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PASADENA CITY COLLEGE

FACILITIES MASTER PLAN 2020

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FACILITIES MASTER PLAN 2020

Approved May 20, 2020

HGA

1301 Colorado Avenue
Santa Monica, CA 90404

T 310-557-7600
F 310-255-9947


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1301 Colorado Avenue
Santa Monica, CA 90404

T 310-557-7600
F 310-255-9947



PARTICIPANTS LIST

The following is a list of primary participants (listed in alphabetical order) in the facilities master planning process. the Members of the Facilities Master Plan executive committee are identified by: (*).

PASADENA CITY COLLEGE

PCC STAFF AND FACULTY

- ALEXANDER BOEKELHEIDE *
- BOB BELL *
- BOBBI L. ABRAM *
- CANDACE D. JONES *
- CHEDVA WEINGART *
- CRYSTAL A. KOLLROSS *
- CYNTHIA D. OLIVO *
- ERIKA A. ENDRIJONAS *
- MICHAEL BUSH *
- RICHARD LARET *
- ROBERT H. BELL *
- ROBERT BLIZINSKI *
- SALVATRICE M. CUMMO *
- TERRY D. GIUGNI *
- ANTHONY FRANCOSO
- ARIAN NAZARIAN
- ARMANDO DURAN
- BROCK KLEIN
- CARL SHEAFFER
- DAVID VAN PELT
- DAVID STEIMAN
- DORIAN HILLIARD
- GILBERT RIVERA
- LESLIE AGOULD
- LINDA VALENCIA
- LISSETTE BARNHART
- LORI CORTEZ
- LUIS R. CERVANTES
- JEFF ARCHIBALD
- MATT HENES
- MATTHEW KIAMAN
- NIKI DIXON
- OLIVIA LOO
- OSHIN KARAMI
- ROBERT WITTRY
- SANTIAGO VARGAS
- SILVIA TALAOC
- STEVEN MATCHAN
- TAMEKE ALEXANDER
- TODD HAMPTON
- TUNISIA BAILEY

PCC ASSOCIATED STUDENTS

- ALEX SARKISSIAN
- ANDREW BYBEE
- ARIAN NAZARIAN
- CONNIE RIVERA
- FRIOLA RAMIREZ
- RYAN TAN
- SANTIAGO VARGAS

CONSULTANTS

HGA

- ELIZABETH LERICHE
- ENA MURPHY
- JIM BRADBURN
- JOSEPH DALY
- JOE SION
- KEVIN DONAGHEY
- LOUIS KAUFMAN
- LISA MATTHIESSEN
- PATRICK THIBAUDEAU
- STACY KWOK
- SAMIA ALSHAER

KPFF

- GONZALO ARANGUIZ
- WONCHUL LEE

DAVIES ASSOCIATES

- ALEX DAVIES
- NOEL DAVIES

DKS ASSOCIATES

- JEAN MARIE SCHRIVER
- JEFF HEALD
- MARCELLINO KURNIAWAN





1.

Executive Summary


COURIER

SECTION 1

Executive Summary



VISION AND GUIDING PRINCIPLES

The Facilities Master Plan provides a framework for an actionable strategy to augment the existing campus facilities with the goal of creating the best environment for Pasadena Area Community College District (PACCD) students to succeed and embrace the college's philosophy of "Dream, Come, Do". The Facilities Master Plan vision will help define the condition of the existing facilities, provide recommendations for facilities improvements at each of PCC's five campus locations, plan for the quality and quantity of facilities needed for a 10-year projected horizon, align the facilities with PCC's updated Education Master Plan (EMP), and provide a summary of the anticipated budgetary costs associated with the recommendations. The intent of the 10-year master plan is to remain relevant and outline a growth plan that priorities good stewardship of district resources and sets milestones for the next ten years with the College's centennial celebration halfway in 2024. The District's mission is to honor the past and embrace the future to leave a lasting legacy for students over the next 100 years while being an authentic reflection of the District's rich culture and diversity.

The Facilities Master Plan translates the 2019 Educational Master Plan, environmental scan, and the College's goals and vision for the future into a road map of development and growth that incorporates future changes in community needs, addresses evolving teaching and learning modalities, and meets the needs of the diverse culture of students, faculty, staff, administration, and the community. The academic, social and student service needs of all students must be met through development of the appropriate facilities. Pasadena City College must meet the needs of transfer students, career technical education and life-long learning.

The planning exercise for the Facilities Master Plan was an integrated and inclusive process that embraced shared governance. The diverse stakeholders, community, College, students and design team collaborated together to envision the future of Pasadena City College (PCC).

The District is striving for social, economic, environmental and educational sustainability to ensure that the future of PCC is secure in an ever-changing world. Market forces bring new demands for careers, shifting enrollment projections. An aging population triggers continuing education needs and financial pressures will demand that new income opportunities are explored.



The Facilities Master Plan (FMP) provides a build-out for the Colorado campus on its existing site bounded by Colorado Boulevard, Hill Avenue, Del Mar Boulevard and Bonnie Avenue. This FMP includes commentary on phasing and prioritization of projects, and focus on serving measurable educational needs and outcomes as well as intrinsic qualities such as place-making.

The Pasadena Area Community College District (PACCD) covers a large physical area with a diverse mix of population densities, income levels and ethnicities although two thirds of the existing students come from outside of the District. The campus environment will be the origin of education for transfer students, career and technical education, life-long learning and institutional effectiveness. Partnerships with local businesses, educational institutions and the community will leverage the PCC brand and capabilities to reach more students, help them achieve greater skills and enhance sustainability.

The FMP is based on realistic assumptions that have been made through outreach, research and analysis and vetted with District leadership

GUIDING PRINCIPLES

The Goals and Visioning for the Facilities Master Plan are keys to developing the Guiding Principles which shape the physical facilities that support teaching and learning in the 21st century. The updated Educational Master Plan, Mission and Vision for the District, and tenets of career communities were all factors in developing the Guiding Principles.

Town Hall-style sessions were held with the PCC community to collect feedback and input from a wide variety of stakeholders to be as inclusive as possible. Opportunities and challenges were explored with Superintendent / President Erika Endrijonas, Ph.D., focusing on finding new ways to ensure students succeed in their goals regardless of their background or dreams, and that PCC remains an educational leader in the state. Visioning sessions resulted in Guiding Principles in the following categories:

- College Goals
- Pedagogies
- Finances
- Facilities

The Guiding Principles were used throughout the master planning process to measure the relative success of various planning options and strategies for developing the final Facilities Master Plan for the future of the District.

ENROLLMENT, SPACE PROJECTIONS, UTILIZATION ANALYSIS

This is a summary of the portion of the master plan that focuses on the quantitative analysis of the District.

- Demographics
- Enrollment History and Projections
- Projected Growth in Faculty & Staff
- How Well is the Current Space Being Utilized?
- Projected Need for Future Space (renovation and new construction)

COMMON THEMES RELATED TO PHYSICAL SPACE

Common themes related to space that were highlighted when looking at demographics were:

- Improving student services by expanding centers that support the Career Communities.
- Design multi-use spaces that could be used for temporary, targeted services, such as orientation and advising.
- Creating community through designing lounge, study, group work, food service, student organization, and recreation spaces.
- Focusing on renovating and expanding the spaces of programs that attract students and that are in growth fields.
- Relocating departments/spaces to improve functionality.
- Initially focusing new construction efforts on creating laboratory and special-use space.
- Assessing the location, capacity, and technology of existing classrooms and class labs and strategically renovate.
- Addressing spacial challenges at satellite locations.

GROWTH TARGETS

The District goal of 24,000 FTES is achievable in the next 10 years based on historical growth metrics.

SPACE DISTRIBUTION

The following are recommendations based on the current distribution of space:

- Ensure that all spaces are categorized correctly, including spaces used for centers and Career Communities functions.
- Create / renovate satellite locations that offer more student support and facilitate campus life, in addition to course delivery.
- Restore the Health Sciences and Nursing programs to the Colorado campus will provide opportunities for departments shared resources.
- Address course scheduling patterns to improve utilization.

CLASSROOM UTILIZATION

Overall, utilization is adequate, although it does not meet California Community Colleges Chancellor's Office targets. This can be addressed through updated scheduling policies and scheduling courses in rooms other than classrooms. Scheduling sections with rooms of the appropriate capacity would avoid "wasting seats."

Classrooms are generally utilized throughout the day and into the evening. There are opportunities for adding courses Friday afternoon and evening, and Saturday/Sunday.

Every building has under and over performing classrooms. Identifying them can focus renovation efforts and guide design of new classrooms.

The C and R Buildings have the most contact hours scheduled in them. Their classrooms, in particular, should be kept up-to-date. The UU Building with its





large auditorium accommodates a large number of weekly student contact hours (WSCHs).

CLASS LAB UTILIZATION

The Center for the Arts and Science Village buildings have the most class labs and the highest percent of weekly lab hours per building.

There is a need for additional labs.

New labs should be as flexible as possible to allow for easy updating and maximum collaboration opportunities.

CLASSROOMS – PROJECTED NEED

The demand analysis indicates that currently, there is not a great need for additional classrooms.

POTENTIAL NEW CERTIFICATE PROGRAMS

Based on workforce trends, a few key fields/areas have been identified as possible new or expanded program candidates for PCC. They include healthcare, education, energy & environmental, and business administration programs.

SPACE PROJECTION CONCLUSIONS

The Associated for Learning Environments (formerly CEFPI) model indicates that PCC's greatest need for space is, in order of need:

- Class Laboratory spaces
- General Use (Meeting and gathering spaces)
- Food Service
- Lounges
- Merchandising
- Meeting Rooms
- Study facilities, (including any room used for study such as study rooms/lounges and computers)

Translating these numbers into buildings indicates:

- Focus on creating additional lab facilities that include demonstration space especially those to support certificate programs
- Create a new or expanded student services building with a focus on food service, meeting, lounge space, and merchandising and success centers.
- Expand study space within the Library or transition the space to support centers.
- Focus on including meeting, lounge, and study spaces in every new building and major renovation
- Dedicated Media Production space to support online enrollment and course offerings should be included in a future project.
- Plan renovation or minor expansion of the existing Foothill Campus to meet a portion of demand and remove the existing temporary buildings.

PRIORITY INITIATIVES FOR PCC

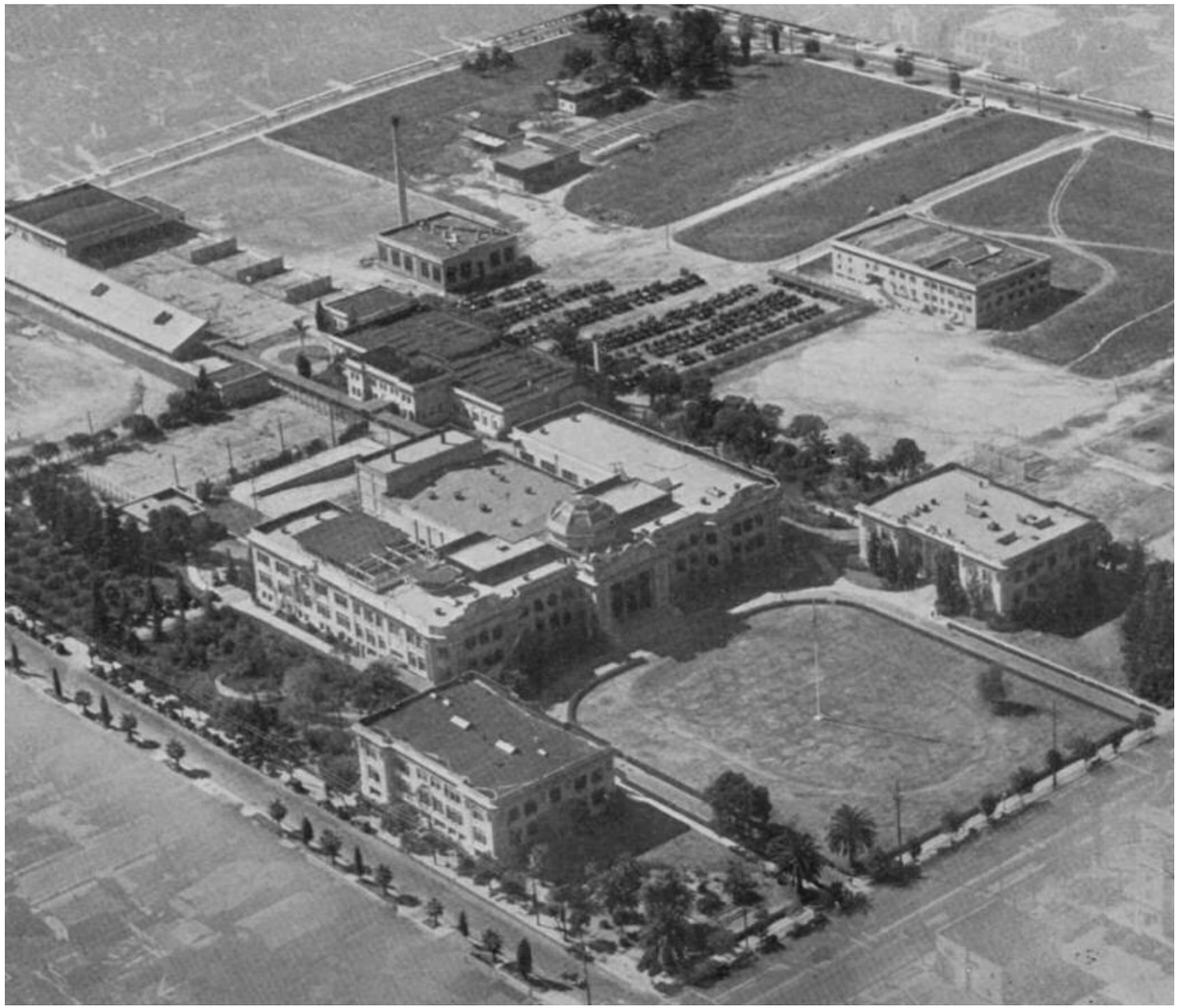
The initiatives listed are topics that the Facilities Master Plan recommends PCC continue to focus on through strategic planning:

- Create active-learning spaces
- Expand access to student services
- Increase student support spaces such as lounge and study
- Further Develop Plans for Satellite Campuses
- Grow / add spaces to support Career Communities.

PRIORITY PROJECTS FOR PCC

Based on review of available data these are the projects PCC should prioritize:

- New Natural Sciences and Health Sciences Laboratories
- New Student Center and Student Life Nexus
- Consolidated and Expanded Student Services Center (1-Stop).
- Expand Rosemead; Explore purchase opportunities.
- Improve Colorado frontage to stregthen college identity.
- Create new / reinforced site circulation.
- Prioritize demolition and replacement projects.



PROGRAM AND PEDAGOGIES

Programming goals derived from the Educational Master Plan were compared with the Guiding Principles from the Visioning Sessions to help guide the space program for the Facilities Master Plan.

The facilities must create an environment for social interaction as well as education. Instructional divisions create synergy through physical adjacency of their programs but interdisciplinary collaboration is critical to forging new paths in educational opportunities and explorations. The campus should be a place to attract and retain students with a balance of student life activities and academic functions in order to raise responsible citizens for the future.

FLEXIBLE LEARNING ENVIRONMENTS

Technology-rich flexible learning environments with classrooms and labs that can easily adapt to varied pedagogies during the same class are the basis of the 21st-century campus. The spaces must be collaborative, flexible, adaptable, mobile and connected. Technology plays a key role in the educational process and facilities need to be flexible to adapt to a constantly changing infrastructure that cannot even be envisioned today.

ACADEMIC DIVISIONS

It is recommended that the Academic Divisions of the District follow marketplace trends for job growth in areas such as education, health care, information technology, energy and environment. But these market needs are also changing and PCC must remain adept at managing this change. The Facilities Master Plan recommends physically clustering programs within a division on campus in adjacent facilities to encourage intra-departmental collaboration.

To encourage interdisciplinary cross-pollination of programs, it is recommended to create Centers to support Career Communities between key divisional programs on campus to foster collaboration and innovation. Additional / Related hubs may contain student services, success labs, computer labs, study and collaboration spaces, and be centered around a campus "living room" to foster student life, retention, and success on campus.

It is also recommended that the Colorado campus should contain a new Science / Health Sciences building to support programs not fully accommodated in the Sarafian replacement building.





STUDENT SERVICES

Student Services and facilities that promote student life and a collegiate environment are soley needed at PCC. Recommendations include replacing the existing L Building with a new larger "one-stop-shop" for Student Services programs that can adapt to changing needs and student demand at peak times of the year. It is recommended that other student services functions be located around the Centers and hubs or campus living rooms to make the programs more accessible, visible, and better used.

Food services need to be expanded to meet the needs of the District. The Colorado Campus Center facility can be enlarged in the future but other café type spaces, food carts, and "grab-and-go" facilities should be located on the Colorado campus around Student Support Locations as well as at satellite locations.

Athletics, recreation, and wellness facilities should be addressed. Intramural facilities could be provided to enhance student life with fitness facilities and multipurpose exercise studios. Facilities could be shared with athletics and can also be offered for community use as an income opportunity.

COLORADO CAMPUS PLANNING STRATEGIES

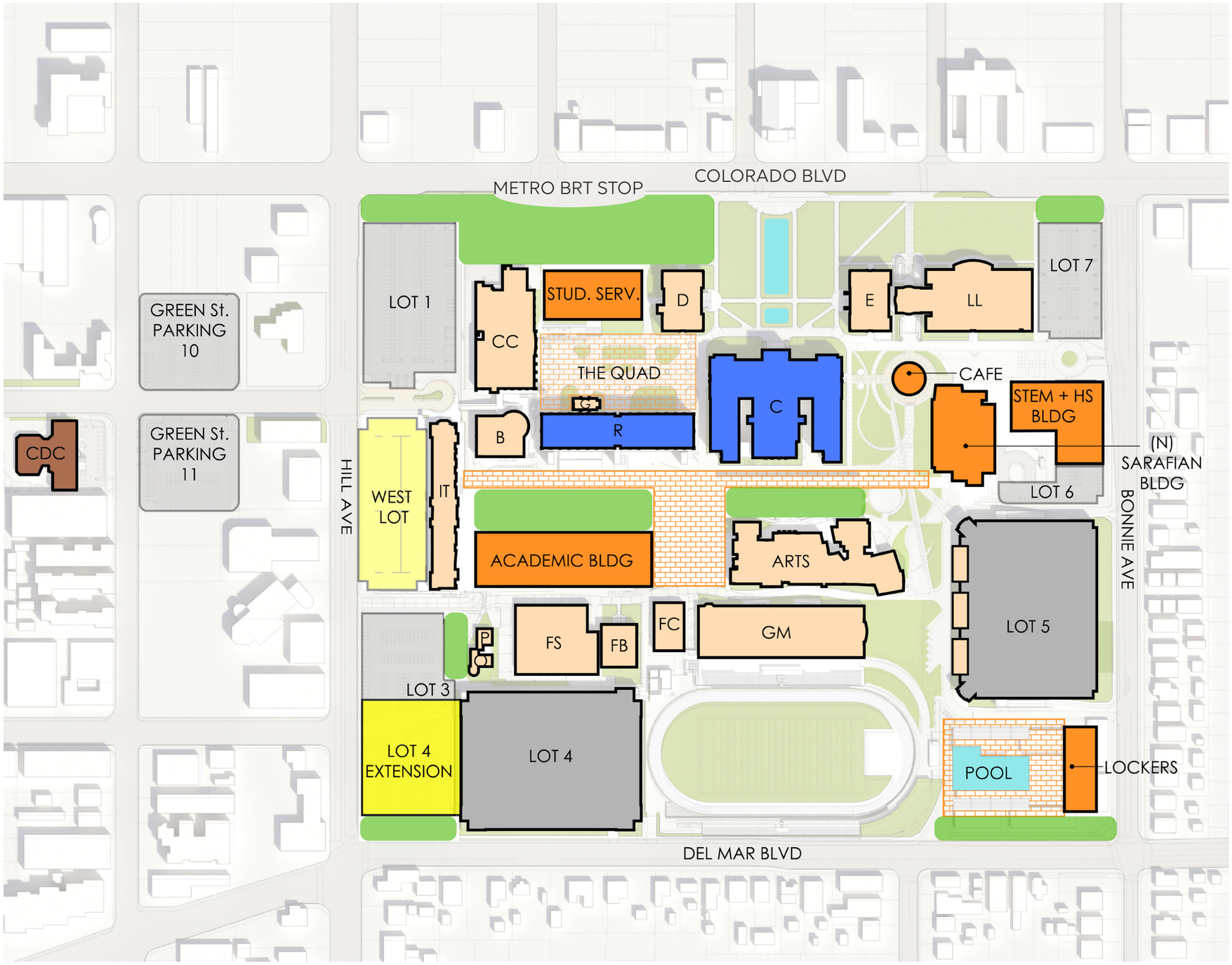
The Facilities Master Plan descriptions are graphical representations of the proposed development of the Pasadena City College Colorado campus and satellite sites to occur over the next ten years. The planning concepts are based on research, analysis, and planning principles that respond to the mission and vision of the College and its stakeholders. The planning solutions depict flexible options of development related to growth demand and resulting space needs, as well as density and building mass on the Pasadena City College sites.

COLORADO CAMPUS FACILITIES MASTER PLAN

The proposed maximum build-out for the Colorado campus provides 1,250,000 gross square feet (GSF) of building area. This includes existing buildings to be renovated, new buildings and removal of buildings that do not meet the needs of the District / College and future pedagogies. This maximum build-out square footage does not include any parking areas. The maximum build-out is illustrated in plan and aerial perspective to show the density of the proposed development on campus.

The Facilities Master Plan (FMP) maintains the legacy core of the Colorado campus as the symbolic "front door". The original campus buildings and mirror pools provide the inspiration for the planning concepts of the FMP, and build upon the inherent attributes, strengths, and character of the relationship between these buildings and the iconic open space.

Quads and open space are regarded as outdoor rooms organized along a series of circulation spines to knit the campus together and create an organization that is discernible, easy to navigate and promotes student life and retention through various activity areas, dining, study spaces and places to see and be seen. The open-space



concept can do much to promote a campus environment that is thriving and student-centered.

Campus edges and corners are redeveloped to be more community friendly, inviting, porous, pedestrian friendly and to present a strong academic image to the community.

PROGRAM DISTRIBUTION

The existing program uses were mapped for each building to understand the distribution of programs by Division. Existing programs are currently scattered throughout campus and do not support synergies between various divisions. Planning strategies are therefore centered on organization of programs within Divisions in physical proximity to strengthen focused career communities.

The proposed space distribution seeks to achieve a better co-location of programs within Divisions to encourage more collaboration, make programs more visible and cross-pollinate pedagogies. The space distribution by division and resultant Career Communities is illustrated later in this document.

The existing decentralized student services functions will improve with the construction of a new one-stop Student Services center. Other student-centered activities along with food service are planned to be located in more visible areas throughout the campus in association with various Centers and Hubs. Athletics and recreational spaces are enhanced to encourage general community use and serve the needs of all students, faculty, and staff.

CENTERS & HUBS

To promote interdisciplinary collaboration, interaction and stimulate new program synergies and learning opportunities, the Facilities Master Plan proposes a consolidation and enhancement of the centers and associated hubs for the outreach student series. These hubs are located at key intersections between various Divisions and program activities on campus. They are designed to support the Career Communities / Guided Pathways objectives.

Associated with these spaces, a variety of student support functions such as computer labs, maker space and tech shop for building prototypes and 3D visualizations are envisioned. Also imagined are additional study and collaboration spaces, white boards and shared technologies associated with these spaces to support student collaboration and success. Food service may also be grouped with these spaces. All functions should be highly transparent, inviting and student oriented.

MASTER PLAN BUILD-OUT OPTIONS

The Master Plan options for the Colorado campus are illustrated for the ten-year plan by illustrating not only a final plan, but proposed project increment phasing. Although a proposed sequence is illustrated, each planning option is flexible to occur at various times based on the priorities and needs of the college.

DISTRICT-WIDE LAND USE

The District was mapped for location of existing PCC students by zip code. Population densities were studied, along with income levels and transportation routes. This analysis illustrated that satellite facilities are well placed to serve students.

The Foothill Campus is suggested to remain as the primary provider of non-credit courses for the District. Relocation of Nursing & Health Sciences to the new Sarafian building will provide space to renovate / grow the non-credit programs and add new programs.

The Foothill campus could grow in the 2024 vision after a new STEM building is constructed on the Colorado campus. It is recommended that the Foothill be expanded from 84,000 GSF (excluding existing modular classrooms) to a potential total of 120,000 GSF to serve the growing needs of non-credit programs.

The Rosemead location is enjoying success due to the large pool of students in the immediate vicinity. It is recommended that Rosemead be expanded and continue to serve the needs of general education programs with a full range student services. As a lease facility investigation of purchasing a facility is recommended.

In addition to these outlying centers of education, it is recommended that the District continue to identify additional locations for non-credit course delivery that reach the widest sector of the community.



SITE AND INFRASTRUCTURE

CIVIL

The Civil narrative describes in detail the existing conditions, opportunities, constraints and recommendations of the civil infrastructure serving the District campus sites as well as potential future needs. The civil description addresses the following utilities:

1. Sanitary Sewer
2. Storm Drain
3. Fire Water / Domestic Water

Besides functionality, the infrastructure system shall also be mindful of its impact to the environment, therefore the practice of sustainable infrastructure design shall be implemented.

ELECTRICAL

Electrical infrastructure shall meet the demands of existing buildings as well as newly planned facilities. To determine the requirements, reasonable projections have been made for future loads, efficient operations, energy conservation, and sustainable development toward an economical capital plan.

As the College expands, so will energy consumption. As energy costs continue to rise, it is important to control college / district use through reduction and conservation. Reducing current energy use will allow the College to maximize its current infrastructure before embarking on physical plant upgrades. Linking current and new facilities together with metering and monitoring, systems will provide valuable real-time and historical data on each building's usage. Applying energy savings strategies to buildings in need of renovation will enable a focused return on investment where it is most necessary. Additionally, through networking technologies, all College facilities, regardless of location, can be linked into one monitoring platform.

New buildings and spaces offer opportunities to incorporate energy conserving strategies in order to offset consumption. Addressing distribution related to the existing buildings will be a critical component in improving resiliency and redundancy.

MECHANICAL / PLUMBING

The new Facilities Master Plan recommends mechanical and plumbing systems to meet the 21st-century criteria for energy efficiency and sustainability by reducing consumption, saving operating costs, implementing metering, adding digital controls, and improving required maintenance.

The Facilities Master Plan identifies and recommends a multi-faceted approach in order to achieve these goals: Upgrade existing campus and satellite locations that have outdated systems and add building automation systems where missing. Require new buildings and major renovations to both exceed California's Green Building Standards and achieve greater energy efficiency goals by targeting a reduction in greenhouse gas use over typical baseline buildings, as well as providing equipment to conserve water resources.

Mechanical and plumbing systems shall ultimately become more durable, energy efficient, flexible, easy to maintain, and support the College's operation goals. The synergies of these strategies are expected to save operating dollars while providing quality, cost-effective, and long-lasting solutions.



TRANSPORTATION

TRANSPORTATION SYSTEM SETTING

Good freeway access serves the Pasadena City College Colorado campus and the Foothill campus with the Foothill Freeway (I-210) while the Rosemead campus is closest to the San Bernardino Freeway (I-10) to the south.

The Metro Gold Line provides light rail service to the Colorado campus via the Allen Avenue Station and the Foothill campus via the Sierra Madre Villa Station. PCC operates a free shuttle service that connects the Colorado campus, Foothill, and the Metro Gold Line Allen Avenue Station.

Pasadena Area Community College District (PACCD) is served by three different transit providers, including Metro, Foothill Transit, and the Pasadena Area Rapid Transit System (ARTS). PCC currently has an agreement with both Metro and Foothill Transit to provide reduced-cost transit passes to students.

PARKING

A parking study was conducted as part of the Facilities Master Plan and determined, based on empirical demand studies, that parking for the Colorado campus is near maximum capacity.

There are a number of strategies to be utilized to determine the optimal future parking needs for the District facilities:

- Student count projections divided by the number of students per parking space
- Travel Demand Management (TDM) / trip reduction strategies, resulting in fewer cars driven to campus
- Increased use of online and distance learning, resulting in fewer cars driven to campus
- Increased use of satellite and remote campuses, distributing and dispersing the parking demand.

Strategies for increasing parking supply may include surface lots at new facilities, above-ground or underground parking structures, and possibly automated count systems.

Existing District parking counts are tabulated and projected parking locations are illustrated. A new parking structure will expand surface parking lost by new building construction. Underground parking at the planned STEM and Health Sciences building may be a potential solution to serve the clinic and community-use facilities.

WAYFINDING

Signage and clear wayfinding is essential to campus planning and placemaking. The College intends to implement a new wayfinding and signage system focused on first-time visitor experience as well as those familiar with the campus to help improve visibility, flow, navigation, and visual excitement.

A comprehensive study of existing signage was performed that led to a number of recommendations for improvements. The following identify the proposed signage/graphic elements which comprise the campus master plan identity and wayfinding system. The signage system can be grouped in the following categories:

- Campus identification signage
- Building identification signage
- Directional/Wayfinding signage
- Information/Instructional signage
- Code/Regulatory signage
- Decorative graphic elements



The goal of the wayfinding program is to provide a comprehensive signage system, which will provide information to students, faculty, and visitors for the efficient use of all the campus facilities. The program should:

- Clearly communicate information
- Facilitate users throughout the campus
- Visually integrate its various components
- Enhance the visual perception of the campus
- Be compatible with exterior and interior architectural treatments
- Be flexible enough to accommodate changes of information
- Be strong enough to retain its visual identity

Some components of the signage system (both exterior and interior signage) have already been utilized on portions of the campus. The College intends to implement this system throughout the entire campus. Specifications and design details should be developed to ensure that signage elements will be fabricated and installed in a manner that will maintain design integrity and provide a high-quality, long-lasting finished product as the system is implemented over time. Materials, colors, methods of attachment and type fonts are common to all sign types and their consistent application is key to the visual identity of the signage system.



SUSTAINABILITY

A campus sustainability committee helped determine the direction for a sustainability program for PCC. Through focus meetings and discussions, recommendations were adopted for further development to institute a College-wide sustainability program.

PCC has identified the following sustainability goals and strategies:

- Upgrade and/or recommission existing facilities and infrastructure to achieve 10% energy and water cost reduction
- Develop internal policies to address sustainability in curriculum, student life, and ongoing operations
- Certify PCC under the STARS system
- Identify key elements of STARS to be improved upon on an annual basis.

2.

Vision + Guiding Principles



SECTION 2

Vision and Guiding Principles



Driven by their commitment to student success, Pasadena City College's mission can be summarized in 3 words: education, diversity, and opportunity.

The facilities master plan (FMP) supports PCC to achieve its aspirations by providing a physical manifestation for teaching and learning that honors the College's mission and values while looking to the future to adapt to the changing needs of the students, faculty, staff, administration, and community. Understanding that PCC is an equity-minded community college was important in the development of the Facilities Master Plan, which strives to enrich students' academic, personal and professional lives.

MISSION AND CORE VALUES

Establishing the goals and vision for the FMP was the first steps in the planning process. These goals and vision are guided by the following essential and enduring educational values, also shared by PCC's students, faculty, staff and administration:

- A Passion for Learning — Recognize that each one of us will always be a member of the community of learners.
- A Commitment to Integrity — Recognize that ethical behavior is a personal, institutional and societal responsibility.
- An Appreciation for Diversity — Recognize that a diverse community of learners enriches our educational environment.
- A Respect for Collegiality — Recognize that it takes the talents, skills and efforts of the entire campus community, as well as the participation of the broader community, to support our students in their pursuit of learning.
- A Recognition of Our Heritage — Recognize that we draw upon the College's long-standing tradition of excellence to offer innovative services to our students and communities.

EDUCATIONAL MASTER PLAN

Another important document that drove the facilities master planning process is the District's strategic plan, outlined in the Educational Master Plan (EMP) and its priorities to improve college operations and continue PCC's tradition of excellence in academic and student-support programming. The four institutional priorities from the EMP is as follows:

1. Equity-Minded Learning Community
2. Academic Programs and Delivery
3. Campus Engagement and Environment
4. Customized Student Support

These institutional priorities are further broken down into strategies with 5 goals as benchmarks to measure the process:

- Goal 1: Completion
- Goal 2: Transfer
- Goal 3: Unit Accumulation
- Goal 4: Workforce
- Goal 5: Equity

The following charts illustrate this process in more detail.

INSTITUTIONAL PRIORITY

1. Equity-Minded Learning Community

STRATEGIES	GOAL 1 Completion	GOAL 2 Transfer	GOAL 3 Unit Accumulation	GOAL 4 Workforce	GOAL 5 Equity
Develop a culture of equity minded and effective instruction and support	●	●	●	●	●
Examine and address gaps or needs of students that have not been identified previously	●	●	●	●	●
Identify and directly support disproportionally impacted students	●	●	●	●	●
Expand instructional efforts and support services for disproportionally impacted students	●	●	●	●	●
Continue institutional transformation and consistent opportunities for professional learning that are equity-minded and student centered [EP]	●	●	●	●	●
Braid existing and emerging resources to further establish the impact of efforts [EP]	●	●	●	●	●
Engage in inquiry and design to further strengthen existing resources and services, and determine where additional innovations are needed [EP]	●	●	●	●	●
Engage in inquiry to assess and evaluate the success of coordinated support activities [EP]	●	●	●	●	●

INSTITUTIONAL PRIORITY

2. Academic Programs and Delivery

STRATEGIES	GOAL 1 Completion	GOAL 2 Transfer	GOAL 3 Unit Accumulation	GOAL 4 Workforce	GOAL 5 Equity
Engage in campus-wide comprehensive curriculum design to ensure accurate, timely, and aligned degree and certificate programs	●	●	●	●	●
Develop and offer courses in multiple modalities	●	●	●	●	●
Collaborate with statewide agencies and partners to develop market responsive degree and certificate programs	●	●	●	●	●
Develop and implement a comprehensive enrollment management process that ensures student-centered class scheduling and course offerings	●	●	●		●
Empower and incentivize pedagogical innovation and excellence as a campus standard	●	●		●	●
Align all degrees and certificates with appropriate workforce entities				●	●
Refine CTE Programs based on market demand	●	●	●	●	●
Increase work-based learning opportunities	●	●	●	●	●
Implement a comprehensive and adaptive system of learning support	●	●	●	●	●

INSTITUTIONAL PRIORITY

3. Campus Engagement and Environment

STRATEGIES	GOAL 1 Completion	GOAL 2 Transfer	GOAL 3 Unit Accumulation	GOAL 4 Workforce	GOAL 5 Equity
Develop a campus wide environment of engagement for all students	●	●			●
Develop and implement effective marketing for all degree and certificate programs	●	●			●
Create a campus wide and external educational campaign on the value of ADTs and CTE Certificates leading to job placement	●	●	●	●	●
Ensure all existing and new full-time personnel positions and staffing align with institutional needs	●	●	●	●	●
Increase opportunities for industry networking	●			●	●
Provide a flexible, innovative, and adaptive learning environment	●	●	●	●	●
Maintain cutting edge and appropriate instructional equipment and technology campus wide	●	●	●	●	●
Adopt an equity-minded, student-informed, and data-driven decision making process campus wide	●	●	●	●	●
Adapt campus practices, reporting, and evaluation mechanisms to better measure effectiveness and campus health	●	●	●	●	●
Enhance and strengthen the overall campus climate and develop a culture of collaboration	●	●	●	●	●

INSTITUTIONAL PRIORITY

4. Customized Student Support

STRATEGIES	GOAL 1 Completion	GOAL 2 Transfer	GOAL 3 Unit Accumulation	GOAL 4 Workforce	GOAL 5 Equity
Empower students with intuitive and informative self-efficacy tools for tracking educational progress and goals	●	●	●	●	●
Streamline all student communication and services to best support the educational goal fulfillment of each student	●	●	●	●	●
Develop and implement a comprehensive and holistic student progress and support system to ensure campus personnel assist students on their way to success and completion	●	●	●	●	●
Provide leadership development and opportunities for emerging student leaders	●	●			●
Create and sustain a culture of viable career pathways for all students	●	●	●	●	●

UPDATED EMP GOAL TARGETS

Vision for Success Local Goals	Baseline 2016-2017	2018-2019 Target	2019-2020 Target	2020-2021 Target	2021-2022 Target
GOAL 1 - **Completion**					
Goal 1A: AA/ADT degrees by 15%	3,177	3,295	3,413	3,531	3,650
Goal 1B: Certificates by 20%	482	506	530	555	580
Goal 1C: All awards by 4%	2,594	2,620	2,646	2,673	2,700
GOAL 2 - **Transfer**					
Goal 2A: ADT degrees by 51%	1,025	1,156	1,287	1,418	1,550
Goal 2B: UC/CSU transfer by 32%	2,052	2,214	2,376	2,538	2,700
GOAL 3 - **Unit Accumulation**					
Goal 3A: decrease units by 15%	92.52	89.12	85.72	82.32	79
GOAL 4 - **Workforce**					
Goal 4A: sum median earnings by 6%	$24,212	$24,575	$24,938	$25,301	$25,665
Goal 4B: regional living wage by 6%	35%	36%	38%	40%	41%
Goal 4C: field of study by 5%	70%	71%	72%	73%	75%
GOAL 5 - **Equity: Close all gaps**					

FACILITIES MASTER PLANNING PROCESS

In depth conferences with the leadership group to discuss opportunities and challenges were conducted along with workshops with various stakeholders. Campus tours were also performed to better understand the campus's architectural context, existing relationships between the different academic programs and buildings and campus connections to its surrounding community.

The research and workshops provided valuable insights into the stakeholders' aspirations for the college as it grows and develops. These values along with the college and district's mission, values, and strategic plan became the guiding principles, which were utilized to evaluate the success of all planning and design options for the future during the master planning process.

CHALLENGES AND OPPORTUNITIES

A Facilities Advisory Committee meeting explored the groups understanding of the opportunities and challenges that lie ahead for the planning process.

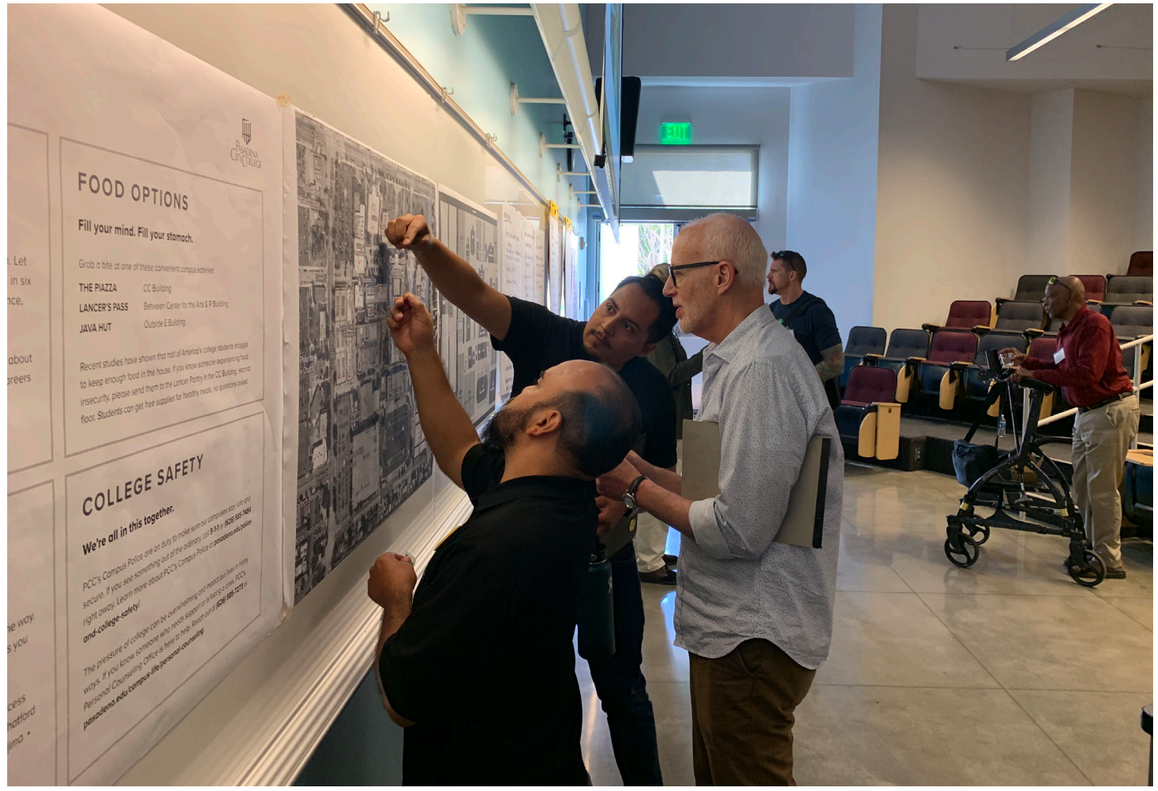
Opportunities

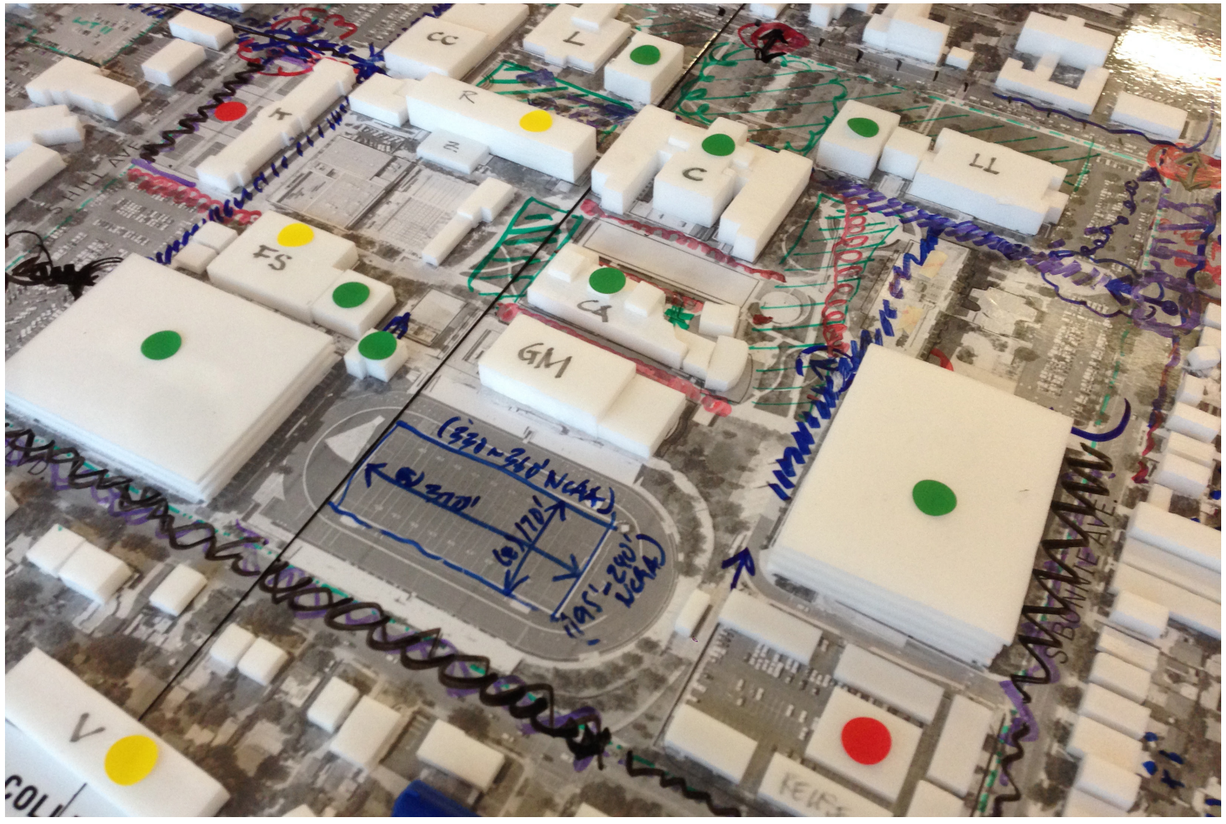
- Innovation
- Growth
- Flexibility
- Technology
- Framework for Future
- Develop Culture of Learning
- Vision for Facilities of Future
- Enhance Reputation for Greatness
- Partnerships
- Sense of Community / Pride
- Collaboration – Students, Faculty, Administration, and Staff

Challenges

- Time
- Funding
- Space and Land
- Cohesive Identity at all Locations
- Prioritizing Issues
- Building Consensus
- Variety of Opinions and Stakeholders
- Innovation within Existing Campus Context
- Building for Future Needs
- Un-programmed Time Between Classes









VISIONING SESSIONS

Collaboration and a transparent approach were the catalyst for visioning sessions and workshops In addition to the executive committee and the leadership group, the members of the college and campus stakeholders are further organized into various groups that lends its expertise in various parts of the FMP: transportation, wayfinding, sustainability, and maintenance and operations committees. The major takeaways from these visioning sessions make up the following list of goals and priorities broken up by category:







Campus

- Growth to 25,000 full time equivalent students (ftes) on campus
- Flexibility
- Reputation
- Sense of community—pcc brand—pride
- College atmosphere, student life and retention
- Collaboration between students, faculty, and administrators
- Partnerships—PUSD, Caltech, higher ed, businesses, city
- Universal access
- Responsiveness to workforce evolving needs
- Sustainability—social, economic, environmental, educational
- Limited budget, fiscal integrity

Learning

- Design, implement, and sustain a culture of learning
- Dynamic and flexible learning environments for next generations
- Interdisciplinary learning
- Career communities (stem, business and industry, liberal aarts, social and behavioral science, arts communitications and design, health sciences and wellness)
- Better integration of academic and vocational programs

Space Attributes/ Requirements

- Cutting edge learning environments
- Maximize utilization of existing spaces
- Flexible furniture
- Updated instructional spaces
- Classrooms with flexibility, appropriate sizes, and good acoustics
- Improved/ specialized labs—teaching kitchen, anatomy, and chemistry
- Group programs into “hubs,” “districts,” or career communities
- Provide spaces for community use
- Variety of space sizes and types serving students, faculty, and administration
- Gender neutral facilities
- Natural lights and windows
- Occupiable roof space

Site and Infrastructure

- Alternate transportation, shuttles to satellite locations, and bus rapid transit (brt)
- Work within existing colorado campus boundaries
- Improve campus orientation and wayfinding
- Improve drop-off areas
- Provide shaded outdoor spaces



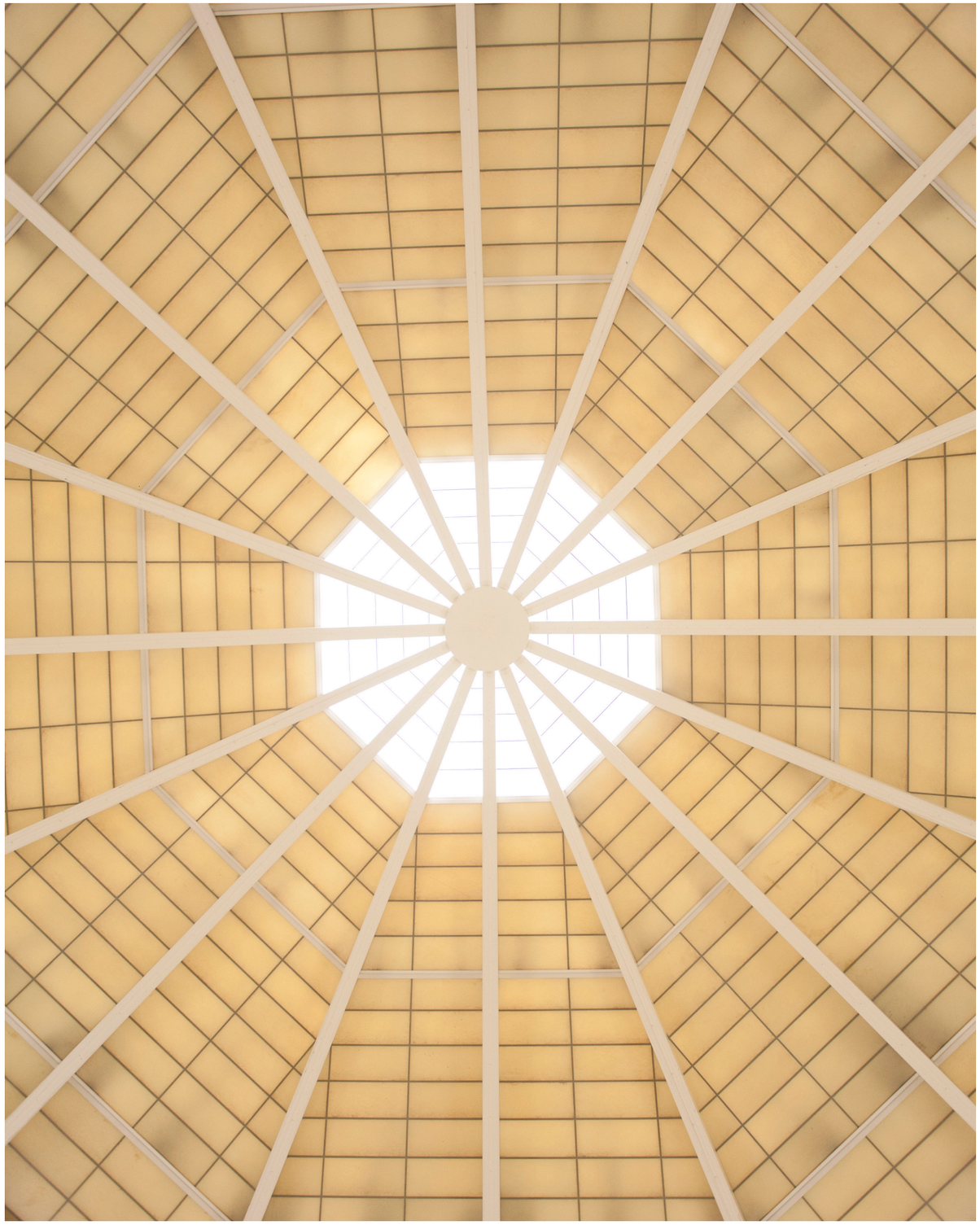
Technology

- Innovation
- Wifi access to electricity indoor / outdoor
- Electronic door locks
- Master lock system
- Safety lighting and security cameras
- Technology refresh

Other

- Hydration stations
- Recycling places
- Better classroom management
- Parking management
- Energy management





GUIDING PRINCIPLES

PCC's mission, core values along with the District's strategic EMP were coupled with the key takeaways from the various visioning sessions and input from students to form the following guiding principles:

COLLEGE GOALS

- Preserve past, move forward
- Community participation
- Distribute services to region
- Innovation
- Growth
- Flexibility
- Equity
- Putting Students First
- Enhance reputation and brand
- Universal access
- Enrollment management
-

LEARNING/ PEDAGOGIES

- A"Everything we do should be student-ready"
- Capture full spectrum of student architypes
- Active Learning
- Address all learning styles
- Dynamic and flexible learning environments
- Interdisciplinary learning
- Promote STEAM
- Integration of academic and vocational programs
- Life-long Learning (Non-credit)
- Response to market needs

FINANCIAL

- Sustainability - social, economic, environmental, educational
- Fiscal integrity
- Revenue enhancement
- Maximize utilization
-

FACILITIES

- Clustering of "meta-majors" or Career Communities with dedicated learning resource centers
- Friendly spaces for introverts and extroverts
- Provide essential student services
- Safety
- Equity
- Thoughtful campus growth
- Improve campus wayfinding
- Cohesive campus
- Synergy between buildings and programs
- Enhanced Technology
- Visibility of programs
- Interaction with community
- Create College atmosphere
- Right balance between cap load ratio tied to square footage and student

3.

Enrollment, Space Projections, and Utilization Analysis


PASADENA
CITY COLLEGE

SECTION 3

Enrollment, Space Projections, and Utilization Analysis



PROCESS

The Design Team created master plan support material covering demographics, enrollment, space distribution, space utilization, benchmarking, and projected space need. Information from a variety of sources was utilized to accomplish this. These sources include:

- Conversations and observations in workshops and meetings
- Data provided by the college including course schedules
- California Community Colleges Chancellor's Office (CCCCO)
- Independent research
- Fusion Database

DEMOGRAPHICS

This effort began by examining demographics.

The result of examining demographics creates a better picture of the student and faculty / staff populations and identifies program areas that the college might focus on.

ENROLLMENT

The enrollment section illustrates historical and existing enrollment conditions. It includes the Districts projections for enrollment growth as well as the Chancellor's office forecast for student .

- Current and historical enrollment for PCC
- Head count and FTES
- Growth projected by the District.

This information provides a snapshot of enrollment possibilities for PCC. The enrollment targets were used to help project future space need.

EXISTING SPACE

Physical space on the Colorado campus and at satellite locations is highlighted. The distribution of space by space type and division is examined in order to identify areas that may lack space or have too much space. Findings and suggestions on existing space and campus inventory close out this section.

Understanding existing space helps with identifying renovation priorities, reorganization possibilities, and quantifying the need for new space.





CLASSROOM AND CLASS LAB UTILIZATION

The utilization section begins with information on the methodology used to examine classroom and class lab utilization across campus. The California Community Colleges Chancellor's Office utilization report findings are included. Current utilization of classrooms and class labs is examined in multiple ways highlighting use patterns and areas of possible improvement. A demand analysis for current and future classroom need is included. This section concludes with major findings and recommendations.

SPACE PROJECTIONS

Projections for space needed at PCC are included in this section. A variety of projection methodologies are explained and utilized to help quantify the future demand for space. A list of building projects based on these projections along with recommendations for prioritizing projects is included.

INTRODUCTION TO DEMOGRAPHICS

In order to plan for the future, trends in enrollment need to be understood and analyzed. Demographic data of the District offers valuable insight. By analyzing this data, a master plan can address the needs of the current population and plan for future populations

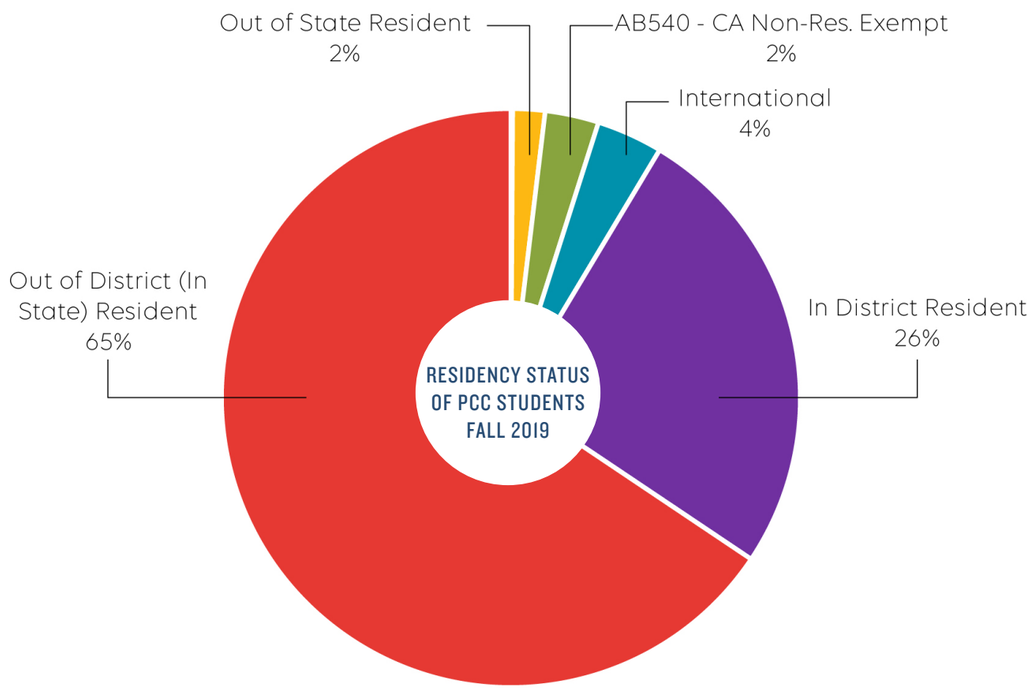
CAPTURE RATE

Capture rates for student enrollment are influenced by a variety of factors. Capture rate influencers for PCC include:

- In vs. Out of District
- Declining High School Populations
- District and LA Area Growth
- International Student Fluctuation
- Area Economy/Industries
- Rate of Recovery from Past Enrollment Dips



Note that demographic and enrollment data will change over time based on the data source, the specific month and year it was pulled, and the specific time period examined. The planning team used the most recent data available to them.



PCC DEMOGRAPHICS

This section highlights basic demographic information.

RESIDENCY STATUS OF PCC STUDENTS

The pie chart below highlights the high proportion of out-of-district students enrolled at PCC.

65% Out of District—Focus on maintaining parking and providing amenities that encourage and support commuter students.

Students who drive from further out require commuter facilities that include appropriate lounge and study space; continued access to parking and public transportation; and the ability to easily connect with services and faculty.

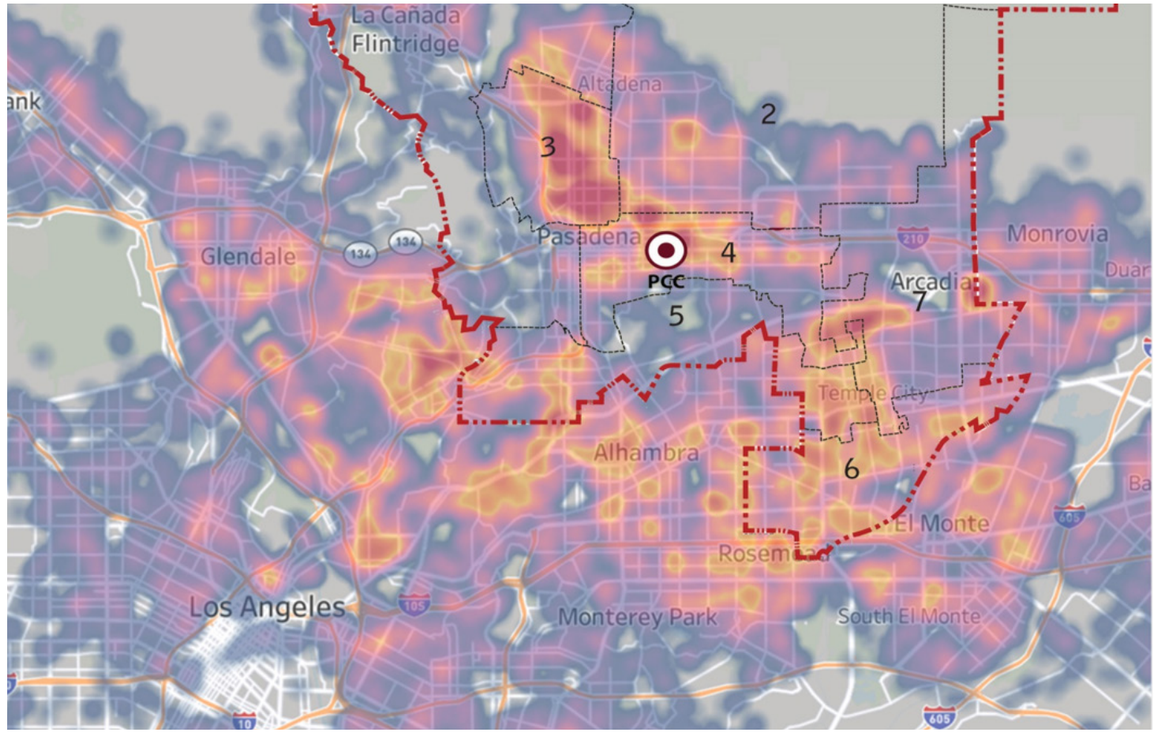
Cities that make up the district include: Arcadia, La Canada Flintridge, Pasadena, San Marino, Sierra Madre, South Pasadena, and Temple City, as well as the unincorporated community of Altadena and sections of El Monte and Rosemead.

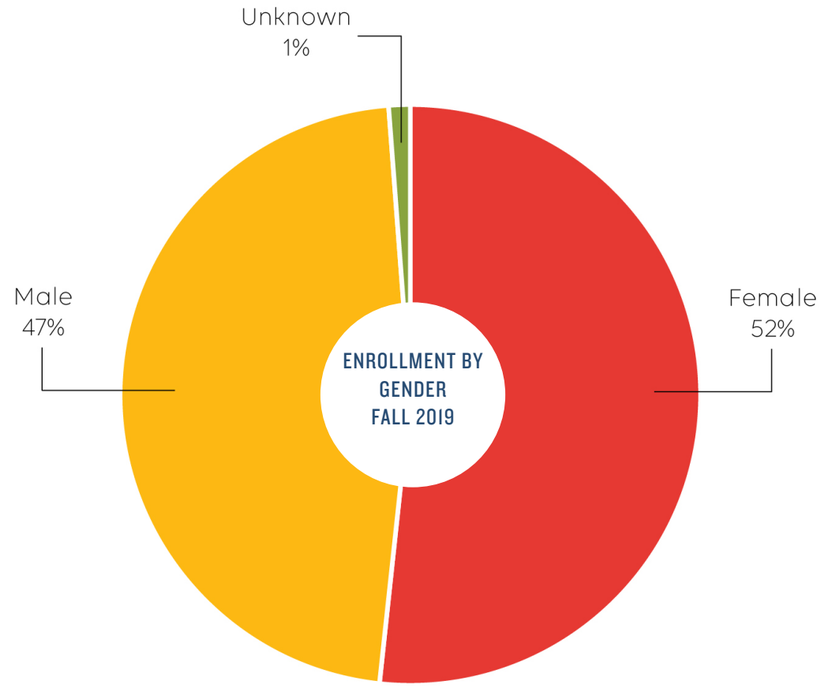
ENROLLMENT

The following is a list of how physical space can increase enrollment:

- PCC satellite facilities providing a spectrum of services for convenience
- Non-PCC locations within the District for outreach (high school partners)
- Ease of transportation through location, public transportation access, parking
- Appropriate classrooms, labs, and online content
- Locate satellites in areas with the lowest reported incomes
- Increase student services spaces and improve access/layout to make it easy for in-district students
- Improve and increase the availability of online courses. This requires District facilities for training, recording, producing, distributing, and supporting online content.
- Create a desirable environment for recruitment and retention by providing spaces for study, lounge, and community building.
- Identify students who may be taking courses at multiple community colleges and investigate opportunities. Location of facilities and ease of scheduling courses are likely be common themes.

Due to declining high school enrollments, the District will continue to rely on out-of-District students. This master plan highlights opportunities for recruitment and retention / persistence from a space perspective.





STUDENT DISTRIBUTION

STUDENTS BY CITY

- More students come from LA than Pasadena.
- Surrounding communities are fairly equally represented at 4-7% each.
- Although most students are from the region, it does not appear that commuting between regional cities greatly affects a student's decision to attend PCC
- Not surprisingly, students are not enrolling in significant numbers from the cities around the two peer institutions that appear to be growing faster than PCC: Mt. San Antonio and Santa Monica

Recommendations related to student distribution:

- Identify the specific programs/courses that students are traveling from out-of-district to take
- Highlight popular programs with workforce demand by providing physical space to improve and grow them
- Market popular programs with proven reputations
- Target businesses in District to promote corporate/workforce training

ENROLLMENT BY GENDER

PCC's fairly even male/female split is an indication that the variety of programs and services offered appeal to both demographics.

STUDENTS BY AGE GROUP

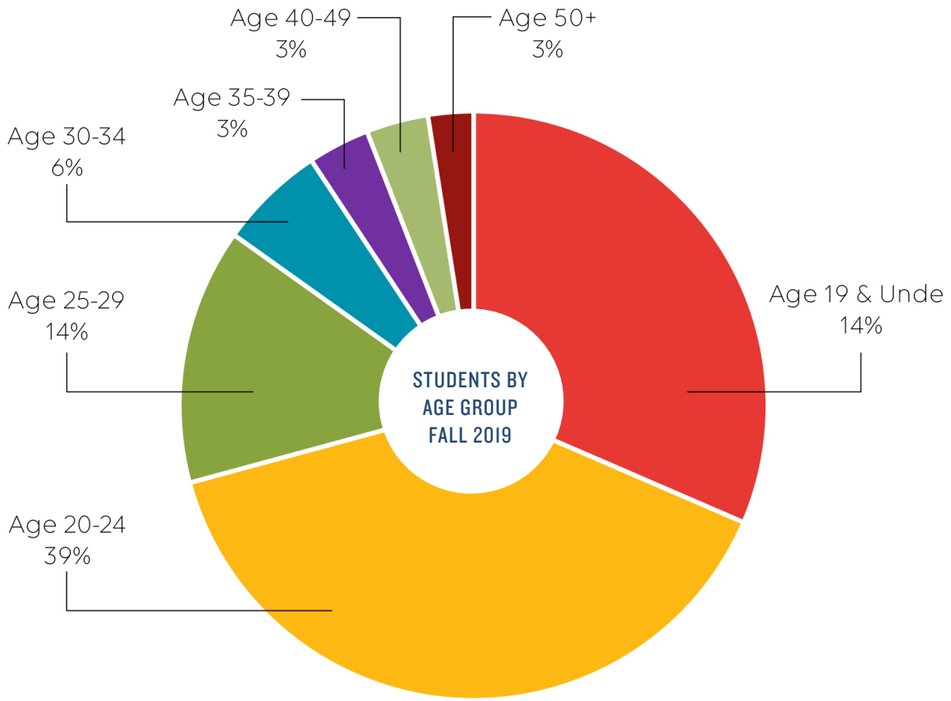
- 71% of students are at or under the age of 24.
- Younger students are more focused on transfer and certificate programs
- Reinforces the need for Career Community/ Guided Pathways spaces

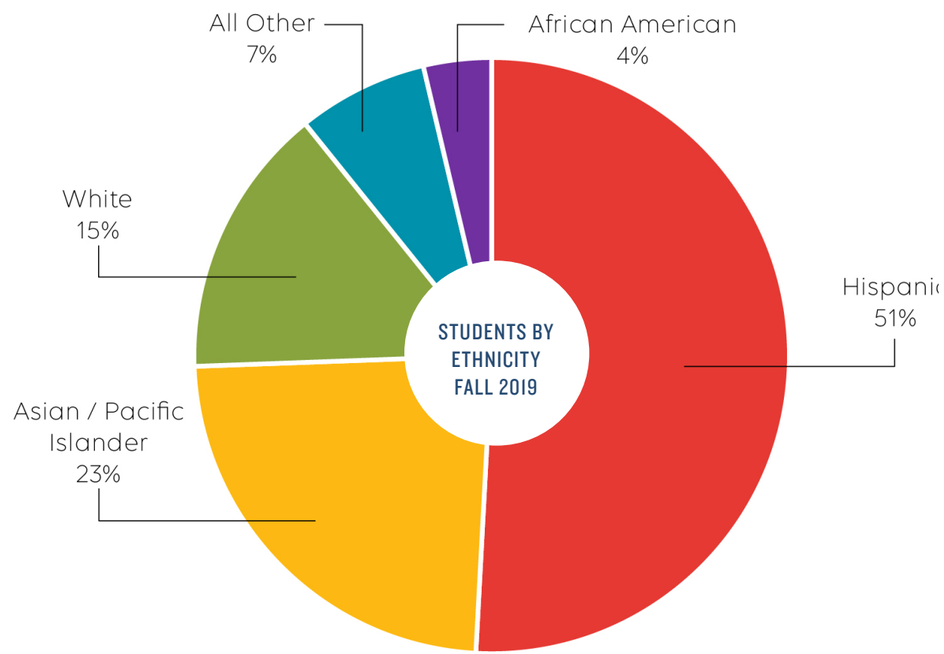
19-21 YEAR OLDS

- Provide facilities similar to the traditional 4-year college experience.
- Create space that will help the students transfer to 4-year institutions or graduate with a degree or certificate:
- Academic Centers
- Classrooms
- Labs
- Study spaces
- Community building spaces like lounges and student organizations
- Student support spaces focusing on advising

STUDENTS OVER 22

- Regional populations show the percentage of older residents will grow faster than other populations





- Older students will return to school for additional training/retraining and for certificate and degree programs
- Physical space must meet the unique needs of older returning or, first time students
- Easy and convenient access to course content and services after traditional business hours
- Student services spaces focusing on providing technology help and career building in the form of resource centers/clinics

ALL AGE GROUPS

- Provide sufficient childcare facilities to meet demand; maintain the Childhood Development Center
- Renovate existing space to remain relevant to industry standards
- Create specialty spaces such as a one-stop-shop for student convenience and additional / improved centers.
- Improve / grow access to online courses, especially on-demand.
- Further develop Career Communities

FALL 2019	
AGE GROUP	NUMBER OF STUDENTS
Age 19 & Under	8,725
Age 20-24	10,890
Age 25-29	3,898
Age 30-34	1,619
Age 35-39	942
Age 40-49	946
Age 50 +	690

STUDENTS BY ETHNICITY

LATINX STUDENTS

- Most (~50%) of students are Latinx
- Percent of Latinx students similar to percent of Latinxs in LA County.
- National Latinx population is growing and will continue to grow at a faster rate than other groups
- PCC is serving a fast growing demographic, their outlook for enrollment growth in the future is better than if they primarily served a declining demographic group

ASIAN/PACIFIC ISLANDER STUDENTS

- Asian/Pacific Islander students are the second largest population (Over 20%)

- Percent is higher than the LA County population
- Recommend identifying the factors that contribute to Asian/Pacific Islanders enrolling at PCC and support those factors through new and improved built space

ALL ETHNICITIES

- Easy to find and use student support services are essential, requiring dedicated centralized space and targeted outreach spaces throughout PCC facilities

STUDENT EDUCATIONAL GOALS

TRANSFER

Seventy percent of students report transfer as their educational goal. Physical space supports student transfers includes:

- Classrooms and labs
- Technology rich
- Relevant to current pedagogy and workplace trends
- Easily adaptable
- Sufficient rooms and course sections to units and time to transfer
- Student Services
- Create central one-stop facilities
- Improve / grow centers
- Provide distributed services, in departments and at satellites (hubs)

RETENTION RATES AND SUCCESS RATES

Historical retention rates at PCC have remained in the mid 80%. Physical space can support and improve retention:

- Services and courses have maintained retention rates
- Provide academic spaces relevant to the market and keep them up-to-date
- Create community through lounges, group work rooms, study spaces, food services, recreation and student organizations

INTERNATIONAL STUDENTS

International students at PCC represent about 4% of the student population. Due to changes in the political climate worldwide, the District is not planning for growth in this demographic.

DEMOGRAPHICS CONCLUSION

Examining demographics related to PCC identified several important considerations that can be translated into the physical master plan.

1. Improving in-district enrollment can be accomplished by carefully locating facilities and services across the District, paying attention to income areas, transportation, satellite facility size, and the mix of available services at the satellites.
2. The majority of out-of-district students come from just south of the District and, to a lesser extent, just east of the District. Encourage continued enrollment through physical space that supports programs that attract students.
3. Support the more traditional aged students by creating spaces closer to a 4-years college/ university experience. Older students should be supported by creating services and spaces where they can get assistance after hours and where they can complete training in a comfortable setting at their own pace.
4. Identify ways to keep and increase the Latinx population on campus as this is a population growing regionally and nationally. Determine why the Asian/Pacific Islander student ratio is higher than the county average and provide spaces to support these programs.
5. Classrooms and labs for core courses and access to online content are essential for transfers. Additionally access to student services for guidance is important.
6. Persistence can be improved by focusing on student community building through physical space.
7. Many of PCC's successful programs already correspond to current market employment demand. Existing programs related to the sciences and health care should be supported. New certificate programs that are introduced could take advantage of existing, available faculty, curriculum, and facilities.
8. Common themes related to space that were highlighted when looking at demographics were:
    - Improve student services by creating a convenient and easy to find one-stop-shop and design multi-use spaces in PCC facilities that could be used for temporary, targeted services.
    - Create community through designing lounge, study, group work, food service, student organization, and recreational spaces.
    - Focus on renovating and expanding the spaces of programs that attract students and that are in growth fields.
    - Relocate departments/spaces to improve functionality.
    - Initially focus new construction efforts on creating laboratory and special use space.
    - Build / focus on space for academic centers.
    - Assess the location, capacity, and technology of existing classrooms and class labs and strategically renovate.

INTRODUCTION TO ENROLLMENT PROJECTIONS

This section illustrates historical and existing enrollment conditions:

Understanding historical enrollment growth trends and agreeing upon goals for future growth play an important role in not only the physical master plan but strategic planning college wide. Goals should reflect the history of the campus, they should also be ambitious enough to drive institutional innovation and growth, while exhibiting a realistic view of future population trends. Over estimating enrollment growth would lead to unnecessary renovation and building campaigns.

CATEGORIES OF DATA

The type of enrollment examined and time period tells different stories and relates to space projections in different ways.

- Head count numbers are generally used for physical planning and goal setting
- Full-time equivalent students (FTES) numbers are often used for reporting purposes, growth goals and as a measure of student attendance related to course load
- Weekly student contact hours (WSCHs) indicate how much instruction is being delivered to students and is often used when calculating classroom and class lab usage
- Term periods (fall term) are utilized when physical space planning is selected as it represents the largest campus population over other terms.

ENROLLMENT TARGETS

To inform the master plan, the District developed enrollment projections for every Division including non-credit, for 5 and 10 year increments.

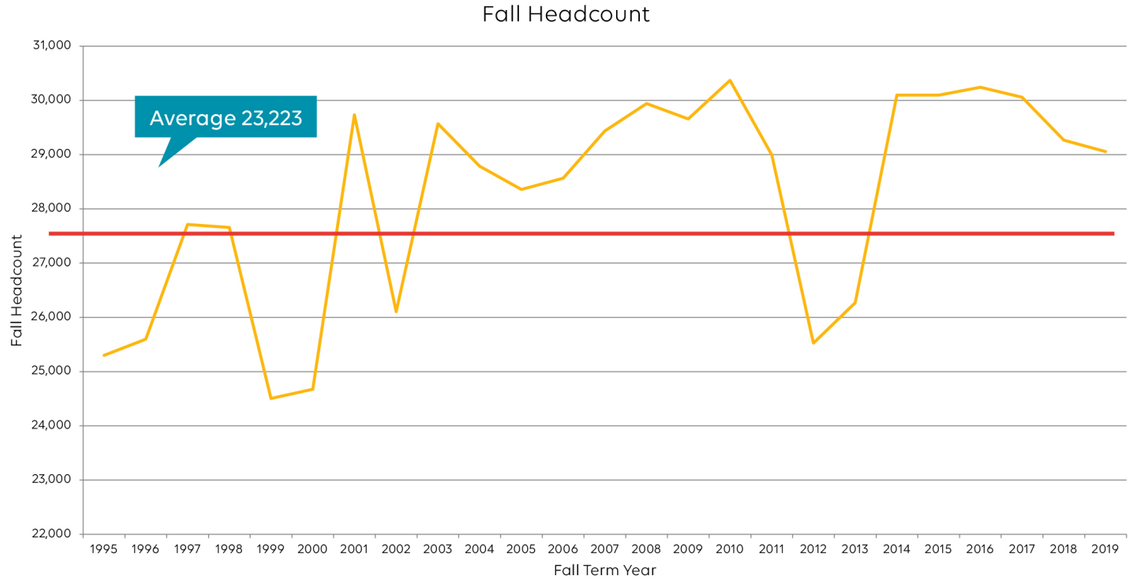
Target maximum FTES is 25,000.

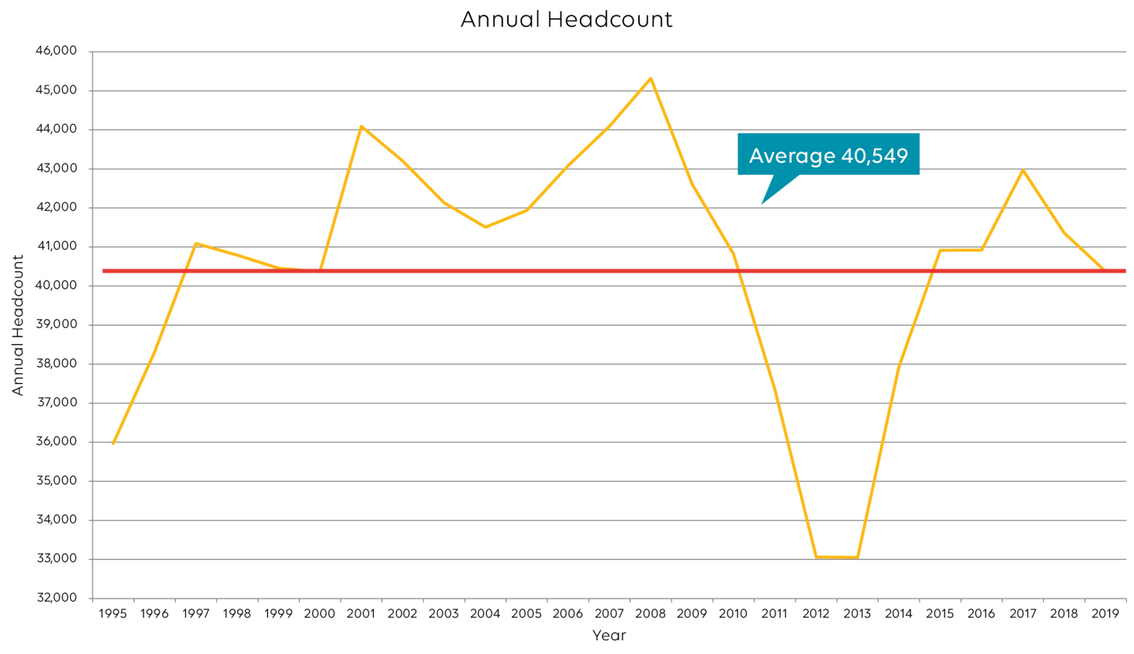
Faculty and staff growth was linked to anticipated student growth.

All of these targets were compared to the chancellor's office forecasts.

PCC HISTORICAL HEAD COUNT

PCC historical head count between 1994/1995 and 2018/2019 has fluctuated with a few periods of sharp declines and increases.



