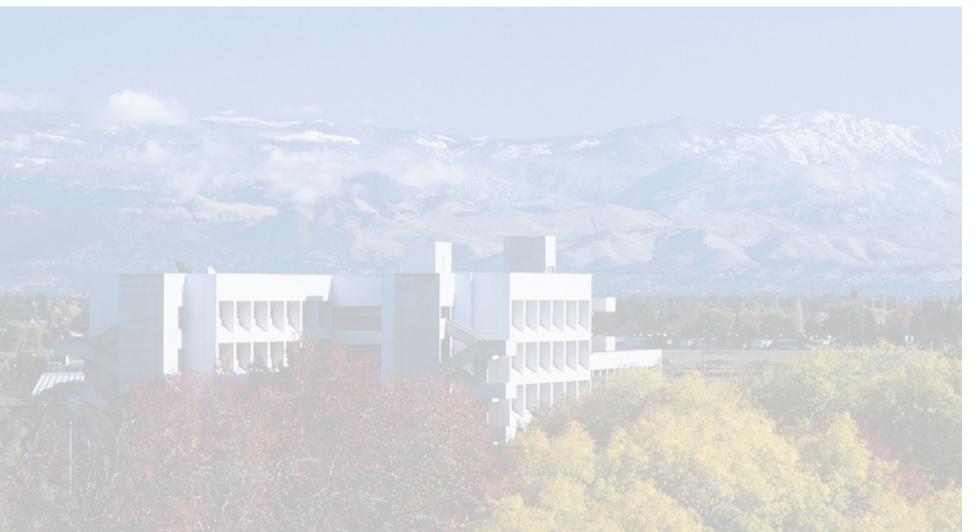
# January 2008 FINAL Campus Master Plan CALIFORNIA STATE UNIVERSITY, FRESNO



ZIMMER GUNSUL FRASCA ARCHITECTS LLP OMNI-MEANS, Ltd.

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#### Charge to the Master Plan Team from President Welty:

"California State University, Fresno is perfectly positioned to support innovation in our region and the transformation of our University as we move towards the University's centennial in 2011.

This new Master Plan will ensure that the physical improvements on campus underscore our commitment to the students, communities and region we serve as we partner to face the challenges of tomorrow and to take advantage of new opportunities that we develop.

infrastructure.

The plan is foundational to how our University will acquire new resources and use technology to enhance learning and research. The Campus Master Plan is a major alignment of our human and physical resources so Fresno State can be recognized as one of the top 10 comprehensive engaged universities in the United States.

The transformation of Fresno State is happening here and now, not by accident or coincidence, but by plan and commitment. The Master Plan for the campus is an inspiring look into the future, boldly establishing the direction for what California State University, Fresno will become."

#### John D. Welty

President California State University, Fresno

The Campus Master Plan will guide our pursuit of excellence in learning and discovery. It will help chart a course for effective engagement with community, government, business, education, health care and nonprofit organizations and individuals throughout Central California.

The new Master Plan for California State University, Fresno is the blueprint for how our campus will be able to serve 30,000 students in the coming years, and presents creative approaches to traffic, parking, utilities and technology



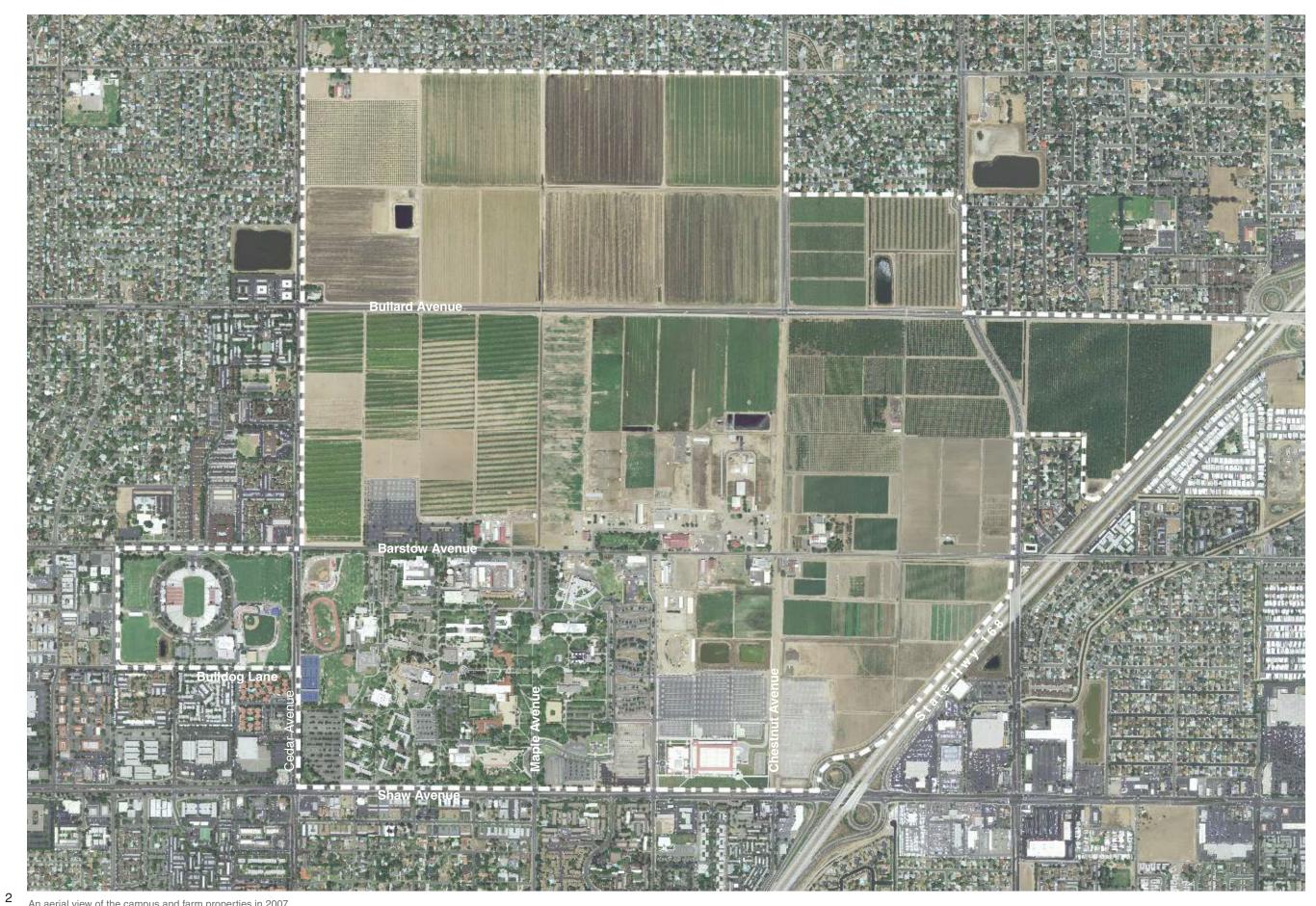
### INTRODUCTION

#### Purpose of the Master Plan

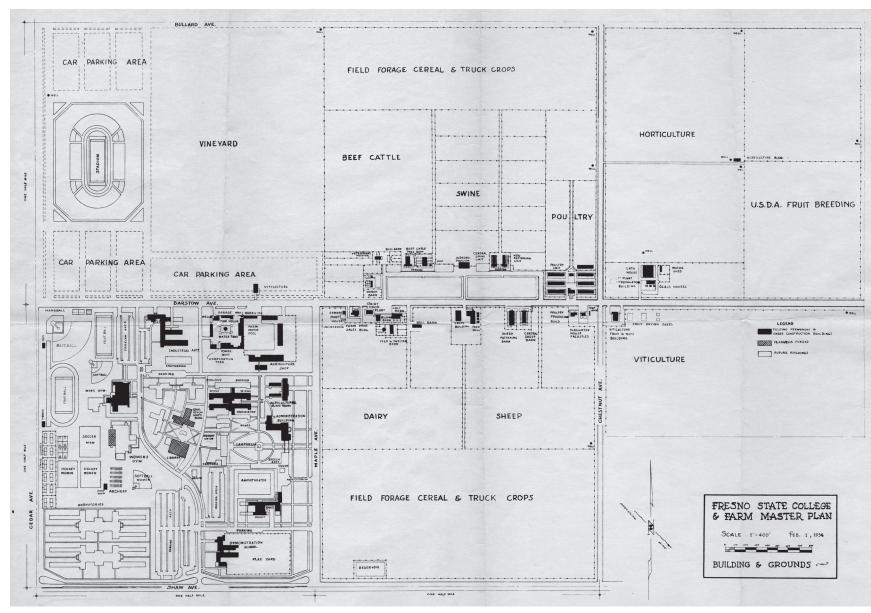
The University will celebrate its centennial in 2011. This will mark not only a hundred years of shaping the region and its workforce through education, but it will also mark an important transition from a traditional state university to an institution of excellence in higher learning and research.

The vision expressed in the Strategic Plan is to become the New California's premier engaged university, nationally recognized as benefiting the region and society as a whole through quality teaching, transformational scholarship, and dynamic leadership.

The purpose of this campus facilities master plan is to set in motion a progressive transformation of the facilities that accommodate the University so that the vision can be accomplished. While today's deficiencies cannot be overlooked, each new investment in the fabric of the University must build towards a campus that will enable realization of the vision.



An aerial view of the campus and farm properties in 2007.



The configuration of what is now the center of the academic campus was established when 'Fresno State College' moved to this location in the 1950s. The geometry of section lines was reinforced and the disposition of agricultural buildings along Barstow was established.



#### Background and Context

In 1911, Fresno Junior College opened with 150 students enrolled. The 'Fresno State Normal School' as it was known was the first of its kind to include agriculture in its curriculum and it undertook to broaden the scope of teacher training. In 1935, the institution was renamed Fresno State College, and by 1940, enrollment reached 2,000. Offerings were expanded to serve a burgeoning enrollment in the years after World War II. It became clear that the campus on University Street could not accept much more growth, and in 1950, ground was broken on 880 acres of open farmland well north of the city. The first buildings were occupied in 1952.



The original campus in Fresno on University Street was outgrown in the years following World War II. An open and unconstrained location was found outside the city to the north.

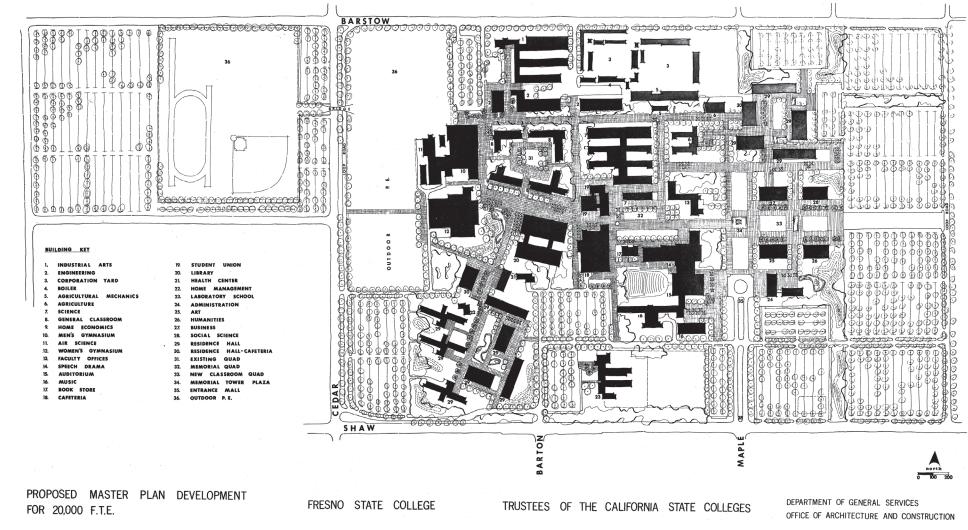
In 1963, a master plan was prepared, anticipating eventual enrollment of 20,000 students and providing for 10,000 parking spaces which would occupy a total of 90 acres. The campus had grown to more than 1,400 acres, including an expansion east of Maple Ave which increased the campus core from 140 acres to 300. The plan was to create a series of quadrangles, excluding traffic from the center of the campus by closing Barton Ave and marking a formal entrance to the campus on Maple with a tall bell tower at the intersection with the east-west pedestrian mall. The master plan responded to a specific list of buildings with a fixed plan for the location of each, as was customary at that time.



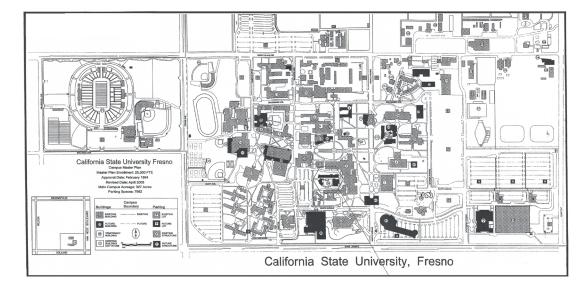
Today, as the 20,000 student enrollment mark is passed, many significant changes in circumstances and in values prompt a fresh examination of the campus and how it can best provide for future needs. California State University, Fresno has welcomed a greater diversity among students, at the same time increasing the number and variety of academic offerings, with more research and advanced degrees planned. Enrollment will surpass 25,000 in the next decade. State colleges are able to rely less on State funding than they did, so they must be able to compete effectively with peer institutions for the best students, faculty and funding. There are serious concerns today about traffic congestion, air and water quality, equitable access and many other topics that were of little or no concern forty years ago.

Half a century of change separates the demands of this campus master plan from its predecessor. Today there is less certainty about what campus facilities will be needed ten or twenty years into the future, so the master plan must provide a clear direction yet accommodate change. The emphasis is thus on overall structure and arrangement of the campus: as a social and cultural destination as well as a center of learning. However, some facility needs can be defined in sufficient detail for their inclusion in the Five-Year Capital Outlay Plan. Facilities planned 10 or more years into the University's future are defined by approximate size and location.

The 1963 campus master plan graphic was updated in 2005 to show anticipated building footprints of new and expanded buildings, and to revise the capacities of surface parking lots. This graphic master plan provided a context for several improvements. It included the new event center and Student Recreation Center as well as the conceptual layout for the proposed Campus Pointe development, which was at the time in design. It was also used as the basis for the 2005 Campus Utilities Master Plan.



The 1963 campus master plan shows Campus Drive largely removed, the campus entrance off Shaw moved west to Barton Avenue, and a new entrance at Maple Avenue, which would terminate in the campus. In this plan, the campus is expanded east to Woodrow, with parking lots occupying as much land as the university facilities they serve. New playing fields and parking were added west of Cedar Avenue.



How the Fresno State campus looked in 1965.

The master plan update of 2005 added new and anticipated improvements to the graphic master plan of 1963. A full image of the updated 2005 master plan can be found in the Appendix.



## EARSTOW AVE APLE AVE. SERVICE ATHLETICS AVE EDAR ACADEMICS AGRICULTURE STUDENT AVE HOUSING CHESTNUT SHAW AVE. **EVENTS &** SERVICE RECREATION ADMINISTRATION ALUMNI AUXILIARY SERVICES

The footprint of the campus and its general organization by use remains the same today as it was in the 1963 master plan, with the Student Recreation Center, Save Mart Center, Campus Pointe, and parking lots reaching east of Woodrow to the east side of Chestnut Avenue.

### Methodology

The master plan team began by gaining a thorough understanding of the values and aspirations of the University in areas of academics, student life, faculty and staff needs. Against these were measured the interests and expectations of every constituency on campus through an extensive series of interviews. Significant among these were interviews with each of the deans to probe their expectations for program changes over the next decade. Meanwhile, available inventory information on campus buildings, open spaces, parking and other facilities was reviewed, verified and supplemented as necessary. The next critical step was to estimate additional facilities needs over the next ten years.

Two subsets of the inquiry process concerned Athletics and the Farm. Each has near-exclusive control of a large area adjoining the academic campus, yet is strongly linked to the campus. The nature of those links was closely examined since a holistic view of university facilities is necessary to the success and usefulness of the master plan. A series of meetings and tours served to inform the master plan team of the special circumstances affecting Athletics and Agriculture facilities and programs, and illuminated ways in which ties to the academic campus could be strengthened.

The age, condition and suitability of each building on campus was assessed, and a plan for incremental replacement of obsolete structures over the next decade was coordinated with a program of new construction and remodeling, reconfiguration of parking and access, and progressive improvement of campus landscape consistent with an overall master plan. Taken together, the products of these efforts provide a firm basis on which to build a campus master plan for the future as summarized in the recommendations which follow.

Over the next twenty years, the campus will need to accommodate a substantial growth in enrollment, and numerous improved and new facilities. Parking will be accommodated in multi-story garages, leaving vacated lots to be occupied by new buildings and open spaces. Circulation and way-finding will be simplified and the arboretum will be expanded across most of the campus.



### EXECUTIVE SUMMARY

#### Master Plan Objectives

In the half century that California State University, Fresno has occupied this campus, it has grown from a small, agriculturally-based school to a major university. Growth has been episodic, and dislocations have occurred between parts of the campus and through the expedient relocation of departments to spaces scattered among several buildings. An objective of the campus master plan is to reconfigure the Schools, Colleges, and administrative and residential components of the University so that they function optimally and create an effective community. A complementary objective is to reconfigure and improve the open space and landscape of the campus in ways that will make them more habitable and more cohesive visually, imparting a recognizable identity to the campus appropriate in its quality to the institution that Fresno State aspires to become.

#### Methodology

This campus master plan examines its predecessors of 1954 and 1963 so that the genesis of today's arrangement of buildings and open space can be understood. It then outlines the methods used by the consultant team as it assembled information and sought an indication of facilities needs a decade hence. Two planning horizons were used: ten years and over twenty years. The ten-year horizon corresponds to the period necessary to identify a series of priority facility improvements, prepare a development program and schematic design for each, secure funding, and complete design and construction. Improvements given a lower priority may take longer to realize, and the master plan must also acknowledge that some will not be achieved for twenty years or more; for example, replacement of recently improved buildings that can be expected to be functionally obsolete in twenty to thirty years.

#### A Firm Yet Flexible Plan

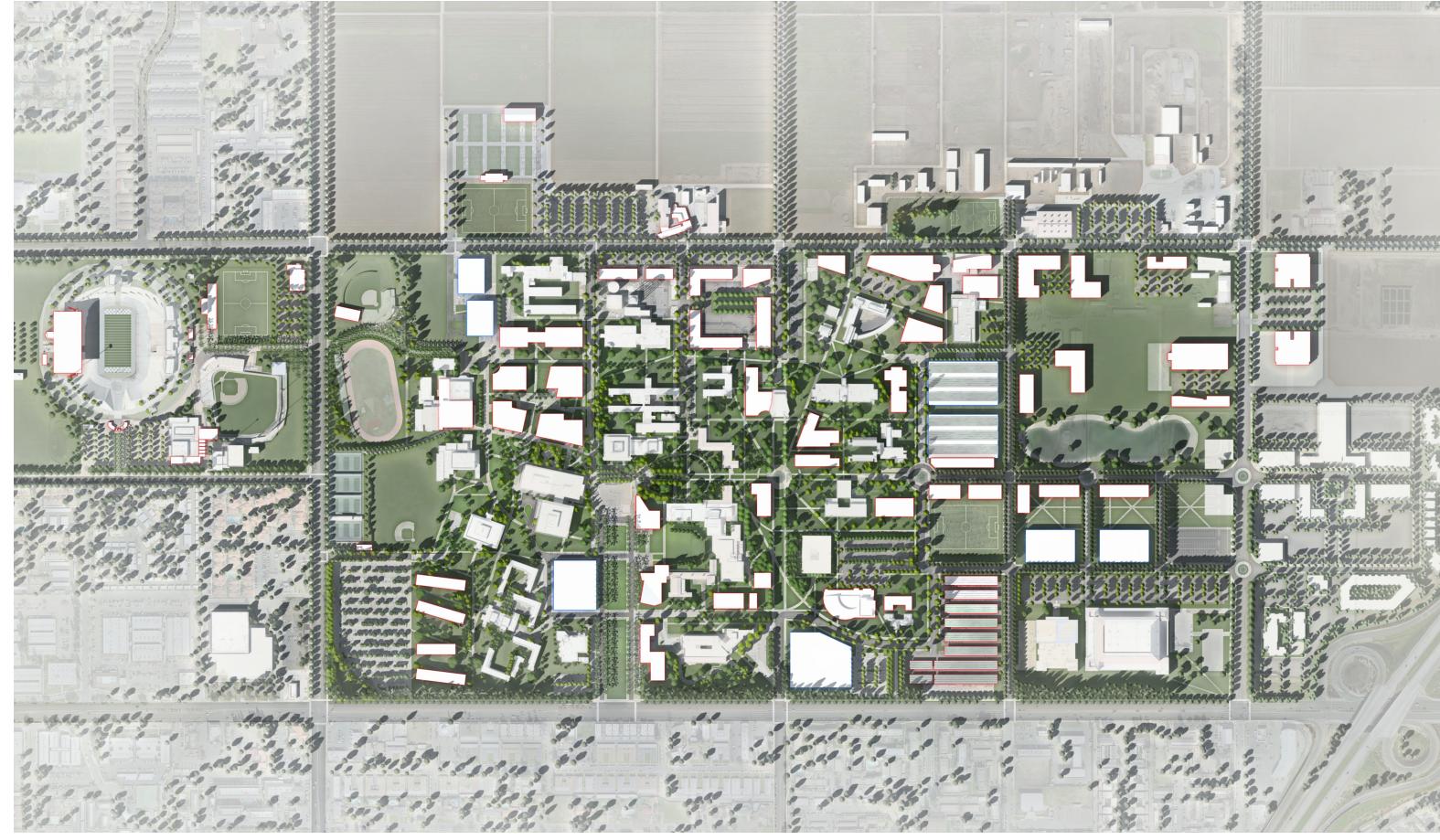
It is important that the master plan should anticipate an unceasing process of additions and changes to the campus reaching far into the future. Another objective of the master plan is therefore to configure the campus in such a way that future expansions and infill projects can be accommodated. In other words, the plan should not present a set piece; a closed system that will at some point be complete. The University will continue to grow, often in ways that are not predictable today, and the campus must be capable of keeping pace with that growth indefinitely.

Working with a master plan steering committee comprising senior administration, faculty, staff and students, core values, goals and derivative objectives were identified and refined. These established parameters within which the consultant team was to work, indicating aspirations, expectations and priorities. A recurring theme was the need to conserve energy and to demonstrate ecological responsibility by use of sustainable materials and practices.

#### Framework Analysis

Analysis of the existing campus was done using a series of framework plans, each isolating just one function: pedestrian circulation, open space, parking and other features. Each plan revealed both the strengths and shortcomings of one campus system. An inventory of the condition and purpose of each building revealed the potential of each through remodel, or, in the cases of older, inflexible and functionally obsolete buildings, removal. Combined with intelligence from the framework analysis plans, the building condition inventory yielded a plan of the campus showing areas amenable to change due to building demolitions, replacement of open parking lots with garage structures, and reconfiguration of circulation routes, landscape and open space. This plan proved valuable to the master plan committee in recognizing where and to what extent change could occur.

#### Values and Parameters



The proposed Long-Range (20-year) Facilities Master Plan for California State University, Fresno shows replacement of some buildings, remodeling of others, and inclusion of new infill buildings including parking garages. Buildings will typically be three or more stories in height to preserve the system of landscaped open spaces while accommodating substantial growth in enrollment.

#### Important Issues

In the course of over 80 meetings with various groups and individuals, each representing a constituency of the greater university community, a number of specific concerns emerged. The following list summarizes important issues:

- The missing sense of community experienced on the campus; allied with building and open space design, amenities, perceptions of safety, collegiality among faculty, and residentiality.
- The difficulty that visitors have in finding their way around campus; the lack of a clear point of entry was paramount in this regard.
- Never enough parking where one wants to park, close to a destination.
- · Conflicts with pedestrians and traffic congestion around the campus at peak periods.
- · Costs, both to the users and to the University, for construction, maintenance and management of parking facilities.

Also derivative from the extensive series of meetings was a program of facility improvements requested over the next ten years. This list far exceeds the ability of the University to fund and complete projects within that period, but it provides decision-makers with an inclusive list from which priorities can be drawn.

#### University Farm Laboratory and Athletics

While the focus of this master plan is the 363-acre academic campus, both the Farm and Athletics exert considerable influences, and although physically separate, they are as much part of the University as any other college, school or department. Each was afforded special attention as a sub-set of the master plan, acknowledging distinctions from the academic campus, yet treating each as integral with the whole community, sharing common objectives and aspirations. The strength of physical connections to the academic campus was a conspicuous focus: in the senses of easy and safe access, and of landscape continuity.

#### **Ongoing Planning**

The campus master plan concludes with a series of recommended actions and key design guidelines to assure consistent guality of implementation. There is also a recommendation that the campus master plan be revisited every five years to assure that its objectives and recommendations remain current. Much of this master plan is strategic in nature, and will not become obsolete, but as improvements are made on campus, some of them unanticipated by this plan, so specific recommendations will need to be updated so that this document can continue to fulfill its function as a basis for coordination of campus facilities improvements.

#### Ten-Year Plan

Every college, division and department will need improvements in facilities and equipment over the next ten years, as additional degree programs and research proliferate and enrollment increases to 25,000. This approved maximum headcount may be reached in less than ten years, so for the purpose of projecting facilities needs to ten and twenty year horizons, it has been necessary to project student headcounts beyond the current limit. Reassessment of the current limit may be necessary in the near future. Many of those needs can be met by remodeling and expansion of existing facilities. A limited number of new buildings can be anticipated in the next ten years, and existing space vacated by occupants of new buildings can in some cases meet the needs of others. The master plan identifies a number of buildings that are functionally obsolete and should be demolished. However, no demolition can occur until alternative accommodation can be found for the occupants-including additional space necessary to keep pace with growing enrollment.

- garage

### Twenty-Year Plan

- Science buildings

This logic has informed recommendations for new facilities to be built in the coming ten years (in alphabetical order):

- Agricultural Research (Viticulture and Enology, ICWT, IFNI)
- Classroom and Faculty Offices Building or Expansion
- Corporation Yards
- New main campus entry near the Henry Madden Library and parking
- New University Center Building
- Parking garage on Lot J or suitable site
- Parking enhancements (e.g. photovoltaic arrays)
- Quadrangle building replacements
- Research Institutes and Specialized academic program centers
- Satellite Student Union expansion or renovation
- Turf lab and playing field on Lot Q
- North Gym renovation and upgrades
- Various landscape, circulation, lighting and way-finding improvements

Implementation of the ten-year plan depends on the availability of funding and other variables. Those projects not completed within that time frame will be carried into the next decade to join anticipated long-term needs as well as facilities for programs that have not yet been devised. New facilities that can be anticipated ten to twenty years into the future include:

 Allied research facilities Additional structured parking Center for Agricultural Excellence · Classrooms, labs and faculty offices Replacement student housing • Performing arts center



## **GOALS & OBJECTIVES**

#### The Strategic Plan

An important purpose of this Campus Master Plan is to align planned improvements on and near the campus with the declared intentions of the University through its strategic master plan: A Plan for Excellence, 2006 – 2011; a document that sets a clear direction for the institution into the next decade. The course set by the strategic plan emphasizes "the aggressive acquisition of resources, the use of technology to enhance learning and research, the development of additional graduate programs, strengthened student success programs, greater civic engagement opportunities for our students, interdisciplinary approaches to, and pride in, the quality, effectiveness and efficiency of campus service unmatched by other public universities in California." This strategic plan differs from those which preceded it by focusing on innovation and transformation of the University. These are to be accomplished by pursuing excellence in learning and discovery; by engaging effectively with community, government, business, education and nonprofit organizations. Fresno State has a long tradition of working closely with the community and bringing new strength to the regional workforce. The direction of the most recent strategic plan is to expand and broaden this effort through an increased emphasis on advanced studies and innovative applied research.

The level of learning, research, creative activity, and engagement demanded by the strategic plan will require constant and progressive improvement of campus facilities; state-of-the-art methods and equipment must be in place to attract and retain the best faculty and students.

The course set by the strategic plan is concisely stated in its vision statement:

We will become New California's premier engaged university, nationally recognized for our teaching, learning, transformational scholarship, and dynamic leadership which engages faculty, students, staff, and community in mutually beneficial and respectful collaboration benefiting the region and society as a whole.

Strategic planning priorities are presented in the strategic plan under eight headings. Specific strategies under each that bear directly on the expectations of a campus facilities master plan are singled out in the following summary:

#### 1. Enhancing Academic Excellence and Scholarship

- Provide necessary technological support for innovative methods of teaching, learning, and engagement.
- Introduce changes in the campus physical environment that promote and support increased student-faculty interaction.
- Provide more dedicated and flexible spaces for individual and group study.

#### 2. Promoting the Success of All Students

- Create an environment that embraces continuous guality improvement to meet the needs of students effectively.
- Support a welcoming atmosphere that maintains facilities and creates spaces for informal learning and social interactions.

#### 3. Advancing Graduate Education

• Initiate improvements that promote a graduate culture on campus to include creating appropriate space for graduate instruction, learning research, and personal interaction.

#### 4. Using Technology to Advance All Aspects of University Life

- Enhance student learning through the increased and effective use of on-line and web-enhanced courses.
- Expand accessible technology for the entire campus community.

#### 5. Engaging with the Region

- Support campus centers and institutes that align faculty, staff, and student research and expertise with the needs of the community.
- Ensure easy access for campus visitors and create comprehensive and easily understandable signage and other navigational help.
- Become a regional leader in environmentally responsible operations; developing sustainable facilities and advancing research in clean air, water, and energy initiatives.

#### 6. Developing a Diverse and Global Perspective

centers and institutes.

#### 7. Generating Private and External Support

identity for the campus.

#### 8. Developing our University Community

campus community.

Celebrate regional arts and culture through innovative

• Set a clear and consistent vision for Fresno State's image and reputation among the key constituencies of the university, and establish a dramatic and memorable visual

Foster a welcoming, culturally inclusive, and engaging

#### Master Plan Goals

A first draft of goals and objectives for the campus facilities master plan was based on the Strategic Plan and the university mission statement. These goals and objectives originated in an initial briefing of the consultant team by senior administration, and have been refined periodically in the light of comments and observations received in the course of developing the master plan. The language became richer in content while remaining concise. The purpose of this evolving draft was to direct the stream of decisions leading ultimately to an adopted master plan for the campus.

Core Values for the Master Plan

- 1. Growing Academic Excellence and Quality
- 2. Supporting Student Success and Cultivating Diversity
- 3. Strengthening Our Visibility and Expanding Community Access
- 4. Developing a Distinctive Campus Quality and Appearance
- 5. Strengthening and Expanding the Physical Infrastructure
- 6. Being an Engaged University
- 7. Advancing the Capabilities of the Central Valley Workforce



These core values were supplemented by four goals:

Goal One Make optimal use of campus facilities and resources in accommodating growth in enrollment and in university programs.

**Goal Three** Develop an image and appearance for the campus that is respectful of its agricultural heritage, yet responsive to its changing activities and architecture.

Accommodate diversity with strategic initiatives and aspirations.

#### Goal Two

Improve pedestrian circulation across the campus.

#### **Goal Four**



#### Specific Objectives

A series of specific objectives was developed for each of the four master planning goals. These, too, were refined as relevant issues emerged with greater clarity.

#### Goal One

Make optimal use of campus facilities and resources in accommodating growth in enrollment and in university programs.

#### Derivative Objectives:

- 1.1 Make campus access and circulation safe and efficient for pedestrians, bicycles, service vehicles, parking access and emergency vehicles.
- 1.2 Improve the performance and capacity of campus infrastructure systems to satisfy projected needs.
- 1.3 Identify major remodels, demolitions and new buildings needed to accommodate projected programs. Also identify remodels for temporary accommodation of personnel and functions while permanent improvements are being made.
- 1.4 Identify potential building sites and for new facilities, and associated campus improvements related to each site.
- 1.5 Locate uses close to others with which they have, or will have programmatic affinities.
- 1.6 Site and configure each new building to be consistent with these goals and objectives.
- 1.7 Site and design every building to take full advantage of energy conservation and sustainable materials, systems and practices.
- 1.8 Orient and design buildings to take full advantage of campus open spaces, and to create places for impromptu meetings around building entrances.
- 1.9 Create places to foster interaction among faculty, staff and students indoors and outside.
- 1.10 Evaluate the potential of underused campus lands to support and enrich campus life.
- 1.11 Adapt each section of the campus boundary to complement the neighboring community.





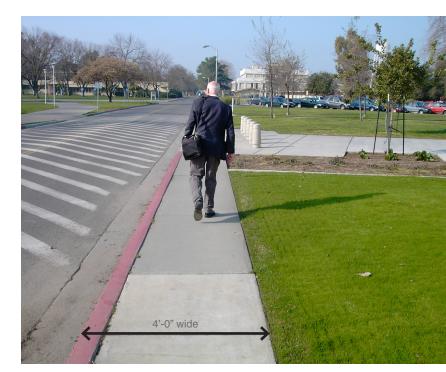
Outdoor spaces can contribute much to the vitality and community of campus life, provided that they are made comfortable and welcoming. In most cases, modification of the microclimate through landscape design is necessary.

interaction among faculty, staff and students.

Good visibility, shade and air movement in summer and places to sit in the sun in winter will foster



Most parking lots are inhospitable to those on foot, with no safe place to walk. Relocation of parking to the perimeter of the campus, and integration with the campus-wide footpath system will improve safety and make walking more attractive.

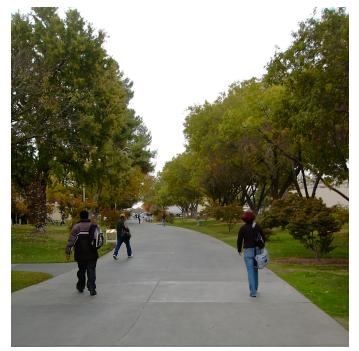


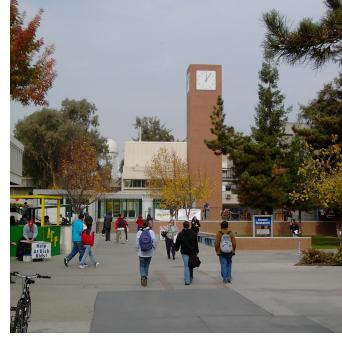
Even minor sidewalks and footpaths need to be wide enough to allow people to pass comfortably, including those using wheelchairs.

## **Goal Two**

Derivative Objectives

transit.







Footpaths should be direct and convenient. They should be integrated with the system of landscaped open spaces that permeate the campus so that the campus functions as a whole and conveys a consistent sense of quality and purpose.

Improve pedestrian circulation across the campus.

2.1 Create a safe and convenient pedestrian network linking most campus destinations without vehicular conflicts.

2.2 Clarify access onto and around the campus with improved routes, sight lines, signage and lighting.

2.3 Recognize the Henry Madden Library as an important destination for university and non-university pedestrians using transit.

2.4 Improve safe and direct access to destinations at the Farm, Campus Pointe, Athletics and nearby student housing.

2.5 Create a service vehicular access system that does not conflict

with major pedestrian routes.

2.6 Design parking lots and structures with safe and convenient routes for those walking to and from them.

2.7 Design pathways and waiting facilities to encourage use of

2.8 Design all pedestrian routes for full accessibility as defined by the Americans with Disabilities Act.

2.9 Extend the pedestrian circulation system to include fitness walking trails suited to a variety of capabilities.

#### **Goal Three**

Develop an image and appearance for the campus that is respectful of its agricultural heritage, yet responsive to its changing activities and architecture.

#### Derivative Objectives

- 3.1 Define the image of the campus in a way that respects the agricultural precedent, incorporates the arboretum and engages other important features of the Central Valley environment.
- 3.2 Address long range plans for the university that preserve the farm laboratory as an integral component of the campus.
- 3.3 Create an overall landscape plan to reunite the academic, athletics and farm portions of the campus.
- 3.4 Unify the appearance of the campus through consistency in the design of pathways, signage and lighting, and in complementary design of landscape and buildings.
- 3.5 Create a clearly recognizable main entrance to the campus and implement a campus way-finding system of fully coordinated lighting and signage.
- 3.6 Introduce water features at visually significant locations on the campus. These should be in scale with their surroundings and should demonstrate efficient use of water.
- 3.7 Plan for recycling of waste throughout the campus, identifying collection sites and enhancing recycling programs.







The campus lacks a consistent system of way-finding information to guide visitors to their destinations. The design and materials used for signage should be consistent with the aspirations of the university, conveying quality and permanence.



The richness of the campus derives from the diversity of its occupants and the variety of spaces and facilities that it accommodates.



Dedicated bike travel lanes promote convenient means for bicycle commuting and help to reduce conflicts between riders and pedestrians. Simple pavement markings would inform both cyclist and pedestrian of priorities.

Accommodate diversity with strategic initiatives and aspirations.

Derivative Objectives

**Goal Four** 

- 4.1 Broaden the experience of commuter students with diverse facilities and a range of transportation options.
- 4.2 Accommodate partnerships with the Regional Jobs Initiative.
- 4.3 Pursue research park initiatives and graduate studies in
  - disciplines that combine agriculture, water technology, air quality, the sciences, manufacturing, engineering and business.
- 4.4 Direct improvements towards enhancing student access, retention and graduation.
- 4.5 Accommodate progressive growth in graduate programs and doctoral programs.
- 4.6 Develop modern athletic facilities that support long term campus growth and enrich the academic experience.



### CONSULTATION OF THE UNIVERSITY COMMUNITY

#### **Ten-Year Projections**

A series of over 80 meetings was held with deans, departments and other constituencies throughout the university to establish the plans and intentions of each for the next ten years. One important purpose of these meetings was to discover the aspirations as well as the more finite intentions of each group, so that a comprehensive view of facilities needs for the whole campus could be constructed. This was aligned with the community and social aspects of the university, and with academics. Attraction and retention of quality faculty and students are important, as is the goal of producing well-rounded students with capabilities that reach beyond their academic credentials.

A ten-year period was selected because that period is short enough for realistic speculation, yet long enough to enable key projects to be identified, programmed, funded, designed, constructed and occupied.

The challenge of leaping ten years into the future was easier for some than for others, and inevitably, scenarios included a lot of detail about current facilities needs, and a certain number of unrealistic demands. However, all colleges and departments rose to the challenge, identifying current trends and making informed estimates of future needs. Expected increases in research and interdisciplinary programs gave rise to many of the facilities improvement requests, but there were other recurring themes too, such as the need for spaces for collegial interaction among students, faculty and staff. The program of requested facilities needs appears later in this document. A list of the meetings from which they were derived appears in the Appendix, and notes on each meeting are included in a technical appendix.

#### Long-Term Objectives

The physical arrangement of the campus derives from the standard division of land into quarter sections, and the subsequent construction of streets along those divisions. A finer geometry of orchards preceded establishment of the university on this land, and had some influence on the layout of initial buildings, open spaces and driveways. Since then, growth has been informed more by expediency than by any overall plan. The current master planning effort has provided an opportunity to take stock of the considerable resources of the campus, and to visualize future changes that will make it serve the university more effectively, while accommodating growth into an undefined future. Even if we could predict facilities needs twenty years into the future, we know that there will be further needs to be accommodated. Thus the form of the campus must be one that supports change and adaptation over the years without compromising present needs.



Long before Fresno State occupied this campus the surveyor's metric of sections and quarter-sections was imprinted on the land. The influence of that grid is evident today in the location of streets, the division of fields, and the orientation of campus buildings.



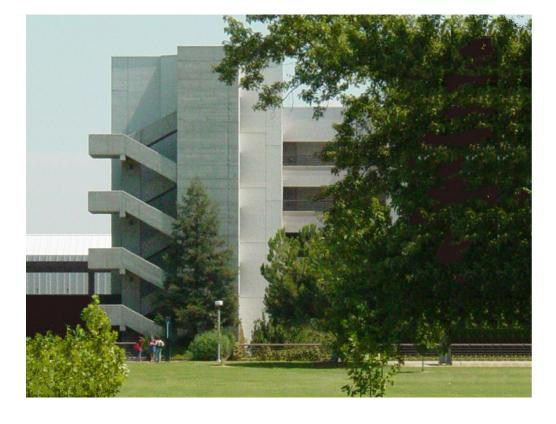
#### Special Considerations

Some principles emerged from the meetings held with many of the groups whose members have different experiences and perspectives on the campus. For example, conflicts between vehicles and those on foot should not occur in the campus core, and should be reduced to a minimum elsewhere. There are some places on campus that accurately portray the spirit of this university, but there are many that need to be greatly improved. Similarly, the campus landscape is exceptional in places, but lacks coherence and consistency overall. These and many more issues emerged and were addressed in the framework plans and other analysis detailed later in this document.



The farm laboratory and athletics facilities each occupy substantial tracts that connect to and interact with the academic campus. Each has functions and facilities that complement those of the academic campus, yet each exhibits some autonomy. In addition to its academic functions, Athletics must accommodate large crowds of spectators, which impose special demands on circulation, parking, safety and security facilities. The Farm functions as a practical laboratory that is directly attached to academic learning and research functions of the College of Agriculture. Special consideration is given to these two components of the University in the campus master plan. It also must accommodate large Farm machinery and Farm enterprise activity which place special demands on roadway circulation on Barstow Avenue.





