



California State University, Fresno

# Active Transportation Plan

Prepared by



for



Discovery. Diversity. Distinction.

2015

# ACKNOWLEDGMENTS

The project team would like to recognize and express gratitude for the many individuals who participated in the development of this Plan.

## CALIFORNIA STATE UNIVERSITY, FRESNO

Tom Gaffery, Parking & Transportation Manager  
Debra Penner, Administrative Support Assistant, Parking & Traffic Operations

## FRESNO STATE CAMPUS PLANNING COMMITTEE

Saeed Attar	Paul Halajian	Patrick Newell
Robert Boyd	Brad Hyatt	Jan Parten
John Bushoven	Garo Kalfayan	Chris Pluhar
Eric Chan	Lisa Kao	Mike Tillman
Michael Coles	John Kriebs	Richard Vaillancour
Hongwei Dong	Jeff Macon	Bernie Vinovrski
Yolanda Doub	Gage Marchini	Gary Wilson
Rick Finden	Dennis Nef	Sandra Witte
Tom Gaffery	Fred Nelson	William Wright

## ACTIVE TRANSPORTATION PLAN STEERING COMMITTEE

Amy Allen, Fresno State faculty	Lisa Kao, Fresno State Risk Management
Tawfik Aly, Fresno State faculty	Mark Keppler, Clovis Community Foundation
Lindsey Chargin, Fresno Council of Governments	Jeff Long, Fresno Area Express
John Cinatl, Caltrans District 6 Bicycle Coordinator, retired	Renee Mathis, City of Clovis
Melissa Garza, Fresno Council of Governments	Moses Menchaca, Associated Students, Inc.
Jill Gormley, City of Fresno	Steve Nasse, Fresno State staff, bicycle commuter
	Laura Rios, Fresno City Council District 4

## ALTA PLANNING + DESIGN

Brett Hondorp, Principal  
Bryan Jones, Project Manager  
Ryan Johnson, Assistant Project Manager & Planner  
Lola Torney, Planner  
Kyle James, GIS & Design  
Erin Feehily, Graphic Designer

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# 1. CAMPUS SNAPSHOT



Figure 1-1: Fresno State Gateway Sign

## 1.1 PLAN PURPOSE

The purpose of an Active Transportation Plan is to act as a guide for mobility and access to, on, and around the California State University, Fresno (“Fresno State”) campus as it further develops and moves into the future. This Plan acts as a compliment to the Fresno State Campus Master Plan adopted in 2008. This Plan provides recommendations – both broad and site specific – to allow the University to better accommodate active and healthy transportation modes for the entire campus community to move to and around campus. Investing in

active transportation is a sustainable and cost effective strategy to manage demand and provides choices for access to the campus in addition to the automobile. In essence, it provides a vision for campus growth in the active transportation realm to 2030 and beyond.

## 1.2 SETTING

Fresno State is located in northeast Fresno, California, very close to the border between the cities of Fresno and Clovis. The main campus is 388 acres large plus an additional 1,011 acre University Agricultural Laboratory. The San Joaquin Valley is one of the richest agricultural areas in the world, and the City of Fresno is the fifth largest city in California.<sup>1</sup>

Due to Fresno State's location within the Central Valley, the hot climate can be a major detractor from using an active mode to get to and from campus. Additionally, many surrounding roadways lack bicycle and pedestrian infrastructure and have high vehicle speeds, so the trips can be seen as unsafe. This Plan will help alleviate some of the safety concerns and address some of the "hot spots" to help encourage the campus community to choose a more cost effective, active, and healthier mode when commuting to and through campus.

## 1.3 CAMPUS COMMUNITY

Fresno State's official motto is "Discovery. Diversity. Distinction." The university mascot is a bulldog. In Fall 2014, Fresno State had 23,179 students enrolled with 2,245 faculty, staff, and managers employed by the campus. **Table 1-1** shows the full enrollment information from Fall 2014.

**Table 1-1: 2014 Enrollment Numbers**

Enrollment		
Total Headcount	23,179	
	Number	Percent
<b>Undergraduate</b>	20,490	88.4%
<b>Graduate</b>	2,162	9.3%
<b>Post-baccalaureate</b>	527	2.3%
Gender		
<b>Female</b>	13,480	58.2%
<b>Male</b>	9,699	41.8%
Ethnicity		
<b>African-American</b>	822	3.5%
<b>American Indian</b>	82	0.4%
<b>Asian</b>	3,424	14.8%
<b>Hispanic</b>	10,049	43.4%
<b>Pacific Islander</b>	54	0.2%
<b>White</b>	5,645	24.4%
<b>Other/Unknown</b>	1,960	8.2%
<b>Non-Resident Alien</b>	1,143	4.9%
<b>International Students</b>	691	

Source: <http://www.fresnostate.edu/academics/oie/quickfacts/index.html>

1. <http://www.fresnostate.edu/advancement/ucomm/fastfacts/>

In the 2013-2014 academic year, 5,128 students received an undergraduate, graduate, or doctoral degree from Fresno State.<sup>2</sup>

Fresno State is a unique campus in that only 1,000 students currently live on the central campus, with an additional 1,000 beds in the Campus Pointe apartment complex on the eastern edge of campus. However, the concentration of people on campus on a weekday can easily exceed 25,000. Approximately 10 percent of students (~2,200) live within 1.5 miles of campus; 35 percent (~8,000 students) live within five miles; and 50 percent (~11,500 students) live within 10 miles. **Figure 1-3** shows 2014 Fresno State student residential locations within 50 miles of campus.



Figure 1-2: Physical education class

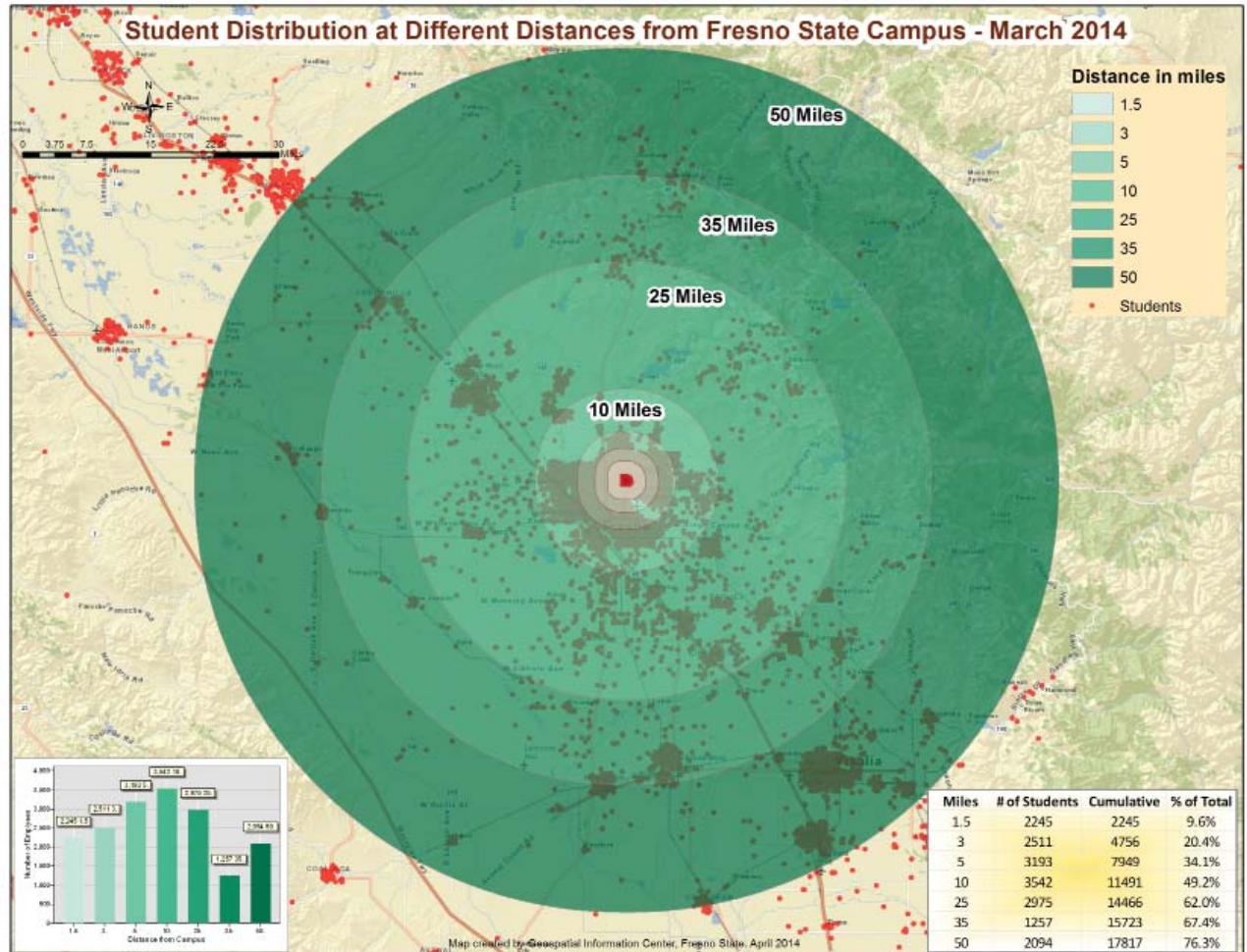


Figure 1-3: Student Residential Distribution within 50 Miles of Campus in 2014

2. <http://www.fresnostate.edu/academics/oie/quickfacts/>

**Figure 1-5** shows 2014 Fresno State student residential locations within 1.5 miles of campus.



Figure 1-4: Students crossing to campus from a parking lot on the north side of campus

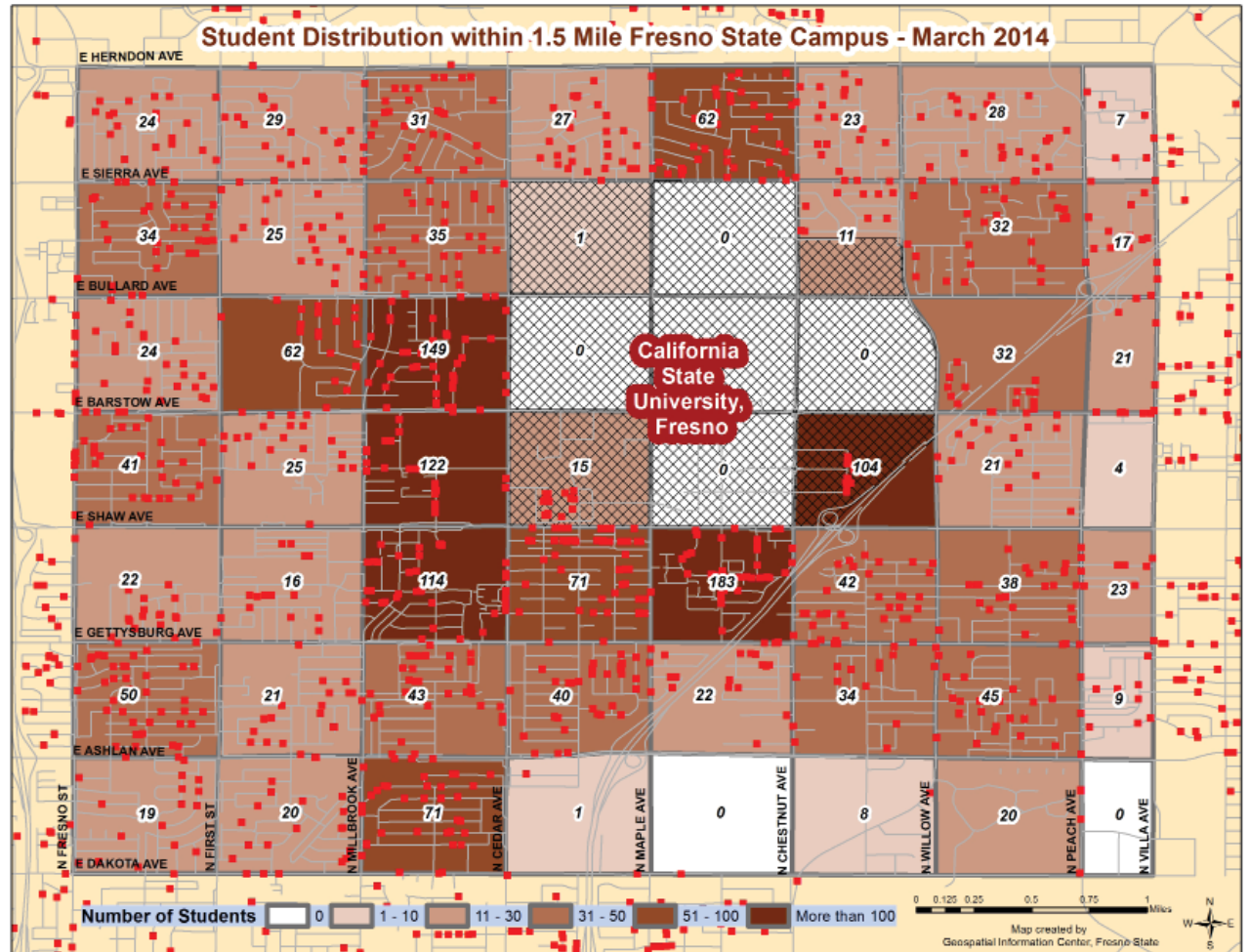


Figure 1-5: Student Residential Distribution within 1.5 Miles of Campus in 2014

A significant concentration of Fresno State employees also live within close proximity of the campus. Almost 20 percent of university employees (~800) live within 1.5 miles of campus; 60 percent (~2,400 employees) live within five miles; and 75 percent (~3,000 employees) live within 10 miles. **Figure 1-7** shows 2014 Fresno State employee locations by residence within 50 miles of campus.



Figure 1-6: Intersection of Henry Madden Library and University Student Union

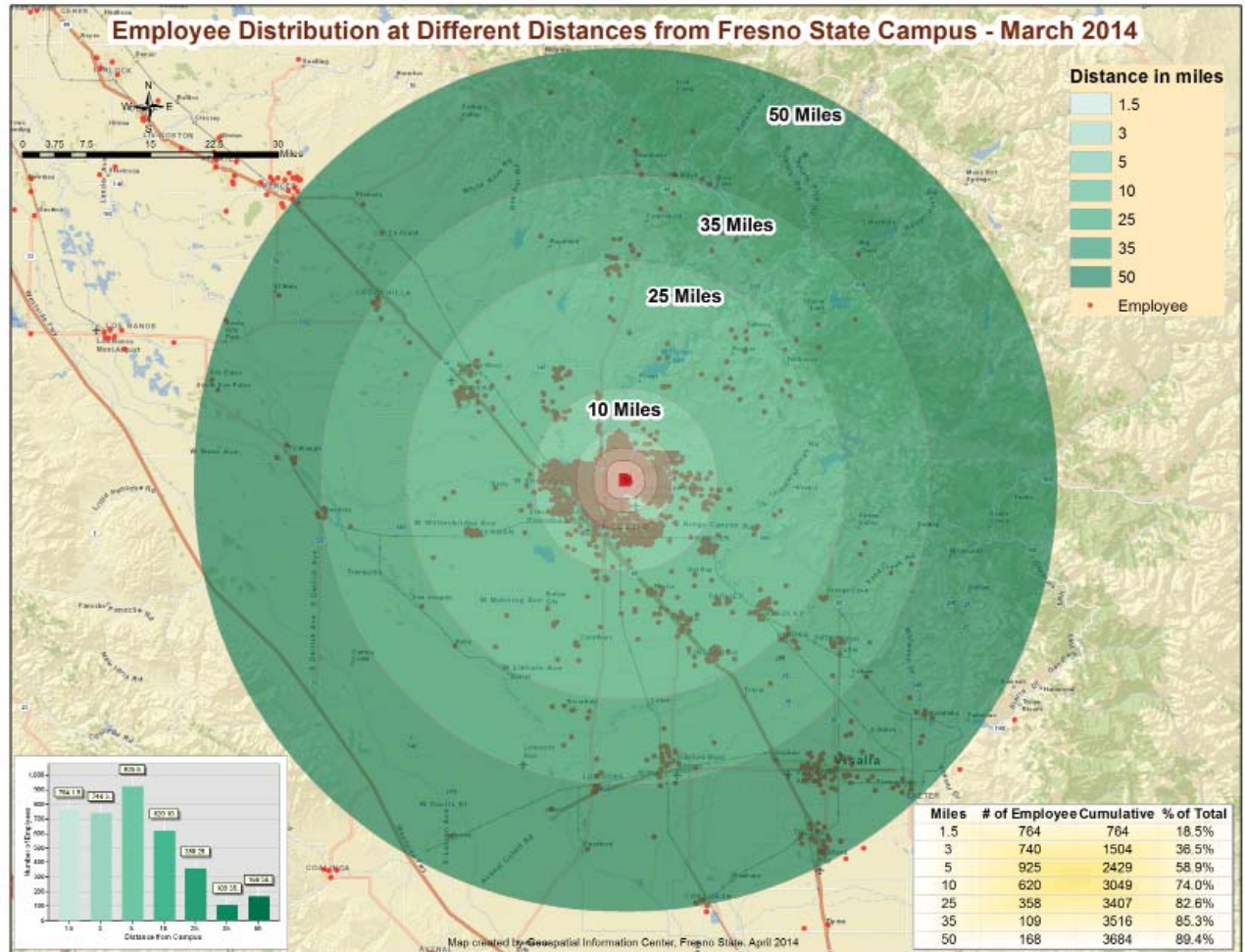


Figure 1-7: Employee Residential Distribution within 50 Miles of Campus in 2014

**Figure 1-9** shows 2014 Fresno State employee locations by residence within 1.5 miles of campus.



Figure 1-8: In front of the Henry Madden Library

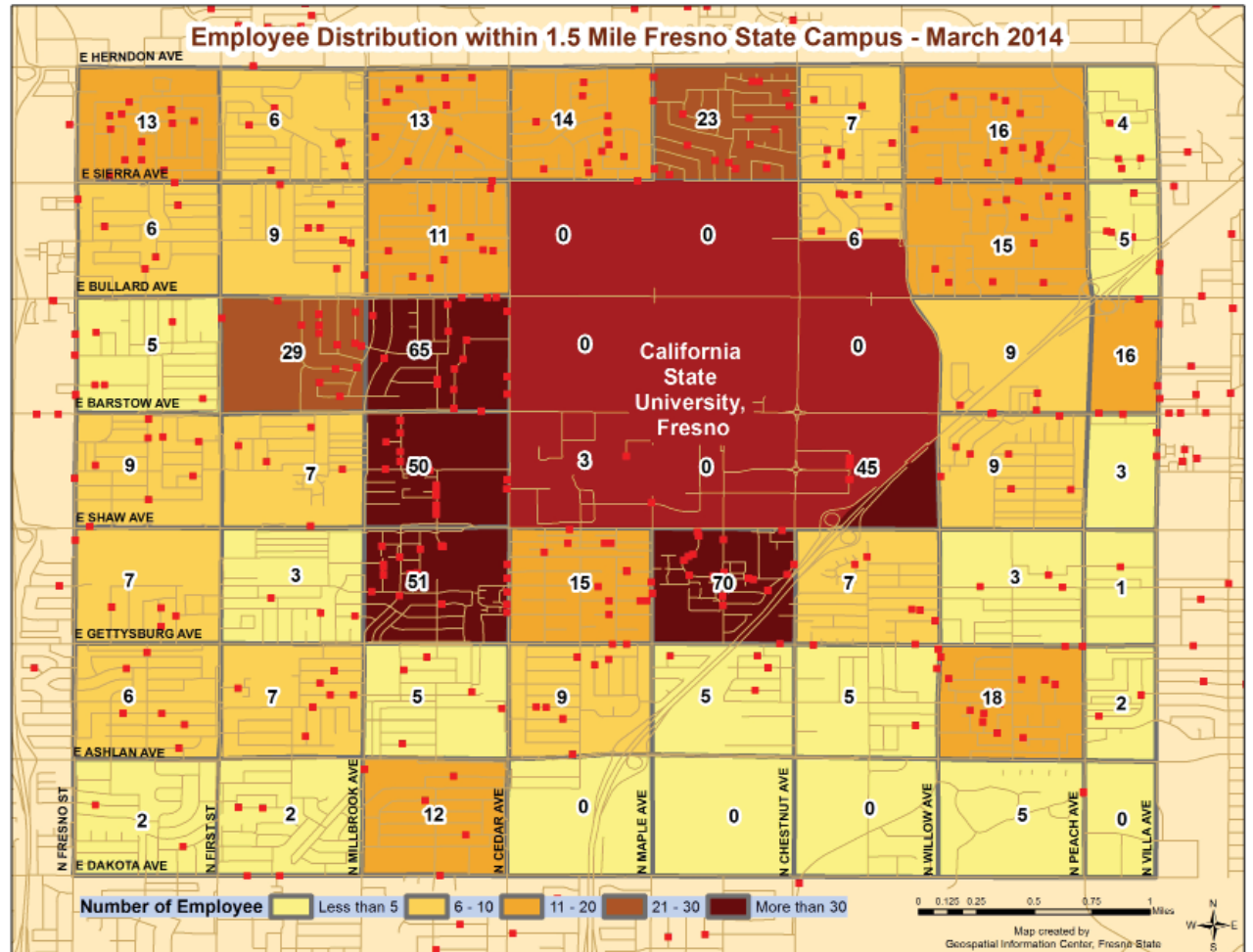


Figure 1-9: Employee Residential Distribution within 1.5 Miles of Campus in 2014

## 1.4 PLAN VISION

Based on community feedback, a vision was developed which defines the goals for the future of mobility on and around the Fresno State campus.

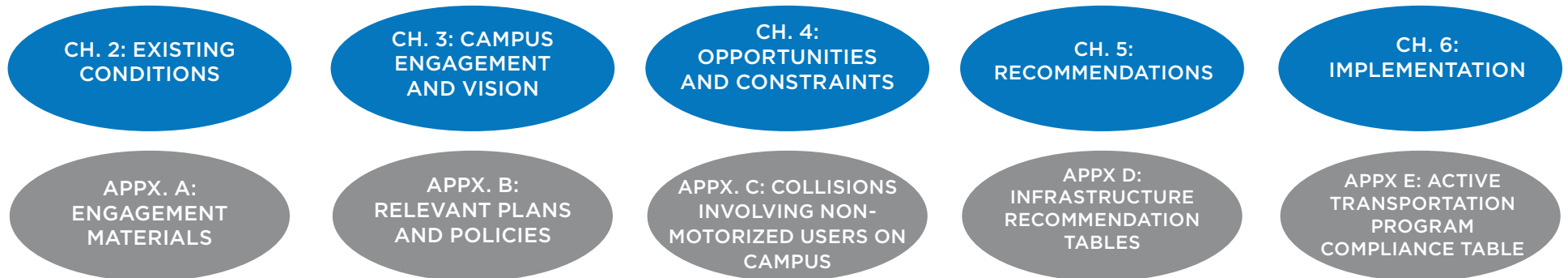
*California State University, Fresno is firmly committed to becoming a leader in active transportation by setting policy, developing programs, and implementing infrastructure to support and safely accommodate a variety of transportation choices to and through campus. This ensures mobility and accessibility for all Fresno State students, faculty, staff, visitors, and vendors. By accommodating and encouraging all transportation modes, Fresno State will be a more fiscally and environmentally sustainable campus and a leader for active and healthy transportation in the Central Valley.*

## 1.5 PLAN ORGANIZATION

The Fresno State Active Transportation Plan is organized into the following chapters and appendices:



Figure 1-10: Bike Barn near the University Student Union





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## 2. EXISTING CONDITIONS



Figure 2-1: Crowded bike racks by the Henry Madden Library

Many students and employees are already walking, bicycling, skateboarding, carpooling, and riding transit to, around, and within the Fresno State campus. The growing popularity of bicycling, for instance, has led to crowding of some bicycle racks on campus, which prompted the University to build high-capacity, secured “Bike Barns.” Improving safety, enhancing connectivity, and providing support facilities will continue to encourage students and employees to walk, ride a bicycle, and use other active transportation modes to reach and move around campus. This chapter describes the existing facilities, policies, and programs as they relate to all modes of transportation at Fresno State.

### 2.1 CAMPUS HEALTH

The Fresno State campus is located in an area that ranks high in both disadvantaged populations and poor air quality. Poor air quality is one of the most pressing issues for the region, and it exists at the neighborhood, city, and regional level. The CalEnviroScreen2.0 tool has identified the Fresno State campus as having very high levels of air pollution. Air pollution (especially particulate matter) is associated with various health issues including lung cancer and low birth weight. Current rates for asthma in Fresno County exceed those for the state. Thirteen percent of adults in Fresno County have asthma, compared with 7.7 percent of

adults statewide; 15.7 percent of Fresno County children and teens have asthma, compared with 10.1 percent of all youth in California.<sup>1</sup>

One hundred percent of the population of Fresno County is exposed to annual PM2.5 concentrations exceeding federal standards.<sup>2</sup> Age, race, and ethnicity play a part in the extent of exposure. The study claims that “children under the age of five are exposed to unhealthy ozone concentrations on more days than adults,” and “Blacks and Hispanics experience somewhat more frequent exposures to elevated levels of PM2.5 than non-Hispanic whites do.” Hispanics in the San Joaquin Valley receive “disproportionately more exposures than other racial or ethnic groups,” and as the concentrations of PM2.5 increase, so does exposure of Hispanics to these pollutants.

The health effects from exposure to air pollution also result in a high price for residents of the San Joaquin Valley: “...the cost of air pollution is more than \$1,600 per person per year, which translates into a total of nearly \$6 billion in savings if federal ozone and PM2.5 standards” are met. The documented health effects include both infant and premature adult mortality, plus events such as nonfatal heart attacks and conditions such as chronic bronchitis and asthma. The report concludes that while progress has been made, achieving the health-based standards “will be very difficult” for the San Joaquin Valley, and that difficulty will only increase with the growth in population



Figure 2-2: Peace Garden at Fresno State

and parallel growth in vehicle traffic and the economy.

Although some of the information above is not exactly reflective on the college campus, Fresno State could be a leader in helping address many of these health challenges so local municipalities in the Central Valley can see the results of investment in active transportation on a community.

## 2.2. BICYCLE FACILITIES

### 2.2.1. BIKEWAYS

Existing bikeway facilities on the Fresno State campus consist of shared-use paths (open to all non-motorized users) of varying widths and levels of improvements throughout the campus (as seen in **Figure 2-3**) and striped Class II on-street bike lanes along a roughly one-half mile segment of Barstow Avenue. The cities of

1. <http://californiabreathing.org/asthma-data/county-asthma-profiles/fresno-county-asthma-profile#>

2. [http://publichealth.lacounty.gov/mch/AsthmaCoalition/docs/BenefitsofMeetingCleanAirStandards\\_11\\_06\\_08.pdf](http://publichealth.lacounty.gov/mch/AsthmaCoalition/docs/BenefitsofMeetingCleanAirStandards_11_06_08.pdf)

Fresno and Clovis have installed bicycle facilities along various streets within their jurisdictions. However, the vehicle speeds on many of these roadways exceed 40 mph, and there are gaps in connectivity such as on Shaw Avenue where bike lanes do not exist. Bicycle riders are legally allowed to travel on all general purpose roadways along with motor vehicles, unless expressly prohibited (e.g., freeways), however many bike riders do not feel comfortable taking the lane or sharing the roadway with motorists. **Figure 2-6** shows the existing bikeways network on and immediately surrounding the Fresno State campus.

### 2.2.2. BICYCLE PARKING AND SUPPORT FACILITIES

The end-of-trip bicycle storage currently on campus consists mostly of short-term bicycle racks at various locations. In addition, enclosed and secured high-capacity “Bike Barns” that



Figure 2-3: Skateboarder and pedestrian using the shared-use path along Barstow Avenue

require a student ID card to access are located at the Student Recreation Center, at University Courtyard, and on the Jackson Avenue campus path adjacent to the Professional Human Services building (see **Figure 2-4**). In total, there are nearly 90 designated locations on campus where bicycles can be locked, with a range of bicycle storage capacity at each.

Self-serve bicycle repair kiosks, such as that shown in **Figure 2-5**, are currently located at the University Student Union, Student Recreation Center, and in the University Courtyard in the student housing area.

**Figure 5-10** in **Chapter 5 – Recommendations** shows the location of existing bicycle parking and support facilities alongside recommended facilities.

### 2.3. PEDESTRIAN FACILITIES

Pedestrian facilities on campus consist primarily of paved pathways that are effectively shared



Figure 2-4: Bike Barn on the Fresno State campus

with all non-motorized users, and motorized golf carts authorized by the University. Gaps in the sidewalk network exist at various locations on the campus and along major perimeter roadways. Many crosswalks and curb ramps do not meet currently accepted design standards; improvements at these locations are identified in **Chapter 5 - Recommendations**.

**Figure 2-6: Existing Active Transportation Facilities** shows the existing network of campus paths.



Figure 2-5: Bicycle Repair Station on campus

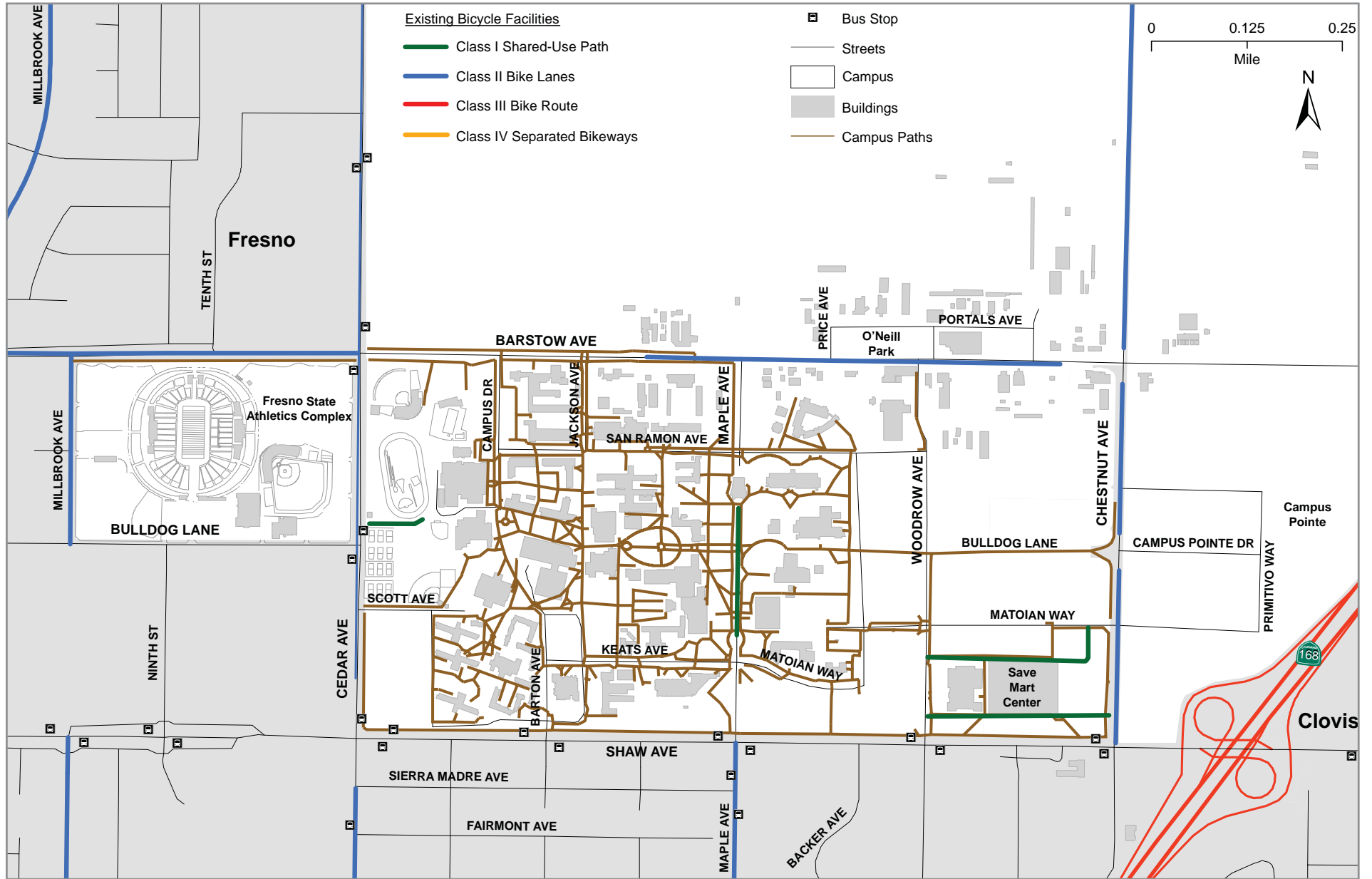


Figure 2-6: Existing Active Transportation Facilities

## 2.4 TRANSIT FACILITIES

The main transit provider in the Fresno metropolitan area is Fresno Area Express, commonly known as FAX. Three FAX bus lines currently service the Fresno State Campus: Routes 9, 28, and 38. The City of Clovis also runs a transit service called Stageline; Stageline Route 10 connects Fresno State to northwest Clovis.

### 2.4.1 BUS-BICYCLE INTEGRATION

All FAX buses can carry two bicycles on a rack on the front of the bus, but some buses are equipped to hold three bicycles. Bicycles are not allowed inside the bus.



Figure 2-7: FAX bus shelter near campus

### 2.4.2 TRANSIT STOPS

**Figure 2-6** shows the existing FAX bus stops around the Fresno State campus. Many of the bus stops surrounding the campus provide overhead shelter from the sun or rain and benches that seat at least two people, as seen in **Figure 2-7**. Additionally, trash cans are provided. However, some stops do not have such amenities or accommodations.

In addition to FAX, some off-campus apartment complexes operate free shuttles to and from Fresno State for residents. Shuttles stop at the following locations on campus:

- Parking Lot K (northwest corner of Barstow Avenue and Campus Drive)
- Campus Drive/San Bruno Avenue turnaround
- Parking Lot D (south of University Center)

Finally, in May 2015, the Yosemite Area Regional Transportation System (YARTS) began its Highway 41 service between Yosemite National Park and the Fresno State campus, with a stop at the intersection of Shaw Avenue and Barton Avenue. This YARTS route also serves the several communities along Highway 41 in between campus and Yosemite National Park.



