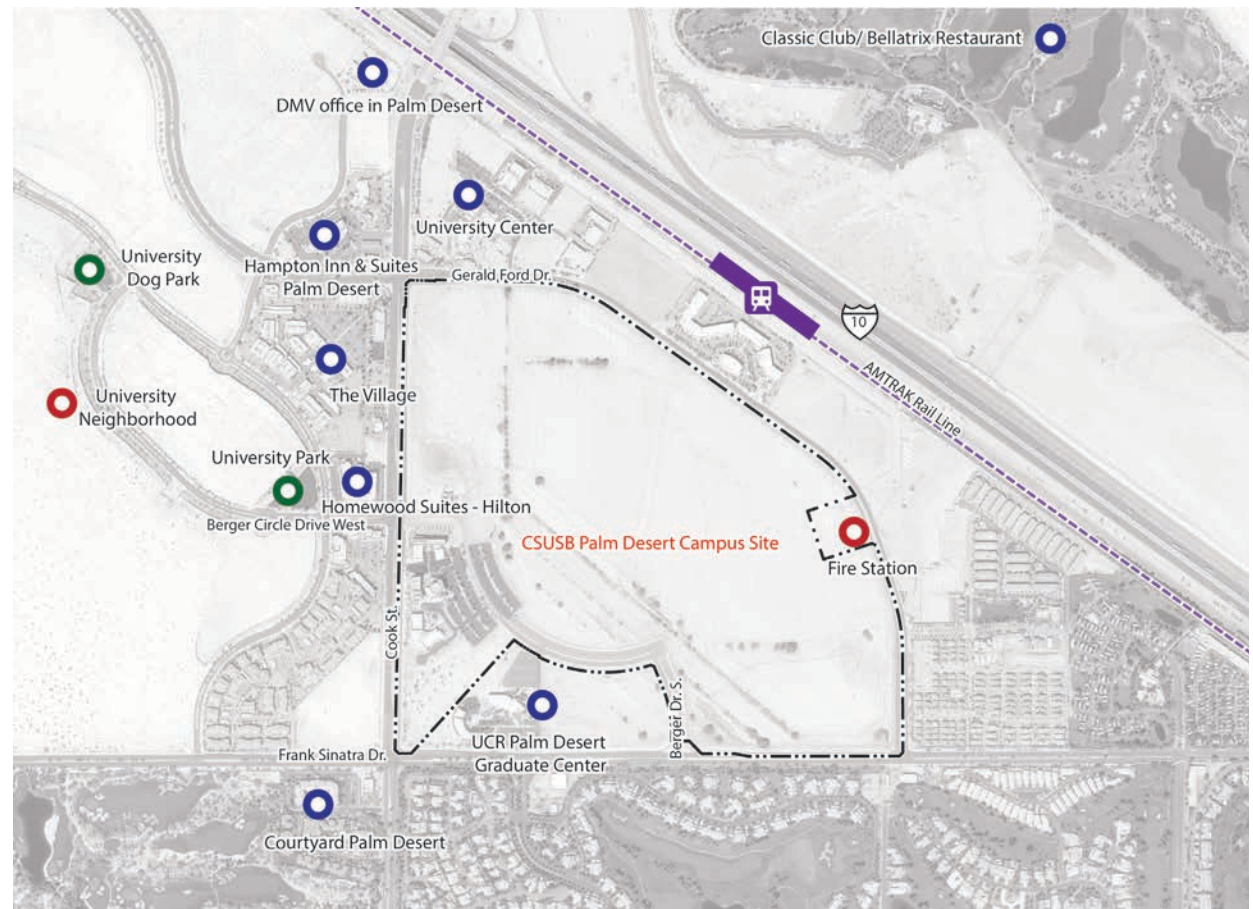
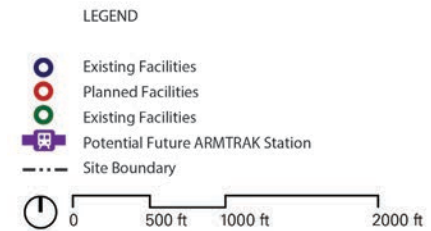


FIGURE 2-3: EXISTING + PLANNED FACILITIES

2.5 OPPORTUNITIES + CONSTRAINTS ANALYSIS

Important views to and from the PDC site are addressed in the 2106 PDC Master Plan insuring that the campus is highly visible within the community and that the long range views of the Indio Hills remain part of the 'place-defining' features of the campus.

SITE CAPACITIES

The original visionaries of the Palm Desert Campus saw the need for a four-year institution of higher education serving the greater Coachella Valley community with a campus size in the 10,000 to 12,000 Full-Time Equivalent (FTE) student enrollment range. Similarly the California State University System assured the founders that the 200-acre site envisioned for the campus could accommodate the projected enrollment. In fact there are a range of campus sizes in terms of both area and master planned enrollment across the twenty-three CSU campuses averaging around 290 net usable acres (non-agricultural academically devoted program). To reconfirm the sizes of campuses possible for the PDC property, the consultant team analyzed seven selected smaller to mid-sized CSU campuses with master planned enrollments between 15,000 and 20,000 FTE, yielding an average net usable campus area of 252 acres. This analysis, which included the CSU campuses San Bernardino, Bakersfield, Channel Islands, San Marcos, Dominguez Hills, Chico and East Bay, showed that on average 13.4 acres of land were required for every 1000 FTE of planned enrollment. Given this general guideline, the PDC land area of 169.4 acres could accommodate around 13,000 FTE. Even higher enrollments would be possible if the PDC campus plan was built to the planned density and associated land areas at CSU Channel Islands, San Marcos or East Bay.

SITE INTERNAL + EXTERNAL RELATIONSHIPS

The PDC site possesses several intrinsic facility related opportunities that can be integrated into the Master Plan. Possibly the greatest of these are the adjacent location of the UCR Palm Desert Graduate Center and the adjacent retail shopping areas to the west along Cook Street. In the first instance, the UCR Palm Desert Graduate Center (UCR-PDGC) was originally intended to be associated with the PDC and as the current programming of the PDGC by UCR is less than its capacity, CSUSB has requested a lease for several of the PDGC rooms (including the 300-seat theater) for use as classrooms and faculty offices for the 2016-2017 academic year. In the second case, the adjacent commercial areas along Cook Street offer students, faculty and staff food service and various convenience items; and the PDC currently leases space there for its Student Recreation and Fitness Center. These adjacent shopping areas, including, the Village at University Park, are directly accessible to the PDC using the campus entrance at Berger Drive West, which becomes University Park Drive upon crossing over Cook Street.

Possibly the most notable constraint on the PDC site are the noted 'blowsands' emanating from the local dune formations in this part of the Coachella Valley (See: "The Local PDC Climate, Vegetation and Wildlife" section). These sands, largely unprotected by vegetation and coupled with the local winds can cause sands to cover adjacent roads, parking lots and landscaped areas in the downwind direction. To mitigate this effect,

the earlier PDC 'circle plan' had planned for irrigated playfields upwind to the prevailing NW wind direction so as to drastically reduce the source of blowsands in that area. This approach of playfield placement to reduce blowsands is thus a potential as well for the current 2016 Master Plan.

Another site-related opportunity to be addressed in the 2016 Master Plan is one of community visibility for the campus. There are several components to campus visibility: visibility of the campus when seen from a distance such as its visibility from the I-10 Freeway; visibility of the campus as viewed from surrounding streets; and visibility of the campus as a local institution, the CSUSB Palm Desert Campus, through local identification signs.

Focusing the discussion on current sign identification for the PDC, although a small monument sign identifies the campus site at the intersection of Cook Street and Gerald Ford Drive, currently, as experienced when arriving from the north along Cook Street, the PDC receives its primary sign identification at the Berger Drive West entrance provided by a modest ground level street median monument sign and an upper level building wall sign near the top of the south-facing wall of the Mary Stewart Rogers Gateway Building. Further south along Cook Street opposite the Indian Wells Center for Educational Excellence, is a programmable monument digital display sign the frame of which permanently identifies the campus name and address. A simple blade sign placed along Cook Street "CSUSB" near the southern end of the campus announces the campus as one approaches the campus from the south. Each of

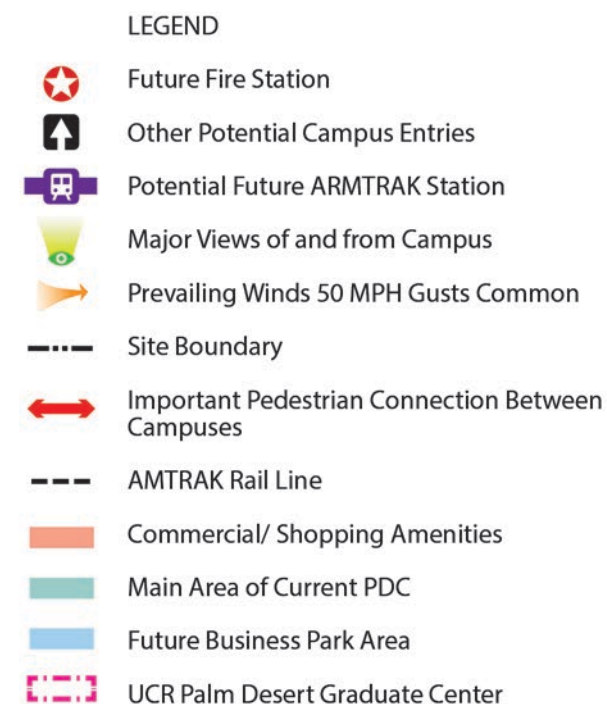
the three PDC buildings which back onto Cook Street are identified by name near the top of the building wall utilizing a uniform sign type: individual letters with consistent font type, color and size.

Although the group of campus buildings present a building mass recognized as the PDC particularly as identified as described above, the buildings are of an architectural style and tan color similar to the campus buildings on the adjacent UCR Palm Desert Graduate Center campus. The UCR center uses a similar set of building signs and monument signs at the campus entrance along Frank Sinatra Drive to identify itself. To visually differentiate the two campuses, two tan monument signs have been placed at the intersection of Cook Street and Frank Sinatra Drive each with the campus name and an arrow pointing to the respective campus. Beyond the similar sign and building identification techniques, the two campuses also have some similarity in the use of various desert plant landscaping. The landscape image of each campus is somewhat differentiated through the use of signature trees with PDC displaying mesquite and palo verde and the UCR Graduate Center using the taller and more formal date palms.

Another feature intended to identify the campus in the community, which had been anticipated in the PDC 'circle plan', was a central clock tower that would both create a landmark identity for the campus as viewed from surrounding areas and at the same time serve as an orientation device for users within the campus. The idea of creating a clock tower for the new campus plan was confirmed in the PDC Campus Forums.

OPPORTUNITIES + CONSTRAINTS ANALYSIS

Figure 2-4 summarizes principal intrinsic features of the PDC site that are considered potentials for integration into the Master Plan contributing or otherwise enhancing the Plan. Similarly, a set of site constraints are delineated that should be evaluated and addressed in the Plan so that they are avoided or otherwise mitigated.



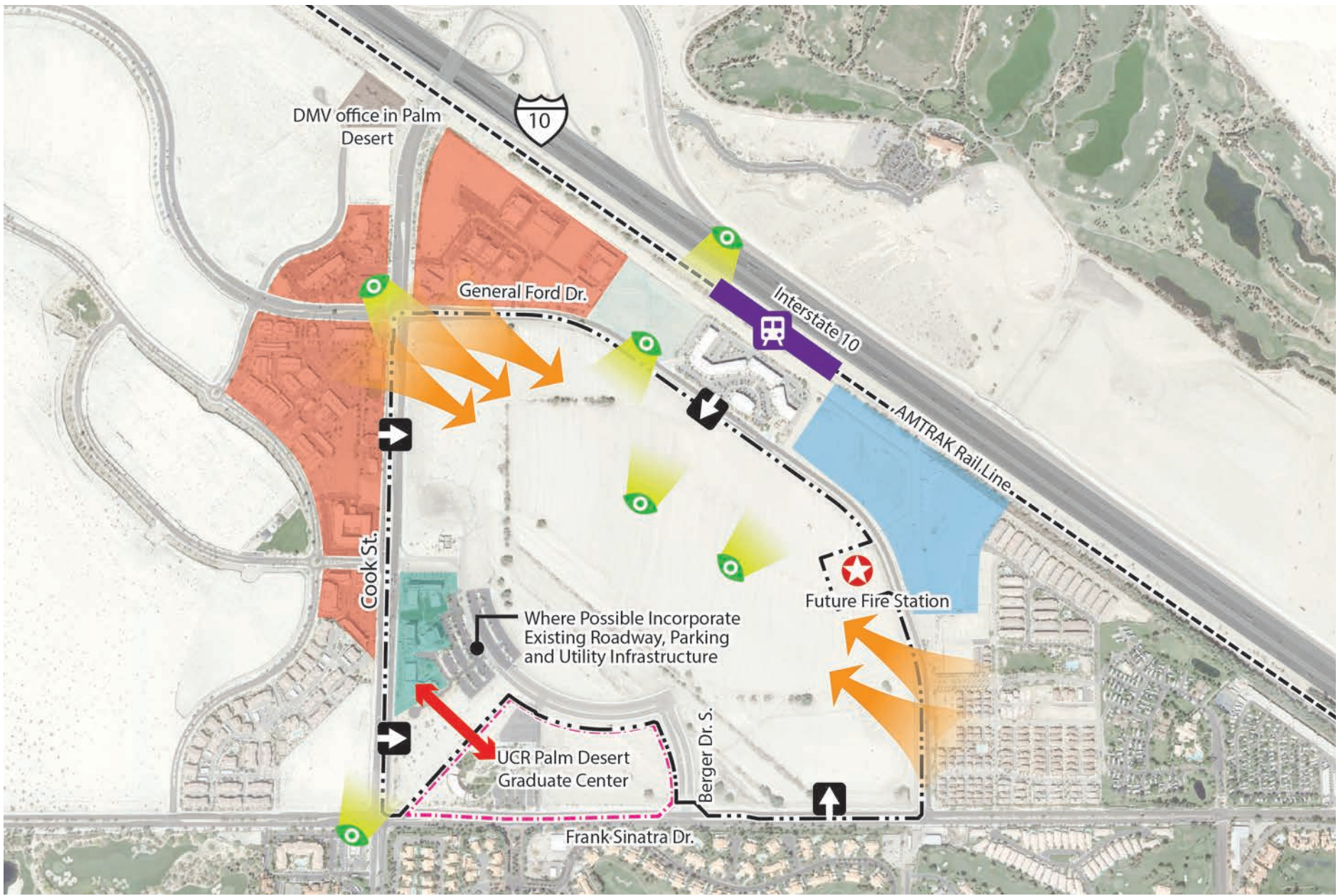
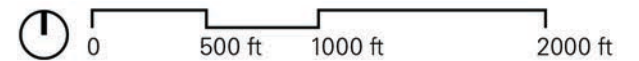


FIGURE 2-4: OPPORTUNITIES + CONSTRAINTS ANALYSIS



2.6 HIGHER EDUCATIONAL NEEDS FOR THE GREATER COACHELLA VALLEY

In May of 2016 the academic planning consultancy Paulien & Associates prepared an analysis of the student demographics and PDC enrollment characteristics for the Greater Coachella Valley. In addition the firm also reviewed trends in regional employment trends to help identify the academic areas that would be needed to support those industry sectors. Highlights from the Paulien & Associates study, “Student Demand Overview for the Campus Master Plan, Palm Desert Campus, California State University, San Bernardino” are included here.

STUDENT DEMOGRAPHICS

Paulien & Associates analyzed the population, student characteristics and Fall 2015 PDC enrollment for the primary 14 postal zip codes that comprise the Greater Coachella Valley area to arrive at an estimate of the average rate that the student age population (defined as population age range of 15-55 years) attends the Palm Desert Campus. This average rate was found to be 0.63 percent—significantly below the statewide average rate of 3.3 percent for the total population attending public 4-year and above institutions. The PDC participation rate is also below the statewide average rate for the population attending public 2-year institutions, which stood at 6.8 percent. Similarly, the Fall 2014 participation rate for College of the Desert, which draws students from the same areas as the Palm Desert Campus, stood at 3.6 percent.

Thus the underlying potential for increasing student participation/for additional student growth at the PDC appears to be substantial. Paulien & Associates also analyzed other factors that suggest the potentials for increasing student enrollments at the PDC. Specifically, the Paulien study found that the percentage of high school graduates meeting the UC/CSU application requirement has grown steadily in both Riverside and San Bernardino Counties over the last four years. Added to this, the percentage of Latino high school graduates meeting UC/CSU application requirement rate has also

increased—Latino students currently make up nearly 60 percent of students attending the PDC.

Further, all of these factors that could logically work to increase Greater Coachella Valley student participation at PDC would also occur over a future period of time in which the regional population is projected to increase.

Finally, the Paulien study, citing the Institute of International Education’s (IIE) annual survey “2013 Open Doors Report on International Education Exchange,” noted that the international student enrollments



Source: <https://advancement.CSUSB.edu/development>

have been increasing across the United States with undergraduate students now out pacing graduate students. This growing source of new students entering the CSU system thus represents additional potential for PDC student growth.

Given the student demographic and population growth identified above, the question then becomes: How can the Palm Desert Campus better attract students? The Paulien & Associates study pointed to three important steps:

1. Identification and offering of courses and curricula that meet the demands of Greater Coachella Valley students;
2. Providing a complement of appropriate academic and student life amenities for the larger population;
3. Providing an appropriate level and mix of residential facilities to serve regional and international populations.

ACADEMIC PROGRAMS FOR THE PDC

The Paulien & Associates study reviewed a report prepared by the College of the Desert on Coachella Valley and regional employment trends and projections—“College of the Desert Labor Market Information Report, October 2015”—as a way of providing a framework for identifying academic programs appropriate for the Palm Desert Campus. These data are summarized below for both the Coachella Valley and the region defined as including the counties of Riverside, San Bernardino, Los Angeles, Orange, and San Diego.

Academic Area	2015-2025 Growth	Job Openings
Nursing	35%	4,344
Culinary Arts and Management	21%	2,847
Business Administration	13%	2,790
Horticulture	34%	1,761
Health Science	42%	1,606
Early Childhood Education	8%	954
Automotive	12%	924
Social Work	17%	706
Accounting	6%	655
Computer Science	25%	337

Source: College of the Desert Labor Market Information Report, October 2015

TABLE 2-5: COACHELLA VALLEY EMPLOYMENT PROJECTIONS

In general, the Palm Desert Campus leaders and administrators have anticipated the types of programs currently and projected to be needed at the PDC. The Health Sciences facility constructed in 2008 is a direct result of supporting such in-demand nursing and health science-related programs. The recent approval of a Hospitality program for the Palm Desert Campus is another emerging program aimed at fulfilling the strong regional demand for workers in the locally significant and growing hospitality industry. Similarly, recent interest coming from the entertainment field has suggested the place for an operational entertainment production facility (Sound Stage and Film Projection Building) that could be placed on the campus and simultaneously used for commercial and educational purposes. As a general perspective, it is also instructive to compare the PDC with other local institutions offering similar courses. The local business college Santa Barbara Business College (SBBC) located in Rancho Mirage offers bachelor’s degree programs in Business Administration, Criminal Justice and Healthcare Administration indicating the local strength of these programs. The Paulien report pointed to the importance

Academic Area	2015-2025 Growth	Job Openings
Nursing	26%	222,127
Business Administration	13%	181,679
Health Science	39%	113,276
Culinary Arts and Management	20%	106,385
Early Childhood Education	16%	69,042
Liberal Arts	36%	62,226
Social Work	20%	55,781
Computer Science	15%	55,532
Automotive	12%	42,944
Accounting	10%	42,537

Source: College of the Desert Labor Market Information Report, October 2015

TABLE 2-6: REGIONAL EMPLOYMENT PROJECTIONS (Riverside, San Bernardino, Los Angeles, Orange, San Diego Counties)

of the community college, College of the Desert, which offers a number of Associate of Arts and certificate programs that possibly indicate a latent demand for related four-year programs that the PDC could offer locally to transfer students. Similarly, there are some PDC students who also currently attend the CSUSB main campus to complete the courses needed for their majors-- some courses of which in the long term could be offered at PDC to better serve those students. The nature of the appropriate course offerings, section counts and class times should be studied to develop an optimum set of curricula for the Palm Desert Campus.

EXISTING BUILDINGS

The Palm Desert Campus has four relatively recently constructed permanent buildings totaling over 100,000 gross square feet of floor area. As was noted elsewhere, construction of the Palm Desert Campus facilities somewhat unique in the California State University system, has been thus far been funded entirely by private and outside public donations. This funding mechanism has allowed the PDC to create a new state university campus serving the long-term needs of the greater Coachella Valley, to build quality facilities exceeding the basic standards of the CSU and to target various programs such as nursing and the health sciences to the demands of the existing and rapidly growing local higher education market. The general characteristics of the existing buildings at PDC are summarized in the accompanying table “PDC Existing Buildings Summary”.

All of the PDC buildings are in good condition and as a group reflect a consistent architectural style that lends a visual cohesiveness to the campus. The basic pattern thus far established is for classroom/lab buildings to be 3 floors in height, thus contributing to a compact campus and thereby reducing walking distances and compact buildings to be cooled—an appropriate response to a hot climate.

Since the PDC was built in anticipation of an expanding future campus, the current lecture and laboratory capacity of the campus exceeds the current enrollment. In general classroom buildings which make up over 90 percent of the existing Full-Time Enrollment (FTE) capacity of all PDC facilities are underutilized for lecture activities based upon CSU standards. This condition has several implications for the construction of the first new additional buildings for the campus: 1) additional lecture based courses can generally be accommodated in existing buildings; 2) new student support facilities such as a dedicated student center and university library should be a priority as they can act to attract additional students; 3) additional academic space can be created in the Mary Stuart Rogers Gateway and Health Sciences buildings as student food service and other services and library functions are shifted into new dedicated facilities. An exception to the existing capacity of the PDC facilities lies in the area of Faculty Offices where there is a recognized need for an additional 11 offices (See: CSU. "Five-Year Capital Improvement Program 2015/2016 Summary of Campus Capacity Main Campus

and Off-Campus Centers." To accommodate this need, CSUSB Palm Desert Campus leadership anticipates contracting to use some of the underutilized office space available in the adjacent UCR Palm Desert Graduate Center, which has currently underutilized spaces available.



Palm Desert Campus Existing Buildings

Building	Year Built	Number of Floors	Floor Area ASF	Floor Area GSF	Student Stations	Total FTE Capacity
Mary Stuart Rogers Gateway	2002	3	22,884	34,900	447	838
Indian Wells Center for Educational Excellence	2002	3	13,790	37,325	330	769
Health Sciences	2008	1-2 ?	15,327	28,000	280	270
Indian Wells Theater	2005	1	9,809	NA	304 ¹	708 ¹
Utility Sub-Station	2005	1	NA	1,176	--	--
Totals			61,810	101,401	1,361¹	1,877-2,585¹

Source: Facility and Capacity Reports, CSU Space and Facilities Database Management System, January 2015

Notes:

NA—Data Not Available

¹—Estimates. The Indian Wells Theater is not currently entered into the Space and Facilities Database Management System as an academic facility but is in fact used for various academic activities.

TABLE 2-7: BUILDING SUMMARY

References

- California State University San Bernardino—Palm Desert Campus. <http://pdc.CSUSB.edu>
- California State University. "Five-Year Capital Improvement Program 2015/2016 Summary of Campus Capacity Main Campus and Off-Campus Centers." <http://www.calstate.edu/budget/fybudget/legislative-reports/1415-utilization-facilities-teaching-faculty-space-report-2.pdf>
- California State University, Office of the Chancellor, Capital Planning, Design and Construction. "Five-Year Capital Improvement Program 2015/16 through 2019/20" http://www.calstate.edu/cpdc/facilities_planning/documents/2015-16-five-yr-capimprovementpgmbk.pdf
- City of Palm Desert. "Environmental Sustainability Plan." Prepared by EcoMotion. February 11, 2010. 59 pages.
- City of Palm Desert. "Comprehensive General Plan/Water, Sewer & Utilities Element." Adopted 3.15.04
- City of Palm Desert. "Comprehensive General Plan/Biological Resources Element." Adopted 3.15.04
- City of Palm Desert Redevelopment Agency. PDC Grant Deed. November 16, 1999.
- City of Palm Desert Redevelopment Agency. UCR/Richard J. Heckman Foundation, Disposition and Development Agreement. March 22, 2001.
- Coachella Valley Water District. "ETo Map" (CVWD Dwg. No. 29523). Updated October 12, 2009.
- Coachella Valley Water District. "Irrigation Water Sources for Golf Courses Update: 12-18-2015" (map)
- Coachella Valley Water District. "Recycled Water, A reliable source for a sustainable future." 2102 (2 page brochure).
- College of the Desert. <http://www.collegeofthedesert.edu/fs/research/layouts/xlviewer.aspx?id=fs/research/Data%20Resources/Labor%20Market%20Information>.
- Converse Consultants. "Geotechnical Investigation Report: Palm Desert Campus, Phase III-Cook Street, Palm Desert, California" (Converse Project No. 05-81-321-01). February 23, 2006;
- Oliphant, Richard. Interview with PDC Master Plan Committee members and staff of Asembledge+, March 23, 2016.
- Paulien & Associates. "Student Demand Overview For the Campus Master Plan, Palm Desert Campus, California State University, San Bernardino." May 6, 2016
- Randy Purnel, Landscape Architect. "Preliminary Landscape Plan, Sustainable Landscape Project. 75-080 Frank Sinatra Drive, Palm Desert, CA 92211." Rancho Mirage, CA; 10/21/2009.
- Waters, Michael R. "Late Holocene Lacustrine Chronology and Archaeology of Ancient Lake Cahuilla, California." Quaternary Research. Volume 19, 1983. 373-387.
- U.S. Geological Survey, "Myoma Quadrangle, 7.5-Minute Series." Myoma, CA, 2015

2.7 FUTURE CAMPUS SPACE NEEDS

Space needs for a campus student capacity size of 8,000 FTE were projected based upon a CSU ASF/FTE model for state-supported facilities and national averages as guidance for non-state supported facilities such as student centers and recreational facilities.

CAMPUS SPACE NEEDS

A framework for anticipating the overall space needs for the PDC was developed assuming a future campus capacity of 8,000 Full-Time Equivalent Students (FTE). It should be noted that the consultant team performed various analyses based upon California State University averages to test the potential capacities of the 169.4 acre Palm Desert Campus site. These analyses suggested that depending on the density of buildings, allowances for various major land uses such as residential and Physical Educational fields that the campus area could potentially support a campus of upwards of 15,000 FTE in the long distance future. To estimate the PDC space needs by major categories of state-supported and non-state supported spaces the following guides were utilized:

1. For Instructional, General Administrative, Library, Media and Plant Operations spaces the average ASF/FTE values (Assignable Square Feet/Full Time Equivalent) were applied based upon the ASF/FTE

Model used for the larger CSUSB main campus. Instructional space estimates were modestly increased to reflect potential higher needs in keeping with CSU system wide averages.

2. For Physical Education indoor space, CSU Standards for Campus Development Programs, Section 9074.01 were applied;

3. Campus Centers, Student Recreation, Assembly and Exhibit spaces were based upon national averages for similar institutions as provided by Paulien & Associates.
4. Assignable Square Feet (ASF) estimates were converted into rounded Gross Square Feet (GSF) estimates based upon a 65 percent building efficiency factor.

Space Category	Estimated Net ASF Need	Projected GSF	Projected GSF Range	
Instructional Space	226,551	350,000	350,000	490,000
General Administration	67,616	105,000	98,000	105,000
Library and Media	100,091	155,000	155,000	200,000
Physical Education	72,000	111,000	111,000	115,000
Campus Centers and Student Recreation	84,000	130,000	130,000	150,000
Plant Operations	16,000	25,000	25,000	28,000
Other Spaces (Assembly, Exhibit)	6,191	10,000	10,000	15,000
TOTALS		886,000	879,000	1,103,000

TABLE 2-8: ESTIMATED FUTURE SPACE NEEDS FOR 8,000 FTE PALM DESERT CAMPUS

CURRENT NATIONAL TRENDS IN CAMPUS PLANNING

Colleges and Universities across the US are experiencing a series of challenges to their ability to provide quality higher education for the 21st Century. Campuses today face significant reductions in their budgets, flattening enrollment growth and increasing competition for students and faculty. At the same, teaching pedagogies are changing in ways that require larger, more technologically “smart” classrooms and global markets and businesses are emphasizing interdisciplinary, collaborative approaches to ever more complex problem solving. As campuses look at more efficient and effective ways to provide higher education without sacrificing quality and results, trends are emerging that encourage more interdisciplinary, multi-use facilities with an emphasis on team teaching, student-faculty interaction, student-student interaction and the ability to utilize technology as a seamless element in the teaching pedagogy.



3

PALM DESERT CAMPUS PLAN VISION + PLANNING PRINCIPLES

3.1 PALM DESERT CAMPUS STRATEGIC MASTER PLAN VISION

The vision for the Palm Desert Campus and the parent CSUSB campus emanates from the CSUSB Strategic Plan 2015-2020 which focuses on five major goal areas: Student Success, Faculty and Staff Success; Resource Sustainability Expansion; Community Engagements and Partnerships; and Identity.



Source: Copyright 2016 Pictometry International Corp, from Bing "Bird's eye" image.

2016 MASTER PLAN VISION STATEMENT

CSUSB/PDC will become a global learning center of opportunity and enterprise for the Coachella Valley, the Inland Empire and the Southern California Region.

2016 MASTER PLAN MISSION STATEMENT

As a healthy environment enabling diverse lives to grow and prosper, the campus will provide a setting in which the intellectual and creative pursuits of the University and general community are activated, interconnected, and sustainable.

3.2 PALM DESERT CAMPUS MASTER PLAN: ALIGNMENT WITH THE CSUSB STRATEGIC PLAN

As a satellite campus of CSUSB in San Bernardino, the PDC reinforces the CSUSB brand and image in Riverside and San Bernardino Counties while serving the unique needs of the greater Coachella Valley residents, workforce and community.

PLAN PRINCIPLES

The 2016 PDC Master Plan Vision and Mission statements boldly declare a chosen direction for this campus and are embodied by five essential Principles aligned with the Strategic Goals of the CSUSB Strategic Plan.



STUDENT SUCCESS

The PDC Master Plan will support CSUSB as an integral part of the outstanding and inspirational academic institution that emphasizes community engagement, collaboration and shared discovery, and balances student life, arts, academics, and athletics. Through a focus on preparing students for resilient and prosperous lives, the university will take its place as a leader in ensuring a brighter future for the region.



FACULTY + STAFF SUCCESS

The PDC Master Plan will reinforce faculty and staff success, diversity, academic rigor and applied research programs, and will promote effective and innovative governance and administration. Doing this with an eye toward regional purpose and global reach will further establish the PDC as a preeminent and recognized institution serving the Coachella Valley and beyond. Enhanced PDC resources will further enable faculty and staff to deliver an advanced learning environment that will be the pride of the state.



RESOURCE SUSTAINABILITY + EXPANSION

The PDC campus will accommodate expected growth while becoming an inspiring exemplar and community hub for sustainable growth and resilient living in the Coachella desert environment. Achieving this through resource optimization means leveraging existing campus assets, strategic partnerships, and community relationships in addition to adding new facilities, technologies, and programs. The university will demonstrate how to optimistically meet future challenges with knowledge, efficiency, and collaboration.



COMMUNITY ENGAGEMENT + PARTNERSHIPS

The PDC Master Plan will support the growth of CSUSB as an innovative regional economic engine, center for community interaction and source of diverse social engagement. Strengthening ties to alumni and groups will bolster long term University health while partnering with industries will open doors for more entrepreneurial and connected graduates.



IDENTITY

The PDC Master Plan will support the growth of CSUSB as a recognized destination for intellectual and cultural activities, for an active campus life and for environmental stewardship. Increased housing opportunities and amenities that provide a desirable, healthy, and safe 24/7 campus lifestyle will create a community that belongs to students who can call the PDC a home away from home. Doing this will add to the larger CSUSB identity and help celebrate coyote spirit.

3.3 GOALS FOR THE PALM DESERT CAMPUS MASTER PLAN

As an Off-Campus Center of CSUSB the Palm Desert Campus maintains the same CSUSB goals for educational excellence delivered from a campus and facilities that foster high levels of student learning and collegiality. Added to these goals the 2016 PDC Master Plan seeks to uniquely address the needs of the local community and to achieve a sustainable integration with the local desert environment.

MAJOR GOALS OF THE 2016 PDC MASTER PLAN

The intent of the 2016 PDC Master Plan is to provide a specific plan framework for accommodating the full range of facilities needed to attract and support the higher educational needs for a California State University campus with a future student enrollment capacity of 8,000 FTE students. In addition, the PDC campus Master Plan must address the specific educational needs of the surrounding target population of students/community of Riverside County and the Coachella Valley, while at the same time supporting the higher educational and developmental goals of CSUSB. The 2016 PDC Master Plan facilitates the CSUSB's ability to:

- Support students, faculty and staff with appropriate teaching, research and administrative facilities;
- Serve as a regional center for intellectual, cultural and life-long learning
- Reinforce CSUSB's active learning focus by providing opportunities for interactions and collaborations among students, faculty, staff and the greater community;
- To promote social and economic equity, provide for a range of ways for students and the community to access the campus and its facilities including access to public transportation and distance learning;
- Conserve natural resources while creating and fostering an environmentally, socially and economically sustainable physical and operational campus.
- To support the integration and retention of local, regional and international students create campus-controlled student residential communities and associated learning communities on the campus;
- Create a nexus of primary student-supporting facilities including a university class library and a full-service student union;
- Support the creation of a range of student learning/research/incubator type spaces on the PDC property through public-private and public-public partnerships;
- Reinforce positive intrinsic features of the PDC site including views to the Indio Hills, the positive architectural expression of the campus within/and viewed from the community and the existing and planned physical connections with surrounding neighborhoods and facilities;
- Create a series of campus outdoor spaces framed by buildings and protected from extremes of sun and wind that facilitate student interaction, student learning and passive recreation.

SPECIFIC GOALS OF THE 2016 PDC MASTER PLAN

The 2016 PDC Master Plan will address a number of developmental issues specifically related to the greater Coachella Valley service population, the PDC site within the City of Palm Desert area and the local desert environmental characteristics:

- Provide appropriate facilities for informal and organized recreation and intercollegiate athletics;
- Through a comprehensive approach to sustainability in the Sonoran Desert environment, maintain CSUSB's stewardship of campus landscape and natural resources;



4

OUTREACH + ALTERNATIVES EVALUATION

4.1 CAMPUS VISIONING AND OUTREACH

The Palm Desert Campus maintains deep connections with its Coachella Valley stake-holders who strongly supported the master planning effort helping move the earlier, broadly defined Master Plan of 2000 to a structured planning framework and set of specific proposals for all aspects of campus development as contained in the 2016 PDC Master Plan.

concepts were refined and presented to the larger campus community at a series of two campus-wide town hall meetings where further input and comments were gathered. At each stage, the campus vision and Master Plan concepts were refined, ultimately resulting in a 'consensus plan' developed after the combined comments received in Campus Town Hall Forum 2 and the Master Plan Committee were integrated by the Master Plan consultants. Additionally, separate informational meetings were held with individuals and organizations that have supported development of the Palm Desert Campus in the past and/or that have expressed interest in future support for campus.

OVERVIEW OF THE PLANNING PROCESS

Creation of the 2016 PDC Master Plan was the result of a collaborative combined effort of the PDC Master Plan Committee--composed of CSUSB/PDC faculty and staff, selected community stakeholders and representation from the CSU Chancellor's Office; students; community stakeholders; and the Master Plan consultant team. A series of working meetings were held with the Master Plan Steering Committee and the Master Plan consultant team. As initiatives were identified at these meetings

PARTICIPATION IN THE PLANNING PROCESS

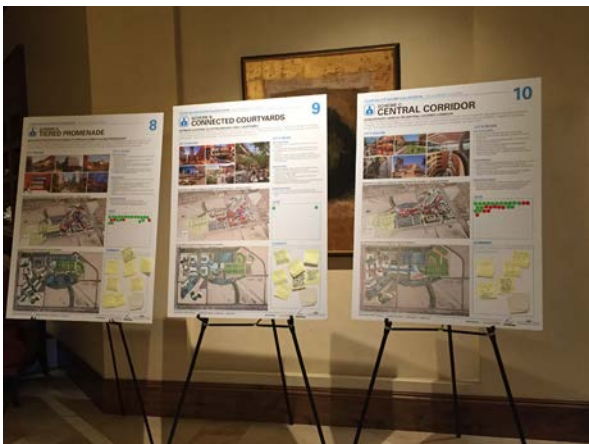
The planning process was designed to encourage participation by students, faculty, staff and community individuals and groups. Two campus-wide town hall style meetings were held at specific points in the planning process designed to engage campus and community stakeholders in the identification of needs and concerns related to the future of the campus and specifically to provide feedback on a series of alternative Master Plan scenarios that were prepared by the Master Plan consultant team.

The University coordinated these campus-wide meetings with the PDC academic and community calendars and scheduled them to ensure that students, staff, faculty and community stakeholders had sufficient opportunity for input into the planning process. The PDC Master Plan Steering Committee provided guidance on the

specific format, scheduling and arrangements for these meetings. To accommodate an expected large turnout, the two Campus Town Hall Forum meetings were held in the 300-seat Indian Wells Theater. Background explanatory planning information was placed on large format boards and then used to convey information to Forum participants--allowing them to study the PDC site and initiatives up close in the lobby area of the Indian Wells Theater after a main presentation had been made in the theater itself. Similar boards were also used to solicit ideas and comments from the Forum attendees who could place their comments on 'post-it' notes. These boards were left at the PDC for subsequent campus/community reference and review. Additionally, the Power Point Presentation prepared for Forum 2 which summarized much of the PDC background information, the evolved alternative Master Plan Schemes and the Consensus Plan was placed on the CSUSB campus website for reference and review.

CAMPUS TOWN HALL FORUM # 1: INTRODUCTION AND REVIEW OF ALTERNATIVE MASTER PLAN SCENARIOS

The first Campus Forum was designed to introduce campus stake-holders to the Master Plan project, encourage their participation in the planning process, and to gather baseline information on campus aspirations, needs, issues and existing conditions. Further, to help focus the feedback for campus stakeholders, three initial campus development plan scenarios were also presented and ensuing discussions were conducted and comments were recorded. Based on input from this first campus Town Hall, the consultant team worked with the PDC Master Plan Steering Committee to refine the scenarios and to select a preferred scenario or Consensus Plan. This Consensus Plan represented a combination of the best elements from the several scenarios.



CSUSB Palm Desert Campus Workshop



**CAMPUS TOWN HALL FORUM #2:
REVIEW CONSENSUS PLAN AND SELECTED
DRAFT MASTER PLAN ELEMENTS**

Based on input from campus administration, the PDC Master Plan Steering Committee and campus and community constituents, the consultant team refined the preferred components of several of the earlier Master Plan scenarios to create a Consensus Master Plan in preparation for developing the fuller Draft Master Plan and related documentation. A second and final campus-wide planning forum was held to review this Draft Master Plan. The consultant team prepared materials to facilitate the meeting, using a 3D campus model to illustrate the plan, elicit comments and record comments for incorporation into a Draft Master Plan.

**PREPARATION OF THE DRAFT AND FINAL
MASTER PLAN**

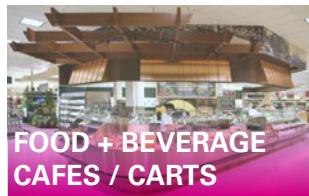
Based on feedback from the Campus Town Hall Forum #2, a final preferred plan was created which became the foundation for preparation of the Draft and Final Master Plan document. The Draft Master Plan document including all chapters related to proposed facilities, transportation, parking, landscape architecture, design guidelines, signs/wayfinding and utilities was later reviewed and commented upon by the Master Plan Steering Committee before its finalization into the final 2016 PDC Master Plan document.



CSUSB Palm Desert Campus Workshop

4.2 STAKEHOLDER INPUT ON KEY ISSUES

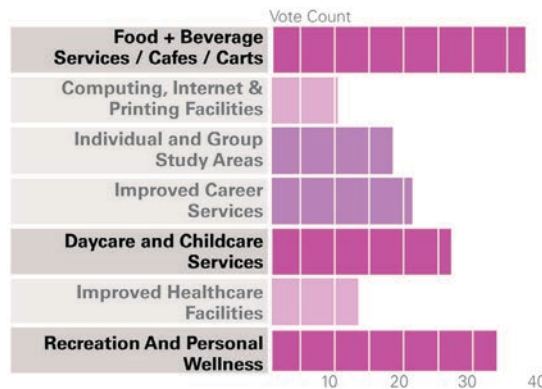
Key input was received from a broad spectrum of PDC stakeholders who expressed a range of ideas aimed at furthering the growth and development of the campus as the emerging center for higher education in the greater Coachella Valley.



WHERE SHOULD WE GO:

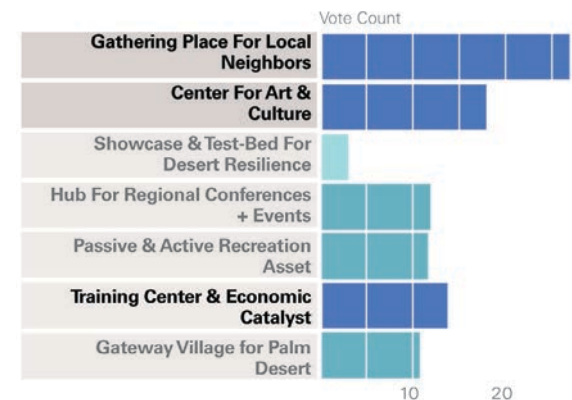
WHAT ON-CAMPUS SERVICES AND FACILITIES NEED TO BE UPGRADED?

24% of the outreach votes favored food + beverage services / cafes / carts. 17% of the outreach votes favored daycare facilities. 20% of the outreach votes favored recreation and personal wellness.



WHAT SHOULD THE UNIVERSITY BE FOR THIS COMMUNITY?

27% of the outreach votes favored fostering a Gathering Place for Local Neighbors. 19% of the outreach votes favored creating a Center for Arts & Culture, and 14% advocated for this campus to be a Training Center & Economic Catalyst.



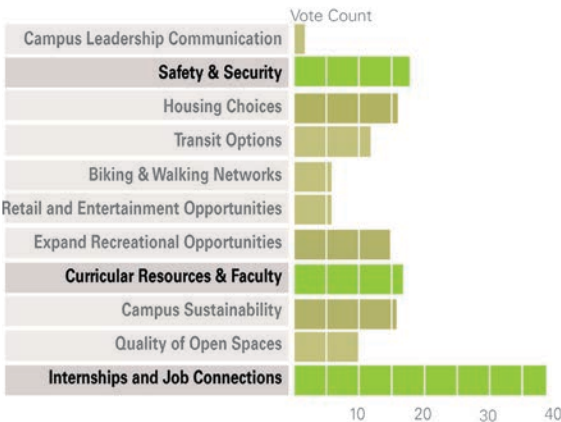
MAJOR CONCERNS + NEEDS

At Campus Town Hall Forum 1, after an orientation and PDC planning presentation in the Indian Wells Theater, participants were invited to identify the most important issues facing the PDC facility and to provide comments. This input was recorded by the participants on 'post-it' notes paced on large format boards displayed in the Theater lobby. The results of that input summarized by major planning categories and communicated on graphic charts are included on these pages. Key issues identified by the participants receiving the majority of votes and comments are highlighted in brighter tones and shading on the summary charts. Similarly, three other large format boards also displayed in the Theater lobby, presented initial master plan layouts summarizing the location of major buildings, parking, student housing and outdoor PE and recreational facilities. Forum participants were encouraged to place a dot on those layouts they liked best and to otherwise provide post-it comments. The feedback gathered informed the development of the Consensus Plan.



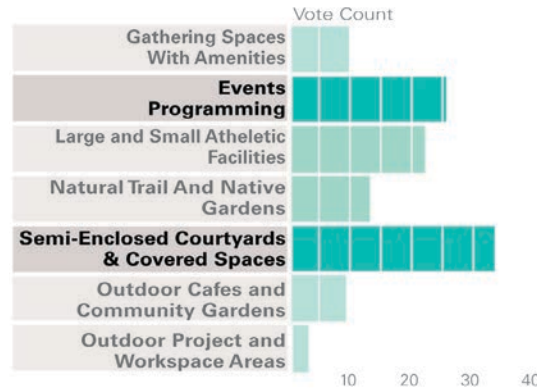
WHAT ARE THE MAJOR ISSUES AFFECTING YOU ON CAMPUS?

25% of the outreach votes favored Internships and Job Connections. 12% of the outreach votes favored safety & security. 11% of the outreach votes favored housing options, curriculum, and sustainability.



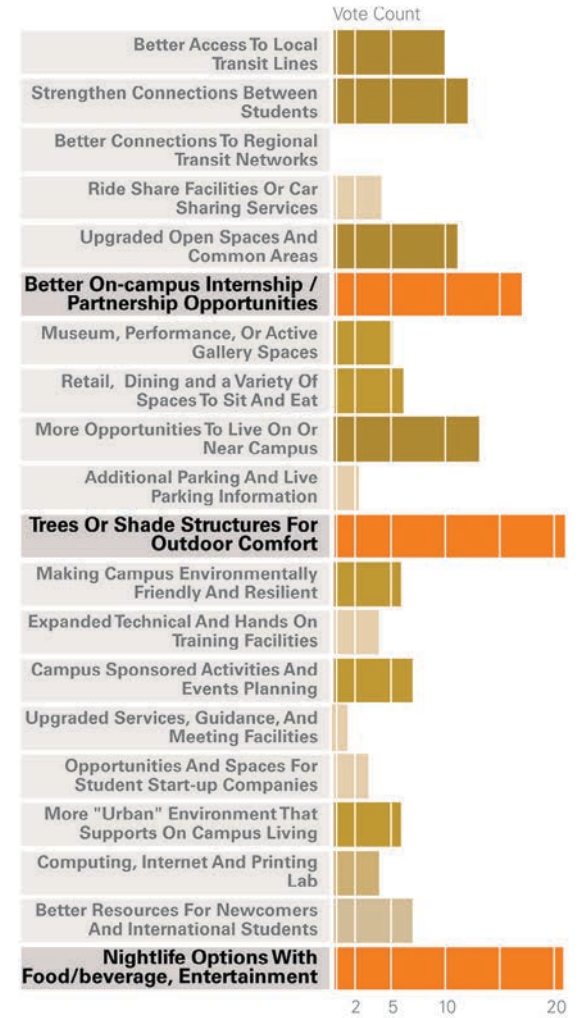
HOW WOULD YOU UPGRADE THE OPEN SPACES ON CAMPUS?

23% of the outreach votes favored spaces capable of supporting a range of events programming. A total of 30% of the outreach votes favored semi-enclosed courtyards & covered spaces indicating concern for environmental and climate comfort on campus.



WHAT BIG IDEAS FOR YOUR CAMPUS HOLD THE MOST INTEREST TO YOU?

13% of the outreach votes favored nNightlife Options With Food/Beverage, Entertainment & Trees Or Shade Structures For Outdoor Comfort. 11% of respondents wanted Better On-Campus Internship/Partnership Opportunities.



4.3 RESPONSE TO THE ALTERNATIVES

Of the initial PDC campus development schemes shared across the campus community there was a strong preference for a campus corridor or pedestrian promenade protected from the harsh desert elements.

Three initial Master Plan Schemes were presented at Campus Town Hall Forum 1. All three schemes sought to incorporate the following:

1. Provide for a compact campus core to facilitate rapid student access between facilities and parking in the desert environment.
2. Maintain Berger Circle Drive West as the main campus entry and to extend it eastward as a major campus roadway containing the campus core on the north.
3. Utilize the initial improved parts to the circular campus roadway and its connection with Berger Circle South as a southern entry to the campus.
4. Provide strong pedestrian links between the PDC and the UCR Palm Desert Graduate Center as a 'sister' institution and potential shared facility.