#### Athletics and the University Farm



### FRAMEWORK PLANS

The Functional Infrastructure of the campus includes many overlapping systems on which day to day activities depend: utilities, signage, access, vehicle and bicycle circulation, parking, building orientation and pedestrian routes. Each system has been mapped separately as a Framework Plan to expose how it works, where it is deficient, and how it can be improved. These plans are displayed beside plans of each framework adapted and expanded to accommodate planned improvements.

#### Existing Building Entrances

Entrances to buildings throughout the campus mark the origins and destination points of walking trips, and collectively define the shape and extent of the pedestrian circulation system. Main entrances generally indicate the front of a building; an orientation relating to the perceived form of the campus when the building was designed. Among the entrances to all existing buildings on campus, it is difficult to recognize any clear pattern: suggesting little consensus on appropriate orientation. One of the purposes of the campus master plan is to bring order to the campus, making it easier for people to find their way from one place to another. This will be achieved through a number of coordinated measures, including the siting and orientation of new and replacement buildings, changes in landscape design, clarification in the hierarchy of walking and vehicular routes, and upgrading signage and lighting.

#### Future Building Orientation

The orientation of major buildings on campus which are expected to endure for generations establish the basic patterns of campus form. Landscape design and circulation routes will conform to that orientation, as will the siting and orientation of new facilities. The existing campus is made up of a series of adjacent groups of buildings, some with only loosely expressed connections to their neighbors. As buildings are replaced, supplemented or remodeled, the orientation of each will acknowledge the established patterns set by existing buildings, landscape and street alignments. An overall sense of order will become apparent between buildings and open spaces as building orientations are reconciled.





The location of each building entrance reflects what was considered the front of the building when it was designed. San Ramon and Campus Drive were the streets to which many early buildings faced; Thomas was designed for a different site entirely. The circulation systems of the campus must serve existing building entrances, and at the same time, give direct access and be compatible with the landscape. Entrances to new and remodeled buildings will be arranged for the convenience of those on foot, giving direct access to the pathway system. In some cases, service access may be changed to remove conflicts with those on foot.

EXISTING CAMPUS FORM





#### PROPOSED 20-YEAR CAMPUS FORM

#### Existing Open Spaces

The open farmland and orchards that prevailed when the campus was first established have been slowly transformed as the campus has grown. The transformation has been through displacement by buildings, roads and parking lots, and by replacement with lawns and rows of trees shading driveways, walkways and parking lots. At the center of the campus, a collection of specimen trees has been planted and matured as an arboretum of some note. Trees are a striking feature of the campus, having now reached a maturity and stature that they form spaces and contain views across the campus. Yet the open spaces lack cohesion—a sense of logical succession. They reflect the episodic development of the campus over the past half-century; a building here, a parking lot there. An objective of the master plan is to knit together the finer features of landscape and open space, replacing or reshaping some, supplementing elsewhere so that the whole reads as an intentional and connected campus, with functional links to the farmland north of Barstow, and west across Cedar to Athletics.

#### Future Open Space

Collectively, buildings, roads and trees have defined the overall form of the campus. An analysis of the building inventory (later in this document) has identified those buildings and associated areas where change will occur. Each new building with the landscape around it will redefine a part of the campus. The master plan seeks to coordinate these interventions in a way that the overall structure and activity patterns of the future campus are supported by the circulation patterns, vistas and spatial definition of the open space. An example of the clarity that this can bring to arrangement of the campus is creation of a new entry off Shaw Avenue which will terminate in the heart of the campus by the University Student Union and Library. The trees forming this broad avenue will connect the tree-lined southern edge of the campus to the arboretum. The amphitheatre and lesser open spaces will have purposeful connections to the armature of the entrance space. In similar fashion, the arboretum will be connected and expanded north along the alignment of Jackson to include spaces that replace San Ramon Avenue, and east to engage a series of defined spaces along the Maple footpath.

Parking lots pose a particular challenge for the open space plan. Currently they occupy a fifth of the campus area, and visually dominate the areas around them. Some will be replaced by parking structures, and the former lots will be replaced by buildings and open space. Others will be planted or replanted with 'orchards' of trees that will extend a shading canopy over parking spaces and walkways.

#### Microclimate Management

One of the objectives of the master plan is to modify the microclimates of the campus to make open spaces habitable and comfortable year-round. A significant component of this is to reduce heat absorption and retention by buildings and paved areas, known as heat island effect. The judicious use of trees near buildings and across paved areas is the most effective means of achieving this reduction. These plantings will be part of the fabric of open spaces that enfold the campus and contribute much to its quality, character and identity.





#### PROPOSED 20-YEAR OPEN SPACE

#### Existing Pedestrian Circulation

People will generally choose the most direct route that they can find between one place and another. Thus many students who live west of the campus walk along Bulldog Lane and enter the campus off Cedar Avenue just north of the tennis courts. Many continue east to the library and the student union, thus establishing one of the primary pedestrian routes on the campus. The existing pedestrian circulation system is the product of entry points around the perimeter of the campus, and the scatter of destinations, including parking lots, within it. Flaws in this system are the conflicts with service vehicles, and the complexity of the system which makes the campus difficult for strangers to navigate.

Circulation within the campus includes pedestrian and bicycle activity. To facilitate convenient and efficient pedestrian and bicycle circulation, campus activity centers were identified and quantified. The probable locations and orientation of new facilities were identified as destinations in a demand analysis. From this analysis a series of routes was suggested. Most are existing routes which require enhancement. Some are new corridors designed to integrate the entire campus from Bulldog Stadium on the west to Campus Pointe and Save Mart Events Center on the east, reducing or eliminating the need to cross the campus other than on foot, by shuttle, or by bicycle.

#### Existing Bicycle Circulation

In the past, bicycle access to the campus and circulation within it was widespread. Some streets have cycle lanes, but large volumes of fastmoving traffic discourage many who would choose to bicycle to campus. On the campus, bicycle routes are often undifferentiated from footpaths, so conflicts with pedestrians are inevitable.



Future Pedestrian Circulation

Based on the existing system of

circulation system will be expanded to serve new buildings, and will be

master plan. At intersections with the main east-west pedestrian mall

be introduced water features, each of a different design. Improvements to bicycle routes to and within the

campus will be sought.

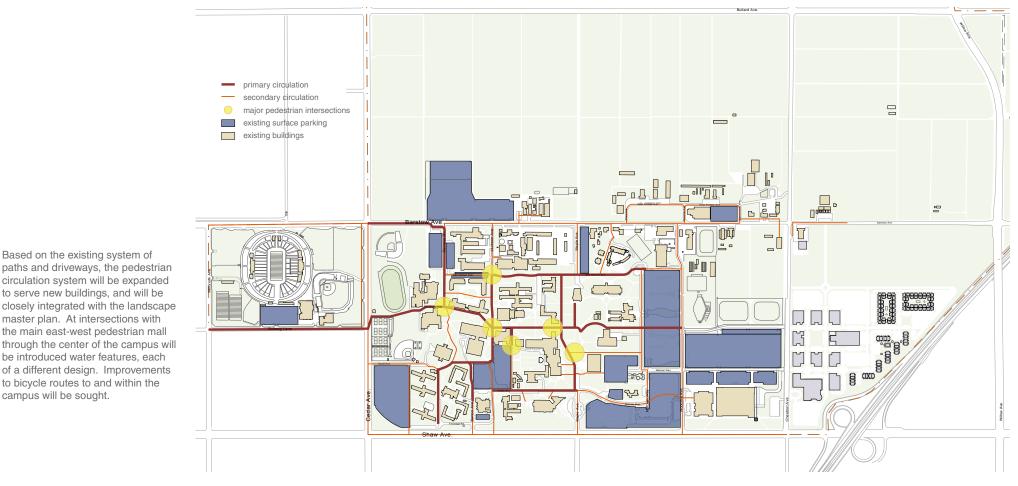
Separate routing for most large service vehicles will make pedestrian circulation safer, and greater conformance of building orientation with the overall form of the campus will make direction-finding easier. Attention to shading and lighting along footpaths, and compatible landscape improvements will make walking feel safer and more rewarding than it is now. Some new footpaths will be added to the network to improve convenience, and greater clarity in way-finding will make campus destinations easier to find. Way-finding will extend beyond the campus to surrounding streets, including jogging trails that follow windrows around the farm. Circulation will be assisted (especially for those who have difficulty walking) by continuously circulating shuttle vehicles on a fixed route.

As new destinations are created on campus and the system of footpaths changes, so pedestrian intersections will change in relative importance. Because of their value as impromptu meeting places, these intersections deserve special attention: a congenial microclimate at different times of the day and in different seasons, places to sit or lean during a conversation, features by which each place can be identified. These are the places where water features and art pieces belong, with special plantings and shading devices. Each pedestrian intersection has the potential to become a focus of informal social and intellectual interaction.

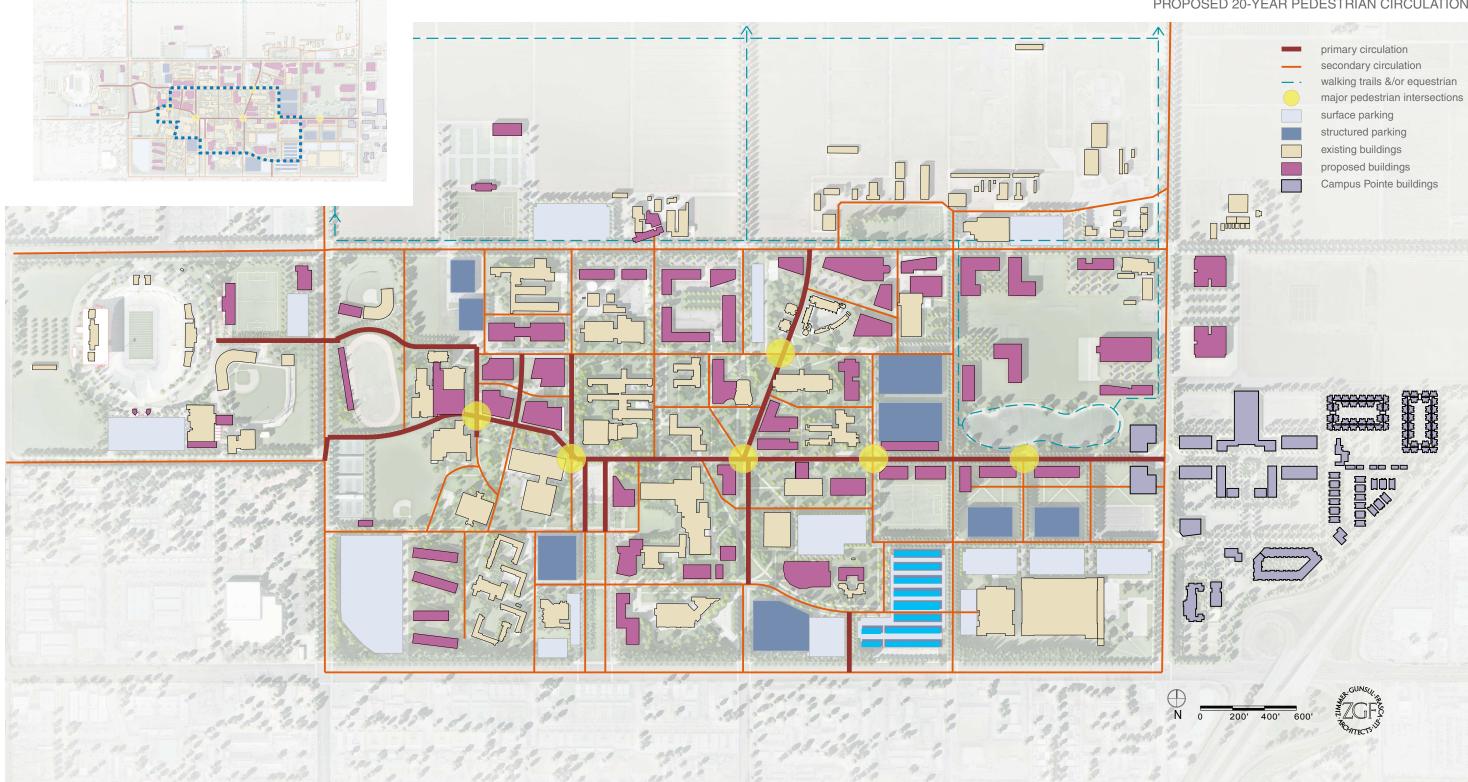
#### EXISTING PEDESTRIAN CIRCULATION

#### Future Bicycle Circulation

Bicycle riders and pedestrians will each seek the most direct route between destinations, so conflicts between them on campus pathways are inevitable. However, in congested areas of the campus, demarcation of a bicycle route can reduce conflicts, and can direct riders clear of places with limited sight lines. In some cases, the location of bike racks and other facilities can make a designated route more attractive to riders.



## PROPOSED CAMPUS SHUTTLE ROUTE



# PROPOSED 20-YEAR PEDESTRIAN CIRCULATION

#### Existing Vehicular Circulation

There are three separate classes of vehicular circulation on campus: parking access, service and delivery access, and circulation by maintenance staff. A fourth category is emergency vehicle access which must be accommodated to every building but is very rarely used. An objective of the campus master plan is to accommodate all of these movements safely and with minimal conflict with those on foot. Another objective is to make vehicular circulation and parking safe and convenient yet inconspicuous. The existing system of circulation routes falls short of both of these objectives.

The campus has become dominated by motor vehicles and vehicle access routes. Our premise was to control the use of motor vehicles within the confines of the campus, restricting their use to locations of necessity, such as loading and unloading bays, and to develop a motor vehicle access plan that will minimize existing conflicts between pedestrians and bicycle users and delivery vehicles that occur on the streets and walkways of the campus.

The backbone to the vehicle circulation system is the perimeter of existing streets comprising Shaw Avenue, Cedar Avenue, Barstow Avenue and Chestnut Avenue. These streets are connected to the campus by a series of on-campus routes: from Shaw Avenue via Barton, Maple and Woodrow Avenues; from Barstow Avenue via Campus, Jackson, and Maple Avenues; and from Cedar and Chestnut Avenues respectively via Scott and Matoian Avenues. Campus access to and from the public roadways will continue through these access corridors, but with enforced prohibitions to cross campus traffic.

# Future Vehicular Circulation

Improvements will be related to associated building projects, so will take many years to complete. Within ten years, improvement associated with the new main entrance off Shaw and the parking garages on Lots J and K can be anticipated.

Safe and congenial circulation on foot between the many destinations on campus demands the removal of current conflicts with vehicular movements. The plan shows a rerouting of service and delivery vehicles using a series of cul-de-sac routes from the perimeter of the campus to the various service entrances to buildings. Conflicts with pedestrian circulation routes would not be removed entirely, but will be substantially reduced. Removal of parking lots from the interior of the campus to lots and structures on its perimeter will remove access traffic entirely. (For example, Lot D will be replaced by buildings and open space following construction of the library parking garage). Maintenance vehicles will continue to use whatever access routes are open to them, so the emphasis will be on use of vehicles that are no more intrusive into the pedestrian environment of the campus interior than is strictly necessary.

EXISTING VEHICLE CIRCULATION

The use of electric golf carts for personal transportation within the campus has proliferated, and adds a new set of conflicts for pedestrians and cyclists. With introduction of the campus circulator shuttle, it is recommended that use of personal golf carts be significantly reduced. The proposed vehicle circulation plan shows primary access to parking and service areas as extensions of the public street system (red). Low volume branches from these serve the service entries of all other buildings on campus (blue). Only small vehicles will be permitted to use the circulation system during the day. Larger vehicles will be permitted until 7:30 am; before that time conflicts with pedestrians will be few.

Barstow Avenue is a private street that is internal to the campus and carries little through-traffic. Proposed changes along Barstow, such as the removal of most parking from Lot Q, will significantly change traffic patterns. It is proposed that design and management of this street be changed so that safety and efficiency of operations will be significantly improved. A series of small diameter roundabouts is proposed to take the place of four-way stops. This solution will control the speed of through-traffic, provide direct routing for pedestrians, and will remove the need for enforcement personnel at intersections.

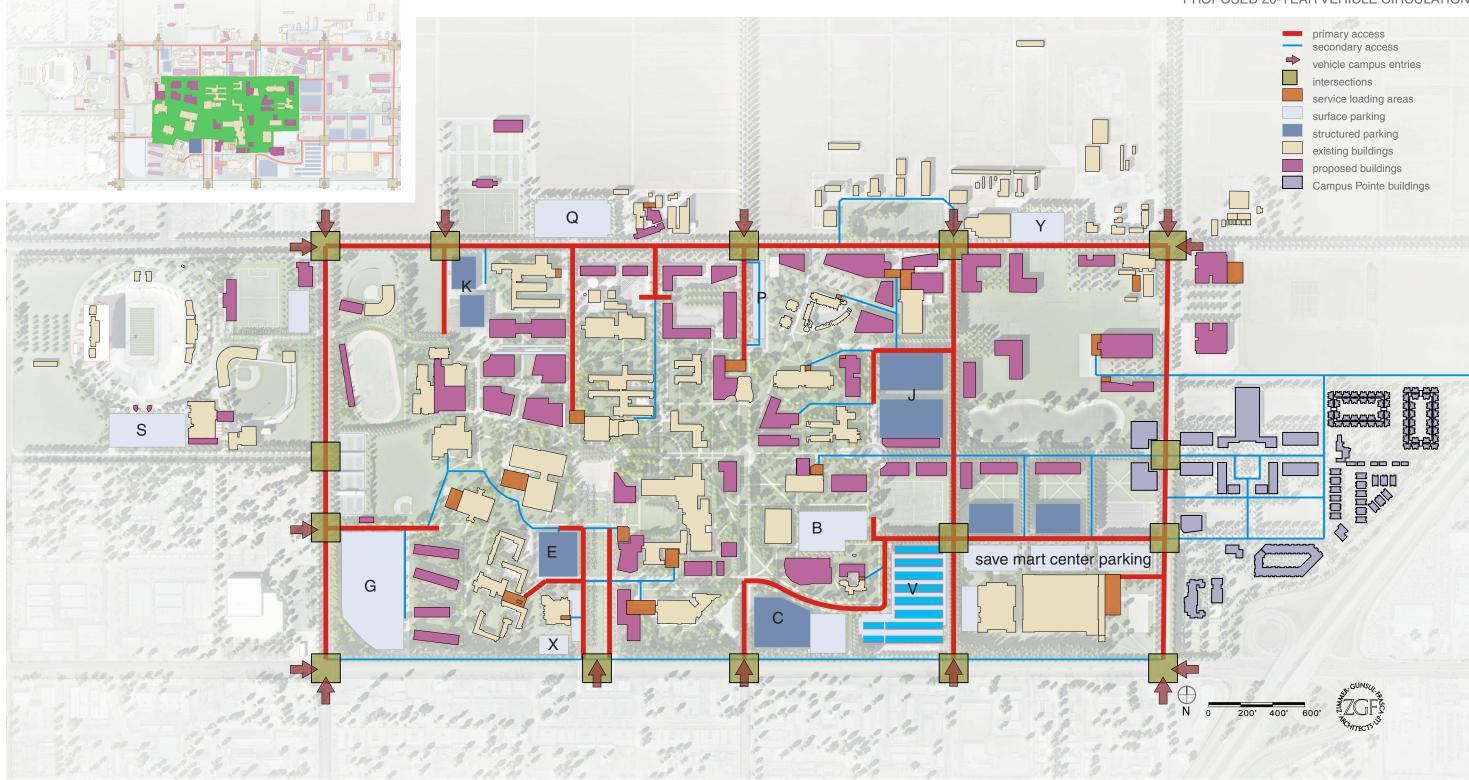




Vehicular circulation will generally be eliminated from the interior of the campus. Typically, cul de sac streets will extend into the perimeter of the campus from the surrounding street system. These will be marked by street trees. Vehicular circulation will be configured to intersect as little as possible with the pedestrian network.



# NON-PUBLIC VEHICULAR AREA (ARBORETUM FOCUS)



# PROPOSED 20-YEAR VEHICLE CIRCULATION

# **Existing Major Utility Routes**

The systems of wet and dry utilities have been built incrementally as the campus has grown. Some lines have been replaced, leaving the old pipes or cables in place. It is important to distinguish active from inactive lines so that the siting of new buildings, plantings and other facilities are not unnecessarily restricted, or conversely, that important utilities are not disturbed.

### Future Major Utility Routes

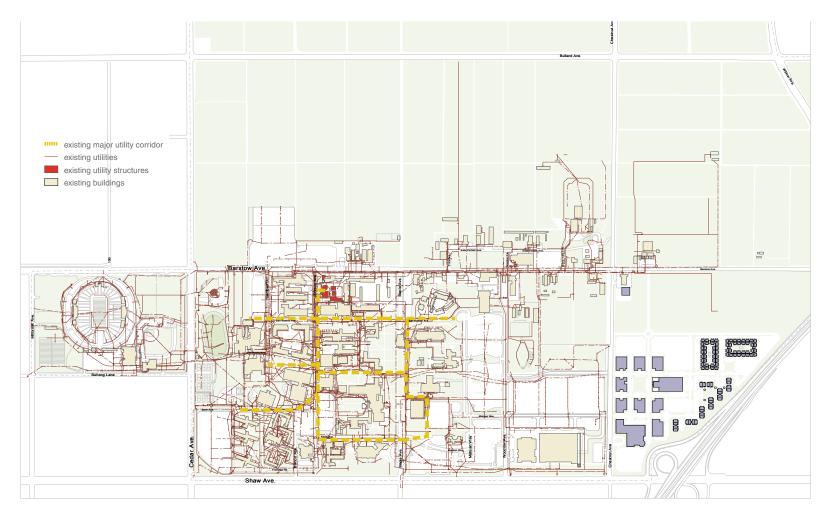
The siting of new buildings identified in the Campus Utilities Master Plan prepared in 2005 will in some instances require further extension of those systems. Most major utility lines on campus are buried beneath driveways and footpaths so that they can be accessed for maintenance. This pattern will continue. In some instances it may be necessary to reroute one or more lines to free a site for construction, but these are unlikely to involve major utility feeders. The Campus Utilities Master Plan projected Central Plant capacity needs and expansions to the existing utility systems based on anticipated building improvements for the next eight years. The basis for increases in demand and the routing of new services was based on the 2005 update of the 1963 campus master plan, and a list of ten specific building improvements. Other improvements through 2025 were referenced only indirectly. The 2008 campus master plan looks ten years into the future, and anticipates additional improvements twenty years into the future, using University projections of enrollment through those periods.

Substantially greater growth is anticipated over twenty years than was contemplated in the Campus Utility Master Plan, yet the basic alignments of services will remain valid, and greater room for improvements will be provided in the redesigned corporation yards for Central Plant. Thus the principles of the Campus Utilities Master Plan are carried forward by this campus master plan. The option of treating waste water on campus has been under consideration for some years, with construction and maintenance costs versus the cost of using the public system being the main determinant. It is now highly probable that an on campus system will be built on campus within ten years. The favored location is north of Barstow and east of Chestnut; the details of the system and specific site have yet to be determined.



Central plant improvements detailed in the Utilities Master plan will be sufficient to meet projected needs for the next decade and beyond. Extensions of major underground utility routes will follow paths and driveways where access can always be assured.

# EXISTING MAJOR UTILITY ROUTES





# PROPOSED 20-YEAR MAJOR UTILITY ROUTES

## **Existing Parking**

Over seventy acres of land are currently occupied by parking in about twenty surface lots. Parking is a resource vital to the University; thus much has been invested in its management, upkeep and access. Planned growth in student enrollment, faculty and staff numbers threaten to increase demand for parking. Meanwhile, congestion and conflicts between vehicles and pedestrians have reached unacceptable levels, notably by Lot Q on Barstow Avenue.

Demand for campus parking normally peaks during the late morning, with a lesser spike occurring in the early afternoon. A third peak, although considerably less extreme, occurs during evening classes. It is during the evening periods that occasional conflicts occur raising the demand for on-campus parking significantly: early evening weekday football games and high demand events at the Save Mart Center tend to conflict with normal campus activities.

There are sectors of the campus where the level of parking is taxed to the limit by normal daytime campus demands. These peak demand locations are in student Lots A and J on the eastern side of the campus, and Lots L and Q to the northwest, and Lots E and G to the southwest. The most heavily used faculty and staff parking is in Lots D, M and O.

Points of access and egress from parking lots are a source of pedestrianvehicular conflict. Some, such as in Lot Q, pose serious safety threats that demand decisive action. It is proposed that most of the parking on Lot Q will be transferred to a multistory garage to be built on Lot K. This and other changes will prompt re-evaluation of the functions and operations of Barstow Avenue as a private campus street east of Cedar Avenue.

### Future Parking

Increasing enrollment in the years ahead threatens to increase demand for parking on campus: already a scarce resource although it occupies one-fifth of the land area. An objective is to accommodate parked vehicles close to the occupants' destination, preferably out of sight and sheltered from the weather. Furthermore, this should be accomplished economically in terms of land used and funds expended. The strategy by which this can be accomplished is in two parts. The first is to reduce the proportion of students who drive to campus; especially those who drive alone. The second is to consolidate large numbers of parked vehicles into carefully located parking garages configured to optimize function and economy, including safe and efficient access and egress

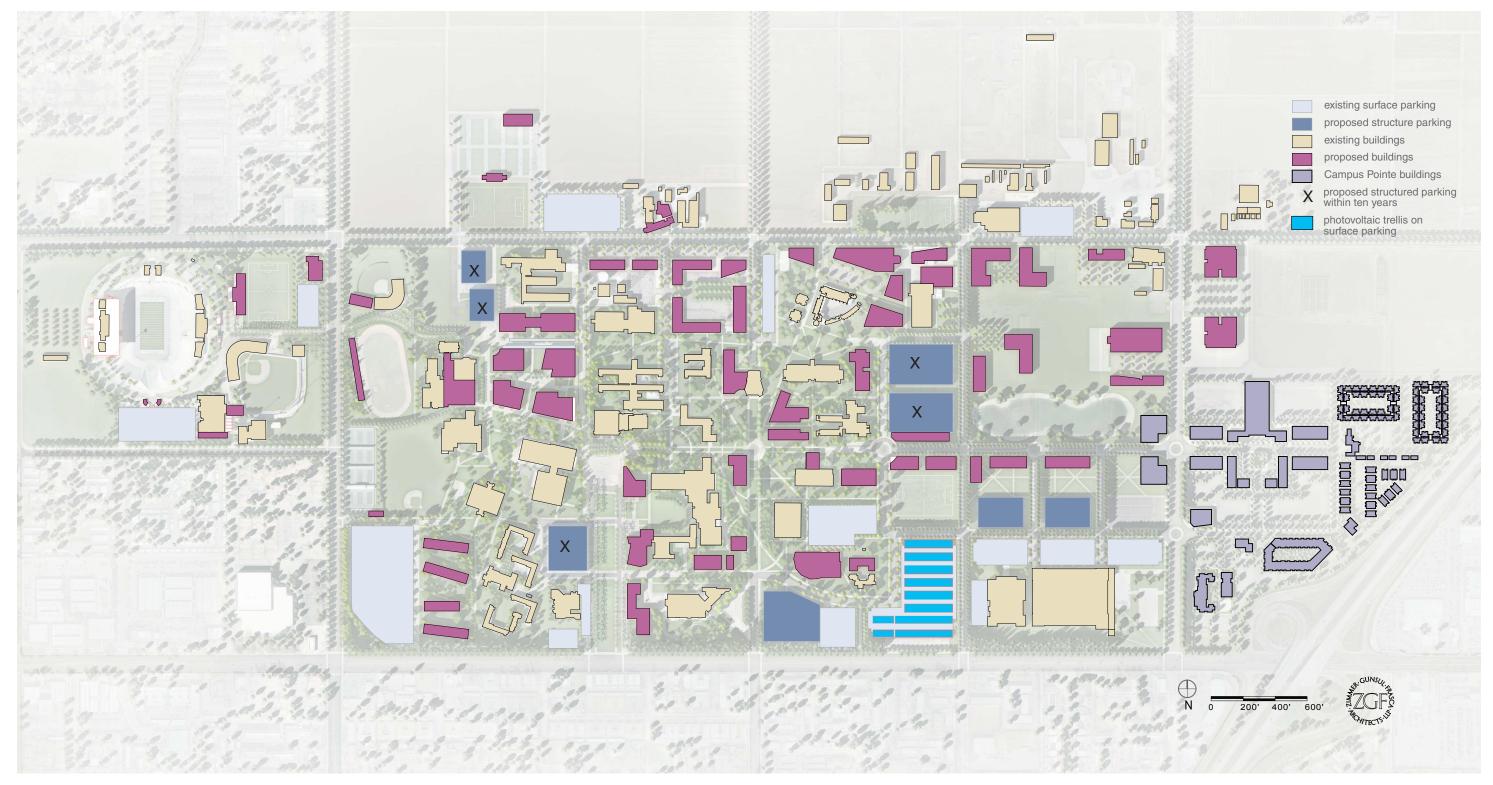
Parking garages are expensive to build, but the trade-off is in scarce land formerly occupied by surface parking which becomes available for other uses, and in control of traffic entering and exiting the campus at peak periods. Points of access and egress at parking garages are critical to their location, providing an opportunity to function pro-actively with the streets and intersections around the campus, and to minimize conflict with pedestrians and cyclists. Another important locational factor relates to those campus buildings and spaces served by each garage: each must be in a place that will not become necessary for future expansion of academic or campus life facilities. New parking facilities will be located where they can meet the normal demands of increased daytime campus needs and the slightly different demands of evening classes and special events. Integration of other uses within new parking structures will be important, especially where they border busy walkways. Potential integrated ground floor might include an on-campus public transit center, an information kiosk for visitors, and a variety of commercial campus operations and offices.

Shading of surface parking lots and the top decks of parking garages is desirable both for keeping parked cars cool and reducing heat build-up (heat island effect) in the paving and building. A conspicuous opportunity is to construct arrays of photovoltaic panels above parked cars to supplement the university's sustainably generated power supply, as demonstrated on Lot V. Alternatively, the top deck of a parking garage may be paved or planted for recreational uses—with suitable perimeter protection.



Currently, much of the campus is visually dominated by parking lots. Scarcity of land will necessitate progressive relocation of parking into strategically located parking structures. Buildings and landscaped open spaces will replace the open parking lots.





# PROPOSED 20-YEAR PARKING

### Existing Building Uses

As is to be expected on a campus that has evolved over half a century and grown from a small agriculturally-based school to a major university, the demands on its buildings have changed, and the original organization of built space by discipline has been largely eclipsed by new needs. Schools and colleges within the university are typically divided between several buildings often scattered across the campus. This makes collegiality between colleagues tenuous, and fragments collective functions, requiring duplication of some activities and equipment. A weakened sense of community between students is often a result of this fragmentation. Some have retained or recovered consolidation in one part of campus: student housing in the southwest, Athletics in the west and Science in the northeast.

#### Future Building Uses

The ability for existing buildings to be adapted or expanded to fulfill future needs depends largely on their condition. This is explored in a subsequent section of this master plan from which is drawn a conclusion on possible sites for future buildings. An objective is to consolidate scattered schools and colleges and administrative departments so that they can function effectively at every level, with spaces and equipment appropriate to their needs and numerous opportunities for professional and social interaction. Faculty offices need to be close to teaching spaces, especially when books and equipment must be carried between these locations. Faculty offices for shared use may be allocated to each region of the campus. These would be convenient for both meetings with students and class preparation. Some could be equipped with shared workstations for part-time faculty. Buildings must be hospitable to impromptu meetings and incidental study. History has taught us that buildings must also be adaptable to changing uses and expandable to accommodate growing needs. Buildings must also be oriented and designed to conserve energy as well as being built from sustainable materials and employing sustainable practices such as daylight harvesting and natural ventilation, both of which contribute to the conservation of costly energy.





Established use districts within the campus will remain largely unchanged, although there will be a marked increase in academic buildings east of the Maple Avenue alignment. In the long term, Campus Pointe will be fully connected to the campus by development of intervening land with buildings and landscaped open spaces.

EXISTING BUILDING USES





# PROPOSED 20-YEAR BUILDING USES



LANDSCAPE ANALYSIS

#### Landscape Inventory

There are four expectations of the landscape master plan that can be derived from the master plan goals and objectives:

- The landscape should define a consistent and appropriate image for the university throughout the campus, drawing together the Arboretum and the agricultural landscape with the remainder of the campus into a coherent whole.
- The landscape framework should be coordinated with other functional frameworks to accommodate ongoing growth and change across the campus.
- The landscape should create comfortable outdoor spaces that are conducive to impromptu meetings between students and faculty at different times of the day and in all seasons;
- Principles of energy conservation and sustainable practices should be upheld by landscape design, through effective use of shade, admission of natural breezes and daylight where they are needed, use of droughttolerant plants and low maintenance materials.

An inventory of existing trees on the campus provides valuable and detailed information on species and age. There are places where trees have come into conflict with their setting through changes around them in soil compaction, water table, installation of utilities or other development. There are places where the remnants of original planting patterns are evident, but have been obscured by subsequent plantings. In short, an overall structure of the landscape is lacking.

The landscape heritage derives from agricultural land divisions and from rows of trees planted along streets and section lines. Only the Arboretum departs from this geometry, relating instead to the irregular open spaces between campus buildings, and natural grouping of trees. Rows of trees have traditionally lined driveways leading into the campus, and these can be extended as windrows into the farm land north of Barstow. Apart from the visual unification provided by these features, the windrows have the practical function of trapping airborne dust and sprays emanating from agricultural operations. Within this orthogonal landscape structure is the free form landscape at the core of the academic campus, where scale is related to the movement of people on foot between buildings. Thus the basic structure of the landscape master plan will be founded in its function. At the next finer layer of design, a series of other functions must be fulfilled by the landscape:

- Cleaning the air by re-oxygenation and transpiration;
- Climate control and shade;
- Erosion control;
- Spatial definition.



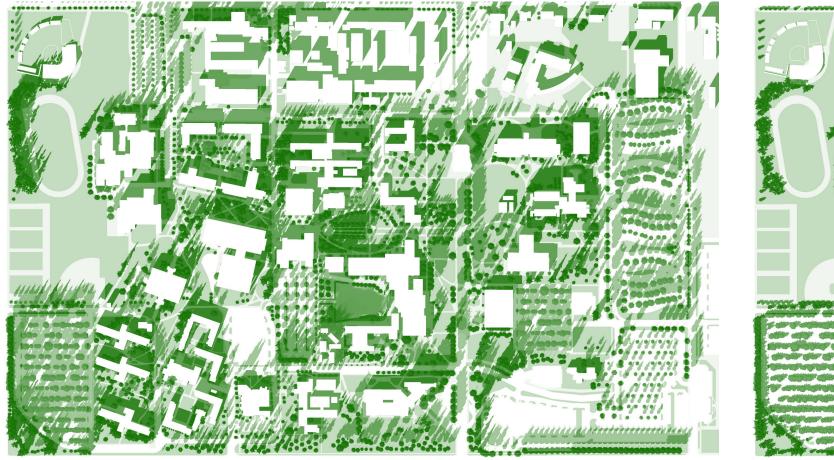


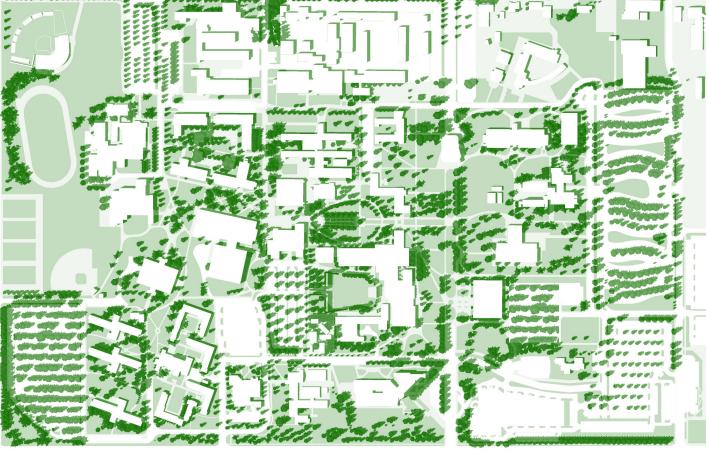
genation and transpiration; ;;



"Heat island effect" is the heating up of paving that is exposed to the sun, and its subsequent heat radiation. The net effect is to raise ambient temperatures, increasing cooling loads in buildings and making outdoor spaces and parked vehicles uncomfortably hot. Average annual temperatures of entire cities have increased sufficiently to upset local ecologies through heat island effect. An opportunity for the campus is to extend tree canopies to shade buildings and most paved surfaces, thereby increasing comfort for everyone, and reducing power demands for cooling.

In the winter months, the sun is lower in the sky and shadows are longer, reducing the areas open to heat island effect. However, the lower sun angle shines more directly into the walls and windows of buildings causing heat build-up and glare. Judicious placement of trees around buildings can reduce these problems significantly. A balance is sought between control of solar gain and admission of ample natural light. The large number of trees on campus contributes much to its established character. Changes will be incremental, associated with particular projects and the open spaces that relate to them. Redevelopment of surface parking lots will bring conspicuous changes, as will creation of the new main entrance off Shaw Avenue. The perimeter of the campus and vehicular entries to it will continue to be characterized by rows of trees. Within the campus, the free-form planting of arboretum specimen trees in loose communities will extend through the series of open spaces and along footpaths, providing shade and ambiance. The benefits of improved tree cover will increase over time, but will depend on continued maintenance and replacement of diseased or damaged trees.





Mid-day shadows in winter fill many of the campus open spaces. Those wishing to linger outside will seek sunny places.

Summer shadows are short and only trees with wide canopies are effective in keeping the ground plane cool.

#### Landscape Evolution and Spatial Hierarchy

Before the university moved to this campus, land was divided by Section and Quarter Section lines, some evident only on surveyors' maps. (In the accompanying diagrams the freeway is shown only as a point of reference, as it is a recent addition.) As roads were built, they followed those lines, and as land was divided, the lines became more clearly marked on the land.

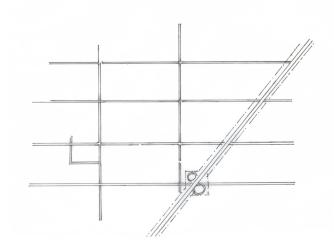
When the university established its first buildings here in the 1950s, some streets were already lined with trees and some fields were subdivided as orchards. Thus the campus was born into an established Euclidean geometry of roads, fields, street trees and orchards. The early master plans (shown in the Introduction chapter) demonstrate how each building, each open space and each parking lot was subject to this pre-existing ordered geometry. Exceptions were the Library, Peace Garden and the two Quadrangle buildings that border it. Later, student residence halls were built following the non-conformist geometry of the Library. Otherwise, each new building and each new planting reinforced the historic rectilinear pattern.

At some indeterminate point in its evolution, the growing group of academic buildings became a campus: a significant destination with a definable sense of place that distinguished it from other clusters of buildings. At its heart, a collection of specimen trees was being planted in small, loosely related communities. These planting patterns were strikingly at variance with the ordered ranks of street trees that were still being added along streets and driveways. The informal arrangement of trees in the Arboretum had begun to establish a series of spaces and views well suited to those on foot, while the ranks of street trees forming long, straight avenues were more suited to faster moving vehicles.

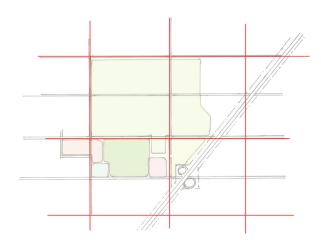
This distinction between open spaces scaled for those on foot and a rectilinear geometry suited to fast-moving vehicles defines the role of the campus within the larger neighborhood. Today, those geometries, made manifest by tree planting patterns and driveway geometry, collide and overlap, communicating a lack of clarity in the campus landscape.

The key distinction is that within the campus, the predominant means of access is walking, and outside it, vehicular traffic prevails. The scale of open spaces within the campus should reflect the speed and scale of those on foot, with a constantly changing series of related spaces help-ing each pedestrian to navigate, and adding to the delight of the journey. Outside the campus, the emphasis is on traveling swiftly from one destination to another, neither of which is necessarily the "campus."

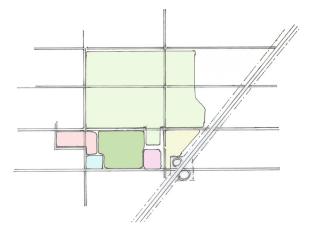
In the landscape recommendations, this distinction is expressed clearly in the street trees and hedgerows that extend around the campus and across the farmland. These give way to non-rectilinear plantings at the places around the campus perimeter where drivers leave their cars and become pedestrians. By this means, the form of the established Arboretum will be extended across the campus, giving it visual definition and accommodating pedestrian-scaled movements and perceptions. Much parking will eventually be housed in multi-story garages, but remaining surface lots will be planted in a rectilinear pattern reminiscent of an orchard. This is to conform with the dimensions and regularity of an efficient parking lot while achieving substantial tree canopy cover that will shade both cars and paving.



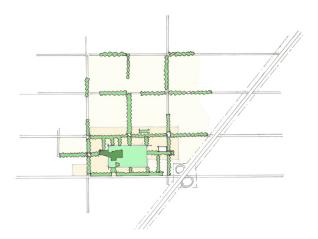
The Euclidean Grid of Sections and Quarter Sections divided land before organized agriculture became established. (The freeway is shown for spatial reference.)



Euclidean geometry of roads, fields, and orchards followed the surveyors' prior divisions of land.



In the 1950s, the campus was introduced and urbanization of the area began. Later the freeway was added, cutting diagonally across the long-established grid.