Figure 2-8: Off-campus apartment complex shuttle on campus



Figure 2-9: FAX bus

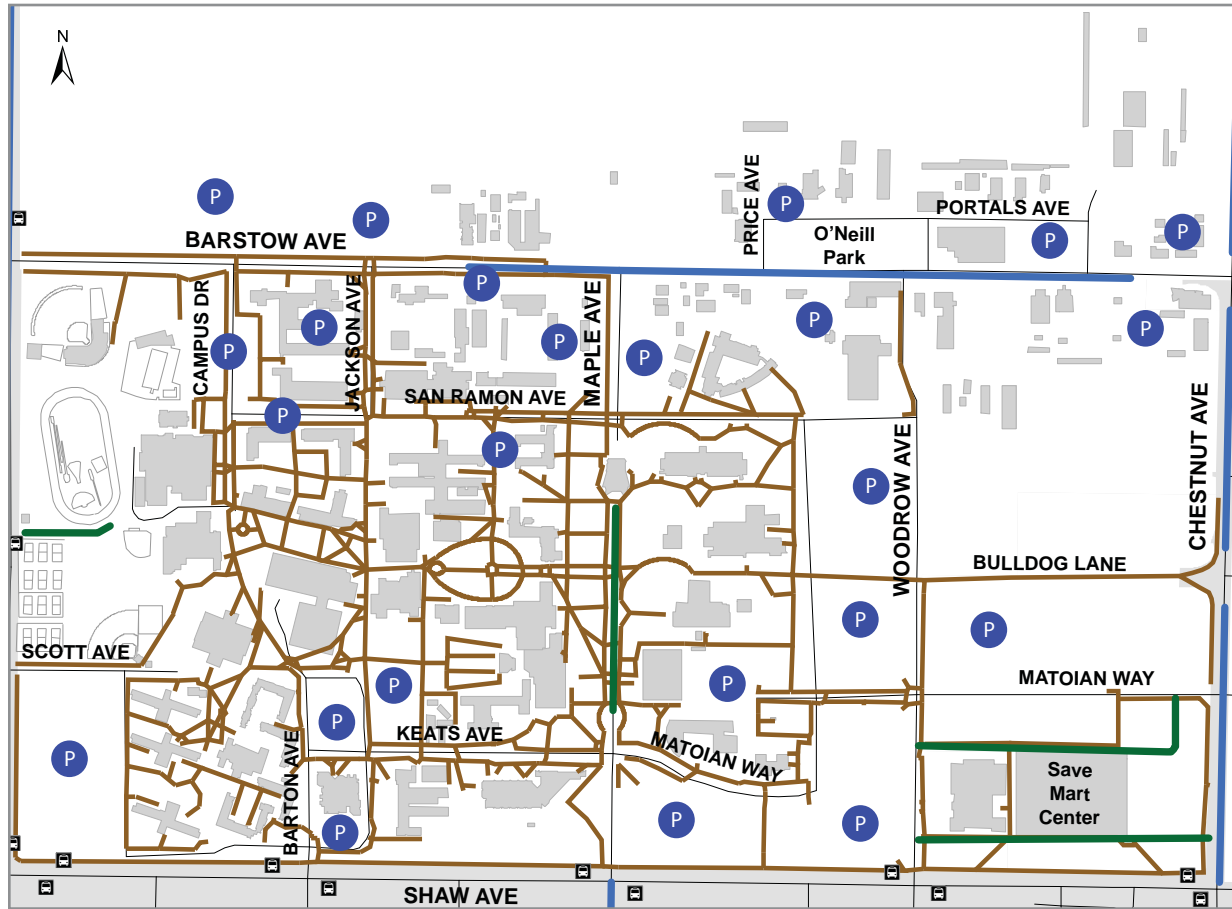


Figure 2-10: Campus parking lot clusters

## 2.5. AUTOMOBILE STORAGE FACILITIES

The Fresno State campus has 31 numbered parking lots for students, faculty, staff, and visitors. The map in **Figure 2-10** shows the campus parking lots; some lots are clustered together and shown by one icon.

## 2.6. CAMPUS-WIDE PROGRAMS Bicycle Registration Program

While bicycle registration is not required for bicycles on campus, the University provides incentives to encourage students, faculty, and staff to register their bicycles. Each person who registers their bicycle receives four vehicle parking permits, each valid for a single use, as well as having her or his bicycle entered into the Police Department's bicycle registration database which provides access to theft recovery, bike lock removal, and courtesy contact services.

The current Bicycle Registration Program is not widely used. **Figure 2-11** shows the number of bicycle registrations since 2011.



Figure 2-11: Number of bicycle registrations from 2011 through Fall 2014

### FAX Bulldog Card Program

As of Summer 2015, all Fresno State students and employees can board any FAX and Clovis Transit bus by simply swiping their Bulldog Card. The University is using revenues from parking fines to pay for the program.

### Preferred Carpool Parking

Students and employees who carpool to campus with another Fresno State employee or student for two or more days per week are eligible to receive a carpool permit. The carpool permit allows carpool drivers to park in designated parking spaces located closer to campus buildings.

## 2.7. CAMPUS POLICIES

### Appendix B - Relevant Plans and Policies

summarizes existing policies and plans relevant to active transportation planning on the Fresno State campus and in the surrounding region.

## 2.8. PLANNED TRANSPORTATION PROJECTS

### 2.8.1 BARSTOW AVENUE BIKEWAYS PROJECT

Fresno State began construction in 2015 on the western half (Phase 1) of the Barstow Avenue Bikeways project between Cedar Avenue and Maple Avenue which consists of a shared-use path and on-street bikeways. The University submitted a state Active Transportation Program Cycle II grant application in June 2015 for funding to construct the second phase

of the project between Maple Avenue and Chestnut Avenue, which will consist of one-way separated bikeways in both the eastbound and westbound directions. Ultimately the Barstow Avenue separated bikeway facilities will connect east to the Willow Avenue Trail.

### 2.8.2 TRANSIT SERVICE AND AMENITIES IMPROVEMENTS

In May 2015, the Fresno Council of Governments (Fresno COG) published the “Public Transportation Strategic Service Evaluation Project Draft Final Report” which includes recommended improvements to the Fresno area transit networks over the next five years. Short-term improvements include an outreach program prior to the adoption of updated efficiency and customer service policies, simplification of route structures, and extending evening service. Mid-term improvements include more comprehensive service and customer service improvements, including increasing frequency of service along the “Priority 1 Networks,” new transit centers, and bus stop improvements. The latter two improvements will coordinate with some of the Fresno State Active Transportation Plan recommendations in **Chapter 5 - Recommendations**. Long-term improvements will focus on improving headways along the other four “Priority Networks” as funding becomes available.<sup>2</sup>

In June 2015, FAX published their “Short Range Transit Plan” report which includes projects that have been identified for implementation when funding levels to FAX are restored. Pertinent upgrades include extending evening service, increasing frequency on key corridors, extending weekend service hours, enhancing on-street transfer locations, and developing an on-campus transit center at Fresno State.

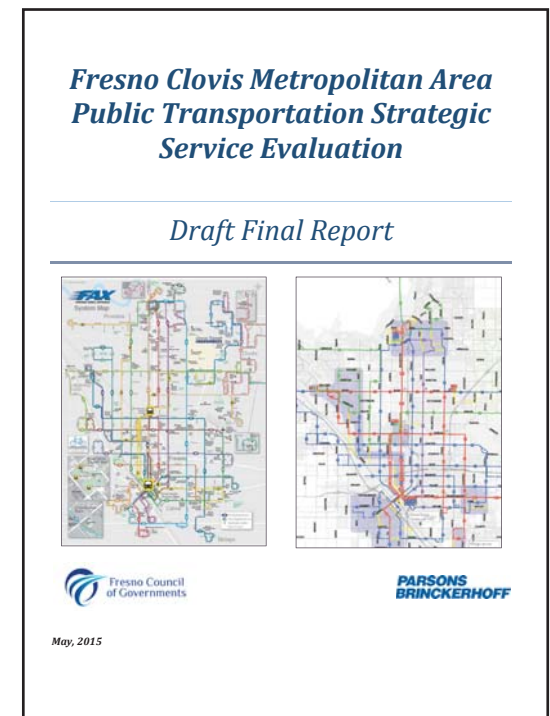


Figure 2-12: Cover of the Fresno Clovis Metropolitan Area Public Transportation Strategic Service Evaluation Draft Final Report from May, 2015.

2. [http://www.fresnocog.org/sites/default/files/publications/Public\\_Transit/15\\_06\\_FCOG\\_Final\\_Report\\_-\\_Draft\\_5.pdf](http://www.fresnocog.org/sites/default/files/publications/Public_Transit/15_06_FCOG_Final_Report_-_Draft_5.pdf)

## 2.9. PLANNED PROGRAMS

### 2.9.1 ENTERPRISE CARSHARE

In collaboration with Enterprise CarShare, Fresno State will soon bring online-booked, hourly car rental to the campus community. Car sharing programs allow people to own fewer or no personal automobiles, but still have access to a vehicle when necessary or desired. The program is expected to begin in August 2015.

### 2.9.2 ZIMRIDE

Zimride is a carpool matching system which will help students and employees find a carpool partner to get discounted and closer parking spaces on campus. The program is scheduled to kick off August 2015.

### 2.9.3 O'NEILL PARK REDEVELOPMENT

J. E. O'Neill Park is a major outdoor focal point for University and associated community activities. The Park is located in the transition between the historic center of the campus and the College of Agricultural Sciences & Technology. The campus is currently working toward a redevelopment of the park which will update to the park's amenities, evaluate and save key trees, and restore the park's role as an "urban forest."

## 2.10. COLLISION AND SAFETY ANALYSIS

Safety is a major concern for both existing and potential bicyclists and pedestrians. Among all

travelers, perceived lack of safety is one of the most frequently cited reasons for not bicycling or walking. Identifying collision sites can draw attention to locations which may be in need of improved safety treatments, particularly if multiple collisions occur at the same location. This section presents data on collisions involving people walking, bicycling, or using other non-motorized travel modes.

**Table 2-1** shows the total number of reported bicycle-, pedestrian-, skateboard-, or scooter-involved collisions on campus between 2010 and 2014. **Table C-1 in Appendix C** describes each collision in detail, and **Figure 2-13** shows the collisions in relation to existing transportation facilities on campus. The data comes from reports generated by the Fresno State Police Department. Three of the reported bicycle-, pedestrian-, skateboard-, or scooter-involved collisions involved golf carts, and the

remaining 78 collisions involved an automobile.

In **Figure 2-13**, pedestrian-involved collisions are shown in red, bicycle-involved collisions are indicated by the orange triangles, and the skateboard-scooter-involved collisions are represented by brown diamonds. Most of the roadways and intersection have occurred on the major streets and in the intersections surrounding campus where both the volume and speed of automobile traffic are significantly higher. While most of these are city-owned streets, partnering with the relevant agency to improve the safety and design of collision around the campus. Most of the intersections are designed based on achieving a certain level of service for automobiles, which results in wider, faster, and often more challenging intersections for pedestrians and bicyclists to navigate and cross.

**Table 2-1: Total Number of Reported Bicycle-, Pedestrian-, and Skateboard-Scooter-Involved Collisions, by Year**

Year	Bicycle-Involved Collisions	Pedestrian-Involved Collisions	Skateboard/Scooter-Involved Collisions	Total
2010	8	6	0	<b>14</b>
2011	10	9	4	<b>23</b>
2012	5	8	0	<b>13</b>
2013	8	7	0	<b>15</b>
2014	8	7	1	<b>16</b>
<b>Total</b>	<b>39</b>	<b>37</b>	<b>5</b>	<b>81</b>

Source: Fresno State Police Department



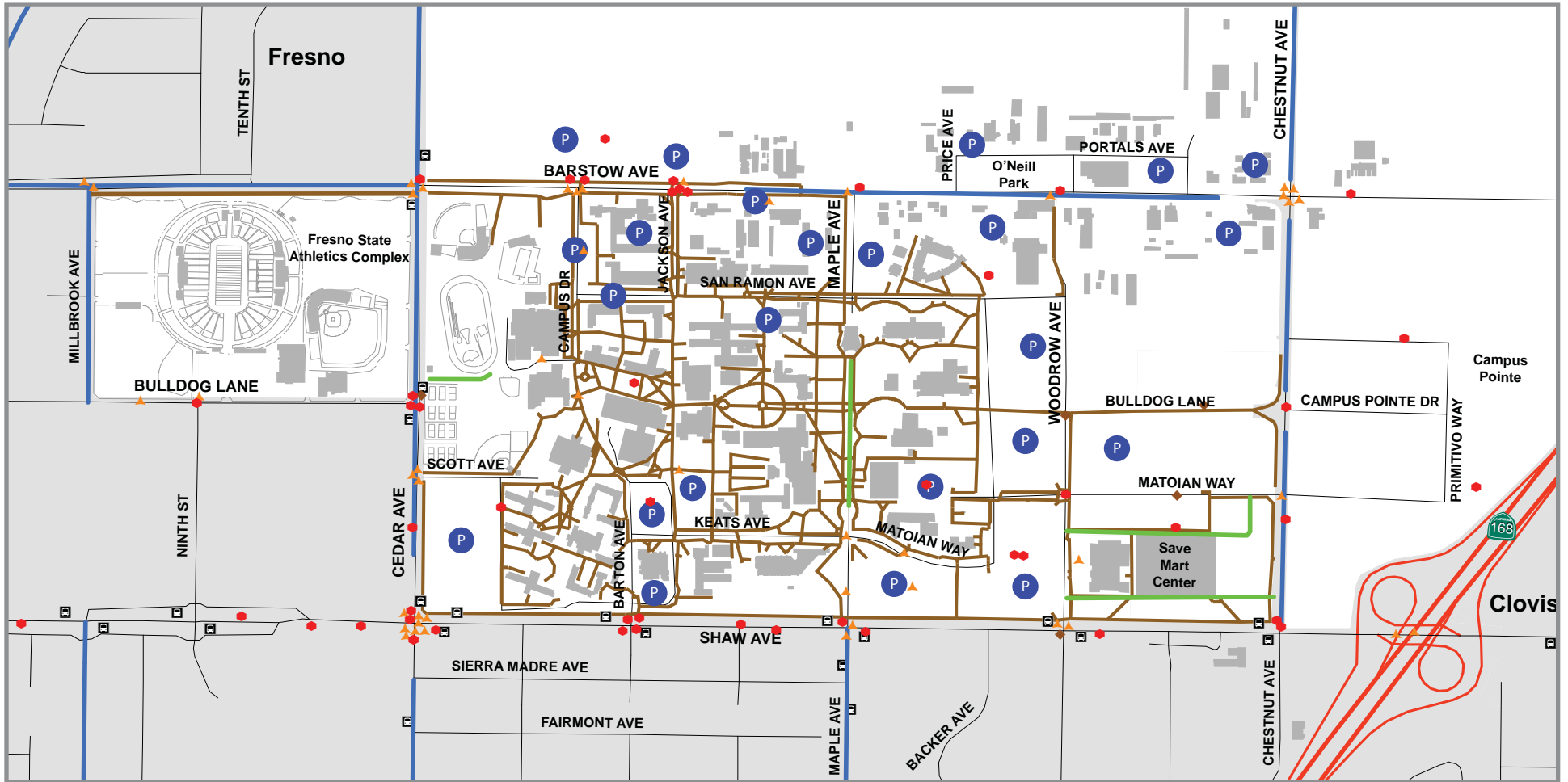


Figure 2-13: Bicycle- (orange triangles), pedestrian- (red dots), and skateboard-scooter (brown diamonds)-involved collision map, zoomed in from the full existing conditions map

It is also important to note that some collisions occurred in parking lots. As the University already plans to redesign some campus parking lots, if done well, this risk of collision can be reduced.

The frequency of collisions is not the only indicator of traffic safety, especially relating to non-motorized users. The speed of motor

vehicles at the moment of impact with pedestrians or bicycle riders often determines the severity of injuries to the non-motorized victim (**Figure 2-12** shows the relationship between motor vehicle speed at impact and pedestrian fatality rates). Therefore, the recommendations in this Plan are not only

intended to eliminate collisions involving non-motorized travelers, but will also be identified for their potential to *lower* the speed of motor vehicles in areas where pedestrians and other active users are expected to be present.

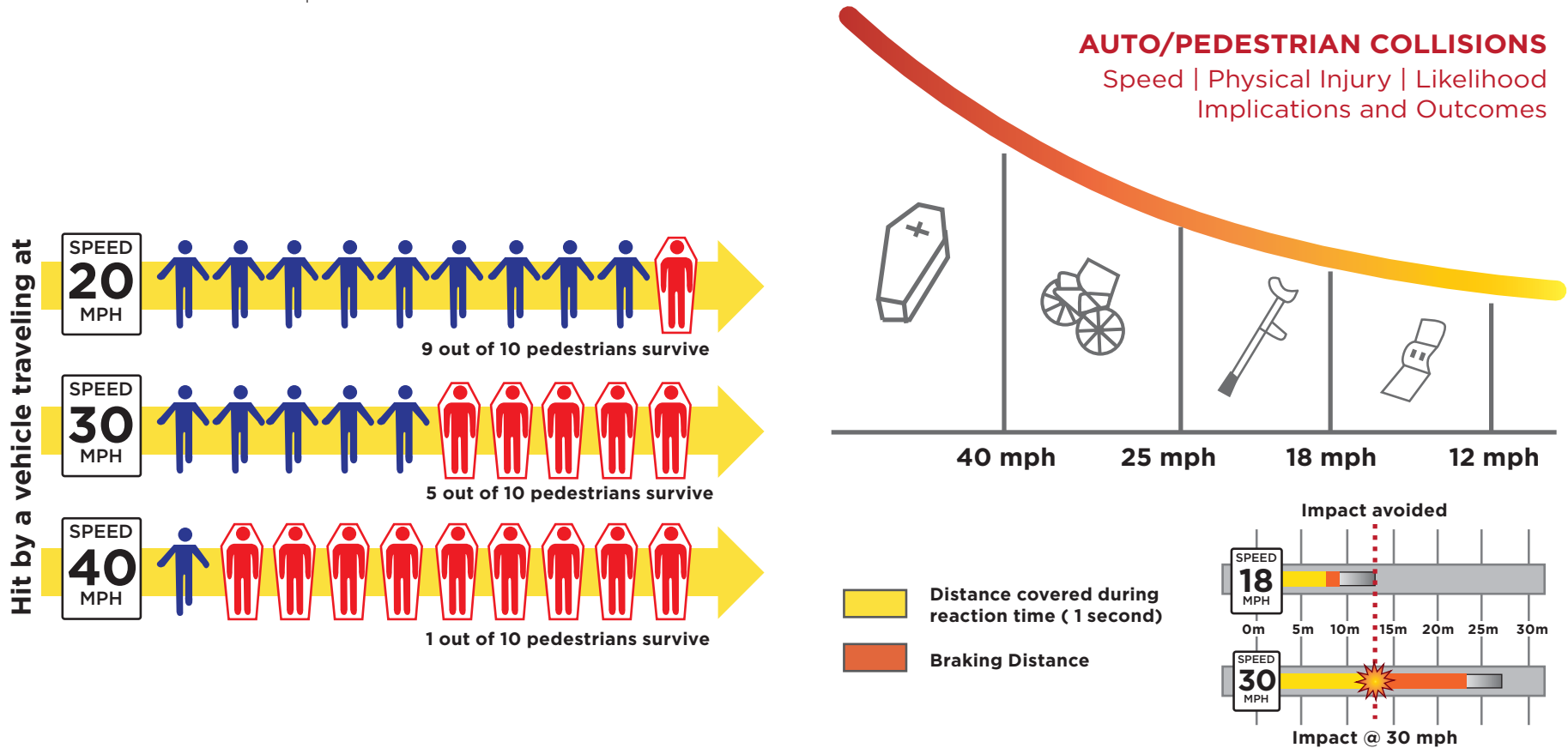


Figure 2-14: Relationship between motor vehicle speed at impact and pedestrian fatality rates



## 3. CAMPUS ENGAGEMENT AND VISION

Engaging with the Fresno State campus community is the best way to learn how the current active transportation options function on campus as well as formulate the vision and goals for the future of the campus.

**Three main methods were used to collect community feedback:**

- a survey
- stakeholder interviews
- a community workshop

### 3.1. SURVEY

A paper and web-based survey using SurveyMonkey were created to gauge how current students and community members travel to and through the Fresno State campus. The Survey was promoted both on campus and through a post to the Fresno State Facebook page. A \$50 gift card to the campus bookstore helped incentivize survey participation. 388 people responded to the survey, and the analysis is shown in the following sections. For a copy of the survey, see **Appendix A - Engagement Materials**

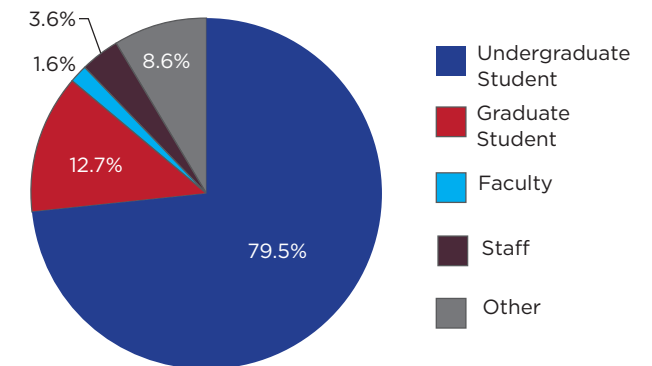


Figure 3-1: Classification of survey respondents

### 3.1.1 DEMOGRAPHICS

Nearly 74 percent of respondents classified as undergraduate students. Over 50 percent identify as Latino/Hispanic.

Seventy-eight percent of respondents travel around campus by walking, while a combined 6.6 percent travel around campus by bicycle, skateboard, or scooter. Nearly 16 percent of respondents report driving to the nearest parking lot in order to travel around campus.

### 3.1.2. METHOD OF TRAVEL

As shown in **Figure 3-3**, 62 percent of respondents report that they drive alone to campus, but for that question, respondents could have provided multiple answers. Seventy-eight percent of respondents state that driving alone is the mode of transportation used most often (when only allowed one answer).

### 3.1.3 EDUCATION AND ENCOURAGEMENT

The focus of the survey was to glean whether respondents currently use an active form of

transportation to and around campus and, if they do not already, what would encourage them to do so more often. Nearly 85 percent of the respondents declared that they never ride a bicycle. Only 10 of the respondents said they ride a bike five or more days per week.

While many of the responses to the question of why respondents do not walk or bike more frequently are not issues that Fresno State could easily remedy such as, “I do not own a bike,” “I carry too much stuff,” “It is too hot,” or, “I do not have enough time,” there were some responses that Fresno State could address. These include answers such as, “Personal safety,” “Insufficient lighting,” “Unsafe/unlawful behavior by motorists and/or pedestrians,” or, “Bike theft.”

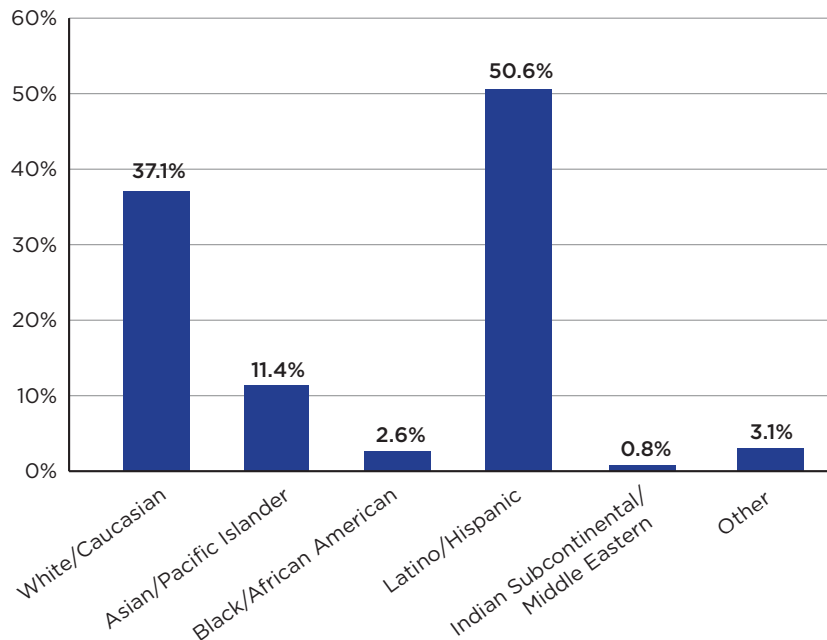


Figure 3-2: Ethnicity of respondents

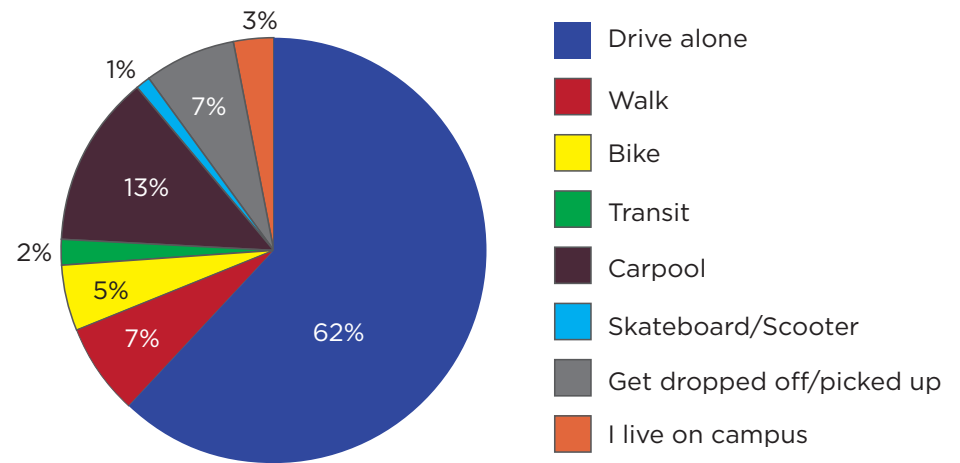


Figure 3-3: Method of travel to campus (“check all that apply”)

**I carry too much stuff**

**I do not own a bike**

**It is too hot**

**I do not have enough time**

*Figure 3-4: Some reasons given as to why respondents do not walk or bike more frequently not under the University's control.*

One survey question asked respondents to rank how likely certain improvements would affect their decision to bike or walk. The top ten choices that respondents indicated they would be much more likely to walk or bike are listed below:

- 1 Improved lighting**
- 2 Improved/additional on-campus paths**
- 3 Better connections between Fresno State campus and surrounding cities**
- 4 Improved/additional sidewalks**
- 5 Improvement to existing street crossings**
- 6 More identified/protected street crossings**
- 7 Lower vehicle traffic volumes/speeds**
- 8 Maps or guides showing best walking routes**
- 9 Improved/additional off-street paths**
- 10 Improved/additional bike lanes**

Another survey question asked respondents to rank how likely certain improvements would affect their decision to use transit. The ranking of the choices wherein respondents would be much more likely to use transit is listed below:

- 1 Free transit passes**
- 2 Real-time arrival information**
- 3 Better connections between Fresno State campus and surrounding cities**
- 4 Late night/early morning service**
- 5 More transit stops on campus**
- 6 Higher frequency of service**
- 7 Improvements to bus/transit stops**

Another survey question focused on education and encouragement programs for biking, walking, and transit. **Figure 3-4** below shows respondents' rankings on various programs Fresno State could offer to the campus community.

Free transit passes and free or discounted on-campus bicycle maintenance and repair were

the most popular responses for which programs could increase respondents' likelihood to walk, bike, or use transit more frequently.

The survey responses were used to develop the list of recommended projects and programs found in **Chapter 5 - Recommendations**. For the full summary, see **Appendix A - Engagement Materials**.

### 3.2. INTERVIEWS

In March 2015, stakeholder interviews were held with many campus organizations and students. The following list shows the many stakeholders who were interviewed and/or provided feedback on the Active Transportation Plan process:

- Active Transportation Plan Steering
- Committee Campus Planning Committee
- Fresno Area Express (FAX)
- Facilities and Public Safety Managers
- Campus Pointe owners
- University High School
- Sustainability Committee
- Arboretum Committee
- Creativity and Innovation for Effectiveness Team
- Fresno State Police Department
- City of Fresno
- Fresno Council of Governments

Overall, more than 50 people attended the stakeholder interviews and meetings. While much of the feedback was positive, many stakeholders wanted to ensure that any recommendations from the plan will work in Fresno and for the Fresno community.

Please rate how likely the following programs would affect your decision to walk, bike or take transit:

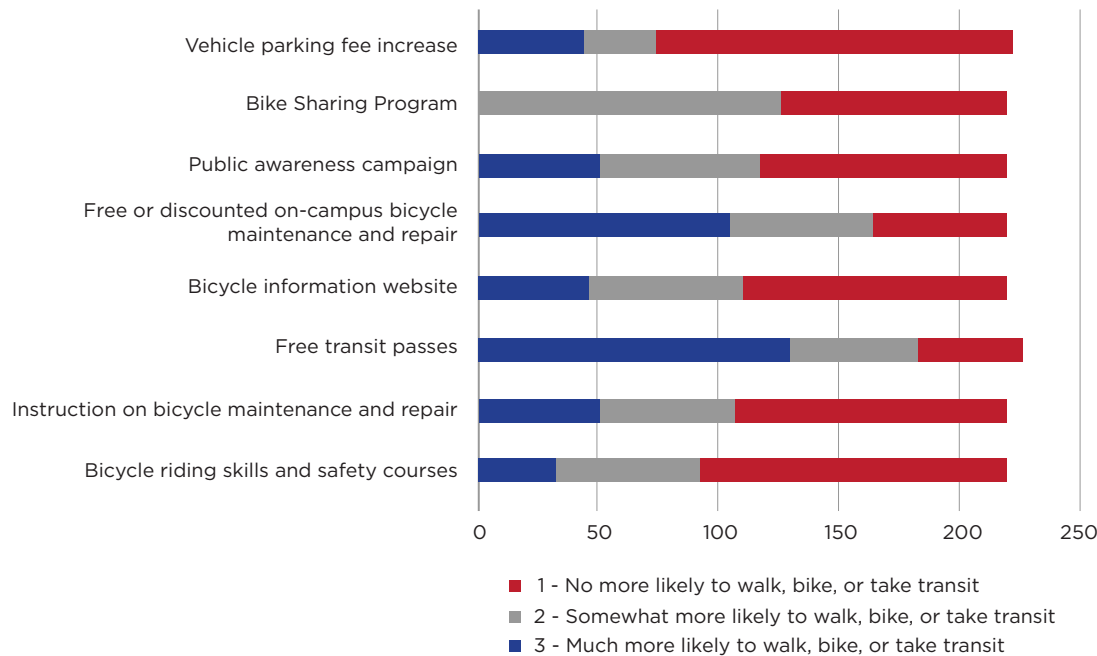


Figure 3-5: Ranking of education and encouragement programs to increase walking, biking, or transit use

### 3.3. WORKSHOPS

On March 26, 2015, a public workshop was held in the Henry Madden Library from 6:00 to 8:00 p.m. The objective of the workshop was to give an overview of the types of recommendations that could potentially be included in the plan and to gather more feedback on what the community hoped to see the campus look like in the future. Fifteen people were in attendance. At the workshop, a short presentation was given before attendees were asked to place stickers on boards showing various infrastructure and programmatic recommendations as a means to vote for their favorite suggestions. Other boards and an enlarged map of campus allowed attendees to write their suggestions and note problem areas. In addition, copies of the paper survey were given to the attendees for quick feedback.

The voting boards helped to show the community's priorities for active transportation on and around campus.

The top five infrastructure suggestions were:

- 1 **Separated Bikeways (“Cycle Tracks”)** (20 stickers)
- 2 **Intersection Improvements for Pedestrians** (16 stickers)
- 3 **Bike-Friendly Intersections** (14 stickers)
- 4 **Improved ADA Access** (13 stickers)
- 5 **(TIE) Shared-Use Paths Along Roadways and Separate Shared-Use Paths** (9 stickers)

The top four preferred program suggestions were:

- 1 **Bicycle/Pedestrian Safety Campaign** (14 stickers)
- 2 **Employer-Based Encouragement** (12 stickers)
- 3 **Car-Free Street Events** (12 stickers)
- 4 **Outdoor Public Art** (11 stickers)

These favored infrastructure and program suggestions were used to create the list of recommendations in **Chapter 5 - Recommendations** as well as the Plan Vision Statement.



Figure 3-6: Plan workshop discussions

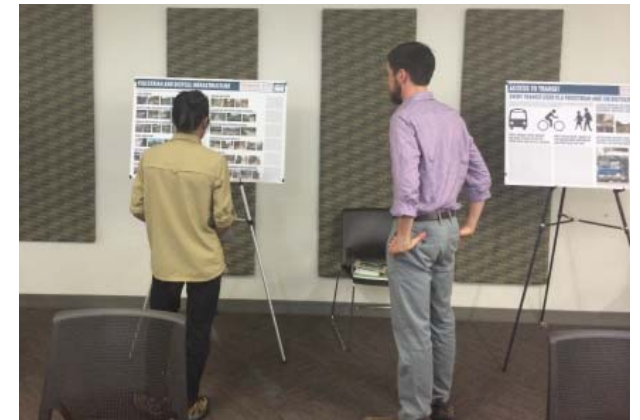


Figure 3-7: Plan workshop boards

### 3.4. VISION STATEMENT

Based on community feedback, a vision was developed which defines the goals for the future of mobility on and around the Fresno State campus. This Vision Statement was also highlighted in **Chapter 1 – Campus Snapshot**.

*California State University, Fresno is firmly committed to becoming a leader in active transportation by setting policy, developing programs, and implementing infrastructure to support and safely accommodate a variety of transportation choices to and through campus. This ensures mobility and accessibility for all Fresno State students, faculty, staff, visitors, and vendors. By accommodating and encouraging all transportation modes, Fresno State will be a more fiscally and environmentally sustainable campus and a leader for active and healthy transportation in the Central Valley.*



Figure 3-8: Fresno State students between classes





## 4. OPPORTUNITIES AND CONSTRAINTS

This chapter outlines some of the opportunities and constraints for developing a well-integrated network of active transport modes such as shared-use paths on the Fresno State campus. Opportunities are considered those elements that offer the potential to improve active transportation conditions on campus, for instance a wide road which could include bike

lanes without the removal of parking or a travel lane. Constraints are elements that present a challenge that will need to be overcome in order to improve active transportation conditions on campus. An example is a busy intersection along a key roadway with challenging conditions where no simple solution is immediately apparent.

### 4.1. CONTEXT

#### 4.1.1 TYPES OF BICYCLISTS

It is crucial in the public outreach process to solicit input from all types of bicyclists (or potential bicyclists) in order to plan a network that maximizes potential. **Figure 4-1** shows a classification system that is based on numerous surveys, focus groups, and real-life experience in one of the nation's most bicycle friendly cities showing typical American attitudes toward cycling.

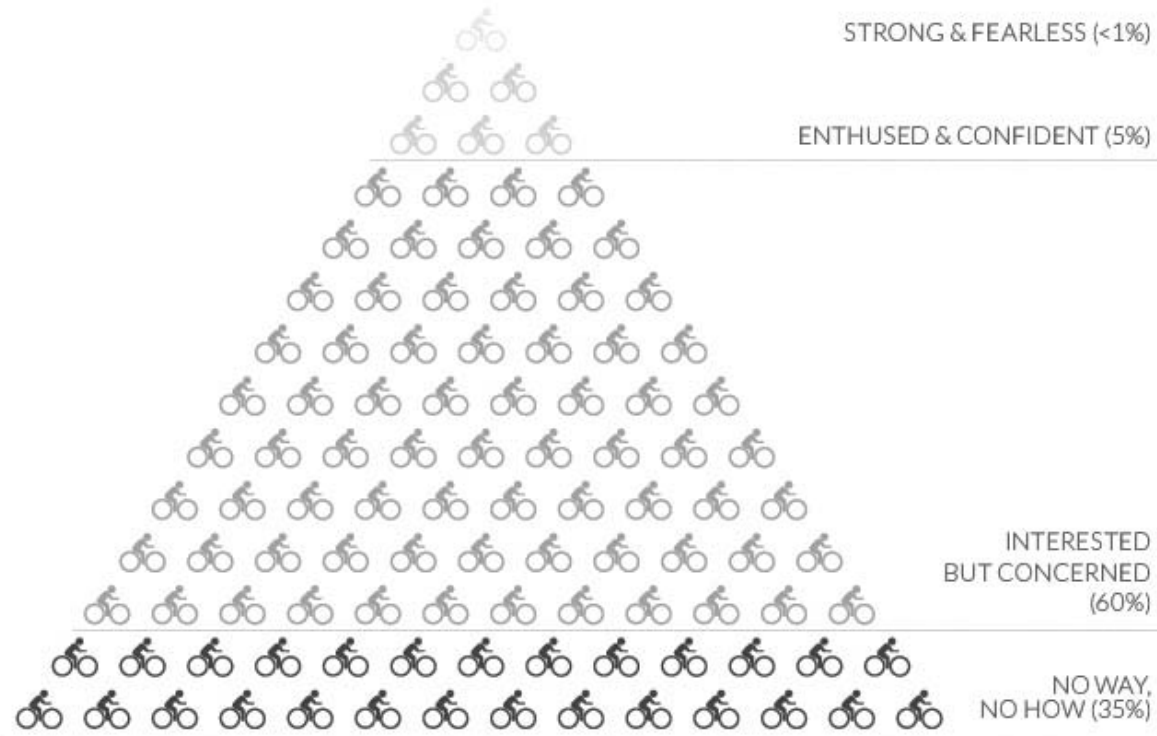


Figure 4-1: Typical American attitudes toward cycling

As illustrated, less than one percent of Americans are *Strong and Fearless* and will ride anywhere regardless of roadway conditions, weather, or the availability of bicycle facilities. The *strong and fearless* can ride at assertive speeds, prefer direct routes, and will typically choose roadway connections – including those shared with vehicles – over separate bikeway facilities such as bicycle paths. This group will be less affected by this plan than the others.