The three initial campus 'schemes' are illustrated on the facing page. It can readily be seen that there was an overwhelming interest in the schemes conceptualized as "Tiered Promenade" and "Central Corridor" which together gained 94 percent of all votes and with each basically equal in favor. Both these schemes have strong academically-oriented pedestrian corridors anchored on at least one end by a major athletic complex facility. These 'corridor' schemes provide protection from the local desert winds and sun as well as giving the campus a strong sense of spatial structure aiding in creating a 'mental map' for campus users. All of the schemes featured a student union/activity center and new library facility near the center of the building mass adjacent to the existing campus. All schemes feature use of solar panels as part of the larger goal of creating an environmentally and economically sustainable campus.

SCHEME A: TIERED PROMENADE

CAMPUS PROGRAM CONFIGURATIONS



ILLUSTRATIVE CAMPUS PLANS



VISUALIZED FEATURES



SCHEME B: CONNECTED COURTYARDS



SCHEME C: CENTRAL CORRIDOR



4.4 CONSENSUS PLAN DEVELOPMENT

ISSUES IDENTIFICATION

At Town Hall Forum 1 participants had a chance to review three alternative Scenario Plans/Schemes as portrayed in large exhibit boards in the lobby area of the Indian Wells Theater. Here they were encouraged to vote for those alternatives they preferred most and to supply comments in the form of 'post-it notes' on the alternatives. Also, representatives from the consultant team were stationed around the boards and received verbal comments as well as further explaining the alternatives as appropriate. After all these comments were gathered, they were analyzed by the consultant team.

As discussed above, other input was gathered from a group of persons and institutions that had supported the PDC in the past; or had expressed an interest in supporting the University as it moved into future phases of campus growth as identified in the Master Plan.

After Town Hall Forum 1 various meeting and conversations and meetings ensued between the PDC Master Plan Steering Committee and the consultant team. Out of these meetings as well as a result of the input received at Town Hall Forum 1 a number of issues arose that needed specific attention in the Draft Master Plan that had not been addressed in the first set of alternative Scenarios/ Schemes. These issues are summarized here:

1. The need for an initial component of University-controlled on-campus student housing that would address several issues facing the CSUSB PDC—the need to accommodate the rising interest in international students seeking to attend the PDC; the importance of providing a residential 'university experience' for those local and other California students seeking a four-year living away from home experience; and the demonstrated effectiveness of retaining those students, especially freshman students, that live in on-campus housing.
2. The interest in placing important community-oriented buildings in a prominent place along Cook Street and to otherwise present a strong CSUSB/PDC image along Cook Street and the Cook Street/Frank Sinatra intersection.
3. The need to select an appropriate site for a Hospitality Management Program, which had recently received approval by the CSU Chancellor's Office. At the time of the 2016 PDC Master Plan preparation, significant support had been gathering for this proposed program across the local, regional and national hospitality business and gaming communities.
4. The need to develop a plan that would appropriately accommodate a significant component of facilities that would attract students to the campus by creating a center of student activity, creating an atmosphere of student life. A stand-alone multi-faceted Student Union or the location of major student union functions within a jointly shared facility, were seen as important steps to accommodate this need.
5. Similarly, the long-term need for a dedicated library was discussed as an important component of creating a campus that could attract and retain students by fully supporting their study and research needs as well as elevating the status of the campus to that of a full service university in the eyes of the community. Examples were offered of CSU Channel Islands (CSUCI) and CSU Monterey Bay (CSUMB), two relatively recent start-up campuses where significant libraries were developed as an early phase of campus growth and development. (As a comparison, in the year 2014 the respective CSU campus libraries held the total number of titles: CSUCI—100,433; CSUMB—277,228; CSUSB—935,366). Also, similar to the PDC situation, both the CSU Channel Islands and CSU Monterey Bay libraries on these campuses were funded through private donations—a distinct possibility for the PDC given the potential donors living in the Coachella Valley.
6. The need to appropriately plan for the presence of blowsands on the PDC site. Several participants at Town Hall Forum 1 identified the issue of blowsands affecting the PDC site. In general these wind blown sands emanate from the northwest where strong winds and undeveloped desert lands contribute a source for sand to be blown from the PDC site itself and across local streets and onto the PDC site. The original 'circle plan' for the PDC also anticipated the placement of playfields to the northwest of the future PDC site as a way of preventing blowsands from eroding from the PDC site and as a buffer of lawns that would intercept blowsands coming from desert areas to the northwest.



BUILDING USE CATEGORIES

- Academic / Instructional
- Library / Media Center
- Physical Education or Recreation / Events Center
- Student Union / Dining + Student Services
- Administration or Special Academic Program
- University Student Housing
- Additional Student Housing

CONSENSUS PLAN FEATURES

The combined issues described above were addressed in the Draft 2016 PDC Master Plan. Each issue or important comment was evaluated and integrated in to the Draft Plan. In some cases the physical layout to the plan was altered to address issues such as the visibility of the campus from surrounding streets or to reduce the effects of blowsands. In other instances issues such as the need for a Hospitality Management facility or a Student Union were addressed in specific proposals related to building configurations, placements or design and are treated in various sections of the Plan. Some issues were addressed in multiple or overlapping ways and are therefore also treated in more than one place in the Master Plan document.

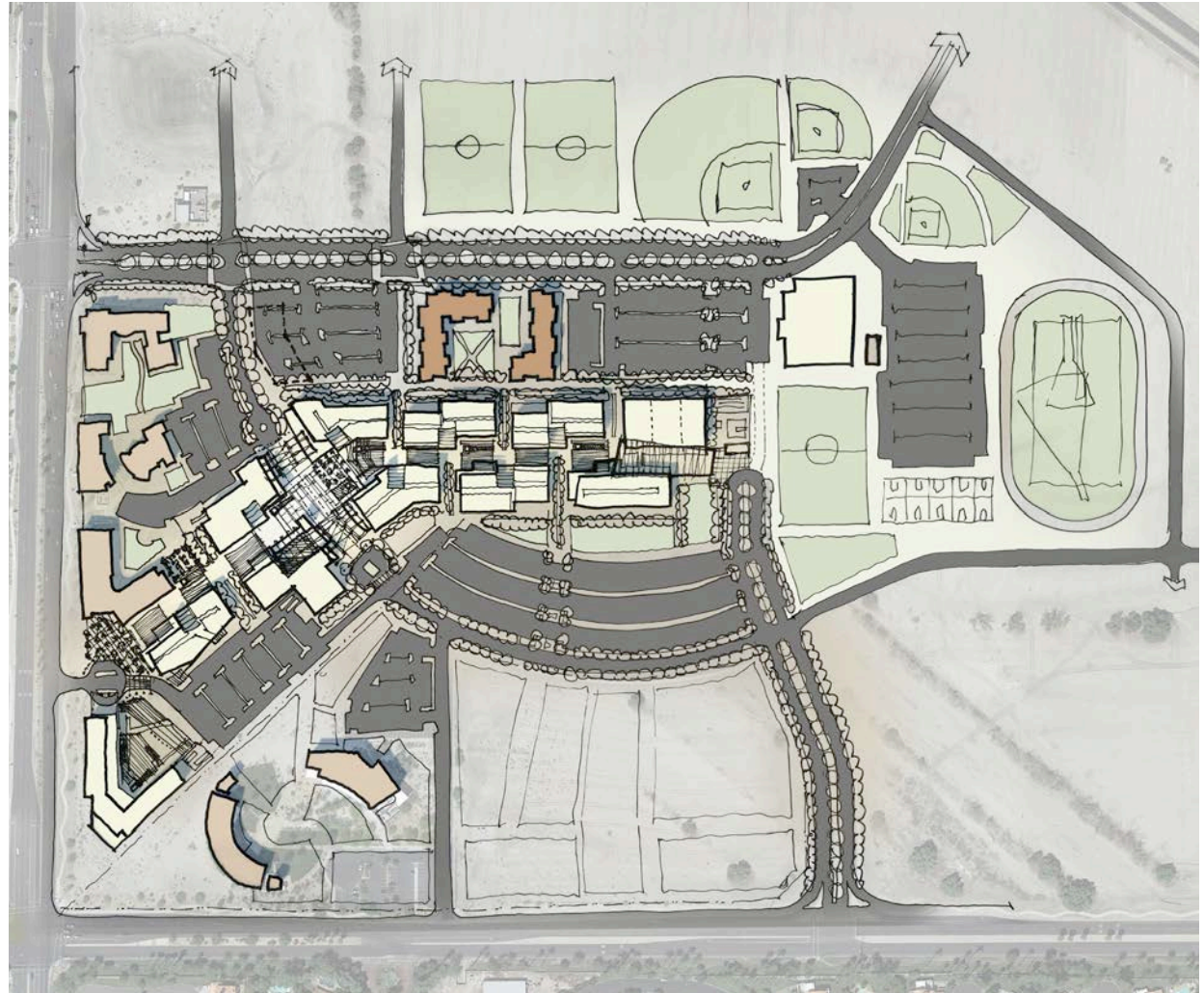


FIGURE 4-1: CONSENSUS PLAN SKETCH



11

PART

MASTER PLAN
ELEMENTS



PALM DESERT CAMPUS MASTER PLAN | 8000 FTE
TRANSPORTATION + CIRCULATION PLAN
CAMPUS SUSTAINABILITY
LANDSCAPE + ENVIRONMENT
SIGNAGE + SECURITY



5.1 CONSENSUS PDC MASTER PLAN

Two important future facilities for the PDC were identified during the planning process: A building or complex of buildings to house a Hospitality Management program; and a stand-alone library that could house additional functions during the early phases of campus growth—as had been the historic path taken by the CSUSB Pfau Library.

In order to grow the campus from this existing physical capacity to the goal of an enrollment of 8,000 FTES, the consultant team estimated the PDC space needs by major categories of state-supported and non-state supported spaces as described in Chapter 5, Table 5-3 and summarized below in the section: “Campus Development and Space Summary.” In summary the total required amount of space for Instructional, administrative, Library, media, physical education, student support/recreation and plant operations will be between 879,000 and 1,103,000 GSF depending upon a number of variables that will unfold over the course of decades time-frame of campus development. In addition to these facilities, a campus of 8,000 students will require parking for approximately 4,000 cars again depending upon possible initiatives such as improved transit ridership, carpooling, public transit, and other variables that could affect parking demand.

PALM DESERT CAMPUS ENROLLMENT GOAL / REQUIREMENTS

The 2016 PDC Master Plan is predicated on growing the campus enrollment to 8,000 FTES. As described in Chapter 2: Existing Conditions. The designated site provides more than adequate land area to accommodate this size campus, leaving a large contingent of the land, which the master plan designates as open space.

PALM DESERT CAMPUS BENCHMARKS

The existing Palm Desert Campus consists of 4 buildings that contain a total of 61,810 assignable Sq. Ft. (ASF). Using CSU space standards, this provides the campus with the capacity to accommodate from 1,800 to 2,500 students (FTES). PDC enrollment for the Fall of 2015 was 987 FTES with a headcount of 1,164 students. The campus provides approximately 350 surface parking spaces.

5.2 PALM DESERT LAND DEVELOPMENT PLAN

By creating a compact campus footprint, the Palm Desert Master Plan reduces the amount of land required for University development to accommodate 8,000 students.

THE CAMPUS SITE CONCEPT

The CSUSB Palm Desert Campus was initially developed on a 55.3 acre site donated by the City of Palm Desert to the California State University (CSU) system in September of 2000. In 2015 the City of Palm Desert transferred ownership of an additional 114.1 acres to the CSU creating a total site area of 169.4 acres for PDC development. This larger site became the basis for preparation of the 2016 PDC Master Plan.

Contemporary trends in campus planning have begun emphasizing the creation of more compact campuses to reduce walking distances, to allow buildings to be placed to form protected courtyards and to create a sense of place for the campus. The 2016 PDC Master Plan concentrates the required development to accommodate 8,000 FTE students within a compact

84.9 acre area at the southwestern corner of the entire 169.4-acre PDC site, organically incorporating the existing PDC campus and structuring the bulk of campus growth eastwards. The remaining portions of the PDC site have been designated as open space but allow flexibility for undefined future development opportunities and future growth of the campus beyond 8,000 students outside the scope of the 2016 PDC Master Plan.

Two other institutions share sites located adjacent to the PDC: the University of California Riverside (UCR) Palm Desert Graduate Center to the south; and a site designated for a future Riverside County Fire Station at the east campus edge located along Gerald Ford Drive. In planning for the overall PDC site, a roadway system was created that provides good PDC campus access and connection to the surrounding neighborhoods. An important aspect of this planned roadway network are easterly connections to the designated County Fire Station site and a future link to the proposed commuter rail/AMTRAK station south of the I-10 Freeway.

The overall master plan for the PDC site also supports the City of Palm Desert's University Neighborhood Specific Plan for the surrounding community which calls for mixed-use development along Cook Street as well as reducing the number of vehicle lanes on the roadway to 2 lanes in each direction and reconfiguring the roadway stretch bordering the PDC site between Gerald Ford Drive in the north and Frank Sinatra Drive in the south with a graceful arrangement of landscaped medians and islands, bike lanes and/or parking. This new roadway



The Promenade

configuration would improve safety for students crossing Cook Street to access retail areas to the west and create a much more graceful gateway to the University Neighborhood as approached from the I-10 Freeway.



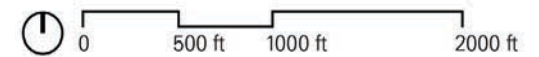
- LEGEND
-  CSU PDC Owned Land
 -  Potential Future AMTRAK Station



FIGURE 5-1: PDC LAND AND DEVELOPMENT



5.3 PALM DESERT CAMPUS MASTER PLAN CONCEPT

The Palm Desert master plan concept envisions a structured framework that grows from the existing campus incrementally to the east, creating a more dense, compact campus to reduce walking distances and create protected outdoor spaces for student gathering.

ILLUSTRATIVE MASTER PLAN

The 2016 Palm Desert Master Plan represents a vision of what the physical campus can become as it grows over time to reach its stated enrollment goal of 8,000 FTES. The plan is a coordinated series of proposals to guide the development of the CSUSB Palm Desert campus over the next 20 years. Guided by the PDC Master Plan Steering Committee and based on the Vision and Principles described in Chapter 3, the 2016 PDC Master Plan is described via narrative, diagrams and illustrations that represent the envisioned future physical environment of the campus. This comprehensive Plan includes the development of new academic, library and campus life facilities; revised vehicle and pedestrian access, circulation and parking; enhanced open space and landscape; new student housing; athletic and recreation facilities; and sustainability initiatives. The 2016 Master Plan capitalizes on the most vivid, character-defining attributes of the campus site—its

desert setting looking across the Coachella Valley to the Indian Hills in the northeast and establishes an incremental development approach to campus growth over a twenty-year period that integrates the existing campus and builds the majority of new campus facilities towards the east—ultimately transforming the campus into an environment for learning that fits harmoniously with its desert surroundings.

KEY MASTER PLAN FEATURES

The 2016 Palm Desert Campus Master Plan offers several significant features that form the basis of the overall plan and are illustrated on the following pages. These features respond to the Master Plan Vision Statement and Principles and were formulated and designed in response to specific needs identified in the program developed for the PDC Master Plan in the initial phases of the project. These key components are described in detail with illustrations, in this and subsequent chapters.

The central features of the 2016 PDC Master Plan are as follows:

- Provides necessary building space and support uses to accommodate 8,000 FTES.
- Provides near term locations for needed projects: (Clock Tower, Library/Media Center and Academic Building for a new Hospitality and other programs)

- Preserves the built portions of the original campus roadway converting it into pedestrian way for only those portions within the new academic core.
- Creates a new central pedestrian plaza as the heart of the PDC connected to “Palm Canyon Walk” as the primary east-west pedestrian ‘spine’ for new academic buildings.
- Encourages multi-disciplinary shared academic buildings to accommodate future unknowns in specific program growth and new pedagogies.
- Provides sites for student housing integral to the academic core to encourage a more 24/7 campus environment.
- Provides new strategically located parking lots positioned to facilitate easy transition from parking into the campus (planned to accommodate parking structures in the long term).
- Enhances the main campus entry at Berger Circle Drive West with new signage, landscaping and campus housing to enhance the campus entry identity.
- Provides campus athletic and student recreation facilities strategically located so that these facilities might be shared with the community.
- Provides sustainability initiatives to protect and conserve CSUSB and community resources.

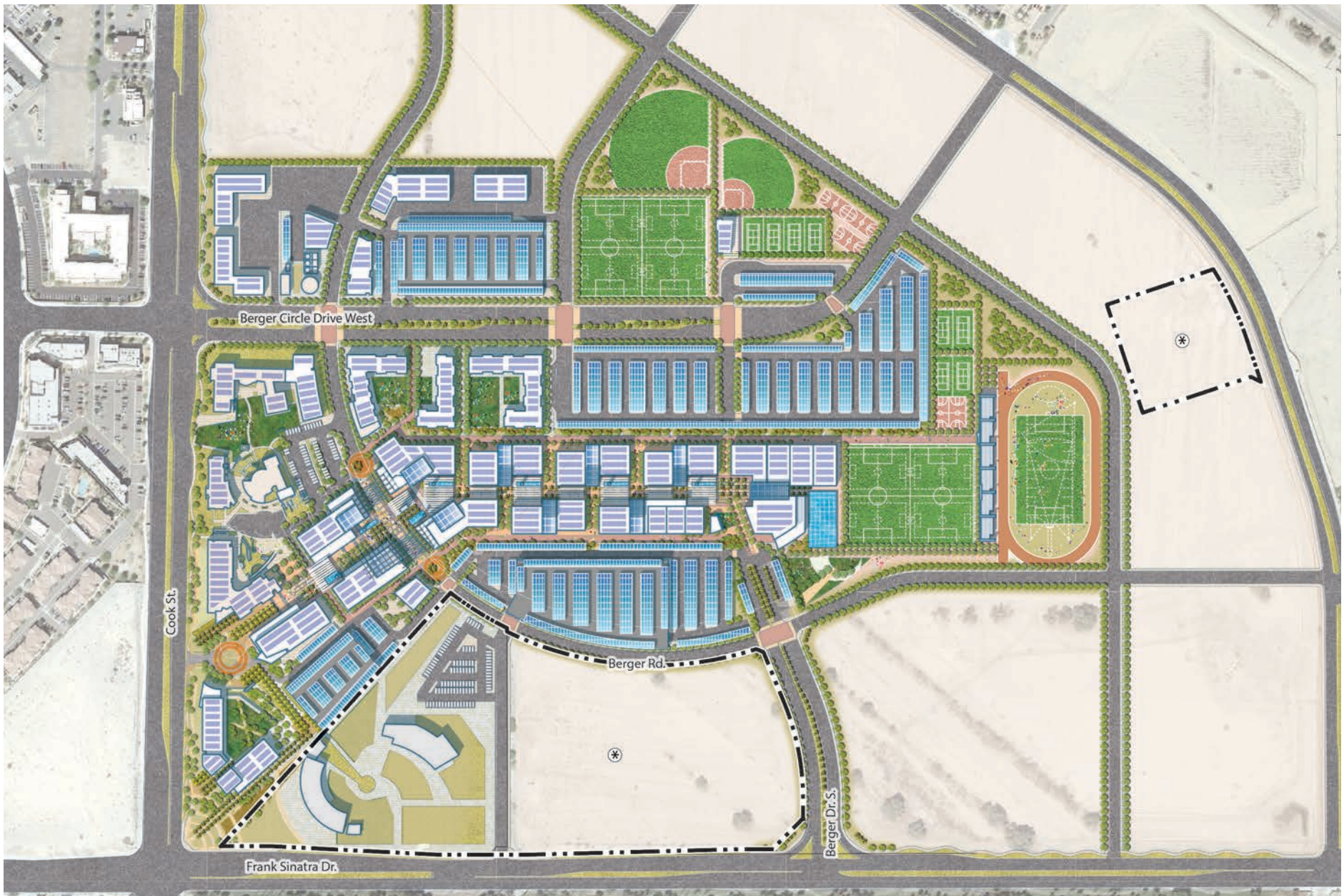
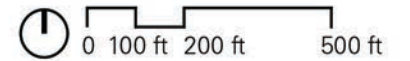


FIGURE 5-2: PALM DESERT CAMPUS ILLUSTRATIVE MASTER PLAN

⊛ Not under CSU ownership



5.4 CAMPUS DEVELOPMENT AND SPACE SUMMARY

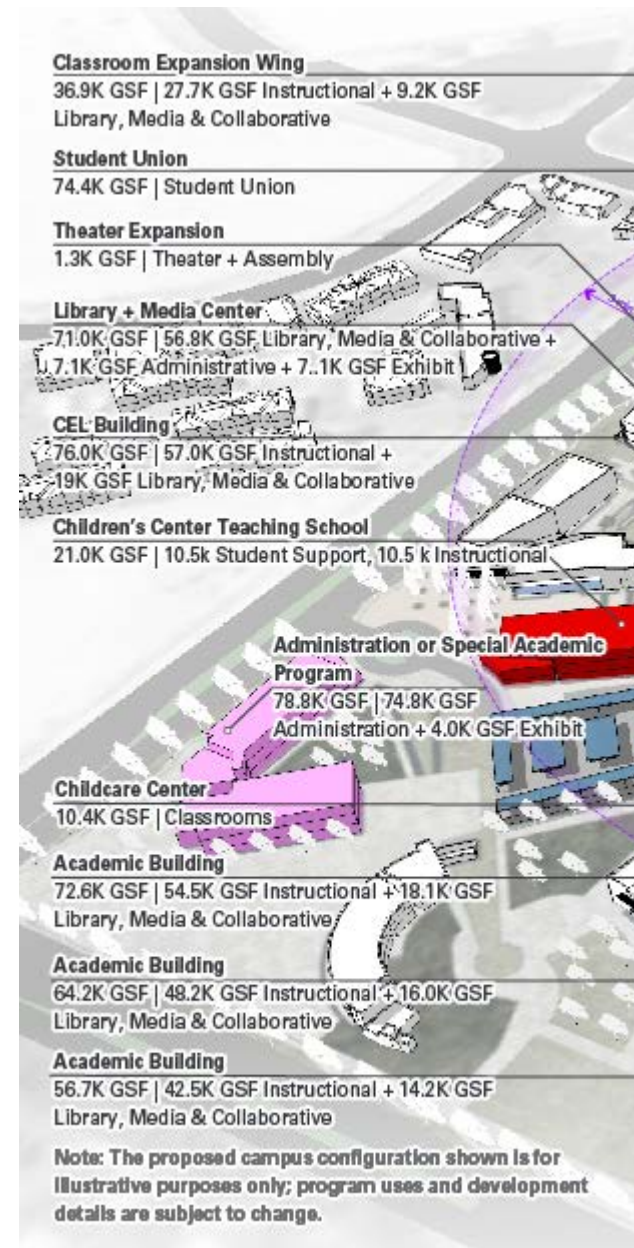
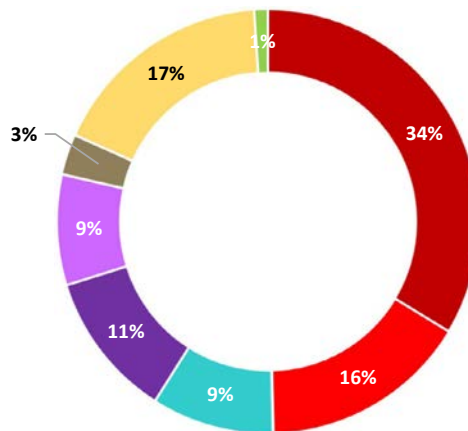
The PDC Master Plan accommodates a full range of campus building/facility spaces and other land uses such as parking. The required areas needed to support these were estimated and then functionally arranged into a structured plan.

To meet the goal of a future 8,000 FTE student campus, the 2016 PDC Master Plan is based upon estimates of space needs by major use categories of state-supported and non-state supported spaces as described in Sections 2.6 and 2.7. These are summarized in the table to the right and arrayed in detail on the Site Program Exhibit, Figure 5-4. In summary, the total amount of required space for Instructional, Administrative, Library/Media, Physical Education, Student Support/Recreation and Plant Operations is estimated at between 879,000 and 1,103,000 GSF depending upon a number of variables that will unfold over the course of future campus development. In addition to these facilities, a campus of 8,000 FTE will require parking for approximately 4,000 cars, again depending upon the success of initiatives such as improved transit ridership, carpooling and other variables that could affect parking demand. For the 2016 Plan, student housing space was estimated at 8% of the student body. Since there is more than adequate land available for major campus facilities, student housing could be increased significantly if demand warranted.

TABLE 5-3: CAMPUS DEVELOPMENT YIELD SUMMARY

DEVELOPMENT SUMMARY:				
ACADEMIC SPACE CATEGORIES	PROPOSED		MIN DEMAND	MAX DEMAND
Instructional	408,075	GSF	350,000	490,000
Library & Collaborative	192,825	GSF	155,000	200,000
Physical Education	113,630	GSF	111,000	115,000
Student Support	135,300	GSF	130,000	150,000
Administration	101,960	GSF	98,000	105,000
Exhibit	12,340	GSF	10,000	15,000
Physical Plant	26,500	GSF	25,000	28,000
ACADEMIC SPACE TOTAL	990,630	GSF	879,000	1,103,000

RESIDENTIAL HALL YIELD SUMMARY	GSF or BEDS	
CAMPUS TOTAL NEW BEDS	616 BEDS	8% of Students
CAMPUS TOTAL NEW HOUSING GSF	209,400 GSF	7,384 remaining commuters



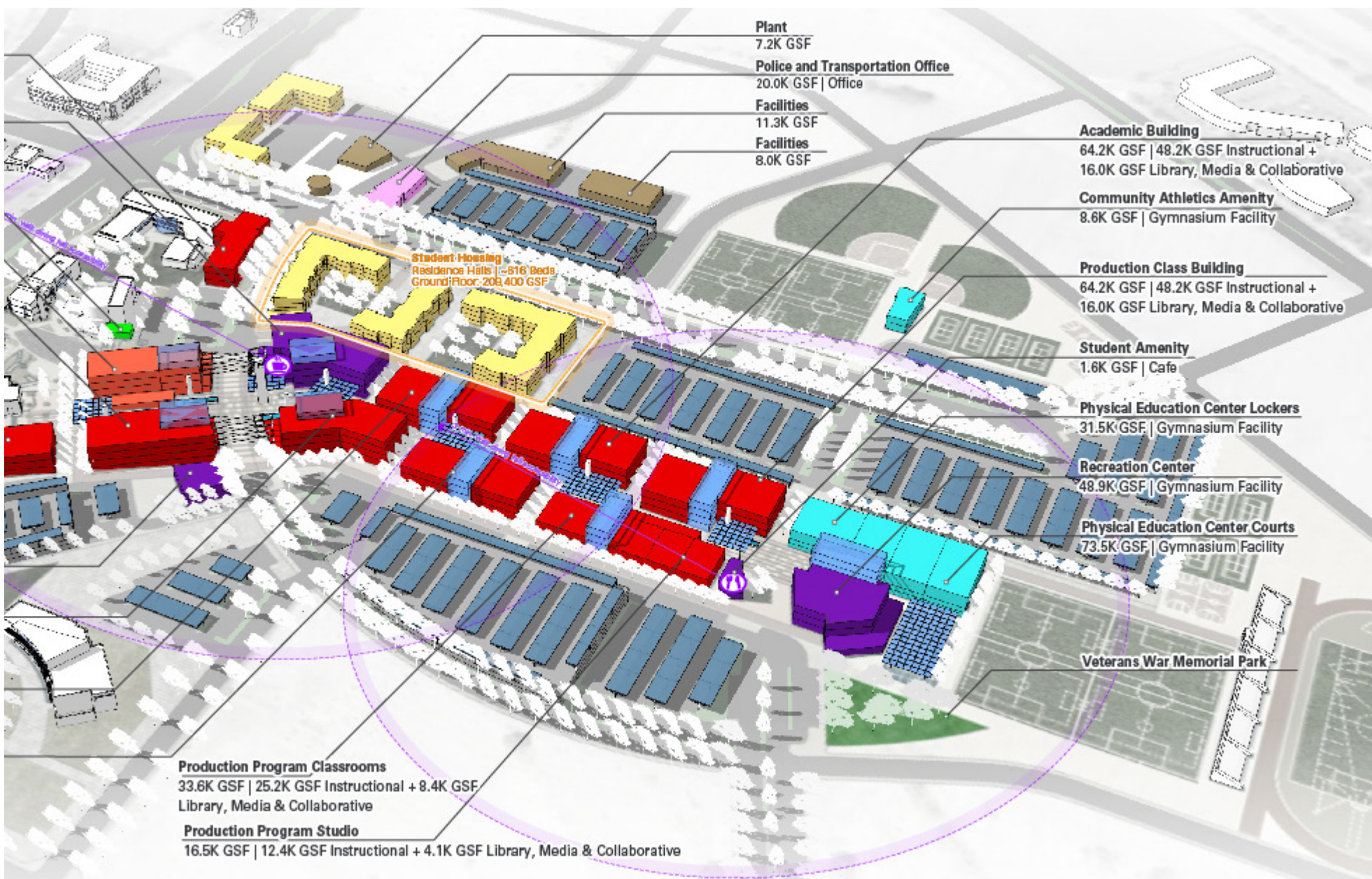


FIGURE 5-4: CAMPUS DEVELOPMENT OVERVIEW

CAMPUS LAND USE ZONES

The 2016 Palm Desert Campus Master Plan builds upon the existing campus and incorporates portions of the circular roadway system in order to facilitate a transition to the new organizational pattern of the re-envisioned Master Plan. Figure 5-5 illustrates a series of functional and geographical land use areas or zones that provide a basic structure for growth of the campus while allowing flexibility for future adjustments as may be required. These land use zones are based on functional and geographical adjacencies linked by a clearly defined and enhanced pedestrian network.

The plan effectively concentrates the use of land and are predicated on several factors including functional adjacencies to other related uses, land suitability and accessibility (pedestrian, vehicle and bicycle). Figure 5-6: Building Plan, describes proposed major building uses and preliminary building footprints for the broad range of programs needed to meet projected space needs for a campus of 8,000 FTE students.

Major land use zones are summarized here.

A new Central Plaza Zone is planned to be located adjacent to the existing campus and will serve as a transition zone as the future campus growth direction is shifted both to the east and to the southwest towards the intersection of Cook Street and Frank Sinatra Drive. This New Central Plaza will incorporate a portion of the existing circular drive and redesignated to become pedestrian in character with enhanced paving, landscape and shade structures. The roadway would be outfitted with removable bollards to allow for service and/or emergency access. To integrate student housing into the campus core a new Housing Zone has been located just north of the Central Plaza.

From the Central Plaza to the east is the proposed Academic Core / Promenade focused on “Palm Canyon

Walk” which terminates with a new Physical Education Zone. At the southwest corner of the Athletics Zone, a special area has been set aside for a Veteran’s Memorial. Parking areas are provided to the north and south offering convenient access to all these functions.

An additional area for sports fields has also been designated north of Berger Circle Drive West which is envisioned as facilities could potentially be shared by different users.

A new Gateway and Special Programs Zone is planned to link the central plaza to the intersection of Cook Street and Frank Sinatra Drive and creates an opportunity for a signature building to brand the campus at this prominent crossroads within the City of Palm Desert.

A new North Campus/Facilities Maintenance Zone and future parking has been placed north of Berger Circle Drive together with additional area for future student housing.

LEGEND

-  Existing Campus Facilities
-  North Campus / Facilities Maintenance
-  Housing
-  Gateway + Special Program
-  Central Plaza
-  Academic Core / Promenade
-  Veterans War Memorial
-  Athletics and Physical Education
-  Unlandscaped Open Space
-  Site Boundary

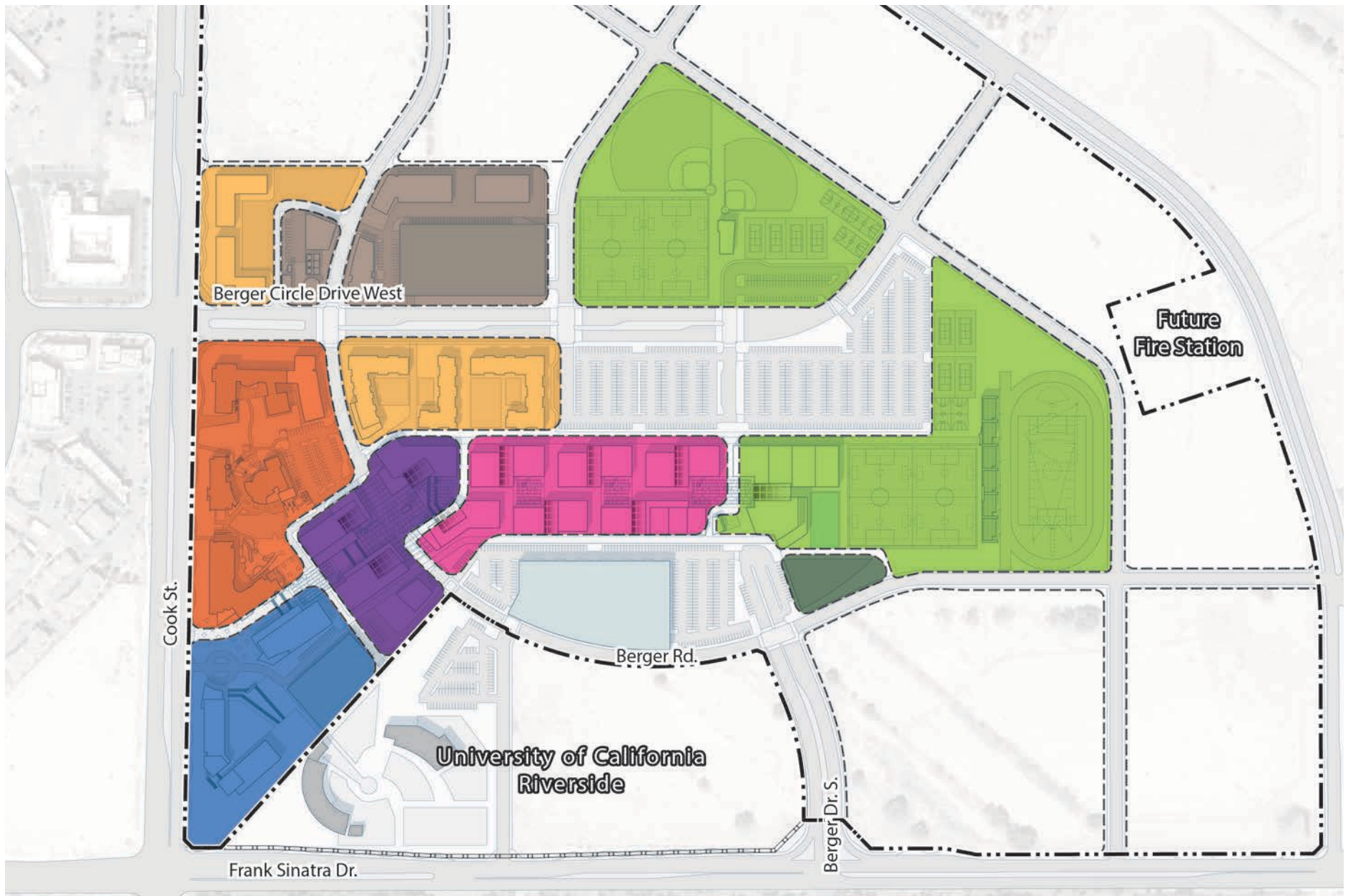
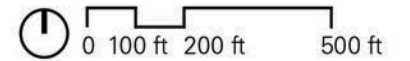


FIGURE 5-5: LAND USE ZONES



5.5 BUILDINGS

In order to allow for fluctuating enrollment patterns and changes in pedagogy as the campus grows, the PDC Master Plan proposes a flexible, multi-use approach to specific programs for the development of new academic buildings.

BUILDING PROGRAM

In order to address projected student enrollment growth and corresponding space requirements, the 2016 Master Plan calls for the ultimate development of between 8 to 10 new academic buildings (350,000 GSF to 490,000 GSF) to be placed within the core area along a new pedestrian promenade in order to create a more dense, walkable campus.

In addition to instructional buildings, complete campuses require a number of other functions to support students, faculty, staff and the community. The 2016 Master Plan provides for the following core facilities needed to create a fully functioning campus--in particular a campus that fully supports and attracts students. All proposed facilities and buildings including long-term parking structures are delineated in Figure 5-6:

- A Library/Media Center
- Student Union/Dining Commons
- Physical Education/Student Recreation and Wellness Center

- Student Housing
- Facilities Maintenance and Physical Plant

FLEXIBLE PROGRAMING FOR ACADEMIC BUILDINGS


Acknowledging that growth in specific academic programs cannot necessarily be accurately predicted, the 2016 Master Plan proposes a flexible approach to the development of new academic buildings. As the campus grows this will allow for changes to specific building programs that respond to fluctuating enrollment patterns, changes in pedagogy or other unknown factors. This approach corresponds to trends in higher education throughout the United States that emphasize shared interdisciplinary academic spaces on University campuses.

Higher education institutions throughout the United States are increasingly emphasizing shared interdisciplinary academic spaces, in close proximity to existing single purpose academic buildings within university campuses to create more flexibility in the use of space. Although certain programs may make predominate use of a particular building, all classrooms would be available for campus-wide scheduling.

This approach offers wide ranging flexibility for the University to adapt to unpredictable future changes in both program offerings and pedagogy. Each building is envisioned to have a mix of uses that would include classrooms, laboratories (where appropriate), faculty offices, collaborative and media spaces and other uses that would be identified at the time each building is programed and designed.

BUILDING NAMES + TYPES

00	Classroom Expansion Wing
01	Administration or Special Academic Program
02	Student Union
03	CEL Building
04	Physical Education Center Courts + Lockers
05	Western Signature Lab Building
06	Library + Media Center
07	Academic Building
08	Academic Building
09	Academic Building
10	Academic Building
11A	Production Program Classrooms (Adjoining Studio)
11B	Production Program Studio
12	Production Class Building (Across the Promenade)
13	Childcare Center
14	Police and Transportation Office
15A	Facilities 1
15B	Facilities 2
16	Central Plant
17	Student Amenity (Food Pavilion)
18	Recreation Center
19	Community Athletics Amenity
20	Theater Expansion
21	Veterans War Memorial Park
H1	Housing
H2	Housing
H3	Housing
H4	Housing

	Physical Education
	Assembly & Exhibit
	Student Support
	Instructional
	Library, Media & Collaborative
	Physical Plant
	General Administration
	Student Housing
	Parking Structure
	Existing Building

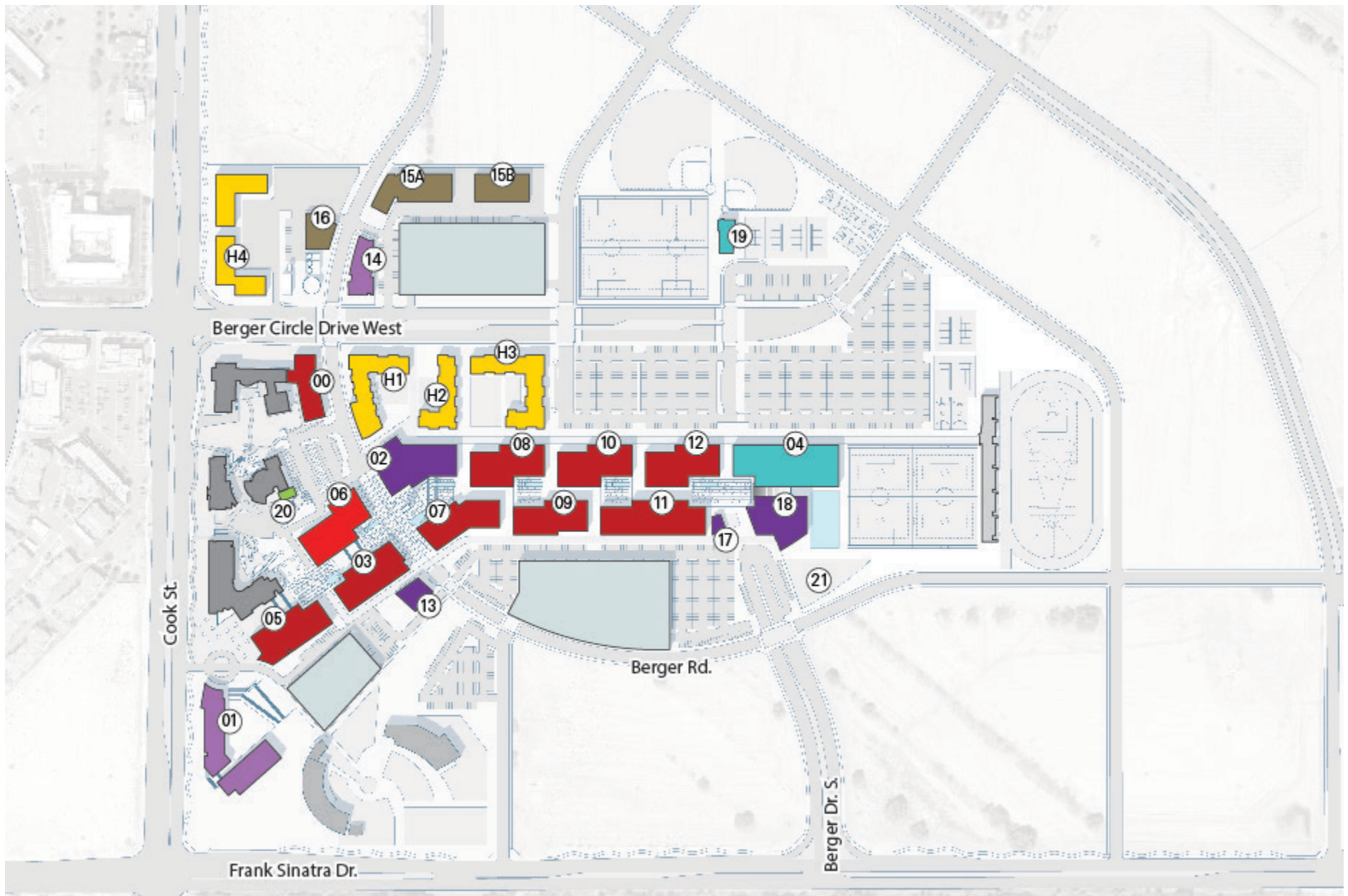
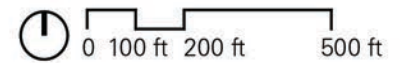


FIGURE 5-6: BUILDING PLAN



5.6 CENTRAL PROMENADE

The PDC Master Plan concept envisions a structured framework that grows from the existing campus incrementally to the east along a landscaped and shaded corridor flanked by academic buildings. This arrangement creates a more dense, compact campus that reduces walking distances and that creates protected outdoor spaces for student gathering. This concept is in part derived from the attractive, cooler ‘palm canyons’ that exist throughout the Coachella Valley.

PALM CANYON METAPHOR

One of the key features of the 2016 Palm Desert Master Plan is the creation of a central pedestrian promenade that will link the existing campus with all new academic development. This central walk, tentatively named “Palm Canyon Walk,” is planned to be framed by new academic buildings to create a shaded canyon-like environment within the surrounding desert environment. This concept has been modeled after the familiar local ecological system of ‘Palm Canyons’ that occur throughout the Coachella Valley. These environments with their close-in canyon character, native

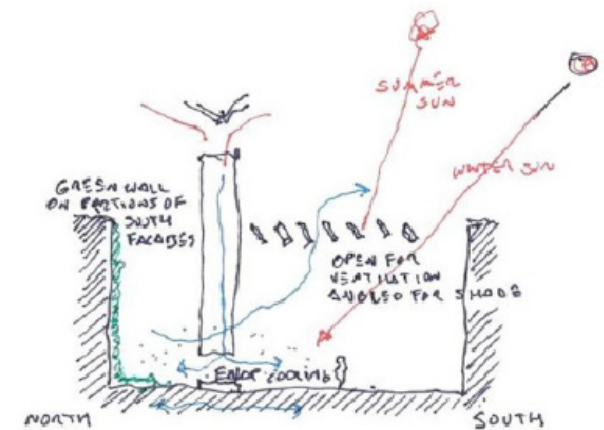
Washingtonia filifera palm trees and water elements provide a natural oasis type setting that is shaded and cool in the Valley’s arid desert environment. This metaphor seems perfectly suited for the Palm Desert Campus where the outdoor environment needs to be made comfortable enough so that students and faculty can gather in these outdoor spaces for the kinds of intellectual interchange that is an important component of campus life. With thoughtful design of this space and the use of sustainable techniques derived through “Performance Design” (see Section 8.3) wind can be mitigated and temperatures reduced to make these spaces not only comfortable but beautiful.

The PDC Master Plan carefully orients buildings to maximize shade, reduce heat gain and provide wind protection. The Plan also introduces cutting edge sustainability components such as evaporative cooling towers and shade structures (both permeable and solar) that collectively will create a pleasant outdoor setting for student activity and gathering.

The PDC Plan envisions enhancing this central pedestrian walk with a variety of pedestrian oriented amenities such as solar shade structures, sheltered study pavilions, enhanced landscape, periodic food carts or venues, shaded seating areas with Wi-Fi which, together with the entry lobbies of new academic buildings, will create a vibrant, active link through the campus core.



Palm Canyons



Concept Sketch



Concept Sketch for Campus Promenade

5.7 CREATING A SENSE OF PLACE

Many visual and other aesthetic components combine to create a unique, memorable and pleasant 'place'. Two major 'place making' elements of the PDC campus will be a central plaza and the 'palm canyon' promenade - both will be created through the careful integration of the design and placement of buildings, landscaping and outdoor elements such as shade structures and screen walls.

PLACE MAKING

Place-making is a broad term for describing the creation of a unique visual and experiential environment that makes a strong positive impression on the mind and spirit. In the campus environment place-making is both the process of creating a recognizable campus that is set apart from surrounding urban or rural context and a way of creating local spaces within the campus that are unique, aesthetically pleasing and memorable.

CREATING COLLEGIALITY: PLACES FOR INTERACTION AND ACTIVITY

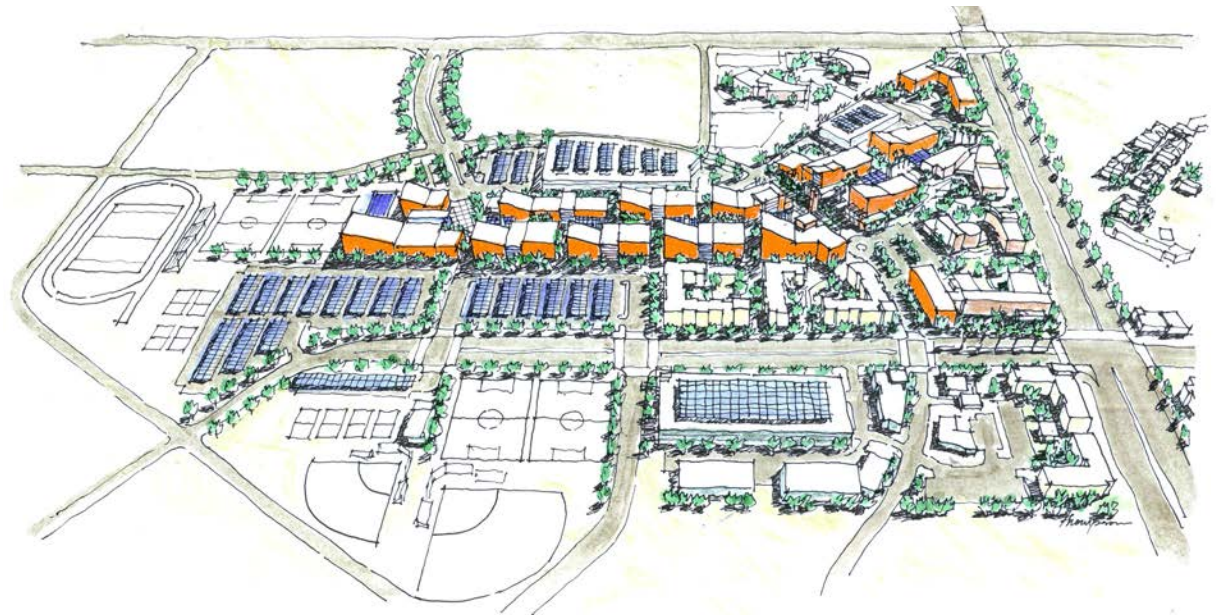
On American campuses today there is a vastly heightened awareness of the importance of the physical campus as a catalyst for learning, as a vehicle for

establishing a strong campus community, and as a way of creating a campus image, personality, uniqueness, style and identity. In an increasingly competitive educational environment, the design quality, specific facilities and sustainability effectiveness of a campus have proven important in attracting students.

