DRAFT
CAL POLY
MASTER PLAN
2035

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OVERVIEW

Introduction

California Polytechnic State University, Cal Poly, founded in 1901, is a comprehensive polytechnic University with a unique tradition of Learn-by-Doing education. The University occupies over 6,000 acres in San Luis Obispo County, and approximately 3,200 acres in Santa Cruz County. These lands provide hands-on opportunities for students to apply their classroom knowledge to real-life situations.

As the future of Cal Poly unfolds, the University must take advantage of opportunities to enhance academic programs and increase student success by creating contemporary learning spaces and inclusive support facilities for a more diverse student, faculty, and staff population. Learn-by-Doing is more than a motto - it is a way of life at Cal Poly - and is integrated into both the academic and support areas of the campus. Learning happens everywhere – inside traditional classrooms, in state-of-the-art laboratories and "maker-spaces," and outside as well, in outdoor teaching and learning (OTL) facilities like agricultural production fields, living laboratories like our "Tree Campus USA," interactive study and lounge spaces, as well as passive and active recreation areas.

The Cal Poly Master Plan (Master Plan) is a long-range planning document that guides the development and use of the University's lands, and looks ahead for the next twenty years. During the next two decades, the campus anticipates growth in student enrollment, new and replacement academic facilities, additional housing on campus, event and entertainment spaces, and other support facilities to accommodate growth and changing times. The Master Plan is a broad document, intended to guide the development of the indoor and outdoor facilities and spaces to meet the programmatic needs of the University. Full implementation will require further analysis and more detailed design as individual projects come forward.

Master Plan Maps

The Master Plan Map identifies conceptual building locations and footprints for future development on campus.

Master Plan Background and Context

The architectural firm of Allison and Rible prepared the first formal Master Plan for Cal Poly in 1949, based on a projected enrollment of 4,080 students. In 1958 the California Department of Education dictated that all non-metropolitan state college campuses plan for an enrollment of 12,000 Full-Time Equivalent Students (FTES). This led to the next Master Plan, prepared by the architectural firm of Falk and Booth in 1962, and approved by the California State University Board of Trustees in May of 1963. In 1970, the Master Plan was revised to increase the enrollment capacity to 15,000 FTES. Thirty years later, after partial updates to accommodate new projects, and anticipating a "tidal wave" of new college students in the early 2000s, the campus completed a comprehensive update of the Master Plan, resulting in a FTES ceiling of 17,500.

Fifteen years after the adoption of the 2001 Master Plan, the campus has realized the majority of anticipated development and teaches over 20,000 students (headcount). A Cal Poly education continues to be in great demand, and this Master Plan update accommodates academic space needs, supporting spaces such as student housing, administration space, recreation and athletics facilities, and community event space to serve a future student population of 25,000 (headcount).

Context

Cal Poly's Master Plan is designed to implement the University's strategic Vision 2022 and its academic mission as a comprehensive polytechnic University. The central focus of the University's academic plan is (1) to reinforce its identity as a premier undergraduate, Learn-by-Doing community of the 21st century and (2) to expand its visibility as a leader in higher education at the same time.

<u>Demographics</u>

As a public University, Cal Poly is responsible for serving the needs of 21st century California and beyond. Cal Poly's academic programs prepare graduates to work in the very fields in high demand as California faces a shortage in the highly-educated workforce required to support a technology-based, knowledge economy. Thus, despite lower birthrates and fewer high school graduates in the state (and nation), Cal Poly feels pressure from student applicants, families, and employers to increase enrollment, particularly in interdisciplinary and polytechnic fields.

California leads the U.S. in demographic change – with people from many ethnic backgrounds and a large aging population. Cal Poly seeks faculty, staff and students that mirror California's population. Diversity and inclusivity are cornerstones of the polytechnic experience. A diverse and

enriching environment that reflects today's global workforce is necessary to prepare students for success as future industry and community leaders. The physical environment can contribute to Cal Poly becoming a more inclusive community of scholars and creative thinkers by providing space and facilities for living and learning that are inviting to people from different social and economic backgrounds and cultures.

Residential Campus

With the advent of instructional technology and other innovations, higher education has been changing dramatically in the past several decades. As a polytechnic institution Cal Poly, its faculty, staff, students, and graduates are helping to shape that future. Nonetheless, the importance of a residential community for undergraduate learning and the hands-on focus of the Cal Poly's Learn-by-Doing approach to education mean that Cal Poly continues to value the physical campus as the primary setting for teaching and learning.

Cal Poly serves the entire State of California (and beyond); over 90 percent of the students come from more than 100 miles away to attend. The University has always provided some student housing, but during the latter half of the 20th century most Cal Poly students lived off campus after their first year. As the campus grew, this put increasing stress on parking, traffic and housing in the city – especially on nearby neighborhoods.

The 2001 Master Plan called for new on-campus housing to be built commensurate with enrollment growth. During the past fifteen years, Cal Poly has more than met that goal, first building suite and apartment-style housing for approximately 3,500 students. More recently, the University has added 1,400 beds for freshmen so it will be able to accommodate 8,200 students living on campus by 2018. With this capacity, undergraduate students will be expected to live on campus their first and second years, leaving their vehicles behind, and fully engaging in the residential campus community.

Most importantly, data shows that undergraduate students are more successful in completing their degrees if they live on campus for at least two years. Therefore, this plan provides enough housing so that the University can ensure that all first and second year undergraduates live on campus. The Master Plan can provide the setting for a full range of campus life activities and services for a complete residential community that supports student success.

Sustainability

Cal Poly's rural setting calls attention to the physical environment and natural resources. Yet sustainability is more than a planning and operational value for the Master Plan and stewardship of Cal Poly's large acreage. It is also central to faculty scholarship, applied research and student learning in many fields. Thus, the Master Plan must not only enable Cal Poly to model sustainable practices, but also provide opportunities for

laboratory and field study to support advanced research and development with respect to sustainability.

Implementation

As a public institution, Cal Poly operates within the fiscal and regulatory framework of the State of California. The State provides funds for the California State University (CSU) through the annual budget process and authorizes the campuses to collect tuition and other fees to cover some operating costs and initiatives. In the past, statewide General Obligation bonds supported capital budgets for instructional and support programs even though funding formulas limited flexibility and deferred maintenance accumulated. Donor funds were used to add space for additional activities and enhance quality – as in the Baker Center for Science and Mathematics – Cal Poly's latest building with state funding. Revenue bonds have and will continue to finance facilities for auxiliary enterprises, such as the Recreation Center, student housing, and parking, that are supported by fees or other income.

Approaches to public funding for higher education change over time. Under recent legislation, the CSU now has greater responsibility and flexibility for managing its capital budget. How the new process unfolds will affect the implementation of the Master Plan, particularly timing and sequencing of facilities. As the University sets academic and support space priorities, it will also be balancing funding sources – leveraging public subsidies, expanding donation opportunities, and enhancing revenue potential.

Faced with this new financial environment, Cal Poly (like other public universities) is exploring innovative ways to generate funds to support important University goals. To that end, Cal Poly has been assessing how some of its extensive land resources might support public-private partnerships, where the land could be leased to a private entity that would develop and manage appropriate uses, thereby generating long-term income to the University. And providing much needed facilities.

Goals

Cal Poly's leadership has developed the following goals for the future of the campus to guide the development of the Master Plan:

The purpose of the Master Plan is to create a physical environment (indoor and outdoor) that provides opportunities for the achievement of the following goals:

- Enhance academic quality and student success through Learn-by-doing.
- Increase the diversity of students, faculty and staff
- House more students in residential communities on campus
- Offer more vibrant evening and weekend events and activities
- Strengthen the compact, cross-disciplinary Academic-Core
- Attain a modal shift from cars to more pedestrian, bicycle and transit use
- Reinforce campus-wide environmental sustainability

The following goals address how to enrich the Academic Core as a special place on campus:

Academic Core Goals

- Design lively, interactive spaces that encourage interaction and cross-disciplinary sharing
- Create a 'heart of the campus' for Cal Poly
- Integrate places for occasional formal gatherings and informal daily gatherings
- Foster campus culture and memories
- Establish a visual identity for the Academic Core
- Provide for users of different backgrounds, ages, and needs
- Develop a framework for academic buildings and support facilities
- Plan a new mixed-use activity center at Brizzolara Creek
- Allow for phased implementation and small projects

The principles, policies, and implementation programs included in the Master Plan, combined with the land uses and projects identified in the maps, will enable Cal Poly to accomplish these overarching goals, accommodate future students, faculty, and staff, and provide the spaces necessary for Cal Poly to educate the leaders and innovators of tomorrow.

Guiding Principles

While the expression of a physical master plan is most easily seen in maps and accompanying diagrams, those visual elements are based on numerous ideas about what a campus should look like and how it should function. Those ideas have been largely articulated in Cal Poly's Master Plan as "principles."

Certain "Guiding Principles" were developed early in the process by the Master Plan professional team with input from the Master Plan advisory committees and University leadership, including the college deans.[1] The general Guiding Principles below reinforce the Master Plan and Academic Core goals, and serve both as starting points for the plan as well as overarching directives applicable to all or most Master Plan topics.

Academic Mission and Learn-by-Doing

- Cal Poly's land and resource uses should advance the University's academic mission. (GP 5)
- Planning should preserve and encourage the Learn by Doing approach to Cal Poly's academic curriculum and reflect that approach in the overall campus character, including outdoor teaching and learning. (GP 6)
- Planning should consider not only current needs and trends, but also changing academic priorities and new pedagogical techniques. (GP 7)

[1] Note that the six different Master Plan advisory committees developed the language in the Guiding Principles, so there is some overlap among them.

Residential Community

- The percentage of students living in on-campus housing should be increased and Cal Poly should continue to develop into a livable residential campus, where academic facilities, housing, recreation, social places, and other support facilities and activities are integrated. (GP 8)

Sustainability as an Overarching Consideration

- Cal Poly should be sustainable with regard to its land and resource planning, as well as site and building design, and operations. Cal Poly should meet or exceed all state and system-wide sustainability policies. (GP 9)
- As an important element of Cal Poly's academic mission, the University should be proactive leader in wise and sustainable land and resource management. (GP 10)

Open Space

- Cal Poly's scenic setting – a campus surrounded by open spaces -- should be preserved; its open lands and the surrounding natural environment are highly valued and should be considered in campus planning efforts. (GP 12)
- Open space should be incorporated into the core campus and integrated into the scope of every new building project, for aesthetics, leisure, social interactions and activities contributing to a healthy lifestyle. (GP 13)

Siting and Design

- Land uses should be suitable to their locations considering the environmental features of the proposed sites. (GP 11)
- The siting of new land uses and buildings should always be considered within the context of the greater campus; functional connections among related activities should be considered, including the nature of activities, "adjacencies" and paths of travel. (GP 14)
- The siting and design of campus buildings and other features should reflect and enhance visual and physical connections to the surrounding natural environment and outdoor spaces on campus, and should maintain, enhance or create aesthetically pleasing views and vistas. (GP 15)
- Campus buildings should incorporate the best design elements regarding massing, human scale, materials, articulation, architectural interest, sustainability and connections with surrounding buildings and spaces; design should reflect authenticity and attention to details in materials, historical context and architectural style. (GP 16)

Replacement

- In cases where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move. (GP 3)

- Cal Poly should evaluate both past investment and the need for future expansion when planning for new and redeveloped facilities. (GP 4)

Transparency and Off Campus Impacts

- Cal Poly should consider potential impacts -- including but not limited to traffic, parking, noise and glare -- on surrounding areas, especially nearby single-family residential neighborhoods, in its land use planning, building and site design, and operations. (GP 1)
- Cal Poly should inform local agencies and the community prior to amending the Master Plan or developing major new projects, and provide opportunities for comments. (GP 2)

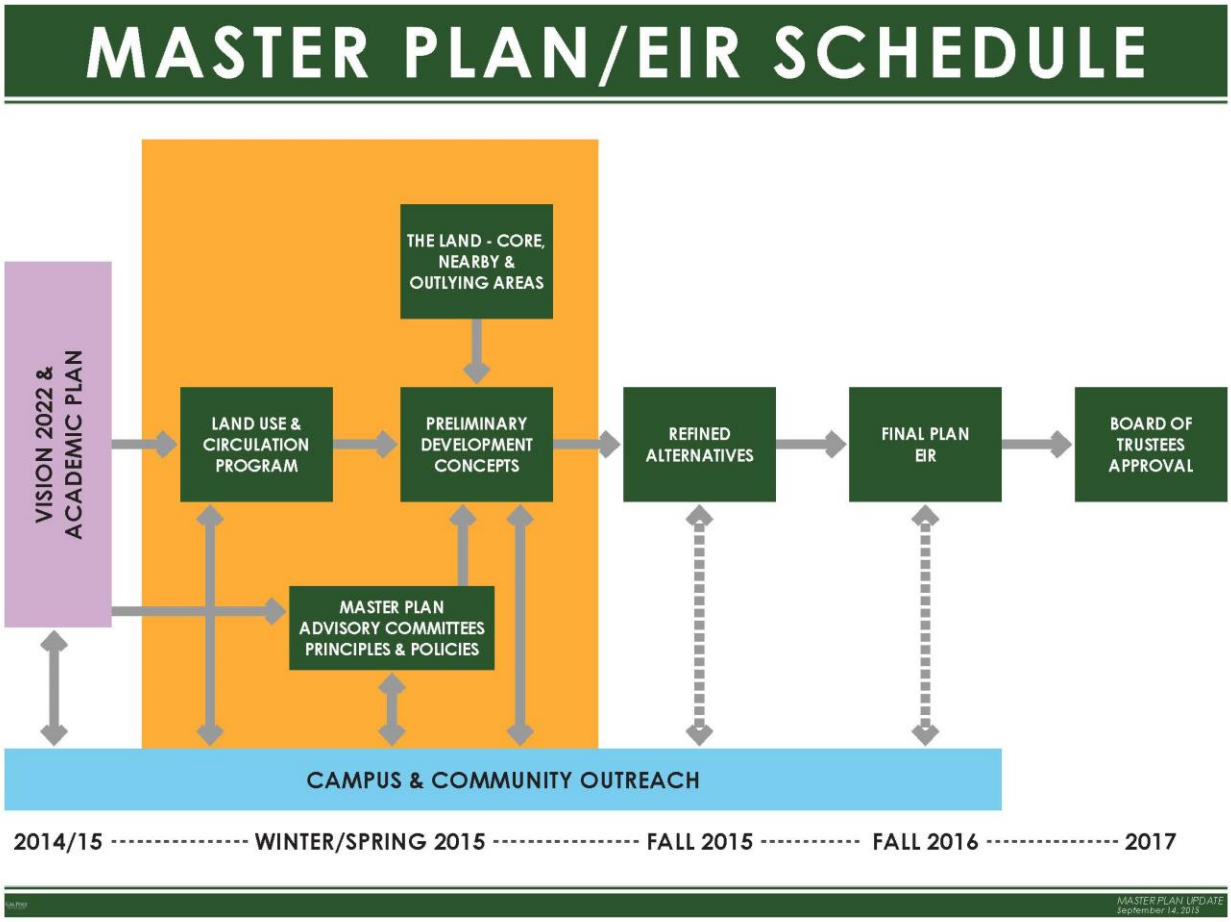
A larger number of "Master Plan Principles" generally address more specific issues in the physical plan, although many are relevant to several topical areas. They, along with suggestions for implementation and operations, are found in the chapters of the Master Plan that follow.

Process

Cal Poly initiated the University's campus Master Plan update process in 2014 with a framework for planning, engaging campus constituents and the broader community throughout.

The following diagram depicts how the Master Plan update process unfolded. In 2014 Cal Poly published Vision 2022, emphasizing the University's comprehensive polytechnic mission and a set of values stressing the importance of its residential community, student success, diversity, and faculty as teacher-scholars. This Vision provided a framework for both a new academic plan and the physical Master Plan.

During late 2014 and the first half of 2015, Cal Poly established the key features of the land use and circulation program and developed principles and policies based on approximately 150 recommendations from the Master Plan advisory committees. Preliminary development concepts were available for discussion during spring 2015, and refined options prepared during fall 2015. The narrative was drafted in early 2016, and environmental review initiated. This schedule then allowed for preparation of the draft environmental impact report in fall 2016, and completion of the plan and final EIR for submittal to the CSU Board of Trustees in 2017.



Community Engagement

Cal Poly engaged a wide range of stakeholders during the Master Plan update process. The Master Plan website and press releases were designed to communicate timely information, but also to receive comments. The Master Plan team sponsored interactive workshops at several points during the process, both on campus and in downtown San Luis Obispo. .,

Representatives from the Master Plan team also discussed the planning process and interim concepts extensively on campus, with local elected officials, agency staff, neighbors, and community organizations.

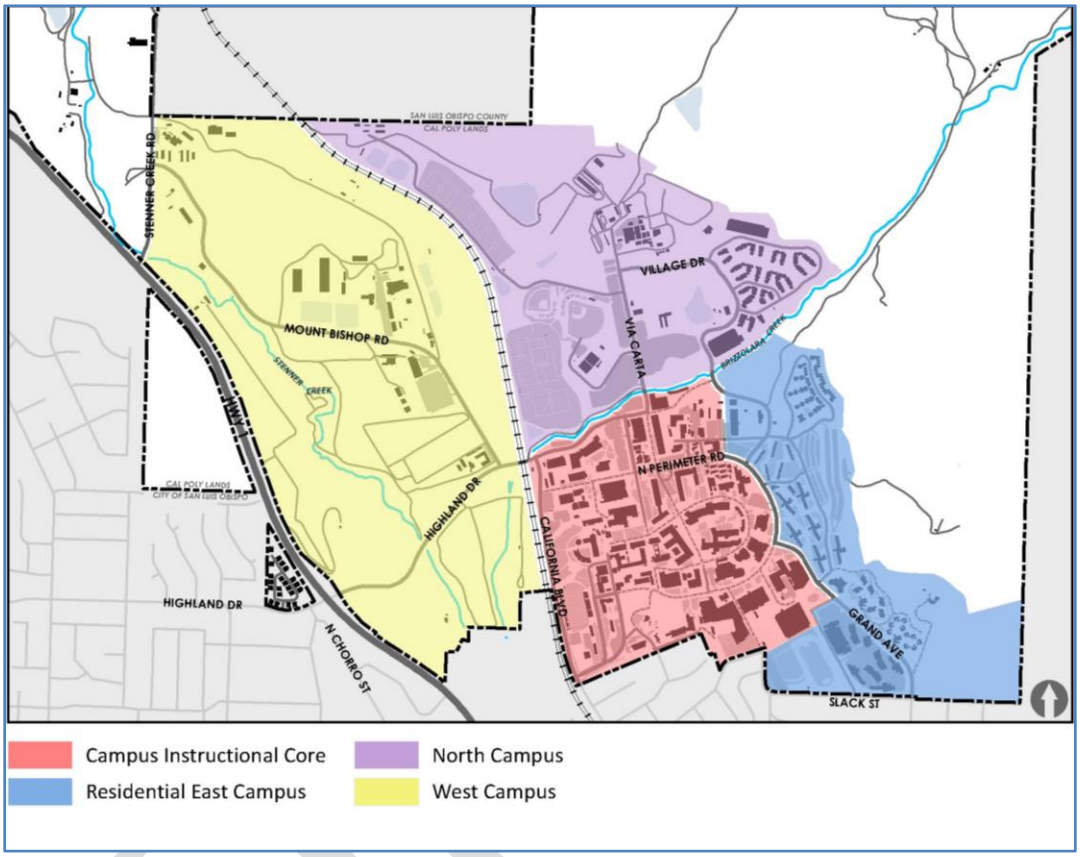
All told, the process involved about 200 meetings including the advisory committees' work and a multitude of presentations over two years prior to the formal environmental review process.

Cal Poly's Future Image

As guidance for approximately the next 20 years, the Master Plan addresses academic program demand, physical and environmental constraints and opportunities, and capital and operating budget requirements to support a future enrollment of 22,500 FTES. The future physical development focuses on land use and circulation issues associated with increasing enrollment.

The plan intensifies development within the Academic Core, and phases new growth north of Brizzolara Creek. At the same time, the plan is designed to protect natural environmental features and prime agricultural lands that form the character of campus.

The main campus is organized into the Academic Core, surrounded by the Residential East Campus, North Campus and West Campus.



Academic Core

The Academic Core encompasses the majority of academic teaching and learning facilities. The core is roughly defined by Brizzolara Creek to the north, the southern edge of campus to the south, Grand Avenue and Perimeter Road to the east, and the Union Pacific Railroad tracks to the west. Support services for students, faculty and staff are also located in the core. Most buildings where classes and laboratories are held are within a ten-minute walking distance, or approximately one-half mile.

Based on the CSU system's formulas for calculating space needs, the Master Plan anticipates development of approximately 1.7 million gross square feet of new or replacement buildings within the core of campus.

Two activity hubs frame the Academic Core – the Julian A. McPhee University Union (UU), and a new area unofficially named "Creekside Village" at the northern edge of the core at Villa Carta and Brizzolara Creek.

The UU is proposed to be redeveloped for an enhanced indoor and outdoor experience supporting the entire campus community, especially the student housing within close proximity. The new Creekside Village will also support the campus community, especially new proposed housing to the north of Brizzolara Creek. It will house a mix of uses including teaching and office spaces, retail and food services, lounge spaces, recreation, student engagement and study spaces, and more.

Via Carta, which is already the primary north/south pedestrian and bicycle route for the Academic Core will become the central spine of campus, providing access to a variety of interactive gathering places, open spaces of numerous types and sizes, and will provide a framework for incorporating new buildings that incorporate academic and support activities in an integrated, unifying and welcoming manner. The varied topography of the Academic Core will be capitalized upon to create interesting places and to preserve and enhance views of the surrounding hills, campus lands and buildings. Utilizing the existing topography will allow grade-level access at multiple levels for many of the proposed buildings.

A major focus of the Academic Core land use plan is to create a true "heart" of campus. This area is anticipated to be a convergence of two spaces, Dexter Lawn and Centennial Meadow. Dexter Lawn, a traditional collegiate landscape, will be extended to the east, terminating at the intersection of Via Carta. Centennial Green will be expanded, resulting in more of a meadow like open space with Central Coast landscaping and numerous seating areas among natural trees and foliage. There will be a visual and physical connection between Centennial Meadow and Dexter Lawn. This area is anticipated to be a gathering space, a meeting place, and an iconic convergence of campus life.

Learning happens everywhere, and the Academic Core will provide opportunities for multi-disciplinary academic facilities, and programmed and impromptu spaces for interaction and exchange of ideas and knowledge. New buildings will include places and spaces for active and passive interaction, both inside and outside. Interactive pedestrian thoroughfares and common areas will allow opportunities for passersby to view learning and creating opportunities through transparent spaces. Common support areas will be provided in buildings to decentralize uses and provide for varied disciplines to come together for services, to study, or to recreate.

The Academic Core will be essentially vehicle free. Emergency, service and special vehicle access needs will be accommodated within the pedestrian streets and plazas similar to how they are currently accommodated on Mustang Way and north Via Carta. Bicycle routes will be defined and separate lanes provided within the Academic Core, and pedestrian routes will be well demarcated to limit pedestrian and bicycle interaction. Intuitive wayfinding will be enhanced by better definition of an informal grid across the Academic Core, with secondary walkways integrated with smaller scale open spaces and seating areas.

Residential East Campus
Student housing is currently concentrated on the east side of campus, primarily along Grand Avenue, at the base of the eastern hills. The newest housing development at the Grand Avenue entrance to campus, slated to open in Fall of 2018, will allow all first-year students to live on campus, in traditional, dormitory-style housing.

These residential neighborhoods will largely remain the same. An additional student housing development is planned for the existing parking lots (R-1 and K-1) behind the North Mountain, or Red Brick, dorms.

Other housing is also proposed on the edges of campus, intended for faculty and staff, alumni, graduate students, students with families, or other non-traditional students. This housing is anticipated being built at an average density of 28 units per acre.

North Campus
The North Campus contains land uses and facilities across Brizzolara Creek from the Academic Core, and is the focus of the physical expansion in the new Master Plan.

Developing student housing in the North Campus will enable Cal Poly to house all first and second year students on campus, as well as approximately 30 percent of upper division students. Currently, Cal Poly houses approximately 40 percent of the students on campus and plans to increase that to 65 percent. This requires adding approximately 6,800 new student beds, in both dormitory and apartment styles, mostly in the North Campus.

In addition to student housing, new recreation facilities are proposed for the North Campus with both passive and active, programmable spaces. The track and football practice field are located near the Union Pacific Railroad tracks, along a proposed extension of California Boulevard. Two parking structures are also proposed, one at Highland Drive and Mt. Bishop Road, and one at Via Carta near the baseball stadium. These structures will replace displaced surface parking lots and provide parking for both events and residential uses in the area.

A multi-purpose arena is also proposed north of Brizzolara Creek. This arena is envisioned to house team sports such as basketball and volleyball, and also provide a venue for concerts, large speaking engagements, and other crowed drawing events. Mott Gym, the current home to basketball and volleyball, is likely to remain with major renovations.

West Campus
The West Campus includes prime agricultural lands, which are preserved for the most part under this plan. Some agricultural facilities, buildings, or related uses might be located on adjacent agricultural lands, as necessary. A new Farm Shop is proposed near Highway 1 and Stenner Creek, and the Beef Cattle Evaluation Center will be expanded. The Cal Poly Rodeo

facilities are also slated for improvement. The Facilities Service Yard and a new Data Center are also located further from the core of campus to free up key space within the Academic Core.

A central and critical Guiding Principle of the Master Plan is that in cases where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move. This principle recognizes the importance of maintaining and enhancing facilities for all of the activities and functions that support teaching and learning at Cal Poly.

Land Use Map

The Master Plan Land Use Map shows the planned land uses by category. It indicates both areas where uses will change from current activities and areas where expansion will occur on presently unassigned lands. Included in the use categories are academic functions, residential neighborhoods (student and faculty/staff), outdoor teaching and learning, and student support areas. Recreation and athletics locations and major open spaces are also indicated. The Land Use Map is not a conceptual design of proposed projects, but rather a land allocation diagram to define location, adjacency and scale of future University development and redevelopment.

Phasing

The Cal Poly Master Plan looks forward twenty years to provide a planning framework based on the University's academic plan. In addition to academic pedagogy changes over time, the phased implementation of the Master Plan will require consideration and forethought of a number of factors including:

- Replacement facilities will need to be provided, consistent with the Guiding Principle that in cases where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move.
- The source, magnitude and program requirements of funding for projects are difficult to predict. Project funds may come from donors, sponsors, public/private partnerships (PPP), student supported fees and, to an extent significantly less than in previous decades, State or CSU funding.
- Construction of a new building will require infrastructure upgrades, support facilities and open space improvements.
- When a new project is completed and space is vacated, the space may require additional improvements to properly house an incoming University program.

As a result of these challenges, multiple "steps" may be required before a new building can proceed. This will require detailed planning and coordination that may change and require modifications as factors change over time, such as a funding opportunity appearing unexpectedly or being disappointingly postponed.

Other phasing considerations will include the need to provide support facilities for the increased number of student housing residents, including dining options, active recreation, indoor and outdoor passive recreation, retail and study space. So, a student housing project may require infrastructure upgrades such as road realignment, utility extensions, parking relocation, and pedestrian pathways. It may also require some of the recreation, open space, food and study type facilities mentioned above. These result in quality-of-life phasing needs in addition to physical infrastructure and program replacement phasing requirements.

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The Master Plan

Background and Setting

Cal Poly's location on the central coast of California, situated in a dramatic natural setting near the Pacific Ocean, offers significant advantages for its academic programs. Its rural land-holdings include productive rangeland, rich farmland, creeks and wetlands, and a wide variety of topography and habitats. These attributes, along with the mild climate, have made Cal Poly rightly known for its outdoor teaching and learning that complements and strengthens its learn-by-doing approach to education.

While the campus community clearly benefits from and enjoys these valuable assets, the setting poses several important challenges as well. For example, its rural location makes access from outside the region challenging; and low population densities make local public transit less robust than in larger metropolitan areas. The hilly terrain, while beautiful, inhibits bike riding by certain segments of the campus community. Local water resources are limited and affected by periodic droughts. Nearby towns provide a full range of commercial services, but lack the scale, variety and price ranges found in larger metropolitan areas.

The regional housing market is complex as more jobs are concentrated in San Luis Obispo and at Cal Poly than in the outlying towns where housing is more available and generally less expensive. Further, regional attractions, particularly the coast, draw retired families and other residents who compete for housing. Cal Poly's students complicate the housing market when they share housing off campus. Under these conditions, towns in the region generally lack sufficient affordable, work force housing to serve their populations. Newly-recruited Cal Poly faculty and staff enter this constrained housing market when they join the University.

Main Campus – Immediate Vicinity
Cal Poly's main campus abuts the City of San Luis Obispo on the south and west. The Alta Vista and Monterey Heights neighborhoods border the southern edge of campus with single family homes. These neighborhoods, especially, experience some direct effects of activity at Cal Poly, including increased traffic, parking congestion, noise, light and glare, and students living within the neighborhoods. Other nearby areas, including the Neighborhoods North of Foothill, experience similar impacts. Santa Rosa Street (Highway 1) frames the western side of the campus with commercial services. And, at the southwest corner, along Foothill Boulevard, several multi-family housing complexes accommodate students – with some specifically designed for that purpose, such as Mustang Village and Stenner Glen.

As a neighbor and partner, the University coordinates its development with the City and County, although as a public university it is not governed by local land use and development regulations. In some instances Cal Poly contracts for services or enters into reciprocal arrangements with local or

state agencies (such as sewage treatment and fire and police protection). Further, the University enters into partnerships with local government to offer programs of mutual benefit – such as the Performing Arts Center.

Historical Development of Cal Poly Campus

The California State Legislature authorized the Cal Poly's founding in 1901. Cal Poly's historical land acquisition and development reflect the University's polytechnic focus, particularly to accommodate a full range of agricultural operations that support the University's Learn-by-doing approach to education and emphasis on applied student projects.
Cal Poly's initial site of 281 acres encompasses the Cal Poly Academic Core to this day. Major additions, beginning in 1918 and continuing into the 1980s, have increased the University's land holdings in San Luis Obispo County to over 6000 acres.

Three thousand of those acres are in the San Luis Obispo Creek watershed, contiguous to the City of San Luis Obispo. Because the land within this area includes a range of geographical features and types of historical development, the Master Plan makes additional distinctions for land use, development density, and other policy purposes.

An additional 3,100 acres are in the Chorro Creek watershed approximately halfway between San Luis Obispo and Morro Bay along Highway 1. Most of this acreage is rangeland, but small portions near Chorro Creek are planted in vineyards or dry farmed with forage crops

Cal Poly has acquired other additional lands primarily from donors who support the University's mission. The largest is Swanton Pacific Ranch in Santa Cruz County (1993) with about 3000 acres of farmland, rangeland, and forests. The most recent donations include the Avila Pier (2001), a small coastal parcel near Ragged Point (2002), and the 448-acre Bartleson Ranch in the Edna Valley (2015). These satellite properties are not addressed in this Master Plan.

Although Cal Poly has added considerable acreage over the last century, except for specialized or accessory structures, all academic and support buildings as well as student housing have been located on the main campus. This approach has maintained a compact campus form around the Academic Core that encourages a pedestrian ambiance and cross-discipline interactions, as well as efficiencies in management, transportation and infrastructure.

Area Designations

Before discussing Cal Poly's campus development further, it is important to clarify the terminology the Master Plan uses to describe different parts of the campus.

The Master Plan refers to the Main Campus as the following areas, and focuses development accordingly:

- The Academic Core remains the most densely developed area of campus focused on academic land uses, with related service and support functions. The core generally includes activities that engage students, faculty and staff multiple times per day, such as classes and labs, advising services, study areas, food outlets and administrative offices – and will continue to be the focus of campus activity.
- The area surrounding the core on three sides includes functions that are typically accessed daily or less frequently and/or require more extensive amounts of land than is available in the core.
    - The Residential East Campus encompasses all first-year student housing and other existing student housing to the east and south of the core.
    - Development in the new Master Plan extends across Brizzolara Creek from the core to form the North Campus, which will encompass future student housing, recreation and athletic fields, parking facilities, and outdoor labs.
    - The West Campus is between the Union Pacific Railroad tracks and Highway 1. It is predominantly agricultural, with some of the University's richest agricultural soils along Stenner Creek and lower Brizzolara Creek. The West Campus also includes supporting land uses along Mt. Bishop Road, including the Technology Park and Cal Poly Corporation warehouse, and will accommodate future parking, facilities services and recreation fields.

The Campus Farm overlays portions of the North Campus, most of the West Campus, and Cheda Ranch (further west along Stenner Creek). The campus farm includes row crops, orchards, vineyards and pastures, animal units, veterinary clinic, feed mill, meat processing facility and related reservoir, irrigation, and animal wastewater treatment systems (described in detail in the Agricultural Lands chapter).

Main Campus – Overarching Land Development Conditions
The built environment in the immediate vicinity, existing circulation and transportation systems, and natural features shape current and future land development of Cal Poly's main campus.

Vehicular access is limited to three major entrances – Grand Avenue with direct connections to Highway 101, Highland Drive directly off Highway 1 (Santa Rosa Street), and California Boulevard off of Foothill Boulevard at the southwest. Local neighborhood streets between Grand Avenue and California Boulevard on the south do not offer through access. The Union Pacific railroad right-of-way bifurcates the campus from Foothill Boulevard to Highland Drive and beyond to the north, limiting other entrances from the west. And steep topography on the north and east precludes vehicular access from that direction. The steeper slopes also present serious development challenges due to landslide potential, grading impacts, construction costs, and visibility issues.

The soils on Cal Poly's flat lands and along the creeks comprise some of the University's greatest assets for agriculture. There are approximately 250 acres of class I soils within the Main Campus.