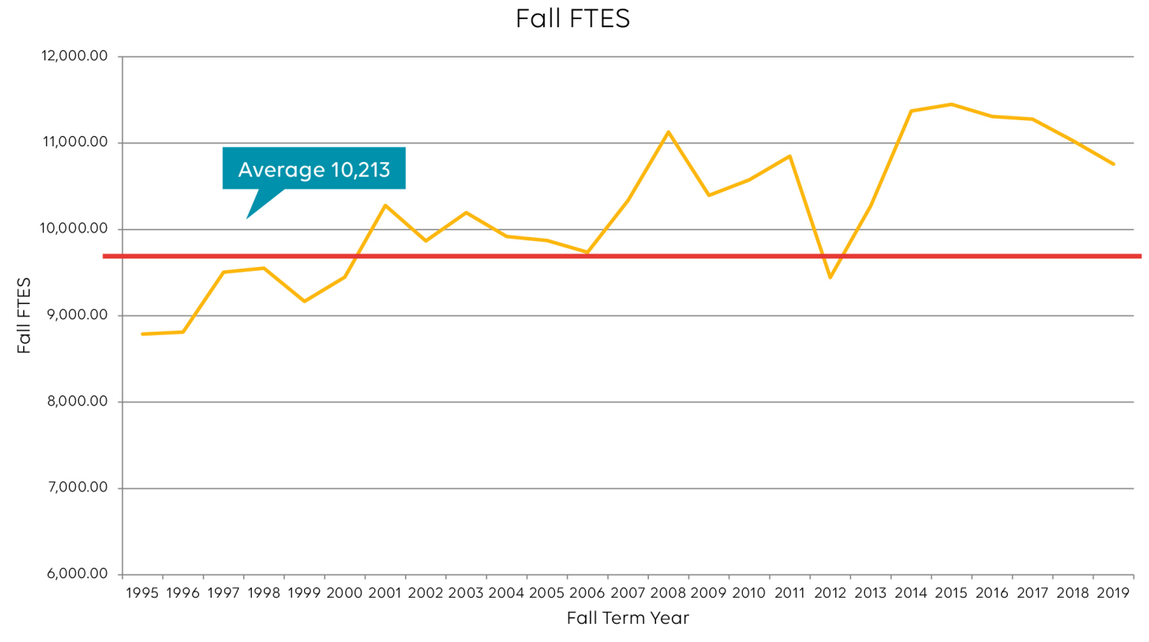


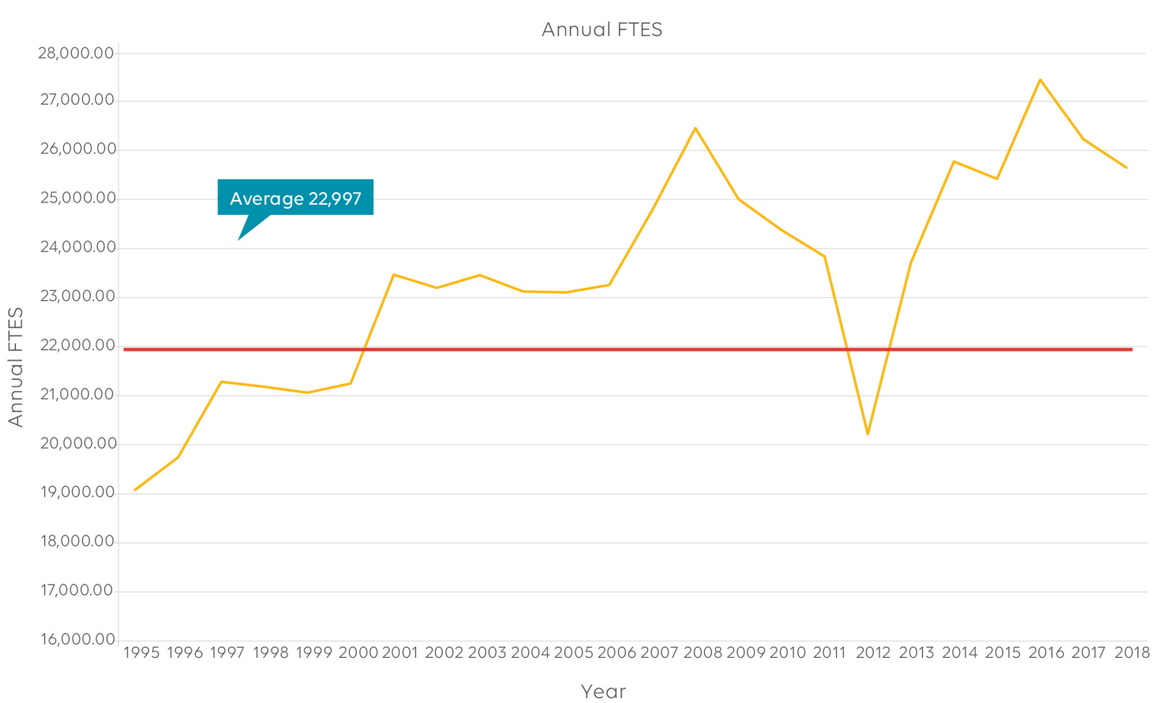
PCC HISTORICAL FTES

PCC historical FTES has also fluctuated during the same time period. PCC has been more successful with FTES growth. PCC has experienced positive annual growth rates.

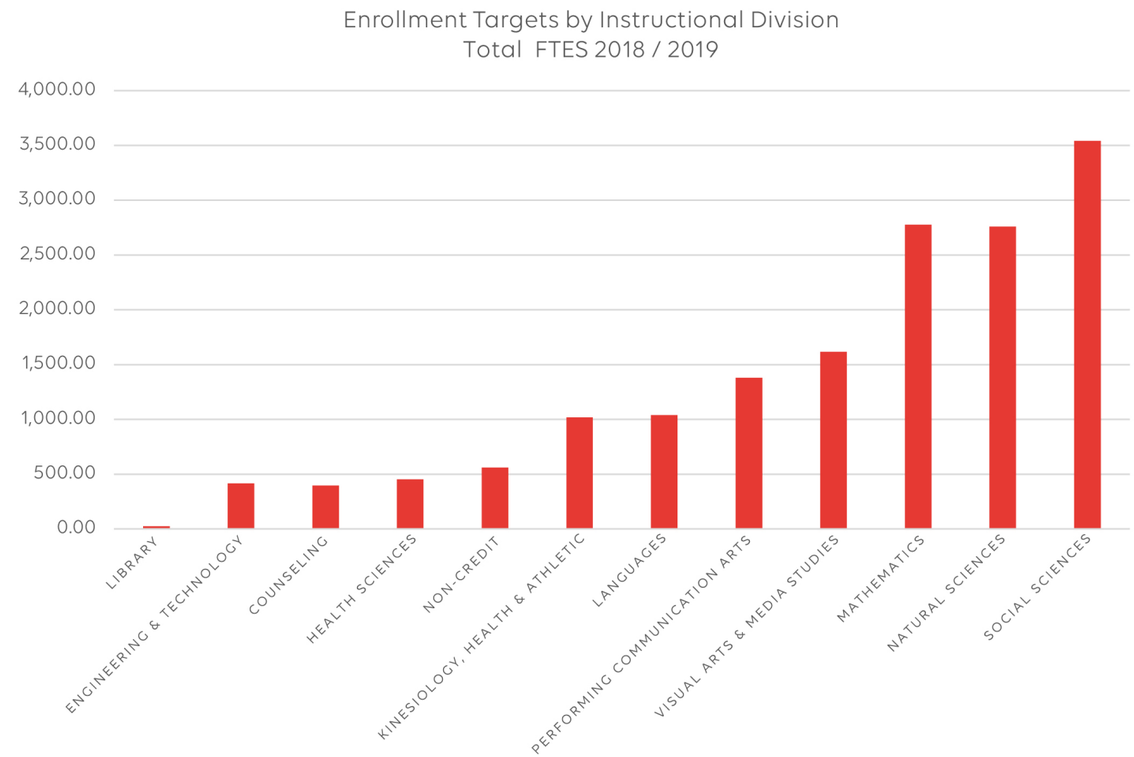
Because PCC has a history of experiencing periods of sharp enrollment changes, new and renovated physical space should:

- Be adaptable to changing layout and functions
- Emphasize student services and amenities as a way to keep students





CURRENT ENROLLMENT BY INSTRUCTIONAL DIVISION — TOTAL 23,361 FTES



Programs with over 400 FTEs in 10-years: Business, Pathways, Kinesiology, Mathematics, Statistics, Anatomy, Biology, Chemistry, Physics, Music, Speech Communication, History, Political Science, Psychology, Sociology, Art

FTEs BY LOCATIONS THE LAST 3 YEARS

LOCATIONS	2016–17	2017 18	2018–19	3-Yr Average	2019 20 (as of Fall '19)
Colorado Campus	20,111.94	19,438.15	18,879.01	19,476.37	9,434.16
Fully Online	1,475.46	1,666.11	2,018.63	1,720.07	1,165.96
Foothill Campus	1,588.28	1,557.57	1,345.09	1,496.98	625.10
Rosmead	1,217.38	1,109.79	1,015.77	1,114.32	512.93
Off-campus	427.48	450.07	461.03	446.19	216.90
High School	107.27	34.59	34.4	57.75	30.05
Northwest	...	...	13.04	18.32	21.08

FUSION ENROLLMENT FORECAST—FALL (UNDUPLICATED)

YEAR	CAMPUS	TOTAL DISTRICT ENROLLMENT
Fall 2018 - Actual		29,811
2020	Pasadena City College	30,701
2021	Pasadena City College	30,918
2022	Pasadena City College	31,137
2023	Pasadena City College	31,357
2024	Pasadena City College	31,579
2025	Pasadena City College	31,802
2026	Pasadena City College	32,027
2027	Pasadena City College	32,254

Modest enrollment growth in line with District goals.

YEAR	CAMPUS	TOTAL CERTIFICATED INSTRUCTIONAL & STATUTY STAFF FTE
2020	Pasadena City College	995
2021	Pasadena City College	995
2022	Pasadena City College	995
2023	Pasadena City College	995
2024	Pasadena City College	995
2020	Community Education Center	75
2021	Community Education Center	75
2022	Community Education Center	75
2023	Community Education Center	75
2024	Community Education Center	75

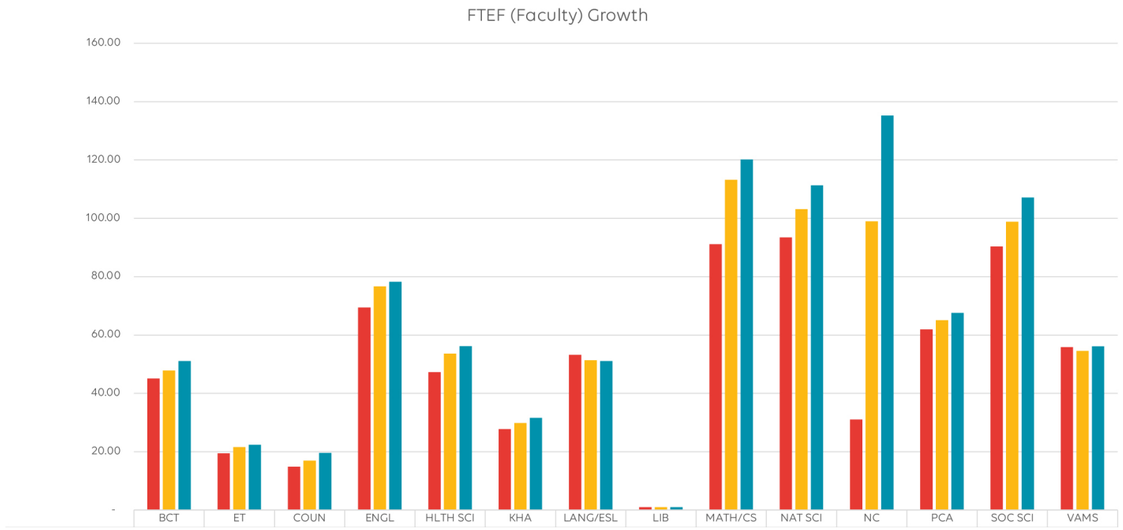
CCCCO ENROLLMENT PROJECTIONS

IThe CCCCO produces a report with enrollment projections for all community college districts in California.

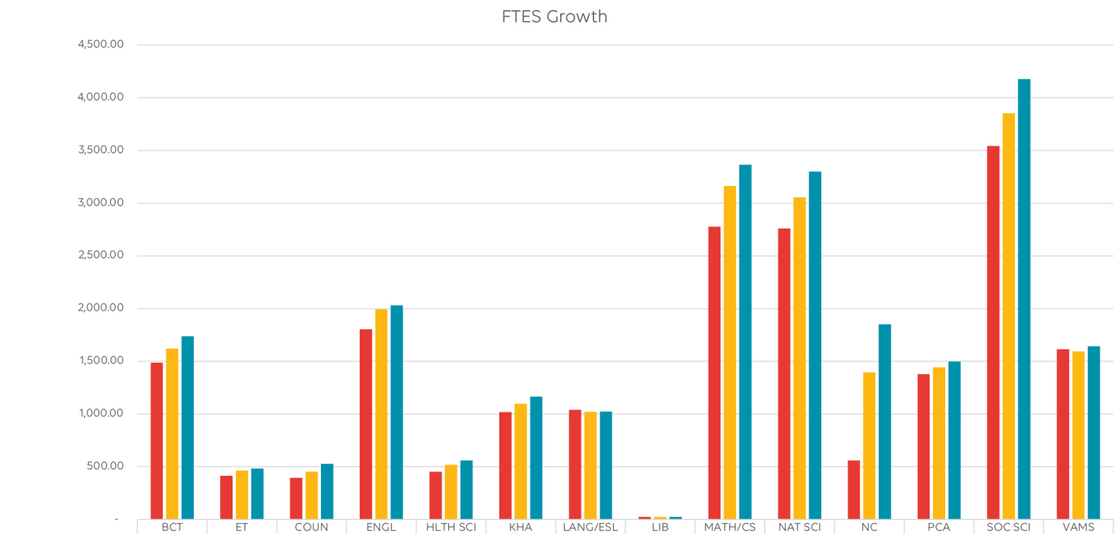
The Fusion Enrollment forecast projects modest 1.5% growth. They project out 8 years. This growth is in line with District target.

The Chancellors office is not projecting faculty and staff growth in the next 5 years (They do not project out beyond 5 years). These projections do not account for the addition of new programs or initiatives that could require additional personnel.

FACULTY GROWTH BY INSTRUCTIONAL DIVISION



ENROLLMENT TARGETS BY INSTRUCTIONAL DIVISION



Note, Faculty growth was calculated by maintaining the current student/ faculty ratios and using the FTES growth numbers provided by the campus.

BCT	Business, Engineering & Tech
ET	Engineering & Technology
COUN	Counseling
ENGL	English
HLTH SCI	Health Sciences
KHA	Kinesiology, Health & Athletic
LANG/ESL	Languages
LIB	Library
MATH/CS	Mathematics
NAT SCI	Natural Sciences
NC	Non-Credit
PCA	Performing Communication Arts
SOC SCI	Social Sciences
VAMS	Visual Arts & Media Studies

ENROLLMENT CONCLUSION

UNDERSTAND WHAT CAUSED ENROLLMENT SPIKESPCC has historically experienced dips and peaks in enrollment. Understanding what might have caused these is important.

Built space and its distribution across PCC can have a big effect on attracting and retaining students and might have affected historical enrollmentnumbers.

KEEP ENROLLMENT STEADY

One goal of the master plan should not only be increasing enrollment to meet targets, but keeping it steady.

- Provide modern teaching spaces that support pedagogy and are easily updated to refect changes in workforce
- Create space that allows staff to provide high quality student services
- Spaces that help build community also help to keep enrollment numbers steady

LEARN FROM PEERS

Look at the built space of peers that are experiencing faster growth and attempt to identify trends.

OUTLINE GROWTH TARGETS

The stated goal of 24,000 FTES is easily achievable in the next 10 years based on historical growth.

	LIB	ET	COUN	HLTH SCI	NC	KHA	LANG/ESL	PCA	VAMS	MATH/CS	NAT SCI	SOC SCI	BCT	ENGL	Total
Total FTES 2018/2019	23.80	415.08	395.60	452.06	559.44	1,018.17	1,040.26	1,379.29	1,615.87	2,777.19	2,759.85	3,542.64	1,486.48	1,803.49	23,361.35
5 year FTES Growth	24.04	464.81	435.16	519.12	792.00	1,097.13	780.00	1,586.18	1,656.27	2,555.01	2,759.85	3,852.88	1,621.89	1,592.00	23,828.47
10 year FTES Growth	24.54	487.14	461.46	564.03	815.02	1,182.53	630.20	1,762.14	1,713.66	2,580.40	2,982.38	4,293.41	1,771.48	1,648.01	25,016.80
overall percent change	103.12%	117.36%	116.65%	124.77%	145.68%	116.14%	60.58%	127.76%	106.05%	92.91%	108.06%	121.19%	119.17%	91.38%	107.09%

INTRODUCTION TO SPACE INVENTORY

Physical space on the PCC Colorado campus and at satellite facilities is highlighted in this section. The distribution of space by space type and division is examined in order to identify areas that may lack space or have too much space. Findings and suggestions on existing space and the campus inventory close out this section.

Before projecting future space needs existing space must be considered. Both academic and non-academic spaces were examined.

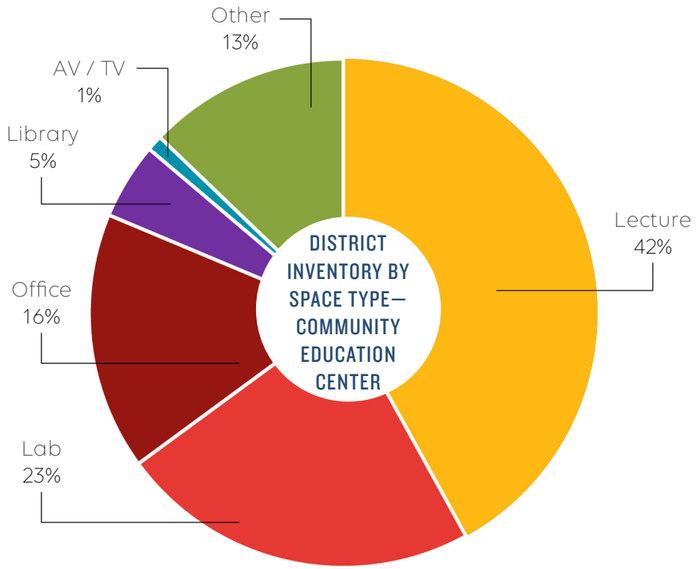
Space is represented in two ways in this report:

- Assignable Square Feet (ASF) describes the amount of useable and assignable space between walls. Assignable square feet does not include corridors, restrooms, and other building support spaces or structural elements like walls and columns
- Gross Square Feet (GSF) encompasses the total enclosed area of a building

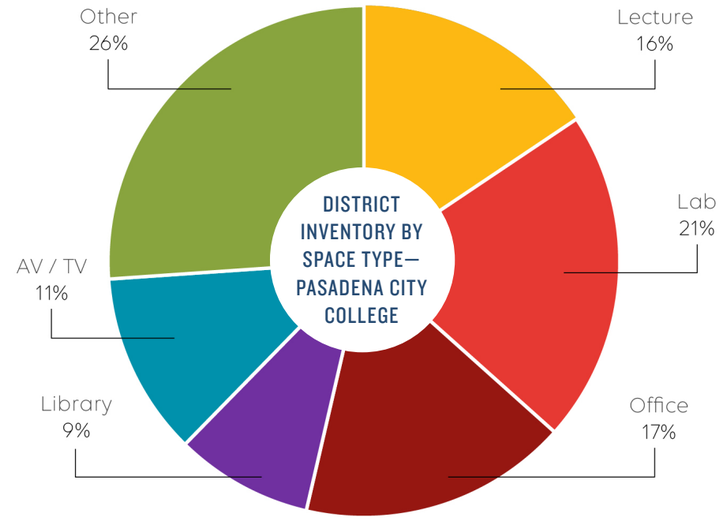
DISTRICT INVENTORY BY SPACE TYPE

CAMPUS	LECTURE	LAB	OFFICE	LIBRARY	AV/TV	OTHER	TOTAL ASF
Foothill Campus	24,081	13,158	9,403	2,787	569	7,361	57,339
Pasadena City college	118,317	159,360	128,967	66,062	87,774	197,888	758,368

COMMUNITY EDUCTION CENTER



PASADENA CITY COLLEGE



SUMMARY OF EXISTING FACILITIES

Existing space at PCC is distributed across the Colorado Campus and immediately surrounding properties including Child Development Center, Foothill, Rosemead and Northwest Campuses. In addition, multiple other venues are utilized for course content delivery.

In addition, selected non-credit courses are taught at partner locations, Colorado Campus Compared to Satellites Locations

The charts clearly show that the satellite facilities are small scale.

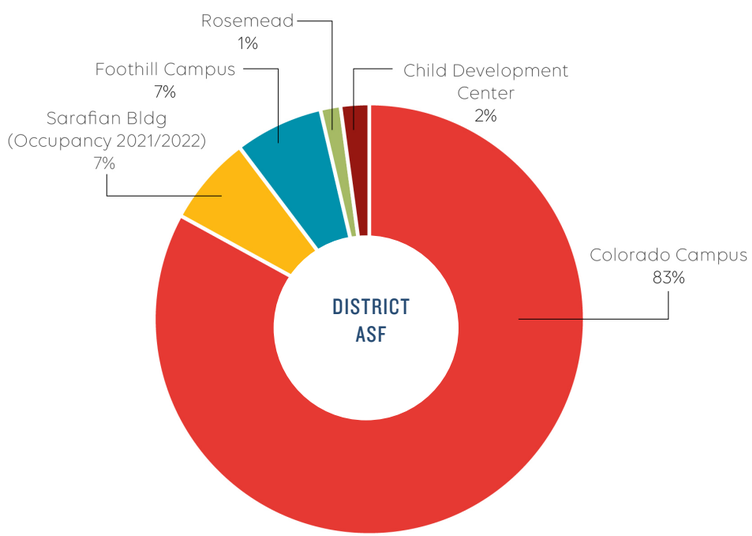
- Additionally providing more student services and support spaces at satellite facilities helps with recruitment and persistence.
- The amount of acreage or the Colorado Campus should be sufficient to accommodate targeted enrollment growth

EXISTING SPACE DISTRICT - NOTES

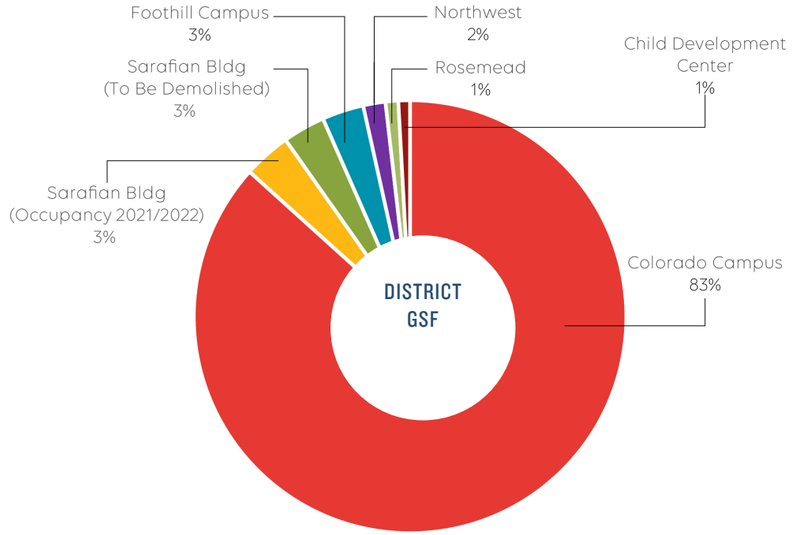
- Fusion Inventory pulled October 2019 differs between the Building Summary Report and the Room Detail Report. For the purposes of overall District numbers the Building Summary Report was utilized in order to match the Fusion Database District Space Inventory home page. The table below illustrates the areas where ASF differs.

PASADENA CITY COLLEGE DISTRICT SPACE	ASF	GSF	ROOMS	STATIONS
Colorado Campus	716,359	2,220,104	1,527	17,030
Child Development Center	18,524	22,302	46	318
Rosemead	13,035	24,355	34	633
Foothill Campus	57,359	79,750	146	1,978
Total	805,277	2,346,511	1,753	19,959
Northwest (John Muir High School)	28,758	42,640	Under Development	
Armen Sarafian Science Building (Occupancy 2021/2022)	58,012	90,763	?	?
Total with Additional Sites	892,047	2,479,914	1,753	19,959
U Bldg / Armen Sarafian (To Be Demolished)	—	81,205	—	1,664

DISTRICT ASF



DISTRICT GSF



ROOM DETAIL FUSION OCTOBER 2019	ASF	STATIONS	BUILDING SUMMARY FUSION OCTOBER 2019	ASF	STATIONS
L Bldg / Student Services	18,417	125	L Bldg / Student Services	18,297	125
R Bldg /C. Robbins	80,657	2,832	R Bldg /C. Robbins	79,301	2,811
V Bldg / Howard Marvin	35,596	1,048	V Bldg / Howard Marvin	35,296	1,046
A5 / Annex 5	897	45	A5 / Annex 5	-	-

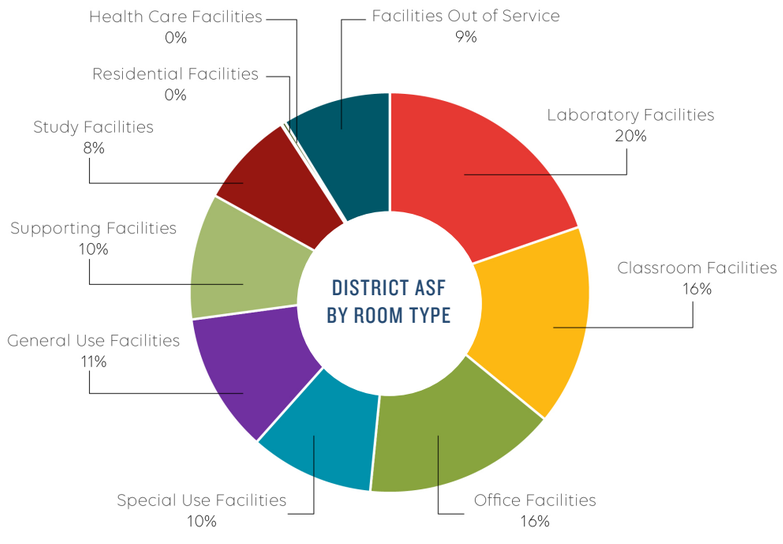
EXISTING SPACE - DISTRICT INVENTORY BY SPACE TYPE

The distribution of space between space types is fairly consistent across the District.

Currently PCC has a higher percent of laboratory space than other space types. However, early space projections included later in this report indicate this is an area where additional square feet are warranted.

EXISTING SPACE - DISTRICT INVENTORY BY SPACE TYPE—TOTAL DISTRICT

ROOM USE CATEGORY		TOTAL ASF	NUMBER OF ROOMS	EXAMPLE OF FACILITY TYPE
000s	Facilities Out of Service	77,473	228	Inactive, Alteration, Unfinished. (Sarafain)
100s	Classroom Facilities	119,214	169	Classrooms, Service
200s	Laboratory Facilities	160,716	241	Teaching Labs, Open Labs, Service
300s	Office Facilities	128,967	676	Offices, Conference, Service
400s	Study Facilities	66,062	55	Library Stacks, Study Space, Service
500s	Special Use Facilities	87,894	138	Athletics, AV/Radio/TV, Child Care, Service
600s	General Use Facilities	94,696	130	Assembly, Exhibition, Food, Service
700s	Supporting Facilities	87,650	134	Computer, Shop, Storage, Service
800s	Health Care Facilities	2,512	18	Treatment, Waiting, Service
900s	Residential Facilities	742	5	Sleep, Toilet/Bath, Apartment, Service
Grand Total		**825,926**	**1,794**	

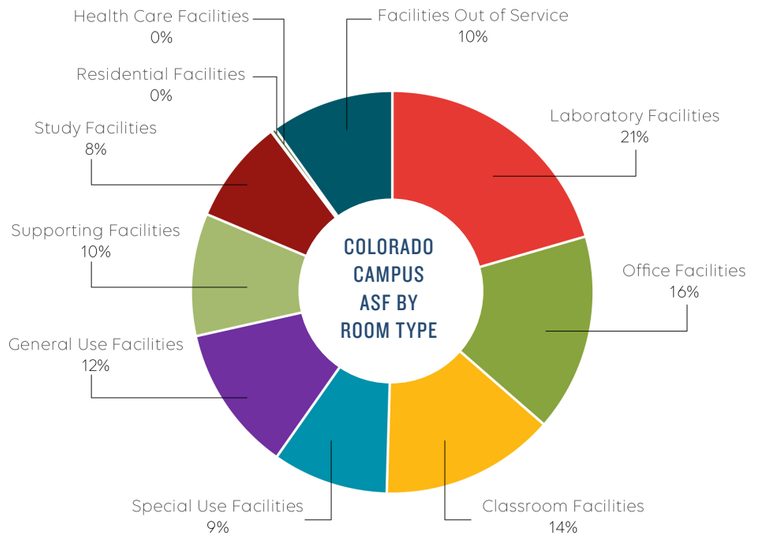


EXISTING SPACE - COLORADO CAMPUS INVENTORY SPACE BY TYPE

Space distribution is regularly analyzed. Centrally scheduled rooms and spaces shared with other divisions would not appear under the division. This means that some departments that might have higher enrollments or provide a large amount of core curriculum courses may appear to "own" less space. At the same time departments with large specialty spaces appear to have more space.

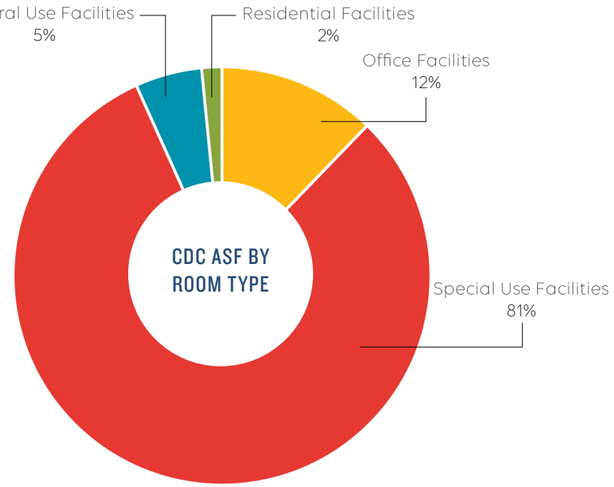
EXISTING SPACE - COLORADO CAMPUS INVENTORY SPACE BY TYPE

ROOM USE CATEGORY		TOTAL ASF	NUMBER OF ROOMS	EXAMPLE OF FACILITY TYPE
000s	Facilities Out of Service	77,473	228	Inactive, Alteration, Unfinished. (Sarafain)
100s	Classroom Facilities	109,828	156	Classrooms, Service
200s	Laboratory Facilities	160,716	241	Teaching Labs, Open Labs, Service
300s	Office Facilities	124,346	647	Offices, Conference, Service
400s	Study Facilities	65,625	54	Library Stacks, Study Space, Service
500s	Special Use Facilities	72,883	112	Athletics, AV/Radio/TV, Child Care, Service
600s	General Use Facilities	93,024	126	Assembly, Exhibition, Food, Service
700s	Supporting Facilities	77,058	128	Computer, Shop, Storage, Service
800s	Health Care Facilities	2,512	18	Treatment, Waiting, Service
900s	Residential Facilities	452	2	Sleep, Toilet/Bath, Apartment, Service
Grand Total		**783,917**	**1,712**	



EXISTING SPACE - CHILD DEVELOPMENT CENTER INVENTORY SPACE BY TYPE

ROOM USE CATEGORY		TOTAL ASF	NUMBER OF ROOMS	EXAMPLE OF FACILITY TYPE
000s	Facilities Out of Service			Inactive, Alteration, Unfinished. (Sarafain)
100s	Classroom Facilities			Classrooms, Service
200s	Laboratory Facilities			Teaching Labs, Open Labs, Service
300s	Office Facilities	2,266	15	Offices, Conference, Service
400s	Study Facilities			Library Stacks, Study Space, Service
500s	Special Use Facilities	15,011	26	Athletics, AV/Radio/TV, Child Care, Service
600s	General Use Facilities	957	2	Assembly, Exhibition, Food, Service
700s	Supporting Facilities			Computer, Shop, Storage, Service
800s	Health Care Facilities			Treatment, Waiting, Service
900s	Residential Facilities	290	3	Sleep, Toilet/Bath, Apartment, Service
Total Room Detail		**18,524**	**46**	

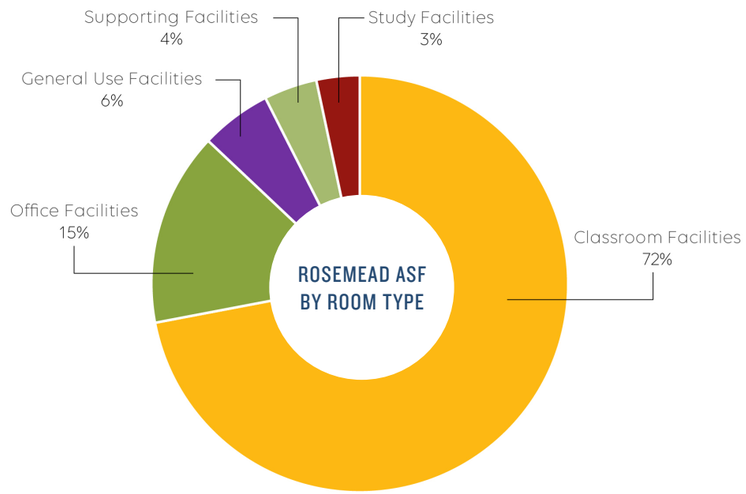


EXISTING SPACE - ROSEMEAD INVENTORY BY SPACE TYPE

The fact that Rosemead is a small satellite facility delivering mostly instruction is apparent in the table and pie chart here. Students are attending Rosemead for a limited number and range of classes, but they must travel to the Colorado campus for student services, laboratory and research (library) facilities.

Rosemead is a lease facility not owned by the District with limited opportunity to grow.

ROOM USE CATEGORY		TOTAL ASF	NUMBER OF ROOMS	EXAMPLE OF FACILITY TYPE
000s	Facilities Out of Service			Inactive, Alteration, Unfinished. (Sarafain)
100s	Classroom Facilities	9,386		Classrooms, Service
200s	Laboratory Facilities			Teaching Labs, Open Labs, Service
300s	Office Facilities	1,959		Offices, Conference, Service
400s	Study Facilities	437		Library Stacks, Study Space, Service
500s	Special Use Facilities			Athletics, AV/Radio/TV, Child Care, Service
600s	General Use Facilities	715		Assembly, Exhibition, Food, Service
700s	Supporting Facilities	538		Computer, Shop, Storage, Service
800s	Health Care Facilities			Treatment, Waiting, Service
900s	Residential Facilities			Sleep, Toilet/Bath, Apartment, Service
Total Room Detail		**13,035**		



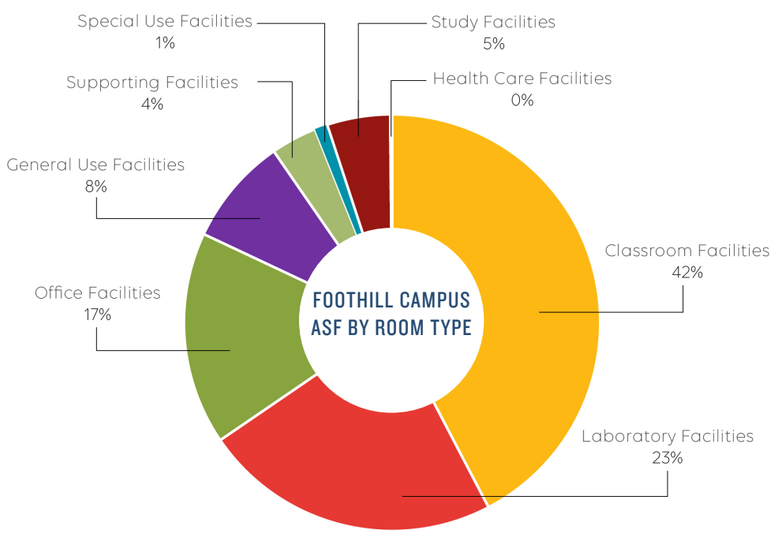
EXISTING SPACE - FOOTHILL CAMPUS INVENTORY BY SPACE TYPE

The Nursing and other Health Sciences programs moved to the Foothill Campus, splitting the focus of the facility from primarily Community Education to an additional significant academic program focus. The Community Education functions and Nursing functions are competing for a limited amount of space. Nursing will move back to the Colorado campus into the new Sarafian building expected in 2020, freeing up the space for the reassignment or the addition of new programs.

Based on population growth trends where there will be a larger percentage of seniors, and workforce trends where healthcare positions will be in demand, the current facilities will limit the potential for PCC to maximize these high demand areas. Expanding to allow for more community resource functions and new programs and moving the Nursing program back onto the Colorado campus where it can be expanded and take advantage of synergies with existing (and possible new) programs there.

There are currently 10 Bungalows and the main building.

Room Use Category		TOTAL ASF	NUMBER OF ROOMS	EXAMPLE OF FACILITY TYPE
000s	Facilities Out of Service			Inactive, Alteration, Unfinished. (Sarafain)
100s	Classroom Facilities	24,081		Classrooms, Service
200s	Laboratory Facilities	13,158		Teaching Labs, Open Labs, Service
300s	Office Facilities	9,403		Offices, Conference, Service
400s	Study Facilities	2,787		Library Stacks, Study Space, Service
500s	Special Use Facilities	569		Athletics, AV/Radio/TV, Child Care, Service
600s	General Use Facilities	4,770		Assembly, Exhibition, Food, Service
700s	Supporting Facilities	2,509		Computer, Shop, Storage, Service
800s	Health Care Facilities	82		Treatment, Waiting, Service
900s	Residential Facilities			Sleep, Toilet/Bath, Apartment, Service
Grand Total		**57,359**		



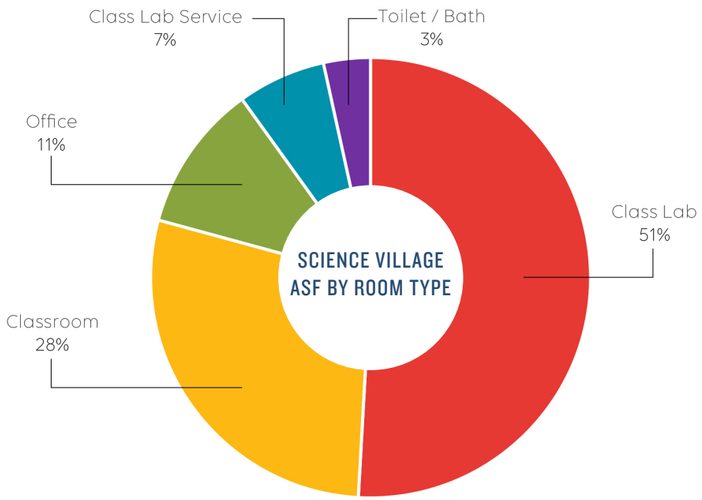
BUILDING	SUM OF ASF	SUM OF GSF
Bungalow 1	900	960
Bungalow 2	900	960
Bungalow 3	900	960
Bungalow 4	900	960
Bungalow 5	883	960
Bungalow 6	889	960
Bungalow 7	897	960
Bungalow 8	897	960
Bungalow 9	—	480
Bungalow 10	900	960
Bungalow 11	900	960
Total Bungalows	8,966	10,080
CEC / Community ED	48,393	69,670
Grand Total	**57,359**	**79,750**

EXISTING SPACE - SCIENCE VILLAGE INVENTORY BY SPACE TYPE

The Science Village was created in response to Sarafian Building closing. It contains some of the most utilized laboratory spaces on campus and has a high net to gross ratio. However, the distribution of single story portables is not as efficient as constructing a multi-story building. Also portables are not permanent, creating a space on campus that is obviously different from the other built environments with no support spaces such as student study / lounge.

Most class labs at Science Village (14) are 1,355 ASF with 27 stations each.

Science Village portables will play a critical role as swing space for the campus as facilities are renovated and constructed.



PROGRAM DISTRIBUTION

EXISTING PROGRAM DISTRIBUTION BY BUILDING

CC Bldg / CAMPUS CENTER (47,065 GSF)

VISUAL ARTS & MEDIA STUDIES	5%
GENERAL ASSIGNMENT	19%
ADMINISRTATIONS / OPERATIONS	8%
STUDENT SERVICES	58%
MAINTENANCE, OPREATIONS & SERVICE	10%

G Bldg / GALLERY (1,400 GSF)

GENERAL ASSIGNMENT	100%

R Bldg / C. ROBBINS (134,107 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	20%
HEALTH SCIENCES (DENTAL)	9%
LANGUAGES AND ESL	4%
MATH AND COMPUTER SCIENCE	18%
SOCIAL SCIENCES	5%
GENERAL ASSIGNMENT	20%
STUDENT SERVICES	4%
MAINTENANCE, OPREATIONS & SERVICE	21%

B Bldg / BOOKSTORE (19,970 GSF)

ADMINISRTATIONS / OPERATIONS	16%
STUDENT SERVICES	84%

Z Bldg / CERAMICS (4,770 GSF)

VISUAL ARTS & MEDIA STUDIES	100%

LP / LANCER'S PASS (2,620 GSF)

STUDENT SERVICES	100%

IT BLDG/ INDUSTRIAL TECHNOLOGY (66,558 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	89%
GENERAL ASSIGNMENT	5%
MAINTENANCE, OPREATIONS & SERVICE	6%

W Bldg / WOMEN'S GYM (43,000 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	7%
NATURAL SCIENCES	69%
GENERAL ASSIGNMENT	13%
STUDENT SERVICES	4%
MAINTENANCE, OPREATIONS & SERVICE	7%

P Bldg / PLANETARIUM (1,309 GSF)

NATURAL SCIENCES	100%

O Bldg / OBSERVATORY (2,923 GSF)

NATURAL SCIENCES	88%
MAINTENANCE, OPREATIONS & SERVICE	12%

FS Bldg / FACILITIES (25,072 GSF)

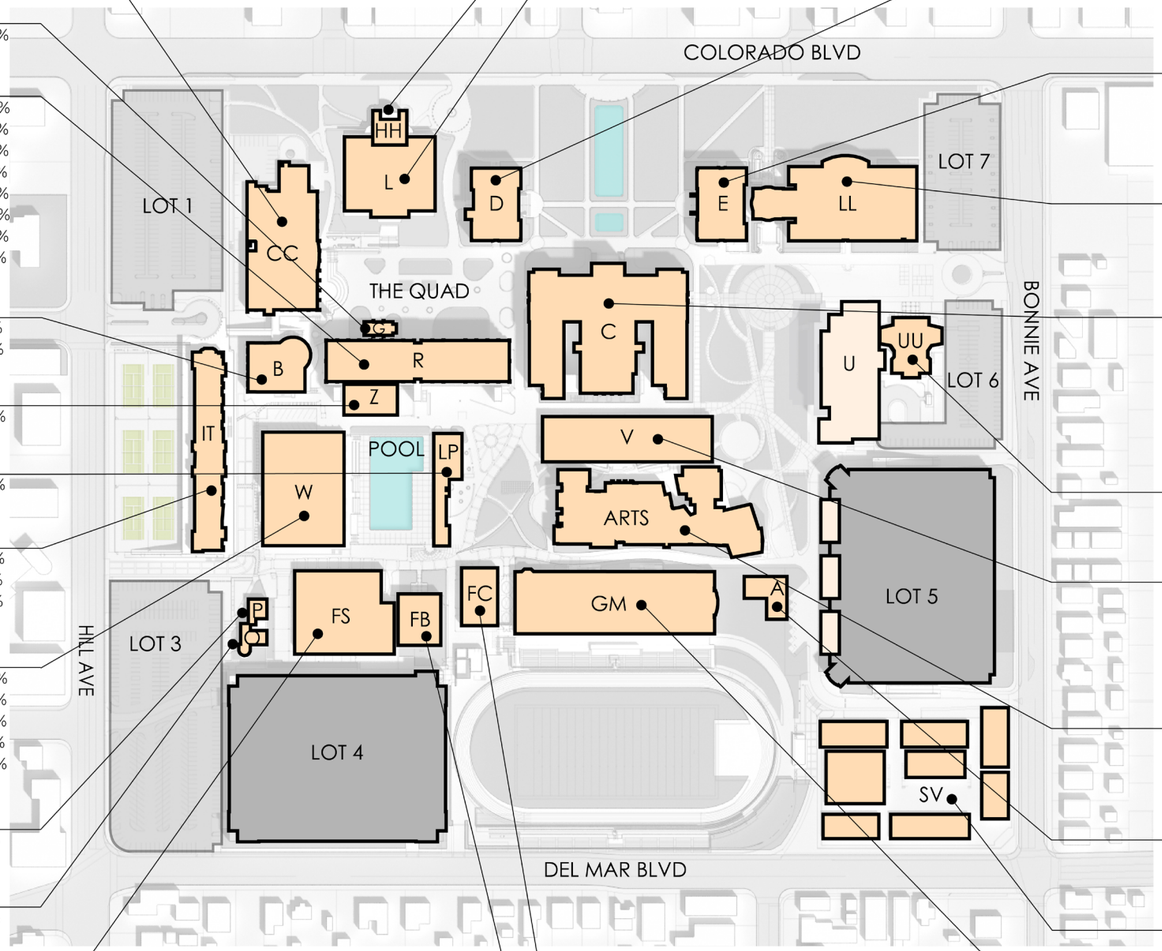
MAINTENANCE, OPREATIONS & SERVICE	100%

HH Bldg / Harbeson Hall (5,040 GSF)

GENERAL ASSIGNMENT	90%
MAINTENANCE, OPREATIONS & SERVICE	10%

L Bldg / STUDENT SERVICE (32,758 GSF)

STUDENT SERVICES	85%
MAINTENANCE, OPREATIONS & SERVICE	15%



FB Bldg / BOILER HOUSE (6,990 GSF)

MAINTENANCE, OPREATIONS & SERVICE	100%

FC Bldg / CHILLER PLANT (6,996 GSF)

MAINTENANCE, OPREATIONS & SERVICE	100%

D Bldg / JANE ADDAMS (37,542 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	7%
HEALTH SCIENCES	8%
LANGUAGES AND ESL	12%
NATURAL SCIENCES	8%
COUNSELING	29%
GENERAL ASSIGNMENT	17%
MAINTENANCE, OPREATIONS & SERVICE	19%

E Bldg / LOUIS AGASSIZ (37,542 GSF)

NATURAL SCIENCES	67%
PERFORMING COMMUNICATION ARTS	3%
GENERAL ASSIGNMENT	7%
MAINTENANCE, OPREATIONS & SERVICE	22%

LL Bldg / SHATFORD LIBRARY (89,829 GSF)

LIBRARY & DISTANCE DUCATION	87%
STUDENT SERVICES	7%
MAINTENANCE, OPREATIONS & SERVICE	6%

C Bldg / HORACE MANN (160,700 GSF)

ENGLISH	5%
PERFORMING COMMUNICATION ARTS	13%
SOCIAL SCIENCES	20%
GENERAL ASSIGNMENT	27%
ADMINISRTATIONS / OPERATIONS	27%
MAINTENANCE, OPREATIONS & SERVICE	7%

UU Bldg / L VOSLOH FORUM (10,000 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	12%
GENERAL ASSIGNMENT	88%

V Bldg / HOWARD MARVIN (45,992 GSF)

SOCIAL SCIENCES	9%
VISUAL ARTS & MEDIA STUDIES	41%
GENERAL ASSIGNMENT	26%
STUDENT SERVICES	12%
MAINTENANCE, OPREATIONS & SERVICE	12%

CA ARTS/ CENTER FOR THE ARTS (87,673 GSF)

PERFORMING COMMUNICATION ARTS	15%
VISUAL ARTS & MEDIA STUDIES	78%
MAINTENANCE, OPREATIONS & SERVICE	7%

A / ANNEX (4,800 GSF)

GENERAL ASSIGNMENT	84%
MAINTENANCE, OPREATIONS & SERVICE	16%

SV / SCIENCE VILLAGE (49,529 GSF)

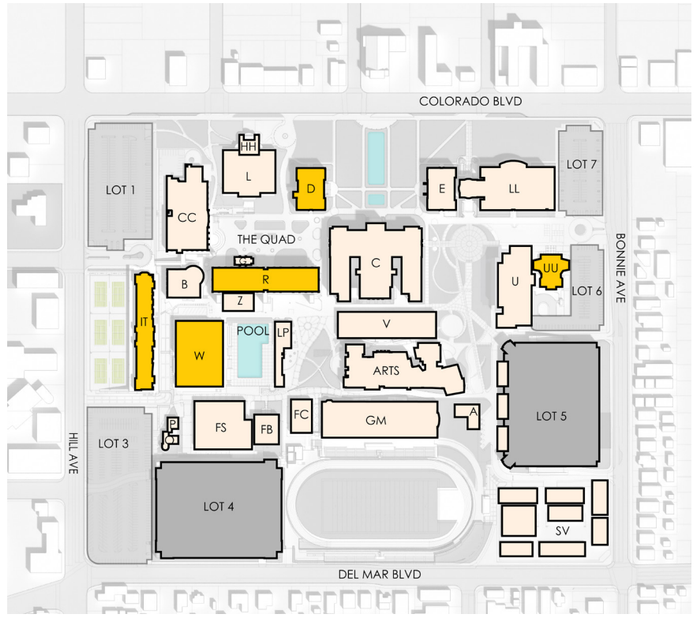
NATURAL SCIENCES	96%
MAINTENANCE, OPREATIONS & SERVICE	4%

GM Bldg / GYMNASIUM (84,172 GSF)

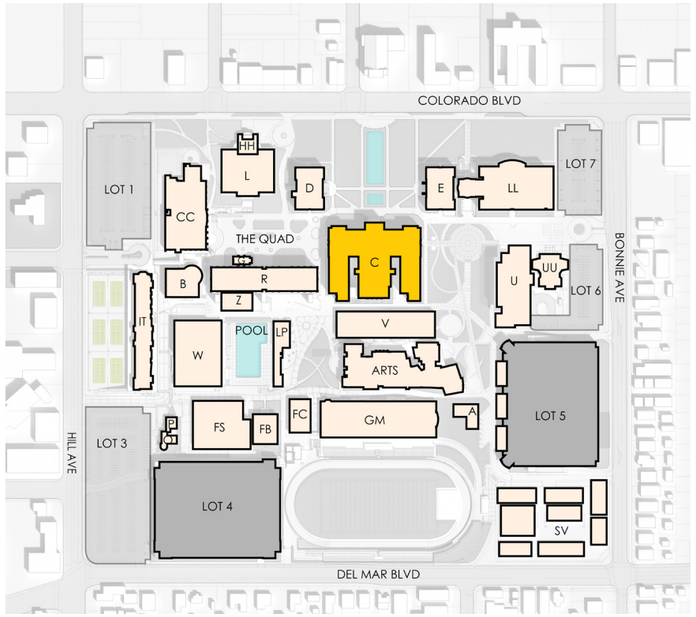
KINESIOLOGY, HEALTH & ATHLETIC	77%
GENERAL ASSIGNMENT	17%
MAINTENANCE, OPREATIONS & SERVICE	6%

PROGRAM DISTRIBUTION BY BUILDING BROKEN OUT BY DIVISION

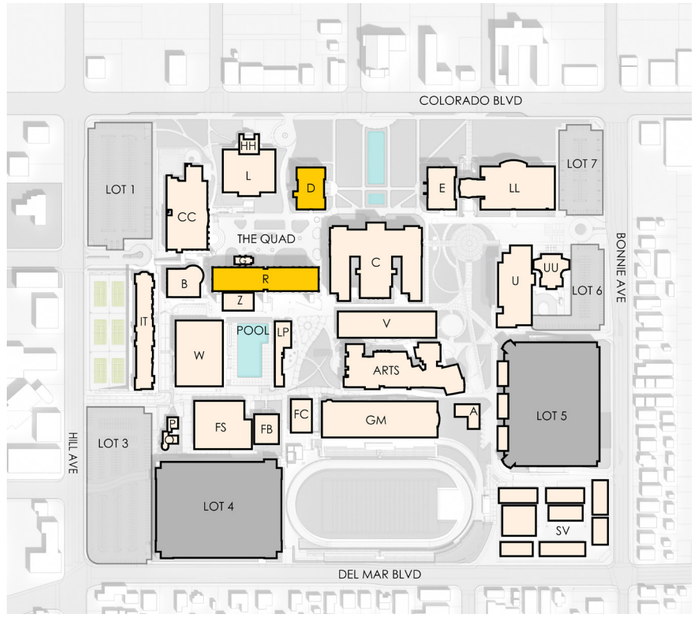
BUSINESS, ENGINEERING & TECHNOLOGY



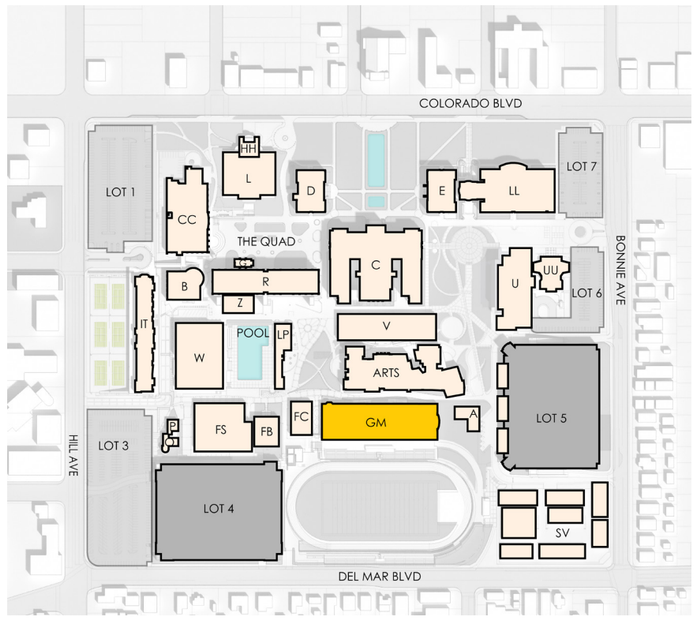
ENGLISH



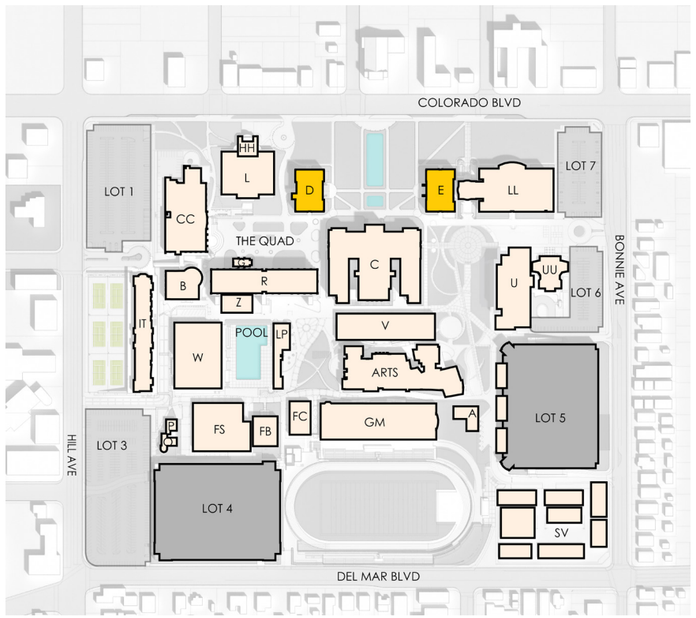
HEALTH SCIENCES



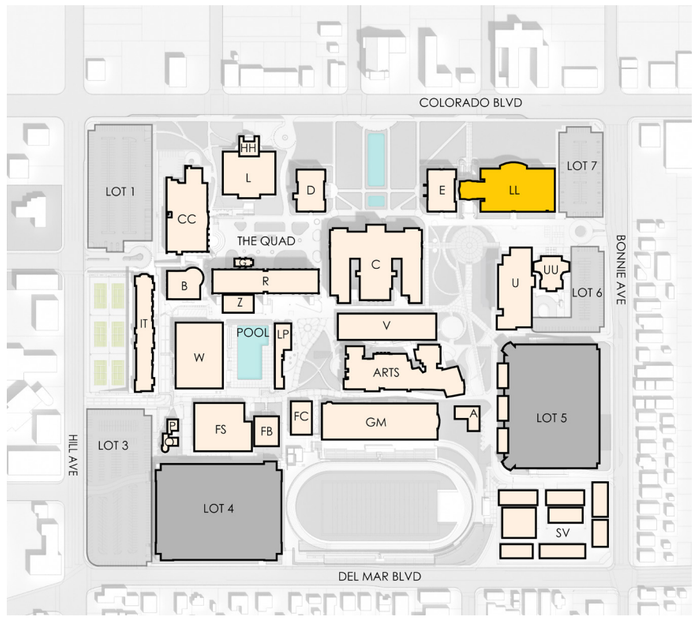
KINESIOLOGY, HEALTH & ATHLETIC



LANGUAGES AND ESL

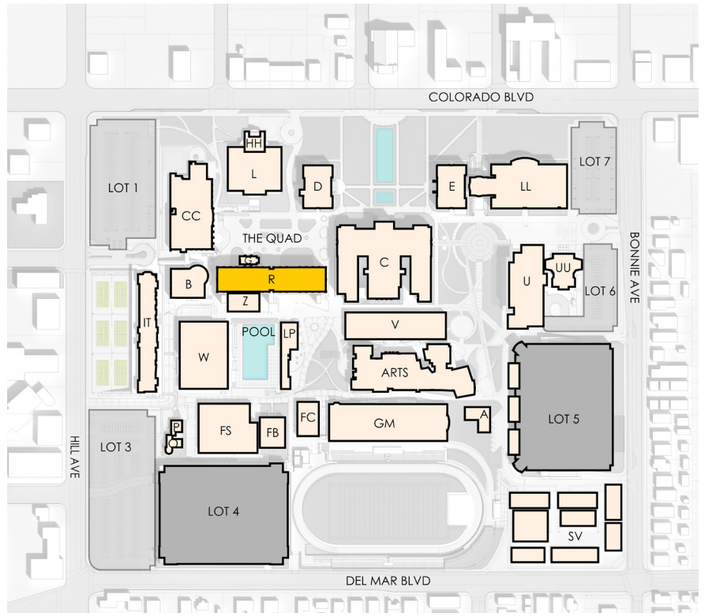


LIBRARY AND DISTANCE EDUCATION

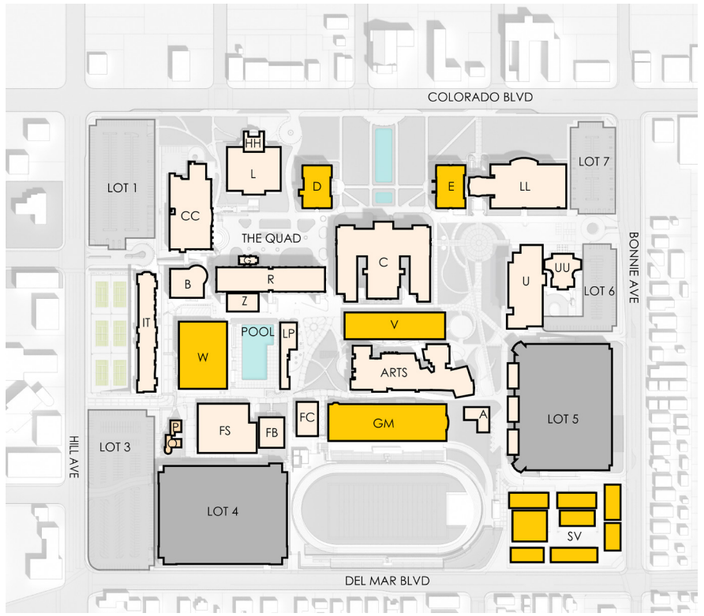


PROGRAM DISTRIBUTION BY BUILDING BROKEN OUT BY DIVISION

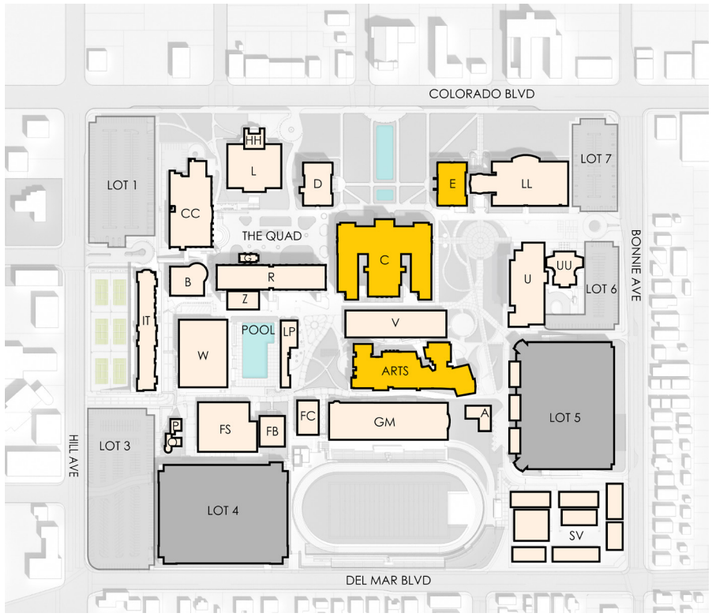
MATH AND COMPUTER SCIENCE



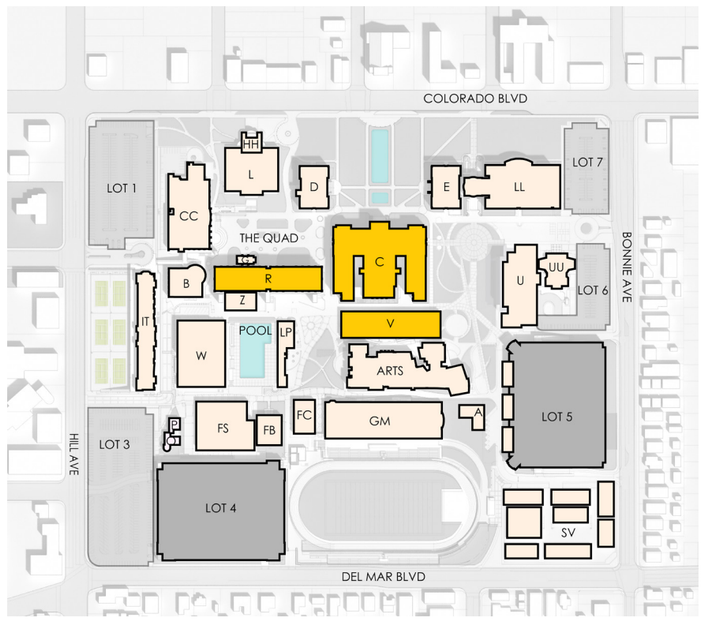
NATURAL SCIENCES



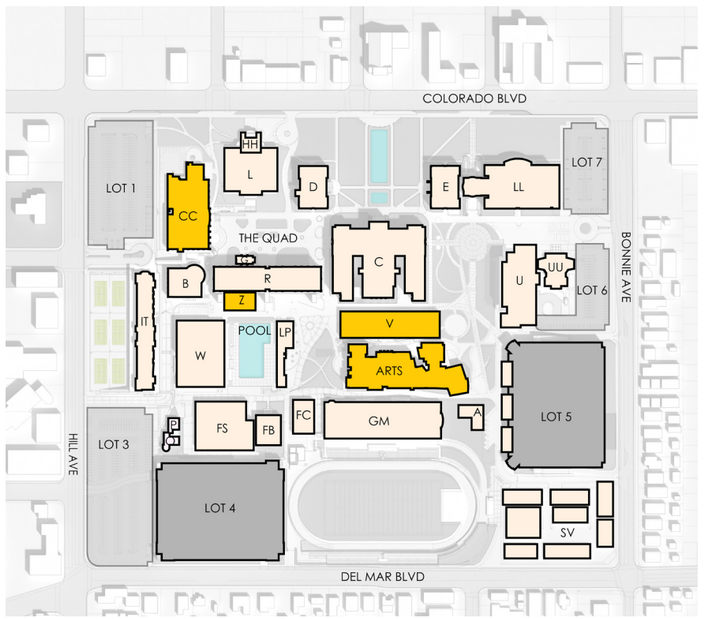
PERFORMING COMMUNICATION ARTS



SOCIAL SCIENCES



VISUAL ARTS & MEDIA STUDIES



COLORADO CAMPUS MAP - EXISTING STUDENT RESOURCES AND ACADEMIC RESOURCES

PCC STUDENT RESOURCES

LL BUILDING
- LIBRARY (BOOKS, RESEARCH) (LL-211)

D BUILDING
- STUDENT HEALTH SERVICES (D-105)
- PASS /TRIO (D-112)
- PERSONAL COUNSELING (D-203)
  - SOCIAL SERVICES (D-203)
- INTERNATIONAL STUDENT CENTER (D-204)
- ASSESSMENT AND PLACEMENT (D-205)
- DSPS (D-209)
- COMMUNITIES OVERCOMING (D-112A)
- RECIDIVISM THRU EDUCATION (D-108G)
- BASIC NEEDS + FAMILY RESOURCE CTR (IN PROGRESS)
- CLOTHING CLOSET (IN PROGRESS)

L BUILDING
- INFORMATION DESK (L-103)
- ACADEMIC COUNSELING (L-104)
- FOSTER YOUTH PROGRAM (L-104)
  - CALWORKS (L-107)
  - EOP&S (L-107)
- TRANSFER CENTER (L-110)
- FINANCIAL AID (L-114)
- ADMISSION AND RECORDS (L-113)
- MEN OF COLOR PROGRAM (IN PROGRESS)
- LEGAL AID (IN PROGRESS)

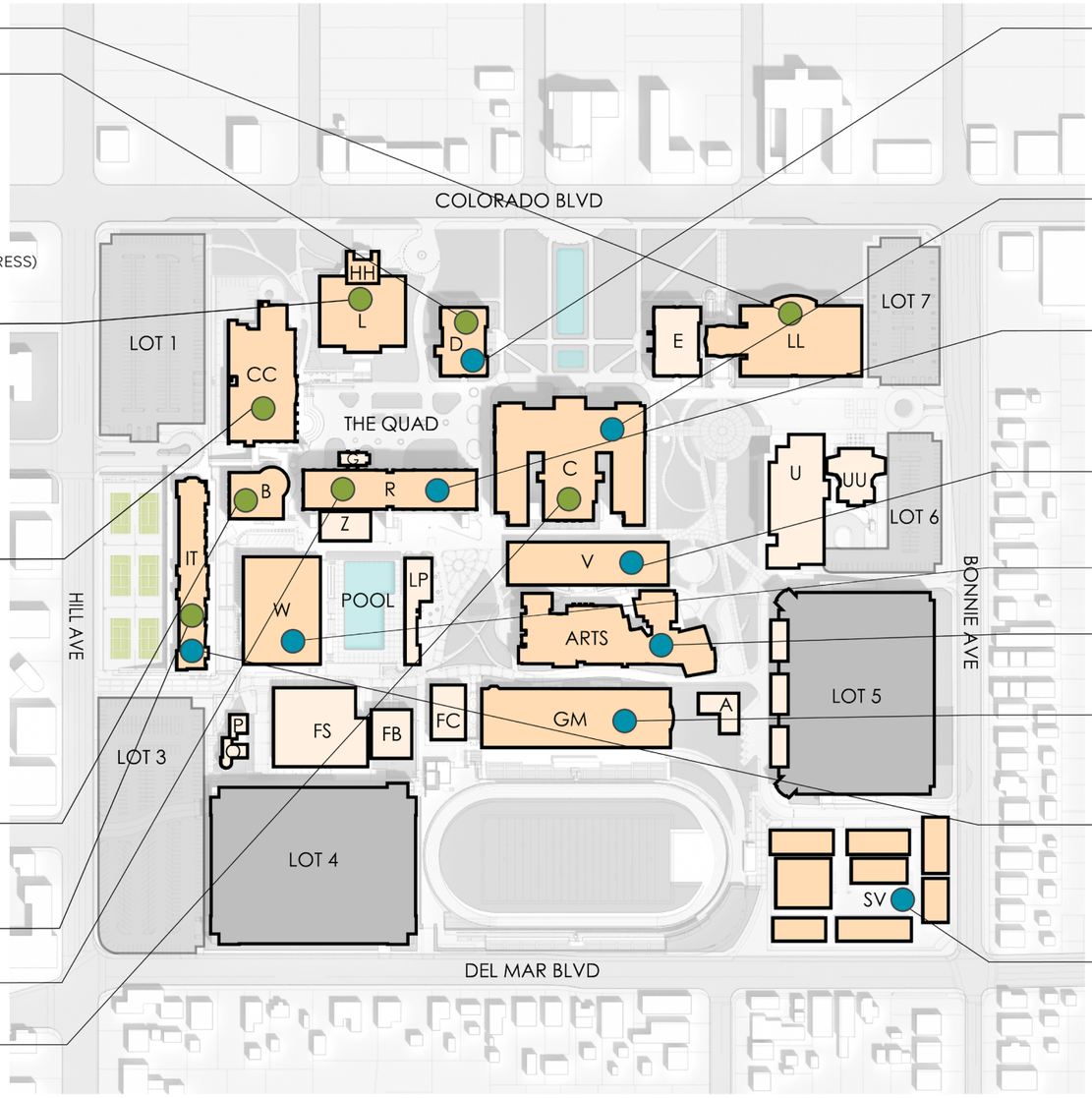
CC BUILDING
- STUDENTS LOUNGE (CC-104)
- STUDENTS LIFE (CC-105)
  - RAPID RESPONSE EMERGENCY AID (CC-105)
  - CLUBS AND ORGANIZATION (CC-105)
  - ASSOCIATED STUDENTS (CC-105B)
  - CROSS CULTURAL CENTER (CC-105 G)
- LANCER PANTRY(CC-211)
- UJIMA / BLACKEDEMIA (CC-224)
- PUENTE (CC-232)
- WELCOME CENTER (WIFI LOUNGE)
- TRANSFER + HONORS PROGRAM (IN PROGRESS)

B BUILDING
- BOOKSTORE
- POLICE STATION (B-210)
- STUDENT BUSINESS SERVICE / U-PASS (B-203)

IT BUILDING
- FREEMAN CENTER - CAREER & COMPLETION (IT-200)

R BULDING
- DENTAL HYGIENE CLINIC (R-511)
- DENTAL ASSISTING CLINIC (R-115)

C BUILDING
- STUDY ABROAD AND TRAVEL (C-245)
- (CA-119)
- HONORS PROGRAM (C-352 D)



PCC ACADEMIC RESOURCES

D BUILDING
- CTE & EWD (D-300)
- COMPUTER LEARNING CENTER (D-103)
- LEARNING ASSESTANCE CENTER (D-300)
- SPEECH CENTER (D-302)
- WRITING SUPPORT CENTER (WEST) (D306)

C BUILDING
- CTE & EWD (C-241)
- SOCIAL SCIENCE CENTER(C-321)
- WRITING SUPPORT CENTER (EAST) (C341)

R BULDING
- MATH SUCCESS CENTER (R-406)
- QUEER UNDOCUMENTED EMPOWER-
- MENT FOR STUDENTS TO THRIVE (R-425)
- FORMER FOSTER YOUTH (IN PROGRESS)

V BUILDING
- PATHWAY (V-102) (V-105)
- SCREEN PRINTING (PRINT SHOP LAB) (V-106)
- FIRST YR. SUCCESS CENTER (IN PROGRESS)

W BUILDING
- VETERANS RESOURCE CENTER (W-180)

CA ARTS BUILDING
- MUSIC CENTER (CA-002)

GM BUILDING
- ACADEMIC ATHLETIC ZONE (GM-112A)

IT BUILDING
- FAB LAB (IT-117)
- MESA (IT224)

SV / SCIENCE VILLAGE
- STEM (SV-25)

PCC's focus on creating Career Communities puts additional emphasis on Student Resources spaces. Existing Student Resources are illustrated on this map.

COLORADO CAMPUS—EXISTING STUDENT RESOURCES & ACADEMIC RESOURCES

EXISTING STUDENTS RESOURCES ROOMS	BUILDING	ROOM NUMBER	ROOM TYPE
Information desk	11 L Bldg / Student Service	103	315 Office Service
Academic counseling	11 L Bldg / Student Service	104	310 Office
Foster Youth Program	11 L Bldg / Student Service	107	310 Office
Transfer Center	11 L Bldg / Student Service	110	310 Office
Admission and Records	11 L Bldg / Student Service	113	310 Office
Financial Aid	11 L Bldg / Student Service	114	310 Office
Student health services	12 D Bldg / Jane Addams	105	880 Public Waiting
PASS /TRIO	12 D Bldg / Jane Addams	112	310 Office
Personal Counseling	12 D Bldg / Jane Addams	203	310 Office
International Student Center	12 D Bldg / Jane Addams	204	880 Public Waiting
Assessment & Placement	12 D Bldg / Jane Addams	205	This room is not found in the building inventory
DSPS	12 D Bldg / Jane Addams	209	310 Office
Study Abroad and Travel	2 C Bldg / Horace Mann	245	310 Office
Social Science Center	2 C Bldg / Horace Mann	321	310 Office
Honors Program	2 C Bldg / Horace Mann	352	315 Office Service
Honors Program	2 C Bldg / Horace Mann	352-D	310 Office
Shatford Library	21 LL Bldg / Shatford Library	211	310 Office
Dental Hygiene Clinic	25 R Bldg / C. Robbins	R-511	315 Office Service
Freeman Center for Career & Competition	36 IT Bldg/ Industrial Tech	200	050 Inactive Area
Student Business Services / U-Pass	37 B Bldg / Bookstore	203	310 Office
Police Station	37 B Bldg / Bookstore	210	310 Office
Student Lounge	4 CC Bldg / Campus Center	104	675 Recreation Service
Student Life	4 CC Bldg / Campus Center	105	315 Office Service
Associated Students	4 CC Bldg / Campus Center	105-B	310 Office
Cross Culture Center	4 CC Bldg / Campus Center	105-G	310 Office
Lancer Pantry	4 CC Bldg / Campus Center	211	635 Food Facilities Service
UJIMA / Blackedemia	4 CC Bldg / Campus Center	224	Missing Room Type in the building Inventory
Puente	4 CC Bldg / Campus Center	232	310 Office

EXISTING ACADEMIC RESOURCES ROOMS	BUILDING	ROOM NUMBER	ROOM TYPE
Computer Learning Center	12 D Bldg / Jane Addams	103	215 Class Lab Service
Learning Assistance Center	12 D Bldg / Jane Addams	300	410 Read/Study Room
Speech Center	12 D Bldg / Jane Addams	302	250 Non-Class Lab
Writing Supporting Center (West)	12 D Bldg / Jane Addams	306	220 Spec Class Lab
Academic Athletic Zone	13 GM Bldg / Gymnasium	112-A	210 Class Lab
CTE & EWD	2 C Bldg / Horace Mann	241	310 Office
Writing Supporting Center (East)	2 C Bldg / Horace Mann	341	410 Read/Study Room
Social Science Center	2 C Bldg / Horace Mann	321	321Office
Veterans Resource Center	24 W Bldg / Women's Gym	108	410 Read/Study Room
Math Success Center	25 R Bldg / C. Robbins	R-406	230 Individual Study Lab
Pathways	26 V Bldg / Howard Marvin	V-102	410 Read/Study Room
Pathways	26 V Bldg / Howard Marvin	V-105	410 Read/Study Room
Screen Printing (print Shop Lab)	26 V Bldg / Howard Marvin	V-106	210 Class Lab
MESA	36 IT Bldg/ Industrial Tech	224	410 Read/Study Room
Fab Lab	36 IT Bldg/ Industrial Tech	117	220 Spec Class Lab
STEM Science Village	47 Science Village; Group G	SV-25	410 Read/Study Room
Music Center	49 CA / Center for the Arts	2	430 Library - Electronic Carrels

In order to better track use, the campus space inventory room types can be updated to reflect student resource functions.

OBSERVATIONS / RECOMMENDATIONS

The District may wish to update the inventory to better capture spaces utilized as centers, classrooms that might not be dedicated to lecture delivery, and distinguishing special use and other spaces that may be better categorized as support facilities.

The following are observations based on the current distribution of space:

- The existing distribution of space at Rosemead illustrates its limitations; it does not serve the whole student
- The programs at the Foothill Campus are already straining its capacity
- The dueling functions of Community Education (non-credit) and credit programs at Foothill Campus require different support spaces
- Bringing the Nursing program back onto campus will provide opportunities for Health Sciences to share spaces and better collaborate.
- The programs at the Foothill Campus are already straining its capacity. The dueling functions of community education delivery and nursing require different space types. The opening of the new science building will create some room to backfill functions into the space.