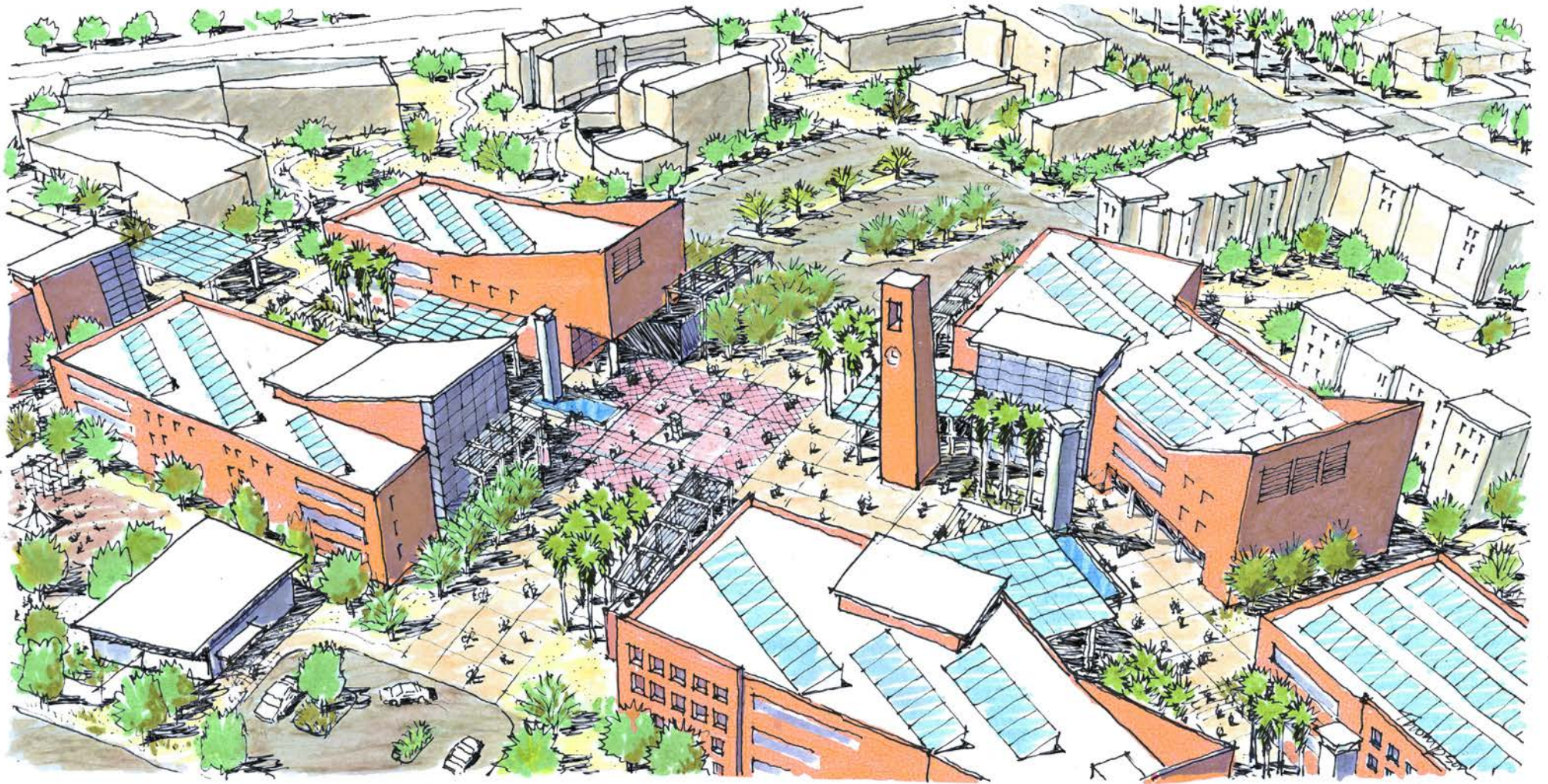
The 2016 Palm Desert Campus Master Plan focuses on establishing these type of memorable spaces through the designs for both the Central Plaza that links the existing campus with the future campus creating a heart for the a new expanded PDC campus; and the pedestrian promenade or 'Palm Canyon' that provides

a handsome multi-purpose outdoor protected space as the campus grows eastward.

Successfully implementing such campus environments and spaces must be accomplished through the careful design of their various components such as the placement of buildings, open spaces, landscaping, signs, hardscape systems, water features, public art, screen walls and site furniture. It will be the combination and unique aesthetic blending of building architecture, building materials and open spaces with their major landscape and hardscape components that will form the backbone of 'place.'



Birds Eye View looking South



Birds Eye View of the Central Plaza looking Northwest

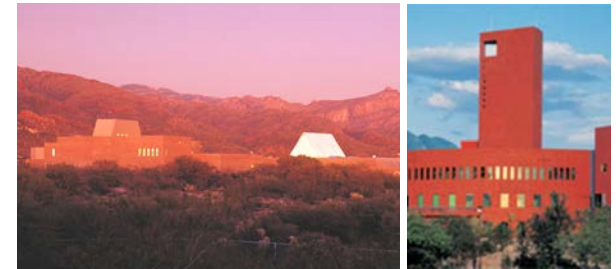
5.8 CREATING A RECOGNIZABLE CAMPUS

The PDC Plan proposes strong 'earth-tone' coloration for future campus buildings to better identify the campus within the Coachella Valley

An important goal of the 2016 PDC Master Plan is to enhance the CSUSB/PDC campus brand and identity within the Coachella Valley. The existing four campus buildings have established an excellent standard of design quality and set a visual architectural and landscape architectural theme that draws from the surrounding desert environment. As the campus continues to grow the architectural identity will need to distinguish the PDC as a unique place within the Coachella Valley environment. The overarching approach for establishing a recognizable architectural aesthetic for the Palm Desert Campus is to unify the campus visual environment by establishing a thematic color palette for campus buildings that forms a powerful contrast when viewed against the context of the muted earth colors of the desert. The PDC Master Plan recommends a campus color palette that is oriented toward rich, saturated earth tone colors as shown in the examples on this page (also refer to Appendix A - Campus Design Guidelines). The hue examples shown are burnt oranges-reds and yellow orange ochers chosen to stand out against the muted tans of the desert floor and those used on the existing PDC buildings.

It is also important to recognize the prominence of the campus site located at the top of a gradual rise that starts near the I-10 Freeway. The campus architecture can capitalize on this location by creating a silhouette of buildings along this natural plateau location which would highlight the campus presence as viewed from the I-10 Freeway and surrounding streets--thereby creating a strong identity for CSUSB Palm Desert Campus within the Coachella Valley.

In keeping with this idea of enhancing the visibility of the PDC within the greater community, the PDC Master Plan proposes a central clock tower as a key feature of the campus that would create a landmark identity for the campus as viewed from surrounding areas while at the same time serving as an orientation/wayfinding device for users moving within the campus.



Conceptual Reference



Existing



Concept Sketch

5.9 CAMPUS LIFE

A mature campus must provide more than instructional space to be successful. Student housing, dining, athletics, recreation and wellness facilities as well as facilities that can be shared with the community help to create a vital and supportive environment for learning and socialization--hallmarks of a complete university campus.

STUDENT HOUSING

To create a more 24/7 campus environment and to better attract and retain undergraduate students, the 2016 PDC Master Plan recommends the addition of a component of student housing just north of the core area of the campus. The PDC Master Plan Steering Committee in conjunction with the Master Plan consultant identified the primary need for freshman housing and international student housing, which would suggest a residential hall type housing model. In general, a basic residence hall unit consists of a double bedroom but to provide greater flexibility, each residence hall pod or wing would also include single bedrooms for resident advisors. Each wing would also have its own study room and would share a lounge/living room space with its associated adjacent wing. Based upon this model, the PDC Plan proposes an initial phase of student housing provided in a 300 to 400 bed residential hall type development. Future phases of student housing may include upper-class level living, based on a residential suite typology which provides

double bedrooms with private bathrooms, similar to apartment style living but without private kitchens; and tied to the meal plan. The initial and later phases of student housing residence halls will all contribute to the demand needed to support a new dining facility planned within a proposed Student Union facility.

STUDENT UNION AND DINING COMMONS

The PDC Master Plan proposes a new Student Union and dining facility to be located at the northeast corner of the new central plaza directly adjacent to the proposed initial phase of student housing. This central location will make this key student life facility an integral part of the new heart for the campus: adjacent to the existing campus, and nearby to the planned new academic buildings and the proposed new Library/Media center.

Student Unions are an essential component of student life in university settings and typically provide in addition to food service; student meeting rooms, student lounge and club room areas, a bookstore, and other related student support functions--that are often determined by students since they are typically funded by student fees set by referendum. This method of funding mandates a certain aggregate student body size to make financing by student fees a feasible approach.

ATHLETIC AND PHYSICAL EDUCATION FACILITIES

Student success on university campuses must include Physical Education facilities as part of a balanced educational environment. Today's campuses also include student recreation and wellness facilities that promote student health and socialization.

Located at the eastern end of the pedestrian promenade ('Palm Canyon Walk') the PDC Master Plan creates an

athletics complex to serve both Physical Educational programs such as Kinesiology and Gerontology as well as student recreation needs. The Plan provides locations for a PE building with gymnasium, lockers, workout rooms and faculty offices as well as a Student Recreation/Wellness building with fitness rooms, weight rooms, dance and other exercise facilities that support student health and wellness. An outdoor pool is also located within this athletics complex.

New playfields are provided in two locations: two soccer fields and a future track/soccer field with bleachers near the PE Center; and a second area north of Berger Circle Drive that would include two additional soccer fields, regulation size baseball and softball fields and tennis courts.

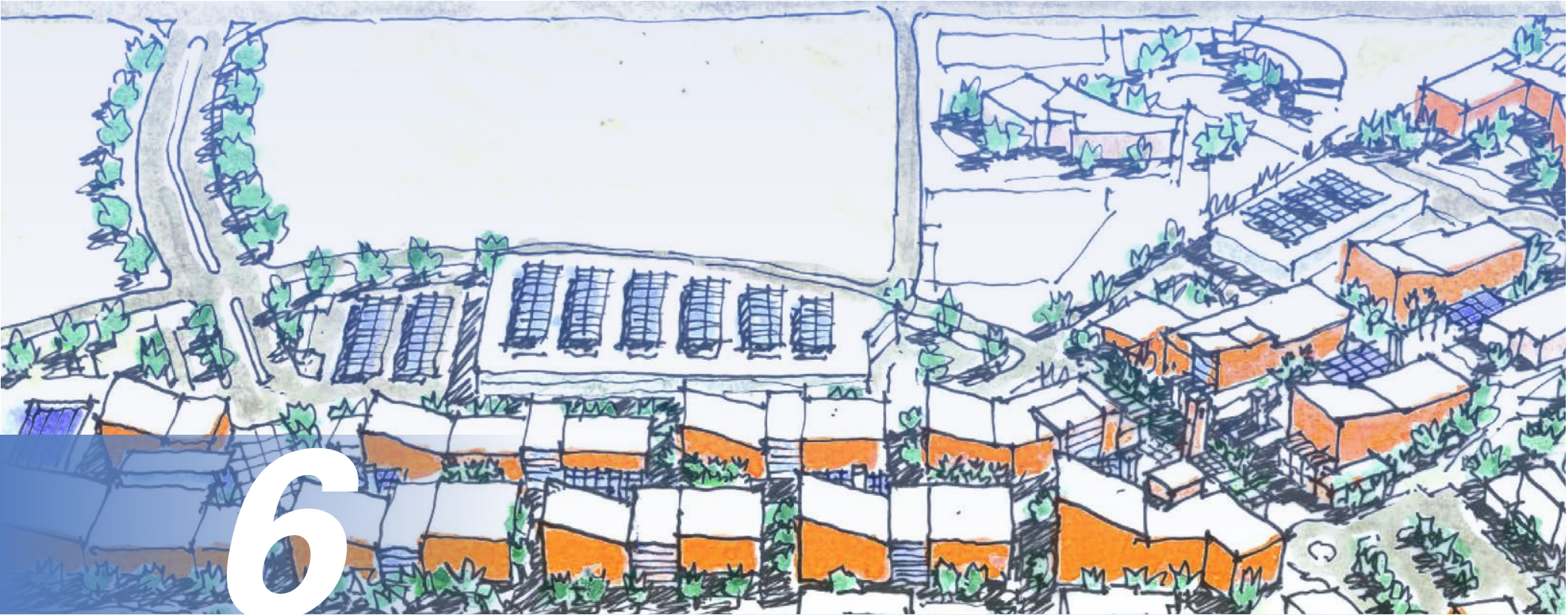
These fields would include Title IX facilities to create opportunities for women student athletes.



Source: <http://www.csusbrecsports.com/membership>

EVENTS FACILITIES & PROGRAMMING PROPOSAL

The planned athletic complex facilities also have the potential to become a hub for community events, regional games, tournaments, camps and clinics on campus further improving the brand of the Palm Desert Campus.



TRANSPORTATION + CIRCULATION PLAN

6.1 INTRODUCTION + ASSESSMENT

As a relatively new campus, the PDC connectivity within local community is evolving. The 2016 PDC Plan proposes a number of improvements to better connect the campus internally and with the surrounding neighborhood and community.

OVERVIEW + ASSESSMENT

The Palm Desert Campus plays a critical role in reducing trip lengths in the Coachella Valley by providing a local four-year higher educational institution alternative to students. As such, the campus is uniquely suited to serve students who would otherwise be driving longer distances to access four-year degree programs such as those at the CSUSB main campus, UC Riverside or the University of Redlands.

Primary access to the campus is provided by Berger Circle Drive at Cook Street and Berger Drive South

at Frank Sinatra Drive. Currently, limited parking is provided on both sides of Berger Circle for both students and faculty.

Bus access is provided to the Palm Desert Campus via SunLine Transit Route 53, which connects the campus to activity centers in the City of Palm Desert such as the Palm Desert Mall, City Hall and the College of the Desert with roughly one hour headways. CSUSB provides shuttle service to connect the San Bernardino Campus to the Palm Desert Campus. Currently, two shuttles operate, each making one trip in the morning and another trip in the evening. This shuttle gives PDC students the ability to take courses at the San Bernardino campus needed to complete their majors.

Sidewalks are provided on Cook Street adjacent to the campus and along the easterly segments of Berger Road where they serve adjacent surface parking; and along Berger Drive South. However, dedicated pedestrian sidewalk access from the parking areas along Berger Road into the main part of the campus is currently not provided. Additionally, connectivity from the shuttle stop area to the main campus is not provided.

Currently, there are no designated bike ways providing direct access to the Palm Desert Campus site but designated bicycle facilities are located to the west on University Park Drive and on College Drive.

Although the City of Palm Desert allows golf carts and neighborhood electric vehicles (NEVs) they are prohibited from use along Cook Street and Gerald Ford Drive adjacent to the campus.

6.2 VEHICLE + SERVICE ACCESS

The 2016 PDC Master Plan follows the spirit of the City of Palm Desert University Specific Plan introducing a network of streets on the PDC property that provide for future campus connectivity to surrounding activity areas within the city.

VEHICLE CIRCULATION + ACCESS

Vehicle access to the campus is proposed by completing Berger Road northward and eastward to Gerald Ford Drive. A second roadway paralleling Gerald Ford Drive is proposed to the southwest, and several connector roadways to link the campus to potential future growth areas adjacent to the campus.

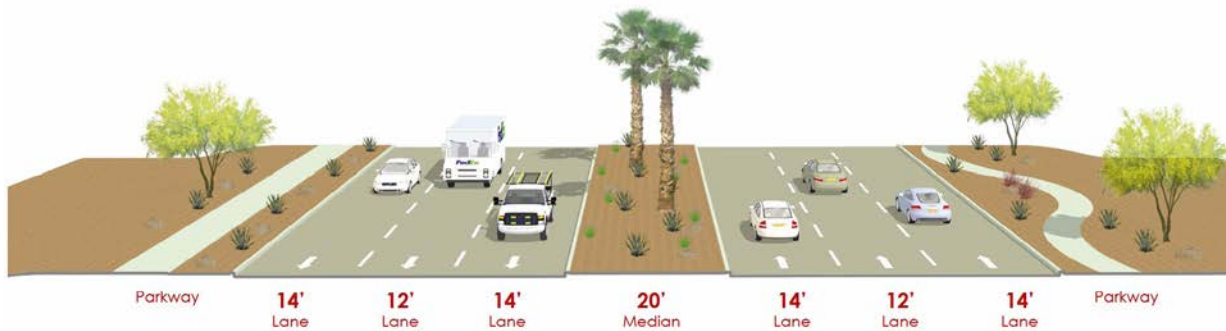
Parking is proposed to be located to the north and south of the campus core, generally keeping vehicles to the periphery of the campus while allowing easy access into the pedestrian areas of the campus. Roadways near the campus will incorporate complete streets principals; focusing on providing slow vehicle speeds, wide pedestrian sidewalks, transit stops to service the existing intra-campus shuttles, and a potential transit stop for future SunLine transit to the site. A New Central

Plaza is proposed that will incorporate a portion of Berger Road and become pedestrian in character and will be outfitted with removable bollards to allow for service and/or emergency access.

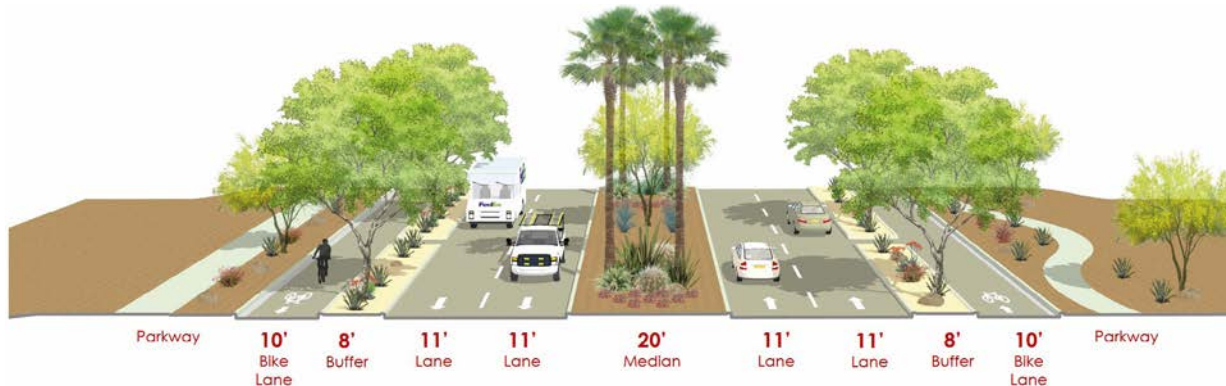
Additionally, the City of Palm Desert is completing its Specific Plan for the area adjacent to the campus along Cook Street and is finalizing their General Plan for public review. As part of the Specific Plan effort, the City has proposed reducing the number of lanes on Cook Street to a four-lane facility with shorter pedestrian crossings on Cook Street. The campus is supportive of this roadway improvement as it would improve student safety and provide better connections to adjacent uses in the city.

SERVICE ACCESS

Service access is proposed to be kept external to the campus as much as possible. As such, Berger Road and the service access roadway from it will provide access to major uses on the campus. It is envisioned that service vehicles will be physically separated (as much as possible) from pedestrians and potential bicycles on the campus.



Existing Cook Street section - Source: University Neighborhood Specific Plan



Proposed Cook Street section - Source: University Neighborhood Specific Plan

LEGEND

- Campus Periphery Road
- Campus Major Road
- Campus Minor Road
- Pedestrian Route with Service Access
- Service Yard
- Surface Lot
- Future Parking Structure
- Special Paving Roadway
- Intersection

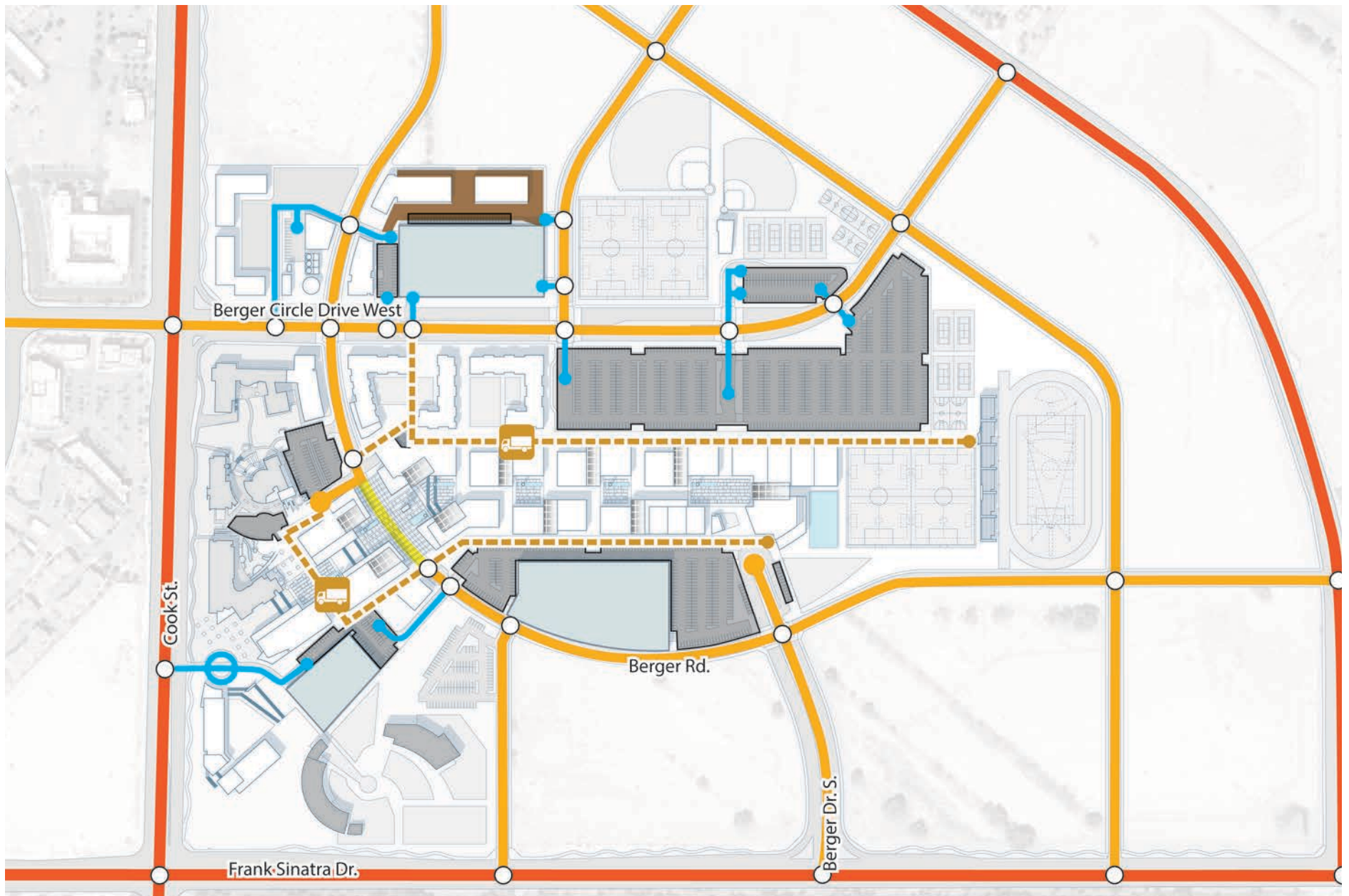
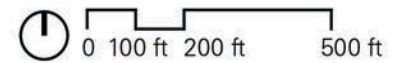


FIGURE 6-1: PROPOSED TRANSPORTATION + SERVICE NETWORK



PARKING DEMAND AND PROPOSED PARKING SUPPLY

The transportation-circulation and parking consultant, Fehr & Peers has conducted parking surveys for numerous CSU campuses, including a recent survey as part of the 2016 CSUSB Master Plan. Most CSU campuses generate parking demand at a rate of 0.50 spaces per full time equivalent (FTE) student. As such, the proposed 2016 PDC Master Plan enrollment of 8,000 FTE students would require approximately 4,000 parking spaces on the PDC campus. However, many factors can affect the planning for future parking demand, including the cost of fuel, cost of parking, availability of public transit, presence of a car share program on campus, increased use of transportation network companies (TNCs) such as Uber and Lyft, and the potential future vehicle fleet of autonomous vehicles. As such, the university should monitor parking demand on an on-going basis and adjust the number of supplied parking spaces accordingly.

The 2016 PDC Master Plan seeks to provide parking on the basis of CSU averages and therefore a future supply of 4,000 parking spaces was planned for and is reflected in all PDC Master Plan illustrations. Further, the illustrations assume the construction of parking structures on surface lots in the future as a way of keeping walking distances between parking facilities and campus buildings and activities to a minimum.

COMMUNITY + SPECIAL EVENT ACCESS

Special events at the campus will occur in specific areas of the campus. Depending on the size of the special event, consideration should occur for both adequacy of parking and for circulation (e.g. temporary traffic control to improve event traffic flow). Scheduling of events when PDC classes are not in session can also be an effective way to insure adequate parking is available.


There are also many open parcels surrounding the Master Plan focus area of planned facilities that could be considered for overflow parking areas if demand warrants their use for special event parking.

Additionally, the campus Master Plan Town Hall Forums and work with the PDC Master Plan Steering Committee confirmed that due to the large retirement community living in the Coachella Valley, that additional handicapped parking spaces should be programmed to directly access faculties such as the Indian Wells Theater and classrooms offering classes through the Osher Lifelong Learning Institute.

Parking Type	ID	Spaces (per level)	Levels	Total
Parking Structure	1	102	4	408
Parking Structure	2	279 (Floor 1) 291 (Floor 2-4)	4	1152
Parking Structure	3	254 (Floor 1) 283 (Floor 2-4)	4	1103
Parking Lot	A	60	1	60
Parking Lot	B	49	1	49
Parking Lot	C	10	1	10
Parking Lot	D	276	1	276
Parking Lot	E	23	1	23
Parking Lot	F	298	1	298
Parking Lot	G	554	1	554
Parking Lot	H	78	1	78
Facilities Parking Lot	I	34	1	34
Facilities Parking Lot	J	31	1	31
Facilities Parking Lot	K	14	1	14
TOTAL				4,090

TABLE 6-2: PARKING SPACES

LEGEND

-  Parking Structure
-  Surface Parking Lot

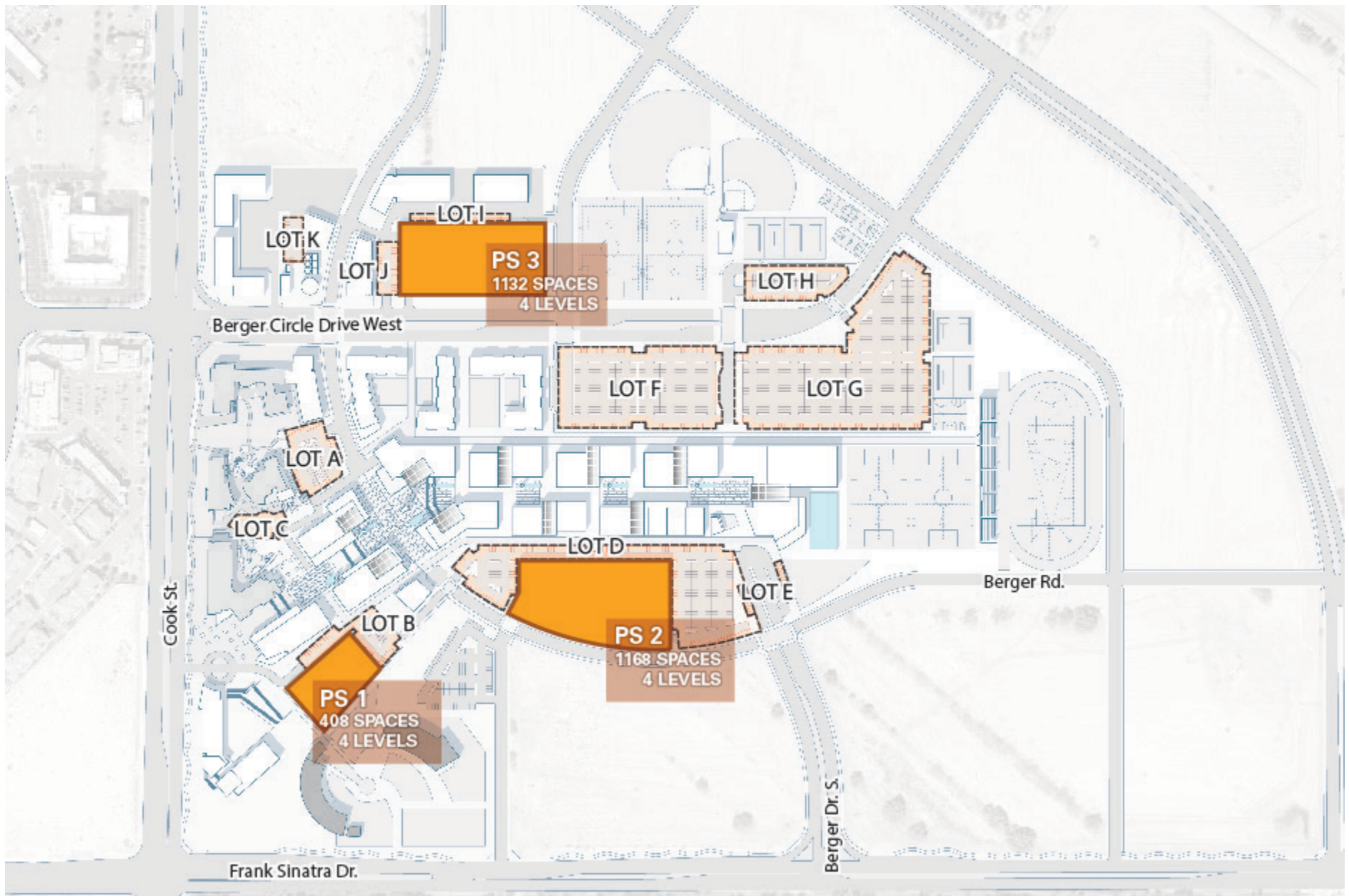
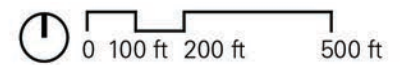


FIGURE 6-3: PARKING PROPOSAL



6.3 PEDESTRIAN + BICYCLE ACCESS

The 2016 PDC Master Plan stresses pedestrian access, safety and scale for the campus. Increased access to the campus by bicycle is also provided for.

PEDESTRIAN CIRCULATION + AMENITIES

On-site pedestrian activity is planned to be focused along the main east-west Academic Precinct/pedestrian spine (“Palm Canyon Walk”) of the campus which is envisioned to be large enough to facilitate significant pedestrian volumes as well as adjacent sitting areas and other amenities. Additionally, direct pedestrian access will be provided to and through the parking areas, providing a direct (and well lit) pedestrian way to and from parking spaces.

The 2016 PDC Plan proposes several pedestrian crossings of the eastward extension of Berger Circle Drive and locations across Berger Road all which will need special treatments to ensure the safe mixing of pedestrians and vehicles at these shared space locations. To accomplish these crossings, complete streets treatments along Berger Road are envisioned, including curb extensions to minimize pedestrian exposure and reduce vehicle speeds, textured pavement, a vertical component (such as a raised intersection) to further ensure that vehicles are traveling at a slow rate of speed, pedestrian signals, and other measures that slow vehicles down and protect pedestrians.

Pedestrian sidewalks currently exist on Cook Street and most of the other roadways surrounding the campus. The proposed lane reduction along Cook Street will also reduce the distance pedestrians have to cross the heavily traveled lanes on Cook Street--and thereby significantly improving student safety.

BIKE CIRCULATION + AMENITIES

The City of Palm Desert generally provides for shared sidewalks (facilities shared by pedestrians, golf carts, and bicycles). In addition, the proposed automobile lane reduction proposed in the University Neighborhood Specific Plan along Cook Street would add bike lanes along this corridor. The 2016 PDC Master Plan envisions extending these bicycle connections into the campus and providing safe bicycle storage near the heart of the campus near Berger Drive West and Berger Road to promote biking to campus and from the campus to the University Neighborhood. Bicycle parking is envisioned as concentrated in the heart of the main campus, at a strategic point where riders can transition to pedestrian pathways to access most campus facilities. As such, sufficient bicycle parking should be provided at this location and monitored to identify future increased needs should they emerge as enrollments grow. This central location would also be key for the campus to provide a location for a transit stop and it could serve as a transfer/waiting location for transportation network companies (TNCs) and/or car share.

Palm Desert’s roadways provide for a range of bicycle guide-way/facility types: Class I facilities (e.g. bicycle paths) that are separated, off-street facilities; Class II facilities that are designated bike lanes within a street defined by signing and striping; and Class III facilities or bike routes, where vehicles and bicycles share the

roadway (these facilities are designated by signage or sometimes with signage and ‘sharrows’ within the roadway). Although not present in Palm Desert, Class IV facilities, otherwise known as separated bikeways or cycle-tracks, can be implemented. Class IV facilities can be located in roadways (and separated by a curb or other physical raised barrier) or can be off-street adjacent to the travel way.



Campus Cyclist

LEGEND

-  Major Pedestrian Route
-  Pedestrian Route
-  Crosswalks
-  Bike Route
-  Pedestrian Plaza
-  Bike Facilities
-  Parking Structure

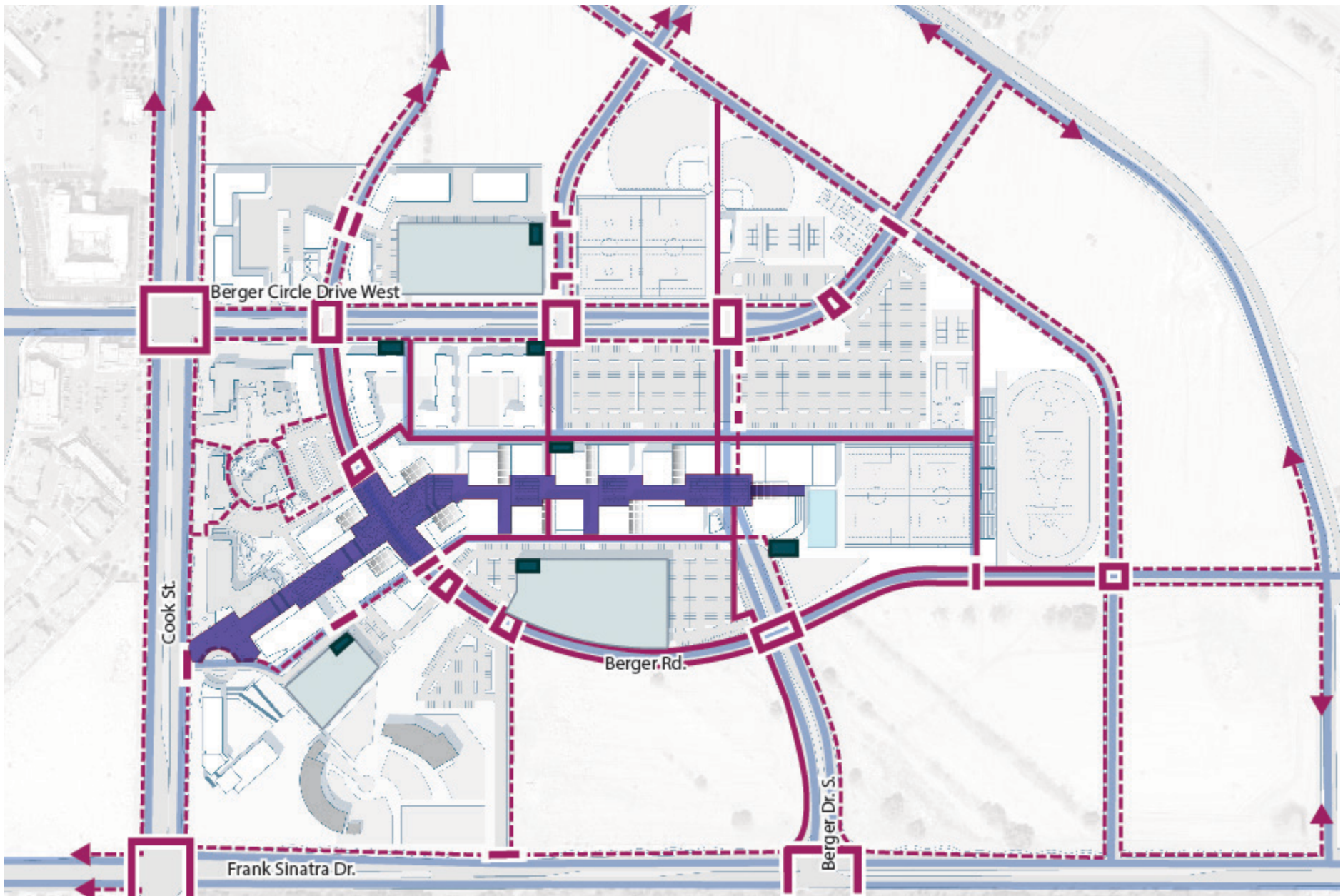
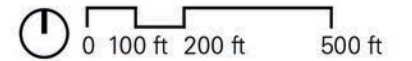


FIGURE 6-4: PROPOSED PEDESTRIAN + BIKE NETWORK



6.4 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) measures have been successfully implemented at many CSU campuses and similar measures if instituted at PDC, can help reduce the need for campus parking, reduce local traffic impacts and contribute to carbon reduction in the future.

TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

The 2016 Palm Desert Campus Master Plan identifies a series of infrastructure needs that will be required as the campus grows based on the projected future enrollment at the campus. The transportation-related needs were identified by the transportation-circulation-parking consultant Fehr and Peers. Those related to parking and intersection capacity were based on an assumption that the basic modes of travel to/from the campus would remain static moving into the future. Thus, the Plan assumes that the way students, faculty, and staff travel to/from the campus will be the same in the future as it is today.

There are however, ways to significantly reduce future parking demand and reduce traffic impacts. The basic approaches often taken to achieve this goal is through the implementation of a more robust Transportation

Demand Management (TDM) strategy. To encourage campuses to adopt some or all of these strategies, the CSU Chancellor's office has developed a Transportation Demand Management Manual, Final Report (Nelson Nygaard, November 2012). Although the Palm Desert Campus is not identified in the document, it would be considered a "suburban" location, as defined below:

Suburban areas are usually further away from the central core than inner suburbs, but they are still associated with the urban core. Traditionally, these areas have been further removed from activity found in the urban core but are still culturally and economically connected. Suburbs are generally located well within a region's boundaries, often composing a great deal of its service area. Suburbs are lower density, largely residential, and generally offer plentiful parking and easy access via automobile. Ten of the CSU campuses fall within this category. To increase campus access via non-auto modes and promote environmental and financial sustainability, there are a number of the TDM measures that can be applied in suburban areas, including carpools, vanpools, ride-share matching, on-campus housing, parking pricing, and subsidized transit. However, their scale, cost, and approach may differ from more urbanized areas.

The top five TDM strategies that are recommended for implementation over time at the Palm Desert campus follow below.

PARKING PRICING

The campus already charges for parking to pay for and manage its parking facilities. However, additional pricing strategies could be developed to further reduce parking demand and trips to/from the campus. These strategies are outlined here:

- **Price Parking to Match Parking Demand** – Instead of providing extra parking at the campus to meet the demand, the campus could increase the cost of parking based on the parking demand. Rates would increase until demand matched the parking supply. Please note that this strategy would require extensive transit service to/from the campus to serve the remaining users accessing the campus. Additionally, it is difficult to apply to faculty and staff given existing provisions in union contracts with those users. Further, this approach could penalize some working and lower income students who need to drive to campus because they must immediately access their employment location before or after classes.
- **Restrict Freshman Parking** – For this strategy, freshman would be prohibited from parking on campus. Please note that this may need to be combined with a strategy where freshman must live on campus to ensure that student housing is utilized without a car. This strategy would also require extensive transit service to/from the university and would be best when combined with a car share program at the university.

It is recommended that the campus continue to monitor this strategy moving forward as it may be difficult to implement given contracting with faculty and staff on campus. Additionally, it must be combined with a comprehensive parking permit program in the adjacent areas to prohibit students from parking in those areas.

U-PASS/SUBSIDIZED TRANSIT

This measure would provide subsidized SunLine transit passes to/from the campus, similar to the subsidized passes currently provided at the CSUSB main campus. In this case, transit passes would be free (or reduced cost) to students, faculty, and staff accessing the university.

CAMPUS HOUSING PARKING DEMAND + ACCOMMODATION

The addition of campus housing has a dramatic effect on the number of vehicle trips generated by the campus. Surveys completed at Cal Poly Pomona indicate that trips to/from the campus can be reduced by as much as 90% (compared to commuter students) in the AM peak hour and 60% in the evening peak hour. Additionally, on-campus housing reduces the parking demand at the campus by approximately 14% based on surveys collected at the campus.

The provision of housing on-campus or in future development adjacent to the campus results in housing where students do not need to commute to the campus. The 216 Master Plan accommodates 300 to 400 beds of campus housing intended for near-term development subject to demand analysis.

CARPOOL AND VANPOOL INCENTIVES

The CSU TDM manual identifies the CSUSB campus as a model campus related to implementing this strategy. Currently, CSUSB provides a \$2 per day incentive for campus affiliates who walk, bike, carpool or vanpool to the campus. Additionally, the campus provides preferential carpool parking at the campus.

It is recommended that the Palm Desert Campus investigate implementing a similar strategy.

RIDE-MATCHING PROGRAM

This program would include online carpool and ride-matching services. This would assist campus faculty, staff, and students to coordinate and match potential campus trips.

CSUSB already implements this service at the CSUSB main campus through the Exclusive Ride-share Matching program and simply requires an online sign-up or phone call to participate.

It is recommended that the campus look to expand this program to the PDC.

OTHER MEASURES

Although not identified in the CSU TDM manual as a top five strategy for suburban campuses, the following strategies could be also implemented to further reduce parking demand and vehicle demand to/from the PDC:

- **Shuttle Service** – The university currently provides a shuttle that connects the Palm Desert Campus to the San Bernardino Campus. It is recommended that this service be continued and investigate the potential to expand this service to have the shuttle connect to other key uses in the area (such as regional transit hubs and key employment areas).
- **End-of-Trip Facilities** – Currently, people commuting to campus by walking or bicycling have limited options to shower and change once they reach their destination. New development on campus should plan for these end-of-trip facilities to make this a more convenient commute mode to/from the campus.
- **Car Share/Bike Share Programs** – CSUSB should investigate the implementation of these programs. These programs have the ability to reduce the need for on-campus residents to have a vehicle and therefore reduce the parking supply needed at the campus.

- **Bike Repair Stations** – As biking becomes more common at the PDC, locations and placement of bike repair stations should be implemented.

GOALS AND EFFECTIVENESS

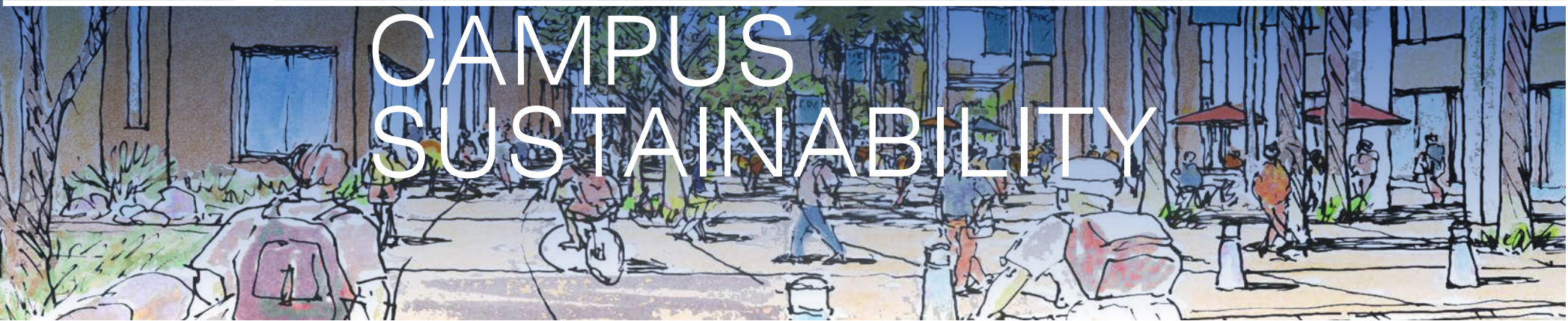
The CSU TDM guidelines provide a variety of methodologies to measure effectiveness of the TDM program. Although the campus currently administers surveys to faculty and staff related to mode split information, it does not capture mode split information related to students. To better understand and monitor campus accessibility, it is recommend that CSUSB develop and administer campus-wide commute surveys that include student statistics.

Given the PDC's suburban location, further enhancement utilizing the additional strategies noted above will decrease demand for parking and for vehicle trips to/from the campus. The associated trip reductions are estimated to range between 10% - 20% depending on the effectiveness of the measures.



7

CAMPUS SUSTAINABILITY



7.1 THE CASE FOR A SUSTAINABLE + RESILIENT CAMPUS

Like most universities, CSUSB PDC has an unparalleled opportunity to lead-by-example with an appropriate response to threats of climate change while simultaneously engaging and educating the student body and the community. This master plan aims to confirm several sustainable development policies as well as establish new goals and benchmarks for improved performance.

ENVIRONMENTAL CHALLENGE + THE COSTS OF INACTION

Climate change due to the use of power generated from burning fossil fuels is changing our economy, our health and our communities. The economic effects are globally important and locally visible. In California, we have been leading energy code policy since the introduction of the California Energy Code in 1977. Since that time, California energy consumption per capita has been generally flat. This in contrast to the rest of the United States which has steadily increased.

California Energy Code is aiming toward Zero Net Energy code in 2020, residential, and 2030, non-residential. The market transformation already realized through the energy code cycles has made ZNE-ready technologies and practices available to many building types close to cost-neutral with high upside on life-cycle benefits. Ongoing energy costs can be significantly reduced using ZNE-ready approach. Given challenging operations budgets for many campuses, this investment in high performance built environment is a key strategy to future-proofing campus budgets as well as reducing climate change impacts.

With respect to water, 2013 was the driest year on record and California is in an intensifying drought with 95% of the state in a severe drought or worse. Water municipalities are at risk of reservoir depletion. State water allocations are greater than available supply. Groundwater table is overdrawn which has negative ecological and economic impacts on California. CSUSB is home to the Water Resources Institute, which is an academic partnership with the Southern California communities driven by the vision that sustaining water resources rests on sound research, analysis and public policy collaboration.

Due to severe drought and increasing temperatures, fire has become a serious risk in the state of California. Palm Desert is surrounded by areas that have experienced devastating fires in the recent past. Sustainability and resilience strategies at the campus level can help to protect the built environment against these impacts such that the campus can continue to operate and even be a safe-haven for the community should these events come close to the campus.

7.2 CAMPUS SUSTAINABILITY FRAMEWORK

As a fast growing campus in the world’s largest comprehensive higher education system, CSUSB PDC has a special obligation to conserve resources, be a demonstration of sustainability for the community, and be an educational resource in the Inland Empire.

OVERALL APPROACH




CSUSB PDC is a beacon for local and international students and has a tremendous opportunity to educate students, staff and the community about sustainability across the campus, in a community setting and embedded in curriculum. The PDC campus resides in an arid micro-climate within a suburban context; the Master Plan will re-envision resource consumption so the campus is an ecologically productive entity




with energy conservation, water reuse and renewable energy production in the forefront. Further, by having the foresight and preparing the infrastructure to be adaptable, PDC is most prepared for natural disasters and stressors; herein lies the nexus between resiliency and sustainability. Strategic energy sources, water supply, and community support are critical and sustainable solutions embody this self-reliance.