Approximately five to nine percent of Americans fall under the category of *Enthused and Confident bicyclists* who respond very quickly when bikeways, including bike lanes, low traffic streets, or multi-use pathways are provided. They will deviate from a more direct route in favor of a preferred facility type. This group includes commuters, recreationalists, racers, and utilitarian bicyclists.

Approximately 60 percent of the population can be categorized as *Interested but Concerned* and represents those who do not currently ride a bicycle regularly in large part due to perceived safety risks from riding with traffic. These individuals will only ride if excellent bikeway facilities are provided, along with route finding assistance and encouragement/education programs. This Plan will affect the *Interested but Concerned* group the most, as it will recommend the facilities and programs that should encourage them to ride or ride more often.

The remaining 30 percent of Americans are not interested in bicycling. They are referred to in

the diagram as *No Way, No How*. Some people in this group may eventually consider bicycling and may progress to one of the user types above.

#### 4.1.2 FIELD REVIEW

The project team conducted a field review on March 26, 2015. The project team found that, due to the relatively level terrain and plentiful shade, Fresno State has a high potential to become a more active and vibrant campus and eventually become a leader in active transportation in the Central Valley. However, many locations around campus were found to be discontinuous for wheeled transportation and unpleasant for pedestrians. The opportunities and possible constraints for success are listed below and will be included in **Chapter 5 – Recommendations**.

#### 4.2. OPPORTUNITIES

One of the primary opportunities for making a more active transportation-friendly campus is the existing geography of the campus and the adjacent neighborhoods of the City of Fresno. The entire campus area and surrounding streets are almost entirely flat. This ensures bicyclists, skateboarders, and others can reach any destination with relatively minimal physical effort, minimizing the need for an expensive specialty bike.

Although Fresno State campus is relatively flat, the climate in the Central Valley is generally considered too hot to spend long periods of



*Figure 4-2: Flat terrain and ample shade provide a more comfortable environment for active transportation users*

time outside in the summer months. This can be alleviated somewhat by installing plenty of shade trees around campus pathways and bicycle parking areas to create comfortable microclimates. While the summer months can be hot, many of the days during the school year have ideal temperatures. In addition even

on the hottest day in Fresno the temperatures in the morning hours are not as hot on the way to campus. **Table 4-1**, reproduced from the City of Fresno Bicycle, Pedestrian, & Trails Master Plan (2010), shows the average monthly temperatures and rainfall for Fresno.

**Table 4-1: Fresno Monthly Weather Averages**

Month	Average Low (°F)	Average High (°F)	Average Precipitation (inches)
January	39	55	2.20
February	42	62	2.06
March	46	68	2.02
April	50	75	0.90
May	56	85	0.41
June	62	92	0.24
July	67	98	0
August	66	97	0
September	61	90	0.20
October	52	79	0.60
November	44	65	1.03
December	38	55	1.57
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>11.23</b>

Source: MSN Weather, 2010

There are a number of opportunities to improve connectivity in the traditional grid pattern of the north-south and east-west roadway directions. This pattern can make connectivity to and from campus easier to transition with the right treatment design. Barstow Avenue, Chestnut Avenue—Shaw Avenue, and Cedar Avenue, the streets immediately surrounding the main campus—are wide enough to stripe a standard, on-street bike lane without impacting curb-side parking or drop-off locations. Barstow Avenue is owned and maintained by Fresno State so any upgrades would not need to go through the City of Fresno permitting process.

The intersection of Cedar Avenue and Bulldog Lane provides an opportunity for an increase in pedestrian safety and compliance at a key gateway to the central campus from the Athletic Complex and residential neighborhoods to the west. Until recently, the T-intersection had restricted pedestrian access when crossing Cedar Avenue on the south side, so pedestrians who live in the complex on the southwest side of the intersection were required to cross Bulldog Lane then Cedar Avenue on the north side to get to campus, a two-step process with high levels of pedestrian infractions (i.e., not using the designated crosswalks). As a result

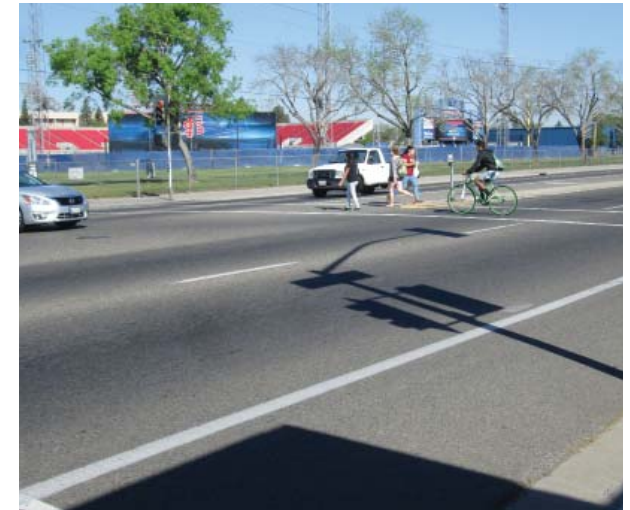


Figure 4-3: A vehicle waits to turn left while students travel through the intersection of Cedar Avenue and Bulldog Lane

of initial outreach and site visits for this Plan, the intersection and traffic signalization were reconfigured in August 2015 to include an all-way pedestrian “scramble” phase with diagonal pedestrian crossing allowed and motorized vehicle movement prohibited.

Another key opportunity lies with the multiple sidewalk/pathways throughout campus that currently lack curb cuts to incorporate wheeled and ADA access. Rather than constructing all new sidewalks and pathways, Fresno State could cut the curbs at intersections or construct raised crosswalks to allow for travelers of all modes to access campus

buildings and other destinations. **Figure 4-4** shows one such location.

Another opportunity Fresno State could pursue is a collaboration with FAX to create a transit hub on N. Maple Avenue by University High School. The roadway currently ends with a circular design to encourage pickups and drop-offs and could easily accommodate FAX buses. A well-designed transit area combined with a free Fresno State bus service program could encourage more students to use transit instead of driving. This could lead to more transit users and inspire FAX to shorten headway times for the bus lines which serve Fresno State. The June 2015 Fresno Area Express report “Short Range Transit Plan” lists projects that have been identified for implementation once funding levels to FAX are restored. One such project



*Figure 4-4: Students must step up onto sidewalks at several campus locations, limiting ADA access*

is to “develop an on campus transit center at Fresno State,” which aligns with this Plan.

An additional opportunity for Fresno State to encourage more active transportation is currently a constraint for bicycle riders: bicycle parking. There are many places on campus with bicycle parking available (see **Figure 4-5**), but the bike racks tend to be inadequate, broken, or non-existent in some places. With the large amount of space around each Fresno State campus building, there is a major opportunity to install effective and durable bike racks as close to building entrances as possible to encourage more bicycle riders to and through campus.

The campus core at the intersection of the Library and University Student Union offers a major opportunity for better active travel

through the heart of campus. In Spring 2015, Fresno State declared their intentions to implement several changes to the campus core which would encourage those “wheeled” travelers using skateboards or scooters to slow down or disembark while moving through the space. Recommended improvements included adding benches around the trees in the center of the core area to decrease travel space, adding and reconfiguring existing bollards on most entrance paths to the intersection, and reconfiguring the sidewalk south of the University Center to offer faster moving travelers a separate facility so they are not forced to use the congested campus core intersection to travel east/west across campus.



*Figure 4-5: Well-utilized bicycle parking spaces by the Library*

Another major opportunity for the Fresno State campus reinforces recommendations from the 2008 Fresno State Campus Master Plan: closing sections of San Ramon Avenue and Keats Avenue to automobile traffic. The 2008 Plan called for the closure of San Ramon Avenue to automobile traffic and associated parking to “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” (page 72). This Active Transportation Plan further recommends that the University close the portion of San Ramon Avenue between the P6 and P17 parking lots north of the Satellite Student Union. In addition, this Plan recommends the closing of Keats Avenue between Jackson Avenue and Maple Avenue to automobile traffic to provide better connectivity between the Education building on the south side of Keats Avenue to the rest of the central campus. Closing these roadways to automobile traffic will also reduce conflicts between motorized and non-motorized travel modes on campus and thus increase the safety of the campus community as they travel around campus.



*Figure 4-6: San Ramon Avenue north of the Agricultural Sciences Building*



*Figure 4-7: The San Ramon Avenue Path ends abruptly at the P17 parking lot*

### 4.3. CONSTRAINTS

One constraint to a more active campus community is the current lack of dedicated facilities for bicyclists in the surrounding neighborhoods. For instance, Shaw Avenue is a seven lane roadway, 102 feet across, with a posted speed limit of 40 mph. This auto-oriented roadway can be daunting for any type of cyclist, but acts as the main east-west connector in central Fresno. Without dedicated bicycle lanes to campus, interested but concerned cyclists will continue to drive to and around campus. Shaw Avenue is a roadway designed for peak periods, while the remainder of the day it has excess capacity

for motorists. This creates safety, mobility, and access challenges for pedestrians, bicyclists, and transit users trying to cross or move along the street.

The most prevalent constraint to increasing active transportation on campus is the current campus mentality about commuting to class. As shown in **Chapter 3 - Campus Engagement and Vision**, the majority of students drive motorized vehicles to campus. With relatively low parking costs compared to other universities and a plethora of parking spaces to choose from, students and employees are not fully encouraged to choose other forms of transportation over driving. As the main core

of the campus becomes closed off to vehicle traffic and the campus grows, parking lots could be repurposed or more robust Travel Demand Management programs could be implemented to reduce the convenience of driving to school.

Another constraint to higher levels of students choosing to walk to campus are some unfriendly or unsafe environments for pedestrians, including the extremely tall wall between the tennis courts and sidewalk on Cedar Avenue between Bulldog Lane and Shaw Avenue. The wall is unadorned and has broken glass and debris in the insets which can make walking next to it unpleasant and/or scary. See **Figure 4-8**.



Figure 4-8: Woman walking next to wall on Cedar Avenue



Figure 4-9: Example of a designated pedestrian path through a parking lot

Parking lot configuration is another constraint to safe active transport on the Fresno State campus. As seen in the collision maps in **Chapter 2 - Existing Conditions**, some of the collisions involving a bicycle or pedestrian on campus occur in parking lots where pedestrians and bicyclists use the lots as a direct route to campus. This condition creates a lot of friction and safety issues for pedestrians, bicyclists, and motorists trying to navigate the parking lots, which results in safety conflicts where drivers who are not expecting to see a pedestrian or bicyclist are less cautious.



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## 5. RECOMMENDATIONS

Through fieldwork and public feedback, a list of recommendations for the Fresno State campus and surrounding area was developed. All of the recommendations incorporate at least one of the “six E’s”: Education, Encouragement, Engineering, Equity, Enforcement, and Evaluation.

### 5.1. POLICY RECOMMENDATIONS

Policy recommendations are the foundation for many other improvements, including new facilities. These set standards and methods by which the campus follows for daily operations, design, implementation, and enforcement.

**Table 5-1** on the following page shows the recommended policies to help the Fresno State community to become more active.

### 5.2. ENGINEERING RECOMMENDATIONS

This section presents the recommended improvements for the Fresno State campus and areas immediately surrounding the campus that are under the authority of adjacent jurisdictions (within a one-mile radius of the central Fresno State campus). The University should coordinate with the relevant agencies to implement recommended facilities that are partially or fully outside of the campus boundaries. Recommendations are organized into bicycle, pedestrian, and transit user facilities.

**Table 5-1: Active Transportation Policy Recommendations for Fresno State**

Recommendation	Description / Rationale	Supporting Agencies	Implementation Time Frame
Adopt this Active Transportation Plan	Provides a framework and roadmap for active transportation improvements and indicates Fresno State’s commitment to support the implementation of active transportation facilities and programs on and around campus.	<ul style="list-style-type: none"> <li>● Fresno State</li> <li>● City of Fresno</li> <li>● FAX</li> </ul>	Short
Active Transportation Planner/ Program Coordinator	Assign a staff person to monitor this Plan and create an active transportation planning position when there is a critical need for a new hire to accommodate the demands of the position.	<ul style="list-style-type: none"> <li>● Fresno State</li> </ul>	Short
Seek campus representation on the City of Fresno Bicycle Pedestrian Advisory Committee	Gives the Fresno State community a voice as to what happens regarding bicycle and pedestrian projects and programs around the city. Previously, Fresno State did have a staff person appointed by the Mayor.	<ul style="list-style-type: none"> <li>● Fresno State</li> <li>● City of Fresno</li> </ul>	Short - assign a responsible current staff member
Create and adopt a bicycle parking policy	Creates a uniform standard for effective bicycle parking across campus.	<ul style="list-style-type: none"> <li>● Fresno State</li> </ul>	Medium - hire an active transportation planner
Explore a “Guaranteed Ride Home” policy for those who register their bikes	Allows those who make smart transportation decisions an alternative means to get home in the case of an emergency.	<ul style="list-style-type: none"> <li>● Fresno State</li> <li>● FAX</li> </ul>	Medium
Offer free parking passes (i.e., 10 per semester) to students, faculty, and staff who regularly travel to campus via active transportation modes and do not purchase a semester parking pass	Incentivizes commuters who make smart transportation choices while understanding that commuting by bicycle is not always the most convenient option.	<ul style="list-style-type: none"> <li>● Fresno State</li> </ul>	Medium
Incorporate recommendations of this Plan into other area plans such as the Fresno General Plan or FAX Long-Range Plan	This will aid in funding and feasibility/design studies for the recommendations.	<ul style="list-style-type: none"> <li>● City of Fresno</li> <li>● FAX</li> <li>● County of Fresno</li> </ul>	Medium
Establish a budget for active transportation planning, implementation, and programming	Shows Fresno State’s commitment to active transportation and the policies and projects in this Plan in more detail	<ul style="list-style-type: none"> <li>● Fresno State</li> </ul>	Short
Create policies for new buildings to identify access and mobility from parking lots, paths, and adjacent buildings	Streamlines new building access decision-making and design	<ul style="list-style-type: none"> <li>● Fresno State</li> </ul>	Ongoing
Establish a Campus Active Transportation & Accessibility Advisory Committee	Endorses Fresno State’s commitment to all modes of transportation	<ul style="list-style-type: none"> <li>● Fresno State</li> </ul>	Medium
Reevaluate parking policies and fare	Incentivizes commuters to reconsider driving alone to campus	<ul style="list-style-type: none"> <li>● Fresno State</li> </ul>	Medium

### 5.2.1 RECOMMENDED BIKEWAY FACILITIES

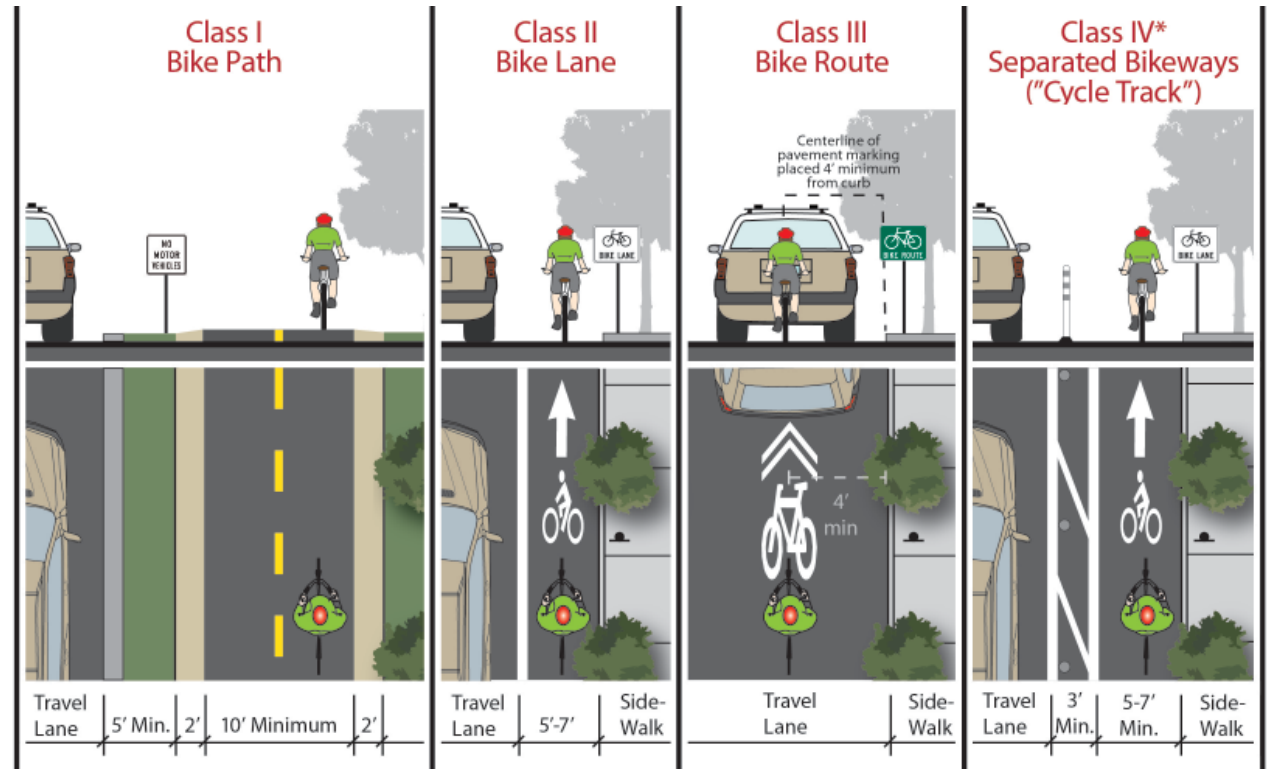
Recommended bicycle transportation facilities are discussed below and include off-street shared-use paths, striped on-street bike lanes, buffered bike lanes, separated bikeways,<sup>1</sup> bike routes (including shared lane markings, or “sharrows”), neighborhood friendly corridors, and bikeways with colored pavement materials. A visual overview of several common bikeway facility types can be seen in **Figure 5-1**. **Table 5-2** displays the total recommended mileage of each bikeway facility type, separated by whether they are on-campus or off-campus. **Figure 5-2** shows the existing and recommended bikeway facilities on and immediately surrounding the Fresno State campus. **Table D-1 and D-2 in Appendix D** list the recommended bikeway facilities identified

in this Plan for on- and off-campus locations, respectively. Please note that project IDs were assigned based on location, and in no way

indicate level of priority. Project priority is listed in **Chapter 6 – Implementation**.

**Table 5-2: Mileage of Recommended Bikeway Facilities**

Facility Type	Proposed Bikeways (Miles)	
	On-Campus	Off-Campus
Class I Shared-Use Path	6.4	0.0
Class II Bike Lanes	0.6	5.8
Class III Bike Route	1.4	3.7
Class IV Separated Bikeways	0.4	0.0
<b>Total</b>	<b>8.8</b>	<b>9.5</b>



\*Standards not yet determined by Caltrans as of October 2015

Figure 5-1: Overview of bikeway facility classes

1. On-street separated bikeways can be substituted for conventional or buffered bike lanes where street width is available.

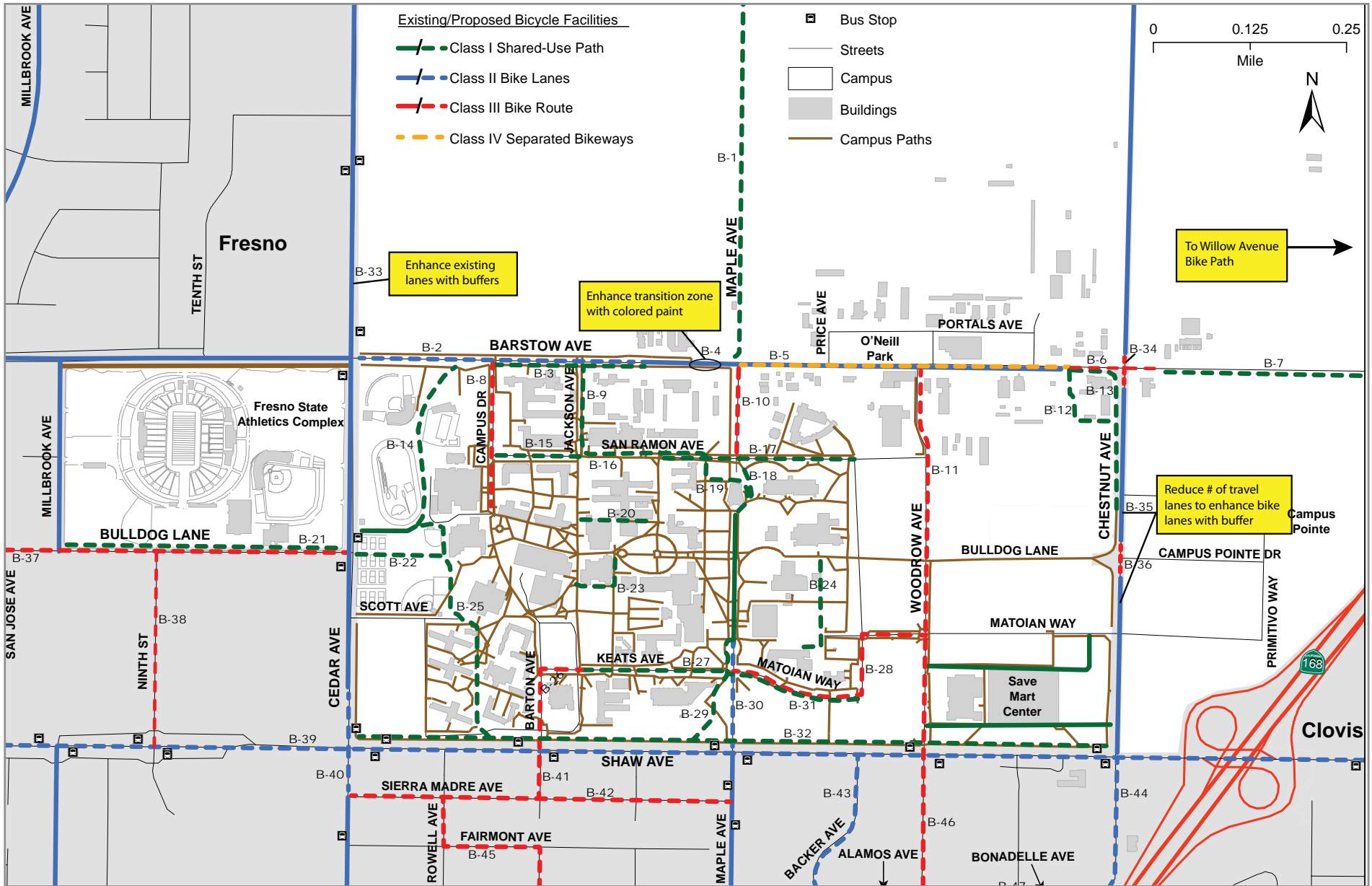


Figure 5-2: Existing and Proposed Bikeway Facilities

### Shared-Use Paths

Class I shared-use paths are paved facilities used by bicyclists, pedestrians, and those using other non-motorized modes of transportation. These facilities can be constructed in roadway right-of-way or can have exclusive right-of-way off-street. Shared-use paths are generally slower moving than bicycle paths and other facility types because they are shared among a variety of users.

### On-Street Painted Bike Lanes

Class II bike lanes are striped and signed on-street travel lanes exclusively for bicycles. Bike lanes provide physical separation from automobile traffic and appeal to bicyclists with moderate to high levels of experience. Because they often provide the most direct connections, these facilities tend to be most popular with experienced bicycle commuters.

### Buffered Bike Lanes

Buffered bike lanes are a type of bike lane with a striped or paver delineated buffer between the bicycle path of travel and either the motor vehicle path of travel, a parking lane, or both (**Figure 5-3**). Buffers between the bicycle and motor vehicle path of travel are useful for high-speed, high-volume arterials or collectors, while buffers between the bicycle path of travel and a parking lane are appropriate for areas with high parking turnover that put bicycle riders at risk of riding in the door zone. A buffered bike lane can encourage bicycle riders with less

confidence to ride more often as it provides an increased level of safety that standard bike lanes do not offer. Streets where buffered bike lanes are recommended may require travel lanes to be narrowed to ten feet in some locations or the removal of parking or a travel lane.

### Bike Routes

Class III bike routes share the right-of-way between vehicles and bicyclists and utilize signage and optional shared lane markings to indicate that the road is a shared use facility. These facilities are typically recommended for streets with relatively low traffic speeds (25 mph or less) and lower volumes (<3,000 ADT) such that less experienced bicyclists will feel comfortable bicycling with mixed traffic.

In order to better highlight the presence of bicyclists to motorists, bike routes could potentially be supplemented with shared lane markings or green-backed sharrows. These pavement markings help to make less experienced riders more comfortable on the road.

### Neighborhood Friendly Corridors

A neighborhood friendly corridor is a Class III bike route on a local or neighborhood street that prioritizes pedestrians, neighborhood traffic, and bicycle riders, and discourages cut-through traffic (**Figure 5-4**). Neighborhood friendly corridors include a wide range of treatment options including the following:



Figure 5-3: Buffered bike lane in Los Angeles



Figure 5-4: Neighborhood Friendly Corridors

- Wayfinding signage
- Pavement markings
- Speed reduction measures (bulb-outs, traffic circles, diverters, chicanes, speed humps)
- Tree canopy
- Traffic volume reduction measures
- High-visibility pedestrian crosswalks
- Bicycle detectors at intersections
- Bicycle crossing signals
- Pedestrian countdown signals

Neighborhood friendly corridors are effective in encouraging the interested *but* concerned to ride more often since they provide a comfortable bicycling environment for most ability levels.

### On-Street Separated Bikeways

A Class IV separated bikeway is an exclusive bicycle facility combining the user experience of a separated path with the on-street infrastructure of a conventional bike lane (**Figure 5-5**). Separated bikeways may provide increased comfort for bicyclists and greater clarity about expected behavior on the part of cyclists and motorists. Separated bikeways may take many forms, but share common elements. Separated bikeways provide space that is intended to be exclusively or primarily for bicycle riders and are separated from vehicle travel lanes, parking lanes, and sidewalks which



Figure 5-5: Separated Bikeway in Long Beach, CA

can reduce conflicts between roadway users. Separated bikeways can be either one-way or two-way, on one or both sides of a street, and separated from vehicles and pedestrians by pavement markings or coloring, bollards, curbs/medians, planter boxes, or a combination of these elements. The appropriate design treatment will depend on corridor- and site-specific conditions.

### Colored Pavement Materials

Colored pavement materials in conjunction with bikeway facilities has been used throughout the U.S. either along the entire bikeway facility



Figure 5-6: Green bike lane in Philadelphia, PA

(**Figure 5-6**), in conflict zones, or beneath bike/arrow stencils. The color highlights the presence of bicyclists to motorists and increases awareness where there is a mixing of modes. One increasingly common use of colored pavement materials is to install dashed color markings at conflict zones to draw attention to the locations where motorists may cross paths with bicyclists. Green-backed shared lane markings are recommended on corridors that do not have sufficient width for a conventional bike lane and where vehicular speeds do not

## 5.2.2 BICYCLE PARKING AND SUPPORT FACILITIES

### Bike Barns

Fresno State currently has three large secure parking areas for bicycles, known as “Bike Barns” (Figure 5-8). It is recommended to build more Bike Barns around campus, to provide students and employees with more secure long-term bicycle parking facilities, with the size of each Bike Barn determined by expected demand. The following locations are identified by this Plan as potential locations for Bike Barns (also shown in Figure 5-10), but the University should continue to identify other suitable locations:

- Student Athlete Village
- Science I (north side of building)

- Music Building (southeast corner of building)

### Short-Term Bicycle Racks

Short-term bicycle racks offer quick bicycle parking for students attending classes, running short errands, or making any other trips that only require a brief stay. Examples of various effective types of short-term bicycle racks can be seen in Figure 5-7 and Figure 5-9.

Figure 5-10 shows the locations of both existing and recommended short-term bicycle parking facilities. These types of racks should be placed as close to building entrances as possible to ensure safety for the bicycle (lower rates of vandalism or theft) and achieve higher utilization rates due to convenience.



Figure 5-8: Bicycle Barn on campus



Lightning Bolt™  
or Varsity Rack™



U-Rack



Post and Loop



Figure 5-9: Short-term bicycle parking

Figure 5-7: Types of short-term bicycle racks



Figure 5-10: Existing and Proposed Support Facilities



### Bicycle Repair Kiosks

As **Figure 5-11** illustrates, bicycle repair kiosks take up minimal space, but can make riding a bicycle to and around campus substantially more convenient. These do-it-yourself “fix-it” stations are often equipped with basic tools and an air pump, but other amenities can be added at the University’s discretion. Repair kiosks are an inexpensive alternative to providing stand alone bicycle repair shops.

In addition to the three existing bicycle repair kiosks on campus, the following locations are identified by this Plan as potential locations for kiosks:

- Student Athlete Village
- Shuttle stop at southwest corner of Barstow Avenue and Campus Drive
- Southwest corner of Barstow Avenue and Maple Avenue
- O’Neill Park
- Satellite Student Union (southside)
- Music Building (southeast corner of building)

**Figure 5-10** shows the locations of existing and recommended bicycle repair kiosks on the Fresno State campus.



Figure 5-11: Bicycle repair kiosk

## Bicycle Signal Detection

A bicycle-friendly community is one where all traffic infrastructure is bicycle-compatible. Traffic signals offer an opportunity for widespread improvement to bicycle connectivity, since many traffic signals in the region are actuated by inductive-loop traffic detectors— i.e., they stay in the red phase until triggered by a motor vehicle. Since bicycles contain much less metal than motor vehicles, they often do not trigger a green phase in these situations. The result is effectively a gap in the bicycle transportation network – the traveler is forced to either cross illegally against the red light or find an alternate route. Bicycle detection at actuated traffic signals enables bicycle riders to trigger a green light - even when no motor vehicle is present – allowing for safe and legal passage.

It is recommended to work with the City of Fresno to install bicycle signal detection at all traffic signals surrounding the campus.

### 5.2.3 BIKE SHARE

Regular bicycle commuting requires some activities that not all people are interested



Figure 5-12: Bike detection marker at traffic signal

in, such as finding secure parking areas and bicycle maintenance. Bike-sharing programs can encourage people to give bicycling a try

by reducing or removing these barriers. One model of bike-sharing includes stations of bikes around a campus, city, and/or region available for checkout. Users checkout these bicycles for a specified period of time at one station for a maximum time frame and turn them back in at any other station. Other bike-sharing models have been implemented around the country, including several on college campuses. Bike-sharing programs not only increase the visibility of bicycling and reduce barriers to riding, but can create an identity for the implementing jurisdiction. The campus staff are currently underway with the Environmental Protection Agency (EPA) to conduct a Bike Share Feasibility Study for the campus.

### Red Bikes

In 2001, Fresno State rolled out a program called Red Bikes which scattered red bicycles around campus that students could use on a first-come, first-serve basis.<sup>2</sup> At the program's peak, 595 bikes were available with bicycle locks for rent along with free helmets for students. **Figure 5-13** shows some of the bicycles used for this program.

*California Assembly Bill 1581 requires all new and replacement actuated traffic signals to detect bicycle riders and to provide sufficient time for a bicycle rider to clear an intersection from a standing start. Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection. More recently, microwave detection has been used to detect and differentiate between bicycle riders and motor vehicles.*

2. [http://www.sustainability.ucsb.edu/\\_client/pdf/conference2006/pres/Transportation/Moving%20Ahead%20in%20Sustainable%20Transportation/Gary%20Beddingfield\\_Moving%20Ahead%20in%20Sustainable%20Transportation\\_Transportation%20Track.pdf](http://www.sustainability.ucsb.edu/_client/pdf/conference2006/pres/Transportation/Moving%20Ahead%20in%20Sustainable%20Transportation/Gary%20Beddingfield_Moving%20Ahead%20in%20Sustainable%20Transportation_Transportation%20Track.pdf); <http://www.fresnostatenews.com/2001/01/fresno-state-starts-new-red-bike-program-for-students/>



Figure 5-13: Fresno State Red Bike program bicycles (Source: abclocal.go.com)

The Red Bike program was not considered operationally successful so the program was canceled. However, the data and feedback collected from the program will be used alongside the *Fresno State Bike Share Planning Study* (see below) to create another program which will offer students a bicycle to use while on campus.

### Fresno State Bike Share Planning Study

Fresno State has partnered with the U.S. Environmental Protection Agency (EPA) to create a campus Bike Share Planning Study. The report will be published in Fall 2015.

### Example Campus Bike Share Programs

#### UC Irvine

UC Irvine implemented a bike share program



Figure 5-14: ZotWheels bike share station

called “ZotWheels” in 2009.<sup>3</sup> For \$40 a year, UCI students and employees can check out a cruiser-style bicycle at one of four stations on campus. Membership is built into the participant’s ID card, and the bike may be checked out for three hours before being prompted to return the bike to a station. If the bicycle is not returned on time, the membership is deactivated. **Figure 5-14** shows part of the ZotWheels checkout keypad at one of the campus stations.

#### University of Oregon

In 2015, the University of Oregon will launch a bike share program. The system will begin with four stations and 40 bikes and will also be open

to the public.

### 5.2.4 PEDESTRIAN FACILITIES

This section focuses on recommended improvements to facilitate pedestrian travel and ADA accessibility to, from, and within the Fresno State campus.

#### Signalized Crossing Enhancements

##### High-visibility Crosswalks

Crosswalks act as the right-of-way for pedestrians crossing the street. They can be marked with paint, thermoplastic, decorative pavers, and other materials to establish the area where pedestrians should cross (see **Figure 5-15**). High-visibility crosswalks help to highlight



Figure 5-15: High-visibility crosswalk design

3. [http://articles.dailypilot.com/2009-10-09/news/dpt-zotwheels101009\\_1\\_bikes-anteater-uci](http://articles.dailypilot.com/2009-10-09/news/dpt-zotwheels101009_1_bikes-anteater-uci)

4. <https://www.parking.uci.edu/zotwheels/main.cfm>

to motorists the presence of pedestrians in the intersection. Common styles of high-visibility crosswalks are zebra or continental crosswalks, which resemble a ladder. Crosswalks paved with decorative pavers can also be considered high-visibility crosswalks as the contrast between the crosswalk and the street can be effective in directing motorists' attention to pedestrians. As intersections are the most common place for collisions to occur, all of the signalized and stop sign controlled intersections around the campus could benefit from high-visibility crosswalks to better highlight pedestrian areas.