The following are recommendations based on the current distribution of space:

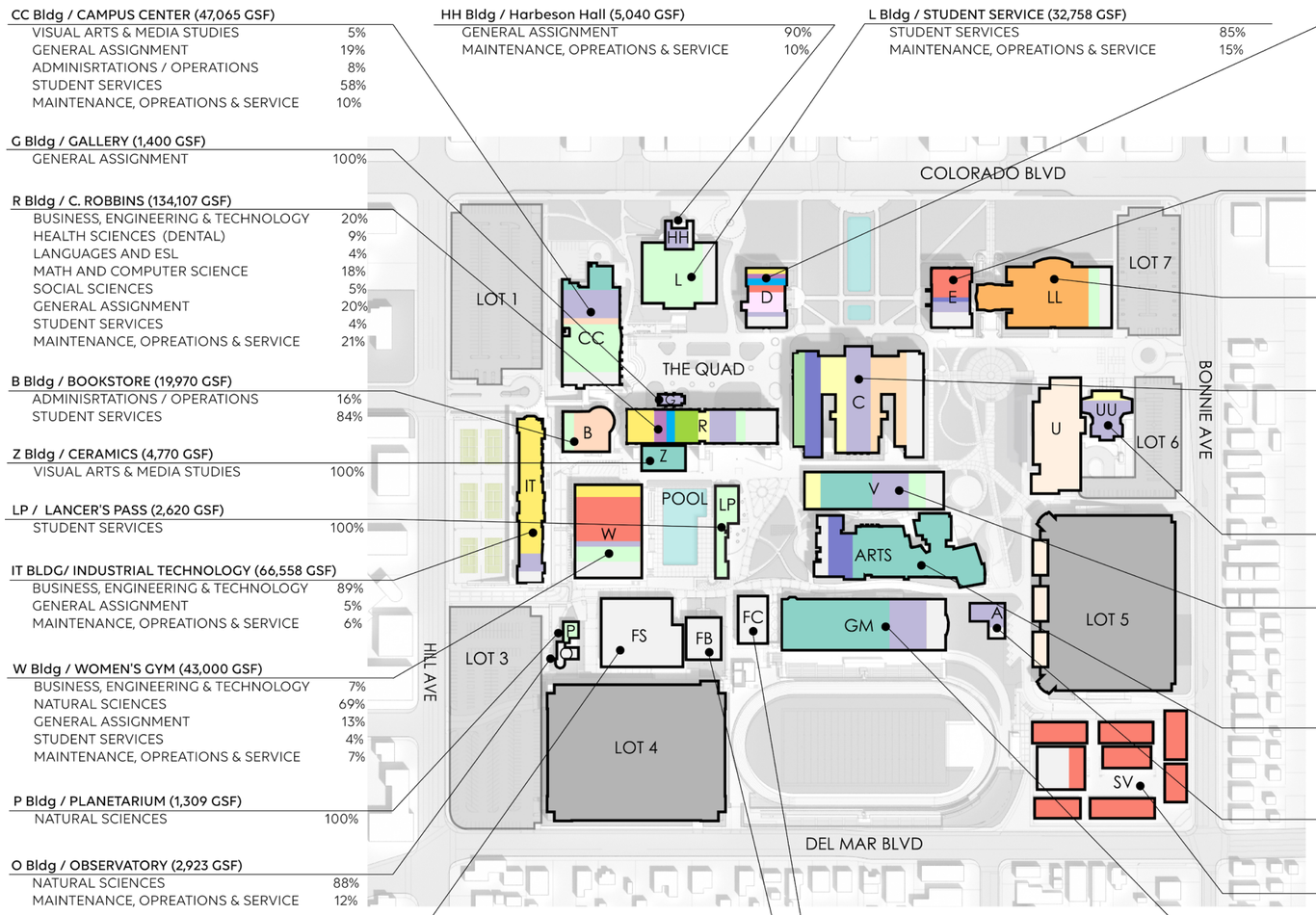
- Evaluate how spaces are categorized; confirm non-assignable spaces
- Create satellite facilities that offer more student support in addition to course delivery
- Further define opportunities for the Northwest campus.

PROGRAM DISTRIBUTION

EXISTING SPACE DISTRIBUTION

The Existing Program Distribution quantifies the spaces devoted to the various Divisions throughout the campus. The diagram reveals that program spaces are scattered in various buildings and are generally not co-located on campus which reduces the collaboration between programs within each Division. The new Center for the Arts creates a new identity for the arts programs although several of the programs are still scattered throughout the campus. The U-Building replacement also begins create an identity and hub for STEM and Health related programs. Student Services are based in the existing L Building although numerous mentoring labs, computer labs and study spaces are also scattered throughout campus along interior double loaded corridors.

The existing program distribution is listed by building and Division. The table summarizes the total existing square footage of all classrooms, labs, offices, etc. for each Division. Several of the General Assignment spaces are most likely classrooms with priority scheduling by specific Divisions.



CC Bldg / CAMPUS CENTER (47,065 GSF)

VISUAL ARTS & MEDIA STUDIES	5%
GENERAL ASSIGNMENT	19%
ADMINISRTATIONS / OPERATIONS	8%
STUDENT SERVICES	58%
MAINTENANCE, OPREATIONS & SERVICE	10%

HH Bldg / Harbeson Hall (5,040 GSF)

GENERAL ASSIGNMENT	90%
MAINTENANCE, OPREATIONS & SERVICE	10%

L Bldg / STUDENT SERVICE (32,758 GSF)

STUDENT SERVICES	85%
MAINTENANCE, OPREATIONS & SERVICE	15%

D Bldg / JANE ADDAMS (37,542 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	7%
HEALTH SCIENCES	8%
LANGUAGES AND ESL	12%
NATURAL SCIENCES	8%
COUNSELING	29%
GENERAL ASSIGNMENT	17%
MAINTENANCE, OPREATIONS & SERVICE	19%

G Bldg / GALLERY (1,400 GSF)

GENERAL ASSIGNMENT	100%

E Bldg / LOUIS AGASSIZ (37,542 GSF)

NATURAL SCIENCES	67%
PERFORMING COMMUNICATION ARTS	3%
GENERAL ASSIGNMENT	7%
MAINTENANCE, OPREATIONS & SERVICE	22%

R Bldg / C. ROBBINS (134,107 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	20%
HEALTH SCIENCES (DENTAL)	9%
LANGUAGES AND ESL	4%
MATH AND COMPUTER SCIENCE	18%
SOCIAL SCIENCES	5%
GENERAL ASSIGNMENT	20%
STUDENT SERVICES	4%
MAINTENANCE, OPREATIONS & SERVICE	21%

LL Bldg / SHATFORD LIBRARY (89,829 GSF)

LIBRARY & DISTANCE DUCATION	87%
STUDENT SERVICES	7%
MAINTENANCE, OPREATIONS & SERVICE	6%

B Bldg / BOOKSTORE (19,970 GSF)

ADMINISRTATIONS / OPERATIONS	16%
STUDENT SERVICES	84%

C Bldg / HORACE MANN (160,700 GSF)

ENGLISH	5%
PERFORMING COMMUNICATION ARTS	13%
SOCIAL SCIENCES	20%
GENERAL ASSIGNMENT	27%
ADMINISRTATIONS / OPERATIONS	27%
MAINTENANCE, OPREATIONS & SERVICE	7%

Z Bldg / CERAMICS (4,770 GSF)

VISUAL ARTS & MEDIA STUDIES	100%

LP / LANCER'S PASS (2,620 GSF)

STUDENT SERVICES	100%

UU Bldg / L VOSLOH FORUM (10,000 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	12%
GENERAL ASSIGNMENT	88%

IT BLDG/ INDUSTRIAL TECHNOLOGY (66,558 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	89%
GENERAL ASSIGNMENT	5%
MAINTENANCE, OPREATIONS & SERVICE	6%

V Bldg / HOWARD MARVIN (45,992 GSF)

SOCIAL SCIENCES	9%
VISUAL ARTS & MEDIA STUDIES	41%
GENERAL ASSIGNMENT	26%
STUDENT SERVICES	12%
MAINTENANCE, OPREATIONS & SERVICE	12%

W Bldg / WOMEN'S GYM (43,000 GSF)

BUSINESS, ENGINEERING & TECHNOLOGY	7%
NATURAL SCIENCES	69%
GENERAL ASSIGNMENT	13%
STUDENT SERVICES	4%
MAINTENANCE, OPREATIONS & SERVICE	7%

CA ARTS/ CENTER FOR THE ARTS (87,673 GSF)

PERFORMING COMMUNICATION ARTS	15%
VISUAL ARTS & MEDIA STUDIES	78%
MAINTENANCE, OPREATIONS & SERVICE	7%

P Bldg / PLANETARIUM (1,309 GSF)

NATURAL SCIENCES	100%

A / ANNEX (4,800 GSF)

GENERAL ASSIGNMENT	84%
MAINTENANCE, OPREATIONS & SERVICE	16%

O Bldg / OBSERVATORY (2,923 GSF)

NATURAL SCIENCES	88%
MAINTENANCE, OPREATIONS & SERVICE	12%

SV / SCIENCE VILLAGE (49,529 GSF)

NATURAL SCIENCES	96%
MAINTENANCE, OPREATIONS & SERVICE	4%

FS Bldg / FACILITIES (25,072 GSF)

MAINTENANCE, OPREATIONS & SERVICE	100%

FB Bldg / BOILER HOUSE (6,990 GSF)

MAINTENANCE, OPREATIONS & SERVICE	100%

FC Bldg / CHILLER PLANT (6,996 GSF)

MAINTENANCE, OPREATIONS & SERVICE	100%

GM Bldg / GYMNASIUM (84,172 GSF)

KINESIOLOGY, HEALTH & ATHLETIC	77%
GENERAL ASSIGNMENT	17%
MAINTENANCE, OPREATIONS & SERVICE	6%

Current Campus Program Distribution

BUSINESS, ENGINEERING & TECHNOLOGY
ENGLISH
HEALTH SCIENCES
LANGUAGES & ESL
LIBRARY & DISTANCE EDUCATION
MATH &COMPUTER SCIENCE
NATURAL SCIENCES
PERFORMING COMMUNICATION ARTS
SOCIAL SCIENCES

VISUAL ARTS & MEDIA STUDIES
KINESIOLOGY, HEALTH & ATHLETIC
ADMINISRTATIONS / OPERATIONS
GENERAL ASSIGNMENT
STUDENT SERVICES
COUNSELING
FOOD SERVICES
MAINTENANCE, OPREATIONS & SERVICE

PROGRAM DISTRIBUTION

EXISTING PROGRAM DISTRIBUTION BY BUILDING

Building: C Bldg / Horace Mann

Total Rooms 312
Total ASF 108,460
Total GSF 160,700

		ASF	%
	ENGLISH	5,475	5%
	PERFORMING COMMUNICATION ARTS	14,615	13%
	SOCIAL SCIENCES	22,204	20%
	GENERAL ASSIGNMENT	30,806	27%
	ADMINISRTATIONS / OPERATIONS	29,922	27%
	MAINTENANCE, OPREATIONS & SERVICE	8,007	7%

Building: LP Bldg / Lancer's Pass

Total Rooms 6
Total ASF 2,549
Total GSF 2,620

		ASF	%
	STUDENT SERVICES	2,549	100%

Building: CC Bldg / Campus Center

Total Rooms 61
Total ASF 36,906
Total GSF 47,065

		ASF	%
	VISUAL ARTS & MEDIA STUDIES	2,051	5%
	ADMINISRTATIONS / OPERATIONS	3,551	8%
	GENERAL ASSIGNMENT	7,876	19%
	STUDENT SERVICES	24,879	58%
	MAINTENANCE, OPREATIONS & SERVICE	4,067	10%

Building: FC Bldg / Chiller Plant

Total Rooms 3
Total ASF 6,485
Total GSF 6,996

		ASF	%
	MAINTENANCE, OPREATIONS & SERVICE	6,485	100%

Building: HH Bldg / Harbeson Hall

Total Rooms 5
Total ASF 3,734
Total GSF 5,040

		ASF	%
	GENERAL ASSIGNMENT	3,374	90%
	MAINTENANCE, OPREATIONS & SERVICE	360	10%

Building: L Bldg / Student Service

Total Rooms 84
Total ASF 18,297
Total GSF 32,738

		ASF	%
	STUDENT SERVICES	15,557	85%
	MAINTENANCE, OPREATIONS & SERVICE	2,740	15%

Building: IT Bldg/ Industrial Technology

Total Rooms 66
Total ASF 43,421
Total GSF 66,558

		ASF	%
	BUSINESS, ENGINEERING & TECHNOLOGY	38,502	89%
	GENERAL ASSIGNMENT	2,194	5%
	MAINTENANCE, OPREATIONS & SERVICE	2,425	6%

Building: D Bldg / Jane Addams

Total Rooms 110
Total ASF 27,798
Total GSF 37,542

		ASF	%
	BUSINESS, ENGINEERING & TECHNOLOGY	2,058	7%
	HEALTH SCIENCES	2,145	8%
	LANGUAGES & ESL	3,333	12%
	NATURAL SCIENCES	2,145	8%
	COUNSELING	8,085	29%
	GENERAL ASSIGNMENT	4,606	17%
	MAINTENANCE, OPREATIONS & SERVICE	5,331	19%

Building: GM Bldg / Gymnasium

Total Rooms 80
Total ASF 63,604
Total GSF 84,172

		ASF	%
	KINESIOLOGY, HEALTH & ATHLETIC	48,927	77%
	GENERAL ASSIGNMENT	10,718	17%
	MAINTENANCE, OPREATIONS & SERVICE	3,969	6%

Building: O Bldg / Observatory

Total Rooms 9
Total ASF 2,138
Total GSF 2,923

		ASF	%
	NATURAL SCIENCES	1,884	88%
	MAINTENANCE, OPREATIONS & SERVICE	255	12%

Building: E Bldg / Louis Agassiz

Total Rooms 52
Total ASF 29,351
Total GSF 37,542

		ASF	%
	NATURAL SCIENCES	19,785	67%
	PERFORMING COMMUNICATION ARTS	1,000	3%
	GENERAL ASSIGNMENT	2,139	7%
	MAINTENANCE, OPREATIONS & SERVICE	6,329	22%

Building: FS Bldg / Facilities

Total Rooms 23
Total ASF 21,422
Total GSF 25,072

		ASF	%
	MAINTENANCE, OPREATIONS & SERVICE	21,422	100%

Building: FB Bldg / Boiler House

Total Rooms 13
Total ASF 6,772
Total GSF 6,990

		ASF	%
	MAINTENANCE, OPREATIONS & SERVICE	6,772	100%

Building: B Bldg / Bookstore

Total Rooms 30
Total ASF 15,965
Total GSF 19,970

		ASF	%
	ADMINISRTATIONS / OPERATIONS	2,552	16%
	STUDENT SERVICES	13,399	84%

Building: Z Bldg / Ceramics

Total Rooms 8
Total ASF 3,859
Total GSF 4,770

		ASF	%
	VISUAL ARTS & MEDIA STUDIES	3,859	100%

Building: LL Bldg / Shatford Library

Total Rooms 84
Total ASF 57,240
Total GSF 89,829

		ASF	%
	LIBRARY & DISTANCE EDUCATION	50,075	87%
	STUDENT SERVICES	3,826	7%
	MAINTENANCE, OPREATIONS & SERVICE	3,542	6%

Building: W Bldg / Women's Gym

Total Rooms 52
Total ASF 32,651
Total GSF 43,000

		ASF	%
	BUSINESS, ENGINEERING & TECHNOLOGY	2,159	7%
	NATURAL SCIENCES	22,463	69%
	GENERAL ASSIGNMENT	4,321	13%
	STUDENT SERVICES	1,250	4%
	MAINTENANCE, OPREATIONS & SERVICE	2,440	7%

Building: R Bldg / C. ROBBINS

Total Rooms 214
Total ASF 79,301
Total GSF 134,107

		ASF	%
	BUSINESS, ENGINEERING & TECHNOLOGY	15,750	20%
	HEALTH SCIENCES	7,390	9%
	LANGUAGES & ESL	2,800	4%
	MATH &COMPUTER SCIENCE	14,250	18%
	SOCIAL SCIENCES	3,950	5%
	GENERAL ASSIGNMENT	15,650	20%
	STUDENT SERVICES	2,850	4%
	MAINTENANCE, OPREATIONS & SERVICE	16,700	21%

Building: V Bldg / Howard Marvin

Total Rooms 65
Total ASF 35,296
Total GSF 45,992

		ASF	%
	SOCIAL SCIENCES	3,087	9%
	VISUAL ARTS & MEDIA STUDIES	14,559	41%
	GENERAL ASSIGNMENT	9,020	26%
	STUDENT SERVICES	4,375	12%
	MAINTENANCE, OPREATIONS & SERVICE	4,082	12%

Building: G Bldg / Gallery

Total Rooms 4
Total ASF 1,098
Total GSF 1,400

		ASF	%
	GENERAL ASSIGNMENT	1,098	100%

Building: UU Bldg / L Vosloh Forum

Total Rooms 11
Total ASF 6,250
Total GSF 10,000

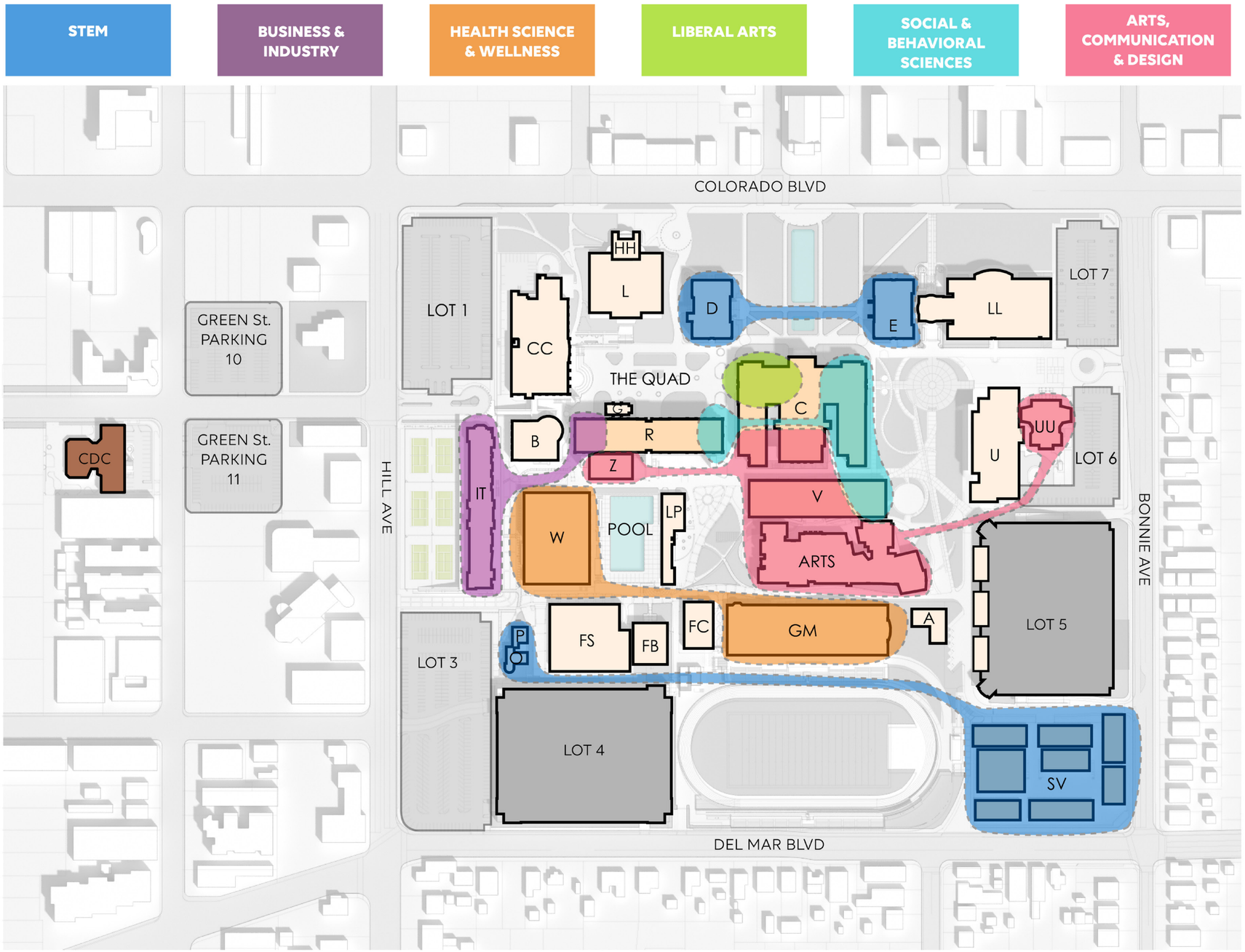
		ASF	%
	BUSINESS, ENGINEERING & TECHNOLOGY	755	12%
	GENERAL ASSIGNMENT	5,495	88%

Building: P Bldg / Planetarium

Total Rooms 2
Total ASF 1,122
Total GSF 1,309

		ASF	%
	NATURAL SCIENCES	1,122	100%

CAREER COMMUNITIES



Colorado Campus Map - Existing Career Communities Distribution

PCC is creating Career Communities that will address the Chancellor's office Guided Pathways and server as a tool to support and advance the educational master plan.

UTILIZATION ANALYSIS

- For the purposes of this analysis, the following data was utilized - Campus space inventory pulled October 2019.
- Projected student enrollment and weekly student contact hours determines the need for new facilities in this report for each educational category for fall semesters led from Fusion 10/2019,
- Weekly student contact hours (WSCH) are "the product of the number of students and the scheduled class periods in which they are enrolled, in graded and ungraded community college classes convened prior to 10 o'clock pm during a census week. A class period is not less than 50 minutes and not more than 60 minutes." (title 5, CCR, §57001(e)).

CALIFORNIA COMMUNITY COLLEGES STANDARDS

- The Board of Governors of the California Community Colleges utilization standards
  - Classroom: 53 hours per week
  - Class Lab: 27.5 hours per week
  - Average classroom fill: 66% minimum
  - Average class lab fill: 85% minimum
- All analysis above was calculated based on information provided by the College

OTHER ROOMS UTILIZED FOR TEACHING PURPOSES

There are several other rooms where courses are being scheduled in that are not 110 Classrooms or 210 Class Labs. PCC may consider moving courses taught in these rooms into classrooms and class labs in order to improve utilization of teaching spaces.

ROOM TYPE	COUNT OF ROOMS SCHEDULED	BUILDING & ROOM NUMBER						
110 Classroom	166							
210 Class Lab	76							
215 Class Lab Service	3	CEC-208	IT-226	Z-102				
220 Spec Class Lab	5	D-301	IT-105	IT-117	IT-137	IT-212		
225 Special Class Lab Service	1	IT-105-D						
250 Non-Class Lab	1	V-206						
310 Office	2	CEC-206-B	W-101-A					
350 Conference Room	1	LL-306						
410 Read-Study Room	2	C-341	LL-311					
520 Athletics-Physical Education	7	GM-102-A	GM-106	GM-215	GM-220	W-102	W-201	W-203
525 Athletic-Physical Ed Service	1	GM-102						
535 A-V, Radio, TV Service	1	LL-124						
610 Assembly	6	C-106	CA-135	CEC-126	UU-180	C-230	CA-140	
615 Assembly Service	1	C-172						
630 Food Facilities	1	GM-102						
NA	Not Included In Count							

Table data was pulled from class schedule Fall 2019.

E Bldg / LOUIS AGASSIZ (37,542 GSF)
- 5 CLASSROOMS
  - 4 MEDIUM CLASSROOMS (41-60 CAPACITY)
  - 1 LARGE CLASSROOM (73 CAPACITY)
- 7 CLASS LAB
  - 3 SMALL CLASS LAB (10-20 CAPACITY)
  - 4 MEDIUM CLASS LAB (21-50 CAPACITY)

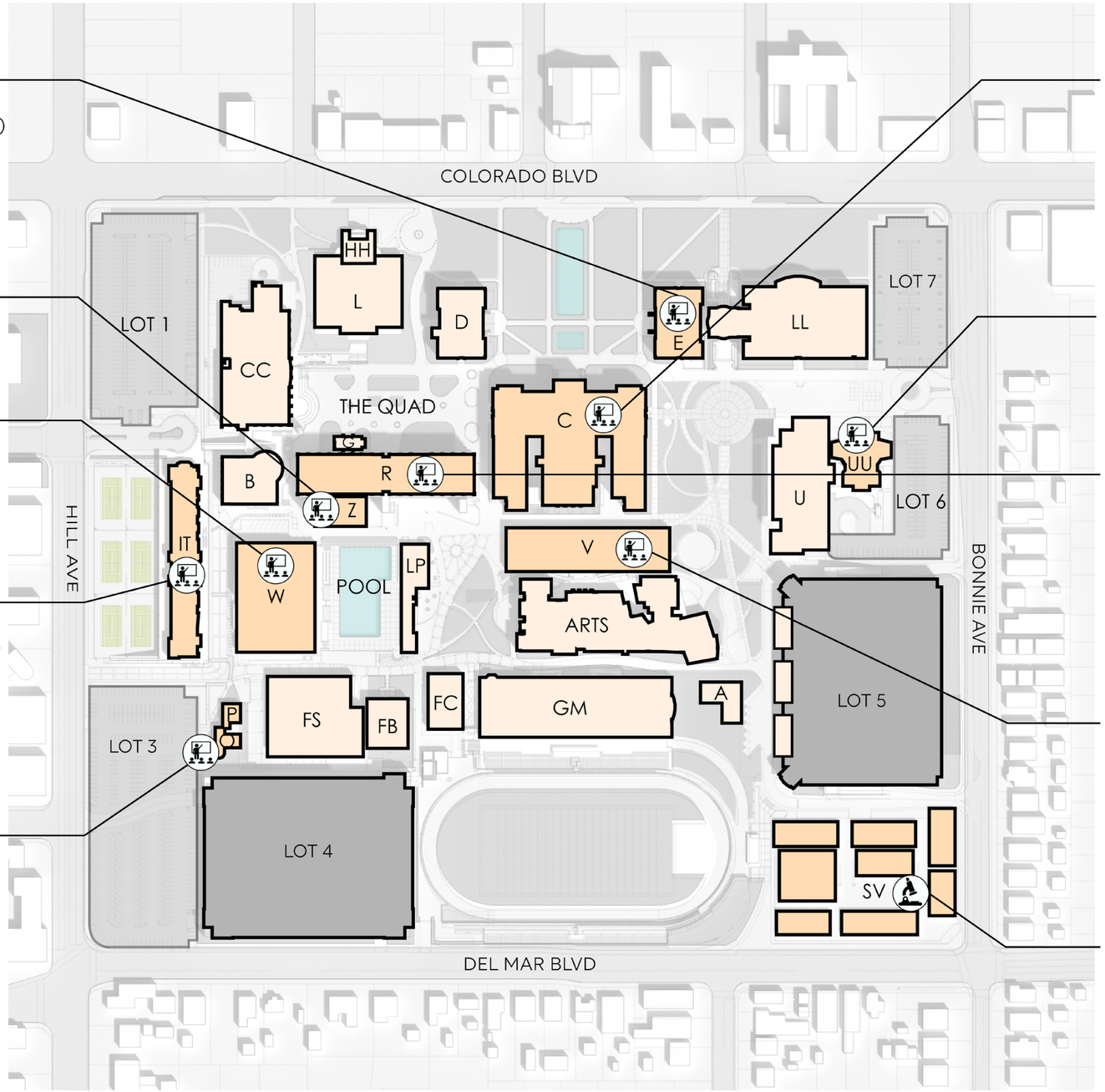
Z Bldg / CERAMICS (4,770 GSF)
- 2 CLASS LAB
  - 2 SMALL CLASS LAB (17 CAPACITY)

W Bldg / WOMEN'S GYM (43,000 GSF)
- 3 CLASSROOMS
  - 3 MEDIUM CLASSROOM (45-60 CAPACITY)
- 1 CLASS LAB
  - 1 SMALL CLASS LAB (20 CAPACITY)

IT Bldg / INDUSTRIAL TECH (66,558 GSF)
- 4 CLASSROOMS
  - 3 MEDIUM CLASSROOM (30- 50 CAPACITY)
  - 1 LARGE CLASSROOM (76 CAPACITY)
- 3 CLASS LAB
  - 2 SMALL CLASS LAB (25 CAPACITY)
  - 1 LARGE CLASS LAB (98 CAPACITY)

O Bldg / OBSERVATORY (2,923 GSF)
- 3 CLASS LAB
  - 3 SMALL CLASS LAB (3-20 CAPACITY)

This map quantifies the number and relative size of existing classrooms and class labs.



C Bldg / HORACE MANN (160,700 GSF)
- 45 CLASSROOMS
  - 36 SMALL CLASSROOMS)20-40 CAPACITY)
  - 8 MEDIUM CLASSROOMS (41-60 CAPACITY)
  - 1 LARGE CLASSROOM (230 CAPACITY)
- 14 CLASS LAB
  - 11 SMALL CLASS LAB (1-25 CAPACITY)
  - 3 MEDIUM CLASS LAB (49-60 CAPACITY)

UU Bldg / L. VOSLOH FORUM (10,000 GSF)
- 2 CLASSROOMS
  - 1 MEDIUM CLASSROOM (35 CAPACITY)
  - 1 LARGE CLASSROOM (298 CAPACITY)

R Bldg / C. ROBBINS (134,107 GSF)
- 44 CLASSROOMS
  - 8 SMALL CLASSROOMS (20-40 CAPACITY)
  - 35 MEDIUM CLASSROOM (41-75 CAPACITY)
  - 1 LARGE CLASSROOM (128 CAPACITY)
- 16 CLASS LAB
  - 12 SMALL CLASS LAB (1-30 CAPACITY)
  - 4 MEDIUM CLASS LAB (31-45 CAPACITY)

V Bldg / HOWARD MARVIN (45,992 GSF)
- 45 CLASSROOMS
  - 3 SMALL CLASSROOM (20-40 CAPACITY)
  - 9 MEDIUM CLASSROOM (41-60 CAPACITY)
- 9 CLASS LAB
  - 6 SMALL CLASS LAB (1-30 CAPACITY)
  - 3 MEDIUM CLASS LAB (31-70 CAPACITY)

SV / SCIENCE VILLAGE (49,529 GSF)
- 9 CLASSROOMS
  - 9 MEDIUM CLASSROOM (45-95 CAPACITY)
- 18 CLASS LAB
  - 15 SMALL CLASS LAB (20-30 CAPACITY)
  - 3 MEDIUM CLASS LAB (40-70 CAPACITY)

Colorado Campus Map - Existing Academic Core (Classrooms and Labs)

CLASSROOM DEMAND ANALYSIS— COLORADO CAMPUS

The demand analysis shows that PCC could currently use:

- Classrooms with a capacity of 55, typically holding section sizes of 30-40 students are in highest demand.
- Section sizes ranging from 30-45 students make up 65% of the total sections.
- 40 capacity rooms that are underutilized, where feasible, can be combined to create larger rooms to meet some of the demand for 55 capacity classrooms.

COLORADO CAMPUS USING CURRENT SECTION SIZES						
Section Size	Total Sections	Total Required Room Hours	Maximum Room Capacity	Total Required Rooms	No. Of Available Rooms	Balance
001 - 013	88	297	20	6	3	(-3)
014 - 027	800	3,199	40	61	62	1
028 - 040	711	2,815	55	54	49	(-5)
041 - 053	73	254	70	5	13	8
054 - 068	14	54	90	2	6	4
069 - 088	4	12	110	1	4	3
089 - 131	12	33	150	1	1	0
132 - 174	9	19	200	1	-	(-1)
175 - 196	-		225	-	1	1
197 - 218	-		250	-	1	1
219 - 253	-		290	-	-	0
Total	**1,711**	**6,683**		**131**	**140**	**9**

Based on the classroom demand analysis, there is a need for over 60,000 ASF of additional classroom space. Note some of this demand will be addressed by classrooms going into the Sarafian replacement building. The total demand for classrooms on campus is more square feet than the A4LE model projects. This is because the classroom demand better illustrates actual conditions at PCC.

CLASSROOMS	TOTAL NEED BY 2030
55 Capacity	52,250
70 Capacity	7,000
200 Capacity	4,000
Total ASF	63,250
Total GSF @65%	97,308

CLASSROOM DEMAND ANALYSIS— FOOTHILL CAMPUS

The demand analysis shows that CEC could use:

- 1-3 additional large capacity (70-110) classrooms net

FOOTHILL CAMPUS USING CURRENT SECTION SIZES						
Section Size	Total Sections	Total Required Room Hours	Maximum Room Capacity	Total Required Rooms	No. of Available Rooms	Balance
001 - 013	48	213	20	5	1	(-4)
014 - 027	51	332	40	7	16	9
028 - 040	31	241	55	5	5	0
041 - 053	2	17	70	1	-	(-1)
054 - 068	3	16	90	1	-	(-1)
069 - 088	2	8	110	1	-	(-1)
089 - 131	-	-	150	-	-	0
132 - 174	-	-	200	-	-	0
175 - 196	-	-	225	-	-	0
197 - 218	-	-	250	-	-	0
219 - 253	-	-	290	-	-	0
Total	**137**	**827**		**20**	**23**	**3**

CLASSROOM DEMAND ANALYSIS— ROSEMEAD

The demand analysis shows that Rosemead could use:

- 1 additional 55 capacity classroom net
- 1 additional 70 capacity classroom net

ROSEMEAD USING CURRENT SECTION SIZES						
Section Size	Total Sections	Total Required Room Hours	Maximum Room Capacity	Total Required Rooms	No. Of Available Rooms	Balance
001 - 013	6	29	20	1	—	(-1)
014 - 027	81	298	40	6	11	5
028 - 040	40	138	55	3	2	(-1)
041 - 053	8	27	70	1		(-1)
054 - 068	—		90	—		0
069 - 088	—		110	—		0
089 - 131	—		150	—		0
132 - 174	—		200	—		0
175 - 196	—		225	—		0
197 - 218	—		250	—		0
219 - 253	—		290	—		0
Total	**135**	**492**		**11**	**13**	**2**

CLASS LAB DEMAND ANALYSIS

This section attempts to estimate the need for additional class labs to meet current and future demand for the District.

Class labs were examined by looking at each individual lab's:

- WSCHs
- Capacity

The calculated difference between existing WSCH and the CCCCO standard of 27.5 hours was translated into a need for additional rooms.

Here is an example calculation:

The General Biology lab in SV13 has a capacity of 27 and was scheduled 1,669 credit hours per week in Spring 2013. Using the standard of 27.5 hours per week, that 27 capacity room should be scheduled 742.5 hours per week. That means that using the standard, there should be at least 1, perhaps 2, labs in addition to SV13 to adequately meet current scheduled need.

This method was used to calculate additional need for the future target years by using projected enrollment numbers for the District and assuming the ratio of WSCH to head count would remain the same. This additional need is based on current operations and does not include plans for any new or greatly expanded programs. It is accommodated in the building blocks outline in this report.

FUTURE NEED:

*Note we assumed additional labs would be approximately the same size as the parent lab. These projections do not include laboratory support spaces and should not be confused with space projections based on the A4LE model.

Based on the class lab demand analysis, there is a need for nearly 200,000 ASF of additional class lab space. Note some of this demand will be addressed by labs going into the Sarafian replacement building. The total demand for class labs on campus is slightly more square feet than the A4LE model projects due to customized analysis.

YEAR	ADDITIONAL LABS NEEDED	ADDITIONAL ASF NEEDED	ADDITIONAL GSF NEEDED (@50%)
Current Need	40	45,000	90,000
25,000 FTES	47	54,000	108,000
Total	**87**	**99,000**	**198,000**





CLASS LABS

There are fewer opportunities for improving class lab utilization because the PCC labs are already highly utilized. The great need for additional labs means underperforming labs must be further investigated. Some labs might be extremely specialized and not suitable for other uses.

- Work to ensure that sections are enrolled to capacity
- Teach more labs between 11AM and 2PM
- Identify class labs that are only scheduled occasionally or are never scheduled

FILLING SECTIONS AND MATCHING CLASSROOMS:

The Max Section Size is the cap on the number of students that can enroll in a section, Section Size is the actual number of students who enrolled in the class, and Room Capacity is the capacity of the room courses are being scheduled in. WSCH are used by the CCCCO when determining space need.

If you calculate the total seats available in all the sections and in all the rooms scheduled there are:

- 6,309 seats unfilled to meet the max section size (23,485 WSCH)
  - Colorado campus: 5,732 Seats (20,599 WSCH)
  - CEC: 577 Seats (2,886 WSCH)
- 15,054 seats unfilled to meet the room capacity (46,498 WSCH)
  - Colorado campus: 13,884 Seats (42,792 WSCH)
  - CEC: 1,170 (3,706)

If all currently underutilized class labs are used to the 27.5 hours target goal, additional sections could be added to existing facilities.

IDENTIFYING UNDERUTILIZED CLASS LABS:

Underutilized class labs can be assessed for possible conversion to other uses or investigated to determine why they are underutilized.

- There are 9 class labs totaling 12,009 ASF that are scheduled less than 20 hours a week (27.5 hours is the goal)

IDENTIFYING UNUSED CLASS LABS:

Unused classrooms can be converted to other uses or the reason they are not scheduled addressed.

- There are 33 Colorado campus class labs totaling 12,335 ASF that were not scheduled
  - Some spaces identified as class labs are very small and may be associated support spaces.

NON-ACADEMIC SPACE

RIGHTSIZING/REORGANIZATION OF NON-TEACHING SPACES

Space can be gained by evaluating and reorganizing departments across campus.

- Relocate departments to consolidate and associate them with the Career Communities
- Ensure all renovations comply with set space standards
- Evaluate existing spaces for opportunities to add functions

CONSOLIDATE AND RELOCATE:

By consolidating departments spread across multiple buildings and associating them with departments focused on similar fields, this will allow for:

- Better collaboration and innovation
- Support of Career Communities/ Guided Pathways
- Ability to share more resources, cutting duplicated spaces such as expensive laboratories, break rooms and lounges, workrooms and other support
- Support Career Communities

ENFORCE SET SPACE STANDARDS

If new renovations comply with established space standards related to office, classroom, and class labs sizing::

- There is better equity across campus through standardization
- It is easier for employees to accept reductions or changes in their space
- It is easier for future changes in space use
- Standards usually result in a reduction in space need

LOOK FOR OPPORTUNITIES

By evaluating existing spaces for opportunities to reorganize or change functions:

- Spaces can be identified for shared/temporary workstations, reducing the need for offices and better supporting adjunct faculty
- Under or unused spaces can be converted to needed space types
- There are opportunities for creating much needed meeting and lounge spaces

EXAMPLE OF SQUARE FOOT GAINS

- Space standards can create space. For example:
  - There are approximately 390 offices sized 80-200 ASF (89 of which are less than 100 ASF) on the Colorado campus. If all of those offices were standardized to be 110 ASF, that would result in a space gain of 5,200 ASF.
- There is around a million ASF on the Colorado campus. If through consolidating departments, using space standards, and identifying under utilized spaces, each building could free up only 2% of space, the result is a space gain of 20,000 ASF!

OBSERVATIONS

While it is difficult to quantify the square feet the campus can gain until an in-depth look at current facilities occurs during renovation and relocation efforts, we can make the following observations:

The following are observations based on the current distribution of space:

- There are opportunities for reductions in existing space need through better utilization:
  - It will not significantly reduce the need to build new facilities to meet growing enrollment or the creation of new programs
  - In general, space gained is not usually suitable for creating large or specialized spaces

The following are recommendations based on the current distribution of space:

- Provide room for increases in faculty and staff, especially to support adjunct
- Provide room for adding much needed lounges, meeting rooms, and study facilities
- Provide room for creating important collaboration for informal interaction
- Provide space to expand the Centers that support the Career Communities





SPACE PROJECTIONS INTRODUCTION

Projections for space needed at PCC are included in this section. A variety of projection methodologies were utilized to help quantify the future demand for space. A list of building projects based on these projections, along with recommendations for prioritizing projects is included.

In general, space projections result in a large demand for space. Space needs as defined during interviews and in questionnaires assist in prioritizing and creating goals based on greatest need.

Note that the space projections do not attempt to separate out existing satellite facilities and address them individually. It is important to understand total District needs first, and then make suggestions as to the distribution of space.

Space projections focused on estimating need for:

- Current Conditions
- 5 years out
- 10 years out

The primary forms of space projection used in this section are:

- CCCCO—California Community College Chancellors Office
- A4LE - Association for Learning Environments (Formerly CEFPI - Council of Educational Facilities Planners)
- Classroom and Class Lab Demand Analysis
- Historic Track Record

The variety of space projections are listed separately and then discussed as a group at the end of this section.

CCCCO SPACE PROJECTION

FY	CAMPUS AND PROJECT	FUTURE GROWTH ELIGIBILITY REPORT (2020 2026)					
		LECTURE	LAB	OFFICE	LIBRARY	AV / TV	TOTAL
2020	Community Education Center	-16,765	6,765	2,597	-2,787	-226	-10,416
2020	Pasadena City College	-24,131	102,448	10,333	32,599	18,567	139,816
2021	Community Education Center	-16,714	6,905	2,597	-2,787	-226	-10,225
2021	Pasadena City College	-23,466	104,298	10,333	33,252	18,622	143,039
2021	Armen Sarafian Building Seismic Replacement	-2,069	4,600	-5,558	837	0	-2,190
2022	Community Education Center	-16,661	7,048	2,597	-2,787	-226	-10,029
2022	Pasadena City College	-20,725	101,566	15,891	33,073	18,678	148,483
2023	Community Education Center	-16,609	7,190	2,597	-2,787	-226	-9,835
2023	Pasadena City College	-20,050	103,441	15,891	33,741	18,735	151,758
2024	Community Education Center	-16,556	7,333	2,597	-2,787	-226	-9,639
2024	Pasadena City College	-19,369	105,334	15,891	34,411	18,792	155,059
2024	Jane Adams Building Seismic and Code Upgrades	0	0	0	0	0	0
2025	Community Education Center	-16,503	7,478	-9,403	-2,787	-226	-21,441
2025	Pasadena City College	-10,201	130,818	-123,409	-66,899	-2,471	-72,162
2025	E Building Seismic and Code Upgrades	0	0	0	0	0	0
2025	Horace Mann Building Seismic and Code Upgrades	0	0	0	0	0	0
2025	Women's Gym Seismic and Code Upgrades	-9	0	-114	-101	0	-224
2026	Community Education Center	-16,449	7,625	-9,403	-2,787	-226	-21,240
2026	Pasadena City College	-9,442	132,903	-123,295	-66,798	-2,471	-69,103
2027	Community Education Center	-24,081	-13,158	-9,403	-2,787	-226	-49,655
2027	Pasadena City College	-116,239	-163,960	-123,295	-66,798	-2,471	-472,763
2028	Community Education Center	-24,081	-13,158	-9,403	-2,787	-226	-49,655
2028	Pasadena City College	-116,239	-163,960	-123,295	-66,798	-2,471	-472,763
2029	Community Education Center	-24,081	-13,158	-9,403	-2,787	-226	-49,655
2029	Pasadena City College	-116,239	-163,960	-123,295	-66,798	-2,471	-472,763

The table above is reproduced from the Chancellor's office Fusion database. It quantifies PCC's eligibility for growing physical space by category. This table takes into account planned projects.

PCC CAPITAL PROJECTS

PRIORITY	PROJECT	CAMPUS	CATEGORY	OCCUPY YEAR	STATUS	STATE COST	DISTRICT COST	TOTAL COST
1	Armen Sarafian Building Seismic Replacement	Pasadena City College	A3	2021-22	Partially Funded	$56,374,000	$2,433,000	$58,807,000
2	Jane Adams Building Seismic and Code Upgrades	Pasadena City College	A3	2024-25	IPP-Approved	$7,648,795		$7,648,795
3	E Building Seismic and Code Upgrades	Pasadena City College	A3	2025-26	Locally Funded or Future	8,917,133		$8,917,133
4	Horace Mann Building Seismic and Code Upgrades	Pasadena City College	A3	2025-26	Locally Funded or Future	$23,790,257		$23,790,257
5	Women's Gym Seismic and Code Upgrades	Pasadena City College	A3	2026-27	Locally Funded or Future	$19,925,276		$19,925,276

CCCCO PROJECTIONS

CCCCO STANDARDS

The CCCCO has developed Facilities Utilization and Space Standards. A summary of the space standards follows:

CLASSROOMS

Standards assume classrooms are available 53 hours a week and occupied on average two-thirds of the time.

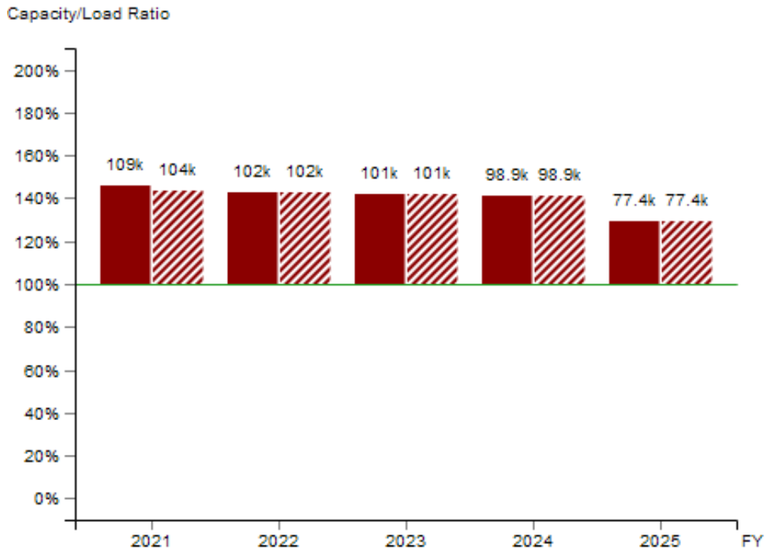
- Use - Classroom and seminar room use shall be not less than 53 hours per 70-hour week for a campus with 140,000 or more weekly student contact hours.
- Occupancy - Classroom and seminar room station occupancy shall be not less than 66 percent of capacity.
- Space per Station - Classroom space shall be computed at 15 square feet per student station.
- Capacity of Future Assignable Space—Future space shall be calculated per 100 weekly student contact hours using a formula based on assignable square feet per station, room use standard, and station occupancy standard.
- Amount of Space—Classrooms and seminars, including classroom service, shall be calculated at 42.9 ASF/100 WSCH for institutions with campus weekly contact hours of 140,000 or more. This report uses this standard as-is—42.9 ASF/100 WSCH.

CLASS LABORATORIES

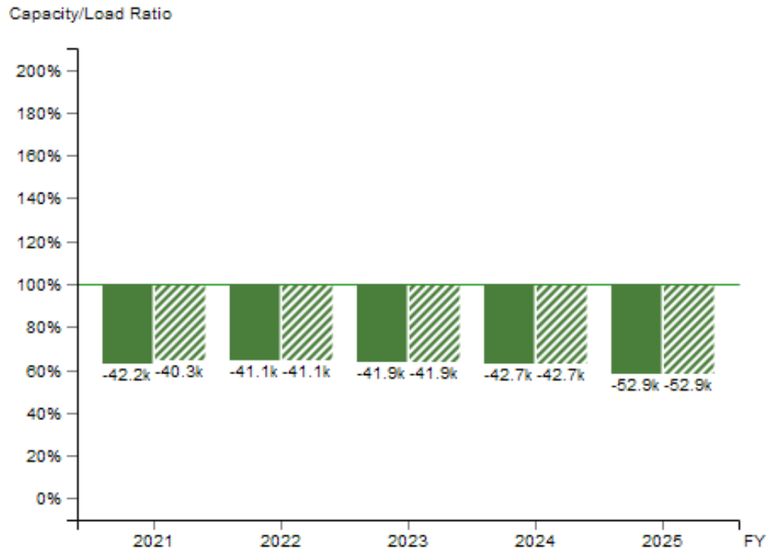
The utilization standards for laboratories are less than the levels of classroom standards. Space is calculated based on subject groupings and varies.

- Use - Laboratory room use shall be not less than 27.5 hours per 70-hour week.
- Occupancy - Laboratory room station occupancy shall be not less than 85 percent of capacity.
- Space per Station and Capacity of Future Assignable Space—Class lab space per station differs. It is based on the standard classification of subject matter (for example - wet laboratory spaces require more square feet than computational lab spaces).
- Amount of Space—Labs identified by specific subjects and related WSCH must be known or calculated in order to determine future need. The average assignable square feet based on the "Assignable Square Feet/100 Subject Grouping" is 80 and the median is 60. For the purpose of this report's initial calculations, the median of 60 ASF/100 WSCH was used.

Bar charts representing classroom and class lab capacity/load rations are pulled from the Chancellor's Office Fusion Database.



CLASSROOMS - Capacity / Load Ratio



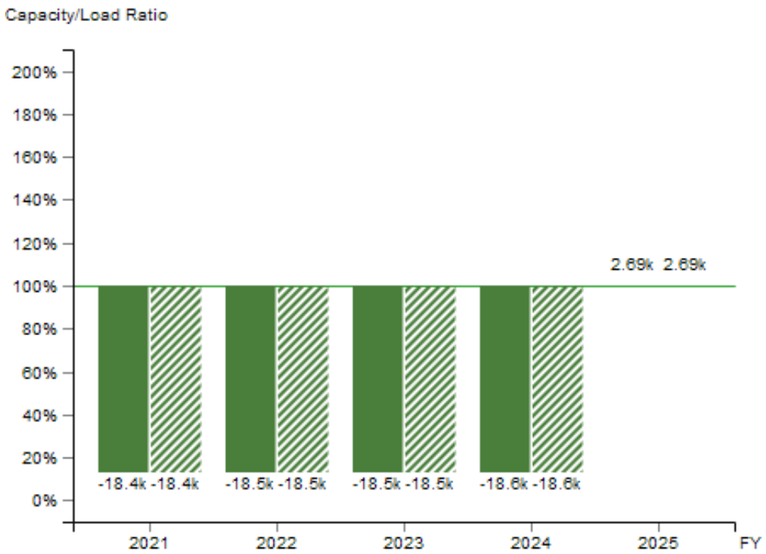
CLASS LABORATORIES - Capacity / Load Ratio

OFFICES

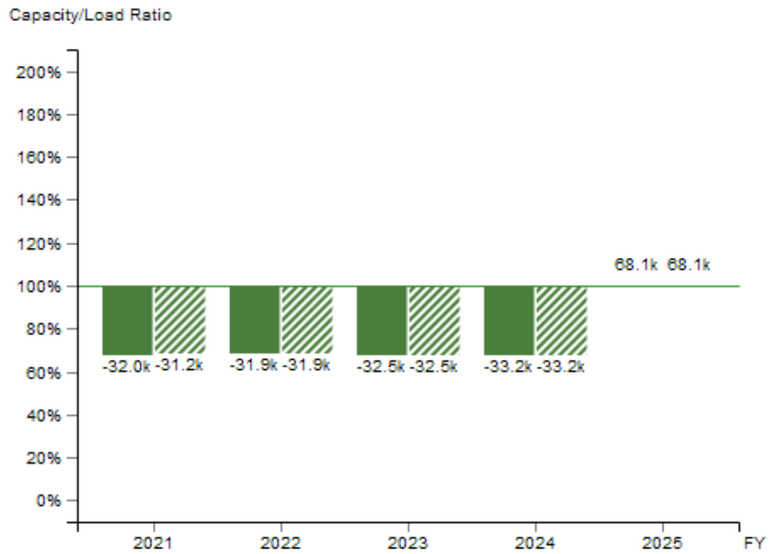
All office space (academic offices, administrative and clerical office service rooms such as break and copy room, and conference rooms) is computed at 140 assignable square feet for each full-time equivalent instructional staff member.

LIBRARY

All library space is computed by assignable square feet for specific library functions outlined in the space standards. Stack space is calculated based on volumes, staff space based on FTE staff, and reader station space based on number of readers. All calculations for the space types also include additional increments of space, over an initial set increment, based on each category. Incremental space is also allocated for audio visual functions. Sufficient data on the subdivisions was not available to use to calculate space need in time for this report. Other calculation methods were utilized instead until the time sufficient data is gathered.



AV / TV - Capacity / Load Ratio



LIBRARY - Capacity / Load Ratio

Bar charts representing office and library capacity/ load rations are pulled from the Chancellor's Office Fusion Database.

NEW SPACE—ARMEN SARAFIAN SCIENCE BUILDING

DISTRICT PRIORITY & PROJECT: 1 ARMEN SARAFIAN BUILDING SEISMIC REPLACEMENT							
OUTLINE OF PROJECT SPACE BUILDINGS AND REMODELINGS							
	"Classroom 100s"	Laboratory 210 - 255	Office 300s	Library 400s	AV/TV 530 - 535	All Other	Total ASF
Project Primary	7,176	38,102	7,037	2,686		2,681	
Project Secondary	-9,245	-33,502	-12,595	-1,849		-840	
Project Net ASF	-2,069	4,600	-5,558	837		1,841	
Project Net Capacity							

LABORATORIES & LABORATORY SERVICE AREAS (ROOM USE CODES 210, 215, 220, 225, 230, 235, 255)						
	Primary Effect			Secondary Effect		
TOP Code	Net ASF	ASF per 100 WSCH	Capacity WSCH	Net ASF	ASF per 100 WSCH	Capacity WSCH
0400 - Anatomy and Physiology	5249	235	2234	-2514	-235	-1070
0400 - Biology, General	8317	235	3539	-10598	-235	-4510
0400 - Biotechnology and Biomedical Technology	2520	235	1072	-129	-235	-55
0400 - Botany, General	1293	235	550	-720	-235	-306
0400 - Microbiology	1290	235	549	-1147	-235	-488
0700 - Information Technology, General	0	0	0	-853	-171	-499
1200 - Nursing	8284	214	3871	-6720	-214	-3140
1200 - Radiologic Technology	1126	214	526	-586	-214	-274
1900 - Chemistry, General	10023	257	3900	-9867	-257	-3839
4900 - General Studies	0	0	0	-368	-257	-143

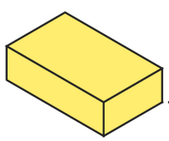
CLASSROOMS, CLASSROOM SERVICE (ROOM USE CODE 100S)			
Summary	Net ASF	ASF per 100 WSCH	Capacity WSCH
Classroom Space	-2069	42.9	-4823
Lab Space	4600	-	1917

OFFICE & OFFICE SERVICE AREAS (ROOM USE CODE 300S)			
Summary	NET ASF	ASF per FTE	Capacity FTE
Office Space	-5558	140	-39.7

The table below is a reproduction of the submitted and approved Project Intent & Scope form as it appears in the Chancellor's office Fusion Database.

PROGRAM DISTRIBUTION

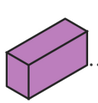
EXISTING PROGRAM AREA DISTRIBUTION BY DIVISION



63,264 ASF
BUSINESS, ENGINEERING & TECHNOLOGY



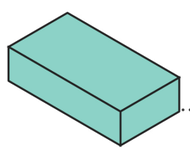
5,475 ASF
ENGLISH



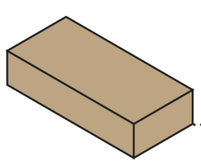
12,720 ASF
HEALTH SCIENCES



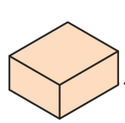
8,194 ASF
LANGUAGES & ESL



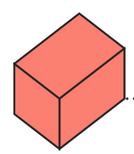
76,106 ASF
VISUAL ARTS & MEDIA STUDIES



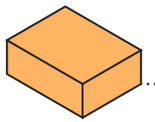
83,081 ASF
KINESIOLOGY, HEALTH & ATHLETICS



41,660 ASF
ADMINISRTATION / OPERATIONS



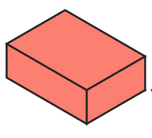
58,031 ASF
(NEW)SCIENCE BUILDING
ARMEN SARAFIAN BUILDING



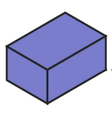
51,869 ASF
LIBRARY & DISTANCE EDUCATION



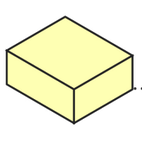
15,034 ASF
MATHEMATICS & COMPUTER SCIENCE



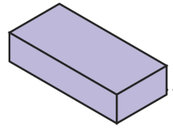
58,193 ASF
NATURAL SCIENCES



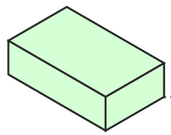
27,880 ASF
PERFORMING COMMUNICATION ARTS



30,338 ASF
SOCIAL SCIENCES



99,758 ASF
GENERAL ASSIGNMENT



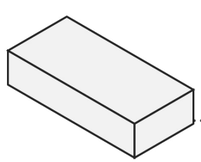
74,770 ASF
STUDENT SERVICES



3,331 ASF
COUNSELING



5,475 ASF
FOOD SERVICES



103,744 ASF
MAINTENANCE, OPERATIONS & SERVICES

A4LE SPACE PROJECTIONS

These space projections are based on a model developed by A4LE. They represent ideal conditions and do not take into account a campus' unique attributes. Building to the fully projected square feet in this model is not typically feasible for a campus as ideal conditions are rarely achievable due to a variety of considerations, not the least of which is funding. This model represents a tool to be combined with other methodologies to identify areas of greatest need.

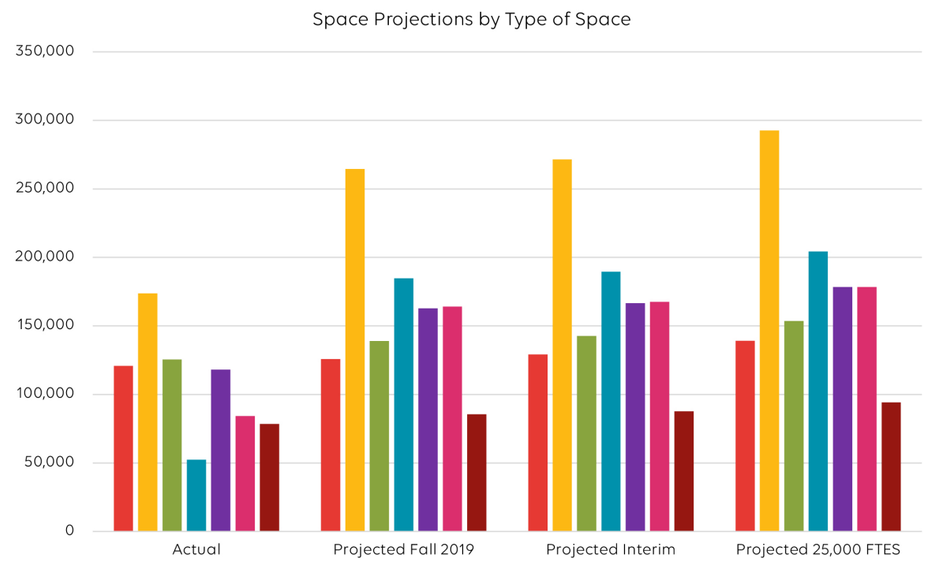
SPACE FOR THE FUTURE

- PCC provided a 25,000 FTES growth target
- FTES used are based on the CCCCO numbers
- Gross square feet (GSF) is projected at 65% efficiency

The largest spaces needs are for lab space and student space:

- Natural Sciences need the most labs, especially in biology and chemistry
- Computer labs are also needed across multiple divisions
- Student support spaces need to increase including Student lounge, recreation, meeting rooms and food service
- There is currently a shortage of 55 capacity classrooms

ROOM TYPE	ACTUAL	PROJECTED FALL 2019	PROJECTED INTERIM	PROJECTED 25,000 FTES
Classroom Facilities	120,874	125,793	129,149	139,166
Laboratory Facilities	172,973	264,518	271,574	292,639
Office Facilities	123,743	138,944	142,597	153,503
Study Facilities	52,335	184,717	189,644	204,354
Special Use Facilities	104,050	162,733	166,660	178,385
General Use	82,721	164,015	167,603	178,315
Support Facilities	78,254	85,445	87,613	94,087
Health Care Facilities	2,994	4,407	4,519	4,854
Other Facilities	23,322			
Total Assignable Square Feet (ASF)	**761,266**	**1,130,571**	**1,159,360**	**1,245,303**
Assignable Square Feet Difference		**369,305**	**398,094**	**484,037**
Total Gross Square Feet (At 65%)	**1,171,178**	**1,739,340**	**1,783,630**	**1,915,851**
Gross Square Feet Difference		**568,161**	**612,452**	**744,672**



SPACE PROJECTIONS SUMMARY

These space projections are based on:

- Enrollment targets and anticipated staffing
- Existing available space
- Space projections based on models (A4LE)
- Utilization analysis of classrooms and class labs
- Assuming utilization of classrooms and class labs to match Chancellor's office targets.

TOTAL WITH IDEAL LAB USE				
CAMPUS	2019 ASF	25,000 FTES Projected Additional ASF	25,000 FTES Projected Total ASF	25,000 FTES Projected Total GSF
Colorado Campus	753,898	544,100	1,297,998	1,996,922
Child Development Center	18,231	-	18,231	22,302
Foothill Campus	51,530	25,975	77,505	119,238
Rosemead Center	14,406	9,700	24,106	37,086
Northwest	24,299	-	24,299	36,020
Grand Total	862,364	579,775	1,442,139	2,211,569

BUILDING BLOCKS

Ultimately, priorities for the renovation/ construction and phasing of projects will need to be determined by the College based on their academic and strategic plans, as well as funding. This master plan provides options for building blocks and phasing based on campus need and academic priorities. A plan for the Colorado Campus overall is also included.

RENOVATIONS

Renovation and reorganization of existing spaces will serve to greatly alleviate many of the space issues identified on campus. Renovations, where appropriate, make use of existing facilities and infrastructure. This results in the need to finance less new construction, exhibiting good stewardship of District resources.

Additionally renovation of instructional spaces identified in the utilization section of this report will improve utilization and student completion.

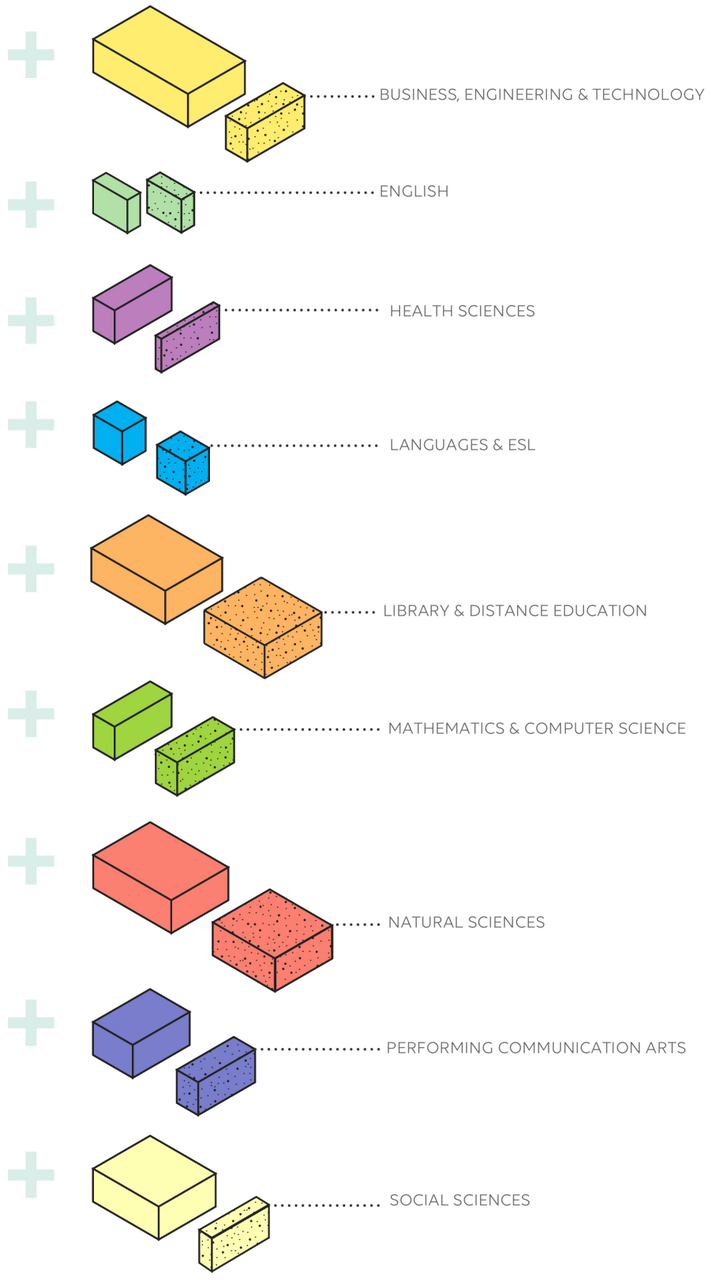
RESIDENCE HALLS

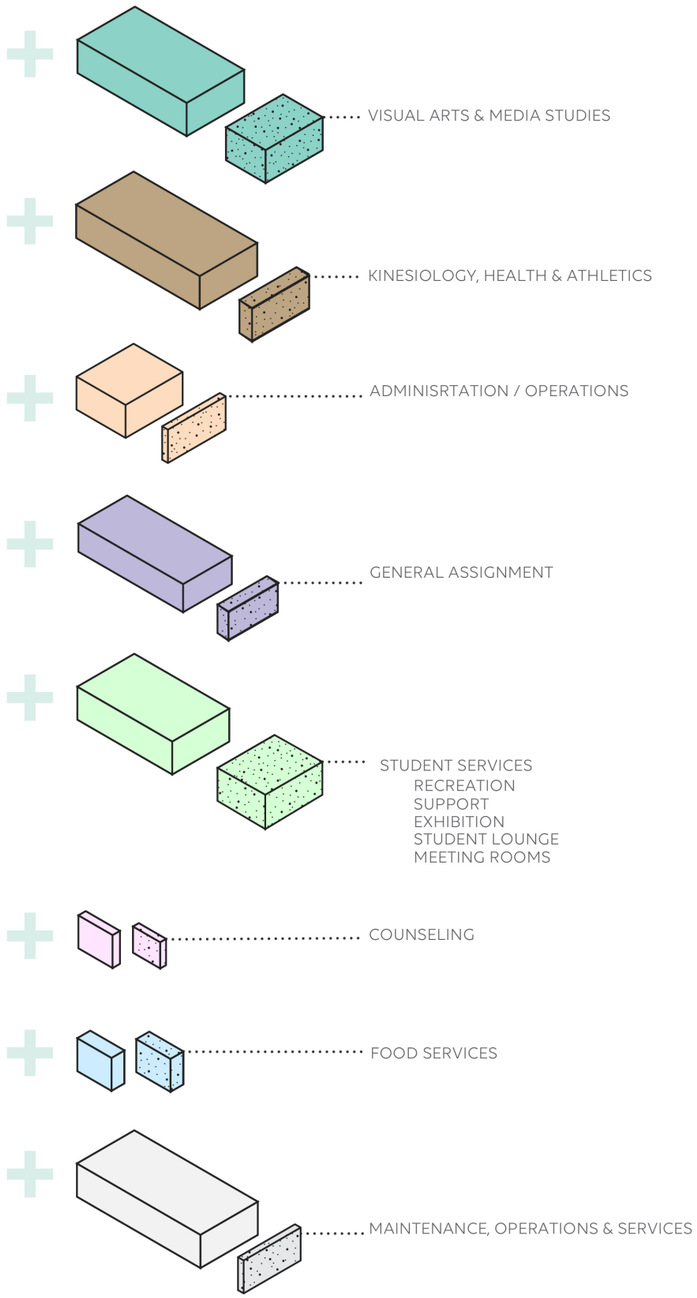
The District has determined that constructing residence halls is not currently in support of the mission of PCC. This master plan does not include options for residence halls for the following reasons:

- No room for residence halls unless at the expense of academic buildings
- Promote educational mission in this plan
- No supporting structures envisioned
- There is no room on the Colorado campus to construct residence halls given the demand for additional academic and support buildings. In addition, the addition of residence halls does not support the educational mission of PCC.



PROPOSED DISTRIBUTION BY DIVISION







PROJECT	NEW CONSTRUCTION GSF	NOTES
Renovate R Building Classrooms		
Selectively Renovate Labs & Classrooms		Buildings C, D, E
Improve Student Services Quad		Create Better Seating; Outdoor Waiting Areas
Consolidate Departmental Offices to Create Adjunct Offices		
Consolidate / Improve Athletic/Rec		Remove Tennis Courts;
Renovations of Non-Teaching Spaces To Create Student Lounge and Study in Each Major Building		
Expand Study Facilities / Centers		Support Guided Pathways/Career Communities; Possible First Year Center; Partial Library Renovation Into Center
Cafe	1,800 - 2,500	
New Lab Building	75,000 - 100,000	Focus on STEM + Health Science
New Student Services Building with Welcome Center	60,000 – 80,000	
Pool Lockers and Support	7,500 - 8,500	Option to Add Recreation Space Available For Community Use
Future - New Academic Building	100,000 - 208,000	Classrooms, Faculty/Adjunct Offices, Innovation Center/Distance Ed
Future - New Student Center Facilities	20,000 – 30,000	Additional Food Service, Student Organization Spaces, Meeting Spaces
Long-Term - General Use Building with Facilities Support	20,000 – 30,000	

COLORADO CAMPUS - PROJECTS STRATEGIES / TACTICS

Note the building blocks outlined here take into account both the space projections and anticipated plans for program and satellite additions or expansions. Because items like campus growth satellite campuses are included, the total GSF will be higher than when only looking at space projections.

NON-TEACHING SPACES

- Ways to consolidate non-academic space are:Relocate departments to consolidate and associate
    - Ensure all renovations comply with set space standards
- Evaluate existing spaces for opportunities to add or replace functions

CONCLUSION

While it is difficult to quantify the square feet the campus can gain through reorganization, we can make the following statements:

- Reductions in existing space need through better utilization:
    a. Will not eliminate the need to build new facilities to respond to growing enrollments and the creations of new programs. However, it will provide needed flexibility and better functionality
    b. Can provide swing space during renovations and constructions
    c. In general, space gained is not usually suitable for back-filling large or specialized spaces
    d. Provide some room for increases in faculty and staff
    e. Provide room for adding much needed lounges, meeting rooms, and study facilities
    f. Provide room for creating important collaboration space for informal interaction

RECOMMENDATIONS

PROCESS AND SCOPE

This portion of the report contains quantitative information. It is a high level look at PCC with accompanying:

- Observations
- Considerations
- Recommendations

The scope of the analysis included:

- Whole District
- Colorado Campus
- Foothill Campus (Continuing Education Center)
- Rosemead Facility
- Northwest (Muir) Facility

The Design Team addressed crucial components in support of the master plan:

- Demographics and Enrollment
- Existing Space and Utilization
- Enrollment and Space Projections
- Building Blocks for Growing PCC
- Determined agreed upon goals for enrollment and program growth
- Interviewed key personnel
- Incoporate previous Public Forum Input
- In-depth collection of support material for the master plan

The findings provide parameters and serve to guide the design team during the planning process.

DEMOGRAPHICS

Examining demographics related to PCC identified several important observations that can be translated into the physical master plan.

Common themes related to space that were highlighted when looking at demographics were:

- Improve student services by creating a convenient and easy to find one-stop-shop and design multi-use spaces in PCC facilities that could be used for temporary, targeted services.
- Create community through designing lounge, study, group work, food service, student organization, and rec spaces.
- Focus on renovating and expanding the spaces of programs that attract students and that are in growth fields.
- Relocate departments/spaces to improve functionality, and create additional adjunct space.
- Initially focus new construction efforts on creating laboratory and special use space.
- Build spaces that support online course content such as capture labs, training spaces, production and distribution spaces, IT support spaces, and administrative space for the distance education related staff.
- Assess the location, capacity, and technology of existing classrooms and class labs and strategically renovate.
- Expand the centers to support the career communities / Guided Pathway
- Built space and its distribution across PCC can have a big effect on attracting and retaining students and might have affected historical enrollment numbers.

ENROLLMENT

Understand What Caused Enrollment Spikes

- Built space and its distribution across PCC can have a big effect on attracting and retaining students and might have affected historical enrollment numbers.

Keep Enrollment Steady

- Provide modern teaching spaces that support pedagogy and are easily updated to reflect changes in workforce
- Create space that allows staff to provide high quality student services
- Spaces that help build community also help to keep enrollment numbers steady

Learn From Peers

- When the campus begins to plan major renovations and new construction, look at the built space of peers that are experiencing faster growth and attempt to identify trends.

Outline Growth Targets

- Targeted growth goals and academic strategic plans can maintain and even increase the rate of enrollment growth.

EDUCATIONAL MASTER PLAN

The campus master plan recommendations for renovations, new construction and other campus improvements will support enrollment growth and student success.

Update and Create Space to Support the Educational Master Plan

- Institutional priorities include
  - Creating equity-minded learning communities
  - Focus on addressing academic programs and delivery that will support the Educational Master Plan's success goals
  - Improve campus-wide engagement and promote equity
  - Customize student support; promote Career Communities/Guided Pathways

EXISTING SPACE

QUANTIFY EXISTING SPACE

- Understanding the college's space utilization serves as an analytical tool to determine space requirements and measure the viability of existing or proposed alternatives.

The following are recommendations based on the current distribution of space:

- Update Campus space inventory
- Moving forward evaluate how spaces are categorized; ensure spaces that could be listed as non-assignable are
- The existing distribution of space at Rosemead illustrates its limitations
    - It does not serve the whole student
    - Create satellite facilities that offer more student support in addition to course delivery
- The programs at the Foothill Campus are already straining its capacity
    - Bringing the Nursing program back onto campus will better realize opportunities for departments sharing resources and create room for new programs
    - Renovate Northwest to provide additional classrooms for non-credit and speciality labs.

UTILIZATION

GAINING SPACE

There are multiple ways that PCC can reclaim existing space on campus or better use space to avoid (or delay) the need for new construction.

POSSIBLE SPACE "GAINS"

A 2% improvement in space utilization at the Colorado Campus would result in a gain of 20,000 ASF

- Re-purposing all classrooms and class labs that were not regularly scheduled at the Colorado campus would result in a gain of over 20,000 ASF
- There is over 30,000 ASF of classrooms and class labs that were under utilized at the Colorado campus while other were over utilized.

INSTRUCTIONAL SPACES

There are opportunities to improve upon utilization by better scheduling existing classrooms and labs:

- Fill sections more or teach larger sections
- Match section size to room size so seats are not "wasted"
- Identify rooms that are only scheduled occasionally or are never scheduled and repurpose or renovate
- Note teaching space observations are all based on the Spring 2014 schedule
- Update space inventory to ensure spaces no longer utilized as classrooms are not arrived in the inventory as classrooms.

PROJECTS

Note the building blocks outlined here take into account both the space projections and anticipated plans for program and satellite additions or expansions. Because items like campus growth satellite campuses are included, the total GSF will be higher than when only looking at space projections.

NON-TEACHING SPACES

- Ways to consolidate non-academic space are:Relocate departments to consolidate and associate
    - Ensure all renovations comply with set space standards
- Evaluate existing spaces for opportunities to add or replace functions


PASADENA
CITY COLLEGE

4.

Program and Pedagogies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WORKSPACE

SECTION 4

Program and Pedagogies



The purpose of this Master Plan is to ensure that the vision for development of the District's physical facilities is realized as envisioned in the Educational Master Plan and the College's mission and vision. A few of the plan's goals are:

- To provide for development of a College that assures students are adequately served by academic and training programs.
- To provide for development of partnerships between the College and business, education institutions and the community to enhance educational opportunities.
- To enhance sustainability of the College and District from social, economic, environmental and educational perspectives.

Programming the facility needs must take into account the following:

- Pedagogy – Individualized learning opportunities, informal learning, team teaching, online education and flipped classrooms.
- Community Engagement – Education partners at K-12 and four year institutions, partnerships with businesses and the community.
- Facilities – On campus, satellite locations, global learning and sustainability.
- Connectivity – Physical and virtual, transportation and technology.

A plan for the future must adapt to changes as the District's needs and demands evolve. Because the development of the master plan works within existing parameters, unforeseen changes are inevitable. This plan provides a well-grounded starting point and basis for future decision making.

LEARNING ENVIRONMENTS OF FUTURE

FLEXIBLE LEARNING ENVIRONMENTS

Students as teachers. Collaborative problem solving, global connectivity and students helping other students are the pedagogies of a successful 21st century learning environment. Flexible teaching labs and classrooms are shown to increase learning and student success. Online education is changing the classroom environment as well. Flipped classrooms with lecture based learning done by students outside of the classroom is combined with problem-based learning in the classroom which is demanding more flexible, collaborative learning environments.







Media-rich communication is mission-critical and technology is essential. As education moves from blackboards to smart phones and the cloud, three trends have emerged:

COLLABORATIVE

The learning space is progressively a social environment that supports team-based interaction and idea exchange in both formal and informal settings, with convenient places for students and faculty to mingle and interact. From portable multimedia presentation devices in the form of iPads and smart phones, to electronic whiteboards with direct connections to computers and networks that allow documents to be shared by all in real time, facilities being designed to foster idea-sharing and collaborative creativity. In addition, increasing collaborations among disciplines is accelerating the movement toward more computer-intensive learning and research via virtual labs and virtual reality.

FLEXIBLE, ADAPTABLE

These two important design concepts differ within the context of time. Flexible spaces support a diverse set of gatherings and functions, ranging from traditional lecture configurations to those supporting team-based activity. The ability to quickly convert from one configuration to another with movable furniture simply and easily makes these spaces flexible.

Likewise, adaptable spaces take into consideration not just current, but also emerging technologies and associated infrastructure. Multiple locations of AV technology within classrooms and labs engage students in problem based learning and allow interconnectivity throughout the class. Through appropriate planning, forward-thinking strategies enable future incorporation of technologies-yet-to-come over a more extended period of time but without major renovation.

MOBILE AND CONNECTED

There is a need for technology to provide access to electronic communications systems throughout classroom, building and campus. Students come to school with familiarity, capacity and expectations of using multimedia to its fullest in all aspects of their academic lives. As broadband wireless technology increases access to information central to the educational process, the Master Plan will need to provide a strategy for investment in evolving instructional technology.

ACADEMIC DIVISIONS

The Educational Master Plan for PCC identifies a number of key trends and factors affecting the future of education at the District. The District focuses on the following primary academic programs in its mission to serve a diverse community:

- Maximizing the probability that students will enter and complete transfer-level coursework in English and math
- College Transfer
- Career Technical Education
- Non-Credit / Not for Credit

PCC offers the following educational and vocational programs that few community college competitors in the region are offering:

- Health related fields
- Alternative energy
- Bilingual education

The current marketplace in the Los Angeles area is witnessing job growth in the following areas:

- Education
- Health Care
- Information Technology

- Energy and Environment

The demographics of the PCC region are also changing:

- Population growth in San Gabriel and Los Angeles Counties
- Out of District participation rate is high but low in-district participation
- English language learners are increasing
- Shifting population by age groups – aging workforce, older learners

RECOMMENDATIONS

Growth of the academic programs could follow the trends in the marketplace for job growth and programs that competitors in the region are less focused on which will make PCC more of a destination community college.