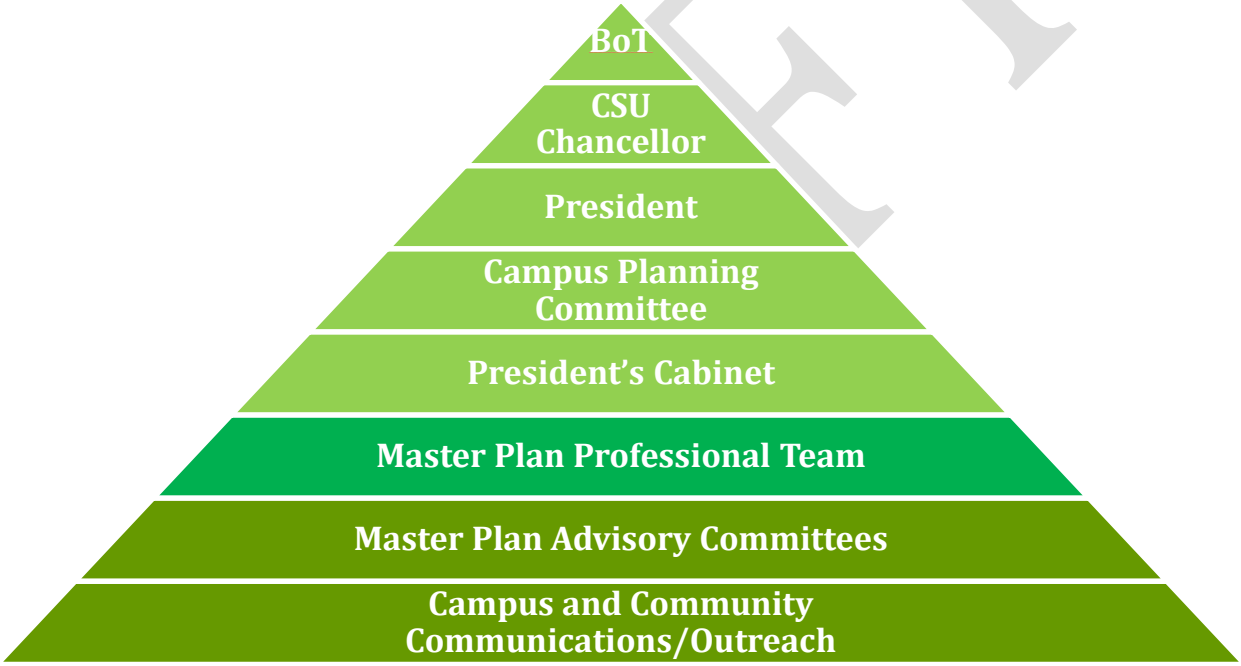
The Master Plan minimizes impacts on prime agricultural land in three ways: The first is to intensify the Academic Core and locate new development in the North and West campuses on less productive soils. The second is to protect croplands in active production for student and faculty use, fully consistent with Cal Poly's learn-by-doing approach to education. Thus, during the Master Plan process the University explicitly excluded lands with prime agricultural soils along lower Brizzolara and Stenner creeks from further development consideration. The third aspect is to concentrate any new land-intensive development that must be located on prime soils around existing development – for example, along Mt. Bishop Road between the railroad tracks, Crops Unit and Technology Park, rather than extending development into new areas.

Process and Community Engagement

Cal Poly followed a thorough, inclusive process to update the University's campus Master Plan. The process began in 2014 with a framework for planning, engaging campus constituents and the broader community throughout. The following discussion summarizes roles and responsibilities first, and then the process itself. The final section addresses community engagement in more detail.

Roles and Relationships

The formal relationships involved in preparing the Cal Poly Master Plan can be portrayed in three groups. As shown in the pyramid below, the top represents leadership direction, review, and formal approval; the middle, professional plan making; and the base, campus and community consultation and involvement. As the process unfolded, information flowed back and forth through the professional team in the middle.



The Cal Poly President's Cabinet (senior leadership team) provided the primary direction for the plan. The Campus Planning Committee is a standing committee with faculty, staff, students and community members that advises the President on capital development plans and projects before they are submitted to the CSU for approval by the Board of Trustees.

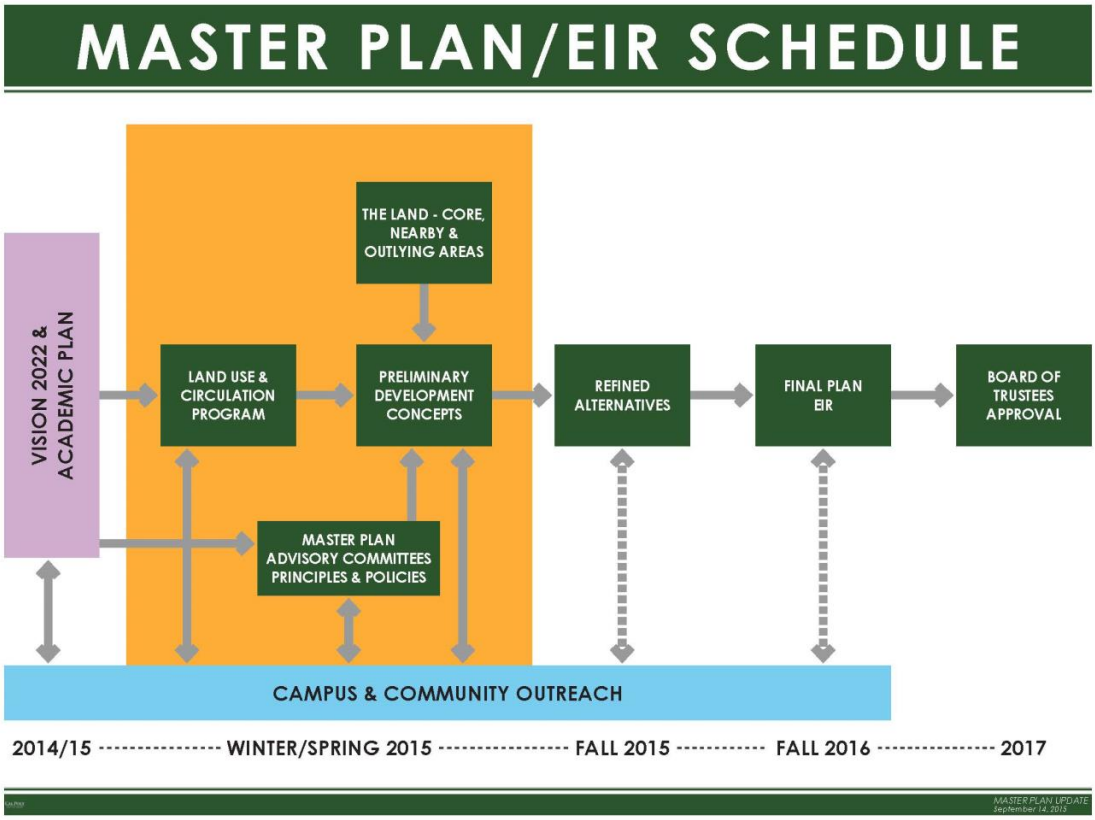
The Master Plan Professional Team comprised both internal and external professional staff. Within Cal Poly, the Facilities Planning and Capital Projects staff managed development of the plan, coordinating with Academic Affairs on academic and enrollment planning and with the Office of the President on policy and communications. Cal Poly's official Master Plan architect was the lead consultant, with other consultants providing

additional expertise as needed. The University also retained environmental consultants to prepare the environmental analysis and documentation. In addition, faculty and students from the City and Regional Planning Department supported key aspects of plan development through studio projects.

Consultation and communication took two parallel and complementary forms. The president appointed six advisory committees to review policies from the 2001 plan, study current planning issues, and make recommendations for the new plan. Members represented the six colleges, Academic Senate, Associated Students, Inc., all administrative divisions, local public agencies, and the broader community. The committees worked intensively over the first six months in preparing their recommendations for plan development. In addition, to provide information and receive ideas from a broader cross-section of the campus and community, Cal Poly set up a range of communication and outreach activities, discussed further below.

Master Plan Development Process

The following diagram depicts how the Master Plan process unfolded. In 2014 Cal Poly published Vision 2022, emphasizing the University's comprehensive polytechnic mission and a set of values stressing the importance of its residential community, student success, diversity, and faculty as teacher-scholars. This Vision provided a framework for both a new academic plan and the physical Master Plan.



The diagram captures the central Master Plan analysis during late 2014 and the first half of 2015 – assessing Cal Poly's land and environs; establishing the key features of the land use and circulation program; and developing principles and policies based on about 150 recommendations from the Master Plan advisory committees. Next, the Master Plan team prepared preliminary development concepts for discussion by University leadership, the campus and the community during spring 2015. The team then refined the options, drawing from feedback on the preliminary concepts as well as additional analysis. By late fall, the direction of the plan had become clear, so the team was able to begin drafting the narrative, and initiate environmental review in 2016. This schedule then allowed for preparation of the draft environmental impact report in fall 2016, and completion of the plan and final EIR for submittal to the CSU Board of Trustees in early 2017.

Community Engagement

Cal Poly recognized a wide range of constituencies and engaged them in a variety ways during the Master Plan process. The Master Plan website and press releases were designed to reach the broadest audiences, primarily to communicate timely information, but also to receive comments. The Master Plan team sponsored interactive workshops at several points during the process – first, to identify important issues the plan should address, and then, to share preliminary and more refined development concepts for comment. Each time, one workshop was held on campus during the University activity hour (11 am on Thursday) and one in downtown San Luis Obispo on a Saturday morning. Each workshop included exhibits to orient visitors to the campus and planning process, and interactive stations to respond to questions and receive comments. Associated Students, Inc. (ASI), also held a workshop in early 2015 focused on engaging students in thinking about the future of the University.

Representatives from the Master Plan team also discussed the planning process and interim concepts extensively on campus, meeting several times with each of the colleges and administrative divisions, the Cal Poly Corporation, the Academic Senate and its Budget and Long-Range Planning Committee, and the Associated Students, Inc. Further, the team shared the process and updates with the San Luis Obispo County Board of Supervisors; the San Luis Obispo City Council and Planning Commission; and public agency staff. Representatives met with neighborhood organizations, particularly Residents for Quality Neighborhoods, other community organizations, and business associations, including the San Luis Obispo Chamber of Commerce. Individuals from all of these constituencies also participated in the Master Plan advisory committees and in the President's Economic Development Advisory Committee. Some Cal Poly alumni and industry representatives also provided input through the President's Council of Advisers.

All told, the process involved about 200 meetings including the advisory committees' work and a multitude of presentations over two years prior to the formal environmental review process.

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Academic Plan

Cal Poly's Academic Plan focuses on Cal Poly's future leadership role as a premier, comprehensive polytechnic University. Elaborating on the values in the University's Vision 2022, the academic plan addresses the overall character of the University as an inclusive academic community, its Learn-by-doing educational philosophy, the academic programs it offers, its commitment to student success, and its approach to scholarship and creative activity. The plan then lays out the implications for future enrollment, and teaching and learning space. The following paragraphs summarize the direction in the plan based on a year of strategic thinking, discussion and analysis.

University Character and Academic Plan Goals

After studying trends in higher education and future forecasts, Cal Poly has determined (1) ***to Reinforce its Identity as a Premier Undergraduate, Learn-by-Doing Community of the 21st Century*** and also (2) ***to Expand its Visibility as a Leader in Higher Education*** at the same time. The strategic planning discussions throughout 2014-15 recognized that the first goal is central to Cal Poly's future – but not sufficient. As knowledge expands in many fields, a baccalaureate education will no longer suffice for even entry-level work, and there is already a demand for the kind and quality of education Cal Poly offers that extends well beyond Cal Poly's traditional undergraduate programs.

Cal Poly can remain predominantly undergraduate and residential, and still pursue innovative initiatives that expand on the University's mission, particularly Learn-by-doing and the Teacher-Scholar model. Indeed, these expansive initiatives can reinforce the central identify of the University by providing opportunities for experimentation that are more challenging to incorporate in traditional undergraduate programs governed by state regulations and regional accreditation requirements.

A key advantage of Cal Poly's continuing residential emphasis is that it also contributes to a holistic, interdisciplinary educational experience with other students as well as faculty and staff mentors. At the same time, the University knows that it needs to take significant steps to improve the overall campus climate for students, faculty and staff – particularly to support a more culturally and ethnically diverse community.

Learn-by-doing and the Comprehensive Polytechnic Curriculum

As stated by the Provost's Task Force on Enrollment in spring 2015:

- Vision – Cal Poly's academic plan emphasizes Cal Poly's leadership in offering program content and using pedagogy designed to meet future societal needs, so new or expanding programs that demonstrate their ability to achieve this vision should be given priority.
- Mission – As a comprehensive polytechnic University, Cal Poly recognizes that one of its hallmarks is the intersection between building comprehensive knowledge and skills for life and applying

> specialized knowledge and skills to professions. As a premier, comprehensive, polytechnic University, it is essential that all colleges contribute to an applied emphasis on addressing real-world problems, pairing technological innovation with contextual understanding of relevant behavioral, cultural, ethical, and social nuances and parameters. …
>
> The University's Learn-by-Doing philosophy applies across these academic domains as well, so plans for adding or expanding a program need to show how the program can accommodate applied learning in formal classroom or lab settings and/or in broader co-curricular activities that are central to the particular discipline.

The Co-Curriculum, Residential Community and Student Success

Cal Poly's academic plan explicitly recognizes that "learning occurs everywhere." National research has demonstrated that undergraduate student success depends upon engagement with activities and support systems that complement and extend the formal curriculum. They start with relatively traditional individual and group projects outside the classroom or lab and include internships, service learning, field work and travel study. Faculty members actively sponsor many of these activities, some of which are discipline-specific and others interdisciplinary. For example, the Center for Innovation and Entrepreneurship is cross-disciplinary; and music, theatre and debate at Cal Poly involve students from all colleges. Traditional-age undergraduates also are involved in intercollegiate athletics, recreational sports, and student government.

In addition to these academic and co-curricular activities, Cal Poly has found that living on campus for at least the first two years is a major factor in student retention, and ultimate degree completion. Thus, the academic plan explicitly encompasses the residential learning community as a central component of undergraduate education.

Research, Creativity and the Teacher-Scholar Model

In 2011 the Cal Poly Academic Senate adopted a resolution adopting the Teacher-Scholar model with an eloquent discussion of the meaning of this model for Cal Poly (AS-725-11). During academic planning discussions in 2014-15, a number of faculty members explicitly noted that they see the Teacher-Scholar model and Learn-by-Doing (AS-727-11) as reinforcing one another. Indeed, both involve the kind of applied research and scholarship that fits well with the Cal Poly mission.

Cal Poly faculty noted that the University has much to gain – indeed much to offer – by being at the forefront in addressing global and regional trends. In order for Cal Poly to take advantage of these research and development opportunities and to pursue emerging fields, Cal Poly will need to be able to encourage the scholarships of "discovery, application, and integration" in

these areas.[2] This implies providing support for professional development as appropriate to each field – including, but not limited to, visiting positions at Cal Poly, exchanges with employers, and team research and demonstration projections with professionals elsewhere as well as traditional research, fieldwork, publication, creative activity, conference participation and sabbatical study.

Population Profile

Cal Poly's student profile is dominantly undergraduate (about 95%) and in the past decade, the percentage of freshmen has risen from 80 to 85 percent of new undergraduates. While the percentage of women has increased, men still constitute nearly 53 percent of the student body. As self-identified, the white student population has dropped from 65 percent to about 57 percent. Most undergraduates are California residents – although the share of non-residents (most from other states rather than other parts of the world) has increased over the past decade.

	Fall 2015
Total Students	**20,944**
Undergraduate	20,049
Post-Baccalaureate and Graduate	895

	CY 2014-15
Degrees Awarded	**4,681**
Bachelor's	4,167
Master's	514

	Fall 2015
State Employees (Staff and Management)	**1,656**
Full-Time	1,255
Part-Time	401
Auxiliary Employees (Full-Time)	**326**

	Fall 2015
Faculty	**1,190**
Tenured/Tenure Track	628
Lecturers, Full-Time	208
Lecturers, Part-Time	354

A Note about Measures
The Master Plan primarily uses fall census data for student, faculty and staff headcount for analysis because individual people provide and use the academic, administrative and other services of the University. Further, most data refer to students, faculty and staff enrolled in or offering courses and programs financially supported by the State of California (General Fund).

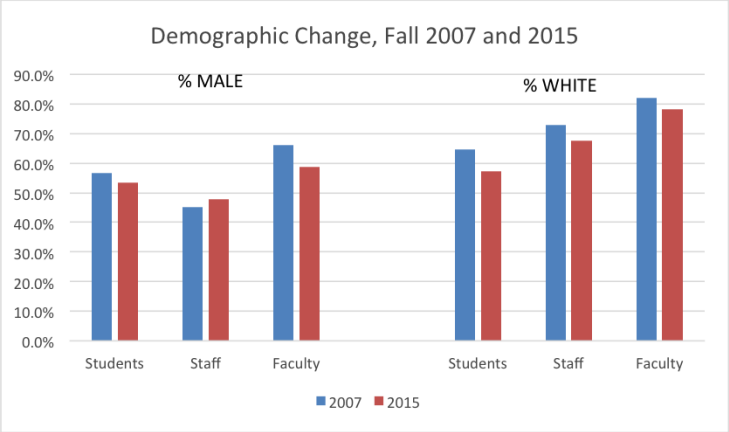
Additional detail on the measures can be found in the Appendix.

Cal Poly's faculty composition has been more strongly male and white than the student profile. Nonetheless, diversity is increasing – men now constitute under 60 percent of faculty, and in the past dozen years the proportion of white faculty has decreased from nearly 85 percent to about 78 percent.

Staff demographics differ. About 52 percent of the staff employees are women; and the percentage of white employees has dropped over the past seven years from about 73 to 68 percent.

[2] Ernest L. Boyer, *Scholarship Reconsidered: Priorities of the Professoriate* (Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching, 1990).

University Demographic Changes, 2007 and 2015

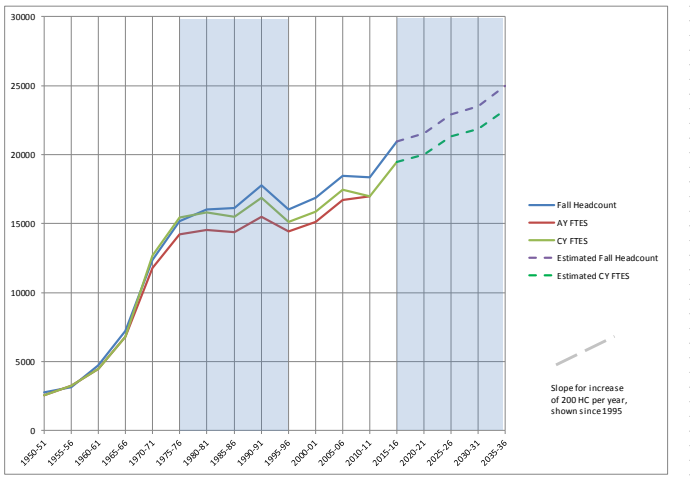


Source for population composition: Cal Poly Factbook.

Enrollment History

After Cal Poly's founding in 1901, enrollment grew slowly until after World War II. In 1950 there were fewer than 3,000 students. Then, enrollment more than doubled, to over 7,200 students in 1965 and doubled again to over 15,000 students in 1975. After that, enrollment ranged between 16,000 and 17,000 through the 1980's, reaching a temporary peak of 17,756 in 1990. Due to state budget reductions, enrollment then dropped to below 15,500 in the early 1990's. By 2001 enrollment recovered to 18,000; then increased to 19,000 by 2007, and 20,000 by 2014. Despite some annual ups and downs, enrollment growth during the past twenty years averaged about 200 students per year. This approximate rate is projected for the next twenty years – to 2035 – again anticipating annual variation as suggested by the dashed lines in the chart.

Student Enrollment, 1950-Present, with Projections to 2035



Source for historical enrollment data: CSU Statistical Abstracts.

Please see Appendix for assumptions underlying enrollment, faculty headcount ration and student composition

The top line on this chart represents fall student headcount, which is higher than Full-Time Equivalent (FTES) because students do not take an average

of 15 units per term. Between 1965 and 2010, Cal Poly offered state-support summer instruction – so the College Year (CY) full-time equivalency is higher than the academic year (AY) during those years because it included summer.

Future Enrollment Scenarios

During Winter and Spring 2015, the Provost's Task Force on Enrollment explored a number of future enrollment scenarios, including the current situation, recent trends, variations in enrollment size and composition, and the potential for year-round operations with an integrated summer. For Master Planning purposes, University leadership decided to pursue two distinct options: continuation of recent trends with some additional assumptions and integration of year-round operations (to be studied in more detail at a later date). In addition, the environmental impact analysis considers the 'no action' or no growth alternative.

The tables and discussion that follow show these three scenarios: no change (from 2015), adjusted recent trends, and integrated year-round operations (YRO). The Adjusted Recent Trend scenario assumes that the fall student headcount would reach 25,000 by the year 2035-36 (the Master Plan horizon), which is roughly equivalent to the 200 headcount per year rate of the past two decades. The Year-Round Operations scenario assumes a very modest fall increase (about 1,000 students over fall 2014), with summer enrollment achieving a level equivalent to 90 percent of fall. As a result, the total (college year) FTES is about 10 percent higher for the YRO scenario. Both future scenarios assume that non-resident student enrollment would increase to no more than 20 percent of the total. Faculty and staffing are assumed to increase more than commensurate with enrollment in order to decrease the student to faculty ratio, support the Teacher-Scholar model, and increase staff support.

In late summer 2015, the University leadership decided to defer discussion of the Year-Round Operations scenario for the immediate future. In addition, leadership decided to explore a short-term "steady state" approach to enrollment management until additional resources, housing, and other facilities are available. These short-term actions affect the timing, but not the full build-out for the new Master Plan. Thus, the analysis that follows continues to include the Year-Round Operations as well as Adjusted Recent Trend scenario. The analysis is based on the largest potential summer enrollment under Year-Round Operations, although further study may show that summer may not achieve this level.

Enrollment and Staffing

	No Change (Fall 2015)			Adjusted Recent Trends	Year-Round Operations
	current ratio		*future ratio*		
Student Enrollment					
Fall Headcount		**20,944**		***25,000***	***21,200***
Summer Headcount (YRO only)			*90.0%*		*19,080*
Unduplicated CY Headcount					*27,560*
Total CY FTES		19,471		*23,264*	*25,760*
California Resident CY FTES	*85.9%*	**16,717**	*80.0%*	***18,611***	***20,608***
Faculty and Staff	*HC ratio*		*adj. HC ratio*		
Faculty	*0.0568*	1,190	*0.0602*	*1,506*	*1,660*
Staff and Management	*0.0946*	1,982	*0.0960*	*2,399*	*2,321*
Total Regular Employees		**3,172**		***3,905***	***3,982***

Student Composition

For some planning purposes, it is important to consider the composition of enrollment by student level. Most importantly, the proportion of undergraduates in their first and second year directly affects demand for housing on campus. The following table assumes that Cal Poly will continue to bring in most new students as freshmen, and thus needs a relatively large number of beds on campus. The assumption of housing all freshmen and second year undergraduates is based on academic policy; and the assumption of 30 percent for upper division undergraduates represents expected demand.

Demand for Undergraduate Student Housing on Campus

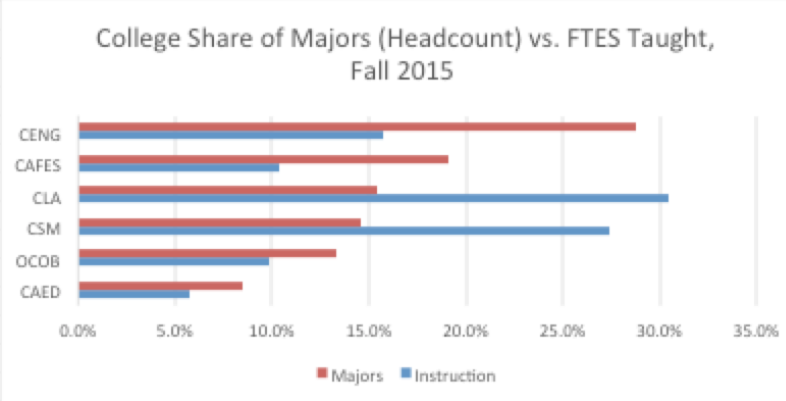
	No Change (Fall 2015)			Adjusted Recent Trends	Year-Round Operations
	current ratio		*future ratio*		
Student Enrollment					
Fall Headcount		**20,944**		***25,000***	***21,200***
Total Undergraduates	*95.7%*	20,049	*95%*	*23,750*	*20,140*
New Freshmen	*24.7%*	4,943	*24%*	*5,700*	*4,834*
2nd Year Undergrads	*23.2%*	4,648	*23%*	*5,463*	*4,632*
Upper Division Unde	*52.2%*	10,458	*53%*	*12,588*	*10,674*
Undeergraduate Student Housing on Campus - Future Demand					
New Freshmen			*100%*	*5,700*	*4,834*
2nd Year Undergrads			*100%*	*5,463*	*4,632*
Upper Division Undergrads			*30%*	*3,776*	*3,202*
Total Undergraduates to Be Housed on Campus (Beds)				***14,939***	***12,668***
Share of All Undergraduates to Be Housed on Campus				***63%***	***63%***

The demand for undergraduate student housing on campus would be reduced if the University were to increase enrollment of new transfer students (compared with freshmen) or to increase the proportion of post-baccalaureate and graduate students. For example, if the proportion of post-baccalaureate and graduate students were to double (to 10 percent of the total), the demand for freshman and second-year student housing would drop by nearly 600 beds under the Adjusted Recent Trends scenario. On the other hand, with more post-baccalaureate and graduate students Cal Poly would have a larger market to consider for housing that would be appropriate for that student level.

Academic Program Composition
The specific colleges and majors in which students enroll reflects the mission of the University and also affects the fields in which faculty and technical staff need to be hired and the kinds of classrooms, laboratories and other teaching facilities that are needed.

The chart below shows the distribution of where courses were taught in Fall 2015 and how it compares with the college in which a student majors. The College of Engineering has the most students (29 percent of all students), and the College of Agriculture, Food and Environmental Science is next (19 percent). However, the colleges of Liberal Arts and Science and Mathematics provide the most instruction (over 30 percent and 27 percent, respectively) – primarily because most students are admitted as freshmen and take general education and support courses taught by these two colleges.

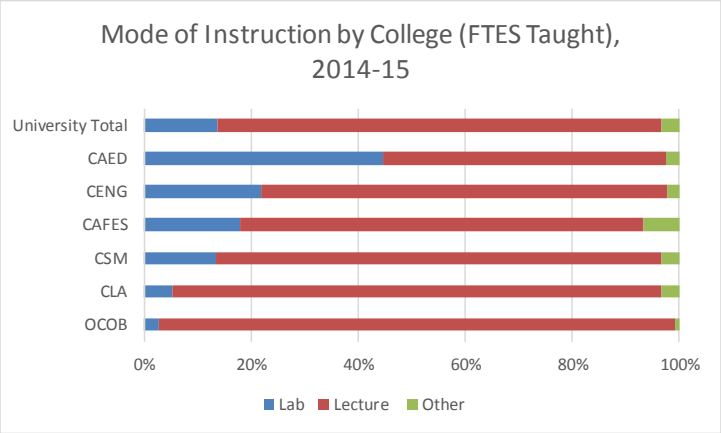
Enrollment by College, Share of Majors (Headcount) vs. FTES Taught, Fall 2015



As a result, any growth in undergraduate enrollment means more instruction in classrooms and labs for freshman and sophomore-level classes. For example, with Cal Poly's strengths in Engineering, the proportion of majors in that college has grown by nearly 25 percent during the past decade, generating the need for facilities to accommodate these additional students. At the same time, majors in the College of Liberal Arts grew by about five percent, yet Liberal Arts needed to increase instruction by nearly 17 percent to accommodate student enrollment in Engineering and other colleges.

The pedagogy in each college involves a different balance of classroom and laboratory instruction. For example, the colleges of Architecture and Environmental Design and Engineering teach proportionately more lab classes (including design studios), while Business and Liberal Arts teach mostly lecture and seminar classes. The College of Agriculture, Food, and Environmental Science uses the highest proportion of "other" formats – including fieldwork, independent study, and asynchronous instruction. Upper division and graduate students require the most specialized laboratories and equipment.

Mode of Instruction by College (FTES Taught), 2014-15



Cal Poly's academic plan recognizes the complementary roles of the six colleges to the University mission, as emphasized above. At the same time it acknowledges the demand for the more traditional polytechnic programs, the quality of the applicant pool attracted to them, and the opportunities for their graduates. The following excerpts from each college's academic planning narratives capture the aspirations of the fields they represent in an increasingly multi-disciplinary setting.

Enrollment projections for the future show that the College of Engineering will continue to be the largest college, particularly as its majors keep developing to meet emergent, applied needs in technological fields.

> "Engineers create the technologies that propel societal changes, while also serving to advance solutions to the world's challenges. … We have worked hard to sustain an educational environment that yields technically-competent graduates serving on the front lines of their professions with courage and a spirit of can-do."

The College of Agriculture, Food, and Environmental Science has perhaps experienced the most change over Cal Poly's lifetime, transitioning from an emphasis on agricultural production to processing and marketing that still takes advantage of Cal Poly's coastal location, ecological diversity, and historical industry support. The College's 2015 strategic plan reflects the aspiration to "be the intellectual and experiential hot house, cultivating and nurturing people who creatively solve problems in agriculture, food, health and the environment."

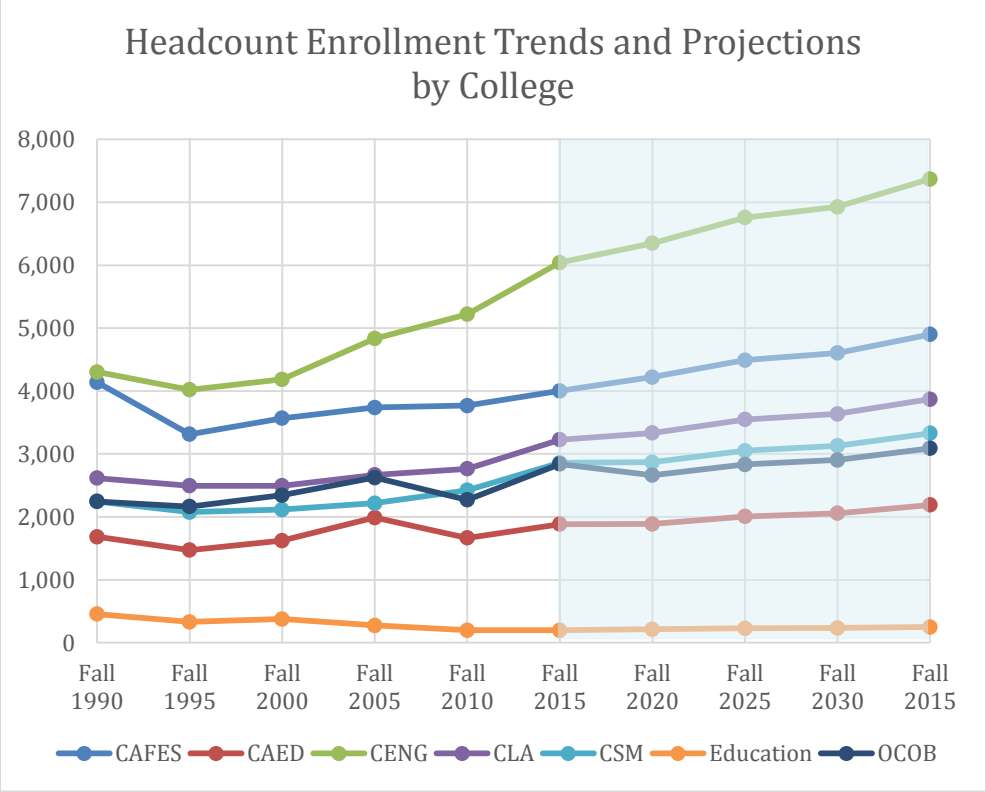
Disciplines in the College of Science and Mathematics are clearly foundational to students in the colleges that apply science, technology, engineering and mathematics in their professional fields. In its own right, Science and Math has provided pedagogical leadership in science education and pioneered faculty/student research partnerships.

The College of Liberal Arts will continue to serve a critical humanistic role in comprehensive polytechnic education at the same time as it focuses on excellence in the arts, humanities, communications and social sciences. Liberal Arts stresses that the "knowledge and skills of the liberal arts combined with a holistic, interdisciplinary experience" will continue to prepare its graduates to address real-world problems in all their social, political and economic complexity.

"The long-term vision of the Orfalea College of Business is to become the undisputed leader in experiential business education." Further, the Orfalea College sees itself as providing leadership for innovative and entrepreneurial activities that bridge the technical fields in the other colleges.

Finally, Architecture and Environmental Design will continue to serve a focused clientele with its highly ranked professional programs. This college sees a future that emphasizes more interdisciplinary study around emerging areas of critical national and international concern, such as sustainability and climate change.

<u>Headcount Trends and Projections by College</u>



Goals and Guiding Principles

Cal Poly's leadership has developed the following goals for the future of the campus to guide the development of the Master Plan:

The purpose of the Master Plan is to create a physical environment (indoor and outdoor) that provides opportunities for the achievement of the following goals:

- Enhance academic quality and student success through Learn-by-doing.
- Increase the diversity of students, faculty and staff
- House more students in residential communities on campus
- Offer more vibrant evening and weekend events and activities
- Strengthen the compact, cross-disciplinary Academic-Core
- Attain a modal shift from cars to more pedestrian, bicycle and transit use
- Reinforce campus-wide environmental sustainability

The following goals address how to enrich the Academic Core as a special place on campus:

<u>Academic Core Goals</u>

- Design lively, interactive spaces that encourage interaction and cross-disciplinary sharing
- Create a 'heart of the campus' for Cal Poly
- Integrate places for occasional formal gatherings and informal daily gatherings
- Foster campus culture and memories
- Establish a visual identity for the Academic Core
- Provide for users of different backgrounds, ages, and needs
- Develop a framework for academic buildings and support facilities
- Plan a new mixed-use activity center at Brizzolara Creek
- Allow for phased implementation and small projects

The principles, policies, and implementation programs included in the Master Plan, combined with the land uses and projects identified in the maps, will enable Cal Poly to accomplish these overarching goals, accommodate future students, faculty, and staff, and provide the spaces necessary for Cal Poly to educate the leaders and innovators of tomorrow.

Introduction to the Principles, Policies, and Implementation Programs

While the expression of a physical Master Plan is most easily seen in maps and accompanying diagrams, those visual elements are based on numerous ideas about what a campus should look like and how it should function. Those ideas have been largely articulated in Cal Poly's Master Plan as "principles."

Certain "Guiding Principles" were developed early on in the process by the Master Plan professional team with input from administration, including the college deans, and based largely on the current (2001) campus plan. Guiding Principles can be thought of both as starting points for the plan process as well as overarching directives relevant to all or most Master Plan topics.