Solar Panels

CAMPUS SUSTAINABILITY FRAMEWORK STRATEGIES

-  **Climate Action Plan** – Participate in Sustainability Tracking, Assessment & Rating System (STARS) and American College and University Presidents’ Climate Commitment (PCC). Renewable Generation and Energy Independence.
-  **Energy Conservation and Utility Management** – Target a 30% energy reduction in existing buildings (conduct ASHRAE audit to establish a baseline) and continue building metering and commissioning/retro-commissioning.
-  **Transportation Demand Management** – Provide shuttle services from off-campus residences, provide EV charging stations, and limit parking to encourage carpooling/ridesharing

-  **Water Conservation** – No potable water for non-potable uses. Reused and reclaimed water for irrigation (Drought tolerant landscape). Water conserving plumbing fixtures.
-  **Waste Management** – Become a zero waste campus. Engage student body, faculty and staff in achievement of goals, encourage education and friendly competition.
-  **Sustainable Building Practices** – Require all new buildings to be LEED Gold and meet Target EUIs for appropriate building typology.

LEGEND

-  **Sustainability Leadership**
Interpretive Signage Focus Area
-  **Energy Conservation**
Performance Dashboard / QR Code
-  **Energy Independence**
Solar PV Shade Canopy
Solar PV Cover Focus Area
-  **Climate Action**
Transportation Options Support
-  **Water Conservation**
Smart Water Demonstration Gardens
Gray Water Irrigation Focus Area
-  **Waste Management**
Resident Waste Diversion Program
-  **Sustainable Procurement**
Reusable Tableware Program
-  **Sustainable Food Services**
Farm-to-Table On-Campus Food Program
-  **Sustainable Building Practices**
LEED Gold Initial Precedent Project
-  **Facilities Operations**
Heat Recovery Chiller Project Sites

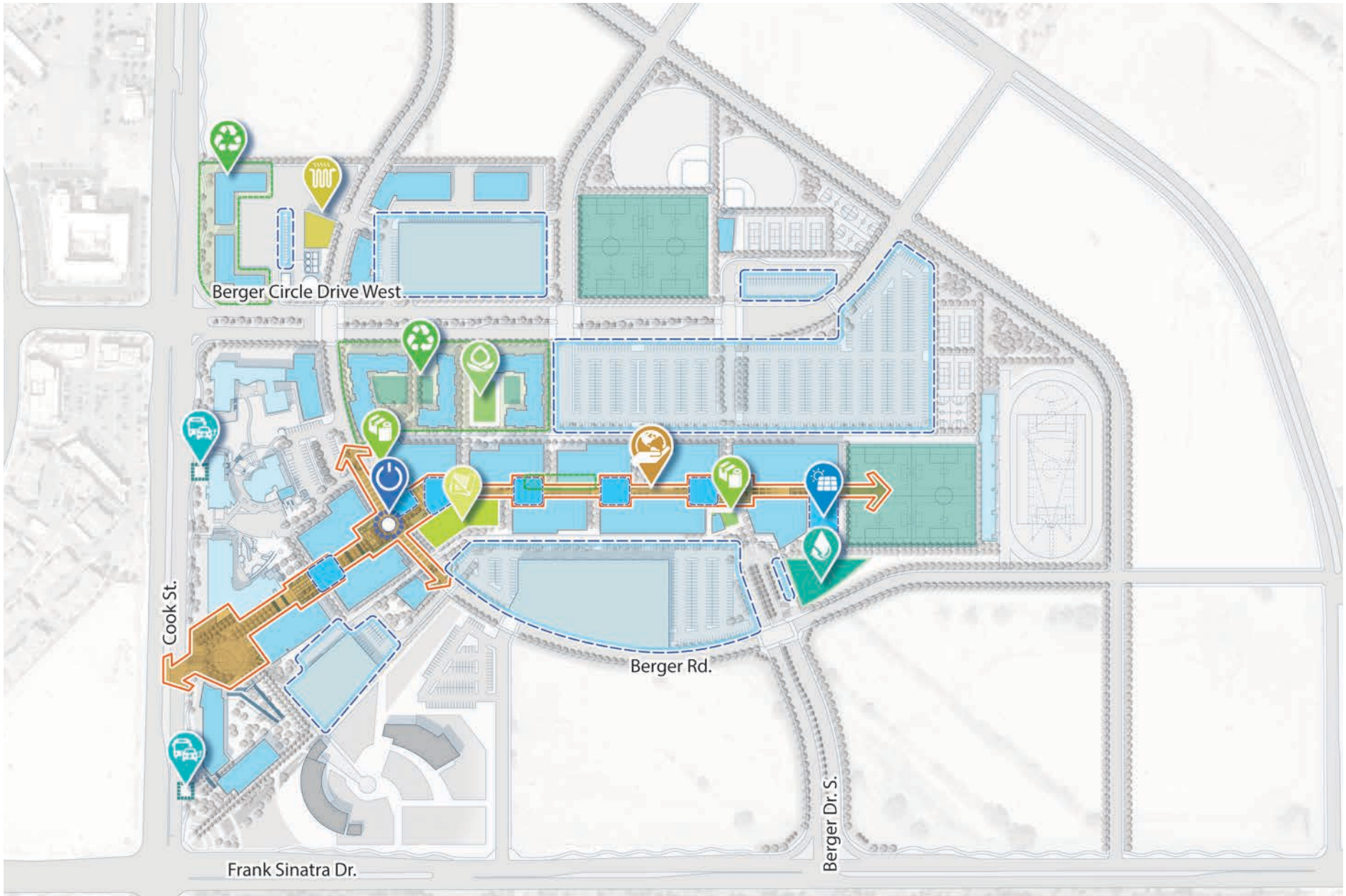
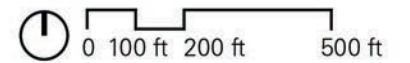


FIGURE 7-1: SUSTAINABILITY FRAMEWORK



7.3 ENERGY SUSTAINABILITY

In order to progress toward Energy Sustainability and achieve state code requirements and CSU mandates, the campus will need to execute energy reduction strategies in both new and existing buildings during the planned growth period.

ENERGY USE BENCHMARK RECOMMENDATIONS

The building measurements are shown in energy use intensity (EUI) values. EUI is a measure of a buildings annual energy use divided by the buildings gross-square-footage. This normalized metric is used primarily in architecture and city benchmarking programs to compare properties across type, region, age and use. The units are presented here in kBtu/sf per year for both electricity and gas.

There are three different sources of benchmark EUI data for three building program types (academic, housing, and laboratory). The first set of benchmark data comes from the Benchmark-based Whole-building Energy Performance Targets for New Buildings study done by Rashmi Sahai on eight UC and CSU campuses using measured energy use. The UC Riverside campus data was used as a benchmark for this study due to it being located in a similar climate. The second set of benchmark data comes from the EnergyIQ benchmarking tool which uses data collected from

the Commercial Buildings Energy Consumption Survey of existing buildings. The same building types used in the previous campus study were entered into EnergyIQ to get another set of benchmark EUIs. The last set of benchmark data comes from P2S Engineering, whose EUI's were formulated from an existing database of metered data available for each of the functional spaces. An average of these 3 benchmark EUI sources was used for this study. Recommended EUI Benchmarks are:

- Academic: 76 kBtu/sf
- Housing: 61 kBtu/sf
- Lab: 204 kBtu/sf

ENERGY USE TARGET RECOMMENDATIONS

As part of this exercise, Target Design EUIs were developed as goals for newly constructed and existing buildings. By setting a standard EUI target for a building, it does not limit innovation in energy efficiency measures. It allows the designer of the building as well as the future occupants to look holistically at a building to find the most effective energy efficiency measures, with the goal to meet or beat the physical target. Recommended EUI Targets for new buildings are:

- Academic: 34 kBtu/sf
- Housing: 24 kBtu/sf
- Lab: 92 kBtu/sf

Using the target EUIs per building type, an overall reduction of 56% in energy use was shown compared to buildings using the benchmark EUIs.

ON-CAMPUS ENERGY PRODUCTION ANALYSIS

In order to calculate the potential for on-campus energy production through the use of PV, we estimated an availability of 80% roof coverage for new buildings. This square footage was measured and a standard efficiency panel was used to estimate the potential PV generation to be 9 Megawatts and be able to offset 106% of all building energy use when using the Target EUIs.

7.4 WATER SUSTAINABILITY

The Palm Desert Campus can become a model for water use in the Coachella Valley starting with the use of local native plant materials and the use of recycled water for irrigation available from the Coachella Valley Water District.

PALM DESERT CAMPUS STORM WATER SEWER EVALUATION

PDC STORM WATER

The storm water system capacity and condition for PDC were evaluated by Sherwood Design Engineers. As a general statement facilities located in a desert areas can be subject to flash floods that occur in various areas as a result of intense storms. The following is a quote from the City of Palm Desert Flooding and Hydrology Element:

“Major historic storm events are used to gauge the potential for future flooding. Benchmark storms used by the U.S. Army Corps of Engineers to calculate the most intense credible storm include the storm of September 24, 1939. It was centered over Indio and consisted of a thunderstorm that preceded a major storm off the west coast of Mexico. This intense storm generated 6.45 inches of rain in a period of 6 hours.” (City of Palm Desert/ Comprehensive General Plan/Flooding and Hydrology Element. Adopted 3.15.04).

Current storm water management infrastructure at CSUSB’s Palm Desert campus is minimal, with only one drainage inlet existing on Berger Drive. Future campus development will require that the current system be evaluated, but given the existing and planned type of urban development around the campus, basic locations for future storm drainage tie-ins appear to be in place (including those on Gerald Ford Drive at the north side of the campus property). Bioswales can be part of a surface storm water conveyance system potentially creating or emulating a ‘desert wash’ ecosystem. Similarly, given the sandy soils surrounding the site and the several planned parking areas indicated in the 2016 PDC Master Plan, bioswales should be planned at the time each parking facility is developed.

PDC WATER SYSTEM PLANNING

An integrated water system approach is something that can be implemented over time with good planning; it is not expected that all components for sustainable water management at full build-out be included within the first phase of construction of a campus. However, it is necessary to design all phases of the campus development with full build-out in mind so that the site is “future ready”, meaning that no actions are carried out that would preclude (in terms of cost or physical space) the implementation of the full water management plan in the future. A basic water system framework needs to be included within a first phase of development in order to prevent later prohibitively higher costs and to coordinate infrastructure locations with the locations of future facilities.

Given the sandy soils surrounding the site and the several planned parking areas indicated in the 2016 PDC Master Plan, bioswales should be planned at the time each parking facility is developed. Also, given the UCR Graduate Center, adjacent to the PDC, synergies may exist to combine water management efforts not just for storm water but potentially for a sanitary reuse system, as well. Although the PDC already has access to non-potable water from the Coachella Valley Water District, a future campus-oriented non-potable water system could be developed as a demonstration project further creating an innovative sustainable campus and providing a compelling draw to students.

INDOOR + OUTDOOR WATER USE SUSTAINABILITY

Metered water data should be used to determine the gal/yr/FTE (full time equivalent or regular occupants). This means taking the total water consumption for the existing campus and dividing this by the number of FTE. This value per FTE can be used to determine the benchmark total water consumption as the campus grows. Once the total benchmark water consumption is calculated, it should be separated by the percentage calculated from the metered data for domestic use vs. irrigation (CSUSB main campus 2013 metered data showed 61% of total water consumption was used as domestic water and 39% towards irrigation).

A reduction factor of 30% should be set against the benchmark domestic water consumption and this can be used as the target water consumption. The water use for irrigation should be targeted to be reduced by 60% against the benchmark consumption based on xeriscape/drought tolerant estimates.

7.5 BUILDING DESIGN AND RENOVATION SUSTAINABILITY GUIDELINES

Sustainability guidelines will help pave the way toward a more engaging campus plan and to increasing stewardship of the campus environment.

WATER EFFICIENCY IN BUILDING DESIGN + RENOVATION

- Reduce potable water consumption by use of low-flow plumbing fixtures, including but not limited to lavatory faucets, showerheads, toilets, urinals, kitchen faucets, dishwashers, washing machines, and pre-rinse spray valves, and other appliances including those labeled as WaterSense. These fixtures not only reduce water demand, but also reduce energy consumption since lower flow rates and pressures reduce pumping needs.
- Gray water collection from buildings.
- Reduce potable water consumption by use of municipal recycled water for non-potable uses including some mechanical demands.
- Capture rain water from the roofs of buildings, after treatment this water supply can be utilized for indoor non-potable re-use and/or cooling.

ENERGY EFFICIENCY IN BUILDING DESIGN + RENOVATION

- Optimize the active MEP systems through low-energy, Passive building design to reduce loads.
- Active system optimization results in reduced lighting power, reduced receptacle loads and more efficient HVAC system.
- Application of efficient lighting systems and daylighting controls.
- Heating and cooling loads should be met with the moderate temperature systems. This means cooling systems with 55 to 60 F water and heating systems with 110-130 F water. Radiant panels, thermally active building slabs (TABS), chilled sails and chilled beams all take advantage of medium temperature chilled water for low-energy cooling.
- HVAC systems which utilize heat pumps, systems that can transfer heat from the air or from ground coupling. These systems make lower hot water temperatures than traditional HVAC, 100 to 120 deg F compared with 150 to 180 deg F. These heat pumps can be coupled with key technologies such as radiant floors, radiators along windows, or even variable refrigerate flow (VRF) systems.
- Thermally zoned VAV airside systems, fan coils / VRF systems paired with dedicated outdoor air

systems, demand control ventilation and underfloor/displacement ventilation systems all provide opportunities for energy efficiency within the building.

EXISTING BUILDINGS TO BE RENOVATED

- Active system optimization results in reduced lighting power, reduced receptacle loads and more efficient HVAC system.
- Application of efficient lighting systems and daylighting controls.
- Individual plug load analyses should be conducted to determine building and lab-specific strategies for reducing plug loads. For existing buildings that are already in operation, smart power strips can be used to monitor electricity usage. These strips can help identify unwanted loads as well as automatically reduce power during off-peak hours.

THERMAL + DAYLIGHTING ENVELOPE STRATEGIES

- Appropriate building massing and orientation to maximize beneficial solar exposure.
- Incorporate passive, low-energy exterior building design to reduce building loads

7.6 ECOSYSTEM + COMMUNITY RESILIENCE

- Building envelopes should be better than code with optimal levels of insulation for the walls and roofs.
- Careful use of glazing area and type, with 40% window-to-wall ratio being the code prescriptive maximum.
- Appropriate external shading for solar heat gain control, while providing an enhanced level of daylight penetration (e.g. Vertical fins on the east/west facades and horizontal overhangs on the south façade).

INTERIOR ENVIRONMENT GUIDELINES

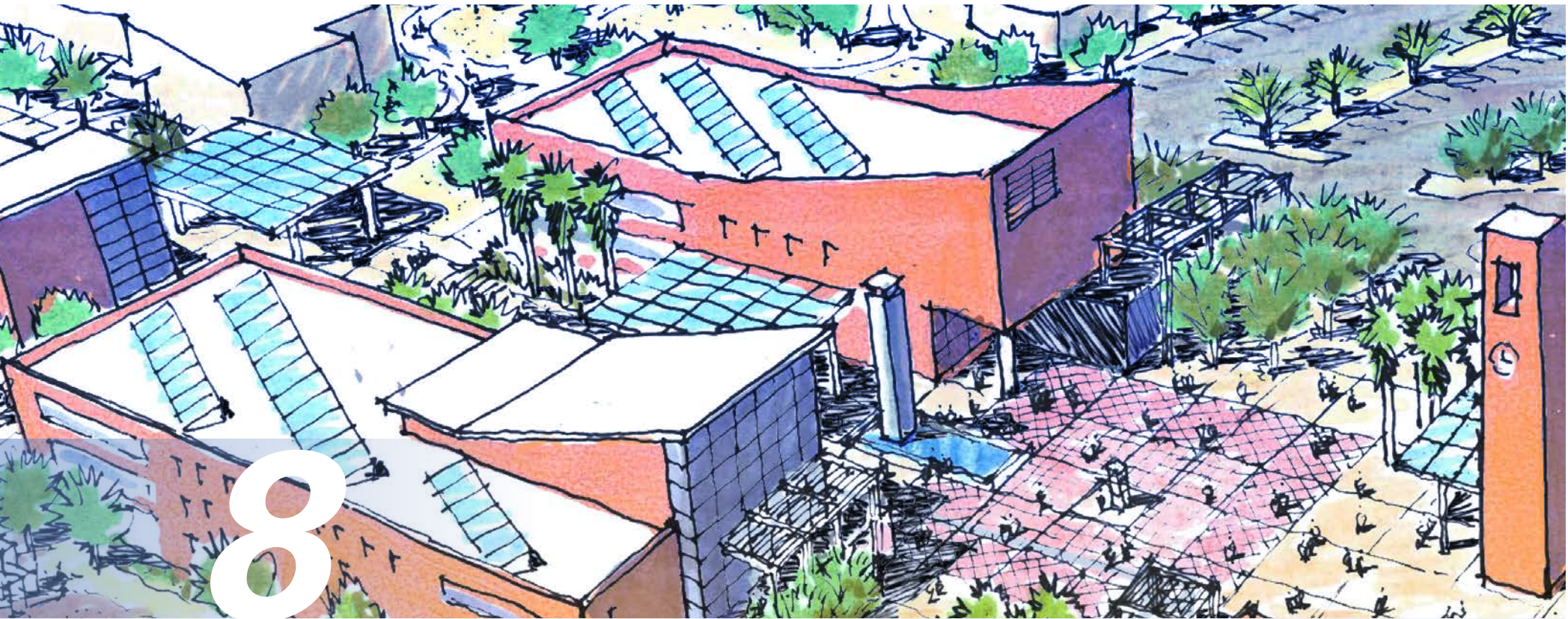
- If additional ventilation is required, especially during the heating months, outside air can be pre-heated with exhaust air. Heat recovery systems should be designed to still allow for economizing and preferably with bypasses to reduce fan power when heat recovery is not needed.
- Passive strategies will harness natural daylight and employ mixed-mode natural ventilation.

An integrated approach to campus planning and environmental sustainability will have lasting positive effects for the Palm Desert Campus and its community.

To develop a home-grown approach to community resiliency, community representatives must be involved in shaping the vision, and contribute toward achieving resiliency objectives. Residents, business owners, and other key stakeholders should be identified and invited to participate and take action to shift PDC into a thriving, resilient, sustainable campus. Involving key local players will uncover opportunities to solve problems, take advantage of synergies, and deliver solutions that are mutually beneficial and support local self-sufficiency and resilience.

ENSURE ADAPTABILITY + FUTURE PROOFING

In an era of rapid change, CSUSB PDC should be equipped to accommodate and continue to thrive under ever evolving conditions; technological, demographic, and climatic. A focus on adaptability and future proofing reduces risk and moreover creates the conditions to develop a safe, durable, and healthy environment in which to live, work and play. A climate change vulnerability analysis should be completed to help understand the climatic impacts and identify potential risks expected 20 – 30 years in the future for the Palm Desert area. Future buildings and infrastructure should be designed to withstand extreme weather and other unforeseen events, and ensure the local community has access to a reliable supply of water, energy and food.



LANDSCAPE + ENVIRONMENT

8.1 LANDSCAPE FRAMEWORK

The Landscape Framework not only builds upon the existing landmark buildings and campus character but portends a legacy of a comprehensively unique and collegial Sense of Place.

Sense of Place. While defining the visual quality of the Campus the resulting environment will respect and celebrate the unique attributes of its desert setting and at the same time moderate the local climate to engender an inviting, attractive, cohesively resilient and enduring Landscape. Emphasis and focus are placed on creating abundant shade covered, wind sheltered, pedestrian friendly spaces as well as incorporating appropriate water conserving desert flora and integrating state of the art sustainability, resource conservation and storm water harvesting and treatment initiatives.

The purpose of the Landscape Framework is to provide the University and the Community a consistent and coordinated set of Principles and Guidelines in order to ensure that phased incremental developments collectively contribute to fostering the underlying character and the envisioned unique Sense of Place for the Palm Desert Campus. The Plan identifies principal landscape zones that collectively contribute to the overall organization and opens space structure of the Campus. Together with the integrated architectural guidelines and the coordinated performance driven Site Sustainability initiatives of the Master Plan the Landscape Framework evokes and engenders what will be the indelible, primary defining characteristics of the Campus.

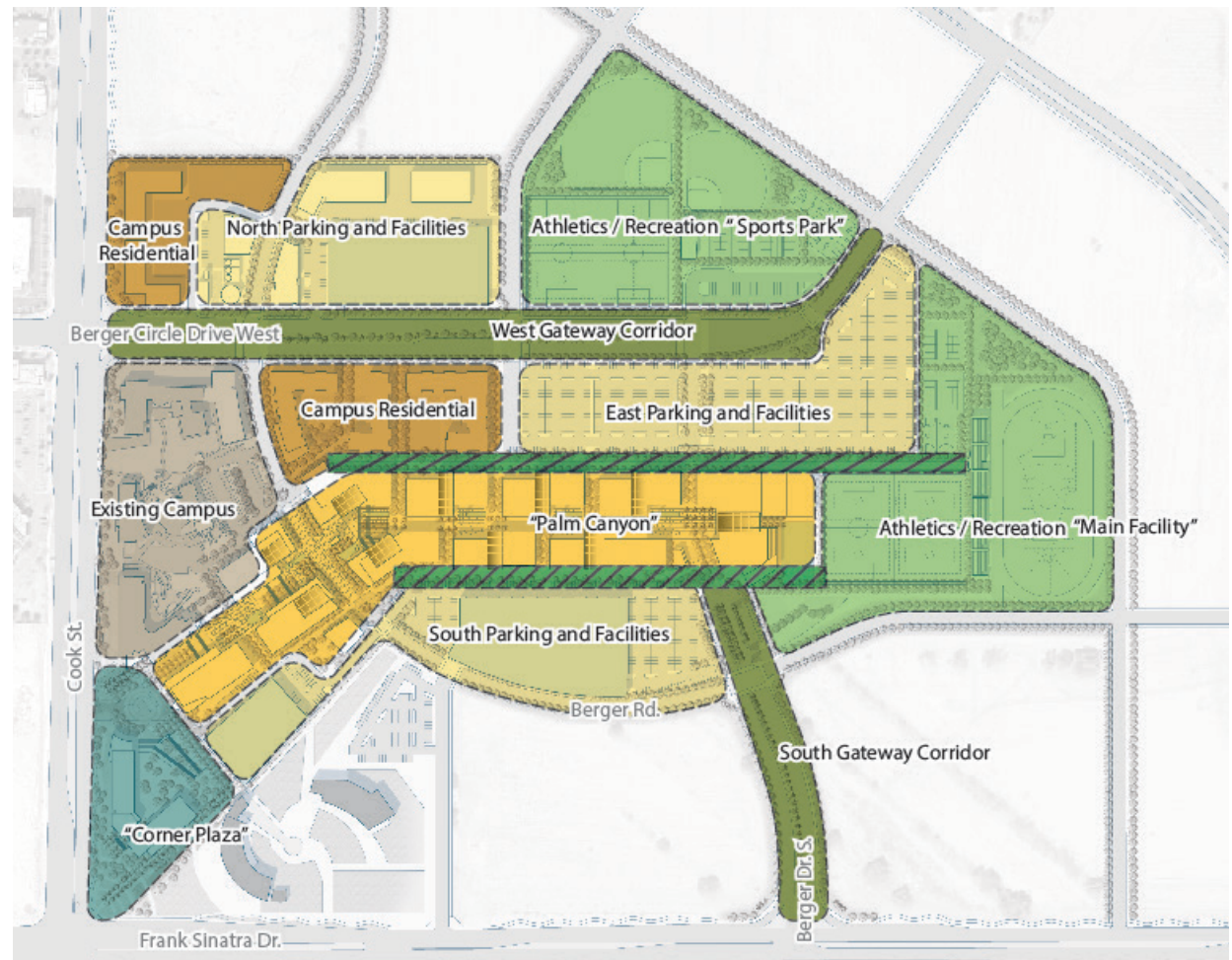
OVERVIEW

The nascent Palm Desert Campus of California State University San Bernardino, comprising approximately 169 acres offers extraordinary opportunities for the University and the Community to Master Plan and to demonstrate integrated, holistic, performance-driven sustainability initiatives. Intrinsically, aligned with reinforcing and supporting the Vision, Goals and the Objectives of the 2016 Facilities Master Plan, the Landscape Framework not only builds upon the existing landmark buildings and campus character but portends a legacy of a comprehensively unique and collegial

LANDSCAPE FRAMEWORK

The proposed California State University San Bernardino/Palm Desert Open Space Framework brings additional distinction, functionality, order and legibility to both the existing campus and its future physical growth by establishing and defining clearly composed, expressed and articulated landscape zones. Contributing to and collectively defining the character and visual quality of the institution, these zones include primary and secondary gateways, streetscapes, plazas, pedestrian promenades, quads and corridors and athletic facilities. Articulating the character defining features and the visual quality of these zones, The Plan not only outlines a general framework or open space structure but also provides broad guidance for the design of these major open spaces.

The proposed Campus Organization and Structure is depicted in Figure 8-1 and each landscape zone is imagined to include discernible character defining qualities. As a whole the intent is to create a holistic and consistent Open Space Environment that unifies, connects and brands the student, faculty, staff and visitor experience of the Palm Desert campus in order to create an attractive, distinctly memorable unique Sense of Place.



LEGEND






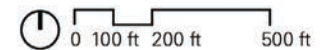
	Gateway Corridor		Campus Residential
	Corner Plaza		Parking and Facilities
	Palm Canyon		Athletics / Recreation
	Palo Verde Corridor		Existing Campus

FIGURE 8-1: LANDSCAPE ORGANIZATION / OPEN SPACE ZONES





GATEWAY CORRIDORS

The primary West Gateway Corridor, Berger Circle Drive West and the secondary South Gateway Corridor, Berger Drive South provide the principal vehicular and pedestrian connections from the surrounding region and community to the campus core. Their consistent landscape treatment will clearly define the nature and the quality of the overall Campus impression. Respectively, landmark intersections at Cook Street and at Frank Sinatra Drive are anticipated to include appropriately scaled and themed brand monuments, coordinated way finding graphic elements, gateway landscape grading/land contouring as well as distinct landscape planting. Extending and unifying these two corridors, common streetscape components will include invitingly scaled and configured pedestrian walkways, consistently spaced canopy shade trees together with coordinated lighting fixtures and way finding graphic elements. On a daily basis, the landscape quality and the unified treatment of these connecting corridors not only functionally serve vehicular and pedestrian users but also will inherently communicate and express the natural quality and the environmentally sensitive character of the campus as a whole.



CORNER PLAZA AND EXISTING CAMPUS

Extending on the western edge of the campus from Frank Sinatra Drive northerly to Berger Circle Drive West, the character of the landscape in these zones is intended to create a strong differentiated and unified public or civic scale. Coordinated together with the existing landscape infrastructure surrounding the Palm Desert Health Sciences Building, the Indian Wells Center of Educational Excellence and the Mary Stuart Rogers Building this landscape zone will be extended southerly to encompass the areas around the proposed Administration Building as well as to positively create and to address the Cook/Sinatra intersection. The corner landscape treatment will be seamlessly blended together and coordinated with the UCR Campus landscape and composed to embrace and to present a clear, civically scaled and impactful identity /signature statement. The proposed landscape incorporates and integrates topographic changes in a re-naturalized setting. As the Community's pedestrian gateway into the campus, Signage monuments together with bold/simple plantings of water wise arid specimens of trees / shrubs and ground covers demonstrate the University's overreaching commitment to sustainability and an environmentally sensitive Campus.



Situated between the proposed Administration Building and the existing Palm Desert Health Sciences Building a vehicle and pedestrian entry establishes a prominent gateway to, as well as a visual/physical link with the Campus Core and the "Palm Canyon Walk". The planning and design emphasis on this Gateway is to extend the Academic Core / Palm Canyon Landscape structure to the Cook Street public realm edge, thus creating both a physical promenade and a symbolic visual corridor and connection to the "heart of the campus". A generously scaled vehicle drop off/pick up location is incorporated within the access circulation, and inviting pedestrian amenities include shade covered walkways/sitting areas together with clusters of Native California Palms.



ACADEMIC CORE/PALM CANYON WALK

This proposed linear corridor, a centralized open space/ pedestrian promenade connects and links the Cook Street entry to the eastern edge of the campus and its athletic facilities. This corridor, envisioned with minimum pedestrian/vehicle conflicts concentrates pedestrian activity in shaded courtyards to foster dynamic interconnectivity, collegiality and social interaction. Along this corridor, wind protection and solar controlling shade elements including architectural trellises and generous tree/palm canopies are strategically placed to work together and to integrate with planned performance driven climate-modifying devices such as purposeful wind-shadow building massing, cooling green walls, evaporative cooling and water feature devices. Conceived as the primary centralized campus circulation space the academic core will be an inviting and attractive space for students, faculty, staff and visitors. An inclusive, beguiling oasis inspired by the iconic Palm Canyons found throughout the Coachella Valley.



PALO VERDE CORRIDORS

These two pedestrian corridors run parallel to Palm Canyon Walk on the north and south side of the academic core buildings and are envisioned as landscape transition zones from surface parking areas into the academic core. The landscape character would highlight native desert plant materials, the Palo Verde tree in particular, to establish a unified campus landscape that expresses the natural qualities and environmentally sensitive character of the campus as a whole.

These two corridors are also be planned to allow service and fire access, as necessary, for all buildings in the academic core.



CAMPUS RESIDENTIAL

Situated north of the Academic Core, the Residential Quads serve the needs of the on-site student population. Resident amenities are envisioned to be on par with private or commercial off-campus living accommodations. These domestic, comfortable, inviting and secure neighborhood enclaves include flexible shaded outdoor spaces facilitating formal and informal gatherings, sitting, dining and collaboration courts together with an array of recreational features such as volleyball areas, basketball courts, gardens and Frisbee lawns. In fact, these enclaves will be the only areas to utilize limited turf grass in centralized courtyards and quads. Secure and visually screened storage areas should be provided for bicycles, skateboards and scooters. Required vehicle ingress/egress for emergency, maintenance, move in/move out traffic will be integrated into this well-ordered and efficiently programmed neighborhood.



NORTH, EAST AND SOUTH PARKING AND FACILITIES

A significant aspect of the Campus Plan is the allocation of approximately 9 acres for surface parking facilities. These parking zones have been strategically configured and located to facilitate ease of pedestrian access to the campus core. In order to mitigate the seasonal climate extremes shading devices are anticipated to be employed through-out these parking areas. A combination of canopy tree planting and solar shade structures are envisioned. In the former situation parking lots will be designed to include horticulturally adequate tree planters, spaced at frequent intervals for continuous shade cover and configured to allow for storm water collection/treatment swales. Promoting a safe and secure night environment, area lighting will be incorporated into proposed shade structures or carefully coordinated with tree planter locations.



ATHLETIC FACILITIES

The Palm Desert Campus Master Plan allocates approximately 16 acres of open space areas programmed for physical education, competitive sport and general recreation and exercise. In order to serve both the student body and the greater community the northern complex is envisioned as a community serving "Sports Park" and the eastern complex the primary University athletic fields. The Plan incorporates landscape system components that include a network of shaded pedestrian and service vehicle pathways that interconnect these facilities within the campus context and establish a cohesive spatial organization. Linear tree windrows are located where possible to buffer and screen prevailing seasonal winds. Interstitial spaces are enhanced with informal shade tree groves and sitting/gathering areas. As topography allows, these athletic fields will be configured to provide storm water retention and groundwater recharge.

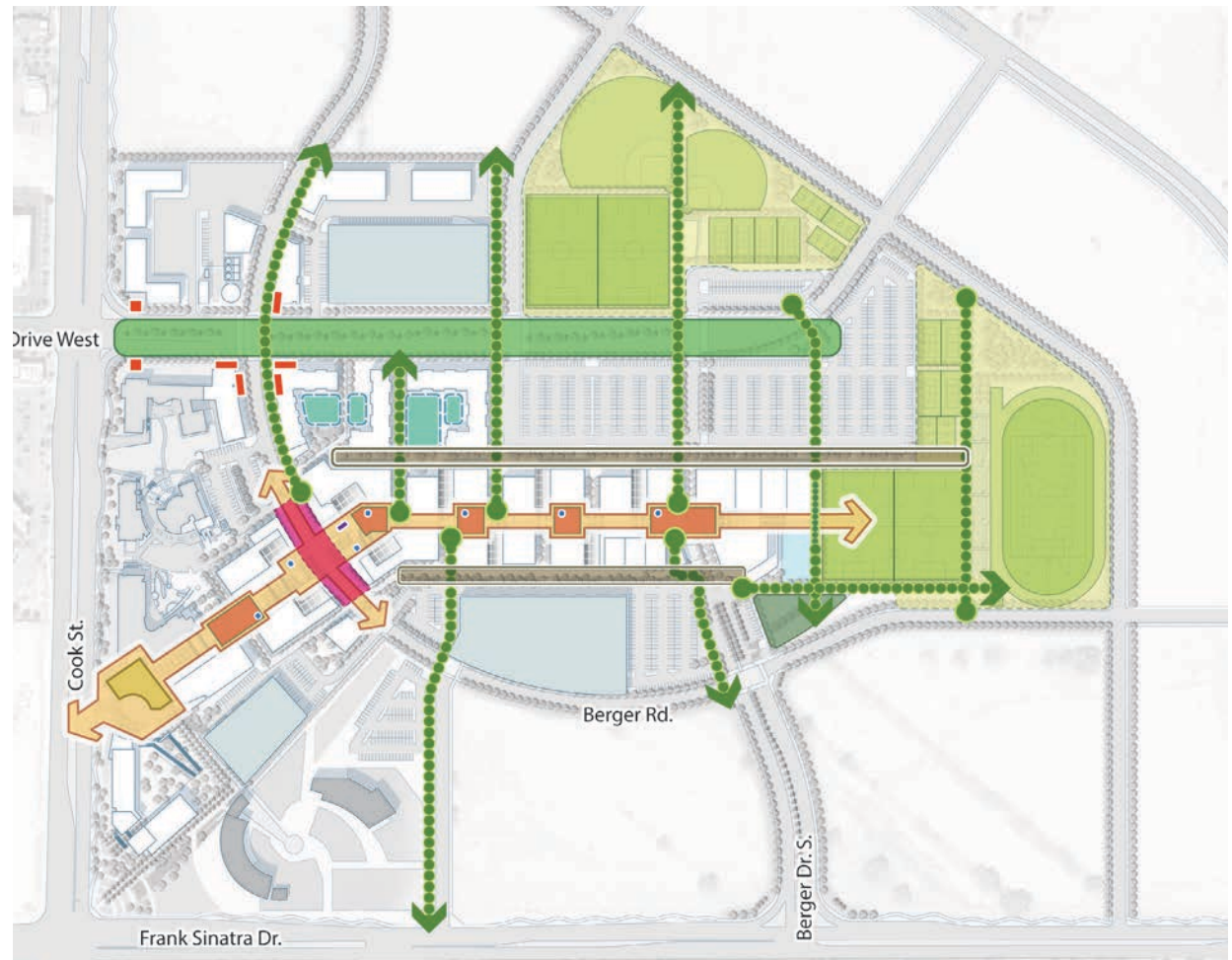
8.2 PRINCIPAL LANDSCAPE SYSTEM COMPONENTS

Landscape will play an important role in the life of the Palm Desert Campus, supporting learning, campus culture and health, thermal comfort, and the campus' environmental goals.

OVERVIEW

Within the Open Space/ Landscape zones developed as the primary organizational structure of the campus a coordinated and cohesive language of landscape systems is employed. Figure 8-2 illustrates the hierarchical order and the interconnected relationships of these component systems. The orchestrated arrangement of primary circulation avenues, plazas and pedestrian promenades, quads, green corridors and way finding landmarks collectively defines the Campus character. The major aspects and characteristics of these components are woven together to provide a network of connected spatial experiences resulting in a campus with a strong quality of unity and a differentiated unique Sense of Place.

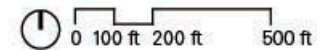
The envisioned character defining features and components of the landscape are outlined and illustrated in three enlargement focus studies of significant spaces and places within the campus setting. These conceptual studies may provide general guidance for future more detailed design.



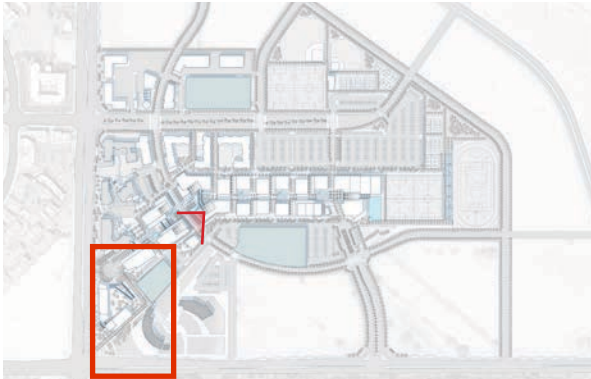
LEGEND

- | | | |
|---------------------------------|----------------------------|--------------------------|
| Plazas + Promenades | Quads + Green Corridors | Key Signage + Public Art |
| Collaboration Plaza | Pedestrian / View Corridor | Key Signage |
| Palm Canyon Promenade | Veterans War Memorial Park | Cooling Towers |
| Palo Verde Corridor | Residential Quads | Signature Clock Tower |
| West Gateway Landscape Corridor | Sports Fields | |
| Administration Court | | |
| Central Plaza | | |

FIGURE 8-2: PRINCIPAL LANDSCAPE SYSTEM COMPONENTS



Key Map



COOK STREET/SINATRA DRIVE INTERSECTION

At this significantly trafficked intersection in the Palm Desert community the primary objective of the Landscape composition in this zone is to provide a readily discernible, distinct and differentiated identity for the University. Major signage monuments are integrated together with contour grading and ground plane colorful plantings. Visual porosity and long vistas are composed and reinforced by the axial positioning of indigenous palms together with clearly defined and shaded pedestrian walkways. Reflecting the significance of the Cook Street Public Realm, a limited but visually impactful palette of desert trees extends continuously along this street edge. Immediately north of the proposed Administration Building, a conveniently accessible motor court, drop off plaza and parking entry road anchor the western terminus of the Academic Core/Palm Canyon corridor. Framing and radiating from this arrival space, geometrically ordered Bosque's of canopy trees and California native palm trees envelop pathways to offer shaded pedestrian connections. Topographic variations within this area are gracefully integrated with the architectural character of envisioned nearby buildings. Though a modest turf grass area enhances the landscape quad associated with the

Proposed Condition



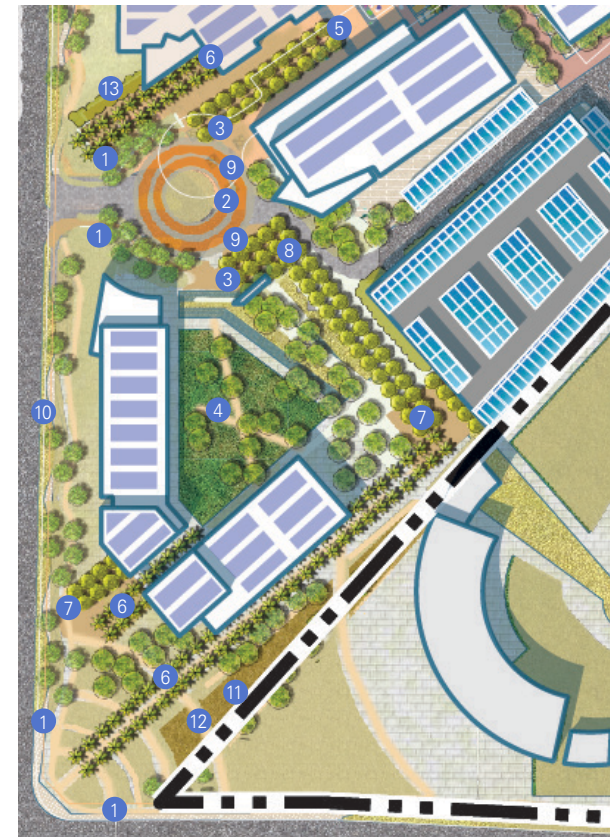
Sketch View



Administration building the majority of the opens spaces are treated as arid landscapes utilizing a predominance of decomposed granite, local boulders and pebbles as well as arid adapted desert plant materials. Emphasizing unity and clarity, collectively, these spaces will positively reflect the desired stature of the University together with its civic prominence in the Community and the Region.

- ① SIGNAGE MONUMENTS
- ② SCULPTURE EARTH FORM W/ SPECIMEN SUCCULENTS
- ③ ARRIVAL PLAZA W/ SHADE BOSQUE
- ④ ADMINISTRATION COURT
- ⑤ CENTRAL CAMPUS PEDESTRIAN COURT
- ⑥ NATIVE PALM ALLEE
- ⑦ SHADE TREE BOSQUE PLAZA
- ⑧ SHADE TREE ALLEE
- ⑨ DROP-OFF/PICK UP
- ⑩ COOK STREET PEDESTRIAN WALK
- ⑪ OPEN SPACE/STORM WATER RETENTION AREA
- ⑫ BRIDGE OVER RETENTION AREA
- ⑬ WINDROW

Landscape Detail



Key Map



COYOTE PLAZA/CAMPUS CROSSROADS

Framed by the proposed Student Union, the Library/Media Center, the CEL Building and a planned Academic Building, Coyote Plaza will be the primary iconic space or plaza within the campus. At the nexus of the Academic Corridor, the plaza is generously configured to allow flexible programming for student body events, fairs, ceremonies and special celebratory events. The plaza's spatial organization, permeable paving layouts and landscape features are designed to permit the navigation of occasional service and emergency vehicle access. Boldly scaled architectural/ photovoltaic shade structures together with extensive Palm and canopy tree plantings create comfortably scaled and shaded seating, dining, gathering and meeting areas. Extending out from the Plaza in north and south directions and providing invitingly accessible pedestrian connections are strategically located shade tree allies. Integrated together with these pedestrian amenities, climate moderating /cooling sustainability features include evaporative ponds and cooling towers. Nearby groves of native California Fan Palms evoke the inviting characteristics of the region's Palm Canyons. Both functional and visual porosity of adjacent building ground floors is emphasized in order to foster indoor/

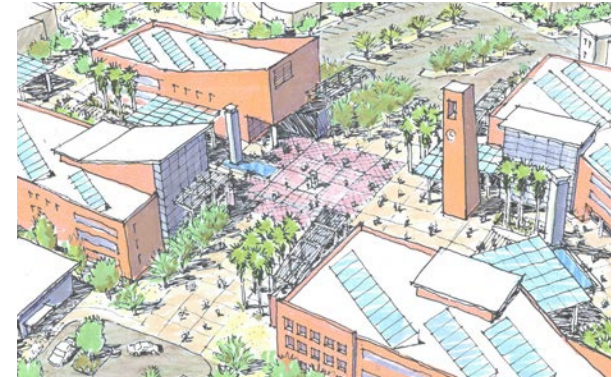
Proposed Condition



outdoor shared spaces and activated edges. Sensitively sited within these spaces will be an appropriately scaled and well executed Coyote Sculpture that exemplifies and embodies the "Coyote Spirit". Envisioned as the primary communal urban space of the Campus, Coyote Plaza will become the unifying, inviting and exciting academic/social gathering hub for the Campus.

- 1 SHADE TREE PEDESTRIAN ALLEY
- 2 NATIVE PALM (WASHINGTONIA FILIFERA) BOSQUE
- 3 SHADE TREE BOSQUE/COURT
- 4 SKYLINE PALM NODE @ VEHICLE COURT
- 5 STORMWATER RETENTION AREA WITH NATIVE BOULDERS + PLANTING
- 6 PEDESTRIAN BRIDGE
- 7 LINEAR STORMWATER ARROYO WITH NATIVE PLANTING
- 8 VEHICLE COURT
- 9 COYOTE PLAZA
- 10 INFORMAL NATIVE SHADE TREES
- 11 WINDROW/SHADE PEDESTRIAN COURT
- 12 ARCHITECTURAL TRELLIS

Sketch View



Landscape Detail



Key Map



EVENTS CENTER PLAZA

Further illustrating principal landscape system components the third area of focus for landscape conceptual planning and design guidance is the Events Center Plaza. As the terminus and the visual focus of the South Gateway Corridor this space will become a primary arrival /destination node for the eastern edge of the campus. For many visitors attending events or viewing the nearby War Memorial it may be the primary point of physical interface with the University and as such must reflect the quality values and character of the campus wide landscape. The configuration and geometry of this space are shaped by the necessity to accommodate both passenger and transit vehicles and to visually mediate and juncture of disparate geometries. Emphasizing the safety and well-being of pedestrian circulation clearly defined and separated shade covered walkways connect points of interests and function.

Proposed Condition

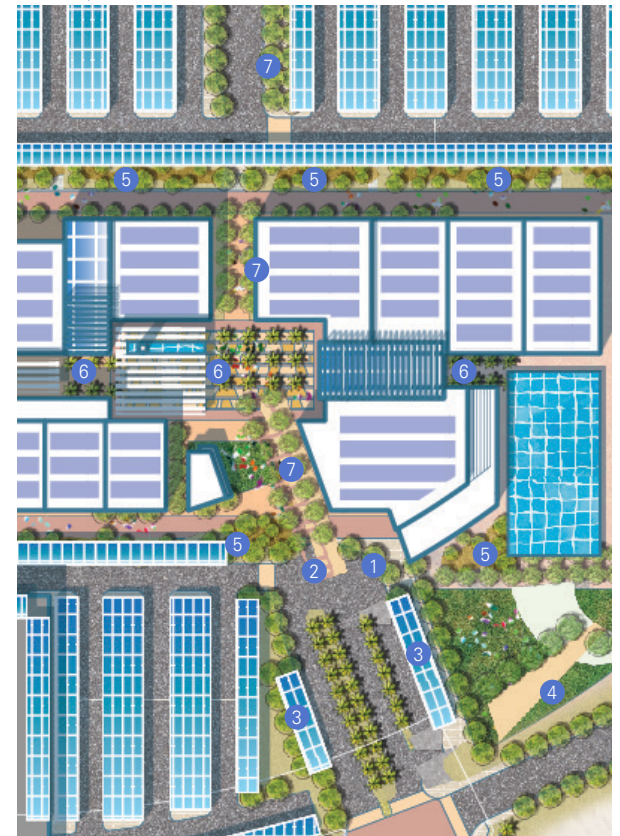


Sketch View



- ① EVENT CENTER VEHICLE/BUS DROP-OFF
- ② ENTRY PROMENADE WITH SHADE TREE ALLEY
- ③ SHORT TERM PARKING
- ④ VETERANS WAR MEMORIAL PARK
- ⑤ STORMWATER RETENTION ARROYO WITH NATIVE TREES
- ⑥ NATIVE PALM BOSQUE (WASHINGTONIA FILIFERA)
- ⑦ PEDESTRIAN SHADE TREE ALLÉE

Landscape Detail



8.3 PERFORMANCE-DRIVEN LANDSCAPE

The hot and often windy desert environment in which the PDC operates presents challenges for conserving energy for cooling and water for plant irrigation. Fortunately, drawing upon the experience gained from successful desert projects coupled with focused site-specific and plan-specific sun and wind studies has led to a PDC Master Plan that seeks to maintain user comfort, resource conservation and sustainability.

To create a plan for the PDC that successfully attains high levels of human comfort, environmental sustainability and economic efficiency six basic strategies were employed. These strategies are summarized here in pictographs. These performance based strategies were applied to the development of the 2016 PDC Master Plan as informed and guided by day-night cycle, seasonally-sensitive, site-specific studies of the sun and wind effects upon the campus plan. The methodology and results of these are outlined on the following pages of this chapter.