This master plan advocates re-connection of campus, street and farm landscapes with windrows and tree-lined driveways. The core of the campus will be characterized by free-form expansion of the Arboretum.

# Landscape Master Plan

As one approaches the campus from south or east, the first impression is of a wooded enclave with parking lots and buildings within. From the north, the first impression is of the ordered rows of crops and orchards on the farm, followed by a venerable rank of street trees on Barstow with parking, a mix of large and small buildings, a water tower and more trees beyond. Arriving from the southeast, the Save Mart Center and parking lots fill the views of those arriving off the freeway. Once inside the campus, buildings, trees, and the spaces formed by them deliver a strong first impression of the university.

The landscape master plan, guided by the four expectations stated at the beginning of this chapter, is intended to match the sense of place conveyed to visitors with the character and aspirations of the university. It is also intended to enhance the outdoor environment to make it more comfortable and to accommodate the needs of those who use it.

- plantings;
- parking lots;
- Special features: fountains, public art, lighting, signage and outdoor furniture.

colors.

One of the greatest influences in transforming the landscape will be the gradual transfer of parking from open lots to garages, and redevelopment of the lots to provide new buildings and open spaces. Currently, one-fifth of the academic campus is occupied by parking lots.

As described above under Landscape Evolution and Spatial Hierarchy, the intention is to anchor the academic campus and farm more tightly together with extensions of street tree rows with hedgerows that delineate the farm and separate it from adjacent housing. Apart from the formal connections made between different parts of the campus, the hedgerows will also serve to intercept dust and spray that might otherwise blow from the farmland into the residential neighborhoods.



A proposed water feature at the pedestrian walkway intersection south of the Satellite Student Union Building along the former Maple Avenue alignment would make a local landmark. It would be designed to celebrate the importance of water while demonstrating how it can be used sustainably.

Components of the existing campus landscape provide a starting point for reshaping it to fulfill those functions, and to convey a consistent and appropriate image for the university. Components include:

• Trees: street trees, the Arboretum, parking lot trees and other

- Roads: streets, drives, footpaths and bicycle paths;
- Open spaces: fields, gardens and shrubberies, lawns,
- quadrangles, plazas, building entries, service areas and

Buildings and other structures such as the water tower also have a significant influence on landscape design, since they impose an architectural scale on spaces around them and set precedents for materials and

Street tree rows and hedgerows will extend into the academic campus only as far as the entries to parking garages and lots. Where drivers become campus pedestrians, the landscape will change from a geometry of streets and quarter-section lines to one of pedestrian campus. Tree planting patterns will shift from ordered rows to informal communities that shape open spaces around the activities of the campus: shading a footpath, defining the approaches to a building entrance, screening a loading dock, marking a meeting place or other special feature.

The first impressions of the campus as one approaches will still be of an ordered geometry because of the street pattern that defines the whole campus and its larger parts. However, on entering the campus, there will be a discernable shift in scale and character; not unlike the contrast experienced today between the parking lots and the Peace Garden. The Peace Garden is symbolically at the heart of the Arboretum. It typifies an

arrangement of landscape around the movements of those on foot and provides an identifiable place of gathering and celebration. These are the qualities that are to be extended with the Arboretum throughout the central campus.

There will be elements of the campus that still exhibit orthogonal organization, reflecting their function. The regular geometry of parking lots invites an ordered, orchard-like arrangement of trees, if the objective of a near-continuous canopy of trees is to be attained. This canopy will not only make the parked vehicles a less conspicuous feature of the campus, it will also control heat gain in both vehicles and paving.

Another exception to the irregular tree planting patterns on the campus will be the proposed entry avenue. A recognizable main entrance to the campus is lacking today. What is proposed is a formal entrance from Shaw towards the Library and University Student Union buildings. It will be a straight avenue; a new extension of the surrounding street system that reaches to the core of the campus. It is appropriate also to extend formal rows of street trees into the campus with it.

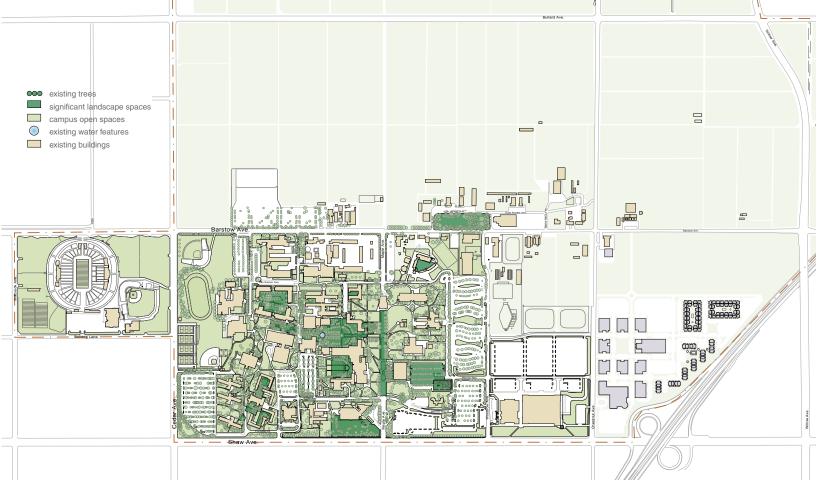
Water is a precious commodity in the Central Valley, and the sight and sound of it can add much to enjoyment of the campus. The existing fountain is much appreciated, especially in hot weather. It is proposed that additional water features be added to the main east-west pedestrian mall at intersections with other footpaths. New water features will have an additional responsibility: to demonstrate conservation and sustainable design. They must lose relatively little water to evaporation and must be undemanding of frequent maintenance. The intention is that each water feature will have its own unique character, providing local landmarks along a footpath that will continue to be heavily used.

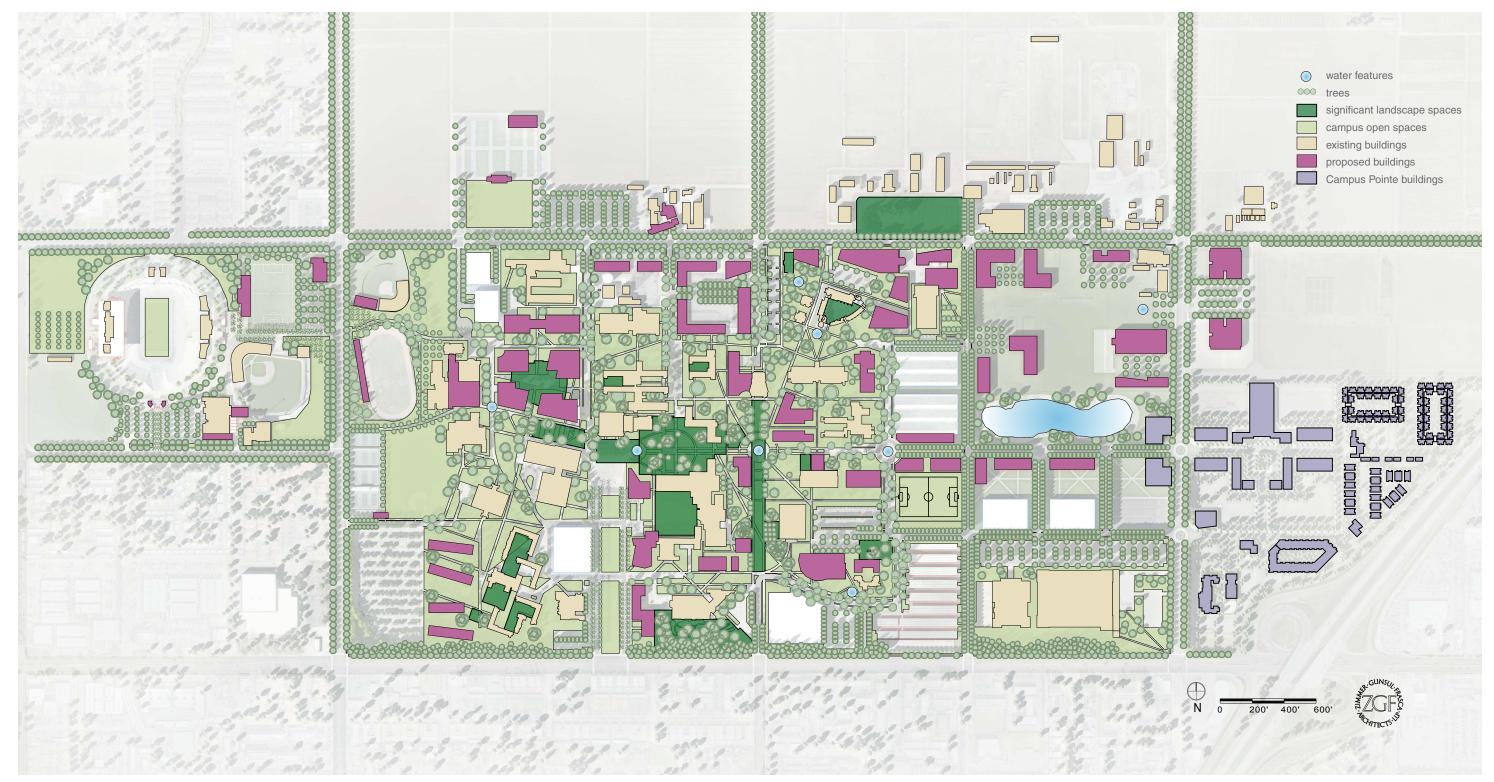
Detailed recommendations for implementation of the landscape master plan follow.



The streets around the campus follow surveyed section lines and currently the geometry of former streets persists into the pedestrian domain. Within the campus, a finer grained circulation system will be shaped by the speed and motions of those on foot, and therefore will depart from strict rectilinearity to create a campus environment. In future, the campus will be improved with progressive construction of a series of linked open spaces. Tree plantings will be generous and varied, with tree canopies shading most paved areas and protecting buildings from solar gain. Loose communities of specimen trees will extend the Arboretum into large and small open spaces throughout the campus.

### EXISTING MAJOR LANDSCAPE FEATURES





# PROPOSED 20-YEAR MAJOR LANDSCAPE FEATURES

# Landscape Recommendations and Design Guidelines

The purpose of this section is to provide guidance for implementation of the landscape master plan. It does not provide a comprehensive set of guidelines, but addressed key issues and expands on the general intent described above.

### **Hedgerows and Street Trees**

The campus includes the academic campus, Athletics and the Farm Laboratory, and all should be visually connected by the landscape. Rows of street trees and hedgerows should connect into the perimeter of the academic campus. Hedgerows (also known as windrows in this context) comprise a double row of columnar trees limbed up six feet above ground level. Hedgerows may also have a trail beside them, or between the parallel rows.

### Arboretum

Supplement and expand the historic Arboretum with communities of specimen trees, and replace diseased and removed specimens. Select plants with sufficient maturity to survive the rigors of a busy campus, and provide soil augmentation, support, protection and irrigation until they become well established. Place trees with consideration for the overall effect of the expanded Arboretum and the influence that the trees will have on local spaces as they gain maturity.

# **Tree Species**

Select trees for general use (i.e. other than arboretum specimen trees) that are disease- and drought-resistant; amenable to the campus climate; and capable of developing effective shade canopies in a relatively short time. Where soil compaction is probable, use specially structured soils to enhance root growth and longevity. Avoid reliance on a single species so that disease outbreaks can have limited effect on the campus as a whole.

#### Xeriscape

Select plant materials, including trees, shrubs, decorative plants and groundcovers that, when established, require little water and other maintenance.

# Water Features

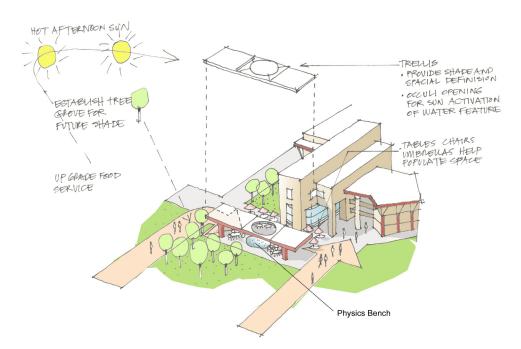
Water features should demonstrate leadership in the responsible use of water, providing the sight and sound benefits of water with minimal evaporative loss. Water features should mark crossings of footpaths with the main east-west walkway across the campus. Each should have a distinct appearance.



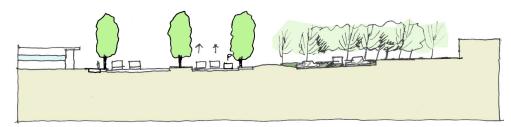




Hedgerows and windrows associated with farmland extend as rows of street trees into the perimeter of the campus. Within the campus, free-formed communities of specimen trees expand the Arboretum.



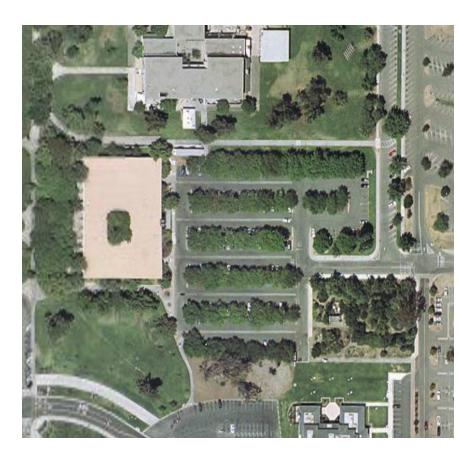
A design study of the front plaza of the Science II Building. Such interventions can create comfortable meeting places in locations that would otherwise remain inhospitable.



Proposed landscape on Shaw Avenue. Sidewalk and median trees would temper the visual impact of the street on adjacent properties. Curb parking would make sidewalks more inviting.



Without shade, paved areas become hot and uncomfortable in the summer. At building entrances, porches or trellises can temper the climate. In parking lots, an orchard-like spread of tree canopies can shade cars and paving effectively, combating heat build-up.





Parking Lots Provide surface parking lots with safe footpaths. Coordinate surface landscaping with orchard-like planting patterns for trees sufficiently closely spaced that at maturity a near-continuous canopy will cover the lot, to shade vehicles and reduce heat island effect. Sustain overall parking counts to meet current campus-wide demand.

Within the academic campus, give priority to the routing and landscaping of walkways, minimizing potential conflicts between pedestrians and bicycles, and with vehicles. Ensure clear sightlines at intersections to reduce the risk of collisions and to enhance personal safety. Provide clear sightlines along walkways coupled with pedestrian illumination for night-time security. Separate service and delivery vehicle circulation from pedestrian routes. Pave walkways with surfaces that are amenable to wheelchair use, and replaceable where access to utilities may be necessary. Where space permits, especially in congested areas, designate extra pavement width for bicycle use. Clearly mark the route of the campus circulator shuttle.

Vehicular Circulation System Minimize vehicular circulation within the academic campus by locating parking lots at its perimeter. The curb radius at intersections should be no greater that 20 feet to slow turning traffic and reduce the length of the cross-walks. Bollards and other obstructions can be used to distinguish pedestrian areas from traffic lanes. Special provisions will be made for buses serving special events.

**Circulation and Way-Finding** Establish a clear hierarchy of roads, driveways and footpaths. Coordinate with this a way-finding system that will guide visitors to parking, and thence to any destination on campus. Signs should be located so that they are illuminated after dark.

# Lighting

Campus lighting should generally be white and of uniform brightness. directed and no brighter than necessary for one pedestrian to recognize another at a few yards distance. Avoid abrupt changes in lighting level that create places of concealment near walkways. Use cut-offs to prevent lights from shining above horizontal, to protect windows of residences and the night sky.

# Meeting Places

At places where paths cross and near building entries, provide seating where it will be shaded and ventilated in the summer, while others will be exposed to winter sun. Plant trees and other vegetation to enhance the microclimate while maintaining clear views of approach routes by day and after dark.

**Bicycle Parking** Provide secure bicycle parking in shaded locations near building entrances, but clear of access routes.

# Pedestrian and Bicycle Circulation System

### Landscape Plant Material Analysis

California State University, Fresno's Plant Materials List was analyzed with the Landscape Recommendations, Design Guidelines and Master Plan principles. The Landscape Plant Materials List has been reorganized by functional categories discussed in the Landscape Implementation section. Key characteristics of each functional category are summarized in the matrix on this page. The following lists are considered a draft and as projects are implemented the list should be reviewed and updated periodically.

### California State University, Fresno Plant Materials List

#### **Accent Trees**

Acer oblongum Acer palmatum Acer palmatum 'Atropurpureum' Albizia julibrissen Arbutus unedo Bauhinia varigata Bauhinia varigata 'Candida' Betula nigra Betula pendula Betula pendula 'Cutleaf' Callistemon citrinus Callistemon rigidus Callistemon virminalis Casuarina equisetifolia Celtis sinensis Ceratonia siligua

Cercis canadensis Cercis occidentalis Chaemerops humilis Chilopsis linearis Chitalpa tashkentensis Chorisa speciosa Citrus Coculus laurisifolia Cordyline australis Cornus florida Cotinus coggygria 'Purpurea' Cratageus laevigata Cryptomeria japonica 'Yoshino' Cryptomeria japonica 'Elegans' Cupressus glabra Cycas revoluta Dicksonia anartica

Diospyros kaki Erioboytra deflexa Erioboytra japonica Ficus benjamina Ficus carica Ficus elastica Ficus lyrata Geijera parvifolia Ginkgo biloba Gleditsia triacanthos 'Rubylace' Gleditsia triacanthos 'Sunburst' Jacaranda mimosifolia Juniperus chinensis 'Tortulosa' Juniperus chinensis 'PfitzeranaAurea' Juniperus occidentalis Juniperus scopulorm 'TollesonsBlueWeeping' Koelreuteria bipinnata Koelreuteria paniculata Lagerstromeia indica Lauris nobilis Leptospermum laevigatum Magnolia liliflora Magnolia salicifolia Magnolia soulangiana Magnolia stellata

Key Characteristics of Campus Trees

Malus floribunda Malus ioensis 'Plena' Malus purpurea 'Eleyi' Maytenus boaria Melaleuca decussata Melaleuca stypheloides Michelia champaca Michelia doltsopa Morus alba Morus nigra Nyssa sylvatica Olea europea Parkinsonia aculeata Pinus patula Pistacia vera Pittosporum phillyraeoides Platanus racemosa Platycladus orientalis Podocarpus henkelii Podocarpus macrophyllus Prunus caroliana Prunus cerasifera 'atropurpurea' Prunus cerasifera 'Newport' Prunus Iusitanica Prunus Iyonii Prunus serrulata 'Kwazan'



Example of an accent tree (Cornus florida) which is small to medium scale. Accent trees are used primarily in the non-auto, historic center of the campus, therefore drought tolerance and low maintenance are not as important as showy flowers and strong fall color.

	Large Scale	Medium Scale	Small Scale	Fast Growing	Slow Growing	Deep Rooted	Shallow Rooted*	Showy Flowers	Fall Color	Deciduous	Broad Leaf Ever.	Needle Evergreen	Fastigiate	Columnar	Spreading	Broadheaded	Drought Talerant	Low Maintenance	High Maintenance
Accent Tree																			
Parking Lot Tree																			
Pedestrian Avenue Tree																			
Street Tree																			
Shade Tree																			
Hedge Row Tree																			
	nt		ant																



Characteristics

\* = Shallow rooted can be mitigated by structural soil and deep irrigation

#### Accent Trees, continued

Prunus subhirtella 'Pendula' Prunus yedoensis 'Akebono' Pyrus kawakami Quercus suber Rhus lances Robinia ambigua 'PurpleRobe' Sabal palmetto Salix babylonica Salix matsudana 'Tortuosa' Sapium sebiferum Shinus molle Shinus terebinthifolius Sophora japonica Taxus baccata 'Stricta' Torreyana californica Trachyocarpus fortunei Vitex agnus-castus Xylosma congestum

# **Parking Lot Trees**

Acer buergeranum Euculyptus polyanthemos Euculyptus sideroxylon Fraxinus oxycarpa 'Raywood' Fraxinus undhei

Gleditsia triacanthus 'Shade Master" Gleditsia triacanthus 'inermis" Liquidambar formosana Liquidambar orientalis Liquidambar styraciflua Liriodendron tulipifera Magnolia grandiflora Platanus acerifolia Pyrus calleryana 'Bradford' Pyrus calleryana 'Aristocrat' Quercus agrifolia Quercus bicolor Quercus douglasii Quercus lobata Quercus nigra Quercus palustris Quercus rubra Ulmus parvifolia Zelkova serrata

#### **Pedestrian Avenue Trees**

Acer buergeranum Acer palmatum Casuarina equisetifolia Cinnamomum camphora Euculyptus camaldulensis Geijera parvifolia

Liquidambar formosana Liquidambar orientalis Liquidambar styraciflua Liriodendron tulipifera Melaleuca stypheloides Melia azedarach Melia azedarach 'Umbracuformis' Platanus acerifolia Podocarpus gracilior Prunus cerasifera 'atropurpurea' Prunus cerasifera 'Newport' Prunus lusitanica Prunus serrulata 'Kwazan' Prunus vedoensis 'Akebono' Pyrus calleryana 'Bradford' Pyrus calleryana 'Aristocrat' Quercus agrifolia Quercus douglasii Quercus lobata Quercus palustris Quercus rubra Quercus virginiana Quercus wislizenii Sophora japonica Taxodium distichum Tilia cordata 'Greenspire' Ulmus parvifolia Ulmus parvifolia 'Delaware' Umbellaria californica Zelkova serrata



Large shade trees are very important to the success of parking facilities blending into a campus setting as well as reducing heat build-up. Deep rooted trees are desirable and should be helped with structural soils and deep irrigation to prevent tree roots from lifting paving.



#### **Street Trees**

Melia azedarach Melia azedarach 'Umbracuformis' Platanus acerifolia Podocarpus gracilior Prunus lusitanica Pyrus calleryana 'Bradford' Pyrus calleryana 'Aristocrat' Quercus douglasii Quercus lobata Quercus palustris Quercus rubra Robinia pseudoacacia Tilia cordata 'Greenspire' Umbellaria californica Zelkova serrata

# Shade Trees

Acer palmatum Acer palmatum 'Atropurpureum' Aesculus californica Aesculus carnea Albizia julibrissen Alnus rhombifolia Araucaria bidwillii Betula nigra

Sketch of street trees on a typical redeveloped campus street. Large scale street trees shade paving and reduce the visual intrusion of auto traffic.

## (Shade Trees, cont'd)

Calocedrus decurrens Casuarina equisetifolia Cedrus atlantica 'Glauca' Cedrus deodora Ceratonia siliqua Celtis occidentalis Chilopsis linearis Cinnamonum camphora Cornus florida Cratageus laevigata Cupressus macrocarpa Euculyptus polyanthemos Euculyptus sideroxylon Ficus benjamina Ficus carica Fraxinus oxycarpa 'Raywood' Fraxinus undhei Geijera parvifolia Ginkgo biloba jacaranda mimosifolia Liquidambar formosana Liquidambar orientalis Liquidambar styraciflua Liriodendron tulipifera Magnolia grandiflora Melia azedarach

Melia azedarach 'Umbracuformis' Morus alba Morus nigra Nyssa sylvatica Parkinsonia aculeata Phoenix canariensis Phoenix dactylifera Phoenix robelenii Pinus attenuata Pinus canariensis Pinus coulteri Pinus densiflora Pinus eldarica Pinus halepensis Pinus patula Pinus pinea Pinus ponderosa Pinus radiata Pinus roxburghii Pinus thumbergiana Pinus torrevana Pistacia atlantica Pistacia chinensis Pistacia vera Platanus acerifolia Platanus racemosa Podocarpus gracilior Populus alba

Populus fremontii Pyrus calleryana Bradford Pyrus calleryana Aristocrat Quercus agrifolia Quercus kelloggii Quercus lobata Quercus palustris Quercus rubra Quercus suber Quercus virginiana Quercus wislizenii Rhus lancea Robinia-ambigua-PurpleRobe Robinia pseudoacacia Sabal palmetto Salix babylonica Salix matsudana Tortuosa Sequioadendron gigantium Sequoia sempervirens Shinus molle Shinus terebinthifolius Sophora japonica Taxodium distichum Tilia cordata Greenspire Torrevana californica Ulmus parvifolia Umbellaria californica Zelkova serrata



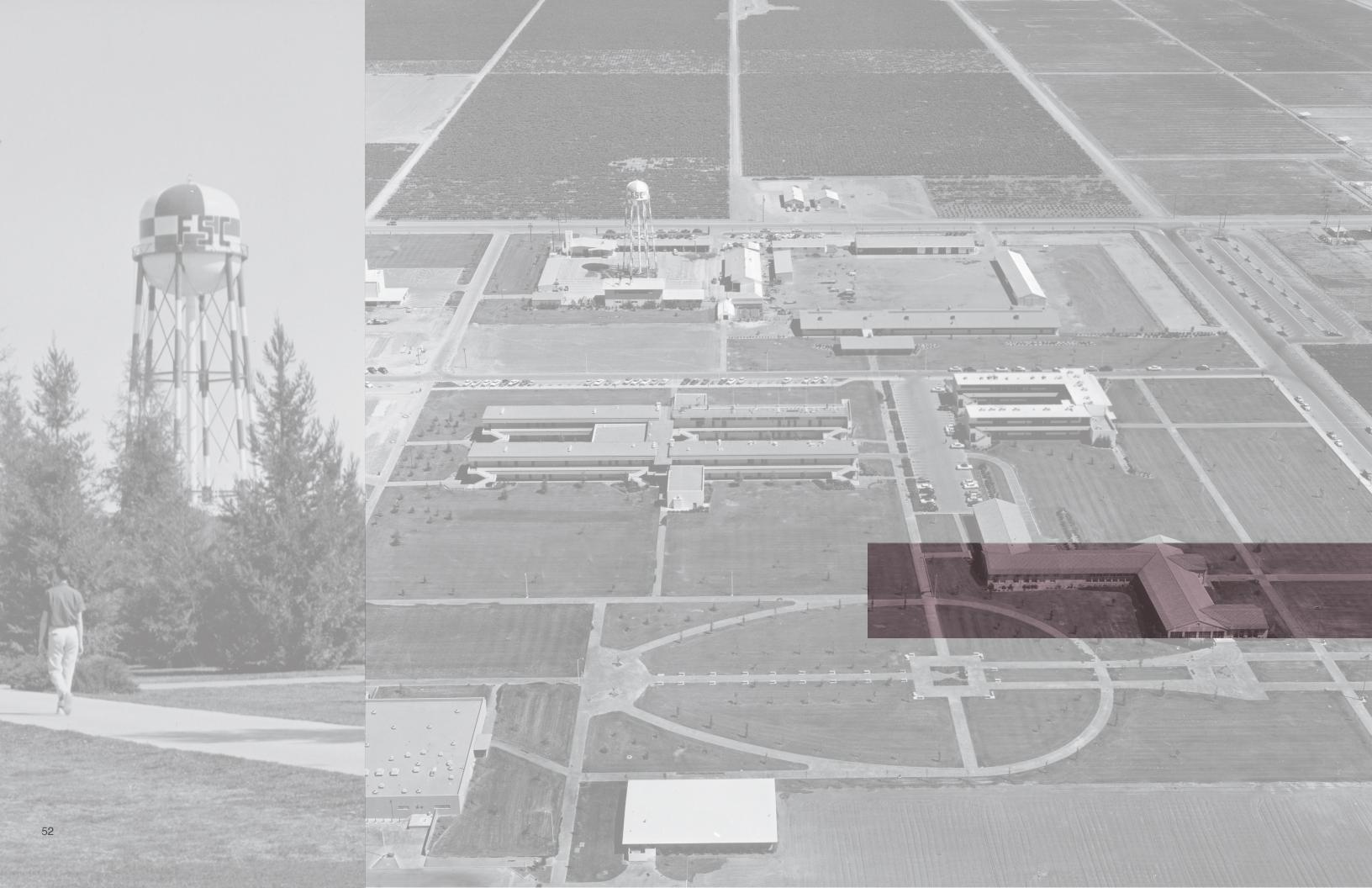
The shade provided by large scale and spreading Shade Trees is a major part of landscape climate control and creating outdoor gathering spaces.



Hedge Row Trees along Chestnut Avenue will establish the Farm as a regional feature in Fresno and the Valley.

#### Hedge Row Trees

- Celtis occidentalis Euculyptus camaldulensis Euculyptus viminalis Liriodendron tulipifera Pinus attenuata Pinus canariensis Pinus coulteri Pinus roxburghii Pinus thumbergiana Populus fremontii Populus nigra 'italica'
- Robinia pseudoacacia



# **DEVELOPMENT ANALYSIS**

# Opportunities for Improvements

The preceding chapters have addressed the generalities of desired improvements to the campus and the landscape that unifies it. The sequence in which improvements can be made, and the location of certain improvements, is dependent on re-use of buildings and land, most of which are currently in use for other purposes. This chapter explores physical opportunities and constraints to change, and begins to quantify increasing demands as the University grows.

#### **Buildings Inventory**

All of the buildings on campus were evaluated with the assistance of Facilities staff who are familiar with the fabric and functions of each. In most cases, the master plan team had already seen the buildings and discussed the fit between building and program with faculty members. The task at hand was to understand the potential usefulness of each building to the university ten, twenty years or more into the future.

Through this process, each building was listed in one of five categories:

- 1. Newer building
- 2. Moderate remodel
- 3. Extensive remodel
- 4. Major capital renewal
- 5. Removed in the next 20+ years

These are, of course, broad categories, and it is unlikely that all category five buildings will be demolished within twenty plus years, since in almost every case new facilities will be needed in advance to accommodate activities displaced from the demolished building. The pace of change will depend upon the flow of funding into new facilities and related campus improvements.

However, the real value of the demolition list is to indicate what parts of the campus will yield opportunities for new buildings and reconfiguration of campus systems and these are illustrated overleaf. Much of the campus is occupied by parking lots and roads, and it is the combination of these with undeveloped areas and the sites of buildings that are to be removed that provide a complete picture of redevelopment opportunities. Redeveloped areas of the campus must accommodate logical extensions of each campus system (circulation routes, parking, open spaces) and these will influence the size, location and orientation of any new building to be accommodated.

#### Newer buildings

Spalding Tennis Center, North Gym Annex, Downing Planetarium, Crime Lab, Science II, Planetarium Museum, Henry Madden Library, Smittcamp Alumni House, Duncan Athletic Facility, Ricchiuti Center, Save Mart Center, Student Recreation Center, Animal Science Pavilion, Farm Graduate Lab, CATI buildings, International Center for Water Technology

#### Moderate remodel buildings

Joyal Administration, Music, McLane Hall, Engineering East, , Kennel Bookstore, Health Center, Thomas Administration, Kremen School of Education and Human Development, Peters Business, Sequoia/Cedar Hall, Birch Hall, Sycamore Hall, Aspen/Ponderosa Hall, Baseball Stadium, Softball Stadium, Corporation Yard, Viticulture and Enology

#### Extensive remodel

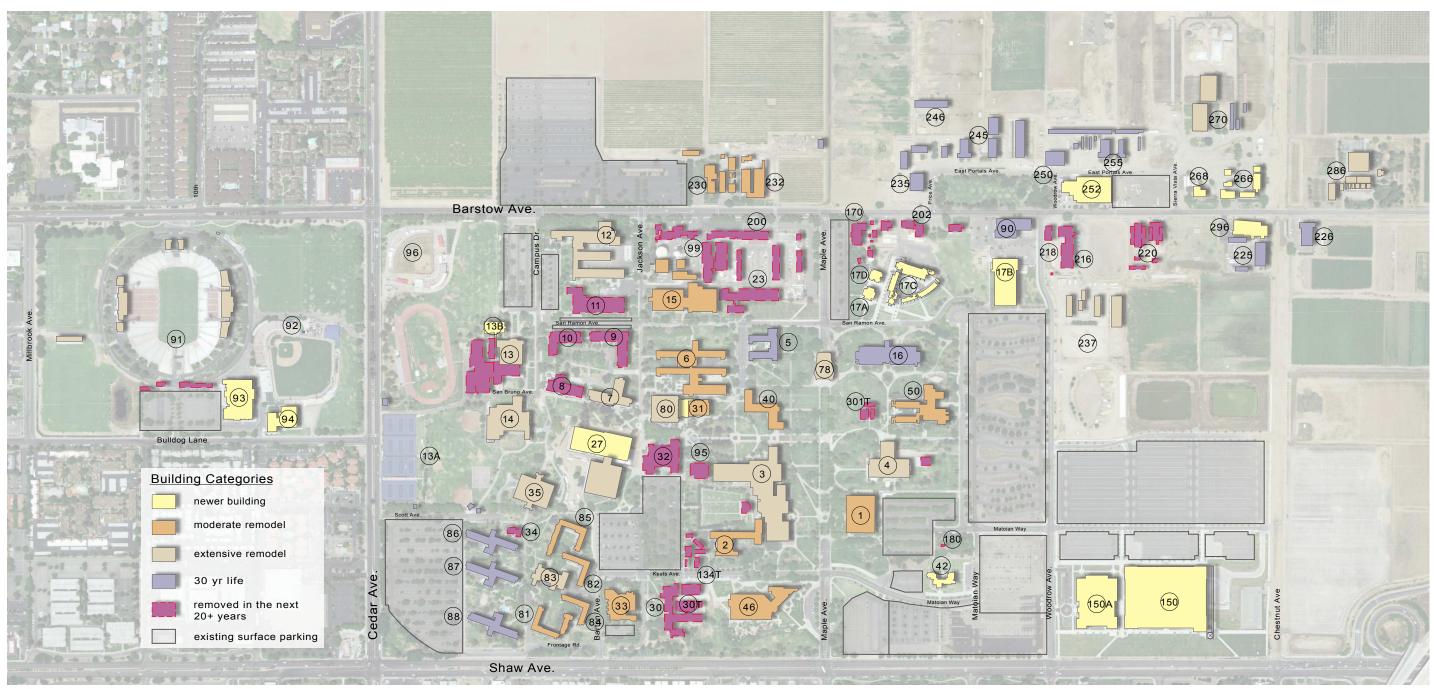
Henry Madden Library, Speech Arts, Conley Arts, Psychology/Human Services, Grosse Industrial Technology, North Gymnasium, South Gymnasium, Residence Dining, Satellite Student Union, University Student Union, The Lodge, Football Stadium, Dairy Unit, Ornamental Horticulture Unit

Major capital renewal / 30 yr life Agriculture, Science I, Baker Hall, Graves Hall, Homan Hall, Shipping/ Receiving/Print Shop, Farm buildings (Farm Market, Poultry Unit, Swine Unit, Beef Unit, Horse Unit, Veterinary Unit), CIT Testing

Removal in the next 20+ years Family and Food Science, McKee Fisk, Social Science, Engineering West, portions of North Gymnasium, Agriculture Mechanics, Lab School, Temporary Lab School, University Center / Food Service, Home Management, Keats Campus, Corporation Yard, University High School, Greenhouses, Meteorology, Farm buildings (Agronomy, Feed Mill, Sheep Unit, Dairy Processing), Peters Temporary building



Functionally obsolete one- and two-story buildings will typically be replaced with sustainable buildings of at least three stories. Taller buildings will be necessary to accommodate projected facility demands. Many existing buildings will be remodeled and expanded to meet changing needs.



### FACILITY LEGEND: MAIN CAMPUS BUILDINGS

1.	JOYAL ADMINISTRATION	13B.
2.	MUSIC	14.
3.	SPEECH ARTS	15.
4.	CONLEY ARTS	16.
5.	AGRICULTURE	17A.
6.	MCLANE HALL	17B.
7.	PSYCHOLOGY/HUMAN SERVICES	17C.
8.	FAMILY AND FOOD SCIENCE	17D.
9.	MCKEE FISK	23.
10.	SOCIAL SCIENCE	27.
11.	ENGINEERING WEST	30.
12.	GROSSE INDUSTRIAL TECHNOLOGY	30T.
13.	NORTH GYMNASIUM	31.
13A.	SPALDING WATHEN TENNIS CENTER	32.

3.	NORTH GYMNASIUM ANNEX SOUTH GYMNASIUM
	ENGINEERING EAST SCIENCE
λ.	DOWNING PLANETABIUM
3.	CRIME LAB
<b>)</b> .	SCIENCE II
).	PLANETARIUM MUSEUM
	AGRICULTURE MECHANICS
	HENRY MADDEN LIBRARY
	LAB SCHOOL
	TEMPORARY LAB SCHOOL
	KENNEL BOOKSTORE
	UNIVERSITY CENTER / FOOD SERVICE

HEALTH CENTER	
HOME MANAGEMENT	
RESIDENCE DINING	
THOMAS ADMINISTRATION	
SMITTCAMP ALUMNI HOUSE	
KREMEN SCHOOL OF EDUCATION	AND
HUMAN DEVELOPMENTCLASSRO	MC
PETERS BUSINESS	
SATELLITE STUDENT UNION	
UNIVERSITY STUDENT UNION	
SEQUOIA / CEDAR HALL	
BIRCH HALL	
THE LODGE	
SYCAMORE HALL	

33. 34. 35. 40. 42. 46.

50. 78. 80. 81. 82. 83. 84.

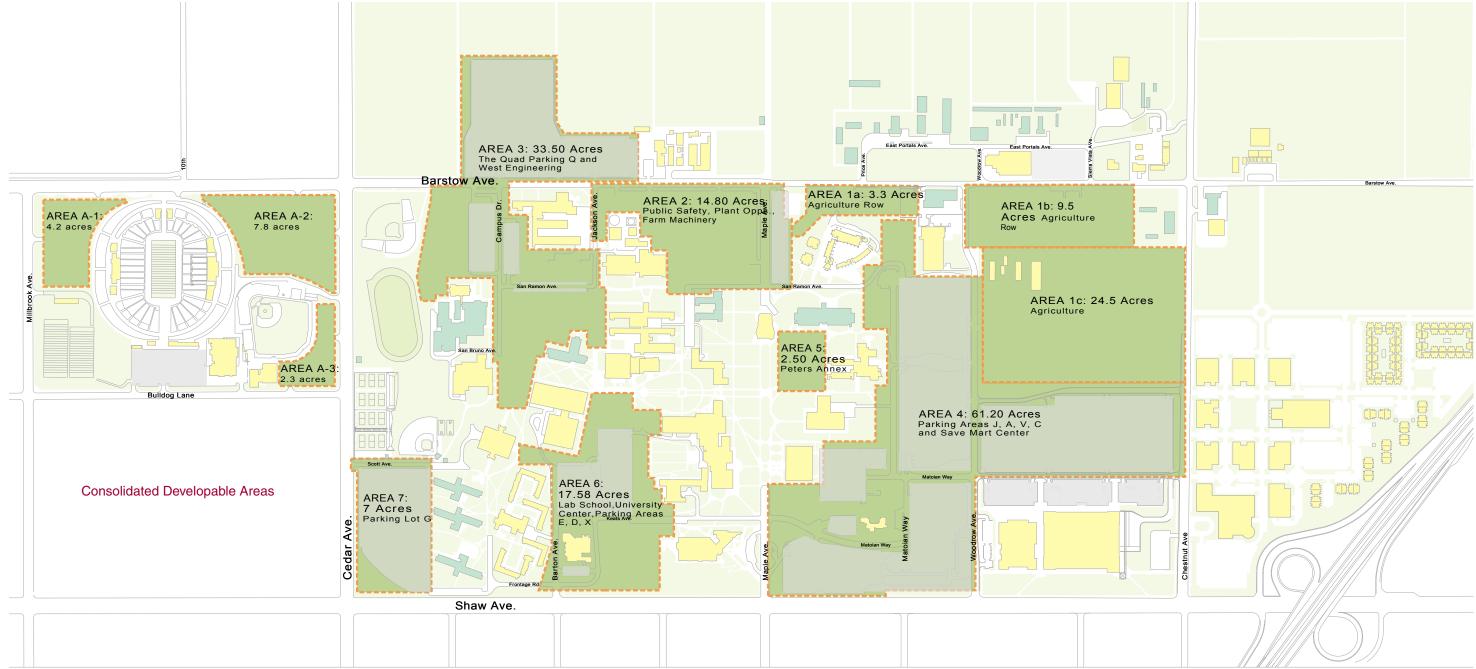
85.	ASPEN / PONDEROSA HALL	150A.	STUDE
86.	BAKER HALL	170.	GREEN
87.	GRAVES HALL	180.	METEO
88.	HOMAN HALL	200 - 295.	FARM E
90.	SHIPPING / RECEIVING / PRINT SHOP	296.	INTERN
91.	FOOTBALL STADIUM	301T.	PETERS
92.	BASEBALL STADIUM		
93.	DUNCAN ATHLETIC FACILITY		
94.	RICCHIUTI STRENGTH AND CONDITIONING CENTER		
95.	KEATS CAMPUS		
96.	SOFTBALL STADIUM		
99.	CORPORATION YARD		
134T.	UNIVERSITY HIGH SCHOOL		
150.	SAVE MART CENTER		

BUILDING CATEGORIES

DENT RECREATION CENTER IENHOUSES IEOROLOGY M BUILDINGS IRNATIONAL CENTER FOR WATER TECHNOLOGY ERS TEMPORARY BUILDING

#### Potential Building Development Areas

A useful way to understand where and how much change can occur in different parts of the campus is to combine surface parking lots and buildings that are to be cleared with adjacent developable lands. Surface parking lots, roads and pathways not burdened with major utilities, and fragments of underused land can be consolidated into areas suitable for comprehensive redesign. By regarding the design of such areas holistically, every aspect of the master plan can be addressed, combining built facilities with supporting landscape and circulation improvements. It is important that construction budgets be developed to include not only demolition and construction on the immediate site of new buildings, but also the landscape, circulation and infrastructure improvements necessary to the project's full integration into the campus systems. This should also include improvements to the lighting and way-finding systems. Only by improving a sector of the campus at a time will the intent of the master plan be realized.