Academic Mission and Learn-by-Doing

- Cal Poly's land and resource uses should advance the University's academic mission. (GP 5)
- Planning should preserve and encourage the "learn by doing" approach to Cal Poly's academic curriculum and reflect that approach in the overall campus character, including outdoor teaching and learning. (GP 6)
- Planning should consider not only current needs and trends, but also changing academic priorities and new pedagogical techniques. (GP 7)

Residential Community

- The percentage of students living in on-campus housing should be increased and Cal Poly should continue to develop into a livable residential campus, where academic facilities, housing, recreation, social places, and other support facilities and activities are integrated. (GP 8)

Sustainability as an Overarching Consideration

- Cal Poly should be sustainable with regard to its land and resource planning, as well as site and building design, and operations. Cal Poly should meet or exceed all state and system-wide sustainability policies. (GP 9)
- As an important element of Cal Poly's academic mission, the University should be proactive leader in wise and sustainable land and resource management. (GP 10)

Open Space

- Cal Poly's scenic setting – a campus surrounded by open spaces -- should be preserved; its open lands and the surrounding natural environment are highly valued and should be considered in campus planning efforts. (GP 12)
- Open space should be incorporated into the core campus and integrated into the scope of every new building project, for aesthetics, leisure, social interactions and activities contributing to a healthy lifestyle. (GP 13)

Siting and Design

- Land uses should be suitable to their locations considering the environmental features of the proposed sites. (GP 11)
- The siting of new land uses and buildings should always be considered within the context of the greater campus; functional connections among related activities should be considered, including the nature of activities, "adjacencies" and paths of travel. (GP 14)
- The siting and design of campus buildings and other features should reflect and enhance visual and physical connections to the surrounding natural environment and outdoor spaces on campus,

and should maintain, enhance or create aesthetically pleasing views and vistas. (GP 15)
- Campus buildings should incorporate the best design elements regarding massing, human scale, materials, articulation, architectural interest, sustainability and connections with surrounding buildings and spaces; design should reflect authenticity and attention to details in materials, historical context and architectural style. (GP 16)

Replacement
- In cases where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move. (GP 3)
- Cal Poly should evaluate both past investment and the need for future expansion when planning for new and redeveloped facilities. (GP 4)

Transparency and Off Campus Impacts
- Cal Poly should consider potential impacts -- including but not limited to traffic, parking, noise and glare -- on surrounding areas, especially nearby single-family residential neighborhoods, in its land use planning, building and site design, and operations. (GP 1)
- Cal Poly should inform local agencies and the community prior to amending the Master Plan or developing major new projects, and provide opportunities for comments. (GP 2)

A larger number of "Master Plan Principles" (MPPs) generally address more specific issues in the physical plan, although many are relevant to several topical areas. Succinct versions of the MMPs are called out in each topic section of the Master Plan, and a matrix table in the Appendix includes the full text and highlights how various principles relate across different Master Plan topics.

The Master Plan process surfaced the desire for several studies that require a more refined or focused level of analysis, as well as for various follow-up measures needed to fully affect specific aspects of the plan. These are differentiated from principles in the plan and are listed as "Implementation Programs" (IP).

In addition to principles and follow-up implementation measures, the planning process suggested a number of administrative policies that should be adopted by the University to guide future decisions relevant to the physical development of the campus to better ensure consistency with the new Master Plan. These are listed as "Other Recommendations" (OR).

The derivation of the principles, implementation programs and ongoing administrative policies largely came from the work of six advisory committees appointed by the President and assigned to focus on different topics. The committees included representatives of administration, staff, faculty, students and community interests as well as outside experts. The

Master Plan professional team considered these recommendations throughout the plan development.

The Master Plan professional team edited the numerous committee recommendations to reduce redundancy across committees, to combine related concepts where appropriate, and for clarity and consistency of language. However, the recommendations from the committees are also listed in the Appendix largely verbatim (or with minor editing where an expression was incomplete or language unclear). Following each committee recommendation there is a reference to where it was considered and incorporated into a principle, implementation program or administrative policy in the plan itself.

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Academic Setting

Teaching and Learning

At Cal Poly, Learn by Doing is a deliberate process whereby students, from day one, acquire knowledge and skills through active engagement and self-reflection inside the classroom and beyond it.
Academic Senate Resolution on Working Definition of Learn by Doing, AS-727-11

Learning Occurs Everywhere

Academic space encompasses a full range of sites and facilities that support the University mission, ranging from instructional space to all of the functions that directly support teaching and learning, including the library, performance and exhibit space, faculty scholarship and creative activity, and academic advising.

Cal Poly's Master Plan is designed to reinforce the University's Learn-by-Doing approach to education. In the 2001 Master Plan, the University explicitly acknowledged the importance of outdoor teaching and learning as well as more traditional classroom and laboratory settings and study areas. While the University recognizes that learning can occur anywhere, it is not equally effective everywhere. For example, seating arrangements, lighting, air quality, and acoustics affect learning in the classroom and lab as well as in more informal settings.

General Themes about Student Learning

- Learning occurs everywhere, both within and outside structured learning environments.
- Learning engages faculty and students beyond the classroom.
- Learning requires social and collaborative interaction.
- Learning and creativity require individual reflection and thought.
- Learning is active and experiential (learn by doing).
- Learning happens when students are empowered.
- Learning crosses disciplines.

Cal Poly Master Plan Advisory Committee on Academic and Instructional Space, March 2015

During the 2014-15 academic planning process, faculty distinguished the space and equipment needs of different forms of learning at Cal Poly:

- Formal, structured learning continues to be scheduled in the classroom and laboratory, even as pedagogical techniques have changed to increase engagement and empowerment. Examples include multi-mode and hybrid instruction and "flipped" classes for a wide range of topics, and problem-based/project-based, Learn-by-Doing laboratories. While some disciplines require specialized equipment and fixed configurations, most faculty seek flexible, adaptable space and furniture, so that the instructor can deploy different teaching methods across the term and sometimes even within a single class session.
- Informal, structured learning takes place in experiential and co-curricular settings outside the classroom in which the learning outcomes and experience are managed by an instructor, coach, or adviser; and sometimes leads to regular academic course credit. Specific facility needs vary significantly based on the specific activity – e.g., "messy" project space for engineering, interior and exterior demonstration areas for architectural projects, research and performance facilities for music and theatre – yet all share a common need for flexible collaboration space.
- Informal, less-structured learning also happens when students work on campus, participate in clubs and organizations, and study together.
- The Teacher-Scholar Model, which reinforces Learn-by-doing, offers opportunities for students to learn alongside faculty conducting research and participating in projects through informal mentoring, role modeling, conference participation, and other, more spontaneous activities. Consistent with Cal Poly's emphasis on student engagement, faculty members seek space to collaborate –

RESOLVED: That the Teacher-Scholar Model include, when possible, meaningful student engagement in faculty scholarly activity and inclusion of scholarship in teaching to create vibrant learning experiences for students.
Academic Senate Resolution on Defining and adopting the Teacher-Scholar Model, AS-725-11

with students and with one another in their scholarship and creative activity. Dedicated space *per se* for research and creative activity is required (as appropriate to the discipline), and visiting scholars or professionals require office as well as research accommodation. Most faculty offices accommodate only one or two guests. While the work space of the future may de-emphasize individual offices and enclosed work areas, faculty and students need privacy for mentoring. Moreover, much research still requires fixed facilities or consistent locations.

- All forms of learning – formal and informal, structured and less-structured – are becoming increasing inter- or cross-disciplinary, underscoring the need for flexibility. All forms of learning also depend on connectivity, indoors and outside, throughout the campus and with off-campus locations in San Luis Obispo and beyond. Most equipment has an information technology component.

Academic and Instructional Facility Inventory and Condition

The Master Plan recognizes that the age, condition and quality of Cal Poly's space ranges from facilities built early in the last century to the Warren J. Baker Center for Science and Mathematics, which opened in the fall of 2013. While some older buildings have been remodeled, their floor plans and other structural features often limit the extent to which they can accommodate emerging pedagogies. Further, funding limitations have led to accumulated deferred maintenance, with some buildings needing such extensive repairs that they are not usable.

The 2001 Master Plan (1) expanded the Academic Core of the campus (e.g., the Engineering Quad), filled in space adjacent to existing buildings (e.g., Constructional Management), and began to replace the most obsolete instructional facilities (e.g., the Baker Center for Science and Mathematics in place of a portion of the old Science building (52)). The 2001 Master Plan provided for additional renovation, infill, and expansion (e.g., the northeast quadrant) to meet the enrollment goals in that plan.

This Master Plan incorporates the academic and instructional space requirements of the 2001 Master Plan that have not been implemented as well as additional space requirements to meet further enrollment growth.

The 2001 Master Plan accommodated facilities for 17,500 FTES of scheduled instruction, which would serve a Fall headcount of 20,900 students. With the completion of the Baker Center, Cal Poly has facilities built to accommodate 16,504 net College Year (CY) FTES of scheduled instruction. Most of the existing shortage for direct teaching is in general purpose classroom space and another significant deficit is in research space and related instructional facilities. The new Master Plan is being designed for 22,500 net CY FTES of scheduled instruction, to serve a future Fall headcount of 25,000 students.

To meet future needs as well as address current deficiencies, the new Master Plan provides for 2,200 additional lecture seats, nearly 1,000 new lab

stations, and nearly 900 graduate student research stations with appropriate instructional support space to back up these facilities. Further, as Cal Poly fully implements the teacher-scholar model, offices will be needed to support nearly 400 more faculty members, along with labs and informal collaboration space where they can work effectively in small teams.

Further, in order to meet the University's academic and instructional space needs, including improvement in the quality of teaching space to meet emerging pedagogies, the new Master Plan calls for selective renovation, replacement and new construction, particularly in the academic core.

Finally, the Master Plan recognizes the value of providing for neutral and unscheduled spaces interspersed with more formal instructional facilities. Historically, general purpose classroom buildings and the library have served this purpose. In the future, Cal Poly sees an expanded need for such flexible areas, in facilities that are clearly welcoming to students and faculty from all disciplines. For example, cross-disciplinary "maker spaces" can accommodate student activities ranging from preliminary idea development through to marketable ventures. At Cal Poly, such learning progresses from the Innovation Sandbox, to the Hatchery, to the San Luis Obispo Hot House and/or Cal Poly Technology Park as and enterprise matures.

In sum, in order to relieve current academic space deficits and to accommodate future enrollment, the new Master Plan calls for nearly three million gross square feet of academic space – for instruction, support, research, library expansion, academic advising and academic administration. After subtracting current academic space and adding new facilities in the academic core that replace obsolete buildings, the net new space required is over 1.1 million GSF.

Current and Future Academic Space (Estimated Gross Square Feet)

	Enrollment (net FTES)	Gross Square Feet (GSF)
Current Built Capacity	16,504	2,100,000
Future Capacity Required	22,500	2,900,000
Replacement (Estimate)		355,000
Net New GSF Needed (Estimate)		**1,155,000**

Academic core Teaching and Learning Principles:

Learning Environment. Buildings and open spaces in the academic core should foster high quality learning experiences, intellectual inquiry and collegial interaction. (MPP 1)

Teaching and Learning Emphasis. The academic core should be primarily for teaching, learning, and support functions. (MPP2)

Walkable Core. Instructional facilities (apart from outdoor teaching and learning areas) should be located within a 10-minute walk in the campus academic core. (MPP 3)

Intensity of Activity. The academic core should be developed at densities that reflect the limited availability of land. All new buildings should be at least in three stories height with complementary open space. (MPP 4)

Formal and Informal Learning Space. The academic core should include places for informal learning and socializing, as well as formal instruction. (MPP 5)

Teaching and Learning in the Academic Core

Historically, most formal, structured indoor teaching and learning at Cal Poly occurred within Perimeter Road. The 2001 Master Plan expanded the academic core to encompass an area roughly bounded by the railroad tracks on the west, Brizzolara Creek on the north, Grand Avenue on the east, and the residential neighborhood on the south. This area is walkable with an approximate ¼ mile radius from the center of campus, and is easily accessible from student housing.

The redevelopment of the Academic Core is a major feature of the new Master Plan, as discussed in the Overview and Design Character sections of

this Master Plan. Teaching and learning is the primary, but not exclusive activity in the core. Indeed, another major goal of the new Master Plan for the Academic Core is to accommodate a variety of functions that support teaching and learning, including unstructured and informal space for individual and collaborative study.

Flexible as well as Specialized Space. Specialized facilities should be located farther from the center of campus while those that are more general and flexible in nature should gravitate toward the center to enhance cross-disciplinary connections. (MPP 6)

Cross-Disciplinary Learning Space. The academic core should include opportunities for interactions between different colleges including multi-use buildings and commons that promote collaboration and connections among disciplines. (MPP 7)

A variety of learning spaces should be available to support different types of interactions. (MPP 10)

Learning spaces should be kept as flexible as possible to ensure viability long into the future. (MPP 11)

Teaching and Learning Facility Design

The Master Plan focuses on land use and site planning rather than individual building design. Nonetheless, as sites are developed, particularly in the Academic Core, it is important to set some expectations about how new and renovated facilities are programmed to meet teaching and learning needs.

Outdoor Teaching and Learning Space and Facilities

The 2001 Master Plan explicitly recognized the importance of outdoor space for teaching and learning for students in all colleges. Nonetheless, as the University increases its enrollment, the academic core expands; and as Cal Poly seeks to house a significantly larger proportion of students on campus, more activities are clustered around the core. This growth puts pressure on outdoor teaching and learning activities that had been historically close to the core. The approach in the new Master Plan is to review the space needs of these historical activities and reprogram the nearby areas. Two factors are paramount: (1) the need for proximity or access to the core for outdoor teaching and learning activities that draw students and faculty very regularly, and (2) the specific features of the land and facilities themselves, such as prime agriculture land in production, or ecologically unique areas, that cannot be relocated or replaced.

Outdoor Teaching and Learning Principles:

Extent of Outdoor Teaching and Learning. Outdoor Teaching and Learning (OTL) should be recognized as important to the University's character, history and ongoing mission and that OTL extends beyond agricultural facilities and across numerous disciplines. (MPP 15)

Location of OTL Activities. OTL activities that do not require extensive amounts of land should be integrated within the academic core where practical. (MPP 16)

Size of OTL Lands. OTL sites should be sized appropriately for best practices for managing natural resources. (MPP 17)

Agricultural fields and facilities (including the Irrigation Training and Research Center) are covered in a separate chapter due to the extent of their size and operations. Outdoor teaching and learning sites and facilities for the other colleges include the following:

Ecological and Biological Study Areas and Preserves

The College of Science and Mathematics manages several preserves and study areas for long-term research and protection, some of which are on the main campus, in close proximity to the academic core for frequent access by students and faculty.

- Botanical Garden (east of the trail head of Poly Canyon, partly in Peterson Ranch).
- Ecological Preserve on the north side of Brizzolara Creek (above Poly Canyon Village).
- Ecological Preserve on Escuela Ranch (211 acres).
- Avila Pier for activities of the Center for Coastal Marine Sciences.
- Ragged Point (at the southern edge of the Big Sur coastline).

In addition, faculty conduct class-related field trips and student and faculty research on riparian corridors, ponds, grasslands, woodlands, and serpentine slopes on the campus. These scientifically interesting features also overlap with environmentally sensitive area and some agricultural rangelands. Faculty and students in other colleges, such as Liberal Arts, also

take advantage of these areas for nature sketching and photography and to connect the humanities and social sciences with the land.

Experimental Construction Laboratory in Poly Canyon
The College of Architecture and Environmental Design established a twelve-acre experimental building area west of the head of Poly Canyon during the latter half of the twentieth century. Most of "the structures date from an era when complex, occupyable, full-scale work" was emphasized. Despite recent bouts with vandalism, the experimental development capacity in the area continues to appeal to CAED faculty, students, and alumni, and to regional tourists. The annual CAED Design Village student club event (held each spring during the Cal Poly Open House) draws about 300 students from Cal Poly, other architecture schools, and community colleges who compete in a design-build-occupy contest. This event attracts hundreds of visitors, and many students list it as a reason why they chose to attend Cal Poly.

Other outdoor activities sponsored by Architecture and Environmental Design include exhibits of large-scale student coursework each term, and occasional design-build campus improvement projects.

Teaching and Learning Principles:

Technology. Campus plans should consider the role of technology in defining campus character for on-campus, commuting, and distance-learning students. (MPP 12)

Extended Education. Some facilities should be designed to accommodate the needs of extended education. (MPP 13)

Engineering Project Facilities and Sites
Programmable outdoor spaces in or near the Academic Core are important to the College of Engineering for student projects. The exterior space surrounding buildings like the Bonderson Project Center and additional future project buildings is part of the overall plan and design of how these academic facilities function. Students use outdoor areas for senior projects, master's thesis, and some technical electives as well as for student club activities like experimental race cars, human-powered vehicles, concrete canoes, solar installations, and steel bridge construction and competition. Also, outdoor areas are well suited for team meetings and gathering areas. The ability to plug in laptops turns an outdoor table into a meeting area.

Outdoor areas provide highly flexible, reprogrammable space that is well suited to accommodate projects with a short duration. For example, prototyping areas near shops allow students to practice construction of projects they may install on field trips (e.g., Engineers Without Borders). Sometimes testing of projects such as vehicles needs to be done outside of assembly and construction areas. Being able to roll these larger projects in and out of a building is needed for safe and convenient testing.

Outdoor teaching and learning space directly adjacent to engineering buildings can greatly increase usable space by simply opening exterior doors. Key features are access to electrical power, compressed air, other machinery, and equipment. Large roll-up doors at ground level to permit forklift access and roll-in of vehicles or heavy equipment. While they are accessible for vehicle delivery and pickup, they can be readily closed off for safety and security. Outdoor awnings are very cost effective and provide usable space nearly every month of the year. In addition, outdoor storage areas in the immediate vicinity of buildings promote shared use of outdoor space.

Other Outdoor Study Facilities and Sites

The Academic Core is a critical location for smaller scale outdoor teaching and learning activity – planned and spontaneous, permanent or temporary. Examples include plant specimens, plant communities and planting arrangements of interest to such fields as botany, landscape architecture, and horticulture. In addition, the academic core offers subject matter for art, design, photography, and environmental design classes – and short-term exhibit space for many disciplines.

Relocation and Replacement Principle:

Disruption. Relocation or disturbance of activities that depend on long-term use of a site should be minimized unless other important University goals override. (MPP 14)

Relocation and Replacement of Academic and Instructional Space

The new Master Plan necessarily includes redevelopment as well as new development. And even some new development will displace existing uses, such as surface parking. Thus, this Master Plan carries forward principles stated in the 2001 Master Plan calling for careful phasing and sequencing to minimize disruption of teaching and learning.

Agricultural Lands

Agriculture is a fundamental part of Cal Poly's image and a principal land use as well as an area of academic study, industry partnership, and revenue generation. While the University's Learn-by-Doing approach to education applies across the campus, agriculture represents the epitome of outdoor teaching and learning. The specific features of the land (slope, soil, climate, exposure, access to water) determine how it is best used and responsible stewardship is essential to its long-term productivity.

> The Learn by Doing educational philosophy embedded in [CAFES] instruction, research, and service initiatives will be empowered by CAFES location in a coastal area with a diverse ecological environment and strong industry base.
> CAFES Strategic Plan (May 2015)

Nearly half of the California college graduates who go into agriculture industries come from Cal Poly; and the industry depends on applied research and training activities at Cal Poly for their development. Thus, the stewardship of the University's agricultural resources for education and research are central to Cal Poly's leadership in the state.

Agricultural Land Inventory

Cal Poly's agricultural lands in San Luis Obispo County are located in two watersheds, in the approximately 3000 acres surrounding the main campus adjacent to the City of San Luis Obispo and an additional 3100 acres in the Chorro Creek watershed.

Cal Poly's agricultural land includes both cropland and grassland. Generally, irrigated row crops are grown on soils classified as prime or Class I; and dry land crops on less fertile soils; with rangeland on hilly areas. In addition, a number of facilities are located on agricultural lands, including barns, the feed mill, food processing facilities, and the farm shop. Also, the agricultural lands support accessory functions important to teaching and learning in the industry, including rodeo, equestrian and other event locations to educate students and showcase agricultural activities.

The Cal Poly Campus Farm

A University farm is a complex undertaking compared with a private farm or ranch that can focus on the crops or livestock most suited to its location. Cal Poly needs to offer the broadest range of agricultural activities that its land can support – and to do so for student learning, experimental research, and demonstration of best practices. At the same time, and as part of the Learn-by-Doing philosophy, the farm is a production operation involving entrepreneurship, maintenance, finances and risk management.

The land use configuration of the farm attempts to balance the features of the land with teaching and learning needs. Agricultural lands not requiring daily or weekly interaction with numerous students are located in the Chorro Creek watershed, and in the more northwesterly portions of the Stenner Creek watershed (e.g., Cheda Ranch). Most of these more remote lands are used for forage hay production, grazing, including longitudinal studies of grazing practices, or for enterprise activities such as avocado orchards and vineyards where irrigation is available.

Agricultural land use is particularly intense on the closest fields to the academic core because they serve as teaching laboratories so that students can experience all aspects of production throughout the academic year. Livestock and poultry facilities are grouped along the foothills just above the academic core; and crops are focused on Cal Poly's prime agricultural soils in the fertile lowlands west of the railroad tracks along Stenner and Brizzolara creeks.

Historically, specific fields have become associated with the particular crop or animal under study. Thus, crops are further categorized as orchards, vineyards, vegetables, ornamental plants, feed – and turf. The various animal units include dairy, beef, sheep, goats, pigs, horses, and poultry.

Agricultural Lands in Acres (2015)	
Campus Farm	
Row Crops	34
Orchards/Vineyards	165
Silage Production	40
Irrigated Pasture	80
Non-irrigated Pasture	489
Sub-Total	808
Ranchlands	
Peterson Ranch	650
Serrano Ranch	544
Chorro Creek Ranch (including Vineyard)	538
Walters Ranch	743
Escuela Ranch	1,819
Sub-Total	4,294

Associated with these production operations are the following agricultural facilities located on the campus farm: Equine Center, Animal Nutrition Center, Meat Processing Center, Beef Cattle Evaluation Center, Compost Production Unit, Leaning Tree Arboretum, Logging Team Competition Facilities, Veterinary Clinic, Rodeo Team Arena and Training Facilities, and a training area for farm tractor operations. Agricultural Operations is responsible for irrigation water management, irrigation delivery systems, livestock water supply and delivery, fencing, road maintenance, equipment maintenance, land use management, manure management, lagoon water application and management, water quality management, and hay and silage production.

The appendix includes a more detailed description of the crops and animal units illustrating the complexity of agricultural land management on a University campus.

Agricultural Practices

In addition to the production operations, the Cal Poly farm provides a research, teaching and training setting for many aspects of operations

ranging from irrigation practices, to waste management, compost production, water quality management, and organic and conventional farming practices with sustainability as a key component to each operation to organic farming and sustainable operations in general.

The Irrigation Training and Research Center (ITRC) is a center of excellence housed within the BioResource and Agricultural Engineering Department. The first commitment of the ITRC is to enhance the strong irrigation teaching program at Cal Poly through activities in training and research. That is, the primary purpose of the Center is to serve as a training center to not only support the Cal Poly irrigation/drainage graduate and undergraduate programs, but to provide opportunities for education, training, research, and special studies in water management to water users within the agricultural and urban irrigation industry. The second commitment is to help with the modernization of irrigation. This involves working both with the on-farm aspects of irrigation as well as the irrigation project level aspects to make improvements and help agriculture solve technical issues.

Other Outdoor Facilities Supporting the College of Agriculture, Food and Environmental Science

Several outdoor installations are important to student learning in the Natural Resources Management and Environmental Sciences department, which includes programs in earth and soil sciences, forestry, and environmental resource management. Study facilities include a greenhouse, a small field lab near Shepard Reservoir and a 75-acre watershed study area in Horse Canyon as well as a Forestry Skills Center and a Logging Team practice and competition area northwest of Stenner Creek between Middlecamp and Nelson reservoirs.

The Swanton Pacific Ranch near Santa Cruz, California, is a 3800-acre ranch includes redwood forests, salmonid-bearing streams, agricultural land, and many other ecosystems. The Swanton Pacific Ranch provides hands-on learning of active forest, ranch, agricultural, and watershed management activities. The management of these forest resources is internationally certified by the Forest Stewardship Council. The Valencia Ranch provides an additional 600 acres of Redwood forest for research and teaching.

The Campus Farm of the Future

Over Cal Poly's first hundred years, the most intense agricultural operations were centered along the north side of Brizzolara Creek. The 2001 Master Plan relocated several agricultural facilities and operations that had become obsolete in function and isolated in location – including the feed mill and abattoir. These facilities were replaced by state-of-the-art production centers located more closely to the operations they serve.

This Master Plan expands the built campus to the north across Brizzolara Creek, and provides housing for upper division students near recreation areas to the north and east of the academic core. This new development calls for a rebalancing of how the University supports its agricultural lands

while maintaining Cal Poly's commitment to Learn-by-Doing. Most particularly, it means being very strategic about which teaching and applied research facilities and fields need to be closest to the academic core for regular student and faculty access.

The Master Plan maintains the land use pattern of animal facilities on the flanks of the foothills and croplands in the plains along the lower creeks. The plan accommodates expanded equine facilities in their current location.. Access to this area for deliveries as well as visitors will be greatly improved with a new roadway and grade-separated railroad crossing joining Mt. Bishop Road and Poly Canyon Village.

At the same time, the Master Plan calls for consolidation of some of the more spread out operations, for example, connecting the beef unit and beef evaluation center, building a new Farm Shop near Highway One and Stenner Creek, closer to the fields where most equipment is used, and moving the ITRC irrigation practices field to the vicinity of Shepard Reservoir.

The remaining changes to agricultural land use will be phased in north and east of Mt. Bishop Road. As new technology develops to process animal waste, fields currently being used for that purpose can be converted to recreation, which will, in turn, support new student residences. Further, as plans for future residential communities on campus emerge, some grazing operations will be relocated, and the new Data Center, Business Park, and the current facilities operations buildings will be located west of Stenner Creek Road.

Community

Residential Community

A central theme of Vision 2022 is for Cal Poly to continue its recent trajectory of becoming a more diverse residential campus. Developing a more extensive residential community will help Cal Poly achieve its strategic objectives to create a rich culture of diversity and inclusivity that supports and celebrates the similarities and differences of every individual on campus. By 2015, more than 35 percent of undergraduates were already living on campus. The University has also ventured into directly providing faculty-staff housing, and there is apparent demand from alumni, retired faculty and staff, and other non-students for opportunities to live on campus, too.

Affordability and Student Housing
As Cal Poly moves toward requiring first and second year students to live on campus, making University-provided housing affordable to all is an important consideration. One major motivation for living off-campus is that it can be less expensive. Thus, especially for lower income students, the requirement of on-campus living must be accompanied by financial support so that this policy does not become an impediment to a more socio-economically diverse student body

The advantages of transitioning the Cal Poly campus into more of a living-learning community are manifold. First, there is substantial evidence that students who live on campus, especially in their early years of college life, perform better academically and are more likely to graduate, and in a timely way. Studies suggest that on-campus living is often especially valuable for those who are among the first in their families to attend college, for students from more diverse social and economic backgrounds, and for students in Science, Technology, Engineering and Mathematics(STEM disciplines).

There are potential benefits to the off-campus community as well. San Luis Obispo is a small city. While the University is undoubtedly a major contributor to the social and economic vitality of San Luis Obispo, the Cal Poly student population, compounded with students drawn to nearby Cuesta College from outside the local area, has tended to drive up housing costs, exacerbate overcrowding, and generate issues in neighborhoods near the campus related to parking, traffic, noise and disruptive student behavior. Thus, the City has long advocated for more student housing on the Cal Poly campus.

Timing of Future Student Housing Projects
Student housing remains the highest priority among residential projects and the next likely development will be apartments north of Brizzolara Creek. This project will also require significant additional infrastructure and services and funding for these support elements must be factored into the planning and financing of the housing itself.

The 2001 Master Plan linked further student enrollment with the provision of more on campus housing. Since 2000, Cal Poly has built two major suite and apartment complexes, Cerro Vista and Poly Canyon Village, which together house about 3500 students. By 1918 Cal Poly will have housing for approximately 8200 students, or 40 percent of all undergraduates.

Housing availability for faculty and staff is also an issue for Cal Poly as high housing costs in the region are sometimes an impediment to hiring and keeping qualified applicants. In 2005, Cal Poly opened Bella Montaña with 69 condominium-style units intended for faculty and staff. After some initial difficulties tied largely to the recession and it's after effects, the project has enjoyed continued success and high rates of occupancy.

<u>Residential Community</u>
Cal Poly envisions an integrated residential experience that encompasses housing, academics, support services, alternative transportation, recreation,

dining, convenience retail, entertainment and other amenities. This approach entails matching housing types with student academic level and other interests, such as field of study. The University sees students progressing from a highly supported first year toward more independent living on campus during the second and upper class years.

The Master Plan accommodates a significant increase in the proportion of undergraduate students living on campus in the future, by providing an additional activity center in Creekside Village. Making the campus more attractive to students "24 by 7" also reduces the need for residents to have cars. And, an improved alternative transportation system will provide them with mobility choices when they need to go off campus.

Cal Poly intends to provide housing for all first and second year students, plus 30 percent of upper division students.
-President Armstrong

Student Housing

The Master Plan identifies locations to accommodate housing for all first and second-year students, plus 30 percent of upper division students. First year students will be provided primarily dormitory style units as research and market analysis show that this configuration is preferable for young students new to University life. The Master Plan identifies an area most appropriate for first year housing in the Residential East Campus located proximate to important services such as the University dining complexes. The University's plan for student housing includes providing financial support to enable lower division students to benefit from living on campus regardless of their background.

Residential Principles:

First Year Students. Housing for first year students should generally be dormitory style, in proximity to other first-year housing, campus dining and other support services. (MPP 18)

Other Students. Housing for students other than first-year students, should emphasize apartment style living. (MPP 19)

Support Services. Support services and facilities should be incorporated into new housing neighborhoods (MPP 20)

After the first year, apartment style units will be provided, similar to Cerro Vista and Poly Canyon Village. This allows greater independence but also greater responsibilities as students learn life skills important to transitioning to a post-college environment. The locations identified in the Master Plan for such housing are mostly in the North Campus, across Brizzolara Creek but within easy walking and biking distance of the Academic Core.

Specialized Student Housing

There may be significant benefits from providing specialized housing options for groups such as fraternities, sororities or other social or academic organizations. This approach could resolve potential conflicts with student-occupied group housing off campus, an ongoing concern of neighbors and the City. These specialized student residential projects could be programmed and designed as components of larger scale projects developed in the North Campus areas designated for student housing in the Master Plan. The pros and cons, as well as the general feasibility of such housing, including viable funding programs, warrant further analysis, and the Master Plan leaves this as an option.

Faculty/Staff Housing and Options Primarily for Non-Students

Five locations have been designated on the Master Plan as "Residential Neighborhoods" primarily for non-students. Two of these sites are on the southern boundary of the campus and would provide "buffers" between the campus itself and adjacent off-campus neighborhoods. One is in the area

near the University House and Spanos Stadium. Another is west of Highway One (and was shown in the 2001 Master Plan as H9), and the final site is along the west side of Stenner Creek Road. Feasibility analyses of these kinds of projects will be required prior to implementing this concept.

As in Bella Montaña, the primary market for these units will be faculty and staff, likely in a garden-apartment style development. In addition, this housing may be offered to older students such as graduate students, veterans and those with families, or possibly alumni or retirement housing. Another possibility is housing for retired members of the community.

However, the development potential of all the sites designated as Residential Neighborhoods, in combination, exceeds the likely demand of faculty, staff and these particular student groups. Units not needed for University-specific groups would be made available to the general public, providing apartment-style housing in a community where reasonably priced housing is needed. A priority system would be used to make sure that University-related housing needs are satisfied first, before making units available to the general market.

Cal Poly is exploring whether these housing concepts may lend themselves to development through Public Private Partnerships. One or more of the Master Plan residential neighborhood sites would be ground-leased to a private developer who would build apartments and manage them. The University would establish priorities for offering units to potential residents as well as require other development criteria through the long-term ground lease or other agreements. Income from the development could then be directed to other important University uses.

Further analysis is necessary to determine the feasibility of any of these sites, so the Master Plan is simply indicating that these uses may be options for those locations. In the meantime, they would remain in their current dispositions.

In locations where the developments are adjacent to or near existing off-campus residential areas, a further designation is applied indicating that the siting and design of any project would need to consider potential impacts on those residential areas. Impacts of concern could include aesthetics, light and glare, parking, traffic and noise. In addition, each site presents other issues that would need to be carefully analyzed, including topography and other natural features, access and multi-modal circulation, extension of infrastructure, impacts on public services and relocation of existing uses. Any feasibility study will need to include the costs of addressing these issues.

Thus, only some of the potential "residential neighborhood" sites may be found feasible. Further, projects that are found to be feasible would not be developed at one time but phased over time.

Residential Principles:

24-Hour Community.
Entertainment, recreation, and social facilities should be provided to support a 24-hour community. (MPP 21)

Living-Learning Environments.
Residential neighborhoods should support learning. (MPP 22)

Designing Future Housing Projects
Existing campus policies as well as several recommendations suggestions from the Master Plan advisory committees relate to the design of future housing projects, including the following, which are discussed in other chapters of the Master Plan:

Housing should be designed to be sustainable.

Housing should include services that are affordable to all groups.

Housing should be designed with convenient walking and bicycle access; covered bicycle parking should be provided.

Housing should be designed and managed such that residents can have a sustainable lifestyle.

Faculty/staff housing should be considered for appropriate on-campus sites, but off-campus options may also be suitable.

Off Campus Housing

Cal Poly supports the City of San Luis Obispo's neighborhood wellness initiative. Several areas near the campus have become increasingly dominated by students and potential lifestyle conflicts between student and non-student residents, a common phenomenon in many University cities.. The City and Cal Poly envision the re-integration of non-student and family living into those neighborhoods nearest the campus as one element of a broader strategy of reducing "town-gown" tensions. The University is contributing, through the Cal Poly Corporation, by purchasing properties in nearby neighborhoods that it intends to make available to faculty or staff.