The intersection of Matoian Way and Chestnut Avenue is an example of an appropriate location for the installation of high-visibility crosswalks. This intersection currently has transverse crosswalks (two lines horizontal to the motor vehicle) on the eastern leg of the intersection, which are not as effective at directing motorists' attention to the pedestrian zone. The University will soon upgrade this intersection with Rectangular Rapid Flashing Beacons, radar speed feedback signs, and improved signage and striping. The University should monitor and evaluate the effectiveness of these treatments, and consider the appropriateness for installation elsewhere on and around campus.

#### Leading Pedestrian Intervals

A Leading Pedestrian Interval (LPI) typically gives pedestrians a 3 to 7 second head start when entering an intersection with a corresponding green signal in the same

direction of travel. LPIs enhance the visibility of pedestrians in the intersection and reinforce their right-of-way over turning vehicles, especially in locations with a history of conflict. All signalized intersections leading into campus should be upgraded to have LPIs.

The intersection of Shaw Avenue and Maple Avenue is an example of an appropriate location for the installation of LPIs. The crossing distance at this intersection ranges from 55 feet to 105 feet and there have been pedestrian injury collisions at this site in recent years. All other signalized intersections along Shaw Avenue on the perimeter of campus, as well as the intersection of Barstow Avenue and Cedar Avenue, are also appropriate candidates for LPIs.

#### Pedestrian Countdown Timers

Pedestrian countdown timers create a more predictable crossing environment and give adequate warning to pedestrians attempting to cross a roadway. All new crosswalk signals should include pedestrian signals with countdowns.

#### "Yield to Pedestrians" Signs for Right-Turning Vehicles

"Yield to Pedestrians" signs for right-turning vehicles are used to tell motorists who are executing turns that they need to yield to pedestrians in crosswalks. These signs should be installed at all signalized intersections where right turns on red (RTOR) are allowed. Installing



Figure 5-16: MUTCD R10-15 "Yield to Pedestrians" sign

"Yield to Pedestrians" signs, such as that shown in **Figure 5-16**, has the potential to reduce conflicts between pedestrians and vehicles turning right when there are high volumes of turning vehicles, high pedestrian volumes, and the presence of pedestrian signal indications.

#### Curb Extensions

Curb extensions visually and physically narrow the roadway, creating safer and shorter crossings for pedestrians (see **Figure 5-17**) while increasing the available space for street furniture, benches, plantings, and street trees. Since there is the potential for reductions in the number and severity of crashes involving motor vehicles and pedestrians, curb extensions are often used in highly urbanized environments where pedestrian volumes are high. Curb extensions can also be effective traffic calming

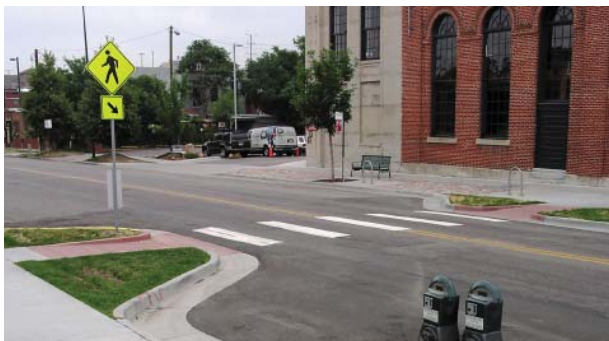


Figure 5-17: Example of a curb extension

treatments at non-signalized intersections. The intersection of San Ramon Avenue and Maple Avenue is an example of an appropriate location for curb extensions. This intersection is located on a corridor with high pedestrian volumes as it is a main entrance to campus from several large parking lots.

#### All-Way Pedestrian Scramble Phases

A pedestrian scramble is an exclusive pedestrian phase during which pedestrians are permitted to cross diagonally in all directions while vehicular movements are prohibited (see **Figure 5-18**). By separating vehicular and pedestrian movements, pedestrian scrambles strive to reduce potential conflicts between the two modes.

The intersection of Cedar Avenue and Bulldog Lane was updated in the Summer of 2015 to feature a pedestrian scramble. The T-intersection previously had restricted pedestrian access when crossing Cedar Avenue



Figure 5-18: Pedestrian scramble at the Cedar Avenue/Bulldog Lane intersection

on the south side, so pedestrians who live in the apartment complexes on the southwest side of the intersection were required to cross Bulldog Lane then Cedar Avenue on the north side to get to campus – a two-step process with high levels of pedestrian infraction. The City of Fresno redesigned the existing traffic signal at this intersection to incorporate a protected vehicular left-turn signal from northbound Cedar Avenue to Bulldog Lane, and the all-way pedestrian scramble phase was added into the new design. However, the City should extend the painted diagonal crosswalks across the entire intersection and realign them to connect with existing curb ramps. The University should work with the City of Fresno to identify other potential locations for pedestrian scramble treatments, such as the intersection of Shaw Avenue and Maple Avenue.

#### **Non-Signalized Crossing Enhancements**

##### Raised Intersections



Figure 5-19: Raised intersection in Indiana

Raised intersections as shown in **Figure 5-19** are flush with the sidewalk and ensure that drivers traverse the crossing slowly. Similar to speed humps and other vertical speed control elements, they reinforce slow speeds and encourage motorists to yield to pedestrians at the crosswalk. They are often installed with decorative pavers so that motorists are more aware of the intersection and can detect that it is a pedestrian zone.

Potential locations for a raised intersection is Campus Avenue and Barstow Avenue and/or Barstow Avenue and Jackson Avenue. These are key pedestrian gateways to campus and a high volume of people use these intersections.

##### Raised Crosswalks

Raised crosswalks are elevated pedestrian crossings that extend the sidewalk across the street. They increase visibility, yielding behavior, and create a safer pedestrian crossing environment especially for persons with

disabilities.

Potential locations for a raised intersection is at Barstow Avenue and Maple Avenue. This is another key gateway to campus, and has high volumes of people using the intersection due to the parking lots on the north side of Barstow Avenue.

Advance Yield Markings

Advance yield markings are placed on the roadway in advance of the crosswalk to increase the rate at which motorists yield to pedestrians and allow pedestrians to complete a safe crossing.<sup>15</sup> They can be particularly helpful on multilane roads, as shown in **Figure 5-20**, to reduce the potential for a multiple threat crash, which involves a motorist in one lane yielding to allow a pedestrian to cross and the driver in the adjacent lane proceeding into the



Figure 5-20: Advance yield markings

crosswalk, thus causing a collision. Advanced yield markings are already located in the two roundabouts on Chestnut Avenue. Appropriate locations for additional advance yield markings are at uncontrolled and midblock crossings on Matoian Way between Parking Lot 4 and Lot 1 and between Lot 5 and Lot 2 at the Save Mart Center.

Pedestrian Signals

There are three potential pedestrian signals which could be utilized around campus: Pedestrian Hybrid Beacon, Pedestrian Light Controlled Crossing signals, and dual pedestrian/bicyclist crossing signals. The pedestrian hybrid beacon (**Figure 5-21**) is a beacon that stays dark until activated by a pedestrian, after which the overhanging lights will flash yellow. The overhanging lights then turn solid yellow followed by solid red, at which point pedestrians are shown a walk indication. To transition back to automobile right-of-way, the beacons flash red towards the primary street and show a flashing “DON’T WALK” sign to the pedestrians with a countdown.

Pedestrian Light Controlled Crossings (**Figure 5-22**) use signals to control vehicular traffic at mid-block crosswalks by allowing a pedestrian to push a button to give approaching motorists a red light. At that point, the pedestrian signal shifts from a “red man standing” to a “green man walking” to inform pedestrians that they



Figure 5-21: Pedestrian Hybrid Beacon



Figure 5-22: Pedestrian Light Controlled Crossing



Figure 5-23: Dual pedestrian/bicyclist, or “toucan”, crossing signal

5. At controlled intersections, advance yield markings should be placed between four and 30 feet back from the intersection. At uncontrolled intersections, they should be placed 20 to 50 feet in advance of the crosswalk.

can cross the street.

Dual pedestrian/bicyclist crossing signals (**Figure 5-23**), sometimes called “toucan crossings”, are a third type of signal. There is a designated area for bicyclists and a designated area for pedestrians; both activate the light by pushing a button. These signals can also improve bicycle and pedestrian transportation by reducing cut-through traffic and vehicle volumes on highly traveled bicycle/pedestrian routes as the median limits the number of turning movements onto a road that motorists can make.

#### Rectangular Rapid Flashing Beacons

Rectangular Rapid Flash Beacons (RRFB) are active warning beacons with user-actuated amber flashing lights that supplement warning signs at unsignalized intersections or mid-block crosswalks. Beacons can be actuated



Figure 5-24: Rectangular rapid flashing beacons

either manually by a push-button or passively through detection. RRFBs use an irregular flash pattern similar to emergency flashers on police vehicles (as seen in **Figure 5-24**). The University is planning to install RRFBs at pedestrian crossings along Chestnut Avenue, in addition to adding a radar speed response sign and bringing signage and striping up to current standards.

#### Sidewalks

Sidewalks are crucial in providing access to key destinations, especially for persons with disabilities. As shown in **Figure 5-25**, Scott Avenue south of the tennis courts, a major campus entrance, lacks adequate pedestrian facilities; the north side of Scott Avenue is missing sidewalk and the south side has inadequate space between the curb line and the fence. The public identified this location as an important part of the pedestrian network



Figure 5-25: Lack of sidewalk along Scott Avenue

and this plan recommends the installation of a sidewalk along that roadway.

#### Parking Lot Walkways

After drivers leave their cars in parking lots, they become pedestrians as they travel to class or work, as shown in **Figure 5-26**. Providing visible walkways through the larger parking lots will cue drivers to expect pedestrians and will encourage pedestrians to stay visible within these pathways. This can reduce the risk of collision within parking lots.

#### Streetscape Improvements

Though the engineering improvements discussed in previous sections are critical in improving safety of pedestrians, they are not guaranteed to increase mode share of walking. Treatments to enhance the pedestrian environment will help to increase the numbers of people walking by creating a more attractive



Figure 5-26: Pedestrians walking through a campus parking lot

and comfortable pedestrian environment. The wall between the tennis courts and Cedar Avenue and the north side of the Satellite Student Union in particular would benefit from streetscape improvements. These improvements include, but are not limited to, the following:

- Pedestrian scale lighting
- Street trees and canopies
- Public seating and benches
- Public art
- Improved transit stops

Many of these improvements can be incorporated into larger improvements projects such as pathway upgrades. This Plan recommends to integrate these streetscape improvements into the planned or recommended projects listed in this Plan or otherwise.






Figure 5-27: Example of recycled plastic outdoor bench (Jameson Bench by Belson Outdoors)

**Table 5-3: Typical Curb Ramp Conditions On Campus and Recommended Updates**

Image	Issue	Recommended Update
	No ADA access ramp	Cut an ADA compliant curb into edge of sidewalk to roadway
	Curb cut directs users into roadway in order to cross driveway or other grade separated area	Cut curb even to crosswalk (not at an angle)
	Curb cut directs users into roadway in order to cross driveway or other grade separated area	Cut curb even to crosswalk (not at an angle)



**Table 5-4: Typical Crosswalk Conditions On Campus and Recommended Updates**

Image	Issue	Recommended Update
	<p>No painted crosswalk connecting the sidewalks</p>	<p>Paint a high-visibility continental-style crosswalk between the two curb ramps</p>
	<p>Stop sign is located beyond crosswalk</p>	<p>Move the stop sign or the crosswalk to place the stop sign before the crosswalk</p>
	<p>Crosswalk paint does not align with curb cuts</p>	<p>Expand crosswalk paint to span both curb cuts at a crosswalk</p>

Curb Ramps

Across campus, curb ramps and curb cuts are placed for ADA, bicycle, skateboard, and scooter access. However, in many places, the curb ramps are angled in such a way that it can be deemed unsafe for those using the space. It is recommended to update the following curb cuts and curb ramps to improve access for all users. **Table 5-3** shows examples of the types of curb ramps on campus and recommended ways to update them.

High-visibility Continental-Style Crosswalks

Crosswalks help pedestrians and non-motorized users navigate roadways to and through campus. In several locations, however, crosswalks are in correctly placed or designed as to create an unsafe environment for all roadway users. **Table 5-4** shows typical crosswalk conditions on campus.



Figure 5-28: High-visibility continental-style crosswalk

Map and Table of Recommended Pedestrian Improvements

Pedestrian improvements recommended for the Fresno State campus and its immediate surroundings are identified in **Figure 5-31** and **Table D-3 in Appendix D**. In total, 25 potential crosswalk and curb ramp improvements are identified on the campus, and nearly two miles of new sidewalks are proposed for the campus. Estimated costs for these recommended facilities are provided in **Chapter 6 - Implementation**. Additionally, **Table D-4** lists recommended off-campus pedestrian improvements which would improve the pedestrian experience when traveling to and from campus. Estimated costs for all of these recommended facilities are provided in **Chapter 6 - Implementation**.

**5.2.5 SKATE/OTHER-WHEELED FACILITY RECOMMENDATIONS**

**Skateboard/Scooter Parking**

There are six parking towers for skateboards and scooters on campus (at the library, University Center, Student Recreation Center, Science II, Peters Business Building, and University High School), with plans to add more. However, the current locations of these parking towers are too far away from building entrances to be entirely useful. **Figure 5-29** shows the completely empty parking tower next to the Library, where, instead of using the parking tower, many skateboarders ride directly up to

the entrance before disembarking and walking into the Library. It is recommended to move these towers closer to building entrances (such as immediately adjacent to the doors building) in order to be more useful to riders. Additionally, it is recommended to buy a skateboard and lock it into the parking tower to show potential users the proper way to store their skateboard or scooter. The demonstration skateboard should be moved periodically to give the appearance that it is used often by a student or other person traveling by skateboard.

**5.2.6 TRANSIT FACILITIES**

**Apartment Shuttles**

Two apartment complexes currently shuttle students to and from campus. It is a well-used system wherein students do not have to pay for parking at their residences and can save money by not driving and parking on campus. **Figure 5-30** shows one such shuttle. It is recommended for Fresno State to encourage other apartment complexes that are more than one mile away from campus to implement a shuttle system or join with an existing shuttle service. In addition, shuttle stops should be added to the following locations on campus:

- Campus Pointe
- Maple Avenue Transit Hub (proposed)
- San Ramon Avenue and Maple Avenue Intersection
- Student Recreation Center



Figure 5-29: Skateboard parking tower next to the Library



Figure 5-30: Apartment complex shuttle for Fresno State students

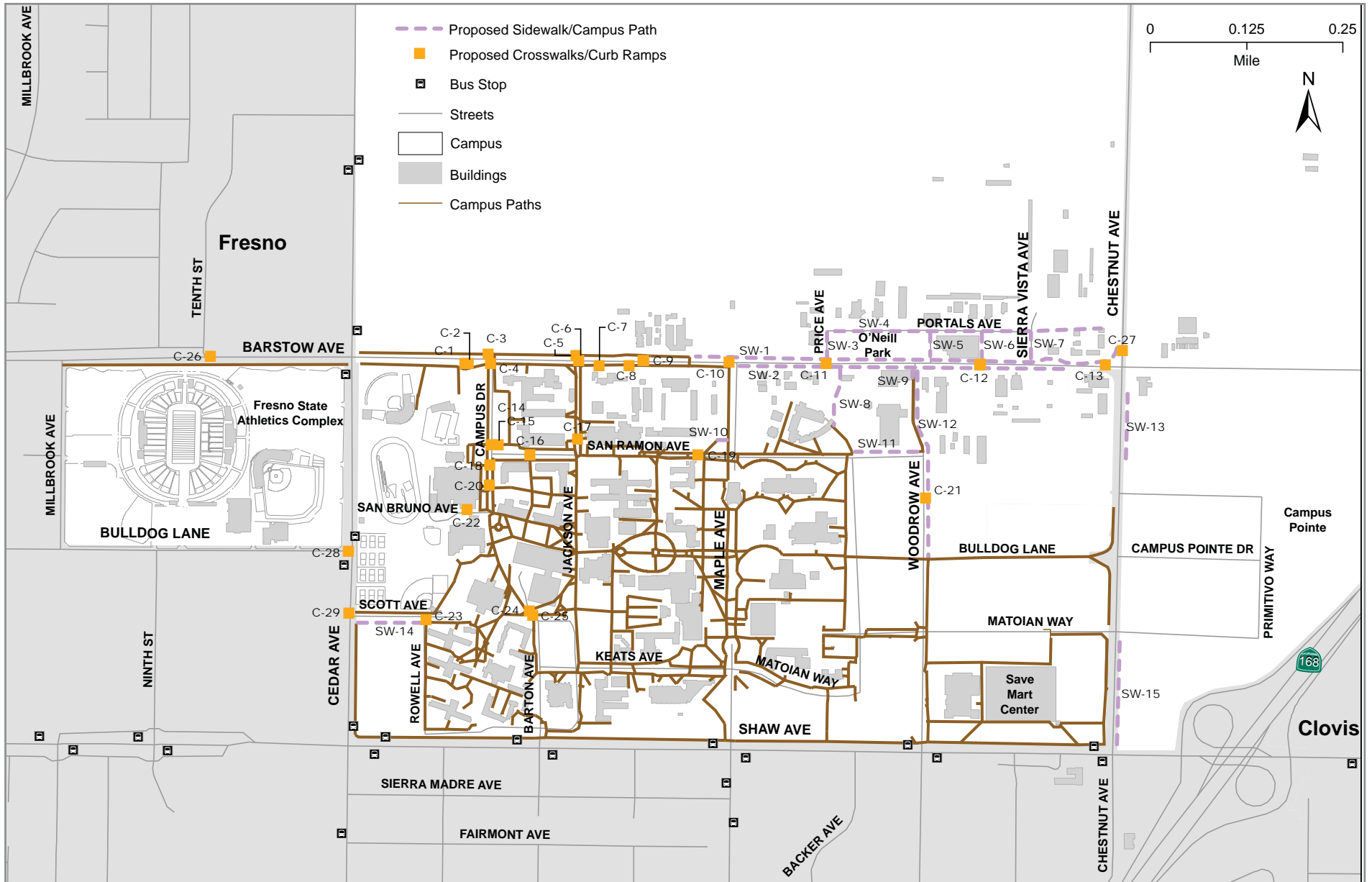


Figure 5-31: Existing and Proposed Pedestrian Facilities

### Campus Shuttle

The Fresno State Campus Master Plan recognizes the need for a circulating campus shuttle to ease those with difficulty walking or for the students who report driving between various parking lots between classes. This Plan recommends to continue pursuing the circulating shuttle program.

### Local Transit Service

Fresno Area Express (FAX) currently runs three bus lines with stops that serve the Fresno State campus: Routes 9, 28, and 38. FAX buses, as seen in **Figure 5-32**, currently hold two or three bicycles on the front of their buses. Additionally, Clovis Stageline Route 10 connects northwest Clovis to Fresno State. YARTS buses, which connect the campus with Yosemite National Park and communities in between, are currently able to carry up to two bicycles in the luggage compartment. This Plan recommends increasing the frequency of all bus service to the campus.



Figure 5-32: FAX bus

and converting the Maple Avenue drop-off loop north of Shaw Avenue into a transit hub that could serve all of the area’s transit providers (see following section).

### Maple Avenue Transit Hub

Currently, Maple Avenue off of Shaw Avenue serves as a pick-up/drop-off location for Fresno State and University High School students. By converting that area into a transit hub, combined with more frequent bus service, students, staff, faculty, and visitors could take a bus to and from campus each day. Covered structures and signage, as seen in **Figure 5-33** from UC Davis, could act as protection from the weather while waiting as well as providing an excellent gateway to campus.

Fresno COG published the Fresno Clovis Metropolitan Area Public Transportation Strategic Service Evaluation Draft Final Report in May 2015.<sup>6</sup> The report lists a mid-term strategy to implement new transit centers

across the network. In June 2015, FAX published their “Short Range Transit Plan” which also lists an “on campus transit center at Fresno State” as an identified project for implementation when funding levels to FAX are restored.<sup>7</sup> The Fresno State Plan recommendation coincides with Fresno COG’s implementation strategy and FAX’s identified project and recommends that the transit hub should be located on Maple Avenue off of Shaw Avenue.

### Fresno State Discounted Bus Service

*Short-Term Solution* – FAX and Clovis Transit service fares cost \$1.25. Currently, Fresno State students and employees are allowed to ride FAX and Clovis Transit buses for free when showing their Bulldog Card.<sup>8</sup> The University pays \$1.10 of the \$1.25 for students and employees that ride the FAX and Clovis Transit buses. If these subsidized riders swipe their ID cards frequently enough to reach the value of a monthly pass, the charged amount will max out at that monthly pass price.



Figure 5-33: Transit Hub at UC Davis

6. [http://www.fresnocog.org/sites/default/files/publications/Public\\_Transit/15\\_06\\_FCOG\\_Final\\_Report\\_-\\_Draft\\_5.pdf](http://www.fresnocog.org/sites/default/files/publications/Public_Transit/15_06_FCOG_Final_Report_-_Draft_5.pdf)

7. [http://agendas.fresnocog.org/itemAttachments/271/ITEM\\_I\\_E\\_2016-2020\\_Short\\_Range\\_Transit\\_Plan\\_-\\_FCMA.pdf](http://agendas.fresnocog.org/itemAttachments/271/ITEM_I_E_2016-2020_Short_Range_Transit_Plan_-_FCMA.pdf)

8. <http://www.fresnostate.edu/adminserv/police/transportation/commuter/faculty-staff.html>

In addition, YARTS offers commuter passes that provide a roughly 60% discount off the regular fare structure.

**Mid-Term Solution** – For a short time, FAX and Clovis Transit should offer discounted fare to match the regular senior citizen and disabled rider discount fares of 60 cents to all with a Fresno State ID.

**Long-Term Solution** – This Plan recommends that FAX and Clovis Transit offer “free” rides to those with a Fresno State ID. To help pay for this, Fresno State students and staff can choose to pay an additional annual fee (included with tuition or removed from pay checks pre-tax) and the University could pay FAX and Clovis Transit a flat amount to off-set those costs. An example system is Unitrans, the bus service for UC Davis and the surrounding community, which currently allows any student to ride a Unitrans bus for free by showing a student ID.



Figure 5-34: SJSU students receive an Eco Pass Clipper card and show their SJSU Tower ID for unlimited free rides on all Santa Clara Valley Transportation Authority (VTA) buses and light rail lines

\$18 per year is added to each student’s tuition for that benefit.<sup>9</sup>

This Plan recommends that FAX partner with Fresno State and other large employers to offer discounted six-month or annual passes at a flat negotiated rate, wherein the employer could “buy-in” for all their employees and each will receive a pass, sticker, or a flat negotiated rate to show the “free” ride (See **Figure 5-34**). As an example, the Valley Transportation Authority in Santa Clara County, California, offers “Eco Passes” to all employers in the county, residents, and those affiliated with San José State University (SJSU). Eco Pass prices are based on the number of employees/residents and the level of VTA services at a given site.<sup>10</sup> As with UC Davis, SJSU students pay into the Eco Pass program as a portion of their tuition in order to get free rides on all VTA services including bus and light rail.<sup>11</sup>

### Improve Transit Stops

Transit stops located near the Fresno State campus should be improved to provide covered shelters and trash cans (where they currently do not exist, i.e., Cedar Avenue at Bulldog Lane and Cedar Avenue at Roberts Avenue), well-maintained lighting, queuing areas for people with bikes, route maps, and benches. These improvements should allow for sufficient space to board and alight as well as provide clearance for pedestrians moving along the sidewalk. Fresno COG’s report – from the transit

hub section above – also includes bus stop improvements which would further coordinate with this Fresno State Plan.

### 5.2.7 WAYFINDING AND SIGNAGE

While the Fresno State campus has an excellent program of pedestrian-oriented wayfinding facilities, wayfinding and signage tailored to bicycle riders is needed. Examples of existing wayfinding signage on campus are seen in **Figure 5-35** and **Figure 5-36**. Wayfinding signage is recommended along paths, roads,



Figure 5-35: Wayfinding signage Kiosk at Fresno State

9. <http://unitrans.ucdavis.edu/fares/>; <http://ucdavis.edu/tuition-and-fees/>

10. <http://www.vta.org/getting-around/Fares/Eco-Pass-Pricing>

11. [http://as.sjsu.edu/asts/index.jsp?val=eco\\_overview](http://as.sjsu.edu/asts/index.jsp?val=eco_overview)



Figure 5-36: Wayfinding signage post at Fresno State

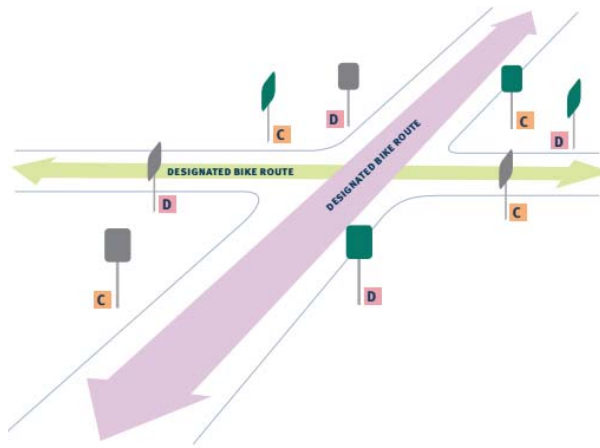


Figure 5-37: Typical bicycle wayfinding signage diagram

and intersections on and around campus to guide bicycle riders to destinations. In most situations, two wayfinding signs are recommended in each direction at an intersection (see **Figure 5-37**). These include a decision sign before the turn and a confirmation sign after the turn. In some situations, it may also be useful to add turn fingerboards to provide clarity at complex intersections, or waymarkers to highlight routes. The University should commission a comprehensive Bicycle Wayfinding Plan to identify key destinations and determine a strategy for locating signs.

### 5.2.8 OTHER MISCELLANEOUS IMPROVEMENTS

Public input and field studies helped identify a variety of locations where specialized treatments are desired to improve pedestrian, bicycle rider, and transit user accommodation, and to minimize conflicts between all travelers. Proposed improvements located outside of the Fresno State campus have been listed separately; the University should coordinate with the appropriate agency to implement these projects.

**Figure 5-38, Table 5-5, and Table 5-6** identify these recommended miscellaneous improvements; however, additional locations will likely be considered based on continued evaluation of the transportation network and in response to specific concerns noted by campus and community stakeholders.

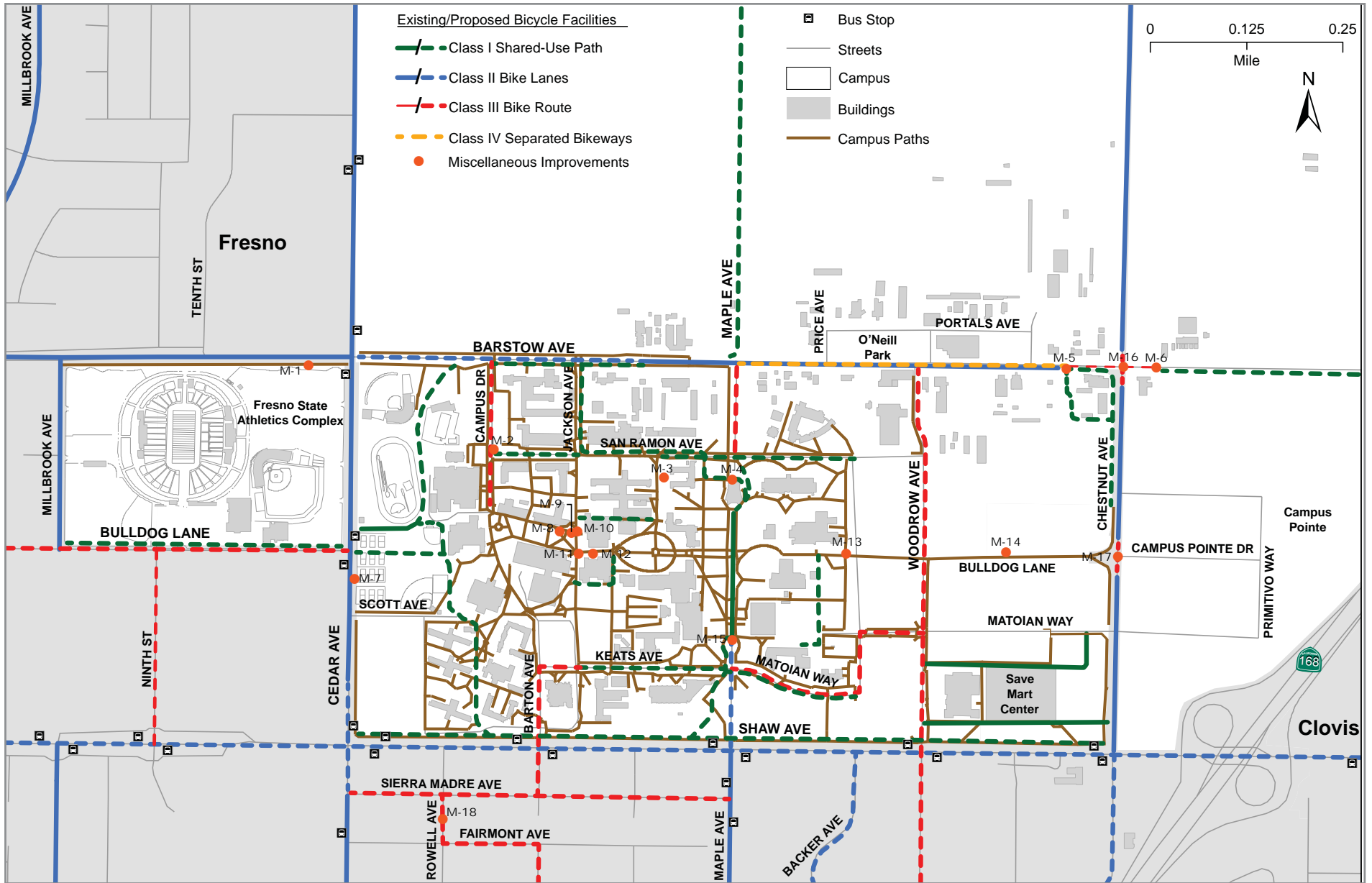


Figure 5-38: Proposed Miscellaneous Improvements

**Table 5-5: Recommended On-Campus Miscellaneous Improvements**

Project ID	Location	Treatment
M-1	Barstow Avenue eastbound bike lane, 250' west of Cedar Avenue	Install signage to route bicycle riders in the eastbound bike lane onto the campus path to continue east to campus
M-2	Campus Drive at San Ramon Avenue	Convert intersection to mini-roundabout
M-3	Parking Lot 17	Close the parking lot to create plaza space
M-4	North side of Satellite Student Union	Improve the north façade of the Union
M-5	Barstow Avenue (300' west of Chestnut Avenue)	Install a ramp on the south sidewalk for bicycle riders to access from the eastbound bike lane before the roundabout
M-6	Barstow Avenue (250' east of Chestnut Avenue)	Install a ramp on the south sidewalk/proposed shared-use path for bicycle riders to access from the eastbound travel lane after the roundabout
M-7	Cedar Avenue between Bulldog Lane and Scott Avenue	Improve wall on east side of Cedar Avenue to be more pedestrian-friendly (e.g., commission a mural)
M-8	Peace Garden Paths	Install traffic calming measures to slow bicycle riders and golf cart operators
M-9	Peace Garden North Path at Jackson Avenue Path	Install bollards/planters at the Peace Garden Path entrance to slow bicycle and golf cart traffic making the transition
M-10	Jackson Avenue Path at Peace Garden North Path	Reconfigure the existing barriers into an M-curve to effectively slow bicycle riders and golf cart operators. Consider hydraulic bollards.
M-11	Jackson Avenue Path at the intersection of the Library and University Student Union	Create a traffic circle with textured pavement and planters to break up clear sight lines and slow bicycle and golf cart traffic. In the long-term, construct a bulldog statue in the circle.
M-12	Campus Core Area between University Student Union and University Center	Repurpose the short wall to create comfortable seating areas
M-13	Fountain Path at Parking Lots 5 & 6	Install a campus wayfinding kiosk
M-14	Bulldog Lane Path (north side) between Woodrow Avenue and Chestnut Avenue	Shift trees from middle of path to allow unobstructed bicycle travel
M-15	Maple Avenue at Administration Building turnaround	Install ramps for bicycle riders to access the campus paths from Maple Avenue

**Table 5-6: Recommended Off-Campus Miscellaneous Improvements**

Project ID	Location	Treatment
M-16	Chestnut Avenue at Barstow Avenue	Reduce travel lanes at the roundabout to one lane
M-17	Chestnut Avenue at Bulldog Lane/Campus Pointe Drive	Reduce travel lanes at the roundabout to one lane
M-18	Rowell Avenue between Sierra Madre Avenue and Fairmont Avenue	Create access through wall for pedestrians and bicycle riders



### 5.3. PROGRAM RECOMMENDATIONS

Equally important as providing active transportation infrastructure is ensuring that users are familiar with the treatments and know how to use them. Education programs targeting the university community are recommended to complement existing efforts at the City level. Similar to education programs, encouragement programs provide incentives and benefits to the public to try utilizing active transportation modes for more trips. The City of Fresno Bicycle, Pedestrian, & Trails Master Plan includes an entire chapter devoted to education, encouragement, and enforcement programs. Programs include media awareness campaigns to educate the general public about rights and responsibilities of bicyclists and motorists, bicycle repair training for residents, bike rides with City politicians, and Safe Routes to Schools programs.

The sections below discuss several programs that are recommended for the Fresno State campus, and **Table 5-7** lists other recommended programs and their time frames. Short-term programs should take 1-2 years to implement; medium 2-3 years

**Table 5-7: Additional Recommended Non-Infrastructure Programs**

Programs		
Recommendation	Description / Rationale	Implementation Time Frame
Active Transportation information presented at Campus Orientation	Distribution of information to incoming and returning students at the beginning of the year through school information packets, including how to share the road with all users, proper (and legal) roadway crossing behavior, locations of bike parking and transit stops, instructions on how to properly lock your bicycle, facility improvements, programming events, and applicable policies and rules.	Short
Bicycle/Pedestrian Transportation Service Website	Establish a website or webpage to become the clearinghouse for all things bicycle, pedestrian and active transportation on campus. All policy, registration, programming, events and local bicycle, pedestrian and active transportation related news should be posted here.	Short
Bike to Campus Day or Bike Week events	Organize a Bike to Campus Day or have Bike Week events during Bike Month in May. Student organizations can lead such events with school administration providing support and outreach on the events	Short
Ticket Diversion program	Initiate Diversion Program whereby students who receive tickets on campus can elect to attend a motorist, bicyclist, and pedestrian safety clinic.  Satisfactory participation and learning will be gauged by the instructor who will administer a certificate of completion for use of payment of the fine.	Medium
Safety/Skills/commuter/repair workshops	Initiate education programs for bicycle safety skills, proper behavior, and care/maintenance.	Medium

### 5.3.1 BICYCLE FRIENDLY UNIVERSITY DESIGNATION (SHORT-TERM)

The League of American Bicyclists (LAB) awards institutions of higher education that, “promotes and provides a more bikeable campus for students, staff, and visitors.”<sup>12</sup> Each campus must apply to receive a Bicycle Friendly University ranking of Bronze, Silver, Gold, or Platinum. As of 2014, 100 colleges and universities have been designated a Bicycle Friendly University.<sup>13</sup> Application cycles are typically open twice a year in the spring and fall. The City of Fresno in 2011 was awarded a Bicycle Friendly Community Bronze Designation. These designations are valid for four years, and the LAB works with award recipients to encourage and identify ways to move up to the next level. It is recommended that Fresno State apply for a Bicycle Friendly University designation.