The Master Plan recommendation is to cluster programs together on campus for better synergy and collaboration between courses and students. This clustering should be based on the career communities. To encourage interdisciplinary cross pollination, collaboration and interaction, nodes of activities such be located with the career communities . These nodes of activities that may include centers, Student Services, study and collaboration spaces, shared use facilities such as computer labs, makerspace or shop and food services.

Several new facilities are recommended for future growth. A new Science and Health Sciences building should be built soon to meet needs not fully accommodated in the U-Building replacement facility. Aggregating all of these programs into complementary facilities will strengthen PCC's goal to meet the needs of transfer students and CTE students in the STEM fields and can lead to synergies with local educational partners such as Caltech and JPL. It is also recommended that Health Science needs be accommodated in this facility. These core specialty programs should be located on the Colorado campus in association with the U-Building replacement to serve the needs of the students and to develop more interdisciplinary collaboration and opportunities collocating opportunities.

Satellite locations such as the Rosemead campus and future satellite facilities can offer general education classes and degree applicable majors to bring education to the community and minimize travel and transportation issues for students located in the outlying areas of the District.

Additional recommendations for growth of the Academic Divisions are included in Section 3.0 Enrollment, Utilization and Space Projections.

CAREER TECHNICAL EDUCATION

Career Technical Education (CTE) programs to train students for jobs in the local community are part of PCC's core mission. CTE programs must respond to the changing needs of the economy and the local marketplace. Over time, these market needs will change and the success of PCC's CTE training will depend on its ability to adapt to these changing market demands.

The largest employers in the Pasadena area are health care providers, educational institutions, technology companies, hospitality, the City and other businesses. These include the Jet Propulsion Laboratory, Caltech, Art Center, Pasadena USD, Kaiser Permanente, Huntington Hospital, banks, and service sector businesses. Partnerships with these businesses and institutions could yield career technical opportunities for programs on campus or in the community.



RECOMMENDATIONS

Career Technical Education facilities will need to be flexible flat floor spaces with a grid of overhead services in a loft like space that can be subdivided based on changing program needs. Shared common facilities should be located adjacent to CTE classrooms and labs to enhance interdisciplinary collaboration and student engagement. Spaces might include a distance learning lab and a Makerspace or tech shop with a wood shop, welding equipment, 3D printers etc. where students can build prototypes and create 3D solutions to classroom problems. Renovations of existing facilities should consider these recommendations.

There are opportunities for PCC to partner with local businesses to provide industry specific training in the workplace. This will provide career training for students to transition into available regional jobs while also providing income to the college. By providing instruction in the workplace this reduces the demand for space on the campus allowing facilities to be utilized for other programs.

STUDENT LIFE

STUDENT SERVICES

Student Services provide a variety of vital services to meet the needs of a diverse student population with diverse backgrounds and skill sets. It is critical that student services be accessible, visible, easy to locate and user friendly. Currently, a





variety of student services are located in numerous buildings throughout campus that are not easy to locate and undersized.

The existing centers have been created ad-hoc in found spaces on campus. Future renovation and growth of the centers should focus on connections / collaborations and visibility / access.

RECOMMENDATIONS

The existing L Building is poorly organized and too small for current Student Services needs with lines forming during busy times. As a number of programs for Student Services move on-line, the space needs for a central Student Services facility will change. The one-stop concept should be developed in a new replacement building that organizes the front-of-house student spaces around computer areas and waiting areas. The back-of-house spaces need to be flexible and adaptable to changing needs of the programs.

Other hubs of Student Services related programs and activities should be located throughout the campus and District. Satellite and mobile facilities can bring student services to the outlying community to raise awareness of programs at PCC and provide assistance and training on site. However, existing facilities are not sized to accommodate a growth in student support space.

The larger satellite locations such as Rosemead, Foothill campus and Northwest should have the necessary Student Services functions including tutoring for these facilities to operate as standalone small centers for general education.

On the Colorado campus, additional Student Services functions should be organized around Hubs or campus living rooms in associations to the career communities . These hubs are envisioned as spaces that encourage interdisciplinary collaboration between program Divisions, innovation and student success. Spaces could include a building lobby or atrium with lounge seating, study areas, computer areas and writing surfaces surrounded by glass enclosed functions such as Success Centers, Computer Labs, Visitor Center, mentoring programs, a Makerspace or tech shop and a variety of study/collaboration spaces for individual study, small group study and classrooms. Food service spaces should also be integral to these hubs. Where possible, Hubs should be located near food service or food service (such as coffee) located within the hub itself.

FOOD SERVICE

The utilization and space projections in Section 3.0 show a need for additional food service facilities. Food service is also a key ingredient of successful student life and student retention on campus as a place to hang out, meet with students and source nourishment throughout the day and evening. Dining facilities can also serve as study and lounge spaces between meals and become the heart of student life.

RECOMMENDATIONS

Expansion of the existing Campus Center is recommended as the primary food venue for the Colorado campus offering a variety of food options from a central kitchen which can also service other food locations on campus. Additional food service facilities such as coffee shops, food carts and a small café should also be located on campus adjacent to hubs of activity such as student services, campus living rooms, study spaces, interdisciplinary collaboration centers etc. Food service can be a catalyst to enabling students to congregate.

Satellite locations could also offer food service in the form of grab and go, cafe-type facilities and food carts. These facilities could be catered from the Colorado campus central kitchen or by local outside vendors. Food service will again enable the satellite locations to be more self-sufficient and aid in student retention and satisfaction.

ATHLETICS / RECREATION

Athletics, recreation and wellness are integral to the philosophy of educating the mind and body. Facilities should be enhanced to promote health as part of the educational curriculum and shared related functions such as dance.

The athletic facilities at PCC are well served by the Hutto Patterson Gymnasium building. The soccer field was enlarged to meet the NCAA requirements so that regulation soccer matches do not need to be held off campus. However, this was not identified as a priority project. Kinesiology programs should be located adjacent to or within the Gymnasium building as they can share facilities.

Intramural facilities should be provided to enhance student life, student retention and overall student health. These facilities will also create a sense of community for students, faculty and staff. The adjacent Pasadena community can also share use of these facilities which could provide additional income to the college. At this time, expansion of recreation.

A long term project might include a recreational fitness facility that could be shared with other campus entities such as Dance, as well as with the general community. However, this type of facility is not currently included in the immediate build out plan. Shared use of existing athletic facilities could reduce the need for duplicate facilities. Tennis courts were determined to be under utilized. The tall chain link enclosures create a barrier to access to the campus. It was determined through to the master planning process that the courts could be replaced with other functions and do not need to be rebuilt. This provides opportunities for improving the west edge of the campus. Community use of the pool and recreation facilities will create ideal synergies with the immediate residential community and the PCC campus.







5.

Colorado Campus Planning Strategies


PASADENA
CITY COLLEGE

SECTION 5

Colorado Campus Planning Strategies



EXISTING COLORADO CAMPUS



POTENTIAL FULL BUILD-OUT OF COLORADO CAMPUS

PLANNING RATIONALE

The PCC Educational Master Plan is anchored by the emphasis on Career Communities as a critical framework for expanding student success. This framework provides clarity and cohesion to the academic journey, establishing defined goals that build toward graduation and the road map to achieve them. The physical experience of the student is a critical component of this journey. Consequently, the Master Plan is focused on enhancing that student experience within the Career Community path.

The PCC Facilities Master Plan extends the Career Communities philosophy to the campus built environment. The physical journey of a student must have the same clarity and cohesion as the educational journey. Key objectives include clarifying destinations (including buildings and open spaces); articulating the pathways that lead to them; and enhancing the moments of arrival and departure.

To achieve this, the Facilities Master Plan refers to the original architecture and landscape of the campus. The historic north campus buildings, landscape and pathways fronting onto Colorado Boulevard illustrate the effectiveness of clear destinations, connecting paths and clear points of arrival as a model of ideal student experience.

Outdoor spaces have clear boundary definitions through landscape and architecture; well-defined and direct paths of travel; and clearly identified entrances to both buildings and exterior areas.

The Facilities Master Plan encourages these qualities on all future improvements.

COLORADO CAMPUS CONTEXT: PCC STUDENT, ACADEMIC RESOURCES, AND FOOD SERVICE

PCC STUDENT RESOURCES

LL BUILDING
- LIBRARY (BOOKS, RESEARCH) (LL-211)

D BUILDING
- STUDENT HEALTH SERVICES (D-105)
- PASS /TRIO (D-112)
- PERSONAL COUNSELING (D-203)
- SOCIAL SERVICES (D-203)
- INTERNATIONAL STUDENT CENTER (D-204)
- ASSESSMENT AND PLACEMENT (D-205)
- DSPS (D-209)
- COMMUNITIES OVERCOMING (D-112A)
- RECIDIVISM THRU EDUCATION (D-108G)
- BASIC NEEDS + FAMILY RESOURCE CTR (IN PROGRESS)
- CLOTHING CLOSET (IN PROGRESS)

L BUILDING
- INFORMATION DESK (L-103)
- ACADEMIC COUNSELING (L-104)
- FOSTER YOUTH PROGRAM (L-104)
- CALWORKS (L-107)
- EOP&S (L-107)
- TRANSFER CENTER (L-110)
- FINANCIAL AID (L-114)
- ADMISSION AND RECORDS (L-113)
- MEN OF COLOR PROGRAM (IN PROGRESS)
- LEGAL AID (IN PROGRESS)

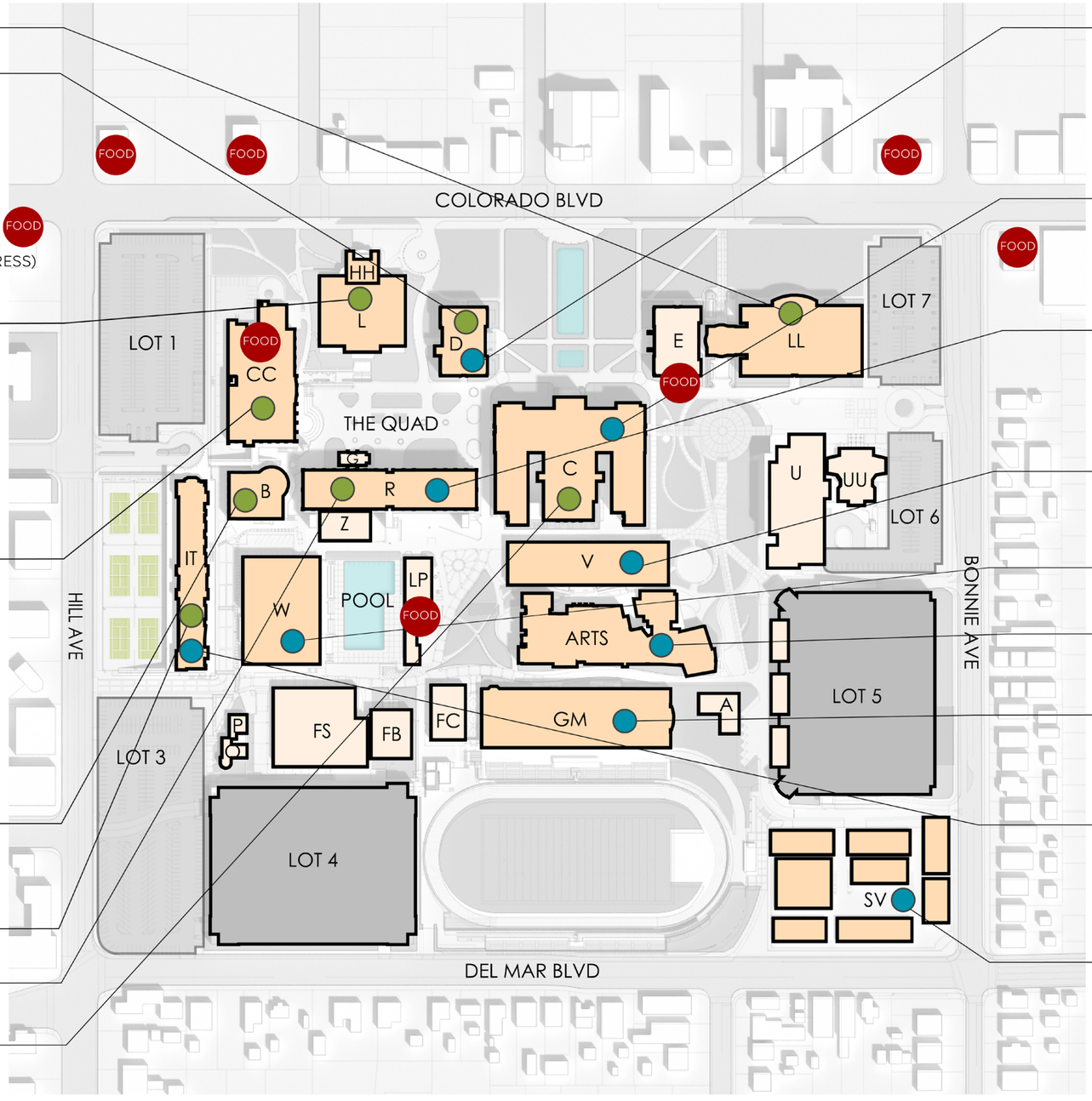
CC BUILDING
- STUDENTS LOUNGE (CC-104)
- STUDENTS LIFE (CC-105)
- RAPID RESPONSE EMERGENCY AID (CC-105)
- CLUBS AND ORGANIZATION (CC-105)
- ASSOCIATED STUDENTS (CC-105B)
- CROSS CULTURAL CENTER (CC-105 G)
- LANCER PANTRY(CC-211)
- UJIMA / BLACKEDEMIA (CC-224)
- PUENTE (CC-232)
- WELCOME CENTER (WIFI LOUNGE)
- TRANSFER + HONORS PROGRAM (IN PROGRESS)

B BUILDING
- BOOKSTORE
- POLICE STATION (B-210)
- STUDENT BUSINESS SERVICE / U-PASS (B-203)

IT BUILDING
- FREEMAN CENTER - CAREER & COMPLETION (IT-200)

R BULDING
- DENTAL HYGIENE CLINIC (R-511)
- DENTAL ASSISTING CLINIC (R-115)

C BUILDING
- STUDY ABROAD AND TRAVEL (C-245)(CA-119)
- HONOR PROGRAM (C-352 D)



PCC ACADEMIC RESOURCES

D BUILDING
- STE & EWD (D-300)
- COMPUTER LEARNING CENTER (D-103)
- LEARNING ASSESTANCE CENTER (D-300)
- SPEECH CENTER (D-302)
- WRITING SUPPORT CENTER (WEST) (D306)

C BUILDING
- STE & EWD (C-241)
- SOCIAL SCIENCE CENTER(C-321)
- WRITING SUPPORT CENTER (EAST) (C341)

R BULDING
- MATH SUCCESS CENTER (R-406)
- QUEER UNDOCUMENTED EMPOWER-
- MENT FOR STUDENTS TO THRIVE (R-425)
- FORMER FOSTER YOUTH (IN PROGRESS)

V BUILDING
- PATHWAY (V-102) (V-105)
- SCREEN PRINTING (PRINT SHOP LAB) (V-106)
- FIRST YR. SUCCESS CENTER (IN PROGRESS)

W BUILDING
- VETERANS RESOURCE CENTER (W-180)

CA ARTS BUILDING
- MUSIC CENTER (CA-002)

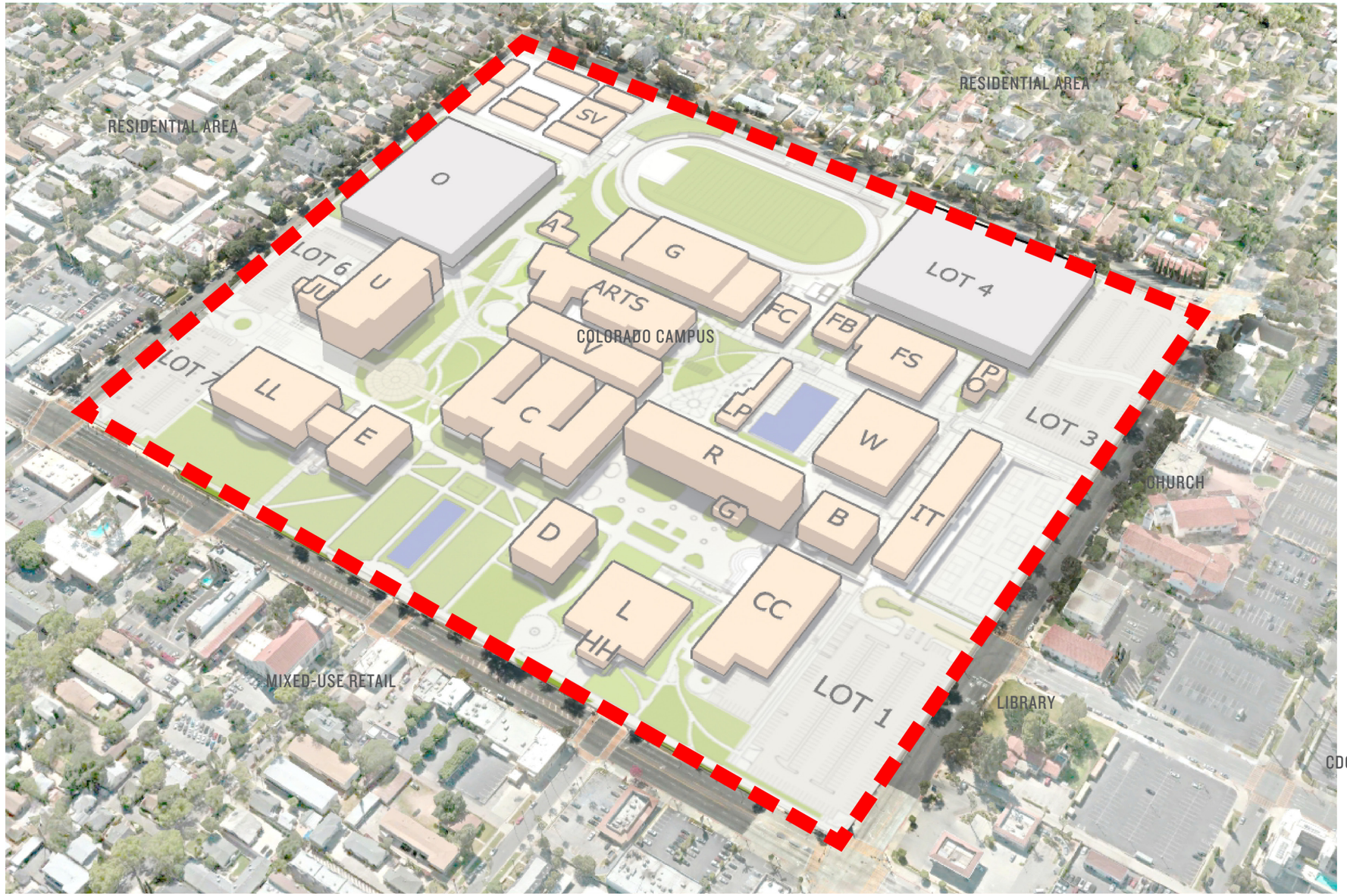
GM BUILDING
- ACADEMIC ATHLETIC ZONE (GM-112A)

IT BUILDING
- FAB LAB (IT-117)
- MESA (IT224)

SV / SCIENCE VILLAGE
- STEM (SV-25)

COLORADO CAMPUS CONTEXT: ZONING

The Colorado campus is bordered by residential areas to the south and east sides, and mix-use retail area to the north. The Child Development Center, library and church is located to the west side of campus.



EXISTING FACILITIES

The facilities – buildings, outdoor athletic spaces and primary mechanical, plumbing and electrical infrastructure- were assessed to establish current state of the campus. Evaluated conditions included:

- Physical condition of architecture and interior systems
- Physical condition of structural, mechanical, electrical and plumbing systems
- Compliance with current accessibility regulations
- Degree of utilization
- Location related to complementary programs
- Capacity of program spaces
- Level of school brand / image reinforcement

Based on these criteria, each facility was recommended for one of the following categories:

- Facility to remain- little or no improvement required
- Facility to remain- significant improvement required
- Facility to be demolished- replaced with new construction
- Facility to be demolished- use removed from campus

The adjacent campus plan illustrates the recommended categorization.



EXISTING OUTDOOR SPACES

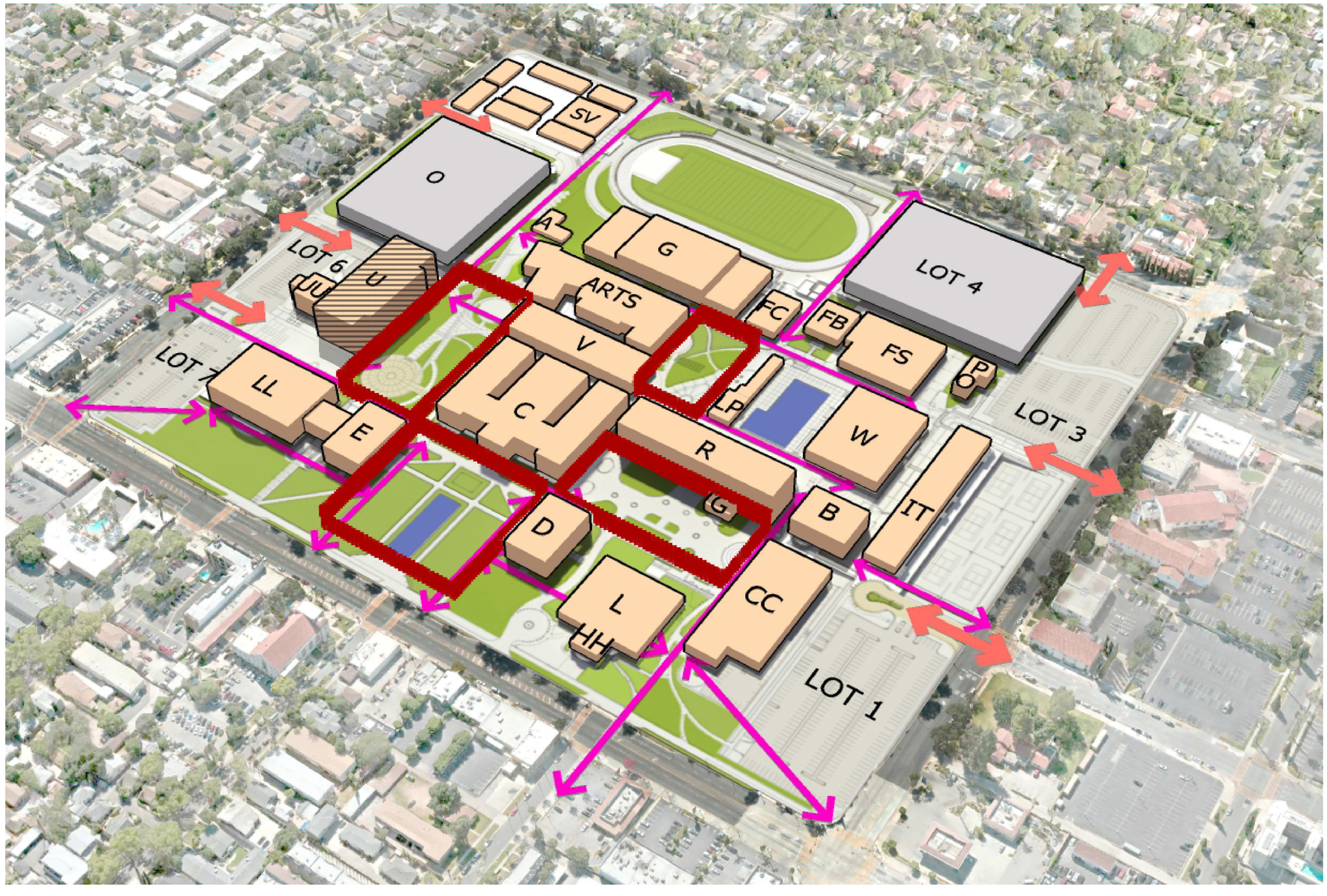
The outdoor spaces – primary common (non-program specific) exterior areas and pedestrian circulation- were assessed to establish current state of the campus. Evaluated conditions included:

- Physical condition of landscape
- Physical condition of hardscape including planters, walls and paths
- Compliance with current accessibility regulations
- Degree of utilization by campus community
- Capacity for desired student activities, including dining, studying, socializing and group events
- Capacity for external event support, including the Rose Parade
- Effectiveness of wayfinding
- Quality of school brand / image reinforcement

Based on these criteria, each facility was recommended for one of the following categories:

- Outdoor space to remain- little or no improvement required
- Outdoor space to remain- significant improvement required
- Outdoor space to be demolished- replaced with new construction
- Outdoor space to be demolished- use removed from campus

The adjacent campus plan illustrates the recommended categorization.



EXISTING PARKING

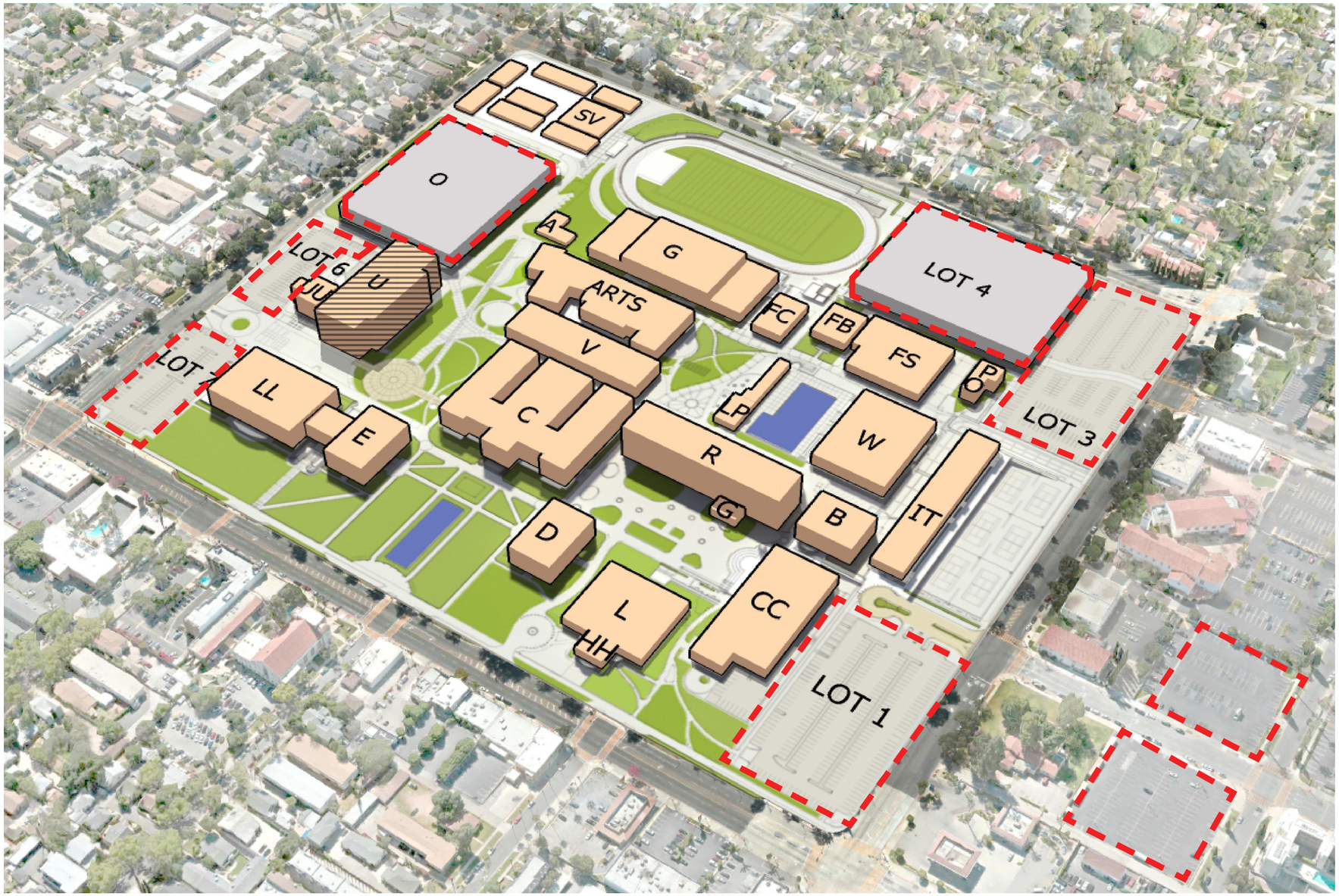
The parking areas– surface lots and parking structures- were assessed to establish current state of the campus. Evaluated conditions included:

- Physical condition of architecture, paved surfaces and landscape
- Quality and effectiveness of lighting
- Location and effectiveness of access and egress
- Degree of utilization by campus community
- Capacity for event support, including the Rose Parade
- Level of school brand / image reinforcement

Based on these criteria, each facility was recommended for one of the following categories:

- Facility to remain- little or no improvement required
- Facility to remain- significant improvement required
- Facility to be demolished- replaced with new construction
- Facility to be demolished- use removed from campus

The adjacent campus plan illustrates the recommended categorization.



EXISTING CAREER COMMUNITIES

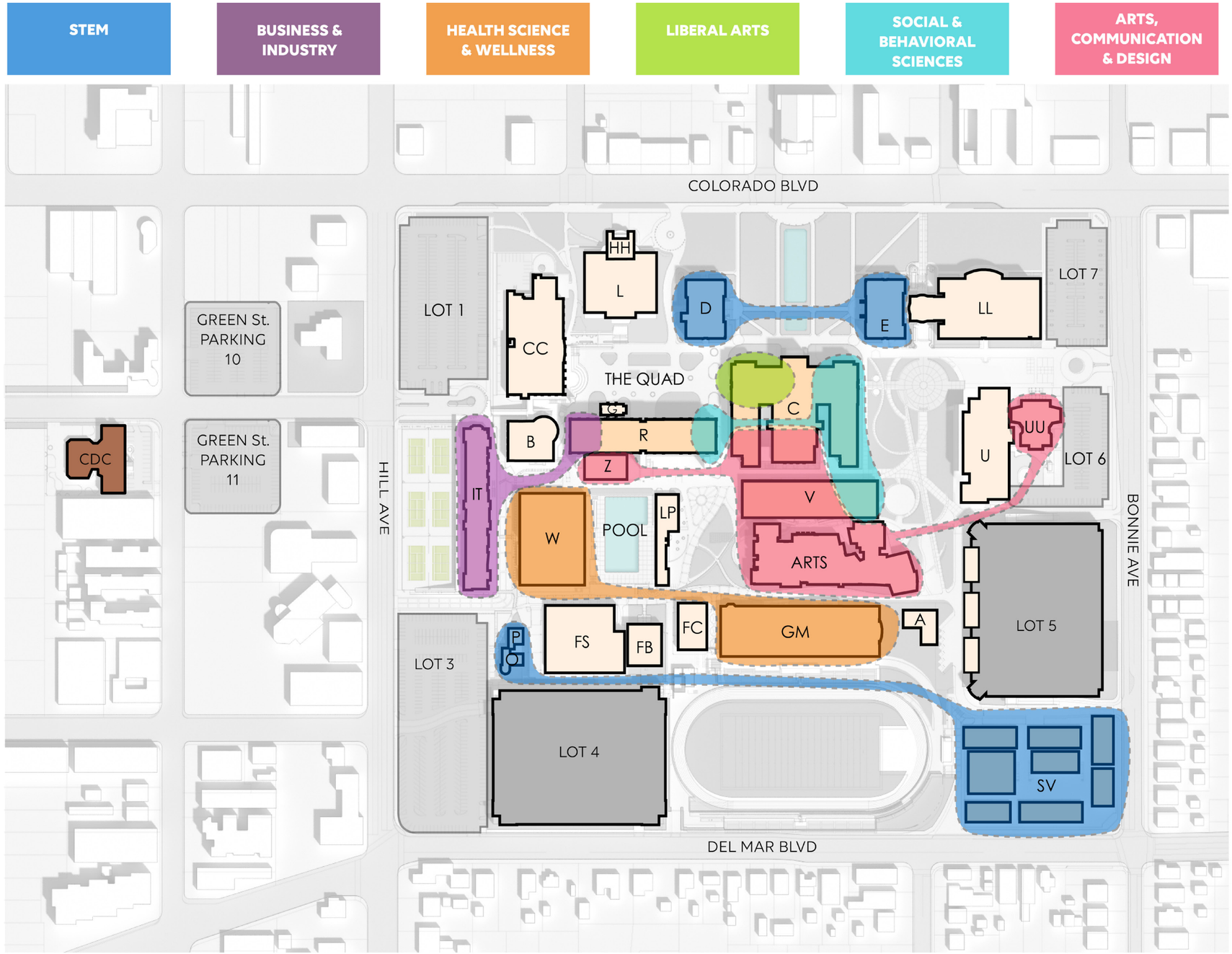
The Career Community spaces were assessed to establish current state of the campus. Evaluated conditions included:

- Degree of utilization
- Location related to complementary programs
- Capacity of spaces
- Level of school brand / image reinforcement

Based on these criteria, each facility was recommended for one of the following categories:

- Space to remain- little or no improvement required
- Space to remain- significant improvement required
- Space to be relocated- renovated or new construction

The adjacent campus plan illustrates the recommended categorization.



LEGEND

- STEM
- BUSINESS + INDUSTRY
- HEALTH SCIENCES + WELLNESS
- LIBERAL ARTS
- SOCIAL + BEHAVIORAL SCIENCES
- ARTS, COMMUNICATION, + DESIGN

FACILITY RECOMMENDATIONS: NEW CONSTRUCTION AND RENOVATION

The Colorado campus includes the following categories of facilities:

- Academic facilities used by primarily one program
- Academic facilities shared by multiple programs
- Student resource facilities shared by all
- Student life facilities shared by all
- Support facilities used by staff

Based on the assessment of the current campus facilities, the projected enrollment and program growth and the desire to clarify and strengthen the Career Communities, the proposed master plan recommends the following primary facility strategies:

- Provide an anchoring trilogy of shared academic facilities at the center of the campus, facilitating access and use by multiple programs. This trilogy includes major renovations of the R and C Buildings , and the construction of a new building on the site of the demolished pool and the W Building.
- Concentrate student life facilities on the western portion of campus, adjacent to the existing book store and student service building. A larger student services replacement building is proposed on the site of the L Building.
- Expand the STEM program on the eastern portion of the campus. In addition to the current facility replacement for the U Building, a new building is proposed directly east, adjacent to Bonnie Avenue.



- Construct a new pool and support facility on the southeast corner of the campus to both support campus programs and increase community access and use.
- Provide three dining facilities at strategic campus locations to provide greater student access and variety of experience. The existing food court located in the CC Building supports west campus; a new dining venue located in the new academic building supports south campus; and a new dining pavilion located in Galloway Plaza supports east campus.

OUTDOOR SPACE RECOMMENDATIONS

The Colorado campus contains a diverse range of gardens, plazas, pathways and entrances, with broad variation in quality and usefulness. While spaces such as the historic reflecting pool quad, the xx plaza and the sculpture garden provide key anchoring spaces for the campus, several other areas are underperforming with respect to usefulness and quality.

The masterplan identified three principal objectives for improvement:

- Improve wayfinding
- Increase opportunities for exterior study, teaching and social activities
- Enhance quality of landscape and hardscape to strengthen campus identity and image

Based on the assessment of current campus outdoor spaces and the above objectives, the proposed master plan recommends the following primary outdoor space strategies:

- Following the precedent established by the historic reflecting pool quad, articulate major open spaces as formal "Rooms" with clear boundaries, entrances, and functions. These conditions can be achieved with architecture, hardscape and landscape elements.
- Enhance the campus perimeter with increased landscape buffers to improve exterior image and identity. Specifically, provide new garden areas at each corner of the campus as key arrival points from the surrounding community.
- Expand the Colorado Boulevard lawn to Hill Avenue on the west and Bonnie Avenue on the east. The proposed replacement of the L Building is recommended to maintain the historic setback on Colorado Boulevard to increase visibility of the reflecting pool.



- Clarify and enhance principal north / south and east / west pathways that link principal campus spaces, facilities and the campus perimeter.
- Increase the number of dedicated areas in multiple locations for study, socializing, dining and events. These improvements should include furniture, access to power and wifi, shade and lighting.

PARKING RECOMMENDATIONS

The campus includes both surface lots and parking structures that are used by students, faculty, staff and visitors. Additionally, parking lot 3 is used as a large vehicle parking area for events such as the Rose Parade.

The masterplan recommends the construction of a new surface lot on Hill Avenue (on the site of the current tennis facility recommended for demolition) and an extension of parking structure 4 on the site of parking lot 3. Large vehicle parking is recommended to occur in the new surface lot on Hill Avenue.



CAREER COMMUNITIES RECOMMENDATIONS

The Career Communities are the critical framework of programs and facilities that clarify educational journeys and destination. The principal goal for the masterplan is to cluster complementary program and student resources for each Community as much as possible.

The recommended strategy establishes overlapping the six Career Community zones, anchored by the shared academic facility core and the shared student services zone.

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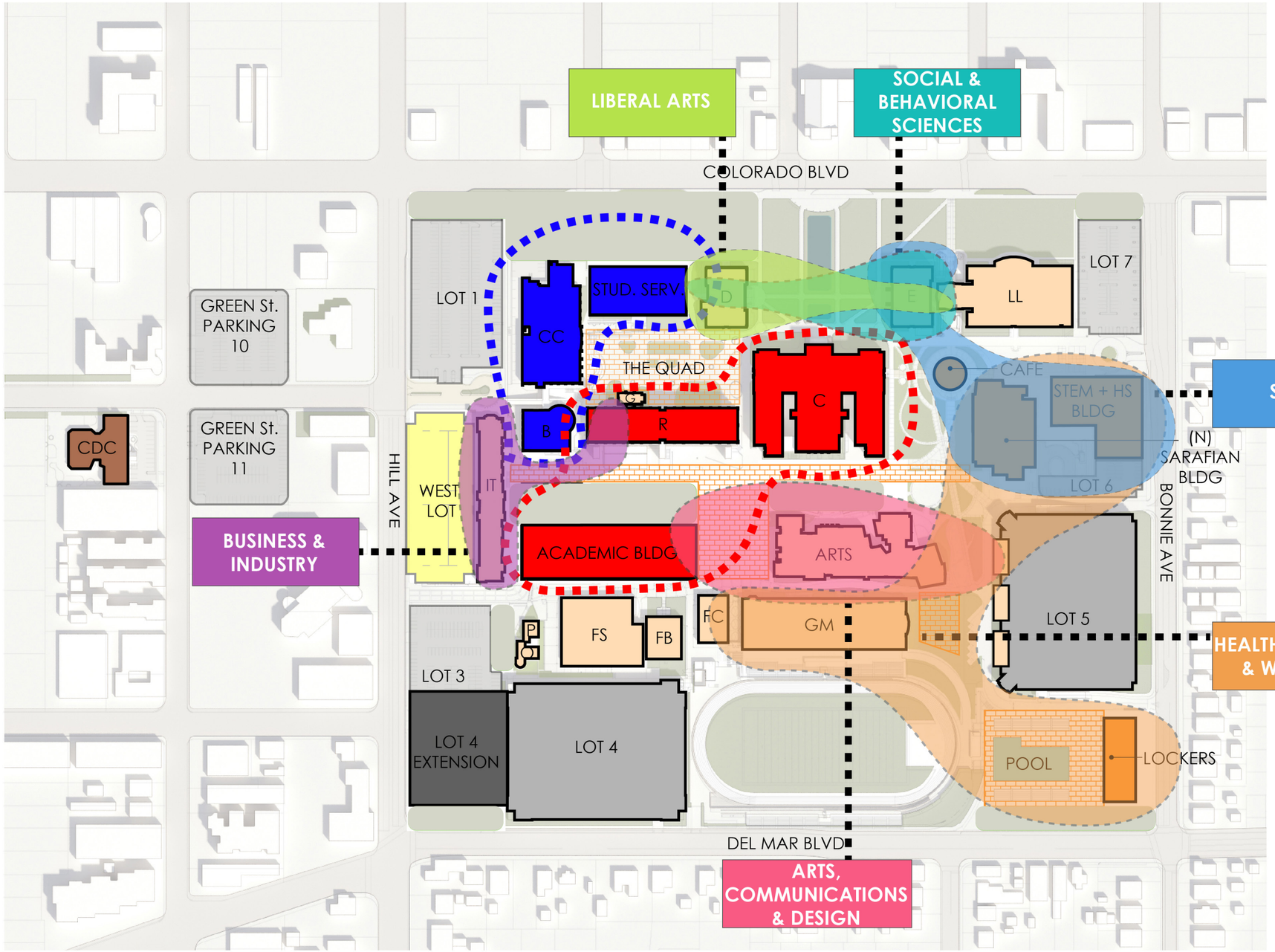


LEGEND

- STEM
- BUSINESS + INDUSTRY
- HEALTH SCIENCES + WELLNESS
- LIBERAL ARTS
- SOCIAL + BEHAVIORAL SCIENCES
- ARTS, COMMUNICATION, + DESIGN
- STUDENT SERVICES
- ACADEMIC CORE

COLORADO CAMPUS OVERALL PROJECT PHASING

PCC FACILITIES MASTER PLAN PROJECTS **2/14/2020**

PRELIMINARY PROJECT MILESTONE SCHEDULE & SEQUENCE*			2020				2021				2022				2023				2024				2025				2026				2027				2028				2029				2030				2031				2032				2033				2034			
			QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER				QUARTER			
CAMPUS	PHASE	PROJECTS	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
COLORADO	-	Approved Sarafian Building																																																										
	0	Campus Utilities + MEP Upgrade																																																										
	1	Stem + HS Building																																																										
		Café + Demolition of Coffee Hut																																																									
		Lot 4 Extension																																																									
		Lot 4 Outdoor Area																																																									
	2	Student Services + Demolition of HH and L Building																																																									
		Outdoor Area along Colorado																																																									
		Relocation of SV and A to Tennis Courts																																																									
		Pool and Locker Facility																																																									
		Outdoor Area at Pool																																																									
	3	Academic Building + Demolition of Pool and W Building																																																									
		New Plaza at Campus Core + Demolition of Z and V Buildings																																																									
	4	Renovation of R Building																																																									
		The Quad																																																									
	5	Renovation of C building																																																									
	6	West Parking Lot + Demolition of Tennis Courts																																																								
	7	Minor Renovation of D Building																																																								
		Minor Renovation of E Building																																																								
		Minor Renovation of FB Building																																																								
		Minor Renovation of O Building																																																								
		Minor Renovation of P Building																																																								
		Outdoor area at P Building																																																								
	-	Campus Wide Wayfinding (phased)																																																								
CDC	1	Wayfinding																																																								
FOOTHILL	3	New Construction of Building																																																							
		Wayfinding																																																								
ROSEMEAD	3	New Construction of Building																																																						
		Wayfinding																																																							
PCC NORTHWEST	1	Moderate Renovation of Northwest Building																																																							
		Wayfinding																																																						

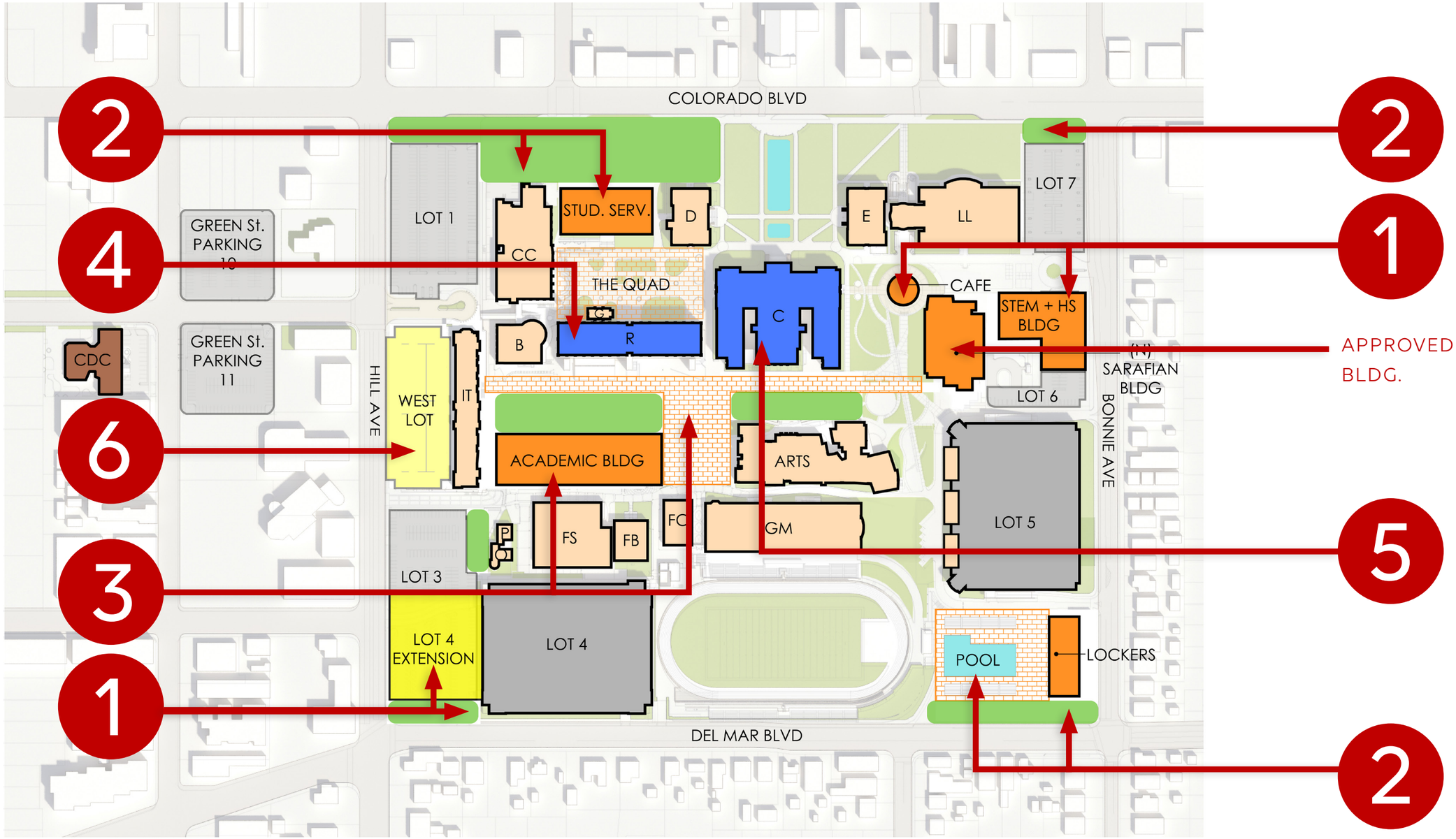
* Assumed to be Design Bid Build Delivery Method

* Exact duration to be determined based upon actual progress at each phase

DESIGN / APPROVAL

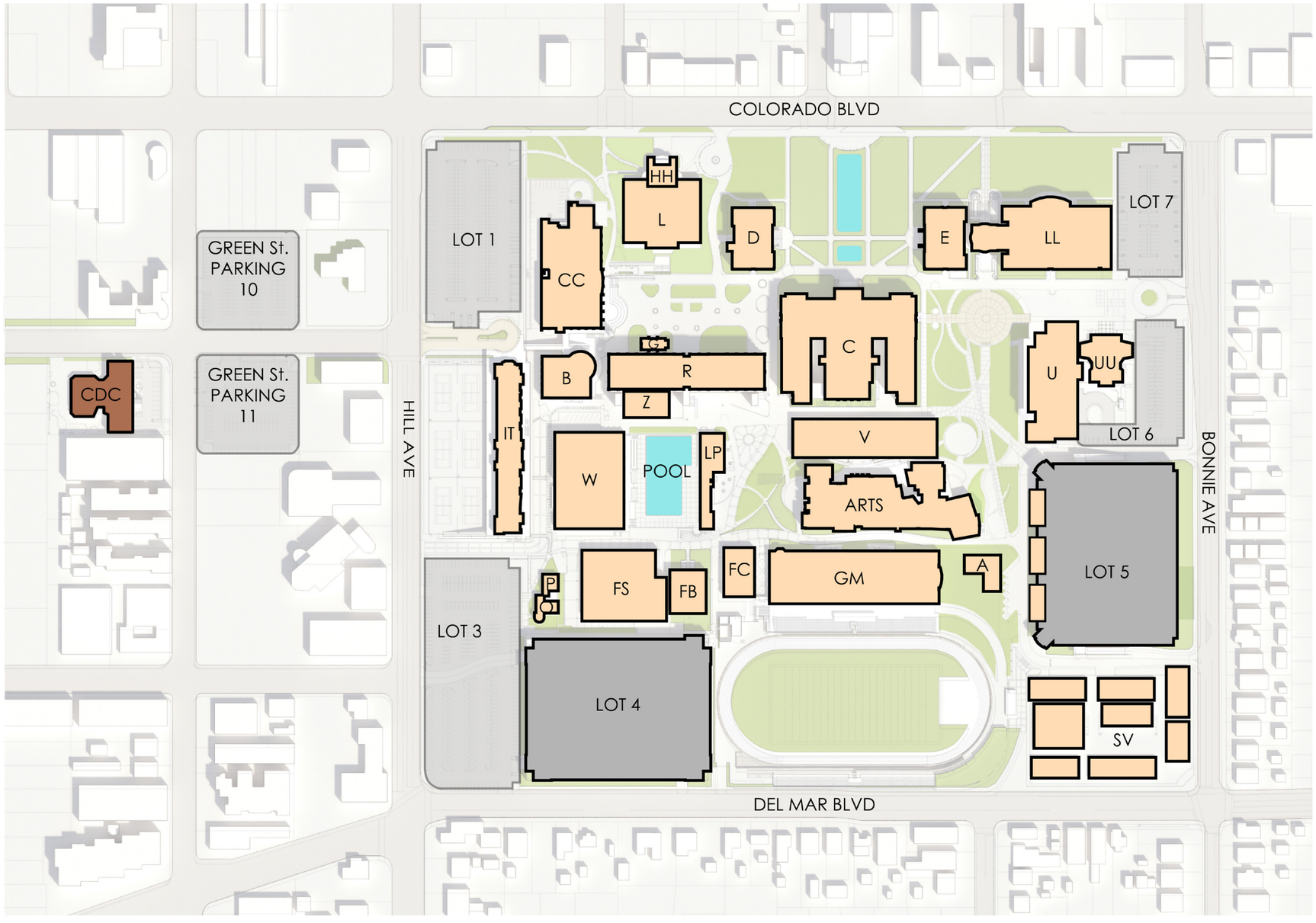
CONSTRUCTION

COLORADO CAMPUS OVERALL PROJECT PHASING



APPROVED SARAFIAN BLDG.

COLORADO CAMPUS: CURRENT STATE



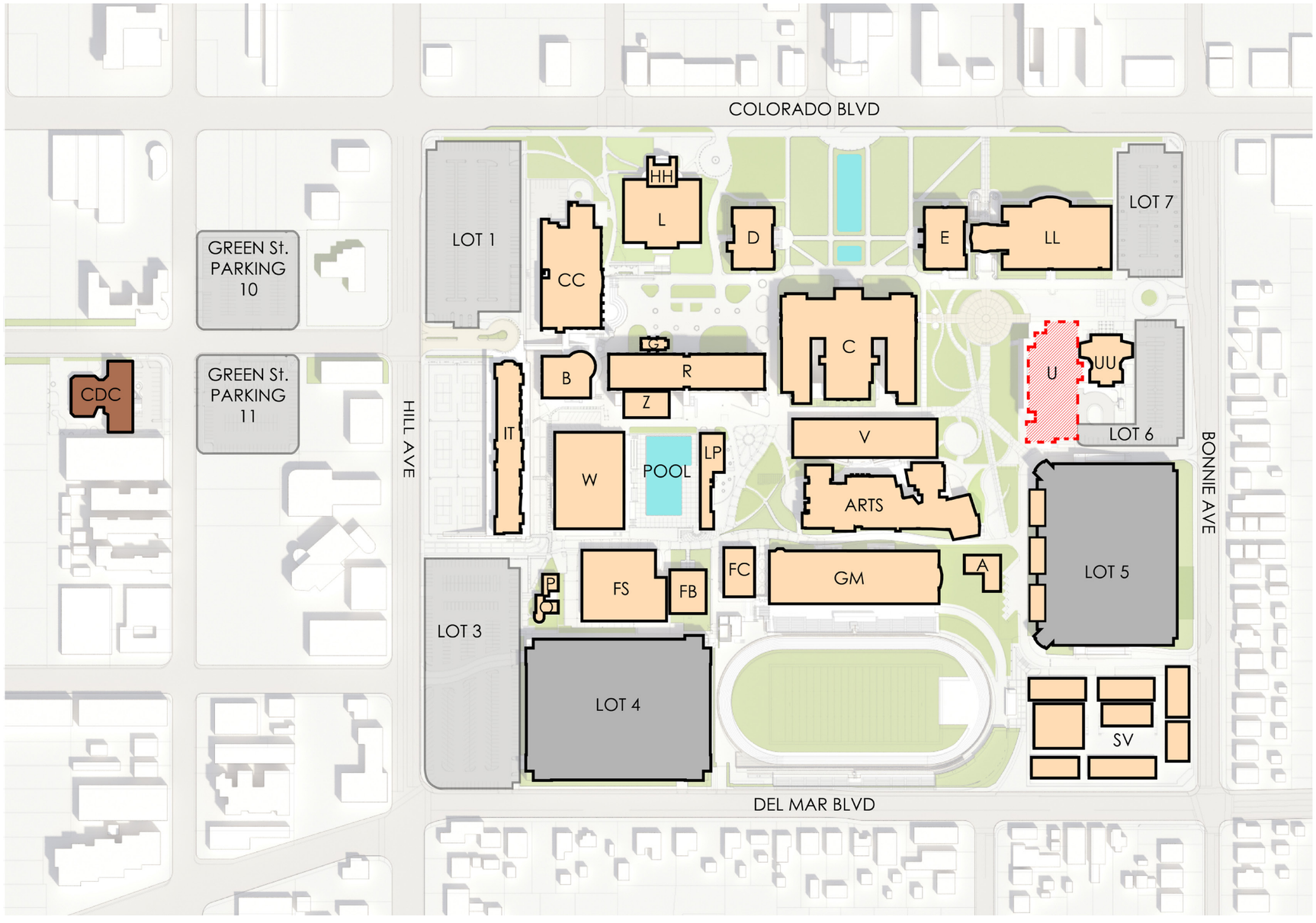
EXISTING PHASE

- U-Building is vacant and pending construction of the approved Sarafian Building

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: U BUILDING DEMOLITION



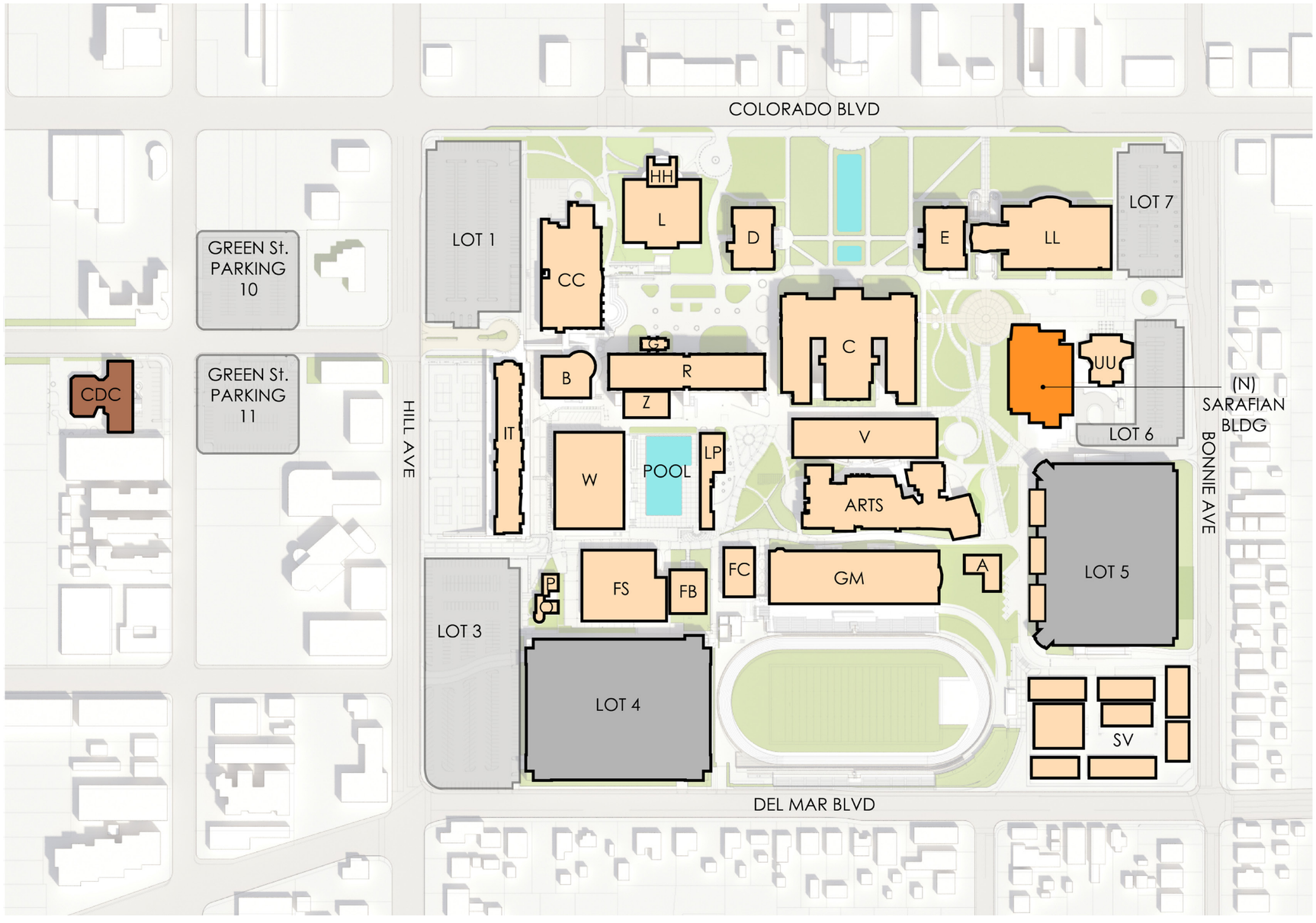
EXISTING PHASE

- U-Building demolition begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: APPROVED SARAFIAN BUILDING CONSTRUCTION



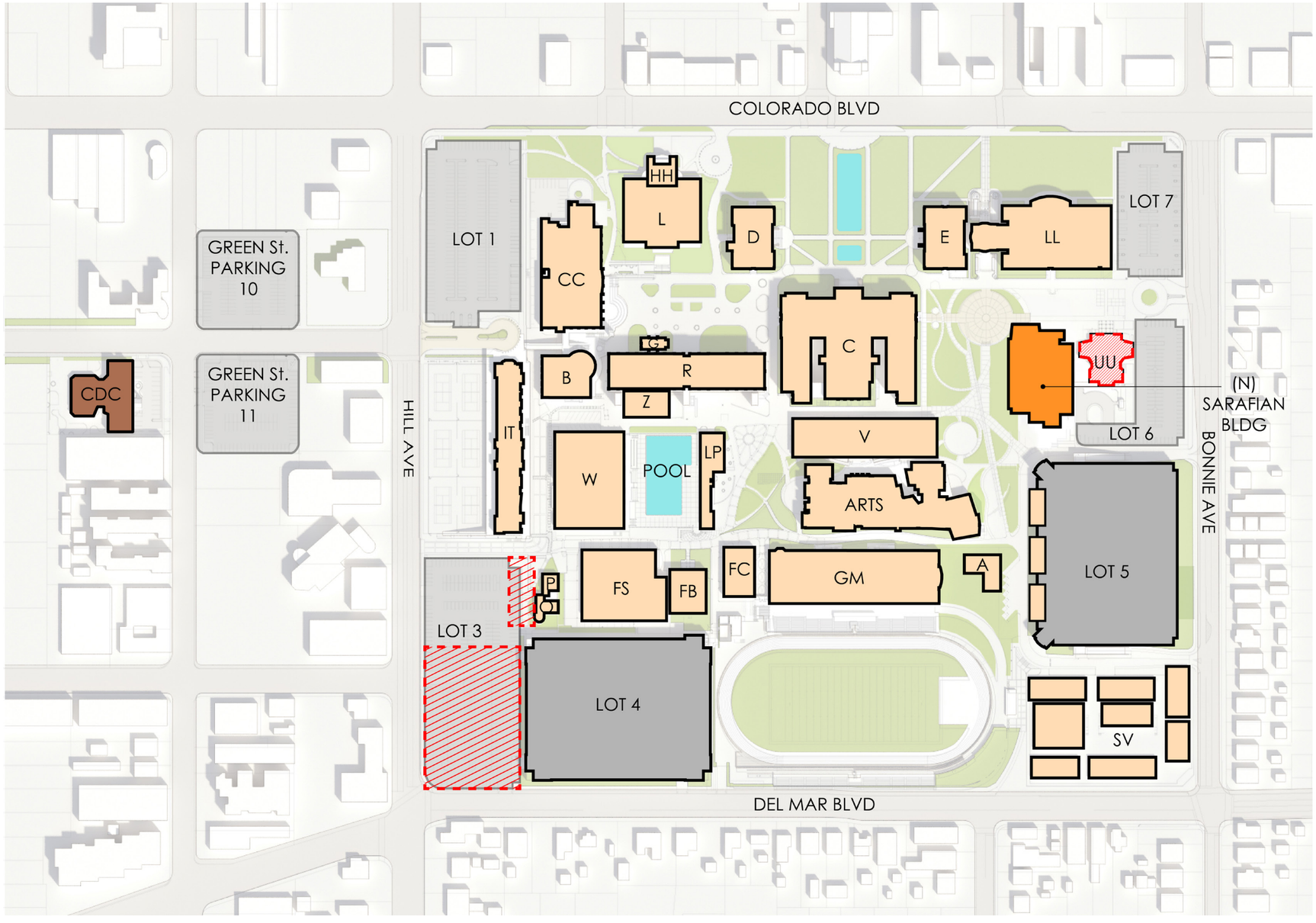
EXISTING PHASE

- Sarafian Building construction begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE I DEMOLITION



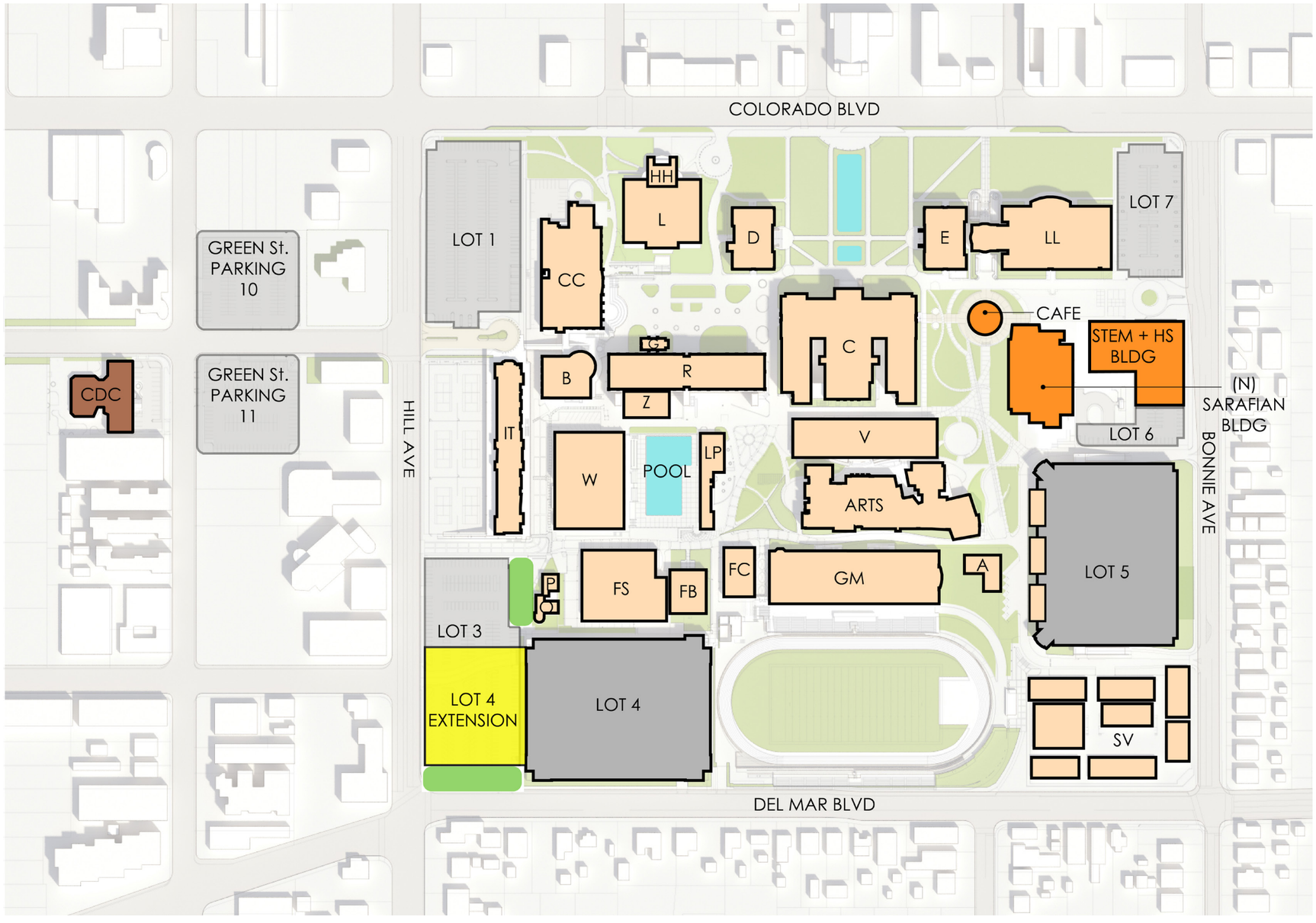
PHASE I

- Sarafian Building construction completed
- UU-Building demolition begins
- Lot 3 demolition begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE I CONSTRUCTION



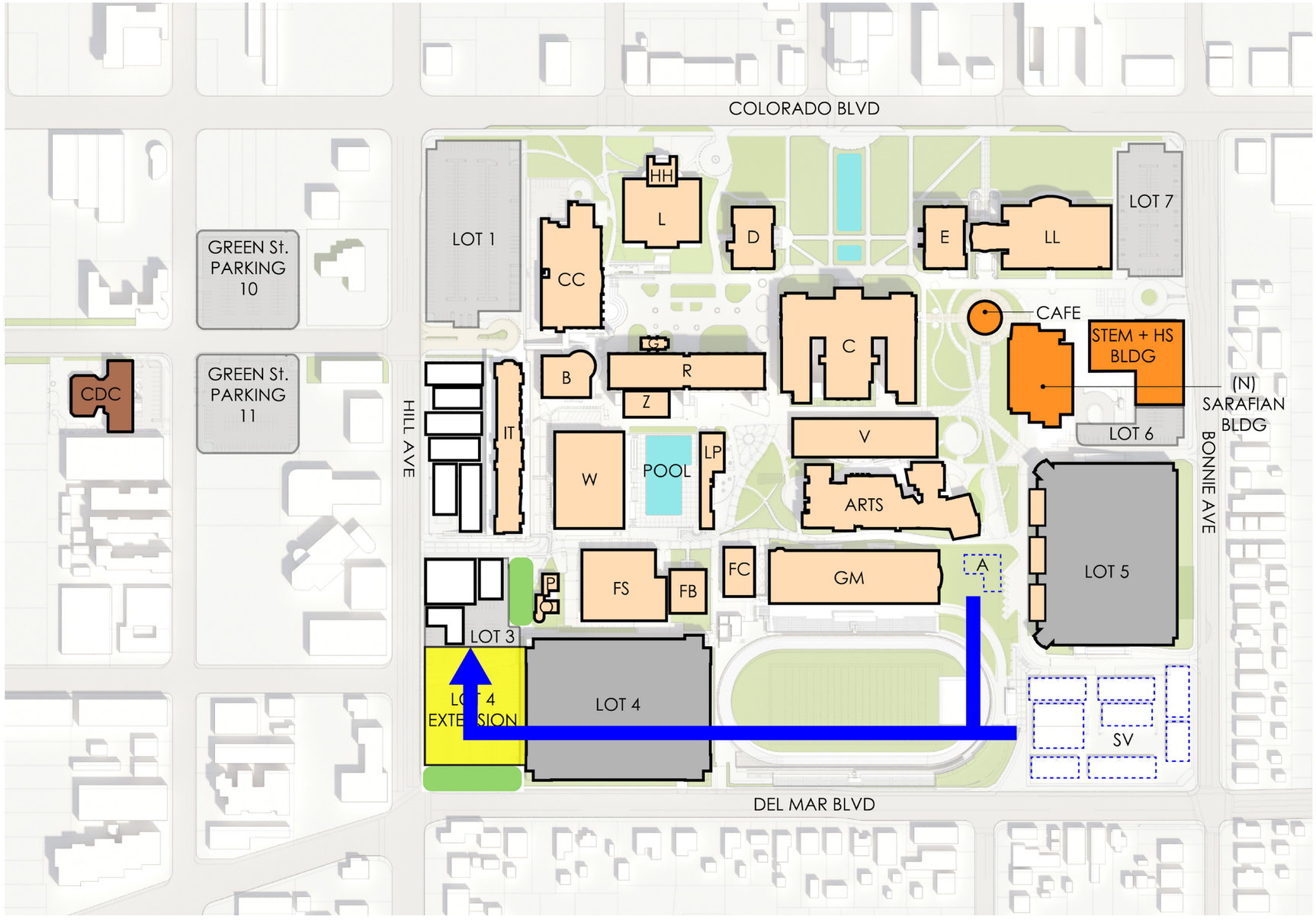
PHASE I

- STEM and Health Sciences Building construction begins
- Cafe construction begins
- Lot 4 Extension construction beings

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 2A RELOCATION



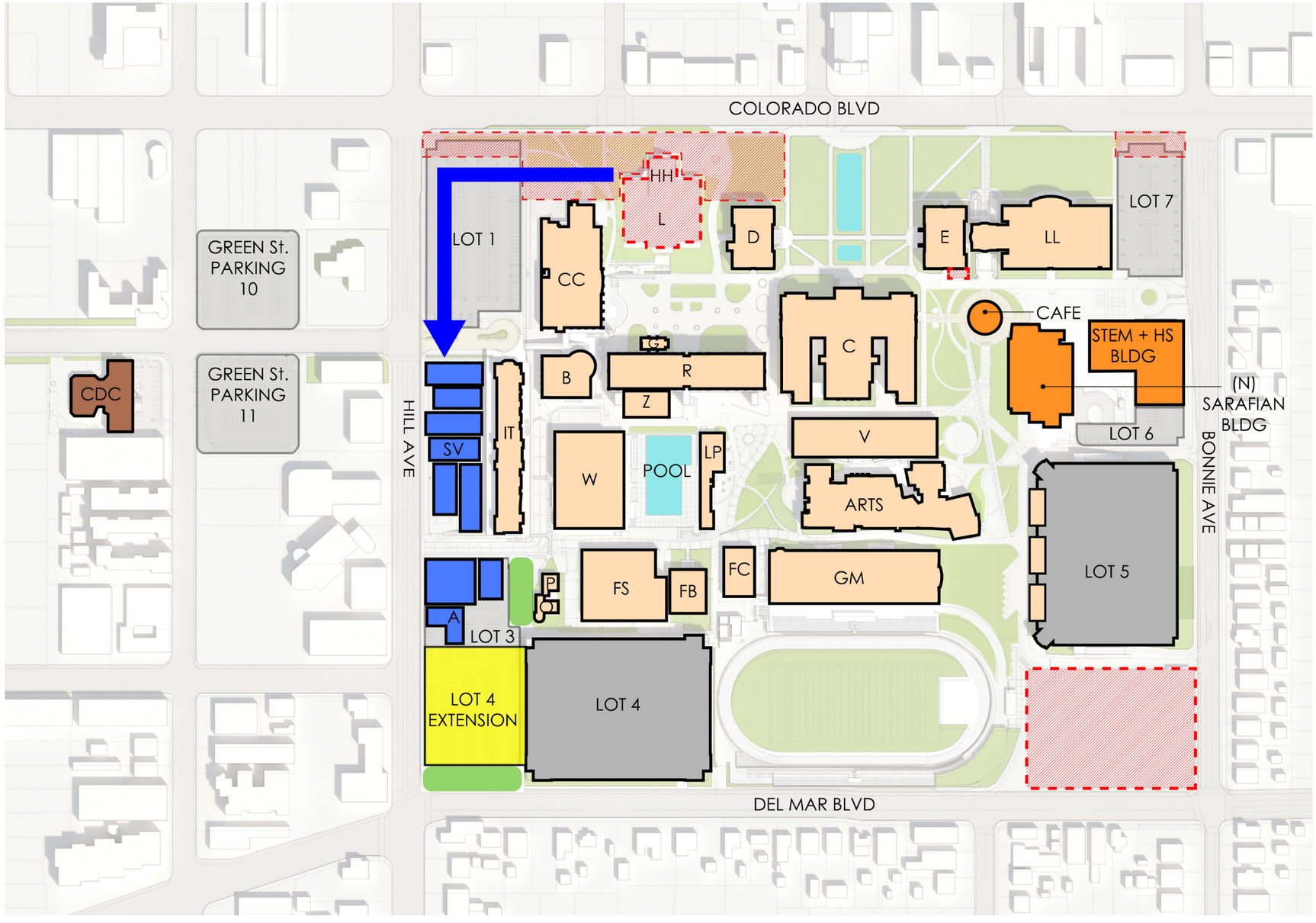
PHASE II

- STEM and Health Sciences Building construction completed
- Cafe construction completed
- Lot 4 Extension construction completed
- Science Village relocated to Tennis Courts and Lot 3
- A-Building relocated to Lot 3.