Small-scale, off-campus housing is also being provided for students in specialized programs. Notably, the Cal Poly "Hot House" in San Luis Obispo's downtown, with apartment units for 35 students, known as "Cal Poly Lofts" – a program that encourages entrepreneurship and innovation among students – includes apartments creating an environment similar to a live-work style arrangement. This and similar programs have the important community benefit of bringing more residents into the downtown, encouraging mixed-use projects there and reinforcing that part of the city as a vibrant and attractive location.

University Life

Vibrant, Engaging, Supportive, Diverse

Cal Poly's Vision 2022 stresses the importance of a vibrant campus community – engaging all aspects of University life for students in particular, but also for faculty, staff and visitors. With many more students living on campus, there is a heightened awareness to the needs of a more diverse community. During early Master Plan open houses, students and other members of the community indicated that the Cal Poly campus needs to be more lively, and offer more activities, particularly for students. The chapter on the residential community addresses how housing on campus supports the student learning experience. This chapter focuses on the many other aspects of University life, including recreation, dining, entertainment, and retail activities as well as support services.

The campus as a microcosm of society must support many different dimensions of diversity including race, ethnicity, gender, sexual orientation, language, culture, religion, mental and physical disability. Only by supporting every student can the University achieve its goals of diversity and inclusion. The Master Plan takes a holistic, or "whole person" view of campus life. This interpretation includes diversity and inclusivity of students, faculty, and staff, a high proportion of students living on campus, a greater societal focus on wellness and the availability of technology. President Armstrong established an Enhanced Campus Life Working Group in 2012 to set the stage for this more expansive approach.

After conducting a student survey and studying current services, the working group made recommendations around five topics that the Master Plan addresses:

- Campus Food Services – more mobile and self-service venues with a variety of menus
- Lounge and Study Space – more quiet, sheltered outdoor study space
- Safety and Transportation – more late hours and late transportation services
- Technology and Power – more outdoor as well as indoor power and wireless access
- Support Services – expanded health services, library hours, student advising – and, particularly, increased student awareness of services

Enhanced Campus Life Working Group:

Charge (excerpt):

Transform campus operations in which the campus service delivery systems and learning approaches are blended and become complementary.

Create a highly functioning, vibrant and comprehensive 24/7 campus life environment through multi-phased dialogue, consultation and collaboration.

Objectives: (excerpt):

Foster an environment that encourages students to stay on campus – days, nights and weekends.

Create attractions that blend social and academic connections.

Enhanced Campus Life Working Group Report, June 2013

Campus Life Activities and Services

Cal Poly will always be a partner and participant in the larger San Luis Obispo area. It does not see itself becoming a self-contained community – and indeed welcomes visitors and supports businesses and services in the San Luis Obispo area. Nonetheless, the Master Plan calls for the University to provide more activities both for the residential student population and the much larger daytime population for the convenience of the campus community and to reduce unnecessary off-campus circulation during peak times.

University life and services beyond the classroom are coordinated by three different organizations at Cal Poly: the Division of Student Affairs, Associated Students, Inc. (ASI), and the Cal Poly Corporation, each with its own areas of focus. Master Plan requirements for activities directly sponsored by academic programs such as lectures, performances and exhibits are covered in the teaching and learning chapter. Administrative services such as cashiering are discussed separately with institutional support.

Student Affairs has the broadest responsibility as a partner in the student learning experience. Student development is an important focus, including ethics, integrity, respect – and health and safety. In addition, Student Affairs' services begin when students are being recruited, progress with orientation and adjustment to college life, personal and academic support throughout a student's career at Cal Poly, and continue with commencement, career services and ongoing alumni relations.

As student government, ASI provides leadership development opportunities for students including student clubs and organizations and management of ASI-managed facilities such as the University Union, Sports Complex, and Recreation Center. ASI also provides informal social and study opportunities, informal and club-sponsored recreation, and student-oriented entertainment throughout the year.

The Cal Poly Corporation handles commercial services on the campus, including food service, retail operations, and vendor contracts.

The three providers often share venues for large indoor and outdoor events and all need office space and backroom support areas to support their activities. Further, as students as well as other members of the campus community engage in University life activities throughout the day, the Master Plan calls for them to be integrated spatially with academic activities. Indeed, the plan stresses shared or joint use where appropriate and feasible – e.g., a lecture hall during the day serving as a performance venue in the evening or weekend.

The most intense University life activities need to be in or near the Academic Core because many members of the campus community use them more than once a day. For several decades the primary activity center has been the University Union area adjacent to the administration building, and along Mustang Way to the Recreation Center.[3]

University Life Principles:

Services
The following types of services should be provided on campus: (1) services that are needed specifically by students (e.g., library, advising, bookstore); (2) services that require coordination with academics or other campus services (e.g., financial aid, academic assistance, disability resources, personal counseling for students); and (3) services used frequently by a considerable number of students, faculty or staff (e.g., food service, banking, health care). (MPP 23)

General Campus Life Location & Design

Commercial Services.
Commercial services should be provided on campus that support residents and help reduce the need for students, faculty and staff to leave campus during the day. (MPP 24)

[3] Concurrent with the development of the Master Plan, the Associated Students, Inc., engaged in a detailed planning process with the Cal Poly Corporation to redevelop the area around the existing University Union and to expand dining facilities and services. However, in February 2016 the students at large turned down a fee referendum intended to fund this project. Nonetheless, the Master Plan sees redevelopment of this area as a future opportunity.

Other, smaller centers have emerged near the Library and Campus Market, and around the Student Services building that houses the career center (among other services) on the lower, southwest side of campus. Other activities focus in and around the residential areas, such as Poly Canyon Village. Redesigned dining facilities will support Student Housing South when it opens in 2018..

In the future, many student-centered activities will continue to converge in the University Union and Recreation Center area. To serve an increase in students, faculty and staff, the Master Plan adds another major center, Creekside Village, connected to the Union by a much more active Via Carta corridor. Existing smaller activity centers near the library and lower, southwest side of campus will be reinforced. Other functions will focus in and around the new residential areas, including large land-consuming activities like outdoor recreation and athletics.

As emphasized in the Enhanced Campus Life report and in the University Life principles, services will be integrated in new buildings along Via Carta and in the activity centers – typically at the ground floor for visibility and access. These buildings could hold a mix of uses, such as academic space, offices, and even residential on upper floors. Dining and entertainment will also be incorporated in the activity centers. The primary activity centers also can accommodate commercial services (including groceries) for the campus population.

Child care is an increasingly important need for the campus. The Orfalea Family and ASI Children's Center can remain in its current location, accessible to proposed housing in the vicinity of the President's House. Additional locations can be identified as new projects are programmed. The health center site can be expanded to accommodate a wider range of health care services. In addition, ancillary health services may be provided in Creekside Village and/or new student housing north of Brizzolara Creek.

The new design for the Academic Core embodies the general University life principles, along with teaching and learning, campus design, and circulation.

General Campus Life Location & Design

Off-campus Connection. Services with frequent off-campus interaction should be located close to off-campus circulation routes and parking facilities. (MPP 25)

Coordination. Related services that require face-to-face interactions should be coordinated in, accessible locations, convenient to their clientele. (MPP 26)

Activity Centers. Several places within the academic core should continue to develop into more intense centers of community activities. (MPP 27)

Outdoor Amenities. Campus public areas should incorporate landscaping and amenities such as flexible seating areas, technology, electrical power, trees, public art, food vendors, and other student –focused amenities. (MPP 28)

Campus Life Service Delivery

Service Facility Size and Schedule. Support services should be sized and designed to accommodate peak demand, where necessary, or demand managed to reduce peaks. (MPP 37)

Service Delivery Space. Service centers should be designed with sufficient waiting space. (MPP 38)

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Recreation and Intercollegiate Athletics

Recreation is an important factor in the University experience as well as for the physical and emotional health of students, faculty and staff. This includes active recreation, both scheduled and spontaneous, and passive or social recreation (talking with others, reading or contemplating). The more passive recreational opportunities are addressed in the discussion of open space types in the Design Character chapter. This chapter focuses on active recreation and intercollegiate athletics.

Most of Cal Poly's indoor athletic facilities are aging. The Natatorium has been filled in, and Crandall Gym is badly in need of repair. The Mott Athletic Center continues to house the basketball and other athletic programs in an obsolete facility, although the competition swimming pool has recently been rebuilt.

An expansion of Spanos Stadium is proposed to better accommodate soccer and football and a multi-sport athletic field house is proposed nearby.

The Jannsen softball and Baggett baseball fields for athletics were built in 2001as part of the larger Sports Complex north of Brizzolara Creek. The recreational playing fields are artificial turf, which will require repair or replacement in the foreseeable future.

In contrast, the Recreation Center, built with student funds in 1993, was fully renovated and expanded in 2012 and accommodates the most up-to-date facilities and equipment for working out, indoor track, Olympic size recreational swimming pool and large leisure pool. Poly Canyon Village has a small multi-purpose indoor facility and recreational pool that is open to all students, not just residents (although encouraging use by others has been challenging).

The Master Plan retains some of these facilities, particularly those that are new or designated for renovation or expansion – Recreation Center, Mott Athletic Center, Spanos Stadium and the softball and baseball fields. In addition, the Master Plan shows a site for a sports and events arena that could accommodate athletic events including tournaments, and concerts and other indoor events that draw large audiences. While the Recreation Center is recent and very popular, increasing the number of on-campus residents will require additional recreational outlets. Creekside Village is proposed to house a recreation center for students, faculty and staff that could be a satellite facility to the existing Recreation Center.

To accommodate additional student housing, some existing playing fields are proposed to be relocated west of the railroad track and other informal recreation areas would be added adjacent to (and incorporated within) new student housing. The track is in poor condition and is near the end of its expected life. To allow for a potential residential neighborhood on the north side of Slack Street, the Master Plan relocates the track and football practice field north of Brizzolara Creek.

Recreation and Athletics Facility Principles

Recreation Space. Recreational spaces and facilities should be provided to serve needs of the campus community. Existing deficiencies should be addressed to the extent practical, and facilities provided prior to or in conjunction with new on-campus housing or significant increases in student enrollment. (MPP 29)

Standards. Recreation and athletic facilities should be designed to meet specific standards when necessary for intercollegiate competitions. (MPP 30)

Multi-purpose Facilities. Recreation and athletic spaces should be designed for multiple users and a variety of activities, and be managed through mutual use agreements. (MPP 31)

Access. Recreation and athletics field and facility design should incorporate space for spectators, ancillary facilities, and access to field maintenance equipment. (MPP 32)

As the new Master Plan calls for replacement (as well as renovation) of some recreation and athletic facilities, the Guiding Principle that calls for minimizing disruption applies here. In cases where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move. This includes fields and other outdoor facilities as well as buildings.

Because the Master Plan indicates significant campus growth to the north, care must be given to assure that on-campus residents who live in the southern and eastern parts of campus are provided with adequate informal recreation opportunities and a clear and safe way of getting to and from scheduled activity venues at any hour.

Recreation and Athletics Facility Principles

Proximity. Recreational and athletic facilities should be in close proximity to the population they are intended to serve. (MPP 33)

Recreation in the Academic Core. As expansion and academic core redevelopment is planned, leisure and programmed recreation should be incorporated. (MPP 34)

Large Facilities and Fields. Future intercollegiate facilities and large programmable recreation facilities should be located outside of the academic core with adequate access. (MPP 35)

Institutional Support

An academic community with a significant residential component requires a wide range of support activities and services. These functions address the needs of four population groups – students and prospective students, faculty, staff, and visitors or guests – and support the physical infrastructure of the campus. Cal Poly provides institutional services through its administrative divisions and auxiliary organizations, all of which serve students, faculty and staff both directly and indirectly to support Cal Poly as a community.

The Office of the President oversees internal and external communications in addition to providing leadership and oversight of all University activities.

Within the division of Academic Affairs, the six colleges and the Kennedy Library offer the academic programs and sponsor the scholarship central to Cal Poly's mission. Academic Affairs is also responsible for key support functions, such as academic advising, enrollment services, and information technology, which enable students to be admitted, enroll and progress toward completing their degrees. In addition, this division handles internal planning and research, academic personnel, and other administrative support for academic programs.

The Division of Student Affairs has primary responsibility for establishing and managing Cal Poly's residential communities for students. In addition, Student Affairs provides a range of support services including health services, counseling, career services, judicial affairs and resources for students with disabilities. Further, Student Affairs sponsors co-curricular activities; and coordinates with the Associated Students, Inc. (ASI), the student-run auxiliary that manages the University Union, Recreation Center, Sports Complex, Orfalea Family and ASI Children's Center, and student government.

The Administration and Finance division covers a wide range of functions that support University operations, particularly the budget, human resources, facilities, and public safety. Administration and Finance also coordinates with the Cal Poly Corporation, which provides or contracts for commercial services including food and beverages and the bookstore, and handles grants and contracts, as well as other commercial activities.

University Development works with the Student Affairs and the Cal Poly Alumni Association, which maintains communication with graduates, and the Cal Poly Foundation, which manages the University's endowments and encourages philanthropic support for activities and facilities, beyond what is available through state funding.

Institutional Support Facilities

The Master Plan accommodates institutional support activities and services based on how they function rather than the formal organizational structure of the University.

The Academic Setting chapter of the Master Plan addresses the central instructional and academic support requirements of the University – including indoor and outdoor classrooms and laboratories, faculty offices, and facilities for study, research and scholarship, including the Kennedy Library.

The University Life chapter covers many face-to-face services and activities that involve regular, direct interaction between students, faculty and staff. The principles in that chapter stress that these functions be located conveniently within the Academic Core – on the ground floor and along major travel paths. The Residential Community chapter also notes that as the Cal Poly residential community expands, housing complexes can accommodate an increasing number of functions that students use regularly as well.

This chapter summarizes the space and location requirements of all institutional support services and activities, with additional attention to those that serve the campus indirectly and tend to be less visible. For example, activities that are handled digitally or more behind the scenes can be placed near the periphery – such as admission and registration processing, technology support, and budget management. Vehicular access is an important locational consideration for some institutional support activities and thus influences their location. For example, facility operations require more space for storage and staging, and can be located further from the core. Similarly, activities with more extensive involvement with the regional community, such as the Technology Park, need good access off campus.

Just as Cal Poly has not been able to keep up with providing sufficient academic space to meet the needs of current students, facilities for institutional support have fallen behind. Some Information Technology Services offices are in the filled Natatorium, built in 1938; others in Cotchett Education (1941), and still others in Pilling (1969). The University Police are in a facility dating to 1941. Alumni House was built in 1959. The Health Center was constructed in 1960 with an addition in 1974. The Administration Building was built in 1964. The functions in the relatively-new Student Services Building (1990) have outgrown that space. The Facilities Services buildings were on the edge of the campus when constructed fifty years ago, but are now in a prime location for more central academic and support functions. Like some faculty offices, several administrative functions are in temporary, modular structures.

With an additional future increase in student enrollment, institutional support services will need to be expanded. Thus, to address the current deficit and then meet future needs, the Master Plan calls for an increase of

over 500,000 Gross Square Feet of support space in the Academic Core to accommodate institutional support as well as the services discussed in the University Life chapter. In addition, the Master Plan calls for an expanded Health Center and the relocation of the Facilities Services operations to the West Campus.

Institutional Support Principles

Flexibility. Public services and utilities should support the University efficiently, with the flexibility to meet changing needs, and designed for ease of maintenance and renovation. (MPP 36)

Recreation in the Academic Core. Development of campus facilities and utility infrastructure should incorporate strategies to minimize impacts on the environment. (MPP 39)

Student Services and Institutional Support Space in Academic Core

	Enrollment (net FTES)	Gross Square Feet (GSF)
Current Built Capacity	16,504	240,000
Future Capacity Required	22,500	770,000
Net New GSF Needed (Estimate)		530,000

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Regional Connection

As a public University, Cal Poly sponsors a range of events and activities that serve the Central Coast and beyond, and thus attract visitors and participants who are not regular students, faculty or staff. Such activities support the mission by sharing the University's academic, cultural, and environmental assets with the public and by engaging in partnerships with the local community to provide expanded opportunities that neither could offer alone.

The Master Plan implications of these activities depend upon their land use, space, and circulation characteristics. Thus, this chapter addresses them based on the size and frequency of events and activities and the venues they use. For example, spring commencement is the largest single event that occurs annually on campus and requires a number of special operating arrangements, whereas employees and customers of the Technology Park represent a small number of regular visits to the campus daily needing only limited special treatment. The following typology represents the range of events and activities:

- Large and very large occasional events such as commencement that may use multiple outdoor venues and require specialized circulation and parking arrangements.
- Mid-size occasional events, such as outdoor concerts and agriculture events, typically at a single venue, that also require specialized circulation and parking arrangements in the vicinity of the venue.
- Mid-size regular events, such as music or theatrical performances and athletic competitions that occur frequently enough to require and follow routine circulation and parking protocols.
- Smaller occasional events, such as art exhibit openings or guest speakers, which may require special arrangements for visitors.
- Daily or weekly activities that draw people from outside the campus community, ranging from campus tours, to Technology Park clients, to customers for Cal Poly products, to local community members who enjoy the campus for informal recreation.

The venues for the mid-size and larger events are specifically designed for those purposes. The existing Performing Arts Center and Spanos Stadium are located at the edges of the Academic Core. The Master Plan calls for improved access to other outdoor athletic fields and agricultural event facilities with the addition of a new road and grade-separated railroad crossing, connecting Mt. Bishop Road and Via Carta. Also, new parking facilities and adjusted public transportation routes will provide improved access to these large venues.

To accommodate smaller events and more regular visits, a major focus of the Master Plan is to improve pedestrian circulation in the Academic Core. As discussed in greater detail in the Overview and Design Character sections of the plan, the redeveloped Academic Core will emphasize clear pedestrian

routes from public transportation stops as well as from parking lots and structures across campus.

Venues

The Cal Poly campus has a variety of venues that can accommodate 100 or more people, ranging from large lecture halls to the Spanos Stadium.

Mid-size and large venues can be grouped according to their primary designed function: (1) academic and performance venues (primarily indoor with some outdoor gathering areas), (2) lawns and plazas (outdoor), and (3) recreation and sports arenas (indoor and outdoor). When considering the capacity of each it is useful to think of the venues in clusters by location, and that all components of each complex are unlikely to be occupied by different groups at the same time. For example, the lobbies in the Performing Arts Center are sometimes used for receptions, but not at the same time that a separate event is scheduled in a performance hall. Please see the appendix for the capacities of each venue. Note that the capacities for outdoor venues without permanent seating are approximate, with actual capacities depending on the set up for a particular event.

Master Plan Principles: Ancillary Activities

Support of Academic Mission. Ancillary activities should clearly complement teaching and learning. (MPP 40)

Location. Ancillary facilities should not compete for land with instructional needs within or near the academic core and should generally be located at more remote sites unless other considerations override. (MPP 41)

Master Plan Changes in Large Venues

Several of the University Life principles and policies pertain to activities and venues that attract visitors from beyond the campus.

The Master Plan makes some important changes in large scale venues. Most of the indoor facilities will not change in the Master Plan because they are embedded in instructional facilities and/or relative new buildings. Some important new outdoor development will occur nonetheless. These in include the following:

- Expansion of Dexter Lawn
- Redesign of Centennial Meadow
- Addition of Creekside Village gathering areas
- Expansion of Spanos Stadium
- A future sports and event arena
- Relocation of track and field
- Relocation of recreation fields in the sports complex

Technology Park

In 2010 Cal Poly opened the first phase of the Technology Park, a place where private companies could locate on campus and take advantage of proximity to certain University facilities as well as the faculty and student talent for which the University is justly known. These companies in turn provide employment opportunities for students and for others in the University community as well as educational advantages as students and faculty can interact with entrepreneurs and observe and participate in their endeavors.

The first phase of the Technology Park, funded in part through a grant from the U.S. Economic Development Administration (EDA), consists of a 25,000

square foot building divisible into numerous smaller spaces customized to the needs of the particular business. In 2015, the EDA approved a second grant to Cal Poly to initiate a second phase of comparable size. Land area for this second phase – and for later phases should the demand continue to grow – was anticipated in the original programming and has been designated for this purpose in the Master Plan.

Two Master Plan principles specifically address the nature and location of ancillary activities, such as the Technology Park. (See Appendix.)

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Environment

Design Character

Natural Setting

Cal Poly is located in a spectacularly beautiful natural setting including dramatic topography and views that includes the Nine Sisters volcanic peaks, rolling hills and outcroppings of trees and vegetation. While the natural campus setting is remarkable, it will be critical for those planning the future of Cal Poly to assure that the campus will always retain the visual connection to the surrounding landscape. Modeling of siting and massing of future individual buildings and neighborhoods will assure that they do not block, but rather frame and focus views and vistas from public areas of the campus and major circulation ways.

The Master Plan has considered the topography of the campus in land use, building siting and open space designations. Incorporating and emphasizing topographic design elements in planning will result in outdoor spaces of varying sizes and character, will provide on-grade access to various floors of buildings, and will provide additional opportunities for the transparent observation and informal and impromptu access encouraged for the Academic Core.

Sense of Place

The organization of the Academic Core around significant open spaces and strong and active circulation routes for pedestrians and bicycles will provide the framework for an iconic sense of place for Cal Poly.

The heart of campus will be realized near the intersection of Via Carta and North Poly View. Dexter Lawn will be expanded in the character of a traditional collegiate grassy quad and will continue to be a major gathering place. Centennial Meadow will become an informal open space with trees and plantings representative of local species interspersed with seating areas of varying size and character. The design and implementation of the central area linking these two major open spaces will be critical to the success of the sense of place of the Academic Core and will create the important collegiate heart of the campus that is currently lacking at Cal Poly. The heart of the campus will be an iconic place for informal gatherings, individual study and scheduled events. It will be the place where significant and ceremonial University events occur.

Via Carta from Mustang Way to Brizzolara Creek is a major pedestrian thoroughfare. It is important that the manner in which buildings face and access Via Carta and the major and secondary open spaces adjacent to it create a lively, interactive and important place for Cal Poly. Via Carta will have food, student services, indoor and outdoor seating, and transparency to see what students and faculty are making and discussing in the academic and support spaces.

Connectivity
Learning happens everywhere, including major and interstitial spaces and pathways across the campus. Spontaneous meeting of colleagues, casual interaction between students working on projects, and the simple action of walking home and pondering new concepts learned in class will all be enhanced by purposeful connectivity between academic, service and residential facilities and neighborhoods. Therefore these spaces need to be carefully considered and designed for planned and spontaneous conversations, individual study and a variety of passive and social interaction as well as walking and cycling.

Intuitive wayfinding is important not only for connecting all of the areas of campus but also to make all of the Cal Poly community feel engaged, safe and confident. Building siting and design, open spaces (large and small) and pathways all contribute to connectivity and clear circulation and wayfinding.

Character Continuity
The Campus Character Committee, convened to advise on design, placemaking, wayfinding, and overall campus feel, suggested that each new and renovated building and its outdoor spaces be programed and designed for its specific function and location on campus. Scale, materials and fenestration need to be appropriate and complementary to the Cal Poly campus and the specific neighborhood in which the building is located. Many buildings incorporate terra cotta color brick, concrete panels and other modular material systems.

While Cal Poly does not have a prescribed architectural vocabulary, a site-specific modern vernacular is befitting to the Academic Core area around Via Carta. New neighborhoods such as Creekside Village and residential neighborhoods should exhibit a high standard of contemporary architectural excellence. The historic campus neighborhood needs to recognize the early campus buildings designs while not artificially mimicking them. The unique natural setting of Cal Poly should always be the most important element in architectural design decisions.

Architectural Design Requirements
Building Siting and Orientation - Building siting and design shall consider views, circulation and building entrance orientation, adjacent and nearby open space, any planned future expansion, topography, existing site features and existing and planned neighboring buildings.

Scale and massing - Buildings in the Academic Core shall be at least at 3 and as many as 6 stories in order to accommodate required future growth in the Academic Core and to allow for significant open space. Topography will help determine the appropriate height for new buildings. Stepped back facades will modulate the perceived scale and contribute to view corridors and framed vistas.

Design Character Guidelines

Design & Scale. The siting and design of campus facilities should incorporate a full 360-degree approach, where all sides of the facility contribute to a cohesive and aesthetically pleasing experience. (MPP 64)

Special attention should be placed on developing the in-between, or interstitial, spaces into well-designed social gathering opportunities. (MPP 65)

The campus should incorporate a unifying central gathering space for the campus community. (MPP 66)

The planning, siting, design and construction of campus facilities should include visual connections to activities inside buildings. (MPP 67)

The design of campus facilities should maintain and incorporate a pedestrian sense of scale. (MPP 68)

Architectural Style and Materials - The new buildings in the Academic Core will be a high quality, contemporary design. The Baker Center for Science and Math is a successful example of scale and materials that are compatible with the existing campus while providing a higher level of architectural design quality than some existing buildings.

Strategic Buildings - Buildings that will be sited adjacent to Via Carta in the Academic Core will be considered strategic buildings as they will define the dense, multi-disciplinary center of campus. The primary entrance to these buildings will be on Via Carta. Secondary entrances from other directions must be active and located purposefully. Building transparency from busy pedestrian oriented Via Carta will allow casual visual access to the activities occurring in labs, lectures, displays and public areas. Interdisciplinary curiosity and sharing will be encouraged as well as make Cal Poly a more interesting and sharing place. The prominent open spaces including Dexter Lawn extension and Centennial Meadow will be enlivened by building transparency. Occupants will benefit when they are visually connected to the active campus life outside of their windows.

Particular care should be given to the siting and design of strategic buildings in relation not only to current buildings, roads and pathways but also, and perhaps especially, to Master Planned building sites, circulation routes and open space development.

Mixed Use - The integration of food and beverages, student services, study areas, exhibits, lounge spaces and other supportive functions into all academic buildings is an important concept of the Master Plan. Support functions in academic buildings will make the campus more interesting and will extend the active hours of the Academic Core, providing convenience for campus residents and improving safety through passive observation and utilization.

Open Space

Various open space conditions arise; each calling for a distinct planning and design approach. Aesthetically pleasing landscaped areas contribute to a sense of place and campus pride.

Dexter Lawn Expansion and Heart of Campus– The formal, traditional collegiate green expanse of Dexter Lawn will be extended to the east. While the lawn need not be identical to the existing, it will be a cohesive extension culminating at the central intersection at the realigned intersection of North Poly Vue and Via Carta with a very important central space, the heart of campus. The character and design of the heart of campus will accommodate a variety of passive and active functions will be the subject of future study.

Centennial Meadow – This open space will be informal with numerous and varied seating areas to attract use of the area. Shade and plantings

using native and low-water use species are encouraged. This space will require clearly defined pedestrian access ways and connect the University Union activity area to the Academic Core. Smaller transitional structures and other connective articulation between the UU and Centennial Park will encourage use and provide exterior expansion and integration of the UU complex.

Smaller Open Spaces – Each new building project will include adjacent open spaces that provide quality seating and study areas. These spaces will relate to the building and also be inviting to those walking or biking past. Spaces will be varied in scale, character, level of privacy and solar orientation. Where possible, power and technology will be integrated into outdoor spaces.

View Preservation – Preservation of views to the Cal Poly outer lands and surrounding hills is an important consideration from open spaces, circulation ways and building windows. Specific alignment and orientation of roads, major pedestrian pathways and building siting and massing will consider view framing and view preservation.

Visual Continuity – Further study will identify consistent materials for certain purposes such as common surface treatments for pedestrian ways, bike paths and bike parking, lighting fixtures, plaza paver materials and palettes of types of site furnishings for large open spaces and pathways.

Plant Materials – Cal Poly has been identified as a Tree Campus, USA. Mapping of existing trees as been completed and must be considered in all building and open space project concept design. Healthy specimen trees will be preserved in place to the extent practical. Relocation should be considered in preference to demolition. If demolition is required, a mitigation replacement plan will be developed and implemented as part of the project. Crop trees and those not determined to be specimen quality may be demolished and new plantings installed.

New plantings shall have the following characteristics:

- Low water requirements
- Non-allergenic
- Ease of maintenance
- Non-invasive root systems
- Pest and disease resistant
- Seasonal color in some areas of campus

Outdoor Spaces. Outdoor spaces should have perceived boundaries and "sense of space" that help to define them as recognizable campus places. (MPP 69)

Pedestrian Emphasis. The academic core should be primarily pedestrian oriented with simple, cohesive and straightforward pedestrian circulation and appropriate amenities, scale and design at the ground level. (MPP 70)

Gateways and Edges. Gateway entrances to Cal Poly should be easily recognizable and reflect its mission as an institution of higher learning. (MPP 71)

The edge of campus should be transparent, friendly, and aesthetically pleasing to the surrounding community. (MP 73)

Wayfinding. Campus design and wayfinding should reflect an enhanced connection to, and interaction with, the surrounding City of San Luis Obispo. (MP 72)

Landmark Spaces. The siting and design of campus buildings and other features should recognize the importance of preserving certain open space areas including Dexter Lawn, O'Neill Green, the Arboretum, and Poly Canyon, and strive to create additional outdoor spaces. (MPP 62)

Landmarks and place-making elements that identify special campus locations such as Dexter Lawn, the Engineering Quad, Via Carta Plaza and Mustang Way should be preserved and enhanced, and new ones created. (MPP 63)

Sustainability and Environmental Stewardship

Cal Poly is committed to being a leader in sustainability in its facilities and operations, and views sustainability as an essential element of its academic mission. In 2004, the University adopted the Talloires Declaration, a ten-point action plan for incorporating sustainability and environmental literacy in teaching, research, operations and outreach at colleges and universities.

These principles are as relevant today as they were a decade ago, and they continue to guide the University's efforts in becoming a more sustainable campus.

- Increase Awareness of Environmentally Sustainable Development
- Create an Institutional Culture of Sustainability
- Educate for Environmentally Responsible Citizenship
- Foster Environmental Literacy for All
- Practice Institutional Ecology
- Involve All Stakeholders
- Collaborate for Interdisciplinary Approaches
- Enhance Capacity of Primary and Secondary Schools
- Broaden Service and Outreach Nationally and Internationally
- Maintain the Movement

Accordingly, the Master Plan was guided by overarching sustainability principles and the goal of wise resource management is reflected in features and policies throughout the plan. One of the advisory committees created to inform the planning process explicitly focused on Natural Resources and Sustainability. Additionally, essentially all the committees -- as well as many other contributors -- also emphasized sustainability in their recommendations.

The plan strives to protect important environmental resources, keeping most prime agricultural land open, creating protective buffers around creeks, and preserving open space and scenic resources that are so important to Cal Poly's image and character. It also requires that new facilities and campus infrastructure be environmentally responsible, energy efficient, and showcase advancements in sustainable technology. New buildings are designed to meet LEED (Leadership in Energy and Environmental Design) standards. Energy systems are continually monitored, maintained, and updated to assure that Cal Poly runs in the most efficient manner possible. Outdated technology and systems are upgraded or replaced as needed, from the simplest valve or faucet in a bathroom, to the complex lighting in the Performing Arts Center.

The plan incorporates "smart growth" measures such as the compact form around the core and mixed uses, approaches that reduce the reliance on cars and that improve the efficiency of infrastructure and energy use. The plan includes areas for renewable energy sources such as solar and wind energy generation, water reclamation, and for waste composting, which is especially important at a University with hands-on, learn-by-doing agricultural programs. Furthermore, and importantly, the plan calls for

Cal Poly's Sustainability Policies and Programs. Cal Poly is a leader in sustainability. The University has adopted the following policy:

Cal Poly shall seek to reduce its use of water and energy, and its generation of landfill waste and greenhouse gas emissions to the lowest levels possible within the constraints of funding, technology, and programmatic needs. In so doing, Cal Poly shall seek to use the campus as a living laboratory to integrate this work with the academic mission of the University and enhance the education of our students.

The Natural Resources and Sustainability Advisory Committee recommended several specific actions that would help implement this policy:

Cal Poly should strive to be a net zero campus by investing in renewable power and prioritizing on-campus generation. Cal Poly should continue its program of identifying areas for solar and other forms of renewable energy.

Cal Poly should continue its program of retrofitting older buildings for energy and water efficiency.

Cal Poly should investigate the use of reclaimed water and the use of grey water systems; turf should be limited to high use areas only.

increased housing on campus that will reduce commuting and the impacts attendant to that; the plan also emphasizes a pronounced shift away from cars toward active transportation modes including walking, bikes and transit.

The campus has undertaken many other sustainably oriented endeavors, catalogued every two years in the Biennial Progress Report for Sustainability for Cal Poly Facilities and Operations, since 2006. Indicators measuring improvements in sustainability efforts include:

- Energy Use
- Transportation
- Water Resources
- Land Use and Development
- Greenhouse Gases, and
- Solid Waste and Recycling

These indicators are monitored by the University to ensure that Cal Poly meets, and in some places, exceeds, the California State University system's Sustainability Policy. Which requires Cal Poly to:

- Reduce Greenhouse Gas emissions to 1990 levels by 2020, and to 80% below 1990 levels by 2040;
- Increase self-generation of energy from 44 to 80MW by 2020;
- Source energy to 33% renewables by 2020;
- Reduce per capita waste going to the landfills to 50% by 2016, and 80% by 2020;
- Reduce water use by 10% by 2016, and 20% by 2020;
- Purchase at least 20% of food from sustainable sources (local, organic, free trade); and
- Integrate Sustainability across the curriculum.

With support from the Facilities Management and Development Department, an undergraduate and graduate studio in the City and Regional Planning Department developed a Greenhouse Gas Inventory and Draft Climate Action Plan for the University. This Plan identifies measures to get Cal Poly to the goal of reduced Greenhouse Gas emissions to 80% below 1990 levels by 2040, and is incorporated into this Master Plan by reference.

Academic programs offer both disciplinary and general education courses with a sustainability focus. Clubs, programs, and other extracurricular activities promote sustainability, energy conservation, and general environmental consciousness. The Cal Poly community strives to be stewards of the land for our present needs and the needs of future generations.

Many more specific sustainability measures will occur during the implementation phases of the plan such as in the design of new buildings and open spaces and in the upgrading of energy and water systems. The advisory committees offered several recommendations in this regard.