### 5.3.2 CAMPUS BICYCLE CLUBS (SHORT-TERM)

A bicycle club on campus can promote the fun, healthy use of bicycles for recreation, commuting, fitness, and competition. Interested students can get involved in the various activities the campus offers while building up school morale and spirit. Bicycle clubs and groups could also lead Bike to Campus Day or Bike Week events and find outside opportunities to bring exciting activities to campus. A designated

bicycle club on campus shows that Fresno State is invested in creating a positive healthy culture for active transportation users.

### 5.3.3 ACTIVE TRANSPORTATION SAFETY CAMPAIGN (MEDIUM-TERM)

A high-profile marketing campaign that highlights bicyclist, pedestrian, and transit user safety is an important part of helping all road users – including motorists – understand their roles and responsibilities on campus roads and those surrounding the University. This type of high-profile campaign is an effective way to raise the profile of active modes and improve safety for all road users (including staff who drive on campus as part of their work).



Figure 5-39: Stanford University’s “Sprocket Man” promotes active transportation safety on campus”

A well-produced safety campaign will be memorable and effective and include clean, clear graphics in a variety of media, such as print or audio/video advertisements, the distribution of free promotional items, and email or in-person outreach. This type of campaign is particularly effective when kicked off in conjunction with other active transportation events or at the beginning of each academic term. It is recommended that Fresno State develop and launch an active transportation safety campaign specific to campus users.

Fresno State can also use the safety campaign to help brand all of the active transportation-related efforts on campus. Safety campaign messages can use similar graphics and colors used on bike/skateboard/scooter/walk orientation materials, active transportation-related campus signs, flyers for events, and promotional items in order to create a cohesive message among all materials.

Fresno State’s active transportation safety campaign should address the following safety issues:

- Where bicycling/skateboarding/riding a scooter is permitted and where there are “wheels off” areas
- Safe bicycling skills
- How to share the road (for motorists and other road users)

12. <http://www.bikeleague.org/university>

13. *Ibid*

- Light and helmet use
- Bicyclists’ rights
- Yielding to pedestrians
- Personal safety while waiting for or riding a bus
- Respect for campus visitors/residents with disabilities

Examples of such campaigns include the Stanford Sprocket Man<sup>14</sup> (shown in **Figure 5-39**) and Boston University’s Helmet Hair campaign,<sup>15</sup> among others.

### 5.3.4 EMPLOYER-BASED ENCOURAGEMENT PROGRAM (MEDIUM-TERM)

With over 2,300 faculty and staff on Fresno State’s campus, more can be done to encourage those who are employed on the campus to use alternative transportation for their daily commutes.

This Plan recommends that the University offer a new encouragement program that provides a wider variety of incentives for employees to sign up, such as giving prizes to the employee who logs the most alternative commute days per semester, for example.

When bike and pedestrian benefits are added to the mix with free parking and transit perks, the probability of driving rises toward 87 percent (see **Figure 5-40**).

In 1991, the state of Washington adopted into law its Commute Trip Reduction program which recognizes that large employers (defined as those with more than 100 workers), are in the “transportation business” in that employers have an “enormous influence over how

their employees get to work.”<sup>16</sup> By allowing employers to implement programs to reduce single-occupant vehicle commuting by employees at major worksites,” the state has been able to reduce vehicles miles traveled in single-occupancy vehicles by 4.5 percent between 2007 and 2012 alone. Some employers have gone with fairly standard programs to reduce car commutes: flexible work and telecommute options, parking fees, enhanced

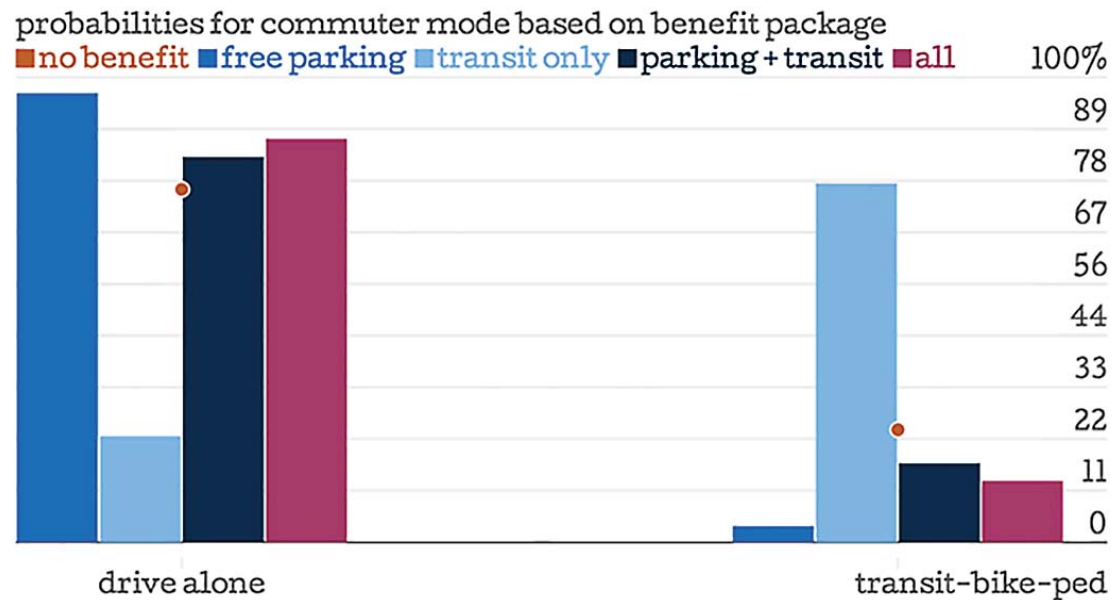


Figure 5-40: Probabilities for driving alone vs. using an alternative mode base on employer-based benefit packages (Source: CityLab)

14. [http://transportation.stanford.edu/alt\\_transportation/Sprocketman.shtml](http://transportation.stanford.edu/alt_transportation/Sprocketman.shtml)

15. <http://www.bu.edu/bikesafety/cycling-safety/safety-campaigns/>

16. Eric Jaffe, <http://www.citylab.com/commute/2015/03/the-problem-with-paying-people-to-bike-to-work/388099/>

transit pass programs, and favorable carpool incentives. But the state has relaxed oversight which also led to some innovative initiatives, including mortgage discounts to move closer to work, money to furnish a home office, and simple cash incentives to quit driving.

Further, this Plan recommends updating the current 1997 Telecommuting Policy to reflect contemporary technology, work trends, and transportation patterns. For instance, the 1997 Policy did not anticipate the differing work and travel preferences of “millenials”, and the definition of “home office” has changed substantially in recent years.

### 5.3.5 BICYCLE COOPERATIVE (CO-OP) ON CAMPUS (MEDIUM-TERM)

A bicycle co-op aims to empower both experienced bicyclists and new riders by teaching skills and techniques for repair and maintenance. Co-ops are effective at encouraging less experienced bicyclists to start riding since they create a non-intimidating workspace and break down initial barriers to riding. Co-ops also raise the awareness of active transportation users on campus. Co-ops are typically managed by non-profit groups, volunteers, or university employees. The University of California, Davis Bike Barn (see **Figure 5-41**) is a co-op on campus that employs students and helps elevate the safety



Figure 5-41: The Bike Barn is a bicycle co-op on the UC Davis campus.

of student bicycle riders.

### 5.4. ADDITIONAL RECOMMENDATION: ESTABLISH A CAMPUS ACTIVE TRANSPORTATION & ACCESSIBILITY ADVISORY COMMITTEE

For the “evaluation and planning” component of this recommendations chapter, it is recommended that Fresno State establish an Active Transportation & Accessibility Advisory Committee (ATAAC). This section presents example committees at universities throughout the United States, as well as recommendations for how Fresno State should establish an Active Transportation & Accessibility Advisory committee of its own.

#### 5.4.1 COMMITTEE EXAMPLES

##### Colorado State University

Colorado State University (CSU) established its Campus Bicycle Advisory Committee (CBAC) in 2008. The CBAC board consists of bicycle advocates, police personnel, City transportation staff, CSU faculty and staff, and CSU students that support and provide guidance on bicycle-related projects and programs. The CBAC has four purposes for existence:

- To promote a safe campus bicycle experience
- To encourage bicycling as a viable alternative transportation mode
- To educate the campus community regarding all modes of transportation
- To develop a culture of bicycling enthusiasts for health, lifestyle and to distinguish our university from all others

The CBAC works with the City of Fort Collins on educational campaigns, highlights safety

concerns for study on campus, applies for grants to implement projects and programs, and creates public services announcements.<sup>7</sup> The CBAC officers include a Chairperson and Vice Chairperson, which are elected to fill a two-year term. Members of the CBAC consist of any person in attendance at CBAC meetings. The meetings occur at least four times per year.<sup>8</sup>

### University of South Carolina

The University of South Carolina's Bicycle Advisory Committee is a group of students, faculty, and staff bicycling advocates who aim to create a better environment for bicyclists at the University of South Carolina. Faculty/staff members of the committee include representatives from the following campus organizations: Facilities and Planning and Programming, Healthy Carolina, Orientation & Testing Services, Outdoor Recreation, Sustainable Carolina, and Vehicle Management & Parking Services.

The committee has five main initiatives: improved campus engineering, increased campus education, increased leadership efforts, improved advocacy, and more consistent enforcement. Based on these goals, the committee is organized into five working groups: Education, encouragement (advocacy), enforcement, evaluation, and engineering.

Each working group has between three and six members, totaling to approximately 23 overall members. Sample current projects conducted by the working groups include assessment data, safety clinics, awareness events, bike registration, and bikeway planning and implementation.<sup>9</sup>

### Cornell University

Cornell University has a Bicycle and Pedestrian Traffic Safety Committee. This committee meets monthly and covers issues pertaining to improving the bicycling and walking environment on campus. The committee consists primarily of staff from Transportation Services, Environmental Health and Safety, Police, Planning, and the Judicial Administrator's office. Interested students and staff can participate.<sup>10</sup>

### Boston University

Boston University (BU) has a very active Bike Safety Committee that aims to educate all campus road users on rules, safety, and how to share the road (see **Figure 5-42**). The University's executive vice president created the committee in 2008 in response to safety

concerns.<sup>11</sup> The committee runs a website informing the university community about biking on campus, conducts bicycling surveys, organizes and hosts bicycle-related events, and evaluates the need for improved bikeways and bicycle support facilities.<sup>12</sup>

### 5.4.2 RECOMMENDED DUTIES OF THE FRESNO STATE ATAAC

Based on a review of the previous example campus active transportation advisory committees, it is recommended that Fresno State establish a committee similar in structure to the bicycle advisory committees at Colorado State University and the University of South Carolina.



Figure 5-42: Boston University's Bicycle Safety Committee advertisement promoting safety through using bicycle helmets.



7. Eric Jaffe, <http://www.citylab.com/cityfixer/2015/04/how-washington-state-convincing-big-companies-to-dramatically-reduce-drive-alone-commutes/389658/>

8. <http://bicycle.colostate.edu/initiatives>

9. <http://bicycle.colostate.edu/campus-bike-advisory-committee> 29. <http://www.cas.sc.edu/greenquad/node/146>

10. <http://www.bike.cornell.edu/oncampus.html>

11. <http://www.bu.edu/today/2008/bike-accidents-prompt-new-safety-plan/>

12. <http://www.bu.edu/bikesafety/enforcement-and-policies/bike-safety-committee/>

For consistency and stability, the committee should have formal positions, including but not limited to a chairperson and vice-chairperson. These positions can be elected or volunteer, depending on demand, and should be permanent University faculty and staff. The position terms should be for a minimum of one academic year. The committee should meet monthly to discuss goals and progress.

Since members will be volunteers, it is essential to have strong staffing to support the committee in order for it to be successful. One of the positions discussed above should take charge of managing the recruitment process, appointing members, managing agendas and minutes, scheduling meetings, bringing agency issues to the committee, and reporting back to the University's administration about the recommendations and findings.

Within the committee, there should be working groups that focus on education, encouragement, enforcement, engineering, and evaluation as they relate to bicycle, pedestrian, and transit access issues. The charges of the working groups and committee as a whole should include some or all of the following:

- Review and provide input on campus facility planning and design as it affects bicycling, walking, ADA accessibility, and transit access (e.g., streets, intersections, signals, parking facilities, and transit stops)



Figure 5-43: The University of South Carolina's Bike Advisory Committee promotes active transportation on campus

- Participate in the development, implementation, and evaluation of transportation studies and plans
- Provide a formal liaison between university, faculty, staff, and students
- Develop and monitor goals and indices related to active transportation on campus
- Promote safe and courteous bicycling and walking on campus



Figure 5-44: Events that encourage bicycling like "Bike to Work" at Colorado State University are organized by bicycle committees on campus.



## 6. IMPLEMENTATION

*This chapter presents cost estimates for both project implementation and maintenance, a prioritization ranking, and a phasing strategy for the campus active transportation projects recommended in this Plan. Also included is a discussion of potential funding sources to implement the proposed projects and programs.*

**NOTE:** *This section only describes estimated costs and prioritization for on-campus projects; recommended projects within other jurisdictions are not discussed here.*

### 6.1. PROJECT COSTS

This section presents the estimated cost to implement the proposed active transportation network on the Fresno State campus.

#### 6.1.1 COST ESTIMATES FOR IMPLEMENTATION

**Table 6-1** displays the planning-level capital cost assumptions for each facility type proposed in this Plan, as well as some treatments that are not specifically recommended in this Plan but could be considered on a project-by-project basis.

**Table 6-2** displays the estimated cost to implement only the proposed bikeways network on the Fresno State campus from the cost assumptions; individual project cost estimates for proposed bikeways are included

in **Table 6-5** and **Table 6-6**. Cost assumptions are based on California averages and may vary depending on environmental conditions of a given facility, unforeseen construction cost variations, and similar considerations. The unit cost assumptions include estimates for design, environmental clearance, and maintenance costs. Cost assumptions exclude specific treatments that may vary by location and must be determined by field review such as traffic calming measures, restriping of existing travel lanes, and sign removal.

Cost assumptions for bikeways projects do not include traffic signal improvements, such as changes to phasing, recalibration of loop detectors, or installation of push buttons.

**Table 6-1: Unit Cost Estimates for Proposed Active Transportation Facility Types**

Facility Type	Description	Estimated Cost
Class I Shared-Use Path	Paving, striping, and signage	\$1,000,000 / mile
Class II Bicycle Lanes (two sides)	Striping, signage, and travel lane restriping	\$85,000 / mile
Class II Buffered Bicycle Lanes (two sides)	Striping, signage, and travel lane restriping	\$140,000 / mile
Class II Bicycle Lanes with Colored Pavement Materials	High-visibility colored paint within a 6' wide bike lane	\$330,000 / mile
Class III Bicycle Routes (two sides)	Signage	\$20,000 / mile
Class III Bicycle Routes (two sides) with sharrows	Pavement markings and signage	\$30,000 / mile
Class III Neighborhood Friendly Corridor	Pavement markings, signage, and limited traffic calming	\$180,000 / mile
Class IV Separated Bikeways, or "Cycle Tracks" (two sides)	On-street bike lane separated from motor vehicle traffic by a vertical barrier	\$1,230,000 / mile
Pedestrian Sidewalk	6' wide sidewalk with curb and gutter	\$200 / linear foot
Continental Crosswalk	10' wide crosswalk	\$2,500 / each
Advance Yield Markings and Signs	Pavement markings and "YIELD" signage	\$3,000 / each
Raised Crosswalk	Raised pavement	\$8,000 / intersection leg
Raised Intersection	Raised pavement	\$60,000 / intersection
Curb Ramp	ADA-compliant curb cut with textured ramp	\$5,000 / each
Curb Extension/Bulbout	Concrete sidewalk extension	\$66,000 / each
Rectangular Rapid Flashing Beacon (RRFB)	High-visibility pedestrian crossing beacon	\$25,000 / crosswalk
Mid-Block Crosswalk with RRFB	Continental crosswalk with pedestrian flashing signal	\$53,000 / crosswalk
Pedestrian Signal	High-visibility pedestrian crossing signal	\$120,000 / each
All-Way Scramble Crosswalk	Redesign of traffic signalization; signage and crosswalk striping	\$100,000 / each
In-Pavement Flashing Lights	Lights embedded in the pavement along crosswalk	\$26,000 / crosswalk

**Table 6-2: Estimated Cost of Proposed On-Campus Active Transportation Network**

Facility Type	Unit Cost	Total Length or Number of Treatments	Total Cost
Class I Shared-Use Path	\$1,000,000	6.4	\$6,400,000
Class II Bicycle Lanes (two sides)	\$85,000	0.5	\$42,500
Class II Bicycle Lanes with Colored Pavement Materials (one side)	\$115,000	0.1	\$11,500
Class III Bicycle Routes with Sharrows (two sides)	\$30,000	1.4	\$42,000
Class IV Separated Bikeways, or "Cycle Track" (two sides)	\$1,230,000	0.4	\$492,000
<b>Total</b>		<b>8.8</b>	<b>\$6,988,000</b>



## 6.1.2 BIKEWAY MAINTENANCE COSTS

Typical maintenance costs for bikeway facilities and the resulting estimates for the entire recommended bikeway network in this Plan are shown in **Table 6-3**.

## 6.2. PROJECT PRIORITIZATION AND PHASING

This section describes the ranking methodology for the recommended active transportation facilities, includes lists of both ranked bikeway and pedestrian projects, and proposes a phasing plan for implementation.

### 6.2.1 PRIORITIZATION STRATEGY

A prioritized list of active transportation projects will help guide the implementation of the proposed active transportation facilities presented in this Plan. Proposed facilities are ranked by criteria that define a facility's ability to address an existing or future need at Fresno State and in the cities of Fresno and Clovis. The following criteria are used to evaluate each proposed active transportation project.

### Public Input

Fresno State solicited public input through a community workshop, survey, and stakeholder meetings. Facilities that community members identified as desirable for future bicycle or pedestrian facilities are of priority to the network because they address the needs of the public.

### Gap Closure (bikeway projects only)

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

### Safety

Active transportation facilities have the potential to increase safety by reducing the potential conflicts between bicyclists, pedestrians, and motorists that often result in

collisions. Proposed facilities that are located on roadways with past bicycle-automobile or pedestrian-automobile collisions are important.

### Connectivity to Existing Facilities

Proposed bikeways and pedestrian improvements that connect to existing active transportation facilities in the study area increase the convenience of bicycling and walking. Proposed facilities that fit this criterion are of high importance.

### Connectivity to Proposed Facilities (bikeway projects only)

Proposed bikeways in the study area will eventually become existing bicycle facilities. Thus, facilities that link to them will enhance future connectivity by improving bicycle travel between cities or destinations in other cities. This will continue to enhance bicycle travel in Fresno region.

**Table 6-3: Estimated Annual Bikeway Maintenance Costs**

Facility Type	Cost per Mile per Year	Proposed Length (miles)	Total Annual Cost	Notes
Class I Shared-Use Path	\$8,500	6.4	\$54,400	Lighting, debris cleanup, and removal of vegetation overgrowth
Class II Bicycle Lanes (two sides)	\$1,500	0.5	\$750	Repainting lane stripes and stencils; sign replacement as needed
Class II Bicycle Lanes with Colored Pavement Materials (one side)	\$3,000	0.1	\$300	Repainting lane stripes and filling; sign replacement as needed
Class III Bicycle Routes (two sides)	\$1,000	1.4	\$1,400	Sign and shared-lane stencil replacement as needed
Class IV Separated Bikeways (two sides)	\$4,000	0.4	\$1,600	Debris removal; repainting stripes and stencils; sign replacement; replacing damaged barriers
<b>Total</b>		<b>8.8</b>	<b>\$58,450</b>	

**Connectivity to Multi-Modal Transportation Centers**

Active transportation facilities that link to modes of public transportation increase the geographical distance that bicycle riders and pedestrians are able to travel. Proposed active transportation facilities that connect to transit stops and centers improve mobility and are, therefore, key pieces of the network.

**6.2.2 PROJECT PRIORITIZATION AND RANKING**

**Table 6-4** and **Table 6-5** show how the criteria described in the previous section translate into weights for project prioritization and ranking.



*Figure 6-1: Crosswalks can be added to increase connectivity throughout the campus.*

**Table 6-4: Bikeway Project Prioritization Criteria**

Criteria	Score	Multiplier	Total	Description
Public Input	2	3	6	Roadway/Pathway was identified by the public as desirable for a future bicycle facility multiple times
	1	3	3	Roadway/Pathway was identified by the public as desirable for a future bicycle facility once
	0	3	0	Roadway/Pathway was not identified by the public as desirable for a future bicycle facility
Gap Closure	1	3	3	Fills a network gap between two or more existing facilities
	0	3	0	Does not directly or indirectly fill a network gap
Safety: Bicycle-Involved Collisions	2	2	4	Provides a bicycle facility on a roadway/pathway that experienced 3 or more bicycle-involved collisions between 2009-2014
	1	2	2	Provides a bicycle facility on a roadway/pathway that experienced 1-2 bicycle-involved collisions between 2009-2014
	0	2	0	Provides a bicycle facility on a roadway/pathway that did not experience any bicycle-involved collisions between 2009-2014
Connectivity: Existing	2	2	4	Provides direct access to an existing bicycle facility
	1	2	2	Provides secondary connectivity to an existing bicycle facility
	0	2	0	Does not directly or indirectly access an existing bicycle facility
Connectivity: Proposed	2	1	2	Provides direct access to a regional proposed bicycle facility
	1	1	1	Provides secondary connectivity to a regional proposed bicycle facility
	0	1	0	Does not directly or indirectly access a regional proposed bicycle facility
Connectivity: Multi-Modal	2	1	2	Provides direct access to a transit stop
	1	1	1	Provides access to an additional route that connects to a transit stop
	0	1	0	Does not directly or indirectly provide access to a transit stop

**Table 6-5: Pedestrian Prioritization Criteria**

Criteria	Score	Multiplier	Total	Description
Public Input	2	3	6	Roadway/Pathway was identified by the public as desirable for a future facility multiple times
	1	3	3	Roadway/Pathway was identified by the public as desirable for a future facility once
	0	3	0	Roadway/Pathway was not identified by the public as desirable for a future facility
Safety: Pedestrian-Involved Collisions	2	2	4	Provides a pedestrian facility on a roadway/pathway that experienced 3 or more pedestrian-involved collisions between 2009-2014
	1	2	2	Provides a pedestrian facility on a roadway/pathway that experienced 1-2 pedestrian-involved collisions between 2009-2014
	0	2	0	Provides a pedestrian facility on a roadway/pathway that did not experience any pedestrian-involved collisions between 2009-2014
Connectivity: Existing or Planned	2	2	4	Provides direct access to an existing/planned pedestrian facility or closes a gap in the existing or planned pedestrian network
	1	2	2	Provides secondary connectivity to an existing or planned pedestrian facility
	0	2	0	Does not directly or indirectly access an existing or planned pedestrian facility
Connectivity: Multi-Modal	2	1	2	Provides direct access to a transit stop
	1	1	1	Provides access to an additional route that connects to a transit stop
	0	1	0	Does not directly or indirectly access to a transit stop

Weights are based on direct, secondary, or complete lack of service. Direct service means that a facility intersects with a facility/destination, whereas secondary access occurs when the primary facility is located in close proximity or adjacent to an existing facility/destination but relies on another route or pathway to make the connection.

**Table 6-6** presents the prioritized list of on-campus bikeway projects by overall ranking, and **Table 6-7** presents the prioritized list of on-campus pedestrian projects. Project IDs correlate with the numbering from **Figure 5-3** and **Figure 5-7**. The following abbreviations are used to describe the project types:

- I: Shared-use path
- II: Bicycle lanes
- II-C: Bicycle lanes with colored pavement materials
- III: Bike routes (with shared lane markings)
- IV: Separated bikeways
- SW: Sidewalk installation
- U: Enhancement to unsignalized crossing
- S: Enhancement to signalized crossing

The projects that ranked the highest should generally be implemented first. Projects with lower rankings may also be combined with other projects to increase connectivity.

### 6.3. PHASING PLAN

Implementation of the Fresno State Active Transportation Plan will take place incrementally through small steps taken over many years, depending on available funding and coordination with external agencies. **Table 6-6** and **Table 6-7**, which list the on-campus bikeway and pedestrian projects by ranking score, also separate the recommended projects into three separate phases that can guide the University and partner jurisdictions toward implementing this Plan over time. Ideally, the University should complete higher-priority projects found within the Phase I, Phase II, and Phase III lists below in the general order

that they appear in the prioritization matrix. However, many opportunities will likely arise over the years that will make lower priority projects feasible either through efforts of an external agency (e.g., street resurfacing), or through on-campus construction projects.

Phase I includes projects that ranked high, are inexpensive in comparison to others, and/or are “low-hanging fruit” that will not require a significant period of time (0-5 years) or roadway reallocation to implement; these priority projects will be incorporated into the next 5-Year Capital Improvement Program (CIP). Phase II projects ranked moderately high, will be moderately expensive, or may

require additional study or roadway allocation to implement (6-10 years). Phase III projects are those that ranked low, will cost a significant amount of money to implement, will require a substantial amount of time (11-20 years) to install, or will require significant roadway reallocation or additional right-of-way.

**Appendix E** lists all of the recommended on-campus pedestrian and bicycling improvements, including miscellaneous improvements, in one combined table by suggested phase.

**Table 6-6: Prioritized Bicycle Projects**

Project ID	Facility Type	Location	Start	End	Project Cost	Public Input	Gap Closure	Safety: Bicycle-Involved Collisions	Connectivity: Existing	Connectivity: Proposed	Connectivity: Multi-Modal	Total Score (21 max)
<b>Phase I</b>												
B-2	II	Barstow Avenue West Path (south side)	Cedar Avenue	340' east of Jackson Avenue	\$34,000	6	3	4	4	2	2	<b>21</b>
B-3	I	Barstow Avenue	Campus Drive	420' east of Jackson Avenue	\$200,000	6	3	4	4	2	2	<b>21</b>
B-21	I	Bulldog Lane Path (north side)	Millbrook Avenue	Cedar Avenue	\$400,000	6	3	4	4	2	2	<b>21</b>
B-30	II	Maple Avenue	200' north of Keats Avenue	Shaw Avenue	\$17,000	6	6	0	4	2	2	<b>20</b>
B-32	I	Shaw Avenue Path (north side)	Cedar Avenue	Chestnut Avenue	\$1,000,000	6	3	4	2	2	2	<b>19</b>
B-9	I	Jackson Avenue Path (east side)	Barstow Avenue	San Ramon Avenue	\$100,000	3	3	4	4	2	1	<b>17</b>

Table 6-6: Prioritized Bicycle Projects (continued)

Project ID	Facility Type	Location	Start	End	Project Cost	Public Input	Gap Closure	Safety: Bicycle-Involved Collisions	Connectivity: Existing	Connectivity: Proposed	Connectivity: Multi-Modal	Total Score (21 max)
B-22	I	Tennis Courts Path	Cedar Avenue	Residence Halls Off-Street Path (proposed)	\$100,000	6	3	0	4	2	2	17
B-24	I	Parking Lot 4 Path	Campus Path South of University Business Center	University High School	\$100,000	6	3	2	4	2	0	17
B-6	III	Barstow Avenue	350' west of Chestnut Avenue	270' east of Chestnut Avenue	\$3,000	6	3	0	4	2	0	15
B-11	III	Woodrow Avenue	Barstow Avenue	Shaw Avenue	\$15,000	0	3	4	4	2	2	15
B-18	I	Science I Gap Closure Path	Campus Path northwest of Science I Building	Campus Path southwest of Science I Building	\$100,000	6	3	0	4	2	0	15
<b>Phase II</b>												
B-7	I	Barstow Avenue East Path (south side)	270' east of Chestnut Avenue	Willow Avenue	\$400,000	3	3	2	4	2	0	14
B-15	I	San Ramon Avenue West Path	Campus Drive	Jackson Avenue	\$100,000	6	3	0	2	2	1	14
B-16	I	San Ramon Avenue Path (north side)	Jackson Avenue	170' west of Maple Avenue	\$200,000	6	3	0	2	2	1	14
B-17	I	San Ramon Avenue East Path	P17 Parking Lot	P6 Parking Lot	\$200,000	6	3	0	2	2	1	14
B-26	III	Barton Avenue/Keats Avenue	Shaw Avenue	Campus Drive/Keats Avenue Intersection	\$3,000	3	3	0	4	2	2	14
B-31	I	Matoian Way Path (south side)	Maple Avenue	Parking Lot 2	\$1,000,000	6	3	0	2	2	1	14
B-8	III	Campus Drive	Barstow Avenue	San Bruno Avenue	\$6,000	3	3	0	4	2	1	13
B-25	I	Residence Halls Path	San Bruno Avenue Bike Path	Shaw Avenue	\$300,000	3	3	0	4	2	1	13
B-4	II-C	Barstow Avenue	250' west of Maple Avenue	100' west of Maple Avenue	\$16,500	6	0	2	2	2	0	12
B-5	IV	Barstow Avenue	Maple Avenue	350' west of Chestnut Avenue	\$492,000	6	0	2	2	2	0	12

**Table 6-6: Prioritized Bicycle Projects (continued)**

Project ID	Facility Type	Location	Start	End	Project Cost	Public Input	Gap Closure	Safety: Bicycle-Involved Collisions	Connectivity: Existing	Connectivity: Proposed	Connectivity: Multi-Modal	Total Score (21 max)
<b>Phase III</b>												
B-28	III	Matoian Way	Maple Avenue	Woodrow Avenue	\$9,000	6	0	0	2	2	1	<b>11</b>
B-10	III	Maple Avenue	Barstow Avenue	San Ramon Avenue	\$3000	0	3	0	4	2	1	<b>10</b>
B-19	I	Satellite Union Path	San Ramon Avenue	South side of Satellite Student Union	\$100,000	3	0	0	4	2	1	<b>10</b>
B-27	I	Keats Avenue Path	Campus Drive	Maple Avenue	\$200,000	6	0	0	2	1	1	<b>10</b>
B-12	I	Parking Lot 9 Path	Barstow Avenue (350' west of Chestnut Avenue)	Chestnut Avenue (350' south of Barstow Avenue)	\$100,000	0	3	0	4	2	0	<b>9</b>
B-13	I	WET Lab Path	Barstow Avenue (350' west of Chestnut Avenue)	Chestnut Avenue (350' north of Bulldog Lane/Campus Pointe Drive)	\$200,000	0	3	0	4	2	0	<b>9</b>
B-20	I	Path north of University Student Union	Jackson Avenue Campus Path	P17 Parking Lot	\$100,000	0	3	0	4	2	0	<b>9</b>
B-29	I	Education School Path	Maple Avenue	Shaw Avenue	\$200,000	0	3	0	2	2	2	<b>9</b>
B-14	I	Aquatics Center Path	Barstow Avenue	San Bruno Avenue Bike Path	\$200,000	0	0	0	4	2	2	<b>8</b>
B-1	I	Maple Avenue Farm Road Path	Sierra Avenue	Barstow Avenue	\$1,000,000	0	0	0	4	2	1	7
B-23	I	University Center South Campus Core Bypass	Jackson Avenue Campus Path	Rose Garden South Path	\$100,000	0	0	0	4	2	0	6

**Table 6-7: Prioritized Pedestrian Projects**

Project ID	Facility Type	Location	Treatment	Public Input	Safety: Pedestrian-Involved Collisions	Connectivity: Existing	Connectivity: Multi-Modal	Total Score
<b>Phase I</b>								
SW-14	SW	Scott Avenue (Cedar Avenue to Rowell Avenue)	Install sidewalk on south side of street	3	4	4	2	<b>13</b>
SW-1	SW	Barstow Avenue (250' west of Maple Avenue to Chestnut Avenue)	Install sidewalk on north side of street	6	2	4	0	<b>12</b>
SW-2	SW	Barstow Avenue (Maple Avenue to Parking Lot 10)	Install sidewalk on south side of street	6	2	4	0	<b>12</b>
C-4	U	Barstow Avenue at Campus Drive (south side)	Install raised crosswalk	6	4	2	0	<b>12</b>
C-23	U	Scott Avenue at Rowell Avenue	Install crosswalks on all sides	6	0	4	2	<b>12</b>
SW-15	SW	Chestnut Avenue (Matoian Way to Shaw Avenue)	Install sidewalk on east side of street	3	2	4	2	<b>11</b>
C-3	U	Barstow Avenue at Campus Drive (north side)	Install curb cut	3	4	4	0	<b>11</b>
C-13	U	Barstow Avenue at Chestnut Avenue	Install crosswalk on west side of intersection	3	4	4	0	<b>11</b>
SW-11	SW	Parking Lot 6 (Woodrow Avenue at San Ramon Avenue)	Install sidewalk along north edge	6	0	4	0	<b>10</b>
SW-12	SW	Woodrow Avenue (Barstow Avenue to Bulldog Lane)	Install sidewalk on east side of street	6	0	4	0	<b>10</b>
C-6	U	Barstow Avenue at Jackson Avenue	Install raised intersection	6	2	2	0	<b>10</b>
C-10	S	Barstow Avenue at Maple Avenue	Install pedestrian refuge island	6	2	2	0	<b>10</b>
C-21	U	Woodrow Avenue (460' north of Bulldog Lane)	Install crosswalks	6	0	4	0	<b>10</b>
C-22	U	San Bruno Avenue (80' west of Campus Drive)	Install ramp from pathway to North Gym south entrance	6	2	2	0	<b>10</b>

**Table 6-7: Prioritized Pedestrian Projects (continued)**

Project ID	Facility Type	Location	Treatment	Public Input	Safety: Pedestrian-Involved Collisions	Connectivity: Existing	Connectivity: Multi-Modal	Total Score
<b>Phase II</b>								
SW8	SW	Band Practice Field on east side of Science II (Barstow Avenue to existing path at southeast corner of Science II)	Install pathway to close gap	3	2	4	0	<b>9</b>
SW-9	SW	Woodrow Avenue (Barstow Avenue to 75' south of Barstow Avenue)	Install sidewalk on west side of street	3	2	4	0	<b>9</b>
C-5	U	Barstow Avenue at Jackson Avenue (north side)	Install curb cut	3	2	4	0	<b>9</b>
C-24	U	Barton Avenue (80' southeast of Library parking gate)	Install crosswalk	6	0	2	1	<b>9</b>
C-25	U	Barton Avenue (110' southeast of Library parking gate)	Install crosswalk	6	0	2	1	<b>9</b>
C-2	U	Barstow Avenue (160' west of Campus Drive)	Install raised crosswalk	6	0	2	0	<b>8</b>
C-9	U	Barstow Avenue (425' east of Jackson Avenue)	Enhance existing crosswalk with pedestrian refuge island and raised median	6	0	2	0	<b>8</b>
C-11	U	Barstow Avenue at Price Avenue	Install mid-block crosswalk with Rectangular Rapid Flashing Beacon	0	4	4	0	<b>8</b>
C-14	U	Campus Drive (50' north of San Ramon Avenue)	Enhance crosswalk	3	2	2	1	<b>8</b>
C-1	U	Barstow Avenue (165' west of Campus Drive)	Re-align curb cut	3	0	4	0	<b>7</b>
C-20	U	Campus Drive (170' north of San Bruno Avenue)	Enhance existing crosswalk	3	0	2	1	<b>6</b>
C-12	U	Barstow Avenue (350' west of Sierra Vista Avenue)	Install pedestrian refuge island	3	0	2	0	<b>5</b>
C-19	U	San Ramon Avenue (180' west of Maple Avenue)	Enhance existing crosswalks	3	0	2	0	<b>5</b>



Table 6-7: Prioritized Pedestrian Projects (continued)

Project ID	Facility Type	Location	Treatment	Public Input	Safety: Pedestrian-Involved Collisions	Connectivity: Existing	Connectivity: Multi-Modal	Total Score
<b>Phase III</b>								
SW-3	SW	Price Avenue (Portals Avenue to Barstow Avenue)	Install sidewalks on both sides of street	0	0	4	0	<b>4</b>
SW-5	SW	Woodrow Avenue (Portals Avenue to Barstow Avenue)	Install sidewalks on both sides of street	0	0	4	0	<b>4</b>
SW-6	SW	Parking Lot 11 on east side of Animal Science Pavilion (Portals Avenue to Barstow Avenue)	Install sidewalks on both sides of street	0	0	4	0	<b>4</b>
SW-7	SW	Sierra Vista Avenue (Portals Avenue to Barstow Avenue)	Install sidewalks on both sides of street	0	0	4	0	<b>4</b>
SW-10	SW	Parking Lot 16 (Maple Avenue just north of San Ramon Avenue)	Install sidewalk along south edge	0	0	4	0	<b>4</b>
SW-13	SW	Chestnut Avenue (Post Harvest Lab to Gibson Farm Market)	Close sidewalk gap	0	0	4	0	<b>4</b>
C-15	U	Campus Drive at San Ramon Avenue	Enhance crosswalk	0	0	2	1	<b>3</b>
C-17	U	Jackson Avenue (100' north of San Ramon Avenue)	Align curb cuts	0	0	2	1	<b>3</b>
C-18	U	Campus Drive (66' south of San Ramon Avenue)	Enhance crosswalk	0	0	2	1	<b>3</b>
C-7	U	Barstow Avenue (125' east of Jackson Avenue)	Install raised crosswalk	0	0	2	0	<b>2</b>
C-8	U	Barstow Avenue (335' east of Jackson Avenue)	Install raised crosswalk	0	0	2	0	<b>2</b>
SW-4	SW	Portals Avenue (Price Avenue to Parking Lot 10/Ag One Building)	Install sidewalks on both sides of street	0	0	2	0	<b>2</b>
C-16	U	San Ramon Avenue (250' east of Campus Drive)	Enhance crosswalk	0	0	2	0	<b>2</b>

## 6.4. FUNDING SOURCES

Funding strategies are a primary focus for all new active transportation-related services and facilities on a college campus. Facilities that are lower in cost, need minimal improvements, and can be tied in with other construction projects are easier to implement and should be considered a priority for implementation if they provide logical connections. In addition, the University should prepare joint applications, when possible, with local and regional agencies, non-profits, and private sector partners to better compete for Federal and State funding opportunities.