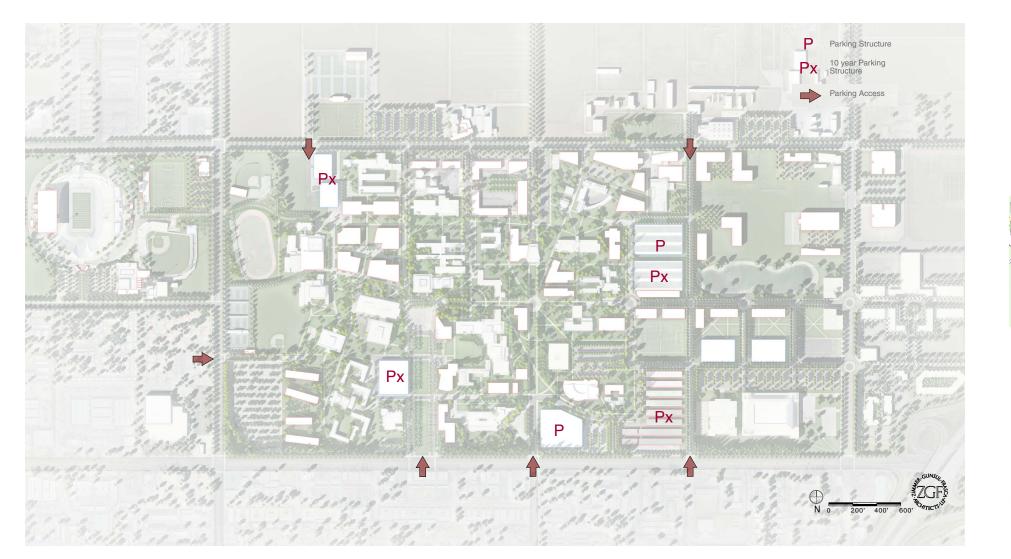
#### **Campus Access**

As parking is removed to multi-story garages, access will continue via the same routes used today to reach parking lots. However, the spread of traffic between entrances will be more uniform, and conflicts with pedestrians will decrease significantly; notably on Barstow near Cedar, where most parking on Lot Q will be transferred to a garage on Lot K.

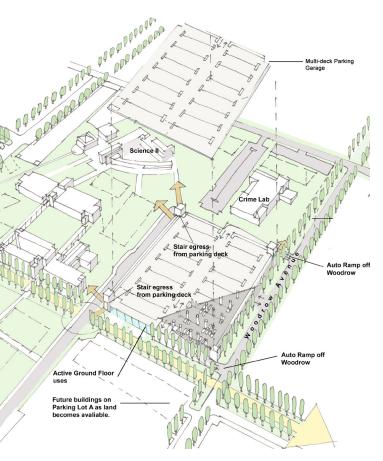
The number of parking spaces to be provided on campus as enrollment increases will depend on how many staff and students can be persuaded to travel to and from campus other than by driving alone. A study of how many students live within walking or bicycling distance of the campus (overleaf) gives an indication of that potential: over 2,500 live within 1.5 miles of the campus and account for about 900 parking spaces on campus. If half of those who currently drive alone to campus could be persuaded to walk, bike, carpool or use transit, the university would save about \$5.4 million in projected construction costs for structured parking.

In the past, there was a strong bicycling tradition among faculty, staff and students. In order to restore this possibility, substantial improvements must be made to the safety and convenience of negotiating streets and intersections off-campus.

Car pooling and transit are other options for campus access. The transit authorities of Fresno and Clovis have indicated a willingness to explore plans to increase ridership by all university personnel, through route changes and free or subsidized transit pass schemes. Potential savings in parking construction would offset the costs associated with free or subsidized transit passes, carpool programs, and incentive programs to encourage walking and bicycling to and from campus. Introduction of pay-per-mile cooperative car rentals on campus would relieve many of the need to bring their own cars onto campus each day for possible errands.

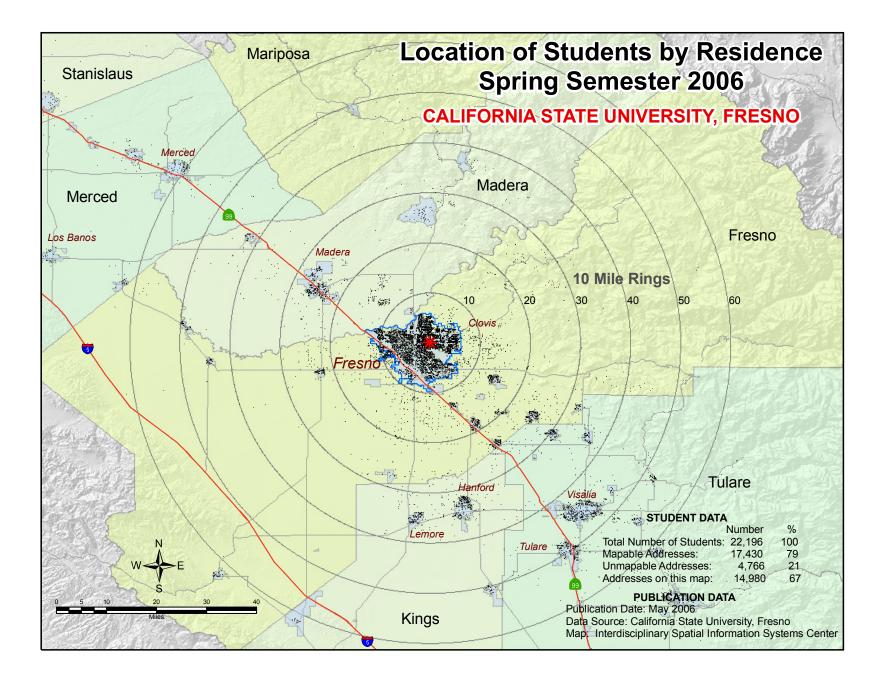


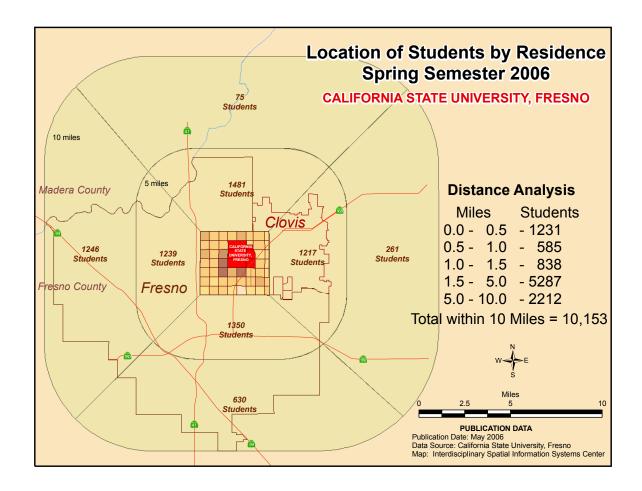


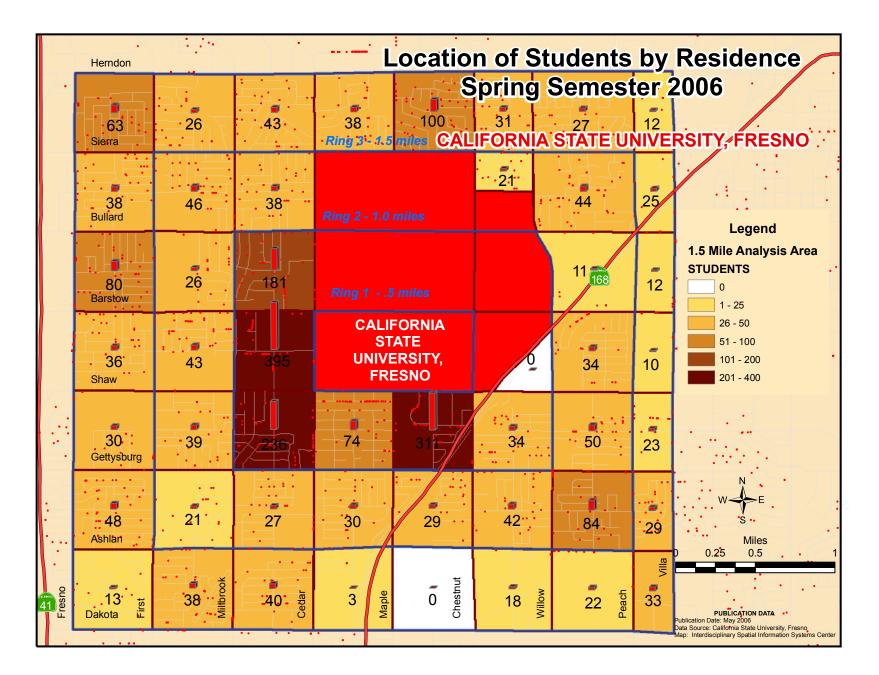


# Student Resident Locations

Large numbers of students live within walking and bicycling distance of the campus. Many more could be persuaded to use those modes rather than driving if there were safe and congenial routes for them to use. Many more would use transit if it could be made more convenient and affordable. Programs to encourage students, faculty and staff to get to and from campus by some means other than driving alone are a priority. The costs of such programs can be off-set by savings in reduced numbers of parking spaces to be constructed on campus. A secondary benefit would be reduction of congestion during peak arrival and departure times at the campus.





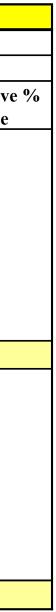


California State University, Fresno Projection of Student Headcount for Space Planning Purposes

	Antic	¥	<mark>sted Fall 2006 <sup>4.</sup> -</mark> in Student Head	<u> </u>	<mark>8, 2007</mark> e Planning Purposes	
School	(15	Annual	Total	Uni-Track	Evaluation Head	Cummulative
Year	unit/FTE)	Increase <sup>4</sup>	Headcount *	Headcount	Count <sup>4</sup> .	Increase
2006-07	18830		21769	1,200	20569	
2007-08	18,750		22,400	1,200	21,200	
2008-09	19,214	2.5%	22,947	1,200	21,747	2.6%
2009-10	19,858	3.4%	23,508	1,200	22,308	5.2%
2010-11	20,636	3.9%	24,579	1,200	23,379	10.3%
2011-12	21,287	3.2%	25,318	1,200	24,118	13.8%
2012-13	22,042	3.5%	26,081	1,200	24,881	17.4%
2013-14	22,824	3.5%	26,964	1,200	25,764	21.5%
2014-15	23,656	3.6%	27,903	1,200	26,703	26.0%
2015-16	24,496	3.6%	28,852	1,200	27,652	30.4%
2016-17	24,680	0.8%	29,059	1,200	27,859	31.4%
2017-18	24,865	0.8%	29,268	1,200	28,068	32.4%
2018-19	25,051	0.8%	29,479	1,200	28,279	33.4%
2019-20	25,239	0.8%	29,691	1,200	28,491	34.4%
2020-21	25,428	0.8%	29,905	1,200	28,705	35.4%
2020-22	25,619	0.8%	30,120	1,200	28,920	36.4%
2022-23	25,811	0.8%	30,337	1,200	29,137	37.4%
2023-24	26,005	0.8%	30,555	1,200	29,355	38.5%
2024-25	26,200	0.8%	30,775	1,200	29,575	39.5%
2025-26	26,396	0.8%	30,997	1,200	29,797	40.6%

Campus growth by student headcount over 20 years.

\*Numbers projected beyond the 25,000 approved maximum are for space planning purposes only.



#### **Gross Facilities Projections**

In order to understand the pace at which additional facilities will be needed, projections of total student headcount (THC) over the next ten years have been matched to the gross area of facilities needed to accommodate them. The average floor area allocated to each student tends to increase over time as the incidence of specialized spaces such as research labs increases. The approved maximum headcount is 25,000 students; a figure that may be reached in the next six or seven years. Before that occurs, formal reassessment of the approved maximum will be necessary. In the meantime, for the purposes of planning orderly growth in facilities on campus, it is necessary to project probable student populations ten and twenty years into the future using growth rates that have proven realistic in recent years. It is with this understanding that the accompanying tables show numbers in excess of the approved FTE.

The broad conclusions from this study are that today's 3.2 million gross square feet (GSF) will need to increase to 4.5 million over the next ten years, and to 5.4 million in twenty years time. The gross areas suggest the extent of the 10-year development program detailed in the following section. On average, 100,000 GSF of new space will be needed each year in addition to replacement of any demolished spaces. As the boundaries of the academic campus will not increase significantly, the density of development will necessarily increase from an average 0.20 Floor Area Ratio (FAR) in 2006 to 0.29 FAR in ten years and to 0.34 FAR in 20 years. (Floor Area Ratio is the ratio of built floor space to site area.) In order to sustain the rich series of landscaped open spaces that characterize the campus, it will be necessary to build taller buildings as density increases. New buildings must also accommodate activities displaced form demolished category 5 buildings that have outlived their usefulness.

In addition to increased facilities needs, parking demand will also increase year by year with enrollment. If no progress is made to reduce on campus parking demand the required number of spaces will increase significantly. If we can not increase the number of people who walk, bicycle, take transit or carpool, to and from campus then 1,500 parking spaces will have to be added in ten years, and 1,440 in twenty years. Congestion increases will accompany these parking additions. If, on the other hand, the current rate of demand of one parking space for every 2.3 FTE students could be reduced by 16% over the next ten years, there would be no net increase in parking demand. Assuming that the additional 1,500 parking spaces would be in parking garages, the savings in construction costs would be in the order of \$30 million.

Projection of Student Headcount for Space Planning Purposes

YEAR	THC	GSF	GSF/THC**
2007-2008	21,200	3,216,151	151.71
2008-2009	21,747	3,332,125	153.22
2009-2010	22,308	3,452,264	154.75
2010-2011	23,379	3,654,186	156.30
2011-2012	24,118	3,807,390	157.87
2012-2013	24,881	3,967,119	159.44
2013-2014	25,764	4,148,987	161.04
2014-2015	26,703	4,343,204	162.65
2015-2016	27,652	4,542,533	164.28
	2016 Total =	4,542,533	GSF
New Co	onstruction =	1,326,382	GSF
YEAR	THC	GSF	GSF/THC**
2015-2016	27,652	4,607,439	166.62
2016-2017	27,859	4,622,303	165.92
2017-2018	28,068	4,703,550	167.58
2018-2019	28,279	4,786,298	169.25
2019-2020	28,491	4,870,401	170.95
2020-2021	28,705	4,956,053	172.65
2021-2022	28,920	5,043,106	174.38
2022-2023	29,137	5,131,756	176.13
2023-2024	29,355	5,221,853	177.89
2024-2025	29,575	5,313,598	179.67
2025-2026	29,797	5,407,018	181.46
	2026 total =	5,407,018	GSF
Nau O	onstruction =	799,579	GSF

(THC\*) = Total Headcount minus Students off Campus.

Uni-Track = Students off campus. GSF = Gross Square Footage on Academic Campus only. Academic Campus is 15,800,000 GSF (363 Acres) and includes Athletic area, Cedar to Chestnut and Barstow to Shaw.

GSF/THC\*\*= The Gross Square Feet / Total Headcount. The GSF/THC is escallated 1% per year.

10 year Build-out (2016) THC\*: 21,200 to 27,652

Existing Gross Ideal Propose and Replacer

Total 10 Year

Existing Parki Add Parking Parking Tota

20 year Build THC: 27,652

Total 20 Year Ideal Propose and Replacer

Total 20 Year

Existing Parki Add Parking Parking Gain

#### Campus Street Parking Yield =

1 = Replacement of demolished building's (Category 5 Buildings) in 2016 and (Category 4 buildings) in 2026 are included in the Proposed Expansion Totals

s Building Area =	3,216,151	GSF
ed New Construction		
ment Space =	1,326,382	
r Build-out¹ =	4,542,533	GSF
ing (all types) =	9,341	Spaces
(approximately) =	1,500	Structured
al =	10,841	Spaces
d-out (2026)		
to 29,797		
r Build-out =	4,607,439	GSF
ed New Construction		
ment Space =	799,579	
r Build-out =	5,407,018	GSF
ing (all types) =	10,841	Spaces
(approximately) =	1,440	Structured
1 =	12,281	Spaces
eet Parking Yield =	700	Spaces

THC\* = Total Headcount minus Students off Campus.

GSF = Gross Square Footage on Academic Campus only.

Academic Campus is 15,800,000 GSF (363 Acres) and

includes Athletic area, Cedar to Chestnut and Barstow to Shaw.



# MASTER PLAN RECOMMENDATIONS

# Ten-Year Development Program

Campus improvements in the next ten years will include much besides new buildings, building remodels and replacements. Utilities, roads, driveways and footpaths, lighting, landscaping, signage and parking will all need improvement to serve the changing campus effectively. Building priorities depend on many factors that are external to the master plan process. The facilities that appear in the following pages are candidates for construction within ten years, but it is probable that only a few of them will be constructed in that period, and that others not listed will join their ranks. They are arranged alphabetically by college and division. This list of possible new facilities provides a basis for assessing future needs in each of the campus systems that are analyzed in the framework plan. These buildings also give an indication of where sites will be needed, and the necessary changes to accommodate them. These explorations were made in the capacity analysis that follows.

Before demolition of any of the identified obsolete buildings can proceed, new space will be needed to accommodate the activities displaced. Three actions are proposed to accommodate this:

- A new classroom and office building is proposed for a site near the Business School.
- Remodeling of the Satellite Student Union building to create a central catering kitchen and a new temporary University Restaurant.
- Remodeling of Thomas and Joyal following the move of senior administration to the new library building.

# College of Agriculture Sciences and Technology

Viticulture and Enology Institute (Tier I and comprehensive campaign) International Center for Water Technology (Tier I) Institute for Food and Nutrition Innovation (Tier I) Farm Market upgrade or relocation Replacement of Ag Operations and Farm Machinery Building California Agricultural Technology Institute Relocation of shared Equine Center

# College of Arts and Humanities

Relocate faculty office space and department offices closer to their respective dean's offices

# College of Education and Human Development

Literacy Center improvements

### College of Engineering

Reallocation of space and remodeling Construction Management Demonstration Center

#### College of Health and Human Services Expansion and improvement of training and health facilities

#### College of Science and Mathematics

Possible aquarium and tide pool Upgrades and remodels in Science I Possible science center

# College of Social Sciences

Use of new classroom building

# Craig School of Business

Institute of Family Business Center for logistics Real Estate Center and Institute for Family Business Remodel University Business Center



#### Division of Continuing and Global Education

Use of improved space

#### Academic

New classroom and faculty offices building Replacement of the Quadrangle Buildings

#### Athletics

North Gym Remodel

- North Gym Annex Remodel
- Student Athlete Locker Rooms, Lounge and Dining Facility
- Natatorium(indoor pool and associated facilities) addition

Duncan building remodel and expansion Soccer stadium design and construction

Beiden Field (baseball) improvements Bulldog Stadium improvements

Other improvements

- Bulldog Diamond (softball) improvements
- New equestrian center
- External Affairs & Administration Building
- Walk of Fame
- Warmerdam Field improvements
- Save Mart Center facilities completion

#### Campus Life and Auxiliary Services

Satellite Student Union Remodel and Expansion, addition of University Kitchen Restaurant (Until permanent new location completed) New playing field and other campus space on lot Q Remodel Residential Dining Hall Smittcamp Alumni Center Addition USU Remodel

#### Centers and Institutes

Armenian Studies Richter Center for Community Learning Engagement and Service-Learning Office of Research and Sponsored Programs Ethics Center Central Valley Cultural Heritage Institute

#### Childcare

Co-locate Home Management House and FFS childcare facilities in order to improve and expand services

#### Facilities

Utility upgrades (as detailed in the Utilities Master Plan) Replacement of Plant Operations, Public Safety Buildings and the Corporation Yards New Campus-Wide Fire and Security Alarm System

Graduate Studies and Office of Research and Sponsored Programs Expand and Remodel Partners Research Facilities

# Information Technology Services/ Campus Information Systems

Technology help desk Repair center Relocation of classroom Building Consolidation of technology programs

### Landscape

New main entrance off Shaw Avenue Way-finding system Upgraded campus lighting Various landscape, path and driveway improvements

#### Parking

New parking garage on site of Lot J Transit Center Photovoltaic arrays over Lot V New parking garage south of the Library New parking garage on Lot K Expansion of parking offices

#### Student Affairs

Learning Resource Center 'One-Stop Shop' for Student and Visitor Services

Teaching, Learning and Technology (Faculty Development) Relocate Faculty Center

#### Undergraduate Studies

Testing Center (up to 300-500 students) Indoor and outdoor places for study and gatherings

#### Ten-Year Implementation Recommendations

The timing of campus improvements and the order in which they are implemented are driven by factors beyond the scope of this master plan. However, a number of specific interventions have surfaced as both important and urgent.

#### Classroom and Faculty Office Building (A)

There is an immediate need for more classrooms and flexible teaching spaces of various capacities from 25 to 45 seats, and a few classrooms of 60 to 100 seats. Some should be equipped for distance learning, all should be equipped for computer-based presentations and study. There is also an immediate need for more faculty offices—both individual offices for full-time faculty, and shared offices and work stations for adjunct faculty who spend much of their time elsewhere. A new building containing these teaching spaces and faculty offices should be independent of particular colleges and schools, being available to all and scheduled through the office of the Provost to assure maximum and appropriate use.

- In one option, the classroom and office building would face the Parking structure defining the first segment west of Woodward of the east-west central campus walkway. That central walkway will eventually connect the central campus to the Event Center and Campus Pointe, and on the west side of the campus to Bulldog Lane.
- In this option, the south side of the classroom building would define the edge of a turf playing field that would eventually replace surface parking Lot A, and would serve the Student Recreation Center, creating an important open space link.
- The alternative site for the Classroom and Faculty Office Building west of the Business School would define a new series of open spaces and building sites on land formerly occupied by Maple Avenue.

#### Parking Garage (B)

It will be necessary to consolidate parking into the first of several parking garages on the campus in order to provide parking for the classroom and office building and vacate the site for construction of Campus Pointe. The plan suggests a parking garage on the southern half of Lot J with the new building located to the west of the Business School. Also a new parking structure will subsequently be built on Lot K.

#### Quadrangle Building Replacements (C)

Following completion of the new classroom and faculty office building, successive replacement of the Quadrangle buildings can be undertaken, relocating the occupants of one building at a time so that it can be demolished and replaced. Replacement buildings will be of three to six stories, some designed to fulfill the needs of a particular department, all with some components available to others. The sizes of these replacement buildings will reflect increasing enrollment, and their orientation will conform to the future open space and circulation plans, as well as accommodating sustainability requirements for energy conservation, minimizing solar gain and taking advantage of daylight harvesting and natural ventilation.

#### Parking Garage (D)

As replacement of the Quadrangle buildings proceeds, parking to serve a growing number of occupants in those buildings will become an increasingly urgent need. A parking garage will be constructed on Lot K and Lot L. These structures will be of sufficient capacity to allow the vacating of a large portion of Lot Q on the north side of Barstow. This will resolve conflicts between vehicles using Barstow and pedestrians crossing between Lot Q and the campus. Part of vacated Lot Q (approximately 5 acres) will revert to agricultural use as turf lab test plots and part as a turf playing field for Kinesiology.

#### **University High School (E)**

Criteria for a permanent site for the University High School were developed, and led to selection of a site immediately south of Joyal and west of the Smittcamp Alumni House. The site is large enough for the proposed school buildings, is near the music buildings, will minimize conflicts with University traffic at peak hours while allowing convenient and safe pick-up and drop-off of students, is in a visually appropriate setting on land controlled by the University and its affiliates, and is remote from land where agricultural chemicals may be used. Displaced parking will have to be relocated nearby.

#### Parking Garage and Campus Entry Avenue (F)

Completion of the Library will be followed by demolition of the University Center and Keats buildings. Construction can then begin on a broad entrance avenue connecting a new main campus entrance on Shaw to the center of the campus at the Student Union and Library. Later buildings will flank the point of arrival with an addition to the Arts and Humanities complex, and a replacement for the University Center. Amenities and student services that existed in the demolished Keats and University Center will be relocated to the ground level of new buildings in the area, retaining the University Student Union area as the heart of the campus. A 'one-stop shop' for student administrative and academic services will also be incorporated into the area.

#### Library Parking Garage (G)

With completion of the new library, an increase in demand will trigger the need for a parking garage. At ground level, it could incorporate a reception and information booth for visitors. A campus transit center served by university shuttles and public transit vehicles from Fresno and Clovis could also be located in the ground level of the garage. Bike storage and childcare might also be located here, activating the building along the walkways. Adjacent sites have been identified for future facilities as needs are warranted.

#### Satellite Student Union Expansion (H)

The Satellite Student Union will be remodeled and expanded to include food service, flexible meeting rooms that can function as seminar rooms, lecture space for conferences, and a new front entrance from the north. This will complement special events space that will be added to the Alumni Center. It will accommodate events that are too large for other campus venues, yet too small to command the Save Mart Center. The expanded Satellite Student Union will also provide a place of respite for the eastern half of the campus, with the possibility of daily food service in addition to serving special events. It may also house cultural centers and institutions.

Completion of the new library will occasion relocation of a number of senior administration offices from Thomas to the library, precipitating a series of relocations, and enabling demolition of Keats and University Center. This will displace a number of food service operations that will need interim accommodation until a new University Center building has been completed. A temporary relocation for the University Restaurant may be found on the east side of the Satellite Student Union Building. Other locations will be needed near the center of the campus for food service cash operations in order to serve the campus community effectively.

Remodeling and expansion of the kitchens in Satellite Student Union Building will be necessary to enable a shift of the dining facility from University Center. That will become the new central catering kitchen for the campus, with its own direct truck access off of Barstow Avenue. The University Restaurant may ultimately be relocated to a more central location.

#### Agricultural Research Center (I)

New buildings for the International Center for Water Technology and the Institute for Food and Nutrition Innovation will form the nucleus of an agricultural research center on Chestnut Avenue and Barstow. These, together with the Viticulture and Enology Institute, will provide a public face for the College of Agriculture that represents its forward-looking teaching and research. Over the mid- to long-term, the Center for Agricultural Excellence will be consolidated between Woodrow and Chestnut. One of the options for realizing the Center for Agricultural Excellence is relocation of the Equestrian Center, Agricultural Enterprise programs and Rodeo to a site north of Bullard and east of Cedar Avenue.



# TEN-YEAR CAMPUS MASTER PLAN

#### Additional Ten-year Improvements

### Corporation Yards (J)

There is some duplication in functions between Plant Operations and the various agricultural facilities located next to them, all of which are in antiquated and inadequate buildings. These will be replaced by a complex that respects the nature of all the activities and functions to be accommodated, but avoids unnecessary duplications. Comprehensive redesign of this area of the campus is recommended, respecting permanent features of the central plant and planned improvements to it as detailed in the Infrastructure Master Plan. Inclusion of the recycling center would enable coordination of this with other materials handling operations.

#### **Campus Circulation (campus-wide)**

Rationalization of vehicular, pedestrian and bicycle circulation on campus to minimize conflicts is a high priority. Recommended changes are shown in the framework plans for future circulation. Special provisions will be made for Barstow Avenue. In most cases, improvements will be associated with nearby major construction projects: new or remodeled buildings, parking garage construction and major landscape improvements. Individual vehicle access projects are therefore not detailed here. Changes in university policy directing vehicle use on campus will be necessary. Service and delivery protocols will also change.

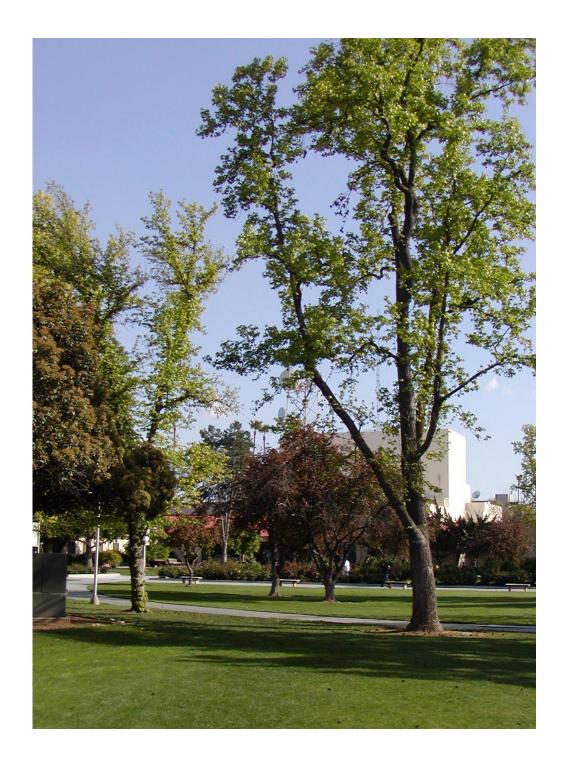
#### Landscape Improvements

Each facility improvement project must include improvements to the area around it. Design and construction budgets should account for associated improvements to utilities, drives, pathways and landscape. An example is restoration of the Peace Garden following the removal and rebuilding of the library. Landscape design will address the new library entrance and continuity of the Arboretum to the east and west. Way-finding, lighting improvements and the introduction of additional water features are important improvements to be undertaken within the ten-year time frame. Such improvements should be consistent with the landscape master plan.

#### **Miscellaneous Improvements**

Above are listed the most conspicuous improvements that are anticipated to occur during the next ten years. Equally important are the many remodels and expansions of existing buildings that will be necessary to accommodate new programs, research, and increasing enrollment. Also of importance are the expansion of the Smittcamp Alumni Center, replacement of a number of agricultural buildings, and relocation of the University High School to a site along Keats Avenue immediately west of the Smittcamp Alumni House. Except for those childcare facilities currently incorporated in the Kremen School of Education and Human Development, co-locate the childcare facilities together with space to increase services to students, staff, and faculty. The preceding pages outline major improvements to the academic campus. In addition to these, improvements will be made to the Farm laboratory and to Athletics on both sides of Cedar Avenue. The Athletics improvements are described in the section titled "California State University, Fresno - Athletics Master Plan".

Worthy of special mention is integration of landscape improvements with the listed ten-year facilities improvements. Unless these are funded, designed and implemented together, it is unlikely that the landscape master plan for the campus will ever be realized. This includes not only plant materials, but pathways and other integral infrastructure.



### California State University, Fresno - Athletics Master Plan

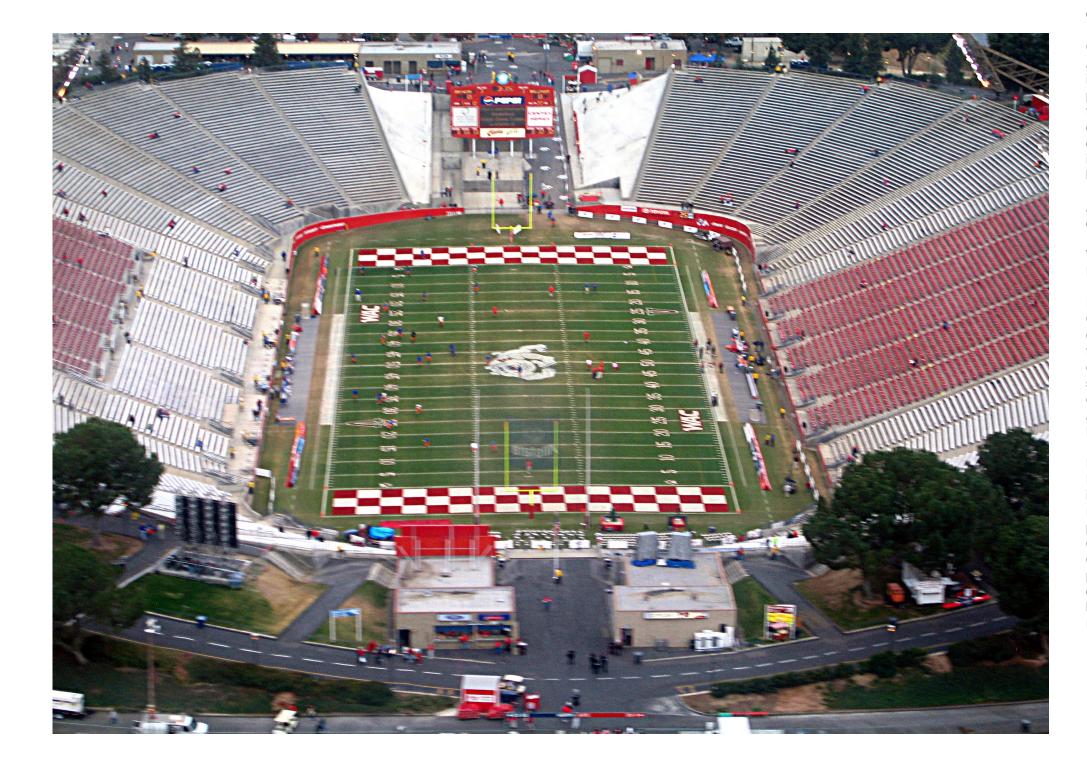
### Context

An important sub-set of the Campus Master Plan is the progressive improvement of Athletics facilities, which occupy the westernmost part of the campus on both sides of Cedar Avenue. A detailed facilities improvement plan has been developed for this portion of the campus and is included here as an expanded detail of the larger campus master plan to which it conforms in most respects. Overleaf is an illustrated summary of those improvements; a detailed list can be found in the Appendix.

Athletic facilities located in the Save Mart Center at the southeast corner of the campus are not shown on the views overleaf, nor is the Rodeo and other equestrian facility that is currently located east of Woodrow, and are to be relocated into new accommodation north of Bullard Avenue and east of Cedar.

Parking for spectator events is a topic of recurring concern. The Campus Master Plan has taken this into consideration along with daily university parking needs and improved circulation throughout the campus. Event planning is arranged to minimize the likelihood of major spectator and other activities coinciding. Two new parking structures are planned within walking distance of the Stadium: one on Lot K and the other immediately south of the Madden Library. Another structure on Lot J will be connected by shuttle service to Bulldog Stadium.

Facilities Improvements North Gym was among the first buildings completed on the campus in the 1950s, and it has been through many changes of use and remodels. The intent of the current Athletic facilities improvements program is to bring all buildings and equipment up to the standards demanded by strong student athlete programs through the coming decade. Kinesiology shares facilities and play fields with Athletics for physical education programs. This will be accomplished through a combination of remodeling and new construction affecting all Athletic buildings, equipment and fields. Those improvements are summarized overleaf.



#### West of Cedar Avenue

#### **External Affairs & Administration Building**

Construct an architecturally conspicuous building to house all external contact functions, including Sports Ticketing and Information, The Bulldog Shop, Bulldog Foundation, and The Hall of Fame. On a second level with views over the ball fields, marketing, offices for broadcasting, and administration would be accommodated.

#### Soccer Stadium

Construct a new soccer stadium with spectator seating for 1,500, an enhanced grass field and press box.

#### **Bulldog Stadium**

Improve spectator facilities and access, expand seating and media accommodation. Construct new roof over west side of stadium. Lower and resurface the field and provide it with improved access. Incorporate Club Level and Club seating. Build new locker rooms for visitors and officials.

#### Fresno State Bulldog Walk of Fame

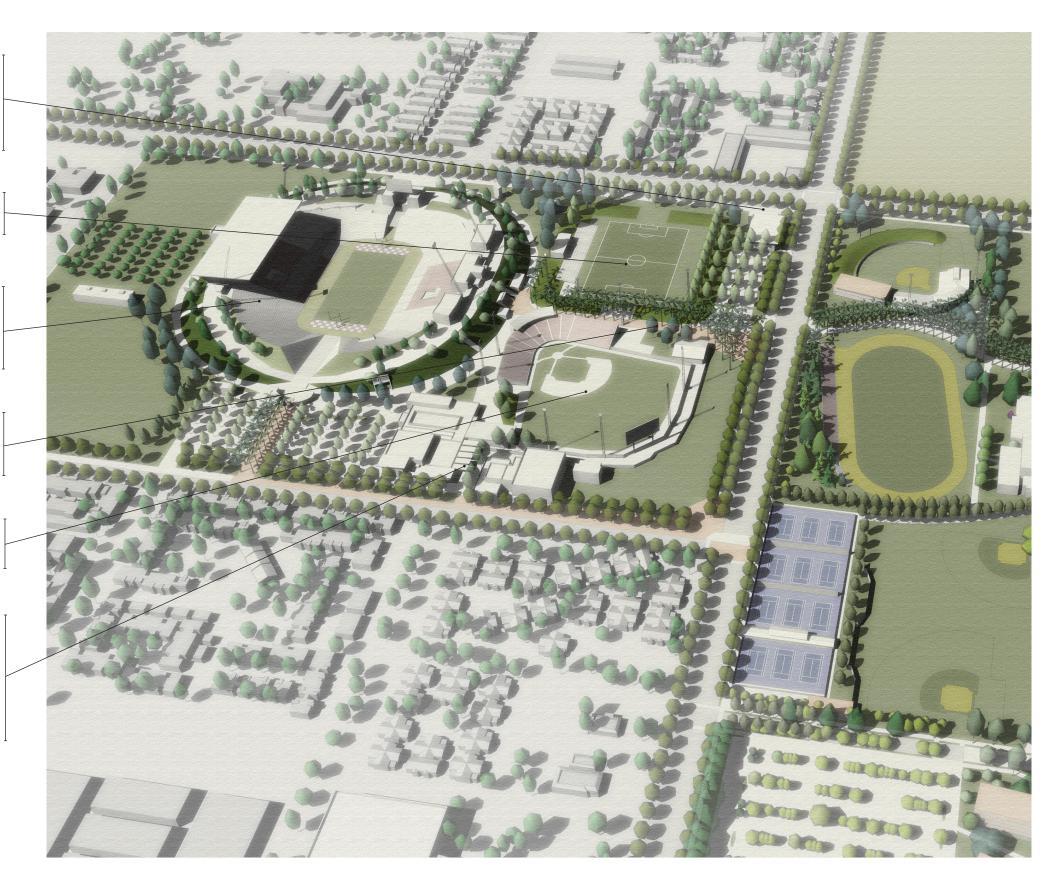
Connect the football, baseball and soccer stadiums with an Athletics Mall, new pedestrian entry, promenade, spectator services and general landscaping.

#### **Beiden Field**

Renovate spectator seating, locker rooms, access and landscaping around the baseball field.

#### **Student-Athlete Center**

Construct facilities expanding the Duncan building. The new facilities will be the main entry to the Student-Athlete Center with football offices, meeting, dining and lounge facilities. A plaza will be built between the two buildings to a create gathering and interaction area for the student athletes. Remodel and expand the Duncan and Ricchiuti buildings to accommodate coaches' offices and improved athletic training, equipment and locker rooms. Improve site security, landscape and the parking area.



### East of Cedar Avenue

facilities

North Gym Remodel spaces throughout the North Gym including coaches' offices, athletic training, equipment and locker rooms for student-athletes and coaches for volleyball, men's and women's basketball. A major construction addition of a natatorium for women's aquatics and university use.

Spalding G. Wathen Tennis Center Renovate playing surfaces and build a new clubhouse with facilities for student-athletes, coaches and visitors. Kinesiology shares tennis facilities with Athletics.

### Not Shown

Equine Center (below) A new competition venue and horse-care center will be built north of Bullard Avenue with a competition surface for equestrian and rodeo events and spectator seating for 1,000 together with Equine Science Academic programs, student-athlete, coach and spectator facilities.



Save Mart Center



#### Bulldog Diamond (softball)

Improve softball spectator facilities, press box, locker rooms and practice

#### Warmerdam Field (track & field)

Reorganize and expand spectator seating and access. Replace track and runway surfaces and create new press box.

Build out training facilities and coach's locker room for volleyball.

#### Landscape Implementation

This section is intended to be used in conjunction with the Ten-Year Implementation Recommendations. Each section below describes elements of the Landscape Master Plan which should be implemented as part of building improvements described in the ten-year plan. The same reference letters are used to designate projects and their locations on the ten-year plan graphic.

### Classroom and Faculty Office Building (A)

There are two possible sites for the proposed Classroom and Faculty Office building: one is south of Lot J between Backer and Woodrow Avenue; the other is west of the Business School and south of Science I.

- In one option, the classroom and office building would face the Parking structure defining the first segment west of Woodward of the east-west central campus walkway. That central walkway will eventually connect the central campus to the Event Center and Campus Pointe, and on the west side of the campus to Bulldog Lane.
- In this option, the south side of the classroom building would define the edge of a turf playing field that would eventually replace surface parking Lot A, and would serve the Student Recreation Center, creating an important open space link.
- Shade trees would protect the south side of the classroom building from heat gain and provide a suitably scaled transition between the building and the playing field.
- The east-west central campus walkway is to be organized with street trees near the perimeter, giving way to informal arboretum plantings in the core of the campus. Pedestrians and bicycles will have priority in the central campus, with limited service vehicle access to Conley Arts and emergency vehicle access throughout.
- The fountain near the Student Union is a familiar campus landmark. Contrasting water features are to be added at crossing places along the central walkway. The first of these would be added with construction of the classroom building, marking access to the Peters Building.