MINIMIZE SOLAR GAINS



MAXIMIZE EVENING / NIGHT COOLING RATE



PROVIDE EVAPORATIVE COOLING



PROMOTE AIR FLOW



BUILDING MASSING



COOL SURFACES + LANDSCAPE

CLIMATE ANALYSIS

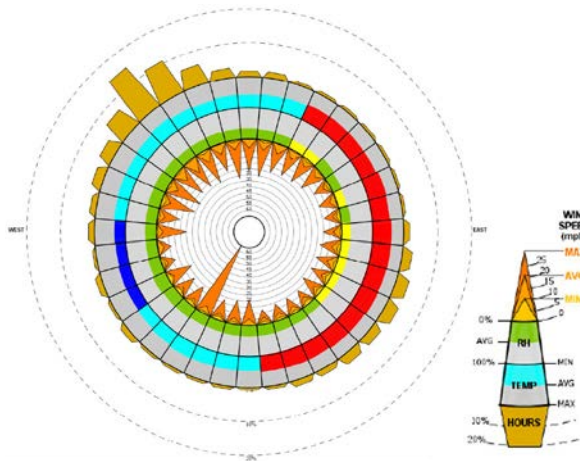
The Palm Desert Campus is located in California's Climate Zone 15 according to California Energy Commission and in ASHRAE 90.1 zone 1B, which is very hot dry. This is low desert, characterized by extremely hot and dry summers and moderately cold winters. The average temperature in Climate Zone 15 is much higher than any other zone in California, especially in the summer. The warmest month is July with a maximum annual temperature of 114.8°F. The warmest six months are Jul Aug Jun Sep May Oct. The coldest month is February. The minimum annual temperature (Jan) is 39.2°F.

The humidity is below the comfort range much of the year, which results in a large diurnal temperature range and very cool nights. The skies are clear most of the year with an annual sunshine of about 85% and high values of direct solar radiation. Mean daily global radiation is 21,765 Btu/h•ft². The annual solar resource amounts to 645.3 kBtu/ft²•yr.

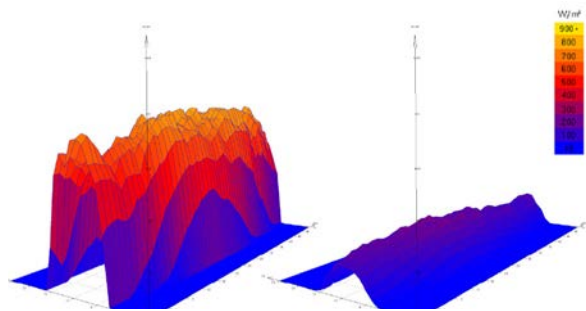
Summer storms bring most of the annual precipitation. August is the wettest month, with 1 inch of rain. The winters are short and mild, and can bring short frosts. While some heating is required during the winter, cooling is the overwhelming concern for designing within zone 15.



Annual mean wind speed is 10.4 ft/s with annual prevailing winds typically from the northwest. Summer prevailing winds are typically from the northwest and east. Climate is very warm but there is potential for cooling using the cool sky at night and evaporative cooling during the daytime when the air is warmest but also dryer.

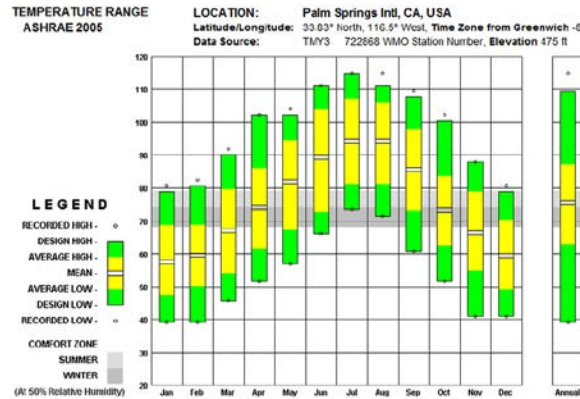


Wind rose with temperature + relative humidity



Direct Solar Radiation

Diffuse Solar Radiation



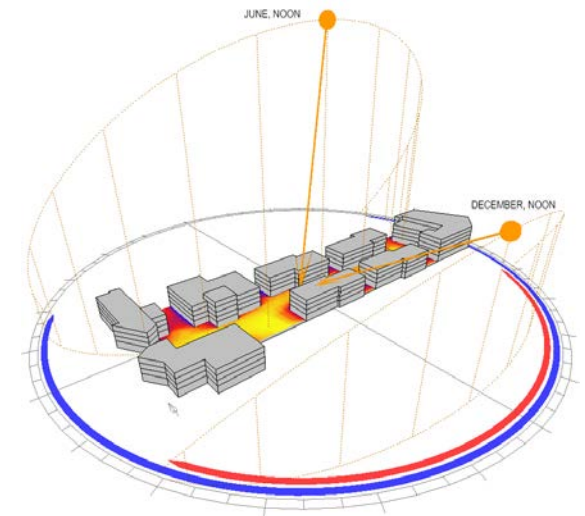
Annual Temperature Range

SOLAR STUDIES

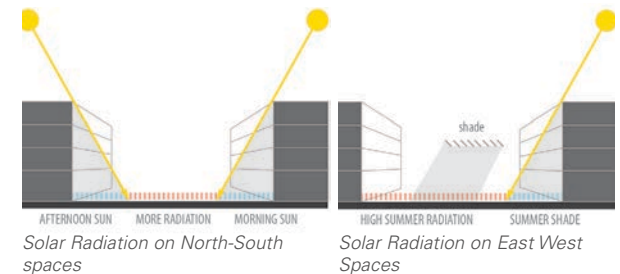
Climate analysis indicates that conditions are outside the comfort zone during most of the year with a critical period from early April to the end of October. During this time of the year outdoor temperatures are above the comfort zone between 8am and 8pm. This is the period that was selected for solar studies of the PDC Master Plan. The campus east-west Academic Precinct was chosen as a focus area of the solar and wind analyses.

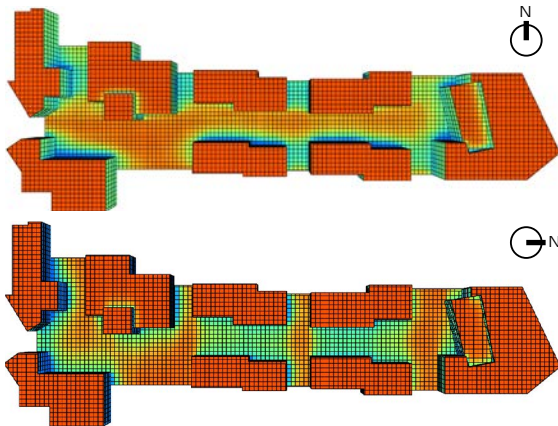
Analysis of the Academic Precinct, shows high values of solar radiation in most outdoor areas in the east-west axis. This is because the outdoor space follows the sun's east-west path and the sun is over the outdoor space most of the day, especially towards its north area. If the corridor layout is rotated to follow a north-south axis, solar radiation overall will be reduced because the facades on the east and the west provide shade at

different times of the day, part of the space receives sun during the morning and another during the afternoon. A space in an east-west orientation generally receives more solar radiation than the north-south.



June and December sun path





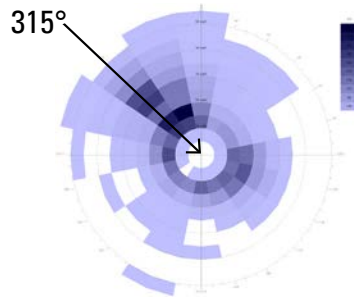
kWh/m²



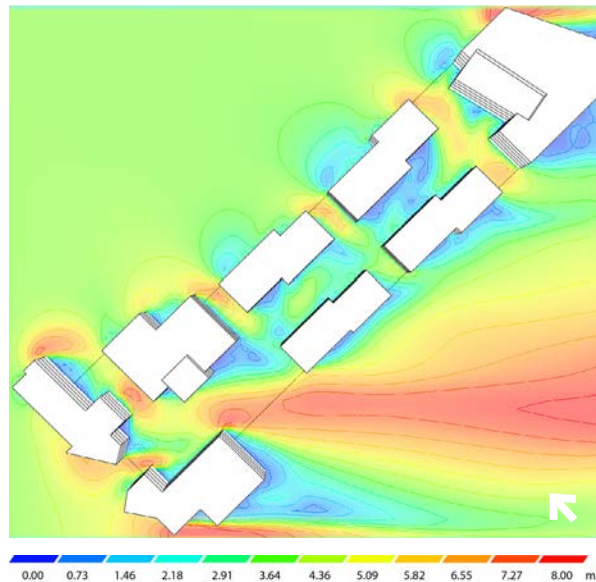
Comparison of insolation of Palm Canyon Walk according to two different orientations

WIND STUDIES

Wind studies are prepared assuming one dominant NW wind direction (315°) and wind speed (27.3 ft/sec). When Academic Precinct is oriented east-west, the wind enters through openings between the buildings and in the case of the larger south opening to the west expands as it exits the corridor. Towards the east end it enters at the north and then exits almost directly towards the south.



Dominant NW wind direction (315°)



Study with wind direction from northwest

DESIGN GOALS + GUIDELINES

One of the main goals for a performance driven design for the PDC is to maximize livability and comfort during hours of peak use. Summer is dominant and the main concern is overheating. There are six main strategies to make the outdoor places more comfortable during overheated periods: a) minimize heat gains, b) maximize evening/night cooling rate, c) provide evaporative cooling, d) promote air flow, e) appropriate building massing, and f) cool surfaces and landscape.

MINIMIZE SOLAR GAINS. Solar gains can be reduced by increasing shade provided by trees--which lower surface and air temperatures by providing shade and cooling through evapotranspiration. Trees and vegetation can also reduce storm water runoff and protect against erosion.

MAXIMIZE SUMMER EVENING/NIGHT COOLING RATE. Clear desert night skies can be used as a heat sink for the energy absorbed on surfaces during the daytime. Pavements and most construction surfaces lose heat absorbed during the day as energy is transmitted to clear and cooler night skies. Operable shade structures or systems that provide some view of the sky allow the ground below to be cooled as energy is transmitted to the sky.

EVAPORATIVE COOLING can reduce outdoor air temperature, especially during summer afternoons when the Wet Bulb Temperature Depression is highest. Evaporative cooling can be implemented in many forms such as fountains, cooling towers, or misters. For outdoor use, shade is also recommended and an enclosure to

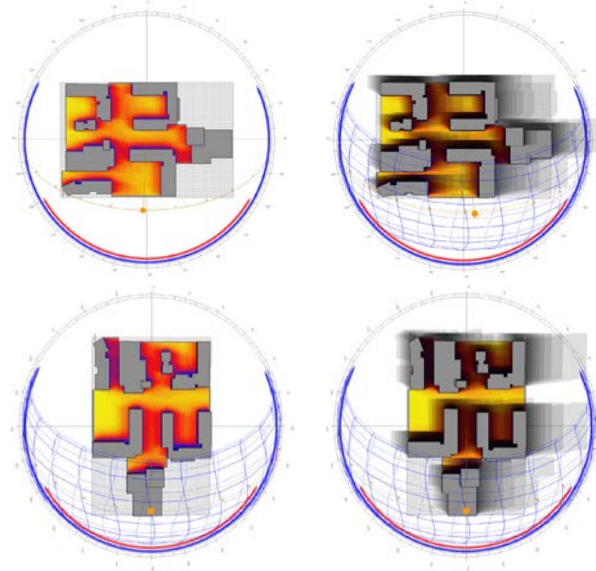
reduce cool air “leakage” They can also be combined with radiant cooling systems. Evaporative cooling systems can be located close to buildings and upwind to cool incoming wind. If structural elements such as cooling towers are used they can also be useful for wayfinding, lighting and campus identity purposes.

PROMOTE NATURAL VENTILATION. Wind is a cooling resource to the human body. When air temperatures are between 75° and 100°F research indicates that a 1 m/sec air velocity at the body surface creates a perceived cooling effect of 3°C; and for 1.5 m/sec up to 5°C. This air movement is helpful up to a certain air temperature, about 100°F. If the air temperature is above this value, then the air will not provide any cooling effect and will be perceived as warming the skin. Care has been taken in the design of the outdoor spaces, so that there is air movement in some areas and no air movement in other areas. Multiple wind studies have been implemented to validate some basic principles, especially the provision of an inlet and outlet to outdoor air across the Academic Precinct.

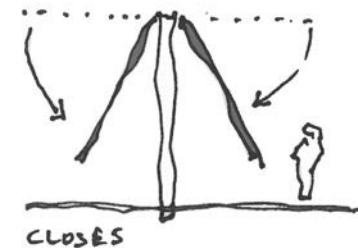
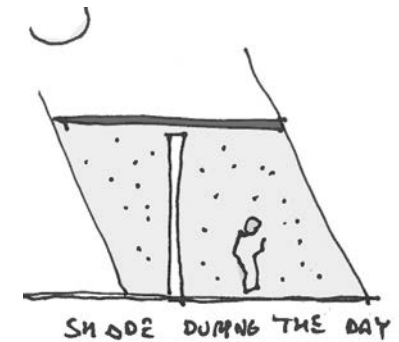
APPROPRIATE BUILDING MASSING. The building can help provide shade and control air flow. Understanding solar geometry and predominant wind directions can help generate shade spaces and channel wind directions as required to improve thermal comfort. An example is a test of the rotation of the courtyards. When the courtyards are located with an open side to the west most outdoor areas receive too much heat. However if the courtyards are located with the open side to the north they receive less solar radiation and have more summer shade

because of the shading provided by buildings to the east and west.

COOL SURFACES AND LANDSCAPE. Growing a vegetative layer of native plants on a rooftop or walls reduces temperatures of the surfaces and the surrounding air. Installing a cool surface that significantly reflects sunlight and radiates heat away from a building reduces surface temperatures, increases the comfort of occupants, and lowers energy demand. Cool pavements used on sidewalks, parking lots, and streets remain cooler than conventional pavements by reflecting more solar energy cools the pavement surface and surrounding air.



Summer solar and shadow studies for courtyard oriented to the west (above) and north (below)



Operable Shade Provides Radiant Cooling at Night



Green Wall



Shading

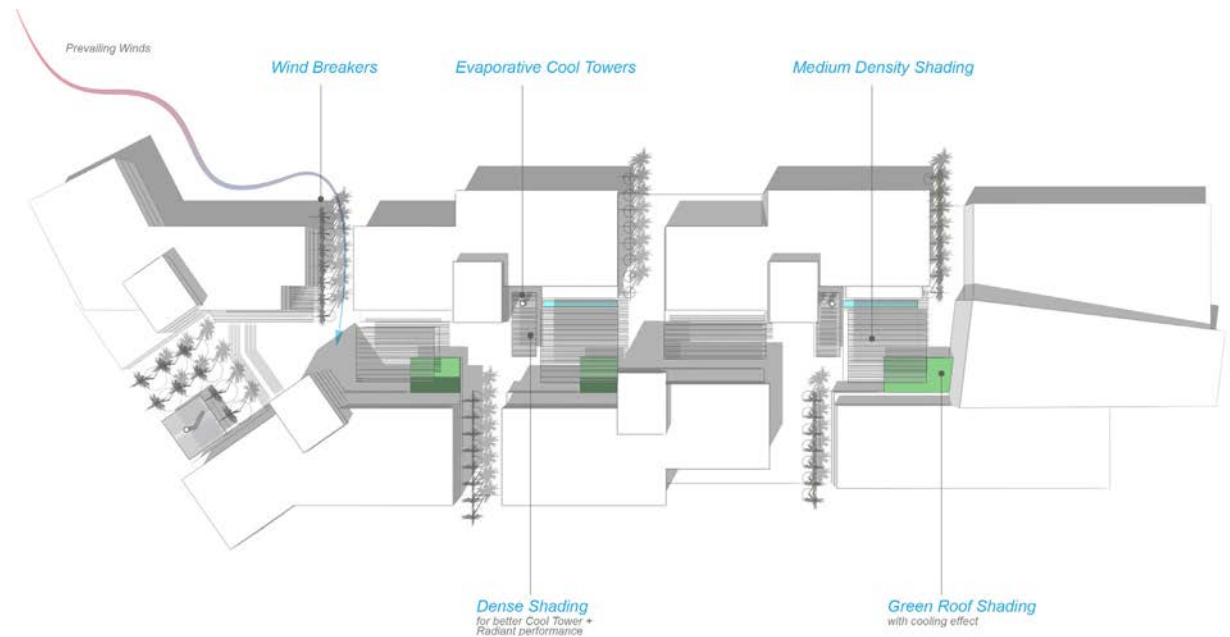


Cool Towers

IMPROVE OUTDOOR COMFORT

Several strategies are proposed and implemented to improve outdoor thermal comfort. These strategies include shading, trees, wind breakers, evaporative cooling towers, and green surfaces in walls, floors and roofs. Shading is implemented in different densities depending on the need. This network of strategies is

organized so that they provide cooler areas in multiple locations along outdoor spaces by combining these strategies. The location and the position of the towers is also based on expected requirements and potential for effectiveness. Additional cooling strategies could be implemented such as radiant systems cooled with the green roofs that cool benches combined with shade.



Outdoor Comfort Strategies

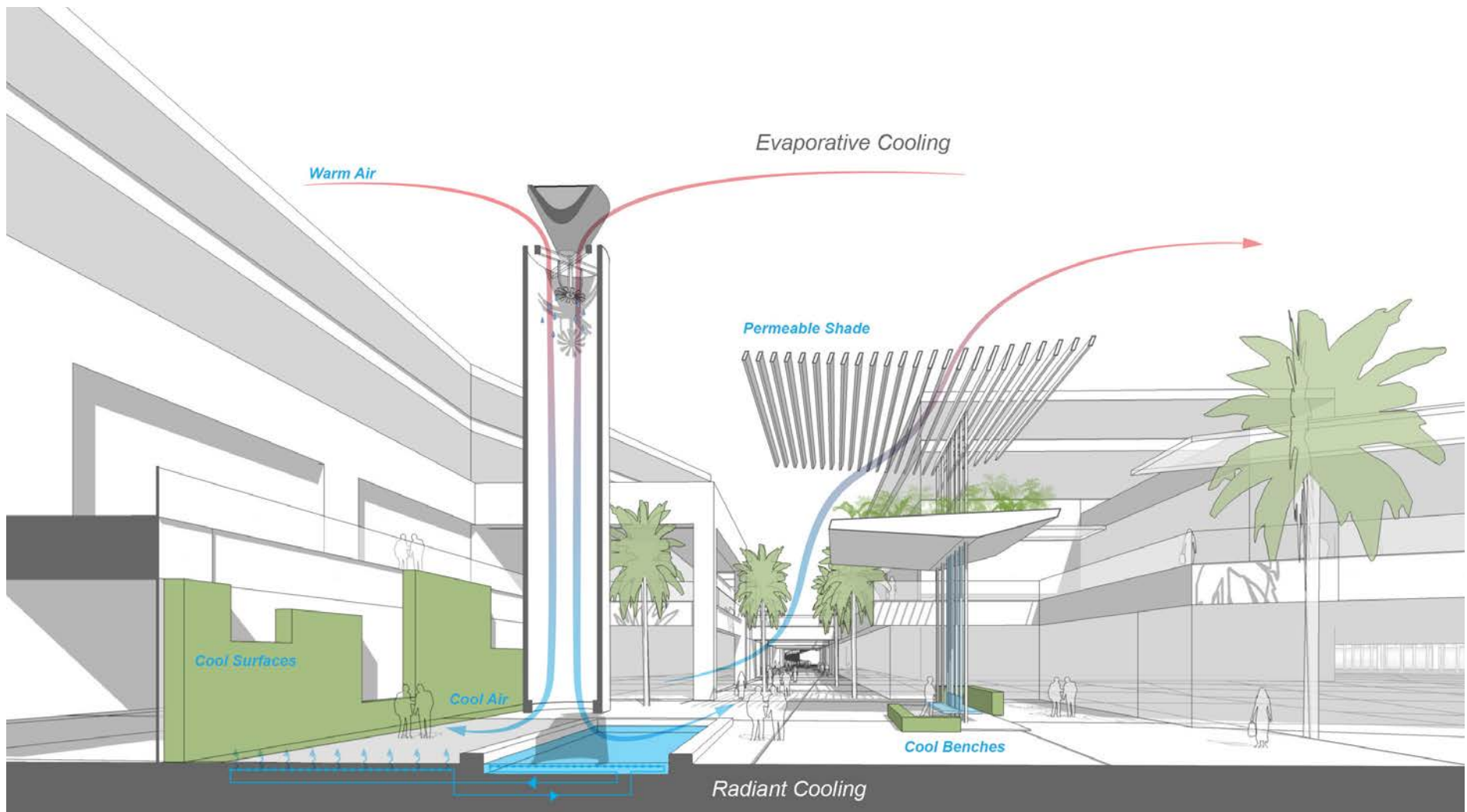


FIGURE 8-3: OUTDOOR COMFORT STRATEGIES



9

SIGNAGE + SECURITY

9.1 WAYFINDING

The 2016 PDC Master Plan delineates an effective wayfinding program that is uniquely expressed through forms, messages, and identity. This program is adaptable and will evolve with the changing needs of the campus.

SUMMARY OF CAMPUS WIDE WAYFINDING ISSUES

- The need to integrate technology into the wayfinding system.
- The need to improve the overall legibility of campus wayfinding and sign elements for vehicular and pedestrian users of the campus.
- The need for consistent nomenclature for signage systems and destinations.
- Inconsistent programming of sign messages. Some key locations need signs and some locations have too many signs.
- Inconsistent typefaces and building identification.
- The need to better identify ADA routes used by persons with disabilities.
- Identify bicycle paths on campus and connections with local bike routes.

SUMMARY OF NEAR-TERM IMPROVEMENTS

- Removal of duplicated signs and sign parts
- Maintaining landscape surrounding signs.
- Implement campus standard for building identification including typeface, size and materials.
- Introduce and implement programs and standards for donor recognition program.
- Introduce and implement programs and standards for PDC's sustainability program.

OVERVIEW

This section of the 2016 PDC Master Plan provides a description of the key wayfinding improvements recommended for the PDC campus. These recommendations are largely based on the goals and strategies identified in PDC Master Plan. The PDC Wayfinding plan is summarized largely in graphic form on the following pages.



9.2 WAYFINDING+SIGNAGE PLAN

Wayfinding signage serves many users. A successful wayfinding program can purposefully address the need for each audience including establishing a solid system for the users.

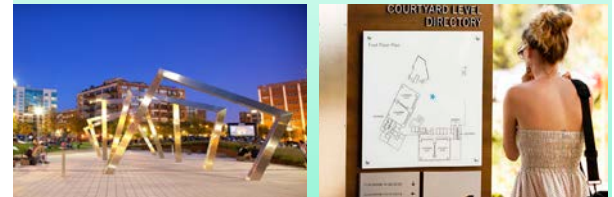
SENSE OF ARRIVAL

Gateways and perimeter banners provide a sense of arrival. These elements help to define the perimeter and identity of the campus



ORIENTATION

Landmarks and directionals are tools to help orient visitors to navigate around campus as vehicular, bike or pedestrian user.



Daily Users

University Students and Staff

Seasonal and event banners are great opportunities reinforce PDC/CSUSB branding and for daily users to be informed of upcoming events and celebrations.

Landmarks serves the daily users to orient and navigate around the campus and utilized by the users as a meet-up destination.

Community

Local Residence attending lectures and workshops

Gateways and banners not only welcome the community but also informs the community of the new events and celebrations of PDC/CSUSB.

Landmarks, vehicular and pedestrian directionals are important navigational tools for the community user who will need to re-orient as they come on campus.

Visitors

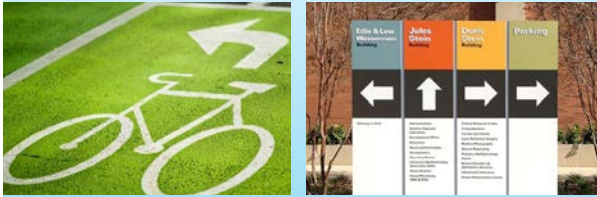
Special event attendees for graduation and campus events.

Gateways and perimeter banners are the first introductory elements that will welcome the visitors and provide a sense of arrival and festive impression.

As a special event visitor, vehicular oriented sign such a parking entry ID with spaces available and navigating quickly will enforce a positive visitor experience.

CONNECTION

All journeys combine multiple modes of travel. The goal for a successful wayfinding program is to encourage a multi-modal experience through access and information.



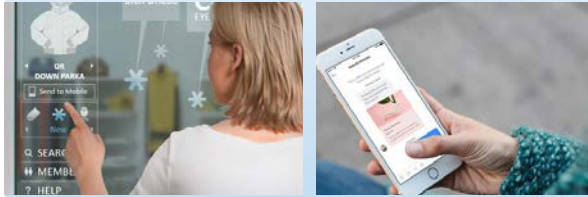
Encouraging daily users to utilize new infrastructure created for pedestrian and bike. Changing the mode of travel around the campus through bike share program.

Promote awareness of multi-modal solution and encourage community/residents to experience the CSUSB PD campus differently.

Promote awareness of multi-modal solution and encourage community/residents to experience the CSUSB PD campus differently.

TECHNOLOGY

Real-time technology, support tools and signage/environmental graphics come together to create an enhanced wayfinding experience. It is a journey that addresses user needs at every stage in navigating the campus.



Space available counters with parking entry ID, real-time bus route arrival schedule and mobile app for class schedule and classrooms streamlines a daily experience.

Support tools such as real-time technology throughout the campus will help the community user to find the destinations with ease.

Real-time support tools will support a seamless transition from the user's home to his/her destination within CSUSB PD campus.

INTERPRETIVE + DONOR PROGRAM

Sustainability efforts documented through interpretive signage encourages program participation and ownership by PDC students and staff.



Daily discovery of sustainability and donor efforts will provide a sense of pride and community for PDC/CSUSB. It is important to promote and recognize through signage.

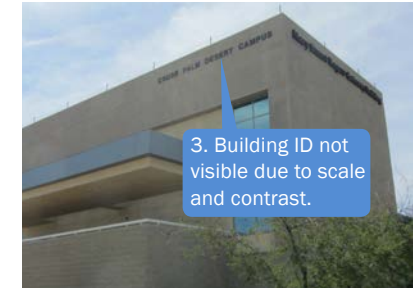
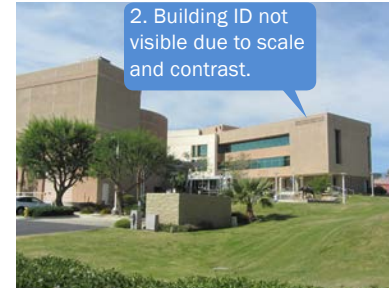
Awareness to sustainability and donor effort shall not go unnoticed for the Community. This is also an opportunity for the community to participate and support PDC/CSUSB.

PDC's goals in sustainability and its recognition for the generous donors needs to be promoted and celebrated.

9.3 EXISTING WAYFINDING ANALYSIS

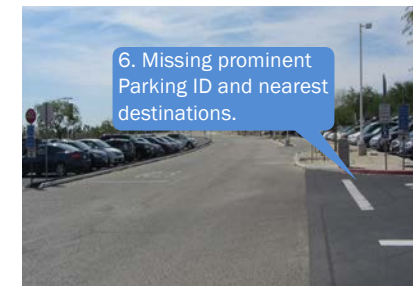
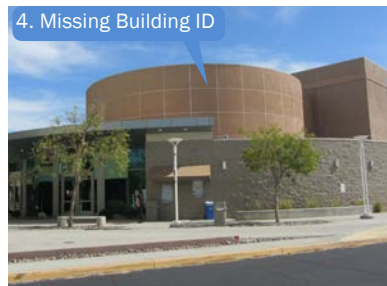
PLACEMENT

- 1 Building ID is not visible from street
- 2 Copy hidden in corner of building
- 3 Two identifications, building no hierarchy



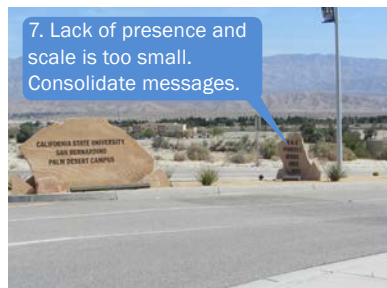
LACK OF SIGNS

- 4 Need Building ID
- 5 Need Campus Delineation from UCR
- 6 Need Parking Lot ID and Nearby Buildings and Destinations



UNIFORMITY

- 7 Campus ID Monument not prominent from street.
- 8 Need Standard Typeface and Unclear Messages.
- 9 Too Small, Not Noticeable. Need Perimeter ID.



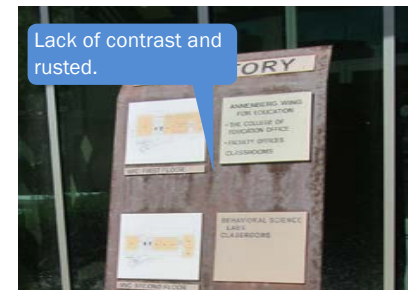
VEHICULAR DIRECTIONAL

- 1 Unmarked Intersection
- 2 Lack Uniformity
- 3 Inconsistent Content + Layout



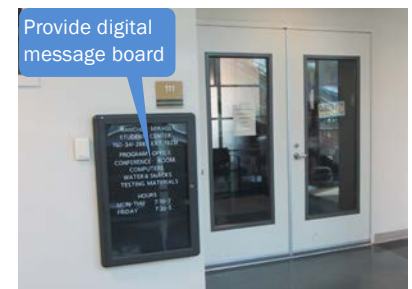
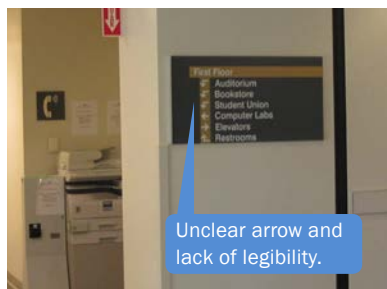
CAMPUS DIRECTORY

- 4 Weathered
- 5 Lack Cohesive System
- 6 Inconsistent Content + Layout

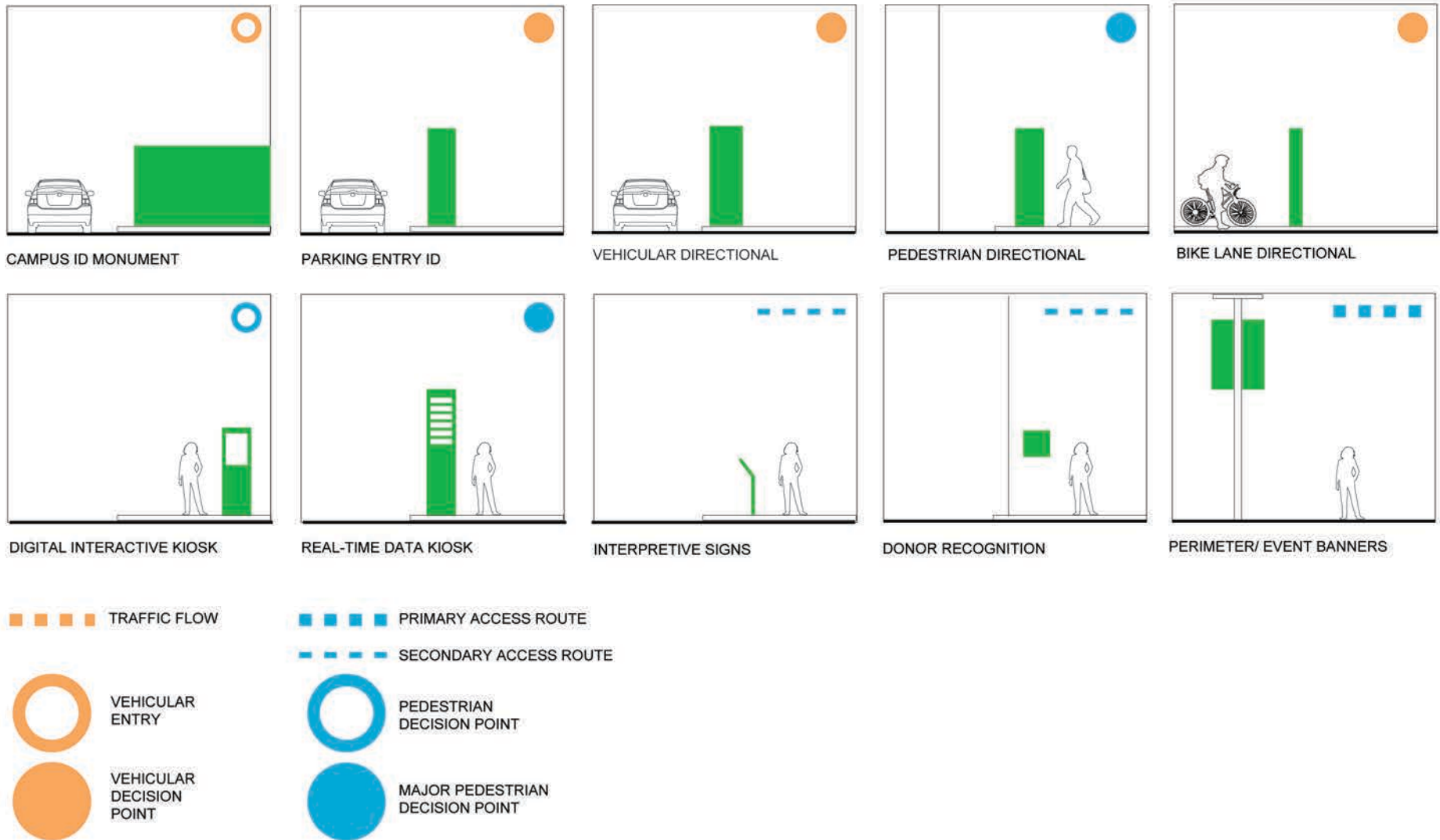


INTERIOR

- 7 Inconsistent System
- 8 Temporary Posting
- 9 Need Changeable Sign



9.4 RECOMMENDED SIGN TYPES



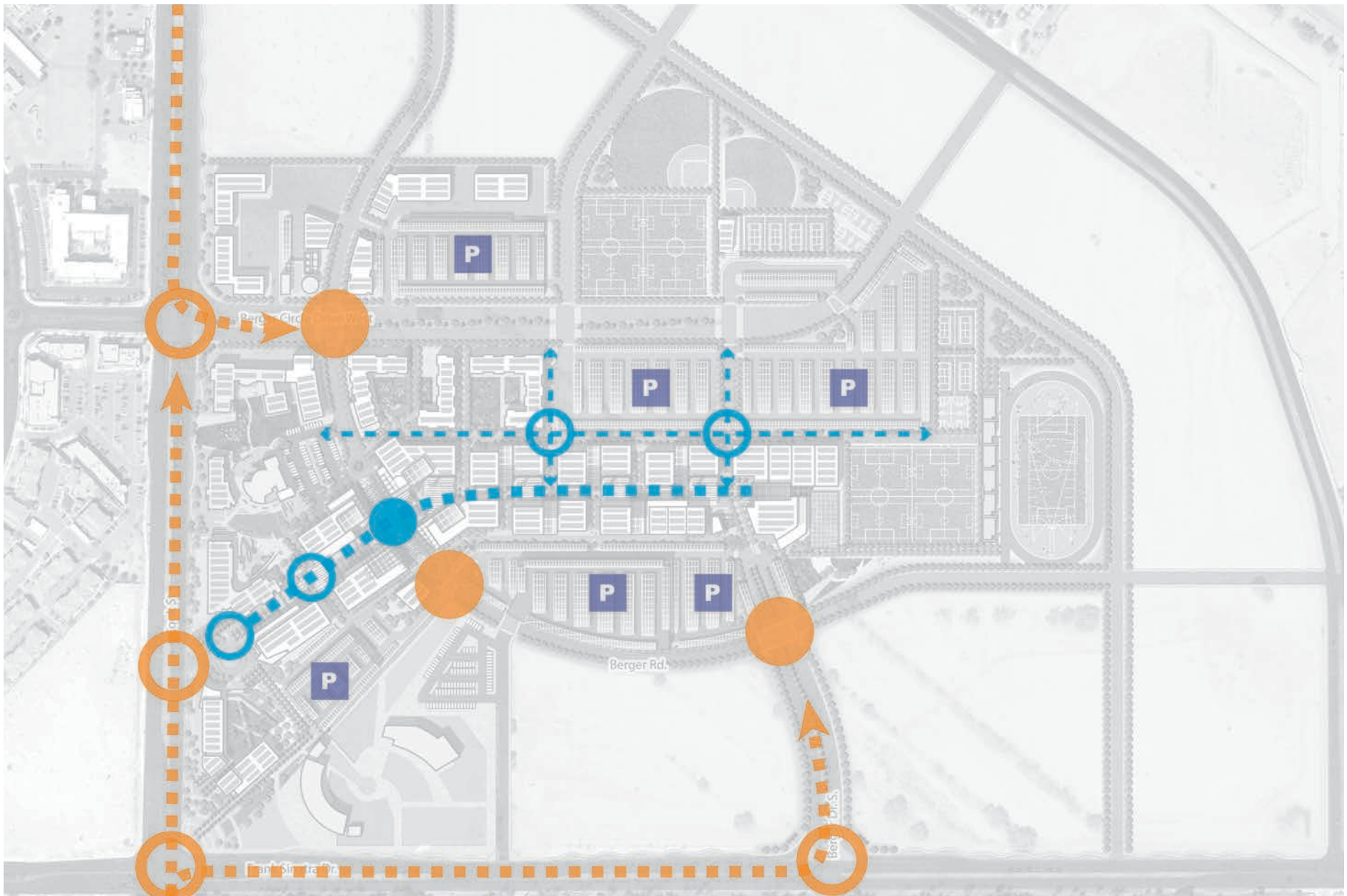
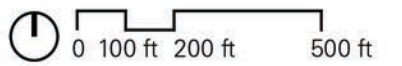
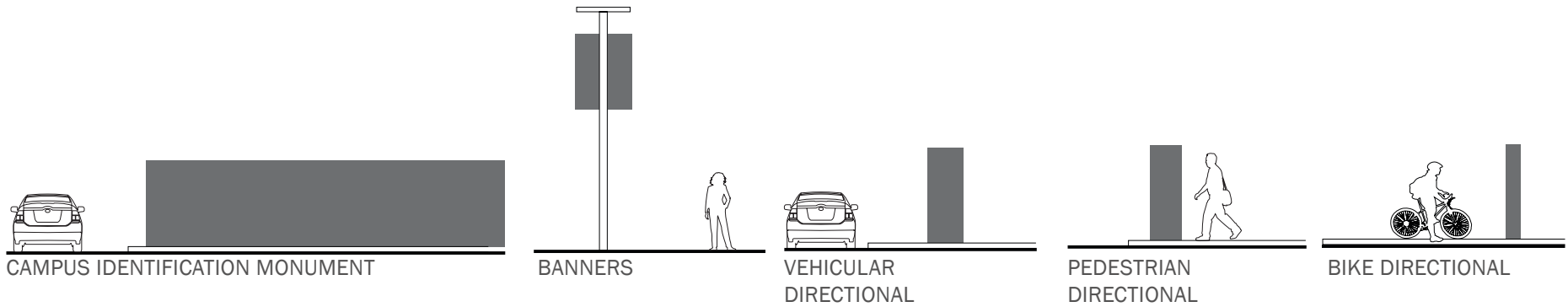


FIGURE 9-1: SIGN TYPES RECOMMENDATION



9.5 RECOMMENDATIONS FOR INTEGRATED WAYFINDING



EXAMPLE OF SIGN TYPES



Establishes sense-of-arrival.



Defines campus perimeter and events



Vehicular directional with nearby destinations



Pedestrian orientation



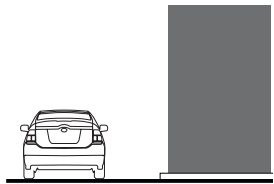
Bike oriented signs along bike path

PLACEMAKING ELEMENTS

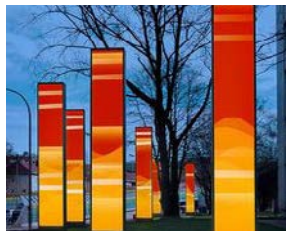
NAVIGATIONAL TOOLS

STATIC SIGN TYPES

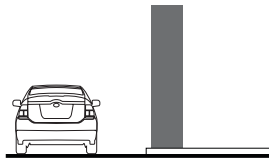
An integrated wayfinding program encompasses static sign elements as well as technology driven tools that work together to create a seamless journey that addresses user needs at every stage of navigation.



CAMPUS LANDMARK



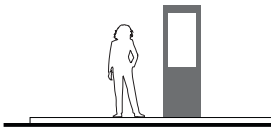
Technology integrated into monument



Parking LOT ID



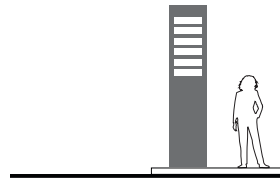
Real-time info with mobile device



PEDESTRIAN DIRECTORY



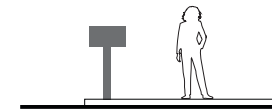
Customized navigational kiosk and mobile app



TRANSIT INFO KIOSK



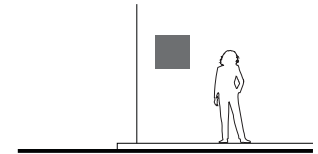
Transit on-route arrival and departure time



INTERPRETIVE SIGNS



QR code access to real-time sustainability data and information



DONOR RECOGNITION PROGRAM



Interactive donor recognition program

REAL-TIME / DIGITAL / MOBILE DEVICES

INTEGRATED TECHNOLOGY

9.6 LONG-TERM SECURITY SYSTEM

Campus safety and security is a top priority for the Palm Desert Campus. California State Law and the Cal State University system will set policies that will help guide the campus.

INTRODUCTION

The California State University San Bernardino Palm Desert campus (PDC) Master Plan for security technology presented herein evaluates the key elements for long-term upgrade and implementation. This evaluation and recommendation covers video surveillance, access control, intrusion detection and mass notification as well as the related supporting infrastructure. Technologies that will develop over these next few decades have been considered but are unknown. Supporting infrastructure consists of information technology (IT), lighting and power. Campus Police, standard operating procedures and maintenance/support are addressed as well.

Information presented establishes a foundation for Administrators to plan for expansion and/or replacement of existing electronic security systems with the goal of enhancing the safety of University assets such as persons and property, from existing and perceived threats. An agitated security climate among education

facilities requires evaluating and addressing security issues. To note, the funding for both construction and support for security systems are currently divided between State (e.g. Administrative, Educational) and Non-State (e.g. Parking) facilities – this must be evaluated for the Master Plan project’s budgeting.

TECHNOLOGY GOALS, OBJECTIVES, RISKS, THREATS + RECOMMENDATION SUMMARY

The key goal for the University is to provide a safe and secure educational environment. Modern/future security systems can provide deterrence and situation awareness for Campus Police and first responders to quickly assess a situation and plan accordingly to end the event as quickly as possible with the least amount of impact to campus persons and facilities.

To satisfy this goal, the following objectives and related recommendations have been established. It is very safe to assume that in 25-30 years from now, all electronic security systems will be seamlessly integrated as a single system. As the University grows; video surveillance, access control, mass notification, emergency phones, and other yet to exist systems shall be incorporated into new construction/renovation projects by building off any preexisting platform and established standards. To note, video surveillance does not provide physical protection, and currently is largely used for after-the-fact forensic investigation. In the future, video surveillance and other related systems likely will have highly effective live interaction with incorporated audio to address situations in real time. This is currently utilized sparingly around the world, e.g. London. Access control does provide a level of physical protection and can meet a key objective for remote lock-down of door for all educational spaces, building main entrances/exits, gates/barriers, etc. Other physical

protection via access control includes restricted access for high risk spaces such as cash handling locations, protected/sensitive records storage, IT rooms, and hazardous materials storage. Audit reporting identifies who accessed which spaces and when. Emergency phones are to be installed throughout campus with new projects for real-time communication with Campus Police. The University currently has multiple systems providing mass notification to faculty/staff/students. Master Plan construction projects unlikely will require modification from the then existing software-based mass notification system which provides real-time information to subscribers via text message and email. Although new projects will need to incorporate internal and external speakers of which broadcast live or pre-recorded mass notification information.

It is likely that the threats that exist today will remain throughout the Master Plan implementation. These risks include terrorism (e.g. bombing), active shooter(s), violence between students/faculty/staff, theft and vandalism. Security measures or products, regardless of how involved or sophisticated they will be cannot ensure protection against every possible threat. A key intent of any security system is to discourage criminals from perpetrating an incident and also to increase the owner’s overall situational awareness.

Risks are categorized as external and internal. External risks consists of persons or items entering the campus and includes terrorism, active shooter, emotionally disturbed person(s), domestic disputes that spill into the school, local gangs/rivalries, criminal activity not by faculty/staff/students and mail/packages. Internal risks consist of persons on campus and includes student-on-teacher and student-on-student violence, theft and vandalism. These risks can be reduced, but never eliminated, through carefully planned, implemented and operated security systems and protocols.

9.7 LONG-TERM SECURITY MASTER PLAN

All facilities identified within the Palm Desert Campus Master plan will have an impact on safety and security on campus. These will typically be addressed during the Design Development phase.

CAMPUS, BUILDINGS + FACILITIES

The PDC Master Plan consists of significant land expansion with new buildings/facilities and parking lots. Notable additions include a Student Union, Childcare Center and three parking structures. These types of Master Plan-related projects are addressed here. Any other existing spaces are assumed have / will have the appropriate electronic security implemented prior to the Master Plan projects.

These locations can differ in terms of security technology implementation and have unique requirements in the following categories.

- Perimeter / Neighboring Properties
- Vehicle Access / Parking
- Pedestrian Walkways / Exterior Gathering Spaces
- Educational Spaces (classrooms/labs)

- Student Housing
- Administrative Spaces
- Campus Police
- High Risk Areas

PERIMETER / NEIGHBORING PROPERTIES

PDC is located in the highly suburbanized City of Palm Desert. The campus has a significant buffer zone (desert land) to the South and East. All surrounding land is owned by the University and will be utilized for campus expansion as part of the Master Plan. The perimeter, as typical in higher education, provides relative ease of access during day and night.

VEHICLE ACCESS / PARKING

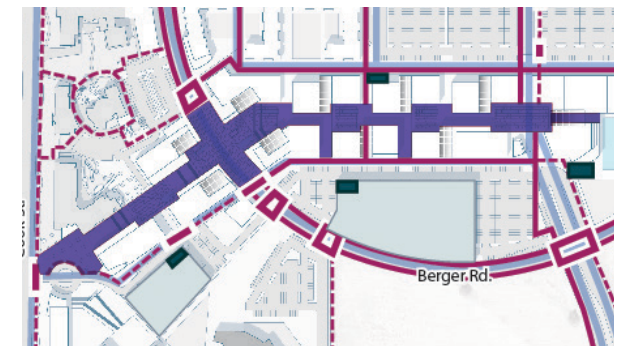
Additional driveways and parking lots will be constructed and allow for unrestricted access from public roads. Master Plan parking improvement projects must incorporate security systems to match the then current security standards. It is recommended that all vehicle access choke points have multiple dedicated cameras to capture license plates, the driver, and wide angle view of vehicles entering and exiting. Cameras need to be placed at lower than usual heights. Lighting is a critical factor due to headlights and brake lights as well as to clearly capture the plate during low light hours. The camera feature 'wide dynamic range' should be selected to increase the visibility.

Parking lots modified and constructed during the Master Plan effort also will incorporate security standards. Based upon input from University staff and implementations at other similar sites, this includes full coverage of the lots from cameras mounted high on poles. Since parking lots are currently the largest area of concern for Campus Police due to vehicle break-ins,

cameras are also recommended at lower heights on poles throughout the lot to view rows. Surveillance provides critical information for accidents and possible related injuries. Access control would be needed for any physical gates, e.g. facility yards. Loudspeakers can be provided via emergency phones on building exterior walls and in interior ceilings/walls.

PEDESTRIAN WALKWAYS / EXTERIOR GATHERING AREAS

Pedestrian walkways will require video surveillance and emergency phones. A key factor here is to have full overall surveillance coverage for situational awareness as well as cameras to cover greater detail pedestrian choke points and gathering areas. The Master Plan includes 'Palm Canyon Walk' (see figure below) which is a central pedestrian plaza. Refer to applicable sections below for related technical information.