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 2B DEMOLITION



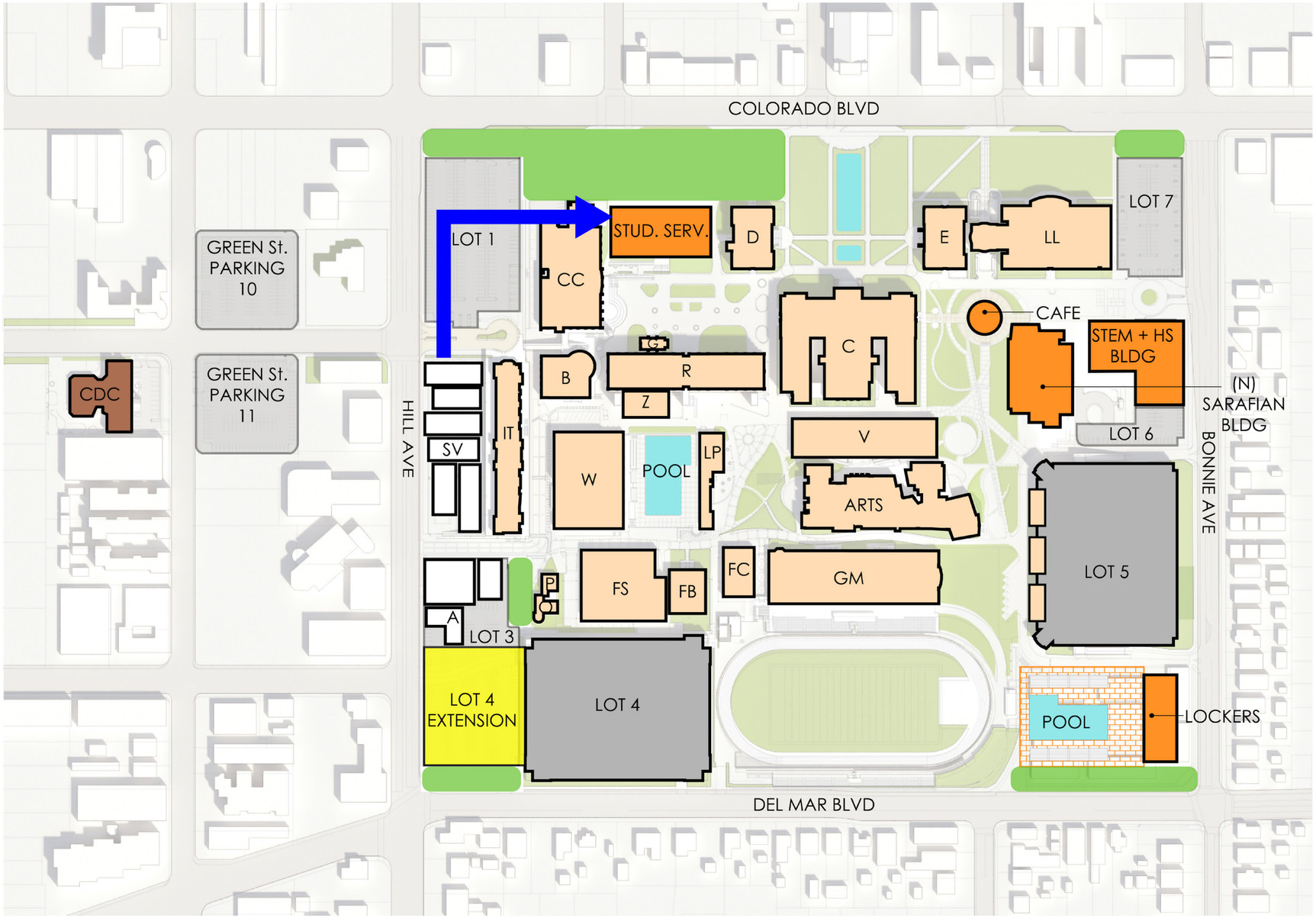
PHASE II

- Occupants of HH and L building moves to Science Village and A-Building
- Coffee Hut demolition begins
- HH-Building and L-Building demolition begins
- Demolition of outdoor area along Colorado begins
- Demolition of southeast lot begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 2B CONSTRUCTION



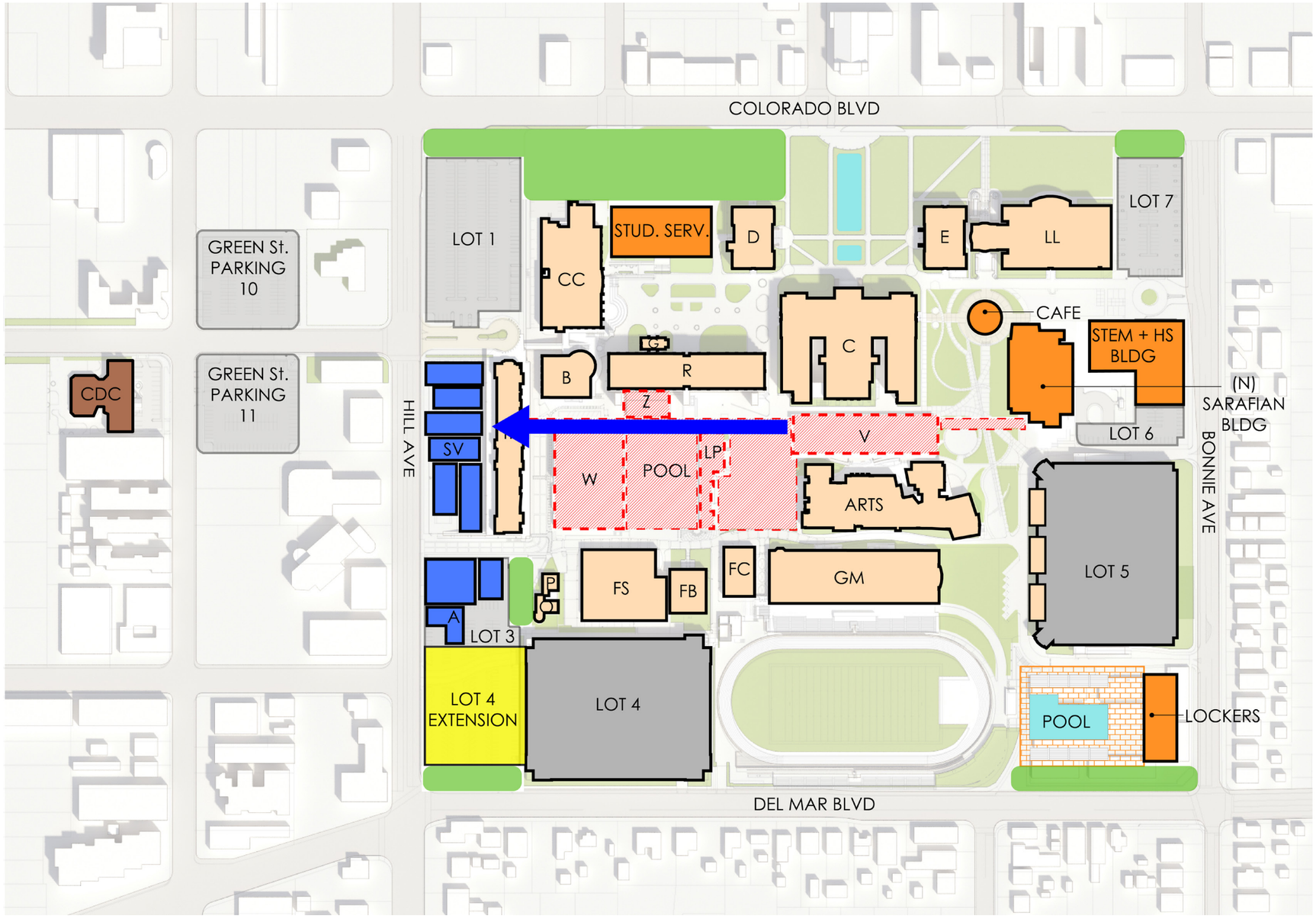
PHASE II

- Student Services Building construction begins
- Occupants of HH and L building moves to new Student Services Building when completed
- Locker Facility + Pool construction begins
- Construction of outdoor area along Colorado begins
- Outdoor area at pool construction begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 3 DEMOLITION



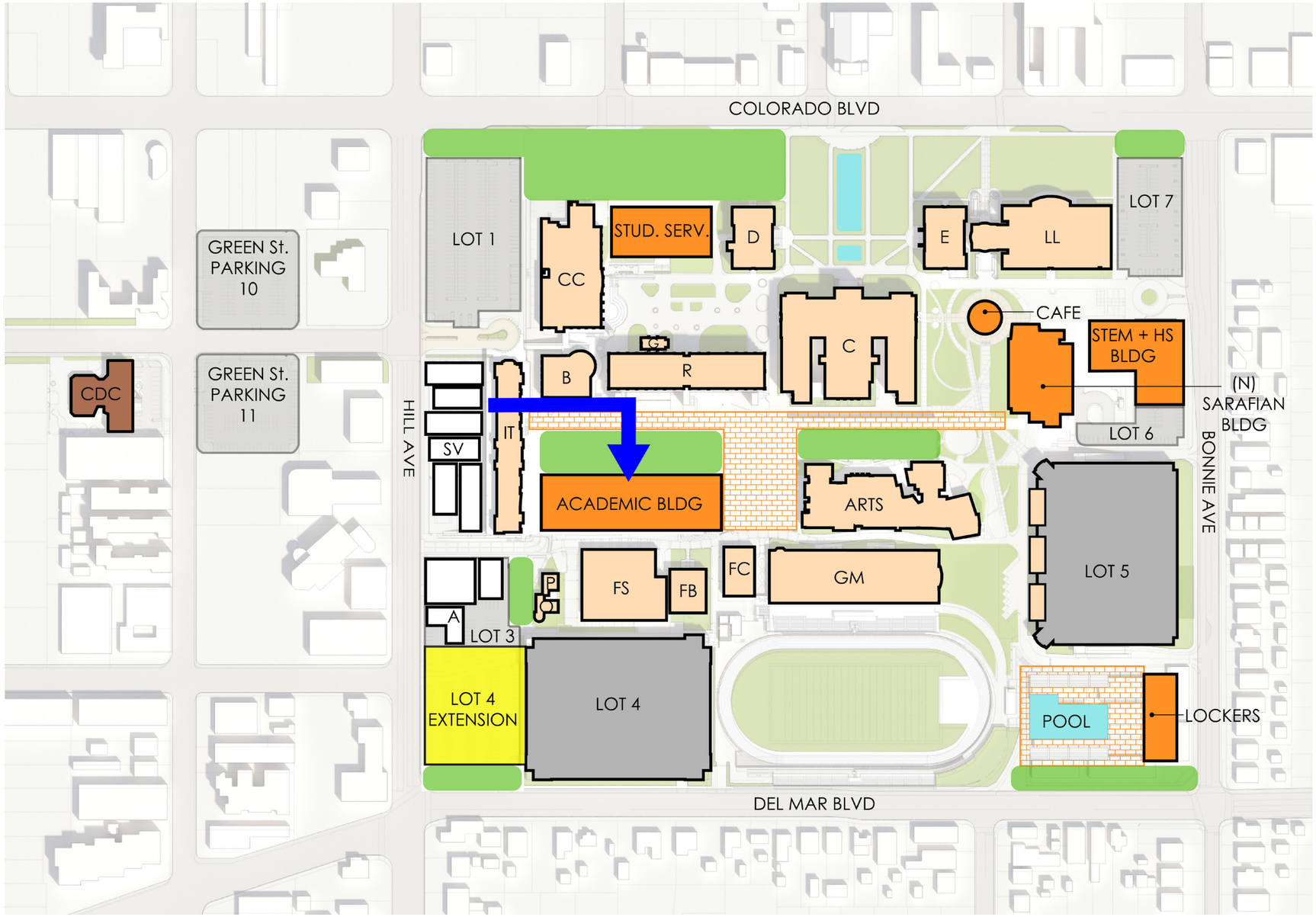
PHASE III

- Locker Facility + Pool construction completed
- Construction of outdoor area along Colorado completed
- Outdoor area at pool construction completed
- Occupants of V-Building moves to Science Village and A-Building
- LP, V, W, Z Buildings demolition begin
- Pool demolition begins
- Central plaza demolition begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 3 CONSTRUCTION



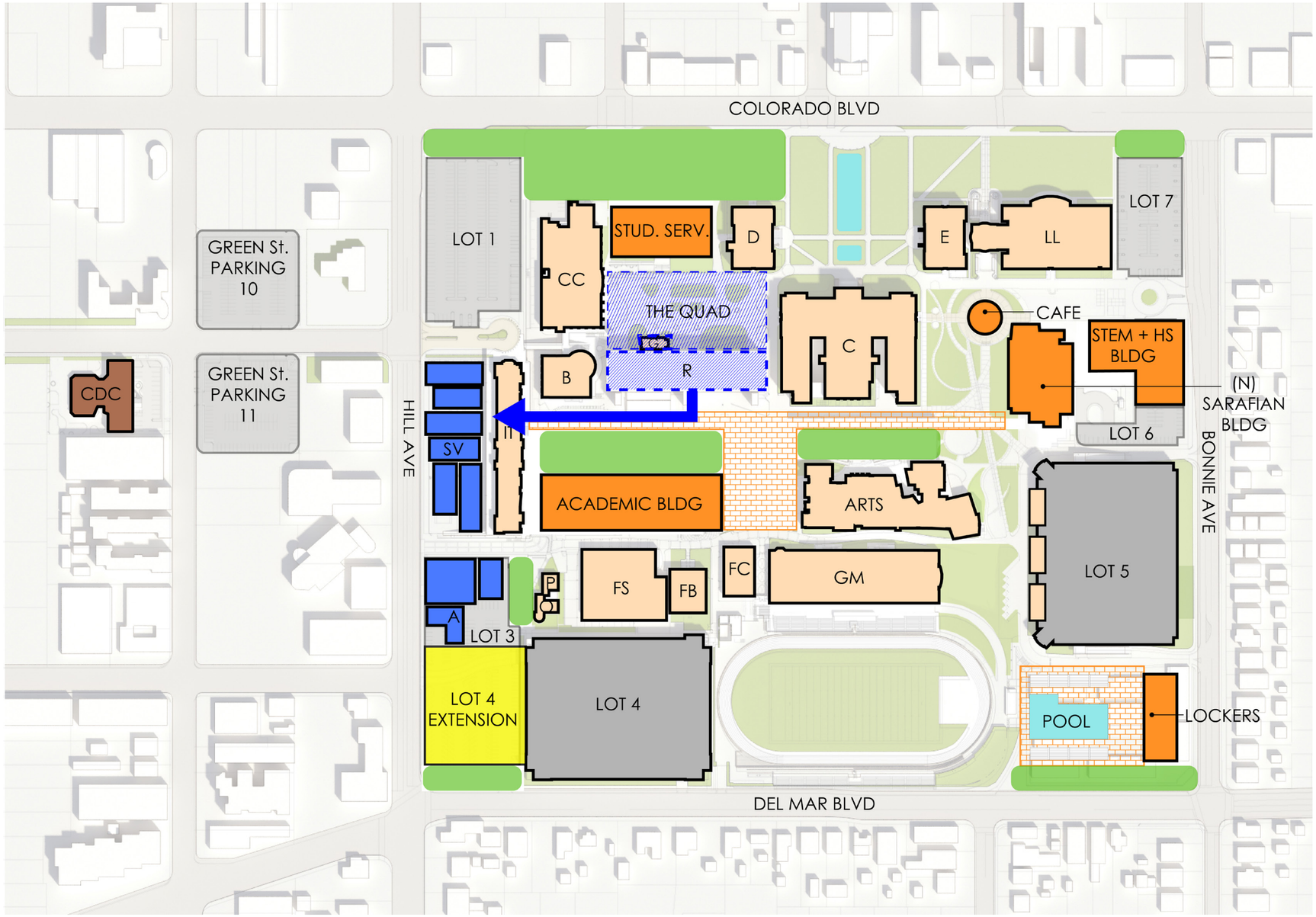
PHASE III

- Academic Building construction begins
- Occupants of V-Building moves to new Academic Building when completed
- Central plaza construction begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 4 RENOVATION



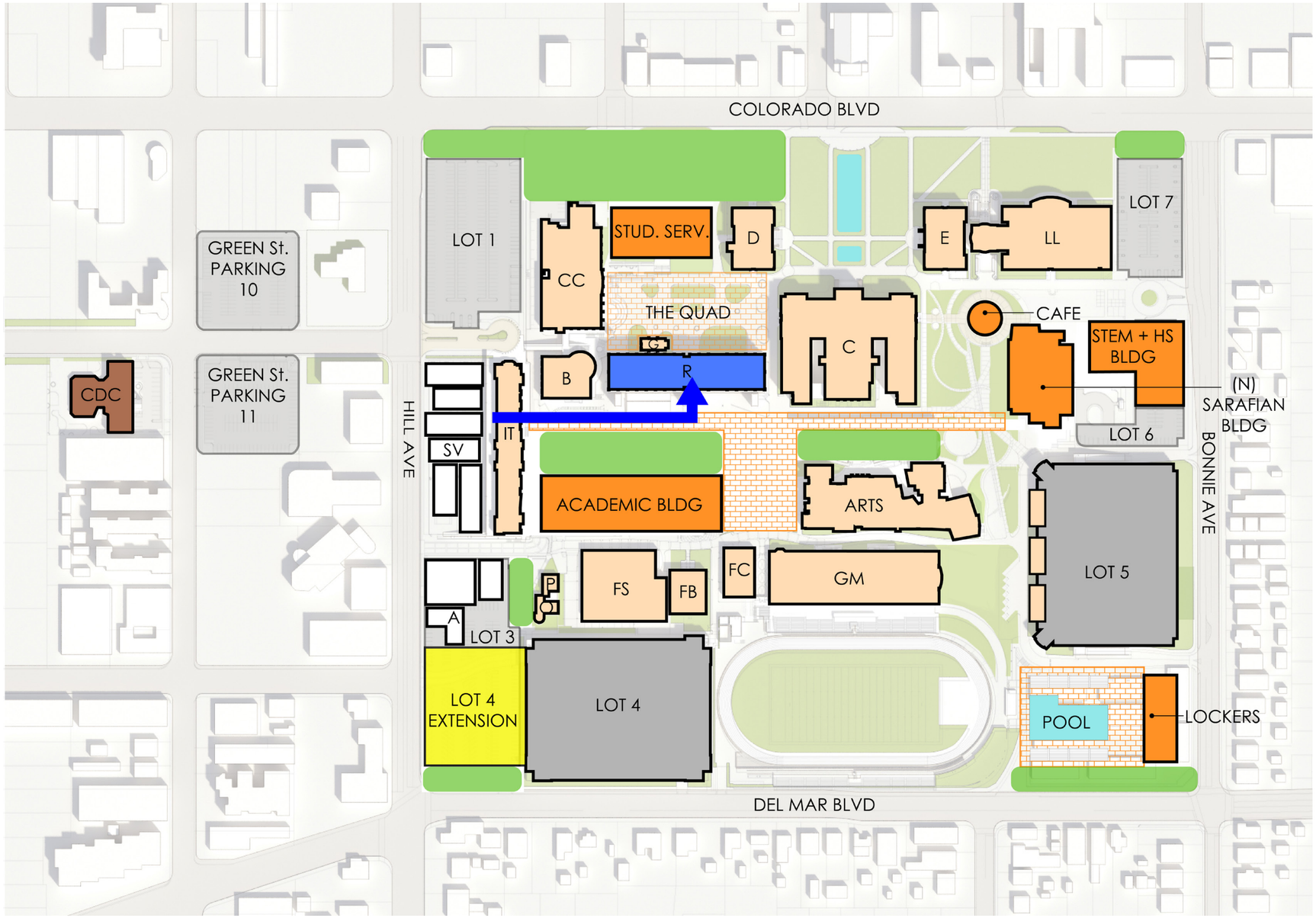
PHASE IV

- Central plaza construction completed
- Occupants of R-Building moves to Science Village and A-Building
- R-Building renovation begins
- The Quad renovation begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 4 RENOVATION COMPLETED

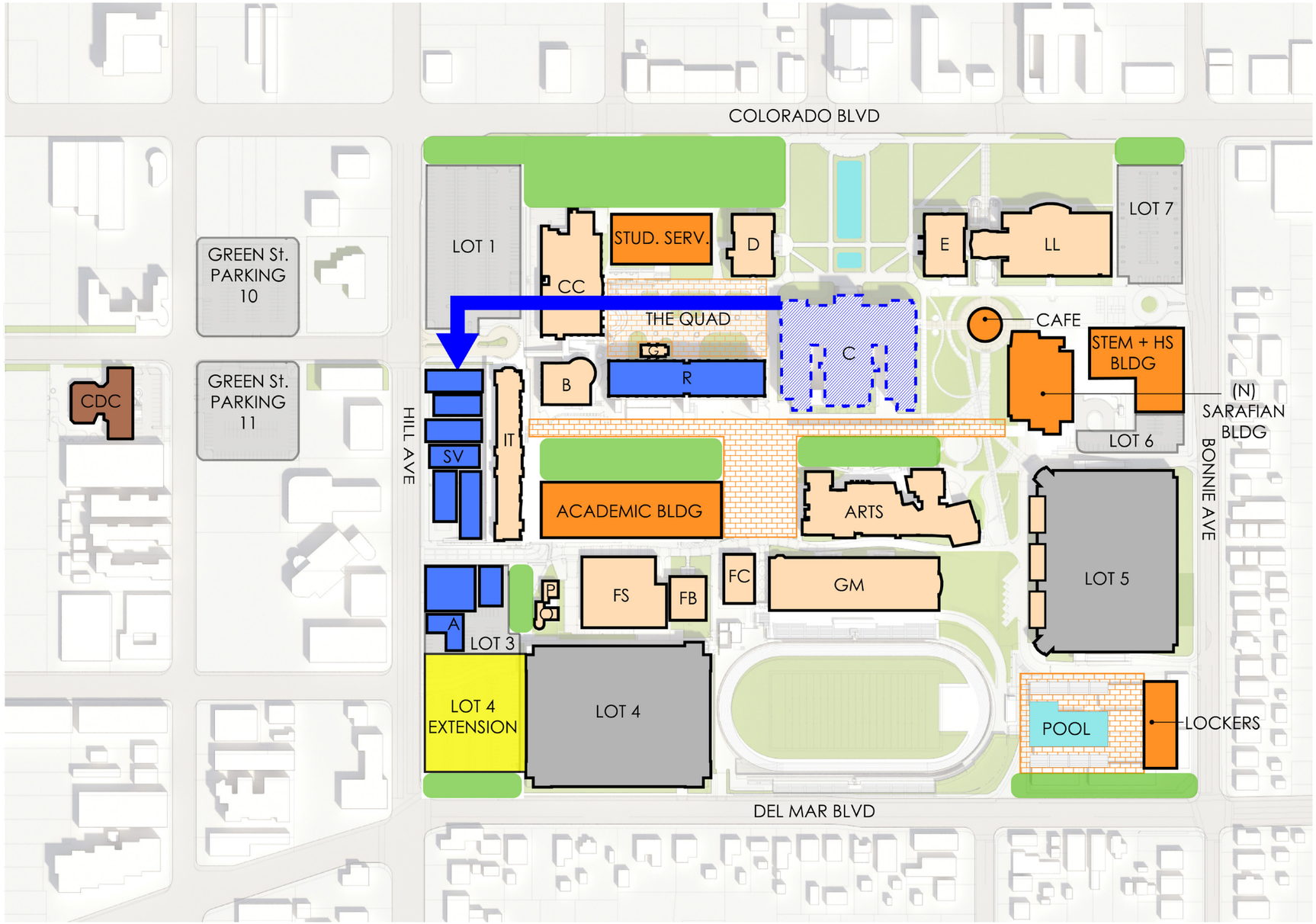


PHASE IV

- R-Building renovation completed
- Occupants of R-Building moves back to R-Building
- The Quad renovation completed

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE



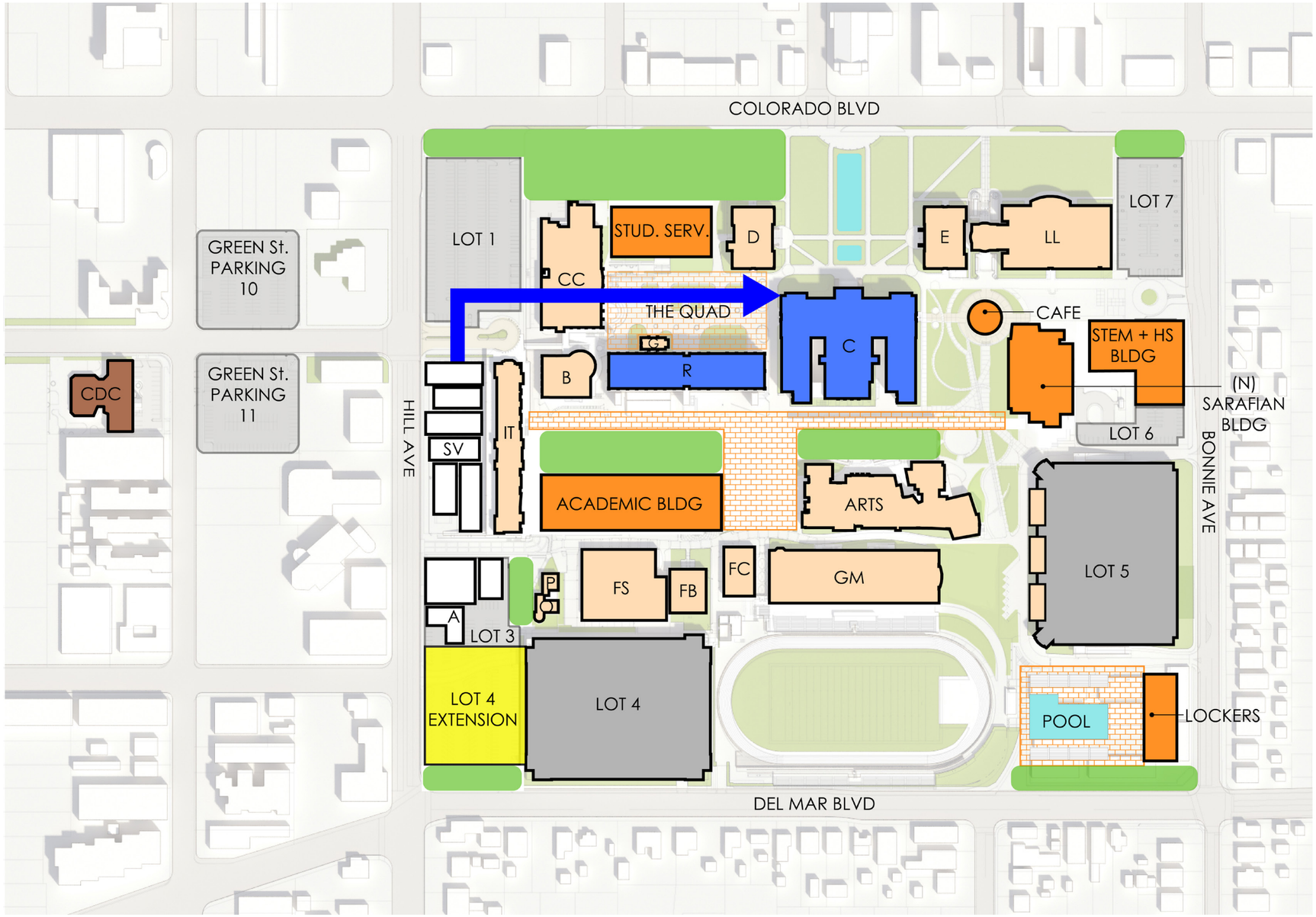
PHASE V

- Occupants of C-Building moves to Science Village and A-Building
- C-Building renovation begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE 5 RENOVATION COMPLETED



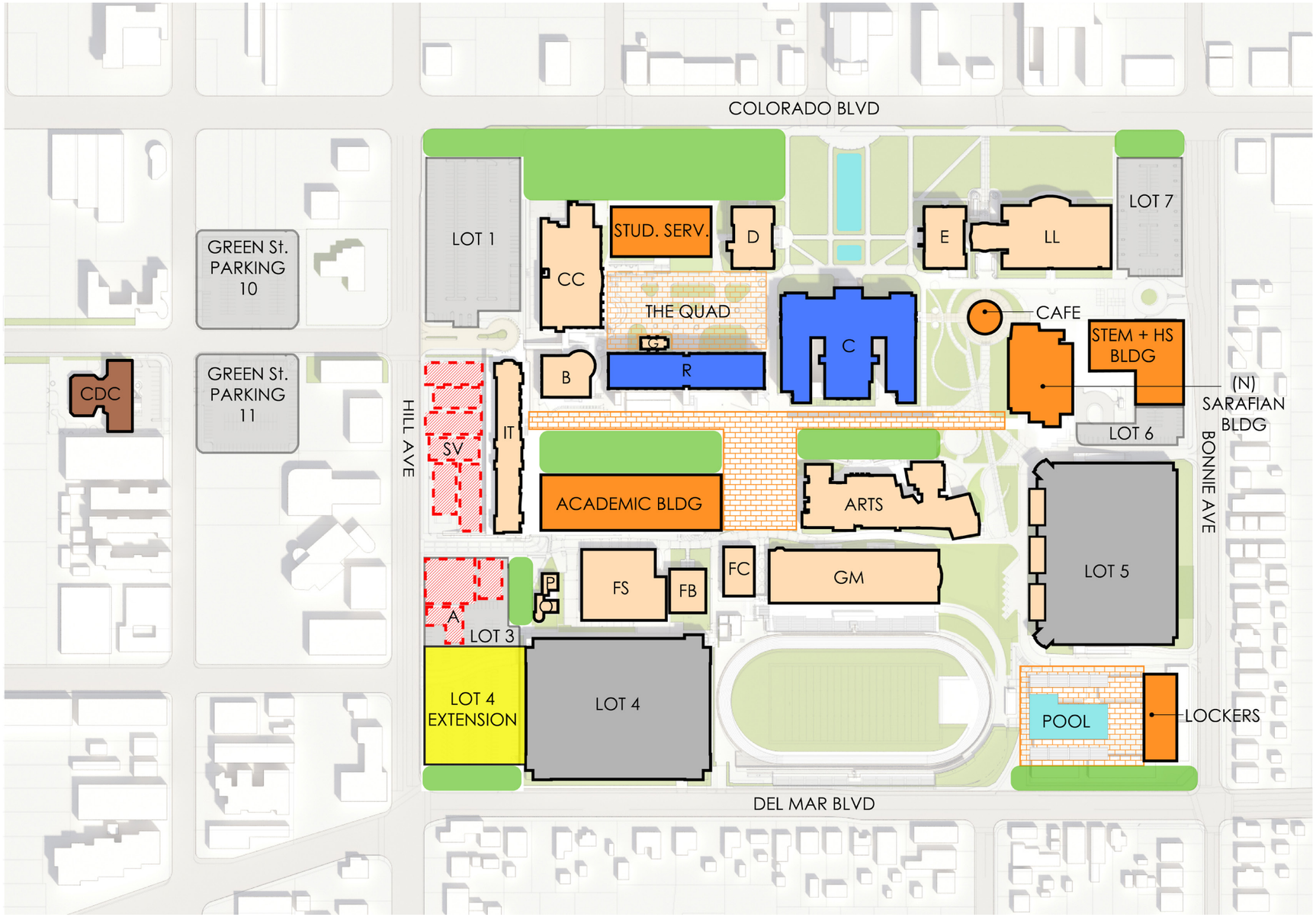
PHASE V

- Occupants of C-Building moves back to C-Building
- C-Building renovation completed

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: PHASE6 DEMOLITION



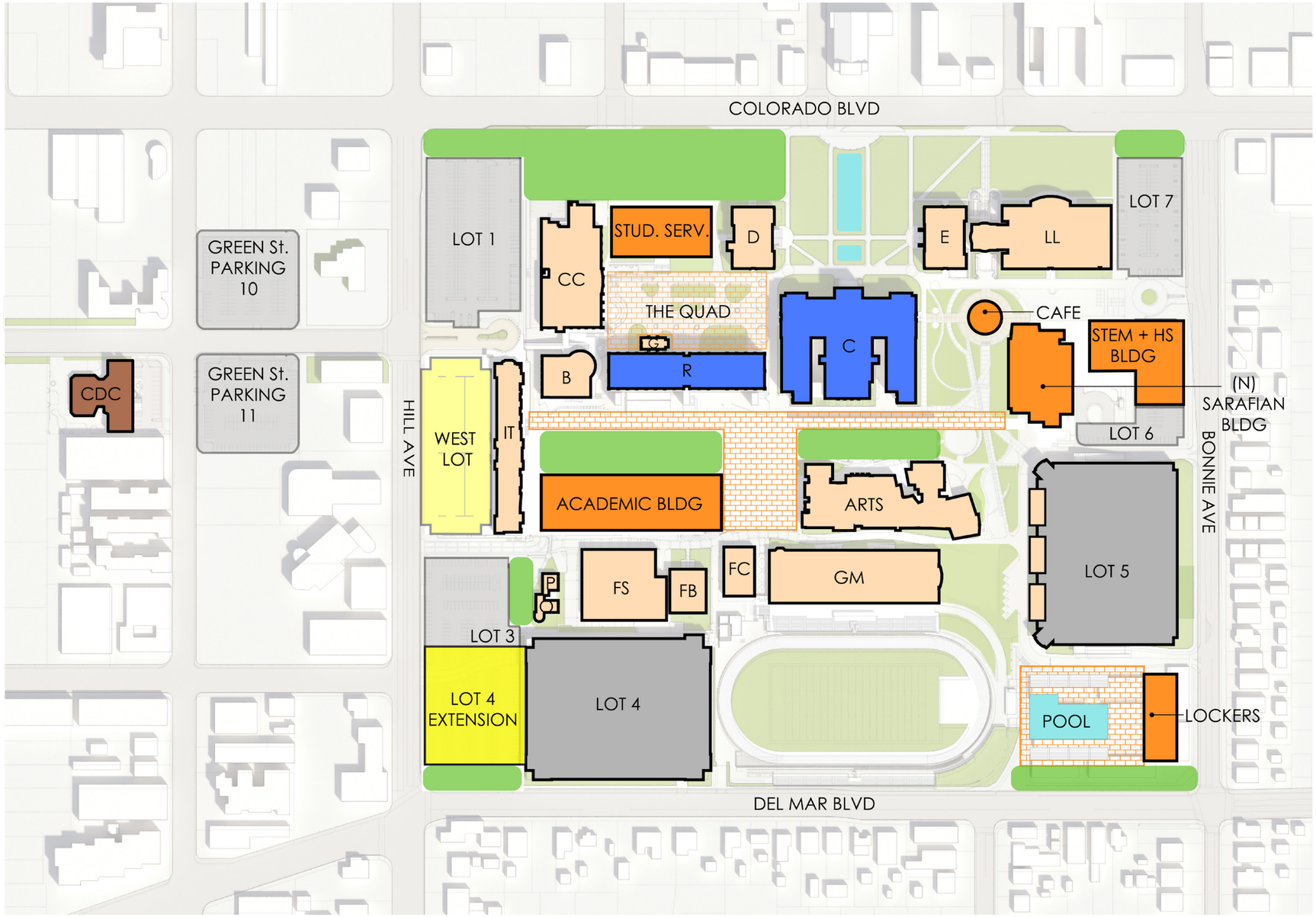
PHASE VI

- Science Village demolition begins
- A-Building demolition begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE

COLORADO CAMPUS: FINAL PHASE



FINAL PHASE

- West Lot construction begins

LEGEND

- EXISTING BUILDING
- NEW BUILDING
- RENOVATED/ RELOCATED BUILDING
- EXISTING PARKING
- NEW PARKING
- IMPROVED / NEW HARDSCAPE AREA
- IMPROVED / NEW SOFTSCAPE AREA
- BUILDING TO BE DEMOLISHED
- BUILDING TO BE RENOVATED
- RELOCATE


PASADENA
CITY COLLEGE

6.

District-Wide Land Use



SECTION 6

District-Wide Land Use



SATELLITE LOCATIONS

EMP GOALS

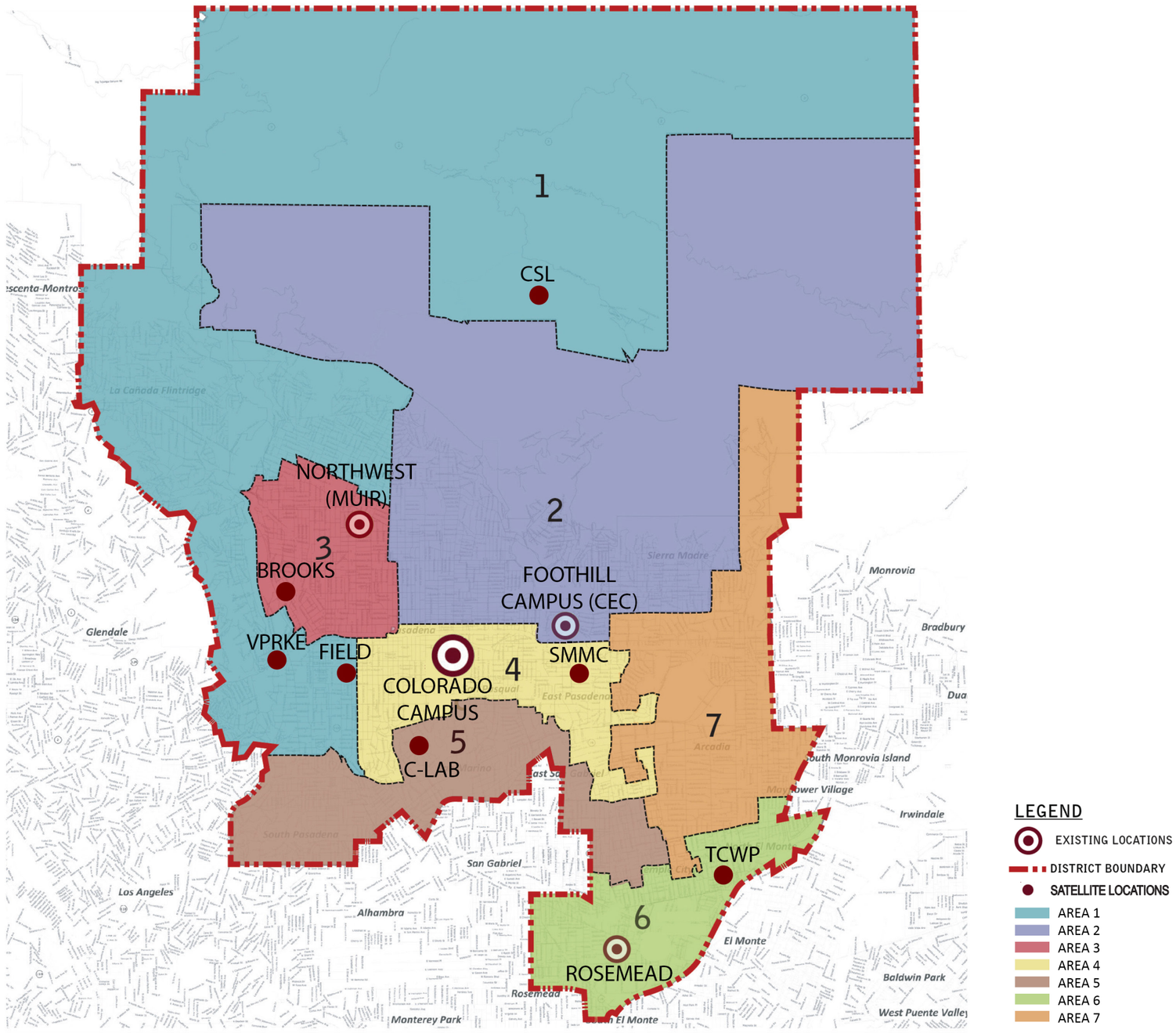
The Educational Master Plan (EMP) discussed priorities for the District facilities that includes satellite locations. Following are points from the EMP that are related to physical space required to serve the needs of the District and its diverse student population.

The District needs were analyzed from a variety of viewpoints to help determine the ideal locations for future satellite facilities. The PCC District covers a large area with diverse concentrations of residents, a wide range of income levels and different levels of access to transportation. The optimal locations for future facilities will be distributed throughout the community in higher population areas, with lower income levels and better access to available transportation. This will allow PCC to best serve the needs of its community and allow for partnerships with businesses and the community to expand the educational opportunities with the District and improve in-District enrollment beyond the current 29% rate.

DISTRICT-WIDE LAND USE MAPS

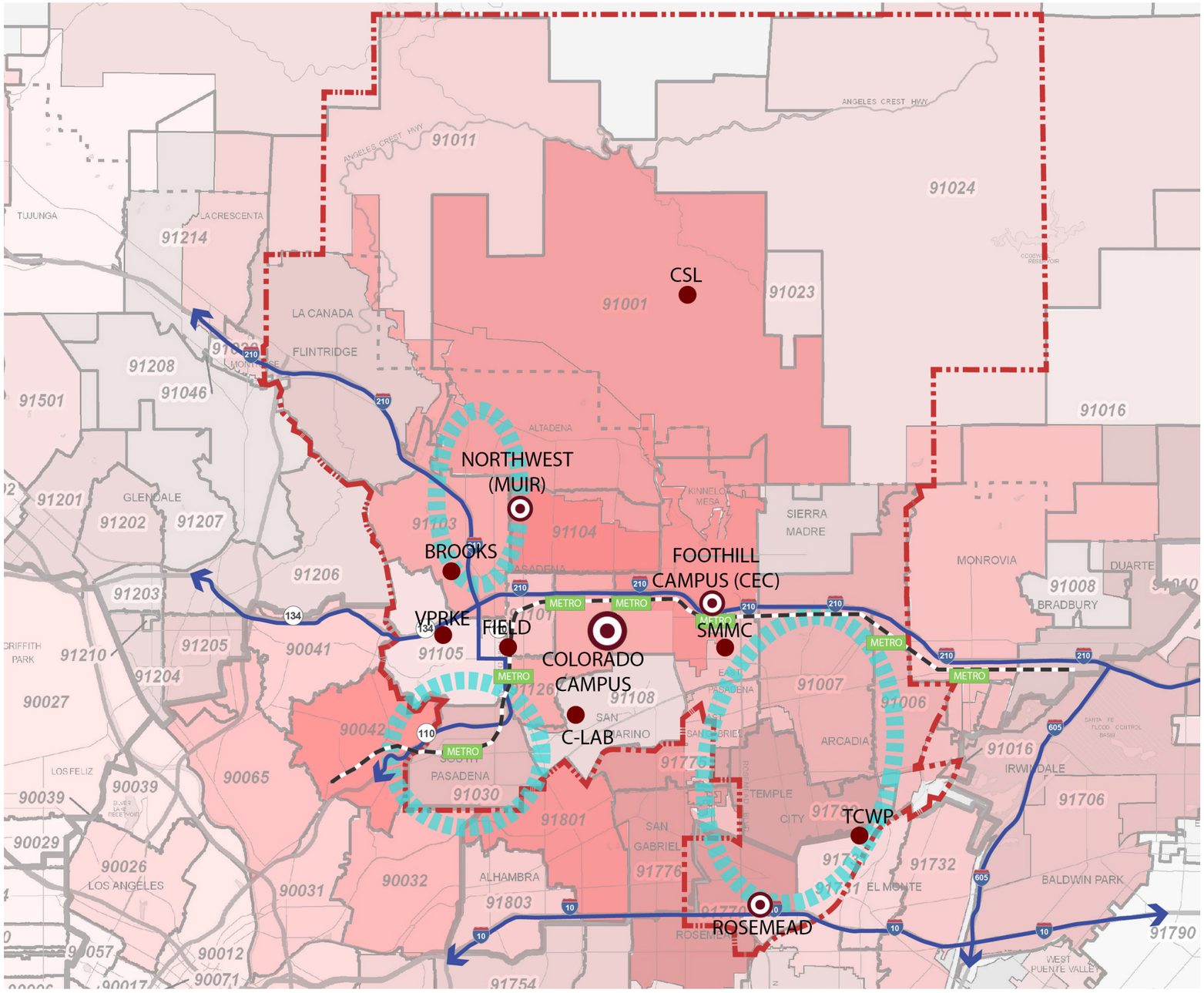
The District-Wide Land Use Map illustrates the locations of the various facilities serving the PACCD.

DISTRICT MAP WITH COLLEGES AND HIGH SCHOOLS



The map of PCC students by zip code shows the highest concentration areas where existing PCC students live.

STUDENT BY ZIP CODE



LEGEND

- EXISTING LOCATIONS
- SATELLITE LOCATIONS
- GOLD METRO LINE
- DISTRICT BOUNDARY

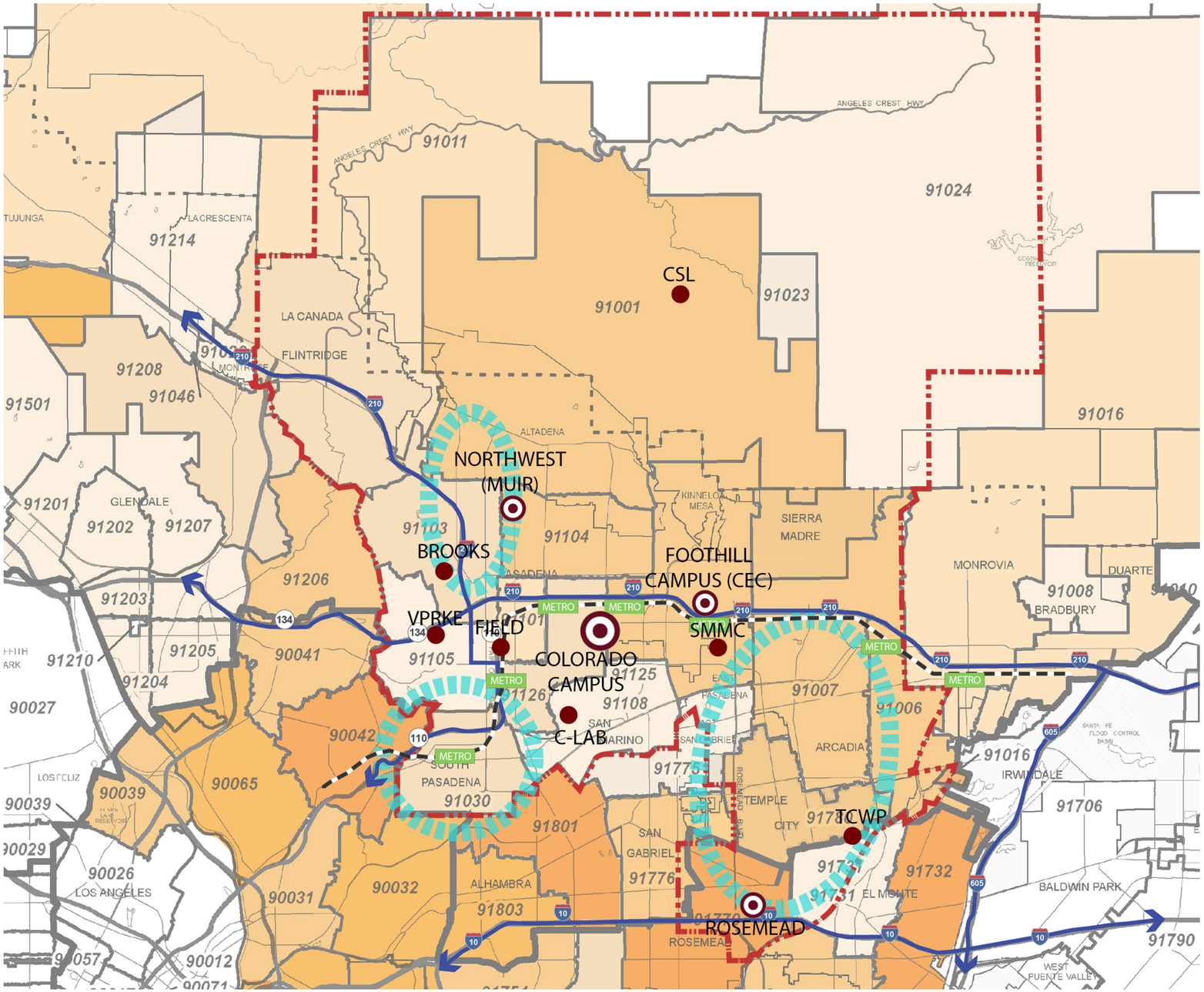
STUDENT DENSITY BY ZIP CODE:

0-100 101-200 201-300 301-400 401-500 501-600 601-700 701-800 801-900

- AREAS FOR POTENTIAL CENTER LOCATIONS

The density of population of residents in the District was analyzed to determine how to best serve the higher concentration of potential students with the closest facilities.

DISTANCE POPULATION DENSITY BY ZIP CODE



LEGEND

- EXISTING LOCATIONS
- SATELLITE LOCATIONS
- GOLD METRO LINE
- DISTRICT BOUNDARY

POPULATION DENSITY BY ZIP CODE:

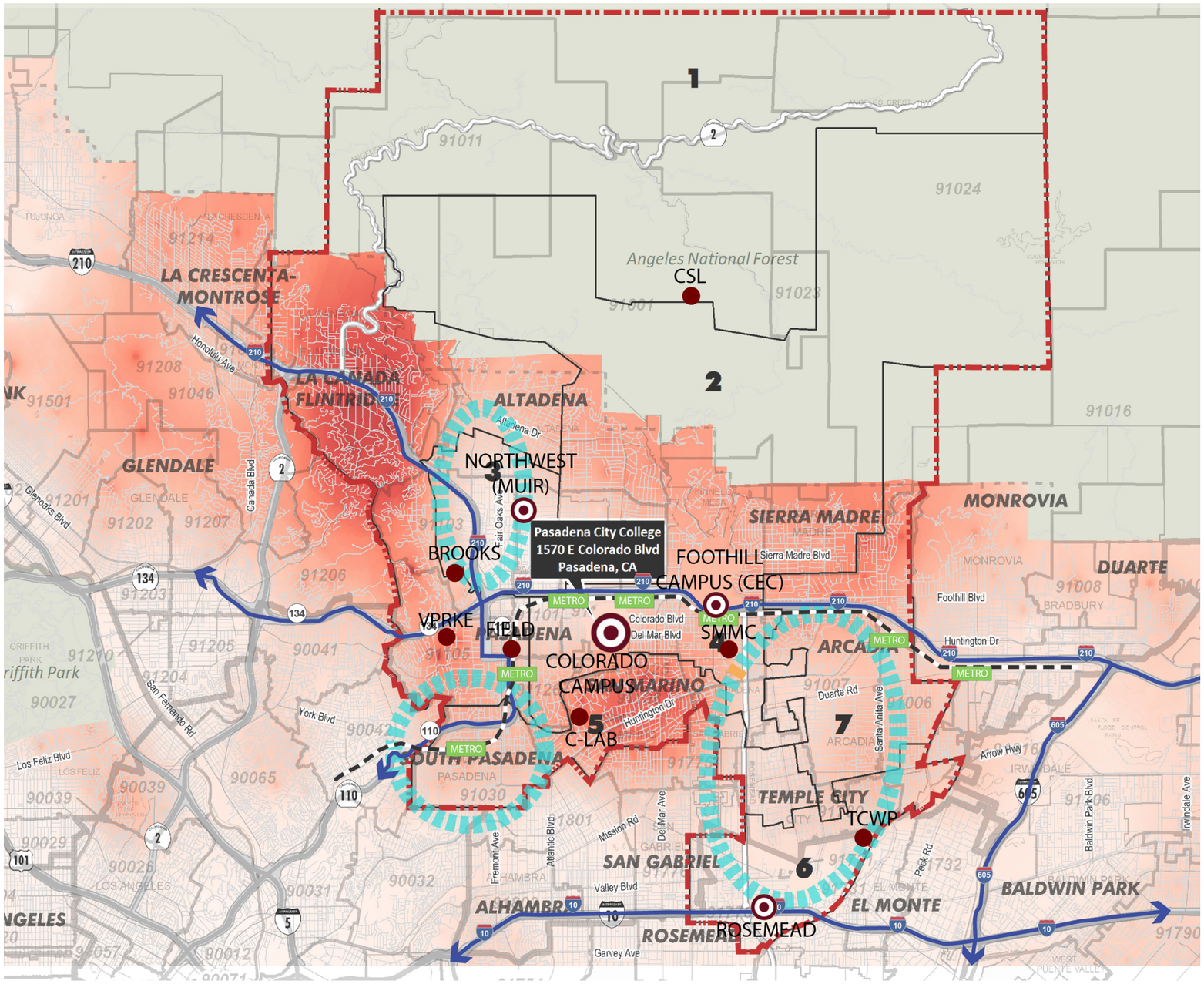
0-15k 15-30k 30-40k 45-60k 60-75k

- AREAS FOR POTENTIAL CENTER LOCATIONS

LOCATION ANALYSIS

The income levels of the District were mapped as they often reflect in inverse proportion. The lower income levels equal higher concentrations of community college students.

DISTRICT INCOME LEVELS



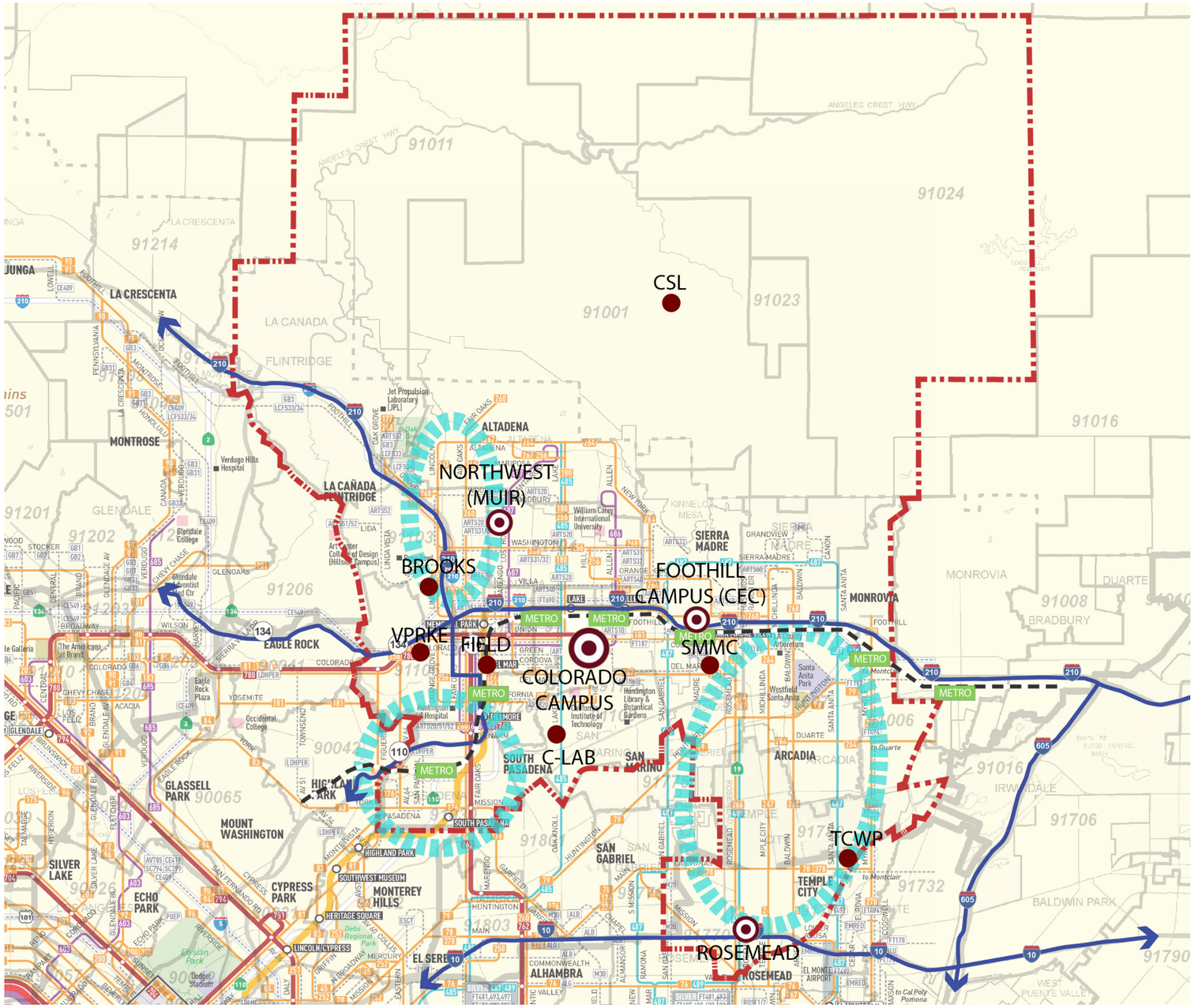
TRANSPORTATION

Transportation routes were analyzed for best freeway access, light rail line access, local roads and bus routes. Locating near existing transportation corridors will maximize access for students and minimize the need for shuttles and supplementary transportation provided by the District.

CONCLUSION

The areas denoted by the three ovals denote denotes district neighborhoods that could serve higher concentrations of students with satellite facilities. These areas have good public transportation, greenway access and higher densities of potential students. They are Northwest Pasadena, East Pasadena and South Pasadena.

TRANSPORTATION ACCESS





MAP OF CEC



FOOTHILL CAMPUS—COMMUNITY EDUCATION CENTER (CEC)

The PCC website states: "The Community Education Center (CEC) mission is to serve a diverse community focusing on capability, flexibility and empowerment." Classes are focused on core goals:

- Preparing transfer students
- Provide workforce to meet needs of current trends
- Promote life-long learning

Non-credit programs offered include:

- ESL & Civics Education
- Adult Basic Education
- Foster & Kinship Care and Independent Living Program
- High School Outreach Program
- Parent Education Program/Seniors & Disabled Adults
- Short-Term Career & Technical Education (CTE) Programs

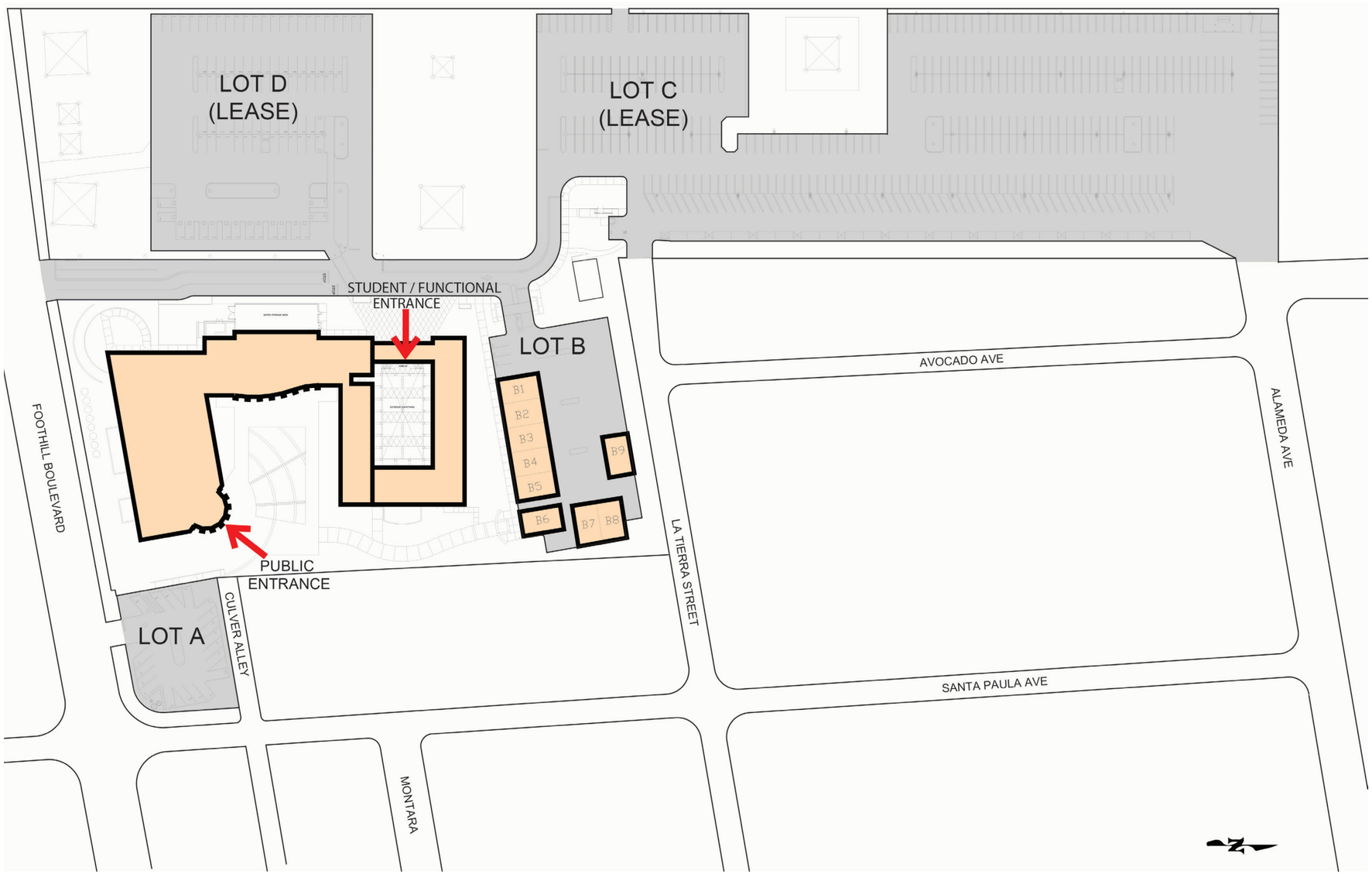
Due to the vacating of the U-Buildings on the Colorado campus, nursing and health sciences were relocated here, creating a strain on the existing programs which primarily serve non-credit programs.

Current zoning, and the parking owned by others, does not provide may opportunities for expansion of the Campus.

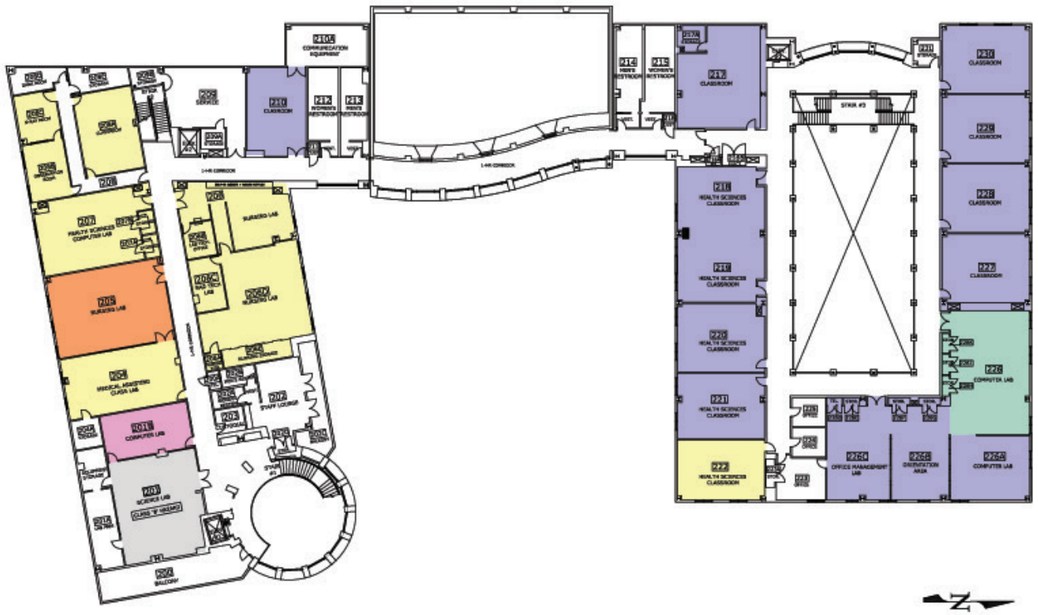
The campus is in excellent condition, and the portables are in good conditions. However, the long term goal is to not house students in portables.

BUILDING	SUM OF ASF	SUM OF GSF
Bungalow 1	900	960
Bungalow 2	900	960
Bungalow 3	900	960
Bungalow 4	900	960
Bungalow 5	883	960
Bungalow 6	889	960
Bungalow 7	897	960
Bungalow 8	897	960
Bungalow 9	—	480
Bungalow 10	900	960
Bungalow 11	900	960
Total Bungalows	8,966	10,080
CEC / Community ED	48,393	69,670
Grand Total	**57,359**	**79,750**

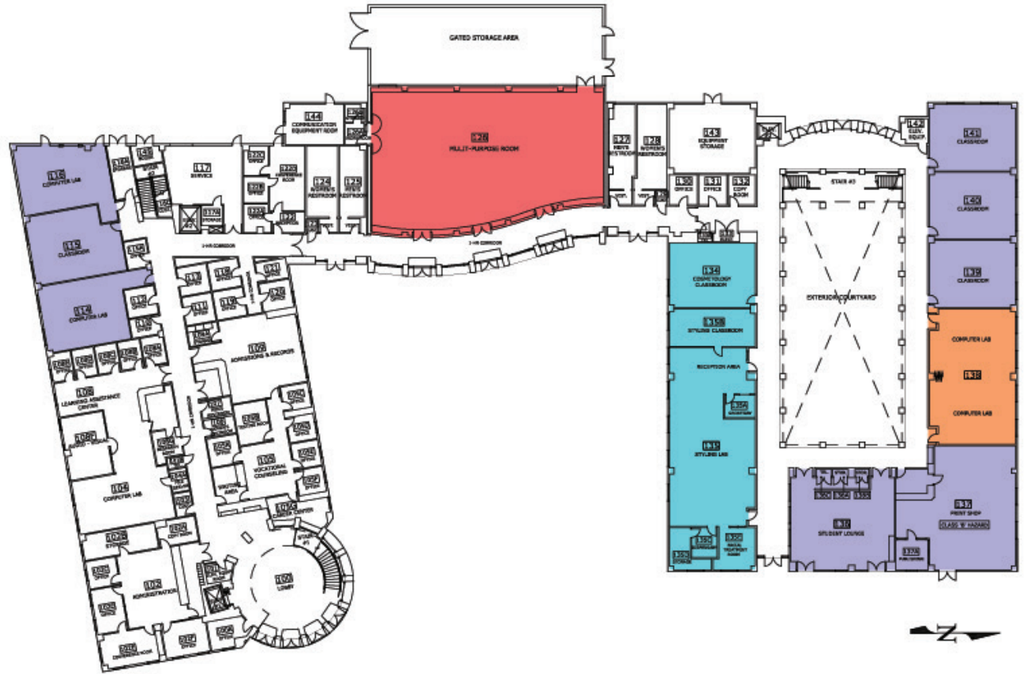
EXISTING PLAN OF CEC



EXISTING SECOND LEVEL FLOOR PLAN OF CEC



EXISTING FIRST LEVEL FLOOR PLAN OF CEC



MULTI-PURPOSE ROOM
COSMETOLOGY AND BARBERING
GENERAL ASSIGN
NOT SCHEDULED
NURSING AND MEDICAL ASSISTING
BUSINESS MANAGEMENT
GENERAL STUDIES
GENERAL CHEMISTRY

SPACE PROJECTIONS—FOOTHILL CAMPUS (CONTINUING EDUCATION CENTER)

GROWTH ELEGIBILITY - IDENTIFIES THE NEEDED OR EXCESS ASF WITHIN EACH DISTRICT														
			SPACE IN ASF						OTHER SPACE IS ABOUT 45% CURRENTLY AT CEC					
YEAR OUT	FY	CAMPUS & PROJECT	LECTURE	LAB	OFFICE	LIBRARY	AV / TV	TOTAL	OTHER SPACE TYPE	GRAND TOTAL ASF	TOTAL GSF	NET TO GROSS RATIO	TOTAL DISTRICT ENROLLMENT	TOTAL DISTRICT CERTIFICATED INSTRUCTIONAL STAFF AND STATUTORY STAFF FTE
	Existing ASF	Community Education Center	24,081	13,158	9,403	2,787	569	49,998	7,361	57,359	79,750	63%		
1	2020	Community Education Center	-16,765	6,765	2,597	-2,787	-226	-10,416			No Need		30,701	75
2	2021	Community Education Center	-16,714	6,905	2,597	-2,787	-226	-10,225			No Need		30,918	75
	2021	Armen Sarafian Building Seismic Replacement												
3	2022	Community Education Center	-16,661	7,048	2,597	-2,787	-226	-10,029			No Need		31,137	75
4	2023	Community Education Center	-16,609	7,190	2,597	-2,787	-226	-9,835			No Need		31,357	75
5	2024	Community Education Center	-16,556	7,333	2,597	-2,787	-226	-9,639			No Need		31,579	75
6	2025	Community Education Center	-16,503	7,478	-9,403	-2,787	-226	-21,441			No Need		31,802	
7	2026	Community Education Center	-16,449	7,625	-9,403	-2,787	-226	-21,240			No Need		32,027	
8	2027	Community Education Center	-24,081	-13,158	-9,403	-2,787	-226	-49,655					32,254	
9	2028	Community Education Center	-24,081	-13,158	-9,403	-2,787	-226	-49,655			No Need			
10	2029	Community Education Center	-24,081	-13,158	-9,403	-2,787	-226	-49,655			No Need			
11	2030	Community Education Center	-24,081	-13,158	-9,403	-2,787	-226	-49,655			No Need			

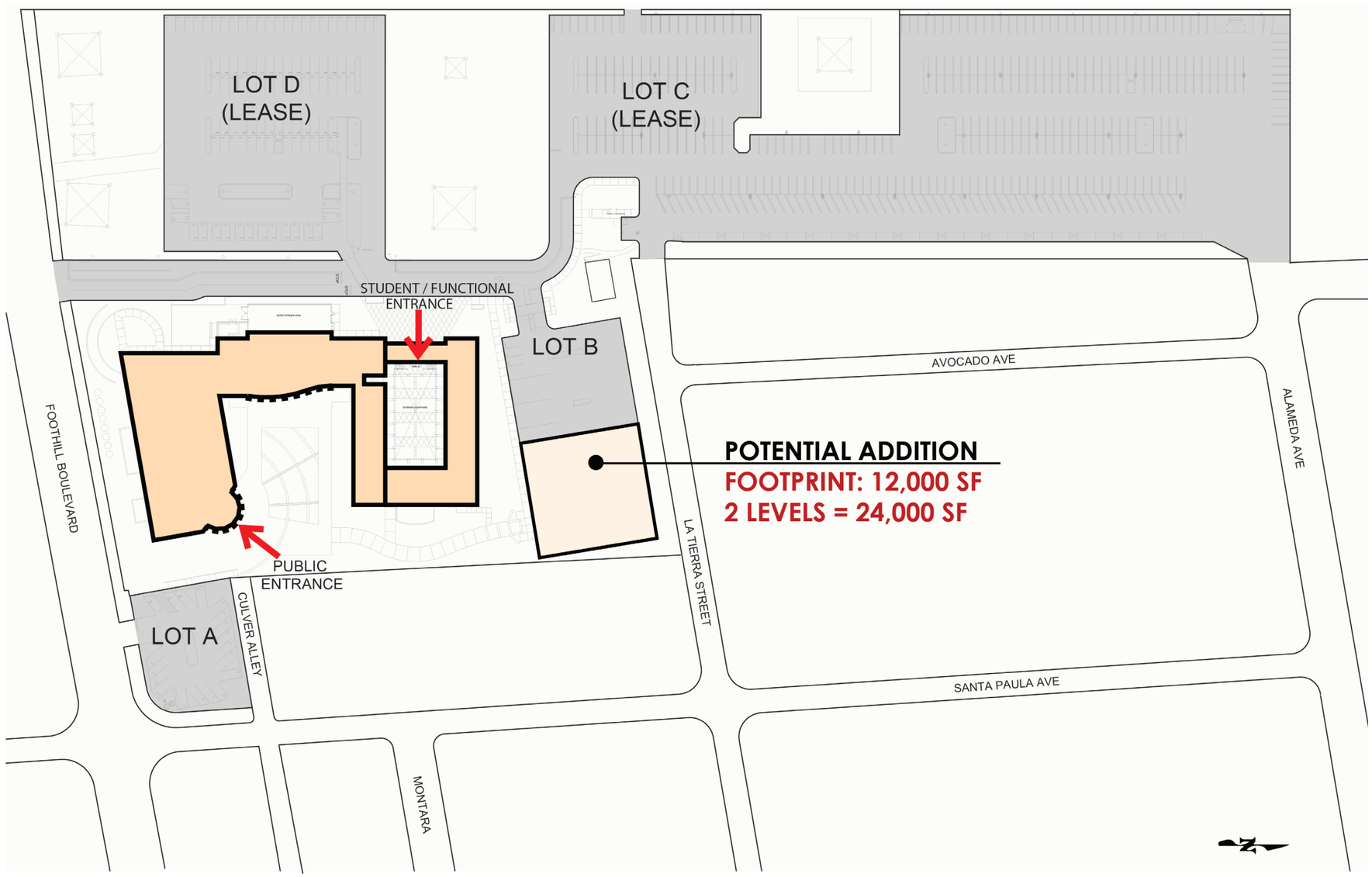
GROWTH ELIGIBILITY REPORT—2020-30

- There is a need for lab space (6,765 – 7,625 ASF) until 2027, then an excess.
- There is a need for office space (2,597 ASF) until 2025, then an excess.
- There is an excess of lecture space (-16,765 - -24,081 ASF).
- There is an excess of library space (-2,787 ASF) and AV/TV (-226 ASF).
- Overall there is an excess of -10,416 ASF currently growing to - 49,655 ASF by 2027.
- Based on the Growth Eligibility Report, constructing new space will be difficult to get approved by the State.
- Plans for new programs, such as phlebotomy are not included in the growth eligibility report, only projects currently showing up on the capital plan.
- The state is not forecasting any staff growth at this location.
- There are currently 10,000 GSF of space in the Bungalows. Opportunities to phase out portables should be investigated. Even removing the portables, there will still be an overall excess of space.

RECOMMENDATIONS

- Quantify new programs – WSCH, number of possible new staff and students – to justify a change in eligibility.
- Evaluate current classroom utilization. Look for opportunities to convert classroom space to needed laboratory and office space.
- Look at opportunities for creating student focused space.
- Focus on evaluating the existing facility for renovation opportunities.

POTENTIAL DEVELOPMENT PLAN OF CEC



RECOMMENDATIONS

The CEC facility offers valuable Non-Credit courses to the PACCCD and its diverse community. The Nursing and Health Sciences programs are temporarily located there due to the abandonment of the U Building on the Colorado campus. It is recommended that Nursing and Health Sciences relocate back to the Colorado campus which is focused on specialty programs and divisions that offer facilities for the entire District.

It is recommended that the CEC facility remain focused on its primary mission of Non-Credit courses. The site can be expanded to meet future needs of the community as the District grows and demands for programs and career training change. This would expand the existing building from its current 84,100 GSF to 109,000 GSF by 2024. By 2034 the existing facility could potentially be enlarged to a total of 120,000 GSF after the existing modular structures have exceeded their lifespan.



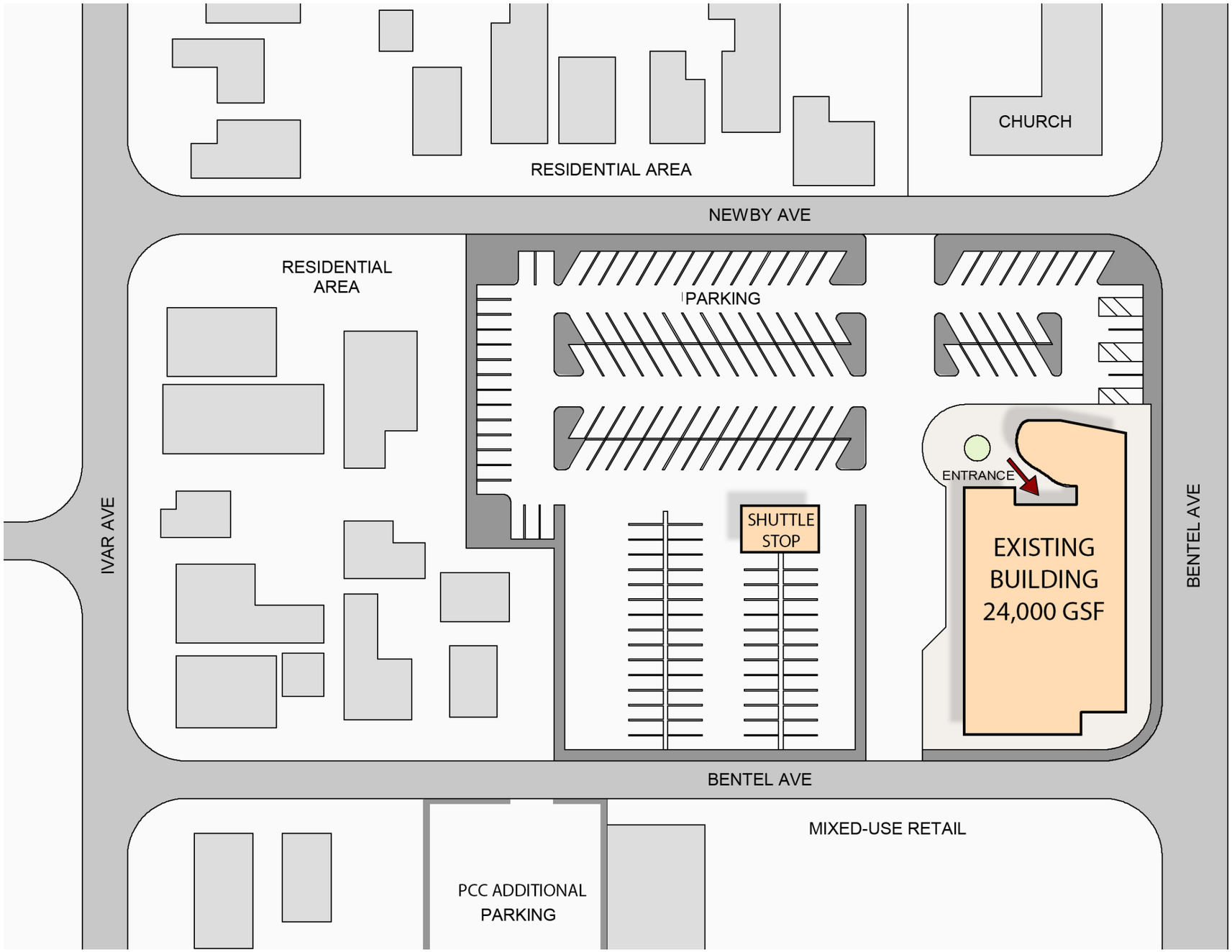
ROSEMEAD CAMPUS

The Rosemead campus of PCC is currently offering a wide variety of general education programs that serve the needs of the immediate community. Since opening in fall of 2013, the campus has grown from 1,000 to 2,000 students in less than one year. It is definitely meeting a needed demand for educational programs within the District as also illustrated by the Location Analysis.