### 6.4.1 OPTIONS THAT INCREASE REVENUES

Implementing the Fresno State Active Transportation Plan recommendations will require new sources of funding to be identified. Options that increase the overall revenue

to the University are the preferred method by which transportation improvements and transportation demand management (TDM) programs should be funded. In essence, many of the transfer options in the following list are also funded through these sources because much of the costs are passed along to the end users. Sources of funds that are new revenues are:

- Student transit fee
- Parking fines
- Transportation fees paid directly by employees
- Fundraising/donations
- Grants
- Partnerships with other agencies and private entities

All of these are advantageous because they represent true increases in funding that can be applied to transportation measures. Revenues derived from these sources can be applied to the programs described in this Active Transportation Plan without negatively impacting other programs or the academic mission of the institution. With the exception of donations, most of these sources have predictable funding patterns and are largely stable, allowing long-term planning for TDM improvements and capital investment in infrastructure once they are implemented.

**Table 6-8** lists potential grant funding sources Fresno State could pursue to implement the recommended projects and programs.

**Table 6-8: Potential Funding Sources**

Funding Source	Remarks
<b>Federal</b>	
Bus and Bus Facilities Program: State of Good Repair	Can be used for projects to provide access for bicycles to public transportation facilities, to provide shelters and parking facilities for bicycles in or around public transportation facilities, or to install equipment for transporting bicycles on public transportation vehicles.
Bus Livability Initiative	Can be used for bicycle and pedestrian support facilities, such as bicycle parking, bike racks on buses, pedestrian amenities, and educational materials
Federal Transit Act	Typical funded projects have included bike lockers at transit stations and bike parking near major bus stops. FTA funds can also be used for First/Last Mile bicycling and pedestrian improvements within 3 miles of a transit stop. Guideline for the use of 10 percent of the annual CMAQ funds starting in fiscal year 2012-2013 for bike/pedestrian projects through a competitive call to local agencies.
Land and Water Conservation Fund (LWCF)	Federal fund provides matching grants to state and local governments for the acquisition and development of land for outdoor recreation use. Lands acquired through program must be retained in perpetuity for public recreational use. Individual project awards are not available. Congress allowed LWCF to sunset in 2015, but there is currently an effort to reauthorize the program.

**Table 6-8: Potential Funding Sources (continued)**

Funding Source	Remarks
MAP-21 – Surface Transportation Program	A wide variety of bicycle and pedestrian improvements are eligible, including on-street bicycle transportation facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities.
MAP-21 – Highway Safety Improvement Program (HSIP)	This program provides funds for the implementation of bicycle transportation facilities that address safety concerns, especially along corridors with high bicycle-involved collision rates. Projects may include education and enforcement programs. The HSIP includes the Railroad-Highway Crossings program.
MAP-21 – Pilot Transit-Oriented Development Planning Program	Provides funding to advance planning efforts that seek to increase access to transit hubs for pedestrian and bicycle traffic.
MAP-21 – Congestion Mitigation and Air Quality Improvement Program (CMAQ)	The amount of CMAQ funds depends on the state's population share and on the degree of air pollution. Recent revisions were made to bring CMAQ in line with the new MAP-21 legislation. There is a broader emphasis on projects that are proven to reduce PM-2.5. Eligible projects include: "Constructing bicycle and pedestrian facilities (paths, bike racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips; (and) non-construction outreach related to safe bicycle use." Studies that are part of the project development pipeline (e.g., preliminary engineering) are eligible for funding. "An assessment of the project's expected emission reduction benefits should be completed prior to project selection."
National Center for Environmental Health – Health Impact Assessment for Improved Community Design	The grant program aims to increase the capacity of public health departments to include health considerations in transportation and land use planning decisions. The grant provides an average of \$145,000 per year for 3 years to 6 awardees. The grant is generally available every 3 years.
New Opportunities for Bicycle and Pedestrian Infrastructure Financing Act	A proposed bill in Congress to set aside one percent of TIFIA's \$1 billion for bicycle and pedestrian infrastructure projects, such as the conversion of abandoned rail corridors for trails, bicycle signals, and path lighting. For these projects, TIFIA's minimum project cost would be \$2 million. Eligible costs include: planning & feasibility studies, construction, and land acquisition. The bill reserves 25 percent of project funding for low-income communities.
Rivers, Trails, and Conservation Assistance Program	RTCA staff provides technical assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways.
Transportation Investments Generating Economic Recovery (TIGER) Program	Can be used for innovative, multimodal and multi-jurisdictional transportation projects that promise significant economic and environmental benefits to an entire metropolitan area, a region, or the nation. These include bicycle and pedestrian projects. Project minimum is \$10 million.
U.S. Environmental Protection Agency – Brownfields Program	Assessment grants provide funding for a grant recipient to inventory, characterize, assess, and conduct planning and community involvement related to brownfields sites (locations that have been host to a hazardous substance, pollutant, or contaminant). Revolving Loan Fund (RLF) grants provide funding for a grant recipient to capitalize a revolving loan fund and to provide sub-grants to carry out cleanup activities at brownfield sites. Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites.
<b>State of California</b>	
Affordable Housing and Sustainable Communities (AHSC) Program	AHSC grants are available for projects that integrate walking and bicycling improvements with affordable housing developments and transit connectivity. Requirements for housing and transit project components vary based on the frequency of transit in the project vicinity and by the density of the community. The primary criteria for project selection is reduction of greenhouse gas emissions. The 2015 application cycle closed in February and offered approximately \$120 million in grant funding.

**Table 6-8: Potential Funding Sources (continued)**

Funding Source	Remarks
Caltrans Active Transportation Program (ATP)	Funds construction, planning, and design of facilities for pedestrians, bicycle riders, and other non-motorized forms of transportation, while also funding non-infrastructure programs related to active transportation. The second application cycle closed in the spring of 2015. The ATP uses MAP-21 federal funds for a portion of the funded projects, so local agencies must adhere to certain federal guidelines. An ATP compliance table for this Plan is included in Appendix E
Clean Water State Revolving Fund Program	The CWSRF program offers low interest financing agreements for water quality projects, which can include "implementation of nonpoint source projects or program." Annually, the program disburses between \$200 and \$300 million. Stormwater management components of bicycle infrastructure projects may be eligible for this funding source. Applications are accepted on a continuous basis.
Climate Ready Grant Program	Climate Ready grants are available for projects located along the coast and coastal watersheds. Shared-use trails are eligible. \$1.5 million total; \$50,000 minimum grant; \$200,000 maximum. Managed by California Coastal Conservancy.
Community Based Transportation Planning Grants	Eligible projects that exemplify livable community concepts including enhancing bicycle and pedestrian access. Administered by Caltrans. \$3 million, each project not to exceed \$300,000.
Environmental Enhancement and Mitigation Program (EEMP)	Funds may be used for land acquisition. Individual grants limited to \$350,000.
Environmental Justice: Context-Sensitive Planning	Funds projects that foster sustainable economies, encourage transit-oriented and mixed use development, and expand transportation choices, including walking and biking. Projects can be design and education, as well as planning. Administered by Caltrans. \$3 million, each grant not to exceed \$250,000.
Habitat Conservation Fund	Provides funds to local entities to protect threatened species, to address wildlife corridors, to create trails, and to provide for nature interpretation programs which bring urban residents into park and wildlife areas. \$2 million available annually. Application deadline is typically in October of each year.
Office of Traffic Safety (OTS) Grant Program	Funds safety improvements to existing bicycle transportation facilities, safety promotions including bicycle helmet giveaways, and studies to improve traffic safety. The grant cycle typically begins with a Request for Proposals in November/December, which are due the following January. For 2015, OTS awarded \$102 million to over 200 agencies
Petroleum Violation Escrow Account (PVEA)	Funds programs based on public transportation, computerized bus routing and ride sharing, home weatherization, energy assistance and building energy audits, highway and bridge maintenance, and reducing airport user fees.
Public Access Program	Funds the protection and development of public access areas in support of wildlife-oriented uses, including helping to fund construction of ADA trails.
Recreational Trails Program	Administered in California as part of the ATP. \$5.8 million guaranteed set-aside. Managed by the California Department of Parks and Recreation.
Safe Routes to School (SRTS)	In 2014, federal SRTS funds were rolled into the State's ATP to streamline grant allocation. \$24 million combined in ATP for state and federal Safe Routes to School projects for the 2014 cycle. SRTS is primarily a construction program to enhance the safety of pedestrian and bicycle transportation facilities near schools. A small percentage of funds can be used for programmatic improvements. Improvements can be made to target students of all grade levels.
Sustainable Communities Planning Grant and Incentives Program	Funded by Prop 84 bond funds, this grant program funds the development and implementation of plans that lead to significant reductions in greenhouse gas emissions, such as rehabilitation of existing infrastructure and the enhancement of recreational resources. The minimum grant award is \$50,000; the maximum award is \$500,000, unless the application is a joint proposal, in which case the maximum award is \$1 million.
	The 10 percent local match requirement is waived for a proposal that qualifies for the Environmental Justice set-aside.

**Table 6-8: Potential Funding Sources (continued)**

Funding Source	Remarks
Watershed Protection Program (Proposition 13)	Grants to municipalities, local agencies, or nonprofit organizations to develop local watershed management plans (maximum \$200,000 per local watershed plan) and/or implement projects (maximum \$5 million per project) consistent with watershed plans. Administered by the Division of Financial Assistance.
<b>Regional and Local</b>	
Measure C Sales Tax	Passed by Fresno votes, the sales tax extension allocates \$0.005 of every dollar spent on eligible purchases to transportation projects. Measure C funding is available for roadway widening (including on-street bicycle lanes), installation of bicycle lanes and shared-use paths, and pedestrian facilities.
Clean Air Fund (AB 434/2766 - Vehicle Registration Fee Surcharge)	Administered by San Joaquin Valley Air Pollution Control District. Local jurisdictions and transit agencies can apply. Funds can be used for projects that encourage biking, walking, and/or use of public transit. For bicycle-related projects, funds can be used to install Class I shared-use paths (maximum of \$150,000 per project) or Class II bicycle lanes (maximum of \$100,000 per project). Funds are also available to subsidize transit passes and construct park and ride lots.
<b>Private</b>	
Community Action for a Renewed Environment (CARE)	EPA grant program to help community organize and take action to reduce toxic pollution in its local environment.
Health Foundations	Focus pedestrian improvements for an obesity prevention strategy. Examples include California Wellness Foundation, Kaiser, and the California Endowment.
PeopleForBikes	PeopleForBikes (formerly Bikes Belong) provides grants for up to \$10,000 with a 50 percent match that recipients may use towards the engineering, design, and construction of bike paths, lanes, bridges, and end-of-trip facilities, as well as programs.
Rails-to-Trails Conservancy	Provides technical assistance for converting abandoned rail corridors to use as multi-use trails.
Surdna Foundation	The Surdna Foundation makes grants to nonprofit organizations in the areas of environment, community revitalization, effective citizenry, the arts, and the nonprofit sector.
Other Private Foundations/ Organizations	Various private foundations and organizations may fund specific components identified in this Plan, such as community encouragement events and other non-infrastructure programs.

#### 6.4.2 FUNDING OPTIONS SUMMARY

It is clear from this discussion that there is no easy solution to funding transportation infrastructure and programs. It is likely that a variety of funding sources will be needed to implement the various infrastructure and programming recommendations made

throughout this Plan. New revenue sources are desirable since they do not adversely affect existing programs. Issues of equity and fairness must be addressed in any solution. This section of the Active Transportation Plan presents ideas and concepts about several possible transportation futures. One can only conclude

that additional investigation is needed to develop a viable proposal that ensures financial viability of transportation providers like Fresno State at a price that is fair to those that use the transportation system.



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# APPENDICES

**APPENDIX A: ENGAGEMENT MATERIALS**

**APPENDIX B: RELEVANT PLANS AND POLICIES**

**APPENDIX C: COLLISIONS INVOLVING NON-MOTORIZED USERS ON  
CAMPUS**

**APPENDIX D: INFRASTRUCTURE RECOMMENDATION TABLES**

**APPENDIX E: ACTIVE TRANSPORTATION PROGRAM COMPLIANCE TABLE**

## APPENDIX A. ENGAGEMENT MATERIALS

### A.1. SURVEY QUESTIONS

This section contains the pages from the printed versions of the outreach survey. All questions were also uploaded to the SurveyMonkey website online.

# Fresno State

## Active Transportation Options

*Thank you for your participation in this survey! Your feedback will be used to help create an Active Transportation Plan that addresses the unique characteristics, challenges, and opportunities of the California State University – Fresno (Fresno State) campus and surrounding communities. Please note that all of your responses will be anonymous and not be sold or distributed.*

### COMMUNITY CHARACTERISTICS

<b>1. Classification:</b> <input type="checkbox"/> Undergraduate <input type="checkbox"/> Graduate <input type="checkbox"/> Faculty <input type="checkbox"/> Staff <input type="checkbox"/> Other (Please specify): _____ _____	<b>2. Age:</b> <input type="checkbox"/> 15-25 <input type="checkbox"/> 26-35 <input type="checkbox"/> 36-45 <input type="checkbox"/> 46-55 <input type="checkbox"/> 56-65 <input type="checkbox"/> 65+	<b>3. Gender:</b> <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Another gender <input type="checkbox"/> Decline to state	<b>4. Ethnicity:</b> <input type="checkbox"/> White/Caucasian <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black/African American <input type="checkbox"/> Latino/Hispanic <input type="checkbox"/> Indian Subcontinent/Middle Eastern <input type="checkbox"/> Other (Please specify): _____ _____
---	--	---	--

**5. How do you travel to/from campus for class/work? (check all that apply)**

Drive alone     Walk     Bike     Transit     Carpool  
 Skateboard/Scooter     Get dropped off/picked up     I live on campus

**6. Which one of the above travel modes is used most often?** \_\_\_\_\_

**7. How do you typically travel AROUND campus? (circle one)**

Walk	Bike	Drive to the closest parking lot	Skateboard/Scooter
------	------	----------------------------------	--------------------

<b>8. What time do you typically <b>arrive to</b> campus? (if you arrive at different times on different days, check all that apply):</b> <input type="checkbox"/> Before 8 am <input type="checkbox"/> 8-9 am <input type="checkbox"/> 9-10am <input type="checkbox"/> 10-11 am <input type="checkbox"/> After 11 am <input type="checkbox"/> I live on campus	<b>9. What time do you typically <b>leave</b> campus? (if you leave at different times on different days, check all that apply):</b> <input type="checkbox"/> Before 3 pm <input type="checkbox"/> 3-4 pm <input type="checkbox"/> 4-5 pm <input type="checkbox"/> 5-6 pm <input type="checkbox"/> After 6 pm <input type="checkbox"/> I live on campus
---	---

**10. How often do you ride a bicycle?**

5+ days a week     3-4 days a week     1-2 days a week     1-2 times a month     Never

### INFRASTRUCTURE IMPROVEMENTS

**11. Where would you like to see more bicycle parking/racks?**

Location 1: \_\_\_\_\_

Location 2: \_\_\_\_\_

Location 3: \_\_\_\_\_



Figure A-1: Page one of Fresno State Active Transportation Survey



12. Are there any locations on or around campus you have safety or connectivity issues with? What and where are they?

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13. What keeps you from riding a bicycle or walking more often? (please rank 1-5):

- |   |  |
|---|--|
| <input type="checkbox"/> I don't have enough time   | <input type="checkbox"/> Unsafe/unlawful behavior by pedestrians |
| <input type="checkbox"/> I have too much stuff to carry   | <input type="checkbox"/> Insufficient bike parking on campus     |
| <input type="checkbox"/> Not enough or disconnected bike paths, routes, or lanes in the <b>City of Fresno</b> | <input type="checkbox"/> I travel with small children            |
| <input type="checkbox"/> Not enough or disconnected bike paths, routes, or lanes in the <b>City of Clovis</b> | <input type="checkbox"/> Health issues/concerns                  |
| <input type="checkbox"/> Not enough or disconnected bike paths, routes, or lanes <b>on campus</b>             | <input type="checkbox"/> Destinations are too far away           |
| <input type="checkbox"/> Unsafe/unlawful behavior by motorists  | <input type="checkbox"/> Insufficient lighting                   |
| <input type="checkbox"/> Unsafe/unlawful behavior by other bicycle riders                                     | <input type="checkbox"/> Bike theft                              |
| <input type="checkbox"/> Lack of wayfinding/signage   | <input type="checkbox"/> I do not own a bike                     |
|   | <input type="checkbox"/> Nowhere to shower/clean up after biking |
|   | <input type="checkbox"/> It gets too hot/too cold/ too rainy     |
|   | <input type="checkbox"/> Personal security                       |
|   | <input type="checkbox"/> Other (please specify):                 |

14. Please rank how likely the following improvements would affect your decision to bike or walk:

- Scale: 3 - Much more likely to bike or walk  
 2 - Somewhat more likely to bike or walk  
 1 - No more likely to bike or walk
- |  |   |
|--|---|
| <input type="checkbox"/> Improved/additional off-street paths                                  | <input type="checkbox"/> Improved campus signage                    |
| <input type="checkbox"/> Improved/additional bike lanes  | <input type="checkbox"/> Lower vehicle traffic volumes/speeds       |
| <input type="checkbox"/> Showers/lockers available at primary destinations                     | <input type="checkbox"/> Improved existing street crossings         |
| <input type="checkbox"/> Better connections between Fresno State campus and surrounding cities | <input type="checkbox"/> More identified/protected street crossings |
| <input type="checkbox"/> Improved/additional on-campus paths                                   | <input type="checkbox"/> Improved lighting                          |
| <input type="checkbox"/> Improved/additional sidewalks   | <input type="checkbox"/> Maps or guides showing best travel routes  |
|  | <input type="checkbox"/> Improved freeway crossings                 |
|  | <input type="checkbox"/> More bicycle parking around campus         |

15. Where do you wish transit provided service to and from campus?: (ex: Airport, Yosemite)

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Figure A-2: Page two of Fresno State Active Transportation Survey

16. Please rank how likely the following improvements would affect your decision to use transit:

- Scale: 3 - Much more likely to use transit  
 2 - Somewhat more likely to use transit  
 1 - No more likely to use transit
- |  |  |
|--|--|
| <input type="checkbox"/> Improvements to bus/transit stops | <input type="checkbox"/> Better connections between Fresno State campus and surrounding cities |
| <input type="checkbox"/> Higher frequency of service       | <input type="checkbox"/> More transit stops on campus  |
| <input type="checkbox"/> Free transit passes               | <input type="checkbox"/> Late night/early morning service                                      |
| <input type="checkbox"/> Real-time arrival information     |  |

17. Please rate how likely the following programs would affect your decision to walk, bike, or take transit:

- Scale: 3 - Much more likely to walk, bike, or take transit  
 2 - Somewhat more likely to walk, bike, or take transit  
 1 - No more likely to walk, bike, or take transit
- |  |  |
|--|--|
| <input type="checkbox"/> Bicycle riding skills and safety courses      | <input type="checkbox"/> Free or discounted on-campus bicycle maintenance and repair |
| <input type="checkbox"/> Instruction on bicycle maintenance and repair | <input type="checkbox"/> Public awareness campaign                                   |
| <input type="checkbox"/> Free transit passes                           | <input type="checkbox"/> Bike sharing program  |
| <input type="checkbox"/> Bicycle information website                   | <input type="checkbox"/> Vehicle parking fee increase                                |

18. Other comments (please share anything else about walking, biking, or taking transit to, from, or around Fresno State that you feel we need to know):

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**Thank you for your participation in this survey!**

If you would like to win a \$50 gift card to Kennel Bookstore or receive more information about the Fresno State University Active Transportation Plan, provide your email below:

Name: \_\_\_\_\_  
 Email: \_\_\_\_\_



Figure A-3: Page three of Fresno State Active Transportation Survey

A.2. WORKSHOP POSTERS

# PROJECT OVERVIEW

## FRESNO STATE ACTIVE TRANSPORTATION PLAN

### KEY INPUTS FOR PLAN DEVELOPMENT:



### DID YOU KNOW?

Between 2010 and 2014, there were **81 collisions** on and around campus that involved a pedestrian or a person on a bicycle.



Only **89 bikes were registered** with Fresno State in 2014.

Fresno is ranked **33rd** in large US Cities for walking and biking commute to work mode share.

The CDC reports that only **48%** of Fresno residents meet recommended levels of daily physical activity.

### FIELD WORK, MAPPING ANALYSIS, AND PUBLIC INPUT ARE KEY ELEMENTS OF THE PLANNING PROCESS.



### PROJECT TIMELINE:

- Project Kick-Off **DECEMBER 2014**
- Public Outreach and Analysis of Existing Conditions **EARLY SPRING 2015**
- Develop Recommendations **SPRING 2015**
- Draft Plan **SUMMER 2015**
- Public Presentation **FALL 2015**
- Final Plan **WINTER 2015**




Figure A-4: Project overview workshop poster

# WHY PLAN FOR WALKING AND BICYCLING?

### HEALTH + ENVIRONMENTAL BENEFITS

Walking and bicycling facilities promote an active, healthy lifestyle.

Accessible Pedestrian & Bike Trails

**SPEND \$1.00**

→ SAVE →

**\$3.00**

Direct Medical Expenses!

Replace 2 miles of driving with walking or biking x 365 days =

730 lbs of carbon dioxide prevented from entering the atmosphere

Sixty-five percent of adults in Fresno County are either overweight or obese. Forty-three percent of children in Fresno are either overweight or obese.

**65%**

A Charlotte, NC, study found that residents who switched to walking to and using light rail for their commute weighed an average of 6.5 pounds less than those who continued to drive to work.

Sidewalks, bike lanes, paths, and greenway trails help to reduce vehicle emissions, fuel consumption, and congestion.

### ECONOMIC BENEFITS

Businesses, residents, and visitors consider quality of life factors like walkability and bikability when choosing locations to settle. Fresno needs to better position itself to take advantage of this economic opportunity.

An initial investment of \$6.7M in walking and bicycling facilities has generated \$60M in annual bicycle-related tourism revenue in the Outer Banks.

Property values are higher by \$4,000 to \$34,000 in walkable areas.

Walking the Walk

Generates \$64 Million in additional residential property taxes

Generates \$174 Million in additional state income taxes

Walking trails can cost by \$76 Million

Walking trails can generate \$68 Million in economic impact

### ACCESSIBILITY + MOBILITY BENEFITS

Walking and Bicycling facilities provide efficient commuting options.

When the city of Seattle removed car lanes and added bike lanes to its Stone Way North street, the volume of cyclists increased 25%, motor traffic on adjacent streets declined 12-34%, speeding decreased 80%, and collisions dropped 14%.

Americans' Choices for Transportation Funding

Walking & Bicycling: 1%

Walking and biking infrastructure is among the most cost-effective forms of transportation investment.

**67%**

After a bike and pedestrian lane was installed on a South Carolina bridge, 67% of users indicated that their activity levels had increased since the opening of the lane.

### SAFETY BENEFITS

Infrastructure Improvements and Safety

Improvement	Crash Reduction Rate
Install sidewalk along roadway	89% pedestrian crash reduction rate
Install refuge islands	56% pedestrian crash reduction rate
Convert unmarked intersection to roundabout	27% pedestrian crash reduction rate
Install countdown signal	25% pedestrian crash reduction rate
Provide protected bicycle lanes	36-40% bicyclist crash reduction rate

CA Perspective: CA had 612 pedestrian fatalities and 124 bicyclist fatalities in 2012.

Figure A-5: "Why Plan for Walking and Bicycling" workshop poster

# PEDESTRIAN AND BICYCLE INFRASTRUCTURE

FRESNO STATE  
ACTIVE TRANSPORTATION PLAN



What would you most like to see in the Fresno State area? (vote with 6 stickers)

## CYCLE TRACKS



A cycle track is an exclusive lane facility that combines the user experience of a separated path with the improved infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk (NACTO).

## SHARED-USE PATHS



## BICYCLE LANES/BUFFERED BICYCLE LANES



## SHARED-USE SIDE PATHS ALONG ROADWAYS



## SHARED LANE MARKINGS (SHARROWS)



## RAISED MEDIANS/CROSSING ISLANDS



## PAVED SHOULDERS



## IMPROVED ADA ACCESSIBILITY



## BICYCLE BOULEVARDS



Bicycle boulevards are streets with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority. Bicycle boulevards use signs, pavement markings, and speed and volume management measures to discourage through trips by motor vehicles and create safe, convenient bicycle crossings of busy arterial streets (NACTO).

## NEW SIDEWALKS



## BICYCLE-FRIENDLY INTERSECTIONS



## INTERSECTION IMPROVEMENTS FOR PEDESTRIANS



Figure A-6: Pedestrian and bicycle infrastructure workshop poster

# ACCESS TO TRANSIT

FRESNO STATE  
ACTIVE TRANSPORTATION PLAN



## EVERY TRANSIT-USER IS A PEDESTRIAN AND/OR BICYCLIST, TOO!

Pedestrian and bicycle access to transit stops is critical to the safety and convenience of transit users in the Fresno State area. Share your thoughts on how to create more transit stops in and around Fresno State that provide safe and comfortable access for pedestrians and bicyclists.

**A LACK OF SIDEWALKS, ADA-ACCESSIBILITY, SHADE, BICYCLE PARKING, OR OTHER KEY ELEMENTS OF A TRANSIT STOP CAN LIMIT THE SAFETY, CONVENIENCE, AND OVERALL ACCESSIBILITY OF TRANSIT.**



**WHAT TRANSIT STOPS/ROUTES ARE MOST IN NEED OF BETTER PEDESTRIAN AND BICYCLE ACCESS?**

**WHAT WOULD MAKE TRANSIT IN THE REGION MORE CONVENIENT AND PRACTICAL FOR YOU?**

**BICYCLE RACKS ON BUSES, WIDE SIDEWALKS, SHELTERS, AND SIMILAR FEATURES ARE CRITICAL TO ENSURING THAT TRANSIT IS A SAFE, PRACTICAL, AND INVITING CHOICE.**

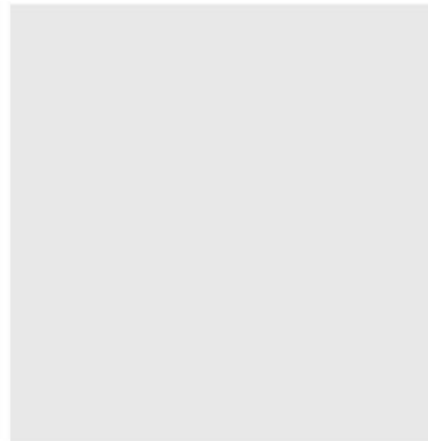
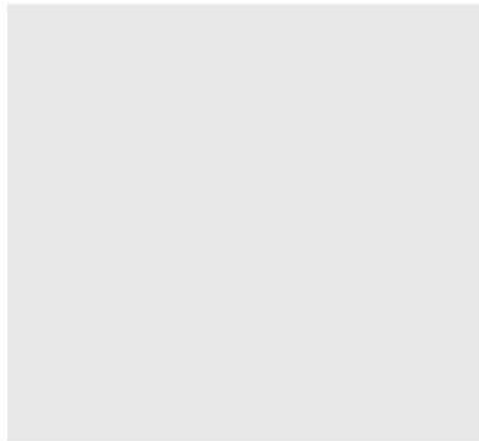


Figure A-7: Access to transit workshop poster



# EDUCATION, ENCOURAGEMENT, AND ENFORCEMENT **FRESNO STATE ACTIVE TRANSPORTATION PLAN**



## FOR TRANSIT, BIKING, AND WALKING

An inviting network of pedestrian and bicycle facilities for all ages and abilities, providing access to transit and destinations

Community understanding and respect for sharing the road with ALL road users (bus, bike, pedestrian, car, and truck)

Increased walking and biking activity, as well as transit usage



A safer environment for every road user

Institutional support and long-term planning for active transportation

A community that serves a diverse population geographically, socioeconomically, and demographically

### WHAT SUCCESSFUL PROGRAMS ALREADY EXIST IN FRESNO?

### WHAT NEW PROGRAMS (OR EXPANSION OF EXISTING PROGRAMS) WOULD HAVE THE GREATEST IMPACT ON WALKING AND BICYCLING ON CAMPUS OR IN FRESNO? (Spend your dots! You have 3 dots to vote for programs you think would provide the greatest benefit to the region.)

<p><b>TRAIL USER ETIQUETTE CAMPAIGN</b> Shared-use greenways and trails are available for use by bicyclists, walkers, runners, skateboarders, rollerbladers, parents with strollers, dogs, children, and, in some cases, equestrians, as well as other modes. A campaign for trail user etiquette works to ensure that all users safely and responsibly share the trail. The campaign may include media advertisements, trail signage, brochures, an "ambassador" program, etc.</p>	<p><b>HAPPY TRAILS TO HEALTHY FOODS</b> Many communities are recognizing the role that both physical activity and healthy eating play in improving overall public health and wellness. This important link can be highlighted in a fun and interactive manner through promoting healthy food outlets along the bicycle, pedestrian, trail, and transit network and partnering with health food providers to identify safe routes for active transportation to their locations.</p>	<p><b>CAR-FREE STREET EVENTS</b> Car-free street events involve periodic street "openings" that create a temporary park that is open to the public for walking, bicycling, dancing, etc. The purpose of the event is to encourage biking and other forms of physical activity in the general public by providing a fun, welcoming environment for activity. Car-free street events have been very successful internationally and are rapidly becoming popular in the U.S.</p>
<p><b>SILVER SNEAKERS SENIORS PROGRAM</b> Interested agencies, non-profits, health departments, and senior centers can partner to develop an active lifestyles program for senior citizens utilizing the bicycle, pedestrian, and greenways network. Activities could include adult tricycle or bicycle rides, nature walks, walks to lunch, and safety education.</p>	<p><b>OUTDOOR PUBLIC ART</b> Public art along a bicycle, pedestrian, greenway, and transit network can bring attention to the network, encourage usage of it, and attract newcomers to bicycling, walking, and transit. By combining art and greenway facilities, the community is creating a unique interactive amenity for both residents and visitors. Such programs also attract new partners, promoters, and sponsors of the active transportation network.</p>	<p><b>INTERPRETIVE SIGNAGE</b> Interpretive signage along a trail and greenway network serves as an education tool. Information related to the history of an area, its cultural significance, or natural features is provided on a graphically appealing sign. Topics could range from native species of plants to river currents to famous historical figures.</p>
<p><b>WAYFINDING SIGNAGE</b> The connectivity of a trail network is contingent upon physically linking bicycle, pedestrian, and transit infrastructure, as well as communicating to trail users the connectors available. Wayfinding signs direct users along the trail, bikeway, and walkway network and to community destinations. These signs can also include mileage, estimated travel time, and even calories burned. The signs also provide an opportunity for recognition of trail partners and sponsors, where applicable.</p>	<p><b>SCHOOL-BASED TRAIL ACTIVITIES</b> In partnership with potential Safe Routes to School efforts, local schools can capitalize on segments of any proposed bicycle, pedestrian, and trail network that intersect their campus. Activities along trail networks could include Bike and Walk to School Day routes, outdoor classrooms for science curriculum, educational afterschool walks and bike rides, and programs for physical education curriculum.</p>	<p><b>PERSONAL TRAVEL ENCOURAGEMENT PROGRAM</b> PTE programs are proven to reduce drive-alone trips by approximately 10% and increase bicycling, walking and transit use within a target area. The programs: • Delivers customized travel information packets; • Hosts fun events such as guided rides, walks, and classes; and • Sends trained outreach staff to farmers' markets and other community events.</p>
<p><b>GUIDED NATURE WALKS &amp; RIDES</b> Naturalists are a significant user group of a trail and greenway network. Unique natural resources, such as the San Joaquin River, can attract significant eco-tourism opportunities. Guided nature walks and bicycle rides could be led by trained volunteers or interested partners, such as a college extension service.</p>	<p><b>HERITAGE TOURISM WALKING/BIKING/TRANSIT MAPS &amp; GUIDES</b> Walking, biking, and transit guides can capitalize on and promote Fresno's rich history. The guides would be targeted to a variety of ages and abilities, offering varying routes for families, touring cyclists, and others.</p>	<p><b>DIVERSION CLASS</b> A diversion class is offered to first-time offenders of certain bicycle-related traffic violations, such as running a stop sign on a bike. It can be aimed just at bicyclists or at bicyclists, motorists, and pedestrians. In lieu of a citation and/or fine, individuals can take a one-time, free or inexpensive class.</p>
<p><b>BICYCLE - PEDESTRIAN RESOURCE WEBSITE</b> The City should create a website that serves as a one-stop resource for bicyclists, pedestrians, and trail users of all types. Information could include tips for commuters, route planning services, message boards, and more.</p>	<p><b>EMPLOYER-BASED ENCOURAGEMENT</b> Companies that establish a bicycling, walking, and transit incentive program for employees increase the number of employees who commute to work, meetings, or lunch by biking, walking, or transit. Such programs can highlight health benefits, increased productivity, and cost-savings related to parking costs.</p>	<p><b>LAUNCH PARTIES FOR NEW BIKEWAYS</b> The area's cities and counties should partner with local advocacy groups to generate media attention and engage local citizens in each incremental expansion of the bikeway network. Popular launch parties in other jurisdictions have included bicycle-handling workshops, free bike mechanic services, live music, bicycle giveaways, and other activities.</p>
<p><b>FAMILY BIKING PROGRAMS</b> Family bicycling programs help parents figure out how to safely transport children by bicycle and help children learn bicycling skills. Activities may include bicycle safety checks, a group ride or parade, "freedom from training wheels" clinics, and opportunities to try out different ways to transport children (e.g., trailers, cargo bicycles, kid seats, etc.).</p>		
<p><b>BICYCLE &amp; PEDESTRIAN SAFETY CAMPAIGN</b> A high-profile marketing campaign is an effective strategy for highlighting the importance of respect and shared responsibility on the road between bicyclists, motorists, and pedestrians. This type of campaign is particularly effective when launched in conjunction with other events such as Walk to School Day or National Bike Month.</p>		
<p><b>KEY QUESTION: ARE THERE OTHER PROGRAM IDEAS YOU WOULD LIKE TO SEE? (write your thoughts or place a dot beside an existing idea to show your support)</b></p>		

Figure A-8: Education, encouragement and enforcement workshop poster

## APPENDIX B. RELEVANT PLANS AND POLICIES

This appendix provides an overview of planning and policy efforts relevant to the Fresno State Active Transportation Plan. The recommendations of the ATP will be consistent with and build upon these local, regional, and state planning efforts and policies.