LEGEND

- Major Pedestrian Route
- - - Pedestrian Route
- Crosswalks
- Bike Route
- Pedestrian Plaza
- Bike Facilities
- Parking Structure

EDUCATIONAL SPACES

Classrooms, laboratories, lecture halls, library, and other areas supporting education are the key spaces that require security systems. Currently, cameras are not installed in classrooms nor in areas considered personal workspaces, e.g. faculty offices. In the future this may change if violent acts continue on an upward trend and the privacy and union concerns are trumped by student/faculty/staff safety. Access control, mass notification, and emergency phones are to be included in new projects – refer to applicable sections below for related technical information.

STUDENT HOUSING

As with educational spaces, student housing has similar privacy requirements for video surveillance. Associated vehicle entrances, parking lots and pedestrian walkways are to consider the recommendations presented above. Access control, mass notification and emergency phones are to be included in new projects. Staff has advised that student housing will be constructed starting in the relatively near future, and is also identified in the Master Plan to establish a more 24/7 campus environment. Refer to applicable sections below for related technical information.

ADMINISTRATIVE SPACES

As with educational spaces, administrative spaces impacted by the Master Plan are to have security systems. Today, cameras are not installed in areas considered personal workspaces, e.g. cubicle areas. See above regarding how this may change in the future. Access control, mass notification and emergency phones are to be included in new projects. The Master Plan includes new athletic and student recreation facilities of which can require unique security design such as camera coverage of spectator areas harsh lighting, and long distance from telecom rooms. Refer to applicable sections below for related technical information.

CAMPUS POLICE

Currently PDC does not have a dedicated Police presence. This will change in the near future. The Master Plan's Police and Transportation Office will require additional levels of security. A dedicated work area shall be established for operation of the security systems. This 'surveillance room' shall have a combination of large and small monitors. Refer to applicable sections below for related technical information.

HIGH RISK AREAS

High risk areas are to be identified in Master Plan projects for specific camera coverage and access control. These systems will help to address theft and vandalism. High risk areas common at higher education facilities include:

- Plant & Facilities/Maintenance
- Cash registers
- Free Speech designated spaces
- Bicycle racks
- Recurring vandalism spots (e.g. graffiti)
- Public events spaces
- Vending machines
- 'Pay-for-print' and 'pay-for-parking' stations



INFORMATION TECHNOLOGY INFRASTRUCTURE

Although PDC does not currently have a full data center, the Master Plan projects shall implement a main distribution frame (MDF) connecting to each building distribution frame (BDF) with fiber optic cable. The current bandwidth to each building is 1 megabit per second (Mb/sec). This results in a significant impact where implementation of high resolution cameras will be limited. At the time of the Master Plan projects, the campus network will likely have been significantly upgraded to support what will be a much greater demand for local area network (LAN) and wide area network (WAN) bandwidth i.e. internet connected devices/systems. For exterior areas, network connectivity will also be required for security devices.

The new buildings must match the then current IT infrastructure standard for cabling throughout the structure. For horizontal cabling, generally conduit is not necessary above drop ceiling panels but plenum-rated cable is required. In the near future, fiber optic cable combined with low voltage power cabling will be adopted at large campuses. Devices would accept this connectivity. Fiber eliminates the current 100-meter distance limitation for copper cabling.

Currently wireless transmission for security devices is only recommended when hardwiring is impractical or too costly. In the future this will likely be very different and wireless high capacity bandwidth should be evaluated for use throughout the new projects. There are current efforts and products in wireless low voltage power which may be a reality at this time in the future.

LIGHTING

A very critical design element for Master Plan projects is to coordinate the lighting design with the video surveillance design. On poles, cameras should be mounted below existing lights to avoid a 'blooming' effect on the viewable image. Properly dispersed and even exterior white lighting is the best solution for optimum night viewing. The camera IR feature can enhance any white light that is captured. In the coming years the range and clarity from built-in IR illuminators will greatly increase. Where even greater IR light is needed, external IR source devices can be installed above/below applicable cameras as part of Master Plan projects.

POWER

All information technology network equipment currently is on back-up power via uninterruptible power supplies (UPS), although PDC currently does not have emergency generators, i.e. security systems rendered useless during any extended power outage. The Master Plan must provide generator(s) to support the information technology network – in particular the MDF. Battery backup power is needed in all other telecom rooms for all switch equipment and power over Ethernet (PoE) devices in the supported building. This ensures the system remains online during short power outages as well as reduces the likelihood of corrupted databases or similar that can occur when servers are not properly powered down. It is recommended that each UPS be sized during design to provide a minimum of 2-hours duration to power all supported security equipment. These battery systems must be UL® listed and match current University IT standards.

It is recommended that the Police and Transportation Office to also have a dedicated generator.

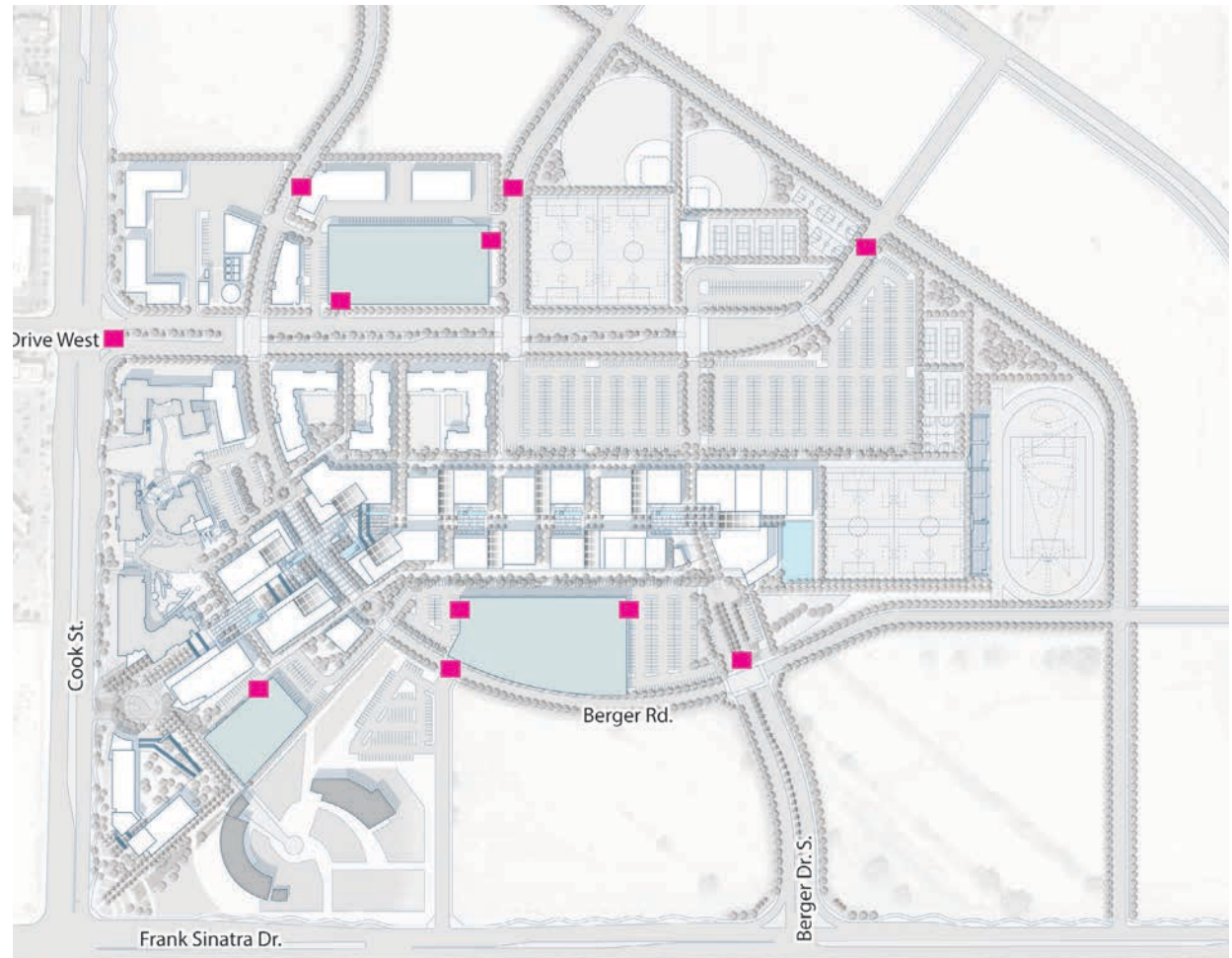
9.8 LONG-TERM ELECTRONIC SECURITY SYSTEMS

Augmenting campus security through the judicious use of technology will help ensure that the campus uses its resources effectively.

VIDEO SURVEILLANCE

PDC currently has outdated analog cameras, although will soon be integrated with SBC's modern IP-based video surveillance platform by on SSI. PDC currently has 50 cameras – interior and exterior. The number will likely have increased by the time of the Master Plan projects. Video is to be monitored from the Police and Transportation Office as well as from remote locations via mobile phone and the web-based interface. All cameras are managed by the Police, although they do not provide maintenance (e.g. repair/replace). Campus Police have identified the desire to clearly capture faces and license plates with high resolution cameras – see figures below for key vehicle entrance/exit locations to be considered for this feature.

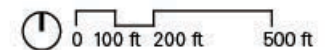
PDC should follow the San Bernardino Campus (SBC) security standard for video retention (currently 120 days with 24/7 recording). To note, this is considered very high and could be value engineered to save significantly on storage costs, i.e. many similar locations keep video



LEGEND

■ Key Vehicle Entrance / Exit Locations

FIGURE 9-2: KEY VEHICLE ENTRANCE AND EXIT LOCATIONS



for 30 days of which recording is only triggered by motion in the scene. PDC's current analog system does not permit significant retention time for video. Cameras consist of pan-tilt-zoom (PTZ) and fixed view. In the future there will be more powerful cameras available of which will be evaluated for selection and installation in Master Plan projects.

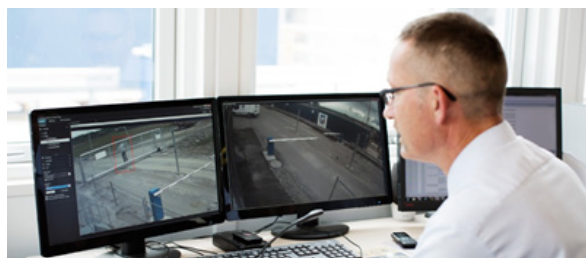
Camera placement during the design effort includes selecting the camera field-of-view from a preferred mounting location (building or pole), selecting the mount type and determining conduit penetration to interior of building with goal to have no exposed conduit from the camera to the applicable telecom room/cabinet. For interior camera placement, areas to cover include main doorways, 1st floor stairwell landings, 1st floor elevator landings, main hallways and gathering areas.

Environmental conditions must be considered in the selection of cameras and supporting exterior infrastructure (e.g. enclosures). Temperatures on campus range from below freezing to 115-degrees F. Maximum wind speed is nearly 60 miles per hour. Due to the surrounding dune formations, 'blowsands' is frequently across the campus area. To address these issues, the following is to be followed:

- Cameras to have a built in blower (fan) to cool the inside of the unit, which creates its own heat thus temperatures could exceed the operating parameters of the camera
- Cameras to be environmentally sealed (IP66 rated) to prevent sand/dust from penetrating the housing and damaging the electronics

- Camera poles are to be designed for minimum sway from heavy wind to prevent higher storage requirements and negative impacts to the field-of-view. The video compression is based upon pixel changes across frames, thus a moving camera will result in larger image size since less can be compressed for transport to the recorder.

Video analytics will play a large role as security systems mature over the coming years. This feature uses algorithms that 'analyze' the video for particular behaviors / actions. The most common is digital fence line crossing. Events trigger real-time alerts to the operator and when properly designed and utilized is a very powerful tool for law enforcement. See image below including 'red box' around a person attempting to cross a fence line.



ACCESS CONTROL

Currently all doors on campus are locked with traditional keys (Note, at a labor cost of \$6,000 per month). Campus Police have requested that the Master Plan consider upgrading, at minimum, classroom and laboratory doors across campus (assuming this has not already occurred prior to the Master Plan projects). Here, the recommendation is to retrofit doors with a wireless all-in-one card reader and door lever product – see photo below for example. This is the most cost effective design eliminating the need to wire each door for the data and power. PDC doors are mostly metal which presents challenges for cutting into the door for installation of the access control hardware. In some cases doors would need to be replaced to accommodate this hardware. These products satisfy code requirements for door hardware that can be manually locked from the inside, but not require any additional actions to open the door to exit.



The new projects shall follow the security standards for access control which would have again, at minimum, networked access control for all classroom and laboratory doors. A key desired feature is the ability to remotely lock these doors during an emergency event. It is recommended that other doors be outfitted as well

including telecom rooms, high value and hazardous storage, senior administrator offices and building exterior doorways. Less critical doors without access control locks should be evaluated for door contacts such that Campus Police is notified if they are left open or forced open. These facilities should deploy the modern equivalent of today's wall-mounted, wired card reader solution which provides significant flexibility to connect other downstream input and output devices such as audible sirens, strobe lights and automatic camera zoom. Doors will require conduit for data and power connections.

It is also recommended to deploy door contacts at new automated external defibrillator (AED) stations to provide a notification to Campus Police that a health-related emergency is occurring and can dispatch an ambulance.

Access control greatly simplifies physical key management which is a current challenge, for example, with the wide range of faculty and staff who need access to multiple classrooms.

The new Police and Transportation Office will require an extra level of access control. All exterior doors should be outfitted as well as gun storage and other storage spaces, e.g. radios, laptops, ticketing devices, cell phones, etc. Also the public counter shall be separated from the rest of the station by an access controlled doorway.

Access control cards can double as University ID badges. At time of Master Plan projects, it is likely that access control cards will have been merged with the Coyote One card.

INTRUSION DETECTION

PDC currently has intrusion detection (burglar alarm). The systems consists mostly of traditional keypads for arming/disarming, panic buttons (e.g. cash handling locations) and motion detectors.

Master Plan projects shall include installation of intrusion detection following the then current security standards. It is recommended to have hardware to alert the Police for the following:

- Doors and windows opened after hours (including roof access panels)
- Motion in main corridors
- Glass breaking
- Duress buttons (stationary and mobile)

Mobile phones or similar will be more and more widely used to arm/disarm systems as well as perform other functions for securing facilities during off hours including video pushed to Campus Police of the area where the alarm was triggered.

MASS NOTIFICATION

PDC currently uses multiple systems for email/SMS/voice mass notification (same systems at SBC). There are no existing campus-wide speakers for audible mass notification.

Mass notification is a combination of tools including email, text messaging, phone app messaging and broadcast voice messaging via loud speakers. Considering the proliferation of mobile phones being carried by persons on campus, mass communication is currently in use by the District such that potential lifesaving information can be quickly and easily sent to all who have subscribed to the database.

A few of the key vendors include Everbridge, RAVE, MIR and Cisco InformaCast. For outdoors, the speaker can be built into the emergency phone(s) and stand-alone speakers for areas not in range of an emergency phone. For indoors, new speakers should be distributed appropriately, e.g. in hallways. It is common now that phones in classrooms double as indoor loudspeakers covering that interior space.

EMERGENCY PHONES

Master Plan projects are to incorporate network-based emergency phones on buildings and in exterior spaces and interior hallways. Phones overall should be distributed with the intent for at least 1 to be visible from anywhere on campus (not including interior). The phones should be equipped with a blue light for visibility and have the capability to broadcast messages from the mass notification software via built-in speaker, and automatic dial to the Campus Police. Phones can be hard-wired or wireless – solar power is an option but is not recommended due to the large panel size needed and can be less reliable for emergency needs. For newly constructed or renovated buildings emergency phones should be located within line of site each entrance.

These phones will identify which unit the person is calling from, provide a camera view of the caller and allow for easy viewing of adjacent cameras to see the overall area. Current manufacturers include, Commend, Code Blue – and Talk-A-Phone which is currently in use at the University. A wide range of products are available – in particular towers and wall-mounted emergency phones. Key attributes recommended are 2-way hands free communication, ADA compliance, illuminated faceplate, call status LED light and self-identification of location to the operator, e.g. victim may be unable to describe where they are calling from.



Tower



Wall Mount

9.9 LONG-TERM OPERATIONS AND MAINTENANCE

Safety and Security will remain on ongoing priority for the Palm Desert Campus. Periodic reviews and updates will help ensure the campus maintains best practices.

STANDARD OPERATING PROCEDURES

During Master Plan implementation, the Universities then current standard operating procedures (SOP) shall be updated by internal staff for any new systems or areas that impact the usage of the systems by the operator. This will also be coordinated with the Emergency Operations Plan. The SOP would include detailed policies and procedures, for example, step-by-step instructions to the operator during common emergency events, list of who has access to view recorded video and for what purposes can that video archive be used.

The SOP should be reviewed with the relevant designer(s) prior to the design of electronic security improvements to ensure the final systems are in line with Campus Police current procedures.

MAINTENANCE + SUPPORT

PDC shall update the then likely existing maintenance program (and/or 3rd party contract) for maintenance of the new security systems. Largely this will consist of camera lens cleaning, annual inspection of device mounts and re-positioning of devices of which bolts have loosened and repair/replacement of data connections. Cameras will be repaired/replaced as needed using on-site spares to ensure minimal downtime for that location. Support is to be procured via contractor from the existing video management system vendor as part of the system installation to include software updates for 3 years minimum and full service remote support for technical and operator questions.

This program will also include identification and remediation of landscape that has grown and impacts the view of security cameras and any wireless point-to-point (line of sight) links. Also to be included is identification of applicable malfunctioning or dead light bulbs for replacement.

No significant maintenance is required for access control, mass notification and emergency phones other than cleaning and replacing malfunctioning devices.

Other areas to be maintained, based upon University IT protocols include replacement of UPS batteries and housekeeping of cable management in racks.

Spare parts should be provided by the Contractor(s). Recommended a minimum of one (1) of each camera type although prorated for additional spares for camera models which have been installed in greater quantities.

9.10 SHORT-TERM SECURITY SYSTEMS INTRODUCTION

The trend toward increased use of electronic systems such as video, access control systems, and emergency phones will continue. These systems form the base of a resilient security plan.

SCOPE, LONG-TERM VS. SHORT-TERM REPORTS

The California State University San Bernardino, Palm Desert campus (PDC) 'short-term' Master Plan for security technology presented herein evaluates the key systems and provides recommendations for upgrade and implementation. Systems covered are video surveillance, access control, intrusion detection and mass notification. Supporting infrastructure for these systems are vetted as well, consisting of information technology (IT), lighting and power. Campus Police, standard operating procedures and maintenance/support are evaluated as well.

The information presented establishes a foundation for Administrators to plan for expansion and/or replacement of existing electronic security systems with the goal of enhancing the safety of University assets such as persons and property, from existing and perceived threats. To note, the funding for both

construction and support for security systems are currently divided between State (e.g. Administrative, Educational) and Non-State (e.g. Parking, Student Union, Residential Housing) facilities; this must be considered during the budget effort. A rough order of magnitude cost estimate has been prepared – see Exhibit O2.

9.11 EXISTING CONDITIONS + RECOMMENDATIONS

The Palm Desert Campus communications infrastructure has some capacity for additional security technology. As the campus expands, upgrades may be required.

ELECTRICAL AND INFORMATION TECHNOLOGY INFRASTRUCTURE

Backbone, Data Center and Cable Pathways

At PDC each of the BDFs at the three main buildings (RG, HS, IW) are connected to the MDF with 1Gb/sec fiber optic cable. This underground infrastructure does have some spare capacity for new cable/conduits. From the MDF, connectivity to San Bernardino campus (SBC) is via Cenic over the Internet. In order to permit robust access for UPD to view PDC cameras the Cenic connection will require an upgrade – recommendation 10Gb/sec (not included in Cost Estimate). Inter-building cable pathways are generally in good condition with spare capacity such that camera and access control cabling can be installed without major challenges.

Telecom Rooms

Per the CSUSB Telecommunications Room Assessment project (Feb. 2014 by P2S), telecom rooms were determined to meet CSU TIP standards and are generally

in good condition. Key concerns identified were physical space and equipment capacity being reached, e.g. cabling. See report for further detailed information.

At PDC, per CSUSB Facilities Services Building Standards, all telecom closets are on emergency power. This consists of uninterruptible power supplies (UPS). All network equipment is on dedicated power circuits. The backup power is for all switch equipment and power over Ethernet (PoE) devices in the supported building (as well as all other network hardware). Security systems on UPS will be out of operation during any extended power outage – batteries are currently sized for 10-40 minute duration. In particular to support new security PoE devices, it is recommended that applicable UPS units be increased in battery capacity to, at a minimum, maintain the 10-40 minute duration. Although, the University should weigh the risks/costs for longer duration (e.g. 1 hour) to power all supported security equipment during an extended/intentional power outage. These battery systems must be UL listed and match current University IT standards.

PDC does not have emergency generators to cover IT infrastructure. It is recommended that the MDF network hardware associated with security systems be backed up with a new generator (not included in Cost Estimate).

Bandwidth / Network

PDC's backbone consists of 1Gb/sec connectivity to SBC via 1Gb/sec Cenic Internet gateway. This is a bottleneck for video surveillance and would significantly impact non-security network traffic. The campus MDF in the Utility Building has 1Gb/sec connections to BDFs in HS, IW and RG. The University standard network switch is Alcatel Lucent #OS6450. PDC links with SBC through the Cenic Internet connection for connectivity to various University systems.

Video Storage

PDC cameras record locally on outdated digital video recorders (DVR) and only retain approximately 7 days of recordings. UPD has collected vendor quotes for networked storage at PDC, although the prices range from \$30-100,000 so are being further evaluated – see Video Surveillance section below regarding encoding PDC analog signals for OnSSI integration. Once PDC cameras are integrated to OnSSI, the recommendations provided in the SBC Security Master Plan (Short Term) would be applicable.

University Police Facilities

Currently PDC does not have a dedicated work space for operating the security systems, e.g. Surveillance Room (SVR) at SBC. Most PDC cameras can be viewed at SBC over the Cenic Internet connection. In the long term it is recommended that a SVR be established at PDC. PDC does have a viewing station at the front desk in RG Building where local cameras only can be viewed (not SBC cameras).

INTEGRATION

Due to PDC currently only having cameras and emergency phones there is not much opportunity for integration. Once the recommended systems herein are implemented they can be linked for interoperability. An example of this is a live video pop-up window showing the location where a person has triggered an alarm in the access control system. University Police have stated that integration amongst disparate systems is of interest – thus is recommended for further consideration in the short term. See Video Surveillance and Access Control sections below for further integration information.

A separate software system can be implemented that sits over all systems and integrates them into a single user interface that provides true situational awareness.

This is known as Physical Security Information Management (PSIM). For example, Situator by Qognify – from their website

“[PSIM] makes sense of all the data coming into your control room. It brings greater awareness of what is happening and it does so sooner. That means you can respond faster and more effectively. You’ll know who to send where, how many of them, and make sure they have the right equipment.”

PSIM collects and presents data from sources such as video surveillance, access control, mass notification, loudspeakers, social media, GIS map data and local news. Operators can be clearly guided on steps to take for common emergency events and have clear information to pass on to first responders. Situator also has a powerful feature where a person can be ‘tagged’ from one camera view and then other designated cameras’ footage is scanned to locate that person and track their movement across cameras. University Police have identified PSIM as a platform that is of interest, but not in the short term. Once new/expanded systems are implemented and users are very comfortable with the operation, PSIM can be further investigated for deployment. To note, the true value of PSIM requires a 24/7 dedicated operator at the security command center.

VIDEO SURVEILLANCE

Video Management System (VMS)

For PDC, this section will assume the integration with OnSSI at SBC will occur as planned. OnSSI's Ocularis Enterprise VMS is version 5.2 with ‘Stay Current’ licensing (ends September 2016). To note, version 5.3 will be released October 2016. It permits restricted web-based access such that any authorized user with LAN access can use the system. At SBC UPD is

utilizing the map function where existing cameras are shown on a campus map and building floor plans and video can be pulled up via mouse clicks. The video is monitored at the SVR as well as from remote locations via mobile phones and the web-based interface. All cameras are managed by Campus Police, although they do not handle maintenance (e.g. repair/replace). The cameras are documented by UPD in a spreadsheet. It is recommended that UPD remain the end-user of all security systems where IT and Facilities provide applicable support. This may require documentation to clearly identify for each system the owner (who provided funding), users, maintenance responsibility, and technology support. The goal is for UPD, as the end-user, to have overall responsibility for the operation of the systems and to request support services as needed from the applicable department, IT or Facilities.

It is recommended that the University remain with OnSSI based upon staff familiarity with its use and the strong reputation and capabilities of the platform. OnSSI is a software company, in that they do not manufacture cameras nor other security hardware, and as such is hardware agnostic. They have focused on open architecture and can integrate with nearly all of the 3rd party systems/hardware including access control, emergency phones and license plate recognition software. Also, UPD advised of their satisfaction with this VMS.

OnSSI's VideoWall add-on feature is recommended (\$50 per camera) to provide powerful collaboration with off-site operators. Their included Smart Motion Detection feature is recommended where, for example, quick crowd formations can trigger a real time alert. Of great benefit to the University is the easy installation/replacement of cameras to the VMS – this is a benefit whether Facilities is installing cameras or contractors where costs should be accordingly lower. The efficient video storage process can increase the amount of

data written to drives and reduce the quantity of drives needed. To note, OnSSI frequently offers up to 30% discounts for education clients. Continuing the existing StayCurrent license is highly recommended such that software updates can be downloaded and installed quickly and easily. One limitation to note with Ocularis is that it currently does not support very high resolution cameras, e.g. 40MP. Such cameras are not recommended for the University at this time, thus this limitation is not applicable – also this will be addressed by OnSSI in future software releases.

Expanded use of the OnSSI mobile app is desired by UPD and is highly recommended. The app is powerful, providing full screen viewing (see Figure below) of up to 16 camera streams on Apple and Android devices, even for users with older 3G smartphones. Users can pull recorded video as well as well as digitally zoom into the view with the full high-definition resolution and frame

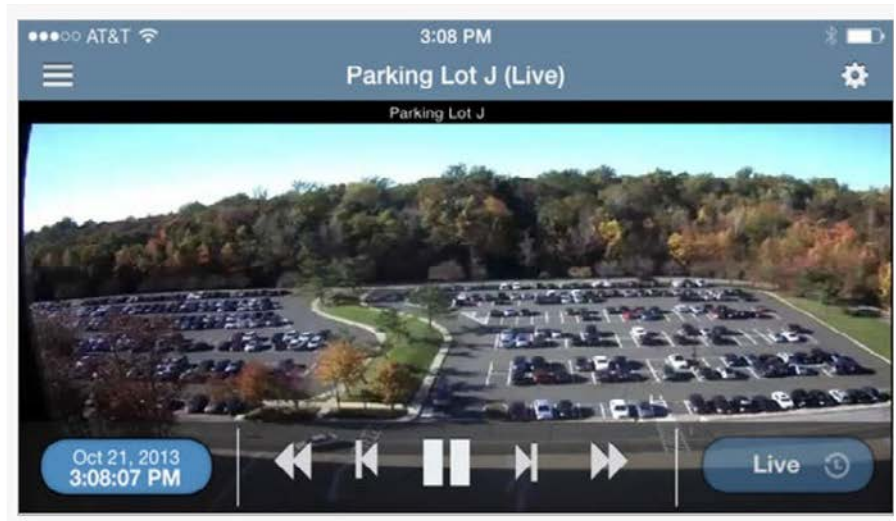
rate. To note, heavy mobile/web-based use typically requires a dedicated server.

For PDC cameras, currently some Police officers/staff have access to video feeds on their mobile devices. This has been identified as a desired feature to be rolled-out to a greater number of personal. To note, heavy mobile/web-based use typically requires a dedicated server.

Cameras

PDC currently has 48 analog and 2 IP-based cameras of which are not yet integrated with SBC's OnSSI VMS. See Exhibit 01 for existing and proposed exterior cameras layout. Encoders have been procured to permit integration of existing PDC analog cameras with IP-based OnSSI. This is highly recommended and funding priority should be made to ensure UPD has both campuses on the same VMS. The leased recreation center across Cook Street has its own camera system of which can be viewed by University Police.

Ocularis Mobile By On-Net Surveillance Systems, Inc.



180-degree camera field-of-view in an app interface

It is recommended in the coming years to replace all existing analog cameras with IP cameras. The existing PTZ cameras should be replaced with panoramic fixed-view cameras, as PTZs are most beneficial for real-time use, i.e. the pan-tilt-zoom functionality provides no benefit with forensic review of video. Cameras should be between 3 and 6 mega pixels (which defines the resolution, i.e. 1080p = 2.1MP) and include internal IR illuminators. External IR illuminators should be implemented for large fields-of-view are to support specialty cameras that do not include internal IR illuminators. As with SBC, it is recommended that new cameras be from HikVision. Familiarity with products and common spares are benefits. Different from SBC, cameras deployed at PDC must consider the very high temperatures, winds and blowsands. Exterior cameras are to include a built-in blower and be IP66-rated (i.e. complete protection from dust/sand) for environmental protection. Other than parking lots and vehicle entrances/exits, camera locations and quantity at PDC is sufficient with views of most exterior spaces and many main doorways at buildings. A particular location identified by staff as a need is the public intersection at Cook Street and Berger Circle Drive. New cameras should be installed after analyzing the specific fields-of-view for major blind spots and to add face and license plate capture.

University Police have identified the ability to clearly capture faces and license plates with high resolution cameras as a critical need. This is recommended, as is a common desire at similar higher education locations. This is recommended at choke points for pedestrian travel and vehicle entrances – which allows for use of 2-6MP cameras instead of 10+MP. License plate recognition software can be deployed and the plate numbers then scanned against existing law enforcement databases (e.g. outstanding warrants). UPD has expressed interest in this feature, although the impact to existing staff workload must be considered for processing of alarms.

Exterior camera placement during the design effort includes selecting the camera field-of-view from a preferred mounting location (building or pole), selecting the mount type and determining conduit penetration to interior of building. A goal is to have minimal exposed conduit from the camera to the applicable telecom room/cabinet. It is best to first identify the optimum camera location for the intended field-of-view, then determine the closest spot where conduit can penetrate into an above ceiling space or interior area where exposed conduit can be installed near the ceiling. Cabling needs to eventually reach an existing cable tray/conduit that connects to the nearest IDF.

Beyond those already highlighted above, it is recommended that cameras be added to provide (increased) coverage of the following spaces, based upon similar higher education systems/needs:

- Telecom rooms, interior, fixed lens
- Main corridors/intersections, interior, multi-lens (see down each corridor)
- Stairwells and elevator 1st floor landings, interior/ exterior
- Facility yards, exterior
- Campus Evacuation and Emergency Triage Sites
- Gates, exterior
- Building main exterior doorways

Camera types recommended include the following:

Camera Type/Description	Locations	Notes
180-degree panoramic	wide areas with minimal obstructions (e.g. trees)	covers same area as 3-6 fixed cameras, saves significant wiring costs (see Figures below)
Thermal	few key areas where any access should be flagged, e.g. 4am on football field	recommended in future after video analytics have been successfully deployed
Pan-tilt-zoom (PTZ)	wide areas with minimal obstructions (e.g. trees)	ability to move camera FOV around and zoom in, best for use in real-time by operator
Multi-lens	corners or hallways where different FOVs are desired, but not multiple installed cameras	unit has 2 – 4 cameras built into a single housing (see Figure below)
Fixed, wide FOV	wide areas where camera location is near the desired field-of-view	
Fixed, narrow FOV	narrow areas where camera location is near the desired field-of-view	
Box, long lens	long range view where camera location is very far from desired field-of-view	internal IR not available

TABLE 9-3: CAMERA TYPES RECOMMENDED



180-degree camera Field of View

24-camera cover this public area with about 8,000,000 pixels



180-degree camera Field of View Comparison

8 panoramic cameras deliver better coverage with 96,000,000 pixels



Example of a multi-lens panoramic camera

Signage

The University currently has signage at PDC to inform persons that video surveillance is in progress. See sign below:



It is recommended that this protocol continue and that new projects provide additional signage. Also, the University should perform a survey of the existing sign locations to best identify additional locations.

Although not a legal requirement, it is common practice to inform persons that they are being recorded.

Poles

Existing light poles are a desirable location for installation of security cameras. At PDC there are sufficiently dispersed poles for use. A key consideration is available 120-volt power at the light poles. University staff advised that all light poles have 24/7 power (not on timers). In many cases, the data cable distance will exceed the 328-foot limitation for copper Ethernet. Fiber is recommended, which requires an underground telecom pathway from the pole to a telecom room of which must have a compatible network switch. At the pole, 120-volt power is required for the fiber media converter and camera power supply. For poles without

power, another option is to deploy Ethernet/PoE extenders of which can extend data and low voltage power by hundreds of feet. As camera coverage is added, existing poles should be used based upon the location, clear lines of sight and available conduit space for cabling.

Vehicle Access and Parking

At PDC, currently vehicle entrances/exits do not have dedicated camera coverage. It is recommended that all vehicle access points have a camera for license plate recognition (LPR). The overall access point should have a nearby camera for a wide view. LPR cameras need to be placed at lower than usual heights to best capture the plate characters. Harsh lighting conditions must be accounted for from headlights and brake lights as well as to clearly capture the plate during low light hours. The camera feature wide dynamic range should be selected to increase the visibility. To note, a special LPR camera can be selected although cost can become an issue – high reliability character capture is a complex task. Full camera coverage of the parking lots from devices mounted high on poles is recommended. Since parking lots are currently the largest area of concern for Campus Police due to vehicle theft and break-ins, cameras are also recommended at lower heights on poles throughout the lot in each row. To note, video surveillance here is for forensic analysis after the fact, providing UPD with potential evidence and details of the criminal activity. Overall, surveillance provides critical information for accidents and possible related injuries. Cameras at vehicle choke points can be used after an event to determine when someone entered/exited campus and the direction of the vehicle on the public road.

Lighting is a very critical design element. On poles, cameras should be mounted below existing lights to avoid a 'blooming' effect on the viewable image. Currently, some cameras have built-in infrared (IR)

illumination for night viewing although the IR range is limited and clarity is much lower than during daylight hours. Properly dispersed and even exterior white light is the best solution for optimum night viewing. All pole-mounted lights at both campuses are LED by Exergy Controls, of which communicate via wireless signal for head-end operation. Due to prohibitive installation and electricity costs, full coverage with white light is not practical. IR illumination can enhance any white light that is captured. Where even greater IR illumination is needed, external IR source devices can be installed co-located with the applicable camera. Products available include PoE and low voltage (greater range). See Figure below.



PoE (left) and Low Voltage IR Illuminators

Pedestrian Walkways and Exterior Gathering Areas

At PDC pedestrian walkways and exterior gathering areas have camera coverage, although not complete and with the desired resolution. The goal for these locations is to have full overall surveillance coverage for situational awareness as well as cameras to cover pedestrian choke points and gathering areas.

Educational and Administrative Spaces

Based upon privacy expectations, cameras are not installed in classrooms nor in areas considered personal workspaces, e.g. faculty offices. It is recommended that this protocol remain in force. To eliminate any complaints from occupants regarding a camera that is actually viewing an adjacent area, it is recommended to install a bullet camera such that the field-of-view is known whereas with dome cameras it is difficult to determine which direction they are aiming. See Figure below.

Residential Housing

PDC staff advised that residential housing will be constructed within the next 5 years. As with educational spaces, residential housing occupants expect privacy. Vehicle and building entrances/exits, parking, and pedestrian walkways and laundry rooms are recommended for camera coverage.

High Risk Areas

High risk areas not already presented above are to be identified for dedicated camera coverage. Camera coverage will help to address theft and vandalism. UPD advised that bike racks also are an area of concern.

Other recommended areas for camera coverage include:

- Cash registers
- Free Speech designated spaces
- Facility yard(s)
- Recurring vandalism spots (e.g. graffiti)
- Public events spaces

- Public counters
- Smoking areas (University will be 100% smoke-free by 2018)
- Theater / ticket booth
- Confidential/important document storage
- Hazardous storage (e.g. laboratories)
- AEDs
- Shuttle/Bus stops
- Large utility enclosures
- Vending machines
- Pay-for-print stations
- Parking Permit Dispensers (currently Ventek product, University transitioning to cash-only). PDC currently has one unit between Lot A and B, and a new unit is proposed for the east side of Building RG.

Video Analytics

Video analytics is currently not in use and is not recommended for implementation at this time. This feature uses algorithms to ‘analyze’ the video for particular behaviors / actions. The most commonly used are digital fence line crossing, object left behind and wrong direction of travel – these events trigger real-time alerts to the operator or others. With appropriate design, product selection and operator involvement video analytics can be a very powerful tool for law enforcement. Cameras should be selected with built-in optional analytics or with compatibility with 3rd party software. In years to come as SVR operator skills mature and dedicated time with monitoring increases video analytics should be evaluated for benefits and feasibility.



Bullet (left) and Dome Cameras

ACCESS CONTROL

Currently PDC does not have an access control system. It is highly recommended that funding be identified to implement a new platform and hardware, as access control is the most costly of the recommended security systems presented herein.

Based upon experience with other similar higher education facilities, it is recommended to outfit, at a minimum, classroom and laboratory doors with a centralized access control platform (head-end at SBC). This includes retrofit of existing doors with a wireless card reader and door lever product – vendors include Allegion/Schlage and Assa Abloy. This is the most cost effective design eliminating the need to wire each door for the data and power – see Cost Estimate (assumes phase 1 roll out with 50 classrooms/labs doors and 2 exterior doorways at each of 10 buildings). In some cases doors would need to be replaced to accommodate this hardware. These products satisfy code requirements for door hardware that can be manually locked from the inside, but not require any additional actions to open the door to exit.

A recommended hard-wired card reader is iClass SE R40 by HID. For wireless access control, the Allegion/Schlage AD400 is recommended (see Figures below).



Allegion/Schlage (AD400)



HID iClass (R40)

Another key benefit and labor cost saver is the ability to automatically lock doors on a daily schedule. This eliminates the need for University staff to unlock and lock the vast quantity of doors every day. Other physical protection via access control includes restricted access and audit trails for high risk spaces such as cash handling locations, protected/sensitive records storage, IT rooms and hazardous materials storage. Audit reporting identifies who accessed which spaces and when.

A robust IP-based platform such as S2 is recommended (PDC will need to follow suit with system selected for SBC). Here, perimeter doors could be remotely locked for shelter-in-place events – i.e. active shooter in Building X, thus lock exterior doors at all other buildings. S2 is a certified partner of OnSSI and is a recommended web-based (no software to install) and highly flexible platform – see Figure below for user interface and hardware. S2 allows for API integration with existing human resource and student enrollment databases. This is a critical feature whereas existing cards can be automatically deactivated, for example when they are removed from the payroll system. The mobile app encrypts communication and includes the ability to lock/unlock doors and manage evacuations.



Access control (key card control) management user interface, server hardware, and mobile management app examples.

Shelter in Place

Unlike cameras, access control does provide levels of physical protection. A key objective for UPD is remote 'shelter in place' door locking during an emergency event. It is recommended, at a minimum, that an access control platform be selected and that all building free ingress doors be retrofitted with access control hardware.

Existing Locks

At PDC all doors are locked with traditional keys. As PDC does not have an existing access control system, the addition would save a reported \$6,000 per month for University custodians who manually lock and unlock doors at the beginning and end of each school day.

At PDC all exterior doors and most interior doors are metal. There are no exterior glass/slider doors. Some metal doors may need to be wired or be replaced with wood doors – many typical metal doors can be retrofitted to accommodate the wireless locking hardware.

Access control greatly simplifies physical key management which is a current challenge, for example, with the wide range of faculty and staff who need access to multiple classrooms. Currently doors at PDC have manual locking hardware with physical keys. Locking hardware consists of cylindrical and mortise lock sets by Schlage and Sargent. Exit doors typically have push bars or similar by Schlage and Von Duprin. Facilities manages the keys and this task has been challenging, i.e. check-in/out effort, keys not returned. The University uses Simple K software which identifies keys per door and is used to track key requests. The Locksmith cuts new keys as needed. There is no Master Key to open every door on campus – this does provide a level of security but also complicates access for staff. Refer to *CSUSB Facilities Services Building Standards* pages 4-5 for further information.

Cards and Key Fobs

Once access control is implemented at PDC, smart cards will be provided. These cards can double as University ID badges. Smart cards can store data within the card to include, for example, the point-of-sale features of the Coyote One card. This implementation of smart cards is highly recommended the elements of the current Coyote One card (point-of-sale). Another critical benefit of smart cards is the superior security of data between the card/key fob and card reader. The relatively easy hacking of prox and mag stripe cards is significantly more difficult with the OSDP standard with AES-128 encryption. Also, smart card systems work with a wide range of manufacturers since it is an open protocol as well as require fewer wires for installation.

Vehicle Access and Parking

Access control is recommended for any physical gates, in particular at future Facility yards and faculty/staff parking lots.

Educational, Administrative + Residential Spaces

If full deployment of access control is not implemented across campus, i.e. for shelter in place capability, than access control for Educational Spaces is not applicable. See the Shelter In Place section above for further information.

Also other critical doors should be outfitted as well including telecom rooms, high value and hazardous storage, and senior administrator offices. Less critical doors without access control locks, but spaces that Police would desire to know if they are left open or forced open, should be outfitted with door contacts.

High Risk Areas

High risk areas are to be identified for access control. These systems will help to address theft and vandalism. An access control system would provide automatic locking of doors on a daily schedule.

Other recommended areas for access control include:

- Facility yard gate(s)
- Confidential/important document storage
- Hazardous storage (e.g. laboratories)
- Utility enclosures

University Police Building

PDC currently does not have a dedicated space for Police. If established in the future it will require extra levels of access control. All exterior doors should be outfitted as well as gun storage and other storage spaces, e.g. radios, laptops, ticketing devices, cell phones. Also the public counter shall be separated from the rest of the station by an access controlled doorway. Other protection should be considered such as sirens for doors forced open.

INTRUSION DETECTION

PDC currently has 10+ year old intrusion detection systems (burglar alarm) generally only at administrative locations and cash handling locations. Monitored devices also include duress buttons, door contacts and motion detectors. These disparate systems are all monitored by SBC's on-site certified monitoring station software (Manitou by Bold Technologies) which validates the alarm then sends to UPD dispatch. The systems are armed/disarmed via traditional keypads. Each department that funded the installation is responsible for management and maintenance of their system.

It is recommended to deploy door contacts at automated external defibrillator (AED) stations to provide a notification to Campus Police that a health-related emergency is occurring and can dispatch an ambulance.

UPD advised that most alerts result in false alarms. In discussions with University staff there was some initial interest in a centralized system for all intrusion detection hardware – although this can be complicated and costly and is not recommended at this time, i.e. funds should be assigned to other systems presented in this report in part because intrusion detection provides security only when buildings are unoccupied; i.e. protecting property, not persons. Although, it is recommended that the existing alarm policy be updated. Along with this effort, buildings/spaces without burglar alarms should be vetted to determine if any should be added, e.g. hazardous storage.

For existing/new monitored locations, it is recommended to validate/have hardware output alarms for the following:

- Opening/breaking of doors and windows (including roof access panels), via door contacts and motion detectors

- Hallway occupancy during off hours, via motion detectors
- Duress buttons (stationary and mobile)

MASS NOTIFICATION

Electronic Alerts

Mass notification is a combination of tools including email, text messaging, phone app messaging and broadcast of audio messages via loud speakers. Considering the proliferation of mobile phones being carried by persons on campus, mass communication is currently in use by the University such that potential lifesaving information can be quickly and easily sent to all who have subscribed to the database. Currently the alerts from these systems are delivered successfully to those users who opt-in.

The University currently has multiple systems providing electronic alerts to faculty/staff/students. Informacast announces to Cisco VoIP phone handsets using template information from Blackboard Connect which is managed by UPD. Blackboard Connect sends alerts only to faculty and staff. Alertus is used to send window pop-ups to faculty and staff workstations and is managed by ITS. UPD has expressed interest in deploying the Rave Guardian mobile app which provides users with the ability to easily send a panic alarm, send/receive crime tip reporting, and storage of residence and medical information for display to responders – see Cost Estimate (\$2 per user per year).

Loudspeakers

Unlike SBC, PDC does not have existing exterior campus-wide loudspeakers for audible mass notification. The existing exterior emergency phones do not have loudspeakers. It is recommended to add external

speakers to existing tower and wall-mounted emergency phones. This can provide for audio coverage at these zones without the need to add speakers at other nearby locations (e.g. existing light pole), saving cost. Although staff advised of poor audio quality and coverage at other colleges/universities, a properly designed system and current hardware output is sufficient to provide clear messaging for the surrounding zone.

These and any new units should be considered for loudspeakers, in part to save cost on wiring and avoid additional installation locations.

For new exterior phone installations, Talk-A-Phone's Wide-area Emergency Broadcast System (WEBS®) software is integrated with their Radius Emergency Phone Tower. Radius denotes the built-in loudspeakers at the top of the tower on all four sides – see Figure below under Emergency Phones section. This design provides 360-degree coverage without the need for bulky external horns.

For campus building entrances and applicable interiors spaces including residential housing, new loudspeakers are recommended. For interior hallways where audio notification is desired, the Talk-A-Phone wall-mounted indoor emergency phone with built-in speakers should be distributed appropriately (e.g. 2 per floor of large buildings). With Talk-A-Phone's seamless integration with Cisco's InformaCast, it is highly recommended that existing handsets in selected locations be utilized for broadcast of audio messaging, in particular for classrooms avoiding the cost to install speakers.

Also, it is recommended to consider external speakers on the applicable buildings where interior speakers are installed and loudspeakers to not exist today. This is due to the economy of scale where amplifier and other local hardware is being installed. These exterior speakers can be placed on each of the building exterior walls to provide wide coverage of these surrounding areas.

EMERGENCY PHONES

Emergency phones provide real-time communication with the Police throughout campus. A total of 5 well distributed exterior emergency phones have been installed at PDC. UPD advised that with the proliferation of cellular phones that emergency phones are not as critical as they once were, but due to unreliable cellular coverage in some areas that there is no plan to cease the installation and operation of emergency phones across campus. These phones have an 'Emergency' button for automatic dial to UPD and 'Information' button. This helps to eliminate non-emergency calls going to UPD (see image below). Currently there are no established standards for the hardware, thus new projects should be used to standardize on the desired system/hardware. Currently the exterior housings are by Code Blue, but the interior components were replaced with products from Talk-A-Phone. As phones are added, it is recommended the feature be included to identify from which unit the person is calling and include the optional built-in camera to provide a view of the caller. These elements allow for quicker response to the location and easy identification of adjacent cameras to view the overall area.

Phones overall should be distributed with the intent for at least one to be visible from anywhere in the vicinity. As with the current units on campus, the phones should be equipped with a blue light for increased visibility and have to 2 buttons as described above. Phone towers can be hard-wired or wireless for data. Solar power is an option but is not recommended due to the large panel size needed and less reliability for emergency needs. Thus, it is recommended that underground conduit be run to each new phone. To note, this conduit will also be used for at least two cameras on the towers and one for the wall-mounted units. The existing phones are well distributed, thus no need for additional units until campus is expanded, e.g. new residence halls in the coming years.



Wall-mounted Phone (left) and Tower Phone (right)

9.12 OPERATIONS + MAINTENANCE

Emergency operations and maintenance are key elements to keeping the campus informed, connected, and safe. Simple maintenance may have a significant impact on campus readiness.

STANDARD OPERATING PROCEDURES

Under a memorandum of understanding (MOU) with the University, PDC Police are part of the Riverside County Sheriff Department. PDC currently does not have dedicated officers. As such, the City of Palm Desert Police responds to calls.

UPDs applicable standard operating procedures (SOP) shall be updated by internal staff for any new systems or areas that impact the usage of the systems by the operator. This will also be coordinated with the Emergency Operations Plan. The SOP would define who has access to view recorded video and for what purposes they can use video archives. Also, it will contain detailed policies and procedures, for example, step-by-step instructions for the operator to follow during common emergency events. To note, currently all requests for recorded video are submitted to UPD for approval – it is recommended to continue this protocol. The SOP should refer to the existing PeopleSoft software reports of which lists registered occupants for each

campus building, e.g. John Smith is in Building XX on Monday and Wednesday from 9- 10:00am for class. Access to this data is critical during emergency events to determine high density areas of student/faculty/staff for response planning.