#### Alternative site for Classroom and Faculty Office Building (A)

- The alternative site for the Classroom and Faculty Office Building west of the Business School would define a new series of open spaces and building sites on land formerly occupied by Maple Avenue.
- Master Plan elements that should be included with this development are:
  - o Completion of the east-west central walkway from the parking garage on Lot J to the Submariners Grove.
    - o Completion of the pedestrian connection from the Downing Planetarium to the east-west central walkway including Science Benches.
    - o New open spaces between Science buildings and the Peters Buildina.
    - o Landscape connections to the Submariners Memorial Grove and the Lew Memorial Grove.

### Parking Structure on Lot J (B)

- The parking garage located on Lot J requires new auto access from Woodrow Avenue. These new streets will have street trees and new pedestrian sidewalks. Trees lining the south and west side of the parking garage will reduce heat gain and shade the decks of the parking garage.
- To reduce the sheer mass and visual intrusion of the parking garage on the campus environment, plant vines that will climb on the garage facade, creating vertical landscapes that clothe the structure.
- Master Plan Stewardship and Sustainability Guidelines can be achieved by:
  - o Gathering rainwater from the decks of the garage, storing it in the stormwater basins east of Woodrow Avenue and drawing the stored water for irrigation of the vertical landscapes on the garage.
  - o Shade the parked cars on the top deck of the parking garage reducing heat island effect with solar arrays or a trellis.

#### Quadrangle Building Replacements (C)

Successive replacement of the Quadrangle buildings with taller buildings on different footprints will significantly change the character of this part of the original campus.

- climate modified outdoor and transitional spaces.
- scape treatments.
- ing development.



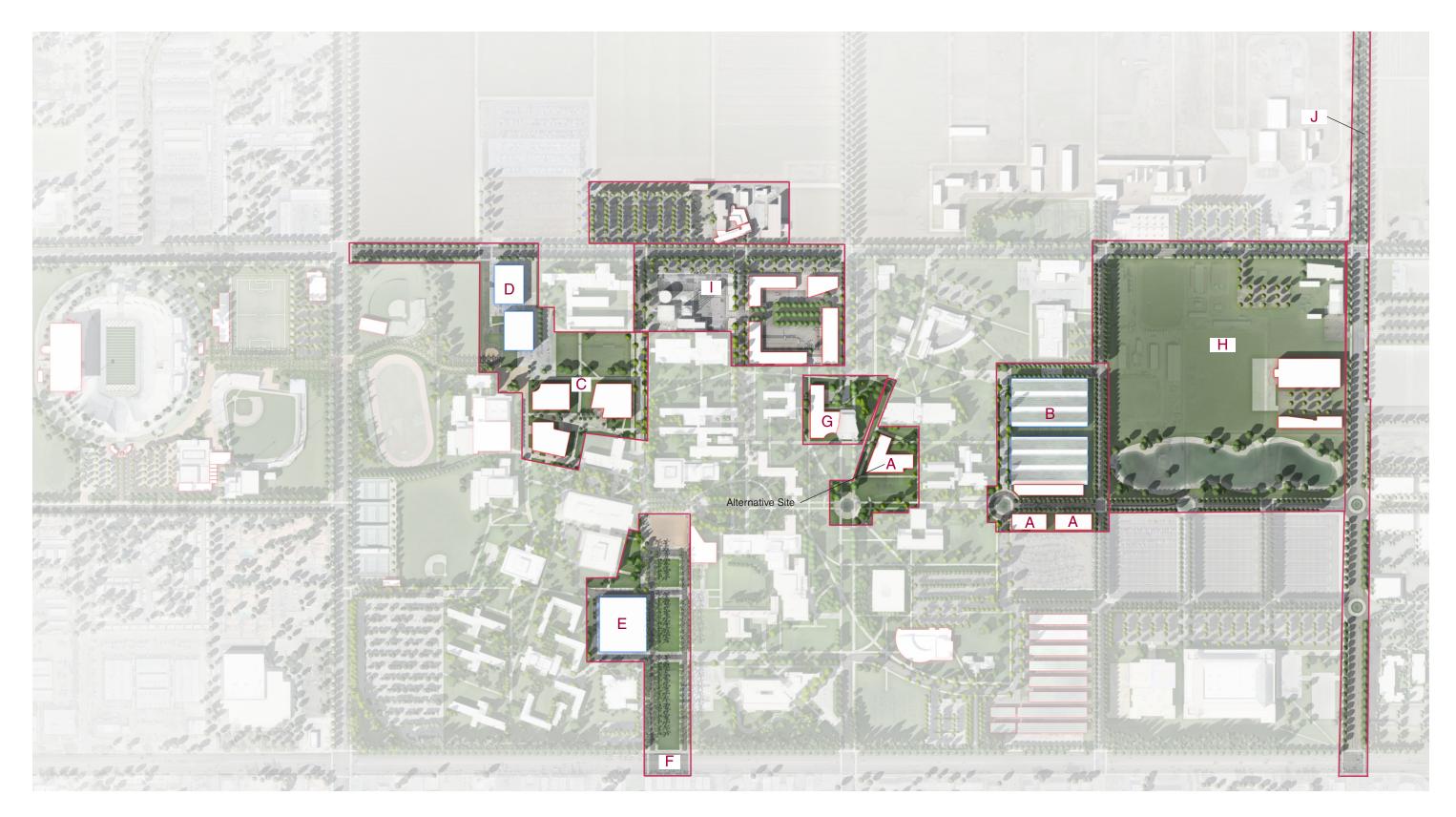
The Plant Operations and Utilities Upgrade project provides the opportunity to add a pedestrian and ve-hicular connection between the Viticulture and Enology Research Center and the center of the campus.

• Removal of San Ramon Avenue and associated parking will create a new open space between the Quad Buildings and West Engineering which should be landscaped as an extension of the Arboretum and a place for outdoor study and relaxation.

· A new internal landscape quad and a series of courtyards that promote outdoor gathering and study places should be designed and constructed with the replacement buildings. These spaces will include

• South of San Ramon, Jackson Street and Campus Drive will become pedestrian avenues in the expanded Arboretum. Termination of the auto environment will be marked by special paving, bollards and land-

• The landscape design must accommodate access to a joint loading and service dock serving the Student Union Building and Quad Build-



# LANDSCAPE IMPROVEMENTS AREA RELATED TO TEN-YEAR PROJECTS

#### Parking Garage on Lot K (D)

- Master Plan elements include street trees and pedestrian sidewalks between the parking garage and Barstow Avenue.
- Shade trees on the south and west side of the parking garage will reduce heat gain and shade the decks of the Parking Garage. Plantings should be designed to lessen the apparent mass of the building.
- Master Plan Stewardship and Sustainability Guidelines can be achieved by:
  - o Street and pedestrian avenue trees as well as shade trees on the south and west sides of the Quad buildings for shade and heat gain reduction.
  - o Shade the parked cars on the top deck of the parking garage, reducing heat island effect with a deck or trellis.

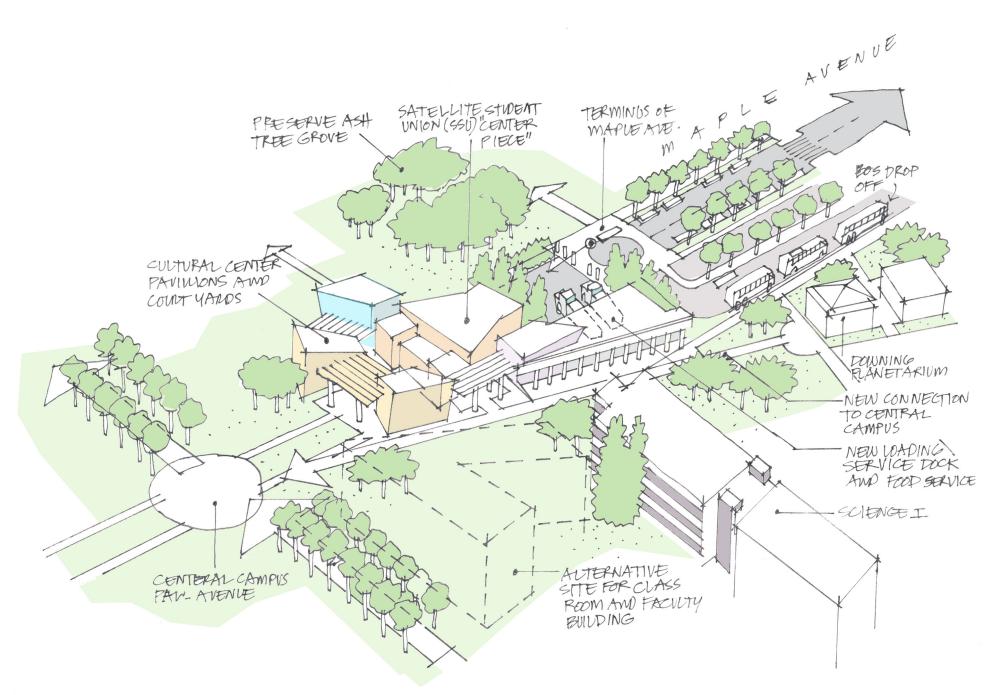
#### Library Parking Garage (E)

Master Plan elements include street trees and pedestrian side-walks between the Parking Garage and Shaw Avenue, and additions to Arboretum plantings towards the center of the campus.

- Shade trees on the west and south side of the parking garage will reduce heat gain and shade the decks of the parking garage. Plantings should be designed to lessen the apparent mass of the building.
- · Pedestrian amenities and lighting are to be included to create a safe and amenable pedestrian environment and to support the transit center in the parking garage.
- Shade the parked cars on the top deck of the parking garage.

#### Campus Entry (F)

- Configure the new entry street that serves the Library parking garage into a grand avenue that visually connects to the Student Union Building and the center of the campus to Shaw using street trees between Shaw and the garage and Arboretum plantings beyond.
- Master Plan Stewardship and Sustainability Guidelines can be achieved by:
  - o Directing rainwater from the parking garage decks to landscape swales in the median of the new campus entry. Swales will be landscaped with plants that clean and filter the storm water and retain it for groundwater recharge needs.
  - o The stormwater landscape swales-being empty most of the year due to scarce rainfall-would also collect surplus irrigation water for subsequent recharge.



Sketch of the Satellite Student Union with additional food service and new loading and service dock. Cultural Center Pavilions and landscape courtyards surround the Satellite Student Union to the south and west. The proposed pedestrian connection from Science II to the Central Campus Pedestrian Avenue is also shown.

#### Satellite Student Union Expansion (G)

- Renovate and integrate the landscape of the existing ash and maple grove northwest of the Satellite Student Union.
- Create a clear transition where Maple Avenue from Barstow gives way to the pedestrian oriented central campus, using special paving, bollards and landscape treatment.
- Support architectural screening of service areas serving the Satellite Student Union building.
- With remodeling and expansion of the Satellite Student Union, consider interconnected courtvards and arcades as usable out-door spaces that transition to air-conditioned interior spaces.
- Completion of the pedestrian connection from the Downing
- Planetarium to the Classroom and Faculty Office Building site is to be included.

#### Agriculture Research Center (H)

- Establishment of a series of research buildings as the Agricultural Research Center is to include remediation of the surrounding land:
  - o Restoration of soils left by the removal of the Rodeo, Student Horse Center and slurry pit. Soil restoration is to include over-seeding with bio-remedial grasses, barley hybrids and composting.
  - o Re-grading and expansion of the existing stormwater ponds into seasonal dry river native landscape (a seasonal lake) that is an amenity associated with the east-west central walkway. Ensure sufficient year-round water to sustain aquatic flora and fauna.
  - o Establishment of the east-west central walkway with coordinated pedestrian, bicycle and auto access and small scaled avenue trees that connect Campus Pointe with the academic campus.
  - o The east-west central walkway and redevelopment of the stormwater ponds will provide a finished edge to the south side of the Center for Agricultural Excellence.
- Initiate in advance of development site infrastructure, streets with sidewalks and street trees in anticipation of development of research facilities, institutes and specialized academic program centers. This will achieve early establishment of a mature landscape for the College of Agriculture.

#### Plant Operations and Utility Upgrades (I)

Following underground utility upgrades in Jackson Avenue, reconstruct it south of Garage K access as a pedestrian walkway structured to carry emergency and service vehicles. Restore street trees along the auto-access portion, and revert to Arboretum plantings along the pedestrian portion.

- Amend and restore landscaping to accommodate the redevelopment of campus pedestrian lighting, which is to establish uniform light levels across the campus.
- · Accommodate a new auto and pedestrian avenue linking the Viticulture and Enology Research Center to the center of the campus. Provide sidewalks and street trees to shade this new avenue.
- · At the south end of Jackson Street and the proposed viticulture avenue where they become pedestrian oriented, a clear termination of the auto environment is required through special paving, bollards and landscape treatments.
- · Shade trees should be planted to the west and south of Plant Operations facilities to reduce heat gain and provide shade.
- With redevelopment of Plant Operations and removal of San Ramon Avenue, create a new open space north of McLane Hall and the Agriculture Building.
- · Coordinate the design of Central Plant security fencing and other security facilities with the campus landscape.

#### Chestnut Avenue Street Improvements (J)

- scape.

#### Miscellaneous Improvements

The implementation measures given above are intended to create a harmonious whole, building on the Arboretum collection, replacing and restoring plant materials as necessary. The overall purpose is to present a consistent and unified landscape that reflects the quality of the institution, and unites academic, athletics, farm and other components into a strongly identified campus.

• Upgrading Chestnut Avenue to a surface arterial allows for the first phase implementation of the hedgerow concept establishing the edge of the campus and the structure of Farm in the larger land-

• The hedgerow plantings should consist of large scale fast growing tree species that are consistent with the scale of the surface arterial, have a columnar habit, have non-invasive root systems, and be able to be limbed up for clear sight lines.

• The hedgerows should generally be planted as double rows to shelter and provide a setting for hiking, riding and running trails. • The median of the surface arterial should be planted with native. fire resistant, drought tolerant grasses and wild flowers.

• Fencing, ground cover and miscellaneous entries should be carefully developed along with the hedgerows at the road edge as the most visible aspect of the campus to visitors and passers-by.

#### Long-Range Campus Master Plan

The long-range campus master plan, unlike the Ten-Year Campus Master Plan, does not identify all the new facilities shown. Projections of enrollments for 2025-26 indicate a total need by that date of approximately 5.5 million gross square feet of facilities; roughly twice the building space that exists on campus today. The challenge is to accommodate this doubling of space without compromising the quality of the campus environment, and without overloading shared facilities such as the Student Union. Many of the facilities that will be needed in twenty years' time cannot be identified yet, so general assumptions have been made about the extent to which each college, school and department will grow, and a number of unassociated buildings are also anticipated.

In order to accommodate so much growth, most parking will be relocated into multi-story garages, releasing surface lots for redevelopment including landscaped open spaces. Also, most new buildings will be at least three stories high. The average density of the campus, measured in square feet of built space per acre, will more than double in the next twenty years; though, of course, one fifth of the campus is currently occupied by surface parking lots, so the actual increase in density will be less evident than might be supposed.

Beyond the horizon of the ten-year master plan, Campus Pointe will have been completed and occupied. It will exert an influence on the eastern part of the campus, and east-west circulation routes will be more heavily used. Buildings that need to be close to the campus but not within it, such as certain research and technology transfer facilities, could be developed with parking garages immediately north of the Save Mart Center. The garages would accommodate event parking in the evenings and at weekends. Landscaped open spaces of the campus would be extended towards Campus Pointe, completing its connection to the campus. Long range planning should allow for the possibility that demand for oncampus housing will increase. In part this may be met by replacement of existing housing with taller buildings.

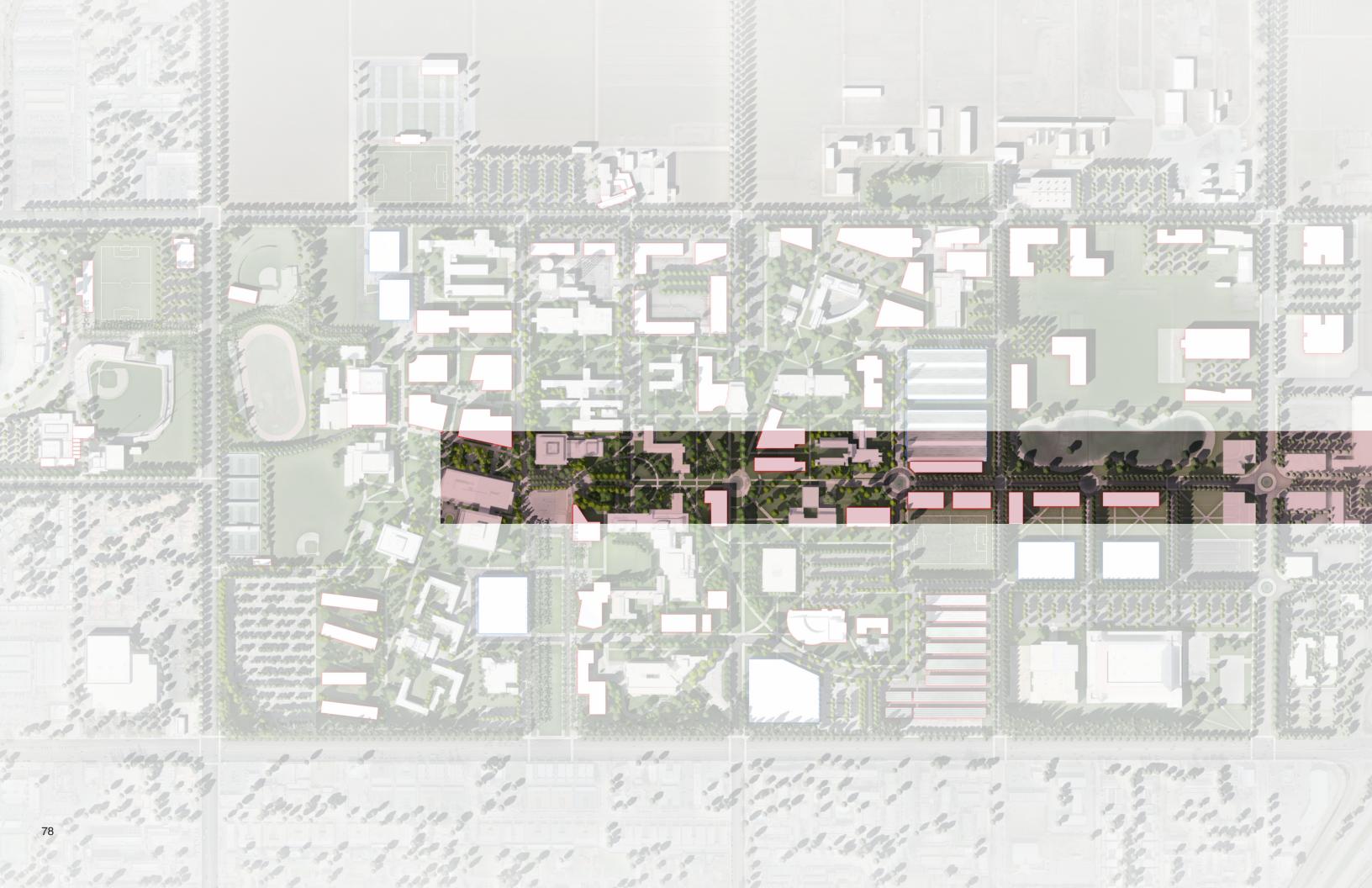
Many new facilities needs will be met by remodeling and expanding existing buildings, which is not evident on the plan. There may also be opportunities to relocate some academic functions off-campus. What the Long-Range Campus Master Plan provides is a clear organization of buildings, circulation and landscaped spaces that can accommodate changing and growing needs over time without losing its sense of order and without compromising the qualities of the campus that are admired today.

As buildings are expanded, remodeled and replaced, it will be possible for scattered departments to reconsolidate. The diagram below gives a sense of which parts of the campus will develop such concentrations. This reconsolidation will enhance collegiality, and will avoid the duplication of personnel and equipment necessary in scattered departments today. This relocation will not in any way diminish the ability for faculty and students to engage in multidisciplinary programs, which can be expected to become more numerous.

A long-term objective is to regroup the educational components of each college, school and department to a location close to their colleagues, strengthening the sense of community and collegiality.



# LONG-RANGE (20-YEAR) CAMPUS MASTER PLAN



# **KEY DESIGN GUIDELINES**

## Key Design Guidelines

The purpose of design guidelines is to provide both project designers and reviewers with a common set of parameters. The design guidelines convey values that underlie the campus master plan that should be evident in the projects that implement the plan. The range of design guidelines given here is far from comprehensive: it is intended to communicate the key principles and intentions of the master plan.

#### **Building Recommendations**

#### 1. Siting and orientation

- Site and orient buildings to respect the orientation of existing significant buildings.
- Respond to the principal directions of flow of those approaching the building, noting that some routes will change as the master plan is implemented.
- Locate the service entrance towards the campus perimeter to minimize conflicts with those using campus footpaths.
- Orient buildings to minimize solar gain yet receive adequate natural light.
- Take advantage of existing mature trees to shade the building in summer.
- Verify that siting does not compromise the long-range-development capacity of the campus.
- Capitalize on special views possible from the site.
- Locate support structures, such as parking garages, so that their functions do not conflict with campus life or academic buildings, and avoid blocking useful daylight from nearby buildings.

#### 2. Uses and activities

- Distinguish each building type by its architecture, yet relate each to its neighbor through materials, color, and a common human scale.
- Expose active uses in buildings along campus walkways to promote safety and vitality.
- Locate the main building entrances conspicuously and provide shade, shelter and seating to encourage impromptu meetings.
- Provide securable bicycle racks near, but clear of entrances and gathering places.
- Take responsibility with each new or remodeled building project for matching the environs with master planned improvements to landscape, pathways, lighting and utilities.
- · Prohibit temporary buildings on campus.

#### 3. Configuration and appearance

- · Build most new buildings three stories or higher to conserve developable land on campus.
- Limit most buildings to six stories to achieve a consistent scale between buildings and open spaces.
- Use the massing and orientation of buildings to define outdoor spaces.
- Relate the scale of architectural features to those of adjacent buildings and to the scale of the people that will use them.
- Screen rooftop equipment from view, both from the ground and from other buildings.
- Use enduring building materials of good quality, such as brick, stone, precast concrete, tile, glass and steel.

#### 4. Structural considerations

- · Select structural systems and floor-to-floor heights that will enable each building to adapt to changing needs and accept replacement mechanical and electrical equipment.
- Minimize the number of structural partitions within the perimeter of each building, thus maximizing its adaptability.
- Address seismic stability through core and perimeter moment resistance and shear walls, leaving most usable space unencumbered.

### 5. Stewardship and sustainability

- notably using solar power.
- Design buildings to operate with low energy demands. Make consistent use of performance measures to ensure that full energy savings are being attained cost effectively.
- ing certain times of the year.
- usable daylight.
- Progressively replace existing plumbing fixtures with water-conserving models.
- Use non-potable water sources and irrigation technology (from ICWT) for landscape maintenance.
- heavy irrigation.
- effectively with tree canopies or by other means.
- Select locally manufactured materials to limit transport-related costs and environmental degradation.
- Specify building materials that use renewable resources, such as certified wood and recycled content materials.
- recyclable.
- pounds.
- pus environment.

Increase on-campus generation of power from renewable sources,

- Evaluate building materials, systems and equipment on their life-cycle costs as well as initial capital costs.
- · Consider systems that use natural ventilation, heating and cooling dur-
- Orient and landscape buildings to minimize solar gain and maximize
- Select plant materials that can flourish in the Fresno climate without
- Limit heat build-up in paved areas (heat island effect) by shading them
- Use materials that are durable, require little maintenance and are

 Increase building materials salvage and construction debris recycling. Avoid using materials, equipment, carpets, adhesives and paints that contain or produce CFCs, HCFC, halons and volatile organic com-

• Accommodate reclamation and recycling of chemicals, and of solid waste, within buildings while protecting the indoor environment. • Increase on-site effluent treatment for laboratories to protect the cam-



Vehicular routes lined with street trees will extend into the perimeter of the campus, terminating at parking entrances and service areas behind buildings.

### Transportation and Parking Recommendations

- 1. Pedestrian and bicycle circulation
- · Give priority to walking within the campus.
- · Acknowledge that bicycles will use footpaths, and design them accordingly: with sufficient width and clear sightlines at corners.
- Terminate vehicular streets just inside the campus periphery at parking garages and service areas.
- Create a network of footpaths that minimize out-of-direction travel for users.
- · Provide a way-finding system that is clearly legible by day and after dark.
- Preserve and create vistas across the campus that help to orient visitors.
- Adhere to barrier-free design standards and safety in design principles throughout the campus.
- Use paving materials that are amenable to wheelchair use.
- Provide tactile edge definition along pathways.

#### 2. Vehicular circulation

- Limit vehicular circulation to the perimeter of the campus, except for emergency and essential maintenance vehicles.
- Orient buildings so that their service areas are accessible from the campus perimeter.
- Accommodate transit access on the main campus entry off Shaw with a campus transit center located south of the library.
- Design roadways to encourage appropriate driving speeds.
- Maintain sight distances appropriate to driving speeds.
- · Use curb radii appropriate to slow-moving traffic.
- Consider designation of bicycle lanes on busy streets.

#### 3. Campus access

- Improve access to the campus for pedestrians and bicyclists with safer routes and improved crossings at all intersections.
- Create a new main entrance to the campus off Shaw Avenue.
- Acknowledge the significance of the campus as a destination and change traffic management practices in the vicinity of the campus to reduce conflicts between through traffic and turning vehicles, bicycles and crossing pedestrians.
- · Encourage greater transit use by faculty, staff and students; consider transit pass programs for all.
- Encourage car pooling, walking and bicycling as sustainable forms of transport to and from the campus for the many who live nearby.

#### 4. Parking

- earess.
- activity.
- within at night.
- Adhere to safety in design principles for parking lots and garages. • Light parking facilities uniformly but no more brightly than necessary for safety, using cut-offs to prevent light trespass into other properties or above the horizontal.

## 5. Emergency access

- Locate parking so that is safe, convenient and inconspicuous.
- Provide direct and well lit walkways from within parking lots and garages to principal destinations on campus.
- · Provide clear sight lines for campus security of all points of access and

Avoid multiple driveways into a parking lot or garage to limit criminal

• Locate stair and elevator towers on the edges of parking garages that are most visible; glaze them generously and illuminate them from

• Construct all campus pathways to support emergency vehicle access. Provide emergency vehicle access to every building by providing sufficient ground-bearing capacity in all weather conditions, and by keeping approaches clear of obstructions.

#### Landscape Recommendations

#### 1. Open spaces

- Contribute to the organized hierarchy of interconnected open spaces that constitute the backbone of the landscape master plan. Give open spaces definition with appropriately located and scaled building facades and trees.
- Temper the microclimate of campus open spaces to make them comfortable to use at most times of the year.

#### 2. Trees

- Preserve and maintain significant stands of trees such as the Arboretum.
- Add communities of specimen trees to expand the Arboretum into adjoining open spaces.
- Extend shade canopies across most paved areas, using tree species that are disease-resistant and drought-tolerant.

#### 3. Campus edges

- Recognize that the edges of the campus express the values of the university.
- Use glimpses of buildings and landscape to announce the presence of the campus at its edges; especially at the most visible approaches.
- Make the main entrance to the campus conspicuous and expressive of the institution's values.
- Make parking a far less conspicuous feature of the campus edges.
- Determine which parts of the campus edge are to be clearly delineated and which are to be 'soft', with no visible edge.

#### 4. Stewardship and sustainability

- Reduce irrigation demands.
- Use non-potable water sources and advanced irrigation equipment (ICWT) for landscape maintenance.
- Use plant species that adapt well to the Fresno climate: are drought tolerant, heat tolerant and disease resistant.
- Use paving materials for pathways that can be replaced with minimal waste when they are removed for access to utilities.
- Minimize impervious surfaces that must be drained, cleared and disposed of elsewhere.
- Maintain campus security by selective trimming and removal of trees and shrubs.
- Avoid management practices that lead to the degradation of water quality; limit the use of fertilizers and pesticides that can leach into the aquifer.
- Limit vehicle use within the campus proper to emergency and essential maintenance traffic.
- Use landform and plant materials to detain and filter storm runoff.
- Use water features that are economical of power and water use.

Refer also to the sections of this document titled "Landscape Master Plan" (page 43) and "Landscape Implementation" (page70.)



The Submariner's tree allee will become a feature of an integrated system of open spaces and walkways.



A broad avenue will lead visitors from a main campus entrance on Shaw Avenue to the heart of the campus.

#### 5. Special features

- scape.

- in its operation.

# 6. Lighting and signage

- become dated.
- tial buildings.

• Select sites for art pieces, fountains, pergolas and other special features that relate them meaningfully to existing architecture and land-

• Accept only those special features that merit a permanent place on the campus and for which maintenance costs can be provided.

• Locate water features at the crossroads of the main east-west pedestrian mall through the center of the campus.

• Make each water feature distinctive in its appearance and sustainable

• Use consistently designed light fixtures throughout campus. Design them to illuminate the faces of people using the footpaths sufficiently for mutual recognition at a few yards distance.

• Use moderate and consistent lighting levels throughout the campus to provide security and comfort for pedestrians, and to limit power use. • Avoid abrupt changes in light levels that obscure darker areas.

• Select a classically simple design for light poles that is unlikely to

• Recognize the significant effect that lampposts have on the campus landscape by day and after dark; locate and color them accordingly. • Use cut-offs to exclude light spillage above horizontal or into residen-

• Coordinate campus lighting with way-finding signs, so that directions are legible by day and after dark.

• Develop a comprehensive way-finding system for the campus.

• Coordinate the location and scale of signs to the needs of campus visitors arriving via the main entrance off Shaw Avenue.

• Use predictable placement and colors for signs.

# APPENDIX

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#### Summary of the Utilities Master Plan

In September 2005, RMF Engineering Inc. of Baltimore, Maryland, completed a Campus Utility Master Plan. This is a comprehensive document addressing general conditions, chilled water, hot water, electrical systems and loads, domestic hot water, sanitary sewer collection, cogeneration and other topics. Estimates of future utility demands were based on the 2005 update of the 1963 campus facilities master plan. An immediate concern was the addition and renovation of the Henry Madden Library. Anticipated campus improvements through 2013 would add almost 500,000 SF; a 30% increase on existing space.

#### **Chilled Water System**

Most space cooling requirements are met by the 1.7 million gallon chiller in Central Plant. Four electric centrifugal chillers use off-peak power to cool the water which significantly reduces power costs. However, any increase in load above 2,200 tons capacity of the system requires on-peak operation of the chillers. Current peak load is 3,400 tons. Future demand is estimated at 4,420 tons, so installation of a second chiller plant is recommended.

Underground distribution and return of chilled water is circulated by three variable speed distribution pumps. The distribution network was modeled on both existing and anticipated load conditions and was found to be adequate through 2013.

#### Hot Water System

Three boilers in the Central Heating Plant generate 41,400 MBH (thousand Btus/hour) distribute though underground pipes. The existing heating load is approximately 30,200 MBH and projected load through 2013 is 36,400 MBH. The distribution system is also adequate, although an additional pump should be added at the Peters Business School prior to 2010.

#### **Campus Electrical System**

A single 12 kv feeder from the PG&E Bullard Substation serves the campus through Central Plant, where re-distribution at 4,160 volts is being updated to 12 kv distribution to campus buildings. Peak recorded demand on the 4,160 volt system was estimated to be 2,360 kw, which was within the capacity of the six campus feeders.

2013 peak electric load is projected to be 9,100 kw, which would exceed the capacity of the existing feeder on the campus, so a second 12 kv feeder is recommended immediately. Additional on-campus 12 kv feeders will be needed to each new building served. Increased transformer capacity will be needed to serve additional chillers.

#### **Cogeneration Analysis**

Options for on-campus generation of power and usable heat were investigated. Since there is no demand for hot water in summer, use of hot water absorption chillers was considered. This study concluded that a 1.2 MW combustion turbine with an 800 ton absorption chiller could provide payback after five years of operation. Over a 25-year period, savings of \$8 million in 2005 dollars would be realized. (see figure 1-3 at right)

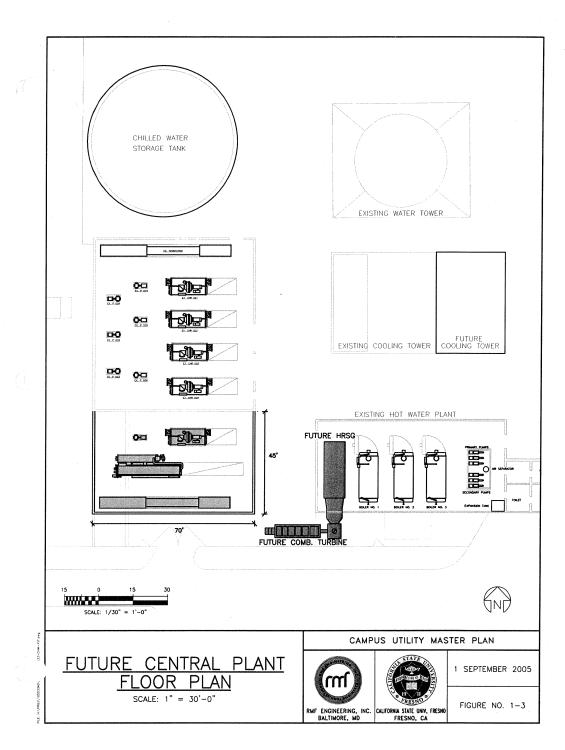
#### **Domestic Water & Sanitary System**

Wells on the campus, with an emergency connection to the City of Fresno Municipal system, supply domestic water. Current and future flow projections are sufficient to support projected demand.

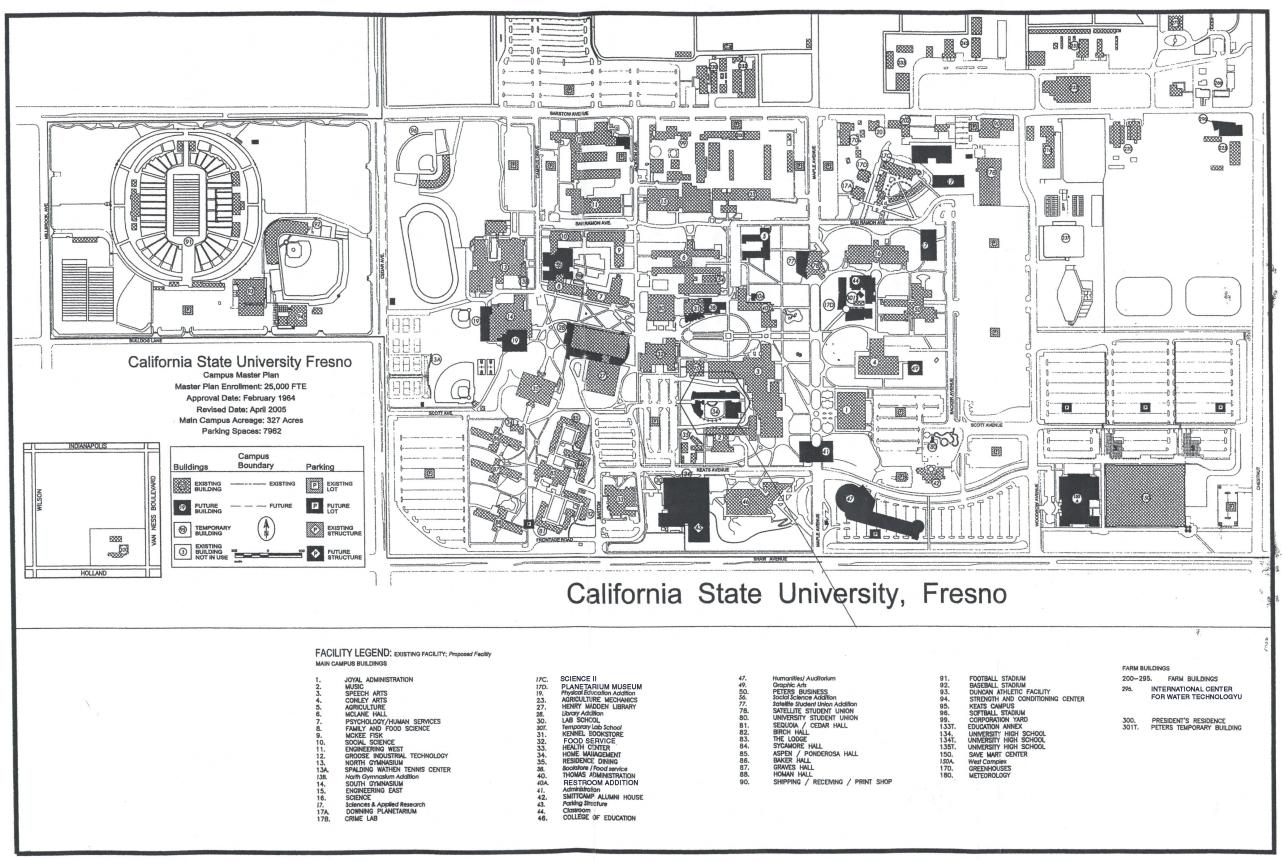
There are two outfalls from the campus into the City of Fresno Municipal sewer system. Their capacity is sufficient for projected flows, although alternative systems are being investigated.

#### **Event Center and Campus Pointe**

Because of the distance of the Save Mart Center from Central Plant distribution, it was decided to construct separate heating and cooling systems for the center. Similar conclusions were reached for Campus Pointe.