Incorporating Sustainability in Future Plans, Designs and Operations

As the Master Plan is implemented through the development of new projects, various sustainability elements should be considered and where appropriate incorporated into the planning, design, construction and operations:

On campus residential neighborhoods should include spaces and facilities that support a sustainable lifestyle. (MPP 42)

Impacts to environmentally sensitive areas should be avoided; environmentally degraded areas should be enhanced or restored where practical. (MPP 43)

Open spaces should form links (spaces and corridors) at all scales to form visual, recreational and access connections. (MPP 44)

The siting and design of campus buildings and other features should reflect and enhance visual and physical connections to the surrounding natural environment and outdoor spaces on campus. (MPP 45)

Cal Poly should preserve and enhance the viability of agriculture and natural habitat systems on its holdings by providing adequate land area including appropriate buffers, connectivity or corridors between related natural communities, and linear continuity along streams. (MPP 46)

Transportation and Circulation

The Master Plan calls for circulation infrastructure and related policies and programs that together are intended to provide for the safe and efficient movement of people and things around the campus while also encouraging a more complete shift to an active transportation approach – one that emphasizes walking, bikes and buses over cars.

The 2001 Master Plan encouraged the reduction of cars on campus through several means including more on-campus residences, the closure of certain roads in the Academic Core, the re-location of parking outside the core, and other programs encouraging alternative transportation. Subsequently, portions of Via Carta, Inner Perimeter and South Perimeter roads were converted to pedestrian ways and bicycle paths; a bicycle plan was adopted that is being incrementally implemented; local transit routes were adjusted with the cooperation of the city and new, upgraded transit stops were developed. Between 2001 and 2011, the number of per capita commuter parking permits was halved and transit ridership approximately doubled.

This Master Plan update continues Cal Poly's efforts to move away from auto-dependency to a more residential, pedestrian and multi-modal environment. The overarching circulation principle is to further develop and implement this modal shift. The City of San Luis Obispo and other regional transportation agencies similarly support multi-modal and active transportation approaches. To be most effective, the on and off-campus circulation networks should be closely coordinated.

Key Features of the Circulation System

The proposed circulation system reflects Master Plan principles that aim to address current deficiencies, provide for future needs and continue Cal Poly's movement away from cars to other modes. The following summarizes key features and related principles.

New Roads

As the campus continues to develop northward, the more intensive uses planned north of Brizzolara Creek will require new roads and parking facilities. Two new roads are proposed: the northernmost one connects Village Drive to Mt. Bishop Road (utilizing in part Sports Complex Road). This would require a grade-separated railroad crossing. Another new road would extend from the California/Highland intersection north of the creek and east to Via Carta to access new residential projects in this vicinity. These new routes would not only accommodate vehicles, but also pedestrians and bicycles.

Redesigning and Managing Access on Existing Roads in the Core.

The plan calls for the redesign of North Perimeter, University, South Perimeter and the eastern end of Highland Drive to restrict through traffic, to create a stronger pedestrian ambiance and to encourage bicycle use. North Perimeter in particular currently divides the Academic Core and creates significant intermodal conflicts.

National and Regional Leader in Multi-Modal and Active Transportation

Cal Poly is an exemplar in reducing automobile use and encouraging alternative modes, especially in the Central Coast area. The University's learn-by-doing philosophy and polytechnic emphasis make for a fertile environment for research and implementation related to best transportation practices. Cal Poly should strengthen its position as a leader in the evolving and expanding field of multi-modal and active transportation.

Transportation & Circulation Principles

Multi-Modal System. Access to and around campus should be efficient and effective for all modes, while shifting to an active transportation system that gives priority to walking, bikes and electric bikes (and similar technologies), and transit and intra-campus shuttles over cars. Existing roads in the academic core, including North Perimeter, should be re-designed and managed to reflect mode priorities. (MPP 47)

Reduce Cars and Encourage Active Transportation. Single occupancy vehicle trips to campus should be reduced by increasing ride sharing and by substituting cars with active transportation options. (MPP 48)

Efficiency. Cal Poly's on-campus circulation systems should connect efficiently with those of the City, County, RTA and Cal Trans. (MPP 49)

Prioritize Resources. Cal Poly should give higher priority to committing resources to active transportation and trip reduction measures over providing more parking on campus. (MPP 52)

It should be noted, too, however, that these roads would not be entirely eliminated, but would continue to accommodate limited vehicle access for transit, shuttles, deliveries, emergencies, maintenance and persons with disabilities.

Parking. A new parking structure would be developed near the intersection of Mt. Bishop Road and Highland to "intercept" most car traffic outside the core. New structures are also envisioned on Via Carta to serve the sports facilities and Equine Center. These latter structures are located proximate to the new student residential areas so that some of this parking could be incorporated into those projects. The amount and location of parking for student residential projects will be evaluated as part of the marketing and feasibility analyses associated with those projects and incorporated into their programming, design and financing. It is the University's intent to discourage residents from bringing cars to campus, so that the demand for parking will be reduced. In addition, the storage of cars for on-campus residents does not necessarily require locations on that most valuable and limited land nearest to the core.

Bicycles, E-bikes and Related Modes. The plan calls for more bike paths penetrating into and through the campus and a significant increase in bike parking nearer to destinations in the core.

Transit. A multi-modal transit center is called out in the vicinity of the Creekside Village near the terminus of Highland at University. A new transit stop would be included near the southwest corner of campus to serve the new residential neighborhood. While the plan indicates that transit routes would bring riders to strategic locations at the edge of the campus thereby eventually eliminating the need for buses to regularly the core, any changes to the current routes, as well as the precise locations and designs of the transit center and future stops would be determined in cooperation with the city and SLO Regional Transit Authority.

Effecting the desired modal shift requires new or modified plans and policies, new management approaches and technologies, the installation of specific improvements and the commitment of resources to these ends. The following are recommended measures for implementing the modal shift.

Improving Intra-campus Connectivity

As the campus grows and more residential development occurs, the need will increase for convenient and effective circulation connections to the Academic Core across all modes. One option that warrants more detailed analysis is the development of a shuttle serving on-campus residential areas, peripheral parking structures, nearby agriculture fields and facilities, sports and performing arts venues, and other important destinations.

Transportation & Circulation Principles

Controls. Conflicts among circulation modes should be avoided through such methods as separated routes, grade separated paths, traffic calming and intersection controls. (MPP 50)

Transportation Center. A multi-modal transportation center should be planned and funded on the campus. (MPP 51)

Connectivity. Increased connectivity between the academic core, peripheral facilities, and residential neighborhoods should be encouraged. (MPP 53)

Safety and Convenience. On-campus residential neighborhoods should be designed with convenient access to the core of campus, including safe and convenient pedestrian and bicycle paths; consideration should be given to a shuttle service or other intra-campus alternatives when residential developments are beyond convenient walking distance. (MPP 54)

All modes of the circulation system should be safe; routes for all modes should be adequately lighted, graded and constructed for both ease of movement and safety. (MPP 61)

Safety

A priority for the entire circulation system is safety. And an active transportation system calls for special attention to the interaction and potential conflicts among different modes. Additional study will be required as transportation and circulation systems continue to be defined and concepts refined.

Timing and Phasing

The most costly new facilities -- including the new roads, vehicular and pedestrian grade-separated railroad crossings and parking structures in the North and West campuses -- would be constructed in conjunction with the major new developments north of Brizzolara Creek that they would serve. The development of new academic, athletic and residential facilities called for in the plan would occur over approximately two decades. Thus, most existing roads and parking lots would remain in place for many years until new facilities become available. However, design changes and new management approaches to parking and vehicular access that would reduce modal conflicts and encourage active transportation could be implemented sooner. For example, new bike paths and bike parking, and the enhancement of pedestrian amenities, could be implemented incrementally as funding allows.

"Green" Design in Parking

Although not generally thought of as candidates for sustainable design, evolving best practices encourage efficient energy and resource s even in parking structures

Transportation & Circulation Principles

Access. On-campus residential neighborhoods should have convenient access to public transportation. (MPP 55)

The campus circulation system should accommodate access for deliveries, maintenance, public safety, persons with other needs, and public transit/internal shuttles. (MPP 60)

Signage. Campus wayfinding should clearly identify places, routes, and destinations and enable people to orient themselves to find their destination. (MPP 56)

Parking. Parking should be provided in appropriate amounts and locations depending on the purpose. (MPP 57)

Major parking facilities should be located to "intercept" cars outside the academic core; drivers should be able to conveniently transition to other active modes or intra-campus shuttles or other options. (MPP 58)

Parking facilities should be sited and designed to reduce visual obtrusiveness while maintaining safety. (MPP 59)

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Infrastructure

Most of Cal Poly's developed land lies within the Main Campus in the San Luis Obispo Creek watershed. It includes about 150 major buildings, with more than six million gross square feet of pace. Planning for the infrastructure required to support the existing campus and anticipated to accommodate potential growth requires critical systems analysis, strategic operation, and continuous maintenance. The Master Plan emphasizes sustainability as a major goal in the design and operation of infrastructure to serve the expanded campus. (Please see the Appendix to the Sustainability chapter for detail regarding current sustainability operations.)

Utility systems in the Academic Core are integrated in the Utilidor that makes a loop along Mustang Way, Grand Avenue and North Perimeter Road. New infrastructure will be needed to accommodate expansion in the North Campus, integrated with the construction of new roadways, discussed in the Transportation and Circulation chapter.

Energy

The Master Plan anticipates that future energy needs will be met through the same means as present, with increasing emphasis on using clean energy sources and on designing and retrofitting facilities for energy efficient operations.

Electrical Energy

Cal Poly purchases its electrical energy from PG&E, which is some of the cleanest in the nation. In addition, it supplements energy generation with renewable energy sources and onsite generation to reduce Cal Poly's greenhouse gas emissions.

- The University installed a large solar photovoltaic system on the roof of Engineering West Building, and a 2.5 kW solar array on the roof of the Facilities Management and Development Building.
- A large scale, ground-mounted solar PV installation is being pursued at the northwest end of campus.
- Opportunities to develop wind generation on campus land are being explored.
- Facility Services is evaluating opportunities to implement a fuel cell combined heat and power system at the campus central plant.
- A 2008 feasibility study determined that manure from campus livestock herds, waste byproducts from the Dairy Products Technology Center, food waste from Campus Dining, and green waste from the crops units and campus landscape operations could be consumed by an anaerobic digester, or other technology, and the resulting methane gas captured and reused.
- Cal Poly has two cogeneration facilities in the student housing areas that can provide combined heat and power to student dormitories and apartments – at Sierra Madre and Poly Canyon Village.

Natural Gas

Natural gas commodity procurement for the larger service accounts (greater than 250,000 therms per year usage) is provided by the California Department of General Services (DGS) as part of a managed portfolio including nearly all Cal State University and University of California campuses, California State administrative buildings, California Department of Corrections, and various cities, counties, and school districts.

Infrastructure Principles

Visibility. Public facilities and utility support structures should be concealed from view unless their visibility serves an explicit educational function. (MPP 74)

Size. Sites and facilities should be sized appropriate to their expected purposes. (MPP 8)

Enhanced Environment. In addition to appropriate infrastructure and technology, instructional spaces should enhance the teaching/learning environment considering such variables as floor plans, windows, views, natural light, air quality, adjacencies and circulation. (MPP 9)

Water

Cal Poly manages water resources to ensure adequate supply, meet or exceed health standards, reduce environmental impact and cost, and conserve and protect natural resources. Preliminary estimates of water requirements for the Master Plan indicate that with conservation-based design, the University should have an adequate supply to meet future needs. However, water remains a concern during drought conditions. The Master Plan will require new infrastructure to deliver domestic water, collect waste water, and manage storm drainage, particularly to service new development in the North Campus. In addition, the capacities of connecting water and sewer mains, and treatment systems will need to be evaluated.

Water Supply and Water Rights

Cal Poly's water is derived from three primary sources: Whale Rock Reservoir, Salinas Reservoir (also called Santa Margarita Lake), and local groundwater. Water from the two reservoirs is delivered by the City of San Luis Obispo; local groundwater is provided via six agricultural wells owned and operated by the University. Cal Poly has water rights for both ground water and surface water. Ground water is pumped from six agricultural wells located on University land and is limited by relatively shallow, low capacity aquifers, especially during drought years. By State Water Resources Control Board permit, Cal Poly owns surface water rights to Brizzolara Creek on the Cal Poly campus, and to Old Creek which supplies Whale Rock Reservoir near Cayucos.

Along with the City of San Luis Obispo and the California Men's Colony, Cal Poly was one of the original developers of the Whale Rock Reservoir, and therefore retains rights to 34 percent of the reservoir capacity. Since Cal Poly owns adequate water rights to meet campus needs, the University does not pay for its water supply, but does pay fees to the City of San Luis Obispo for delivery and treatment. By investing capital funds to purchase a capacity share of the City water treatment plant, Cal Poly receives a discounted rate for treatment costs. Surface water is delivered by the City of San Luis Obispo from both Whale Rock Reservoir and Salinas Reservoir. The City of San Luis Obispo operates Whale Rock Reservoir and determines the most economical way to deliver both treated water for domestic consumption and raw (untreated) water for agricultural use. Whale Rock water is generally used for domestic use. Untreated Salinas water is generally delivered to Cal Poly for agricultural use. Both types of delivered water are applied against Cal Poly's Whale Rock water rights.

Waste Water
The Cal Poly sanitary sewer system was built as part of the original campus infrastructure and has been in service for over 100 years. Partly due to the rolling terrain of the campus and surrounding community there are numerous sewer lift stations, many of them in the outlaying agricultural areas. All waste water from the Cal Poly campus is discharged to the City of San Luis Obispo's sewer collection and treatment system. Cal Poly, in partnership with the City of SLO, has invested capital funds to purchase a capacity share of the City's waste water treatment plant, and therefore receives a discounted rate for waste water. Ongoing conservation efforts, such as installation of ultra-low flow plumbing fixtures, have resulted in significant reductions in sewer volumes despite of campus growth. In addition, the City and the University are exploring the potential for using partially-treated grey water for irrigation.

Storm Drainage
The campus experiences most of its rainy season in the winter months from October through March. Storm drainage can be a challenge during particularly heavy rainy seasons.

Most of the Academic Core and North Campus drain to Brizzolara Creek which runs across the north side of campus. Portions of the West Campus drain to Stenner Creek. The University, as part of the Clean Water Act and State and Regional Water Boards requirements, has developed an aggressive Storm Water Mitigation Program. This program includes a contract to annually clean and vacuuming all catch basins, drainage inlets and area drains every October. The campus has also installed storm-interceptors as part of the Poly Canyon Student Housing complex and approximately ten percent of the existing drainage inlets have open bottoms.

Solid Waste

As part of the ongoing effort to make Cal Poly a more sustainable campus, a Zero Waste Pilot Program is being implemented at several locations around campus. Cal Poly operates an integrated waste management program that includes source use reduction, recycling, composting of food waste, green waste, and manure, resale of scrap metal and surplus equipment, and zero waste event catering. Cal Poly contracts with San Luis Garbage for collection of solid waste and recycling. Recycling containers are provided to faculty, staff, and students by Facility Services, and collection is performed by Custodial Services and the campus Recycling Coordinator.

Data and Communications

Data and communication systems are designed to meet current loads. Thus, when demand increases with campus expansion, Cal Poly will need to expand or upgrade these utilities.

Telephone
The campus has two PRI (Primary Rate Interface) services from Time Warner Cable. The services are provided over separate fiber optic cables to the campus main telephone switch.

Internet Service
The campus has redundant network service utilities that have divergent paths onto campus from different overhead and underground source connections. The network service is provided by CENIC over fiber optic cable. The service provides connectivity with 10Gb of bandwidth.

Data Center
The campus has one Data Center that is located in the Computer Science Building. The Data Center houses major network equipment required for routing network signals throughout the campus. In addition, the Data Center houses most of the campus computer network servers. The Master Plan calls for relocating the Data Center to accommodate additional capacity and meet security requirements.

Campus Network
The campus network consists of two redundant main core switches located in the Data Center, with sub-core switches strategically located throughout the campus. All the switches are connected via fiber optic cable, which. is routed in underground pathways.

IMPLEMENTATION
I. Programs

The master plan described in the previous sections sets out principles that will be applied as Cal Poly implements the plan. Some of these involve specific building and landscape projects described further under phasing. In addition, some aspects of the plan will require further study and/or the preparation of more focused plans and establishment of operational programs. The master plan advisory committees offered a number of suggestions for implementation, which are listed with each topic. This chapter expands on the work of the advisory committees and summarizes the studies and programs Cal Poly needs to put into place for successful plan implementation.

Additional studies and implementation programs are listed in alphabetical order with each general heading for the Master Plan.

Academic
The master plan focuses on the physical facilities and learning environments the University needs to provide in order to support the curriculum, enrollment, and scholarship envisioned in the academic plan. This will require continuing research regarding effective teaching and learning practices, including instructional technology so that the University can build or remodel indoor and outdoor spaces to meet state-of-the-art standards.

Additional specific studies include:
- Agriculture Lands and Facilities Program and Concept Plan

Community
The community chapter of the master plan emphasizes the educational value of students living on campus. It also stresses the importance of a full range of activities and services to support a culturally rich university life. In addition to meeting locational principles and design guidelines, facilities and programs that serve the campus community can be expanded and enhanced through partnerships. Sometimes, these are within Cal Poly, for example when ASI and the Cal Poly Foundation collaborate. Other times, partnerships involve the City of San Luis Obispo and/or a non-profit organization, as with the Performing Arts Center.

Additional specific studies include:
- Faculty/Staff Neighborhoods Programs and Concept Plans
- Public Private Partnership Projects Feasibility Studies
- Slack and Grand Avenue Faculty/Staff Residential Neighborhoods Development Study
- Student Housing Neighborhoods Programs and Concept Plans
- Student Services and Support Facilities Needs Study
- Track and Recreation Fields Relocation Study

Environment
The master plan provides a framework for stewardship of the Cal Poly's natural environment and for design of the University's built environment. Applying these principles entails additional study, establishment or expansion of programs, and development of more focused plans and guidelines. A number of them focus on sustainability, some address circulation and transportation, and others deal with physical design.

Additional specific studies and updates include:
- Academic Core Buildings Siting and Open Space Area Plan
- Campus Gateways Design Study
- Campus Standards, including landscaping, outdoor furniture, and lighting
- Creekside Village Program and Concept Plan
- Facilities Services Yard Program and Concept Plan
- Historic Neighborhood Area Plan
- Infrastructure Improvements Requirements Study
- Modal Shift and Circulation Plan Study
- North Campus Concept Study
- Parking Needs Study
- Utility Master Plan Update
- Wayfinding Master Plan Update

In addition, the implementation of the master plan involves expansion of the physical infrastructure of the campus as well as maintaining and renewing existing systems. Construction projects are shown in the phasing discussion. In addition, some operational practices can be improved so as to enhance sustainability and increase efficiency.

STUDIES AND PROGRAMS

A complete list of the suggestions for implementation from the master plan advisory committees follows.

Teaching and Learning

Design of Instructional Spaces. Cal Poly should apply the most current research regarding effective learning environments -- including such factors as classroom configuration, technology, furniture, lighting, acoustics, color, access and egress -- to the programming, design and construction of new or remodeled buildings that include instructional space. (IP 1)

Flexible Scheduling. Cal Poly should evaluate the potential for greater flexibility and efficiency in scheduling, including summer session, to serve more students and decrease time to degrees, without requiring new capital investment. (IP 2)

Recreation and Athletics

Partnerships. Cal Poly should consider partnership opportunities for development, management and use of recreation facilities by accommodating diversity of needs, interests and resources. (IP 3)

Sustainability and Stewardship

Renewables. Cal Poly should continue its program of identifying areas for solar and other forms of renewable energy. (IP 4)

Energy and Water Conservation. Cal Poly should continue its program of retrofitting older buildings for energy and water efficiency. (IP 5)

Cal Poly should investigate the use of reclaimed water and the use of grey water systems; turf should be limited to high use areas only. (IP 6)

Cal Poly should investigate the potential of becoming a climate action reserve. (IP 7)

Trails. A trail plan should be developed to provide access to Cal Poly's natural resources and open spaces where appropriate considering factors such as safety, avoidance of degradation of the resources and interference with educational priorities; such a plan should address design, management and signage to addressing appropriate use and signage, including possible links between off campus public lands. (IP 8)

Leadership and Partnerships. Cal Poly should take a proactive leadership role in the preservation of the area's natural resources and develop strategic partnerships with other agencies and organizations involved with resource stewardship. (IP 9)

Transportation and Circulation

Safety. Educational programs that promote safety in all modes should be improved and better directed to target audiences. (IP 10)

Updated Implementation Plan. Cal Poly should incorporate pedestrian, bicycle and transit plans into a comprehensive and updated multi-modal active transportation plan designed consistent with leading standards. (IP 11)

National Leader and Multi-Disciplinary Center. Cal Poly should be a national leader in multi-modal transportation best practices, related research and technology transfer and should develop a multidisciplinary center or institute focused on transportation issues including planning, research and modeling actual practices. (IP 12)

SLO an Active Transportation Model Community. As a regional leader in fostering active transportation, Cal Poly should partner with local, regional and national public and private organizations (including but not limited to the

City, County, Caltrans, SLOCOG, RTA, Amtrak, and Union Pacific Railroad) to make San Luis Obispo a model for modal shift from single occupancy autos to a complete active transportation system. (IP 13)

Implementing the Modal Shift. Cal Poly should strengthen policies that discourage people from bringing cars to campus, especially for first and second year students living on campus, and other students who reside on or near campus, and should concurrently provide the services, infrastructure and incentives for using active transportation options so that most students will not want a car. (IP 14)

Education, incentives and the use of emerging technologies such as dynamic matching should all be supported and utilized to improve ridesharing and the choice of active transportation modes. (IP 15)

Educational and information campaigns related to modal shift should be compelling, consistent, effective and across multiple media. (IP 16)

Measurable objectives should be established to track progress toward shifting modes to an active transportation system including social science metrics related to attitudinal as well as behavior shifts. (IP 17)

For the desired modal shift to be expeditiously implemented, more robust and sustainable funding sources must be identified. (IP 18)

Bicycles. Cal Poly should partner with the City to help develop off-campus bicycle improvements as prescribed in the city's bike plan and that improve connections between the campus and community. (IP 19)

Convenient bicycle routes throughout the campus, as well as bike parking located as near as practical to campus origins and destinations, should be provided to encourage bicycle use. (IP 20)

On campus housing should be designed to accommodate bicycle parking that is indoors or otherwise protected from the elements. (IP 21)

Buses. Cal Poly should continue to work with the City and RTA to make public transportation more convenient than automobile use through such improvements as shorter headways, increased evening and weekend services, and greater convenience for on-campus residents. (IP 22)

Cal Poly should work toward restoring, expanding and publicizing extra-regional bus service. (IP 23)

Parking Demand Management. Parking should be efficiently managed to reduce the need for parking spaces through real time information regarding space location and availability, variable time pricing, and other best practices. (IP 24)

Entry Kiosks. A system should be established whereby sponsored guests can obtain parking passes without crossing the campus to a single staffed kiosk. (IP 25)

Infrastructure

Deferred Maintenance and Adapted Re-use. Cal Poly should develop a program to adequately maintain its infrastructure and other physical assets, including addressing deferred maintenance, to extend the useful lives of those assets; the adaptive re-use of existing buildings should be considered in lieu of new construction where appropriate based on the evaluation of such factors as costs (including future maintenance and operating costs), the program/use of the facility, the adequacy of technology for contemporary and future users, the appropriate intensity/density of development for the site location, and environmental impacts. (IP 26)

Phasing

Phased Implementation
The phased implementation of the Master Plan will require consideration and forethought of a number of factors including:

- One of the Guiding Principles of the Master Plan is that where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move. Thus, funding for the replacement project will need to be secured prior to initiating construction of the new facility.
- The source, magnitude and program requirements of funding for projects is difficult to predict. Project funds may come from donors, sponsors, public/private partnerships (PPP), student supported fees and, to an extent significantly less than in previous decades, State or CSU funding.
- Construction of a new building may require infrastructure upgrades or changes that can increase the project cost considerably over the cost of the building itself.
- When a new project is completed and space is vacated, the existing space can either be reassigned or demolished and the site made available for other uses at that time or in the future. If the space is retained for a short or longer term, it will require some level of secondary effects improvements to properly house an incoming University program. This most often results in a separate project requiring its own funding and is seldom part of the new construction budget.

As a result of these challenges, multiple "steps" may be required before a new building can proceed. This will require detailed planning and coordination that may change and require modifications as factors change over time, such as a funding opportunity appearing unexpectedly or being disappointingly postponed. With these considerations in mind, the following projects could be developed in the early years of the Master Plan's 20 year outlook. Circumstances may arise that result in buildings other than those listed here being developed. Secondary effects projects are not identified here but will need to be defined and implemented.

Potential Early Projects

		Continuing from 2001 Master Plan	Project in Process	Potential early projects
	Academic Building (600 FTES)			X
	Academic Center (Library Expansion) (400 FTES)	X		(X)
	Baseball Clubhouse		X	
	Beef Cattle Evaluation Center Expansion			X
	Culinary Support Center		X	
	Data Center			X
	Engineering Projects Building, Circulation and Parking			X
	Health Center/Medical Clinic Renovation and Addition			X
	Faculty and Staff Residential Neighborhood (Slack St. and Grand Ave.) (420 units)			X
	Fermentation Sciences		X	
	H.P. Davidson Music Center Expansion (50 FTES)	X		(X)
	Horticulture Greenhouse Relocation/Agriculture Events Center/Equine Pavilions/Animal Health Clinic/Circulation and Parking		X	
	I Field Renovation		X	
	Solar Farm		X	
	Student Housing NE of Brizzolara Creek and Via Carta, Circulation and Parking (1500 units)			X
	Student Housing at R1 Lot and Parking and Circulation			X
	Technology Park Phase II			X
	Track and Football Practice Field Relocation, Faculty/Staff Residential Neighborhood ("Track Site"), Circulation and Parking (200-300 units)			X
	Undergraduate Science Research and Agriculture Technology Center		X	
	University House Area Housing Development, including Senior Housing (100-150 units)			X
	U, Building 19, Renovation and Expansion			X
	Vista Grande Dining Hall Replacement		X	

Other phasing considerations will include the need to provide support facilities for the increased number student housing residents, including dining options, active recreation, indoor and outdoor passive recreation, retail and study space. So, a student housing project may require infrastructure upgrades such as road realignment, utility extensions, parking relocation, and pedestrian pathways. But it may also require some of the recreation, food and study type facilities mentioned above. These result in quality-of-life phasing needs in addition to physical infrastructure and program replacement phasing requirements.

The Academic Core will be especially important to the successful fulfillment of the Master Plan. Students in all Colleges take classes that are taught in the Academic Core, especially in the first two years at Cal Poly. This is the area where formal as well as unscheduled academic interaction regularly occurs. In order to the thriving heart of campus envisioned in this Master Plan careful consideration of building siting will be required. The existing buildings, streets and open spaces will only gradually, and over a long period of time, be replaced or reconfigured. New buildings will be sited to consider the future impact on the campus, not just the current conditions. Buildings on Via Carta are especially located on the "prime real estate" with significant visibility and pedestrian activity from that major street. These buildings will be icons of the Cal Poly experience for generations.

Projects in the Academic Core cannot be thought of as stopping a few feet outside of the building footprint. Not only will utilities need to be extended and in some cases capacity upgraded, but there will be other impacts to the University. Increased capacity in the Academic Core, increased utilization of facilities and open space and the need to upgrade already inadequate physical resources must be supported by projects as they are being planned and developed. Open space and support facilities will need to be provided as part of academic projects.

Consider Context. The siting of new land uses and buildings should always be considered within the context of the greater campus; functional connections among related activities should be considered, including the nature of activities, "adjacencies" and paths of travel.

Landmark Spaces. The siting and design of campus buildings and other features should recognize the importance of preserving certain open space areas including Dexter Lawn, Poly Grove, the Arboretum, and Poly Canyon, and strive to create additional outdoor spaces.

Design and Scale. Special attention should be placed on developing the in-between, or interstitial, spaces into well-designed social gathering opportunities.

Phasing Stages

Some examples of phased (or staged) development are indicated below. These are not exhaustive phasing studies and specific project staging requirements will need to be analyzed for each project in the context of its timing.

VIA CARTA/DEXTER LAWN/CENTENNIAL MEADOW

REQUIRED

- Via Carta and open Space Specific Plan for project siting and to allow progressive small project implementation without sacrificing completed work as large projects are designed and constructed.
  - Define the 'heart of campus' intersection of Dexter Lawn, Via Carta and Centennial Meadow to inform future planning and design
- Coordinate with ASI and Corporation regarding UU Activity Center for Via Carta southern segment improvements.

OPPORTUNITY

- Small project progressive implementation.
  - Extend Dexter Lawn to east and align as allowed between existing structures and existing topography, allowing for ultimate future expansion.
  - Relocate spaces in parking lot H-11 in order to improve Via Carta between N. Poly View and N. Perimeter and between Math/Science (Bldg. 38) to Agriculture (Bldg. 10).
  - Relocate spaces in parking lot C-6 and improve Via Carta between Mustang Way and S. Poly View and between Engineering South (Bldg. 40) to Dining Complex (Bldg. 19) and future UU expansion.

INSTRUCTIONAL FACILITY

REQUIRED

- Determine if Math/Science (Bldg. 38) will remain or if its functions will be relocated prior to new building construction.

OPPORTUNITY

- If Bldg. 38 is demolished, develop Library Lawn open space between the Instructional Facility and Via Carta.

ENGINEERING EAST AND COMPUTER SCIENCE

REQUIRED

- Identify where Engineering East (Bldg. 20) and Computer Science (Bldg. 14) functions will be relocated.
- Demolish Bldg. 20 and 14 and develop new academic facility on the combined site.

OPPORTUNITY

- Use siting of new academic facility to define and implement Dexter Lawn Expansion, Via Carta improvements and Centennial Meadow west edge. Define enhanced pedestrian and bicycle route north/south at west side of new academic facility to Instructional Facility and S. Perimeter.

ENGINEERING PROJECTS BUILDING

REQUIRED

- Develop a strategy for parking located in H-2.

OPPORTUNITY

- Plan the Engineering Projects Building to encourage exploration of active project work and exhibits. Connect pedestrians from the engineering complex to Creekside Village and the Academic Core. Provide visual and sound separation for the engineering projects yard.

BRIZZOLERA EAST STUDENT HOUSING – SOPHOMORE

REQUIRED

- Develop a strategy for parking located in lot H-16.
- Identify where the replacement spaces will go, or if transit and bike systems will be improved and parking policy changed, allowing parking spaces to be reduced.
  - Constructing parking structure at Highland Dr. and Mt. Bishop Rd. would require other facility relocations.
  - Constructing parking structure at north Via Carta may require road improvements and realignment.
- Relocate portion of recreation field (approx. one soccer field) in order to relocate ITRC adjacent to Shepherd Reservoir.
- Construct approximately 1500 bed housing neighborhood with amenities, east of Via Carta, north of Brizzolara Creek.
  - Use Village Drive access for construction and resident traffic (no road realignment required).

OPPORTUNITY

- Design Creekside Village Specific Plan to accommodate phased development
- Relocate parking lot H-2. Construct mixed-use functions to support student housing.
- Relocate Farm Shop (9) and Ag Engineering Shop (8A). Construct mixed-use functions to support student housing.

CREEKSIDE VILLAGE

REQUIRED

- Mixed Use Development Specific Plan for Creekside Village area, including siting and functional use.
  - Coordinate with detailed circulation plan, including vehicles, transit, service, bicycles and pedestrians.
  - Coordinate with siting of transit center and transit routes.
  - Develop architectural guidelines for Creekside Village development.
- Relocate Ag Engineering Shop (Bldg. 8A).
- Relocate Farm Shop (Bldg. 9 and 9A) to the Farm Shop, NW of Rodeo Facilities.
- Relocate Ag Engineering (Bldg. 08) to academic building in Academic Core.
- Relocate Facilities Management and Development buildings to Corporate Yard.
- Relocate University Police to University Corporation Yard [or retain in new building in Creekside Village].
- Relocate spaces in parking lots H-4 a-g.
  - Identify where the replacement spaces will go, or if transit and bike systems will be improved and parking policy changed, allowing parking spaces to be reduced.

- Facilities staff will park at University Corporation Yard.

OPPORTUNITY

- Relocate spaces in parking lot H-2 and develop initial mixed-use building at that location.
- Rebuild bridge over Brizzolara Creek to reflect new use and circulation patterns.

HIGHLAND & MT. BISHOP PARKING STRUCTURE/REC DECK

REQUIRED

- Relocate ag fields
- Improve roadway access
- Improve pedestrian access to Academic Core

OPPORTUNITY

- Create a campus gateway to the Academic Core at Highland/Mt. Bishop intersection
- Create a contributing element to the outdoor recreation area on the parking structure top deck

NORTH VIA CARTA PARKING STRUCTURE

REQUIRED

- Temporarily accommodate existing surface parking spaces during construction
- Extend Village Drive for vehicular access on north
- Extend California Blvd. for vehicular access on south
- Improve pedestrian and bicycle access to Academic Core

RECREATION FIELDS

REQUIRED

- Develop Specific Plan for Northern Recreation Facilities (fields, courts, support facilities north of Highland Dr.)
- Relocate/reconfigure some existing rec fields
- Relocate some ag fields
- Reconfigure Rodeo Facilities
- Extend Village Drive and California Blvd. to access rec facilities
- Improve pedestrian and bicycle access to Academic Core

PUBLIC/PRIVATE PARNERSHIP PROJECTS

REQUIRED

- 'Slack and Grand' Housing
  - No relocation required
  - Extend infrastructure to accommodate development
- 'Track Site' Housing
  - Relocate track/football practice field to site east of railroad, north of Brizzolara Creek
  - Extend California Blvd. to new track/practice field site
  - Replace parking spaces located in parking lot G2

    - Extend infrastructure to accommodate development
    - Improve pedestrian and bicycle access to Academic Core
- 'University House' Housing
    - Identify a different residence for the President's family.
    - Determine if the president's residence will be incorporated into the development or demolished
- 'Stenner Creek Road' Housing
    - Relocate ag facilities
    - Extend infrastructure to accommodate development
    - Improve pedestrian and bicycle access to Academic Core
- 'H9' Housing
    - No relocation required
    - Provide vehicular road access to site
    - Extend infrastructure to accommodate development

Monitoring and Adjusting

Life of the Plan

This Master Plan Update looks out to the year 2035, laying out the land use pattern and forecasting the facilities needs of the campus as enrollment grows and programs adapt, to meet the needs of the changing campus. Although it is a long range planning document, it needs to be revisited periodically for adjustments and amendments as University interests change. The University anticipates that the Master Plan will be revisited and updated in ten years, to ensure it is still on track with University goals. Every five years, a comprehensive review will be taken to determine if an update is required in a shorter time period.