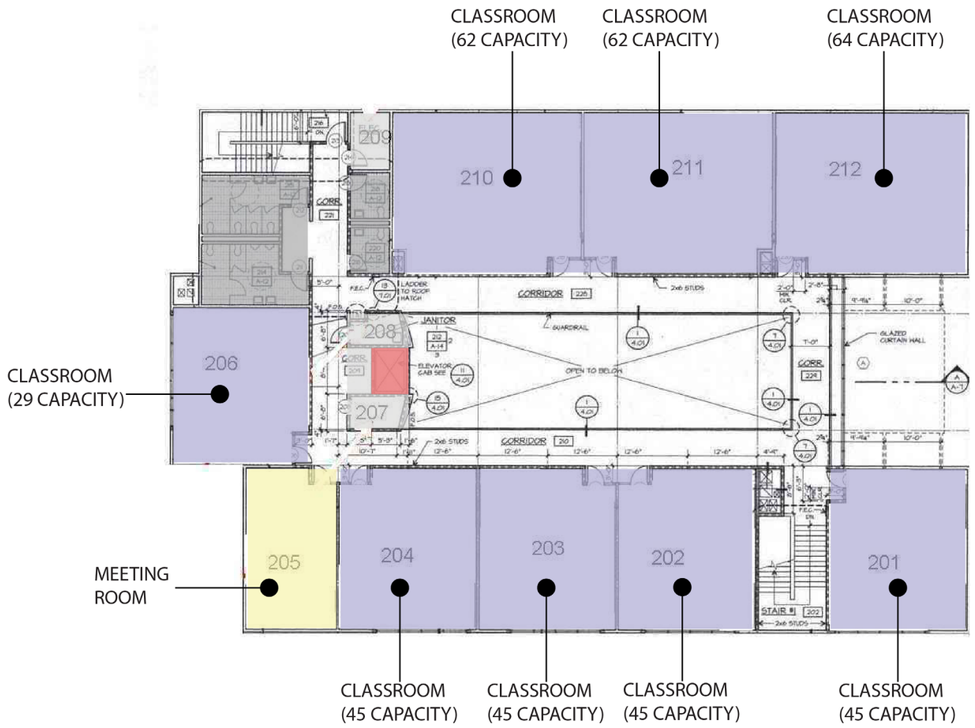
Currently classes are offered from the following Divisions:

- Business and Computer Technology
- English
- Kinesiology Health and Athletics
- Languages
- Mathematics
- Natural Sciences
- Performing and Communication Arts
- Social Sciences

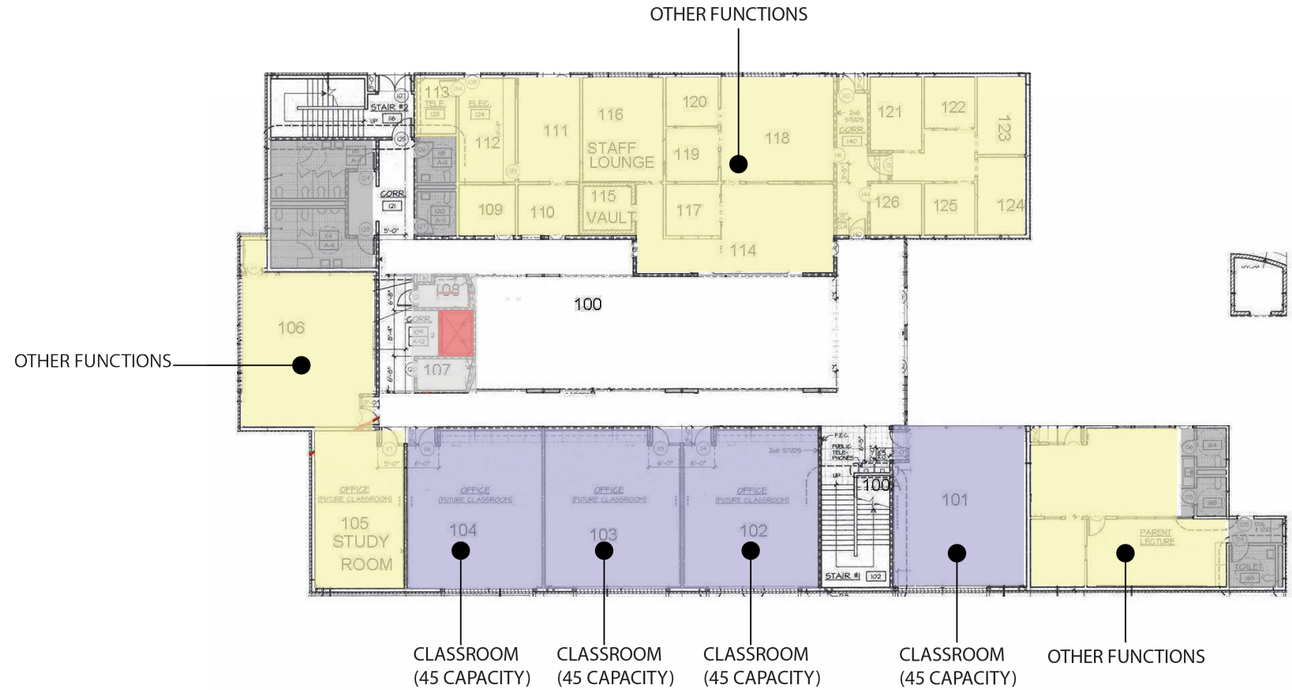
EXISTING PLAN OF ROSEMEAD CAMPUS



EXISTING SECOND LEVEL FLOOR PLAN OF ROSEMEAD CAMPUS



EXISTING FIRST LEVEL FLOOR PLAN OF ROSEMEAD CAMPUS



- CLASSROOM
- OTHER FUNCTIONS
- RESTROOM
- SUPPORT
- ELEVATOR

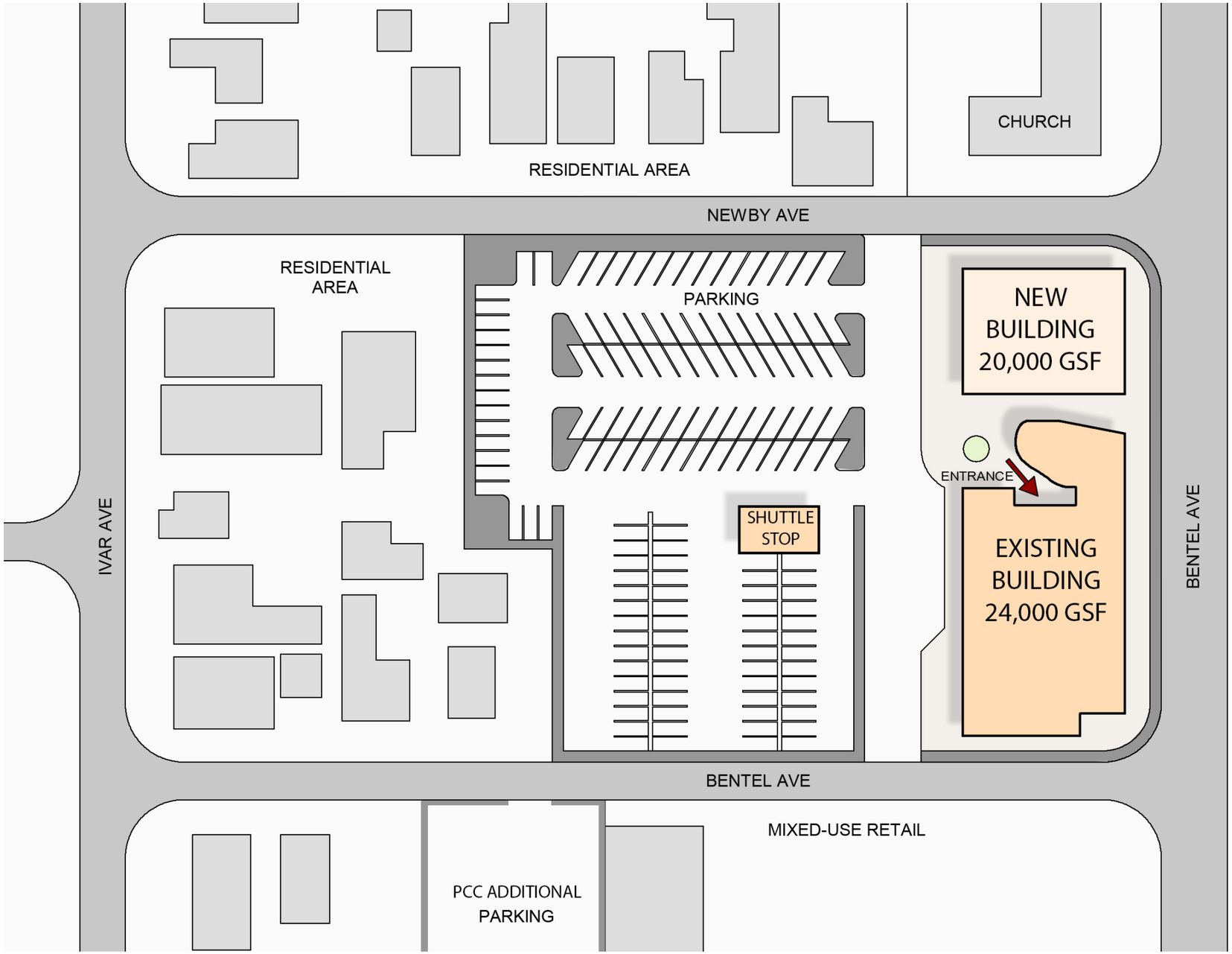
RECOMMENDATIONS

Rosemead could grow to a much larger facility serving the needs of the community now and into the future. The existing facility is 14,406 ASF and 24,000 GSF. If additional land could be obtained adjacent to the existing facility or a new larger site located within the neighborhood, the Rosemead campus could expand to potentially providing a full range of general education programs from each of the Divisions with classrooms, labs, administration, student affairs, library, student services, small food venue and support facilities . Career Technical Education programs could also be offered based on partnerships with the local community and businesses to truly offer a regionalized approach to education and offer relief to the landlocked Colorado campus of PCC.

Expansion would be phased over the fifty year Master Plan: by 2024 it could grow to 75,000 GSF. The Science Village portables at 44,000 GSF could be relocated here after construction of a STEM building on the Colorado campus to provide additional classroom and office space for the life span of the modular structures. In 2034 Rosemead could become 100,000 GSF after the modular village lifespan is exceeded, and by 2064 potentially, 200,000 GSF to meet the demands of the immediate community.

	ASF	GSF
Existing Building	14,406	24,000
Proposed Building		20,000 Footprint 40,000 - 2 Story

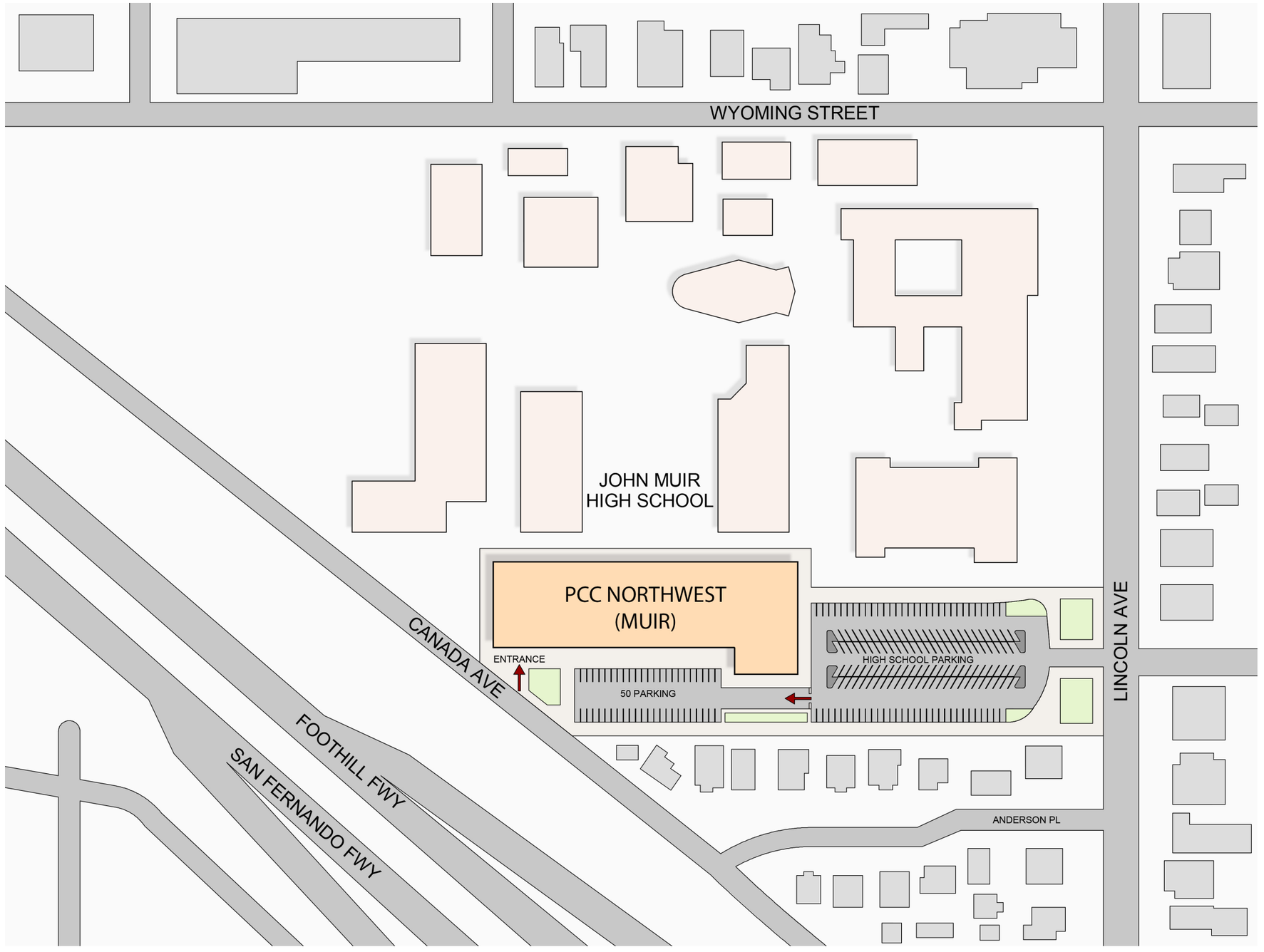
POTENTIAL DEVELOPMENT PLAN



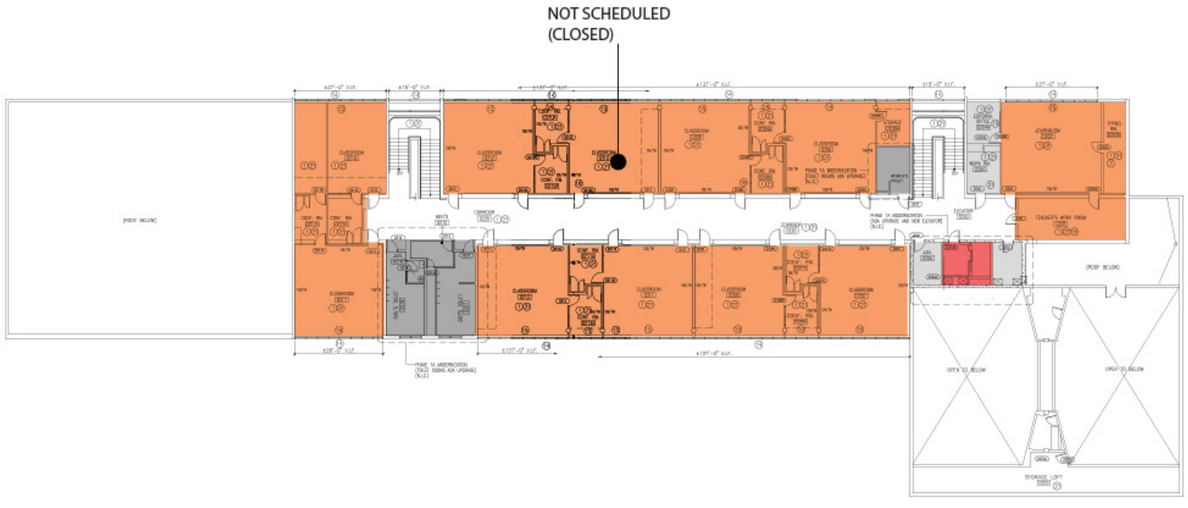


NORTHWEST SITE (JOHN MUIR HIGH SCHOOL)

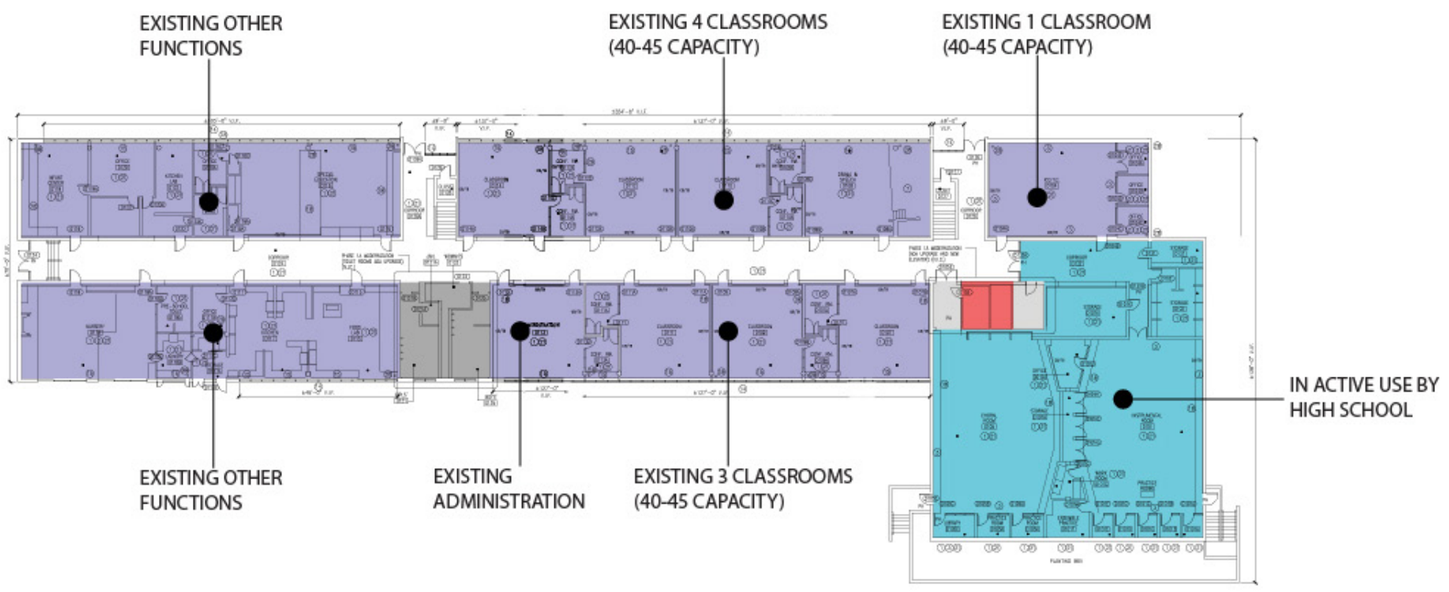
EXISTING MAP OF NORTHWEST SITE



EXISTING SECOND LEVEL FLOOR PLAN OF NORTHWEST SITE

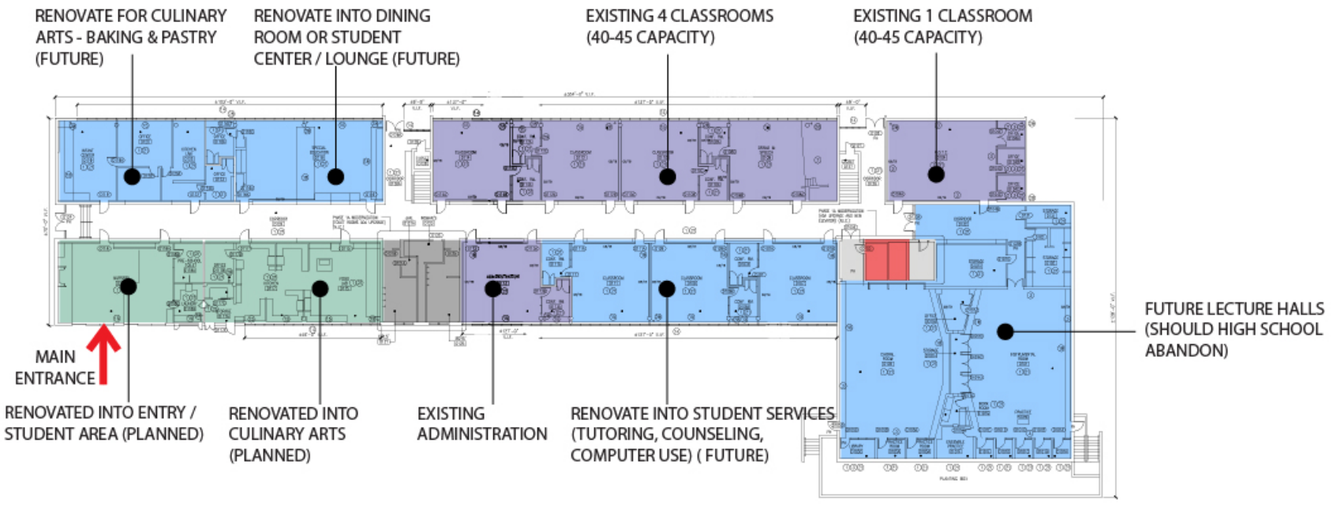


EXISTING FIRST LEVEL FLOOR PLAN OF NORTHWEST SITE



IN ACTIVE USE BY HIGH SCHOOL
EXISTING
NOT SCHEDULED (CLOSED)
RESTROOM
SUPPORT
ELEVATOR

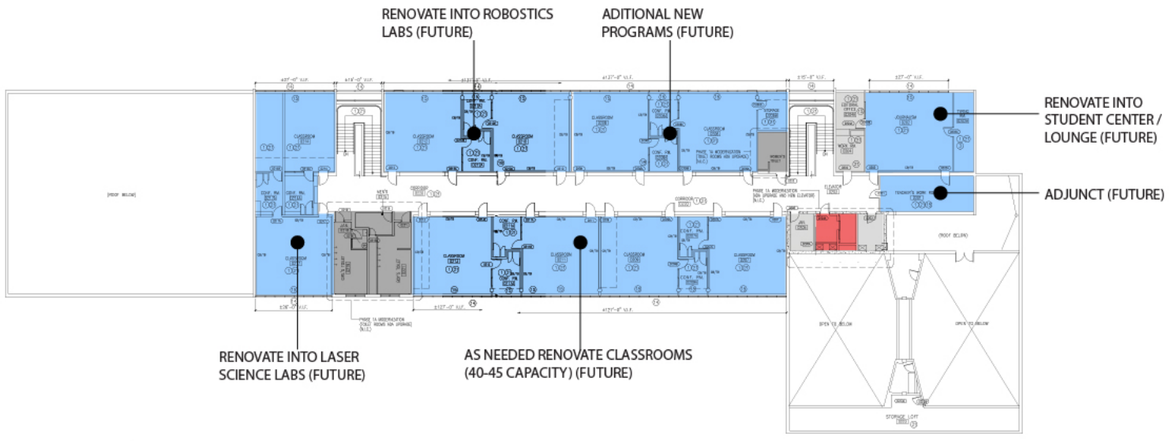
POTENTIAL DEVELOPMENT- SECOND LEVEL FLOOR PLAN



EXISTING
PLANNED
FUTURE
RESTROOM
SUPPORT
ELEVATOR

NOTE:
RESTROOMS AND ELEVATOR MAY REQUIRE UPGRADING FOR ACCESSABILITY / CODE REQUIREMENT

POTENTIAL DEVELOPMENT- FIRST LEVEL FLOOR PLAN

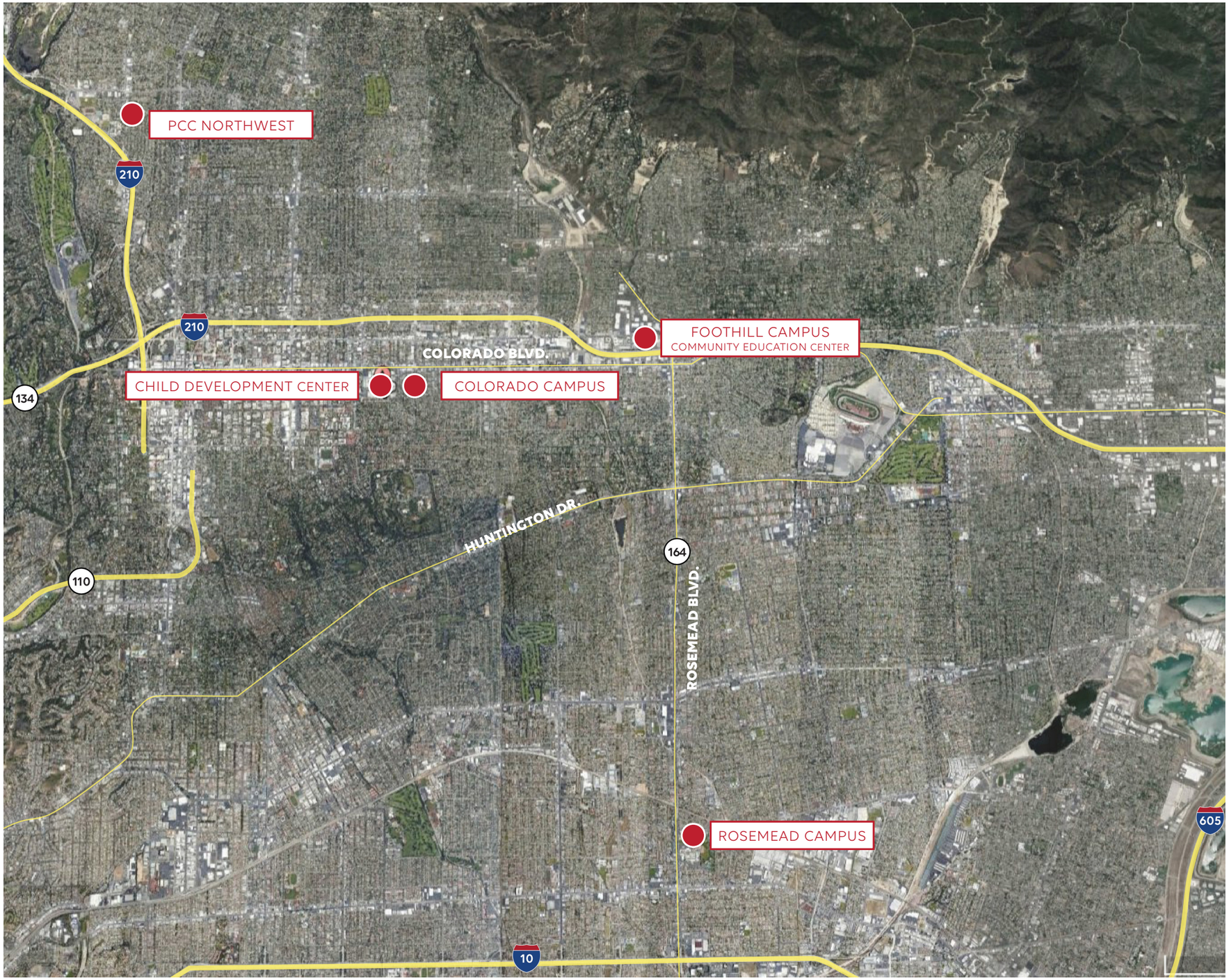


RECOMMENDATIONS

- Existing Classrooms (1st Floor)
- Add Classrooms (2nd Floor)
- In-Progress Culinary Arts (1st Floor)
- Add Culinary Arts (1st Floor)
- Add Laser Science (2nd Floor)
- Add Robotics (2nd Floor)
- Add Student Lounge, Study (1st and 2nd Floors)
- Add Administrative and Student Services (1st Floor)
- Improve Exterior Signage From Street to Entrance
- Unify Branding and Signage With Colorado Campus

SATELLITE PHASING

- Northwest - Renovation for new labs, classrooms, and student services
- Foothill Campus - Renovation of existing facility
- Foothill Campus - New building
- Rosemead - New building



7.

Site and Infrastructure



Site and Infrastructure

7.1 CIVIL NARRATIVE

RECOMMENDATIONS

A. SANITARY SEWER

Based on as-built drawings provided by the City of Pasadena Public Works Department and existing underground utilities represented in document titled *PCC_CLT Presentation Infrastructure*, PCC has various sewer connections along Colorado Boulevard, Del Mar Boulevard, and Bonnie Avenue. Colorado Boulevard has a 15" to 18" sewer main flowing from west to east direction. Del Mar Boulevard has a 8" to 12" sewer main flowing from from west to east direction. Bonnie Avenue has a 8"

Based on the information collected, the west half of the campus sewer system appears to be collected by an unknown main pipe running from south to north direction between Lot 1 and Building CC and connects to public sewer line in Colorado Boulevard.

The other easterly half of the campus sewer system appears to be collected by an unknown main pipe running from north to south direction between Lot 5 and Building GM (Gymnasium) and connects to public sewer main in Bonnie Avenue.

A new sewer lateral will be required for each new building including Student Service Building, Academic Building, Café, Sarafian Building, and STEM and Health Sciences Building. At full built-out, 10 existing buildings (HH, L,U, UU, SV, A, V, LP, W, and Z) will be demolished and 6 new buildings will be constructed. To determine the potential impact on the existing sanitary sewer facilities, LACSD No. 8's User Categories and Mean Loadings table was used to calculate pre and post development average daily wastewater flows. Peak flows were calculated using the relationship between Average Dry Weather Flow (ADWF) and Peak Dry Weather Flow (PDWF) per Section F235 of the City of Los Angeles, Bureau of Engineering Sewer Design Manual, Part F, given by:

$Q_{PDWF}=2.64\ (\ Q_{ADWF})^{0.905}$

The estimated existing buildings' average daily and peak sewer loads are summarized in Table 1 and the proposed buildings' predicted loads are listed in Table 2. By comparing the total combined Peak Dry Weather Flow of existing buildings (191,565 GPD) versus the new buildings (95,118 GPD), the potential full built-out of the Facilities Master Plan will reduce the total campus sewer load significantly, nearly by half the amount of the existing load.

TABLE 1 - EXISTING SEWAGE LOADS (EXISTING CONDITIONS)

Building ID	Building Name	User Category	Estimated Existing Area[1] (SF)	Unit of Measure	Unit Flow (GPD)	Average Dry Weather Flow[2] Q (GPD)	Peak Dry Weather Flow Q_{peak} (GPD)
HH	Harberson Hall	Office/ Classroom	2,400	1000 SF	200	480	2,513
L	Student Center	Office/ Classroom	21,300	1000 SF	200	4,260	18,122
U	Armen Sarafian	Office/ Classroom	25,460	1000 SF	200	5,092	21,297
UU	Forum	Office/ Classroom	8,580	1000 SF	200	1,716	7,959
SV	Science Village	Office/ Classroom	45,850	1000 SF	200	9,170	36,269
A	Annex	Office/ Classroom	4,400	1000 SF	200	880	4,349
V	Howard Marvin	Office/ Classroom	25,300	1000 SF	200	5,060	21,176
LP	Lancers Pass	Office/ Classroom	7,200	1000 SF	200	1,440	6,791
W	Gymnasium	Office/ Classroom	30,550	1000 SF	600	18,330	67,882
Z	Ceramics	Gym	5,370	1000 SF	200	1,074	5,208
					Total:	47,502	191,565

[1] Existing building square footage are approximate and are based on PCC Base Maps
[2] Average daily flow are based on "An Ordinance Prescribing the Connection Fee Rate and Mean Loading per Unit of Usage for County Sanitation District No. 8 of Los Angeles County"
[3] Peak dry weather flow is calculated as 2.64 x ADWF0.905 per Section F235 of the City of Los Angeles, Bureau of Engineering Sewer Design Manual – Part F, where ADWF is in cfs.

City of Los Angeles, Bureau of Engineering Sewer

Building Name	User Category	Estimated Existing Area1 (SF)	Unit of Measure	Unit Flow (GPD)	Average Dry Weather Flow[2] Q (GPD)	Peak Dry Weather Flow Q_{peak} (GPD)
Student Services	Office / Classroom	22,000	1000 SF	200	4,400	18,660
Café	Office / Classroom	3,730	1000 SF	200	746	3,745
Sarafian	Office / Classroom	2,440	1000 SF	200	488	2,550
STEM + HS	Office / Classroom	27,600	1000 SF	200	5,520	22,911
Locker Facility	Office / Classroom	13,000	1000 SF	200	2,600	11,592
Academic	Office / Classroom	45,000	1000 SF	200	9,000	35,660
				Total:	22,754	95,118

[1] Building proposed square footage are based on Architectural Master Plans.
[2] Average daily flow are based on "An Ordinance Prescribing the Connection Fee Rate and Mean Loading per Unit of Usage for County Sanitation District No. 8 of Los Angeles County"
[3] Peak dry weather flow is calculated as 2.64 x ADWF0.905 per Section F235 of the City of Los Angeles, Bureau of Engineering Sewer Design Manual – Part F, where ADWF is in cfs.

B. STORM DRAIN

Based on the record research, there are two main storm drain lines running along Colorado Boulevard and Del Mar Boulevard. Colorado Blvd. has a 54" Reinforced Concrete Pipe (RCP) storm drain owned by LA County Flood Control District (LACFCD). The pipe upsizes to 132" RCP that transverses the northeast portion of the campus, Lot 7. Del Mar Avenue has a 36" LACFCD owned storm drain that runs from west to east.

The campus has an existing privately owned storm drain network, which consists of a series of catch basins and storm drain lines throughout the existing site. The exact size, location, and flow directions of pipes have not been verified, however based on the information provided by PCC, the campus' storm drain system appears to discharge towards the southeast corner of the campus. The stormwater treatment systems will capture and treat the runoff prior to connecting to the public storm drain system.

Per City of Pasadena's Low Impact Development (LID) requirements, the Municipal Separate Storm Sewer System (MS4) Permit establishes new LID requirements for new development and redevelopment projects. Development projects, which require the design and implementation of post-construction controls to mitigate stormwater pollution, prior to completion of the project(s), through the development of an LID Plan are as follows:

- All Development Projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of Impervious Surface area.
- Industrial Parks with 10,000 square feet or more of surface area.
- Commercial Malls with 10,000 square feet or more of surface area.
- Retail Gasoline Outlets with 5,000 square feet or more of surface area.
- Restaurants with 5,000 square feet or more of surface area.
- Parking Lots with 5,000 square feet or more of Impervious Surface area, or with 25 or more parking spaces.

Streets and road construction with 10,000 square feet or more of Impervious Surface area. Street and road construction applies to standalone streets, roads, highways, and freeway projects, as well as to streets within larger projects.

- Automotive Service Facilities with 5,000 square feet or more of surface area.
- Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (Pasadena does not have any Environmentally Sensitive Area), where the Development will:
  - Discharge Stormwater Runoff that is likely to impact a sensitive biological species or habitat; and
  - Create 2,500 square feet or more of Impervious Surface area
- Single-family Hillside Properties.
- Redevelopment Projects:
  - Construction Activity that results in the creation, addition, or replacement of 5,000 square feet or more of Impervious Surface area on an already developed Site of one of the Projects identified above.
  - Construction Activity that results in an alteration to more than 50% of Impervious Surface area on an already developed Site and the existing Site was not subject to post-construction stormwater quality control requirements, the entire Site must be mitigated.

The new MS4 Permit requires for projects to retain on-site the Stormwater Quality Design Volume (SWQDv) Defined as the runoff from:

- The 0.75-inch, 24-hour rain event (not applicable for Pasadena); or
- The 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyet map.

Based on the proposed buildings layout, the required volumes for each project to retain on-site are as below in Table 3:

TABLE 3 - SUMMARY OF STORMWATER QUALITY DESIGN VOLUMES

Building	Area (Acres)	85th Rainfall (Inches)	Soil Type	SWQDv (cubic-ft.)
Student Services	0.505	1.05	14	1718
Café	0.086	1.05	14	292
Sarafian	0.056	1.05	14	190
STEM + HS	0.634	1.05	14	2156
Locker Facility	0.298	1.05	14	1013
Academic	1.033	1.05	14	3514
Total:	**2.611**			**8,883**

C. FIRE WATER / DOMESTIC WATER

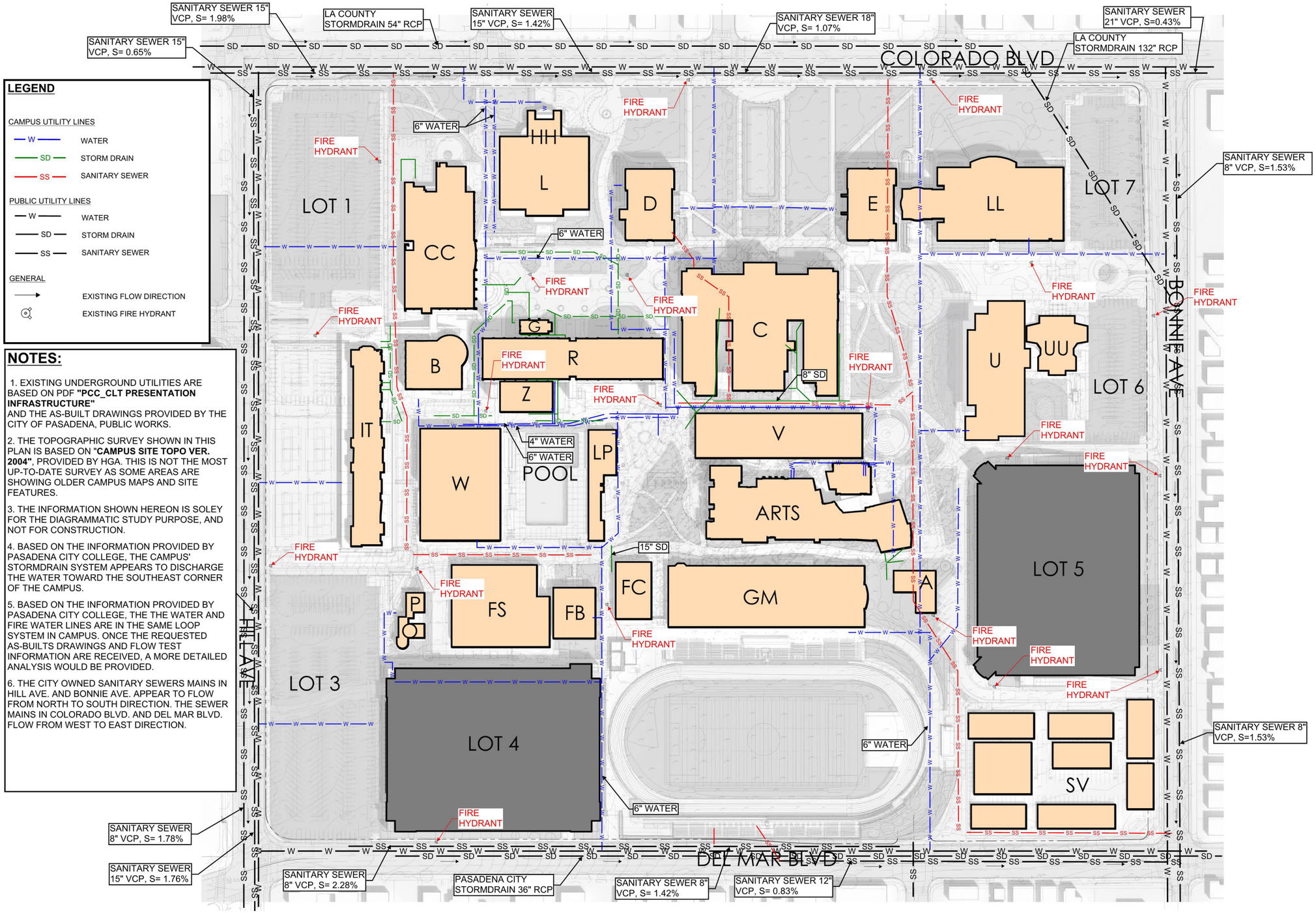
PCC water distribution is composed of a combined fire water and domestic water service loop that runs throughout the campus. Per as-built drawings provided by the City of Pasadena, the system consists of various 6" pipe being supplied by 24" main along Colorado Blvd., 8" main along Bonnie Ave., and 12" main along Del Mar Blvd.

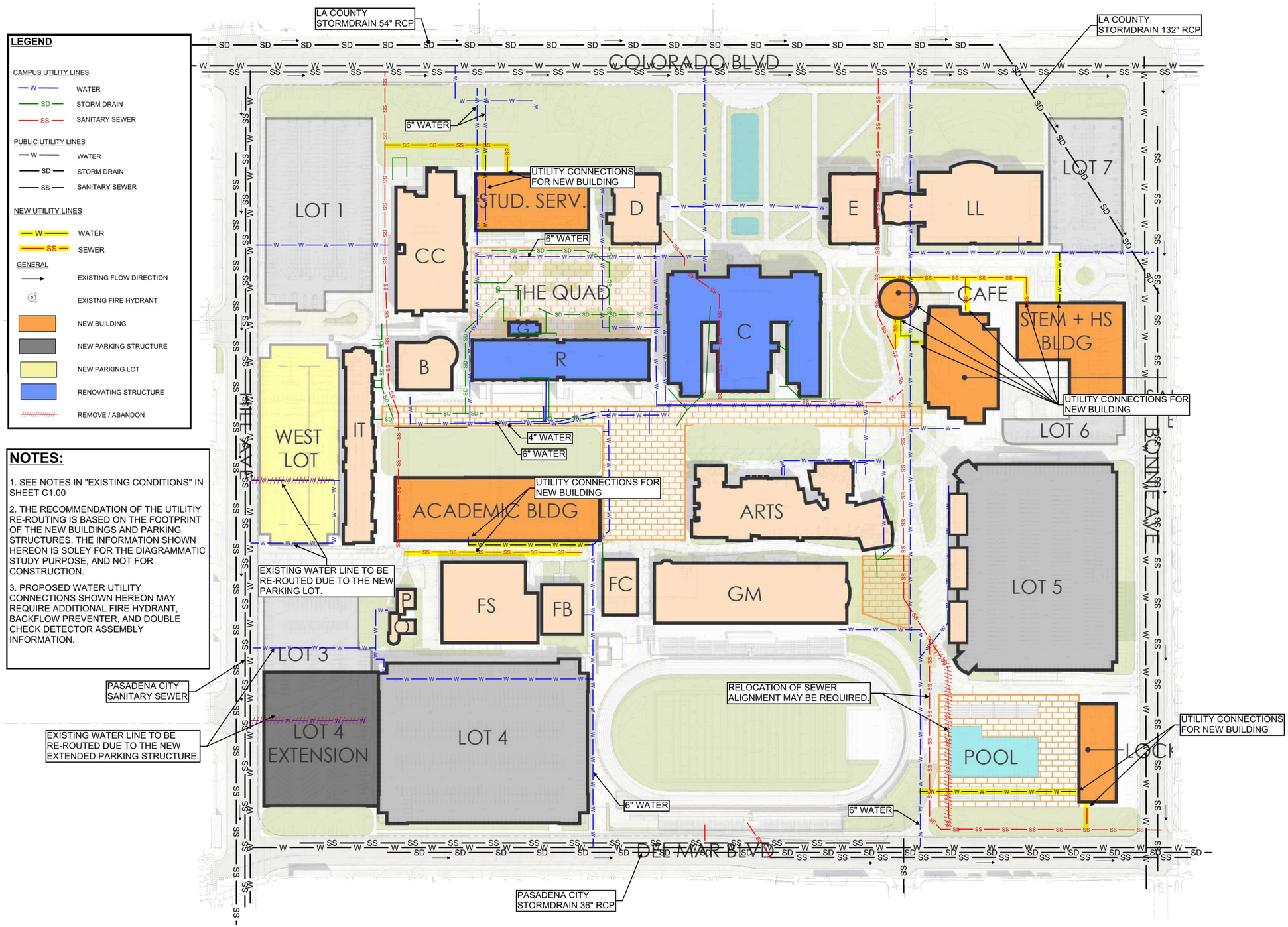
New connections will be required for each new buildings. It is anticipated the new buildings domestic and fire water laterals will be a manifold connection to the existing 6" water mains throughout the campus. Each system will require a backflow prevention device assembly and a fire department connection. There appears to be 14 private hydrants and 6 city owned hydrants in campus. Each system will require a backflow prevention device assembly and a fire department connection.

D. FIRE ACCESS AND FIRE HYDRANTS

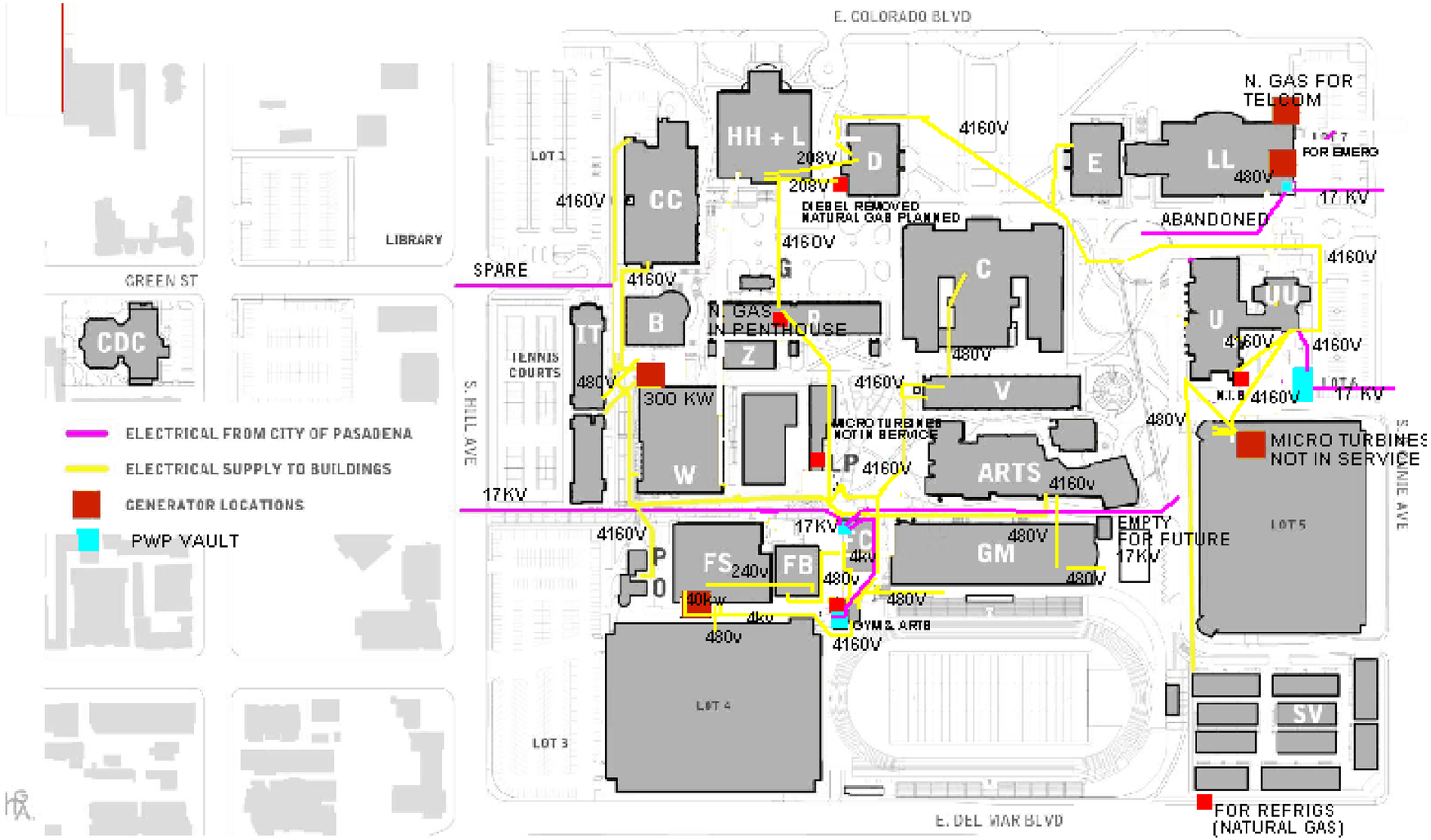
Based on the information provided by PCC, there appears to be 14 private hydrants and 6 city-owned hydrants in campus. There is not enough information to determine the hydraulics of the pressurized lines, fire, and domestic water.




LEGEND
CAMPUS UTILITY LINES
W WATER
SD STORM DRAIN
SS SANITARY SEWER
PUBLIC UTILITY LINES
W WATER
SD STORM DRAIN
SS SANITARY SEWER
GENERAL
EXISTING FLOW DIRECTION
EXISTING FIRE HYDRANT
NOTES:
1. EXISTING UNDERGROUND UTILITIES ARE BASED ON PDF "PCC_CLT PRESENTATION INFRASTRUCTURE" AND THE AS-BUILT DRAWINGS PROVIDED BY THE CITY OF PASADENA, PUBLIC WORKS.
2. THE TOPOGRAPHIC SURVEY SHOWN IN THIS PLAN IS BASED ON "CAMPUS SITE TOPO VER. 2004", PROVIDED BY HGA. THIS IS NOT THE MOST UP-TO-DATE SURVEY AS SOME AREAS ARE SHOWING OLDER CAMPUS MAPS AND SITE FEATURES.
3. THE INFORMATION SHOWN HEREON IS SOLEY FOR THE DIAGRAMMATIC STUDY PURPOSE, AND NOT FOR CONSTRUCTION.
4. BASED ON THE INFORMATION PROVIDED BY PASADENA CITY COLLEGE, THE CAMPUS' STORMDRAIN SYSTEM APPEARS TO DISCHARGE THE WATER TOWARD THE SOUTHEAST CORNER OF THE CAMPUS.
5. BASED ON THE INFORMATION PROVIDED BY PASADENA CITY COLLEGE, THE THE WATER AND FIRE WATER LINES ARE IN THE SAME LOOP SYSTEM IN CAMPUS. ONCE THE REQUESTED AS-BUILTS DRAWINGS AND FLOW TEST INFORMATION ARE RECEIVED, A MORE DETAILED ANALYSIS WOULD BE PROVIDED.
6. THE CITY OWNED SANITARY SEWERS MAINS IN HILL AVE. AND BONNIE AVE. APPEAR TO FLOW FROM NORTH TO SOUTH DIRECTION. THE SEWER MAINS IN COLORADO BLVD. AND DEL MAR BLVD. FLOW FROM WEST TO EAST DIRECTION.
SANITARY SEWER 15" VCP, S= 1.98%
LA COUNTY STORMDRAIN 54" RCP
SANITARY SEWER 15" VCP, S= 1.42%
SANITARY SEWER 18" VCP, S= 1.07%
SANITARY SEWER 21" VCP, S=0.43%
SANITARY SEWER 15" VCP, S= 0.65%
LA COUNTY STORMDRAIN 132" RCP
COLORADO BLVD
SANITARY SEWER 8" VCP, S=1.53%
LOT 1
LOT 7
LOT 6
LOT 5
LOT 4
LOT 3
HH
L
D
E
LL
CC
G
C
B
R
Z
U
UU
IT
W
POOL
LP
V
ARTS
P
FS
FB
FC
GM
A
SV
6" WATER
4" WATER
15" SD
8" SD
FIRE HYDRANT
HILL AVE
BONNIE AVE
DEL MAR BLVD
SANITARY SEWER 8" VCP, S= 1.78%
SANITARY SEWER 15" VCP, S= 1.76%
SANITARY SEWER 8" VCP, S= 2.28%
PASADENA CITY STORMDRAIN 36" RCP
SANITARY SEWER 8" VCP, S= 1.42%
SANITARY SEWER 12" VCP, S= 0.83%


LEGEND
CAMPUS UTILITY LINES
W WATER
SD STORM DRAIN
SS SANITARY SEWER
PUBLIC UTILITY LINES
W WATER
SD STORM DRAIN
SS SANITARY SEWER
NEW UTILITY LINES
W WATER
SS SEWER
GENERAL
EXISTING FLOW DIRECTION
EXISTNG FIRE HYDRANT
NEW BUILDING
NEW PARKING STRUCTURE
NEW PARKING LOT
RENOVATING STRUCTURE
REMOVE / ABANDON
NOTES:
1. SEE NOTES IN "EXISTING CONDITIONS" IN SHEET C1.00
2. THE RECOMMENDATION OF THE UTILITIY RE-ROUTING IS BASED ON THE FOOTPRINT OF THE NEW BUILDINGS AND PARKING STRUCTURES. THE INFORMATION SHOWN HEREON IS SOLEY FOR THE DIAGRAMMATIC STUDY PURPOSE, AND NOT FOR CONSTRUCTION.
3. PROPOSED WATER UTILITY CONNECTIONS SHOWN HEREON MAY REQUIRE ADDITIONAL FIRE HYDRANT, BACKFLOW PREVENTER, AND DOUBLE CHECK DETECTOR ASSEMBLY INFORMATION.
LA COUNTY STORMDRAIN 54" RCP
LA COUNTY STORMDRAIN 132" RCP
COLORADO BLVD
6" WATER
UTILITY CONNECTIONS FOR NEW BUILDING
6" WATER
UTILITY CONNECTIONS FOR NEW BUILDING
4" WATER
6" WATER
UTILITY CONNECTIONS FOR NEW BUILDING
EXISTING WATER LINE TO BE RE-ROUTED DUE TO THE NEW PARKING LOT.
PASADENA CITY SANITARY SEWER
EXISTING WATER LINE TO BE RE-ROUTED DUE TO THE NEW EXTENDED PARKING STRUCTURE.
RELOCATION OF SEWER ALIGNMENT MAY BE REQUIRED.
UTILITY CONNECTIONS FOR NEW BUILDING
6" WATER
6" WATER
DEL MAR BLVD
PASADENA CITY STORMDRAIN 36" RCP
LOT 1
CC
STUD. SERV.
D
E
LL
LOT 7
THE QUAD
G
R
B
C
CAFE
STEM + HS BLDG
LOT 6
WEST LOT
IT
ACADEMIC BLDG
ARTS
LOT 5
FC
GM
FS
FB
P
LOT 3
LOT 4 EXTENSION
LOT 4
POOL
LOCK
WILLIAM ALLEN
LOS ROBLES AVE
BUENA VISTA

EXISTING ELECTRICAL DISTRIBUTION MAP



7.2 ELECTRICAL NARRATIVE

The electrical section of this master plan makes use of several electrical terms which the reader may not be familiar with or may not have heard before. Therefore, this introduction will contain a brief overview of some of the terms and systems that will help familiarize the reader with how electricity is distributed throughout the campus.

Pasadena Water and Power (PWP) serves the Colorado campus with four 17,000 Volt or 17 kV (kilovolt) lines. The Child Development Center (CDC) and Foothill Campus are served by separate PWP services. The interconnection of all the high voltage lines is commonly referred to as the "power grid" or just "grid" for short. All of these high voltage lines travel back to their respective power generation plant. The lines are operated at a high voltage rather than at a high amperage because it is a much more efficient way to distribute electricity for the utility.

For the Colorado campus, the four 17 kV service lines come into PWP vaults. These vaults are owned by PWP and are locked by them to prevent unauthorized entry. The vaults can serve several purposes, such as splicing or splitting the incoming cables, switching the incoming lines or transforming the voltage into another one that will be more useful for distribution to a building.

Splicing or splitting the cables is self-explanatory and there are numerous places where the high voltage lines are split on the Colorado campus. Splicing is done to avoid having to pull additional cables but sometimes there can be problems at the splicing locations. Splicing is also done to remove bad sections of cable without having to repull the entire length of cable again.

Switching is done to switch from one line to another, perhaps one has seen this before when power goes out and then 30 – 45 seconds later comes back on. This is most likely an automatic transfer switch operating from the utility that will open the breaker on the downed line and then close the breaker on a line from another source.

The third thing that commonly takes place in a vault is voltage transformation. Unless each building has a main switchboard that is rated for 17 kV, there needs to be some way to step that voltage down to something that is more commonplace and usable. 17 kV and 4160 V are common distribution voltages and 480/277 V and 120/208 V are common utilization voltages. Most buildings will operate at one of these two voltages and manufacturers offer numerous types of gear that are rated for these voltages.

Transformers, as their name suggests, transform the voltage from one level and configuration to another level and configuration. Most transformers which serve buildings come in with high voltage lines on the primary side and leave with lower voltage lines on the secondary side. The most common type of transformer configuration is a delta-wye configured transformer. This transformer configuration has three high voltage lines on the primary (delta configuration) and then transforms them to three lower voltage lines on the secondary with a neutral point connection (wye configuration). This neutral point connection is a neutral point between the three phase conductors and is useful for powering up lights at 277 V or receptacles at 120 V. Services can be at 480 V (3 Phase, 3 Wire) or 480/277 V (3 Phase, 4 Wire). The difference is that the 4 wire service has 277 V power available for lights and other equipment whereas a 3 wire service would only have 480 V available.

A building that is 480/277 V will have transformers to get to 120/208 V to feed receptacles but a 120/208 V building has no need for transformers. In general, larger buildings are served at 480/277 V and smaller buildings are served at 120/208V. While 120/208V buildings do not contain transformers, they are limited on power as 480/277 V buildings have more than twice the amount of power available for the same size service.

Transformers come in various shapes and sizes depending on their application. Transformers can be located in PWP vaults, outside of buildings (large green pad mounted transformers) or inside buildings. Large transformers located inside the buildings are called substations. These are used when there is no room or it is undesirable to place a transformer outside of the building. They are essentially just a very large transformer indoor transformer. In 480/277 V buildings, smaller transformers are found in the electric rooms to step the voltage down from 480 V to 120/208V for power distribution. These can be various sizes but the most common are 112.5 kVA, 75 kVA, 45 kVA and 30 kVA. The kVA stands for kilovolt-amperes and represents a power capacity for the transformers, where a 75 kVA transformer has as much power capacity as a 30 kVA and 45 kVA transformer put together.

Outside of the PWP vaults, the power lines still need to be distributed to the buildings on campus. The easiest way to do this is to keep them at higher voltages, that is why the main interconnecting lines are at 17 kV and the distribution lines to the buildings are at 4160 V.

There are four voltage configurations seen on the Colorado campus. These are 17 kV to 480/277 V services, 17 kV to 4160/2400 V services, 4160 to 480/277 V services and 4160 to 120/208 V services. The 4160 V services have to use vacuum interrupter switches, oil switches or oil fuse cutouts to be able to disconnect power at such a high voltage. A vacuum interrupter is a switch and overcurrent protection device which uses electrical contacts in a vacuum for arc suppression. An oil switch is a switch whose contacts are opened and closed in oil. An oil fuse cutout uses oil as the medium for arc suppression and also acts as both a disconnect switch and an overcurrent protection device. The important thing to note here is that vacuum interrupters and oil fuse cutouts offer over current protection in addition to switching, whereas an oil switch can only offer switching. 480/277 V and 120/208 V services will utilize circuit breakers or fuses to both distribute power and to protect against overcurrent surges.

ELECTRICAL SERVICES

PCC's Colorado campus is served by four underground 17 kV lines from PWP that lead to six service entrance points on campus. These lines were installed in the late 50s to early 60s and terminate into four PWP vaults. Two 17 kV lines come from South Hill Ave and two lines come from South Bonnie Ave. The top (northernmost) 17 kV line on the South Hill Ave side is indicated as a spare on the electric utility plans terminates into an underground manhole. The lower 17 kV line travels to a PWP vault in the FC Building, a PWP vault in the Electrical Switchgear Building and then travels and terminates into an underground manhole outside Parking Lot No. 5. On the South Bonnie Ave side, the top 17 kV line travels to an aboveground PWP vault outside the LL Building and then to an abandoned manhole 10' under the Sculpture Garden. The lower 17 kV line on the South Bonnie Ave side travels to a PWP vault in between Building UU and Parking Lot No. 5 and then travels to Building UU.

As mentioned above, there are six incoming services for the Colorado campus. Four of these services are in the Electrical Switchgear Room, one is at Building UU and the last one is at Building LL. The main electrical switchgear was moved from an outdoor location to an indoor location and replaced in 1998. The four incoming service locations in the Electric Switchgear Room are the A Lineup, the B Lineup, the Chiller Plant (Building FC) and the GM building. There is an incoming service for the U and UU Buildings, Parking Lot No. 5, and Buildings D and E. The last incoming service serves the LL Building and is located outside the building.

The Library and Gym Buildings are served at 480/277 V and all the other buildings on the Colorado campus are served at 4160 V. 4160 V distribution lines travel throughout the campus and interconnect all of the buildings.



Top South Hill Ave 17 kV Spare Feeder Manhole

Off the Colorado campus, the CDC Building has a 480/277 V, 600 A underground service that terminates into the main switchgear. The CEC Building has a 480/277 V, 2000 A service fed from an aboveground 17 kV PWP vault and 750 kVA transformers.

VAULT LOCATIONS AND DISTRIBUTION

The main service entry point for the campus is in the PWP Vault C1. This vault is located in the NW corner of the Chiller Plant building and contains an existing PWP 4-way switch and a 4-way splice. This vault is fed from the lower South Hill Ave 17 kV line and then travels between the Arts and GM Building to an electrical manhole outside Parking Lot #5.

The 4-way switch and 4-way splice feed into PWP Vault C2 located in the structure next to the Electrical Switchgear Room. This vault houses a 4-way splice and three transformer banks of three transformers each. The three transformer banks are rated for 1500, 2748 and 2500 kVA. The 1500 kVA transformer bank is a 17 kV to 480/277 V transformer for Main Switchboard MS (installed in 2003, one transformer was manufactured in 1970 and the other two were manufactured in 1993). The 2748 kVA transformer bank is a 17 kV to 4160/2400 V transformer for Main Switchboards MCA and MCB (installed in 1997 and 2008 and all manufactured in 1970). The 2500 kVA transformer bank is a 17 kV to 4160/2400 V transformer for Main Switchboard CMS that was installed in 1997 with an unknown manufacture date.



Bottom South Hill Ave 17 kV PWP Vault Location

The secondary entry into the Colorado campus occurs at PWP Vault C3 located near the ramp at Staff Parking Lot #6. This is an underground vault that serves Buildings D, E, U, UU, Parking Lot #5 and the Science Village. This vault contains a 1000 kVA transformer bank (installed in 1972, manufactured in 1970) that feed into the Electric Switchgear Room in Building UU at 4160/2400 V.

The third entry into the Colorado campus occurs at PWP Vault C4 located outside Building LL by Staff Parking Lot #7. This is an aboveground vault and is a 17 kV to 480/277 V service just for Building LL. This vault houses a 750 kVA transformer bank (installed in 1993, manufactured in 1951).

The 17 kV lines from C1 and C3 used to be able to be switched over but this interconnectivity was lost in 2009 when the Arts building was built. There is a manhole that is buried under the sculpture garden and its neck was not extended during construction. As a result, there is no way to pull the 17 kV cables thru so the cables are now abandoned in place and have been cut off at the old service entry point by Building LL.

BUILDING ELECTRICAL DISTRIBUTION

There are four PWP vaults on the Colorado campus and the main ones are vaults C1 and C2. Vault C2 feeds the Electrical Switchgear Room which houses one switchboard and three sets of switchgear.

See below for a description of the switchboards and switchgear in the Electrical Switchgear Room.

Main Switchboard MS (4000 A, 480/277 V, 3 Phase, 4 Wire)

- 3000 A circuit breaker for Building GM
- 600 A spare circuit breaker – locked in the "Off" position, used to feed the T Building Electric Room (now where the Arts building is located)

Main Switchgear CMS (600 A, 4160/2400 V, 3 Phase, 3 Wire)

- 480 A vacuum interrupter for the Chiller Plant (FC)

Main Switchgear MCA (600 A, 4160/2400 V, 3 Phase, 4 Wire)

- 600 A vacuum interrupter Main Disconnect
- 150 A vacuum interrupter to Parking Lot No. 4 (identified as the F7 Parking Structure on the switch)
- 275 A vacuum interrupter to Buildings R and L (identified as the F4 and R BLDG on the switch)

- 175 A vacuum interrupter to Building W, Buildings O & P, Building B (identified as F1 N.W. CAMPUS (W BLDG) on the switch)
- 150 A vacuum interrupter to Building FS, Building FB and the Pool (identified as FEED TO SUBSTATION "NTH" on the switch)
- 150 A vacuum interrupter spare

Main Switchgear MCB (600 A, 4160/2400 V, 3 Phase, 4 Wire)

- 600 A vacuum interrupter Main Disconnect
- 275 A vacuum interrupter to Building C (identified as F5 and BLDG "C")
- 250 A vacuum interrupter to Building CA
- 180 A vacuum interrupter to Building V
- 324 A vacuum interrupter to Building CC and Building IT

PWP Vault C3 feeds to an indoor electric room in Building UU that houses a set of switchgear. See below for a description of the switchgear in Building UU's Electrical Room.

Main Switchboard C3 (600 A, 4160/2400 V, 3 Phase, 4 Wire)

- 600 A oil switch Main Disconnect
- 600 A oil switch for Buildings D and E
- 600 A oil switch for Buildings U and Parking Lot No. 5
- 600 A oil transfer switch for Building U in the "Off" position

PWP Vault C4 is an outdoor service that feeds to an indoor electric room for Building LL that houses a set of switchboards and a 480/277 V, 2000 A, 3 Phase, 4 Wire service.

Together, all of the power for the Colorado campus flows through one of these three service entrance points (C1 and C2, C3 and C4). Outside of the 17 kV to 480/277 V service for Building LL and the 480/277 V service to the GM Building, all other buildings on the Colorado campus are served at 4160 V.

MICROTURBINES

Microturbines run on natural gas and produce electricity and the exhaust heat is captured and then reused for other building processes, such as heating the pool in the Aquatic Center, hence the term cogeneration. One group of microturbines is located in Building LP and the other group is located in Parking Lot No. 5. The microturbines in the LP building were used to heat the pool water and the ones in Parking Lot No. 5 were used to power the absorption chiller for the U Building with remaining waste heat dissipated by the cooling tower at the parking structure. Both of these microturbines need servicing and are not currently operable.

GENERATORS

The Colorado campus has both natural gas and diesel generators of various ages and sizes located throughout the campus. Some of these generators serve a specific purpose whereas others provide emergency power to multiple buildings.

- Building W has a 300 kW emergency diesel generator which serves the CC, B, IT, R and C Buildings (added for the communications and network systems). This generator also backs up the command center for the city on the upper floor of Building CC.
- Building D recently had a 30 kW emergency diesel generator removed (due to a fuel tank issue by the local fire marshal) and a 30 kW natural gas generator is planned to replace it in 2020.
- Building FS and Parking Lot No.4 share a 40 kW emergency diesel generator.
- The Electrical Switchgear building has a 225 kVA diesel generator inside a room that serves the emergency loads for Building GM and Building CA as well as the football field egress lights.
- Building LL has a 150 kW natural gas generator that backs up the main network and telecom equipment for PCC as well as a 60 kW diesel generator that provides emergency power for the building.
- Building R has a 60 kW natural gas generator in the penthouse which provides emergency power for the building.
- The Science Village has a 25 kW natural gas generator for the refrigerators in the Science Village.
- Building U has a 60 kW generator but this is scheduled for demolition when the building comes down and is currently out of service. This generator was taken out of service due to a complaint by AQMD. The emergency power was changed over to the microturbines in Lot No. 5 before they stopped functioning.

GREEN POWER

There are no sources of green power on the campus. Fuel cells were considered for installation in Building FB at one time but this did not happen due to the high costs for both the installation as well as the operating costs. Parking Lot No. 5 was designed so some future solar could be added but the lighting would need to be changed and a canopy would need to be built.

GM BUILDING—GYM

Building GM is serviced from a 3000A circuit breaker in Switchboard MS in the Electrical Switchgear Room. This circuit breaker supplies power to a 3000 A, 480/277 V, 3 Phase, 4 Wire switchboard in the main electric room. The switchboard provides power to a 225 kVA, 480 to 120/208 V, 3 Phase, 4 Wire transformer that then distributes 120/208 V power throughout the building. All lighting is fed at 277 V, and most mechanical equipment is fed at 480 V.

This building gets emergency power from a 225 kVA diesel generator next to the Electrical Switchgear Room. The electrical equipment in this building dates back to when the building was built in 1998. There is a spare circuit breaker on Switchboard MS in the Electrical Switchgear Room that used to serve the T Building Electric Room. The wire was removed and most of the conduit abandoned in place.

The electrical equipment is made by GE and spare parts are still available.

FC BUILDING—CHILLER PLANT

Building FC is serviced from a 480A vacuum interrupter switch in Switchboard CMS in the Electrical Switchgear Room. This switch supplies power to a 600 A, 4160/2400 V, 3 Phase, 3 Wire switchboard.

Chiller Plant Switchgear (600 A, 4160/2400 V, 3 Phase, 3 Wire)

- 600 A oil switch Main Disconnect
- 150 A oil switch for Chiller 1
- 150 A oil switch for Motor Control Center (MCC)
- 150 A oil switch for Chiller 2
- 175 A oil switch for Chillers 3, 4 and Building FB's Cooling Tower

Chillers 1, 2 and the Motor Control Center are all fed from separate 1000 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire substations located in the Chiller Plant. There is a separate 1000 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire padmount transformer outside in the Chiller Plant which feeds a 1600 A, 480/277 V, 3 Phase, 4 Wire switchboard. This switchboard feeds Chillers 3 and 4 as well as the Building FB Cooling Towers.

PARKING LOT NO. 4

Parking Lot No. 4 is serviced from a 150A vacuum interrupter switch in Switchboard MCA in the Electrical Switchgear Room. The feeder terminates into a 500 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire substation in the electric room of the structure.

R BUILDING—ROBBINS

Building R is serviced from a 275A vacuum interrupter switch in Switchboard MCA in the Electrical Switchgear Room. The feeder travels to Building R underground and terminates into three oil fuse cutout switches in the basement. One oil fuse cutout feeds a 750 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire transformer for the west wing. The second oil fuse cutout feeds another 750 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire transformer for the east wing. The other oil fuse cutout feeds Building L. The first two oil fuse cutouts feed the transformers which in turn then feed the (2) 2500 A busducts. These busways serve loads on the East and West sides of the building. Most of the gear in this building looks to be the original from 1964 (east wing) and 1966 (west wing). There is a natural gas emergency generator in the penthouse that is also original to the building.

L BUILDING—STUDENT SERVICES

Building L is fed from an oil fuse cutout in the basement of Building R. The 4160 V feeder travels to the L Building and goes into an oil switch. This switch feeds a 500 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire transformer which then feeds a 1600 A, 120/208 V, 3 Phase, 4 Wire Main Switchboard in the same room. The main switchboard feeds an 800 A distribution board which then distributes power to various other panels located throughout the building. This building had emergency power from a generator at Building D but when that was removed battery powered egress lighting was installed.

Building W is serviced from a 175 A vacuum interrupter switch in Switchboard MCA in the Electrical Switchgear Room. The feeder travels from MCA to a four-way splice and then to a 300 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire indoor transformer. This switchgear feeds a 1000 A, 120/208 V, 3 Phase, 4 Wire Switchboard in Building W's electric room. This is an original switchboard and feeds several of the original panels in the building.

Building W also is served by a 500 kVA, 4160 to 480 V, 3 Phase, 3 Wire ungrounded delta outdoor transformer. This transformer feeds MCC-DP and is located in the front of the building and is surrounded by a fence enclosure. MCC-DP provides an ungrounded delta connection to Switchboard DP, which is a 600 A, 480 V, 3 Phase, 3 Wire switchboard. This switchboard primarily provides power for the chiller, chilled water pumps, an automatic transfer switch and some other panels.

O & P BUILDINGS—OBSERVATORY AND PLANETARIUM

P are serviced from the same feeder that serves the W Building. The feeder travels from MCA to a four-way splice and then to a 75 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire outdoor transformer.

B BUILDING—BOOKSTORE

Building B is serviced from the same feeder that serves the W Building. The feeder travels from MCA to a four-way splice and then to a 500 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire indoor substation. This substation feeds a 1600 A, 480/277 V, 3 Phase, 4 Wire Switchboard HDB1 from the secondary conductors.

FS BUILDING—FACILITIES SERVICE

Building FS is serviced from a 150 A vacuum interrupter switch in Switchboard MCA in the Electrical Switchgear Room. The feeder travels from MCA to a 750 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire indoor substation. This substation feeds a 1200 A, 480/277 V, 3 Phase, 4 Wire Main Switchboard from the secondary conductors. There is a 300 kVA, 480 to 120/208 V, 3 Phase, 4 Wire indoor transformer to power 120/208 V panels throughout the building. This service also feeds the boiler building (FB) and the pool.

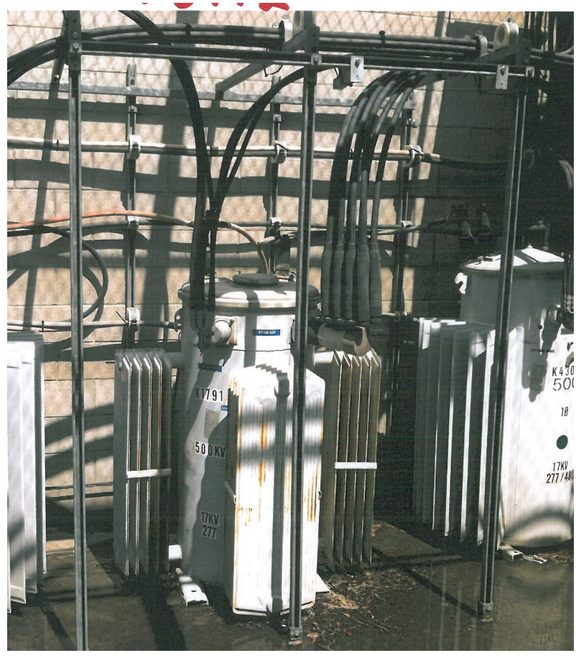
C BUILDING—HORACE MANN

Building C is serviced from a 275 A vacuum interrupter switch in Switchgear MCB in the Electrical Switchgear Room. The feeder travels from MCB to a 2000 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire substation. This substation feeds a locked 2000 A, 480/277 V, 3 Phase, 4 Wire Main Switchboard located outside the building.

The Building C Main Switchboard serves the following loads:

Main Switchboard C (2000 A, 480/277 V, 3 Phase, 4 Wire)

- 2000 A Main Circuit Breaker
- 200 A spare circuit breaker
- 250 A circuit breaker to a 150 kVA, 480 to 240 V, 3





Photos of V8772, North of Lot 4



Existing Electric Utility Info Southwest of Colorado Campus

Phase, 3 Wire transformer for Building C 3 Phase loads

- 450 A, two pole, circuit breaker for A Phase loads
- 450 A, two pole, circuit breaker for B Phase loads
- 450 A, two pole, circuit breaker for C Phase loads
- 600 A circuit breaker to Distribution Board DSB
- 600 A circuit breaker to a 500 kVA, 480 to 120/208 V, 3 Phase, 4 Wire transformer for Dimming Panel DBD

Building C also receives power from a 1500 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire unit substation in the basement of Building V.

ARTS BUILDING—CENTER FOR THE ARTS

Building CA is serviced from a 250 A vacuum interrupter switch in Switchboard MCB in the Electrical Switchgear Room. The feeder travels from MCB to a 1500 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire pad mount transformer to the south of the building. This transformer feeds a 2000 A, 480/277 V, 3 Phase, 4 Wire Main Switchboard located in the main electric room for the building.

V BUILDING—HOWARD MARTIN

Building V is serviced from a 180 A vacuum interrupter switch in Switchboard MCB in the Electrical Switchgear Room. The feeder travels from MCB to two compact HVL load break switches. One switch feeds a 500 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire transformer to Distribution Switchboard DA. The other one feeds a 750 kVA, 4160 to 240 V, 3 Phase, 3 Wire transformer to Distribution Switchboard DB.

CC BUILDING—CAMPUS CENTER

Building CC is serviced from a 324 A vacuum interrupter switch in Switchboard MCB in the Electrical Switchgear Room. The feeder travels from MCB to (2) 4-way splices and then to two HVL switches feeding a 500 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire transformer and a 500 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire transformer in the NW electrical room.

IT BUILDING—INDUSTRIAL TECH

Fed from the same feeder as Building CC, to a 1500 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire unit substation with a 300 A main switch fused at 275 A and a 2500 A secondary breaker located in the junk car storage lot north of the W Building.

D BUILDING—JANE ADDAMS

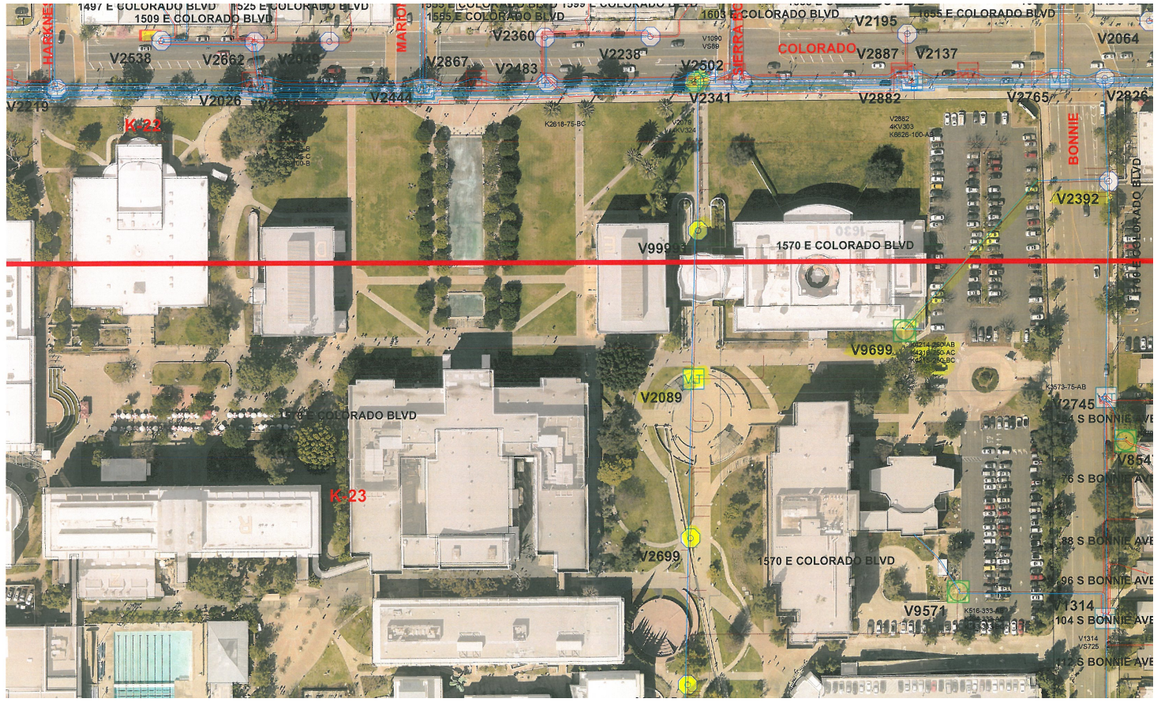
Building D is serviced from a 600 A oil switch in Main Switchboard C3 in Building UU shared with Building E. A 4160 V feeder travels to a manual transfer switch and then to oil fuse cutouts for overcurrent protection. The oil fuse cutouts feed a 500 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire substation.

E BUILDING—LOUIS AGASSIZ

Building E is serviced from a 600 A oil switch in Main Switchboard C3 in Building UU shared with Building D. A 4160 V feeder travels to a manual transfer switch and then to oil fuse cutouts for overcurrent protection. The oil fuse cutouts feed a 500 kVA, 4160 to 120/208 V, 3 Phase, 4 Wire substation.

PARKING LOT NO. 5

Parking Lot No. 5 is serviced from a 600 A oil switch in Main Switchboard C3 in Building UU shared with Building U. A 4160 V feeder feeds a 750 kVA unit substation to a 1000 A, 480/277 V, 3 Phase, 4 Wire service (labeled as a 1200 A bus).



Existing Electric Utility Info North of Colorado Campus

U BUILDING—ARMEN SARAFIAN

Building U is serviced from a 600 A oil switch in Main Switchboard C3 in Building UU shared with Parking Lot No. 5. Previous drawings show that the 4160 V feeder goes to a 2000 kVA, 4160 to 480/277 V, 3 Phase, 4 Wire substation in the building. This building is scheduled to be replaced and was inaccessible at the time of survey.

LL BUILDING—SHATFORD LIBRARY

Building LL is serviced from a 17 kV PWP feeder and PWP transformer bank in an above ground vault. This transformer bank provides power to a 2000 A, 480/277 V, 3 Phase, 4 Wire outdoor Main Service Switchboard which feeds a 2000 A distribution switchboard in the main electrical room of the building. This distribution switchboard feeds a 500 kVA, 480 to 120/208 V, 3 Phase, 4 Wire transformer for distribution to 120/208 V loads in the building.