### B.1. LOCAL PLANS AND POLICIES

#### B.1.1 CALIFORNIA STATE UNIVERSITY - FRESNO CAMPUS MASTER PLAN (2008)

The first objective listed in the Fresno State Campus Master Plan is to “make campus access and circulation safe and efficient for pedestrians, bicycles, service vehicles, parking access and emergency vehicles.” One of the primary visions in the plan to help improve the safety of active transportation modes is to provide separate routing for most large service vehicles. Some of the major recommendations listed in the plan are to provide adequate and shaded bicycle parking at all campus destinations, to designate extra pavement width for bicycle use where permissible, and to ensure clear sightlines at intersections to reduce the risk of collisions and to enhance personal safety.

#### B.1.2 CITY OF FRESNO GENERAL PLAN (2014 )

The General Plan, and specifically the Mobility and Transportation element of the General Plan, frequently mentions the idea of “Complete Streets” and includes objectives and policies for all modes and all users of streets and highways, transit, sidewalks and trails, and bicycle transportation modes.

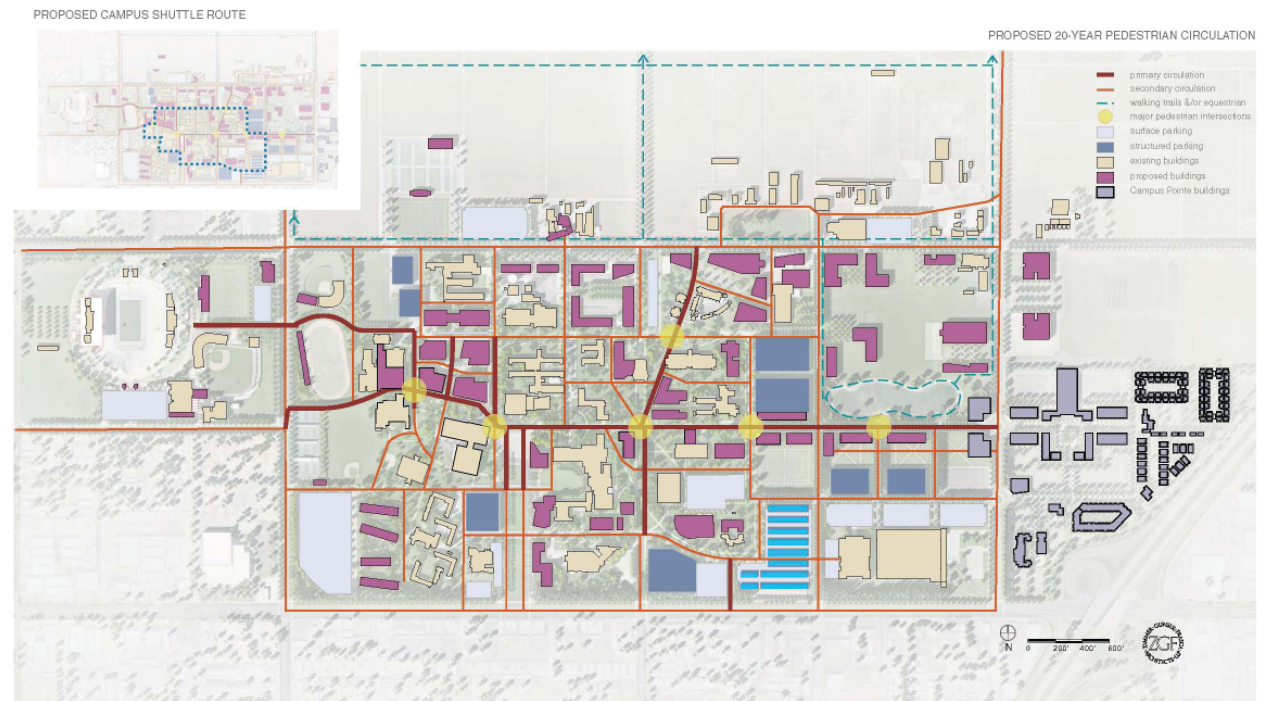


Figure B-1: Proposed 20-year circulation map from 2008 Campus Master Plan

Specific Mobility and Transportation Element active transportation policies that are applicable to Fresno State are as follows:

**Table B-1: Active Transportation Policies Applicable to Fresno State**

<b>Objective</b>	
MT-1	Create and maintain a transportation system that is safe, efficient, provides access in an equitable manner, and optimizes travel by all modes.
<b>Implementing Policies</b>	
MT-1-e	Ensure Interconnectivity Across Land Uses. Update development standards and design guidelines applicable to public and private property to achieve Activity Centers, neighborhoods, and communities which are well connected by pedestrian, bicycle, appropriate public transportation, and automobile travel facilities.
MT-1-f	Match Travel Demand with Transportation Facilities. Designate the types and intensities of land uses at locations such that related travel demands can be accommodated by a variety of viable transportation modes and support Complete Neighborhoods while avoiding the routing of excessive or incompatible traffic through local residential streets.
MT-1-k	Multi-Modal Level of Service Standards. Develop and use a tiered system of flexible, multi-modal Level of Service standards for streets designated by the Circulation Diagram. Strive to accommodate a peak hour vehicle LOS of D or better on street segments and at intersections, except where [other policies] provide greater specificity. Establish minimum acceptable service levels for other modes and use them in the development and environmental review process.
<b>Objective</b>	
MT-2	Make efficient use of the City’s existing and proposed transportation system and strive to ensure the planning and provision of adequate resources to operate and maintain it.
<b>Implementing Policies</b>	
MT-2-d	Street Redesign where Excess Capacity Exists. Evaluate opportunities to reduce right-of-way and/or redesign streets to support non-automobile travel modes along streets with excess roadway capacity where adjacent land use is not expected to change over the planning period.  Commentary: Such strategies could include narrowing roads (road diets), adding landscape medians, adding street parking, and adding bike lanes.
<b>Objective</b>	
MT-4	Establish and maintain a continuous, safe, and easily accessible bikeways system throughout the metropolitan area to reduce vehicle use, improve air quality and the quality of life, and provide public health benefits.



**Table B-1: Active Transportation Policies Applicable to Fresno State (continued)**

<b>Implementing Policies</b>	
MT-4-a	Bicycle, Pedestrian, and Trails Master Plan. To the extent consistent with this General Plan, continue to implement and periodically update the Bicycle, Pedestrian, and Trails Master Plan to meet State standards and requirements for recommended improvements and funding proposals as determined appropriate and feasible.
MT-4-b	Bikeway Improvements. Establish and implement property development standards to assure that projects adjacent to designated bikeways provide adequate right-of-way and that necessary improvements are constructed to implement the planned bikeway system... to provide for bikeways, to the extent feasible, when existing roadways are reconstructed; and alternative bikeway alignments or routes where inadequate right-of-way is available.
MT-4-c	Bikeway Linkages. Provide linkages between bikeways, trails and paths, and other regional networks such as the San Joaquin River Trail and adjacent jurisdiction bicycle systems wherever possible.
MT-4-e	Minimum Bike Lane Widths. Provide not less than 10 feet of street width (five feet for each travel direction) to implement bike lanes for designated Class II bikeways along roadways. Strive for 14 feet of street width (seven feet for each travel direction) for curbside bike lanes where right-of-way is available.
MT-4-f	Bike Detection Devices. Include bicycle detection devices when new intersection traffic control signals are installed and strive to retrofit existing traffic control signals to provide bicycle detection and retiming of signal phases to make them more bicycle friendly.
MT-4-g	Advocacy for Bike Accommodation. Advocate for the accommodation of bike facilities in new or upgraded State Route interchanges and railroad construction projects, and construction of bicycle crossings of freeways and railroads.
MT-4-h	Bicycle Parking Facilities. Promote the installation of bicycle locking racks and bicycle parking facilities at public buildings, transit facilities, public and private parking lots, and recreational facilities. Establish standards for bicycle parking in the Development Code.
MT-4-i	Bicycling and Public Transportation. Promote the integration of bicycling with other forms of transportation, including public transit. Continue to provide bike racks or space for bicycles on FAX buses.
MT-4-j	Street Maintenance for Bicycle Safety. Provide regular sweeping and other necessary maintenance to clear bikeways of dirt, glass, gravel, and other debris and maintain the integrity of the bicycling network.
MT-4-k	Bicycle Safety, Awareness, and Education. Promote bicycle ridership by providing secure bicycle facilities, promoting traffic safety awareness for both bicyclists and motorists, promoting the air quality benefits, promoting non-renewable energy savings, and promoting the public health benefits of physical activity.

**Table B-1: Active Transportation Policies Applicable to Fresno State (continued)**

<b>Objective</b>	
MT-5	Establish a well-integrated network of pedestrian facilities to accommodate safe, convenient, practical, and inviting travel by walking, including for those with physical mobility and vision impairments.
<b>Implementing Policies</b>	
MT-5-1	Sidewalk Development. Pursue funding and implement standards for development of sidewalks on public streets, with priority given to meeting the needs of persons with physical and vision limitations; providing safe routes to school; completing pedestrian improvements in established neighborhoods with lower vehicle ownership rates; or providing pedestrian access to public transportation routes.
MT-5-b	Sidewalk Requirements. Assure adequate access for pedestrians and people with disabilities in new residential developments per adopted City policies, consistent with the California Building Code and the Americans with Disabilities Act.
<b>Objective</b>	
MT-6	Establish a network of multi-purpose pedestrian and bicycle paths, as well as limited access trails, to link residential areas to local and regional open spaces and recreation areas and urban Activity Centers in order to enhance Fresno’s recreational amenities and alternative transportation options.
<b>Implementing Policies</b>	
MT-6-a	Link Residences to Destinations. Design a pedestrian and bicycle path network that links residential areas with Activity Centers, such as parks and recreational facilities, educational institutions, employment centers, cultural sites, and other focal points of the city environment.
MT-6-b	Multi-Agency Planning for Paths and Trail System. Continue to participate in multi-agency planning and implementation partnerships for the coordinated development of the Fresno-Clovis Metropolitan Area planned path and trail system and with Madera County for the San Joaquin River Parkway trail system.
MT-6-c	Link Paths and Trails and Recreational Facilities. Strive to provide path or trail connections to recreational facilities, including parks and community centers where appropriate, and give priority to pathway improvements within neighborhoods characterized by lower vehicle ownership rates and lower per capita rates of parks and public open space.
MT-6-d	Link Paths and Trails and Cultural Resources. Strive to designate and implement paths and trails to pass by environmental amenities, historic sites, and other cultural resources, where appropriate, and provide informational signage or other interpretation of those resources to the public.

### B.1.3 CITY OF FRESNO BICYCLE, PEDESTRIAN, AND TRAILS MASTER PLAN (2010)

The Bicycle, Pedestrian, and Trails Master Plan is intended to guide and influence bikeway policies, programs, and development standards to make bicycling in the City of Fresno more comfortable, convenient, enjoyable, and safer for all bicyclists. The ultimate goal of this effort is to increase the number of persons in the City of Fresno who bicycle for transportation to work, school, and errands, or for recreation. The Plan includes \$1.3 billion in bicycle network improvements to be built out over several years.

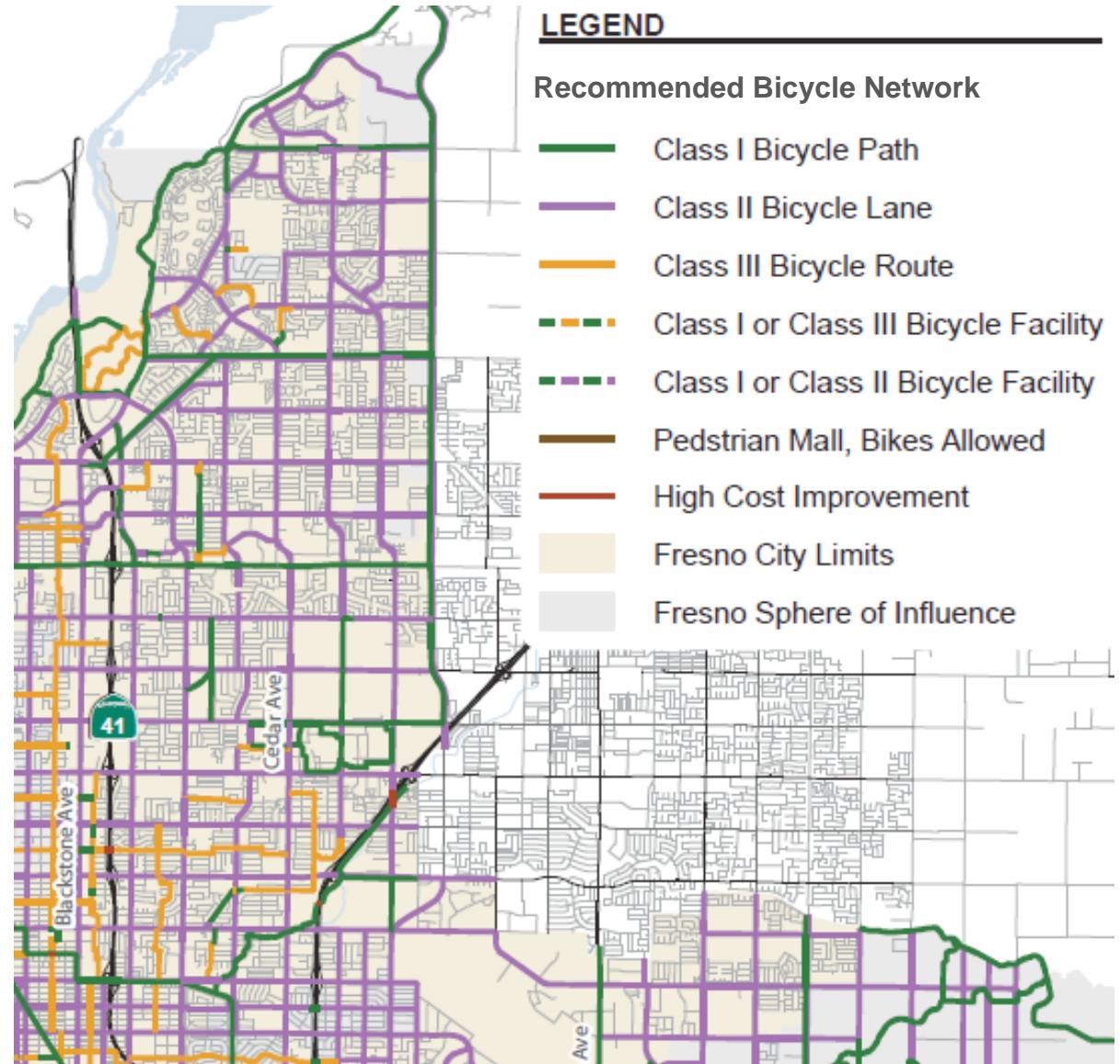


Figure B-2: Recommended bicycle network from 2010 City of Fresno Bicycle, Pedestrian, and Trails Master Plan

**B.1.4 CITY OF CLOVIS GENERAL PLAN (2014)**

The City of Clovis, immediately to the east of Fresno State, published their draft General Plan in 2014. Below are some goals and policies that address active transportation within the city as they apply to this Active Transportation Plan.

**Table B-2: Active Transportation Goals and Policies from the Clovis General Plan**

<b>Circulation Element Overarching Goal: A comprehensive and well-maintained multimodal circulation system that provides for the safe and efficient movement of people and goods.</b>	
<b>Goal 1: A context-sensitive and “complete streets” transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.</b>	
<b>Policy</b>	
1.3	Age and mobility. The design of roadways shall consider all potential users, including children, seniors, and persons with disabilities
1.5	Neighborhood connectivity. The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
1.6	Internal circulation. New development shall utilize a grid or modified-grid street pattern. Areas designated for residential and mixed-use village developments should feature short block lengths of 200 to 600 feet.
<b>Goal 2: A roadway network that is well planned, funded, and maintained.</b>	
2.2	Multimodal LOS. Monitor the evolution of multimodal level of service (MMLOS) standards. The City may adopt MMLOS standards when appropriate.
<b>Goal 3: A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.</b>	
3.3	Old Town and Mixed Use Village Centers. Transportation decisions on local streets in Old Town and mixed-use village centers shall prioritize pedestrians, then bicyclists, then mass transit, then motorists.
3.7	Conflict points. Minimize the number of and enhance safety at vehicular, pedestrian, and bicycle conflict points.
3.10	Pedestrian access and circulation. Entrances at signalized intersections should provide sidewalks on both sides of the entrance that connect to an internal pedestrian pathway to businesses and throughout nonresidential parking lots larger than 50 spaces.
3.11	Right-of-way design. Design landscaped parkways, medians, and rights-of-way as aesthetic buffers to improve the community’s appearance and encourage nonmotorized transportation.
3.12	Residential orientation. Where feasible, residential development should face local and collector streets to increase visibility and safety of travelers along the streets, and encourage pedestrian and bicycle access.

**Table B-2: Active Transportation Goals and Policies from the Clovis General Plan (continued)**

<b>Goal 4: A bicycle and transit system that serves as a functional alternative to commuting by car.</b>	
4.1	Bike and transit backbone. The bicycle and transit system should connect Shaw Avenue, Old Town, the Medical Center/R&T Park, and the three Urban Centers.
4.2	Priority for new bicycle facilities. Prioritize investments in the backbone system over other bicycle improvements.
4.3	Freeway crossings. Require separate bicycle and pedestrian crossings for new freeway extensions and encourage separate crossings where Class I facilities are planned to cross existing freeways.
4.4	Bicycles and transit. Coordinate with transit agencies to integrate bicycle access and storage into transit vehicles, bus stops, and activity centers.
<b>Goal 5: A complete system of trails and pathways accessible to all residents.</b>	
5.1	Complete street amenities. Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
5.2	Development-funded facilities. Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.
5.3	Pathways. Encourage pathways and other pedestrian amenities in Urban Centers and new development 10 acres or larger.
5.4	Homeowner associations. The City may require homeowner associations to maintain pathways and other bicycle and pedestrian facilities within the homeowner association area.
5.5	Pedestrian access. Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers and to provide general pedestrian connectivity throughout the city.

### B.1.5 CITY OF CLOVIS BICYCLE TRANSPORTATION MASTER PLAN (2011 )

The City's Bicycle Transportation Master Plan (BTMP) establishes goals, policies, implementation actions, and priorities for the development of bicycle facilities in the City of Clovis as envisioned by the General Plan. The ultimate goal of the BTMP is to increase the number of persons in Clovis that bike for both utilitarian and recreational purposes by developing and maintaining an interconnected system of all types of bicycle facilities. In the BTMP, support facilities identified for future implementation include directional signage, both short- and long-term bicycle parking, and shower and locker facilities.

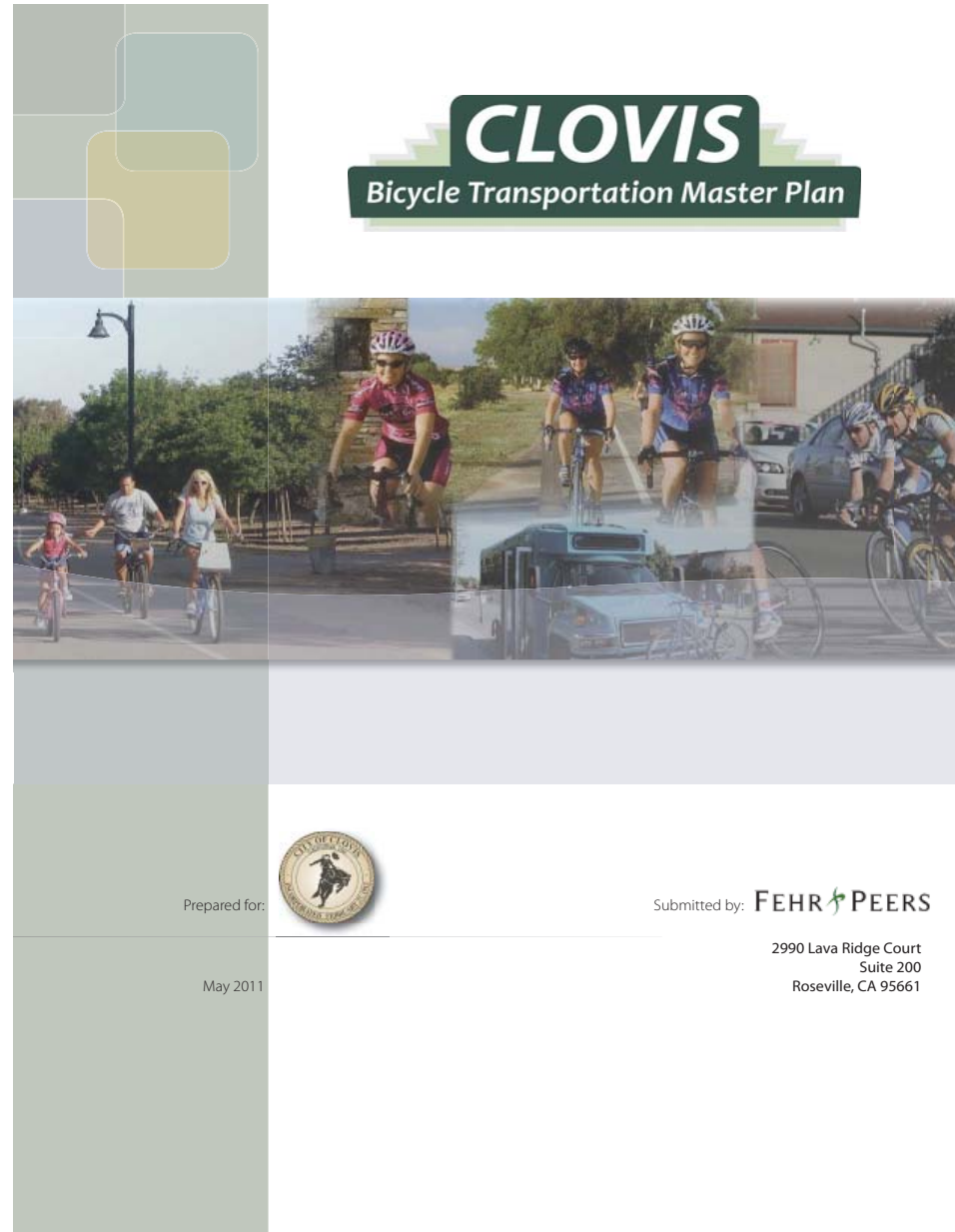


Figure B-3: Cover of The City of Clovis Bicycle Transportation Master Plan

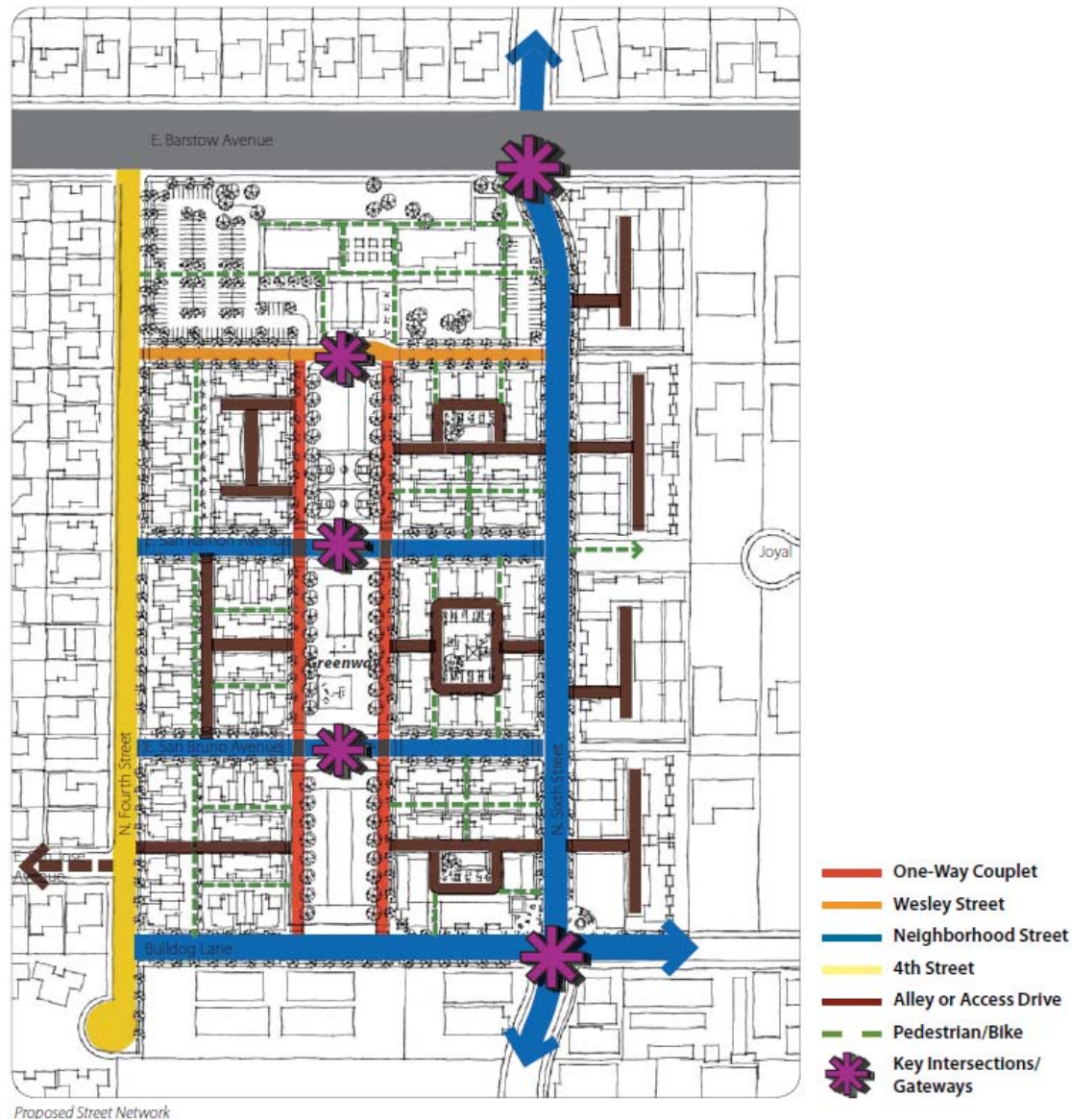


Figure B-4: Proposed street network from the El Dorado Park Neighborhood Plan

### B.1.6 EL DORADO PARK NEIGHBORHOOD PLAN (2009)

El Dorado Park is a neighborhood adjacent to the west side of the Fresno State campus. The area was first developed as affordable housing for Fresno State students but has deteriorated over the past 15-20 years. Today, a majority of the student population has been replaced by low-income families and individuals seeking affordable housing. The neighborhood is isolated, virtually set aside from its surroundings because of an ill-conceived pattern of streets. Partly due to this isolation, crime and blight have become all too common. The El Dorado Park Neighborhood Plan is intended to be a plan of action that can transform the neighborhood from its current conditions to their vision where: The streets are safe, homes and apartments at a variety of income levels are livable and healthy, there are places to play, study and worship, and families flourish side by side with students and are focused on a lively, active green space for all to enjoy.

## B.2. REGIONAL PLANS AND POLICIES

While the Fresno State planning efforts cannot extend past jurisdictional boundaries, the impacts of active transportation improvements in Fresno will benefit residents of many communities. Likewise, this Plan must be mindful of and incorporate where possible neighboring communities' planning efforts relating to pedestrian and bicycle mobility. With a shared roadway network and jurisdictional crossover among school districts, inter-jurisdictional coordination between Fresno State and its neighbors is essential for the efficient and coordinated implementation of improved bicycle and pedestrian facilities.

### B.2.1 Fresno County General Plan (2014)

The most recent General Plan update from Fresno County includes a new theme called "Health and Well-Being." It says, "The plan seeks to promote the health and well-being of its residents, recognizing that the built environment affects patterns of living that influence health. The plan seeks to ensure long-term conservation of agricultural lands and environmentally sensitive landscapes; encourage walking and biking and provide linked transit systems; promote greater access to healthy foods and produce, particularly fresh locally -grown produce; and create community centers that provide access to employment, education, business, and recreation."



Figure B-5: Fresno County location within California



The following table outlines the goals and policies from the Transportation and Circulation chapter that promote healthy transportation options within Fresno County that are applicable to Fresno State.

**Table B-3: Active Transportation Goals and Policies from the Fresno County General Plan**

<b>Transportation and Circulation Chapter</b>	
Goal TR-C	To reduce travel demand on the County's roadway system and maximize the operating efficiency of transportation facilities so as to reduce the quantity of motor vehicle emissions and reduce the amount of investment required in new or expanded facilities.
<b>Policy</b>	
TR-C.3	Alternative Employee Transportation Modes. The County shall work with the Cities of Fresno and Clovis to encourage new urban development within the Fresno-Clovis Metropolitan Area (FCMA) to provide appropriate on-site facilities that encourage employees to use alternative transportation modes as air quality and transportation mitigation measures. The type of facilities may include bicycle parking, shower and locker facilities, and convenient access to transit, depending on the development size and location.
Goal TR-D	To plan and provide a safe, continuous, and easily accessible bikeway system that facilitates the use of the bicycle as a viable alternative transportation mode and as a form of recreation and exercise.
<b>Policy</b>	
TR-D.1	Bicycle Routes. The County shall implement a system of recreational, commuter, and inter-community bicycle routes in accordance with the Regional Bikeway Plan described in the Circulation Diagram and Standards section and depicted in Figure TR-2. The plan designates bikeways between cities and unincorporated communities, to and near major traffic generators such as recreational areas, parks of regional significance, and other major public facilities, and along recreational routes.
TR-D.2	Bikeway Construction Priority. The County shall give priority to bikeways that will serve the most cyclists and destinations of greatest demand and to bikeways that close gaps in the existing system.
TR-D.3	Regional Bikeways Plan The County shall implement Regional Bikeways Plan routes as Class II facilities unless otherwise designated.
TR-D.4	Bikeway Improvements. The County shall develop bikeways in conjunction with street improvement projects occurring along streets and roads designated on the Regional Bikeways Plan map.
TR-D.5	Rights-of-Way Dedications. The County shall require as a condition of land development that adequate rights-of-way or easements are provided for designated bikeways or trails
TR-D.6	Bicycle Safety Programs. The County should promote bicycle safety programs through education and awareness programs aimed at both cyclists and motorists.
TR-D.7	Minimize Conflicts. The County shall construct and maintain bikeways to minimize conflicts between bicyclists and motorists.
TR-D.8	Bicycle and Transit Links. The County shall support development of facilities that help link bicycling with other modes of transportation.
TR-D.9	Regional Bicycle and Recreational Trails Master Plan. The County shall maintain and implement the Regional Bicycle and Recreational Trails Master Plan as a framework for future development of the County's bicycle and recreational trail network and enable the County to pursue local, State, and Federal funding for bicycle and trail facility improvements.

**B.2.2 FRESNO COUNTY REGIONAL BICYCLE & RECREATIONAL TRAILS MASTER PLAN (2013)**

The Fresno County Regional Bicycle & Recreational Trails Master Plan is one component of the continued effort towards making bicycling an integral part of Fresno County daily life. The Plan provides a comprehensive long-range view for the development of an extensive regional bikeway network that connects cities and unincorporated areas countywide. Its ultimate goal is to encourage more bicycle trips.

**B.2.3 FRESNO COUNTY REGIONAL TRANSPORTATION PLAN (2014)**

Fresno Council of Government’s 2014 Regional Transportation Plan helps the County plan for a sustainable course toward 2040 and beyond. The Plan’s many chapters touch on environmental justice, needed policies, congestion management, and the performance measures and project list to help the County achieve its greenhouse gas emission reduction goals. The Plan also includes the County’s Sustainable Community Strategy, where the focus for sustainability is on complete streets policies and implementation measures.

**B.2.4 FRESNO CLOVIS METROPOLITAN AREA PUBLIC TRANSPORTATION STRATEGIC SERVICE EVALUATION (2015)**

This Plan outlines the priorities for the Fresno area’s transit agencies. The “Preferred Network



Figure B-6: Cover of The Fresno County Regional Bicycle & Recreational Trails Master Plan

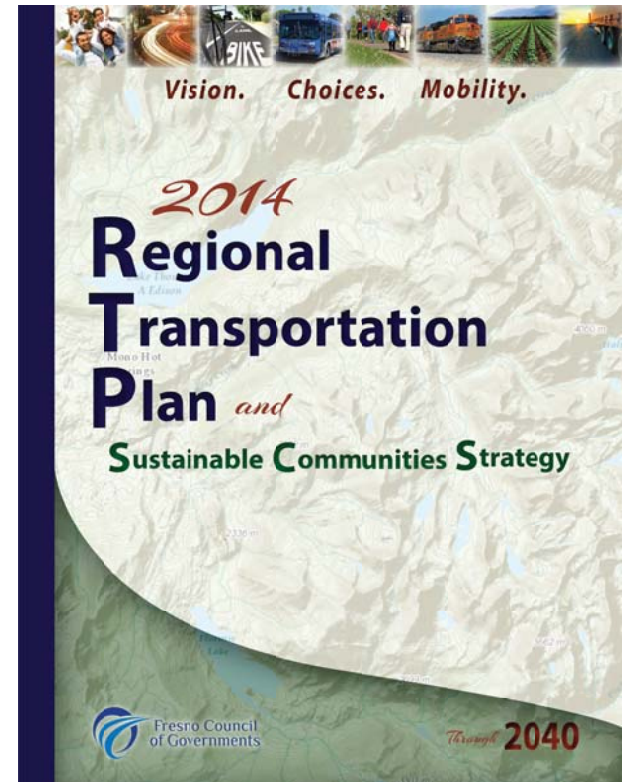


Figure B-7: Cover of The Fresno County Regional Transportation Plan

Plan” a scheme of service, capital, and customer service improvements that will markedly enhance systemwide efficiency and improve the transit system with minimal investment. This Final Report is the culmination of the Strategic Service Evaluation project. The Final Report summarizes the Service Evaluation process, including the assessment of the existing transit system, development of network alternatives, public and stakeholder outreach, and the recommended Preferred Network definition and implementation.