Environmental Impact Report

A comprehensive environmental impact report (EIR) has been prepared for this 2035 Master Plan Update, pursuant to the California Environmental Quality Act (CEQA). An EIR is a detailed analysis of the potential environmental effects of a plan or development project. It identifies alternatives to the proposed plan, and presents ways to reduce or avoid potential environmental effects. Mitigation measures are identified, and required to be carried out to move forward with plan components. These mitigations and how they will be monitored have been incorporated into the Master Plan as policies, where possible, to ensure implementation as the plan moves forward.

Master Plan Amendments

As the Master Plan unfolds, changes may be required to accommodate shifting priorities, or unforeseen circumstances. Any alteration to the Master Plan Map will require a formal Master Plan Amendment with California State University Board of Trustees approval.

Responsibilities for Implementation

Facilities Planning and Capital Projects - The Office of Facilities Planning and Capital Projects (FPCP) is responsible for the management, update, and implementation of the Master Plan. A subdivision of the Facilities Management and Development Department, FPCP works with campus clients to upgrade, remodel, and construct campus facilities, as well as plan for accomplishing the long range vision of the University. Responsibilities include contracting with architects and other consultants, as appropriate, during the design process, conducting required environmental review, overseeing construction, and monitoring long-term impacts.

Stakeholders - There are many groups and individuals who are considered stakeholders in the future development of the campus. As new buildings are planned and programmed, those groups who have interest in the project help guide the design. Each College takes an active role in the development of its facilities, from new animal unit facilities to research buildings, to selecting furniture for offices. Faculty, staff, and students alike participate in configuring the spaces in which they teach and learn.

The greater community of San Luis Obispo is also a stakeholder in Cal Poly development. The University informs the City staff and elected officials of upcoming issues that might interest the City, and invites residents and business owners to participate in the planning process to voice their concerns and suggest solutions.

Campus Planning Committee - The University's Campus Planning Committee is advisory to the President. The committee's primary function is to assist the President in the coordination, development, and control of a long-range plan for the physical development of the campus, within a framework of policy established by the Trustees of The California State University. The committee serves in an advisory capacity in relation to the following:

1. Development and maintenance of a long-range plan for the physical development of the campus.
2. Selection of sites for each new building and other physical facilities on any University-owned property.
3. Review of the work of the architects during the schematic drawings phase.
4. Review of recommendations on the five-year and other long-range building programs.
5. Review of all proposed projects to be constructed on the campus that will have an architectural and/or environmental impact. These projects will include, but are not necessarily limited to, structures, roads, walks, signs, etc.
6. Study and review such other areas as may be delegated to it by the President.
7. Work with city and county planning commissions on matters related to campus development, zoning in areas surrounding the University, streets, and highways leading to and from the campus, and other matters.

The membership of the Campus Planning Committee is as follows:

1. President (Chair)
2. Provost (Vice Chair)
3. Chief of Staff
4. Vice President for University Development
5. Vice President for Student Affairs
6. One representative from College of Agriculture, Food and Environmental Sciences nominated by the Dean
7. One representative from the College of Architecture and Environmental Design nominated by the Dean
8. Senior Vice President for Administration & Finance
9. Consulting Architect
10. Facility Planner, Campus
11. Facility Planner, Chancellor's Office
12. Two representatives from the Academic Senate nominated by the Executive Committee of the Academic Senate
13. Representative of the staff (appointed by the President)
14. ASI President or ASI Chair of the Board

15. Two representatives of the City of San Luis Obispo nominated by the Mayor, with one member being an elected official and one member representing staff.
16. Two representatives of the County of San Luis Obispo nominated by the Chair of the Board of Supervisors, with one member being an elected official and one member representing staff
17. Chair, Campus Landscape Committee
18. Vice Provost for Academic Programs and Planning
19. Executive Director for Cal Poly Corporation
20. Executive Director for ASI

Board of Trustees - The Board of Trustees is responsible for the oversight of the California State University. The Board adopts rules, regulations, and policies governing the California State University, and has authority over use of property, development of facilities, and fiscal resources management. This Master Plan Update, all Master Plan Amendments, development plans, and schematic drawings are reviewed and approved by the Board.

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Appendix

The following principles are organized by topic heading in the Master Plan. They are categorized as GP (General Principle), MPP (Master Plan Principle), IP (Implementation Program) or OR (Other Recommendation). See the Introduction for further explanation of these categories. The columns to the right reiterate the topic headings and the "X's" indicate those topics most related to the principle.

			MASTER PLAN PRINCIPLES	Process and Community Engagement	Teaching and Learning	Agricultural Lands	Residential Community	University Life	Recreation and Intercollegiate Athletics	Institutional Support	Public Safety	Regional Connection	Design Character	Sustainability and Environmental Stewardship	Transportation and Circulation	Infrastructure
			PROCESS AND COMMUNITY ENGAGEMENT													
Transparency and Off Campus Impacts	GP	1	Cal Poly should consider potential impacts -- including but not limited to traffic, parking, noise and glare -- on surrounding areas, especially nearby single-family residential neighborhoods, in its land use planning, building and site design, and operations.	X	X	X	X	X	X	X	X	X	X	X	X	X
	GP	2	Cal Poly should inform local agencies and the community prior to amending the Master Plan or developing major new projects, and provide opportunities for comments.	X	X	X	X	X	X	X	X	X	X	X	X	X
Replacement	GP	3	In cases where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move.	X	X	X	X	X	X	X	X	X	X	X	X	X
	GP	4	Cal Poly should evaluate both past investment and the need for future expansion when planning for new and redeveloped facilities.	X	X	X	X	X	X	X	X	X	X	X	X	X

			MASTER PLAN PRINCIPLES	Process and Community Engagement	Teaching and Learning	Agricultural Lands	Residential Community	University Life	Recreation and Intercollegiate Athletics	Institutional Support	Public Safety	Regional Connection	Design Character	Sustainability and Environmental Stewardship	Transportation and Circulation	Infrastructure
Student Involvement	OR	1	Student involvement should be maintained and encouraged in the development of campus facilities, enrollment planning, campus character, and the "learn-by-doing" approach.	X	X	X	X	X	X	X	X	X	X	X	X	X
			TEACHING AND LEARNING													
GP: Primacy of Academic Mission	GP	5	Cal Poly's land and resource uses should advance the University's academic mission.		X	X								X		X
GP: Learn-by-doing	GP	6	Planning should preserve and encourage the "learn-by-doing" approach to Cal Poly's academic curriculum and reflect that approach in the overall campus character, including outdoor teaching and learning (OTL).		X	X							X			
GP: Forward Looking and Adaptability	GP	7	Planning should consider not only current needs and trends, but also changing academic priorities and new pedagogical techniques.		X	X							X			
Academic Core: Emphasis on Teaching and	MPP	1	The mix of uses and the siting and design of buildings and open spaces in the Academic Core should create an environment that fosters high quality learning experiences, intellectual inquiry and collegial interaction.		X			X		X			X			

			MASTER PLAN PRINCIPLES	Process and Community Engagement	Teaching and Learning	Agricultural Lands	Residential Community	University Life	Recreation and Intercollegiate Athletics	Institutional Support	Public Safety	Regional Connection	Design Character	Sustainability and Environmental Stewardship	Transportation and Circulation	Infrastructure
Learning	MPP	2	The Academic Core should be reserved primarily for teaching and learning activities (including mixed-use learn-by-doing spaces), faculty offices, labs and research, and other related support functions including co-curricular activities, food service and recreation/leisure.		X		X	X	X	X			X		X	
Academic Core: Efficient Use of Land	MPP	3	In general, instructional facilities (apart from various outdoor teaching and learning areas) should be located within a 10-minute walk of one another in the campus Academic Core.		X		X	X		X			X	X	X	
	MPP	4	The Academic Core should be developed at densities that reflect the limited availability of land in that central location. Older, inefficient one-story buildings should eventually be redeveloped with multi-story structures and associated open spaces. No new building with fewer than three stories should be developed in the Academic Core.		X								X	X	X	
Informal Learning and Cross Discipline	MPP	5	The Academic Core should include a variety of places, indoor and outdoor, where informal learning, interaction and socialization can occur as well as formal instruction. Where feasible, new buildings should integrate these activities within a single structure.		X		X	X		X			X	X	X	

			MASTER PLAN PRINCIPLES	Process and Community Engagement	Teaching and Learning	Agricultural Lands	Residential Community	University Life	Recreation and Intercollegiate Athletics	Institutional Support	Public Safety	Regional Connection	Design Character	Sustainability and Environmental Stewardship	Transportation and Circulation	Infrastructure
Collaboration	MPP	6	The siting and design of a new facility should acknowledge its context and enhance connections among related functions; generally, more specialized facilities should be located farther from the center of campus while those that are more general and flexible in nature should gravitate toward the center.		X		X	X	X	X			X		X	
	MPP	7	The core should be designed with visible opportunities for interactions between different colleges so that students, faculty, and staff are aware of and involved in other colleges and departments; these should include, for example, neutral multi-use buildings and commons that promote collaboration and connections among disciplines.		X			X		X			X			
Size and Setting	MPP	8	Sites and facilities for all activities should be sized appropriate to their expected purposes.		X	X	X	X	X	X	X	X	X	X	X	X
	MPP	9	In addition to appropriate infrastructure and technology, instructional spaces should be designed to best enhance the teaching/learning environment considering such variables as floor plans, windows, views, natural light, air quality, adjacencies and circulation.		X	X							X	X		X
Flexibility and Adaptability	MPP	10	A variety of learning spaces should be available to support different types of interactions, e.g. private (individual) study, small groups, large groups, formal and informal meetings.		X	X	X	X					X			

			MASTER PLAN PRINCIPLES	Process and Community Engagement	Teaching and Learning	Agricultural Lands	Residential Community	University Life	Recreation and Intercollegiate Athletics	Institutional Support	Public Safety	Regional Connection	Design Character	Sustainability and Environmental Stewardship	Transportation and Circulation	Infrastructure
	MPP	11	Because academic priorities, technology and pedagogy are dynamic and changing, learning spaces should be kept as flexible as possible to ensure viability long into the future.		X	X		X					X			
	MPP	12	Campus planning efforts should consider the increasingly important role of technology in defining campus character for on-campus, commuting, and distance-learning students.		X					X			X		X	
	MPP	13	Some facilities should be designed to accommodate the needs of extended and/or executive education.		X							X	X			
Relocations	MPP	14	Cal Poly should minimize relocations or disturbances of activities that depend on long-term use of a site, including links to its biological or geological features, for research or related educational purposes, unless other important University goals override.	X	X	X	X	X	X	X		X	X	X	X	X
Outdoor Teaching and Learning	MPP	15	Cal Poly should continue to recognize Outdoor Teaching and Learning (OTL) as important to the University's character, history and ongoing mission and that OTL extends beyond agricultural facilities and encompasses many kinds of teaching and learning opportunities across numerous disciplines.		X	X	X	X					X	X		
	MPP	16	OTL activities that do not require extensive amounts of land should be integrated within the Academic Core where practical.		X	X	X	X					X		X	

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	MPP	17	In addition to considering pedagogy, OTL sites should also be sized appropriately for application of best practices for managing natural resources.		X	X							X	X		
Design of Instructional Spaces	IP	1	Cal Poly should apply the most current research regarding effective learning environments -- including such factors as classroom configuration, technology, furniture, lighting, acoustics, color, access and egress -- to the programming, design and construction of new or remodeled buildings that include instructional space.		X	X							X	X		X
Flexible Scheduling	IP	2	Cal Poly should evaluate the potential for greater flexibility and efficiency in scheduling, including summer session, to serve more students and decrease time to degrees, without requiring new capital investment.		X		X	X		X	X		X	X		X
Variety in Size and Type of Spaces	OR	9	Informal learning spaces such as meeting, seminar and conference rooms should be designed with a variety of sizes to accommodate different group sizes and purposes.		X											

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Continual Adaptation	OR	10	Cal Poly should continually evaluate how changes in technology and socio-economic forces affect both pedagogy and the development of the physical campus, and adapt its plans, teaching and management practices when appropriate.		X	X	X	X		X			X	X	X	X
			RESIDENTIAL COMMUNITY													
Increase Students Living on Campus	GP	8	The percentage of students living in on-campus housing should be increased and Cal Poly should continue to develop into a livable residential campus, where academic facilities, housing, recreation, social places, and other support facilities and activities are integrated.				X	X	X	X			X	X	X	
Student Housing Types	MPP	18	Housing for first year students should generally be dormitory style, in proximity to other first-year housing, campus dining and other support services.				X	X								
	MPP	19	New student housing not oriented primarily to first-year students, should emphasize apartment style living.				X	X					X			
Services and Amenities	MPP	20	Support services and facilities such as retail, food outlets, study and workspaces, and recreational amenities should be incorporated into new housing where possible.				X	X					X			

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	MPP	21	As Cal Poly becomes even more of a residential campus, entertainment, recreation, and social facilities should be provided to support a 24-hour community.				X	X			X	X	X			
	MPP	22	Residential environments should support learning, including study space, internet infrastructure and learning support within residential complexes. Such environments are particularly important to undergraduate students living away from home for the first time.		X		X	X								
Funding	OR	11	University provided housing must be self-supporting.	X			X									
	OR	12	Cal Poly may utilize a variety of development and funding options for housing, including public private partnerships.	X			X									
Faculty Off Campus Option	OR	13	Faculty/staff housing should be considered for appropriate on-campus sites, but off-campus options may also be suitable.				X									
			UNIVERSITY LIFE													

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Campus Services	MPP	23	The following types of services should be provided on campus: (1) services that are needed specifically by students (e.g., library, advising, bookstore); (2) services that benefit from or require knowledge of the campus and that require coordination with academics or other campus services (e.g., financial aid, academic assistance, disability resources, personal counseling for students); and (3) services used frequently by a considerable number of students, faculty and/or staff daily (e.g., food service, banking, health care).				X	X		X					X	
	MPP	24	Commercial services should be provided on campus that support residents and that help to reduce the need for students, faculty and staff to run errands off campus during the day.				X	X		X					X	
	MPP	25	Services with frequent off-campus interaction - such as visits by potential students, donors, parents, vendors or other guests - should be located close to off-campus circulation routes and parking facilities.				X	X		X					X	
	MPP	26	Related services that require face-to-face interactions should be coordinated and consolidated in central, accessible locations, convenient to their clientele.				X	X		X					X	

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Activity Centers	MPP	27	Several places within the core should continue to develop into more intense centers of community activities, including but not limited to, a mixed-use activity center near Brizzolara Creek and Via Carta, the expanded library, the UU and Mustang Way areas.		X		X	X	X	X			X		X	
Features of Public Areas	MPP	28	Campus public areas should incorporate landscaping and amenities such as flexible seating areas, wireless technology, electrical power, trees, public art, food vendors, and other student –focused amenities.		X		X	X		X			X			X
A Diverse Community	OR	14	To better accommodate a diverse community that reflects people with different learning styles, as well as people from different personal, ethnic and cultural situations and needs, University-provided services should be offered in a variety of cost ranges and forms.		X		X	X		X		X				
Wellness	OR	15	Health and wellness among the campus community should be encouraged by providing a variety of types of opportunities to engage in healthy behaviors.				X	X	X							
			RECREATION AND INTERCOLLEGIATE ATHLETICS													

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Adequate Facilities	MPP	29	Recreational spaces and facilities should be provided to serve needs of the campus community. Existing deficiencies should be addressed to the extent practical, and facilities provided prior to or in conjunction with new on-campus housing or significant increases in student enrollment.				X	X	X							
Design	MPP	30	Recreation and athletic facilities should be designed to meet specific standards when necessary, such as those required for NCAA and other intercollegiate competitions.					X	X							
	MPP	31	In general, recreational and athletic spaces should be designed for multiple users and a variety of activities, including academic purposes, and should accommodate both informal recreation and organized sports programs and be managed through mutual use agreements.		X		X	X	X							
	MPP	32	Recreation and athletics field and facility design should incorporate space for spectators, ancillary facilities, and access to field maintenance equipment.				X	X	X							
Location	MPP	33	Recreational and athletic facilities should be in close proximity to the population they are intended to serve.				X	X	X						X	
	MPP	34	As expansion or core redevelopment is planned, leisure and active (programmable) recreation should be incorporated.		X		X	X	X							

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	MPP	35	Future intercollegiate facilities and large programmable recreation facilities (fields, gyms, and courts) should be located outside of the Academic Core with integrated amenities promoting access.		X				X						X	
Partnerships	IP	3	Cal Poly should consider partnership opportunities for development, management and use of recreation facilities by accommodating diversity of needs, interests and resources.						X							
Managing Costs	OR	16	Cal Poly should encourage more student, faculty, staff and community use of facilities by managing the cost of use/participation.						X							
			INSTITUTIONAL SUPPORT													
Appropriate Size and Flexibility	MPP	36	Public services and utilities should support the University efficiently, with the flexibility to meet changing needs, and designed for ease of maintenance and renovation.							X						X
	MPP	37	Support services should be sized and designed to accommodate peak periods, or demand managed so as to even out peaks - e.g., class schedules and exams spread out over the day and week, rotation of registration priorities.		X		X	X		X	X				X	X
	MPP	38	Service centers of all types (e.g., advising, counseling, health care) should be designed with sufficient space to accommodate students (or other clientele) waiting for					X		X						X

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			service.													
Sustainable Design	MPP	39	Development of campus facilities and their utility infrastructure support should consider sustainability, alternative sources, self-sufficiency, life-cycle costing and/or other strategies to minimize impacts on the environment.							X				X		X
Collaborative Planning	OR	17	Support services should be planned with a holistic approach using collaborative interactive processes to involve all parties delivering and receiving services.					X		X						
Accessibility and Safety	OR	18	Campus services and facilities must be designed to meet or exceed applicable legal guidelines such as access for those with physical or learning disabilities, fire safety, and emergency response systems.					X		X	X					
			REGIONAL CONNECTIONS													
Relation to Academic Mission	MPP	40	Ancillary activities should clearly complement teaching and learning.									X				
	MPP	41	Ancillary facilities should not compete for land with instructional needs within or near the Academic Core and should generally be located at more remote sites unless other considerations override.		X		X	X		X		X				
			SUSTAINABILITY AND ENVIRONMENTAL													

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			STEWARDSHIP													
GP: Sustainability as Overarching Consideration	GP	9	Cal Poly should be sustainable with regard to its land and resource planning, as well as site and building design, and operations. Cal Poly should meet or exceed all state and system-wide sustainability policies.			X	X	X					X	X	X	X
GP: Sustainability Leadership	GP	10	As an important element of Cal Poly's academic mission, the University should be proactive leader in wise and sustainable land and resource management.		X	X								X	X	X
GP: Environ-mental Suitability	GP	11	Land uses should be suitable to their locations considering the environmental features of the proposed sites.		X	X	X	X	X	X	X	X	X	X	X	X
GP: Value of Open Space	GP	12	Cal Poly's scenic setting – a campus surrounded by open spaces -- should be preserved; its open lands and the surrounding natural environment are highly valued and should be considered in campus planning efforts.			X		X					X	X		
	GP	13	Open space should be incorporated into the core campus and integrated into the scope of every new building project, for aesthetics, leisure, social interactions and activities contributing to a healthy lifestyle.			X		X					X	X		
Sustainable Living	MPP	42	On campus residential areas should include spaces and facilities that support a sustainable lifestyle.				X	X						X		

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Avoid Impacts	MPP	43	Impacts to environmentally sensitive areas should be avoided; environmentally degraded areas should be enhanced or restored where practical.		X	X	X	X	X	X	X	X	X	X	X	X
Connections	MPP	44	Open spaces should form links (spaces and corridors) at all scales to form visual, recreational and access connections.		X	X	X	X	X	X		X	X	X	X	
	MPP	45	The siting and design of campus buildings and other features should reflect and enhance visual and physical connections to the surrounding natural environment and outdoor spaces on campus.		X	X	X	X	X	X		X	X	X	X	
Agriculture and Habitat Protection	MPP	46	Cal Poly should preserve and enhance the viability of agriculture and natural habitat systems on its holdings by providing adequate land area including appropriate buffers, connectivity or corridors between related natural communities, and linear continuity along streams.		X	X							X	X		
Renewables	IP	4	Cal Poly should continue its program of identifying areas for solar and other forms of renewable energy.											X		X
Energy and Water Conservation	IP	5	Cal Poly should continue its program of retrofitting older buildings for energy and water efficiency.			X							X	X		X
	IP	6	Cal Poly should investigate the use of reclaimed water and the use of grey water systems; turf should be limited to high use areas only.			X	X	X					X	X		X
	IP	7	Cal Poly should investigate the potential of becoming a climate action reserve.											X		

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	OR	19	Infrastructure development should maximize resource conservation, leverage current policy and practice in support of sustainable design, consider long-term return on energy investment, and establish a foundation for future revenue potential.			X							X	X		X
	OR	20	Cal Poly should strive to be a net zero campus by investing in renewable power and prioritizing on-campus generation.											X		X
	OR	21	Cal Poly should continue to exceed Title 24 Cal Green requirements in new construction.		X	X	X	X	X	X		X	X	X		X
Solid Waste and Recycling	OR	22	Cal Poly should plan for solid waste management, and in particular for recyclables, in all future development.		X	X	X	X	X	X		X	X	X		X
Low Impact Design	OR	23	Cal Poly should be the model for Low Impact Design principles.		X	X	X		X	X		X	X	X	X	X
Resource Stewardship and Academic Mission	OR	24	Cal Poly should be a leader in resource stewardship; it should manage its natural resources and design and operate its buildings so that they are an integral component of current and future research, education and living experiences involving daily student, faculty and staff participation.		X	X	X	X		X			X	X	X	X

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Fundraising	OR	25	Cal Poly should integrate sustainability principles into fundraising priorities.											X		
Trails	IP	8	A trail plan should be developed to provide access to Cal Poly's natural resources and open spaces where appropriate considering factors such as safety, avoidance of degradation of the resources and interference with educational priorities; such a plan should address design, management and signage to addressing appropriate use and signage, including possible links between off campus public lands.						X					X		
Leadership and Partnerships	IP	9	Cal Poly should take a proactive leadership role in the preservation of the area's natural resources and develop strategic partnerships with other agencies and organizations involved with resource stewardship.			X								X		
			TRANSPORATION AND CIRCULATION													

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Modal Shift to Active Transport-ation	MPP	47	Access to and around campus should be efficient and effective for all modes, while shifting to an active transportation system that gives priority to walking, bikes and electric bikes (and similar technologies), and transit and intra-campus shuttles over cars. Existing roads in the Academic Core, including North Perimeter, should be re-designed and managed to reflect mode priorities.				X	X		X	X		X	X	X	X
	MPP	48	Single occupancy vehicle trips to campus should be reduced by increasing ride sharing and by substituting cars with active transportation options, including walking, bicycling and transit.				X	X		X	X		X	X	X	X
	MPP	49	Cal Poly's on-campus pedestrian, bicycle, transit and vehicle circulation systems should seamlessly connect with those of the City, County, RTA and Cal Trans.				X	X			X			X	X	X
	MPP	50	Conflicts among circulation modes should be avoided through such methods as separated routes, grade separated paths, traffic calming and intersection controls.					X			X		X		X	X
	MPP	51	A multi-modal transportation center should be planned and funded on the campus.				X	X		X	X		X	X	X	X
Trip Reduction Over Parking	MPP	52	Cal Poly should give higher priority in committing resources to active transportation and trip reduction measures over providing more parking on-campus.				X	X		X	X		X	X	X	X

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Connectivity	MPP	53	Increased connectivity between the Academic Core, peripheral facilities, and residential neighborhoods should be encouraged.		X	X	X	X	X	X	X		X		X	X
	MPP	54	On-campus residential neighborhoods should be designed with convenient access to the core of campus, including safe and convenient pedestrian and bicycle paths; consideration should be given to a shuttle service or other intra-campus alternatives when residential developments are beyond convenient walking distance.				X	X						X	X	X
	MPP	55	On-campus residential developments should be provided convenient access to public transportation stops and improved transit access to off-campus amenities.				X	X						X	X	X
Wayfinding	MPP	56	Campus wayfinding should clearly identify places, routes, and destinations and enable people to orient themselves to find their destination.										X		X	
Parking	MPP	57	Parking should be provided in appropriate amounts and locations depending on the purpose.			X	X	X	X	X	X	X	X		X	X
	MPP	58	Major parking facilities should be located to "intercept" cars outside the Academic Core; drivers should be able to conveniently transition to other active modes or intra-campus shuttles or other options.			X	X	X	X	X	X	X	X		X	X

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	MPP	59	Parking facilities should be sited and designed to reduce their visual obtrusiveness but at the same time be responsive to safety and vandalism concerns.						X	X	X	X	X		X	X
Comprehen-sive System	MPP	60	The campus circulation system should accommodate access for deliveries, maintenance, public safety, persons with other needs, and public transit/internal shuttles.					X		X	X				X	X
Safety	MPP	61	All modes of the circulation system should be safe; routes for all modes should be adequately lighted, graded and constructed for both ease of movement and safety.		X		X	X			X		X		X	X
	IP	10	Educational programs that promote safety in all modes should be improved and better directed to target audiences.								X				X	
Updated Implementati on Plan	IP	11	Cal Poly should incorporate pedestrian, bicycle and transit plans into a comprehensive and updated multi-modal active transportation plan designed consistent with leading standards.											X	X	
National Leader and Multi-Disciplinary Center	IP	12	Cal Poly should be a national leader in multi-modal transportation best practices, related research and technology transfer and should develop a multidisciplinary center or institute focused on transportation issues including planning, research and modeling actual practices.											X	X	

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SLO an Active Transpor-tation Model Community	IP	13	As a regional leader in fostering active transportation, Cal Poly should partner with local, regional and national public and private organizations (including but not limited to the City, County, Caltrans, SLOCOG, RTA, Amtrak, and Union Pacific Railroad) to make San Luis Obispo a model for modal shift from single occupancy autos to a complete active transportation system.											X	X	
Implementing the Modal Shift	IP	14	Cal Poly should strengthen policies that discourage people from bringing cars to campus, especially for first and second year students living on campus residents, and other students who reside on or near campus, and should concurrently provide the services, infrastructure and incentives for using active transportation options so that most students will not want a car.				X						X	X	X	
	IP	15	Education, incentives and the use of emerging technologies such as dynamic matching should all be supported and utilized to improve ridesharing and the choice of active transportation modes.											X	X	
	IP	16	Educational and information campaigns related to modal shift should be compelling, consistent, effective and across multiple media.											X	X	
	IP	17	Measurable objectives should be established to track progress toward shifting modes to an active transportation system including social science metrics related to											X	X	

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			attitudinal as well as behavior shifts.													
	IP	18	For the desired modal shift to be expeditiously implemented, more robust and sustainable funding sources must be identified.											X	X	
Bicycles	IP	19	Cal Poly should partner with the City to help develop off-campus bicycle improvements as prescribed in the city's bike plan and that improve connections between the campus and community.											X	X	
	IP	20	Convenient bicycle routes throughout the campus, as well as bike parking located as near as practical to campus origins and destinations, should be provided to encourage bicycle use.					X					X	X	X	
	IP	21	On campus housing should be designed to accommodate bicycle parking that is indoors or otherwise protected from the elements.				X	X					X	X	X	
Buses	IP	22	Cal Poly should continue to work with the City and RTA to make public transportation more convenient than automobile use through such improvements as shorter headways, increased evening and weekend services, and greater convenience for on-campus residents.				X	X						X	X	
	IP	23	Cal Poly should work toward restoring, expanding and publicizing extra-regional bus service.				X							X	X	

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Parking Demand Management	IP	24	Parking should be efficiently managed to reduce the need for parking spaces through real time information regarding space location and availability, variable time pricing, and other best practices.				X	X					X	X	X	X
Future Parking Facilities	IP	26	A system should be established whereby sponsored guests can obtain parking passes without crossing the campus to a single staffed kiosk.										X	X	X	X
	OR	25	Any future or renovated parking facility should meet the certification standards of the Green Parking Council or similar organization.										X	X	X	
Connections to the Core	OR	26	Where activities are located beyond walking distance from the Academic Core, alternative transportation options should be provided.												X	
	OR	27	If intra-campus shuttles or similar future services are provided, they should be low or zero emission (such as electric, CNG or gas hybrid).											X	X	
			DESIGN CHARACTER													
GP: Consider Context	GP	14	The siting of new land uses and buildings should always be considered within the context of the greater campus; functional connections among related activities should be considered, including the nature of activities, "adjacencies" and paths of travel.		X			X		X			X		X	

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GP: Connections and Views	GP	15	The siting and design of campus buildings and other features should reflect and enhance visual and physical connections to the surrounding natural environment and outdoor spaces on campus, and should maintain, enhance or create aesthetically pleasing views and vistas.										X			
GP: Best Design Practices	GP	16	Campus buildings should incorporate the best design elements regarding massing, human scale, materials, articulation, architectural interest, sustainability and connections with surrounding buildings and spaces; design should reflect authenticity and attention to details in materials, historical context and architectural style.										X	X		
Landmark Spaces	MPP	62	The siting and design of campus buildings and other features should recognize the importance of preserving certain open space areas including Dexter Lawn, O'Neill Green, the Arboretum, and Poly Canyon, and strive to create additional outdoor spaces.				X	X				X	X		X	
	MPP	63	Landmarks and place-making elements that identify special campus locations such as Dexter Lawn, the Engineering Quad, Via Carta Plaza and Mustang Way should be preserved and enhanced, and new ones created.				X	X					X			
Design and Scale	MPP	64	The siting and design of campus facilities should incorporate a full 360-degree approach, where all sides of the facility contribute to a cohesive and aesthetically										X			

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			pleasing experience.													
	MPP	65	Special attention should be placed on developing the in-between, or interstitial, spaces into well-designed social gathering opportunities.				X	X					X			
	MPP	66	The campus should incorporate a "central" gathering space unifying the upper and lower campus areas for the campus community. Additional ways to better connect these areas include circulation routes and the location and design of open spaces.				X	X					X		X	
	MPP	67	The planning, siting, design and construction of campus facilities should incorporate the concept of transparency with regard to people-facility relationships (e.g. increased use of glass in building; exposure to processes).		X	X	X	X					X			
	MPP	68	The design of campus facilities should maintain and incorporate a pedestrian sense of scale.					X					X		X	
	MPP	69	Outdoor spaces should have perceived boundaries and "sense of space" that help to define them as recognizable campus places.					X					X			

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Pedestrian Emphasis	MPP	70	The campus Academic Core should be primarily pedestrian oriented with simple, cohesive and straightforward pedestrian circulation and appropriate amenities, scale and design at the ground level.		X		X	X			X		X	X	X	X
Gateways and Edges	MPP	71	Gateway entrances to Cal Poly should be easily recognizable and reflect its mission as an institution of higher learning.				X	X		X		X	X		X	
	MPP	72	Campus design and wayfinding should reflect an enhanced connection to, and interaction with, the surrounding City of San Luis Obispo.					X		X		X	X		X	
	MPP	73	The edge of campus should be transparent, friendly, and aesthetically pleasing to the surrounding community.					X				X	X		X	
Temperate Climate	OR	28	The design of the built environment (interior and exterior) should take full advantage of the Central Coast's Mediterranean climate for health, environmental, energy efficiency and aesthetic reasons.										X	X		X
Design and Climate Control	OR	29	The design of campus buildings and outdoor spaces, with regard to climate control, should recognize the purpose and intent of the facility (i.e. technology lab vs. lecture space) and the effects of siting, sun exposure, wind, materials, and air circulation.		X								X	X		X
			INFRASTRUCTURE													

			MASTER PLAN PRINCIPLES	Process and Community Engagement	Teaching and Learning	Agricultural Lands	Residential Community	University Life	Recreation and Intercollegiate Athletics	Institutional Support	Public Safety	Regional Connection	Design Character	Sustainability and Environmental Stewardship	Transportation and Circulation	Infrastructure
Invisibility	MPP	74	In general, public facilities and utility support structures should be concealed from view unless their visibility serves an explicit educational function.										X			X
Deferred Maintenance and Adapted Re-use	IP	27	Cal Poly should develop a program to adequately maintain its infrastructure and other physical assets, including addressing deferred maintenance, to extend the useful lives of those assets; the adaptive re-use of existing buildings should be considered in lieu of new construction where appropriate based on the evaluation of such factors as costs (including future maintenance and operating costs), the program/use of the facility, the adequacy of technology for contemporary and future users, the appropriate intensity/density of development for the site location, and environmental impacts.							X			X	X		X

	Committees and Recommendations	Reference to Master Plan Edited Principles
No.	The following are principles reviewed and/or recommended by the various Master Plan Advisory Committees. These recommendations were later edited for inclusion in the Master Plan; the edits were to reduce redundancy, to increase clarity and consistency, and to incorporate considerations from other sources of input. The column to the right indicates where among the Master Plan's edited principles a committee recommendation has been addressed.	
	GUIDING PRINCIPLES	GP 5
1	Cal Poly's land and resource uses should advance the University's academic mission.	GP 5
2	Planning should consider not only current needs and trends, but also changing academic priorities and new pedagogical techniques.	GP 7
3	Cal Poly should continue to develop into a livable residential campus, where academic facilities, housing, recreation, social places, and other support facilities and activities are integrated.	GP 8
4	Land uses should be suitable to their locations considering the environmental features of the proposed sites.	GP 11
5	Cal Poly should be sustainable with regard to its land and resource planning, site and building design, and operations.	GP 9
6	Cal Poly should meet or exceed all state and system-wide sustainability policies.	GP 9
7	The siting of new land uses and buildings should always be considered within the context of the greater campus; functional connections among related activities should be considered, including the nature of activities, "adjacencies" and safe and healthy paths of travel.	GP 14
8	Cal Poly's scenic setting – a campus surrounded by open spaces -- should be preserved.	GP 12,13
9	Cal Poly's open lands and the surrounding natural environment are highly valued and should be considered in any future campus planning efforts.	GP 12,13
10	Open spaces should form links (spaces and corridors) at all scales to form visual, recreational and access connections.	GP 14,15 MPP 44
11	Campus buildings should incorporate the best design elements regarding massing, human scale, materials, articulation, architectural interest, and a connection with surrounding urban spaces.	GP 16
12	Cal Poly should consider potential impacts -- including but not limited to traffic, parking, noise and glare -- on surrounding areas, especially nearby single-family residential neighborhoods, in its land use planning, building and site design, and operations.	GP 1
	ACADEMIC FACILITIES COMMITTEE	