CHILD DEVELOPMENT CENTER

The Child Development Center is served by an underground PWP feeder that goes to a 600 A, 480/277 V, 3 Phase, 4 Wire Main Switchboard in the main electric room. There is a 75 kVA, 480 to 120/208 V, 3 Phase, 4 Wire transformer in the main electric room to serve the 120/208 V loads in the building.

FOOTHILL CAMPUS

The Foothill Campus is served by an aboveground 17 kV PWP feeder that goes to a 2000 A, 480/277 V, 3 Phase, 4 Wire Main Switchboard in the main electric room. There is a 750 kVA, 480 to 120/208 V, 3 Phase, 4 Wire transformer in the main electric room to serve the 120/208 V loads in the building.

SERVICE ANALYSIS & RECOMMENDATIONS

PCC's electrical distribution services are adequately sized to handle the loads that are present on the campus. In general, taking down a building and installing a new building in the same place should not pose any problems as long as the power usage of the old building and new building are roughly the same. For a new building that will require more power, this will need to be more closely coordinated with between the engineering consultant, the college's Electrical Engineering Consultan, PWP.

The 1998 replacement of most of the head-end switchgear in the Electrical Switchgear Room will continue to serve PCC for several more years to come. The switchgear in the Building UU Electric Room though needs to be replaced. In addition to not having the proper working clearances, this equipment is from 1972 and uses oil, so there is the possibility for leaks, PCBs and failure of the equipment. If oil has leaked than there could be problems extinguishing the arc when the switches are disconnected.

By far, the most important infrastructure upgrade really isn't an upgrade at all but a return to a previous condition. When the 17 kV interconnection was abandoned because the Sculpture Garden got poured over the existing manhole, the campus lost the ability to switch between the Hill and Bonnie feeders. This meant that if one of these feeders went down, or needed to be taken down for service, than PCC had to go down for the duration of that service. Certainly any down time is disruptive but down time on the Hill side feeder would cause more of the campus to go down than the Bonnie feeder. Restoring the interconnection of this feeder is of the most importance, especially given the numerous power outages that the campus experienced last year.

The second most important infrastructure upgrade would be the replacement of all of the switchgear at Building UU. It is unclear how all of this is



Bottom South Bonnie Ave 17kV PWP Vault



Top South Bonnie Ave 17 kV Vault at the LL building



CEC PWP Vault and Service Entrance



CDC Main Service Entrance and Disconnect

connected and interconnected and the equipment is old and may be operating in an unsafe condition. Additionally, code required minimum clearances are not provided which could limit any future work being done in this room if an inspector refuses to allow it.

The third most important upgrade would be to provide 4160 V routing to Building LL if the C3 vault transformers ever get upgraded. As it stands now, Building LL has its own 17 kV feed from PWP. By tying this building into the existing 4160 V distribution, it would then be able to be served by either the Hill or Bonnie feeders if the interconnection is restored. Individually powering buildings up at 17 kV should be avoided in the future with so much 4160 V feeder cabling throughout the campus.

BUILDING ANALYSIS & RECOMMENDATIONS

PCC has all sorts of buildings on the campus from original to newly constructed. There is quite a contrast from an original, untouched building to the newly built Arts Building which was LEED Gold Certified in 2014. In general, older buildings should begin to have their oil fuse cutouts removed and replaced with solid dielectric fault interrupters. Oil switches should be replaced with vacuum interrupters. Gear that was installed before 1980 should also look at getting replaced as it will be very hard to get replacement parts and this equipment has reached the end of its useful life. Abandoned or no longer useful equipment should be removed.

One of the problems that PCC Colorado campus has is that it is bound by the tight configuration of the existing buildings. Ideally, the 4160 V distribution system should be in a ring configuration around the campus. As buildings get built or demolished, they would then tie into this ring for power. This is not the case at PCC due to the way the campus has grown and evolved through the years. As a result, this leads to solutions like powering Building C from Building V's basement. This works for the present day but then poses a huge construction cost item when Building V is to be demolished later on. There are several instances of this around campus as well, where one building is fed thru the service of another building. For example, Building L is fed thru Building R's service. It is also unclear how Buildings U, UU, D, E and Parking Lot No. 5 are connected to the UU Building's 4160 V switchgear.

Future renovations should start to correct these problems so they won't be problems again when the buildings are ready for demolition. Ideally, the 4160 V feeds should come from a splice at the closest manhole and not from another building. Each building should be independent of the other buildings on the campus. This way, they can be built and constructed with as little disruption to the other infrastructure on the campus as possible. Again, there is a difference between ideal starting from scratch and doing the best with the situation that is presented.

Similar to feeding one building through another, this is also happening with the emergency power on the campus. The recent 300 kW diesel generator addition outside of Building W is a prime example of this condition. Building W has a 300 kW emergency diesel generator which serves the CC, B, IT, R and C Buildings (added for the communications and network systems). This generator backs up the command center for the city on the upper floor of Building CC. This is a very important generator but its location is next to Building W is problematic.

The only buildings that should have generators are the ones where they are backing up communications or server equipment, the city command center, police operations, refrigerators or other special equipment. All other buildings should have central lighting inverters with battery backup. As generators come down the buildings that they serve should start to be outfitted with central lighting inverters. These inverters have all of the batteries in one place and would then just

tie into the emergency panels already existing in these areas. It is recommended to install central lighting inverters in all of the buildings served by the 300 kW generator when that generator goes offline.

The focus needs to be on making these buildings independent, with an independent 4160 V feeder, transformer or substation and independent emergency lighting source.

A short circuit coordination study and arc flash analysis and training for maintenance personnel should also be put in place. All of the equipment should be properly labeled. Some locks were not able to be opened during the survey, these should be replaced with ones so that a master key can open all of the locks on campus as well as all of the electric doors. If smoke is seen coming from an electrical room, there is no place for fumbling around with keys. Staff should be fully trained on how to shut off power for a building should it ever need to be done quickly. All switchgear should be properly labeled with the loads served, and switchgear in the Electrical Switchgear Room should have the labels updated.

See below for a list of replacement items for each building.

GM BUILDING—GYM

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

FB BUILDING—BOILER HOUSE

Distribution equipment is older and old panelboards should be replaced. The boilers have been removed and the building is mostly used for storage and laundry services.

FC BUILDING—CHILLER PLANT)

The oil switches and substations should be replaced. Exterior conditions on the equipment would indicate that the interior insulation on the substation is probably degraded and the oil switch should be replaced with a vacuum interrupter.

R BUILDING—ROBBINS

Building R has not been renovated much since its construction in 1968 and is in need of a full electrical overhaul.

L BUILDING—STUDENT SERVICES

Recommend replacing the oil switch in the basement with a vacuum interrupter but other than that the electrical infrastructure in this building looked good.

W BUILDING—WOMEN'S GYMNASIUM

The original switchboard in this building is in need of replacement but other than that all of the other equipment looked good. The panelboards in the hallways may also need replacement.

O & P BUILDINGS—OBSERVATORY AND PLANETARIUM

Buildings O & P have not been renovated much since its original construction, but as long as the use does not change then these buildings can remain as is. Upon survey, this building has a piece of metal stuck in the B Phase of the main fuse compartment that poses an electrical hazard that should be remedied immediately. All of the old fuse panels should be replaced with circuit breaker panels and new switchboards should be provided.

B BUILDING (BOOKSTORE)

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

FS BUILDING—FACILITIES SERVICE

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

C BUILDING—HORACE MANN

Underneath the stage, the smell of gas was observed in a room that contained electrical equipment. This building is very poorly lit and needs a complete lighting renovation.

ARTS BUILDING—CENTER FOR THE ARTS

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

V BUILDING—HOWARD MARTIN

Building V needs a lighting renovation, especially over the stairs. The equipment in this building is old but appears to still be functioning.

PCC OUTRAGES 2015 TO 2020

CATALINA 17KV CKT				
Date	Time Start	Date	Timed End	Planned
12/24/15	15:24	12/24/15	16:05	NO
8/19/16	10:42	8/19/16	22:01	NO
8/19/16	10:42	8/19/16	11:38	NO
8/19/16	11:38	8/19/16	12:23	NO
12/2/16	08:48	12/26/16	08:57	NO
7/14/19	07:08	7/14/18	08:18	YES
12/22/19	21:54	12/23/19	05:29	YES

HALSTEAD 17KV CKT				
Date	Time Start	Date	Timed End	Planned
9/21/15	07:39	9/21/15	07:52	NO
9/21/15	10:33	9/21/15	19:52	NO
12/24/17	08:54	12/24/17	11:05	NO

MAPLE 17KV CKT				
Date	Time Start	Date	Timed End	Planned
7/8/15	23:17	7/9/15	04:02	YES
5/31/19	15:02	5/31/19	15:31	YES
6/11/19	18:05	6/11/19	18:33	YES
6/11/19	18:35	6/12/19	14:46	NO
6/12/19	01:39	6/12/19	06:02	NO
6/12/19	14:31	6/17/19	14:46	NO
8/22/19	00:55	8/22/19	01:17	YES
10/1/19	00:00	10/1/19	04:54	YES

CC BUILDING—CAMPUS CENTER

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

D BUILDING—JANE ADDAMS

Building D should have the manual transfer switch removed as it no longer serves any purpose as both the D and E buildings are tied into the same feeder at the Building UU Switchgear Room. The oil fuse cutouts should be replaced with solid dielectric fault interrupters. The lighting is also due to be updated in this building as well. The gear is from 1976 and should also be considered for replacement.

E BUILDING—LOUIS AGASSIZ

Building E should have the manual transfer switch removed as it no longer serves any purpose as both the D and E buildings are tied into the same feeder at the Building UU Switchgear Room. The oil fuse cutouts should be replaced with solid dielectric fault interrupters. The lighting is also due to be updated in this building as well. The gear is from 1976 and should also be considered for replacement.

PARKING LOT NO. 5

Parking Lot No. 5 currently does not have any emergency power available because it lost this when the microturbines went down. The circular lights also need to be replaced as a lot of bug infiltration was noticed during the site visit. The linear strip lights need attention so another water leak doesn't trip out the parking lot and the Science Village. The rest of the electrical gear and infrastructure looked good.

U BUILDING—ARMEN SARAFIAN

This building was inaccessible during the survey and is scheduled for demolition and replacement.

LL BUILDING—SHATFORD LIBRARY

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

CHILD DEVELOPMENT CENTER

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

FOOTHILL CAMPUS

The electrical equipment in this building looked good and was not in need of any replacements or repairs.

SUSTAINABILITY ANALYSIS & RECOMMENDATIONS

The LEED STARS program will be implemented, but the primary focus should be interconnecting the 17 kV feeder and getting these buildings in safe operating conditions. From there, PCC can start with a solid foundation that they can grow upon. Assuming all of the building issues get resolved, the next step would be to then implement an occupancy sensor installation program throughout the campus, starting with the classrooms.

PCC will need to check with the Authority Having Jurisdiction (AHJ) if they can install occupancy sensors or if Title 24 will force them to have to upgrade the entire lighting system. Assuming just the occupancy sensors can be installed, the cost for these devices will have the most value and the shortest ROI payback period. Once the initial cost for this program is funded, the operating costs should start to be reduced and then those funds can go into other capital improvement projects, such as installing new LED lights throughout the campus buildings starting with the oldest of buildings. It will take some time for this plan to evolve but the initial capital costs for occupancy sensors will start to give way to the reduced operating expenses and will eventually turn net positive for PCC.

As far as other strategies, energy conservation is the main strategy to be implemented in PCC. There could be solar panels installed on top of Parking Lot No. 5 and the idea of fuel cells came and went but really the money would best be spent in trying to improve the overall energy efficiency of the each buildings on campus. Therefore, the last recommendation is to install electrical submeters on the feeds for each building and to start benchmarking their performance to similar size/type buildings. This will also allow PCC to start gauging how effective the implementation of their energy saving measures are doing.

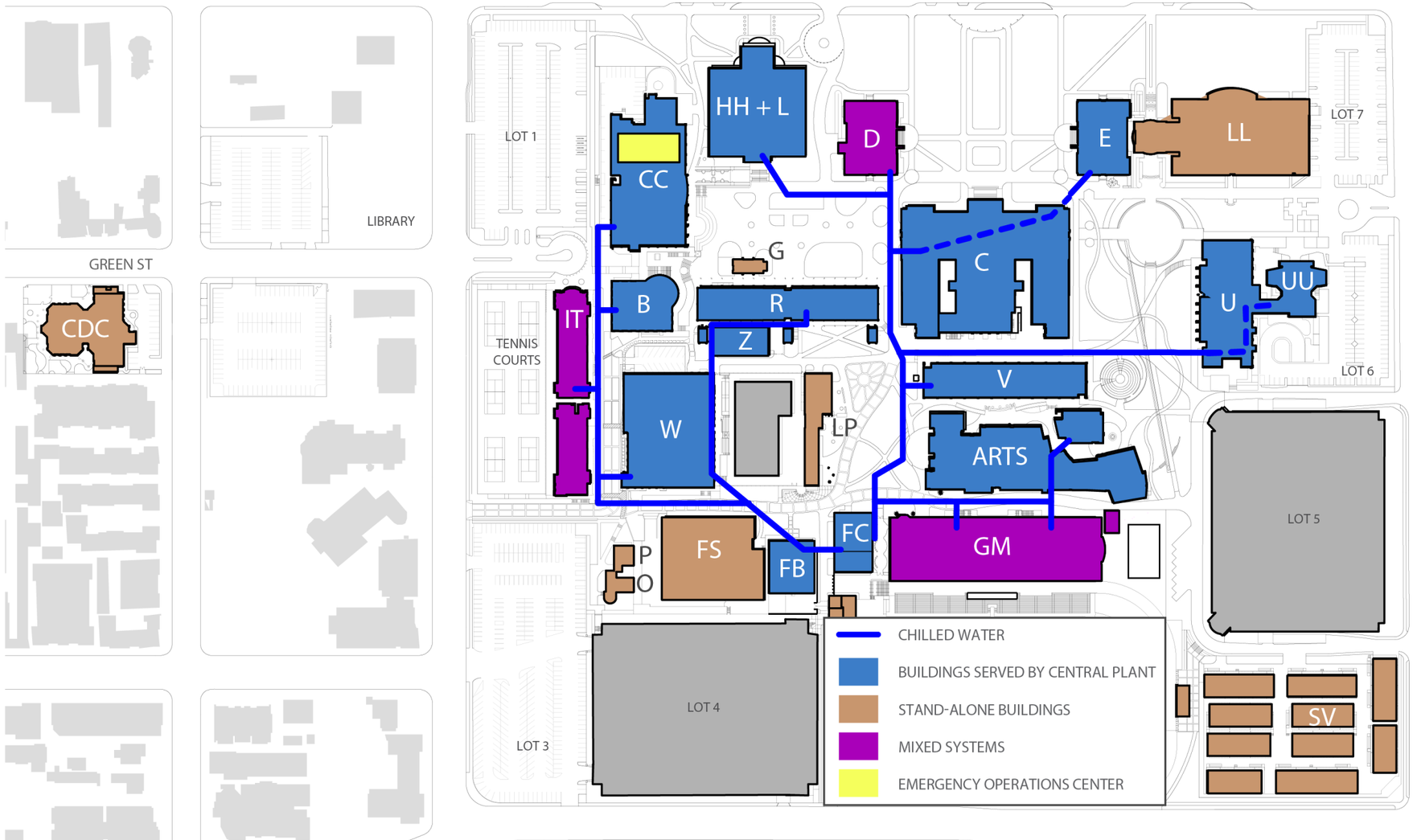
ELECTRICAL SERVICE SIZES

Building	Primary Voltage	Secondary Voltage	Amapacity	Emergency Generator	Generator Size	Fuel Type	Comments
Arts	4160	480/277	2000	Yes			
B	NA	NA	NA	Yes			Fed from CC
C	4160	480/277	2000	Yes			Fed from a substation in Building V's basement
CC	4160	480/277	600	Yes			Feeds B Building
	4160	480/277	600	Yes			
	4160	120/208	1600	Yes			
CDC	NA	480/277	600	No			Underground Electrical Service right to Switchgear
CEC	Unknown	480/277	2000	Yes	75 kVA (est.)	Diesel	Outdoor PWP Vault to Main Electric Room
D	4160	120/208	1600	No			Replace Oil Fuse Cutout Switches and remove inactive MTS
							Natural gas genset is being planned
E	4160	120/208	1600	No			Replace Oil Fuse Cutout Switches and remove inactive MTS
FB		240	400	No			
FC	4160	480/277	1200				Chiller #1
FC	4160	480/277	1200				Chiller #2
FC	4160	480/277	1600				Motor Control Center
FC	4160	480/277	1600				Chillers #3 and #4, FB Cooling Tower
Switchgear Room	4160	4160	600				MCA
Switchgear Room	4160	4160	600				MCB
Switchgear Room	4160	4160	480				To FC Building
Switchgear Room	4160	480/277	4000				To GM and T Buildings (T Building CB Locked in Off Position)
FS	4160	480/277	1200				
GM	NA	480/277	3000	Yes	225 kVA	Diesel	Fed from 3000A CB in Swbd MS in Switchgear Room
IT	4160	480/277	3000				
L	4160	120/208	1600	No			Natural gas genset being planned
LL	17000	480/277	2000	Yes	150 kW	Natural Gas	For Main Campus Telecom
Lot #5		480/277	1200				Parking Lot #5 is the only building on campus right now without emergency lighting
P		120/208	125				
R	4160	120/208	2500A Bus	Yes	25 kW	Natural Gas	Generator in Penthouse
	4160	120/208	2500A Bus				
SV	NA	NA	800				Fed from a 800A CB in the Lot #5 Electric Switchgear Room
U	4160	480/277	1600	Yes (offline)	60 kW	Diesel	Scheduled for demolition, currently has no power or emergency lighting
UU	17000	480/277					
V	4160	120/240	2000?				
	4160	120/208	1600?				
	4160	480/277	2000				Feeds Building C
W	4160	120/208	1000	Yes	300 kW	Diesel	Feeds CC, B, IT, R and C Buildings. Building W has batteries for emergency lighting.
	4160	480	600				

FEEDER CAPACITIES

17 kV Feeder Source	Service Entry Point	Installed (kVA)	Peak Demand (kVA)	Remaining (kVA)	Year Built
Top South Hill Ave.	Spare				
Bottom South Hill Ave.	Switchboard MS	1500	953	547	1998
	GM				
	Switchboard CMS	2500	2060	440	1998
	Chiller #1				
	Chiller #2				
	MCC				
	Chillers #3 and #4				
	Switchboard MCA	2748	1146	348	1998
	Lot No.4				
	R + L				
	W + O + P + B				
	FS + FB + Pool				
	Switchboard MCB		1254		1998
	C				
	CA				
	V				
	CC + IT				
Top South Bonnie Ave.	LL	750		375 EST	1993
Bottom South Bonnie Ave.	D	1000		500 EST	1972
	E				
	U				
	UU				
	Lot #5				
	SV				
Community Education Center	CEC	750			1990s EST
Child Development Center	CDC	150			1996

FIGURE I. EXISTING CAMPUS CHILLED WATER SYSTEM



7.3 MECHANICAL / PLUMBING NARRATIVE

OVERVIEW

SITE

The campus currently has a district chilled water distribution system which is connected to a majority of the buildings on campus, but not all.

The campus does not currently have a district heating system; each building is served by a dedicated boiler or indirect gas heat. It is evident that a steam distribution existed at one time, but it has long been abandoned and the boiler house repurposed. Although heating is less significant than cooling in this climate, it is still required.

BUILDINGS

The majority of the Colorado campus buildings are served by chilled water and hot water air handling units. A campus chilled water system provides chilled water to most of the buildings, but several have on-site air-cooled chillers. Heating water is provided by boilers in each building; there is no campus heating water system. Each building has an electric domestic hot water heater.

AC BUILDING—POOL BUILDING

The purpose of this building is to house pool equipment and is served by domestic and fire water, and natural gas. The building was not assessed and is assumed to be adequate for the use.

B BUILDING—BOOK STORE

The Bookstore is conditioned with one air handling unit on the roof of the building using chilled water from the campus loop and hot water provided from the Campus Center. The control system is currently OPTO 22.

C BUILDING—HORACE MANN

The building is served by nine air handling units at various locations throughout the building. AHUs 1 and 2 serve the auditorium, providing supply air overhead and returning through openings under the seats. The building uses chilled water from the campus loop and hot water from the on-site boiler. The east side of the building uses Schneider controls and the west side is local, stand-alone controls.

ARTS BUILDING—CENTER FOR THE ARTS

The Center for the Arts is the newest building on campus having been completed in 2014. Five air handling units are mounted on the roof; one is dedicated the recital hall and one to the Little Theater. The three other units serve the remainder of the building using VAV boxes with reheat. A make-up air unit on the roof provides make up air to exhausted spaces (e.g. jewelry). All the units use chilled water from the campus loop and hot water from the on-site boiler. The building controls are Distech.

CC BUILDING—CAMPUS CENTER

The Campus Center building is also fairly modern. It is served by three air handling units on the roof plus a make up air unit for the kitchen. The Building uses chilled water from the campus loop and hot water from the on-site boiler (which also serves building B). Building controls are a combination of OPTO 22 and TAC

D BUILDING—JANE ADDAMS

Two air handling units and the boiler are housed in the mechanical penthouse. A heat pump unit is located on grade. The air handling units use chilled water from the campus loop and hot water from the on-site boiler. The building controls are Distech.



E BUILDING—LOUIS AGASSIZ

Two air handling units and the boiler are housed in the mechanical penthouse. The air handling units use chilled water from the campus loop and hot water from the on-site boiler. The building controls are Distech.

FB BUILDING—BOILER PLANT

The boiler plant has been abandoned for many years; this building is currently being used for storage.

FC BUILDING—CHILLER PLANT

The chiller plant produces chilled water for many of the buildings on campus. The plant consists of two Trane water-cooled chillers (model CVHF, 770 nominal tons, R-123 refrigerant), 2 Smardt chillers (Model SWA, 540 nominal tons, R-134A refrigerant) and two two-cell Evapco cooling towers. The plant is operated via an Andover control system.

FS BUILDING—FACILITY SERVICES

The Facility Services building is served by three packaged rooftop units and one split system, all



located on the roof. Indirect gas heat is provided in the units. Electric unit heaters are located in the maintenance shops. Controls are local, stand-alone for each unit.

G BUILDING—GALLERY

The Gallery is served by a packaged unit on grade adjacent to the building.

GM BUILDING—GYMNASIUM

Six roof top air handling units, three each on east and west, serve the main gymnasiums and adjacent areas. These units were converted from packaged unit to chilled water / hot water units in the 1990's. Three other packaged roof top units are located on the east roof to serve the remaining areas. A small packaged unit conditions the press box. The building uses chilled water from the campus loop and hot water from the on-site boiler. The building controls are Distech.

HH BUILDING—HARBERSON HALL

Harberson Hall is served from Student Services Building.

IT BUILDING—INDUSTRIAL TECHNOLOGY

Four indirect evaporative make-up air units supply the auto, carpentry and welding shops which are 100% exhausted. A roof mounted air handling unit serves the remaining spaces in the building. The building uses chilled water from the campus loop and hot water from the on-site boiler. The building controls are Distech.

L BUILDING—STUDENT SERVICES

Four air handling units are located in the mechanical penthouse: three serve the Student Services Building and one is dedicated to Harberson Hall. Cooling is provided by the campus chilled water system and heating is delivered by the on-site boiler. The building controls are Distech.

LL BUILDING—SHATFORD LIBRARY

Two air handling units located on the roof of the building are the primary conditioning equipment. A split system, with the condensing unit on the roof, is dedicated to the student records data center. A boiler provides heating water. Two air-cooled chillers are located on the roof, but one is not operational. The buried ice storage tanks located to the north are abandoned due to tanks leaking. The building controls are Distech.

LP BUILDING—LANCERS PASS

Lancers pass is conditioned by a packaged rooftop unit with gas heat, DX cooling and integral controls.

O & P BUILDINGS—OBSERVATORY AND PLANETARIUM

The Observatory and Planetarium buildings are conditioned by multiple packaged rooftop unit with gas heat, DX cooling and individual integral controls.

BUILDING R - ROBBINS

The Robbins Building is served by ten air handling units, two per floor, each serving half. The units are old and in various stages of upgrade and repair. Heating is provided by two boilers in the mechanical penthouse and cooling is provided by the campus chilled water system. The controls are Distech.

BUILDING SV—SCIENCE VILLAGE

The Science Village consists of multiple modular buildings with each module served by a packaged system mounted on the side of the building. Heating is provided by electric resistance and cooling is DX. Laboratory exhaust fans are located on the roof. All controls are local and integral with the units.

BUILDING U—ARMEN SARAFIAN

The Sarafian Building has sustained structural damage in a recent seismic event and it will be replaced. It is currently being used for storage. The building has floor-by-floor air handling units which are not operational. A boiler in the lower level continues to provide heating water to the Forum.

BUILDING UU—FORUM

The Forum is conditioned by a constant volume air handling unit with zone-level hot water reheat. Hot water is provided to the system by the boiler in the U Building. The system has local controls which are not fully functional; For example, the maintenance crew adjusts the position of the chilled water valve based upon hot/cold complaints.

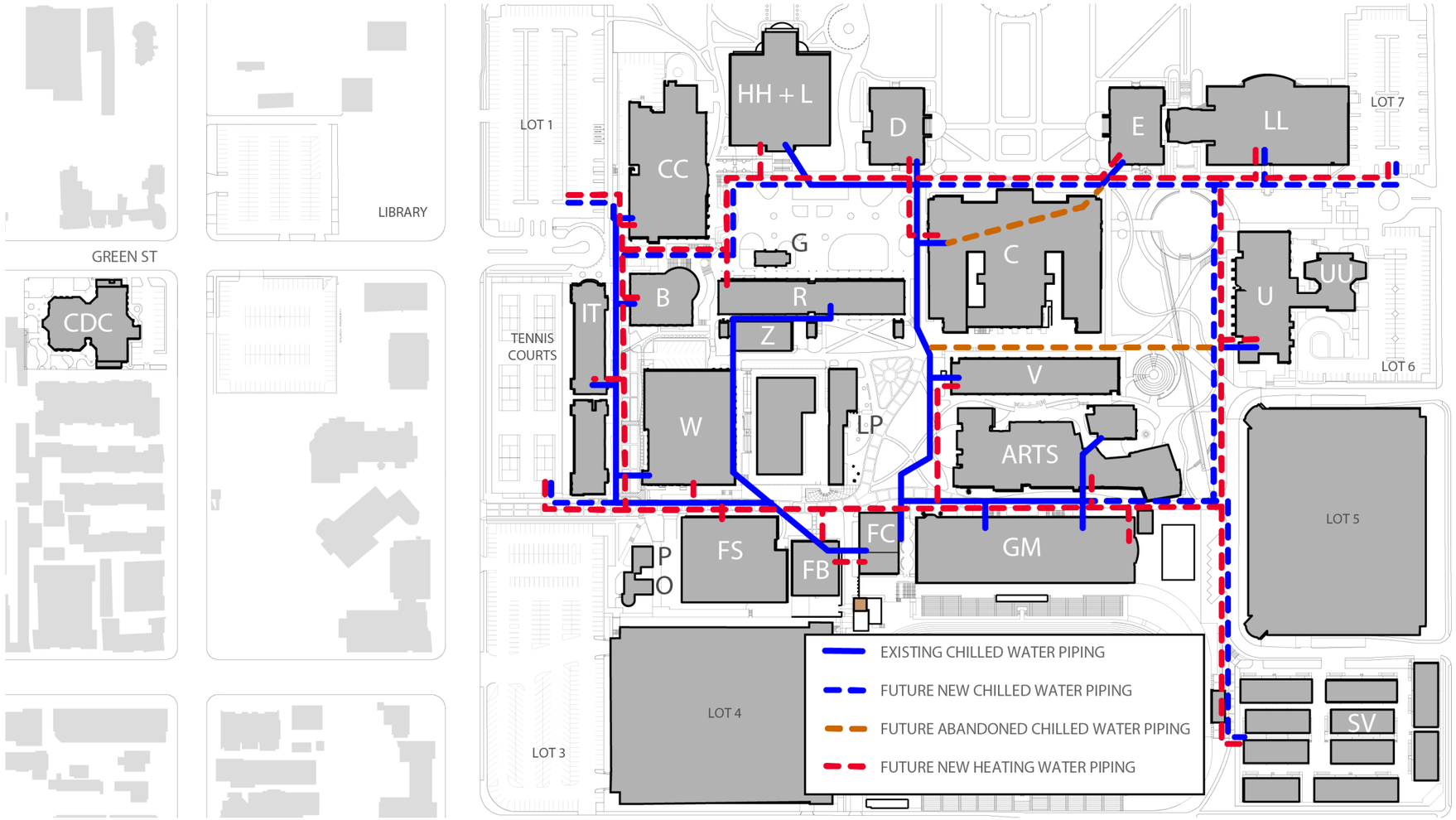
BUILDING V—HOWARD MARTIN

Dedicated fan coil units in each space condition the Martin Building. Heating water is provided by an on-site boiler and cooling is from the campus chilled water system. Two chilled water / hot water air handling units are located on the roof; these units were installed several years ago, but never operated. They appear to be in reasonable condition. Controls for the fan coil units and boiler are stand-alone.

BUILDING CDC—CHILD DEVELOPMENT CENTER

Three packaged VAV rooftop units condition the Child Development Center. The units have

FIGURE 2. PROPOSED CAMPUS CHILLED AND HOT WATER SYSTEM



indirect gas heat and DX cooling. Controls are Schneider Electric.

FOOTHILL CAMPUS

Foothill campus is conditioned by five air handling units on the roof of the facility. Heating water is provided by an on-site boiler. Chilled water is provided by an air-cooled chiller located on the roof. The buried ice storage tanks located to the south are abandoned due to tanks leaking. The building controls are Schneider Electric.

ANALYSIS & RECOMMENDATIONS

SITE

The campus chilled water system appears to be operating properly although not all buildings are connected to the system. There is no campus heating water system.

RECOMMENDATIONS

1. Expand the campus chilled water system to create a bi-direction loop and to provide connections to the Shatford Library, the Facility Services building and future buildings on campus.

2. Recommission the Boiler House for its original purpose and install a district heating hot water system. As with the chilled water system recommendation, the heating water system should have a bi-directional loop configuration and be used by the same buildings.

Benefits of using district chilled and hot water systems include:

Redundancy and reliability: District chilled and hot water systems rely on multiple machines to provide and distribute the chilled and hot water. A bi-directional loop configuration minimizes the potential for and extent of downtime for maintenance or failure of a section of the piping. Combined, this significantly reduces the risk of failure interrupting facility operations.

Reduced fossil fuel use: District chilled and hot water systems allow for the use of more efficient equipment, better part-load operation and reduced peak loads resulting in less fossil fuel use and overall energy costs. Centralized systems also simplify the use of thermal storage (e.g. ice storage), energy recovery (e.g. heat recovery chiller) and renewable technologies (e.g. solar thermal).

Improved maintenance and operation: District chilled and hot water systems rely on significantly less equipment which inherently reduces the maintenance required. Also, equipment is concentrated in one location reducing travel to and from buildings.

Coordination of the location and timing of the installation of the new chilled water and hot water will be required to minimize rework and to take advantage of work already being performed. Accessible tunnels are recommended for flexibility, maintenance access and longevity of the systems. Less attractive, but cheaper and definitely possible, are concrete trenches with access from grade or direct buried piping.

3. In conjunction with conversion to campus chilled water at Shatford Library, configure the ice storage system at the building to act as a satellite chilled



water plant, supplying chilled water to the campus loop from the ice storage when not required for to condition the building.

4. Convert all buildings to the campus standard control system which can be access from a central user interface. Control components should be as 'open source' as possible (e.g. Niagara) to prevent being limited to the service and capabilities of a single manufacturer.

5. Meter all services serving each building: domestic water, electricity, chilled water and hot water. Also, monitor domestic hot water electricity use separately. Connect the meters to the campus control system and leverage this information to monitor performance and report on progress.

6. Install new domestic water shut off valves at all buildings to allow for building shutdown without affecting other buildings.

7. Create a campus energy dashboard to market and track the campus energy use. This could be displayed throughout campus as well as accessible through the campus website.

BUILDINGS

It was evident that the campus has suffered from a lack of preventative and ongoing maintenance. There were many instances where items were not functional or obviously delinquent. Many of the buildings do not have functioning domestic water shut off valves necessitating the use of the utility shut off valve resulting in shutting off water to many buildings, not just the specific one. On the HVAC side, the filters for one of the air handling units at the Gymnasium were so dirty and clogged that they were sucked out of the filter racks by the air. It is recommended that the campus initiate a comprehensive program to become more current on deferred maintenance items as well and develop an ongoing preventative maintenance process.

The campus has already standardized on one control system and is working to convert all the buildings to this system. It is recommended for all buildings to be converted to the campus standard.

AC Building—Pool Building

None

B Building—Book Store

This building is relatively new and thus the equipment is in reasonable condition. Recommendations for this building are to convert to Distech controls in the short term and then convert over to campus heating water system when installed.

C Building—Horace Mann

The air handlers in this building are old (potentially original) and in various stages of upgrade/repair. The systems are inefficient and access for maintenance has been compromised over the years. A complete HVAC system overhaul is recommended. All existing units should be replaced with VAV air handling units and all zones converted to VAV with hot water reheat. Maintenance access should be a consideration when locating/configuring the equipment. A displacement ventilation system—suppling low at low velocity and returning high—is an effective strategy for high occupancy spaces; heat generated from the occupants naturally rises allow the cool air from below to flow across the occupants. Thus, it is recommended to take this opportunity to convert the auditorium unit from overhead supply / low return; to low supply / overhead return utilizing to existing air paths. The controls should be upgraded to campus standard during the HVAC upgrade. Provisions should be made to connect the building to the campus heating water system when it's installed and the existing boiler is near end of life.

Arts Building—Center for the Arts

This is the newest building on campus and, thus, the equipment and systems are in reasonably good condition. The building should be connected to the campus heating water system when it's installed and the existing boiler is near end of life.

CC Building—Campus Center

The Campus Center is a relatively new building and systems are in adequate condition. It is recommended that the controls be converted to the campus standard and the building connected to the campus heating water system when it's installed and when the existing boiler is near end of life.

D Building—Jane Addams

This building has newer equipment which is in adequate condition. The building should be connected to the campus heating water system when it's installed and when the existing boiler is near end of life.

E Building—Louis Agassiz

This building has newer equipment which is in adequate condition. The building should be connected to the campus heating water system when it's installed and when the existing boiler is near end of life.

FB Building—Boiler Plant

The campus district heating system has been abandoned for many years; the Boiler Plant is now being used for storage. It is recommended that the Boiler Plant converted back to a heating plant to take advantage of higher efficiencies, lower peak demand, reduced maintenance and the ability to use waste heat and thermal storage. A campus heating water loop should be installed to provide bi-directional service to all the buildings on the Colorado campus. Boilers can then be added to the Boiler Plant as buildings are connected to the system. Provisions should be made to take advantage of waste heat from the chiller plant during times of coincident heating and cooling.

FC Building—Chiller Plant

The equipment in the chiller plant is relatively new and in good condition. Provisions should be made for additional chillers and towers as more buildings are connected to the campus chilled water system.

FS Building—Facility Services

The roof top units on the Facility Services Building are in adequate condition. It is recommended that the controls be converted to the campus standard, and the roof top units be converted to air handling units when they are to be replaced. The building should then be connected to the campus chilled water and hot water systems to serve the air handling units.

G Building—Gallery

The Gallery appears to be operating well. It is recommended that the controls for this building be connected to the central campus control system, whether through a controls replacement or a bridge to the existing control system.

GM Building—Gymnasium

The Gymnasium is a relatively new facility; the controls have been upgraded to the campus standard and the main air handling units have been converted from packaged to chilled water / hot water. The building should be connected to the campus heating water system when it's installed, and the existing boiler is near end of life.

HH Building—Harberson Hall

See Student Services Building

IT Building—Industrial Technology

The air distribution for the Industrial Technology Building appears to be operating well, but the boilers have been a significant maintenance issue for several years. It is recommended that a complete overhaul of the existing boilers be performed to improve performance in the near term. The building controls should be converted to the campus standard and building connected to the campus heating water system when it's installed, and the existing boilers are near end of life.

L Building—Student Services

This building has newer equipment which is in adequate condition. The building should be connected to the campus heating water system when it's installed and when the existing boiler is near end of life.

LL Building—Shatford Library

This building has newer equipment which is in adequate condition. The ice storage tanks and associated air-cooled chiller should be repaired. In doing so, provisions should be made to have the ice storage system act as a remote chiller plant, able to charge the campus chilled water system when it's not required at the building. The building should be connected to the campus heating water system when it's installed and when the existing boiler is near end of life.



LP Building—Lancers Pass

Lancers Pass appears to be operating well. It is recommended that the controls for this building be connected to the central campus control system, whether through a controls replacement or a bridge to the existing control system.

O& P Buildings—Observatory and Planetarium

The Observatory and Planetarium appear to be operating well, but equipment is approaching end of life. It is recommended that the control be upgraded to the campus standard concurrent with equipment replacement.

R Building—Catherine Robbins

The systems at the Catherine Robbins building are inadequate. The air handlers are old (some are original) and in various stages of upgrade/ repair, and the piping and appurtenances are in need of servicing. The original steam domestic water heater has been abandoned and the new electric water heater is not operational. The recommendation is that the existing constant-volume, floor-by-floor AHUs be replaced with AHU's on the roof (structural evaluation and accommodations may be necessary), and the air distribution converted to VAV zones with hot water reheat. The controls should be converted to the



campus standard and the building connected to the campus heating water system when it's installed and when the existing boiler is near end of life. Additionally, the domestic water heater should be replaced.

SV—Science Village

The Science Village appears to be operating adequately. The modular buildings are planned to be replaced with a new science building, so specific changes are recommended. Although, if the construction of a new science building is not in the near future, it would be beneficial to connect the various units to the building control system for monitoring and diagnostics. The new science building should utilize high performance laboratory ventilation strategies, be connected to the campus chilled and hot water systems and use campus standard control system.

U Building—Armen Sarafian

This building has been abandoned and is scheduled for replacement. The boiler in this building should be disconnected or relocated to serve the Forum. The replacement building should utilize high performance architecture, HVAC and lighting strategies, be connected to the campus chilled and hot water systems and use the campus standard control system.

UU Building—Forum

The HVAC systems in this building are unsatisfactory. The constant-volume reheat system is highly inefficient, and the controls do not maintain comfort conditions. The heating water from this building is provided from the U Building which is scheduled for replacement. Thus, a new (or relocated) boiler should be installed dedicated to this building. The schedule for the replacement of the UU Building and installation of the campus heating water system should be taken into consideration. The existing HVAC system should be replaced with a VAV air handling unit and VAV reheat boxes. Heating and chilled water control valves should be repaired, and the building controls converted to the campus standard. The building should be connected to the campus heating water system when it's installed and when the boiler is near end of life.

V Building—Howard Martin

The room-by-room fan coil units are noisy, inefficient and high maintenance. The never-used, existing rooftop air handling units should be overhauled as required for proper variable air volume (VAV) operation. The existing fan coil units and associated ducts removed. Install new distribution ductwork from the rooftop air handling unit and provide VAV boxes with hot water reheat for each zone. The building controls should be converted to the campus standard and the building connected to the campus heating water system when it's installed and when the existing boiler is near end of life.

CDC Building—Child Development Center

The packaged rooftop units appear to be fairly new and in proper working order. The building controls should be connected to the campus control system either through a controls replacement or a bridge to the existing control system.

Foothill Campus

The HVAC system appears to be operating adequately except for the ice storage system. The building controls should be converted to the campus standard. Also, the ice storage system should be repaired to take advantage of off hours operation and peak load reduction.

EXISTING BUILDING SUMMARY

					Existing Systems Type/Description						Existing Systems Condition		Recommendations			
Campus	ID	Name	ASF	GSF	Air Distribution	Heating	Cooling	Controls	Plumbing	Notes	Rating	Notes	Near Term (1-5 years)	Priority	Long Term (5-10 years)	Priority
Colorado		Overview - Colorado Campus	799,390	1,074,901	Varies	Building level boilers	Combination of campus chilled water, biulidng level chillers and packaged DX systems.	Varies; campus is standardizing on Distech.	Most buildings do not have a building level meter nor shut off capability (either failed or non-existent). Thus, water use cannot be managed, and repairs cannot be made without affecting many other buildings.	Many buildings have boilers, piping and associated components exposed on the roof. Although the climate is generally mild here, protecting equipment and components from weather will extend the life of the items.	Inadequate	Although there are a couple of good buildings, there are many buildings which are in need of significant repairs or upgrades. Many systems are 40+ years old and have not been adequately maintained.	Install or repair domestic water shut off valves and meters at each building. Connect water meters to campus control system. Upgrade all buildings to Distech controls and connect to campus control system.	1, 3	Convert buildings to campus HW and CHW systems	9, 10
	AC	Pool Building	2,806	3,242	-	-	-	-	-	Building is for housing of pool equipment.	Unknown	Building not assessed				
	B	Bookstore	15,851	19,970	(1) AHU on roof	HW from Bldg CC	Campus CHW	OPTO 22			Adequate	Newer building. Can benefit from some additional maintenance.	Upgrade to Distech controls and connect to campus control system.	3	Connect to campus heating water system (either independently or through CC Building)	9
	C	Horace Mann	112,684	160,700	(9) Indoor AHUs; AHU-1,2 serve the auditorium; supply high, return under seats	Boiler	Campus CHW	East: Schneider West: stand alone			Inadequate	Air handlers are old (potentially original) and in various stages of upgrade/repair. Systems are inefficient and access for maintenance has been compromised over the years.	Replace existing air handling units with VAV air handling units; improve maintenance access when locating / configurating equipment. Convert auditorium from overhead supply / low return; to low supply / overhead return utilizing existing air paths to improve occupant comfort and system efficiency. Convert air distribution for other area to VAV zones with hot water reheat. Upgrade to Distech controls and connect to campus control system.	3, 5	Remove boiler at end-of life and connect building to campus heating water system.	9
	CA	Center for the Arts	68,015	87,673	(3) AHUs on roof of main building; (1) AHU on roof for theater; Multiple Exhaust Fans on roof; (1) Make Up Air unit on roof	Boiler: 1,000 MBH	Campus CHW	Distech	24 kW, 100 gal electric water heater		Good	Newest building on campus; some decline in performance	None		Remove boiler at end-of life and connect building to campus heating water system.	9
	CC	Campus Center	42,555	47,065	(3) AHU's + Kitchen unit; no heat in AHUs; VAV w/ Reheat	Boiler, also serves Bldg B	Campus CHW	Optal + TAC			Adequate	Newer building	Upgrade to Distech controls and connect to campus control system.	3	Remove boiler at end-of life and connect building to campus heating water system.	9
	D	Jane Adams	28,465	33,800	(2) AHUs in penthouse; (4) Heat pump units on grade	Boiler: 990 MBH input	Campus CHW (DX for heat pumps)	Distech			Adequate	Newer air handlers	None		Remove boiler at end-of life and connect building to campus heating water system.	9
	E	Louis Agassiz	23,119	33,800	(2) AHUs in penthouse	Boiler: 990 MBH input	Campus CHW	Distech	50 MBH, 80 gal natural gas water heater		Adequate		None		Remove boiler at end-of life and connect building to campus heating water system.	9
	FB	Boiler House	6,646	6,990	N/A	N/A	N/A			Builidng currently used for facility storage.	Unsatisfactory	Campus heating water system has been abandoned for many years.	Install campus heating water piping and centralized boilers to take advantage of higher efficiencies, lower peak demand and ability to use waste heat from Chiller Plant.	6	Expand boiler plant capacity to support addition of existing and future buildings	9

EXISTING BUILDING SUMMARY (CONTINUED)

					Existing Systems Type/Description						Existing Systems Condition		Recommendations			
Campus	ID	Name	ASF	GSF	Air Distribution	Heating	Cooling	Controls	Plumbing	Notes	Rating	Notes	Near Term (1-5 years)	Priority	Long Term (5-10 years)	Priority
	FC	Chiller Plant	6,485	6,996	N/A	N/A	(2) Trane Chillers; (2) Smardt Chillers; (2) 2-cell Evapco cooling towers	Andover			Good	Appears to be in good operating condition.	Expand campus chilled water system; create bi-direction loop. See campus utility narrative.	7	Expand chiller plant capacity to support addition existing and future buildings to CHW system	10
	FS	Facilities Services	23,082	25,072	(3) Packaged units on roof; (1) DX split system on roof; HW unit heaters in shop areas	Indirect gas furnace in unit	DX in unit	stand alone			Adequate		Upgrade to Distech controls and connect to campus control system.	3	Remove boiler at end-of life and connect building to campus heating water system. Replace rooftop units at end of life with air handling using with chilled water and hot water coils.	9, 10
	G	Art Gallery	1,078	1,400	(1) packaged unit on grade	Indirect gas furnace in unit	DX in unit	stand alone	N/A		Good		Upgrade to Distech controls and connect to campus control system.	3	None	
	GM	Gymnasium	78,534	84,172	(6) AHUs + (3) RTUs on roof (1) Packaged DX unit serving the press box		AHUs: Campus CHW RTUs: DX in unit	Distech	24 kW, 100 gal electric water heater	The (6) AHU's were converted from DX RTU's to HW/CHW AHU's in the 1990's	Good	Newer building, upgraded controls and conversion from DX to chilled water for main AHUs.	None		Remove boiler at end-of life and connect building to campus heating water system.	9
	HH	Harberson Hall	4,262	5,040	Served from Student Services Building						Adequate					
	IT	Industrial Technology	45,403	66,558	(4) indirect evap make-up air units for auto shop, carpentry and welding (100% exhausted); (1) AHU for all other spaces	(2) Boilers: (issues)	Campus CHW	OPTO 22			Adequate	Air distribution seems to be operation well. Boilers have had significant issues	Provide complete boiler overhaul to reduce boiler issues until campus HW system is established. Upgrade to Distech controls and connect to campus control system.	3, 4	Remove boiler at end-of life and connect building to campus heating water system.	9
	L	Student Services	19,716	32,738	(4) AHU's in penthouse (one serves Harberson Hall)	Boiler: 1,530 MBH input	Campus CHW	Distech	40 MBH, 50 gal natural gas water heater		Adequate		None		Remove boiler at end-of life and connect building to campus heating water system.	9
	LL	Shatford Library	60,554	89,829	(2) AHUs on roof; (1) Split systems w/ condensers on roof for Student Records Data Center	Boiler	(2) Air cooled chillers on roof (1 not working); buried ice storage tanks are abandoned due to leakage.	Distech	5 kW, 80 gal electric water heater		Adequate		None		Repair ice storage tanks and air cooled chiller; provide capability for for ice storage to act as remote chiller plant to charge campus chilled water system when not required for building use. Remove boiler at end-of life and connect building to campus heating water system. Remove air cooled chiller at end of life and connect to expanded campus chilled water sytem.	9, 10, 11
	LP	Lancers Pass	2,572	2,620	(1) packaged unit on roof	Indirect gas furnace in unit	DX in unit	stand alone			Good	No apparent issues.	Upgrade to Distech controls and connect to campus control system.	3	None	
	O	Observatory	2,519	2,923	(1) packaged unit on roof	Indirect gas furnace in unit	DX in unit	stand alone	DW from W Building		Adequate	Equipment approaching end of life	Upgrade to Distech controls and connect to campus control system.	3	None	
	P	Planetarium	1,216	1,309	(1) packaged unit on roof	Indirect gas furnace in unit	DX in unit	stand alone	DW from W Building		Adequate	Equipment approaching end of life	Upgrade to Distech controls and connect to campus control system.	3	None	

EXISTING BUILDING SUMMARY (CONTINUED)

					Existing Systems Type/Description						Existing Systems Condition		Recommendations			
Campus	ID	Name	ASF	GSF	Air Distribution	Heating	Cooling	Controls	Plumbing	Notes	Rating	Notes	Near Term (1-5 years)	Priority	Long Term (5-10 years)	Priority
Colorado	R	Robbins	84,043	134,107	10 AHU's; 2 per floor; dual-duct, multi-zone, 2 have been recently replaced	Boilers: (1) Parker, (2) Raypak high efficiency.	Campus CHW	Distech	Domestic hot water heat exchanger (steam) and storage tanks in basement are abandoned. Small storage water heater on 4th floor is not operational.		Inadequate	No hot water at building. Air handlers are old (some are original) and in various stages of upgrade/repair. Piping and controls are questionable.	Replace existing constant-volume, floor-by-floor AHUs with AHU's on roof. Convert air distribution to VAV zones with hot water reheat. Upgrade to Distech controls and connect to campus control sytem. Install new domestic water heater and repair plumbing piping.	2, 3, 5	Remove boiler at end-of life and connect building to campus heating water system.	9
	SV	Science Village	41,743	43,930	Packaged DX units on side of each modular unit; Laboratoy exhaust fans on roofs	Electric in units	DX in units	stand alone			Adequate		Upgrade to Distech controls and connect to campus control system.	3	Include high-efficiency, variable-volume lab exhaust system in design of future science facility. Connect to campus controls, hot water and chilled water systems.	9, 10, 12
	U	Armen Sarafian	52,903	81,205	Building recently damaged in seismic event and will be replaced. Currently being used for storage. Air handling units are not functioning.	Boiler: (1) Parker 2,000 MBH input	Campus CHW	N/A	N/A		Unsatisfactory	Buiding not occupiable.	Disconnect or relocate boiler to allow for continued operation of UU Building when U Building is demolished.	8	Provide high performance HVAC design for replacement building. Connect to campus controls, hot water and chilled water systems.	9, 10, 12
	UU	Forum	6,250	10,000	(1) custom constant volume unit with zone-level reheat	Served from U Building	Campus CHW	stand alone	12 kW, 40 gal electric water heater		Unsatisfactory	Comfort and energy use are compromised due to inefficient HVAC system and the necessity for manual adjustments of controls.	Disconnect heating water from boiler in U Building and add boiler dedicated to serve to UU building (existing boiler in U Building could be relocated). Replace existing constant volume, reheat AHU with VAV air handling units. Convert air distribution to VAV zones with hot water reheat. Repair heating and chilled water control valves. Upgrade to Distech controls and connect to campus control sytem.	8	Remove boiler at end-of life and connect building to campus heating water system.	9
	V	Howard Martin	30,776	45,992	Fan coil units in each room; (2) AHUs on roof, installed but never operated; (2) large exhaust fans on roof (abandoned)	Boiler: (1) Raypak		stand alone	9 kW, 50 gal electric water heater		Inadequate	Room-by-room units are noisy, inefficient and high maintenance.	Overhaul never-used, existing rooftop AHUs as required for proper operation. Remove existing fan coil units and abandoned ductwork and equipment. Add distribution ductwork and terminal units for a VAV system with hot water reheat. Upgrade to Distech controls and connect to campus control system.	3, 5	Remove boiler at end-of life and connect building to campus heating water system.	9

EXISTING BUILDING SUMMARY (CONTINUED)

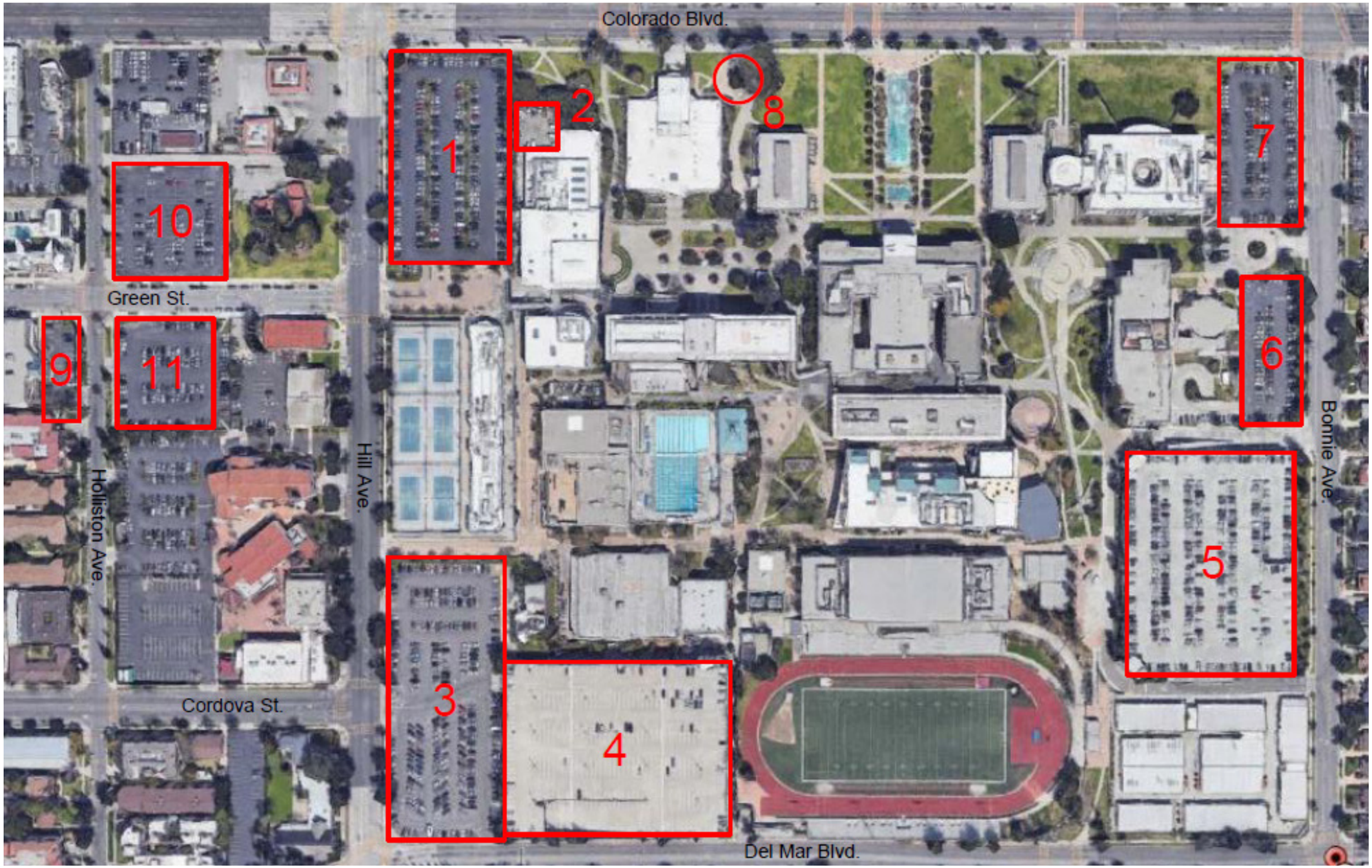
					Existing Systems Type/Description						Existing Systems Condition		Recommendations			
Campus	**ID**	**Name**	**ASF**	**GSF**	**Air Distribution**	**Heating**	**Cooling**	**Controls**	**Plumbing**	**Notes**	**Rating**	**Notes**	**Near Term (1-5 years)**	**Priority**	**Long Term (5-10 years)**	**Priority**
Colorado	W	Womens Gymnasium	34,254	43,000	(7) AHUs on roof	Boiler	Campus CHW	stand alone	DW also serves O & P Buildings; 650 MBH hot water boiler with large storage tank (due to showers)		Adequate		Upgrade to Distech controls and connect to campus control system.	3	Remove boiler at end-of life and connect building to campus heating water system.	9
	Z	Ceramics	3,859	4,770				stand alone	unknown		Adequate		Upgrade to Distech controls and connect to campus control system.	3	None	
Colorado Adjacent	CDC	Child Developme nt Center	18,231	22,302	(3) packaged units on roof	Indirect gas furnace in unit	DX in unit	Schneider	75 MBH, 75 gal natural gas water heater		Good	Packaged roof top units are fairly new and operating properly.	Upgrade to Distech controls and connect to campus control system.	3	None	
	WH	Temporary	10,000	10,450							Unknown	Building not assessed				
Foothill	CEC	Community Education Center	51,530	84,093	(5) AHU's on roof	(1) Boiler: Raypak	(1) Air cooled chiller; buried ice storage tanks are abandoned due to leakage.	Schneider	270 MBH, 100 gal natural gas water heater		Adequate	System is operating well, except for ice storage system.	Upgrade to Distech controls and connect to campus control system.	3	Repair ice storage tanks and air cooled chiller.	11
		Modulars	8,877	9,000							Unknown	Building not assessed				
Rosemead	-	Rosemead	14,406	24,028							Unknown	Building not assessed				
John Muir HS	NW	Northwest	28,758	42,640							Unknown	Building not assessed				

Rating	Description	Needs
Excellent	New, operating properly, and/or highly efficient	No immediate needs beyond regular maintenance
Good	Early life, generally operating properly, and/or fairly efficient	Minor system repairs and/or upgrades
Adequate	Mid life, inefficient operation, and/or not efficient	Major system repairs and upgrades
Inadequate	End of life, regular failures, and/or inefficient	Major equipment replacement and system overhaul
Unsatisfactory	No longer functioning	Complete system redesign and replacement

8.

Transportation

FIGURE I. PASADENA CITY COLLEGE COLORADO CAMPUS PARKING LOT LOCATIONS



SECTION 8

Transportation



COLORADO CAMPUS EXISTING CONDITIONS

Parking is located throughout 11 parking lots across campus, which consists of 2 parking structures, 7 surface lot areas, 1 storage lot, and 1 "drop- off" only zone. Currently, under the existing configuration, the Colorado Campus has a total of approximately 5,144 parking spaces which include 86 accessible parking spaces, 6 motorcycle zones, 11 electric vehicle spaces, and 6 police parking spaces. It should be noted that all 5,144 parking spaces are located within parking lots or structures throughout the campus.

Vehicular access to the site itself is provided via various local streets, the primary ones being Colorado Boulevard, Bonnie Avenue, Green Street, Holliston Avenue, Hill Avenue, and Del Mar Boulevard. The different parking lots for the Colorado campus are located throughout the campus and are also accessible via the local streets listed above.

Figure 1 (on the left page) shows the location of the various Colorado Campus parking areas. Table A provides a breakdown of the campus' existing parking supply per lot and by the type of parking space. Lot 2 is a parking area designated strictly for the campus' district vehicles. In addition, Lots 4 & 5 are parking structures which consist of five (5) levels each, including the roof. The parking supply data in Table A (on the following page) includes all five (5) levels for both Lots 4 & 5.

EXISTING LAND USES

The existing Colorado campus consists of 734,883 gross square feet. This information will be used to determine the estimated existing parking demand associated with the site. Additional school information, such as school population, is needed to calculate the existing parking demand, which will be provided in the final report. Table B (on the following page) shows a breakdown of the area square footage on the PCC's Colorado Campus.

TABLE A: PARKING FACILITY SUPPLY[1]

LOT #	PURPOSE	STUDENT	STAFF	ADA	MOTORCYCLE	VISITOR	ELECTRIC	POLICE	TOTAL SPACES
1	Staff	-	196	7	1	-	4	6	214
22	District	-	-	-	-	-	-	-	(26)
3	Student	287	-	10	-	-	-	-	297
4	Student	2,162	-	24	4	-	-	-	2,190
5	Student / Staff	1,550	391	34	1	-	4	-	1,980
6	Staff	-	96	4	-	-	-	-	100
7	Staff / Visitor	-	96	5	-	-	3	-	104
9	CDC	-	-	1	-	16	-	-	17
10	Student	126	-	-	-	-	-	-	126
11	Student / Staff	104	12	-	-	-	-	-	116
TOTAL PARKING SPACES									5,144

[1] Parking lot supply was estimated based on DKS field observation.

[2] Parking lot only serves needs of adjacent land use. Therefore, parking spaces are not included in overall parking supply.

TABLE B: EXISTING FLOOR PLAN INFORMATION

SITE	AREA (SQ FT.)
Colorado campus	716,359
Child Development Center	18,524
TOTAL	734,883

TABLE C: PARKING DEMAND PER ITE PARKING GENERATION MANUAL (4TH EDITION)

LAND USE	QUANTITY	UNITS	PARKING REQUIREMENTS[1]	REQ. SPACES
Community College	20,791	School Population (FTE)	0.18 spaces per school population	3,742
Total Spaces Required per ITE Parking Generation Manual (4th Edition)				**3,742**
Total Spaces provided on-site				**5,144**
Surplus per ITE Parking Generation Manual (4th Edition)				**1,402**

[1] Parking rates are from Parking Generation Manual, 4th Edition

ESTIMATED PARKING DEMAND BASED ON INDUSTRY STANDARDS

The 4th Edition of Parking Generation published by the Institute of Transportation Engineers (ITE) was used to provide the parking generation estimates. Based on the parking demand rates for community colleges, the campus requires 0.18 parking spaces per school population. Based on 2018-2019 Full-Time Equivalent (FTE) data provided by Pasadena City College, there were approximately 23,361 total student, staff, and faculty, with approximately 89% (20,791 FTE) assigned to the Colorado campus. Table C shows the number of spaces required per industry standard rates. As shown, the total number of spaces estimated per ITE's Parking Generation manual is 3,742. Hence, according to ITE's Parking Generation manual, the Colorado Campus has a surplus of 1,402 parking spaces.

OBSERVED PARKING DEMAND

In order to establish a peak parking demand, one (1) observed parking occupancy count was performed to get an adequate assessment of the typical weekday parking demand at the campus. Parking occupancy data was conducted at every parking lot identified in Table A. The parking survey was conducted on Thursday, November 7, 2019, between 7:00 AM and 9:00 PM, at one-hour intervals.

It should be noted that the observed parking counts were conducted during typical school activities and operations.

Table D provides a summary of the overall campus observed parking demand. As shown on Table D, the observed weekday peak period for the total campus occurred at 1:00 PM. There was a total of 4,574 vehicles parked, which is approximately 88.92% of the supplied 5,144 parking spaces.

A complete summary of the observed parking demand is provided in Table D.

TABLE D: OVERALL OBSERVED PARKING DEMAND [1]

TIME	TOTAL OBSERVED DEMAND	PERCENT OCCUPIED
7:00 AM	1,425	27.70 %
8:00 AM	2,589	50.33 %
9:00 AM	3,566	69.32 %
10:00 AM	4,053	78.79 %
11:00 AM	4,411	85.78 %
12:00 PM	4,236	82.35 %
1:00 PM	4,574	88.92 %
2:00 PM	4,411	85.75 %
3:00 PM	3,796	73.79 %
4:00 PM	3,173	61.68 %
5:00 PM	2,797	54.37 %
6:00 PM	2,452	47.67 %
7:00 PM	2,369	46.05 %
8:00 PM	1,948	37.87 %

[1] Observed on Thursday, November 7, 2019

In summary, according to ITE's Parking Generation manual, the Colorado Campus should have a surplus of approximately 1,402 parking spaces. Actual parking occupancy counts taken on campus show a higher demand of 4,574 vehicles or 88.92% occupied around 1:00pm in the afternoon. This equates to parking rate of 0.22 spaces per school population and leaves approximately 570 spaces available for additional or future parking needs.

FUTURE (YEAR 2029) PARKING DEMAND ASSESSMENT

The Colorado campus' parking demand was estimated based on a projected increase in Full-Time Equivalents (FTEs) over a period of the next 10 years. Based on projections estimated by campus representatives, the Colorado Campus is expected to have approximately 22,246 total student, staff, and faculty Full-Time Equivalent in the year 2029 or an overall increase of approximately 7%.

Based on the 22,246 FTE projection, Table E shows the number of spaces recommended based on

industry standard rates. As shown, the projected parking requirement at the Colorado campus is 4,004.

It is a generally accepted principle that a site operates at optimum efficiency when the occupancy rate falls within 85 and 95 percent. Therefore, DKS recommends that the campus take a conservative approach and apply a 15% "cushion" to the parking requirement considering the high parking occupancy rate and the parking needs for special events. As shown on Table E, the future parking requirement is 4,004 parking spaces based on the estimated future school population. However, when a 15% "cushion" is applied to the future parking requirement, the future parking demand is adjusted to 4,605 parking spaces. Currently, the campus supplies 5,127 parking spaces. Therefore, based on industry standard rates, the Colorado Campus is expected to have a surplus of 522 parking spaces assuming the existing parking supply.

TABLE E: FUTURE (YEAR 2029) PARKING DEMAND PER ITE PARKING GENERATION MANUAL (4TH EDITION)

LAND USE	QUANTITY	UNITS	PARKING REQUIREMENTS[1]	REQ. SPACES
Community College	22,246	School Population (FTE)	0.18 spaces per school population	4,004
15% Effective Supply Adjustment to Parking Requirement				4,605
Total Spaces provided on-site				5,127
Surplus Per Effective Parking Supply Requirement				522

[1] Parking rates are from Parking Generation Manual, 4th Edition

By comparison, based on the existing parking occupancy counts taken in November 2019 which determined a parking rate of 0.22 spaces per school population, the increase in FTEs to 22,246 on the Colorado Campus would generate a parking demand of approximately 4,894. Given the existing supply of 5,144 spaces, this leaves approximately 275 spaces available for additional or future parking needs.



PCC SHUTTLES BETWEEN CAMPUSES AND METRO GOLD LINE

Pasadena City College currently provides a shuttle system that travels between the Colorado Campus, the Community Education Center (CEC), the Rosemead Campus, and the Metro Gold Line Station on Allen Ave. The main shuttle stops locations where the shuttle runs through include Lot 7 of the Colorado Campus, Lot C of the CEC, the pick-up/drop-off zone at the Rosemead Campus, and the stop on Allen Ave. The shuttle system runs every 15-20 minutes from each location, from 6:30 AM to 10:45 PM on Monday to Thursday and from 6:30 AM to 5:45 PM on Friday. Currently, campus staff and shuttle drivers are witnessing a trend with higher volumes occupying the shuttles in the AM periods between 7:00 AM- 11:00 AM then a decline throughout the day. In addition, the shuttle experiences very low to no passengers on Friday between all 3 campuses while Rosemead does not provide a shuttle system at all on Friday.



During Week 1 of the Fall 2019 semester, there was an average of 851 total passengers utilizing the shuttle system per day. Within that daily average, approximately 90.5% of those passengers (770 passengers) are traveling within the main route from the Colorado Campus, the CEC, and the Allen Ave Gold Line and 9.5% (approximately 80 passengers) traveling from and to the Colorado campus and the Rosemead Campus. While it is evident that most of the passengers are utilizing the shuttle to and from the Colorado Campus and the CEC/ Allen Ave Gold Line, the Rosemead campus has been experiencing growing ridership in the shuttle system.

The Metro Gold Line is a freeway-median light rail station in the LA County Metro Rail System that is located above the North Allen Ave in the median of the 210 Freeway. Currently, the only access to the shuttle system for commuters who utilize the rail system, such as the Gold Line, is the stop on Allen Ave under the 210 freeway. A proposed extension to the shuttle system or possible Bus Rapid Transit (BRT) system to provide additional pickup/drop-off zones within the proximity of other train stations in the City of Pasadena.

NORTH HOLLYWOOD METRO BUS RAPID TRANSIT (BRT) CORRIDOR

The proposed North Hollywood Bus Rapid Transit (BRT) Corridor can provide additional commuter access directly to the Colorado campus. The proposed primary route of the system will begin in North Hollywood through Lankershim and SR-134 to Downtown Burbank. The route travels southeast to the arrive at the proposed bus stations in the city of Glendale where there are the alternate route options to travel to the City of Pasadena: through Central/SR-134, Central/ Broadway, and Central/Colorado Blvd. The BRT is then able to reach the Colorado Campus through multiple alternative routes such as Colorado Blvd, Green/ Union Couplet, or the SR-134 exit via Colorado or Fair Oaks Ave. Based on conversations with LA Metro staff, the project is moving forward and could be complete by 2025. While projected ridership has not been confirmed from LA Metro, there are a significant number of students that live on or near the proposed North Hollywood BRT route that attend and could utilize this form of transportation.

ELECTRONIC PARKING SPACE COUNT SYSTEM

A proposed parking monitoring system can facilitate traffic flow and alleviate congestion throughout all three campuses. The system implementation includes a parking space counting program in order to notify students, staff and employees of the current parking conditions ahead of time. The implementation can also be taken a step further in order to notify drivers within a certain radius, and even remotely, when a parking lot or structure is reaching maximum capacity.

SUMMARY AND RECOMMENDATIONS

In summary, the parking rate experienced on the Colorado Campus is larger than typical industry standard rates. The parking demand projections based on the increase in FTEs estimates that the Colorado Campus will be at 95% occupancy in the future year 2029. As previously mentioned, it is a generally accepted principle that a site operates at optimum efficiency when the occupancy rate falls within 85 and 95 percent. Additionally, potential modest reductions in parking in Lots 1, 6 & 7 as outlined in the Facilities Master Plan will impact the future ability to park on campus for students, faculty and staff.

Therefore, it is recommended that the campus take a conservative approach and evaluate alternative approaches to either providing additional parking supply on the Colorado Campus or looking to alternative means to reduce the parking demand:

- The potential re-use of the tennis courts near the West Lot on Hill Avenue to provide surface parking.
- Evaluate the potential to expand the Lot 4 parking structure over Lot 3 to build a multi-level parking facility.
- Evaluation and installation of an electronic parking space count system as referred to above
- Provide additional direct access to Lot 7 from Bonnie Avenue.
- Evaluate alternative access to and from Lot 5 parking structure.

FIGURE 2: PASADENA CITY COLLEGE FOOTHILL CAMPUS PARKING LOT LOCATIONS FOR LOTS A, B, C, AND D



FOOTHILL CAMPUS EXISTING CONDITIONS

Parking is located throughout 4 parking lots. Currently, under the existing configuration, the Foothill Campus has a total of approximately 516 surface parking spaces, which includes 384 student spaces, 88 staff spaces, 21 accessible parking spaces, 17 visitor parking, and 1 motorcycle zone. It should be noted that all 516 parking spaces are located within parking lots. In addition, it was observed that not all striped parking spaces in Lot B are currently being used and instead being used to host temporary classrooms and as office structures. There is 1 parking space for the Dean, 2 for disabled staff, and 5 spaces for staff with permits.

Vehicular access to the site itself is provided via various local streets, the primary ones being East Foothill Boulevard, La Tierra Street, and Santa Paula Avenue. The two (2) parking lots are also accessible via the local street listed above. The different parking lots for the Foothill Campus are located throughout the campus and are also accessible via the local streets listed above.

Figure 2 shows the location of the various Foothill Campus parking areas. Table F provides a breakdown of the campus' existing parking supply per lot and by the type of parking space.

EXISTING LAND USES

The existing Foothill Campus consists of 67,809 square feet. Table G shows a breakdown of the area square footage on the PCC's Foothill Campus.

TABLE F: PARKING FACILITY SUPPLY [1]

LOT #	PURPOSE	STUDENT	STAFF	VISITOR	ADA	MOTOR CYCLE	TOTAL SPACES
Lot A	Visitors	—	—	17	1	—	18
Lot B	Staff	—	7	—	2	—	9
Lot C	Staff	—	81	—	18	—	99
Lot D	Student & Staff	389	—	—	—	1	390
TOTAL PARKING SPACES							516

[1] Parking lot supply was estimated based on DKS field observation.

TABLE G: EXISTING FLOOR PLAN INFORMATION

SITE	AREA (sq. ft.)
Community Education Center	57,359
Foothill Warehouse	10,450
TOTAL	67,809

ESTIMATED PARKING DEMAND BASED ON INDUSTRY STANDARDS

The 4th Edition of Parking Generation published by the Institute of Transportation Engineers (ITE) was used to provide the parking generation estimates. Based on the parking demand rates for community colleges, the campus requires 0.18 parking spaces per school population. Based on 2018-2019 Full-Time Equivalent (FTE) data provided by Pasadena City College, there were approximately 23,361 total student, staff, and faculty, with approximately 6% (1,402 FTE) from the Foothill Campus (Community Education Center). Table H shows the number of spaces required per industry standard rates. As shown, the total number of spaces estimated per ITE's Parking Generation manual is 252. Hence, according to ITE's Parking Generation manual, the Foothill Campus has a surplus of 264 parking spaces.

OBSERVED PARKING DEMAND

In order to establish a peak parking demand, one (1) observed parking occupancy count was performed to get an adequate assessment of the typical weekday parking demand at the campus. Parking occupancy data was conducted at every parking lot identified in Table D. The parking survey was conducted on Thursday, November 7, 2019, between 7:00 AM and 9:00 PM, at one-hour intervals.

It should be noted that the observed parking counts were conducted during typical school activities and operations.

Table I provides a summary of the overall campus observed parking demand. As shown on Table C, the observed weekday peak period for the total campus occurred at 11:00 AM. There was a total of 411 vehicles parked, which is approximately 79.65% of the supplied 516 parking spaces.

A complete summary of the observed parking demand is provided in Table I.

TABLE I: OVERALL OBSERVED PARKING DEMAND

TIME	TOTAL OBSERVED DEMAND	PERCENT OCCUPIED
7:00 AM	109	21.12 %
8:00 AM	186	36.05 %
9:00 AM	348	67.44 %
10:00 AM	402	77.91 %
11:00 AM	411	79.65 %
12:00 PM	368	71.32 %
1:00 PM	311	60.27 %
2:00 PM	263	50.97 %
3:00 PM	223	43.22 %
4:00 PM	152	29.46 %
5:00 PM	66	12.79 %
6:00 PM	63	12.21 %
7:00 PM	69	13.37 %
8:00 PM	59	11.43 %

1. Observed on Thursday, November 7, 2019

In summary, according to ITE's Parking Generation manual, the Foothill Campus should have a surplus of approximately 264 parking spaces. Actual parking occupancy counts taken on campus show a higher demand of 411 vehicles or 79.65% occupied around 11:00am in the morning. This equates to parking rate of 0.29 spaces per school population and leaves approximately 105 spaces available for additional or future parking needs.

FUTURE (YEAR 2029) PARKING DEMAND ASSESSMENT

The Foothill campus' parking demand was estimated based on a projected increase in FTEs over a period of the next 10 years. Based on projections estimated by campus representatives, the Foothill Campus is expected to have approximately 1,500 total student, staff, and faculty Full-Time Equivalent in the year 2029 or an overall increase of approximately 7%.

Based on the 1,500 FTE projection, Table J shows the number of spaces recommended based on industry standard rates. As shown, the projected parking requirement at the Foothill campus is 270.

TABLE H: PARKING DEMAND PER ITE PARKING GENERATION MANUAL (4TH EDITION)

LAND USE	QUANTITY	UNITS	PARKING REQUIREMENTS[1]	REQ. SPACES
Community College	1,402	School Population (FTE)	0.18 spaces per school population	252
Total Spaces Required per ITE Parking Generation Manual (4th Edition)				252
Total Spaces provided on-site				516
Surplus per ITE Parking Generation Manual (4th Edition)				264

[1] Parking rates are from Parking Generation Manual, 4th Edition

TABLE J: FUTURE (YEAR 2029) PARKING DEMAND PER ITE PARKING GENERATION MANUAL (4TH EDITION)

LAND USE	QUANTITY	UNITS	PARKING REQUIREMENTS[1]	REQ. SPACES
Community College	1,500	School Population (FTE)	0.18 spaces per school population	270
15% Effective Supply Adjustment to Parking Requirement				311
Total Spaces provided on-site				516
Surplus Per Effective Parking Supply Requirement				205

[1] Parking rates are from Parking Generation Manual, 4th Edition



It is a generally accepted principle that a site operates at optimum efficiency when the occupancy rate falls within 85 and 95 percent. Therefore, DKS recommends that the campus take a conservative approach and apply a 15% "cushion" to the parking requirement considering the high parking occupancy rate and the parking needs for special events. As shown on Table J, the future parking requirement is 270 parking spaces based on the estimated future school population. However, when a 15% "cushion" is applied to the future parking requirement, the future parking requirement is adjusted to 311 parking spaces. Currently, the campus supplies 516 parking spaces. Therefore, based on industry standard rates, the Foothill Campus is expected to have a surplus of 205 parking spaces assuming the existing parking supply.

By comparison, based on the existing parking occupancy counts taken in November 2019 which determined a parking rate of 0.29 spaces per school population, the increase in FTEs to 1,500 on the Foothill Campus would generate a parking demand of approximately 435. Given the existing supply of 516 spaces, this leaves approximately 81 spaces available for additional or future parking needs.

LOT C & D LEASES

Pasadena City College leases land from Southern California Edison (SCE) where Lots C & D are currently located. The College is currently evaluating opportunities to minimize the need to lease all or part of these two lots from SCE. However, these are the two primary parking lots for students, faculty and staff and are immediately adjacent to the Foothill Campus.

LOT B PARKING STRUCTURE

The existing Lot B on the Foothill Campus is approximately 24,000 SF and is currently occupied with temporary/portable classrooms due to the construction of the U Building and Science Village on the main campus. It is estimated that there would be an additional 74 parking spaces (18' x 9') if the temporary classrooms were to be removed. From a planning standpoint, the consideration of a parking structure on Lot B was assessed. With a maximum of 3 to 4 floors and circulation design, each floor could provide approximately 50 parking stalls (18' x 9') per floor, totaling around 150-200 total parking spaces within the structure. Therefore, with the addition of the proposed parking structure, approximately between 80-130 parking spaces would be provided compared to the existing open surface Lot B.

SUMMARY AND RECOMMENDATIONS

In summary, the parking rate experienced on the Foothill Campus is larger than typical industry standard rates. The parking demand projections based on the increase in FTEs estimates that the Foothill Campus will be at 84% occupancy in the future year 2029. As previously mentioned, it is a generally accepted principle that a site operates at optimum efficiency when the occupancy rate falls within 85 and 95 percent. Therefore, while it is not imperative that the campus identify opportunities to provide additional parking to serve the Foothill Campus, the opportunity to increase parking use, both in the existing lots and improve Lot B in concert with the shuttle service may offset some of the parking needs on the Colorado Campus. The following are recommendations:

- Evaluate the potential to expand Lot B to utilize surface parking and evaluate the opportunity to construct a multi-level parking facility.
- Re-evaluate lease options with SCE re: Lots C & D
- Re-emphasize shuttle connection between Colorado Campus and Foothill Campus

FIGURE 3: PASADENA CITY COLLEGE ROSEMEAD CAMPUS PARKING LOT LOCATION FOR MAIN LOT AND ADDITIONAL PARKING



ROSEMEAD CAMPUS EXISTING CONDITIONS

Parking is located throughout 2 parking lots. Currently, under the existing configuration, the Rosemead Campus has a total of approximately 236 surface parking spaces, which includes one 196 student spaces, 30 staff spaces, and 10 accessible parking spaces. It should be noted that all 236 parking spaces are located within parking lots.