### **B.2.5 MEASURE C - FRESNO COUNTY TRANSPORTATION SALES TAX (1986)**

Measure C was passed by Fresno County voters in 1986 as a way to pay for much needed transportation infrastructure needs. In 2006, when Measure C was reauthorized by voters for the next 20 years, six percent of the expenditures were aimed toward the alternative transportation program. The sales tax will be up for another reauthorization vote in 2027.

### **B.3. STATE PLANS AND POLICIES**

Since 2006, three legislative bills that support bicycle facility development in California have been signed into law: the Global Warming Solutions Act, Complete Streets Act, and Sustainable Communities and Climate Protection Act.

#### **B.3.1 ASSEMBLY BILL 32: GLOBAL WARMING SOLUTIONS ACT (2006)**

The Global Warming Solutions Act (AB 32), signed into law in 2006, laid out specific actions



Figure B-8: Measure C Logo



Figure B-9: AB32 Logo (Source: <http://www.socalgreenrealestateblog.com/>)

to reduce emissions, including increasing motor vehicle and ship yard efficiency and other strategies involving refrigerants, landfills and consumer products. The goal of AB 32 is for California to reach 1990 greenhouse gas emission levels by 2020.

**B.3.2 ASSEMBLY BILL 1358: COMPLETE STREETS ACT (2008)**

Since January 1, 2011, all California cities and counties have been required to include accommodation for all street users (pedestrians, bicyclists, transit riders, motorists, children, persons with disabilities, and elderly persons) in circulation element updates, as required by the Complete Streets Act (AB 1358).

**B.3.3 SENATE BILL 375: SUSTAINABLE COMMUNITIES AND CLIMATE PROTECTION ACT OF 2008**

The Sustainable Communities and Climate Protection Act (SB 375) links land use planning with greenhouse gas emissions, requiring metropolitan planning organizations to develop land use plans to meet emission reduction goals set by the State Air Resources Board.

**B.3.4 CALTRANS DEPUTY DIRECTIVE (DD) 64-R1**

Deputy Directive 64-R1 was issued to ensure that travelers of all ages and modes can move “safely and efficiently along and across a network of ‘complete streets.’” The directive establishes responsibilities for Caltrans staff to safely accommodate bicyclists, pedestrians, transit users, and motorists.



*Figure B-10: Complete streets accommodate all street users, including pedestrians, bicyclists, transit users and motorists*

## APPENDIX C: COLLISIONS INVOLVING NON-MOTORIZED USERS ON CAMPUS

This dataset is from Fresno State Police Department records from 2010 to 2014.

**Table C-1: Collisions Involving Non-Motorized Users on Campus**

Date	Location	Involved Parties
2/8/2010	E. Barstow Ave/N. Jackson Ave	Motorist/Pedestrian
2/13/2010	E. Barstow Ave/N. Chestnut Ave	Motorist/Bicycle Rider
2/23/2010	Parking Lot P18	Motorist/Bicycle Rider
4/9/2010	Matoian Way/Maple Ave	Motorist/Bicycle Rider
4/12/2010	San Bruno Ave/W. of Campus Drive	Golf Cart Driver/Bicycle Rider
4/27/2010	N. Cedar Ave/E. Shaw Ave	Motorist/Bicycle Rider
4/28/2010	E. Barstow Ave/N. Chestnut Ave	Motorist/Bicycle Rider
7/16/2010	Parking Lot P31	Motorist/Bicycle Rider
7/29/2010	N. Cedar Ave/Bulldog Lane	Motorist/Pedestrian
8/31/2010	Bulldog Lane between N. Cedar Ave and Millbrook Ave	Motorist/Bicycle Rider
11/30/2010	E. Shaw Ave/East of N. Maple Ave	Motorist/Pedestrian
12/14/2010	E. Barstow Ave/N. Cedar Ave	Motorist/Pedestrian
10/6/2010	Peace Garden	Golf Cart Driver/Pedestrian
10/7/2010	N. Campus Dr/E. Barstow Ave	Motorist/Pedestrian
1/27/2011	Save Mart Center	Motorist/Person on Skateboard
1/31/2011	Parking Lot P20	Motorist/Pedestrian
2/2/2011	Palmilla Apartments	Motorist/Pedestrian
2/11/2011	E. Shaw Ave/N. Woodrow Ave	Motorist/Person on Skateboard
2/25/2011	N. Jackson Ave/E. Barstow Ave	Motorist/Pedestrian
2/28/2011	N. Chestnut Ave/E. Barstow Ave	Motorist/Bicycle Rider
3/17/2011	N. Chestnut Ave/Bulldog Lane	Motorist/Pedestrian
5/10/2011	N. Chestnut Ave/South of Matoian Way	Motorist/Pedestrian
6/29/2011	E. Shaw Ave/N. Cedar Ave	Motorist/Bicycle Rider
7/28/2011	E. Shaw Ave/Highway 168	Motorist/Bicycle Rider
7/30/2011	E. Shaw Ave/N. Chestnut Ave	Motorist/Pedestrian
8/25/2011	Rowell Ave/South of Scott Ave	Motorist/Pedestrian
9/23/2011	E. Shaw Ave/N. Jackson Ave	Motorist/Pedestrian
9/29/2011	N. Chestnut Ave/Matoian Way	Motorist/Bicycle Rider

**Table C-1: Collisions Involving Non-Motorized Users on Campus (continued)**

Date	Location	Involved Parties
10/4/2011	E. Shaw Ave/N. Maple Ave	Motorist/Bicycle Rider
10/11/2011	Bulldog Lane/West of Chestnut Ave	Motorist/Person on Scooter
10/14/2011	S. Maple Ave	Motorist/Bicycle Rider
10/18/2011	E. Barstow Ave/N. Millbrook Ave	Motorist/Bicycle Rider
10/28/2011	Sidewalk East of South Gym (5275 N. Campus Drive)	Golf Cart Driver/Bicycle Rider
10/28/2011	Parking Lot P23	Motorist/Bicycle Rider
11/1/2011	E. Barstow Ave/N. Chestnut Ave	Motorist/Bicycle Rider
11/29/2011	N. Cedar Ave/Bulldog Lane	Motorist/Person on Skateboard
12/14/2011	N. Cedar Ave/Bulldog Lane	Motorist/Pedestrian
1/15/2012	N. Cedar Ave/E. Shaw Ave	Motorist/Pedestrian
3/21/2012	West of N. Cedar Ave/E. Barstow Ave	Motorist/Bicycle Rider
6/8/2012	Chardonnay Ave East of 5180 N. Primitivo Way	Motorist/Pedestrian
8/7/2012	Parking Lot P4	Motorist/Pedestrian
9/5/2012	E. Shaw Ave/N. Woodrow Ave	Motorist/Bicycle Rider
9/7/2012	E. Shaw Ave/N. Cedar Ave	Motorist/Pedestrian
9/12/2012	N. Chestnut Ave/E. Barstow Ave	Motorist/Bicycle Rider
10/30/2012	E. Barstow/N. Campus Dr	Motorist/Bicycle Rider
10/30/2012	N. Woodrow Ave/Matoian Way	Motorist/Pedestrian
11/3/2012	N. Maple Ave/E. Barstow Ave	Motorist/Pedestrian
11/5/2012	E. Shaw Ave/N. Barton Ave	Motorist/Pedestrian
11/5/2012	N. Chestnut Ave/E. Shaw Ave	Motorist/Pedestrian
11/8/2012	West Complex	Motorist/Bicycle Rider
2/23/2013	Bulldog Lane/N. Sixth St	Motorist/Pedestrian
2/26/2013	Save Mart Center	Motorist/Pedestrian
3/7/2013	University High School	Motorist/Bicycle Rider
3/7/2013	E. Barstow Ave/N. Woodrow Ave	Motorist/Pedestrian
4/16/2013	E Shaw Ave/N Woodrow Ave	Motorist/Bicycle Rider
5/1/2013	N. Cedar Ave/E. Scott Ave	Motorist/Bicycle Rider
5/1/2013	E. Barstow Ave/N. Jackson Ave	Motorist/Pedestrian
9/16/2013	E. Barstow Ave/N. Jackson Ave	Motorist/Pedestrian

**Table C-1: Collisions Involving Non-Motorized Users on Campus (continued)**

Date	Location	Involved Parties
9/18/2013	Parking Lot P2	Motorist/Pedestrian
9/19/2013	E. Barstow Ave/N. Campus Dr	Motorist/Bicycle Rider
9/23/2013	Parking Lot P1	Motorist/Bicycle Rider
9/27/2013	N. Cedar Ave/E. Barstow Ave	Motorist/Bicycle Rider
10/1/2013	E. Shaw Ave/N. Barton Ave	Motorist/Pedestrian
10/21/2013	E. Barstow Ave/N. Maple Ave	Motorist/Bicycle Rider
11/25/2013	E. Barstow Ave/N. Campus Dr	Motorist/Bicycle Rider
1/8/2014	E. Shaw Ave/N. Cedar Ave	Motorist/Pedestrian
1/28/2014	E. Barstow Ave/N. Millbrook Ave	Motorist/Bicycle Rider
2/11/2014	N. Cedar Ave/E. Barstow Ave	Motorist/Bicycle Rider
2/25/2014	N. Jackson Ave/E. Barstow Ave	Motorist/Bicycle Rider
2/26/2014	Parking Lot P2	Motorist/Pedestrian
3/3/2014	E. Shaw Ave/N. Barton Ave	Motorist/Pedestrian
3/20/2014	E. Barstow Ave, East of Chestnut Ave	Motorist/Pedestrian
3/27/2014	Bulldog Lane/N. Cedar Ave	Motorist/Pedestrian
4/16/2014	Highway 168/Shaw Ave	Motorist/Bicycle Rider
8/28/2014	E. Shaw Ave/N. Cedar Ave	Motorist/Bicycle Rider
9/2/2014	E. Barstow Ave/N. Campus Dr	Motorist/Pedestrian
9/23/2014	N. Woodrow Ave/Bulldog Lane	Motorist/Person on Skateboard
9/24/2014	E. Barstow Ave/N. Woodrow Ave	Motorist/Bicycle Rider
10/7/2014	N. Cedar Ave/E. Scott Ave	Motorist/Bicycle Rider
11/7/2014	Bulldog Lane/N. Ninth St	Motorist/Bicycle Rider
12/17/2014	Parking Lot P30	Motorist/Pedestrian

## APPENDIX D: INFRASTRUCTURE RECOMMENDATION TABLES

**Table D-1: Recommended On-Campus Bikeway Facilities Sorted by Implementation Phase**

Project ID	Facility Type	Street / Location	From	To	Length (miles)
B-1	I	Maple Avenue Farm Road Path	Sierra Avenue	Barstow Avenue	0.99
B-2	II	Barstow Avenue West Path (south side)	Cedar Avenue	340' east of Jackson Avenue	0.35
B-3	I	Barstow Avenue	Campus Drive	420' east of Jackson Avenue	0.20
B-4	II-C	Barstow Avenue <sup>1</sup>	250' west of Maple Avenue	100' west of Maple Avenue	0.03
B-5	IV	Barstow Avenue	Maple Avenue	350' west of Chestnut Avenue	0.42
B-6	III (sharrows)	Barstow Avenue	350' west of Chestnut Avenue	270' east of Chestnut Avenue	0.12
B-7	I	Barstow Avenue East Path (south side)	270' east of Chestnut Avenue	Willow Avenue	0.42
B-8	III (sharrows)	Campus Drive	Barstow Avenue	San Bruno Avenue	0.18
B-9	I	Jackson Avenue Path (east side)	Barstow Avenue	San Ramon Avenue	0.11
B-10	III (sharrows)	Maple Avenue	Barstow Avenue	San Ramon Avenue	0.11
B-10	III (sharrows)	Woodrow Avenue	Barstow Avenue	Shaw Avenue	0.49
B-11	I	Parking Lot 9 Path	Barstow Avenue (350' west of Chestnut Avenue)	Chestnut Avenue (350' south of Barstow Avenue)	0.12
B-12	I	WET Lab Path	Barstow Avenue (350' west of Chestnut Avenue)	Chestnut Avenue (350' north of Bulldog Lane/Campus Pointe Drive)	0.23
B-13	I	Aquatics Center Path	Barstow Avenue	San Bruno Avenue Bike Path	0.22
B-14	I	San Ramon Avenue West Path <sup>2</sup>	Campus Drive	Jackson Avenue	0.11
B-15	I	San Ramon Avenue Path (north side)	Jackson Avenue	170' west of Maple Avenue	0.16
B-16	I	San Ramon Avenue East Path <sup>3</sup>	P17 Parking Lot	P6 Parking Lot	0.24
B-17	I	Science I Gap Closure Path	Campus Path northwest of Science I Building	Campus Path southwest of Science I Building	0.03
B-18	I	Satellite Student Union Path	San Ramon Avenue	South side of Satellite Student Union	0.12

1. Enhance the eastbound bike lane with colored pavement materials through the transition zone.
2. Close this portion of San Ramon Avenue to motor vehicle traffic. This is called for in the 2008 Campus Master Plan.
3. Close this portion of San Ramon Avenue to motor vehicle traffic. The segment between Maple Avenue and Parking Lot P6 must be designed in a way to allow it to be reopened temporarily to motor vehicle traffic during large on-campus events.



**Table D-1: Recommended On-Campus Bikeway Facilities Sorted by Implementation Phase (continued)**

Project ID	Facility Type	Street / Location	From	To	Length (miles)
B-19	I	Path north of University Student Union Path <sup>4</sup>	Jackson Avenue Campus Path	P17 Parking Lot	0.09
B-20	I	Bulldog Lane Path (north side)	Millbrook Avenue	Cedar Avenue	0.36
B-21	I	Tennis Courts Path <sup>5</sup>	Cedar Avenue	Residence Halls Off-Street Path (proposed)	0.11
B-22	I	University Center South Campus Core Bypass	Jackson Avenue Campus Path	Rose Garden South Path	0.08
B-23	I	Parking Lot 4 Path	Campus Path South of University Business Center	University High School	0.14
B-24	I	Residence Halls Path	San Bruno Avenue Bike Path	Shaw Avenue	0.34
B-25	III (sharrows)	Barton Avenue/Keats Avenue	Shaw Avenue	Campus Drive/Keats Avenue Intersection	0.14
B-26	I	Keats Avenue Path <sup>6</sup>	Campus Drive	Maple Avenue	0.19
B-27	III (sharrows)	Matoian Way	Maple Avenue	Woodrow Avenue	0.33
B-28	I	Education School Path	Maple Avenue	Shaw Avenue	0.15
B-29	II	Maple Avenue	200' north of Keats Avenue	Shaw Avenue	0.17
B-30	I	Matoian Way Path (south side)	Maple Avenue	Parking Lot 2	0.97
B-31	I	Shaw Avenue Path (north side)	Cedar Avenue	Chestnut Avenue	0.99

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4. Enhance the existing pedestrian path to facilitate comfortable bicycle riding.

5. Will require the removal of one set of tennis courts.

6. Close Keats Avenue to motor vehicle traffic between Campus Drive and Maple Avenue.

**Table D-2: Recommended Off-Campus Bikeway Facilities<sup>8</sup>**

Project ID	Facility Type	Street / Location	From	To	Length (miles)
B-32	II (buffered)	Cedar Avenue <sup>7</sup>	Sierra Avenue	Shaw Avenue	1.41
B-33	III (sharrows)	Chestnut Avenue	190' north of Barstow Avenue	240' south of Barstow Avenue	0.08
B-34	II (buffered)	Chestnut Avenue <sup>8</sup>	Barstow Avenue	Shaw Avenue	0.45
B-35	III (sharrows)	Chestnut Avenue	180' north of Bulldog Lane/Campus Pointe Drive	220' south of Bulldog Lane/Campus Pointe Drive	0.08
B-36	III (neighborhood friendly corridor)	Bulldog Lane/San Jose Avenue	First Street	Cedar Avenue	1.04
B-37	III	Ninth Street	Bulldog Lane	Shaw Avenue	0.25
B-38	II (buffered)	Shaw Avenue <sup>9</sup>	First Street	Peach Avenue	2.99
B-39	II	Cedar Avenue	390' north of Shaw Avenue	Sierra Madre Avenue	0.15
B-40	III (sharrows)	Barton Avenue	Shaw Avenue	Sierra Madre Avenue	0.07
B-41	III (neighborhood friendly corridor)	Sierra Madre Avenue	Cedar Avenue	Maple Avenue	0.49
B-42	II	Backer Avenue/Alamos Avenue	Shaw Avenue	Bonadelle Avenue	0.55
B-43	II	Chestnut Avenue	Shaw Avenue	Bonadelle Avenue	0.23
B-44	III (neighborhood friendly corridor)	Rowell Avenue/Fairmont Avenue, Barton Avenue	Sierra Madre Avenue	Ashlan Avenue	1.04
B-45	III (sharrows)	Woodrow Avenue	Shaw Avenue	Alamos Avenue	0.22
B-46	III (neighborhood friendly corridor)	Bonadelle Avenue/San Gabriel Avenue/Woodrow Avenue	Alamos Avenue	Gettysburg Avenue	0.42

7. The University should coordinate with partner agencies (e.g., Cities of Fresno & Clovis, Caltrans) to implement these bicycle transportation facilities.

8. The recommendation is to enhance the existing standard Class II bike lanes to buffered bike lanes.

9. Reduce the number of motor vehicle travel lanes and enhance the existing standard bike lanes to buffered bike lanes.

**Table D-3: Recommended On-Campus Pedestrian Improvements**

Project ID	Location	Treatment
SW-1	Barstow Avenue (250' west of Maple Avenue to Chestnut Avenue)	Install sidewalk on north side of street
SW-2	Barstow Avenue (Maple Avenue to Parking Lot 10)	Install sidewalk on south side of street
SW-3	Price Avenue (Portals Avenue to Barstow Avenue)	Install sidewalks on both sides of street
SW-4	Portals Avenue (Price Avenue to Parking Lot 10/Ag One Building)	Install sidewalks on both sides of street
SW-5	Woodrow Avenue (Portals Avenue to Barstow Avenue)	Install sidewalks on both sides of street
SW-6	Parking Lot 11 on east side of Animal Science Pavilion (Portals Avenue to Barstow Avenue)	Install sidewalks on both sides of street
SW-7	Sierra Vista Avenue (Portals Avenue to Barstow Avenue),	Install sidewalks on both sides of street
SW-8	Band Practice Field on east side of Science II (Barstow Avenue to existing path at southeast corner of Science II),	Install pathway to close gap
SW-9	Woodrow Avenue (Barstow Avenue to 75' south of Barstow Avenue)	Install sidewalk on west side of street
SW-10	Parking Lot 16 (Maple Avenue just north of San Ramon Avenue)	Install sidewalk along south edge
SW-11	Parking Lot 6 (Woodrow Avenue at San Ramon Avenue)	Install sidewalk along north edge
SW-12	Woodrow Avenue (Barstow Avenue to Bulldog Lane)	Install sidewalk on east side of street
SW-13	Chestnut Avenue (Post Harvest Lab to Gibson Farm Market) <sup>10</sup>	Close sidewalk gap
SW-14	Scott Avenue (Cedar Avenue to Rowell Avenue)	Install sidewalk on south side of street
SW-15	Chestnut Avenue (Matoian Way to Shaw Avenue) <sup>11</sup>	Install sidewalk on east side of street
C-1	Barstow Avenue (165' west of Campus Drive)	Re-align curb cut
C-2	Barstow Avenue (160' west of Campus Drive)	Install raised crosswalk
C-3	Barstow Avenue at Campus Drive (north side)	Install curb cut
C-4	Barstow Avenue at Campus Drive (south side)	Install raised crosswalk
C-5	Barstow Avenue at Jackson Avenue (north side)	Install curb cut
C-6	Barstow Avenue at Jackson Avenue	Install raised intersection
C-7	Barstow Avenue (125' east of Jackson Avenue)	Install raised crosswalk
C-8	Barstow Avenue (335' east of Jackson Avenue)	Install raised crosswalk
C-9	Barstow Avenue (425' east of Jackson Avenue)	Enhance existing crosswalk with pedestrian refuge island and raised median

10. This is on campus property, but within a City of Fresno roadway easement. Will require coordination with the City.

11. This is on campus property, but within a City of Fresno roadway easement. Will require coordination with the City.

**Table D-3: Recommended On-Campus Pedestrian Improvements (continued)**

Project ID	Location	Treatment
C-10	Barstow Avenue at Maple Avenue	Install pedestrian refuge island
C-11	Barstow Avenue at Price Avenue	Install mid-block crosswalk with Rectangular Rapid Flashing Beacon
C-12	Barstow Avenue (350' west of Sierra Vista Avenue)	Install pedestrian refuge island
C-13	Barstow Avenue at Chestnut Avenue	Install crosswalk on west side of intersection
C-14	Campus Drive (50' north of San Ramon Avenue)	Enhance crosswalk
C-15	Campus Drive at San Ramon Avenue	Enhance crosswalk
C-16	San Ramon Avenue (250' east of Campus Drive)	Enhance crosswalk
C-17	Jackson Avenue (100' north of San Ramon Avenue)	Align curb cuts
C-18	Campus Drive (66' south of San Ramon Avenue)	Enhance crosswalk
C-19	San Ramon Avenue (180' west of Maple Avenue) <sup>12</sup>	Enhance existing crosswalks
C-20	Campus Drive (170' north of San Bruno Avenue)	Enhance existing crosswalk
C-21	Woodrow Avenue (460' north of Bulldog Lane)	Install crosswalks
C-22	San Bruno Avenue (80' west of Campus Drive)	Install ramp from pathway to North Gym southern entrance
C-23	Scott Avenue at Rowell Avenue	Install crosswalks on all sides
C-24	Barton Avenue (80' southeast of Library parking gate)	Install crosswalk
C-25	Barton Avenue (110' southeast of Library parking gate)	Install crosswalk

**Table D-4: Recommended Off-Campus Pedestrian Improvements**

Project ID	Location	Treatment
C-26	Barstow Avenue at Tenth Street	Install mid-block crosswalk with Rectangular Rapid Flashing Beacon
C-27	Barstow Avenue at Chestnut Avenue	Install crosswalk on west side of intersection
C-28	Bulldog Lane at Chestnut Avenue	Install all-way pedestrian "scramble" configuration and signal <sup>13</sup>
C-29	Cedar Avenue at Scott Avenue	Install mid-block crosswalk with Rectangular Rapid Flashing Beacon

12. These crosswalks should be enhanced in the near-term. This section of San Ramon Avenue is proposed to be closed to motor vehicle traffic in the long-term, contingent on Lot P17 being removed from the parking inventory.

13. The scramble crossing was installed in Summer 2015 as a result of initial outreach and field visits for this Plan; the University should improve the treatment in response to observations of its use.

**Table D-5: On-Campus Active Transportation Infrastructure Recommendations**

Project ID	Location	Treatment
<b>Phase I</b>		
B-2	Barstow Ave. (Cedar Ave. to 340' east of Jackson Ave.)	Class II Bike Lanes
B-3	Barstow Ave. (Campus Dr. to 420' east of Jackson Ave.)	Class I Shared-Use Path
B-6	Barstow Ave. (350' west of Chestnut Ave. to 270' east of Chestnut Ave.)	Class III Bike Route (with sharrows)
B-9	Jackson Ave. Path, east side (Barstow Ave. to San Ramon Ave.)	Class I Shared-Use Path
B-11	Woodrow Ave. (Barstow Ave. to Shaw Ave.)	Class III Bike Route (with sharrows)
B-18	Science I Gap Closure Path (Campus Path northwest of Science I Building to Campus Path southwest of Science I Building)	Class I Shared-Use Path
B-21	Bulldog Ln. Path, north side (Millbrook Ave. to Cedar Ave.)	Class I Shared-Use Path
B-22	Tennis Courts Path (Cedar Ave. to proposed Residence Halls Off-Street Path)	Class I Shared-Use Path
B-24	Parking Lot 4 Path (Campus Path south of University Business Center to University High School)	Class I Shared-Use Path
B-30	Maple Ave. (200' north of Keats Ave. to Shaw Ave.)	Class II Bike Lanes
B-32	Shaw Ave. Path, north side (Cedar Ave. to Chestnut Ave.)	Class I Shared-Use Path
SW-1	Barstow Ave. (250' west of Maple Ave. to Chestnut Ave.)	Sidewalk on north side of street
SW-2	Barstow Ave. (Maple Ave. to Parking Lot 10)	Sidewalk on south side of street
SW-11	Parking Lot 6 (Woodrow Avenue at San Ramon Avenue)	Sidewalk along north edge
SW-12	Woodrow Ave. (Barstow Ave. to Bulldog Ln.)	Sidewalk on east side of street
SW-14	Scott Ave. (Cedar Ave. to Rowell Ave.)	Sidewalk on south side of street
SW-15	Chestnut Ave. (Matoian Way to Shaw Ave.) <sup>14</sup>	Sidewalk on east side of street
C-3	Barstow Ave. at Campus Dr. (north side)	Install curb cut
C-4	Barstow Ave. at Campus Dr. (south side)	Install raised crosswalk
C-6	Barstow Ave. at Jackson Ave.	Install raised intersection
C-10	Barstow Ave. at Maple Ave.	Install pedestrian refuge island
C-13	Barstow Ave. at Chestnut Ave.	Install crosswalk on west side of intersection
C-21	Woodrow Ave. (460' north of Bulldog Lane)	Install crosswalks

14. This is on campus property, but within a City of Fresno roadway easement. Will require coordination with the City.

**TableD-5: On-Campus Active Transportation Infrastructure Recommendations (continued)**

Project ID	Location	Treatment
C-22	San Bruno Ave. (80' west of Campus Dr.)	Install ramp from pathway to North Gym south entrance
C-23	Scott Ave. at Rowell Ave.	Install crosswalks on all sides
M-1	Barstow Ave. eastbound bike lane, 250' west of Cedar Ave.	Install signage to route bicycle riders in the eastbound bike lane onto the campus path to continue east to campus
M-4	North side of Satellite Student Union	Improve the north façade of the Union
M-7	Cedar Ave. between Bulldog Ln. and Scott Ave.	Improve wall on east side of Cedar Ave.
M-9	Peace Garden North Path at Jackson Ave. Path	Install bollards/planters
M-10	Jackson Ave. Path at Peace Garden North Path	Reconfigure the existing barriers
M-11	Jackson Ave. Path at the intersection of the Library and University Student Union	Create a traffic circle with textured pavement and planters
M-13	Fountain Path at Parking Lots 5 & 6	Install a campus wayfinding kiosk
<b>Phase II</b>		
B-4	Barstow Ave. (250' west of Maple Ave. to 100' west of Maple Ave.)	Class II Bike Lanes (with colored pavement materials)
B-5	Barstow Ave. (Maple Ave. to 350' west of Chestnut Ave.)	Class IV Separated Bikeways
B-7	Barstow Ave. East Path, south side (270' east of Chestnut Ave. to Willow Ave.)	Class I Shared-Use Path
B-8	Campus Dr. (Barstow Ave. to San Bruno Ave.)	Class III Bike Route (with sharrows)
B-15	San Ramon Ave. West Path (Campus Dr. to Jackson Ave.)	Class I Shared-Use Path (road closure)
B-16	San Ramon Ave. Path, north side (Jackson Ave. to 170' west of Maple Ave.)	Class I Shared-Use Path
B-17	San Ramon Ave. East Path (Parking Lot 17 to Parking Lot 6)	Class I Shared-Use Path (road closure)
B-25	Residence Halls Path (San Bruno Ave. Bike Path to Shaw Ave.)	Class I Shared-Use Path
B-26	Barton Ave./Keats Ave. (Shaw Ave. to Campus Dr./Keats Ave. Intersection)	Class III Bike Route (with sharrows)
B-31	Matoian Way Path, south side (Maple Ave. to Parking Lot 2)	Class I Shared-Use Path
SW-9	Woodrow Avenue (Barstow Avenue to 75' south of Barstow Avenue)	Install sidewalk on west side of street
C-1	Barstow Ave. (165' west of Campus Dr.)	Re-align curb cut
C-2	Barstow Ave. (160' west of Campus Dr.)	Raised crosswalk
C-5	Barstow Ave. at Jackson Ave. (north side)	Install curb cut

**Table D-5: On-Campus Active Transportation Infrastructure Recommendations (continued)**

Project ID	Location	Treatment
C-9	Barstow Ave. (425' east of Jackson Ave.)	Enhance existing crosswalk with pedestrian refuge island and raised median
C-11	Barstow Ave. at Price Avenue	Install mid-block crosswalk with Rectangular Rapid Flashing Beacon
C-12	Barstow Ave. (350' west of Sierra Vista Ave.)	Install pedestrian refuge island
C-14	Campus Dr. (50' north of San Ramon Ave.)	Enhance existing crosswalk
C-19	San Ramon Ave. (180' west of Maple Ave.)	Enhance existing crosswalks
C-20	Campus Dr. (170' north of San Bruno Ave.)	Enhance existing crosswalk
C-24	Barton Ave. (80' southeast of Library parking gate)	Install crosswalk
C-25	Barton Ave. (110' southeast of Library parking gate)	Install crosswalk
M-5	Barstow Ave. (300' west of Chestnut Ave.)	Install a ramp on the south sidewalk
M-6	Barstow Ave. (250' east of Chestnut Ave.)	Install a ramp on the south sidewalk/proposed shared-use path
M-8	Peace Garden Paths	Install traffic calming measures
M-12	Free Speech Area between University Student Union and University Center	Repurpose the short wall
M-15	Maple Ave. at Administration Building turnaround	Install ramps
<b>Phase III</b>		
B-1	Maple Ave. Farm Road Path (Sierra Ave. to Barstow Ave.)	Class I Shared-Use Path
B-10	Maple Ave. (Barstow Ave. to San Ramon Ave.)	Class III Bike Route (with sharrows)
B-12	Parking Lot 9 Path (350' west of Chestnut Ave. on Barstow Ave. to 350' south of Barstow Ave. on Chestnut Ave.)	Class I Shared-Use Path
B-13	WET Lab Path (350' west of Chestnut Ave. on Barstow Ave. to 350' north of Bulldog Ln./Campus Pointe Dr. on Chestnut Ave.)	Class I Shared-Use Path
B-14	Aquatics Center Path (Barstow Ave. to San Bruno Ave. bike path)	Class I Shared-Use Path
B-19	Satellite Union Path (San Ramon Ave. to south side of Satellite Student Union)	Class I Shared-Use Path
B-20	Path north of University Student Union (Jackson Ave. Campus Path to Parking Lot 17)	Class I Shared-Use Path
B-23	University Center South Campus Core Bypass (Jackson Ave. Campus Path to Rose Garden South Path)	Class I Shared-Use Path
B-27	Keats Ave. Path (Campus Dr. to Maple Ave.)	Class I Shared-Use Path (road closure)

**Table D-5: On-Campus Active Transportation Infrastructure Recommendations (continued)**

Project ID	Location	Treatment
B-28	Matoian Way (Maple Ave. to Woodrow Ave.)	Class III Bike Route (with sharrows)
B-29	Education School Path (Maple Ave. to Shaw Ave.)	Class I Shared-Use Path
SW-3	Price Ave. (Portals Ave. to Barstow Ave.)	Install sidewalks on both sides of street
SW-4	Portals Ave. (Price Ave. to Parking Lot 10/Ag One Building)	Install sidewalks on both sides of street
SW-5	Woodrow Ave. (Portals Ave. to Barstow Ave.)	Install sidewalks on both sides of street
SW-6	Parking Lot 11 on east side of Animal Science Pavilion (Portals Ave. to Barstow Ave.)	Install sidewalks on both sides of street
SW-7	Sierra Vista Ave. (Portals Ave. to Barstow Ave.)	Install sidewalks on both sides of street
SW-10	Parking Lot 16 (Maple Ave. just north of San Ramon Ave.)	Sidewalk along south edge
SW-13	Chestnut Ave. (Post Harvest Lab to Gibson Farm Market) <sup>2</sup>	Close sidewalk gap
C-7	Barstow Ave. (125' east of Jackson Ave.)	Install raised crosswalk
C-8	Barstow Ave. (335' east of Jackson Ave.)	Install raised crosswalk
C-15	Campus Dr. at San Ramon Ave.	Enhance crosswalk
C-16	San Ramon Ave. (250' east of Campus Dr.)	Enhance crosswalk
C-17	Jackson Ave. (100' north of San Ramon Ave.)	Align curb cuts
C-18	Campus Dr. (66' south of San Ramon Ave.)	Enhance crosswalk
M-2	Campus Dr. at San Ramon Ave.	Convert intersection to mini-roundabout
M-3	Parking Lot 17	Close the parking lot to create plaza space
M-14	Bulldog Ln. Path (north side) between Woodrow Ave. and Chestnut Ave.	Shift trees from middle of path
M-15	Maple Ave. at Administration Building turnaround	Install ramps
M-11	Jackson Ave. Path at the intersection of the Library and University Student Union	Create a traffic circle with textured pavement and planters
M-12	Campus Core Area between University Student Union and University Center	Repurpose the short wall
M-13	Fountain Path at Parking Lots 5 & 6	Install a campus wayfinding kiosk
M-14	Bulldog Ln. Path (north side) between Woodrow Ave. and Chestnut Ave.	Shift trees from middle of path

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15. This is on campus property, but within a City of Fresno roadway easement. Will require coordination with the City.



## APPENDIX E: ACTIVE TRANSPORTATION PROGRAM COMPLIANCE TABLE

The following table is a checklist required for Active Transportation Program funding.

**Table E-1: ATP Compliance Checklist**

Subject	ATP Compliance Checklist	Location in Plan
Future Trip Estimates	The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.	N/A
Collision Report	The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	Chapter 2
Land Use Patterns	A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.	Chapter 2
Existing and Propose Bikeways	A map and description of existing and proposed bicycle transportation facilities.	Chapter 5
End-of-Trip Bicycle Parking	A map and description of existing and proposed end-of-trip bicycle parking facilities.	Chapter 5
Bicycle Parking Policy	A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	Chapter 5
Bicycle Connections to other Modes	A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.	Chapter 2
Pedestrian Connections to other Modes	A map and description of existing and proposed pedestrian facilities at major transit hubs. These must include, but are not limited to, rail and transit terminals, and ferry docks and landings.	Chapter 2
Wayfinding	A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.	Chapter 5
Maintenance	A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	Appendix B
Education Programs	A description of bicycle and pedestrian safety, education, and encouragement programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the law impacting bicycle and pedestrian safety, and the resulting effect on accidents involving bicyclists and pedestrians.	Chapter 5

**Table E-1: ATP Compliance Checklist (continued)**

Subject	ATP Compliance Checklist	Location in Plan
Community Involvement	A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.	Chapter 3
Regional Plan Coordination	A description of how the active transportation plan has been coordinated with neighboring jurisdictions, including school districts within the plan area, and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	Appendix B
Project List	A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	Chapter 5
Past Expenditures and Future Financial Needs	A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.	Chapter 6
Implementation	A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	Chapter 6
Adoption Resolution	A resolution showing adoption of the plan by the city, county or district. If the active transportation plan was prepared by a county transportation commission, regional transportation planning agency, MPO, school district or transit district, the plan should indicate the support via resolution of the city(s) or county(s) in which the proposed facilities would be located.	TBD