	Committees and Recommendations	Reference to Master Plan Edited Principles
13	Cal Poly should continually evaluate how changes in technology and socio-economic forces affect both pedagogy and the development of the physical campus, and adapt its plans, teaching and management practices when appropriate.	GP 7, MPP 10,11,12 OR 10
14	The design of the Academic Core should emphasize the quality of the learning experience that occurs there.	MPP 1
15	The Academic Core should be reserved primarily for teaching and learning activities (including mixed-use learn-by-doing spaces), faculty offices, and other related support functions, while integrating a network of open spaces for outdoor learning, recreation, and social functions.	MPP 2
16	In general, instructional facilities (apart from various outdoor teaching and learning areas) should be located within a 10-minute walk of one another in the Academic Core.	MPP 3
17	The Academic Core should be developed at densities that reflect the limited availability of land in that central location.	MPP 4
18	Older, inefficient one-story buildings should eventually be redeveloped with multi-story structures and associated open spaces.	MPP 4
19	No new building with fewer than three stories should be developed in the Academic Core.	MPP 4
20	The Academic Core should be a mixed-use environment that enables learning and fosters intellectual inquiry through the siting and design of buildings, outdoor spaces, and social places.	MPP 1,7,27,28
21	The entire campus environment affects teaching and learning and, therefore, should be viewed as a place for teaching and learning, including informal as well as formal and outdoor as well as indoor spaces.	GP 5,6
22	The Academic Core should provide a variety of support service centers where informal learning, interaction and socialization can occur as well as formal instruction. New buildings should integrate these activities within a single structure.	MPP 1,2,5,27,28
23	Several places within the core should continue to develop into more intense centers of community activities, including but not limited to, a “Learn-by-Doing” commons, the expanded library, the UU and Mustang Way areas.	MPP 27
24	Such areas may include instructional facilities such as general-purpose classrooms, student and faculty research space, and offices as well as related support facilities accommodating co-curricular activities, food service and recreation/leisure.	MPP 1,2,5,7,10
25	The campus should include places where all Cal Poly community members, including faculty and staff, may interact and socialize in a collegial environment.	MPP 1,2,5,7
26	The campus should emphasize opportunities for interactions across disciplines.	MPP 1,6,7,67
27	It is important to provide visible opportunities for interactions between different colleges that are otherwise "siloed" - students, faculty, and staff need to be more aware of and involved in what is going on in other colleges and departments.	MPP 1,7,67

	Committees and Recommendations	Reference to Master Plan Edited Principles
28	The campus should include neutral places -- including multi-use buildings or commons -- that promote collaboration and connections among disciplines.	MPP 7, 67
29	Sites and facilities for all activities should be sized appropriate to their expected purposes.	MPP 8
30	The quality of interior space is critical to learning; the design of new building should consider factors such as floor plans, adjacencies, window views and natural light, lighting, air quality, and sustainability.	MPP 9, IP 1, OR 29
31	In addition to appropriate infrastructure and technology, instructional spaces should be designed to best enhance the teaching/learning environment considering such variables as windows, views, natural light, adjacencies and circulation.	MPP 9, IP 1, OR 29
32	Classroom design should be informed by the following principles from the literature on effective teaching and learning space: room geometry, comfortable furniture, flexible seating, space for the instructor to move around, good sight lines (including placement of projection equipment and screens), color, acoustics, zoned lighting, access and egress, space to congregate before and after class.	MPP 9,11, IP 1, OR 29
33	A variety of learning spaces should be available to support different types of interactions, e.g. private (individual) study, small groups, large groups, formal and informal meetings.	MPP 10, OR 9
34	Because academic priorities, technology and pedagogy are dynamic and changing, learning spaces should be kept as flexible as possible to ensure viability long into the future.	MPP 11
35	Cal Poly should minimize relocations or disturbances of activities that depend on long-term use of a site for research or related educational purposes, unless other important University goals override.	MPP 14
36	In cases where an activity must be relocated, new sites should be identified and replacement facilities developed prior to the move.	GP 3
37	Cal Poly should evaluate both past investment and the need for future expansion when planning for new and redeveloped facilities.	GP 4
38	Cal Poly should continue to recognize Outdoor Teaching and Learning (OTL) as important to the University's character, history and ongoing mission.	MPP 15
39	The campus commitment to OTL extends beyond agricultural facilities to include OTL features in support of the sciences, design, and other disciplines. OTL will also encompass the learning potential of campus environmental features, as well as outdoor student work and exhibit areas.	MPP 15
40	Where practical, OTL sites and facilities should be located near the Academic Core.	MPP 16
41	OTL activities that do not require extensive amounts of land should be integrated within the Academic Core.	MPP 16

	Committees and Recommendations	Reference to Master Plan Edited Principles
42	In addition to considering pedagogy, OTL sites should also be sized appropriately for application of best practices for managing natural resources.	MPP 17
43	Locations for OTL activities that are necessarily linked to site-specific biological or geological features that cannot be moved should be protected and appropriately managed.	MPP 14
44	Cal Poly should consider greater flexibility and efficiency in scheduling, including summer session, to serve more students and decrease time to degrees, without requiring new capital investment.	IP 2
45	Informal learning spaces such as meeting, seminar and conference rooms should be designed with a variety of sizes to accommodate different group sizes and purposes.	MPP 8,10, OR 9
46	As an important element of Cal Poly's academic mission, the University should be a proactive leader, facilitator and communicator in wise and sustainable land and resource management.	GP1
47	Cal Poly should inform local agencies and the community prior to amending the Master Plan or developing major new projects, and provide opportunities for comments.	GP 2
	HOUSING AND CAMPUS LIFE COMMITTEE	
48	Housing for first year students should generally be dormitory style, in proximity to other first-year housing, campus dining and other support services.	MPP 18
49	New student housing not oriented primarily to first-year students, should emphasize apartment style living.	MPP 19
50	Faculty/staff housing options may be suitable for off-campus locations.	OR 13
51	Support services and facilities such as retail, food outlets, study and workspaces, and recreational amenities should be incorporated into new housing where possible.	MPP 20
52	As Cal Poly becomes even more of a residential campus, entertainment, recreation, and social facilities should be provided to support a 24-hour community.	MPP 21
53	Residential environments should support learning, including study space, internet infrastructure and learning support within residential complexes. Such environments are particularly important to undergraduate students living away from home for the first time.	MPP 22
54	University provided housing must be self-supporting.	OR 11
55	Cal Poly may utilize a variety of development and funding options for housing, including private party partnerships.	OR 12
	CAMPUS CHARACTER AND PLACEMAKING COMMITTEE	

	Committees and Recommendations	Reference to Master Plan Edited Principles
56	Special attention should be placed on preserving and encouraging the "learn-by-doing" approach related to Cal Poly's academic curriculum and overall campus character, including outdoor teaching and learning (OTL).	GP 6
57	The "upper" (north of the Baker Science building) and "lower" campus areas should be better connected. Methods may include location of open spaces, routing of circulation systems, design of new facilities, and interdisciplinary class scheduling.	MPP 66
58	The siting and design of campus buildings and other features should recognize the importance of preserving certain open space areas including Dexter Lawn, Poly Grove, the Arboretum, and Poly Canyon, and strive to create additional outdoor spaces.	MPP 62,63
59	Landmarks and place-making elements that identify special campus locations such as Dexter Lawn, the Engineering Quad, Via Carta Plaza and Mustang Way should be preserved and enhanced, and new ones created.	MPP 62,62
60	Efforts should be taken to intensify the Academic Core to create additional open space and mixed-use facilities (e.g., integrated services; residential uses over academic and support space.)	MPP 1,2,4,5,27
61	Vehicular circulation within the Academic Core should be minimized to allow for additional gathering spaces and increased pedestrian circulation.	MPP 47,48,68,70
62	Parking facilities should generally be located at the campus perimeter to support and encourage a safe, pedestrian-friendly Academic Core.	MPP 58
63	Special attention should be placed on developing the in-between, or interstitial, spaces into well-designed social gathering opportunities.	MPP 65
64	The campus should incorporate a "central" gathering space unifying the upper and lower campus areas for the faculty-student community.	MPP 66
65	Campus buildings and spaces should be designed appropriately with regard to their respective academic neighborhood and also connect and integrate with adjacent academic neighborhoods.	MPP 7,14,15,16
66	Landscape and urban design should reinforce the identity of each academic neighborhood and serve to visually tie the campus together.	MPP 7,14,15,16
67	Increased connectivity between the Academic Core and peripheral facilities, residential communities, and academic neighborhoods should be encouraged.	MPP 53,54,55, IP 20,21,22
68	The planning, siting, design and construction of campus facilities should incorporate the concept of transparency with regard to people-facility relationships (e.g. increased use of glass in building; exposure to processes).	MPP 67
69	The design of campus facilities should maintain and incorporate a pedestrian sense of scale.	MPP 68
70	Outdoor spaces should have a sense of boundary and "sense of space" that help to define them as a recognizable campus places.	MPP 69

	Committees and Recommendations	Reference to Master Plan Edited Principles
71	Campus public areas should incorporate landscaping and amenities such as flexible seating areas, wireless technology, electrical power, trees, public art, food vendors, and other student –focused amenities.	MPP 28
72	Campus planning efforts should consider the increasingly important role of technology in defining campus character for on-campus, commuting, and distance-learning students.	MPP 12
73	The design of campus facilities should incorporate "360-degree" architecture where all sides of a building contribute to a cohesive and aesthetically pleasing pedestrian experience.	MPP 64
74	The design and construction of campus facilities should reflect authenticity and attention to detail in materials, historical context and architectural style.	GP 16
75	The siting and design of campus facilities, including public spaces and thoroughfares, should maintain, enhance or create aesthetically pleasing views and vistas.	GP 12,13,15, MPP 44,45
76	Views from public spaces and thoroughfares should be enhanced by careful siting of new structures, preservation of views to surrounding hillsides, and screening of unsightly utilitarian systems.	MP 12,13,15 MPP 44,45
77	The siting and design of campus buildings and other features should reflect and enhance visual and physical connections to the surrounding natural environment and outdoor spaces on campus.	GP 12,13,15
78	In general, public facilities and utility support structures should be concealed from view unless their visibility serves an explicit educational function.	MPP 74
79	Connecting spaces between campus facilities should promote simple, cohesive and straightforward pedestrian circulation.	MPP 56,65
80	Campus wayfinding should clearly identify places, routes, and destinations and enable people to orient themselves wherever they are on the campus and to find any destination with ease.	MPP 56
81	The percentage of students living in on-campus housing should be increased.	GP 8
82	On-campus residential enclaves or neighborhoods should consider the importance of proximate, high quality food establishments and additional student-focused activities, events, amenities, services, and extended hours.	GP 8, MPP 20,21,22
83	Residential communities should be supported by social infrastructure (i.e. food, entertainment, recreation, gathering spaces, activities, and services).	GP 8, MPP 20,21,22
84	The design of the built environment (interior and exterior) should take full advantage of the Central Coast's Mediterranean climate for health, environmental, energy efficiency and aesthetic reasons.	OR 28
85	Student involvement should be maintained and encouraged in the development of campus facilities, enrollment planning, campus character, and the "learn-by-doing" approach.	OR 1

	Committees and Recommendations	Reference to Master Plan Edited Principles
86	The design of campus buildings and outdoor spaces, with regard to climate control, should recognize the purpose and intent of the facility (i.e. technology lab vs. lecture space) and the effects of siting, sun exposure, wind, materials, and air circulation. The design of outdoor spaces on campus should also consider these effects and the regional temperate climate.	GP 16, OR 29
87	Parking facilities should be sited and designed to reduce their visual obtrusiveness but at the same time be responsive to safety and vandalism concerns.	MPP 59
88	Gateway entrances to Cal Poly should easily recognizable and reflect its mission as an institution of higher learning.	MPP 71
89	Campus design and wayfinding should reflect an enhanced connection to, and interaction with, the surrounding City of San Luis Obispo.	MPP 72,49
90	The edge of campus should be transparent, friendly, and aesthetically pleasing to the surrounding community.	MPP 73
91	Campus development should incorporate facilities designed to accommodate extended and/or executive education.	MPP 13
	RECREATION AND ATHLETICS COMMITTEE	
91	Recreation and athletic facilities should be designed to meet specific standards when necessary, such as those required for intercollegiate competitions.	MPP 30
92	In general, recreational and athletic spaces should be designed for multiple users and a variety of activities, including academic purposes, and should accommodate both informal recreation and organized sports programs.	MPP 31
93	Recreation and athletics field and facility design should incorporate space for spectators, ancillary facilities, and access to field maintenance equipment.	MPP 32
94	Recreational and athletic facilities should be in close proximity to the population they are intended to serve.	MPP 33
95	Incorporate alternative methods of travel within the core campus and outlying areas of the campus and beyond.	MPP 47,48,49,53, IP 11,19,20,11
96	As expansion or core redevelopment is planned, leisure and active (programmable) recreation should be incorporated.	MP 8, MPP 2,21,34, OR 15
97	Future intercollegiate facilities and large programmable recreation facilities (fields, gyms, and courts) should be located outside of the Academic Core with integrated amenities promoting access.	MPP 35
98	For athletics to be competitive, dedicated facility use or priority schedule through mutual use agreements will be required.	MPP 31
99	Health and wellness should be encouraged by providing a variety of types of opportunities for the campus community to engage in healthy behaviors.	OR 15

	Committees and Recommendations	Reference to Master Plan Edited Principles
100	As Cal Poly's existing recreational spaces are not sufficient to support the current needs of students, faculty and staff, additional recreation and sports facilities should be developed prior to (or in conjunction with) additional on-campus housing or significant increases in student enrollment.	MPP 29
101	The Mustang Way 'downtown' neighborhood should continue to be enhanced with gathering places, services and activities, and a second satellite activity neighborhood should be considered.	MPP 27,63
102	In cases where existing recreation or athletic facilities must be relocated, new sites should be identified and replacement facilities developed first.	GP 3
103	Trails should be developed on campus where appropriate to link City and federally owned open spaces (which may also function as wildlife corridors).	IP 8
104	On campus residential areas should include spaces and facilities that support a sustainable lifestyle.	MPP 42
105	Open spaces should form links (spaces and corridors) at all scales to form visual, recreational and access connections	GP 13, MPP 44
106	Open space should be integrated into the scope of every new building project, for aesthetics and well as for leisure and activities contributing to a healthy lifestyle.	GP 13
107	Cal Poly should encourage more student, faculty, staff and community use of facilities by managing the cost of use/participation.	OR 16
108	Cal Poly should pursue partnership opportunities for development, management and use of recreation facilities by community residents.	IP 3
	OPEN SPACE AND NATURAL RESOURCES COMMITTEE	
106	Impacts to environmentally sensitive areas should be avoided.	GP 11, MPP 43
107	Cal Poly should preserve and enhance the viability of agriculture and natural habitat systems on its holdings by providing adequate land area including appropriate buffers, connectivity or corridors between related natural communities, and linear continuity along streams.	MPP 46
108	As an important element of Cal Poly's academic mission, the University should be a proactive leader, facilitator and communicator in wise and sustainable land and resource management.	GP 10, OR 24
109	Trails and roads should be carefully designed and managed to avoid degradation of natural areas; a trail plan should be developed addressing appropriate use and signage.	IP 8
110	Cal Poly should provide appropriate public access to its natural resources to enhance recreation and education.	IP 8

	Committees and Recommendations	Reference to Master Plan Edited Principles
111	Cal Poly should provide adequate bicycle facilities.	MPP 47,49,54, IP 11,19,21
112	Cal Poly should work with regional agencies to provide appropriate bike routes.	MPP 49, IP 11,19
113	On campus bike routes should limit speed to reduce conflicts with pedestrians.	MPP 61, IP 10
114	Cal Poly should limit the use of vehicles for first year students.	IP 14
115	Cal Poly should set aside areas for solar and other forms of renewable energy.	IP 4
116	Cal Poly should focus on retrofitting older buildings for energy efficiency.	IP5
117	Environmentally degraded areas should be enhanced or restored.	MPP 43
118	Cal Poly should develop strategic partnerships with other organizations to preserve the area's natural resources.	IP 9
119	Cal Poly should investigate the use of reclaimed water and the use of grey water systems; turf should be limited to high use areas only.	IP 6
120	Cal Poly should plan for solid waste management, and in particular for recyclables, in all future development.	OR 22
121	Cal Poly should vigorously strive to exceed Title 24 Cal Green requirements.	OR 21
122	Cal Poly should strive to be the model for Low Impact Design principles.	OR 23
123	Cal Poly should be a leader in land and resource stewardship through the use and management of its properties.	GP 9,10, IP 9, OR 24
124	Cal Poly should manage and conserve its biological and other natural resources so that they are an integral component of current and future research, education and living experiences involving daily student, faculty and staff participation.	GP 9,10, IP 9, OR 24
125	Cal Poly should integrate sustainability principles into fundraising priorities.	OR 25
126	Cal Poly should provide for both formal and informal learning regarding sustainability and the natural environment.	GP 10
127	Cal Poly should manage its lands and develop future buildings to aid in the education of our students regarding sustainable practices.	GP 5,9
128	Cal Poly should take a proactive leadership role with federal, state and local efforts to conserve and manage its natural resources, as well as those in the region.	IP 9
129	Infrastructure development should maximize resource conservation, leverage current policy and practice in support of sustainable design, consider long-term return on energy investment, and establish a foundation for future revenue potential.	OR 19

	Committees and Recommendations	Reference to Master Plan Edited Principles
130	Development of campus facilities and their utility infrastructure support should consider sustainability, alternative sources, self-sufficiency, life-cycle costing and/or other strategies to minimize impacts on the environment.	MPP 39, IP 27
131	A policy regarding deferred maintenance and building reuse should be included.	IP 27
132	Cal Poly should investigate the potential of becoming a climate action reserve and implementing relevant protocols on campus were existing protocols are available (climateregistry.org)	IP 7
133	Cal Poly should strive to be a net zero campus by investing in renewable power and prioritizing on-campus generation.	OR 20
134		
	CIRCULATION COMMITTEE	
135	Access to and on campus should be efficient and effective for all modes, while establishing the following modal priorities in the core campus: 1) pedestrians; 2) bikes, e-bikes and similar technologies; 3) public transit and any future intra-campus shuttles or other technologies; 4) cars.	MPP 47
136	Existing roads in the Academic Core, including North Perimeter between the Poly Canyon Road intersection and University Avenue, should be re-designed and managed to reflect mode priorities.	MPP 47
137	Conflicts among circulation modes should be avoided through such methods as separated routes, grade separated paths, traffic calming, and intersection controls.	MPP 50
138	A multi-modal transportation center should be planned and funded on the campus.	MPP 51
139	Single occupancy vehicle trips to campus should be reduced by increasing ride sharing and by substituting cars with active transportation options, including walking, bicycling and transit.	MPP 48
140	Cal Poly's on-campus pedestrian, bicycle, transit and vehicle circulation systems should seamlessly connect with those of the City, County, RTA and Cal Trans.	MPP 49
141	Cal Poly should give higher priority in committing resources to active transportation and trip reduction measures over providing more parking on-campus.	MPP 52
142	On-campus residential developments should be designed with convenient access to the core campus, including safe and convenient pedestrian and bicycle paths; consideration should be given to a shuttle service or other intra-campus alternatives when residential developments are beyond convenient walking distance.	MPP 54
143	On-campus residential developments should be provided convenient access to public transportation stops and improved transit access to off-campus amenities.	MPP 55

	Committees and Recommendations	Reference to Master Plan Edited Principles
144	The Academic Core should be primarily pedestrian oriented.	MPP 70
145	Parking should be provided in appropriate amounts and locations depending on the purpose.	MPP 57
146	Major parking facilities should be located to "intercept" cars outside the Academic Core; drivers should be able to conveniently transition to other active modes or intra-campus shuttles or other options.	MPP 58
147	The campus circulation system should accommodate access for deliveries, maintenance, public safety, persons with other needs, and public transit/internal shuttles.	MPP 60
148	All modes of the circulation system should be safe; routes for all modes should be adequately lighted, graded and constructed for both ease of movement and safety.	MPP 61
149	Convenient bicycle parking should be provided as near as practical to campus origins and destinations.	IP 20,21
150	Any future or renovated parking facility should meet the certification standards of the Green Parking Council or similar organization.	OR 25
151	Educational and information campaigns related to modal shift should be compelling, consistent, effective and across multiple media.	IP 16
152	Measurable objectives should be established to track progress toward shifting modes to an active transportation system including social science metrics related to attitudinal as well as behavior shifts.	IP 17
153	Cal Poly should work toward restoring, expanding and publicizing extra-regional bus service.	IP 23
154	For the desired modal shift to be expeditiously implemented, more robust and sustainable funding sources must be identified.	IP 18
155	Intra-campus shuttles or similar future services should be low or zero emission (such as electric, CNG or gas hybrid).	OR 27
156	Cal Poly should use policies and incentives, including pricing strategies, to reduce parking demand.	IP 24
157	Cal Poly should incorporate existing pedestrian, bicycle and transit planning into a comprehensive and updated multi-modal active transportation plan designed consistent with leading standards.	IP 11
158	Cal Poly should strengthen policies that discourage people from bringing cars to campus, especially for on-campus residents and students who reside near campus, and should concurrently provide the services, infrastructure and incentives for using active transportation options so that most students will not want a car.	IP 14
159	On campus housing should be designed to accommodate bicycle parking that is indoors or otherwise protected from the elements.	IP 21

	Committees and Recommendations	Reference to Master Plan Edited Principles
160	Cal Poly should be a national leader in multi-modal transportation best practices, related research and technology transfer and should develop a multidisciplinary center or institute focused on transportation issues including planning, research and modeling actual practices.	IP 12
161	Cal Poly should partner with local, regional and national public and private organizations including but not limited to the City, County, Caltrans, SLOCOG, RTA, Amtrak, and Union Pacific Railroad to make San Luis Obispo a model for modal shift from single occupancy autos to a complete active transportation system.	IP 12,13
162	Educational programs that promote safety in all modes should be improved and better directed to target audiences.	IP 10
163	Cal Poly should be the leader in the region fostering the use of active transportation and discouraging the use of single-occupant automobiles; Cal Poly should set targets, identify priorities and increase funding for this purpose.	IP 13
164	Education, incentives and the use of emerging technologies such as dynamic matching should all be supported and utilized to improve ridesharing and the choice of active transportation modes.	IP 15
165	Bike paths and bike parking should be installed in locations that encourage the campus community to use bicycles.	MPP 54, IP 11,19,20,21
166	Cal Poly should partner with the City to help develop off-campus bicycle improvements as prescribed in the city's bike plan and that improve connections between the campus and community.	IP 19
167	Cal Poly should continue to work with the City and RTA to make public transportation more convenient than automobile use through such improvements as shorter headways, increased evening and weekend services, and greater convenience for on-campus residents.	IP 22
168	Cal Poly should work toward restoring, expanding and publicizing extra-regional bus service.	IP 23
169	Cal Poly should use policies and incentives, including pricing strategies, to reduce parking demand.	IP 24
170	A system should be established whereby sponsored guests can obtain parking passes without crossing the campus to a single staffed kiosk on Grand Avenue.	IP 26
171	Intra-campus shuttles or similar future services should be low or zero emission (such as electric, CNG or gas hybrid).	OR 27
172	Parking should be efficiently managed to reduce the need for parking spaces through real time information regarding space location and availability, variable time pricing, and other best practices.	IP 24
173	Any future or renovated parking facility should meet the certification standards of the Green Parking Council or similar organization.	OR 25

	Committees and Recommendations	Reference to Master Plan Edited Principles
174	On campus housing should be designed to accommodate bicycle parking that is indoors or otherwise protected from the elements; convenient bicycle parking should be provided as near as practical to campus origins and destinations.	IP 20,21
175	Where activities are located beyond walking distance from the Academic Core, alternative transportation options should be provided.	OR 20
	INFRASTRUCTURE AND SUPPORT SERVICES	
176	The following types of services should be provided on campus: (1) services that are needed specifically by students (e.g., library, advising, bookstore); (2) services that benefit from or require knowledge of the campus and that require coordination with academics or other campus services (e.g., financial aid, academic assistance, disability resources, personal counseling for students); and (3) services used frequently by a considerable number of students, faculty and/or staff daily (e.g., food service, banking, health care).	MPP 23
177	Commercial services should be provided on campus that support residents and that help to reduce the need for students, faculty and staff to run errands off campus during the day.	MPP 24
178	Services with frequent off-campus interaction - such as visits by potential students, donors, parents, vendors or other guests - should be located close to off-campus circulation routes and parking facilities.	MPP 25
179	Related services that require face-to-face interactions should be coordinated and consolidated in central, accessible locations, convenient to their clientele.	MPP 26
180	Public services and utilities should support the University efficiently, with the flexibility to meet changing needs, and designed for ease of maintenance and renovation.	MPP 37
181	Service centers of all types (e.g., advising, counseling, health care) should be designed with sufficient space to accommodate students (or other clientele) waiting for service.	MPP 38
182	To better accommodate a diverse community that reflects people with different learning styles, as well as people from different personal, ethnic and cultural situations and needs, University-provided services should be offered in a variety of cost ranges and forms.	OR 15
183	Support services should be sized and designed to accommodate peak periods, or demand managed so as to even out peaks - e.g., class schedules and exams spread out over the day and week, rotation of registration priorities.	MPP 37
184	Development of campus facilities and their utility infrastructure support should consider sustainability, alternative sources, self-sufficiency, life-cycle costing and/or other strategies to minimize impacts on the environment.	MPP 39
185	Ancillary activities should clearly complement teaching and learning.	MPP 40

	Committees and Recommendations	Reference to Master Plan Edited Principles
186	Ancillary facilities should not compete with core instructional needs for land within or near the Academic Core and can generally be located at more remote sites unless other considerations override.	MPP 41
187	Support services should be planned with a holistic approach using collaborative interactive processes to involve all parties delivering and receiving services.	OR 17
188	Campus services and facilities must be designed to meet or exceed applicable legal guidelines such as access for those with physical or learning disabilities, fire safety, and emergency response systems.	OR 18

Information Related to Campus Setting and History

Professor John V. Stechman characterized Cal Poly's land development in three phases: I. Establishment (1902-1932); II. Consolidation (1933-1960); and III. Expansion (1961-1982). In his epilogue, he concluded that "Cal Poly's future will necessitate on-going change to sustain contemporaneous agricultural practices and their promotion through basic teaching modes. It is clearly evident, however, that change cannot take the form of growth, *per se*, but rather that of internal development aimed at continuing improvement of the land and facilities under control at present."[4]

Cal Poly's initial site of 281 acres encompasses the Cal Poly Academic Core to this day. Major additions in 1918 and 1929 increased the campus to over 1,000 acres, during what Stechman called the Establishment phase. Throughout the early years, Cal Poly irrigated less than 100 acres of land and the academic campus occupied less than 50 acres, leaving the remainder of the University's lands for dryland crops and rangeland.

During President Julian McPhee's long administration (1933-66), Cal Poly added the Peterson and Serrano ranches on the northeast, the Cheda ranch on the northwest, and a number of smaller parcels to consolidate the nearly 3000 contiguous acres in the San Luis Creek watershed. Irrigated fields and pastures then covered 150 acres and the Academic Core increased to about 100 acres, while non-irrigated pasture and rangeland grew to about 2,000 acres.

The Expansion phase included acquisition of the Chorro and Escuela ranches in the Chorro Creek watershed in 1968, and the Walters Ranch in 1982 – adding a total of 3,100 acres. Cal Poly had been leasing most of the larger parcels for grazing before acquiring title. The academic campus expanded to cover 250 acres and irrigated fields to about 350 acres during this time.

A fourth, satellite, phase now follows Stechman's analysis. Whereas earlier lands were acquired through purchases authorized by the State or governmental grants, more recently Cal Poly has acquired additional lands primarily from donors who support the University's mission. The largest is Swanton Pacific Ranch in Santa Cruz County (1993) with about 3800 acres of farmland, rangeland, and forests. The most recent donations include the Avila Pier (2001), a small coastal parcel near Ragged Point (2002), and the 448-acre Bartleson Ranch in the Edna Valley (2015).

During the first two phases of development, land acquisition, building construction, and student enrollment grew at modest, parallel rates. With the Expansion phase, however, the trends diverged. Academic and support space was added, but at a slower rate than student enrollment, which increased rapidly starting in the 1960's. More land was acquired, first in the Chorro Creek watershed, and then in satellite locations. However, except for

[4] John V. Stechman (1985), ***An Illustrated History of Land Acquisition and Development for Agricultural Education, California Polytechnic State University, San Luis Obispo, California***, p. 40.

specialized or accessory structures, all academic and support buildings as well as student housing are located on the Main Campus in the San Luis Obispo Creek watershed.

Information Related to Academic Plan

Enrollment Measures

The Master Plan primarily uses fall census data for student, faculty and staff headcount for analysis because individual people provide and use the academic, administrative and other services of the University. Further, most data refer to students, faculty and staff enrolled in or offering courses and programs financially supported by the State of California (General Fund) – because these are the records kept consistently by the California State University. To date the magnitude of non-state activity has been relatively modest – approximately 300 regular employees of auxiliaries (ASI and Cal Poly Corporation) and roughly 130 students in self-support academic programs.

As Cal Poly has only one official location, all students and employees are considered to be affiliated with the San Luis Obispo campus. Nonetheless, at any particular time, some students may be enrolled in courses offered online, study travel or other programs away from the Central Coast; some faculty may accompany those students; and some employees may be working at other locations (e.g., the ranches in the Chorro Creek watershed or at Swanton Ranch in Santa Cruz County) – and not everyone attends or works a regular weekday schedule.

These numbers do not count seasonal workers; nor do they include participants in extension programs, occasional workshops, or conferences; nor people who visit or attend events on campus.

The implications are that the data slightly over-count the people involved in routine daily or weekly patterns on campus, but understate the volume of intermittent activity, which can be highly variable (ranging from mid-summer or mid-December lows to athletic event and commencement highs).

It is important to note that full-time equivalency (FTE) is the measure used for some very important budgeting and reporting data. (Full-time equivalency is based on the premise that an undergraduate takes 15 units per term and a graduate student 12 units per term.) For example, the State of California, and thus the CSU, funds enrollment based on FTE Students (not headcount) – and makes further distinctions between undergraduate, post-baccalaureate and graduate students, and focuses on California residents rather than all students. Also, for facility planning purposes, the CSU is concerned with instruction that needs appropriate classrooms or laboratories, and consequently discounts space needs for online instruction and independent study, including senior projects and master's thesis, which are not scheduled in space and time.

Future Enrollment Scenarios – Assumptions

Neither future scenario assumes any significant variation in average unit load for students as this has changed slowly over time. The average for

undergraduates is over 14.5 units per term. If the average were to increase at a rate of 0.01 per year (the recent rate), then CY FTES would go up about 300 (for the future 25,000 fall headcount). This would require 14 additional faculty but no additional staff, because staffing ratios are based on headcount, not FTES. Post-baccalaureate and graduate student loads are more variable, but their proportion of total enrollment at Cal Poly is so small, changes in their loads have little effect on CY FTES.

To adjust the faculty headcount ratio, this analysis assumes the following for the future: tenured/tenure-track faculty would increase to 75 percent of instructional faculty (FTEF) as compared with between 60 and 65 percent in recent years; the student to faculty ratio would be reduced by 1.0 from the most recent three-year average; and tenured/tenure-track faculty would be released an average of 6 weighted teaching units per year for scholarship and creative activity. The staffing ratio would increase modestly (by 2 percent) to provide additional student services, but no change would occur in the management ratio, or ratios for auxiliary employees.

The percentages of freshmen and second year students in the future are 24 percent and 23 percent of undergraduates, respectively. The remaining 53 percent includes all upper division students, whether they entered as freshmen or as transfer students. It also includes students who take more than four years to complete their degree, but assumes that Cal Poly will continue to improve its four and five year graduation rates. The percentages for fall 2015 were different due to recent annual variations in the size of the freshman class.

Information Related to Teaching and Learning

Calculations of Space Needs – Measures and Assumptions

The CSU calculates CY FTES (college-year full-time equivalent students) differently depending upon the purpose. The annual State budget allocation to the CSU includes an expectation regarding the California residents to be served, so each campus also has a target for California resident CY FTES. Students from other U.S. states and other countries, who pay additional fees, are added to reach the total CY FTES served. At the same time, the CSU recognizes that a portion of instruction is not scheduled in space and time – for example, supervised internships, travel study, and thesis; and asynchronous courses such as those taught online. Thus, for space planning purposes, the CSU calculates a net CY FTES to estimate facility needs.

The gross square footage estimates assume that the current ratio of 127 GSF/net FTES will apply in general in the future. Clearly this is a general average for Master Planning, recognizing that individual buildings will have varying assignable and gross square footage ratios depending upon the use and design.

Information Related to Agricultural Lands

Context

Food and fiber are basic to human life, and their production are affected by every major global trend – water, climate change, environmental degradation, population growth, urbanization, income inequality, biotechnology, immigration, political uncertainty, food safety, human health, animal welfare.

California agriculture

In 2014 … California's 76,400 farms and ranches received $54 billion for their output.

California's agricultural abundance includes more than 400 commodities. The state produces nearly half of US-grown fruits, nuts and vegetables. Across the nation, US consumers regularly purchase several crops produced solely in California.

California's top-ten valued commodities for 2014 were:

Milk	$9.4 billion
Almonds	$5.9 billion
Grapes	$5.2 billion
Cattle, Calves	$3.7 billion
Strawberries	$2.5 billion
Lettuce	$2 billion
Walnuts	$1.8 billion
Tomatoes	$1.6 billion
Pistachios	$1.6 billion
Hay	$1.3 billion

https://www.cdfa.ca.gov/Statistics/

As one of the two major colleges of agriculture in the state (the other at UC Davis) – and three much smaller colleges (CSU Fresno, CSU Chico, and Cal Poly Pomona) – Cal Poly is critical to the future of California agriculture.

The Campus Farm Today

Cal Poly's Campus Farm has been rated one of the best college farms in the United States.