Vehicular access to the site itself is provided via various local streets, the primary ones being Rosemead Boulevard, Bentel Avenue, and Newby Avenue. The two (2) parking lots are also accessible via the local streets listed above.

Figure 3 shows the location of the two Rosemead Campus parking areas. Table K provides a breakdown of the campus' existing parking supply per lot and by the type of parking space.

ESTIMATED PARKING DEMAND BASED ON INDUSTRY STANDARDS

The 4th Edition of Parking Generation published by the Institute of Transportation Engineers (ITE) was used to provide the parking generation estimates. Based on the parking demand rates for community colleges, the campus requires 0.18 parking spaces per school population. Based on the 2018-2019 Full-Time Equivalent (FTE) data, the Pasadena City College currently consists of approximately 23,361 total student, staff, and faculty FTE, with approximately 5% (1,168 FTE) from the Rosemead Campus. Table L shows the number of spaces required per industry standard rates. As shown, the total number of spaces required per ITE's Parking Generation manual is 210. Hence, according to ITE's Parking Generation manual, the Rosemead Campus has a surplus of 26 parking spaces.

TABLE K: PARKING FACILITY SUPPLY [1]

LOT #	PURPOSE	STUDENT	STAFF	ADA	TOTAL SPACES
Main Lot	Student & Staff Parking	142	30	7	179
Additional Parking	Student Parking	54	-	3	57
TOTAL PARKING SPACES					236

[1] *Parking lot supply was estimated based on DKS field observation.*

TABLE L: PARKING DEMAND PER ITE PARKING GENERATION MANUAL (4TH EDITION)

LAND USE	QUANTITY	UNITS	PARKING REQUIREMENTS[1]	REQ. SPACES
Community College	1,168	School Population (FTE)	0.18 spaces per school population	252
Total Spaces Required per ITE Parking Generation Manual (4th Edition)				252
Total Spaces provided on-site				516
Surplus per ITE Parking Generation Manual (4th Edition)				264

[1] Parking rates are from Parking Generation Manual, 4th Edition

OBSERVED PARKING DEMAND

In order to establish a peak parking demand, one (1) observed parking occupancy count was performed to get an adequate assessment of the typical weekday parking demand at the campus. Parking occupancy data was conducted at every parking lot identified in Table G. The parking survey was conducted on Thursday, November 7, 2019, between 7:00 AM and 9:00 PM, at one-hour intervals.

It should be noted that the observed parking counts were conducted during typical school activities and operations.

Table M provides a summary of the overall campus observed parking demand. As shown on Table M, the observed weekday peak period for the total campus occurred at 11:00 AM. There was a total of 104 vehicles parked, which is approximately 44.07% of the supplied 236 parking spaces.

In summary, according to ITE's Parking Generation manual, the Rosemead Campus should have a surplus of approximately 26 parking spaces. Actual parking occupancy counts taken on campus show a lower demand of 104 vehicles or 44% occupied around 10:00am in the morning. This equates to parking rate of 0.09 spaces per school population and leaves approximately 132 spaces available for additional or future parking needs.

A complete summary of the observed parking demand is provided in Table G.

FUTURE (YEAR 2029) PARKING DEMAND ASSESSMENT

The Rosemead campus' parking demand was estimated based on a project increase in FTEs over a period of the next 10 years. Based on projections estimated by campus representatives, the Rosemead Campus is expected to have approximately 1,250 total student, staff, and faculty Full-Time Equivalent in the year 2029 or an overall increase of 7%.

Based on the 1,250 FTE projection, Table N shows the number of spaces required per industry standard rates. As shown, the projected parking requirement at the Rosemead campus is 207.

It is a generally accepted principle that a site operates at optimum efficiency when the occupancy rate falls within 85 and 95 percent. Therefore, DKS recommends that the campus take a conservative approach and apply a 15% "cushion" to the parking requirement considering the high parking occupancy rate and the parking needs for special events. As shown on Table N, the future parking requirement is 225 parking spaces based on the estimated future school population. However, when a 15% "cushion" is applied to the future parking requirement, the future parking requirement is adjusted to 259 parking spaces. Currently, the campus supplies 236 parking spaces. Hence, the Rosemead Campus is expected to have a deficiency of 23 parking spaces assuming the existing parking supply.

By comparison, based on the existing parking occupancy counts taken in November 2019 which determined a parking rate of 0.09 spaces per school population, the increase in FTEs to 1,250 on the Rosemead Campus would generate a parking demand of approximately 259. Given the existing supply of 236 spaces, this leaves a deficiency of approximately 23 spaces.

TABLE M: OVERALL OBSERVED PARKING DEMAND

TIME	TOTAL OBSERVED DEMAND	PERCENT OCCUPIED
7:00 AM	63	26.69 %
8:00 AM	88	37.29 %
9:00 AM	103	43.64 %
10:00 AM	104	44.07 %
11:00 AM	78	33.05 %
12:00 PM	81	34.32 %
1:00 PM	81	34.32 %
2:00 PM	90	38.14 %
3:00 PM	85	36.02 %
4:00 PM	81	34.32 %
5:00 PM	70	29.66 %
6:00 PM	28	11.86 %
7:00 PM	15	6.36 %
8:00 PM	12	5.08 %

1. Observed on Thursday, November 7, 2019

TABLE N: FUTURE (YEAR 2029) PARKING DEMAND PER ITE PARKING GENERATION MANUAL (4TH EDITION)

LAND USE	QUANTITY	UNITS	PARKING REQUIREMENTS[1]	REQ. SPACES
Community College	1,250	School Population (FTE)	0.18 spaces per school population	225
15% Effective Supply Adjustment to Parking Requirement				259
Total Spaces provided on-site				236
Surplus Per Effective Parking Supply Requirement				-23

[1] Parking rates are from Parking Generation Manual, 4th Edition



SUMMARY AND RECOMMENDATIONS

In summary, the parking rate experienced on the Rosemead Campus is less than typical industry standard rates. The industry standards parking demand projections based on the increase in FTEs estimates that the Rosemead Campus will be at 91% occupancy in the future year 2029. As previously mentioned, it is a generally accepted principle that a site operates at optimum efficiency when the occupancy rate falls within 85 and 95 percent. Therefore, while it is not imperative that the campus identify opportunities to provide additional parking to serve the Rosemead Campus, there are not many alternatives on the existing site or adjacent lot to increase parking supply. Recommendations should focus on decreasing the parking demand including improving the shuttle service connection to the Colorado and Foothill Campuses.



9.

Wayfinding


You're currently in...
ALUMNI COMMONS
LANCER POINT
Your gateway to PCC.
Don't forget to visit
www.pasadena.edu/lancerpoint
CENTER for the ARTS
ROBINSON STADIUM
HUTTO-PATTERSON GYM (GM)

SECTION 9

Wayfinding



OBSERVATION AND ANALYSIS OF EXISTING CONDITIONS

The growth of the Pasadena City College Colorado campus and satellite sites have created the need for a robust family of vehicular, pedestrian and specialty wayfinding elements. A wayfinding/ signage system for a large institution like Pasadena City College can easily become diluted over time as the campus changes and signs are added that introduce a new design direction. Taken as a whole, the current multi-campus wayfinding /signage system lacks cohesiveness. The strength of any comprehensive system lies in a consistent presentation of information along a defined path of travel. The components of the system must be easily recognizable as a wayfinding tool, must reflect the character of the campus environment and must have clear visuals that aid in the navigation to an intended destination.

The following observations are from the perspective of a first-time visitor. While a comprehensive wayfinding and signage system must address the needs of an array of users, first time visitors have the greatest need for information and are most dependent upon signage and wayfinding elements. Therefore, an effective wayfinding system has the potential to enhance the visitor experience and contribute to a positive impression of the campus.

1. PASADENA CITY COLLEGE BRAND

There is an inconsistent use of the Pasadena City College brand across all campuses in terms of color, scale, placement and application. The current shield and logotype have value as a recognizable brand image and should be uniformly applied throughout all the campuses when possible.

2. PRIMARY CAMPUS IDENTIFICATION MONUMENTS

Large campus identification monument signs are located at three of the four corners of the campus. There is no Pasadena City College identification at the southwest corner of campus, which is a missed opportunity to establish a sense of arrival. The current monument signs, while classical in design, are not eye-catching and have understated branding that does not suggest a vibrant institution of learning.

3. CAMPUS GATEWAYS/ENTRY POINTS

The existing signs at primary pedestrian and vehicular entry points are understated and lack



consistent Pasadena City College branding. These elements do not reinforce the campus identity or promote a strong sense of arrival.

4. DIRECTORIES/CAMPUS MAPS

The directory map signs at campus entry points are small and difficult to identify as a source of information from a distance. The maps are located along the periphery of campus but not within the campus interior.

5. BUILDING/FACILITY IDENTIFICATION SIGNS

The methods of identifying buildings are inconsistent throughout the Colorado campus. There are currently multiple means of building/facility identification that include donor names, functional names (e.g. "bookstore"), and an abbreviated letter code system. In some cases the letter code does not match the building name, creating confusion. Building nomenclature needs to be consolidated and streamlined into a more effective wayfinding tool.

6. PEDESTRIAN WAYFINDING AND SIGNAGE

The existing wayfinding signage system on the campus interior is scant and lacking in continuity. A number of makeshift signs have been placed around the campus to compensate for this deficiency. A comprehensive signage system along a defined path of travel would greatly improve wayfinding throughout the campus for infrequent and first-time visitors.

7. PARKING LOT AND GARAGE SIGNAGE

Parking lot and garage signage lacks consistency and in some locations has weathered to the point of illegibility. Code required information needs to be assessed and updated to meet current requirements. Parking related signage/wayfinding elements could have a distinct identity through the use of design, color, and typography.

8. RESTROOM SIGNAGE

Restroom wayfinding signage on the Colorado campus is limited and could be incorporated into a wayfinding signage program. First-time and infrequent visitors rely on this information to locate restrooms. Signage at restroom entries needs to be assessed and updated to meet current code requirements.

9. AMENITY WAYFINDING SIGNAGE

The current signage on the Colorado campus does not adequately address amenity wayfinding. This information should be incorporated into a comprehensive wayfinding system to increase access and awareness.

10. NOTICE BOARDS

The design of notice boards and methods of displaying information are inconsistent throughout the campus. Standards should be established for the posting of flyers and advertisements by students and others in order to maintain a more orderly display.

11. REGULATORY SIGNAGE

The use of custom and off-the-shelf signs contributes to a cluttered appearance throughout the campus. Design standards should be established so this information can be presented in a more consistent and orderly manner.

12. TEMPORARY SIGNS

Temporary information is displayed in a variety of sign formats and in some cases compensates for a lack of permanent signage. Design standards should be established so this information can be presented in a more consistent and orderly manner.

13. TRANSIT SIGNS

The Colorado campus lacks sufficient transportation related signage. A system of signs

should address vehicular, pedestrian, bicycle, rideshare, and public transportation options.

14. BANNERS

There are currently a variety of banners displayed on campus. Banners could be incorporated into a comprehensive wayfinding system in addition to promoting the campus identity/brand.

15. BUILDING ENTRY SIGNAGE

The current signage at building entries is inconsistent and in some cases lacks information about the facilities/activities located inside. Signage standards for this level of information should be established so that there is continuity throughout the campus.

16. TYPOGRAPHY

The Optima typeface appears on permanent signage across the Colorado campus and several of the satellite sites. The Pasadena City College logotype uses the Optima typeface and building names are often displayed in this typeface. There are instances where different typefaces are used for building names and on signage. The current college website and more recent promotional materials use an Avenir typeface, which has a more contemporary appearance.

17. COLOR

The current gray/green color used on architectural elements and on signage is consistently applied throughout the Colorado campus and at some of the satellite sites. Consideration should be given to how this color relates to the more contemporary red and yellow color scheme used for campus branding and on signage at the Northwest satellite site.

18. SATELLITE SITES

Foothill Campus uses the Optima typeface and green sign color but does not display the Pasadena City College logotype and shield. Some of the signs imitate the signage on the Colorado campus while others are unique in their design.

PCC at Rosemead displays the Pasadena City College logotype and shield on the building and has a large pylon/readerboard sign that appears to be a carry-over from the previous building use. The on-site ancillary signage is mostly temporary or off-the-shelf and is inconsistent in design and lacks branding.

PCC Northwest employs a unique signage system based on the current campus branding scheme. The signs use the Avenir typeface and the red and yellow color palette.

Child Development Center for the most part uses the same signage as the Colorado campus because of its close proximity. The campus logotype and shield are used at a small scale on the entry monument, and the Optima typeface and green color scheme are used on parking related signage.

In general, there is a lack of consistent signage across the satellite campuses. Consideration should be given to uniformly applying a single signage system across all sites with a consistent display of the PCC brand.

WAYFINDING STRATEGIES

The size and complexity of the Pasadena City College main campus necessitates the need for a comprehensive wayfinding/signage system that will provide information for the efficient use of all the college's facilities including satellite campuses. The primary objective of the wayfinding program is to provide a system that:

1. Improves access to the campus, particularly for first time or infrequent visitors
2. Achieves organizational, visual and functional clarity in the signage.
3. Facilitates user movement throughout the campus with maximum efficiency
4. Visually integrates its various components with the built environment
5. Is coordinated with the Campus Master Plan and campus construction projects
6. Deals with growth by implementing signage that is flexible so it can accommodate ongoing changes of information but is designed to retain its visual identity over time
7. Increases opportunities for self-help
8. Increases awareness of and access to campus amenities
9. Utilizes the latest information technology
10. Makes the campus more pedestrian friendly
11. Reinforces primary and secondary paths with signage
12. Marks accessible routes as necessary

By definition, wayfinding is a system for organizing and communicating information. A comprehensive wayfinding system can aid navigation with a variety of tools, each designed to guide users through an environment via a carefully planned sequence. Signage is only a single element of a broader wayfinding system. A well thought out system will have a wide reach by using color, symbols, maps, online tools, signs and other visual cues to provide reassurance and directions.

Signs, as one of the key components of a wayfinding system, are meant to incorporate aesthetic, branding and messaging needs utilizing typography, composition and color to communicate at a target audience in a format that can easily be absorbed by users. Because signage as a communication device becomes a semi-permanent part of the visual landscape it must not only clearly communicate information but must also be compatible with and relate to the built environment. The graphic elements, be it signage or other wayfinding elements, must be an integral part of the campus and enhance the campus environment. The use of durable and sustainable materials is also an important consideration in the design process. Any successful sign system in a college setting must allow for ongoing changes in sign locations and information. Signs should be easy to maintain and alter as the need arises by in-house sources or by select outside vendors familiar with the wayfinding system.

The primary function of an effective wayfinding system is to get users to the campus of choice and to move them from key campus entry points to a particular location within the complex. All users, be it students, faculty, visitors, emergency responders or the community as a whole, will share a need for information. This need for information will be both constant and varied. The success of the wayfinding system must not only rely on the design and thoughtful placement of the system components, but also function within the context of a broader wayfinding strategy. This strategy must include a variety of tools and technologies that respond to the needs of users and guide them through the environment.

In particular, information technology is an important component of any successful wayfinding system that seeks to anticipate future growth. Pre-arrival technology including Google Maps, City of Pasadena and Pasadena City College websites, and interactive maps are all available tools. On-campus technology can incorporate mobile apps, smartphones, text messaging, internet links, QR codes, and



touchscreen displays at strategically placed kiosks within the campus.

MASTER WAYFINDING/SIGNAGE PROGRAM COMPONENTS

I. PRIMARY CAMPUS IDENTIFICATION MONUMENTS AT PROJECT CORNERS.

Enhancement of existing monuments or design of new monuments to increase brand recognition and improve college image.

2. CAMPUS GATEWAY/ENTRY POINT SIGNAGE.

Monument/pylon signs at primary campus entry points to promote college brand and establish sense of arrival.

3. VEHICULAR WAYFINDING AND PARKING SIGNAGE.

Freestanding parking identification signage elements at off-street entries to reinforce college brand. Directional signage pertaining to specific parking lots and garages.

4. PEDESTRIAN WAYFINDING

Freestanding signs along defined paths of travel throughout campus to include directional signage and directories with campus maps. Wayfinding signage to include restrooms and campus amenities.

5. INFORMATION KIOSKS

Information kiosks at key assembly places within campus. Elements could incorporate interactive technology in addition to printed materials and static maps.

6. BUILDING IDENTIFICATION SIGNAGE

On-building and freestanding building identification elements as required to provide clear information about building use and location of primary entries.

7. TRANSPORTATION ORIENTED SIGNAGE

Signage elements identifying and directing users to transportation/pick-up and drop-off points.

8. INTERPRETIVE SIGNAGE

Signage identifying architecture, landscape, and public art/sculptures.

9. BANNERS AND DECORATIVE ELEMENTS

Pole or building mounted banner elements to provide event/historical information and promote campus branding.

IO. ANCILLARY SIGNAGE

Signage to include code required, regulatory, and informational elements.

II. SATELLITE CAMPUS IDENTIFICATION MONUMENT

Monument signs at primary satellite campus entry points where feasible to promote college brand and establish sense of arrival

I2. TEMPORARY SIGNAGE

Freestanding or building mounted signs of a temporary nature to convey changing information.

I3. DONOR RECOGNITION SIGNAGE

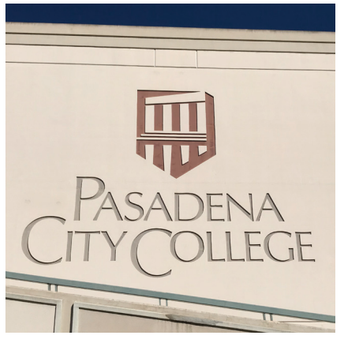
On-building or freestanding elements identifying donors.

I4. CAMPUS MAPS

Digital and printed map artwork for main and satellite sites.

















PASADENA CITY COLLEGE LOGO

LOGO FORMAT:
TO EFFECTIVELY PROMOTE THE PASADENA CITY COLLEGE BRAND, THE SHIELD AND LOGOTYPE SHOULD BE DISPLAYED CONSISTENTLY ON TWO AND THREE DIMENSIONAL APPLICATIONS. WHEREVER POSSIBLE THE TWO ELEMENTS SHOULD BE USED IN THE STANDARD STACKED FORMAT.

COLOR:
COLOR IS AN IMPORTANT COMPONENT OF THE PASADENA CITY COLLEGE BRAND. THE RED AND YELLOW COLOR SCHEME USED ON THE COLLEGE WEBSITE AND PROMOTIONAL MATERIALS SHOULD BE APPLIED TO THE COLLEGE BRAND AS WELL. THESE COLORS GIVE THE BRAND A CONTEMPORARY AND VIBRANT VISUAL APPEAL AND EVOKE A MORE SPIRITED ATTITUDE.

USAGE:
THE LOGO AND RED AND YELLOW COLOR SCHEME CAN BE APPLIED AT VARIOUS SCALES TO ARCHITECURAL AND WAYFINDING ELEMENTS THROUGHOUT THE MAIN CAMPUS AND SATELLITE SITES TO REINFORCE THE BRAND. IN ORDER TO AVOID OVERSATURATION, THE LOGO SHOULD BE DISPLAYED SELECTIVELY ON TWO AND THREE DIMENSIONAL ELEMENTS.

ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

AVENIR NEXT MEDIUM

ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

AVENIR NEXT CONDENSED MEDIUM

ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

AVENIR NEXT DEMI BOLD

ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

AVENIR NEXT BOLD

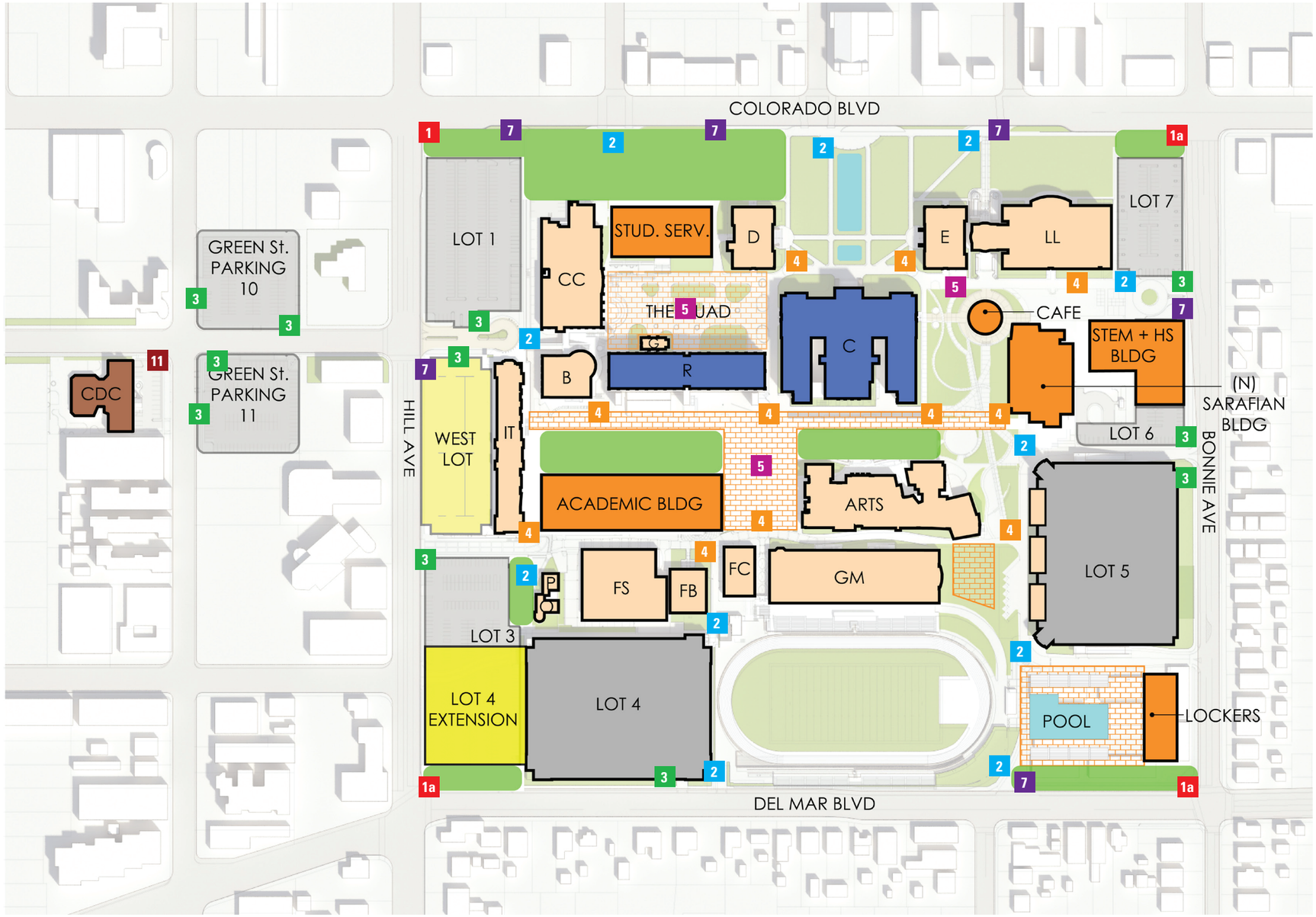
TYPOGRAPHY

THE CURRENT LOGOTYPE IS ADAPTED FROM THE OPTIMA TYPEFACE. THIS TYPEFACE IS CURRENTLY USED ON SIGNAGE AND GRAPHICS THROUGHOUT THE MAIN CAMPUS AND SATELLITE SITES. THE MORE RECENT WEBSITE AND OTHER MARKETING AND PRINT MATERIALS USE THE MORE CONTEMPORARY AVENIR TYPEFACE THAT IS SANS SERIF AND MORE ADAPTABLE FOR SIGNAGE APPLICATIONS. THE AVENIR TYPEFACE IS AVAILABLE IN A VARIETY OF WEIGHTS AND IS MORE SUITABLE FOR USE WHERE MULTIPLE LINES OF COPY ARE REQUIRED FOR WAYFINDING PURPOSES.



ICONOGRAPHY

INTERNATIONAL ICONS CAN BE USED TO SUPPLEMENT MESSAGES ON DIRECTIONAL SIGNS AND CONVEY INFORMATION TO A WIDER AUDIENCE.



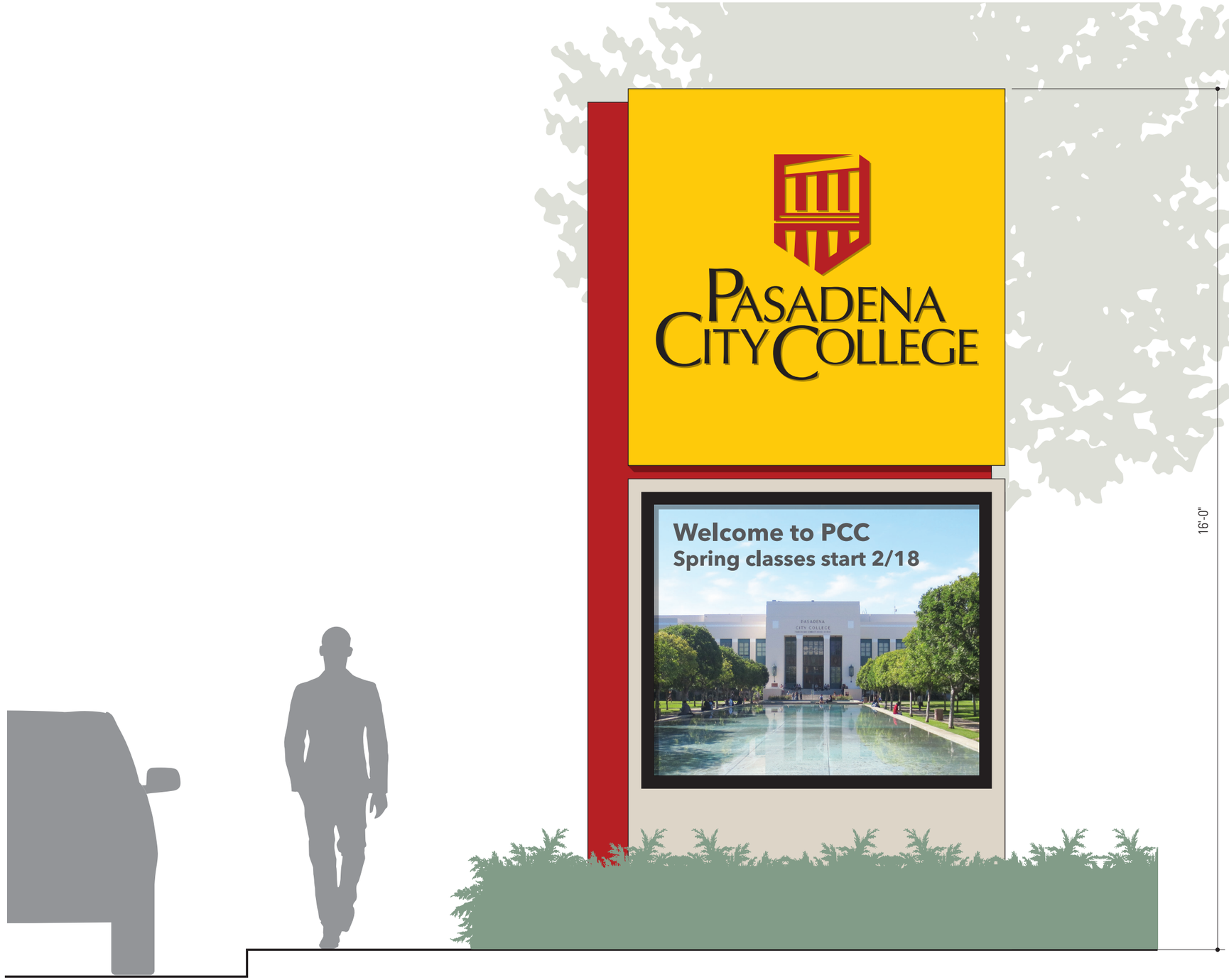
SIGN LEGEND

1	PRIMARY CAMPUS IDENTIFICATION ELEMENT (WITH READERBOARD)
1a	PRIMARY CAMPUS IDENTIFICATION ELEMENT (WITHOUT READERBOARD)
2	CAMPUS GATEWAY/ENTRY POINT SIGN
3	PARKING LOT ENTRY SIGN
4	PEDESTRIAN WAYFINDING ELEMENTS
5	INFORMATION KIOSK
6	BUILDING IDENTIFICATION SIGN
6a	BUILDING IDENTIFICATION WALL SIGN
7	TRANSIT ORIENTED SIGNAGE
8	INTERPRETIVE SIGNAGE
9	BANNERS/DECORATIVE ELEMENTS
10	TEMPORARY SIGNAGE
11	SATELLITE CAMPUS MONUMENT
12	ANCILLARY SIGNAGE

N

1 SCHEMATIC SIGN LOCATION PLAN - MAIN CAMPUS - FUTURE STATE

SCALE: NTS



1 PRIMARY CAMPUS I.D. ELEMENTS

VEHICULAR ORIENTED PRIMARY CAMPUS IDENTIFICATION ELEMENTS LOCATED AT CAMPUS SITE CORNERS. SIGN TO CONSIST OF FABRICATED ALUMINUM CORE CABINET AND FACE PANELS WITH PAINT FINISH. SIGN CABINET TO HAVE INTERNAL ILLUMINATION FOR HALO LIGHTING EFFECT ON COLLEGE LOGO. DIGITAL READERBOARD TO INCORPORATED INTO LOWER SIGN CABINET AT SELECT LOCATION(S). CONSIDERATION SHOULD BE GIVEN TO ENHANCING LANDSCAPING AT PROJECT CORNERS TO COMPLEMENT THE SIGNAGE.

1 SCALE: 1/2" = 1'-0"



1a PRIMARY CAMPUS I.D. ELEMENTS

VEHICULAR ORIENTED PRIMARY CAMPUS IDENTIFICATION ELEMENTS LOCATED AT CAMPUS SITE CORNERS. SIGN TO CONSIST OF FABRICATED ALUMINUM CORE CABINET AND FACE PANELS WITH PAINT FINISH. SIGN CABINET TO HAVE INTERNAL ILLUMINATION FOR HALO LIGHTING EFFECT ON COLLEGE LOGO. DIGITAL READERBOARD TO INCORPORATED INTO LOWER SIGN CABINET AT SELECT LOCATION(S). CONSIDERATION SHOULD BE GIVEN TO ENHANCING LANDSCAPING AT PROJECT CORNERS TO COMPLEMENT THE SIGNAGE.

1a SCALE: 1/2" = 1'-0"



2 SCALE: 1/2" = 1'-0"

2 CAMPUS GATEWAY/ENTRY POINT SIGNAGE

SIGNAGE ELEMENTS LOCATED AT PRIMARY PEDESTRIAN CAMPUS ENTRY POINTS. SIGN TO CONSIST OF FABRICATED ALUMINUM CORE CABINET AND FACE PANELS WITH PAINT FINISH. DIGITALLY PRINTED MAP ARTWORK ON REMOVABLE PANEL TO ALLOW FOR UPDATES TO INFORMATION.

3 PARKING LOT ENTRY SIGN

SIGNAGE ELEMENTS LOCATED AT PARKING LOT ENTRIES. SIGN TO CONSIST OF FABRICATED ALUMINUM CORE CABINET AND FACE PANELS WITH PAINT FINISH. SIGN COPY TO BE APPLIED VINYL GRAPHICS WITH SATIN CLEAR OVERCOAT.



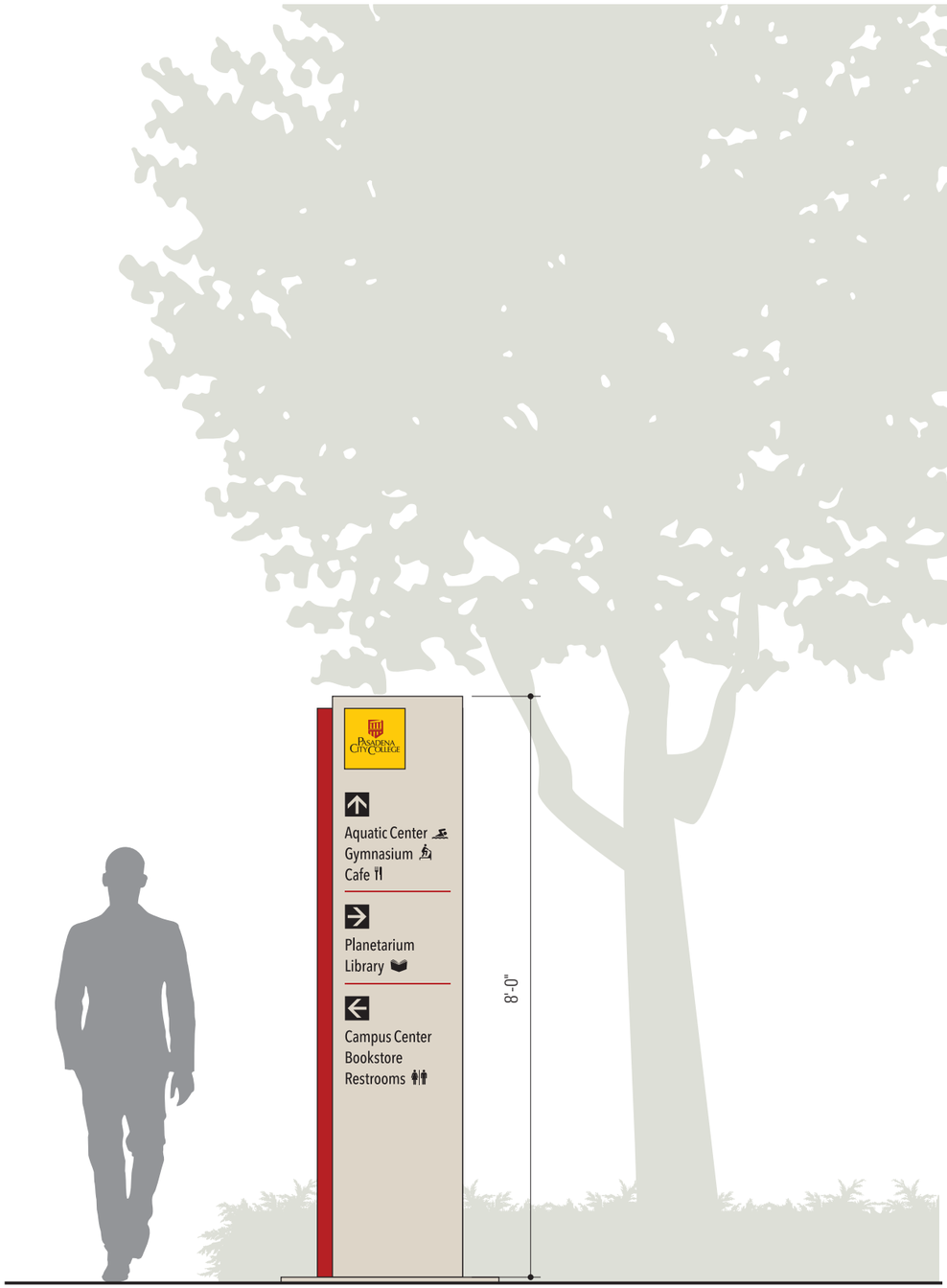
3 SCALE: 1/2" = 1'-0"

4 PEDESTRIAN WAYFINDING ELEMENTS

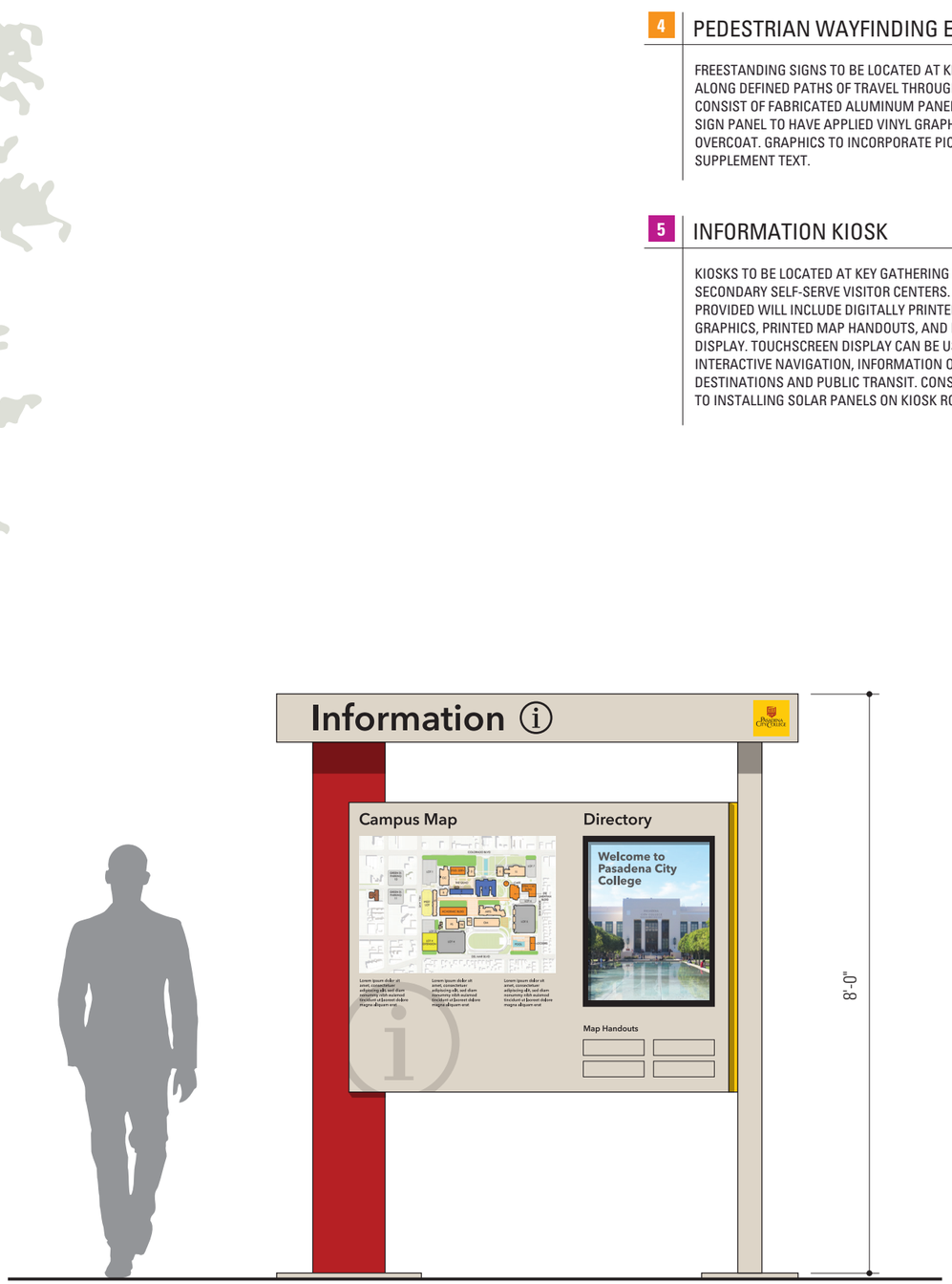
FREESTANDING SIGNS TO BE LOCATED AT KEY DECISION POINTS ALONG DEFINED PATHS OF TRAVEL THROUGHOUT CAMPUS. SIGN TO CONSIST OF FABRICATED ALUMINUM PANEL WITH PAINT FINISH. SIGN PANEL TO HAVE APPLIED VINYL GRAPHICS WITH SATIN CLEAR OVERCOAT. GRAPHICS TO INCORPORATE PICTOGRAMS TO SUPPLEMENT TEXT.

5 INFORMATION KIOSK

KIOSKS TO BE LOCATED AT KEY GATHERING PLACES WILL ACT AS SECONDARY SELF-SERVE VISITOR CENTERS. INFORMATION PROVIDED WILL INCLUDE DIGITALLY PRINTED CAMPUS MAP GRAPHICS, PRINTED MAP HANDOUTS, AND DIGITAL TOUCHSCREEN DISPLAY. TOUCHSCREEN DISPLAY CAN BE USED FOR ADVERTISING, INTERACTIVE NAVIGATION, INFORMATION ON CAMPUS DESTINATIONS AND PUBLIC TRANSIT. CONSIDERATION TO BE GIVEN TO INSTALLING SOLAR PANELS ON KIOSK ROOF.



4 SCALE: 1/2" = 1'-0"



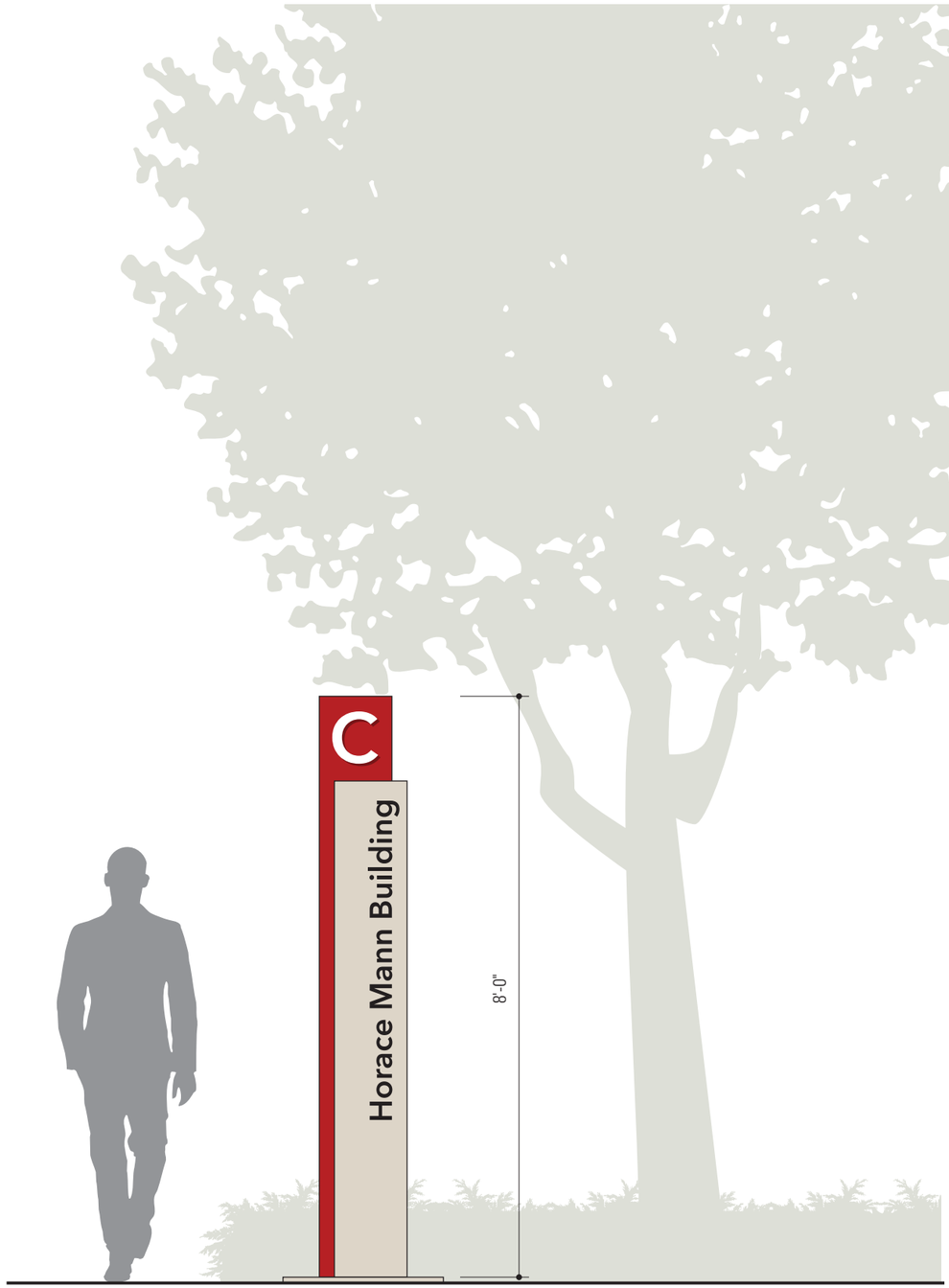
5 SCALE: 1/2" = 1'-0"

6 BUILDING IDENTIFICATION SIGN

FREESTANDING SIGNS TO BE LOCATED ADJACENT TO PRIMARY BUILDING ENTRIES. SIGN TO CONSIST OF FABRICATED ALUMINUM PANEL WITH PAINT FINISH. SIGN PANEL TO HAVE APPLIED VINYL GRAPHICS WITH SATIN CLEAR OVERCOAT.

6a BUILDING IDENTIFICATION WALL SIGN

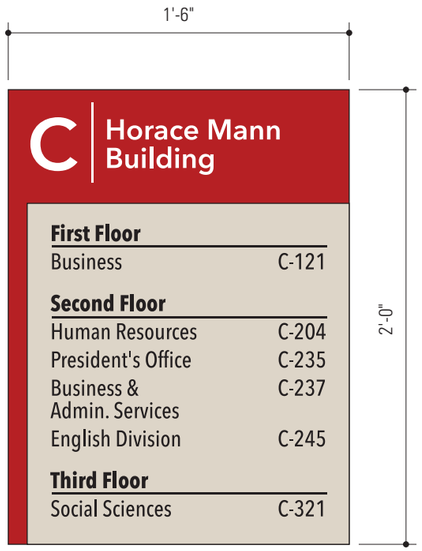
WALL MOUNTED SIGNS TO BE LOCATED ADJACENT TO PRIMARY BUILDING ENTRIES AND PROVIDE BUILDING LETTER CODE/NAME AS WELL AS DEPARTMENT/FACILITY NAMES AND ROOM NUMBERS. ROOM NAMES AND NUMBERS TO BE DIGITALLY PRINTED ON REMOVABLE FACE PANEL TO FACILITATE ONGOING CHANGES IN INFORMATION.



6 SCALE: 1/2" = 1'-0"



6a SCALE: 1/2" = 1'-0"



6a SCALE: 1 1/2" = 1'-0"

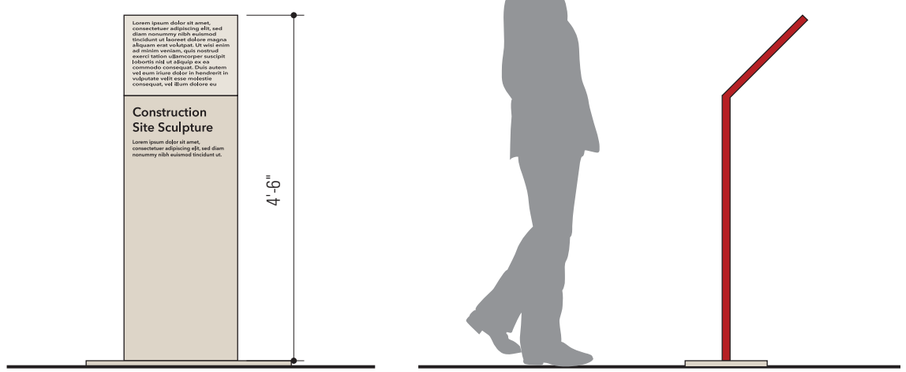
7 TRANSIT ORIENTED SIGNAGE

FREESTANDING SIGNS TO BE LOCATED AT STRATEGIC POINTS AROUND PERIPHERY OF AND WITHIN CAMPUS. SIGN TO CONSIST OF FABRICATED ALUMINUM PANEL WITH PAINT FINISH. SIGN PANEL TO HAVE APPLIED VINYL GRAPHICS WITH SATIN CLEAR OVERCOAT AND DIGITALLY PRINTED MAP ARTWORK IDENTIFYING TRANSIT PICK-UP AN DROP-OFF AREAS FOR VARIOUS MODES OF TRANSPORTATION TO AND FROM THE CAMPUS.

8 INTERPRETIVE SIGNAGE

FREESTANDING SIGNS IDENTIFYING ARCHITECTURE, LANDSCAPE, PUBLIC ART, SCULPTURES AND HISTORICAL SITES ON CAMPUS. ALUMINUM PANEL WITH PAINT FINISH AND APPLIED VINYL COPY WITH SATIN CLEAR OVERCOAT.



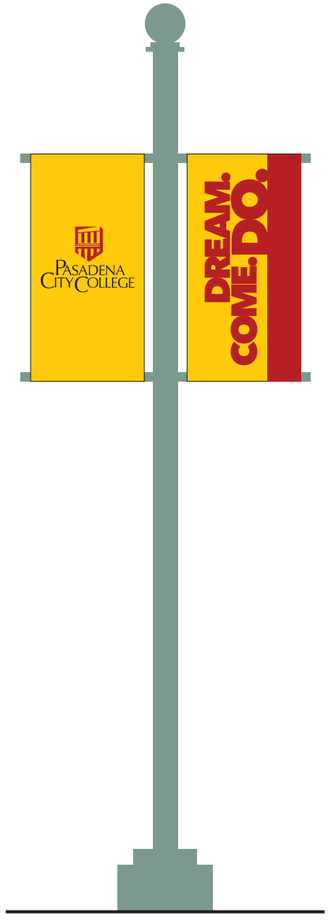


7 SCALE: 1/2" = 1'-0"

8 SCALE: 1/2" = 1'-0"



9 SCALE: 1/2" = 1'-0"



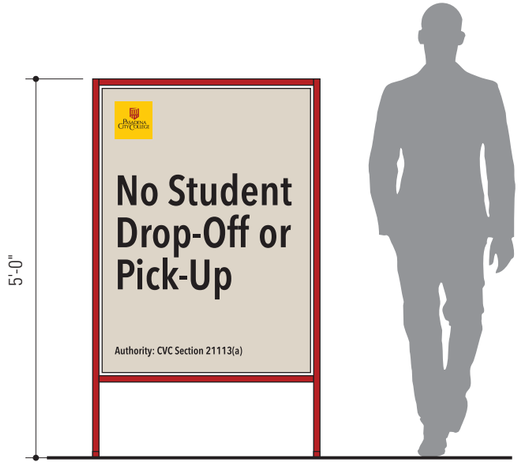
9 SCALE: 1/2" = 1'-0"

9 TRANSIT ORIENTED SIGNAGE

LIGHT FIXTURE, POLE, OR BUILDING MOUNTED BANNER ELEMENTS TO REINFORCE BRANDING COLOR PALETTE AND CORRESPOND WITH OTHER CAMPUS SIGNAGE.

10 TEMPORARY SIGNAGE

FABRICATED METAL SUPPORT FRAME WITH PAINT FINISH. CHANGEABLE SINTRA SIGN PANEL WITH DIGITALLY PRINTED COPY. PANEL TO BE MECHANICALLY CLIPPED TO SIGN FRAME TO FACILITATE CHANGE OF INFORMATION. ALL TEMPORARY SIGNS TO UTILIZE STANDARD MATERIALS, FORMAT, AND COPY LAYOUT.



10 SCALE: 1/2" = 1'-0"

11 SATELLITE CAMPUS MONUMENT

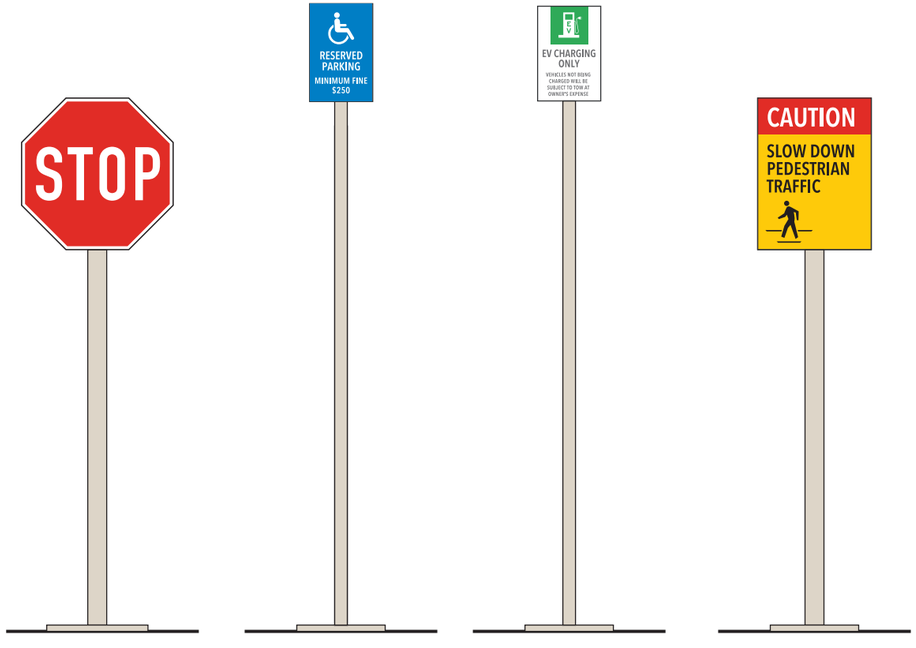
LIGHT FIXTURE, POLE, OR BUILDING MOUNTED BANNER ELEMENTS TO REINFORCE BRANDING COLOR PALETTE AND CORRESPOND WITH OTHER CAMPUS SIGNAGE.

12 ANCILLARY SIGNAGE

STANDARDS SHOULD BE ESTABLISHED FOR ALL ANCILLARY SITE SIGNAGE TO INCLUDE REGULATORY, CODE REQUIRED AND INFORMATIONAL SIGNAGE. SUPORT POSTS, SIGN FORMATS, COLORS, TYPE FONT, AND COPY LAYOUTS SHOULD BE CONSISTENTLY IMPLEMENTED ACROSS ALL CAMPUSES. OFF-THE-SHELF SIGNAGE TO BE REPLACED TO REINFORCE THE CAMPUS VISUAL IDENTITY.



11 SCALE: 1/2" = 1'-0"



12 SCALE: 1/2" = 1'-0"


IN MEMORY OF THOSE MEMBERS OF OUR PJC/PCC FAMILY WHO SACRIFICED THEIR LIVES TO PROTECT THE FREEDOMS WE ENJOY

10.

Sustainability


CAMPUS CENTER

SECTION 10

Sustainability



FACILITIES MASTER PLAN SUSTAINABILITY GOALS

A campus sustainability committee helped determine the direction for a sustainability program for PCC. Through focus meetings and discussions, recommendations were adopted for further development to institute a College-wide sustainability program.

PCC has identified the following sustainability goals and strategies:

- Upgrade and/or recommission existing facilities and infrastructure.
- Develop internal policies to address sustainability in curriculum, student life, and ongoing operations
- Certify PCC under the STARS system (sponsored by AASHE)
- Identify key elements of STARS to be improved upon on an annual basis.

ENERGY

Existing campus facilities vary substantially in terms of energy efficiency. The first step will be to bring all buildings and infrastructure up to an agreed standard, which should include upgrading mechanical and electrical systems.

Future new construction and major renovation projects should attempt to achieve 10% water and energy use reductions above current code requirements, calculated in terms of cost.

MOST EFFECTIVE STRATEGIES

- East/west orientation of buildings with minimal glazing on east and west facades
- Narrow building footprints to maximize daylight penetration
- Optimized façade to minimize heating and cooling loads and maximize daylighting. Key factors to consider include:
  - Optimal values for façade and roof element U-values and solar heat gain coefficient (SHGC)
  - External shading and daylight enhancement through refractive films or light shelves.
  - Reduced window to wall ratios.
  - Dynamic shading systems or fixed external shading.

- Effective HVAC zoning
- Operable windows in offices and break rooms and where acceptable
- Exposed thermal mass or phase change material

Mechanical Systems Options

- VAV with economizer (economizer required by code)
- VRF with simultaneous heating and cooling
- Radiant heating and cooling panels/slabs with dedicated outdoor air for ventilation
- Heat recovery on ventilation exhaust
- Chilled beams
- Low power lighting: Utilizing low ambient light levels with task lighting, daylight dimming and vacancy sensing.

Controls and ongoing operations:

- Comprehensive sub-metering water and energy systems
- Operable windows for natural ventilation to be interlocked with building energy management system for natural ventilation control
- Energy efficient computers and other equipment
- Ongoing commissioning

MAJOR RENOVATIONS

Replace Old/Failing Elements:

This may include:

- Conversion of CAV to VAV systems
- Economizers
- Heat recovery on exhaust
- Re-zoning of mechanical systems, where appropriate, to reduce reheat requirements and improve thermal comfort
- Sealing leaking ductwork
- Insulating ductwork and shading rooftop ductwork where required
- Installing VFDs on all AHU fans, chilled water and heating hot water pump
- Installation of a centralized building energy management system (for mechanical and lighting systems) with DDC controls or controls retro-commissioning for more recently retrofitted or constructed buildings
- Removal of any electric resistance heating
- Solar film: Where practical, application of low e solar film for reduced solar gain
- Roof reflectance: Increase the SRI of roofs through painting or application of reflective coating/layer.
- Thermal mass: Expose thermal mass or apply phase change material in wall/ ceiling elements to reduce internal temperature fluctuation.
- Natural ventilation: Where practical, enable natural ventilation in cellular offices, open-plan offices and break rooms. Operation to be coordinated with systems control.
- Replacement of all light fixtures with LEDs
- Daylight dimming and vacancy sensing controls.
- Wall insulation: cavity insulation or furred out envelope construction to decrease U-factor in poorly performing walls. Address any thermal bridging as part of this process.
- Roof insulation: Decrease U-factor of roof through application of insulation, preferably above deck.
- Enhanced daylighting measures: refractive films or light shelves, heliostats, light- wells, solar tubes or Parans-type collectors.
- Replacement of high infiltration doors and windows: For reduced heating and cooling demand.
- Comprehensive sub-metering
- Installation of fumehood occupancy sensors in laboratories
- Enabling of sash-interlocked, constant face velocity fumehood control
- Replacement of ineffcient process equipment
- Installation of VAV interlocked with fumehood exhaust for effective turndown of supply air
- Low static pressure control valves
- Wind velocity based exhaust exit velocity control
- External shading over poorly performing glazing that admits a high level of solar radiation.

CAMPUS-SPECIFIC MEASURES

- PCC should consider all parking lots incorporate a photovoltaic canopy and electric vehicle (EV) charging stations. This strategy will help the campuses reduce energy costs, while also providing shade for the cars below.
- Retro-commission central plant

WATER

- All new construction and major renovations should target a 10% reduction over Code baselines for flush and flow fixtures.
- Signage and education around the impacts of water use in bathrooms and kitchens to raise awareness and help lower use.
- Building-level water metering to measure the total water use for the building and associated grounds
- Water sub-metering for all new construction and major renovations to measure: irrigation, indoor plumbing fixtures and fittings, domestic hot water, boilers, reclaimed water, and other process water.

CAMPUS-WIDE MEASURES

- Irrigation sub-metering
- Consider potential future municipal reclaimed water lines; design new irrigation to accommodate reclaimed water
- Native or adapted plants that require minimal watering
- Efficient and centralized irrigation equipment and controls
- Stormwater collection and treatment where possible
- Bioswales at parking areas
- Consider graywater treatment and reuse systems at new construction

STARS

STARS is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance.

STARS will enable PCC to address sustainability not just in the built environment, but in the ongoing operations of the campus. In addition, STARS recognizes the value and importance of curriculum, student engagement, and social equity. STARS provides a framework to recognize, celebrate, and strengthen PCC's commitment to these broader values

STARS

- Addresses sustainability at the broader level appropriate for an educational institution
- Provides a framework for understanding sustainability in all sectors of higher education

- Enables meaningful comparisons over time & across institutions
- Creates incentives for continual improvement toward sustainability
- Facilitates information sharing about higher education sustainability practices & performance
- Builds a strong, more diverse campus sustainability community
- Can be certified at the Platinum, Gold, Silver, Bronze, or Reporter level

Why Use Stars

- Gain recognition for your sustainability efforts
- Generate new ideas - Identify best practices to implement locally
- Engage your community - Engage individuals in creating a culture of sustainability on campus and beyond
- Create a Baseline for Continuous Improvement - Measure your current performance & assess your progress
- Inform Strategic Planning & Budgeting - STARS can serve as a framework to help integrate sustainability into your institution's planning & development efforts
- Integrate Sustainability into the Curriculum
- Make real progress towards sustainability - 90% of participants report STARS has instigated changes that move their institution towards being more sustainable
- Organized into 5 Broad Categories
  - Academics (AC)
  - Engagement (EN)
  - Operations (OP)
  - Planning & Administration (PA)
  - Innovation & Leadership (IN)
- Each Category further breaks down into sub-categories which then break down into individual credits

The following preliminary review of the STARS checklist reveals that PCC is already well placed to score an initial projection of Silver. In addition, there appears to be the potential to improve over time, with an eventual score of Gold or even Platinum.



STARS 2.2 CREDIT CHECKLIST

Category	Subcategory	Credit Number and Title		PCC Probable Current Points	Future Points	Total Points Available	Applicable to:	Minimum Requirement	Notes	Requires completion of a separate inventory, assessment or survey?	Timeframe
Report Preface	Introduction	PRE 1	Executive Letter			Required	Institutions submitting a scored report.	Obtain a cover letter from a high-ranking executive to accompany the institution's STARS Report.			N/A
		PRE 2	Points of Distinction			Optional	All institutions.	Highlight programs, initiatives, or accomplishments that reflect the institution's leadership for sustainability.	Diversity & Affordability, Campus Engagement, Curriculum		N/A
	Institutional Characteristics	PRE 3	Institutional Boundary			Required	All institutions.	Define the boundary to be used for its STARS report.			Most recent data available within the previous three years.
		PRE 4	Operational Characteristics			Required	All institutions.	Have current operational data (e.g. campus area, floor area of building space, endowment size).			Most recent data available within the previous three years.
		PRE 5	Academics and Demographics			Required	All institutions.	Have current demographic data (e.g. FTE enrollment, FTE employees, number of people living on-campus).			Most recent data available within the previous three years.
Academics (AC)	Curriculum	AC 1	Academic Courses	4		14	Institutions that have students enrolled for credit.	Conduct an inventory to identify isustainability course offerings.		Yes	Most recent data available within the previous three years.
		AC 2	Learning Outcomes	2		8	Institutions that have degree programs.	Have adopted one or more institution-level sustainability learning outcomes and/or have students graduate from degree programs that require an understanding of the concept of sustainability.			Most recent data available within the previous three years.
		AC 3	Undergraduate Program	1.5		3	Institutions that have undergraduate majors, academic programs, or the equivalent.	Offer at least one sustainability-focused, undergraduate-level major, degree program, minor or concentration.			Current program status and offerings.
		AC 4	Graduate Program	0		3	Institutions that offer at least 25 distinct graduate programs.	Offer at least one sustainability-focused, graduate-level major, degree program, minor, concentration or certificate.			Current program status and offerings.
		AC 5	Immersive Experience	2		2	Institutions that offer immersive educational programs.	Offer at least one immersive, sustainability-focused educational study program.			Programs offered during the previous three years.
		AC 6	Sustainability Literacy Assessment	2		4	All institutions.	Conduct an assessment of the sustainability literacy of the institution's students.	assumes student survey only	Yes	Most recent data available within the previous three years.
		AC 7	Incentives for Developing Courses			2	All institutions.	Have an ongoing program that offers incentives for academic staff to develop new sustainability courses and/or incorporate sustainability into existing courses or departments.			Programs or incentives offered within the previous three years.
		AC 8	Campus as a Living Laboratory	2		4	Institutions where students attend the physical campus.	Utilize the institution's infrastructure and operations as a living laboratory for applied student learning for sustainability.	includes diversity and affordability as one of 10 focus areas	Yes	Projects and initiatives currently in progress or conducted within the previous three years.

STARS 2.2 CREDIT CHECKLIST (CONTINUED)

Category	Subcategory	Credit Number and Title		PCC Probable Current Points	Future Points	Total Points Available	Applicable to:	Minimum Requirement	Notes	Requires completion of a separate inventory, assessment or survey?	Timeframe
Academics (AC)	Research	AC 9	Research and Scholarship			12	Institutions where research is considered in employee promotion or tenure decisions.	Conduct an inventory to identify the institution's sustainability research.	This credit applies to all institutions where research is considered in employee promotion or tenure. Consider marking entire research section NA	Yes	Most recent data available within the previous three years.
		AC 10	Support for Sustainability Research			4	Institutions where research is considered in employee promotion or tenure decisions.	Have programs to encourage and/or support sustainability research.			Active programs and policies, and incentives offered within the previous three years.
		AC 11	Open Access to Research			2	Institutions where research is considered in employee promotion or tenure decisions.	Facilitate open access publishing.			Current policies and programs.
Engagement (EN)	Campus Engagement	EN 1	Student Educators Program	2		4	institutions with students who are enrolled for credit and attend the physical campus.	Coordinate an ongoing peer-to-peer sustainability outreach and education program for students.			Current program status and offerings.
		EN 2	Student Orientation	1		2	Institutions that hold student orientation.	Include sustainability prominently in student orientation activities and programming.			Activities from the most recent semester (or equivalent), the most recent year, or the previous three years.
		EN 3	Student Life	0.5		2	All institutions.	Have co-curricular sustainability programs and initiatives.			Currently available programs and events that occurred during the previous three years.
		EN 4	Outreach Materials and Publications	0.4		2	All institutions.	Produce outreach materials and/or publications that foster sustainability learning and knowledge.			Currently used outreach materials and publications.
		EN 5	Outreach Campaign	2		4	All institutions.	Hold at least one sustainability-related outreach campaign directed at students and/or employees.			Most recent campaign(s) for which data is available within the previous three years.
		EN 6	Assessing Sustainability Culture	1		1	All institutions.	Conduct an assessment of campus sustainability culture that focuses on sustainability values, behaviors and beliefs.		Yes	Most recent data available within the previous three years.
		EN 7	Employee Educators Program	1		3	All institutions.	Administer or oversee an ongoing peer-to-peer sustainability outreach and education program for employees.			Current program status and offerings.
		EN 8	Employee Orientation	1		1	All institutions.	Cover sustainability topics in employee orientation and/or in outreach and guidance materials distributed to new employees.			Activities from the most recent 1, 2 or 3 years.
		EN 9	Staff Professional Development and Training	1		2	All institutions.	Make available professional development and training opportunities in sustainability to non-academic staff.			Current program status and offerings and training and professional development activities that occurred within the previous three years.
		EN 10	Community Partnerships	1		3	All institutions.	Have at least one formal community partnership to work together to advance sustainability.			Current partnerships and/or partnerships that were active during the previous three years.

STARS 2.2 CREDIT CHECKLIST (CONTINUED)

Category	Subcategory	Credit Number and Title		PCC Probable Current Points	Future Points	Total Points Available	Applicable to:	Minimum Requirement	Notes	Requires completion of a separate inventory, assessment or survey?	Timeframe
Engagement (EN)	Public Engagement	EN 11	Inter-Campus Collaboration			3	All institutions.	Collaborate with other colleges and universities to support and help build the campus sustainability community.			Current membership status and collaborations that were active during the previous three years.
		EN 12	Continuing Education	1		5	Institutions that have formal continuing education or community education programs.	Offer continuing education courses that address sustainability and/or have at least one sustainability-themed certificate program through a continuing education or extension department.		Yes	Most recent data available from within the previous three years and current program status and offerings.
		EN 13	Community Service	2		5	All institutions.	Have data on student engagement in community service and/or a formal program to support employee volunteering.			Most recent data available within the previous three years.
		EN 14	Participation in Public Policy		1	2	All institutions.	Advocate for public policies that support campus sustainability or that otherwise advance sustainability.			Efforts that took place during the previous three years.
		EN 15	Trademark Licensing		2	2	Institutions whose logo is trademarked and appears on apparel, and have gross annual licensing revenue of $50,000 or more.	Have adopted a labor rights code of conduct in its licensing agreements with the licensees who produce its logo apparel.	opportunity to play up equity		Current membership status and active codes of conduct.
Operations (OP)	Air & Climate	OP 1	Emissions Inventory and Disclosure	1.25	1.75	3	All institutions.	Have completed an inventory to quantify the institution's greenhouse gas (GHG) and/or air pollutant emissions.	need energy data to calculate	Yes	Inventories completed or updated within the previous three years.
		OP 2	Greenhouse Gas Emissions		2	8	All institutions.	Have completed an inventory to quantify the institution's Scope 1 and Scope 2 greenhouse gas (GHG) emissions.	include in master plan. Identify target EUI and GHG reductions for new buildings	Yes	Current programs, policies and practices and inventories of annual emissions completed or updated within the previous three years.
	Buildings	OP 3	Building Design and Construction	2.5		3	Institutions that have new construction and/or major renovation projects completed within the previous five years.	Own new or renovated buildings that were designed and built in accordance with a published green building code, policy/guideline, or rating system.	assumes Art building only		Current certification status of buildings completed within the previous five years.
		OP 4	Building Operations and Maintenance		1	5	All institutions.	Own buildings that are operated and maintained in accordance with a sustainable management policy/program or a green building rating system focused on the operations and maintenance of existing buildings.	need to review LEED O&M and BREEAM and determine applicability and appetite		Current certification status of buildings.
	Energy	OP 5	Building Energy Efficiency		1	6	All institutions.	Have data on grid-purchased electricity, electricity from on-site renewables, utility-provided steam and hot water, and stationary fuels and other energy products.	future points. Need to establish baseline within master plan		Most recent data available from the previous three years and data from a baseline year.
		OP 6	Clean and Renewable Energy		1	4	All institutions.	Support the development and use of clean and renewable energy sources.	consider requiring on new projects		Most recent data available within the previous three years.

STARS 2.2 CREDIT CHECKLIST (CONTINUED)

Category	Subcategory	Credit Number and Title		PCC Probable Current Points	Future Points	Total Points Available	Applicable to:	Minimum Requirement	Notes	Requires completion of a separate inventory, assessment or survey?	Timeframe
Operations (OP)	Food & Dining	OP 7	Food and Beverage Purchasing		2	6	Institutions that have that have dining services operated by the institution, a contractor, or a franchisee.	Purchase food and beverage products that are sustainably or ethically produced and/or plant-based.	opportunity for student engagement	Yes	Most recent data available within the previous three years.
		OP 8	Sustainable Dining		1	2	Institutions that have that have dining services operated by the institution, a contractor, or a franchisee.	Have programs and initiatives to support sustainable food systems and minimize food waste.	opportunity for student engagement		Current policies or programs.
	Grounds	OP 9	Landscape Management		1	2	Institutions with managed grounds comprising one or more percent of the total area of the campus.	Manage grounds organically or in accordance with an Integrated Pest Management (IPM) program.	discussed during Dec meeting		Current programs and practices.
		OP 10	Biodiversity			1-2	Institutions with managed grounds comprising one or more percent of the total area of the campus.	Have conducted an assessment to identify endangered and vulnerable species and/or areas of biodiversity importance on land owned or managed by the institution.	NA	Yes	Current programs and the most recent assessment(s) completed or updated within the previous three years.
	Purchasing	OP 11	Sustainable Procurement	0.5	1	3	All institutions.	Apply sustainability criteria when making procurement decisions.			Current policies and practices.
		OP 12	Electronics Purchasing		1	1	All institutions.	Purchase environmentally and socially preferable electronic products.			Most recent data available within the previous three years.
		OP 13	Cleaning and Janitorial Purchasing		1	1	All institutions.	Purchase cleaning and janitorial paper products that meet multi-criteria sustainability standards.			Most recent data available within the previous three years.
		OP 14	Office Paper Purchasing		0.5	1	All institutions.	Purchase office paper with post-consumer recycled, agricultural residue, and/or Forest Stewardship Council (FSC) certified content.			Most recent data available within the previous three years.
	Transportation	OP 15	Campus Fleet		1	1	Institutions that own or lease motorized vehicles.	Include vehicles that are hybrid, electric and/or alternatively fueled in the institution's motorized fleet.			Most recent data available within the previous three years.
		OP 16	Commute Modal Split	2	2	5	All institutions.	Conduct a survey to gather data about student and/or employee commuting behavior.		Yes	Most recent data available within the previous three years.
		OP 17	Support for Sustainable Transportation	0.2	0.4	1	All institutions.	Have implemented strategies to encourage more sustainable modes of transportation and reduce the impact of student and employee commuting.			Current programs, practices and plans.
		OP 18	Waste Minimization and Diversion		2	8	All institutions.	Have data on the weight of materials recycled, composted, donated/re-sold, and disposed in a landfill or incinerator.			Most recent data available from the previous three years and data from a baseline year.

STARS 2.2 CREDIT CHECKLIST (CONTINUED)

Category	Subcategory	Credit Number and Title		PCC Probable Current Points	Future Points	Total Points Available	Applicable to:	Minimum Requirement	Notes	Requires completion of a separate inventory, assessment or survey?	Timeframe
Operations (OP)	Waste	OP 19	Construction and Demolition Waste Diversion	0.5		1	Institutions that have conducted a major construction, renovation and/or demolition project in the three years prior to the anticipated date of submission.	Divert non-hazardous construction and demolition waste from the landfill and/or incinerator.			Most recent data available for a one-year period within the previous three years.
		OP 20	Hazardous Waste Management	0.5	0.5	1	All institutions.	Have strategies in place to 1) safely dispose of all hazardous, special, universal, and non-regulated chemical waste and minimize the presence of these materials on campus; and/or 2) recycle, reuse, and/or refurbish electronic waste.			Current programs.
	Water	OP 21	Water Use		2	4-6	All institutions.	Have data on potable and non-potable water use.	worth adding meters for better future management		Most recent data available from the previous three years and data from a baseline year.
		OP 22	Rainwater Management		2	2	All institutions.	Use green infrastructure and low impact development (LID) practices to help mitigate stormwater run-off impacts and treat rainwater as a resource rather than as a waste product.			Current policies, plans, and/or strategies.
Planning & Administation (PA)	Coordination & Planning	PA 1	Sustainability Coordination		1	1	All institutions.	Have at least one sustainability committee, office, and/or officer tasked by the administration or governing body to advise on and implement policies and programs related to sustainability on campus.			Current sustainability committee composition and practices, office status, and/or officer position status.
		PA 2	Sustainability Planning	2	2	4	All institutions.	Have a published plan that includes measurable sustainability objectives and/or include the integrated concept of sustainability in the institution's highest guiding document.			Current and formally adopted plan(s).
		PA 3	Inclusive and Participatory Governance	2		3	All institutions.	Have formal participatory or shared governance bodies, include diverse stakeholders on the institution's highest governing body, and/or host or support a formal body through which external stakeholders have a regular voice in institutional decisions that affect them.			Current policies and procedures.
		PA 4	Reporting Assurance		1	1	Institutions that are submitting a scored report for the first time under a new version of STARS or for a higher rating.	Complete an assurance process that provides independent affirmation that the information in its current STARS report is reported in accordance with credit criteria.	required third party review	Yes	Assurance provided for the information included in the institution's current STARS submission.

STARS 2.2 CREDIT CHECKLIST (CONTINUED)

Category	Subcategory	Credit Number and Title		PCC Probable Current Points	Future Points	Total Points Available	Applicable to:	Minimum Requirement	Notes	Requires completion of a separate inventory, assessment or survey?	Timeframe
Planning & Administration (PA)	Diversity & Affordability	PA 5	Diversity and Equity Coordination	2		2	All institutions.	Have a diversity and equity committee, office and/or officer and/or make diversity trainings and activities available.			Current practices and status and participation during the previous three years.
		PA 6	Assessing Diversity and Equity		1	1	All institutions.	Have engaged in a structured assessment process to improve diversity, equity, and inclusion on campus.		Yes	Most recent assessment(s) conducted or updated during the previous three years.
		PA 7	Support for Underrepresented Groups	2	1	3	All institutions.	Have policies, programs or initiatives to support underrepresented groups and foster a more diverse and inclusive campus community.			Current program offerings and status.
		PA 8	Affordability and Access	2	2	4	All institutions.	Have data related to the institution's accessibility and affordability to low-income students.			Most recent data available within the previous three years.
	Investment & Finance	PA 8	Committee on Investor Responsibility			2	Institutions with endowments of $1 million or larger.	Have a formally established and active committee on investor responsibility (CIR) or similar body.	NA		Current committee composition and practices.
		PA 9	Sustainable Investment			3-5	Institutions with endowments of $1 million or larger.	Make positive sustainability investments and/or have investor engagement policies and practices.	NA		Current policies and actions taken within the previous three years.
		PA 10	Investment Disclosure			1	Institutions that have an investment pool.	Make a snapshot of investment holdings available to the public on at least an annual basis.	NA		Current holdings (i.e. most recent snapshot available).
	Wellbeing & Work	PA 11	Employee Compensation		2	3	All institutions.	Have data on the hourly wages and total compensation provided to employees.	does PCC pay living wage? Note that Pasadena just instituted $15 minimum hourly wage		Current compensation status and offerings.
		PA 12	Assessing Employee Satisfaction		1	1	All institutions.	Conduct a survey or other evaluation that allows for anonymous feedback to measure employee satisfaction and engagement.	requires survey	Yes	Most recent evaluation conducted during the previous three years and current policies and practices.
		PA 13	Wellness Programs		1	1	All institutions.	Have a wellness and/or employee assistance program and/or prohibit smoking within all occupied buildings.	does PCC provide wellness services?		Current program status and offerings.
		PA 14	Workplace Health and Safety		1	2	All institutions.	Have an occupational health and safety management system (OHSMS) and/or data on work-related injury or ill health.			Current program status and most recent data available from the previous three years.
Innovation & Leadership (IN)	Innovation & Leadership	IN --	Catalog of optional credits available		1	0.5 each (up to 4 bonus points)	All institutions (varies by credit).	Varies by credit.	consider programs for ex-convicts, food insecure and homeless students	Varies by credit.	Varies by credit. Current programs, policies, and practices or the most recent data available within the previous three years.
			TOTAL	**44.85**	**41.15**						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