Previous Master Plan (1964 updated to 2005)



Master Plan Meetings in Alphabetical Order

Meeting	Subject	Date	Meeting	Subject
17	Agricultural Farm Tour & Discussion	12/21/05	68	Master Plan Coordinating Committee
37	Agriculture School & Foundation Workshop	02/09/06		Master Plan Coordinating Committee – Parking & Transportatio
61	Alumni Association	04/06/06	24	Update
69	Arboretum Group	05/10/06	74	Master Plan Infrastructure
35	Arboretum Sub-Committee	02/08/06	36	Master Plan Issues Review
60	Arboretum Sub-Committee	04/06/06	20	Master Plan Progress Meeting
5	Athletics	11/10/05	52	Neighborhood Real Estate
27	Athletics Management Team	01/11/06	78	Parking Plan
76	Auxiliary Facilities	09/13/06	77	Parking Police
59	Auxiliary Management Team	04/06/06	32	Programs for Children
49	Buildings Condition Survey	03/09/06	2	Project Direction – President
	CA Agricultural Technology Institute, Center for Irrigation Technology,		41	Project Planning Meeting
8	CA Water Institute	12/20/05	54	Project Planning Meeting
55	Cabinet Meeting	04/05/06		Research & Sponsored Programs, Graduate Studies & Universi
67	Cabinet Meeting	05/10/06	16	Lecture Series
42	California Environmental Quality Assessment	03/08/06	34	Residence Halls, Baker Hall
38	Campus Master Plan Coordinating Committee	02/09/06	12	School of Continuing & Global Education
46	Campus Master Plan Coordinating Meeting	03/08/06	63	Science Benches
43	Campus Parking Analysis	03/08/06	51	Smittcamp Family Honors College
1	Campus Pointe	11/10/05	6	Strategic Planning Committee
4	Campus Security	11/10/05	40	Strategic Planning Committee
50	Campus Security Update	03/09/06	53	Strategic Planning Committee
75	Campus Shuttle System	08/22/06	71	Strategic Planning Committee
73	Center for Agricultural Excellence	08/22/06	25	Student Affairs Management Team
13	College of Agricultural Sciences & Technology	12/21/05	58	Student Health Center
9	College of Arts & Humanities	12/20/05	39	Student Leadership & President's Breakfast Group
11	College of Engineering	12/20/05	28	Technology Department
22	College of Health & Human Services	01/10/06	56	Tentative Phasing of Improvements
21	College of Science & Mathematics	01/10/06	65	Testing Center
15	College of Social Sciences	12/21/05	79	Transit Center
29	Community & Economics Development	01/12/06	23	Transit: City of Fresno & City of Clovis
66	Community Based Learning	04/07/06	19	Undergraduate Studies
72	Corporation Yard & Utility Projects	08/22/06	26	University Advancement, Foundation & Campaign
10	Craig School of Business	12/20/05	44	University High School
64	Enterprise Zone & the Revitalization Group	04/06/06	31	Utilities Update
70	Environmental Impact Report	05/10/06	80	Vehicle Circulation
62	Ethics Center	04/06/06	7	Viticulture & Enology, Ag Foundation, PR Farms
3	Facilities Planning & Projects	11/10/05		
33	Faculty Development & Smart Classrooms	02/08/06		
47	Faculty Senate Executive Committee & Committee Chairs	03/08/06		
45	Farm Follow-Up Meeting	03/08/06		
48	Friends of the University	03/08/06		
30	Gerontology	02/08/06		
18	Henry Madden Library	12/22/05		
14	Kremen School of Education	12/21/05		
		04/05/00		

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	11/02/06

12/20/05

# Master Plan Meetings in Chronological Order

Meeting	Subject	Date	Meeting	Subject	Date
1	Campus Pointe	November 10, 2005	50	Campus Security Update	March 9, 2006
2	Project Direction – President and Cabinet	November 10, 2005	51	Smittcamp Family Honors College	March 9, 2006
3	Facilities Planning & Projects	November 10, 2005	52	Neighborhood Real Estate	March 9, 2006
4	Campus Security	November 10, 2005	53	Strategic Planning Committee	March 10, 2006
5	Athletics	November 10, 2005	54	Project Planning Meeting	March 10, 2006
6	Strategic Planning Committee	November 11, 2005	55	Cabinet Meeting	April 5, 2006
7	Viticulture & Enology, Ag Foundation, PR Farms	December 20, 2005	56	Tentative Phasing of Improvements	April 5, 2006
8	California Agricultural Technology Institute, Center for	,	57	Master Plan Coordinating Committee	April 5, 2006
	Irrigation Technology, California Water Institute	December 20, 2005	58	Student Health Center	April 5, 2006
9	College of Arts & Humanities	December 20, 2005	59	Auxiliary Management Team	April 6, 2006
10	Craig School of Business	December 20, 2005	60	Arboretum Sub-Committee	April 6, 2006
11	College of Engineering	December 20, 2005	61	Alumni Association	April 6, 2006
12	School of Continuing & Global Education	December 20, 2005	62	Ethics Center	April 6, 2006
13	College of Agricultural Sciences & Technology	December 21, 2005	63	Science Benches	April 6, 2006
14	Kremen School of Education	December 21, 2005	64	Enterprise Zone & the Revitalization Group	April 6, 2006
15	College of Social Sciences	December 21, 2005	65	Testing Center	April 7, 2006
16	Research & Sponsored Programs, Graduate Studies	December 21, 2005	66	Community Based Learning	
10	& University Lecture Series	December 21, 2005		Cabinet Meeting	April 7, 2006
17		December 21, 2005	67	0	May 10, 2006
17	Agricultural Farm Tour & Discussion	December 22, 2005	68	Master Plan Coordinating Committee	May 10, 2006
18	Henry Madden Library		69	Arboretum Group	May 10, 2006
19	Undergraduate Studies	December 22, 2005	70	Environmental Impact Report	May 10, 2006
20	Master Plan Progress Meeting	January 10, 2006	71	Strategic Planning Committee	May 11, 2006
21	College of Science & Mathematics	January 10, 2006	72	Corporation Yard & Utility Projects	August 22. 2006
22	College of Health & Human Services	January 10, 2006	73	Center for Agricultural Excellence	August 22. 2006
23	Transit: City of Fresno & City of Clovis	January 10, 2006	74	Master Plan Infrastructure	August 22. 2006
24	Master Plan Coordinating Committee – Parking &		75	Campus Shuttle System	August 22. 2006
	Transportation Update	January 10, 2006	76	Auxiliary Facilities	September 13, 2006
25	Student Affairs Management Team	January 11, 2006	77	Parking Police	September 13, 2006
26	University Advancement, Foundation & Campaign	January 11, 2006	78	Parking Plan	September 13, 2006
27	Athletics Management Team	January 11, 2006	79	Transit Center	September 13, 2006
28	Technology Department	January 12, 2006	80	Vehicular Circulation	November 2, 2006
29	Community & Economics Development	January 12, 2006			
30	Gerontology	February 8, 2006			
31	Utilities Update	February 8, 2006			
32	Programs for Children	February 8, 2006			
33	Faculty Development & Smart Classrooms	February 8, 2006			
34	Residence Halls, Baker Hall	February 8, 2006			
35	Arboretum Sub-Committee	February 8, 2006			
36	Master Plan Issues Review	February 9, 2006			
37	Agriculture School & Foundation Workshop	February 9, 2006			
38	Campus Master Plan Coordinating Committee	February 9, 2006			
39	Student Leadership & President's Breakfast Group	February 9, 2006			
40	Strategic Planning Committee	February 10, 2006			
41	Project Planning Meeting	February 10, 2006			
42	California Environmental Quality Assessment	March 8, 2006			
43	Campus Parking Analysis	March 8, 2006			
44	University High School	March 8, 2006			
45	Farm Follow-Up Meeting	March 8, 2006			
46	Campus Master Plan Coordinating Meeting	March 8, 2006			
47	Faculty Senate Executive Committee & Committee Chairs	March 8, 2006			
48	Friends of the University	March 8, 2006			
49	Buildings Condition Survey	March 9, 2006			

# Fresno State Department of Athletics **Strategic Plan Facilities**

Illustrations in the "Athletic Master Plan" section are derived from the following complete list of planned improvements dated October 1, 2006.

#### North Gym (volleyball, men's basketball and women's basketball)

- Removal of upper-level bleacher seating
- Basketball full-time coaches' offices and DBO constructed on west balcony
- Basketball graduate assistant constructed within North Gym (TBD)
- · Renovation of practice space to include
  - 1. Removal of west-side bleachers and crow's nest
    - 2. Removal of retractable basketball goals on north, south and west sides
    - 3. Replace several north-side doors with padded solid wall
    - 4. Installation of free-standing basketball goals
    - 5. Texture and paint wall surfaces (murals TBD)
    - 6. Relocate and enhance overhead lighting
    - 7. Replace scoreboards and shot clocks
  - 8. Floor refinished to match game floor at Save Mart Center
- · Volleyball coaches' offices relocated to renovated east side office complex
- Wall constructed to create courtyard on west side of main gym building
- Construction of secure connector between North Gym and Annex
- Men's staff locker room constructed within North Gym complex (TBD)
- Women's staff locker room constructed within North Gym complex (TBD)
- Conference room relocated from Annex to North Gym main building (TBD)
- Student-athlete study lounge constructed in North Gym main building (TBD)
- East-side operations offices constructed in North Gym main building (TBD)
- Renovation of lobby entrance/trophy cases/hallways/stairwells/restrooms
- General landscaping and connection to the Athletics Mall
- Women's basketball locker room upgrade
- Volleyball locker room upgrade
- · Men's basketball locker room relocated to Annex and upgraded
- Renovation to accommodate team video and meeting room within Annex
- · Satellite training room relocated to Annex
- Satellite equipment room relocated to Annex

#### Bulldog Diamond (softball)

- Outfield seating reduced and spectator berm and/or picnic area constructed
- · Construction of restroom facilities and meeting room for visitor's dugout
- · Press box and camera platform renovation
- Construction of permanent, solid outfield and side fences
- · Completion of permanent seating on east and south sides
- Enhancement of the warming track
- Construction of locker room facility on southwest side
- Create southeast spectator entrance with shared plaza with Warmerdam Field
- Complete general landscaping and appropriate connection to the Athletics Mall

#### Bulldog Stadium (football)

- Replace/upgrade scoreboards and install permanent video wall
- · Lower field, reduce points of field access and enhance west side access
- Replace natural grass playing surface with rubber in-filled surface
- Enhance restrooms and concession stands
- Enhance access to points of entry and access to seating
- Construct locker rooms for visitors and officials/storage on south end
- West side renovation/construction:
  - 1. Additional spectator seating (TBD)
  - 2. Private suites
  - 3. Club seating
  - 4. Press box and live media locations
  - 5. Camera platforms
  - 6. Game operations central command location
- West-side operations offices constructed (TBD)
- East side spectator entrance with shared plaza with Bieden Field and Soccer Stadium
- · General landscaping and connection to the Athletics Mall

#### Warmerdam Field (track and field)

- Relocation of spectator seating to east side to provide
  - 1. Spectator seating for 1,000 toward north finish line
  - 2. Grass berm seating on north, south and west sides
  - 3. Ten-seat press box and camera deck toward north finish line
- Secure, decorative fencing around venue and track
- Northeast spectator entrance with shared plaza with Bulldog Diamond
- Replacement of track and runway surfaces
- General landscaping and connection to the Athletics Mall

#### Bieden Field (baseball)

- Remove bleacher seating and hitting cages along first baseline
- Renovate all red seats with new hardware
- Renovate home locker room and creation of video viewing area
- Renovate visiting locker room
- Renovate press box and camera platform
- Renovate permanent, solid outfield and side fences
- Construct Pete Bieden Circle and "Wall of Fame 5."
- Improve outfield spectator berm and/or picnic area on first-base side
- Build brick wall to replace second outfield fence (to obscure service areas)
- Provide northwest spectator entrance with shared plaza with Bulldog Stadium and Soccer Stadium
- Complete general landscaping and connection to the Athletics Mall

#### Spalding G. Wathen Tennis Center

- Renovation of playing surface
- · Construction of clubhouse on south end:
  - 1. Satellite coaches' offices
  - 2. Meeting room/student-athlete lounge
  - 3. Unisex restrooms/changing rooms
  - 4. Equipment storage/stringing machine room
  - 5. Renovation/upgrade of external public restrooms
- General landscaping consistent with the Athletics Mall

#### Soccer Stadium

- · Construction of competition venue immediately east of Bulldog Stadium:
  - 1. Enhancement of natural grass field
  - 2. Spectator seating for 1,000
  - 3. Grass berm seating on north, south and east sides
  - 4. Ten-seat press box and camera deck
  - 5. Secure, decorative fencing
- · Southwest spectator entrance with shared plaza with Bulldog Stadium and Bieden Field
- · General landscaping and connection to the Athletics Mall

### Duncan Building (Multi-sport)

- Construction of visitor entrance and team meeting rooms
- Construction of coaches' offices and support space:
  - 1. Softball
  - 2. Baseball
  - 3. Soccer
  - 4. Men's tennis
  - 5. Women's tennis
  - 6. Women's golf
  - 7. Men's golf
  - 8. Track and field/cross country
- Expansion and renovation of primary training room
- Expansion and renovation of primary equipment room
- Construct men's track and field locker room (former football locker room)
- Construct women's track and field locker room (former football locker room)
- · General landscaping and connection to the Athletics Mall

### Save Mart Center (volleyball, men's basketball, women's basketball and track and field)

- Construction of volleyball locker room on 'Bulldog Corridor'
- Construction of training room on "Bulldog Corridor"
- Construction of locker room/meeting rooms on 'Bulldog Corridor'
- "Seat-killer" curtain system
- Purchase volleyball competition surface
- Create storage for indoor track

#### Student-Athlete Village (multi-sport)

- Decorative security fencing surrounding complex with card swipe access
- Newly constructed building to share plaza with Duncan and Ricchiuti buildings
  - 1. Locker rooms:
    - a. Soccer
    - b. Men's tennis
    - c. Women's tennis
    - d. Future additional sport (TBD)
  - 2. Student-athlete lounge
  - 3. Men's and women's staff locker rooms
  - 4. Student-athlete dining facility
- West-side operations offices constructed in North Gym main building (TBD)
- General landscaping and connection to the Athletics Mall

#### Equine Center (shared academic program space)

- · Construction of competition venue and horse-care center built north of Bullard Avenue and east of Cedar Avenue
  - 1. Competition surface for equestrian and rodeo events
  - 2. Spectator seating for 1,000
  - 3. Six-seat press box and camera deck
  - 4. Satellite coaches' offices
  - 5. Meeting room/student-athlete lounge
  - 6. Student-athlete changing rooms
  - 7. Equipment storage
  - 8. Renovation/upgrade of external public restrooms
  - 9. Secure, decorative fencing
- · General landscaping consistent with Athletics Mall

#### External Affairs/Administration Building

- Newly constructed building at an undetermined site:
  - 1. First floor (general public):
    - a. Athletics Ticket Office
    - b. Fresno State Athletics Hall of Fame
    - c. Bulldog Shop
    - d. Bulldog Foundation
    - e. Retail stores (TBD)
  - 2. Second floor (administration):
    - a. Sports Information
  - b. Marketing and Broadcasting
    - c. Business Affairs
    - d. Director of Athletics/Administration
- · General landscaping and connection to the Athletics Mall

Construction of Fresno State "Walk of Fame" throughout the Athletics Mall Kinesiology shares facilities and play fields with Athletics for physical education programs.

Working Paper on Parking, Access and Circulation (Omni-Means)



California State University Fresno

Campus Master Plan

Working Paper On Parking, Access and Circulation

November 16, 2006

Prepared for: Zimmer-Gunsul-Frasca Partnership California State University -Fresno

CAMPUS MASTER PLAN

WORKING PAPER ON PARKING, ACCESS AND CIRCULATION

**PREPARED FOR:** ZIMMER-GUNSUL-FRASCA PARTNERSHIP CALIFORNIA STATE UNIVERSITY FRESNO

> **PREPARED BY: OMNI-MEANS, LTD. ENGINEERS & PLANNERS** 943 RESERVE DRIVE, SUITE 100 **ROSEVILLE, CA 95678** (916) 782-8688

> > **NOVEMBER 16, 2006**

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Prepared by:



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California State University Fresno – Campus Master Plan Zimmer-Gunsul-Frasca Partnership

#### 1. INTRODUCTION AND STUDY METHODOLOGY

OMNI-MEANS, Ltd. is a member of the Zimmer-Gunsul-Frasca Partnership (ZGF) team to prepare a Master Plan to govern the future growth of the California State University Fresno. OMNI-MEANS responsibility is to develop a parking, access and circulation plan that will be integrated into the overall Campus Master Plan be developed by ZGF. These studies will be coordinated through a series of on campus upper management and committee sessions over the course of one year initiating in the winter of 2005/2006.

#### STUDY METHODOLOGY

We have undertaken this project with the understanding that there will be two major project components, with several sub-components; these are:

- Campus Parking Needs
  - Campus Student Growth
  - East Campus Needs Campus Pointe Project
  - Bulldog Stadium Needs
  - New and Expanded Parking Facilities
- Campus Access and Circulation
  - Motor Vehicle
  - Transit
  - Pedestrian/Bicycle

Our approach to this project is to develop a comprehensive database adequate to gain an understanding of the existing characteristics of the University and its users; student, faculty, staff and visitors. This information will be coalesced into the overall campus master plan project, recognizing new and/or deleted campus buildings; recommending revisions to pedestrian and bicycle facilities; identifying new and/or expanded parking facilities; and, addressing alterations to the campus access and circulation system.

A considerable amount of traffic and parking data has been generated. The data collection effort has covered everything from campus traffic and parking activity to classroom attendance by time of day and day of the week. The specific data will be presented in the context of the overall analysis.

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## 2. PARKING

The parking analysis is composed of three separate but mutually dependent components:

- Daily Campus Needs
- East Campus Needs Campus Pointe
- Weeknight Bulldog Stadium Events

#### **CAMPUS PARKING**

The daily campus needs are a function of the existing and future (10-year horizon); student enrollment and university support system of faculty and staff. The project tasks associated with this effort include:

- Obtain the Current Parking Inventory
  - o Student
  - Faculty/Staff
- Determine Magnitude of Current Usage
- Identify Future Parking Demand
  - Student
  - Faculty/Staff
- Identify Potential Reductions through Enhanced Transit/Bicycle/Pedestrian Usage •
- Locate Potential Sites for New and/or Expanded Parking Facilities

The current parking inventory was secured through the "Facilities Management" office of CSU Fresno. The campus contains a total of 7905 parking spaces of all types, from dedicated spaces for campus police, visitors, and motorcycle users, to faculty/staff and student designated lots. Facilities which are dedicated for principally student use contain a total of 5743 spaces which includes 300 spaces within the Save Mart Center parking, faculty/staff designated facilities number 2098 spaces; and there are an additional 173 spaces, which are set aside for other and/or visitor parking. The following table, Table 1, presents the statistics for the more significant parking facilities.

TABLE 1 PRIMARY PARKING FACILITIES							
Facility Overall Student Faculty							
Name	Facility Type	Capacity	Capacity	Capacity			
А	Student	690	690				
В	Faculty	297		297			
С	Student/Faculty	467	343	124			
D	Faculty	270		270			
E	Student/Faculty	231	137	94			
G	Student	1024	1024				
J	Student/Faculty	618	376	242			
K	Faculty	236		236			
L	Faculty	110		110			
М	Faculty	53		53			
Ν	Faculty	136		136			
0	Faculty	98		98			
Р	Student	188	188				
Q	Student	1326	1326				
V	Student	717	717				
Rec Ctr	Student	44	44				
	Totals	6505	4845	1660			

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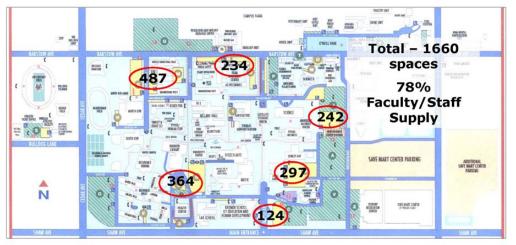
page 2 R973rpt002.doc The 5,456 student spaces are provided within 16 surface parking lots scattered about the campus, with nine (9) of those lots containing 90% of the student parking supply as shown on Figure 1.

> FIGURE 1 PRELIMINARY STUDENT PARKING (NINE FACILITIES)



There are 20 faculty/staff parking areas also scattered around the campus. The primary parking areas, representing 10 surface lots and containing 1660 spaces or 78% of the supply is shown on Figure 2 below.

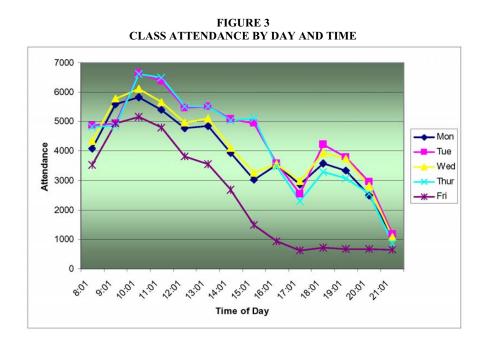
#### FIGURE 2 PRIMARY FACILITY/ STAFF PARKING (TEN FACILITIES)



To determine the magnitude of the use of these facilities we undertook a series of parking occupancy surveys. The first matter to determine was the timing for these surveys to take place; which day of the week, what time of day. Again, the "Facilities Management" office provided outstanding information based on the fall 2005 enrollment. The information provided presented classroom activity by day of the week and time of day, as shown in Figure 3.

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The knowledge of classroom activity provided the necessary information to select the times of the day and the day of the week to collect parking occupancy data for the campus. Fall 2005 parking data was collected in October 2005 (day classes) and January 2006 (evening classes). Subsequently, with the 2006-07 school year in full swing and the new Recreation Center opened adjacent to Lot V, the University requested that the surveys be re-done to reflect the new school year activity. In September 2006, the surveys were updated and the findings are summarized in Table 2.

TABLE 2 PARKING SURVEY SUMMARY					
	Morniı	ng			
Parking Type	Capacity	Occupied	% Occupancy		
Total Surveyed	7,989	6,312	79%		
Student	5,699	4,703	83%		
Faculty/Staff	2,098	1,563	74%		
Visitor	92	9	10%		
Other	100	37	37%		
	Afterno	on			
Parking Type	Capacity	Occupied	% Occupancy		
Total Surveyed	7,989	5,628	70%		
Student	5,699	4,105	72%		
Faculty/Staff	2,098	1,485	71%		
Visitor	92	11	12%		
Other	100	27	27%		
	Evenir	ng			
Parking Type	Capacity	Occupied	% Occupancy		
Total Surveyed	7,989	3,566	45%		
Student	5,699	2,835	50%		
Faculty/Staff	2,098	706	34%		
Visitor	92	13	14%		
Other	100	12	12%		

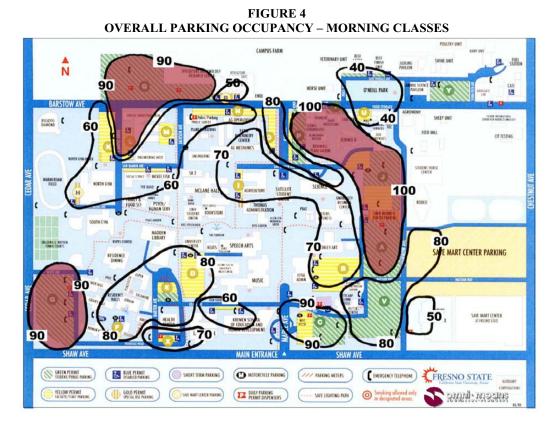
California State University Fresno - Campus Master Plan Zimmer-Gunsul-Frasca Partnership The two daytime intervals were 10:00 AM to coincide with the highest occupancy condition of the day and 2:00 PM to gather information relative to the afternoon peak. The evening parking data was collected between 6:00 and 7:00 PM. The evening data will assist in determining the best use of underutilized internal campus parking during these periods for other campus functions or events at Bulldog Stadium and Save Mart Center. In each case, 98% of all parking facilities were surveyed.

While the statistics indicate that parking supply is sufficient to meet current and possibly future demands, a closer look is warranted; particularly with respect to student parking. The overall conditions can mask an underlying problem, and this is clearly the case at Fresno State. When we review the mid-morning parking at the primary student and faculty parking facilities we see an entirely different story, as illustrated in the following table (Table 3) and on Figure 4. Figure 4 illustrates the percentage of all available parking occupied during the morning parking survey.

# TABLE 3

PRIMARY PARKING FACILITY USAGE - 10:00 AM										
	Facility		Overall		Stu	Ident Facilities	5	Facul	lty/Staff Facilit	ies
Name	Facility Type	Capacity	Occupancy	% Occ	Capacity	Occupancy	% Occ	Capacity	Occupancy	% Occ
A	Student	690	677	98%	690	677	98%			
В	Faculty	297	225	76%				297	225	76%
С	Student/Faculty	467	440	94%	343	307	90%	124	77	62%
D	Faculty	270	232	86%				270	232	86%
E	Student/Faculty	231	187	81%	137	117	85%	94	78	83%
G	Student	1024	943	92%	1024	943	92%			
J	Student/Faculty	618	650	105%	376	387	103%	242	239	99%
K	Faculty	236	147	62%				236	147	62%
L	Faculty	110	103	94%				110	103	94%
М	Faculty	53	35	66%				53	35	66%
N	Faculty	136	86	63%				136	86	63%
0	Faculty	98	87	89%				98	87	89%
Р	Student	188	186	99%	188	186	99%			
Q	Student	1326	1251	94%	1326	1251	94%			
V	Student	717	602	84%	717	602	84%			
Save Mart	Student Overflow	300	236	79%	300	236	79%			
	Totals	6761	6087	90%	5101	4706	92%	1660	1309	79%

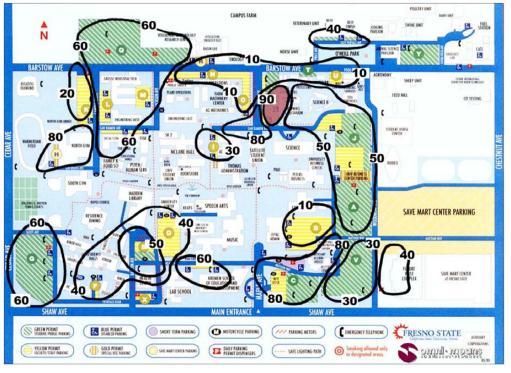
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Reviewing the information presented begins to bring into focus the issue of adequacy not quantity of the parking supply. The parking supply is adequate; but in terms of the spatial relationship between campus activity centers and parking location is very tight. For example, of the nine (9) primary student parking facilities, seven (7) exceed 90% occupancy. As ninety percent 90% occupancy is considered to be capacity for surface parking, (85% for parking structures), these seven (7) student parking lots currently are exceeding the design capacity. This "design-reduction" accounts for poor parking habits, circulating traffic, and the appearance that the rows are filled. In addition lots "D" and "O" are nearing 90%, lot "E", adjacent to the library, is at 83%, and lot "V" which was in the low 50 percent occupancy level now registers 84%. These ten facilities are at a cumulative 90% (theoretical capacity). The remaining student facilities, representing 642 spaces were at 23% occupancy, lots "S" and "Y" were virtually vacant.

In the evening, Figure 5, during night classroom activity the overall parking levels peak at around 45% occupancy campus wide. Of the 4400 vacant spaces 1400 are faculty/staff spaces (66% of the supply) and 2800 are student spaces (50% of the supply). The peak occupancy in the evening occurs in lots "P" and "C" with 96% and 85% occupancy respectively.

FIGURE 5 **OVERALL PARKING OCCUPANCY – EVENING CLASSES** 



**CLASSROOMS ACTIVITY IN RELATION TO PARKING FACILITIES** The relationship between classroom activity and parking facility location is a precursor for use. Like in real estate, the most important factor to use, besides need, is location. The parking surveys we conducted emphasize this fact. Lots "Y" and "S" are remote and virtually unused despite the fact that 520 spaces are available for use. Lot "V" located at the intersection of Woodrow and Shaw/Matoian was underutilized at 52% until the opening of the new Recreation Center; lot "V" now experiences 84% usage. Lot "V" has experienced this increase not only due to the Recreation Center but as a part of an apparent trend for campus parking on the east side as witnessed by the increasing usage of the Save Mart parking.

In order to understand the underlying forces which lead to the current parking characteristics of the campus we need to identify the classroom activity centers and relate them to parking facility location. This information will provide a blueprint for appropriate locations of new or expanded parking facilities.

Campus facilities management provided us with an excel spreadsheet which provides information on classroom activity by building, and by time of day. This information was correlated into a tabular form which provides a summary of both peak study periods, 10 AM Tuesday and 6:00 PM Wednesday. This information is presented in Table 4.

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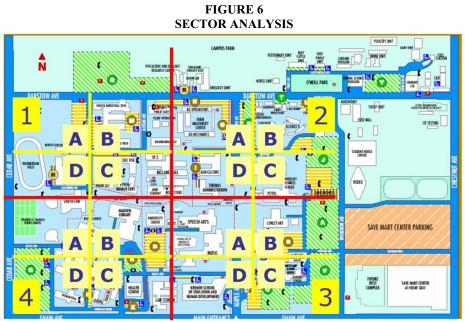
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TABLE 4 CLASSROOM ACTIVITY					
	Peak Period				
	Wed 6-8 PM	Tue 10-11 AM			
AG=Agriculture	200	256			
AGM=Agri Mechanics	71	99			
CA=Conley Arts	176	181			
ED=Education	367	505			
EE=Engineering East	176	261			
ENL=	29	36			
EW=Engineering West	48	70			
FFS=Family Food Science	415	538			
IT=Information Technology	1,074	303			
LS=Lab School	72	258			
M=Music	233	368			
MCF=McKee Fisk	80	98			
MCL=McLane Hall (40%)	288	367			
MCL=McLane Hall (60%)	433	550			
NG=North Gym	13	213			
OFF=Off Campus	0	0			
PB=Peters Business	342	563			
PHS=Psychology/Human Services	214	338			
S=Science	189	280			
S2=Science II	420	525			
SA=Speech Arts	121	146			
SG=South Gym	104	195			
SS=Social Sciences	337	555			
USU=University Student Union	0	0			
Total	5402	6705			

The next step in the process was to aggregate classroom activity by sector of the campus. The campus was divided into four quadrants, with the main campus considered to be Barstow Avenue on the north, Shaw Avenue on the south, Woodrow Avenue on the east, and Cedar Avenue on the west. The quadrants then subdivided the campus roughly east from west along a line east of Jackson, and north from south along a line just north of Bulldog Lane. Each quadrant was then sub-divided into four sectors, yielding a total of 16 sectors from which we can analyze classroom activity, parking availability, pedestrian and bicycle demand, etc. The following figure, Figure 6, illustrates this effort. The quadrant are identified as:

- 1- Northwest
- 2- Northeast
- 3- Southeast
- 4- Southwest

FIG	URI
SECTOR	AN.

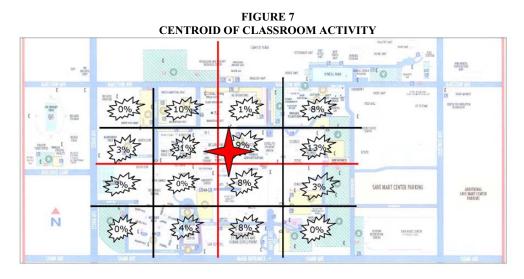


The classroom activity was then segregated within the appropriate sectors to provide a picture of the dispersion of those activities. The following table provides a breakdown of the classroom dispersion throughout the campus.

		TA	BLE 5		
_		CLASSROC	M ACTIVITY		
	Peak	Period		Peak	Period
	Wed 6-8 PM	Tue 10-11 AM		Wed 6-8 PM	Tue 10-11 AM
Quadrant 1 -	Northwest		Quadrant	2 - Northeast	
Sector A			Sector A		
Sector B			AGM=Agri Mechanics	71	99
EE=Engineering East	176	261	Sector B		
EW=Engineering West	48	70	S2=Science II	420	525
IT=Information Technology	1,074	303	Sector C		
Sector C			S=Science	189	280
FFS=Family Food Science	415	538	PB=Peters Business	342	563
MCF=McKee Fisk	80	98	Sector D		
MCL=McLane Hall (60%)	433	550	MCL=McLane Hall (40%)	288	367
PHS=Psychology/Human Services	214	338	AG=Agriculture	200	256
USU=University Student Union	0	0	Quadrant 2 Totals	1,510	2,090
SS=Social Sciences	337	555	Quadrant	3 - Southeast	
Sector D			Sector A		
NG=North Gym	13	213	M=Music	233	368
Quadrant 1 Totals	2,790	2,926	SA=Speech Arts	121	146
Quadrant 4 - Southwest			Sector B		
Sector A			CA=Conley Arts	176	181
SG=South Gym	104	195	Sector C		
Sector C			Sector D		
LS=Lab School	72	258	ED=Education	367	505
Quadrant 4 Totals	176	453	Quadrant 3 Totals	897	1,200
Campus Totals Tuesday	10-11 AM	6,669	Campus Totals Wednesday	6-8 PM	5,373

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The following figures provide a graphical representation of the distribution of classroom activity on a daily basis.



Comparing the center of campus classroom activity with the utilization of existing campus parking facilities illustrates why some facilities are heavily used and other facilities are relatively vacant.

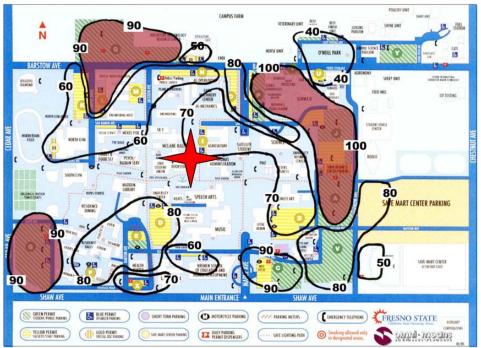


FIGURE 8 CLASSROOM CENTROID VS. PARKING USAGE

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#### **CAMPUS GROWTH**

The Fresno State University campus is expected to undergo a 20% increase in student enrollment over the next 10 years. Unless travel patterns change the vast majority of students will be arriving on campus by private vehicle, and the number of on-campus residents will remain low in comparison to overall enrollment. The University Facilities Management provided us with enrollment growth forecasts, which we extrapolated into an annual growth level. Enrollment growth directly equates to parking needs and this information is vital to our analysis, Table 6 emphasizes this fact.

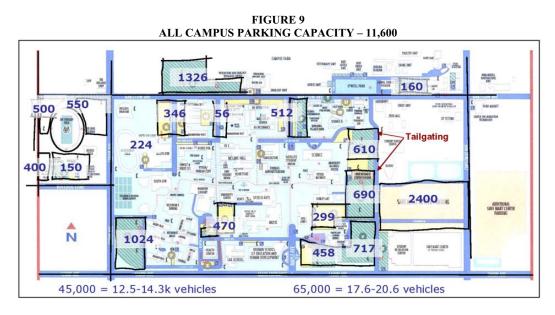
	РОТЕ	NTIAL EFFE	TAB CTS OF PAR	LE 6 KING DEMAN	D REDUCT	IONS	
School Year	Peak Pa	arking Accur	nulations	Pot. Incr. in Parking	Potential Reductions		
	Student <sup>1.</sup>	Staff	Total	Demand	5%	10%	15%
2006-07	4,018	1,563	5,581				
2007-08	4,118	1,602	5,721	140	286	572	858
2008-09	4,221	1,642	5,864	283	293	586	880
2009-10	4,327	1,683	6,010	429	301	601	902
2010-11	4,435	1,725	6,160	579	308	616	924
2011-12	4,546	1,768	6,314	733	316	631	947
2012-13	4,660	1,813	6,472	891	324	647	971
2013-14	4,776	1,858	6,634	1,053	332	663	995
2014-15	4,896	1,904	6,800	1,219	340	680	1020
1. Excludes Stude	nt Housing Lo	ot G					
>90% Capacity	4247	1888	6135				

The critical element associated with this growth is the importance in altering the home to school travel behavior of those students within walking, bicycling, and those near to existing or potential transit routes. Each parking space not placed in a new structure will save the university \$15-20,000. A five percent (5%) change in this behavior can result in a cost savings of between \$5 and \$7 million in parking structure costs; a 10% change doubles that savings. This is a goal worth planning for!

#### **BULLDOG STADIUM PARKING NEEDS**

Bulldog Stadium, home to the Fresno State Bulldogs football program, is the scene of up to six sellout crowds each year. Normally football games are held on Saturday, either in the mid to late afternoon, or an evening game. Recently, with the popularity of football on television, games can be scheduled on virtually any night of the week, and Fresno State football has become a staple of ESPN for mid-week games, usually beginning around 5:00 PM pacific time. This results in an overlap between normal late afternoon/evening classroom activity and the early arriving crowd for a late afternoon kickoff.

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To develop an understanding of the parking characteristics surrounding an ESPN Thursday evening game, we were requested by the University to obtain aerial photos of the activities prior to game time; the University also arranged for a helicopter tour, to view first hand the crowd arrival characteristics prior to an early evening football game. Based upon both ground and aerial observations it can be reasonably stated that early evening kickoffs result in a late arriving crowd, on a weeknight. Using the aerial photographs taken at 30 minutes prior to kickoff there were a total of 5900 vehicles parked on campus. Unfortunately, due to weather (rain), an FAA flight prohibition to accommodate an F-14 flyover, and darkness, we were unable to secure readable aerials after 5:00 PM. It can be reasonably assumed that the vast majority of these vehicles are game oriented, as virtually all afternoon classroom activity would be completed, and the evening classes begin an hour or two after the scheduled kickoff.

A capacity football game at Bulldog Stadium will attract 45,000 fans; statistically football crowd arrive in much larger groups than any other sporting event; it is not uncommon for football crowds to arrive with the vehicle occupancy rate of 3.5 persons per vehicle, average arrival is around 3.0 vehicles per vehicle. The mode of arrival varies radically for college football venues, with number of resident campus students and the level of public transportation. For example, in auto dependent Southern California studies have found that for college football 95% of the attendees arrive by private automobile; whereas in Seattle the University of Washington's from a1987 study only 65% arrived by private vehicle. Fresno with limited public transportation and few on-campus residents would likely be in the 95% range.

Thus, the number of private vehicles requiring parking would range from 12,200 to 14,300, depending upon the actual arrival characteristics. The campus, including the north lot and all of the temporary parking provided on soccer fields, practice fields, etc., can handle up to 11,500 vehicles if every space were occupied. With night school activities requiring around 3600 spaces the total demand for parking on or near the campus would likely be in the range of 16-18,000. It was our observation of the game parking that the north lot adjacent to the Save Mart Center was nearly empty, despite the opportunity to use the university provided shuttle busses running from Lot "A" and Lot "J" to Bulldog stadium. With 3600 oncampus for academic purposes, and assuming all but the north lot were fully occupied the number of parkers within the neighborhood ranges from 7000 to 9000.

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With the growth in the campus it is expected that the night school activity will increase from the current level of 3600 parked vehicles to around 4300 parked vehicles. This in itself will not over tax the current parking situation, however, we would expect to see a significant increase in the use of the north lot. There has been some discussion regarding the expansion of Bulldog Stadium to around 65,000 seats. This increase will change the parking dynamics significantly. Assuming no increase in off-campus parking availability the demand for on-campus parking will increase to the point that the shortfall will be in the 4-5000 range. This may create a dynamic whereby alternative travel modes become more acceptable to the community.

FIGURE 10



#### SAVE MART CENTER/CAMPUS POINTE

The Save Mart Center opened in November 2003 with 2400 parking spaces immediately adjacent and to the north in a dedicated facility, "North Lot", plus a 2000 space temporary parking facility, the "East Lot" located to the east across Chestnut Avenue. These two facilities plus the availability of Lot V to the west of Woodrow Avenue have provided sufficient parking for events of all scales.

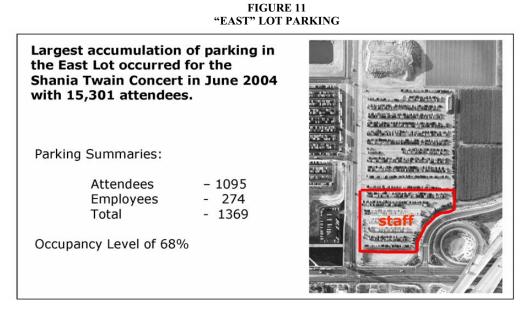
The University Auxiliary Companies which owns the land under the Save Mart Center as well as the North lot and the East lot, has executed a ground lease to the developers of the Campus Pointe project.

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	Capacity	Occupied	%	Vacant Spa
Faculty Lots 6 PM				
Lot B	298	42	14%	256
Lot C	124	71	57%	53
Lot J	242	72	30%	170
Total	664	185	28%	479
Vacant Spaces	479			
Student Lots 6 PM	1–7 PM			
Lot A	690	345	50%	345
Lot C	343	326	95%	17
Lot J	376	272	72%	104
Lot V	717	177	25%	540
Total	2126	1120	53%	1006
Vacant Spaces	:			1006
Fotal Vacant Spaces	1485			
Mart Center Dedicated Vacant Spaces:			540	

Beginning this fall a portion of the "East" lot, 1200 spaces, will be removed from the Save Mart Center parking supply, necessitating both a long term replacement plan consistent with the Campus Master Planning needs, as well as an interim plan, one designed to overcome the potential immediate shortfall resulting from the Phase 1 Campus Pointe project. The most obvious solution is to immediately construct new parking either on the surface of within a structure. However, until an overall campus master plan is developed a "knee jerk" reaction of this nature could result in the waste of hundreds of thousands of dollars of limited fiscal resources.



From our earlier evening surveys we were able to determine the magnitude of the evening use of the parking facilities in the immediate vicinity of the Save Mart Center, specifically lots "A", "B", "C", "J" and "V". The weekday evening, school in session, is the critical design period for the Save Mart Center. Presently lots "A", "B", "C", and "J" are restricted to academic campus activities during weeknights,

school in session. On weekends or during holidays and vacation periods all parking facilities are available to Save Mart Cent patrons.

Table 6 indicates the number and location of available nighttime parking on campus in the key facilities in the vicinity of the Save Mart Center. With the exception of Lot "V" all of the vacant spaces are located in facilities currently "off-limits" to the Save Mart Center patrons.

#### **IMPACT OF THE PHASE 1 CAMPUS POINTE PROJECT**

The phase 1 Campus Pointe project will remove 1,200 spaces from service, leaving 800 in the interim. The 800 remaining spaces are currently uses for patrons, 500 spaces, and Save Mart Center staff, 300 spaces. One of the largest events was the Shania Twain concert in June 2004, with a total attendance of 15,301. This was also one of the highest recorded parking events with a total of 4,380 patrons plus staff. We had aerial photography taken at 20 minute intervals beginning around an hour before the event to just past the event start. These aerials provide a great data base for studying parking access and circulation, and confirming the use of the east lot.

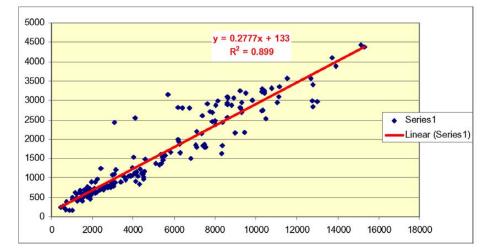
Although the lot was filled to only 65% capacity, a quick study of the photograph would lead to a different conclusion; this photograph gives the impression, by its visual impact, of a facility that is nearly "full" even at only 70% of capacity.

Consider now that design capacity is 90% of total available spaces. This condition would prevail if the current parking practices at the Save Mart Center continue for all events; that being ticket sales at the entrance and no guidance to available parking beyond. We evaluated the Shania Twain aerial photos and determined that the attendee occupancy of the North lot was 92%, and lot V was 91% which substantiates the use of 90% as a design level. Of the 8% (187) parking loss in the North lot 41 wee due to support vehicles for the entertainer; therefore, the actual vacant spaces represented 6% of available parking. In the case of Shania Twain concert, 214 additional vehicles could have been parked on the North lot and lot V. In this specific case it was not an issue because spillover parking was available in lots A and C. In fact, a total of 441 vehicles were parked in these two lots. Maximum capacity can be approached if ticket sale is followed by parking attendant guidance to orderly fill "all" available spaces.

To date that has not been a necessity, however with parking loss comes new potentially more restrictive strategies, to offset the loss and meet the short-term goals. During the Shania Twain event the total of all parked vehicles within the parking fields adjacent to the Save Mart Center was 3367, had this been a school weeknight, the demand would have been at 108% of absolute capacity within the North lot and lot "V", the currently available facilities. A capacity crowd, 16,500, would have exceeded the capability of these two lots by an additional 2-300 vehicles, which would have generated increased demand for the East lot.

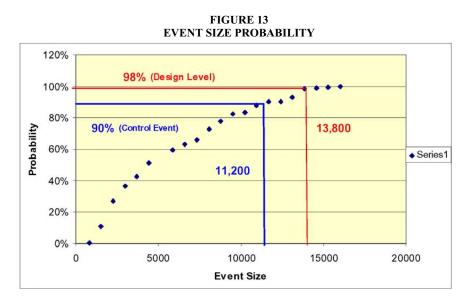
In order to gain a complete understanding of the relation between parking and attendance at the Save Mart Center we obtained parking and attendance records for 172 events between November 2003 and June 2005. A regression analysis was completed on the data set which yielded an equation with an R2 = 90%, which is a relatively reliable statistical threshold. The following figure illustrates the data points and the regression analysis results.