The 20 Best College Farms - http://www.bestcollegereviews.org/best-University-farms/v

1. Warren Wilson College (NC)
2. College of the Ozarks (Missouri)
3. Deep Springs (CA)
4. Hampshire College (MA)
5. Butte College (CA)
6. College of the Atlantic (ME)
7. UC Santa Cruz
8. Michigan State University
9. Clemson University (SC)
10. **CAL POLY**
11. Evergreen State College (WA)
12. UC Davis
13. Western Washington University
14. Central Carolina Community College (NC)
15. Yale University (CN)
16. Duke University (NC)
17. Berea College (KY)
18. Berry College (GA)
19. Cal State Chico
20. University of New Hampshire

Ranking Criteria:
- Farm Size
- Integration with the Main Campus
- Sustainability
- Are courses taught at the farm?
- Do students use the farm?
- Integration with the community

Understanding the dynamics of agricultural land management on a University campus is particularly important as many students and faculty no longer grow up in farm families where they learn these relationships early in life.

Irrigation Technology Research Center

The Merriam Irrigation Practices Field is used for instruction in BRAE irrigation classes, and for training of industry and government personnel. The filed is jointly used by the Cal Poly sheep unit. Improvements include a dedicated water supply connected to Drumm Reservoir, two underground pipeline water distribution networks, a canal containing multiple water measurement devices, a runoff return-flow system, and upgraded linear move sprinkler system, a complete set of modern drip system filters, upgraded CIMIS weather station instrumentation, improved fertigation equipment, a new pump testing laboratory, a furrow demonstration area, border strips, hand move sprinklers, equipment to lay out drip hose, and soil moisture sensors installed throughout the field. The facility includes six, neatly organized sheds with a wide variety of equipment such as augers, graduated cylinders, chemigation equipment, pressure gauges, and other items needed to conduct laboratory classes.

The Water Resources Facility is unique for university irrigation teaching programs, and provides Cal Poly with a unique, closely situated field

laboratory for practical demonstrations and laboratory exercises. It is a key component of the BRAE department irrigation facilities and is well-maintained and equipped by the ITRC. This facility provides BRAE students with superb and unique experience with water control, SCADA (Supervisory Control and Data Acquisition), pumps, and water conveyance equipment. It has allowed the department to expand course content to include these topics, which are important for post-graduation employment opportunities.

The ITRC provides the funds for maintenance and improvement. Total area of the WRF is approximately five acres including a two-acre reservoir with a storage capacity of about fifteen acre-feet. Estimated cost to replace this facility is about $10M. The facility has been built with outside funding and has been constructed using primarily student labor. This facility has numerous pumps and variable frequency drives of various designs powered by an 800 amp/500 Kva supply. The pumps can be used to supply several canals and flumes, including a weighing tank that has an accuracy of 0.1% for flow measurement. Additionally, features of the facility include state-of-the-art SCADA systems, modern RTUs (Remote Terminal Units), innovative gate designs on structures, and its own computer control system that gives students rare opportunities to obtain training in automation.

Crops

The Horticulture and Crop Science Department manages agricultural lands near the Academic Core in order to provide access to the 'Learn-by-doing' laboratories for plant science students that are analogous to other traditional teaching laboratories in the physical and life sciences located in buildings on the main campus.

The orchards on the Cal Poly Farm serve as teaching and research laboratories where students learn tree propagation, fruit tree identification, tree biology and physiology, pest management, weed control, irrigation, tree development from flowering and pollination through maturation and harvesting. In order to learn about a full range of tree fruit crops that have different growing requirements, the orchard complex needs to include several species each of stone fruit such as peaches, plums, nectarines, cherries, and apricots; pome fruits such as apples and pears; avocados; and the many citrus varieties and the major nut crops grown in California. Further, the orchard needs sufficient specimens of each species to conduct experimental research, which requires space for trials replicated in time and in space. Orchard studies also focus on propagation: planting, transplanting, grafting, and the cycle of replacement as fruit production declines after trees reach maturity.

Several of the orchards that represent major fruit crops in California and can be grown in the Central Coast climate must be of sufficient size to accurately model the commercial operations into which many of HCS graduates will be employed during internships and following graduation. The teaching orchard, also known as the deciduous orchard contains many species of common and rarer fruits to broaden student horizons of knowledge and first-hand experience. The research conducted in the orchards are

commonly funded and supplied by the same industries that employ graduates from the Horticulture and Crop Science Department.

The row crops (vegetables) offer similar learning opportunities for students in a variety of vegetables and leafy greens from planting to market. Students gain experience in the full production cycle of the most common row crops grown in the Central Coast of California. Additionally, crops are grown in greenhouses using hydroponic systems to tightly regulate plant nutrition and moisture under controlled environmental conditions. Hoop-houses are open-ended clear plastic tunnels under which representative crops are grown to model the crops particularly berries grown commercially under those conditions in California. Bee hives are located in the crop and orchard fields where students learn about apiary sciences including propagating, establishing, and maintaining bee colonies. Honey is collected from the hives by students and processed in the honey processing room. The bee and honey classes are very attractive to students from a broad spectrum of disciplines across campus.

The Crops Unit is home to the Cal Poly Organic Farm, which is a sub-unit where students and faculty focus on raising crops that meet organic farming standards established by the California Certified Organic Farmers. These are standards recognized by all retail markets that sell "organic" foods. The Organic Farm attracts students from all disciplines across campus and is a significant avenue by which the HCS Department attracts new students especially those without traditional farming backgrounds.

The Strawberry Center is a model system that is funded by the California Strawberry Commission. It represents a major link to a commodity group seeking to find solutions to the most vexing problems of their industry. Their desire is to find alternatives to environmentally impacting pest management technologies. The Center includes two plant pathologists who teach and employ Cal Poly students from a variety of disciplines across campus. Student-faculty research interactions are among the most positively impacting educational experiences a student can have. The Center has been very successful at obtaining significant funding for research into pest problems of interest to the Strawberry Commission and the industries they represent. Research in this area will ultimately grow to occupy approximately 10 acres of agricultural land.

Facilities for immediate post-harvest activities need to be nearby as well, as students also learn about processing, packaging, storage, and marketing. The Crops Unit houses a facility for processing freshly picked fruits and vegetables. The main processing line is a fully automated unit donated by a leading industry sponsor and represents technology that students see when employed in the commercial industry following graduation. Students learn about and abide by the stringent food safety rules and regulations that are paramount in the food industries today. The Unit also houses a honey processing unit for honey collected from hives in the fields.

The Horticulture Unit provides over 30,000 square feet of horticultural greenhouse space, shade houses, additional hoop houses, and retractable roof greenhouses. Representative commodities are grown here at near commercial scale for student learning and faculty/student research. Hydroponic systems, lighting systems, temperature controlled environments are examples of the type of teaching and research conducted in these facilities. The surrounding grounds provide learning laboratories for outdoor ornamentals used in landscaping both at commercial and private residence scales. Demonstration gardens provide examples of emerging trends in landscaping and flower gardens used throughout the US for students to install, maintain, and study for durability and sustained aesthetics.

The Horticulture Unit is also home to the Leaning Pine Arboretum, a nationally recognized arboretum where Cal Poly students and faculty study plant species adapted to the Mediterranean climates of the world. The Arboretum serves as a living laboratory for studying aesthetics, vigor, maintenance requirements, and the potential for species to become invasive and thus weedy if propagated in the Central Coast. The Unit is home to the Cal Poly Turf Program where research is conducted on all aspects of turf related to private and public lawns and the golf industries. Water quantity and quality research is conducted on these turf facilities that allow faculty and students to understand the most pressing issues related to aesthetic and water especially important in California.

Feed crops such as alfalfa, forage hay and silage corn provide a bridge between the crops and animal units, with opportunities to learn and experiment with growing such crops for the best nutrition. In addition, they help control the feed costs associated with the dairy, beef cows, and horses. Several of the fields where these feed crops are grown also serve as "spray fields," which meet California state water quality regulations associated with the Dairy Unit.

Vineyards are similar to orchards as teaching and research labs. Cal Poly wine is produced by Cal Poly students who learn about the entire global wine industry and are responsible for wine from viticulture to production to marketing.

All Wine and Viticulture majors learn the foundation of viticulture through lecture and labs that use the campus' Trestle Vineyard. The campus teaching and production vineyard is critical for the learn-by-doing education. Traditionally, total planted acreage has been 12.56, but with the diagnosis of extreme red blotch infection 6.34 acres were pulled out in 2015. The remaining 6.22 acres were scheduled for minor redevelopment to address minor virus infection, but by November of 2015, this portion was also deemed unsalvageable due to virus spread. Currently, plans are in place to redevelop and expand the vineyard to 14.56 acres. Until Trestle has been successfully replanted and the vines are in production, the WVIT Department is using the HCS Demonstration Vineyard and Gallo's Chorro Ranch for teaching purposes

Animals

Over 800 students in the animal science program, and many other Cal Poly students, learn experientially at the animal production units. They are essentially "living laboratories" that support Learn-by-doing. The proximity of these units to the core of campus is necessary to allow students opportune access during the day to these lab courses. Unlike chemistry or biology labs, these animal laboratory units are maintained as self-supported commercial operations. This offers students real world experience while supporting the expenses associated with live animals for teaching.

Each animal has its own requirements for teaching and learning, production and animal husbandry. Student learning focuses on every aspect of their care, including nutrition, behavioral health, reproduction, and waste management. Each animal unit includes some indoor and/or covered facilities as well as outdoor areas for grazing and exercise.

The Equine Center supports broodmares, with their subsequent offspring, to expose students to the entire spectrum of commercial equine production. Students are involved with the reproductive maintenance and breeding of the mares, and participate in foaling, halter breaking, and starting the offspring under saddles. They then sell these young riding horses in an annual sale, with involvement in the marketing and organization of this commercial venture. The unit also maintains research geldings that are used not only for applied equine nutrition, but also for the riding courses offered each quarter. The eight national equestrian team horses maintained at the unit are used to support the two nationally competitive riding teams and equine judging team. The unit also has several horses that support the nationally acclaimed equine ICSI program, one of only three in the nation offering this specialized *in vitro* fertilization work in horses.

The Cal Poly Dairy manages a purebred Holstein and Jersey herd of about 200 cows, producing milk for the Cal Poly Creamery while providing students with exposure to all aspects of a commercial dairy. The creamery produces a variety of dairy food products, including award winning cheeses, chocolate milk, and ice cream. The sale of Cal Poly branded food products from the creamery provides financial support for dairy science teaching activities, applied research, and programs in dairy food processing. The land surrounding the dairy provides grazing for young dairy stock and dry cattle, essential from an animal welfare standpoint. They also serve as spray fields to comply with State and Federal regulations regarding waste management, as fields used to produce crops cannot be used as animal spray fields.

The Cal Poly beef herd is housed in several locations on campus. The Beef Center, currently located on Via Carta just north of Brizzolara Creek, is used for cattle production labs, with animals being brought in for teaching. This allows students to get to their other classes in a timely manner, as it is within a ten minute walk of the Academic Core. Other beef cattle units include the Beef Cattle Evaluation Center, a cattle feedlot used for certain lab activities and applied research, and the Bull Test Center, located 11 miles off campus. This is used several times each quarter for class labs, and is used

more extensively in the spring, summer, and fall. Over 60 students are enrolled in this project, which involves raising registered bull calves, monitoring their growth and development, and selling the bulls for breeding that exceed the test index in the fall. It is the only University organized and student run bull test on the west coast. In addition, the remote beef cattle grazing lands are used to support the beef herd and provide educational opportunities for rangeland resource management to Cal Poly students.

The annual Cal Poly Bull Test, organized and managed entirely by students, is a commercial enterprise with consigners from across the Western U.S. The bulls are managed by students to improve the quality of beef cattle. The proceeds from the annual sale are used to fund additional projects within the Animal Science Department.

The swine center houses 60 commercial sows, providing animals for teaching while supplying the Cal Poly J and G Lau Family Meat Processing Center with a steady supply of pork for their commercial production needs. The swine are also used to teach animal behavior and husbandry concepts, therefore, the students have direct experience working in a commercial swine production process.

The Sheep and Goat Center is housed at the Cheda ranch barn, and graze in temporary enclosures across campus, playing a significant role in weed abatement and firebreak control by campus facilities. This allows for a significant reduction in the use of chemical sprays and mechanical weed control, saving time and labor, reducing Cal Poly's footprint on the environment, and supporting Cal Poly's goal of sustainability. The small ruminants are used to teach animal behavior and husbandry concepts to students, as well as act as a commercial production supply chain for the Meat Processing Center for lamb products. Students therefore have direct experience working in a commercial animal production process.

The Cal Poly Poultry Center has both commercial broiler and layer operations, with student involvement in all aspects of this commercial poultry operation. 6,000 broiler birds are contract raised for Foster Farms each quarter, and the enriched colony and cage free systems house about 6,000 laying hens. Students can also be involved in pullet rearing at the center, and tending the quail colony which provides feed for falconer clients.

The Cal Poly Veterinary Center is charged with supporting the health needs of the many animals on campus (about 1200 livestock and 12,000 poultry birds at any one time), while providing hands on learning opportunities for the students to learn first-hand about animal health and well-being. The clinic also houses a teaching lab, with multiple sections of various animal science anatomy and physiology labs occurring there on a daily basis. Many Cal Poly students are interested in veterinary medicine. The Cal Poly Veterinary Center provides these pre-veterinary students with valuable experiences in preparation for their career pursuits. Forty to 50 students attend a professional veterinary degree program each year after graduating from the Animal Science program.

The Cal Poly Animal Nutrition Center is the only HACCP[5] certified, *Food Safe Feed Safe*© qualified commercial feed mill in a University setting in the United States. Students participate in all aspects of this commercial plant, including procurement of raw materials, ration formulations, product preparation and delivery, HACCP plan development, and state and federal regulatory audits. The mill supports the nearly 18,000 animals on campus, and is capable of formulating research diets for a wide variety of animals.

The J and G Family Meat Processing Center is a state of the art commercial red meat and poultry harvest and fabrication facility that supports teaching, research, and commercial production of meat products carrying the Cal Poly label. This facility makes it possible to provide the community with locally raised and harvested high quality natural meat products, while exposing students holistically to the food system from "farm to fork." Food safety must be taught with consideration of the whole food chain, from production to the final product sold to the consumer. Cal Poly is unique in its ability to immerse its students to this comprehensive learning environment. The California consumer is the ultimate beneficiary of this approach to educating the next generation of food producers.

The Cal Poly Rodeo Team is comprised of student athletes who compete annually on the college rodeo circuit. The Cal Poly team has been one of the most competitive forces in the West Coast Region since 1939, with Cal Poly hosting its first rodeo on campus in 1951. The rodeo facility includes an arena as well as land for year-round livestock and feed support. The arena area includes practice areas, seating, back up facilities for rodeo events, and parking for classes and labs that use the facility routinely for practices, demonstrations and exhibits. The adjacent pastures, pens, and hay storage area supports 50-100 head of practice stock. In addition, currently 86 stalls are available for students to board their horses, along with feed storage and trailer space. The proximity enables students to care for their personal competitive horses while at Cal Poly, and the boarding fees provide income for the rodeo.

As part of Cal Poly's Water Quality Management Plan, Agricultural Operations is responsible for maintaining the confined livestock operations on the campus farm. This involves manure management of both solids and liquids. Solids are removed routinely and composted or spread on approved fields and pastures identified in the water quality management plan. Liquids are captured within lagoons at several of the animal units. The accumulated lagoon water is then utilized as an irrigation resource on fields and pastures approved within the water quality management plan. Associated with the use of both lagoon water and lagoon solids are specific quality monitoring

[5] Hazard Analysis Critical Control Point (HACCP) is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.

requirements designed to ensure proper use and monitoring of ground water resources.

Today, under the guidance of department staff and supervision of student employees, the compost unit processes over 7,000 cubic yards of manure and 3,500 cubic yards of green waste and wood chips into 3,500 cubic yards of finished compost.

The composting operations processes livestock manure from the dairy, beef evaluation center, beef unit, equine center, and poultry unit and incorporates the green waste generated from campus landscaping. In 2011, the Cal Poly composting operations became members of the U.S. Composting Council's Seal of Testing Assurance Program.

The BioResource and Agricultural Engineering Department also teaches several tractor and machinery operations and safety course near the composting area.

Livestock and Poultry at Cal Poly, 2015 (Rounded)			
Equine Center			
Cal Poly horses, including broodmares	95-110		
Student's boarded horses	10-15		
Clients' riding or reproduction horses	15-26		
Rodeo (seasonal – 7 months)		Small Ruminants	
Boarded horses	80	Sheep	85-140
Bucking horses	10	Goats	40-85
Calves	40		
Steers	30		
Goats	10		
Beef Cattle		Dairy Cattle	
Serrano and Peterson Ranches	30-60	Holstein cows	110
Escuela Ranch	120-180	Jersey cows	120
		Heifers	95
		Calves	120
		Bulls	3
Swine		Poultry	
Sows	60	Layers	5,900
Pigs/Hogs	350	Broilers	6,000
Gilts	6	Pullets	4,000
		Quail	200

For Chapter III C. Recreation and Intercollegiate Athletics

Recreation and Sports Venues (capacity)		
Recreation Center	Indoor	Outdoor
MAC Center (multipurpose)	750	
Main Gym	1580	
Martial Arts Room	270	
Rec Center Plaza		250
Mott Athletic Center		
Main Gym (bleacher capacity)	3032	
Mott Lawn		500
Track Field		600
Sports Field by Track		200+
Spanos Stadium (Football)		
President's Suite	142	
Stadium (bleacher capacity)		10,000
Memorial Field		500
Mustang Memorial Plaza		150
Baggett Stadium (Baseball) (bleacher capacity)		1,772
Janssen Stadium (Softball) (bleacher capacity)		800
Sports Complex		
Turf Fields 1, 2, 3		200
Lower Soccer Fields 4, 5, 6, 7		200
Lower Softball Fields 4, 5, 6		200

Information Related to Institutional Support

Public Safety

University Police Department
The Mission of the University Policy Department (UPD) is to promote a safe and secure learning environment by working cooperatively with the campus community to enforce the laws, preserve the peace, maintain order and provide exceptional professional services to the campus community.

UPD is responsible for responding to and handling all calls for service, as well as processing, investigating and prosecuting all crimes committed on State University property and grounds owned, operated and controlled or administered by the California State University. Cal Poly's Patrol Officers work with numerous allied agencies including the City of San Luis Obispo Police Department (SLOPD), the San Luis Obispo Sheriff's Department, Parole Services, and the Narcotics and Gang Task Forces to solve crimes and provide agency assistance known as Mutual Aid. In and around campus neighborhoods, UPD works closely with SLOPD by proactive patrol to deter public disorder crimes and enforcement efforts throughout the academic school year and major events.

In addition to Police Patrol, UPD provides the following services:

- Bicycle Patrol
- 9-1-1 Communications
- Investigations
- Campus Safety Reports
- Escort Van Service and Mustang Patrol (safe walking escort)
- Property Registration
- Housing Resources
- Special Events/Event Security
- Special Weapons and Tactics (SWAT) Team

Fire Department
Cal Poly contracts with the California Department of Forestry (CDF) and City of San Luis Obispo for fire protection services. The contract covers all structures on campus as well as grassland fire suppression.

The City's Fire Department has four stations, 42 professional firefighters, and a response time goal of four minutes (www.slocity.org. March 9, 2016). It is a full service fire department offering paramedic advanced life support, fire suppression, specialty rescue, and hazardous materials mitigation services. CalFire Station 12 is located directly across from Cal Poly, along Highway 1, and is the headquarters station for CalFire/San Luis Obispo County Fire Department. Station 12 is home to fire administration, fire prevention, law enforcement, training, emergency medical administration, emergency command center, and Station 12 fire operations.

Fire Marshall
Cal Poly's Facilities Department works closely with the California State Fire Marshal to ensure that the buildings on campus meet the Fire and Life Safety Code requirements. Fire And Life Safety is the main entity within the Office of the State Fire Marshal for the application of laws and regulations related to fire prevention, life safety, fire protection systems, building construction and protection. This is achieved through code compliance inspections and plan review of State-Owned and State-Occupied buildings and institutions.

Environmental Health and Safety
Environmental Health and Safety (EH&S) assists the campus in providing a safe and healthful workplace through the development and implementation of programs which minimize the risk of occupationally related injury or illness. Also, EH&S develops and implements programs to ensure the safe use, handling and storage of hazardous materials and appropriate and compliant disposal of hazardous wastes. These are accomplished through employee training programs, procedures and policies, and compliance surveys.

Emergency Operations Center (EOC)
The EOC is the coordination center of campus-wide efforts in a disaster. It is located in the Old Fire House (Building 74) at University Police and will be staffed with Emergency Managers. The EOC is not open to the public.

Cal Poly has a Campus Emergency Management Plan that is designed to coordinate the use of University and community resources to protect life and campus facilities immediately following a major disaster. The plan clearly defines the emergency management command structure as well as the priorities and responsibilities for each position within the structure. It is activated whenever an emergency affecting the campus cannot be managed through normal channels. Examples of the types of emergencies where the plan may be activated include:

- Earthquakes
- Hazardous Materials Release
- Floods
- Fires and Explosions
- Extended Power Outages
- Pandemic Flu

The President or his designee must authorize activation of the Campus Emergency Management Plan. Upon activation of the Plan, the Emergency Operations Director, or his designee, will commend activation of the EOC.

Information Related to Regional Connection

Examples of Events and Activities that Attract Visitors from Off Campus

Activity or Event	Venue	Frequency	Audience
Very Large, Occasional Events Sponsored by Cal Poly (examples)			
Fall Commencement	Recreation Center, Entire Campus	Annual (Mid-June)	Family and Friends of Students
Spring Commencement	Football Stadium, Entire Campus	Annual (Mid-December)	Family and Friends of Students
Open House (includes special activities, such as rodeo)	Entire Campus	Annual (Mid to Late April)	Admitted and Prospective Students and Families
WOW (Orientation Week)	Entire Campus, and Field Trips throughout SLO Region	Annual (Mid-September)	New Freshmen and Transfer Students
Large, Occasional Events Sponsored by Other Groups (examples)			
High School Commencements	Football Stadium	Annual (Mid-June)	Family and Friends of Local High School Graduates
Mid-Size, Occasional Events Sponsored by Cal Poly			
Musical Concerts	Outdoor Playing Fields	Several Times per Year	Students and Friends
Agriculture Events (e.g., horse shows, livestock auctions)	Various CAFES venues, depending on event	Several Times per Year	
Mid-Size, Regular Events SponsoredVista G by Cal Poly and/or Community Partners			
Concerts, Plays, and Other Theatrical Performances	Performing Arts Center; Cal Poly Theatre	Seasonal – Several Days per Week	Patrons, Ticket Holders
Convocations and Speakers	Performing Arts Center	Variable	Targeted Audiences

Football and Baseball/Softball Games and other Outdoor Athletic Events	Football, Baseball, and/or Softball Stadium; Track, etc.; depending on sport and season	Seasonal – Several Days per Week	Students and Other Ticket Holders
Indoor Athletic Events	Mott Athletic Center	Seasonal – Several Days per Week	Students and Other Ticket Holders
Smaller, Occasional Events Sponsored by Cal Poly			
Art Exhibits, Openings	University Art Gallery, Other Venues as Advertised	Variable, Often at the End of the Term to Show Student Work	Patrons
Speakers, Panels, etc.	Various Lecture Halls	Variable	Interested Public
Daily or Weekly Activities Associated with Cal Poly			
Campus Tours	Entire Campus	Seasonal – Daily	Prospective Students
Business Development	Technology Park	Daily	Employees, Customers
Cal Poly Product and Insignia Sales	Bookstore, Campus Market, Farm Store	Daily	Customers
Informal Recreation	Track, Poly Canyon, Trails	Daily	Local Community Members

Academic and Performance Venues (capacity)		
	Indoor	Outdoor
Lecture Halls (7)	100-230	
ATL Keck Lab	175	
Cohan Performing Arts Center/Theater Complex		
Harman Hall	1281	
Pavilion	220	
Phillips Hall (also serves as lecture space)	180	
Rossi Grand Lobby	144	
Balcony Lobby	120	
PAC Plaza		450
Spanos Theatre	486	
Spanos Theatre Patio		200
Spanos Threatre Lawn		200
University Union		
Chumash Auditorium	996	
Lone Pine Arboretum		300

Lawns and Plazas in Academic Core (capacity)	
	Outdoor
University Union	
UU Marketplace	300
Mustang Way	700
Dexter Lawn	
East, West	1,000 each
Mall	400
Baker Science	
Lawn	1,000
Patio	150
O'Neill Green	
North, South	1,000 each
East	250
Rose Garden	400
Erhart Agriculture South Patio	100
Bonderson Engineering Plaza	100

Information Related to Sustainability

Energy

Cal Poly continues to make progress on reducing energy consumption. Total energy use (electricity and natural gas combined, reported as British Thermal Units (BTUs) per square foot), has dropped over 21 percent since 2001.

Electricity

The majority of electricity use on campus is for lighting and HVAC (Heating, Ventilation, and Air Conditioning). Cal Poly purchases approximately 92 percent of its electricity needs from Pacific Gas and Electric Company (PG&E), and generates the other 8 percent on site from a combination of solar Photovoltaic (PV) and cogeneration. Cal Poly has implemented numerous energy conservation projects to reduce electrical usage, including fluorescent lighting retrofits, occupancy sensors, HVAC equipment upgrades, variable frequency drives for pumps and fans, and installation of digital energy management systems. In spite of the fact that the campus square footage has grown dramatically in recent years, electricity use has remained relatively flat – indicating that conservation efforts have been able to offset growth. Electricity costs have escalated rapidly in recent years due to utility rate increases, more than doubling since 2002. Power supplied by PG&E is some of the cleanest in the nation. PG&E's power mix includes 15 percent qualified renewables (biomass, geothermal, small hydro, solar PV, and wind) and another 36 percent non-carbon emitting.

Renewable Energy and Onsite Generation

CSU Executive Order 987 established a goal for all CSU campuses to procure or generate on site 20 percent of their electricity needs from renewable resources by 2010. The CSU also set a goal to increase on site generation capacity from 26 Megawatts (MW) to 50 MW by 2014. Of this 50 MW capacity, 10 MW are to be from renewable resources. To further reduce Cal Poly's greenhouse gas emissions, the University installed a large solar photovoltaic system, and is investigating opportunities for even larger solar systems, wind power, fuel cells, biomass systems, and cogeneration or combined heat and power systems.

Solar

Cal Poly has successfully constructed multiple small solar PV systems across the campus, including a 135 kW solar array on the roof of the Engineering West Building, and a 2.5 kW solar array on the roof of the Facilities Management and Development Building.

Wind Power

As part of Cal Poly's efforts to reduce its environmental impact and greenhouse gas emissions, Facility Management and Development is evaluating opportunities to develop wind generation on campus land. Engineering studies are under way to evaluate potential sites, technologies, regulatory requirements, and funding sources, with the hopes of developing a wind farm on the Cal Poly campus that could generate a significant amount

of the University's electricity needs while providing opportunities for teaching and research. There is already active wind power research under way within the College of Engineering at the Cal Poly Wind Power Research Center at Escuela Ranch.

Fuel Cells
Similar to the statewide solar program, Cal Poly is participating in a California State Fuel Cell program, intended to install hydrogen fuel cells in state facilities using third party power purchase agreements. To meet the campus' needs for electricity and additional heating capacity as new buildings come on line, Facility Services is evaluating opportunities to implement a fuel cell combined heat and power system at the campus central plant. Such a system would provide both electricity and hot water at very high efficiencies, would emit significantly less greenhouse gas than conventional sources, and would produce virtually zero emissions of air pollutants.

Biomass
With over 6,000 acres of land near the Academic Core, diverse agricultural crops and livestock herds, a working dairy, and an active Bioresource and Agricultural Engineering program, Cal Poly has unique resources and opportunities to utilize biomass as an energy source. A 2008 feasibility studydetermined that manure from campus livestock herds, waste byproducts from the Dairy Products Technology Center, food waste from Campus Dining, and green waste from the crops units and campus landscape operations could be consumed by an anaerobic digester, or other technology, and the resulting methane gas captured and reused. Capturing methane from a digestion process to use as a fuel significantly reduces the greenhouse gas effects of the solid waste stream. These waste streams could be used as feed stock for a combined heat and power system. Cal Poly continues to monitor technologies, regulatory requirements, and potential sources of funding for future opportunities.

Cogeneration
Cal Poly has two cogeneration facilities in the student housing areas that can provide combined heat and power to student dormitories and apartments. The Sierra Madre cogeneration system, constructed in 1984, is a 350 kW unit driven by a natural gas fired Caterpillar reciprocating engine. The system has been in operation for 25 years, generating approximately 1,900,000 kWh of electricity per year – enough to power 170 average homes. It has provided electricity for the Sierra Madre dorms and, when electricity demands are low, back feeds power into the campus distribution system for use in other dorm building s. The system also provides space heating and domestic hot water for Sierra Madre and Yosemite dorms. It is currently awaiting replacement.

The Poly Canyon Village cogeneration system, completed in 2009, is a 500 kW system comprised of two 250 kW Stowell Distributed Power units, using natural gas fired reciprocating engines manufactured by Man. This cogen system produces 1,900,000 kWh of electricity per year – enough to power

170 average homes. The system also provides space heating, domestic hot water, and heating for a student recreation swimming pool.

Beyond the various efficiency improvements the campus has implemented, the following additional projects are planned or underway to enhance overall energy efficiency, reduce the campus' carbon footprint, and accommodate anticipated growth:

- The University owned Mustang Substation has the space for moderate capacity increases. Physical space exists for a twin primary transformer that, together with the current primary transformer can provide ample capacity for growth.
- Campus energy audits identify recommended projects that could be developed in the future;
- There are potential opportunities at the Campus Central Heating and Cooling Plant to improve efficiency of generation and distribution of chilled and hot water through a Monitoring Based Commissioning (MBCx) process.

Natural Gas

The majority of natural gas use on campus is for space heating, production of domestic hot water, cooking, and heating of swimming pools. Cal Poly has eight separate natural gas service accounts and receives service from the Southern California Gas Company. Natural gas commodity procurement for the larger service accounts (greater than 250,000 therms per year usage) is provided by the California Department of General Services (DGS) as part of a managed portfolio including nearly all Cal State University and University of California campuses, California State administrative buildings, California Department of Corrections, and various cities, counties, and school districts. Natural gas service for the small accounts (less than 250,000 therms per year) is performed entirely by So Cal Gas. All campus gas distribution systems (beyond the utility owned meter) are maintained by the campus Plumbing Shop.

Water

Conservation

Cal Poly has aggressively pursued water conservation through water efficient new construction, retrofit of existing buildings with ultra-low flow plumbing fixtures, installation of drip irrigation and irrigation controls, and use of native and drought tolerant plantings. These efforts have resulted in water usage rates that have dropped or remained flat since 1997, in spite of significant campus building growth over the same period. In 2015, Cal Poly adopted a Drought Response Plan in response to the Governor's Executive Order to state agencies to reduce water usage by 25 percent by February 2016. The campus was successful in implementing immediate measures including additional low flow fixtures, replaced kitchen equipment, reduction of watering to campus sports fields and landscaping, and major improvements to agricultural irrigation systems. These efforts resulted in a reduction of total water use of 23 percent.

To protect streams, wetlands, groundwater, biological habitats, sensitive species, and archaeologically significant areas, Cal Poly has developed a Water Quality Management Plan and a Storm Water Pollution Prevention Program. Preserves have been established on especially sensitive areas and water resources are regularly monitored. Cal Poly has also, largely through CAFES (the College of Agriculture, Food, and Environmental Sciences), undertaken resource enhancement projects including improvements to riparian habitats in the Chorro Valley and migratory fish habitats along Stenner and Brizzolara Creeks.

Waste

As part of the ongoing effort to make Cal Poly a more sustainable campus, a Zero Waste Pilot Program is being implemented at several locations around campus. A zero waste campus is one that produces no trash that is destined for a landfill, and instead, reduces, reuses, recycles, and composts its waste.

Solid waste and Recycling

Cal Poly operates an integrated waste management program that includes source use reduction, recycling, composting of food waste, green waste, and manure, resale of scrap metal and surplus equipment, and zero waste event catering. Cal Poly contracts with San Luis Garbage for collection of solid waste and recycling. Recycling containers are provided to faculty, staff, and students by Facility Services, and collection is performed by Custodial Services and the campus Recycling Coordinator.

Cal Poly, as per Assembly Bill 75, has been mandated by the California Integrated Waste Management Board (CIWMB) to divert at least 50 percent of its solid waste from the landfill since 2004. The campus submits annual reports to the CIWMB on the tonnage of solid waste generated by campus, and the percentage diverted from landfill by recycling, reuse, or resale. Cal Poly has met or exceeded the 50 percent diversion requirement every year. As per Assembly Bill 1016 in 2008, the CIWMB has changed the reporting methodology, and will track waste generation on a per capita basis. The requirement for at least 50 percent diversion from landfill is still in effect.

Procurement

In order to supply academic departments, administrative offices, campus operations and maintenance, food service, athletics, and housing, the University's purchasing department makes a significant amount of office supplies, paper goods, computers, materials and equipment, food, and food service supplies available. Deliveries to campus equate to an average of about ten full tractor trailer loads per week. Wherever possible, Cal Poly strives to purchase commodities that are environmentally friendly, energy efficient, recyclable, or made from recycled content. All shipping pallets are reused, and all cardboard boxes are recycled.

Office Paper

Cal Poly Distribution Services, which handles shipping, receiving, and mail delivery, offers office paper delivery to all departments on campus. As per California Public Contract Code Section 12209, all paper purchased contains

a minimum of 30 percent recycled content. This program supplies over 33,000 reams of paper per year to the Cal Poly campus, and all users are asked to recycle used paper.

Energy Star
By Governor's Executive Order S-20-04, Cal Poly and all State agencies are mandated to purchase energy star rated equipment and appliances whenever possible. Cal Poly requires Energy Star certification for all computers, monitors, printers, copiers, refrigerators, and other appliances and equipment.

Sustainable Food Services
Campus Dining offers over 20 restaurants and food venues on campus with at least one food operation open every day. Campus Dining is constantly improving its operations to function more sustainably. Driven by consumer demand, all Campus restaurants avoid using polystyrene (foam) and all of the cardboard, plastic, glass, and metal used is properly recycled. The culinary chefs are mindful about purchasing fruits, vegetables, dairy, and meat products from the Cal Poly Organic Farm and other local producers. Thousands of pounds of food material is composted and safely made into premium soil. Campus Dining operates biodiesel trucks.