A draft SOP should be revised then reviewed with the relevant designer(s) prior to the design of electronic security improvements to ensure the final systems are in line with UPD current and related new procedures.

MAINTENANCE AND SUPPORT

Currently PDC does not have a security maintenance program/contract. As items fail they are to be repaired/replaced by the department that funded the original installation. UPD is pursuing these departments to obtain funding for an annual campus-wide maintenance contract. Occasionally the systems are checked by ITS, Risk Management and UPD. The University should establish a maintenance program (and/or 3rd party contract) for maintenance of new and existing security systems.

Largely the physical efforts will consist of camera lens cleaning (see image below of existing camera with dirty lens), identification of relevant dead light bulbs, annual inspection of device mounts and re-positioning of devices of which bolts have loosened (e.g. poor camera field-of-view) and repair/replacement of data connections. Cameras would be repaired/replaced as needed using on-site spares to ensure minimal downtime for that location. The maintenance program will also include identification and remediation of landscape that has grown and impacts the view of security cameras and any wireless point-to-point (line of sight) links. For video surveillance, the 1-time camera license fees provides lifetime tech support and software patches. The only recurring cost is the StayCurrent plan (currently in place) – see Cost Estimate (\$30 per camera per year).

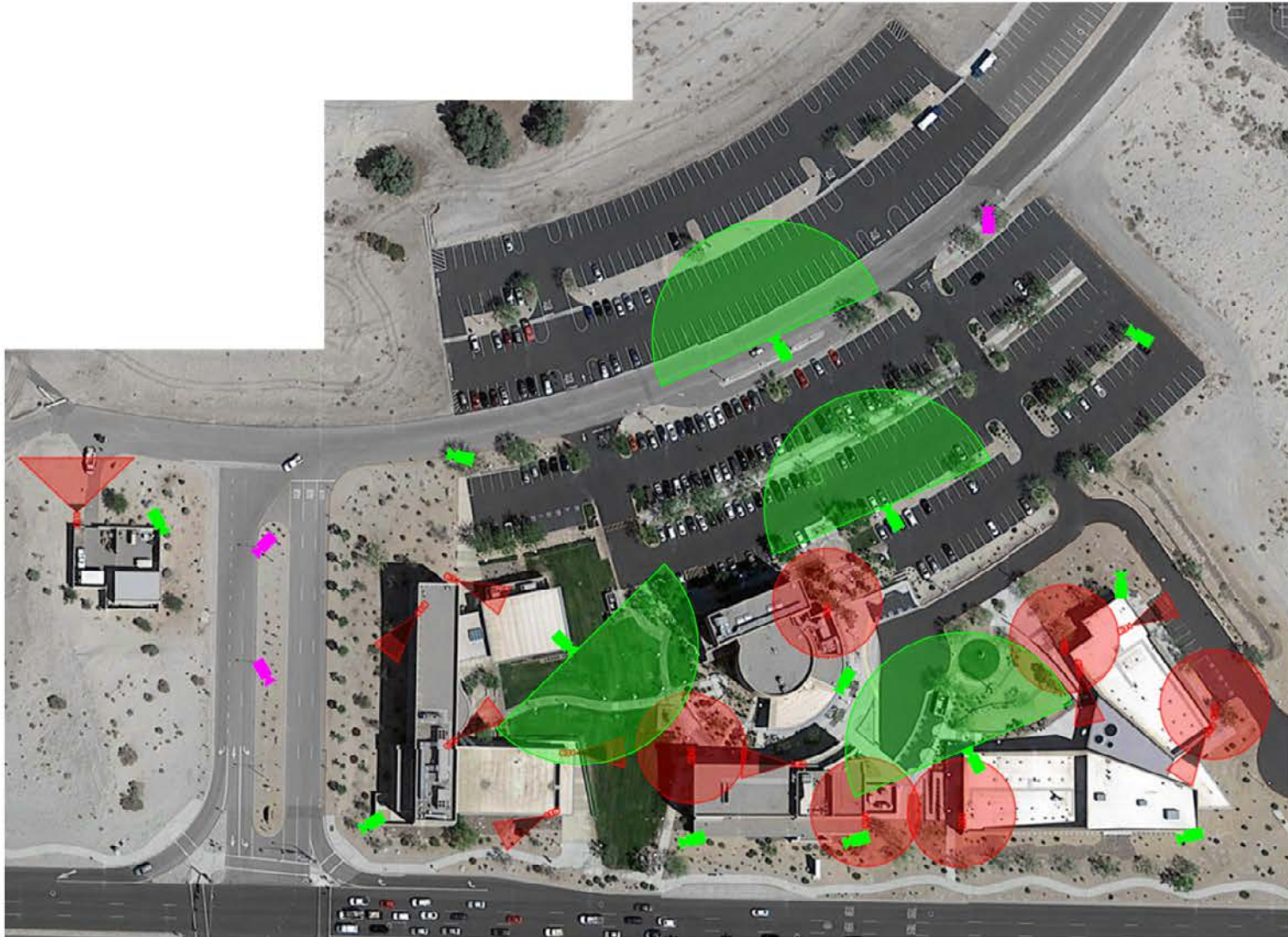


For access control, S2's Software Upgrade Support Plan (SUSP) provides for software patches and full upgrades as well as technical support.

No significant maintenance is required for mass notification and emergency phones other than cleaning and replacing malfunctioning devices.

Other areas to be maintained, based upon University IT protocols, include replacement of UPS batteries and housekeeping of cable management in racks.

Spare parts should be provided by the contractor. Recommended (2) of each camera type with installed quantities over (20) and prorated for additional spares for camera models which have been installed in greater quantities. For access control it is recommended to retain (2) of each card reader type for installed quantities over (20).



- CSUSB - Palm Desert Campus
- Exhibit 01 - Exterior Existing and Proposed Camera Layout
- Field of View, Existing
 - Panoramic Camera Location and Field-of-View, Proposed
 - Fixed Camera Location, Proposed
 - License Plate Camera Location, Proposed

TABLE 9-4: ROM NEAR-TERM SECURITY UPGRADE COST ESTIMATE

Category	Item	Units	Unit Cost	Total Cost	Notes
Overall	Network Switches (24-port, PoE)	6	\$5,500	\$33,000	add'l units for added PoE devices
	Power (rack-mounted UPS)	9	\$4,000	\$36,000	add'l batteries for existing UPS
	Signage	10	\$1,000	\$10,000	
	SVR Video Wall	-	\$22,000	\$0	
	EOC Wall Monitors	-	\$5,000	\$0	
	Total			\$79,000	
Access Control (S2)	Head-end Server	-	\$34,000	\$0	see SBC, must share server
	Controller / Expansion Blades	1	\$25,800	\$26,000	Controller (Network Node) 2 doors + 5 expansion blades, 14 doors each; incl. enclosures and power supplies
	Card Readers (wired or wireless)	70	\$2,500	\$175,000	assuming 2 entrances to 10 buildings and 50 classrooms/labs
	Smart Cards / Fobs	500	\$4	\$2,000	
	Burglar Alarm - Duress Buttons	8	\$300	\$2,000	expanded coverage for existing systems
	Burglar Alarm - Motion / Glass Break	50	\$300	\$15,000	expanded coverage for existing systems
	Burglar Alarm - Door Contacts	35	\$400	\$14,000	monitoring of doors that do not require a card reader
	Training	1	\$5,000	\$5,000	
	Licenses and Software (Year 1)	-	\$6,000	\$0	see SBC, licenses on shared server
	Total			\$239,000	
Video Surveillance (OnSSI)	Head-end Server / Storage	50	\$1,800	\$90,000	150TB total (3TB/camera); assumes 2.1MP cameras, 24/7 recording @ 7 frames/sec, 1.3Mb/sec bandwidth per camera and 120 day retention
	Licensing - StayCurrent (annual)	-	\$30	\$0	covered by SBC
	Licensing - Cameras	50	\$160	\$8,000	lifetime; includes tech support and software patches
	Cameras	50	\$1,200	\$60,000	incl. mounting, core through exterior walls, cabling and conduit
	Pole w/ Wired Data & Power	2	\$16,000	\$32,000	incl. trench to nearest telecom vault
	External IR Illuminators	4	\$1,300	\$5,000	
	Training	2	\$1,000	\$2,000	3-day off site course, provides certification (avoids reliance on security contractors)
	Total			\$197,000	
Emergency Phones (Talk-A-Phone)	Head-end	-	\$5,500	\$0	utilize existing system
	Outdoor Tower w/ Loudspeaker	2	\$13,750	\$28,000	
	Outdoor Speakers (4 sides, bldg. mounted)	5	\$7,150	\$36,000	incl. amplifier & paging module
	Indoor Wall-mount w/ Loudspeaker	20	\$3,000	\$60,000	
	Licenses (annual)	1	\$2,000	\$2,000	incl. qty. 200 end points
	Total			\$126,000	
Mass Communication	Head-end	-	\$0	\$0	existing Informacast system
	Rave Guardian mobile app	8,000	\$2	\$12,000	
	Licenses and Software (Year 1)	-	\$0	\$0	
	Total			\$12,000	
Other	Trenching/Boring	1	Lump Sum	\$20,000	
	Door Modification	1	Lump Sum	\$10,000	
	Building Cabling Unforeseen Conditions	1	Lump Sum	\$8,000	
	Contingency (10%)	1	Lump Sum	\$65,000	
	Total			\$103,000	
Engineering & Design	Total	1	\$ 95,000	\$ 95,000	
	Grand Total			\$850,000	

PART III

APPENDICES



APPENDIX A - CAMPUS DESIGN GUIDELINES

APPENDIX B - CAMPUS LANDSCAPE PALETTE

APPENDIX C - ENROLLMENT DEMAND + SPACE NEEDS ANALYSIS

APPENDIX D - TECHNICAL REPORT: UTILITIES MASTER PLAN



APPENDIX

A CAMPUS DESIGN GUIDELINES

A.1 INTRODUCTION + BACKGROUND ANALYSIS

The goal of the Palm Desert Campus Master Plan Design Guidelines is to strengthen the campus “context,” including its architectural character and landscape setting in order to reinforce the educational mission and to strengthen the campus’ sense of place.

INTRODUCTION

These design guidelines provide design direction for the campus and future architects to ensure new building development consistently connects with existing buildings, circulation networks, and the natural landscape. Landscape guidelines are also included in the 2016 Palm Desert Campus Master Plan (See Appendix B) to ensure continuous maintenance of open space and water conservation.

In 1984 it was recognized that the Greater Coachella Valley was in need of a long-term four-year public university. CSU San Bernardino (which was already serving the area) was identified as a likely candidate to establish a local satellite center in the Coachella Valley. With limited funding available through the California State University system (CSU), leaders of Coachella Valley approached the CSU Board of Trustees with an offer to build the campus with private funds if the CSU would adopt such a facility as a satellite campus of CSUSB. Built upon its collaborative realization, Palm Desert Campus is an educational institution serving the Greater Coachella Valley since its establishment at its current site in 1994. The purpose of the CSUSB Palm Desert 2016 PDC Master Plan is to support and advance the CSUSB’s educational mission by providing a guide for the development of the physical campus and its facilities over the next twenty years to meet an enrollment goal of 8,000 Full Time Equivalent (FTE). The Plan defines future land uses, building locations and a sustainable development pathway for a total campus acreage of 169.4 acres.



Site of Palm Desert Campus



Groundbreaking Ceremony of permanent campus for CSUSB Palm Desert Campus 2000



Current condition of CSUSB Palm Desert Campus

As a major four-year higher-education institution serving the Greater Coachella Valley Area, Palm Desert Campus has the potential to grow as a primary education component of the growth of Riverside County. Located within the City of Palm Desert, which is approximately 100 miles east of Los Angeles and 65 miles southeast of the CSUSB main campus, the Palm Desert Campus' current and future development relies heavily on its surrounding context and amenities, natural environment, and seasonal climate conditions. Palm Desert Campus is situated within the Sonoran Desert, a dry climate area consisting of strong seasonal winds from the northwest and southeast, high summer temperatures, and below freezing evening temperatures.

The first issue that must be addressed in developing appropriate design guidelines for a specific campus is exactly what is the character of CSUSB Palm Desert Campus? As a campus that emerged from the demand to establish a four-year public university in the Greater Coachella Valley Area, the CSUSB Palm Desert campus derives its character from its surrounding natural desert landscape and seasonal climate conditions. This basic approach, when used in conjunction with an enhanced landscape setting will ensure University goals to enrich the campus identity and values, and establish a distinctive 'sense of place'.

There is one characteristic that is common among institutions of higher education - a sense of permanence. Design guidelines that apply to its architecture, landscape and signage will serve to guide future development of the campus and reinforce a sense of permanence and dignity appropriate to a 4-year university. The design guidelines in this chapter set a series of parameters for new and renovated existing

buildings, and for aspects of the campus landscape and sustainable design features that will be addressed in the next twenty years.

THE EXISTING CAMPUS VISUAL ENVIRONMENT

Contributing to the rapidly developing portion of Palm Desert, the site where PDC is located was chosen due to its potential to expand campus grounds, its direct access to the I-10 Freeway from Cook Street, adjacent mix of land uses, residential development, and commercial uses.

Existing Buildings

Palm Desert Campus is stemmed from four buildings. Multiple individuals, charitable foundations, institutions, businesses, several local cities and the County of Riverside worked together to fund the initial grouping of four buildings. Currently, all existing PDC buildings are in good condition and as a group reflect a consistent architectural style that lends a visual cohesiveness to the campus. Existing buildings containing classrooms and labs typically consist of 3 floor levels that enable PDC to maintain its compact campus growth-contributing to reduced walking distance and flexibility to respond to hot climate conditions. As the Palm Desert Campus was built upon the possibility of expanding, existing buildings are not able to accommodate the current lecture and laboratory capacity based on the campus' increased enrollment. As a result, new building development considers accommodating to the campus' growing enrollment. Considerations include additional academic space and facilities accommodating students and faculty. Considering connecting the old campus core to new development and ensuring compact campus growth, sustainable design measures are implemented in renovating existing buildings. Sustainable building design



Existing academic building on Palm Desert Campus



Campus building with minimal pedestrian accessibility



The Desert landscape is a critical influence that can potentially unify building characteristics and regional context

strategies attempting to reduce energy consumption are incorporated in renovating existing buildings.

Connections Between Buildings and Site

The Palm Desert Campus is planned to grow from its four initial buildings into a future campus that is denser, more compact- highlighting its campus identity while merging with its natural environment and nearby mixed land use development. The Master Plan emphasizes to connection between the existing campus and new campus development, using the circular 'ring road' as the means of integrating new campus development. The 2016 Palm Desert Campus Master Plan builds upon the existing campus and incorporates portions of the circular roadway system to facilitate a transition to new campus development. Providing a seamless transition from the old campus core with new development and renovated existing buildings will create a compact campus core facilitating student access between facilities and parking.

Campus Landscape as A Unifying Element

Landscaping on the Palm Desert Campus incorporates a number of attributes that correspond with its desert setting and local climate. In response to its climate environment, the Palm Desert Campus Master Plan focuses on concentrated open space with abundant covered shading, shelter from seasonal desert wind, and a dense pedestrian-oriented grouping of buildings and outdoor space that reduce walking distances and address conservation of natural resources and energy. PDC's Master Plan identifies landscape principles that contribute to the overall organization of open space on campus. Integrated with architectural guidelines and the coordinated performance-driven site initiatives, campus landscape serves as the unifying element.

A.2 PURPOSES AND GOALS

The Design Guidelines provided in this chapter identify methods to promote a cohesive environment between new buildings, existing buildings, and the campus' landscape environment.

The Design Guidelines are based on guideline purposes and design goals summarized in Section A.2.

The overall purpose of the Palm Desert Campus Master Plan Design Guidelines is to unify the campus visual environment by establishing measurable strategies to provide design direction for future architects, landscape architects and/or designers. The Design Guidelines address the visual aspects of building exteriors and the connections between structures, landscape and both pedestrian and vehicle circulation systems.

GUIDELINE PURPOSES

The Design Guidelines provide for the following purposes:

- To guide the design of new and existing campus buildings and landscapes to create a unified campus identity.
- To identify ways that new and existing buildings, roads, and landscapes work together to form a cohesive and visually pleasing campus setting.
- To ensure that new development on campus enhances the experience of its students, faculty, staff, and the community.
- To promote sustainable design practices on campus and ensure energy and water efficiency are being integrated into all new building and landscape designs.
- To establish benchmarks for campus review; allow flexibility in the implementation of design guidelines to ensure the most efficient and creative solutions in future development.
- To apply design strategies to ensure existing buildings, and landscape elements provide a seamless integration of new development and to strengthen the campus' visual setting.
- To ensure that new development on campus aligns with compact growth and enhances the experience of its students, faculty, staff and community.
- To encourage existing and new development (building and landscape) on performance-driven design and other sustainable design strategies pertaining to climate control, energy, and water efficiency.

DESIGN GOALS

The Design Guidelines are based on the following major goals:



ACHIEVE VISUAL INTEGRATION

- Each individual building should first establish its identity within the greater whole of the campus and then present its individual identity.
- Ensure all new buildings act as supportive components for enriching and activating the public space network.



FOSTER A STRONG SENSE OF COMMUNITY

- Provide multi-functional outdoor rooms for accommodating events, programs, social interactions, and interdisciplinary collaboration
- The building design should aim to strengthen a urban lifestyle community through providing ample actives uses on the ground floor



FOSTER A SENSE OF PERMANENCE

- Promote high quality design in buildings, landscape, signage and wayfinding as well as campus art installations
- Employ enduring designs and materials for campus buildings that evoke a sense of permanence
- Encourage innovative and sustainable design and construction in all phases of campus development.



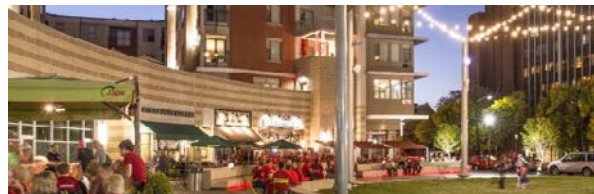
UTILIZE LANDSCAPE TO UNIFY CAMPUS ENVIRONMENT

- Use landscape to unify the overall character of campus buildings and to enrich the public spaces
- Incorporate a palette of drought tolerant plants that contributes to a cohesive and uniform aesthetic in the campus' semi-arid climate setting



STRENGTHEN CONNECTIONS BETWEEN BUILDING & SITE

- Establish a distinguished hierarchy of pedestrian promenade, pathways, and plazas that can connect and serve campus destinations
- Create a pedestrian/bicycle-friendly environment by implementing tree canopies, street amenities, shading structures, and traffic calming measures
- Articulate building entries and entry plazas to directly orient campus users into the buildings



BUILD A SAFE AND SECURE ENVIRONMENT

- Integrate active uses on the ground floor of the academic and residential buildings
- Encourage large proportion of transparent features on the ground-level of buildings and avoid blank walls where possible
- Ensure appropriate illumination for pedestrian pathways, public spaces, building entries, and parking areas



ESTABLISH A COHESIVE VISUAL DESIGN VOCABULARY

- Collection of the buildings, considering all variations of style, size, function, and age, should share a common visual vocabulary
- New building development should appear relative to existing building and natural environment
- The remodel of existing building should respect the building's authentic character



RESPECT NATURAL SETTING

- Provide a desert preserve area for native plants species habitat
- Utilize drought-tolerant plants in the landscape design to reduce water consumption and cost of maintenance
- Integrate low-impact design measures on campus for stormwater capture and infiltration

A.3 SITE DESIGN GUIDELINES

Master planning and design of buildings and landscape in an integrative approach can define and enhance the University's sense of permanence. The following guidelines are to ensure that building siting, site planning, and campus improvements support academic and social interactions.

DESIGN PRINCIPLES

The Site Design Guidelines are based on six major principles:



COHESIVE IDENTITY: Utilize site location & visibility to emphasize the campus' image and to integrate the campus within its natural environment. Promote new developments that portray a cohesive character and enhance the overall campus image.



SOCIAL INTERACTION: Promote social interaction and collaborations in various types of outdoor rooms. Ground floors of buildings should be articulated and distinct. Interior spaces should be organized as extensions of the public space outside.



SAFE AND SECURE: Integrate active uses at buildings ground-level adjacent to primary pedestrian walkways and public spaces. Promote visual transparency by incorporating clear-glass windows and doors, and other openings at the ground-level to enrich visual interest and support a sense of security.



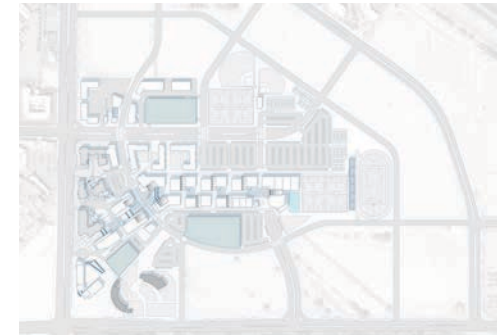
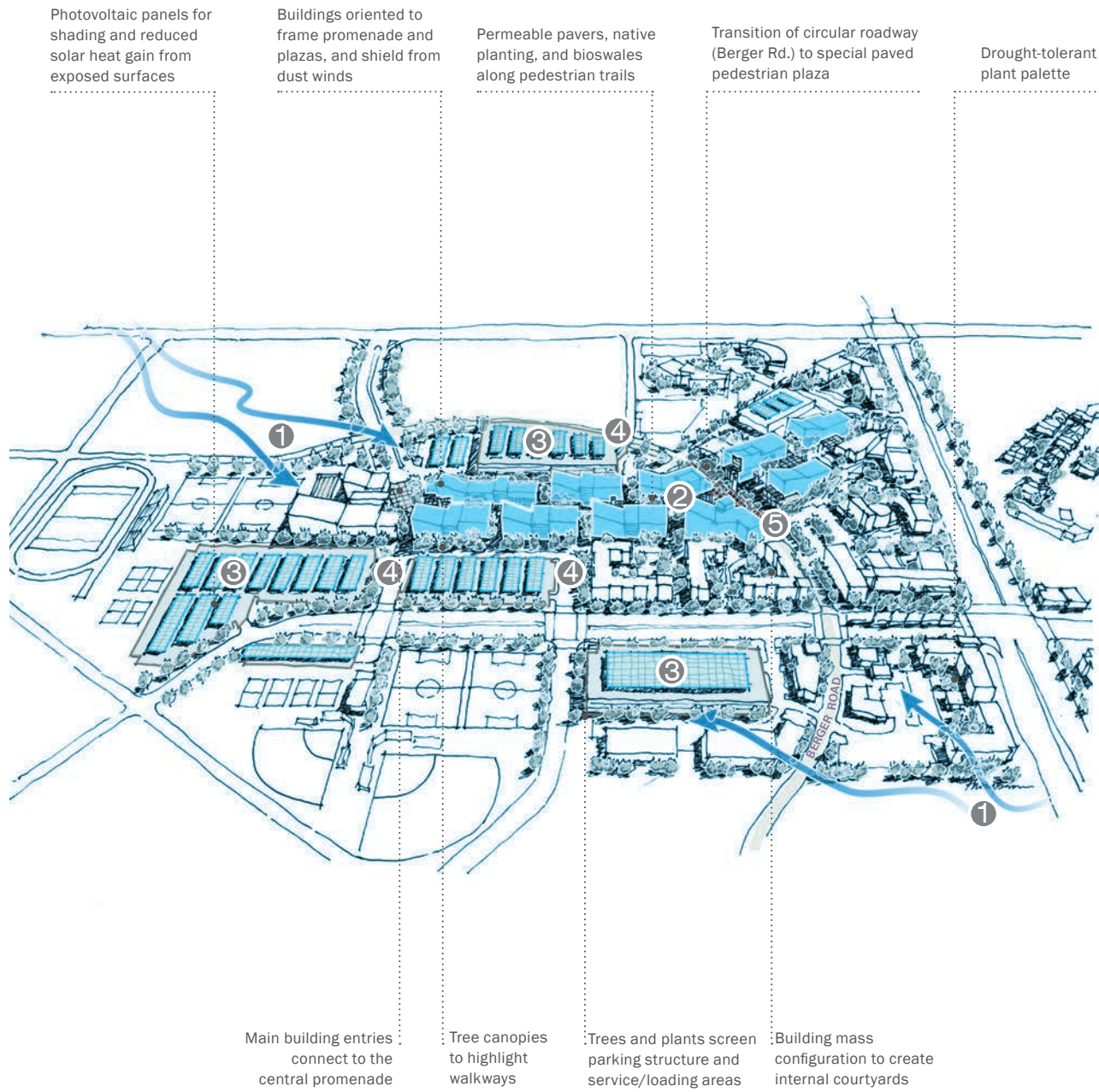
CONNECTIONS: Develop a road network with a hierarchy that strengthens the connections between the various campus precincts. Strengthen connections and access to/from campus with incorporated roadway network and surrounding mixed-use development.



HUMAN-SCALE COMFORT: Buildings and outdoor spaces should contribute to the campus environment. Encourage components that offer a human dimension, such as building elements, decorations and site furnishings. Incorporate rich details, especially at eye-level.



SUSTAINABLE DESIGN: Address seasonal climate conditions & compact campus growth through strategic and flexible building configuration and utilized surfaces. Maximize efficiency of orientation, building envelope, glazing, sun-shades, solar roof panels and solar hot water systems for all campus buildings.



DESIGN RECOMMENDATIONS

- 1 Configure and orient building and landscape elements to protect campus occupants from local desert winds and excessive sun exposure.
- 2 Configure community-oriented buildings (i.e. Library, and Student Union) adjacent to existing buildings to support the campus' image and sense of place.
- 3 Utilize exposed land and built surfaces as opportunities to allow campus to be self-sustaining- environmentally and economically.
- 4 Strategically located parking areas that provide secure access to campus facilities.
- 5 Transition portions of circular roadway within original campus core to pedestrian only spaces within the new campus core.
- 6 Apply compact campus growth to reduce walking distances and contain a concentrated sense of place within the campus.

FIG A-1: SITE DESIGN GUIDELINES ILLUSTRATIVE 1



Building siting and orientation should respect the Palm Desert backdrop and bring natural views to and complement the campus physical environment



New buildings should be oriented facing the central promenade and add features to the campus built environment



Integrate circular roadway; transitioning vehicular circulation to distinctive pedestrian walkways

BUILDING SITING & ORIENTATION

Intent

Building orientation is a critical aspect of site design and planning. Careful siting and orientation of buildings define the unique character of the campus and can contribute significantly to the reduction of energy use. Strategic building siting and orientation shapes an aesthetically appealing, human-scale oriented, and thermally-comfortable physical environment.

Guidelines

- Utilize building placement and orientation to form new open spaces, to articulate pedestrian walks and activity nodes, and to reinforce existing open spaces.
- Manage building placement and massing to strengthen visual axes and to form visual corridors that link the pedestrian promenade, plazas, and walkways to the adjoining internal courtyards.
- New buildings constructed along the perimeters of the central promenade should be oriented to connect other public spaces and plazas.
- Visually organize spaces between and amongst buildings, and integrate the natural environment with the campus site's built environment.
- Consider solar angles and wind direction in building siting and orientation to reduce energy consumption

and to create thermally-comfort campus environment.

VEHICULAR CIRCULATION

Intent

The scale at which pedestrians and vehicles function best is not the same. Streetscape design approaches should be taken into account for reducing potential conflicts between automobiles and pedestrians for the purpose of creating a traffic safe environment on campus.

Guidelines

- Organize traffic flows on campus and direct vehicles to the peripheral of campus- away from the pedestrian-only zones, the central pedestrian promenade, plazas, and passages.
- Articulate the hierarchy of the roadway network (e.g., loop roads, service routes, and parking access drives, etc.) through street dimensions, visual identity as well as signage and wayfinding system.
- Apply design approaches to distinguish the primary vehicular entry points from pedestrian gateways as well as the arrival plazas.
- Introduce gateway signage, directional signs and information kiosks at the gateway areas to inform students, faculty and visitors.
- Improve traffic safety on and around campus. Traffic calming measures (including enhanced crosswalks, curb extensions, speed tables, etc.) should be applied at key vehicular entry points and major intersections to protect pedestrians and bicyclists.

ACCESS, PARKING AND LOADING

Intent

Building entrances help orient students, faculty and visitors to the campus. It is important for entrances to be clearly marked and visible from a distance and clearly linked to the pedestrian pathway system. Appropriately place parking facilities, loading and service areas to avoid pedestrian/vehicular conflicts and minimize aesthetic distraction from the public realm.

Guidelines

- All buildings entries are to be clearly defined and legibly identifiable from a distance, and be located along the pedestrian walkways. All entries are to be designed to promote a safe and secure environment.
 - Where possible, provide at least two major pedestrian entries for each building: One as the primary entry for students and visitors to access the building lobby while the secondary entry serves as limited access for faculty and staff.
 - Provide service access to all the buildings on-campus. Use trees, planting, fences, walls, grade separation, or any combination of these elements to screen service areas from public view.
 - Integrate ADA access facilities along sidewalks, major building entries, and service entries.
- Locate parking structures on-campus with direct circulation linkages to the academic core, residential zones, and central promenade.
 - Integrate tree planting on the surface parking lots to help mitigate runoff, reduce “heat island” effect, microclimate and shade issues.
 - Use landscaping or short decorative walls to screen the surface parking lot from the public right-of-way.
 - Enable campus expansion and building locations to complement nearby amenities and to allow secure access to nearby transportation.



Integrate covered gathering space around campus to promote outdoor linkages



Use traffic calm approaches to reduce the potential conflicts between automobiles and pedestrians



Apply architectural language, details, or color to articulate the building major entry and ensure it is well-lit after sunset. Integrate ADA access ramp at the major entry of the building



Incorporate bicycle route with pedestrian walkways and passages



Place short-term bicycle parking at the building's major entry. Integrate bicycle center with cafe / food and beverage establishments.

PEDESTRIAN & BICYCLE CIRCULATION

Intent

Pedestrians are primary users of the campus; their movement and safety are fundamental to the site design of the Palm Desert Campus. In addition, the use of bicycles for on/off-campus commuting should be encouraged and can reduce the use of private vehicles. Promoting bicycle and pedestrian culture on campus can help to create an inviting and healthier physical environment for students, faculty, and visitors.

Guidelines

- Reinforce the pedestrian-oriented character of the campus environment and organize the pedestrian circulation through pedestrian-only zoned, pedestrian walks with a provision of well-paved sidewalks, shaded tree canopy, shade structures, comfortable seating facilities, drinking fountains, and pedestrian-scale lighting equipment.
- Strengthen the pedestrian connections between walkways and adjoining building entries, and other public spaces.
- Wherever possible, extend the active uses at the ground-level of buildings, bringing activities to the adjacent pedestrian plazas and passages.
- Use grade separation, curbs, bollards, special pavement, planters, tree rows to differentiate pedestrian zones from adjacent vehicular zones for pedestrian safety.
- Major pedestrian passages should be no less than eight feet in width to allow walking in groups and to permit wheelchair access. Integrate ADA compliant curb ramps where appropriate.

- Place short-term bicycle parking in highly-visible locations adjacent to building main entries. Long-term bicycle parking should be located in featured parking structures or other areas that are easily accessed.
- Promote condensed, compact growth to reduce walking distances, promote a sense of spatial structure, and establish a concentrated sense of place within campus.
- Incorporate community-based facilities and open space, planned roadway transitions, and nearby mixed-use development to activate pedestrian access to and from campus.

OUTDOOR SPACES

Intent

Outdoor space is a crucial component in the campus site design. Utilize buildings, landscape, and site furnishings to activate featured outdoor spaces on campus and encourage social interactions and outdoor communications.

Guidelines

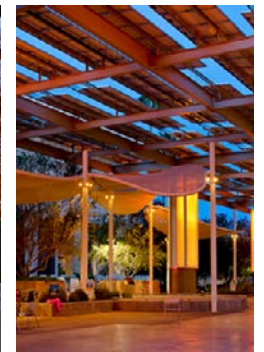
- Define and contain outdoor spaces through a combination of building and landscape, providing different types of outdoor space such as a central promenade, public plazas, interactive collaboration courtyards, and residential courtyards, etc.
 - Introduce diverse architectural elements (e.g., arcades, trellises, sun shade structures, etc.) that establish a comfortable transition between the indoor and outdoor environment. These elements will help to promote a thermally-comfortable outdoor environment for pedestrians in the semi-desert climate.
 - Ensure outdoor space is comfortable for human occupation and social interaction by addressing climate conditions and integrating landscape elements. Decorative paving, plants, furniture, and lighting should shape, embellish, and give purpose to outdoor spaces. A high level of open space amenities is encouraged throughout the campus.
- Provide amenities such as tables, chairs, and benches to promote casual seating and interactive spaces. Integrate movable tables and chairs to accommodate flexibility in placement and spatial configuration.
 - Address safety in designing outdoor spaces, allowing for surveillance. Encourage the presence of active uses, such as cafes, food trucks, and vendors in the public spaces. Provide appropriate illumination in outdoor spaces after sunset for safety and security.



A trellis creates a comfortable transition between indoor and outdoor environment for social interaction.



Shaded seating structures provide thermally-comfort outdoor rooms in the semi-desert environment.



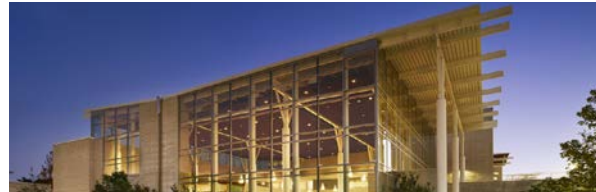
Integrative active uses on public plazas, providing shaded places to sit and linger.

A.4 ARCHITECTURAL DESIGN GUIDELINES: ACADEMIC ZONES

A primary objective for CSUSB Palm Desert Campus' architectural design guidelines is to establish a strong cohesive identity- merging its old campus core to new building development. Academic buildings are designed to be explicitly collegiate in character and should implement good proportions, visible points of entry, and well-articulated expression of human-scaled elements, such as windows, doors, steps, ramps and canopies.

DESIGN PRINCIPLES

The Architectural Design Guidelines relating to Academic Zones are based on six major principles:



COLLEGIATE CHARACTER: Each building within the academic zone should establish its identity within the greater whole of the campus and present its individual identity to contribute to a network of public spaces.



SOCIAL INTERACTION: Manage building mass and form to articulate outdoor spaces in accommodating social activities. Maximize ground-level activities that provide opportunities to strengthen social interaction and interdisciplinary collaboration.



SUSTAINABLE PERFORMANCE: Promote integrative systems in building design to minimize energy consumption and maximize occupant health. Integrate climate-responsive design and building systems to improve occupant comfort and productivity in existing and new buildings.



HUMAN SCALE: Apply components that provide human-scale, such as canopies, trellis elements, covered entries, and exterior light fixtures. Integrate rich details at eye-level in order to enrich adjacent public realm.



ACCESSIBILITY: Buildings should be oriented and designed to emphasize entries and provide direct access to the campus' promenade, plazas, and other public spaces.



PERMANENCE: Enrich design of campus buildings with use of details, durable materials, and contrasting colors to complement campus' surrounding context -exhibiting a sense of permanence and quality.



DESIGN RECOMMENDATIONS

- 1 Configure academic buildings within the future academic core along the central pedestrian promenade to ensure dense, compact campus growth.
- 2 Orient buildings to form semi-public green courtyards.
- 3 Incorporate large proportions transparent glazing at the ground floor to extend activities into outdoor space and providing shading.
- 4 Incorporate colors, materials, and spatial elements such as double-height ceilings, glazing, and central areas in main building entries as a multi-use gathering area where building occupants may interact.
- 5 Incorporate operable windows into building facades to allow for natural ventilation.
- 6 Strategically apply water and energy efficient building systems and materials, such as photovoltaic panels, shading systems, and roof gardens.

FIG A-2: ACADEMIC ZONE DESIGN GUIDELINES ILLUSTRATIVE

Campus buildings can be divided into two main categories: “Signature” buildings which occupy the visually and functionally important locations or are in the foreground of the campus; and “fabric” buildings that make up the overall fabric of the campus or occupy the visual and functional background.



“Fabric” Building CSUSB Palm Desert Campus



“Signature” Building CSUSB Palm Desert Campus

MASSING & SCALE

Intent

A building’s massing and scale can be articulated through a variety of visual effects which are used to articulate the facade of a large building or visually give the impression of a change of plane. Building massing, whether for ‘significant’ or ‘fabric’ buildings, should be developed to create a comfortable relationship between the scale of the building and the scale of a person.

Guidelines

- Building mass and form should provide appropriate spatial relationships to their adjacent academic context and comprehensible to human-scale.
- Academic buildings are typically to be three to four levels.
- Manage building massing and form by articulating individual identity adjacent to the promenade and plazas. Create distinctive promenade, plazas, and other open spaces for facilitating interdisciplinary collaboration and interaction.
- The massing and orientation should be planned to mitigate strong seasonal winds from the northwest and the southeast.
- Take advantage of the sun’s seasonal path by orienting the buildings. Employ flat, parapet roofs on all new academic buildings for integrating solar roof panels, assisting buildings to generate self-sustaining energy power.

BUILDING ENTRIES

Intent

Articulated and visible entries for academic buildings help orient students and visitors. Optimum building entry placement can help frame and activate the streetscape, define outdoor gathering spaces, and provide students, faculty, and visitors with a pleasing environment on campus.

Guidelines

- All building entries should be articulated to differentiate primary and secondary entrances.
- Primary building entries should be oriented to major campus pathways (such as the central promenade) and face the major pedestrian walkways. Secondary entries should access courtyard areas or +parking.
- Primary and secondary building entries should receive architectural enhancements as a way of establishing a visual focus and a hierarchy of façade elements. Typically, such architectural enhancements include:
 - Use of accent forms and materials that clearly identify the entry from building massing;
 - Enhanced materials and/or contrasting colors;
 - Sun shades;
 - Clear glass;
 - Special lighting; and/or
 - Special entry pavement.
- Coordinate the placement of entries as well as the design of building ground-levels with the design of the adjacent public spaces.



Covered building entry forms informal social spaces and provides transitional space that extends interior activities to the outdoors.



Articulation of buildings façades enriching the campus environment and providing human-scale comfort at eye-level.



Incorporate transparent features on the ground floor of the buildings to maximize visible ground-level activities.

- Where applicable, employ a covered entry area for academic buildings to create shaded and informal outdoor spaces to promote social interaction and mitigated climate impacts.
- Service entrances and areas should not be located on building frontage and should be consolidated where possible, along a shared service corridor. Existing service entrances and loading areas that are fronting streets or the public realm should be appropriately screened with landscape elements.
- All building entries should be designed to feel safe, secure, and well-lit after sunset. Incorporate signage at all building entries to provide building identification.

ARTICULATION & FENESTRATION

Intent

Proper articulation of a building's façade will add richness and variety to the academic architecture. Quality design of buildings' façades can define its architectural character and add interest to campus streets, quads, and other open spaces. A clear pattern of building fenestration that unifies the building can strengthen the building identity, articulate the entrances and ground floor activities, provide natural light and breeze for creating a comfortable indoor environment for building users.

Guidelines

- Clearly delineate a distinctive base, middle, and top for the academic buildings. Articulate the building façade into constituent parts to create rhythm and interest. Provide visual continuity with neighboring buildings and engage the landscape design of open spaces.
- Research and laboratory building façades should express where appropriate building function, structure, and scale. Reveals, mullions, setbacks, and changes of plane can achieve this type of articulation.
- Reinforce buildings' connection to the public spaces upon which it fronts. Buildings' frontages along the central promenade, plazas, and collaboration quads should create a welcoming and attractive outdoor environment.



Building fenestration should consider the semi-arid climate environment where the campus sits. Incorporate elements such as arcades, trellises, canopies to enrich the public realm and enhance energy performance.



Recommended building materials palette include stucco, fiber cement panels, high-performance glass, metal panels and other materials suitable to a warm, arid climate.

- Where appropriate, incorporate multiple uses in academic buildings. Place public functions on the buildings' ground-level and less public/more utilitarian functions on the upper-levels. Uses within buildings' ground-level should correspond to windows or glazed entry areas that invite pedestrian traffic and provide a sense of security to pedestrians at night.
- Avoid large blank walls or an uninterrupted building mass to enhance the visual and physical experience of buildings and to reinforce a sense of security.
- Encourage a range of window sizes, shapes, and depths to create unique and distinctive patterns of shade and shadow for building façades.
- The placement and proportion of windows can strategically address climatic conditions of a semi-arid environment. Building fenestration should respond to its location corresponding to solar orientation, views, natural breezes and daylighting needs.
- Dark tinted, reflective or opaque glazing is discouraged for any required public street level wall opening and are also discouraged in other applications.
- Incorporate operable windows where appropriate to provide occupants in academic buildings and residential buildings natural ventilation.
- Take every opportunity to introduce protected natural light into buildings, especially lobbies, gathering areas, and shared spaces within the building.
- Incorporate shading structures (e.g., arcades, loggias, trellises, etc.) as important elements in creating comfortable transitions- from building internal spaces to outdoor gathering areas as a beneficial climate response.

MATERIALS

Intent

A major overarching design tool for unifying the campus is through the use of exterior building materials. The following guidelines suggest a specific palette of materials that can be deployed by future architectural designers to acknowledge the 'signature' or 'background' character of the building being designed. The recommended materials palette is based on the dominant and defining character of CSUSB Palm Desert Campus – a semi-arid climate suggesting materials that evoke this semi-desert landscape environment which define this campus and serve as the campus "context."

Guidelines

- Exterior building materials should be used to unify the collection of campus buildings. Stucco or 'dryvit', fiber cement panels, glass and other materials would be considered suitable to a warm, arid climate.
- New buildings should incorporate large proportions of glass and some use of metal panels as facade materials.
- Clear, high-performance glass should be used to allow natural light to penetrate through buildings' interior as well as allowing true color views into and out of classrooms, offices and other campus buildings.
- Polished/reflective metal materials are not recommended for use on the campus.
- Metal buildings, although appropriate for industrial settings and even as temporary facilities, do not fit on the CSUSB Palm Desert Campus.
- Renewable and recycled materials are highly encouraged to be used in all existing buildings and new buildings.

COLORS

Intent

Exterior building colors should be used to unify the collection of campus buildings. It is recommended that the campus adopt an official campus color palette to guide new building development and existing buildings. The guidelines and examples below provide directions for this palette.

Guidelines

- The Design Guidelines recommend a rich, saturated, and thematic color palette of earth tones that contrasts with the surrounding desert's muted earth tones.
- The hue examples shown on the right page are only suggestions for the orientation of the color palette.

- *Primary colors.* On new and remodeled buildings, a limited palette of rich, saturated earth-tone colors should be used as building primary colors. Colors such as burnt oranges, reds, and yellow orange are considerable color choices to contrast with the muted tans of the desert.

- Deviations from the official campus color palette should be approved and reviewed by the campus body, committee or department that administers the campus design guidelines,

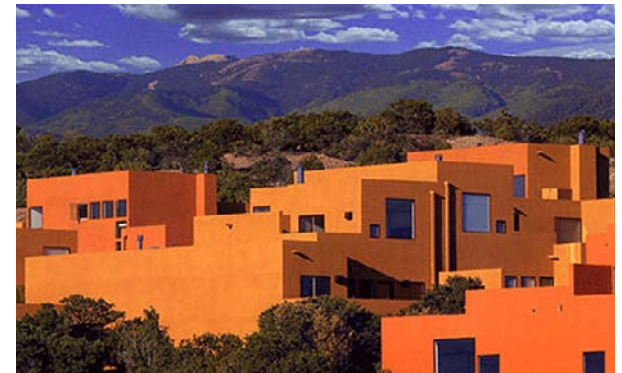
- When applicable, colors should be used to further divide building facades into human scale elements at the ground floor level.



Recommended Example: Use of warm saturated colors for building exteriors



Recommended Example: The building exterior uses warm saturated color tones as a primary color and warm earth tone colors - desert sand as an accent color.



Recommended Example: The building exterior uses a majority of tones such as rust-orange which complements its surrounding context

A.5 ARCHITECTURAL DESIGN GUIDELINES: RESIDENTIAL ZONES

Design for residential buildings requires careful consideration of scale and massing, and its relationship to adjacent open spaces, structures, and connections to pedestrian and vehicle circulation networks.

DESIGN PRINCIPLES

The Architectural Design Guidelines regarding to Residential Zones are based on six major principles:



COLLEGIATE CHARACTER: Distinguish residential buildings with individual character, differentiating them from academic and institutional buildings, but still integrated with the greater whole of the campus “context”.



THREE DIMENSIONAL QUALITY: Articulate building facades to emphasize shadow lines and visual relief while enriching the overall campus context. Use visually pleasing proportions and clear patterns for building openings.



OUTDOOR ROOMS: Use building orientation and massing to differentiate types of outdoor space, such as the promenade, courtyards, plazas, and other open spaces. To facilitate social interaction and passive recreation, create a vibrant, urban-style living environment for the community.



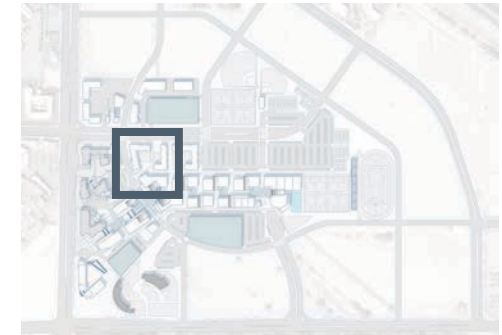
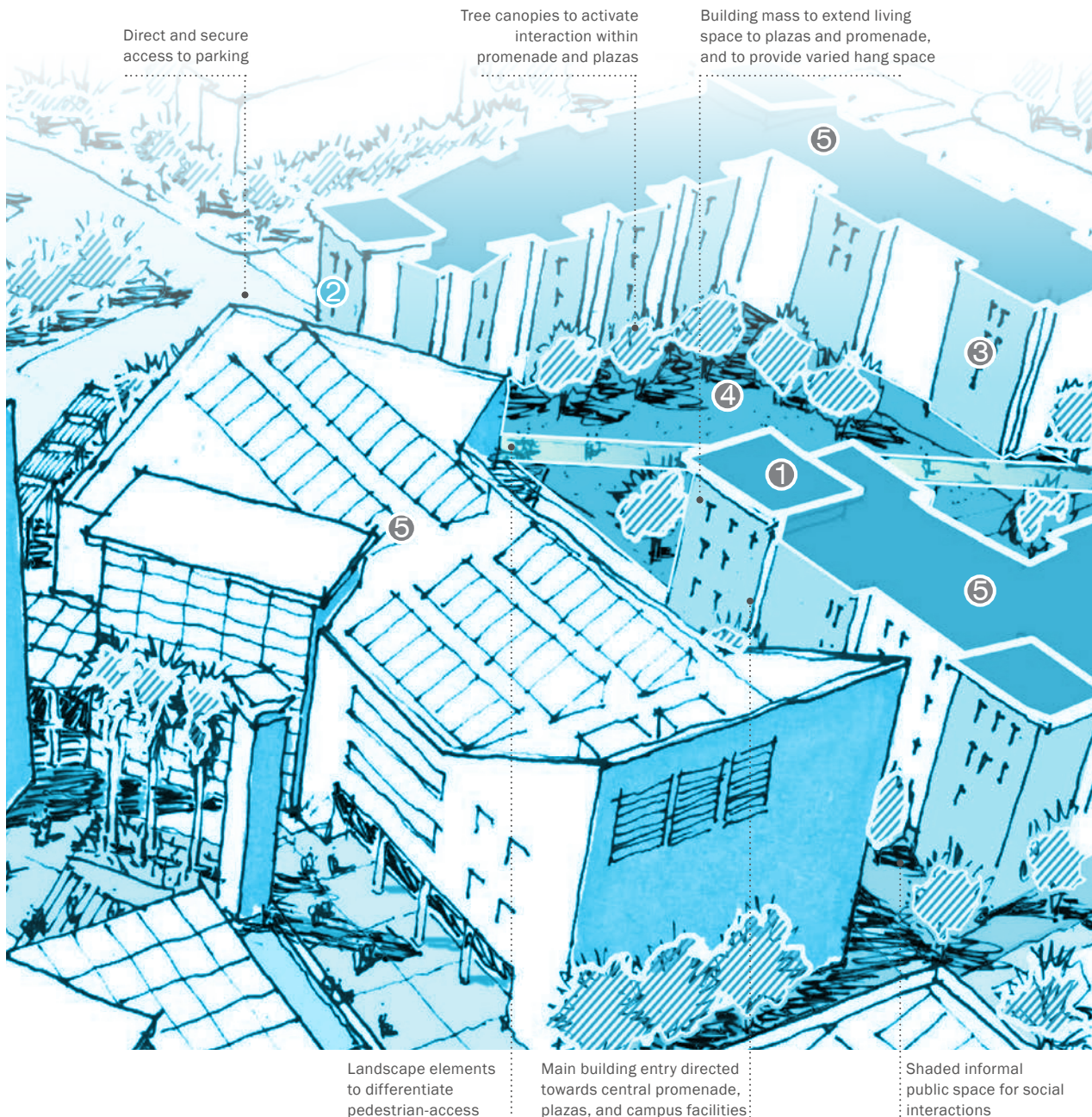
BUILDING STREET RELATIONSHIPS: Orient new residential buildings facing primary pedestrian walks and plazas; encourage active ground floor uses and establish interactive visual connections to animate the sidewalks.