The event we must consider is a capacity event, 16,500 attendees. The regression analysis yields a parking demand of 4715 vehicles to be parked for a capacity event. This demand falls just below the maximum threshold of 4817 spaces available within lot V, the North lot and the East lot. When practical capacity is applied there would be a potential shortfall of 380.

To date a capacity event (16,500) has not occurred. In fact, the vast majority of the events are in the lower ranges of attendance. To provide significance to this evaluation we have analyzed the distribution of events by size to identify reasonable design thresholds for this analysis. Our conclusion is that the 98% event, 13,800, is a reasonable design criteria; of the 172 events included within this analysis only three (3) exceeded this threshold. We have also determined that events below 11,200 should not require any special strategies as long until the phase 2 Campus Pointe is implemented.



Taking into consideration all of the facilities available for a mid-week evening Save Mart Event we have developed a table which presents the conditions we believe will need to be met for varying Save Mart Center events. We have analyzed, side by side, the maximum event (16,500); the 98% design event (13,800); and, the threshold event (11,200), the event above which the implementation of some additional alternative control strategies will be required.

For a capacity event a total of 1080 vehicles would be displaced, with the closing of the Phase 1 portion of the East lot, this does not include the additional 380 vehicles seeking parking which will not able to be accommodated on-site based upon the 90% practical capacity threshold, associated with a capacity event.

TINT

TABLE 8								
CAPACITY EVENT CIRCULATION – EA	CAPACITY EVENT CIRCULATION – EAST CAMPUS PARKING STUDY							
East Lot Parking Analysis	Control Event	Design Event	Capacity Event					
Attendance:	11,200	13,800	16,500					
% Attendance	68%	84%	100%					
Total Parking Demand (not incl staff):	3243	3965	4715					
Available North Lot and Lot V	3117	3117	3117					
East Lot Parking Capacity:	2000	2001	2000					
East Lot Demand @90%:	438	1160	1530					
East Lot Employees:	274	274	274					
Un Met Demand	0	0	380					
Total Displaced - Campus Point Buildout:	438	1160	1530					
% occupied:	26%	68%	90%					
Phase 1 Displaced:	309	819	1080					
Balance of Parking Demand:	2805	2805	3185					

For design event conditions the phase 1 closing of the East lot results in the relocation of 819 vehicles, a number far more manageable with potentially less disruption to normal campus activities. There would be adequate spaces available to off-set this loss, for the design event, if all available parking spaces were opened to Save Mart attendees. However, that is not a realistic or practical solution give the academic nature of the normal campus nighttime activities.

This results in the need to consider the relaxation of the current parking lot restrictions. The use of currently vacant spaces within the "campus only" parking fields could provide a "short-term" parking solution.

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# TABLE 11 REPLACEMENT STRATEGIES (PHASE 1 CAMPUS POINTE)

TABLE 9 PHASE 1 CAMPUS POINTE PARKING SHORTFALL						
	Control Event	Design Event	Capacity Event			
Available Parking (scho	ol weeknig	ht)				
North Lot	2400	2400	2400			
Lot V	717	717	717			
East Lot	800	800	800			
Staff	300	300	300			
Attendees	500	500	500			
Total Capacity Attendee Parking	3617	3617	3617			
Demand	3243	3965	4715			
Theoretical % Occupied:	90%	110%	130%			
Capacity @ 90%:	3255	3255	3255			
Shortfall:	12	(710)	(1460)			
100% Capacity w/ Staff Directed Parking:	3617	3617	3617			
Shortfall:	374	(348)	(1098)			

The Phase 1 Campus Pointe will result in a shortfall of available parking if the "status quo" relative to the existing parking management techniques and existing restrictions to the use of potentially available campus parking is continued. The previous table, Table 9, illustrates the magnitude of the shortfall for differing Save Mart events.

The re-cap of nighttime parking activity in and around the Save Mart Center, shown on Table 10, presents the framework for a series of parking strategies, aimed to solving the short-term problem.

TABLE 10 VACANT RESTRICTED PARKING (A, B, C & J)								
Capacity Control Event Design Event Capacity Even								
Lot A	690	345	345	345				
Lot B Faculty	298	256	256	256				
Lot C Student	343	17	17	17				
Lot C Faculty	124	53	53	53				
Lot J Student	376	104	104	104				
Lot J Faculty	242	170	170	170				
Total	2073	945	945	945				

#### SHORT TERM PARKING STRATEGIES

We have developed a series of short term parking strategies to be considered for implementation until the long term parking plan is finalized and implemented. These strategies recognize that developing the Master Plan Parking does not provide an immediate, or even a near term solution. Significant capital investment will be required to meet all of the campus parking goals. One means to avoid or defer the capital expenses is to provide positive "on-site" parking control (directed parking). This increases the amount of labor required for major events, but maximizes the potential utilization of the parking that has already had significant investment. The Phase I Campus Pointe provides an immediate problem the magnitude of which is outlined below, along with a comparison showing the benefit of directed parking:

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	Control Event	Design Event	Capacity Event
Event Size	11,200	13,800	16,500
Required Spaces	3243	3965	4715
Post Campus Pointe Phase 1 parking:	3617	3617	3617
Potential parking availability - un-directed:	3255	3255	3255
Shortfall			
With Staff directed parking:	374	(348)	(1098)
Without Staff directed parking:	12	(710)	(1460)

With this in mind we have developed a series of sequential implementation measures which can overcome the short-fall that will be immediately realized upon the initiation of the Campus Pointe project.

The first step involves the reconstruction of Lot "A" to increase the supply by 200 spaces.

Replacement Strategies - Phase 1 Campus Pointe								
Control Event Design Event Capacity Even								
Event Size	11,200	13,800	16,500					
Required Spaces	3243	3965	4715					
Post Campus Pointe Phase 1 parking:	3617	3617	3617					
Potential parking availability - un-directed:	3255	3255	3255					
Shortfall								
With Staff directed parking:	374	(348)	(1098)					
Without Staff directed parking:	12	(710)	(1460)					
Sequential Stra	ategy							
1. Reconstruct Lot A - +200 (Open 200 spaces for events)								
Additional Parking Spaces (@90%)	180	180	180					
Remaining Shortfall	0	(530)	(1280)					
Impact: Capital Expenditure, no	change to operati	ons						

Step two involves opening Lot "B" to Save Mart Event attendees. This results in the displacement of 42 faculty and/or staff parkers to other available facilities.

Replacement Strategies - Phase 1 Campus Pointe								
Control Event Design Event Capacity E								
Event Size	11,200	13,800	16,500					
Required Spaces	3243	3965	4715					
Post Campus Pointe Phase 1 parking:	3617	3617	3617					
Potential parking availability - un-directed:	3255	3255	3255					
Shortfall								
With Staff directed parking:	374	(348)	(1098)					
Without Staff directed parking:	12	(710)	(1460)					
Sequential Stra	ategy							
Reconstruct Lot A - +200 (Open 200 spaces for events)								
Additional Parking Spaces (@90%)	180	180	180					
Remaining Shortfall	0	(530)	(1280)					
Remove restriction in Lot B - Use for Events								
Available Parking Spaces (@90%)	268	268	268					
Remaining Shortfall	0	(262)	(1012)					
Impact: Displacement of 42 F	aculty/Staff Parker	rs						

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Step three requires the relocation of Save Mart staff parking from the East lot to one of the satellite lots such as "Q", "S" or "Y". This could result in a "van" shuttle to and from the Save Mart Center for employees.

Replacement Strategies - Phase 1 Campus Pointe						
	Control Event	Design Event	Capacity Event			
Event Size	11,200	13,800	16,500			
Required Spaces	3243	3965	4715			
Post Campus Pointe Phase 1 parking:	3617	3617	3617			
Potential parking availability - un-directed:	3255	3255	3255			
Shortfall						
With Staff directed parking:	374	(348)	(1098)			
Without Staff directed parking:	12	(710)	(1460)			
Sequential Stra	ategy					
1. Reconstruct Lot A - +200 (Open 200 spaces for events)						
Additional Parking Spaces (@90%)	180	180	180			
Remaining Shortfall	0	(530)	(1280)			
2. Remove restriction in Lot B - Use for Events						
Additional Parking Spaces (@90%)	268	268	268			
Remaining Shortfall	0	(262)	(1012)			
3. Relocate Savemart staff parking to Lot Q or S & shuttle						
Additional Parking Spaces (@90%)	270	270	270			
Remaining Shortfall	0	0	(742)			
Impact: Potential Shuttle Expen	se From Lot Q, S	or Y				

The final step is the implementation of directed "on-site" parking to maximize the available parking. This step requires an increase in personnel to provide the direction within all of the available facilities.

	Control Event	Design Event	Capacity Event
Event Size	11,200	13,800	16,500
Required Spaces	3243	3965	4715
Post Campus Pointe Phase 1 parking:	3617	3617	3617
Potential parking availability - un-directed:	3255	3255	3255
Shortfall			
With Staff directed parking:	374	(348)	(1098)
Without Staff directed parking:	12	(710)	(1460)
Sequential Stra	itegy		
1. Reconstruct Lot A - +200 (Open 200 spaces for events)			
Additional Parking Spaces (@90%)	180	180	180
Remaining Shortfall	0	(530)	(1280)
2. Remove restriction in Lot B - Use for Events			
Additional Parking Spaces (@90%)	268	268	268
Remaining Shortfall	0	(289)	(1038)
<ol><li>Relocate Savemart staff parking to Lot Q or S &amp; shuttle</li></ol>			
Additional Parking Spaces (@90%)	270	270	270
Remaining Shortfall 4. Require stant directed parking in all racilities serving the	0	0	(742)
Save Mart Center for canacity or near canacity events Parking Increase	362	362	362
Remaining Shortfall	0	0	(300)

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Each step in the overall strategy requires some alteration to existing policy and/or practice. It may be advisable to re-order the sequence of the implementation of these measures. The implementation of all of these measures does not assure that the demand can be accommodated for every conceivable event. The analysis suggests 300 parkers will need other facilities; chances are that there will be this many or more that park at the Campus Pointe and utilize the available facilities either before or after an event.

#### FUTURE NEW AND/OR EXPANDED PARKING FACILITY LOCATIONS

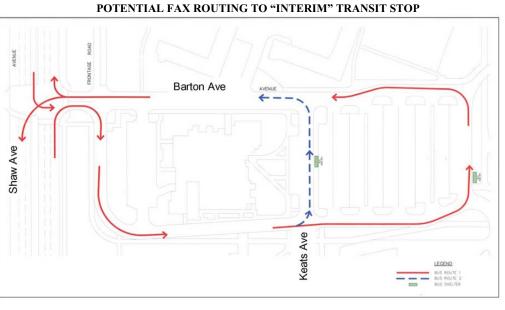
The proper location of parking facilities is a function of location-location. This was evident in our findings regarding the use of existing campus parking. One of the prime consideration is the ability to locate new and/or expanded facilities where they will serve all campus activities, taking into account the various times of use. For example, a facility on the east side of campus may be suitable to meet the demands from the daily peak campus classroom activity to the west, and service the needs of the Save Mart Center in the evening and on weekends and holidays. An expansion of parking on the northwest area of the campus would likewise serve the needs of the central campus and the Bulldog Stadium to the west.

#### ENHANCED TRANSIT SERVICE TO REDUCE PARKING DEMAND

One of the primary goals of the Campus Master Plan will be to generate opportunities to reduce the incidence of single occupant vehicle; encourage walk-in and bicycling from the neighborhoods; and, improve the function and opportunity to utilize public transit. We have met with both FAX and Clovis Transit and they both profess to be anxious to increase service to the campus. They state a willingness to adjust routes, and frequency, but they need an on-campus bus terminal to provide convenience and safety for potential users. We have evaluated a few locations and have come up with a recommendation that a Transit facility be incorporated into parking facilities near the new library.

In a follow-up meeting with the FAX representatives the opportunity for a neighborhood shuttle accompanied by an "interim" on-campus transit center may stimulate transit usage in the short term. In response to this opportunity we have developed a possible "interim" transit center which is illustrated on Figure 14.





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#### **POTENTIAL PARKING STRUCTURE LOCATIONS**

Several locations have come under primary consideration as potential locations for expanded campus parking. The appropriate size and location for these new facilities is a function of the anticipated campus growth and the magnitude and location of planned classroom building demolition and new construction. The following figures provide a graphical presentation of planned demolition and construction over the next 10 years. Each graphic illustrates the center of the proposed activity as it relates to the current classroom distributions. Reviewing these two graphics provides the insight that the campus classroom activity center will be moving further to the east toward the larger parking facilities found along Woodward Avenue.

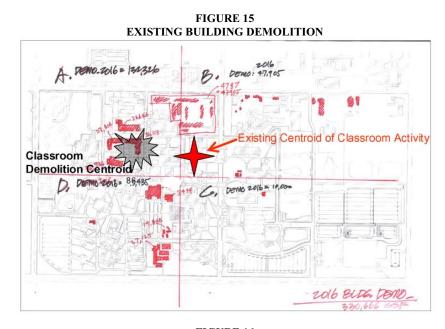
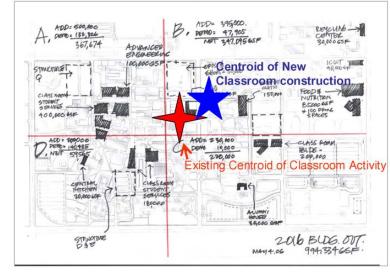


FIGURE 16 NEW BUILDING CONSTRUCTION



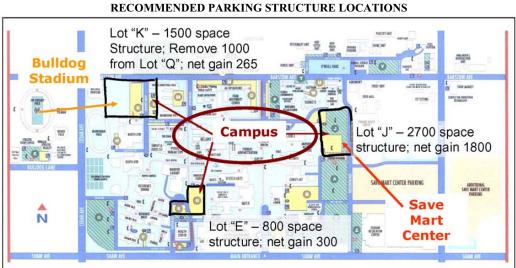
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The central theme regarding new parking facilities is to maximize those we have, and to use techniques to encourage other travel modes, specifically pedestrian, bicycle, and transit. The implementation of a transit center should encourage more bus ridership with the introduction of neighborhood jitney service to and from the on-site transit center. Normal growth forecast indicate the need to add and additional 1200 spaces over the next 10 years; a modest 5% reduction in single driver vehicles through any combination of these mode shifts would reduce that needed increase by over 25%, resulting in a reduction in capital expenditure on new parking structures by upwards of \$5 million.

The most appropriate locations for new structures are within easy access to all campus venues. Therefore, three locations have been identified for implementation over the next 20 years. The three will result in a net increase of 2365 spaces, which should prove sufficient, with improved mode shift, to meet the universities needs through the Master Planning horizon.

FIGURE 17



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## 3. ACCESS AND CIRCULATION

The overall campus access and circulation were evaluated with specific attention given to the control of traffic flow along Barstow Avenue and Chestnut Avenue. The campus consists of the area bounded by SR 168/Willow Avenue to the east, Bullard Avenue to the north, Cedar Avenue to the west and Shaw Avenue to the south. In addition, the campus is bisected by Barstow Avenue east-west, and Chestnut Avenue north-south. These major arterials provide the primary access and circulation to and within the campus. The Barstow Avenue/Chestnut Avenue corridors, particularly the Barstow corridor, introduce an unwanted component of through traffic to the vehicular activity center of the university.

To understand the magnitude of the interaction between the university and the adjacent community a series of traffic counting techniques were utilized; first to understand the magnitude of the access points, and second to evaluate the interference through traffic presents along Barstow Avenue between Cedar Avenue and Chestnut Avenue. Access to and from the campus was determined through peak hour counts along the entry corridors and major access points. The results are tabulated on Table 12.

ТА	BLE 12		
M <u>PUS PORTALS - PERCEN</u>			
	AM	PM	Overall
Barstow West @ Cedar	29%	31%	30%
Barstow East @ Chestnut	12%	22%	17%
Barton @ Shaw	13%	15%	14%
Maple @ Shaw	22%	11%	17%
Woodrow @ Shaw	19%	17%	18%
Matoian @ Chestnut	3%	1%	2%
N. Pkg Acc@ Chestnut	3%	2%	2%
	100%	100%	100%

FIGURE 18 **CAMPUS ACCESS – PORTALS** 



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The importance of Barstow as a campus roadway is evident in that 47% of all campus traffic enters through this access corridor. Plant facilities, campus police and the single largest parking field (Lot "Q") all access through Barstow Avenue. While Shaw Avenue is also a major access and the primary window to the university, Barstow is the backdoor where services and deliveries are focused. The next evaluation was to determine the magnitude of the through traffic component along Barstow Avenue, the traffic traversing between Fresno and Clovis without a destination within the Campus. An origin-destination study was undertaken for three periods during the day, morning, mid-day and evening. The results were surprising in that the use of the Barstow corridor for non-campus activities is extremely small, from a low of 5.9% in the morning eastbound to a high of 16.9% in the evening westbound.

#### FIGURE 19 **BARSTOW AVENUE – NONE UNIVERSITY TRAFFIC**



Develop a Series of roundabouts at key intersections

Roundabouts Provide adequate capacity, improve safety, and calm the traffic through the campus

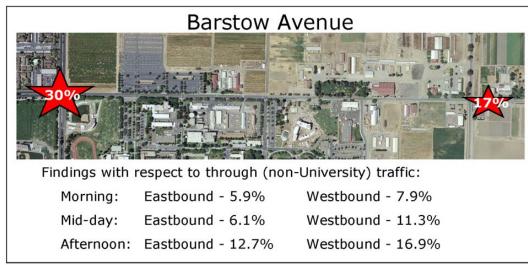
The bottom line is that Barstow Avenue is a university owned roadway which service primarily university traffic, over 90% in the morning and 80-90% the rest of the day.

Traffic management along Barstow between Cedar and Chestnut is primarily via a series of all-way stops. These stops were likely installed for traffic calming purposes, to control the rate of flow through the campus. However, these stop controls now create severe congestion through the university, necessitating the use of police personnel to manually over-ride the stop sign requirements during peak periods. This is magnified during events at the Save Mart Center and Bulldog Stadium, where personnel are required to man these locations to prevent gridlock.

California State University Fresno - Campus Master Plan Zimmer-Gunsul-Frasca Partnership

page 25 R973rpt002.doc The Campus Pointe project environmental document analyzed these intersections and has recommended that several of the stop signs along Barstow be replaced with traffic signals and/or have significant geometric improvements to increase capacity. Another solution, which would maintain the traffic calming effects and preserve and enhance the campus atmosphere, would be a series of urban-compact roundabouts installed at each access intersection; Woodrow, Maple, Jackson and Campus. These would meter the flow through the campus and prevent the long vehicle queues experienced now and worsened in the future. In addition, these improvements would eliminate the need for police personnel to manage traffic flow on a daily basis.

FIGURE 20 CAMPUS ACCESS – BARSTOW AVENUE



End of Parking Acess and Circulation

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# **TECHNICAL MEMORANDUM**

To:	ZGF Partnership	Date:	August 7, 2007		
Attn:	Paddy Tillets; Robert Wood	Project:	Fresno State Campus Master Plan		
From:	H. Ross Ainsworth				
Re:	2016/2026 Parking Demands	Job No.:	25-7987-01		
		File No.:	C973mem005a.doc		
CC:	Cindy Matson, Vice President of Administration and Finance, CSU Fresno				

With the resolution to the campus growth forecasts I have finalized the forecasts for both 2016 and 2026. The assumptions used in this analysis are:

- 1. The future parking structures present in the Draft Master Plan (DMP) will be constructed to meet both 2016 and 2026 parking demands.
- 2. A 5% reduction in parking demand will occur through the implementation of TDM practices, specifically an on-site transit station and a neighborhood "jitney" shuttle service.
- 3. The building removal and replacements will occur as presented in the DMP

The following table illustrates the anticipated campus enrollment, year by year through 2026.

	Adjusted Fall 2006 <sup>4.</sup> - updated July 18, 2007							
	Anticipated Change in Enrollment							
School	(15	Annual	Total	Uni-Track	Evaluation Head	Cummulative %		
Year	unit/FTE) 18830	Increase 4	Headcount <sup>4.</sup> 21769	Headcount	<u>Count</u> <sup>4</sup> . 20569	Increase		
2006-07	18850		21709	1,200	20309			
2007-08	18,750		22,400	1,200	21,200			
2008-09	19,214	2.5%	22,947	1,200	21,747	2.6%		
2009-10	19,858	3.4%	23,508	1,200	22,308	5.2%		
2010-11	20,636	3.9%	24,579	1,200	23,379	10.3%		
2011-12	21,287	3.2%	25,318	1,200	24,118	13.8%		
2012-13	22,042	3.5%	26,081	1,200	24,881	17.4%		
2013-14	22,824	3.5%	26,964	1,200	25,764	21.5%		
2014-15	23,656	3.6%	27,903	1,200	26,703	26.0%		
2015-16	24,496	3.6%	28,852	1,200	27,652	30.4%		
2016-17	24,680	0.8%	29,059	1,200	27,859	31.4%		
2017-18	24,865	0.8%	29,268	1,200	28,068	32.4%		
2018-19	25,051	0.8%	29,479	1,200	28,279	33.4%		
2019-20	25,239	0.8%	29,691	1,200	28,491	34.4%		
2020-21	25,428	0.8%	29,905	1,200	28,705	35.4%		
2020-22	25,619	0.8%	30,120	1,200	28,920	36.4%		
2022-23	25,811	0.8%	30,337	1,200	29,137	37.4%		
2023-24	26,005	0.8%	30,555	1,200	29,355	38.5%		
2024-25	26,200	0.8%	30,775	1,200	29,575	39.5%		
2025-26	26,396	0.8%	30,997	1,200	29,797	40.6%		

The Campus Master Plan has been developed with two discreet planning horizons, 2016 - ten year horizon, and 2026 - 20 year horizon. This analysis accounts for the anticipated enrollment changes over each period as well as the dynamics of building demolition, replacement and expansion. Obviously parking changes will be a major part of the Campus Master Plan, and new parking structures have been identified for construction around the campus environment. To facilitate a more efficient campus, several Traffic Demand Management (TDM) measures have been recommended for implementation as well. These TDM measures are designed to reduce the demand for on-campus parking, potentially saving million of dollars in capital expenses. These TDM measures include;

- On Campus circulating Shuttle
- Neighborhood Jitney service operated by Fresno Area Transit (FAX)
- On-Campus Transit Terminal, to serve the Shuttle the Jitney and both Fax and **Clovis Transit regular transit routes**
- Enhanced campus walking and bicycle facilities

With these alternatives in place the expectation is a minimum 5% reduction in motor vehicle trips to the campus, resulting in reduced congestion and reduced parking demand on campus.

The following Table presents the projected status quo parking demand, along with the potential demand with the 5% reduction.

Potential Effect of Parking Demand Re						
School Year	Peak Parking Accumulations					
	Student <sup>1.</sup>	Staff	Total			
2007-08	4,076	1,586	5,661	T		
2008-09	4,181	1,626	5,807			
2009-10	4,289	1,668	5,957			
2010-11	4,495	1,748	6,243	l		
2011-12	4,637	1,804	6,441			
2012-13	4,784	1,861	6,644			
2013-14	4,953	1,927	6,880			
2014-15	5,134	1,997	7,131			
2015-16	5,316	2,068	7,384			
2016-17	5,356	2,084	7,440	l		
2017-18	5,396	2,099	7,496	l		
2018-19	5,437	2,115	7,552	l		
2019-20	5,478	2,131	7,608			
2020-21	5,519	2,147	7,665	l		
2020-22	5,560	2,163	7,723			
2022-23	5,602	2,179	7,781	l		
2023-24	5,644	2,195	7,839	l		
2024-25	5,686	2,212	7,898	l		
2025-26	5,729	2,228	7,957	l		
1. Excludes Stud	lent Housing Lo			1		
90% Capacity	4247	1888	6135	T		

1

uctions				
in	Potential			
Parking	Reductions			
Demand	5%			
80	283			
226	290			
376	298			
662	312			
860	322			
1,063	332			
1,299	344			
1,550	357			
1,803	369			
1,859	372			
1,915	375			
1,971	378			
2,027	380			
2,084	383			
2,142	386			
2,200	389			
2,258	392			
2,317	395			
2,376	398			

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3

The preceding table clearly indicates that at practical capacity, 90%, the campus parking facilities will be maxed out for students by school year 2010 and for staff by school year 2014. The implementation of the TDM measures could forestall the need for major capital expenditure on student parking facilities for up to two additional school years.

For this Master Plan analysis the campus was divided into 16 quadrants identified as Sector 1 - 4, divided into A-D quadrants, as illustrated below.

	ESNO STATE April Sur University Free Campus Master Plan – Parking	
- 4		
N		i lida
1	4 Centroid of Classroom Activity	- 63

#### 2016 PLANNING YEAR

The first level of analysis is the first Master Plan horizon year, 2016; this forecast includes all projected demolitions and new construction for this period. The parking analysis was derived using the demolition and new construction anticipated by 2016 as shown on the following table.

2016 Horizon Year					
Campus	Building	Identification			
Quadrant	Building Demolitions	New Construction			
1A		Lot "K" Parking Structure			
1B	Advanced Engineering	Engineering West			
1C	Family Food Science McKee Fisk Social Sciences	Quadrangle Replacement			
2A	Agri Mechanics Corporation Yard	New Corporation Yard			
2C		Lot "J" Parking Structure			
2D		Classrooms/Faculty Offices Satellite Student Union			
3B		Classrooms/Faculty Offices			
4A		University Restaurant			
4B	University Center Keats				
4C	Library Parking Str				
North of Barstow	Lot "Q" Parking Lot	Agriculture Research			

The first test of the 2016 conditions accounts for new buildings, increased enrollment and associated staffing, and the proposed additional parking facilities. The result of this analysis is that the student parking facilities will have excess parking spaces while the staff parking will be deficient in capacity both based upon the 90% parking design model.

Sector         Parking (sp)         Classroom (sf - 100's)         Sector Summary           1A (Lot K)         1500         0         346         06 Ad           1B         0         100         1         1,775         Fore           1C         0         300         1         1,775         Fore           1D         0         0         1         1,775         Fore           2A         0         0         2         1,732         Fore           2D         0         0         2         1,982         06 Ad           3A         0         12         1,982         06 Ad           3B Lot A)         0         200         3         1,953         Fore           3D         0         0         1,437         06 Ad           4A         0         0         1,437         06 Ad           4B         0         8         4         1,666	Design Yr:	2016	Bldg Demo:	yes	New Const:	yes			
CSU Fresho           June 2007 Enrollment Forecasts           Parking (sp)         Classroom (sf - 1000's)         Parking Summary           Sector         Parking (sp)         Classroom (sf - 1000's)         Sector Summary           1A (Lot K)         1500         0         1         1,775         Fore           1A (Lot K)         1500         0         1         1,972         Capa           1B         0         100         1         1,972         Capa           1D         0         0         1         1,972         Capa           2A         0         0         2         1,184         06 AZ           2B         0         0         2         2,001         Capa           2D         0         0         1,982         06 AZ           3A         0         12         1,982         06 AZ           3B Lot A)         0         200         3         2,240         Capa           3D         0         0         1,437         06 AZ         66         Fore           4C Lot E)         300         0         1,251         06 AZ <th>Design (</th> <th>Capacity</th> <th>90%</th> <th>TDM Re</th> <th>ductions</th> <th>5%</th>	Design (	Capacity	90%	TDM Re	ductions	5%			
Additional         Parking Summary           Sector         Parking (sp)         Classroom (sf - 1000's)         Sector Summary           1A (Lot K)         1500         0         1         1,775         Fore           1C         0         300         1         1,775         Fore           1C         0         300         1         1,775         Fore           2A         0         0         1         1,732         Fore           2B         0         0         2         1,732         Fore           2C (Lot J)         700         150         2         2,001         Capa           3A         0         12         3         1,982         06 Ad           3B Lot A)         0         200         3         1,953         Fore           3C (Lot C)         0         0         1,982         06 Ad           3D         0         1         1,933         Fore           3C (Lot C)         0         0         1,437         06 Ad           4A         0         0         1,437         06 Ad           4B         0         8         4         1,666         Fore	CSU Fresno								
Sector         Parking (sp)         Classroom (sf - 1000's)         Sector Summary           1A (Lot K)         1500         0         446         06 Ad           1B         0         100         1         1,775         Fore           1C         0         300         1         1,775         Fore           1D         0         0         1         1,775         Fore           2A         0         0         1         1,732         Fore           2C (Lot J)         700         150         2         2,001         Capa           2D         0         0         1,732         Fore         2,001         Capa           3A         0         12         1,982         06 Ad         3         5 Cree         3           3D         0         0         0         3         1,982         06 Ad           3D         0         0         0         3         1,982         06 Ad           4A         0         0         0         1,939         Capa           4A         0         0         1,939         Capa           0-1B (Lot Q)         (1000)         0         1,939			June 2007 Enrol	Iment Forecasts	8				
Sector         Parking (sp)         (sf - 1000's)         Sector Summary           1A (Lot K)         1500         0         1         346         06 Ad           1B         0         100         1         1,775         Fore           1C         0         300         1         1,775         Fore           1D         0         0         1         1,775         Fore           2A         0         0         2         1,732         Fore           2B         0         0         2         2,001         Capa           2D         0         0         2         2,001         Capa           3A         0         12         1,982         06 Ad           3B Lot A)         0         200         3         1,953         Fore           3C (Lot C)         0         0         1,437         06 Ad         64           4B         0         8         4         1,666         Fore           4C (Lot E)         300         0         1,437         06 Ad           4B         0         8         4         1,666         Fore           0-1B (Lot Q)         (1000)		Addi	tional		Parking Summar	у			
1B         0         100         1         1,775         Fore Capa           1D         0         0         1,972         Capa           1D         0         0         0         1,972         Capa           2A         0         0         2         1,184         06 Ad           2B         0         0         2         2,001         Capa           2D         0         0         2         2,001         Capa           2D         0         0         2         2,001         Capa           3A         0         12         1,982         06 Ad           3B Lot A)         0         200         3         1,953         Fore           3C (Lot C)         0         0         1,953         Fore         1,939         Capa           4A         0         0         0         1,939         Capa         1,939         Capa           4D         0         0         0         1,939         Capa         1,939         Capa           0-1B (Lot Q)         (1000)         0         -         -         -         360         Capa         236         Capa	Sector	• • • •			Sector Summary	,			
1C         0         300         1         1,972         Capa           1D         0         0         1,972         Capa           2A         0         0         1,184         06 Ad           2B         0         0         2         1,732         Fore           2C (Lot J)         700         150         2         2,001         Capa           2D         0         0         2         2,001         Capa           3A         0         12         1,982         06 Ad           3B Lot A)         0         200         3         1,953         Fore           3C (Lot C)         0         0         3         1,437         06 Ad           4A         0         0         0         1,939         Capa           3D         0         0         1,939         Capa           4A         0         0         0         1,939         Capa           4B         0         8         4         1,666         Fore           0-1B (Lot Q)         (1000)         0         1,251         06 Ad           0-2B         0         0         24         06 Ad	· · ·		Ŭ			06 Actual			
1C         0         300         1,972         Capa           1D         0         0         1,972         Capa           2A         0         0         1,184         06 Ad           2B         0         0         1,732         Fore           2C (Lot J)         700         150         2         1,184         06 Ad           2D         0         0         1,732         Fore         2,001         Capa           3A         0         12         3         1,953         Fore         2,240         Capa           3B Lot A)         0         200         3         1,953         Fore         2,240         Capa           3D         0         0         0         1,437         06 Ad         4           4B         0         8         4         1,666         Fore           4C (Lot E)         300         0         1,437         06 Ad           4B         0         0         0         1,939         Capa           0-1B (Lot Q)         (1000)         0         1,251         06 Ad           0-2B         0         0         236         Capa	. –			1	, .	Forecast			
2A         0         0         1,184         06 Addition           2B         0         0         1,732         Fore           2C (Lot J)         700         150         2         1,732         Fore           2D         0         0         0         2,001         Capa           3A         0         12         1,982         06 Addition           3B Lot A)         0         200         3         1,953         Fore           3C (Lot C)         0         0         0         2,240         Capa           3D         0         0         0         2,240         Capa           3D         0         0         0         2,240         Capa           3D         0         0         0         1,953         Fore           4A         0         0         0         1,437         06 Addition           4B         0         8         4         1,666         Fore           4C (Lot E)         300         0         0         1,251         06 Addition           0-1B (Lot Q)         (1000)         0         1,251         06 Addition         203         Capa			300		1,972	Capacity			
2B         0         0         2         1,732         Fore           2C (Lot J)         700         150         2         1,732         2,001         Capa           2D         0         0         0         2,001         Capa         2,001         Capa           3A         0         12									
2C (Lot J)         700         150         2         2,001         Capa           3A         0         12		0	0			06 Actual			
2C (Lot J)         700         150         2,001         Capa           2D         0         0         -         -         -           3A         0         12         1,982         06 Ad         -           3B Lot A)         0         200         3         1,953         Fore           3C (Lot C)         0         0         3         2,240         Capa           3D         0         0         -         -         -         -           4A         0         0         -				2		Forecast			
3A         0         12         1,982         06 Addition           3B Lot A)         0         200         3         1,953         Fore           3C (Lot C)         0         0         0         2,240         Capa           3D         0         0         0         1,953         2,240         Capa           4A         0         0         0         1,437         06 Addition         06 Addition           4B         0         8         4         1,666         Fore         7,939         Capa           4C (Lot E)         300         0         0         0         1,939         Capa           0-1B (Lot Q)         (1000)         0         1,251         06 Addition         185         Fore           0-2B         0         0         0         0         185         Fore           360         Capa         203         Capa         185         Fore           0-2B         0         0         0         0         143         Fore           360         Capa         203         Capa         203         Capa           0-3B         0         0         0         1500	2C (Lot J)	700	150	2	2,001	Capacity			
3B Lot A) 3C (Lot C)         0         200         3         1,953 2,240         Fore Capa 2,240           3D         0         0         2,240         Capa Capa 2,240         Capa Capa 2,240         Capa Capa 2,240         Capa Capa 2,240         Capa Capa 2,240         Capa Capa 2,240         Capa Capa 2,240         Capa 2,240         Capa 2,260         Cap 2,260									
3C (Lot C) 3D         0         0         3         2,240         Capa Capa Capa Capa Capa Capa Capa Capa	3A	0	12		1,982	06 Actual			
3C (Lot C)         0         0         0         2,240         Capa Capa A           3D         0         0         0         - <td>3B Lot A)</td> <td>0</td> <td>200</td> <td>2</td> <td>1,953</td> <td>Forecast</td>	3B Lot A)	0	200	2	1,953	Forecast			
4A         0         0         1,437         06 Addition           4B         0         8         4         1,666         Fore           4D         0         0         0         1,939         Capa           4D         0         0         0         1,939         Capa           0-1B (Lot Q)         (1000)         0         1,251         06 Addition           0-1B (Lot Q)         (1000)         0         185         Fore           0-1D         0         0         0         64         06 Addition           0-1D         0         0         0         64         06 Addition           0-2B         0         0         0         0         43         Fore           203         Capa         64         06 Addition         43         Fore           0-3B         0         0         0         236         06 Addition           200         Fore         300         Capa         6,524         06 Addition           Total         1500         770         Total         7,598         Fore           9,341         Capa         9,341         Capa         Capa	3C (Lot C)	0	0	5	2,240	Capacity			
4B         0         8         4         1,666         Fore           4C (Lot E)         300         0         1,939         Capa           4D         0         0         1,939         Capa           4D         0         0	3D	0	0						
4C (Lot E) 4D         300 0         0 0         4 1,939         Capa Capa 1,251         Capa 0           0-1B (Lot Q)         (1000)         0         1,251         06 Ac           0-1B (Lot Q)         (1000)         0         185         Fore 326         Capa           0-1D         0         0         64         06 Ac           0-2B         0         0         0         24         06 Ac           0-2B         0         0         0         24         06 Ac           0-3B         0         0         203         Capa           0-3B         0         0         200         Fore           300         2200         Fore         300         Capa           1500         770         Total         7,598         Fore           9,341         Capa         9,341         Capa	4A	0	0		1,437	06 Actual			
4C (Lot E)         300         0         1,939         Capa Capa Capa Capa Capa Capa Capa Capa	4B	0	8	4	1,666	Forecast			
O-1B (Lot Q)         (1000)         0         1,251         06 Adden to the second	4C (Lot E)	300	0	4	1,939	Capacity			
O-1D         O         O         IBS         Fore         326         Capa         43         Fore         360         Capa         360			0						
O-1D         0         0         326         Capa           O-1D         0         0         64         06 Ad	O-1B (Lot Q)	(1000)	0		1,251	06 Actual			
O-1D         0         0         0           O-2B         0         0         0         0         360         Capa           O-2B         0         0         0         24         06 Ad         43         Fore           O-3B         0         0         0         236         06 Ad         200         Fore           O-3B         0         0         0         236         06 Ad         200         Fore           Total         1500         770         Total         6,524         06 Ad         204         204         204         205         Fore         300         Capa         200         Fore         300         Capa         204					185	Forecast			
0-2B         0         0         360         Capa           0-2B         0         0         24         06 Ad           43         Fore         203         Capa           0-3B         0         0         236         06 Ad           0-3B         0         0         236         06 Ad           203         Capa         203         Capa           0-3B         0         0         236         06 Ad           200         Fore         300         Capa           300         70         Total         6,524         06 Ad           7 total         1500         770         Total         7,598         Fore           9,341         Capa         9,341         Capa         6,524         06 Ad					326	Capacity			
O-2B         0         0         360         Capa           O-2B         0         0         24         06 Ad           43         Fore         203         Capa           O-3B         0         0         236         06 Ad           0-3B         0         0         236         06 Ad           203         Capa         200         Fore           300         Capa         300         Capa           7 total         1500         770         Total         7,598         Fore           9,341         Capa         9,341         Capa         300         Capa	0-1D	0	0		64	06 Actual			
O-2B         0         0         0         0           O-3B         0         0         0         236         06 Ad 43         Fore 203         Capa 203         Capa 200         Fore 300         236         06 Ad 43         Fore 203         Capa 200         Fore 300         Capa 200         Fore 300         Capa 204         Capa 204         Fore 300         Capa 204         Capa 205         Capa 204         Capa 204         Capa 205         Capa 204         Capa 205         Capa 204         Capa 205         Capa 204         Capa 205         Capa 205					43	Forecast			
O-2B         0         0         0         24         06 Ar				0#	360	Capacity			
O-3B         O         O         203         Capa           0-3B         0         0         236         06 Ad           200         Fore         300         Capa           300         Capa         300         Capa           Total         1500         770         Total         6,524         06 Ad           Parking Summary         Student         Faculty         9,341         Capa	O-2B	0	0		24	06 Actual			
O-3B         0         0         236         06 A/           200         Fore         300         Capa           Total         1500         770         Total         6,524         06 A/           Parking Summary         Student         Faculty					43	Forecast			
Total         1500         770         Total         6,524         06 Ac           Parking Summary         Student         Faculty					203	Capacity			
Image: Marking Summary         Student         Student         Faculty           1500         770         Total         6,524         06 Active Stress of the stress of th	O-3B	0	0		236	06 Actual			
Total         1500         770         Total         6,524         06 Addression           Parking Summary         Student         7,598         Fore         9,341         Capa					200	Forecast			
Total         1500         770         Total         6,524         06 Åd           Parking Summary         Total         7,598         Fore         9,341         Capa           Parking Summary         Student         Faculty         Faculty         Faculty         Faculty					300	Capacity			
9,341 Capa Parking Summary Student Faculty					6,524	06 Actual			
Parking Summary Student Faculty	Total	1500	770	Total	7,598	Forecast			
					9,341	Capacity			
		Parking	Summary	Student	Faculty				
Parking Shortfall 0 (108)		Parking	Shortfall	0	(108)				
Available Parking 444 0		Available	Parking	444					

One solution to this problem would be to identify additional staff parking within the new parking structure to be located on existing Lot "K"; this is the prime parking facility from an access and demand perspective. This scenario was examined as a possible solution, and the results indicate that the allocation of 10% of the additional new Lot "K" parking structure to faculty and staff would offset the shortfall; however, all parking facilities on campus will be at or near design capacity.

943 Reserve Drive, Suite 100, Roseville, CA 95678 ~ (916) 782-8688 fax (916) 782-8689

Design Yr:	2016	Bldg Demo:	yes	New Const:	yes		
Design Capacity		90%	TDM Reductions		5%		
		Mo CSU F	resno				
		June 2007 Enrol	Iment Forecas	ts			
	Additional Parking Summary						
Sector	Sector Parking (sp) Classroom (sf - 1000's) Sector Summary						
1A (Lot K)	1500	0		346	06 Actual		
1B	0	100	1	1,769	Forecast		
1C	0	300	1	1,972	Capacity		
1D	0	0					
2A	0	0		1,184	06 Actual		
2B	0	0	2	1,748	Forecast		
2C (Lot J)	700	150	2	2,001	Capacity		
2D	0	0					
3A	0	12		1,982	06 Actual		
3B Lot A)	0	200	3	1,972	Forecast		
3C (Lot C)	0	0	5	2,240	Capacity		
3D	0	0					
4A	0	0		1,437	06 Actual		
4B	0	8	4	1,689	Forecast		
4C (Lot E)	300	0	4	1,939	Capacity		
4D	0	0					
O-1B (Lot Q)	(1000)	0		1,251	06 Actual		
				195	Forecast		
				326	Capacity		
0-1D	0	0		64	06 Actual		
				44	Forecast		
			Off	360	Capacity		
O-2B	0	0	UI	24	06 Actual		
				45	Forecast		
				203	Capacity		
O-3B	0	0		236	06 Actual		
				203	Forecast		
				300	Capacity		
				6,524	06 Actual		
Total	1500	770	Total	7,664	Forecast		
				9,341	Capacity		
	Parking	Summary	Student	Faculty			
	Parking Shortfall Available Parking		0	0			
			309	27			

It must be noted that without the 5% Transportation Demand Management reductions the campus will require additional parking, that is, additional to the Master Planned parking, prior to 2016.

#### 2026 MASTER PLAN

The Fresno State University Campus Master Plan envisions campus development through the year 2026. As such the campus will continue to grow, as indicated on the first table provided here-in. The campus is expected to attain a build-out capacity of 26,396 FTE (full time equivalent students) and a headcount of nearly 31,000. The parking evaluation for this next increment of growth is based upon these Master Plan assumptions:

- Parking structure on Lot "C"
- Parking structure on the north side of Lot "J

Design Yr:	2026	Bldg Demo:	yes	New Const:	yes
Design Capacity		90%	TDM Reductions		5%
		Мо	del		
		CSU F			
		June 2007 Enrol		ts	
	Addit	ional		Parking Summar	у
Sector	Parking (sp)	Classroom (sf - 1000's)		Sector Summary	1
1A (Lot K)	1500	0		346	06 Actual
1B	0	100	1	1,775	Forecast
1C	0	300	I	1,972	Capacity
1D	0	0			
2A	0	0		1,184	06 Actual
2B	700	0	2	2,124	Forecast
2C (Lot J)	700	150	2	2,701	Capacity
2D	0	0			
3A	0	12		1,982	06 Actual
3B Lot A)	0	200	0	2,315	Forecast
3C (Lot C)	740	0	3	2,980	Capacity
3D	0	0			
4A	0	0		1,437	06 Actual
4B	0	8	4	1,602	Forecast
4C (Lot E)	300	0	4	1,939	Capacity
4D	0	0			
O-1B (Lot Q)	(1000)	0		1,251	06 Actual
				179	Forecast
				326	Capacity
0-1D	0	0		64	06 Actual
				42	Forecast
			Off	360	Capacity
O-2B	0	0	Oli	24	06 Actual
				38	Forecast
				203	Capacity
O-3B	0	0		236	06 Actual
				172	Forecast
				300	Capacity
				6,524	06 Actual
Total	2940	770	Total	8,246	Forecast
				10,781	Capacity
	Parking	Summary	Student	Faculty	-
	Parking		0	(128)	
	Available	Parking	1207	0	

As in the previous analysis, the student parking will be adequate, while staff and faculty parking could be in short supply. The recommended solution to this would be to assign around 25% of the new spaces within the Lot "C" parking structure to Faculty and Staff. The resulting parking loading is as shown below.

CALIFORNIA STATE UNIVERSITY, FRESNO MASTER PLAN 109 FINAL January 2008

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August 7, 2007

			Parking		
Sector	Lot K		Altered Capacity		
	Student	Faculty	Total	Student	Faculty
1A	1350	150	1500	90%	10%
1B	Lot J no	0		100%	0%
1C		0		100%	0%
1D	Lot J so	0		100%	0%
2A	_ <b></b>	0		100%	0%
2B	700	0	700	100%	0%
2C	700	0	700	100%	0%
2D	Lot C Lot A	0		100%	0%
3A				100%	0%
3B	0	0		100%	0%
3C	555	185	740	75%	25%
3D	Lot E	0		100%	0%
4A				100%	0%
4B		0		100%	0%
4C	300	Lot Q	300	100%	0%
4D	0			100%	0%
O-1B	(1000)		(1000)	100%	0%
O-1D	0	0		100%	0%
O-2B	0			100%	0%
O-3B	0			100%	0%
Total	2605	335		100%	0%
Shortfall	0	0			
Overage	1040	39			

## SUMMARY

In summary the Master Plan provides for adequate on-campus parking for both the near term - 2016, and the long term -2026. In order for the parking to match the forecasts here-in, the Transportation Demand Management (TDM) measures must be implemented successfully, these measures include:

- On Campus circulating Shuttle
- Neighborhood Jitney service operated by Fresno Area Transit (FAX)

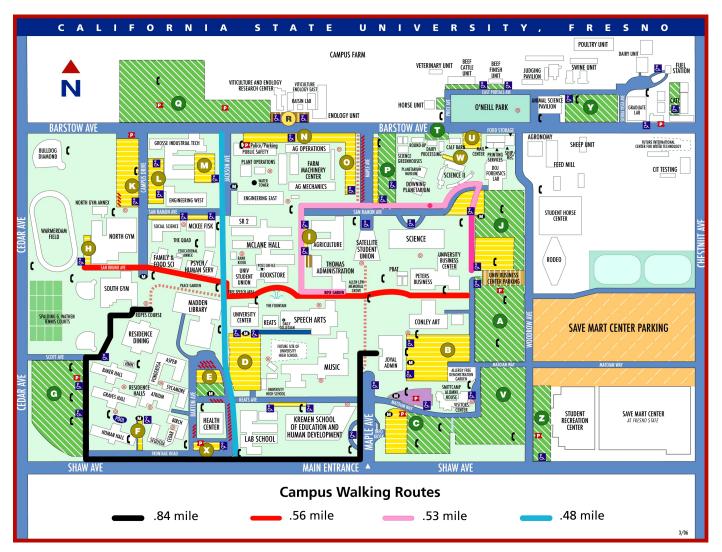
943 Reserve Drive, Suite 100, Roseville, CA 95678 ~ (916) 782-8688 fax (916) 782-8689

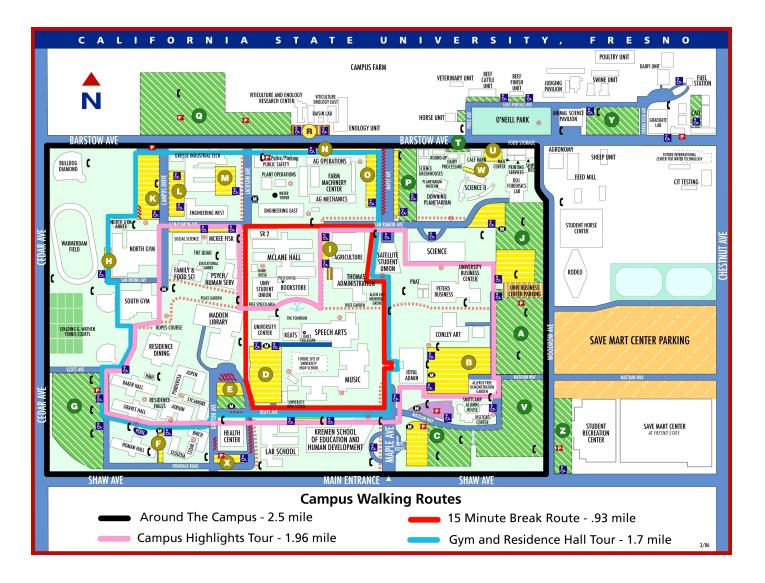
- On-Campus Transit Terminal, to serve the Shuttle the Jitney and both Fax and **Clovis Transit regular transit routes**
- Enhanced campus walking and bicycle facilities

The parking measures anticipated within this analysis are outlined on the following Table,

Master Plan Parking Additions/Deletions							
	20	16	20	26			
	Student	Fac/Staff	Student	Fac/Staff			
Lot "K"	1350	150		_			
Lot "J" north			700				
Lot "J" south	700						
Lot "C"			555	185			
Lot "E"	300						
Lot "Q"	(1000)						
Total	1350	150	1255	185			

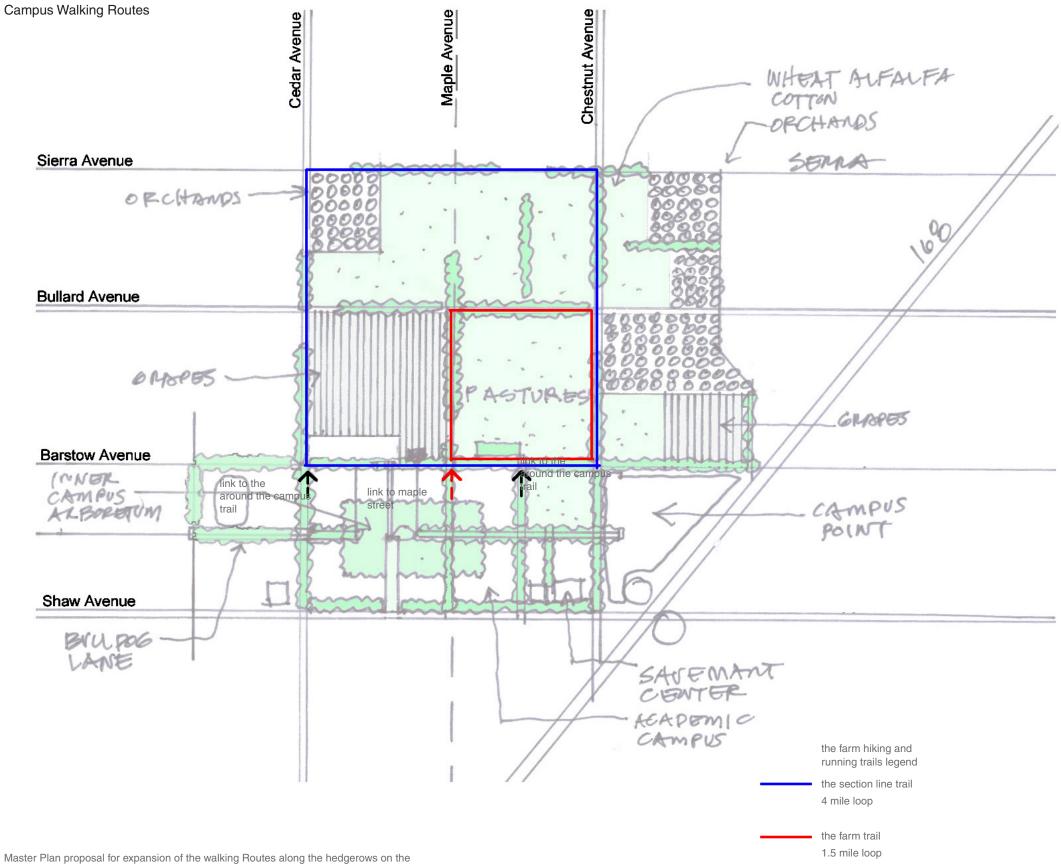
Please note that the parking changes represented within this table are net changes from the existing parking counts on the surface lots they replace; for example the Lot "E" parking structure will need to be of sufficient size to replace the current surface lots"D" and "E", which presently contain 364 faculty and staff spaces as well as 137 student spaces. The new parking structure "E" needs to contain a total of 800 spaces with 364 faculty and staff and the balance for student use. This is the consistent presentation throughout this Technical Memorandum.





Existing Campus Walking Routes

## Campus Walking Routes



Master Plan proposal for expansion of the walking Routes along the hedgerows on Farm.

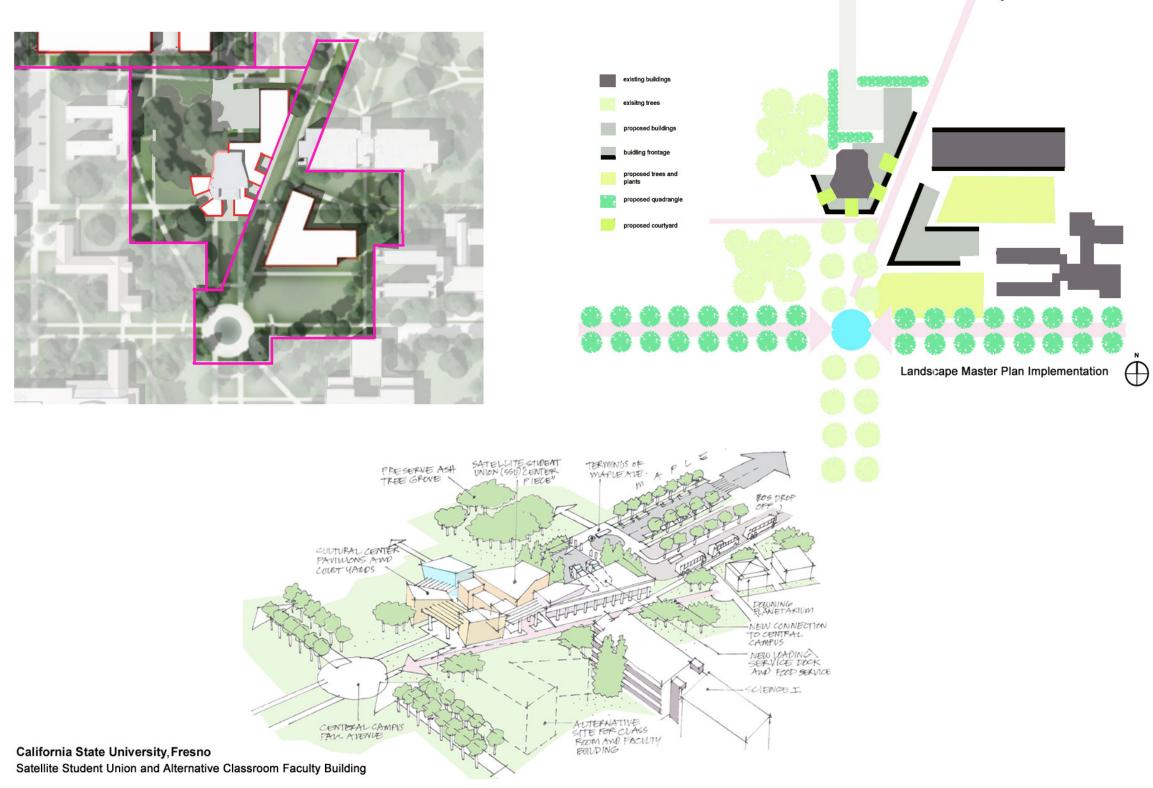


Updated illustrative site plan for Campus Pointe as approved by the California State University, Fresno Board of Trustees on March 6, 2007.

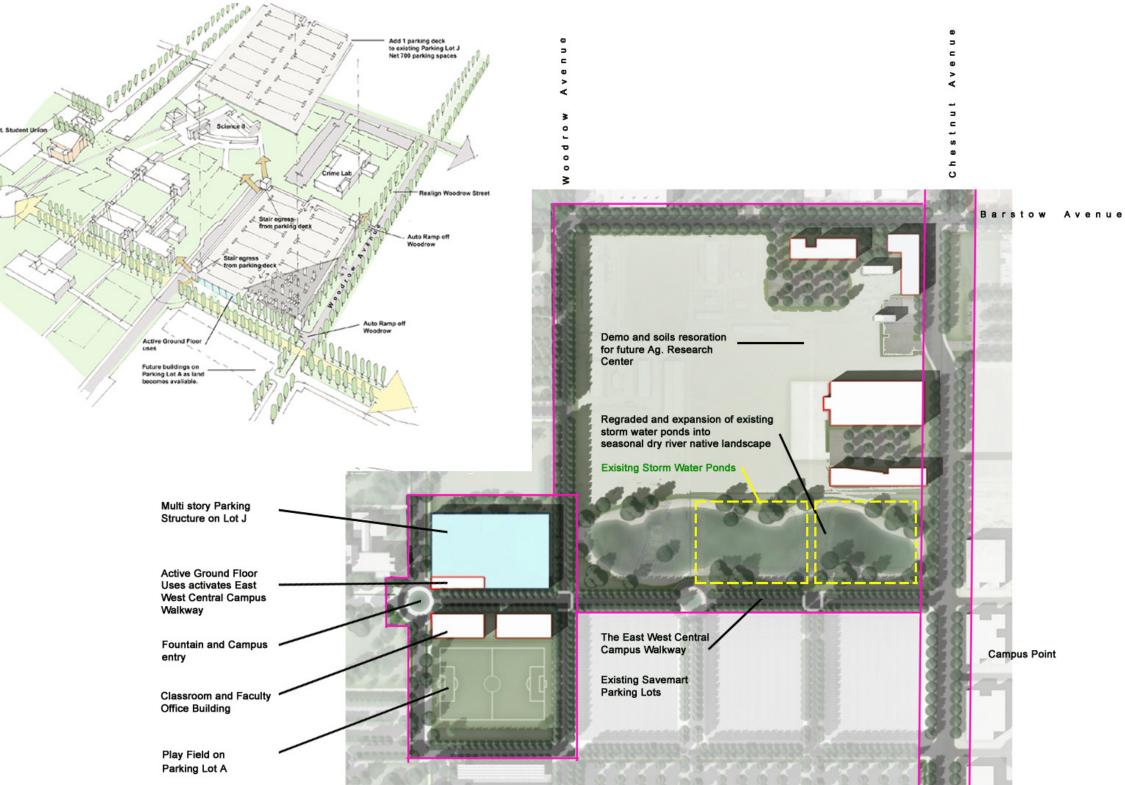
## **Campus Pointe**

	RETAIL
	CINEMA
	LIVE/WORK LOFTS
	HOTEL/MEETING
	SENIOR HOUSING
ļ	MULTI-FAMILY HOUSING

TICS:	
DTAGE	PARKING
,000 sf ,000 sf (14 screens ,000 sf (40 units)	;)
	1,465 cars 1,490 cars
(200 keys) ,000 sf	
,500 sf	371 cars
300,000 sf (216 unit 1,000 sf	s)
	573 cars
,000 sf (144 units) ,000 sf	
	226 cars
,000 sf (180 units)	180 cars



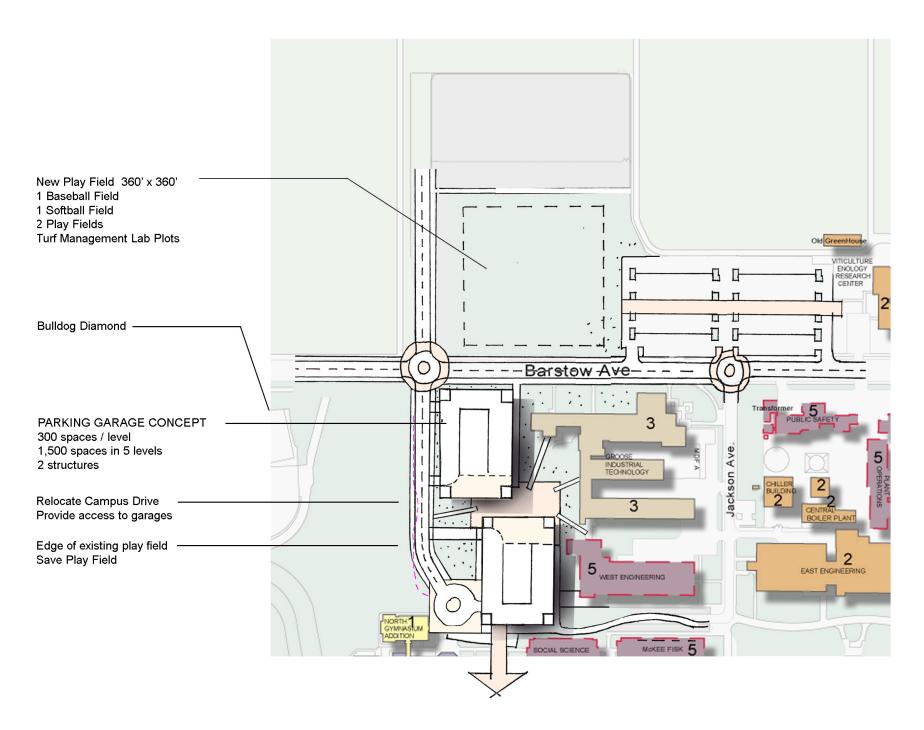
ZGF Architects LLP November 2006



California State University, Fresno Classroom and Faculty Building, Parking Structure on Lot J and Agricultural Research Center ZGF Architects LLP November 2006

Landscape Master Plan Implementation



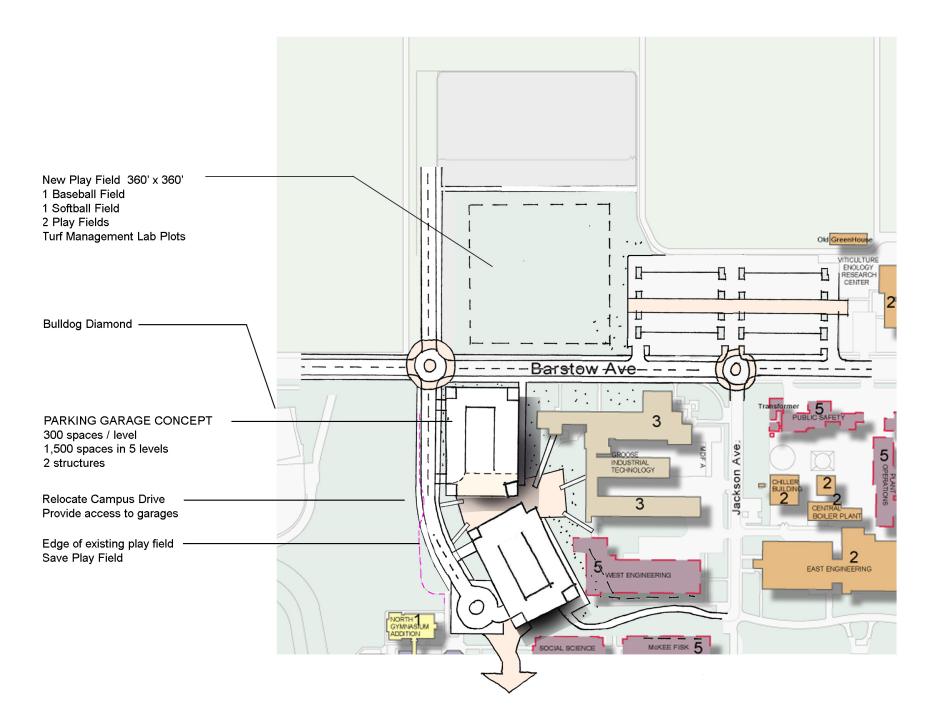




## California State University Fresno PARKING STRUCTURE STUDY

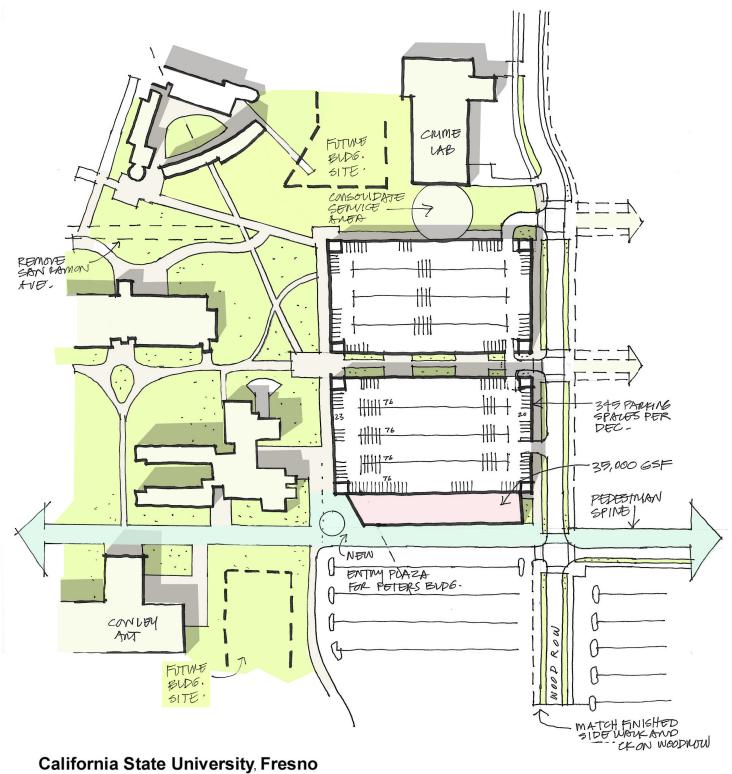
200' 60' 0 - I 1" = 200'

**ZGF** ARCHITECTS LLP March 2007



# California State University Fresno PARKING STRUCTURE STUDY

ZGF ARCHITECTS LLP March 2007 0 200' 60' 1" = 200'



# LOT J PARKING STRUCTURE STUDY

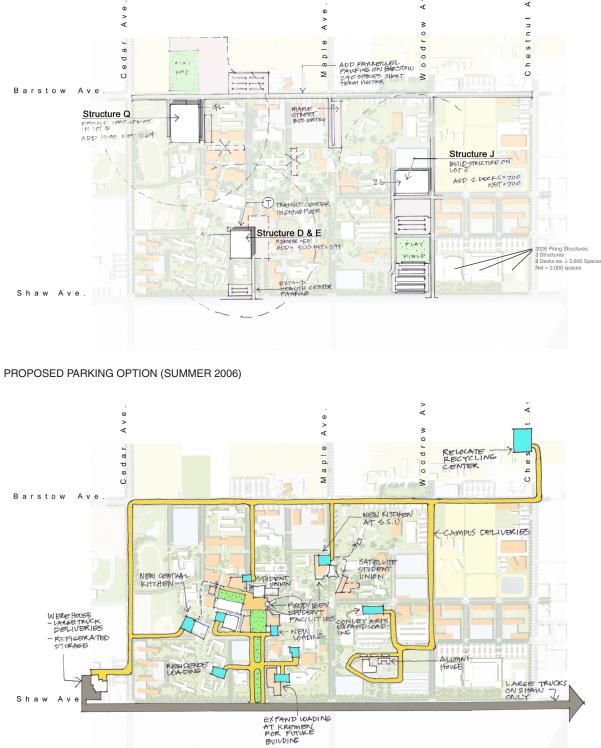
**ZGF** ARCHITECTS LLP

January 2007

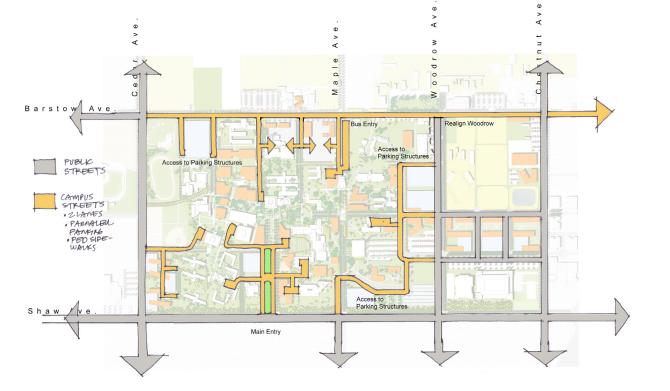
#### PROPOSED SERVICE AND LOADING CIRCULATION ALTERNATIVES (WINTER 2006)

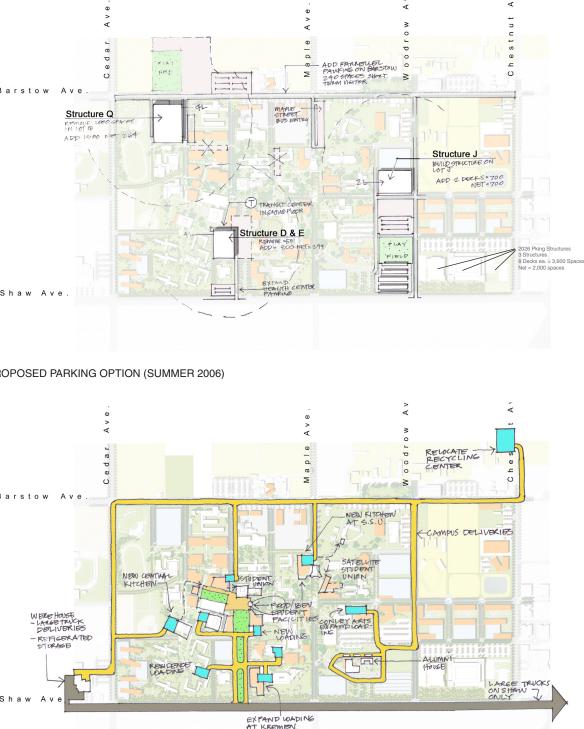
#### PROPOSED SERVICE AND LOADING CIRCULATION (SPRING 2006)



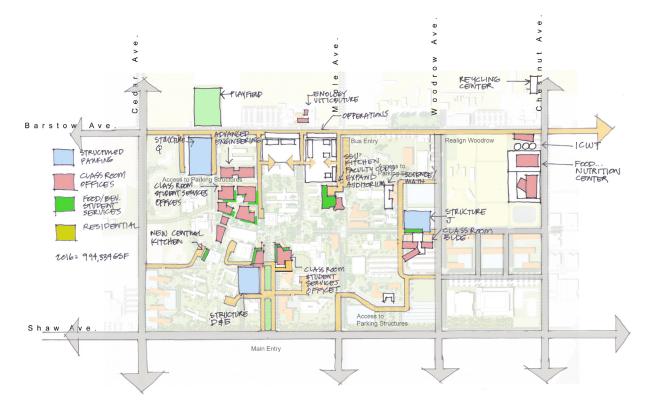


#### PROPOSED VEHICULAR CIRCULATION OPTION (SPRING 2006)





#### Evolution of the Master Plan



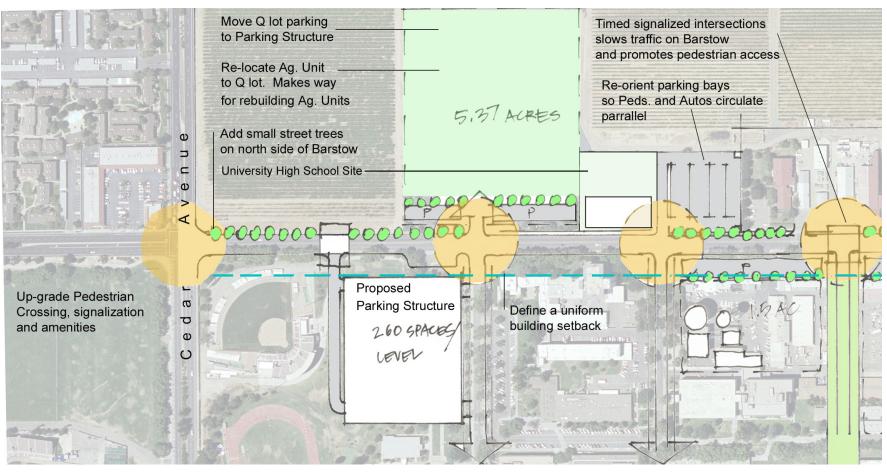


PROPOSED TEN YEAR MASTER PLAN (SUMMER 2006)



PROPOSED TWENTY YEAR MASTER PLAN (SUMMER 2006)

PROPOSED LANDSCAPE FEATURES (SUMMER 2006)

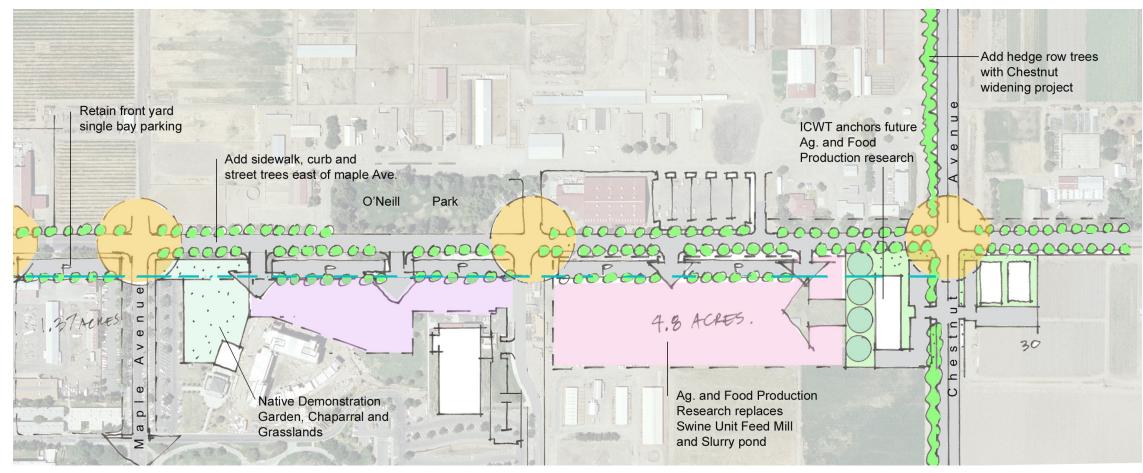


BARSTOW STUDY FROM CEDAR AVENUE TO THE FUTURE VITICULTURE PEDESTRIAN AVENUE CONNECTION TO THE CENTER OF CAMPUS (FALL 2006)

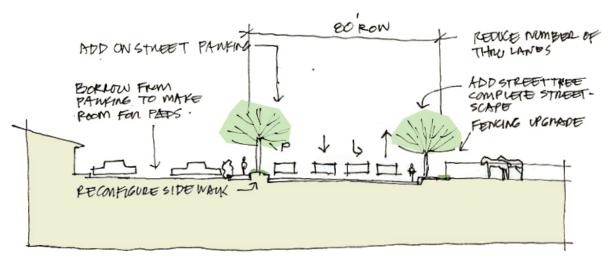


Photo illustration above shows the replacement of existing Modesto Ash trees with street trees at the curbline on Barstow Avenue. The images on these pages are shown as examples of evolutionary sketches during the master plan process.

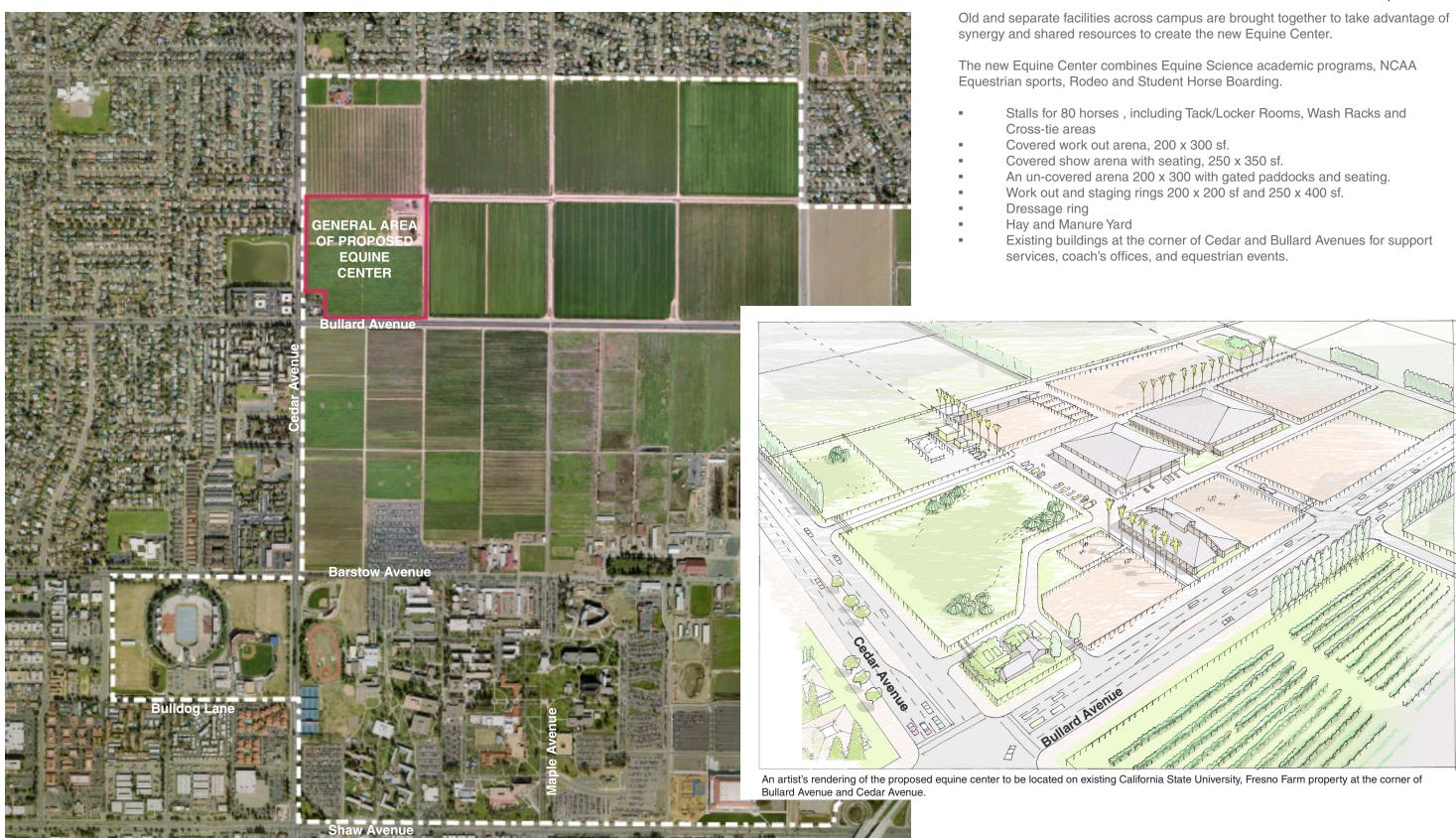
#### Barstow Avenue



BARSTOW STUDY FROM MAPLE AVENUE TO CHESTNUT AVENUE (FALL 2006)



Sketch section of the proposed landscape on Barstow Avenue at the existing Horse Unit.

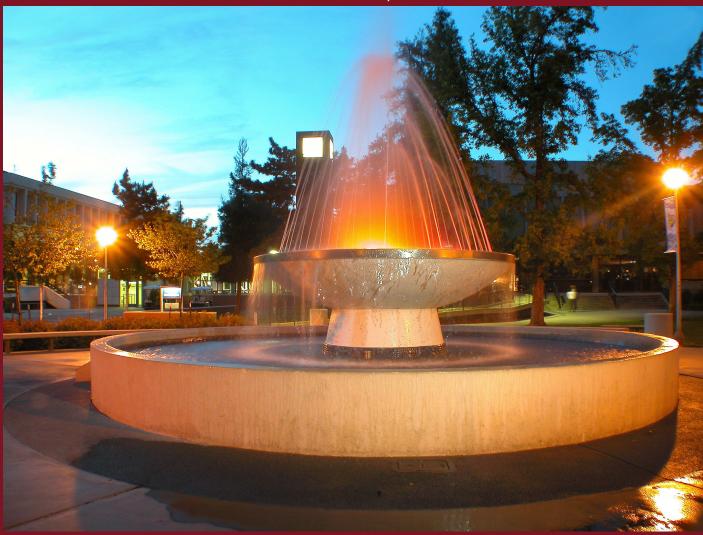


## Future Equine Center

January 2008 FINAL

# Campus Master Plan CALIFORNIA STATE UNIVERSITY, FRESNO

ZIMMER GUNSUL FRASCA ARCHITECTS LLP OMNI-MEANS, Ltd.



	FTE's	Annual	Total	Uni-Track	Evaluation	Cummulative
School Year	(15 unit/FTE) <sup>3</sup>	Increase <sup>2</sup>	Headcount <sup>1</sup>	Headcount	Head Count <sup>2</sup>	% Increase
2007	18,830		22,400	1,200	21,200	
2008	18,830	0.0%	22,400	1,200	21,200	0.0%
2009	18,830	0.0%	22,400	1,200	21,200	0.0%
2010	18,830	0.0%	22,400	1,200	21,200	0.0%
2011	19,138	1.6%	22,767	1,200	21,567	1.7%
2012	19,452	1.6%	23,140	1,200	21,940	3.5%
2013	19,771	1.6%	23,519	1,200	22,319	5.3%
2014	20,094	1.6%	23,904	1,200	22,704	7.1%
2015	20,424	1.6%	24,296	1,200	23,096	8.9%
2016	20,758	1.6%	24,694	1,200	23,494	10.8%
2017	21,098	<b>1.6%</b>	25,098	1,200	23,898	12.7%
2018	21,444	1.6%	25,509	1,200	24,309	14.7%
2019	21,795	1.6%	25,927	1,200	24,727	16.6%
2020	22,152	1.6%	26,352	1,200	25,152	18.6%
2021	22,515	1.6%	26,783	1,200	25,583	20.7%
2022	22,884	1.6%	27,222	1,200	26,022	22.7%
2023	23,258	1.6%	27,668	1,201	26,467	24.8%
2024	23,639	1.6%	28,121	1,202	26,919	27.0%
2025	24,027	1.6%	28,582	1,203	27,379	29.1%
2026	24,420	1.6%	29,050	1,204	27,846	31.3%
2027	24,820	1.6%	29,526	1,205	28,321	33.6%
2028	25,227	1.6%	30,009	1,206	28,803	35.9%
2029	25,640	1.6%	30,501	1,207	29,294	38.2%
2030	26,060	<b>1.6%</b>	31,001	1,208	29,793	40.5%
1.638%	Annual % Increa	ase				

# Anticipated Change in Student Headcount for Space Planning Purposes

Notes:

1. Numbers projected beyond the 25,000 approved maximum are for space planning purposes only

2. Adjusted Fall 2006

3. Revised March 2009

CALIFORNIA STATE UNIVERSITY, FRESNO MASTER PLAN ADDENDUM, july 2010