HUMAN-SCALE: Encourage components that offer a human dimension, such as canopies, trellis elements, covered entries, and exterior light fixtures. Incorporate rich detail, especially at eye-level.



PERMANENCE: Utilize buildings and landscape to define and enhance the campus’s sense of permanence. Developments should make a long-term addition to the campus. Use details, materials, and colors in tune with the campus “context.” Raise the level of design with materials that exhibit permanence and quality.



DESIGN RECOMMENDATIONS

- ① Emphasize building entries and access to residential units are secure and easily identifiable using architectural accents and lighting.
- ② Incorporate spatial elements such as double-height ceilings, glazing, and central areas in main building entries as a multi-use gathering area where building occupants may interact.
- ③ Articulate building massing and façade through architectural accents, materials, and color to differentiate residential buildings from academic and institutional buildings.
- ④ Orient buildings to form semi-public green courtyards that provide direct access to the central promenade, recreational areas, and campus facilities.
- ⑤ Strategically apply durable and water efficient and energy efficient building systems and materials, such as photovoltaic panels, shading systems, and roof gardens.

FIG A-3: RESIDENTIAL ZONE DESIGN GUIDELINES ILLUSTRATIVE



Existing residential buildings on campus are typically three levels



Manage building mass and components to the building facade to break down the mass. New housing buildings are typically three levels.



Highlight the building entry through different architectural language. Use large portion of clear-glass features at the entrance to ensure safety and security at night.

MASSING & FORM

Intent

Attention to residential building massing and scale is important in order to reinforce the overall character of the campus. Sensitive considerations are required in the building design to articulate the appropriate building volume, respecting the overall campus environment and providing visual interest and human-scale comfort.

Guidelines

- Distinguish residential buildings through building mass.
- Residential buildings typically consist of 3 or 4 levels that correspond to desired residential density.
- Manipulate the scale of buildings to provide visual interest. Recessed wall planes and building off-sets can create varied shadow lines and visual diversity.
- Utilize building mass configuration and scale to articulate semi-public and private gathering areas. Provide transitions to indoor spaces, outdoor spaces, and adjacent buildings. Ensure the natural light is provided in social interacting spaces.
- Integrate articulated elements and features to help break down apparent massing of the complex to a more intimate, approachable scale. Incorporate smaller-scale components on lower levels.
- Strategically design building mass to reduce building energy consumption, and to optimize solar orientation, natural ventilation and passive heating and cooling.
- Form and configure building masses to provide semi-enclosed courtyards- enabling residents and campus users access to campus amenities and communal recreational areas.

BUILDING ENTRIES

Intent

Entries for residential buildings should be well-marked and easily accessible for residents from campus pathways.

Guidelines

- Establish clear and congenial connections between residential buildings and the campus. Existing and new pathways should incorporate landscape and spaces to enable gathering for both organized activities and informal interaction.
- Wherever possible, orient residential building entries toward major campus walkways, the central promenade, and primary plazas.
- Design multiple entries to create a hierarchy (primary, secondary, service, etc.) and differentiate the function of entries. Entries providing a direct visual connection to internal courtyards are also encouraged.
- Coordinate the design of residential buildings' ground-level with the design of adjacent walkways, plazas, and courtyards.
- Incorporate diverse and active uses on the ground-level of new residential buildings where possible. Introduce classrooms, faculty offices, innovative offices, as well as food and beverage services to encourage social interaction.
- All residential building entries should be designed to feel safe and secure, and be well-lit in evening hours.
- Use landscape to buffer residential buildings from roadways. Pathways crossing vehicle circulation



Incorporate active uses at the ground floor of residential buildings.



Recommended building exterior primary colors could include beige, warm grey, warm natural earth tone, warm earth tone, etc.



High saturation colors can be used to articulate the building elements such as entrance, window frame, canopy, etc., to increase visual interest.



Incorporate wood / wood-related materials to express a more residential feeling

routes must incorporate multiple layers of warning and notifications, through special paving, change of landscape, and signage.

- Provide adjacent amenities and architectural components such as canopies and trellises to provide shade and activate adjacent outdoor gathering space and promote pedestrian activity

- Screen unsightly utility and service items, such as garbage cans, utility boxes, and mechanical equipment from view at ground level, streets and from other buildings where feasible.
- Screening should consist of approved fences or landscape buffers. Roof screens should be compatible and complement exterior materials and color.

ARTICULATION & FENESTRATION

Intent

Proper articulation of a building's façade can add visual variety to residential buildings and consideration for its surrounding context. Consistent architectural design and building fenestration design will reinforce building identity, create human-scale comfort at eye-level, and activate the adjacent public spaces.

Guidelines

- Articulate façades and architectural details to distinguish residential buildings from academic, institutional and recreational buildings.
- Encourage active uses and ample fenestration at the ground floor. Incorporate transparent features (such as clear glass on windows and doors) in façades to allow visual access to the building's active interior uses while enticing pedestrians walking by.
- Minimize blank walls at ground-level. The building façade at the ground level should be open and visible from adjacent spaces. Incorporate permeable ground floor areas such as arcades and open connections to internal courtyards wherever possible.
- Incorporate solar panels and roof gardens to mitigate seasonal climate conditions.

MATERIALS & COLORS

Intent

The selection of materials and color palette for residential buildings must conform to the official color and material palettes mentioned above and be approved by the University.

Guidelines

- Choice of exterior building materials is based on their ability to lend texture and visual interest, durability, and degree of low-maintenance.
- The color palette for residential buildings can be more vibrant than academic buildings, as well as visually cohesive within the overall campus fabric.
- Highly saturated colors will provide building identity at entrances or courtyard and are to be used to accent building elements and to create visual interest and human scale.

A.6 ARCHITECTURAL DESIGN GUIDELINES: PARKING STRUCTURES

Although they provide a utilitarian function, parking structures are typically the largest structures on campus and noticeable from major public streets. Their massing, articulation, and design details (i.e. stair towers and facades materials) are critical in creating a desirable, congenial, pedestrian-scale campus. The following design guidelines address design standards for parking structures that allow these large facilities to be designed to (scale, form, and safety measures) in ways that do not detract from the campus image.

DESIGN PRINCIPLES

The Architectural Design Guidelines regarding to Parking Structures are based on six major principles:



CONTEXT COHERENCY: Design parking structures to integrate into the campus environment and not stand out as utilitarian structures that detract the overall campus image.



ACCESSIBILITY: Locate parking structures at the peripheral of the campus with clear-marked entries. Elevators and stairs of the parking structures should be highlighted with architectural elements, to increase visibility and improve secure access at entry points.



VISUAL IMPACTS: Minimize negative visual impacts of parking structures on adjacent buildings and public context by reducing the monotony of its underlying structure systems through wall mass, window openings, and variant use of color, material, and texture.



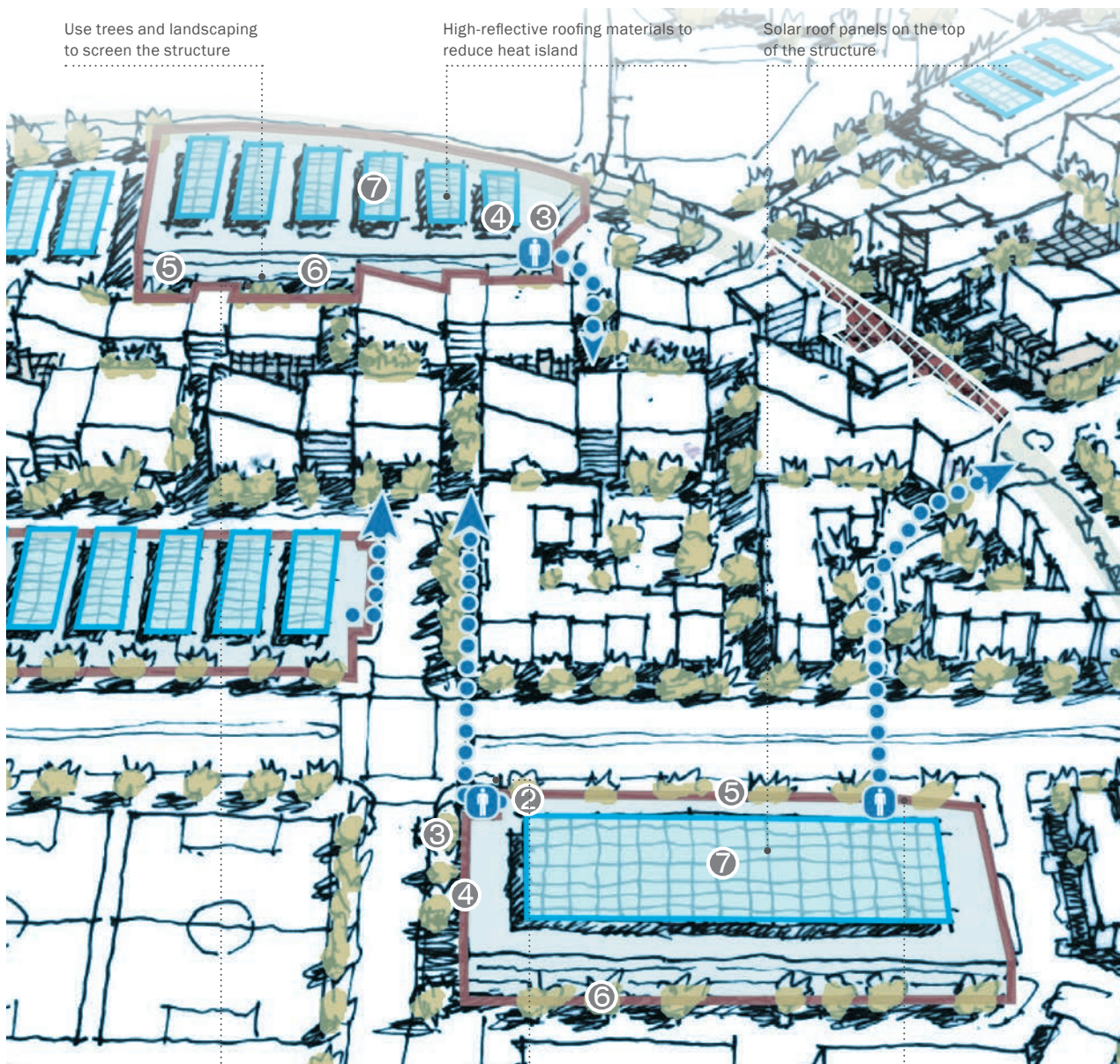
ARCHITECTURAL INTEGRITY: Apply design approaches to articulate the massing, scale, form, and details of the parking structures to establish a strong architectural character while softening their apparent mass.



PEDESTRIAN EXPERIENCE: Appropriately locate vehicular and pedestrian entries to minimize vehicle and pedestrian conflicts. Wherever possible, integrate active uses at ground level to add activities to the surrounding public realm.



SUSTAINABLE PERFORMANCE: Integrate sustainable design approaches in the parking structure design and apply solar roof panels, renewable materials, natural ventilation, and stormwater treatment measures where possible for achieving the goal of green building performance.



DESIGN RECOMMENDATIONS

- ① Manage the structure massing, scale and form to reduce its apparent mass and negative visual impact.
- ② Clearly define the vertical circulation element (stair tower and elevator core); ensure it is glazed and well-lit after sunset
- ③ Highlight the structure major entrance; integrate components to provide human-scale comfort at eye-level
- ④ Integrate active uses at the ground floor of the structure, i.e., office, retail, and food and beverage establishments, etc.
- ⑤ Increase exterior openings and minimize solid walls for passive surveillance
- ⑥ Utilize solar roof panels, reflective roofing materials to enhance energy efficiency and reduce heat island effect
- ⑦ Use trees and plantings to screen parking structures and blend it into the surrounding environment

FIG A-4: PARKING STRUCTURE DESIGN GUIDELINES ILLUSTRATIVE



The tower of for each parking structure emphasizes entries to stairways and elevators. Solar roof panels are also provided on the top parking deck.



Parking structure stair towers should be glazed and well-lit at night to provide maximum visibility and safety.



Parking structure with active uses at the ground floor

MASSING & FORM

Intent

The massing and form of parking structures exert critical impacts on the surrounding environment. Considered design of the massing, scale and form of parking structures can help to minimize its apparent mass and integrate them into the campus setting.

Guidelines

- Enhance the quality of design for the parking structures. Manipulate the massing, scale and form of the structures proportionally to reduce its negative impact on the overall character of the campus image.
- Limit the height of parking structures to five levels, including parking on the roof level. Parking structures are recommended to be no more than four stories.
- Apply architectural design approaches to the design of bulk and scale for decreasing the “visual weight” of structure massing as the height increases.
- Define stair towers and elevator cores to be distinct taller masses that intersect the mass of the main structure.
- Encourage placing internalized ramping in parking structures to avoid an angular geometry to the perimeter of the structure.

ARTICULATION AND DETAILS

Intent

The articulation and design element details (stair towers and facade materials) of parking structures are critical for creating a congenial, pedestrian-scale campus. Other elements such as landscape screening, LED colored panels are encouraged to be integrated in the exterior design to achieve visual distinction.

Guidelines

- Clearly delineate the vertical circulation elements (including stair towers and elevator cores) of parking structures and place them close to the main entrances of the structure. Incorporate architectural details, materials, and textures to highlight the main entrances and allow for visibility from a distance.
- Where parking structures and pedestrian areas/ public spaces adjoin, deploy a high level of design language at the exterior edge of the parking structure (e.g., decorative details, overhead trellises, planters/seat walls, pedestrian-scale lighting, etc.) to establish a comfortable and well-proportioned human dimension.
- Integrate academic, office or retail uses at the ground floor in the exposed sides of the parking structures to activate adjoining passages and open spaces where the programs are permitted.
- Soften the facades of parking structures facing primary pedestrian pathways, residential zones, or major public spaces by incorporating architectural or landscape screening onto the structure.
- Design parking structures to allow passive surveillance with exterior openings and minimized solid walls. Avoid large blank walls and continuous sloped strip openings on structure facades.



Use landscape to provide visual perimeter screening onto the structure.



Recommended material palate for the exteriors of parking structures



Recommended material palate for the exteriors of parking structures

- Stair towers should be glazed and well-lit to ensure safe and secure access. Lighting for stair and elevator towers should allow those elements of the structure to serve as a visible beacon to pedestrians at night.
- Minimize openings on parking structure façades facing residential areas to minimize disruptive noise and lighting.
- Incorporate sustainable design features such as solar roof panels, renewable materials, and stormwater treatment systems (where applicable) to optimize green building performance.
- Promote natural ventilation and daylighting to minimize mechanical ventilation.

MATERIALS & COLORS

Intent

Within the budget constraints, the selection of exterior materials and colors of parking structures should be applied to reduce the overall monotony of the structure and help blend the structure into the adjacent campus environment.

Guidelines

- Design parking structures to match the campus' color palette, materials selection, and the campus' building scale and architectural-style.
- Recommended for the campus' material palette, exteriors of parking structures may include precast concrete or cast-in-place concrete.
- Encourage use of high reflective roofing materials on the parking structures to minimize potential heat islands resulting from solar absorbent surfaces.
- Encourage use of white or very light color on the walls and ceilings within a parking structure to increase the perception and reality of safety. This will reflect and distribute light from light fixtures and reduce shadow areas.

A.7 LANDSCAPE DESIGN GUIDELINES

The following design guidelines are aimed to provide guidance in creating a strong landscape framework that will establish the overall landscape identity of the campus, unify campus building character, and provide appealing multi-functional outdoor spaces that will accommodate diverse events, programs, social interactions, and interdisciplinary collaboration.

DESIGN PRINCIPLES

The Landscape Design Guidelines are based on six major principles:



REGIONAL CHARACTER: Contribute to the authentic character of the regional semi-arid/desert environment through the use of regional adaptive plant species and locally/regional sourced materials.



MULTI-FUNCTIONAL: Integrate a range of open spaces with distinctive character and assorted scale that can accommodate diverse programs, events and activities for enriching the campus public realm and add more interest to the community.



HABITAT ENRICHMENT: Introduce native plant species and natural systems to create a resilient community which can protect and increase biodiversity, reduce maintenance, minimize water and energy consumption and create a positive environmental impact.



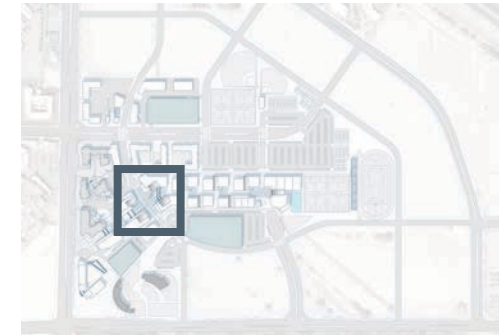
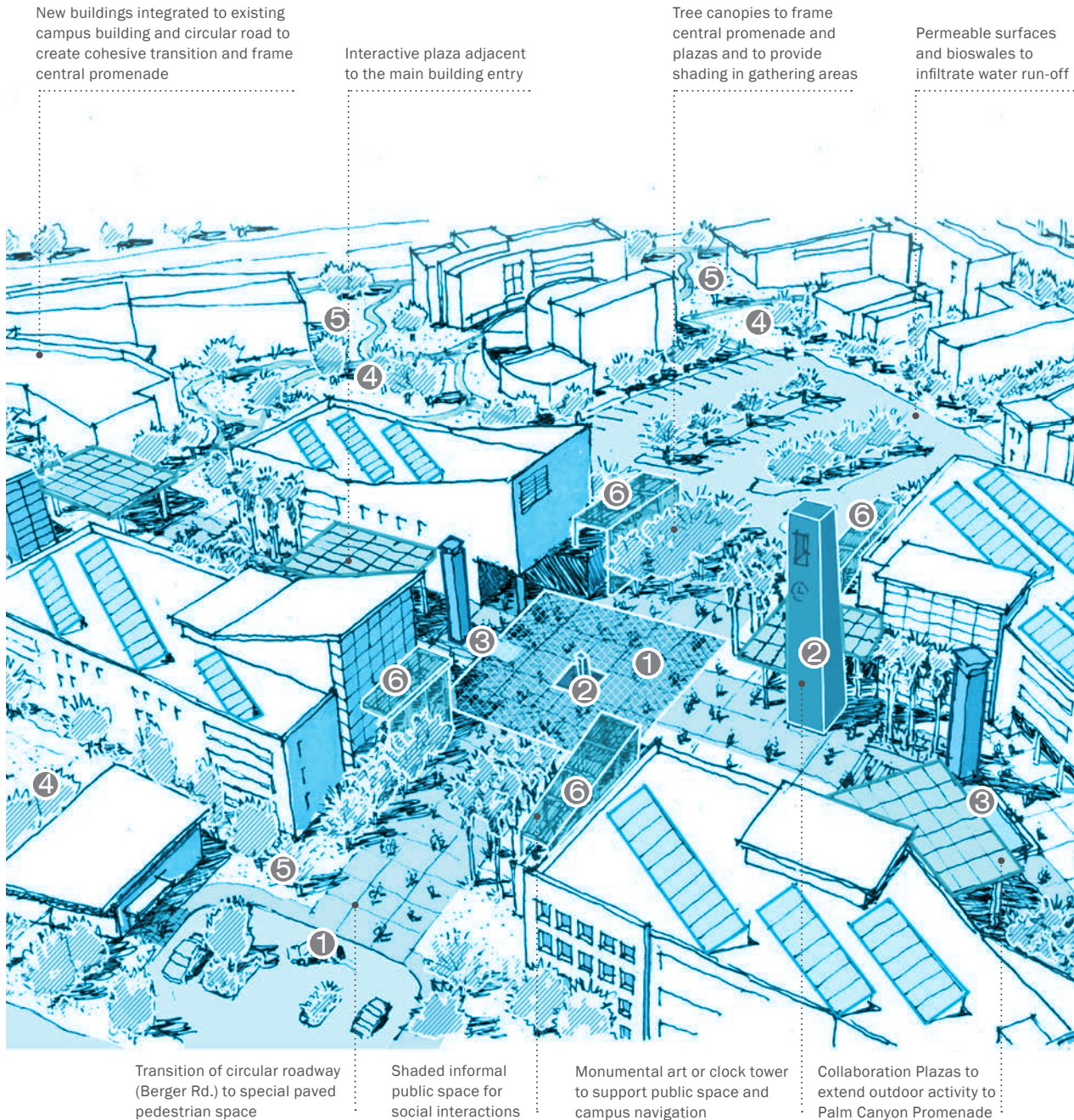
LANDSCAPE IDENTITY: Apply different landscape design approaches, plants, detail components, materials to establish a distinguished identity for each landscaped zone but still achieve a coherent landscape image that matches with the overall campus building character.



COMMUNAL SPACE: Provide ample outdoor rooms for students, faculty, visitors as communal spaces encompassing both informal/formal, public/semi-public open spaces for facilitating social gatherings and interactions.



LOW IMPACT DEVELOPMENT (LID): LID designs should be considered early on in the site design and development process. Where possible, integrate LID treatments such as renters, permeable pavers, bioswales, rain gardens for stormwater capture and micro climate mitigation.



DESIGN RECOMMENDATIONS

- 1 Utilize special paving as a hierarchy tool to indicate the central areas, main entries, and major access roads and walkways to distinguish pedestrian and vehicular areas with color, materials, texture, and removable bollards.
- 2 Incorporate monumental art pieces as navigating/landmark elements (clock tower or sculptures) to aid campus users in creating a mental map of the campus and emphasize the central promenade and plaza.
- 3 Incorporate water features such as fountains and cooling towers to enrich open space as gathering areas and to promote comfortable outdoor conditions with radiant and evaporative cooling.
- 4 Use native/climate-adaptive planting and complementary landscape elements to emphasize central plaza & promenades, promoting the campus' identity and sense of place.
- 5 Implement permeable surfaces & bioswales to mitigate water run-off.
- 6 Strategically implement color, materials, and landscape elements (i.e. trees & shaded seating) to promote seamless transitions from the old campus core to the central promenade and enable compact campus growth.

FIG A-5: LANDSCAPE DESIGN GUIDELINES ILLUSTRATIVE



Conserve and preserve the natural setting and promote compact campus growth for future development



Protect the high-biologic diversity



Densify the planting of palms along the central promenade to strengthen the landscape's cohesive character

NATURAL OPEN SPACES

Intent

The natural setting is a significant component of the campus green infrastructure to protect and maintain regional landscape character and biodiversity of the overall landscape environment on campus. Integrative approaches should be taken into account during campus landscape design for respecting and preserving the natural context at large.

Guidelines

- Protect wildlife/native species habitat and corridors (where applicable) by maintaining the biologic linkages between natural reserves and other landscaping zones.
- Restore disturbed or eroded biologic habitat/corridors.
- Consider locating sites for any needed-infrastructure facilities within the natural reserves.
- Use native or climate adapted plants to help obtain sustainability goals and integrate the campus site with its surrounding natural environment.

LANDSCAPED SPACES

Intent

A range of landscape design approaches should be integrated in the landscape design of each type of public spaces and outdoor rooms to strengthen its landscape character and creating appealing, interactive and safe outdoor environments.

Guidelines

- Integrate native, drought-tolerant plants and large-scale electronic, and static signage monuments to the enhance the campus central promenade.
- Introduce wayfinding/signage kiosks, bike lockers and racks as well as pedestrian-scale illumination equipment.
- Promote permeable hardscape materials for stormwater capture.
- Densify campus with palms and tree canopies. Extend hardscape to the buildings along the central promenade to form a series of interactive plazas and entry plazas.
- Incorporate solar panel shading systems, collaboration pavilions, bike lockers, casual seating and tables to create an aesthetically appealing and thermally-comfortable walkway linking the plazas to the central promenade.
- Strengthen the residential building area with landscape elements that would unify residential building façades and their activated ground-level.



Incorporate bioswales, rain gardens, permeable paving, native ground cover along pedestrian pathways and campus trails



Introduce a cohesive climate adaptive plant palette to unify the campus building characters



Introduce drought-tolerant plants on campus for lower maintenance and water conservation

- Preserve and densify the planting of trees to strengthen campus landscape character. Incorporate bioswales, permeable paving, native ground covers and drought-tolerant grasses in the landscape design.
- Provide street furnishing, such as bench seating and pedestrian-scale lighting.
- Incorporate unique landscape character and flora variety to differentiate plazas and courtyards. Provide shaded canopies, movable chairs, tables, and food and beverage accommodations to facilitate social interaction in these outdoor spaces.
- Use structural landscape to enhance seamless transitions from buildings to the adjoining public spaces, screen service/loading areas, and blank building façades.
- Incorporate clustered aligned trees to mitigate seasonal winds and to buffer any adjacencies to the athletic/sports field. Provide storm water retention and infiltration wherever topographic conditions allowed.

PLANTS

Intent

The selection of a variety of plants that can be well-grown and easily maintained at CSUSB Palm Desert Campus should primarily consider the semi-arid/desert environment due to this unique natural setting.

Guidelines

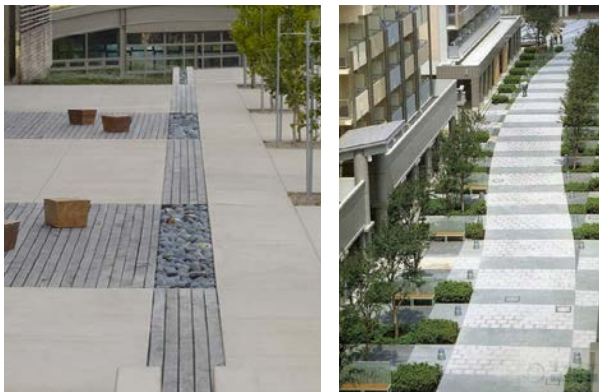
- Promote the utilization of native or climate-appropriate and drought-tolerant planting within all the campus landscape zones. Refer to the detailed Plant Material Palette provided in Appendix B for a specified selection of plants requiring low water consumption.
- Respect and reinforce natural landscape and designed planting patterns as well as the intrinsic and recognizable character of each landscape zone on campus. Consider fragrance, sound, color and texture in planting design.
- Strategically locate trees to maximize exposure to winter suns and provide summer shade along pedestrian walks, pathways, trails or adjoining to the façades of academic/residential buildings.
- Promote water conservation by using a computer-regulated irrigation system as well as efficient subterranean drip irrigation systems for water conservation.
- Keep plantings healthy without the use of conventional fertilizers and pesticides. Promote ease of maintenance on campus.



Pathways, plazas where accommodating intense pedestrian activities can use permeable modular pavers; while vehicular routes, surface parking lot should use permeable asphalt paving



Soft-surface paving materials can be used on campus trails or small paths in gardens and natural reserve area



Different paving pattern with consistent color and materials can create a sense of harmony and define landscape character of public spaces

PAVING

Intent

A variation in paving texture, color and material selection is intended to be associated with the hierarchy of public spaces on campus, including pedestrian walks, plazas, quads, courtyards, gardens, natural reserves and other open space areas. A high quality of paving design will enrich the public realm identities, improve visual quality, and reinforce the primacy of pedestrian activities throughout the campus site.

Guidelines

- Utilize high-quality modular paving units, such as precast concrete, brick pavers, cast stone, or tile accents on major pedestrian walkways such as the central promenade, plazas, courtyards and building entries where there is a high-level of accommodation for pedestrian and social-interactive activities.
- Continue using cast-in-place concrete pavers on the pedestrian pathways throughout the campus. Consider replacing impervious concrete pavers with permeable concrete pavers gradually on the sidewalks during the future campus development.
- Use soft-surface paving materials - decomposed granite on the small paths/trails within the natural environment such as rain gardens and natural reserves which will build connections between the textural quality that reinforce a connection with the natural environment.
- Use durable, flexible, and permeable asphalt paving materials for all the vehicular roadways. Avoid using asphalt paving in the areas with heavy pedestrian activities.
- Use permeable, porous pavers for surface parking lots. Where permeable surfaces are not feasible, use asphalt and perforated curbs draining into bioswales that allow rainwater capture and infiltration.
- Color selection of paving materials should remain consistent with its surrounding building characters and pedestrian activities. Warm, rich colors should be used to provide richness and human scale, especially along primary pedestrian walkways, major intersections, public plazas, collaboration quads, and courtyards- balanced with the use of lighter colors for reducing heat island effects.
- Avoid use of dark-tone, petroleum-based paving materials that generate heat islands and require high energy consumption in their production.



Design the attached shade structure in a rhythm, proportion, and scale sympathetic to the building



Shade structures on public plazas provide a comfortable outdoor interactive area and act as a landscape art component

SHADE STRUCTURES

Intent

Shading structures, such as arcades, trellises, canopies, and solar panel shading systems, either attached to the buildings or freestanding as an individual component in the public plazas can help create a comfortable shaded area for accommodating formal/informal social activities by mitigating micro-climate within the semi-desert environmental context.

Guidelines

- Integrate arcades, trellises, and overhang canopies in campus' building design to provide transitional spaces from the indoor environment to the outdoor environment while serving as shelter from extensive sunlight in the semi-desert environment. .
- Design shading structures to express rhythm, proportion, and scale sympathetic to the building to which it is attached.
- Provide various types of shading structures in public areas to provide shelter from excessive sunlight and to create a thermally-comfortable outdoor environment for students, faculty and visitors.
- Integrate high-tech elements to enhance the overall design quality of the campus environment. For example, LED solar PV shading structures may create a shaded outdoor room during daylight and an active, illuminated public space at night.

LANDSCAPE ART

Intent

Incorporate art installations within the campus' overall landscape design. Art components may emphasize outdoor spaces, enrich the public realm, strengthen the campus' overall identity, and serve as a visual landmark or a focal point within the public spaces throughout the campus.

Guidelines

- Locate sculpture art at campus gateways, the central promenade, plazas, or other important pedestrian gathering and interactive spaces in order to create a focal point and reinforcing landscape character.
- Select art installations relevant to associated academic/residential buildings to enhance the overall learning and social interactive experience.
- Place each art piece relative to its immediate context. Encourage interactive art installations to vitalize public spaces and to provide students and visitors opportunities to directly interact with art work.
- Integrate art elements with campus elements, such as paving, signage and wayfinding, and campus furnishing design.
- Promote high-quality design for art components. Use durable materials in order to reduce on-going maintenance costs.



APPENDIX

B CAMPUS LANDSCAPE PALETTE

B.1 LANDSCAPE IMPLEMENTATION AND MAINTENANCE

DESERT PLANT PALETTE AND IRRIGATION GUIDELINES

The University's overarching sustainability initiatives dictate both an appropriate desert adapted arid plant palette as well as state of the art irrigation strategies. The attached recommended plant palette may be considered a general guide for campus infrastructure and is intended as a fundamental matrix for application throughout the Palm Desert Campus. At the same time, alternative species may be considered and evaluated based on site specific conditions as development evolves. The overriding goal should be to ensure a readily adapted, sustainable and maintainable landscape.

It is intended that all new and renovated irrigation systems will meet or exceed the State of California Model Water Efficient Landscape Ordinance requirements. Furthering the goals of sustainability objectives and potable water conservation the following initiatives are encouraged:

- In order to quantify and monitor landscape water use, Install dedicated landscape irrigation water meters at all well or point of service connection locations;
- Install in line flow sensors and master valves at all mainline points of connection
- Establish base line water use numbers for all landscape zones on campus for ongoing evaluation of water consumption;

- Utilize a coordinated "Smart" irrigation controllers that utilize weather based evapotranspiration data (Eto) or moisture based data (soil sensors) in order to automatically update and to adjust irrigation programs/schedules;
- Soil/rain sensors should be installed throughout systems in order to interrupt or suspend irrigation delivery during significant rain events;
- In order to improve efficiency of delivery utilize high efficiency rotor type heads in lieu of traditional spray nozzles or heads;
- Minimize irrigation run off by utilizing soak-and-cycle programs;
- Utilize check or anti -drain valves on all irrigation circuits;
- Regularly monitor and adjust irrigation programming to reduce runoff;
- Monitor irrigation circuits and programs and utilize in line pressure regulating devices to ensure optimum operating pressures for nozzles and heads;
- In smaller or narrow planting areas consider utilizing drip emitter systems (e.g. Netafin);
- Deep water trees with dedicated low flow bubbler heads separate from other turf, shrub or ground-cover irrigation circuits;
- Utilize less water intensive landscape material palette;
- Utilize minimum 3 in. Depth organic mulches in shrub and ground cover areas;
- Aerate and reduce soil compaction in high traffic zones in order to minimize irrigation water runoff.

		BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
		SMALL TREES 25 - 30 FT		EVERGREEN		
<i>Acacia aneura</i>	Mulga Acacia				Yellow	LOW
<i>Arbutus unedo</i>	Strawberry Tree				White	MOD
<i>Callistemon citrinus</i>	Lemon Bottlebrush				Red	MOD
<i>Ebenopsis ebano</i>	Texas Ebony				Yellow	MOD
<i>Eriobotrya deflexa</i>	Bronze Loquat				White	MOD
<i>Laurus nobilis</i>	Sweet Bay					MOD
<i>Olea europaea 'Wilsonii'</i>	Fruitless Olive					LOW
<i>Olnea tesota</i>	Desert Ironwood		Lt Purple	MOD		
SMALL TREES 25 - 30 FT		BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
		<i>Acacia farnesiana</i>	Sweet Acacia	✓	Yellow	LOW
		<i>Acacia willardiana</i>	Palo Blanco		Cream	LOW
		<i>Chilopsis linearis</i>	Desert Willow	✓	Pink	MOD
		<i>Chitalpa tashkentensis</i>	Chitalpa		Pink	LOW
		<i>Chorisia speciosa</i>	Silk Foss Tree		Pink	MOD
		<i>Prosopis 'Phoenix'</i>	Phoenix Mesquite		Light Yellow	LOW
		<i>Psorothamnus spinosus</i>	Smoke Tree	✓	Dark Blue	V LOW
		<i>Koelreuteria bipinnata</i>	Chinese Flame Tree		Yellow	MOD
		<i>Lagerstroemia 'Muskogee'</i>	Muskogee Crape Myrtle		Lavender	MOD
		<i>Lagerstroemia 'Natchez'</i>	Natchez Crape Myrtle		White	MOD
		<i>Parkinsonia 'Desert Museum'</i>	Mexican Palo Verde	✓	Yellow	LOW
		<i>Prosopis chilensis</i>	Chilean Mesquite		Yellow	LOW
		<i>Prosopis glandulosa</i>	Texas Honey Mesquite	✓		LOW

TABLE B-1: CAMPUS LANDSCAPE PALETTE TABLE

MEDIUM TREES : 30 - 40 FT	EVERGREEN	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
		<i>Brachychiton populneus</i>	Kurrajong Bottle Tree		Yellow	MOD
		<i>Cinnamomum camphora</i>	Camphor Tree			MOD
		<i>Geijera parviflora</i>	Australian Willow		Cream	MOD
		<i>Prosopis alba</i>	Argentine Mesquite		Yellow	LOW
		<i>Rhus lancea</i>	African Sumac		Yellow	MOD
MEDIUM TREES : 30 - 40 FT	DECIDUOUS	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
		<i>Fraxinus velutina 'Rio Grande'</i>	Fan-Tex Ash	✓		MOD
		<i>Parkinsonia 'Desert Museum'</i>	Mexican Palo Verde	✓	Yellow	LOW
		<i>Parkinsonia florida</i>	Blue Palo Verde	✓		LOW
		<i>Robinia pseudoacacia</i>	Black Locust			MOD
		<i>Robinia x ambigua Idahoensis</i>	Locust			MOD
		<i>Zelkova serrata</i>	Japanese Zelkova			MOD
LARGE TREES 50 - 70 FT	EVERGREEN	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
		<i>Eucalyptus viminalis</i>	Manna Gum			MOD
		<i>Quercus ilex</i>	Holly Oak			MOD
		<i>Quercus suber</i>	Cork Oak			LOW
		<i>Quercus virginiana</i>	Southern Live Oak			MOD

TABLE B-1: CAMPUS LANDSCAPE PALETTE TABLE [CONTINUED]

CONIFERS	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
	<i>Pinus brutia var. eldarica</i>	Afghan Pine			MOD
	<i>Pinus canariensis</i>	Canary Island Pine			MOD
	<i>Pinus halepensis</i>	Aleppo Pine			MOD
WINDROW	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
	<i>Celtis occidentalis</i>	Common Hackberry			MOD
	<i>Chilopsis linearis</i>	Desert Willow	✓		MOD
	<i>Pinus brutia ssp. Eldarica</i>	Afghan Pine			MOD
	<i>Pinus halepensis</i>	Aleppo Pine			MOD
PALMS	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
	<i>Chamaerops humilis</i>	Mediterranean Fan Palm			MOD
	<i>Phoenix dactylifera</i>	Date Palm			MOD
	<i>Washingtonia filifera</i>	California Fan Palm	✓		MOD
	<i>Washingtonia robusta</i>	Mexican Fan Palm			MOD

TABLE B-1: CAMPUS LANDSCAPE PALETTE TABLE [CONTINUED]

		BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
		SHRUBS LOW : 1 FT - 5FT	<i>Agave filifera</i>	Thread Agave		
<i>Anisacanthus quadrafidus var. wrightii</i>	Desert Honeysuckle				Orange	LOW
<i>Baccharis 'Starn'</i>	Starn Coyote Bush		✓			LOW
<i>Dasyliirion wheeleri</i>	Desert Spoon				Cream Wht	LOW
<i>Dietes bicolor</i>	Fortnight Lily				Yellow	MOD
<i>Echinocactus grusonii</i>	Golden Barrel Cactus					LOW
<i>Encelia farinosa</i>	Desert Encelia		✓		Yellow	V LOW
<i>Justicia californica</i>	Chuperosa		✓		Orange	V LOW
<i>Leucophyllum candidum</i>	Texas Ranger				Purple	LOW
<i>Penstemon eatonii</i>	Firecracker Penstemon		✓		Orange	LOW
<i>Penstemon heterophyllus</i>	Foothill Penstemon		✓		Lavender	LOW
<i>Penstemon palmeri</i>	Scented Penstemon		✓		Pink	LOW
<i>Penstemon parryi</i>	Parry's Penstemon				Rose	LOW
<i>Salvia greggii</i>	Autumn Sage				Pink, Red	MOD
<i>Salvia leucantha</i>	Mexican Bush Sage				Purple	MOD
<i>Salvia leucantha 'Santa Barbara'</i>	Santa Barbara Mexican Bush Sage				Purple	MOD
<i>Verbena rigida</i>	Vervain				Purple	MOD

TABLE B-1: CAMPUS LANDSCAPE PALETTE TABLE [CONTINUED]

		BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
SHRUBS	MEDIUM - LARGE: 3 FT - 20 FT	<i>Agave americana</i> 'Variegata Mediopicta'	Striped Century Plant		Yellow	V LOW
		<i>Abutilon palmeri</i>	Indian Mallow	✓	Yellow	MOD
		<i>Acacia greggii</i>	Catclaw Acacia	✓	Yellow	LOW
		<i>Baccharis sarothroides</i>	Broom Baccharis	✓	White	LOW
		<i>Caesalpinia gilliesii</i>	Yellow Bird of Paradise		Yellow	LOW
		<i>Caesalpinia mexicana</i>	Mexican Poinciana		Yellow	LOW
		<i>Calliandra eriophylla</i>	Fairy duster		Pink	LOW
		<i>Calliandra peninsularis</i>	NCN		Red	LOW
		<i>Cordia boissieri</i>	Wild Olive		White	LOW
		<i>Cordia parvifolia</i>	Little-Leaf Cordia		White	LOW
		<i>Encelia farinosa</i>	Desert Encelia	✓	Yellow	V LOW
		<i>Hesperaloe parviflora</i> 'Red'	Red Yucca		Red	LOW
		<i>Hesperaloe parvifolia</i> 'Yellow'	Yellow Yucca		Yellow	LOW
		<i>Justicia californica</i>	Chuparosa	✓	Orange	V LOW
		<i>Leucophyllum candidum</i>	Violet Silverleaf		Violet	LOW
		<i>Leucophyllum frutescens</i>	Texas Ranger		Violet	LOW
		<i>Leucophyllum laevigatum</i>	Chihuahuan Sage		Lavender	LOW
		<i>Rosmarinus</i> 'Tuscan Blue'	Tuscan Blue Rosemary		Blue	MOD
		<i>Simmondsia chinensis</i>	Jobba	✓	yellow	LOW
		<i>Salvia</i> 'Allen Chickering'	Mexican Bush Sage	✓	Blue/Purple	LOW
<i>Salvia clevelandii</i>	Cleveland Sage	✓	Blue	LOW		
<i>Sophora secundiflora</i>	Mescal Bean		Violet	LOW		

TABLE B-1: CAMPUS LANDSCAPE PALETTE TABLE [CONTINUED]

GROUND COVER 1 FT - 3 FT	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
	<i>Artemesia 'Powis Castle'</i>	Wormwood			MOD
	<i>Achillea millefolium</i>	Yarrow		White	LOW
	<i>Baccharis 'Centennial'</i>	Centennial Desert Broom	✓	NA	LOW
	<i>Baccharis 'Starn'</i>	Centennial Desert Broom	✓	NA	LOW
	<i>Bulbine frutescens</i>	Stalked Bulbine		Yellow	LOW
	<i>Dalea capitata</i>	NCN		Yellow	MOD
	<i>Dalea greggii</i>	Trailing Indigo Bush		Purple	LOW
	<i>Lantana 'New Gold'</i>	Trailing Lantana		Gold	MOD
	<i>Sphaeralcea ambigu</i>	Desert Mallow	✓	Orange	V LOW
	<i>Sphaeralcea ambigu</i>	Desert Mallow		Orange	V LOW
BIOSWALE PERENNIALS GRASSES	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
	<i>Sambucus nigra ssp. mexicana</i>	Blue Elderberry	✓	White	MOD
	<i>Achillea millefolium</i>	Yarrow	✓	White	LOW
	<i>Baileya multiradiata</i>	Desert Marigold	✓	Yellow	LOW
	<i>Melampodium leucanthum</i>	Blackfoot Daisy	✓	White	LOW
	<i>Muhlenbergia capillaris</i>	Hairy Awn Muhly			MOD
	<i>Muhlenbergia dumosa</i>	Bamboo Muhly			MOD
	<i>Muhlenbergia lindheimeri</i>	Lindheimer's Muhly			MOD
	<i>Muhlenbergia rigens</i>	Deer Grass	✓		MOD

TABLE B-1: CAMPUS LANDSCAPE PALETTE TABLE [CONTINUED]

GRASSES	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
	<i>Aristida purpurea</i>	Purple Three-awn	✓	Purple	NA
	<i>Muhlenbergia capillaris</i>	Pink Muhly		Rose	LOW
	<i>Muhlenbergia dumosa</i>	Bamboo Muhly		Insignificant	MOD
	<i>Muhlenbergia lindheimeri</i>	Lindheimer's Muhly		White	MOD
	<i>Muhlenbergia rigens</i>	Deer Grass	✓	Cream	MOD
	<i>Sporobolus airoides</i>	Alkalai Sacaton		Cream	MOD
AGAVE YUCCA	BOTANICAL NAME	COMMON NAME	NATIVE	FLOWERING	WUCOLS CLASSIFICATION
	<i>Agave americana</i>	Centura Plant		Yellow-Grn	V LOW
	<i>Agave victoria-reginae</i>	Queen Victoria Agave		Yellow	V LOW
	<i>Dasyilirion wheeleri</i>	Desert Spoon		Cream	LOW
	<i>Foquieria splendens</i>	Ocatillo	✓	Orange	V LOW
	<i>Nolina parryi</i>	Parry Beargrass	✓	Cream	LOW
	<i>Yucca brevifolia</i>	Joshua Tree	✓	Cream	V LOW
	<i>Yucca elata</i>	Soaptree Yucca		Cream	LOW
	<i>Yucca gloriosa</i>	Spanish Dagger		Cream	LOW
	<i>Yucca recurvifolia</i>	Soft leaf Yucca		Cream	MOD
<i>Yucca rostrata</i>	Beaked Yucca		Cream	LOW	

TABLE B-1: CAMPUS LANDSCAPE PALETTE TABLE [CONTINUED]



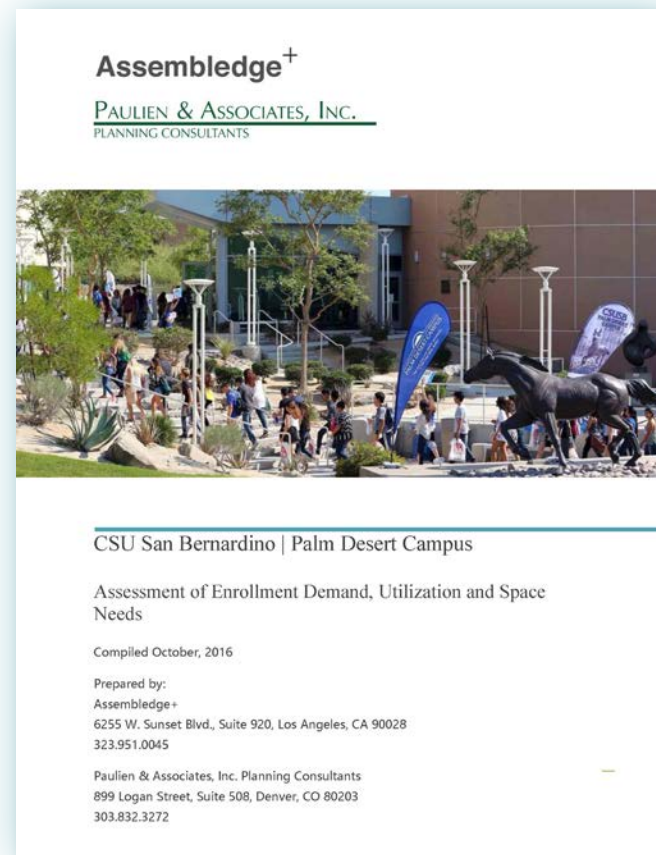
APPENDIX

C ENROLLMENT DEMAND + SPACE NEEDS ANALYSIS

C.1 UNDERSTANDING CURRENT DEMANDS

The Master Plan project team performed background research on enrollment and space use trends at Palm Desert Campus; that work was used to inform the spatial planning exercises central to this master planning effort. This accompanying appendix constitutes an anthology of memoranda summarizing that analysis.

Please see the following document, under separate cover, for this additional 2016 Master Plan information:



A wide-angle photograph of a campus landscape. In the foreground, there is a paved road with yellow dashed lines. The middle ground is filled with lush green trees and palm trees. In the background, there are blue mountains under a sky with large, white and grey clouds. The overall scene is bright and clear.

APPENDIX

D TECHNICAL REPORT:
UTILITIES MASTER PLAN



D.1 DETAILING IMPLEMENTATION

An engineering firm brought special expertise to evaluate the utilities currently serving the campus and to provide specific recommendations to upgrade or modify that existing utility infrastructure to support the facilities proposed as part of this Master Plan.

Please see the following document, under separate cover, for this additional 2016 Master Plan information:

