San José State University
Department Of Urban And Regional Planning
URBP 256: Transportation Planning: Local Issues
(Spring 2015)

Bicycle Safety Assesment For The San José State University Campus

Volume I: Technical Report
February 2016

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February 15, 2016

SJSU Administration
1 Washington Square
San Jose, California 95192
RE: *Bicycle Safety Assessment for the San Jose State University Campus*

Dear SJSU Administration:

It is with much pleasure that I would like to transmit to your administration the final Technical Report (Volume I) for the *Bicycle Safety Assessment for the San Jose State University Campus*. This project was researched and prepared by the graduate students of *URBP 256: Transportation Planning –Local Issues* (Spring 2015), under the leadership and guidance of Mr. Eduardo C. Serafin, PE, AICP. This technical report describes the findings of current conditions of bicycle and pedestrian safety at SJSU, and the potential opportunities for the future of the campus. Being that SJSU is located in the heart and downtown of San Jose, it is important that alternative modes of transportation are made readily accessible to campus, in a safe manner.

We would like to express our gratitude to the SJSU administration, staff and stakeholders that worked with students in gathering information, data, and providing detailed interviews to assess the safety aspect of bicyclists and pedestrians on campus. We believe this assessment will be useful for future decision making on campus to appropriately adapt to alternative modes of transportation when commuting to campus. We consider this research project from the student of SJSU to be beneficial to the campus' administration and future plans.

Sincerely,

Hilary Nixon
Professor and Chair
Department of Urban and Regional Planning

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EXECUTIVE SUMMARY

The Technical Report (Volume I) of the *Bicycle Safety Assessment (BSA) for the San Jose State University Campus* represents the culmination of a semester-long effort of research, data collection, and analysis of current conditions of bicyclist and pedestrian safety on the SJSU campus. This document describes the methods and analyses that were utilized to develop preliminary potential safety recommendations to the SJSU Administration and stakeholders. Considering this is a current-conditions report, the findings herein describe a snapshot of the Spring 2015 academic semester. The Technical Report is categorized into the following five sections:

1. Pedestrian & Bicyclist Collision Data & Trend Analysis
2. Best Practices Review for College Campus Bicycle Planning
3. Benchmarking Policies, Programs, and Practices for SJSU
4. Travel Mode Choice Analysis for SJSU Campus
5. Biking Field Audits and Walking On-Site Reviews

Research Problem

For all college campuses, travel safety is a key consideration for students, faculty, staff, and visitors. Safety-related events on the SJSU campus include an unfortunate incident where a pedestrian was recently killed in a collision with a bicyclist. As a result, the breadth of reactions to this unfortunate fatality on campus has included some drastic changes for bicyclists on campus. Because of this situation, a comprehensive safety assessment was deemed appropriate in order to determine how bad the perceived problem really is. If significant policy changes for bicyclists on campus were made, travel modal shifts could occur, which in turn could result in unintended consequences of increasing parking demand on campus, and even contributing to the increase in greenhouse gas emissions on and around campus. This travel mode shift might also exacerbate safety issues and concerns, as more vehicular traffic might potentially increase risk to pedestrians and bicyclists.

Methodology

To conduct this BSA for SJSU, the class adapted methods for collecting data and conducting safety assessments by utilizing the *Technical Guide for Conducting Bicycle Safety Assessments for California Communities*, a grant project implemented by the Technology Transfer Program of the Institute of Transportation Studies at the University of California, Berkeley. The BSA focuses on the initial steps of the bicycle master planning process by laying out broad, preliminary, and conceptual safety improvement options for future consideration. Because the BSA is typically used for local cities and counties, the class research team tailored the procedures from the BSA Technical Guide from UC Berkeley to meet the needs of a college campus. The chapters in this report have been organized to showcase the research conducted for the various analytical methods, as described by the BSA Technical Guide.

Assumptions and Constraints

A major constraint that was present throughout the assessment was the continuing construction on campus. Although construction is temporary, there is usually some form of construction taking place somewhere on campus throughout the school year. Although locations may vary, construction-related detours and closures may present barriers to maintaining the desired level of safety for pedestrians and bicyclists on campus. Narrow paths and high levels of pedestrian flow during peak hours may raise safety concerns for faculty, students, staff, and contractors at SJSU.

Moreover, because SJSU undergoes construction on a regular, year-long basis, this might affect some of the data and information that was collected through field audits and observations to represent normal operating conditions on campus. Although the teams tried to conduct audits as if there was no construction in the area, it was difficult because of the limited space and widths of pathways that were left to perform the audits. However,

because construction is common throughout the year at SJSU, these findings may assist in determining how narrow or wide pathways should be during times of construction.

The comparison of best practices, collision data, and travel mode share was focused on Northern California universities. This might be viewed as a constraint, because the sample of universities chosen may not be a representative sample of all universities across the State. However, in the aggregate, Northern California universities may serve as a sufficient comparison base for this study due to the similarities in academic programs, weather or climate, and student demographics with SJSU.

Study Results and Key Findings

From the extensive analysis of the available traffic collision data completed for this BSA, SJSU does *not* appear to have a significant safety problem with on-campus collisions as compared to other universities using the Statewide Integrated Traffic Reporting System (SWITRS) database. Collision data at SJSU was not available through SWITRS for unknown reasons. Therefore, a key constraint in the availability of collision data on campus remains to be the apparent non-participation of the SJSU University Police Department (UPD) in the statewide collision data collection for SWITRS. The reported three collisions on the SJSU campus over the study period were requested separately from the UPD. As documented in Chapter 1, bicyclist-on-pedestrian collisions are very rare within the SJSU campus area, as compared to other Northern California universities. Furthermore, within the period of study, the output from SWITRS generated only one bicyclist-on-pedestrian collision on record. Although bicycle and pedestrian safety may be a perceived problem on campus, it may actually *not* be a problem to the extent that many might assume, notwithstanding the recent pedestrian fatality.

The BSA study included a review of the current policies of universities that have been named bicycle-friendly universities (BFU) by the League of American Bicyclists. The team explored the policies shared by the BFU universities in California and the applicability of these policies to SJSU. Chapter 2 identifies measures and policies from other campuses that

SJSU could potentially implement in the near and long term. SJSU has the potential of being classified a BFU as designated by the League. SJSU currently has some policies and practices that include some aspects of a bicycle-friendly university—such as having bicycle parking around campus, the campus being accessible to bicyclists, law-enforcement officer training, and a bike-theft prevention program. The League offers assistance to universities to determine how they could achieve, at a minimum, bronze-level certification of a bicycle-friendly university. This type of technical guidance could be available to SJSU, if it were interested in being classified as a bike-friendly university by the League of American Bicyclists.

The BSA benchmarking analysis of the current safety practices for bicyclists and pedestrians on campus was conducted via interviewing relevant staff and key stakeholders. This benchmarking analysis yielded that the University has potential opportunities for safety improvement, including in the areas of the infrastructure, advocacy, education and supportive services on campus. Table 3-3 details the potential opportunities the university may pursue in the near future to improve safety for bicyclists and pedestrians on campus. One major finding from the team's research was the importance of improving the bicycle safety program at SJSU by developing a comprehensive or master bicycle plan with a designated staff coordinator for the effort. This planning process would allow the campus to clearly identify specific areas of potential safety improvement and create a plan to address the most-needed services and identify funding to promote safety for all modes of transportation on campus, including bicycling.

A unique feature of the BSA for the SJSU campus is a review of the travel mode share for SJSU compared against City of San Jose and Santa Clara County travel mode shares, as well as travel patterns at other Northern California universities. The purpose of this review is to assess whether there are potential measures to increase the mode share for bicycling on the SJSU campus. Since SJSU is located within the downtown area of San Jose, there are many travel mode options for students, faculty, staff, and visitors. However, even with these options available, SJSU still sits in a heavily auto-dependent and sprawling region of Santa Clara County. Compared to the City of San Jose and Santa Clara County, SJSU has a

more diverse travel mode share, as described in Table 4-1. Although driving is common at SJSU, alternative modes—such as public transit, biking, and walking—have much higher mode shares when compared to the city and county level data. Although bike infrastructure, such as bike lanes, may be available in and around the campus, San Jose as a whole appears to lack connectivity in safe bike access to areas further out of the downtown core.

The final component of the BSA is conducting field audits to gain a better understanding of the existing bicycling conditions on the SJSU campus grounds. After conducting a bicycling and walking audit of the SJSU campus, many students feel that campus is not conducive to bicycling activity. While the overall safety of cyclists and pedestrians may not appear to be problematic, many students believe the efficiency of bicycle movement is greatly impacted by the built environment. The teams identified a number of factors that affected bicycle movement, when analyzing the campus into quadrants. The main factors observed include the width of campus pathways, location of bicycle storage facilities, and poor line-of-sight at critical intersections, as described in Chapter 5. Not only do these factors impact the efficient movement of bicyclists, but they also impact pedestrians and campus-facility vehicles when traveling throughout campus. Moreover, these conditions are heightened during peak hours of heavy pedestrian flow on campus, mainly during times of moving from class to class.

Policy Implications from Research Results

Policy I: Work with SJSU Administration and University Police Department (UPD) to report traffic collision information for the campus to SWITRS

> As discussed in Chapter 1 of this report, collision data for the SJSU campus was not publicly accessible via the SWITRS database and needed to be requested through the University Police Department (UPD). Although the UPD might not be required to share this information with the statewide database, this data could be vital in understanding the severity of traffic-safety-related issues on and nearby campus.

With this data available, the University can potentially work with students, faculty, local and regional planners, and other stakeholders to address the needs for better travel safety on campus and the surrounding area. Analysis of the complete, comprehensive traffic collision data on and around the campus could help in the decision-making process for prioritizing improvements for areas of travel safety concerns.

Policy II: Collaboratively work with the League of American Bicyclists to achieve certification for SJSU as a bicycle-friendly university

Working with the League of American Bicyclists (LAB) may help SJSU to better plan for bicyclist safety and facilitate the prioritization of potential projects on campus. Through the application process, LAB can offer technical assistance and expertise to SJSU to be recognized as a bicycle-friendly university. Given that some of the bicycle initiatives on campus are led by Transportation Solutions, an Associated Students organization, a staff member from SJSU or Transportation Solutions could collaboratively work with LAB to attain a bicycle-friendly university ranking for SJSU. Through the LAB application process, the university will receive feedback on the application and technical assistance on how the campus can become a more bicycle-friendly university, regardless if the campus is given an award designation. This collaborative effort may enable SJSU to address potential opportunities it may have for accommodating bicycling as a major alternative mode of transportation on campus.

Policy III: Work with SJSU Administration and all SJSU campus stakeholders to undergo a collaborative planning process to develop a comprehensive or master bicycle plan for the SJSU campus

The first and most urgent step in improving SJSU's bicycle safety program would be to create a comprehensive or master bicycle plan and appoint a designated planning coordinator on staff. This planning process would allow the campus to clearly

identify specific areas of improvement and create a plan to address the most needed services and prioritize funding to provide safety for all modes of transportation on campus, including bicycling. Ideally this planning process would be sponsored by the SJSU Administration and would include a collaborative, engaging process for SJSU campus stakeholders. Adequate resources from the SJSU Administration would be needed to engage a professional planning firm to develop the comprehensive or master bicycle plan and to conduct an independent, outreach process to engage all pertinent SJSU campus stakeholders in order to ensure an open, transparent, and inclusive planning process.

Policy IV: Work with the City of San Jose and other public agencies to prioritize funding for more bicycle infrastructure for safer routes to the SJSU campus

Results showed that students at SJSU utilize more alternative modes of transportation than residents of San Jose and Santa Clara County in general. However, in order for SJSU to increase usage of different travel modes to reach the campus, it is imperative that local and regional jurisdictions invest funds to prioritize safe alternative transportation options. Although there is bicycle infrastructure within downtown San Jose and around campus, the City still needs to implement a bike network to effectively connect the SJSU campus to other areas throughout the City. A more connected bike network would not only be beneficial for students, faculty, and staff at SJSU, but would also benefit San Jose residents, who choose or need biking as a primary mode of transportation. Facilitating stronger relationships between the University, the City of San Jose, Santa Clara County, and the Santa Clara Valley Transportation Authority will be crucial in providing safer and more reliable transportation options to access the SJSU campus.

Policy V: Explore suggested opportunities for improving conditions on the SJSU campus grounds for walking and bicycling, especially during significant construction on campus

As demonstrated in the biking and walking audits (Chapter 5), many paths on campus appear not to be adequate for bicyclists, pedestrians, and campus-facility vehicles during peak pedestrian flow on campus. Campus pathways were, in general, too narrow for cyclists to travel from different activity centers within the school's boundaries. In addition, during the walking audits, pedestrians were not able to comfortably walk two-abreast while coming into contact with bicycle travel. To remedy this situation, the research team suggests for the SJSU Administration to explore the following recommendations: 1) widen pathways, 2) create new bicycle-only routes, or 3) mark pathways that show the suggested direction of traffic. The location of bicycle storage facilities was also an issue identified by the audits. By not allocating enough space for adequate bicycle storage (capacity), cyclists are more likely to lock their bikes to campus infrastructure, such as handrails and benches. Also, the line-of-sight experienced at certain intersections on campus appear to be inadequate to the auditing teams. Suggestions to remedy this situation consist mainly of installing mirrors at eye-level for cyclists to see travelers approaching from other directions. Finally, with construction and other expansion changes happening on campus on a regular basis, the SJSU Administration may wish to reevaluate available path widths, especially when large areas of the campus are under significant construction.

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CHAPTER 1

PEDESTRIAN & BICYCLIST COLLISION DATA & TRENDS ANALYSIS

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CHAPTER 1

PEDESTRIAN & BICYCLIST COLLISION DATA & TRENDS ANALYSIS

A.1 Overview of the Collision Data Analysis

In June 2014, a bicycle collision occurred on the San Jose State University campus on Paseo de San Carlos, which resulted in a fatality[1]. This prompted research into the magnitude of possible problems the campus faces with bicycle related collisions. This chapter identifies collision rates between three types of crashes: bicycles and pedestrians, bicycles and vehicles, and vehicles and pedestrians, amongst eight California universities. This multi-modal collision comparison between universities utilized data derived from the Statewide Integrated Traffic Records System (I-SWITRS)[2]; a database that serves as a means to collect and process data gathered from reported collisions. Summary conclusions based on the data, and the related reports and resources are also provided in this chapter.

A.1.1 California Universities Chosen for Assessment Comparison

The following seven universities were chosen in order to compare collision trends with SJSU:

- University of California, Santa Cruz (UCSC), Santa Cruz, CA
- California State University, East Bay (CSUEB), Hayward, CA
- Stanford University, Palo Alto, CA
- San Francisco State University (SFSU), San Francisco, CA
- University of California, Berkeley (UCB), Berkeley, CA
- California State University, Sacramento (CSUS), Sacramento, CA

[1] Eric Kurhi, "San Jose State: Woman, 89, dies after getting hit by bicyclist on campus," mercurynews.com, March 26, 2014.
[2] "I-SWITRS," The California Highway Patrol, http://iswitrs.chp.ca.gov/Reports/jsp/userLogin.jsp, accessed April 2, 2015.

- University of California, Davis (UCD), Davis, CA

The universities were selected due to their locality in Northern California, similarities in climate and weather, and varying ridership levels of multi-modal transportation. Further, the chosen campuses are all located in the San Francisco Bay Area region with the exception of UC Davis and CSUS. These two universities reside in the Sacramento Metropolitan Region, approximately 100 miles from SJSU. UC Davis was chosen for this assessment, as it is considered one of the most bicycle friendly campuses in the country. Both the University of California and the California State University school systems are publicly funded entities. They possess relatively similar goals, values, and mission statements. Stanford University is the only private university included in this study.

A.1.2 The Importance of Identifying Differing Types of Collisions

Bicycles, motorized vehicles, and walking are all modes of transportation that are utilized to commute to and from different locations. Because of SJSU's close proximity to the downtown core, there are multiple modes of transportation offered. Within the university, there are certain areas designated for limited vehicle access, dismount zones for bikes and skateboarders, and yearlong and ongoing construction, which influences the re-routing of many pathways and routes. The campus is made up of 154 acres and hosts 33,000 people between students, faculty and staff. Three collision types are considered in this assessment: bicycles with vehicles, bicycles with pedestrians, and pedestrians with vehicles.

A.1.3 The Legitimacy of I-SWITRS Data

The Statewide Integrated Traffic Records System (I-SWITRS) is a database that serves as a means to collect and process data gathered from a collision scene, provided by the California Highway Patrol. Local law enforcement agencies report collision incidents to the system, which are then available to the public. The reports provide information such as, but not limited to, time of the day the collision

occurred, the primary collision factors, road surface conditions, lighting conditions, and severity of injury, if any.

A.2 Problem Statement

This chapter investigates and analyzes the available collision data and trends. Collision data from most campuses in this study pool were not available. However, based on the collision data and trends from 2011 and 2012, using UCD and UCSC as proxies, and considering that no pedestrian-bicycle collisions were identified in the surrounding community over the five-year study period, it can be concluded that the bicycle-pedestrian collision question on the SJSU campus may likely be a low-priority safety concern. The data clearly illustrates that off-campus collisions between vehicles and pedestrians and between vehicles and bicycles are a serious concern in the neighborhoods surrounding the campus, and warrants further study by university and city officials. The data from UCD and UCSC also illustrates the long-term benefits that SJSU could benefit from by actively reporting on-campus collision to the I-SWITRS system.

A.3 On-Campus Collisions Data Analysis

Collision data for three different types of collisions are considered and analyzed throughout the research: all collisions involving bicycles, and all collisions involving pedestrians. The category of bicycle data includes collisions between bicyclists, bicycle against vehicles, and bicycle with any other modes of transportation, besides walking. The pedestrian data is categorized between: pedestrians against bicycles, vehicles, and other modes. The study period was from 2009 to 2013, and for each year, and each collision type, a collision data report was generated from I-SWITRS. The collision reports from the I-SWITRS table were used to record all of the collision data and show the collision figures across all campuses. All numbers reported are absolute collisions. No other post-processing calculations were conducted. The graphs give a visual representation of how the collisions vary across campuses studied. SWITRS data and the Transportation Injury Mapping System

(TIMS)[3] generated the maps. The maps show an overview of the collision rates occurring just outside the boundaries of SJSU and within the associated city jurisdiction.

A.3.1 Findings of Data Collisions

Table 1-1. Collisions Report Availability from I-SWITRS

University	Reporting Year	Ped Collisions (Report 6)	Bike Collisions (Report 7)	Total Collisions (Report 8)
San Jose State University (SJSU)	2013	No	No	No
	2012	No	No	No
	2011	No	No	No
	2010	No	No	No
	2009	No	No	No
University of California, Santa Cruz (UCSC)	2013	Yes	Yes	Yes
	2012	Yes	Yes	Yes
	2011	Yes	Yes	Yes
	2010	Yes	Yes	Yes
	2009	Yes	Yes	Yes
California State University, East Bay (CSUEB)	2013	Yes	No	Yes
	2012	No	No	Yes
	2011	No	Yes	Yes
	2010	No	No	Yes
	2009	Yes	Yes	Yes
Stanford University	2013	N/A	N/A	N/A
	2012	N/A	N/A	N/A
	2011	N/A	N/A	N/A
	2010	N/A	N/A	N/A
	2009	N/A	N/A	N/A
San Francisco State University (SFSU)	2013	No	No	Yes
	2012	Yes	Yes	Yes
	2011	No	No	Yes
	2010	No	No	Yes

[3] "Transportation Injury Mapping System," The University of California, Berkeley, tims.berkeley.edu, accessed April 2, 2015.

University	Reporting Year	Ped Collisions (Report 6)	Bike Collisions (Report 7)	Total Collisions (Report 8)
	2009	No	No	Yes
University of California, Berkeley (UCB)	2013	No	No	No
	2012	No	No	No
	2011	No	No	No
	2010	No	No	No
	2009	No	No	No
California State University, Sacramento (CSUS)	2013	No	Yes	Yes
	2012	No	Yes	Yes
	2011	No	Yes	Yes
	2010	No	Yes	Yes
	2009	Yes	Yes	Yes
University of California, Davis (UCD)	2013	No	Yes	Yes
	2012	No	Yes	Yes
	2011	Yes	Yes	Yes
	2010	No	Yes	Yes
	2009	Yes	Yes	Yes

Stanford University is a private university, and collision data was not available through I-SWITRS. I-SWITRS does not have on-campus collision data for SJSU[4] and UCB for the 5-year span with all three-collision data types. With regard to the remaining five universities, available collision reports were generated for certain years, and certain collision types.

[4] Anecdotal discussions with the SJSU Police Staff indicated that the collision numbers would have been fairly low.

Table 1-2. Collisions Reported from I-SWITRS

University	Reporting Year	Ped Collisions (Report 6)	Bike Collisions (Report 7)	Total Collisions (Report 8)	Student Full-time Population, 2015
San Jose State University (SJSU)	2013	N/A	N/A	N/A	
	2012	N/A	N/A	N/A	
	2011	N/A	N/A	N/A	
	2010	N/A	N/A	N/A	
	2009	N/A	N/A	N/A	
	Total	***N/A***	***N/A***	***N/A***	***33,969***
University of California, Santa Cruz (UCSC)	2013	2	4	20	
	2012	1	3	23	
	2011	3	1	31	
	2010	1	12	40	
	2009	3	12	47	
	Total	***10***	***32***	***161***	***17,203***
California State University, East Bay (CSUEB)	2013	1	N/A	4	
	2012	N/A	N/A	6	
	2011	N/A	1	4	
	2010	N/A	N/A	7	
	2009	1	1	11	
	Total	***2***	***2***	***32***	***14,823***
Stanford University	2013	N/A	N/A	N/A	
	2012	N/A	N/A	N/A	
	2011	N/A	N/A	N/A	
	2010	N/A	N/A	N/A	
	2009	N/A	N/A	N/A	
	Total	***N/A***	***N/A***	***N/A***	***15,877***
San Francisco State University (SFSU)	2013	N/A	N/A	4	
	2012	N/A	1	4	
	2011	1	N/A	15	
	2010	N/A	1	7	
	2009	N/A	1	14	
	Total	***1***	***3***	***44***	***33,696***
University of California, Berkeley (UCB)	2013	N/A	N/A	N/A	
	2012	N/A	N/A	N/A	
	2011	N/A	N/A	N/A	
	2010	N/A	N/A	N/A	
	2009	N/A	N/A	N/A	
	Total	***N/A***	***N/A***	***N/A***	***38,440***
California State University, Sacramento (CSUS)	2013	N/A	5	24	
	2012	N/A	N/A	30	
	2011	N/A	3	48	
	2010	N/A	1	61	
	2009	1	1	64	
	Total	***1***	***10***	***227***	***31,127***
University of	2013	N/A	2	10	

University	Reporting Year	Ped Collisions (Report 6)	Bike Collisions (Report 7)	Total Collisions (Report 8)	Student Full-time Population, 2015
California, Davis (UCD)	2012	1	7	12	
	2011	2	13	28	
	2010	N/A	2	6	
	2009	1	3	4	
	Total	***4***	***27***	***60***	***40,585***

Note:

- All of the data used to analyze the 8 universities was extracted from the I-SWITRS reports. [5]
- N/A highlighting in yellow for 5 universities participated I-SWITRS system cannot be determined whether there was no reported collision or there was zero collisions reported.
- The number of total collisions is calculated based on available reported collisions.
- Please see original I-SWITRS reports from Map A-1 to Map A-105 in Exhibit 1.

The missing data brings about difficult in building a definitive analytical conclusion. However, if the two most complete years of data from USCS and UCD are used as proxies for SJSU, then an inference can be made on collision probabilities through estimating what SJSU collision data could potentially represent if a full data set existed. In the following extracted data table, during the years of 2011 and 2012 at UCSC and UCD, the UCSC data for pedestrian collisions and bike collisions averaged to two incidents. Pedestrian collisions for UCD averaged to 1.5 incidents for the two-year period. The bicycle collisions for the two study years are higher compared to years 2009, 2010 and 2013. During 2011 and 2012 the average collisions were 10 incidents. However, during 2009, 2010 and 2013 the average was 2.3 incidents. Since UCD is considered one of the most bicycle friendly campuses in the nation, clearly something abnormal impacted years 2011 and 2012, which was further supported by the statistics in 2009, 2010 and 2013.

[5] "I-SWITRS," The California Highway Patrol, http://iswitrs.chp.ca.gov/Reports/jsp/userLogin.jsp, accessed April 2, 2015.

Table 1-3. UCSC and UCD Collision Rate Averages

University	Reporting Year	Ped Collisions	Bike Collisions	Total Collisions	Full-Time Student Population
SJSU	2012	N/A	N/A	N/A	
	2011	N/A	N/A	N/A	
	Average	N/A	N/A	N/A	33,969
UCSC	2012	1	3	23	
	2011	3	1	31	
	Average	2	2	27	17,203
UCD	2012	1	7	12	
	2011	2	13*	28	
	Average	1.5	10	20	40,585

* 2011 and 2012 were anomalies as other years for UC Davis experienced < 3. However, these were the only two complete years comparable to UCSC.

The State's I-SWITRS database cannot be a definitive source used to evaluate SJSU's collision history. However, based on discussions with campus police and using campuses like UCSC and UCD as proxies, it can be concluded that it is highly unlikely that SJSU has an on-campus collision problem. In contrast, (as will be shown in the next section) some nearby off-campus collision trends are significant for vehicles on bicycle and vehicles on pedestrian: e.g. Stanford, Berkeley, and San Jose.

It is recommended that SJSU actively engage in the I-SWITRS reporting program, collecting a couple of years of data, and repeat this analysis effort before proceeding with any final determination of the overall pedestrian and bicycle safety situation on the SJSU campus.

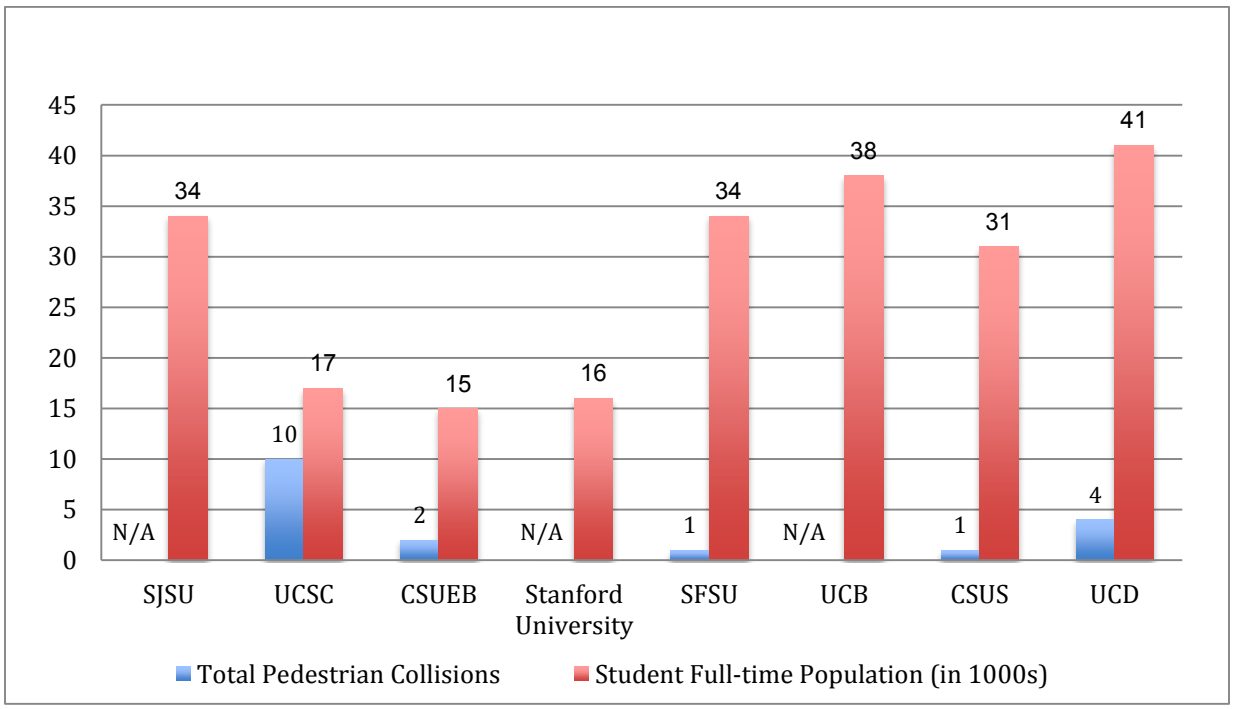
Table 1-4. Collisions Reported from SJSU

University	Reporting Year	Ped Collisions (Report 6)	Bike Collisions (Report 7)	Total Collisions (Report 8)	Student Full-time Population
San Jose State University (SJSU)	2013	N/A	N/A	N/A	
	2012	N/A	N/A	N/A	
	2011	N/A	N/A	N/A	
	2010	N/A	N/A	N/A	
	2009	N/A	N/A	N/A	
	Total	***N/A***	***N/A***	***N/A***	***33,969***

Note: Collisions reports on San Jose State University campus are required from the University Police Department. We are still waiting for their response. If available reports are received, we will update this table.

SJSU, Stanford University, and UC Berkeley are marked N/A in the Table 1-2 because no collision data was available for the years queried. However, through verification with the SJSU University Police Department (UPD), data collection records were provided for the purpose of this study. For the Full-time Population section, the number is derived from the college websites in the year of 2015.

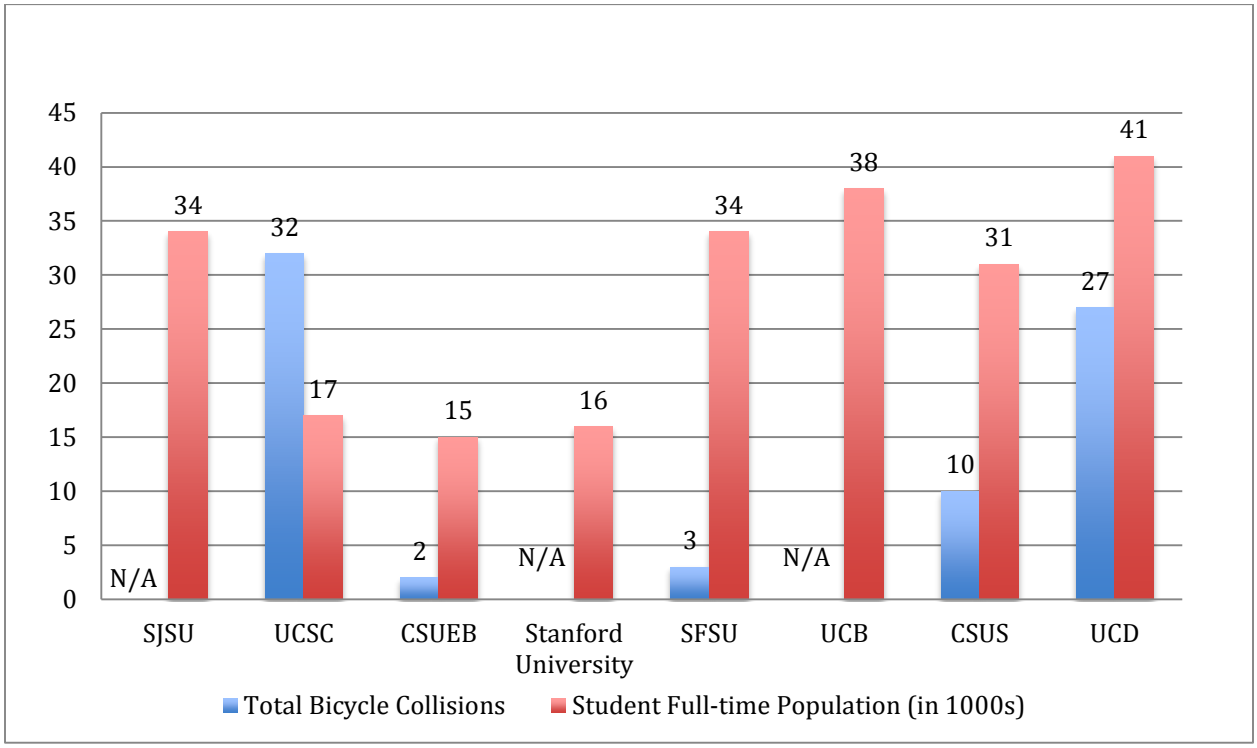
Figure 1-1. Total Pedestrian Collisions from 2009 to 2013



Compared to student population (in 1000s), the number of pedestrian collisions was relatively low on each campus with the available collision data. Only UCSC showed a

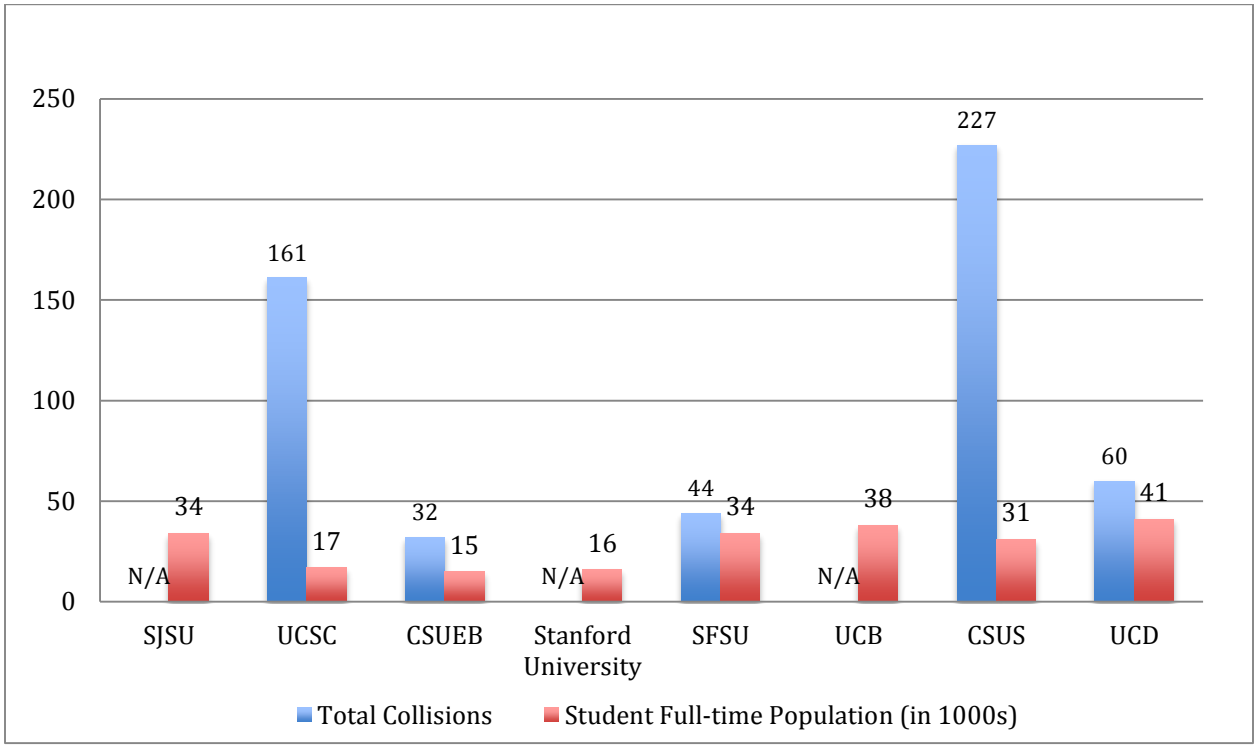
total of ten pedestrian collisions in five years, and an average of two collisions per each year. For other campuses, the average pedestrian collisions were less than one per year. Across the five-year span of total pedestrian collisions, it is difficult to claim that pedestrian involved collision on campus was a severe problem at the universities studied.

Figure 1-2. Total Bicycle Collisions from 2009 to 2013



The five-year bicycle collisions trend showed a higher number of on-campus collisions compared to pedestrian collisions. Bicycle collisions on both USCS and UCD campuses were approximately 30 per year within the five-year period, and the average was about six per year. The remaining universities with available collision data showed a low number of bicycle-involved collisions across the five-year period. Specific bicycle involved reports (Technical Appendices –Large Exhibits) show that most bicycle collisions were collisions between bicycles and vehicles. Based on this pattern, bicycle involved collisions is minor safety factor for the UCSC and UCD campuses, specifically for collision of bicycle and vehicle.

Figure 1-3. Total Vehicle Collisions from 2009 to 2013



Most of the total collisions on campuses across the five-year period were vehicle-to-vehicle collisions. UCSC and CSUS experienced the most vehicular collisions amongst the universities. Hundreds of collisions happened from 2009 to 2013, which resulted in an average of over twenty collisions per year. The data show also showed that an average of eight collisions per year for the remaining universities. Therefore, the most severe problem was vehicle-to-vehicle collisions in comparison to pedestrian and bicycle involved collisions in this five-year period.

A.4 Collisions Data Analysis for Northern California University Campuses

A.4.1 Overview

The following maps have been generated using the Transportation Injury Mapping System (TIMS) offered by UC Berkeley. TIMS utilizes data from the Internet Statewide Integrated Traffic Recording System (I-SWITRS). The maps provide an overview of the collisions that surround the campus and occur on city property. The

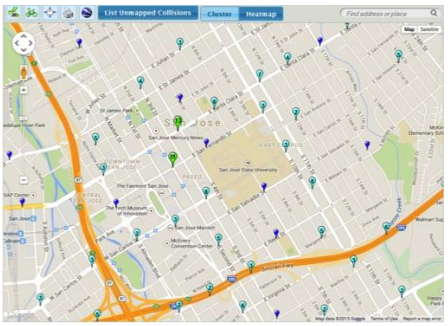
TIMS system did not have any collision data available for the campuses. Each map displays collisions that occurred from January 1, 2009 through December 31, 2013.

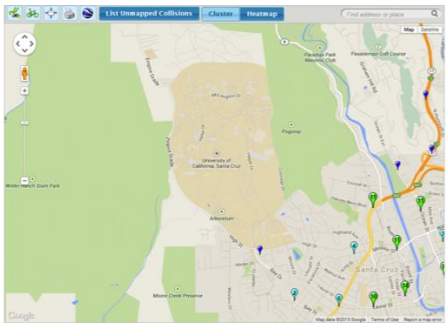
The outputs from the TIMS analysis of bicycle and pedestrian collisions in the Downtown San Jose area show that there are a significant amount of bicycle collisions and pedestrian collisions involving vehicles, but only one bicycle versus pedestrian collision. This suggests that bicycle on pedestrian collisions are very rare and not a significant safety or policy issue for Downtown San Jose and the SJSU campus.

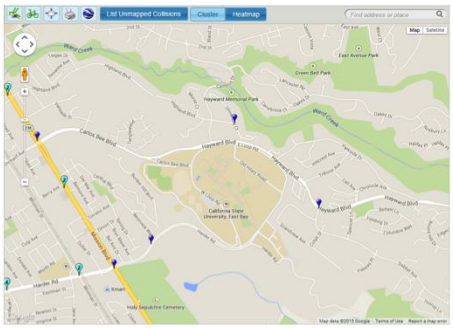
The data from the TIMS maps of bicycle and pedestrian collisions in the Downtown San Jose area show that there are significant numbers of bicycle collisions and pedestrian collisions involving vehicles, but only one bicycle versus pedestrian collision. This suggests that bicycle on pedestrian collisions are very rare, and not a significant safety or policy issue for Downtown San Jose and the SJSU campus.

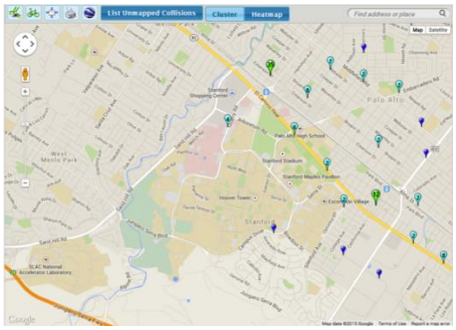
A.4.2 Comparisons of TIMS Maps Findings of Eight Universities' Surroundings[6]

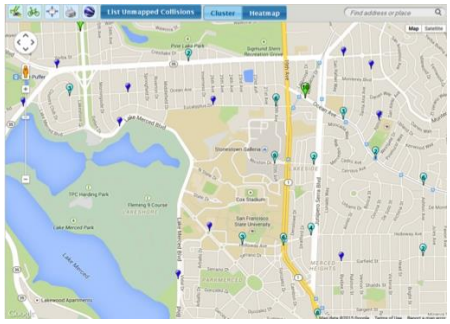
Figure 1-4. Comparison of Pedestrian Collision Data TIMS Maps from 2009 to 2013

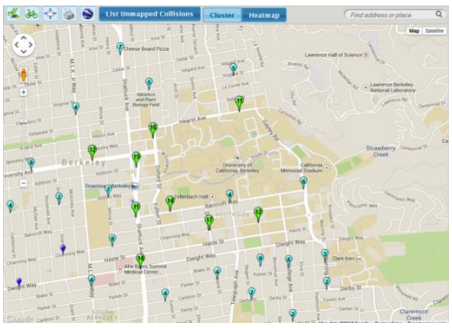

SJSU

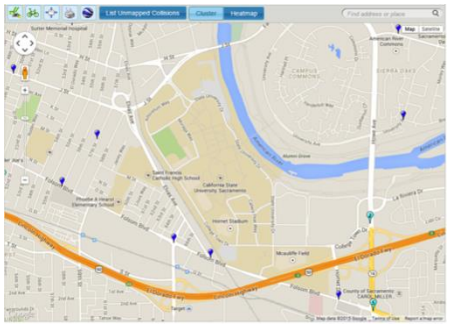

UCSC

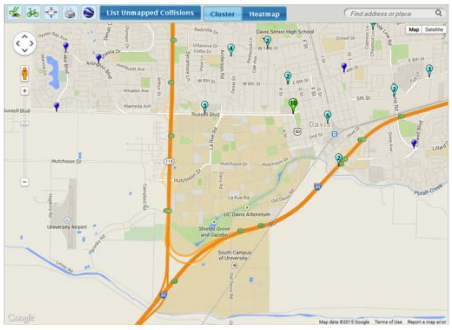

CSUEB


Stanford


SFSU

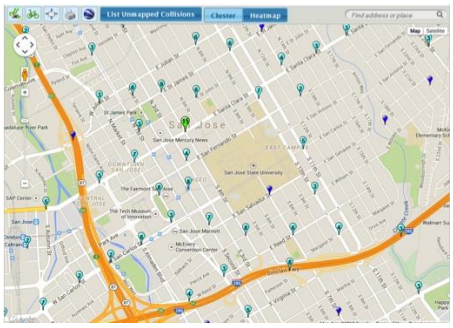

UCB


CSUS

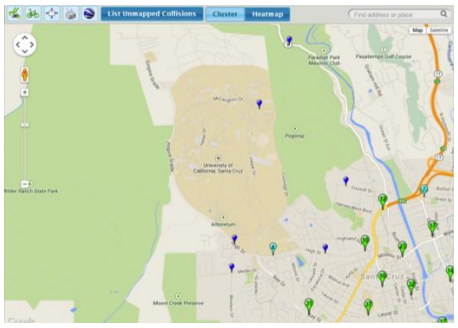

UCD

[6] "Transportation Injury Mapping System," The University of California, Berkeley, tims.berkeley.edu, accessed April 4, 2015.

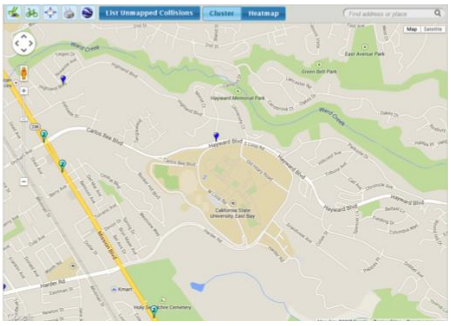
Figure 1-5. Comparison of Bicycle Collision Data TIMS Maps from 2009 to 2013



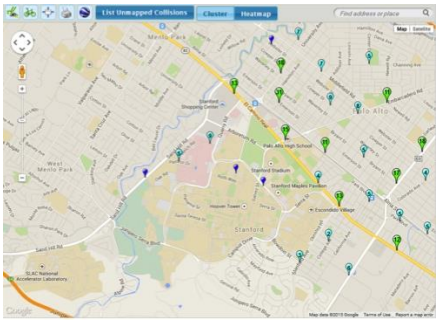
SJSU



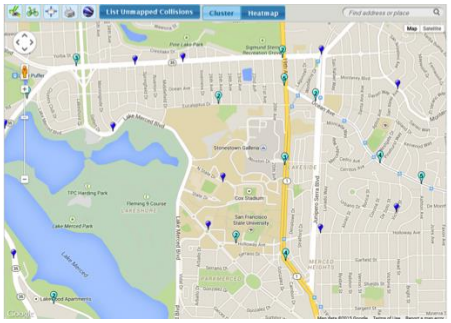
UC Santa Cruz



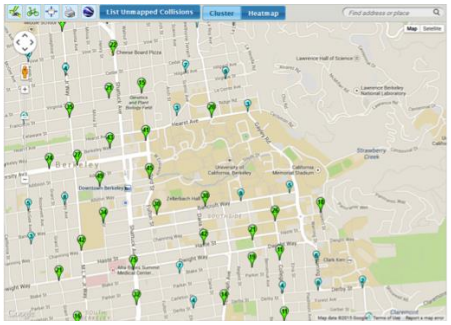
CSUEB



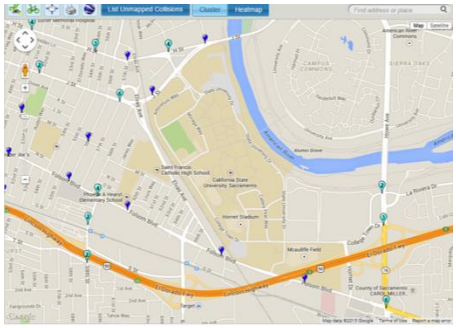
Stanford



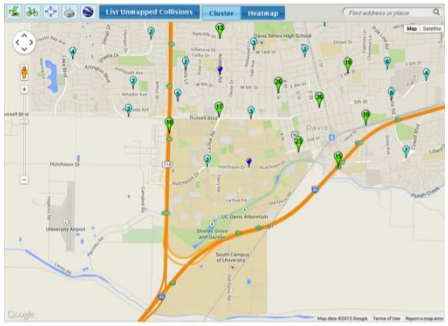
SFSU



UCB

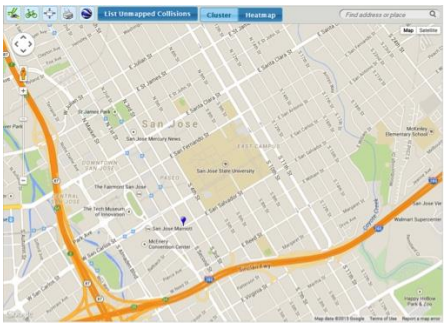


CSUS

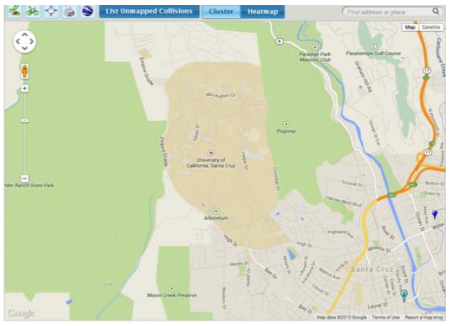


UCD

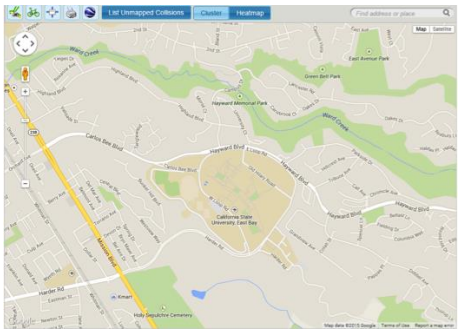
Figure 1-6. Comparison of Pedestrian and Bicycle Collision Data TIMS Maps from 2009 to 2013



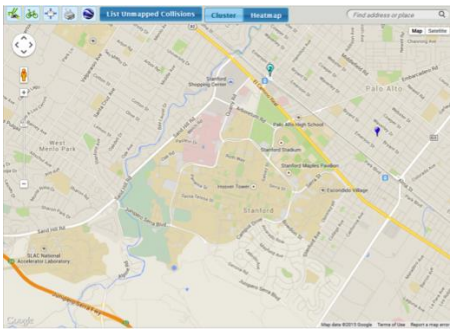
SJSU



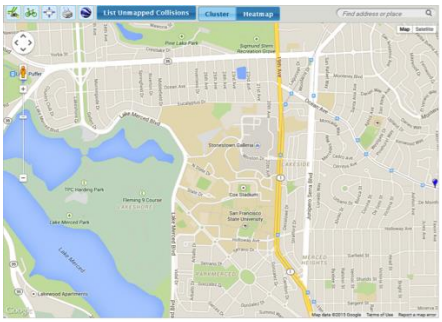
UCSC



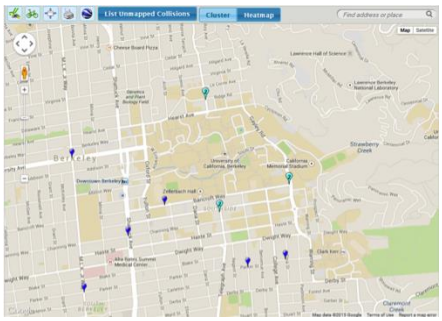
CSUEB



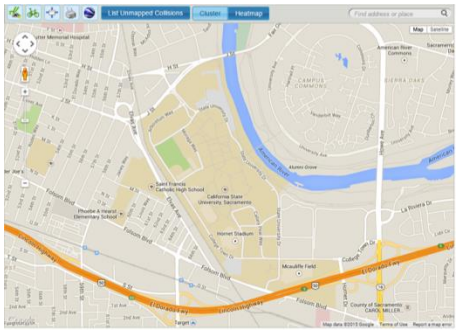
Stanford



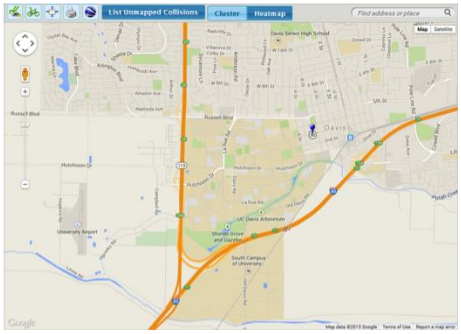
SFSU



UCB



CSUS



UCD

Note:

- Please see original TIMS tables and maps in Exhibit 2.

Findings:

San Jose State University:

The outputs from the TIMS analysis of bicycle and pedestrian collisions in the Downtown San Jose area show that there were a significant number of bicycle collisions and pedestrian collisions involving vehicles, but only one bicycle versus pedestrian collision. This suggests that bicycle on pedestrian collisions are very rare and not a significant safety or policy issue for Downtown San Jose and the SJSU campus.

UC Santa Cruz:

There were very few collisions of any type in the vicinity of the UC Santa Cruz campus. This may be due to the campus location some distance from the downtown area of Santa Cruz, and most of the traffic in the area is going to or from the campus.

CSU East Bay:

In comparison to the other campuses in urban setting the CSU East Bay campus has a relatively low number of pedestrian or bicycle collisions. The area that most collisions occurred was in the south west of campus near Mission Boulevard.

Stanford University:

There are a significant number of bicycle collisions and pedestrian collisions near the east side of campus. This could be due the significant amount of bicycle and pedestrian traffic that is generated by the Caltrain Commuter Rail service. The TIMS query output showed collisions on campus when SJSU query did not. This may be attributed to differences in collision reporting polices at the universities. In the five-year time from 2009 through 2013 there were only three reported bicycle vs. pedestrian collisions reported in the vicinity of Stanford University.

San Francisco State University:

The area surrounding the San Francisco State University campus had a low number of bicycle and pedestrian collisions involving cars in the five-year time from 2009 through 2013 when compared to the other universities. This may be due to the fact that bicycle

riding is not allowed on campus, and therefore have a very low mode share. There was only one reported bicycle versus pedestrian collision in the five-year time frame.

UC Berkeley:

The UC Berkeley vicinity has the highest number of bicycle and pedestrian collisions involving cars. This may be due to the high volumes of bicycle and pedestrian mode share for students and residents of Berkeley. During 2009 through 2013 there were twelve incidents of bicycle versus pedestrian collisions in the area surrounding campus.

CSU Sacramento:

The area surrounding the CSU Sacramento campus has a very low number of pedestrian collisions. There are a moderate number of bicycle collisions on the south west side of campus near the rail line. In the five-year time period there are no bicycle on pedestrian collisions in the area surrounding the CSU Sacramento campus

UC Davis:

The outputs from the TIMS analysis of bicycle and pedestrian collisions in the UC Davis area shows that there are far fewer bicycle collisions and pedestrian collisions as compared to the Downtown San Jose area. Only bicycle versus pedestrian collisions were identified in the UC Davis study area.

In analyzing the eight Northern California university campuses by utilizing the TIMS collision database, it becomes apparent that bicycle on pedestrian collisions are very rare, and do not pose a significant safety concern. There are a wide variety of the levels of bicycle and pedestrian collisions involving vehicles with the eight different campuses. This is most likely due to the different urban settings, bicycle and pedestrian mode share, and street design of the different campuses in the study.

A.5 Final Conclusion

From these findings, SJSU does not have significant safety problem with on-campus collisions as compared to other universities using the Statewide Integrated Traffic Reporting System (I-SWITRS). Collision data at SJSU was not available through I-SWITRS for unknown reasons. The reported three collisions on the SJSU campus over the study period were requested separately UPD. It is recommended that that SJSU actively engage in the I-SWITRS reporting program and collect several years of data. Participation of SJSU in the I-SWITRS can dramatically assist the public, other universities, city planners, and others in evaluating and planning for multi-modal transportation safety.

REFERENCES:

"I-SWITRS." The California Highway Patrol. http://iswitrs.chp.ca.gov/Reports/jsp/userLogin.jsp. Accessed April 2, 2015.

"Transportation Injury Mapping System." The University of California, Berkeley. tims.berkeley.edu. Accessed April 2, 2015.

CHAPTER 2

BEST PRACTICES REVIEW FOR COLLEGE CAMPUS BICYCLE PLANNING

Team 2:

Team Leader: Allan Rimban

Jake Armstrong
Sean Dougan
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CHAPTER 2

BEST PRACTICES REVIEW FOR COLLEGE CAMPUS BICYCLE PLANNING

The Purpose of This Chapter

This chapter provides a review of the current policies of universities that have been named Bicycle-Friendly Universities by the League of American Bicyclists. This chapter explores the policies shared by these universities and the applicability of these policies to SJSU. It also outlines the process for applying for a BFU award and identifies measures and policies from other campuses that SJSU could potentially implement in the near and long term. Data was gathered for this chapter by primarily conducting qualitative research on the selected campuses. Additionally, key officials were interviewed from the campuses and relevant documents were accessed to understand the campuses' policies and measures on bicycle safety and planning.

B.1 Why use the list of Bicycle Friendly Universities

In research, the credibility of sources is established by evaluation of certain characteristics of the source. According to the University of California, Santa Cruz Library and Purdue University's Online Writing Lab, the credibility of a source is determined by evaluating the source against the following criteria (University of California, Santa Cruz 2015; Purdue OWL 2015):

1. Authority - who published this work?
2. Currency - how recent is its findings?
3. Purpose - is the source objective and neutral?

B.1.1 The Authority of the BFU List

Organizations that have been dedicated to their causes for a long period of time hold considerable credibility because of the time they have spent mastering their field.

The League of American Bicyclists started out as the League of American Wheelmen in 1880 in Newport, Rhode Island (League of American Bicyclists 2013a) and has been committed to "listen and learn, define standards and share best practices to engage diverse communities and build a powerful, unified voice for change" (League of American Bicyclists 2013a). The League has led the United States in setting standards for making bike friendly communities. It publishes a monthly magazine dedicated to inform the community of bikers in the country (League of American Bicyclists 2013a). It has worked with the government, advising the National Highway Traffic Safety Administration in matters of bike policy, and helping Congress with energy-related legislation (League of American Bicyclists 2013a). By virtue of its achievements in the field of bicycle travel and its long-time dedication to its cause, the League makes itself a credible source for this study.

B.1.2 The Currency of the BFU List

Most recent sources are credible because they keep up with the changes in their fields of study. The League publishes a BFU list every year since 2011; with the most recent list in 2014. The more recent the data source, the more connected its findings with the current conditions. With its 2014 list and considering the time it takes to review the bike-friendliness of campuses in the country, the League has the most up-to-date list of bicycle-friendly universities possible.

B.1.3 The Purpose of the BFU List

The League's board of directors is composed of community leaders from across North America, with representatives from states like New Mexico, New York, Missouri and California (League of American Bicyclists 2013c). Furthermore, the league evaluates universities using a strict set of criteria. Because of its diverse membership and rigorous methodology for evaluating the bike-friendliness of campuses, the League serves as a convincing source of information on bike friendly universities.

B.2 Applying for a BFU Review

Universities that make the effort to submit an application receive feedback on their application and technical assistance to improve their campuses regardless if they are given an award. Campuses that show significant effort towards improvement are favorably evaluated in a subjective manner, if they re-submit the following year (Neptune 2015). Universities awarded receive a certificate of award, promotion on all of the League's publications and sites including the yearly BFU list, and signs that can be posted identifying the campus as an official BFU (League of American Bicyclists 2013b). Simply going through the application process is beneficial to the university for receiving feedback on the application and technical consultation on ways the university can become a BFU (Neptune 2015). Universities and the LAB feel that this designation benefits the university greatly in the long run by attracting students and faculty by providing safe travel alternatives that are environmentally friendly (Neptune 2015). Competition is growing for this designation and it is attracting more and more universities to apply. The LAB receives roughly 50 to 60 applications per year.

B.2.1 The BFU Ranking Criteria

The League recognizes elements across 5 categories that make great places for biking, referred to as the 5 'E's[7] below: Engineering, Education, Encouragement, Enforcement, Evaluation and Planning. The section below is an excerpt from the League's BFU ranking criteria:

> *<u>Engineering:</u> Creating safe and convenient places to ride and park*
>
> *The most visible and perhaps most tangible evidence of a great place for bicycling is the presence of infrastructure that welcomes and supports it.*

[7] League of American Bicyclists. http://bikeleague.org/content/5-es

Survey after survey shows that the physical environment is a key determinant in whether people will get on a bike and ride. The most advanced Bicycle Friendly Communities and Bicycle Friendly Universities have a well-connected bicycling networks, consisting of quiet neighborhood streets, conventional and protected bike lanes, shared use trails, and policies to ensure connectivity and maintenance of these facilities. Secure, convenient and readily available bike parking is also a key component. For Bicycle Friendly Businesses, great bike parking in addition to showers and locker facilities are vital to promoting bicycling both in the workplace and wider community.

<u>Education:</u> Giving people of all ages and abilities the skills and confidence to ride

Offering a lot of ways for people to get the skills and confidence to ride is key to building great places for bicycling. At the community level this begins with bicycle-safety education being a routine part of public education. Communities, businesses and campuses can offer options for adults looking to improve their biking skills with everything from online tips, brown bag lunch presentations and in-depth on-bike training opportunities. The League's Smart Cycling program, and more than 2,000 League Cycling Instructors around the country, are a great resource in delivering high quality education programs. It is also vital to make motorists and cyclists aware of their rights and responsibilities on the road through public education campaigns that promote the Share the Road message.

<u>Encouragement:</u> Creating a strong bike culture that welcomes and celebrates bicycling

Communities, businesses and universities play a critical role in encouraging people to ride by giving them a variety of opportunities and incentives to get on their bikes. This can be done through the celebration of National Bike Month

and Bike to Work Day, producing community bike maps, route finding signage, bicycle-themed celebrations and rides and commuter challenges. Many places are investing in public bike sharing systems and internal fleets, which are a convenient, cost effective, and healthy way of encouraging people to make short trips by bike.

Enforcement: Ensuring safe roads for all users

Basic laws and regulations need to govern bicycling and the rules of the road to ensure safety for all road users. With a good set of laws and regulations in place that treat bicyclists equitably within the transportation system, the next key issue is enforcement. Law enforcement officers must understand these laws, know how to enforce them, and apply them equitably to ensure public safety. A good relationship between the bicycling community and law enforcement is essential; for example, a police representative can participate on a Bicycle Advisory Committee to increase awareness on both sides. Similarly, having more police officers on bikes helps increase understanding of cyclists' issues. On college and university campuses, theft prevention is a huge undertaking. Having law enforcement partners and great policies in place is essential to promoting bicycling.

Evaluation & Planning: Planning for bicycling as a safe and viable transportation option

Metrics are essential. A comprehensive bicycle master plan, in combination with dedicated funding and active citizen/organizational support is the foundation of a great bicycling community, business or university A successful plan focuses on developing a seamless cycling network that emphasizes short trip distances, multi-modal trips and is complemented by encouragement, education and enforcement programs to increase usage. A dedicated Bicycle Program Coordinator and an effective Bicycle Advisory Committee can play an

important role in helping decision makers create, implement, and prioritize those bicycle programs and policies.

B.2.2 The Process

There is no charge to apply for a BFU certification thanks to the generous sponsorship of TREK bicycles that pays for staffing, materials, and supplies (League of American Bicyclists, 2013b; Neptune 2015). Once submitted, the League reviews the application and verifies information by distributing comprehensive surveys to students who attend the university, to faculty, and to local bicycle advocates that verify the information (Neptune 2015). If a university is awarded a BFU ranking, the award is valid for 4 years. After 4 years the university must reapply to show that it has maintained its status as a BFU (Neptune 2015). In 2015, the League expects to receive a large number of applications since the program is now 4 years old, and many universities will be re-applying for BFU status (Neptune 2015).

Applying for a BFU award is a true commitment to improving San Jose's campus. If San Jose wishes to consider submitting an application, a representative from the university should first fill out the Quick Assessment Form[8] on the following page. A representative chosen should be aware of all aspects of the university's bicycle-related activities and efforts and should consult with students and staff (League of American Bicyclists 2013b). The League recommends that before a university submits a full application it should answer "yes" to at least one question within each of the 5 E's in the Quick Evaluation below. This evaluation is a condensed version of the full application. Evaluations of campus elements that are addressed by the 5 E's are summarized by three or less questions beneath each category. This gives the university a benchmark to begin preparing a full application or to make physical or policy changes that poise the university for submittal of a successful application.

[8] http://bikeleague.org/bfa/quick-assessment/university

BFU Quick Evaluation to Determine if Your Campus is Eligible for an Award:

1) Engineering

Does your campus have a well-connected bicycling network?

Is bike parking readily available throughout the campus?

Is the college or university easily accessible by bike?

2) Evaluation

Does your school have a current comprehensive bicycle plan?

Does your college or university have a bicycle program manager?

3) Enforcement

Do campus safety/law enforcement officers receive training on the rights and responsibilities of all road users?

Is there a program on campus to prevent bike theft?

4) Education

Does the school offer bicycle education classes for students and staff?

5) Encouragement

Is there an active bicycle advocacy group at the college or university?

Is there an on-campus bike center for rentals and repairs?

The next step is for the university representative to fill out the current year's application available online.[9] BFU recommends filling out a word version of the complete application, and then waiting until the deadline for submittal in order to capture all bike related improvements or changes within the last year (Neptune 2015).

B.2.3 The Ranking

The League promotes a holistic approach to evaluating universities by favoring those that satisfy aspects of all the 5 E's (Neptune 2015). Universities that have a great bicycle network on campus, but do not have any bicycle safety educational

[9] The BFU online application can be accessed at: <http://www.bikeleague.org/university>

programs or do not encourage bicycle commuting through advocacy may not be highly considered.

The League awards universities with an honorable mention, bronze, silver, gold, or platinum rating within the BFU program. While there is some subjectivity to the evaluation process, in general in order for a university to earn greater than an honorable mention, it must at least meet one criterion within each category. The more categories achieved within each 'E' the higher the BFU level achieved. Weather factors, and needs of the campus are taken into consideration as well. For example, the League evaluates a campus on the east coast differently than it would evaluate a campus on the west coast.

For an award of bronze and above, the university must go above and beyond within at least one category. For a silver designation, the university would have to go above and beyond in at least 2 categories, and so on. The highest rated Platinum rated university goes above and beyond in at least 4 categories (Neptune 2015). The League also evaluates the roads surrounding the campus, how the university is accessed from the surrounding city streets, and if there are bicycle amenities leading to the university (Neptune 2015). This level of attention should encourage universities to work collaboratively with the surrounding jurisdiction to improve the bicycling network as a regional endeavor. Also taken into account is a campus that shows significant improvement from its previous state towards becoming a BFU. As mentioned above, this award nomination is a commitment by both the university and the League towards improving bicycle safety and access.

B.3 Best Practices and Policies from BFU-Ranked Campuses

Exhibit 1 details a set of tables that lists current policies of California campuses that have been awarded Platinum, Gold, Silver and Bronze awards by the League. The tables contain four columns: the first column provides the name of the measure that helps a campus

achieve bicycle-friendliness; the second column describes that measure; the third states the benefits of that measure; and the fourth suggests a way to implement that measure in SJSU. The fourth column, "Potential Application to SJSU", provides concrete measures that SJSU can implement in its own campus. By providing these concrete measures, this table aims to inform policy makers of the level of bicycle-friendliness that the university can achieve by implementing these measures.

Matrix of the Best Practices in Bicycle Planning and Safety Implementation

In summary, the selected universities received awards based on the comprehensiveness of their bicycle safety and planning policies and measures. Table 2-1 graphically explains the components of the policy goals that these campuses have achieved and the policy goals that SJSU has achieved so far.

Table 2-1 Summary of Policy Goals Bicycle-Friendly Universities and SJSU

Bicycle-Friendly University (BFU) Rankings for California Universities

	Well-connected bicycling network	Bike parking campus wide	Campus easily accessible by bike	Comprehensive bicycle plan	Bicycle program manager	Law enforcement officers training	Bike theft prevention program	Bicycle education classes	Active bicycle advocacy group	Bike center for rentals & repairs
PLATINUM										
Stanford University	■	■	■	■	■	■	■	■	■	■
University of California, Davis	■	■	■	■	■	■	■	■	■	■
GOLD										
University of California, Santa Barbara	■	■	■		■	■	■	■	■	■
SILVER										
California State University, Long Beach	■	■	■	■	■		■	■	■	■
University of California, Berkeley	■	■	■	■	■		■	■	■	■
University of California, Irvine	■	■	■		■		■	■	■	■
University of California, Santa Cruz		■	■	■	■	■	■	■		■
University of Laverne		■			■	■	■			■
BRONZE										
California Institute of Technology			■				■	■	■	■
Pomona College (Claremont Colleges)										■
Santa Monica College		■	■		■	■		■	■	■
University of California, Los Angeles		■		■			■		■	■
University of San Diego		■	■						■	
POTENTIAL APPLICANT										
San Jose State University		■	■			■	■			

B.4 Analysis and Data Interpretation

The following sections describe what the platinum, gold, silver, and bronze campuses have in common.

B.4.1 Platinum Campuses

The platinum award is given to campuses that go above and beyond. The university must satisfy at least one element within each of the five "E" categories but must also go above and beyond in at least four of the five "E" categories. Stanford and UC Davis are the only campuses that have received the Platinum award.

Stanford and UC Davis have met all the criteria of the five 'E's and have done so by making great effort to go above and beyond in most of the categories. Both of these campuses have many educational opportunities for students; and many miles of bike lanes. Their supporting infrastructure, such as bike racks and lockers, are located campus-wide. Both campuses also encourage bicycle riding through incentive and reward programs. These campuses enforce their bicycle riding and parking policies to ensure the safety of bicyclists and pedestrians on campus. Additionally, evaluation and planning is a significant part of each of these two campuses bicycle environment.

B.4.2 Gold Campuses

To receive a gold award, the university must satisfy at least one element within each of the five "E" categories but must also go above and beyond in at least three of the five "E" categories. UC Santa Barbara is the only California campus that has been given the Gold award for 2014.

Gold awards are given to campuses that go above and beyond in at least three of the five "E" categories. UC Santa Barbara was very close to receiving a Platinum award but did not satisfy two criteria. UC Santa Barbara does not have a comprehensive bicycle plan and does not have a bicycle program manager. These two factors are

what kept UC Santa Barbara from becoming a Platinum level campus. The Gold award goes to campuses that do a great job in several areas but not all.

B.4.3 Silver Campuses

For a university to receive a Silver designation, the university must satisfy at least one element within each of the five 'E' categories, and should go above and beyond in at least 2 of the 5 'E' categories. Five universities in California have received Silver designations: CSU Long Beach, UC Berkeley, UC Irvine, UC Santa Cruz, and University of Laverne. Research into each of these campuses shows a mix of bicycle and transportation policies.

The Silver ranked campuses all lacked at least one element within the five 'E's that prevented them from being ranked Gold. For example, three out of five Silver ranked campuses lacked Law Enforcement officer's training and two out of five do not appear to have a bicycle advocacy group present on campus. All Silver ranked campuses meet the Engineering criteria for adequate bike parking campus wide. However, they fall short in some of the other aspects within that category.

Three out of five Silver ranked campuses claim to have a well-connected bike network or are easily accessible by bike. Some campuses fall short of this, but make up for it with other qualities. For example, UC Santa Cruz is the only campus that has a bike shuttle and an "Emergency Ride Home" program. This could have encouraged the League to rank UC Santa Cruz higher within the Engineering criteria.

All Silver ranked campuses have a designated Bicycle Program Manager under the Evaluation category. Within the Encouragement category, all campuses that received a Silver award have bicycle repair stations or a bike shop on campus. Within the Enforcement category, most Silver ranked campuses have a mandatory bike registration program to help with bike recovery if stolen, but campuses that receive a Gold or Platinum rating have more active bike theft prevention programs or training programs for enforcement officers. All Silver ranked campuses, with the

exception of University of Laverne, provide bicycle education classes for students and faculty.

B.4.4 Bronze Campuses

For an award of Bronze and above, a university must go above and beyond within at least one of the five 'E' categories. Universities that receive a Bronze satisfy at least one element within each 'E' category, but fall short in meeting three or greater criteria evaluated by the League. Five campuses in California have been awarded a Bronze ranking: California Institute of Technology, Pomona College, Santa Monica College, UCLA, and UC San Diego.

Campuses with a Bronze ranking may meet many criteria, but they all rank low within the Engineering category. All of the Bronze campuses lack a well-connected bicycling network on campus and are not as accessible by bicycle. Most of the Bronze campuses have sufficient bicycle parking facilities, and repair stations or bike rentals on campus. UCLA and UC San Diego have electronic bike lockers, bike racks or boxes, and provide shower access.

UCLA is the only Bronze ranked campus that satisfies the Evaluation category by having an adopted Comprehensive Bicycle Plan. Santa Monica is the only campus that meets Enforcement criteria by having a dedicated Bicycle Program Manager and actively cooperating with campus police. Two of the five campuses have a bike theft prevention program.

Under the Encouragement criteria all Bronze campuses, with the exception of Pomona College, have an active bicycle advocacy group. Only California Institute of Technology and Santa Monica College, who offer bicycle education classes, satisfy the Education criteria.

While a Bronze ranked university should be proud to be ranked as a Bicycle Friendly University; these campuses have much more work to do to earn a Gold or Platinum ranking.

B.5 Suggestions

Following the recent bicycle collision on campus, SJSU should review and renew their current bicycle practices. With a growing campus population and increased bicycle ridership, a proactive approach to managing bicycle safety and planning would greatly benefit the university.

B.5.1 Near-Term Safety Improvement Options

The following are improvement options that could be utilized within the next two years without significant costs to the University:

1. **Bicycle Repair Stations** - The addition and maintenance of basic bicycle repair tools within the current bicycle enclosures around campus. These tools would include: air pumps, tire levers, and wrenches (15mm/17mm).
2. **Bicycle Safety Education Classes** - Information seminars held during freshman and transfer student orientation to educate students on bicycle safety and proper cycling behavior. Classes would also include information on how to share pathways with bicyclists as a pedestrian.
3. **Bicycle Advocacy Group** - A campus organization focused on the interests of cyclists at San Jose State University. University support and legitimization of this organization would demonstrate SJSU's dedication to promoting safety, alternative modes of transit, and student health.
4. **Redesigned Dismount Zones** - Redesigning dismount zones to meet the standards of the federally-published Manual of Uniform Traffic Control Devices (MUTCD). Following these standards would involve redesigning the current signage and barriers to emphasize the nature of the dismount zone.
5. **Bicycle Specialist Within UPD** - Appoint a university police officer to specialize in bicycle safety, knowledge, and traffic enforcement.

6. **Mirror Adjustment** - Adjust traffic mirrors on campus to make them more visible to bicyclists to see different viewpoints.
7. **Bicycle Manage**r - A dedicated bicycle manager who works on transportation, planning, facilities with bike related issues, and safety for all modes of transportation.
8. **Mandatory Bicycle Registration** - Require all bicyclists to have their bicycles registered with UPD. Registration can be administered as a part of the regular school registration. Mandatory bicycle registration can prevent bicycle theft.

B.5.2 Long-Term Safety Improvement Options

The following are improvement options that will require more than five years to implement with significant capital investment.

1. **Comprehensive Bicycle Plan** - Prepare a bicycle plan that is integrated with the campus master plan and other existing plans, such as the Landscape Master Plan. Ensure that the comprehensive bicycle plan will integrate all modes of transportation and prioritize safety measures.
2. **Well-Connected Bicycling Network -** Establishing a comprehensive network of bicycle paths, traffic signs, and delimitations throughout the campus to promote all modes of transit. Separate spaces for bicyclists and pedestrians, with signs to indicate each, would be necessary to organize a safe and effective network.
3. **Bicycle Connections** - SJSU's bicycle group should reach out to other social bicycle groups to get both information and education, especially in terms of bicycle safety.
4. **Pedestrian Only Area** – Designate an area where motor vehicles and bicycles are strictly prohibited and where bicycles should be walked and skateboards carried by hand.
5. **Improved and Reliable Bicycle Racks** - Add more bicycle racks with more occupancy placed in areas with the highest volume of bicyclists to reduce issues with bicycle parking. Furthermore, have reliable bicycle racks to deter thieves from stealing bikes on campus.

Exhibit 1. California University Campuses Awarded Ranking by the League of American Bicyclists

The purpose of Exhibit 1 demonstrates the current practices and programs of the respective university campuses are implementing that enables them to receive a ranking of Platinum, Gold, Silver or Bronze from the League. This table could provide potential examples and suggestions to SJSU to become a more bike friendly campus and apply for such ranking.

Table 2-2 Best Practices and Policies from Platinum-Ranked Campuses

Measure	Description	Benefits	Potential Application to SJSU
Stanford University			
Education			
Free bike safety classes	Hosted with Public Safety Department, these classes serve as traffic school of bicyclists on campus.	Informs students about bike safety and the rules of the road.	Applicable during the orientation programs for new and transfer students.
Dorm road shows and new student orientation events	Five shows per quarter featuring a comprehensive bike presentation, bike tune-ups, and bike quiz.	A fun way to educate students on bike safety and to encourage them riding bikes.	Implement through the University Housing Services.
White plaza bike safety stations	Safety stations are set up in White Plaza every Friday to reward bicyclists for good behavior (wearing helmets, etc.).	Encourages students to follow rules on bike safety.	A good location for a similar measure in SJSU is the Plaza de Cesar Chavez.
Partnerships with other departments	Stanford's Transportation Office coordinates with other entities like the Planning Department, the School of Medicine and Silicon Valley Bicycle Coalition.	Provides a holistic approach to improving bike safety on campus.	Establish a partnership between Transportation Solutions and the College of Engineering or the Department of Urban and Regional Planning in undertaking projects that can improve bike safety.
Engineering			
Bike map resources	Online maps that show the locations of different bike facilities, including bike shops and bike paths.	Allows bicyclists to know where they can park and ride their bikes safely; helps promote a bike-riding culture.	Add the locations of bike racks to SJSU's existing map of bike enclosures.
Construction detours and circulation	Construction plans are required to identify safe detour routes for bicyclists.	Ensures safer bike riding around construction zones on campus.	Require building constructions to include a plan for temporarily and safely rerouting bike traffic.

Free bike safety repair stands	Bike "fix-it" stations with minor tools like air pump, to repair bikes; these stands are located in different locations on campus.	Promotes safety by helping bicyclists fix minor issues with their bikes and ensuring that their bikes are in good condition.	Set up free bike repair stands in well-traveled areas such as Plaza de Cesar Chavez, Tower Hall and the Quads.
Report a hazard to transportation office	Bicyclists are encouraged to report other dangerous impedances to bike travel.	An inexpensive feedback mechanism on bike facilities; promotes bike-friendly atmosphere.	Establish a mechanism for reporting transportation hazards; clarify the department responsible for responding to these reports; inform students about this reporting mechanism.
Encouragement			
Incentives and promotions	Various signs and posters, all over the campus, that encourage helmet use; in many events, bike safety accessories are given away for free.	Promotes a bike-riding culture.	Disseminate posters and flyers that educate students about the bike programs on campus; ask the City or a private donor for help in procuring accessories that can be given away to students following the best practices in bicycle safety.
Sprocket man mascot	A comic book hero, created by a student in the 1975 as a way to promote bicycle safety on campus.	Promotes bicycle safety in a way with which students are familiar.	A similar publication for SJSU can be worked out with the College of Humanities and the Arts.
Annual bike light giveaways, Helmet testimonies	Bike lights are given away annually at the student orientations; special guests are featured in bike safety classes to share their experience with bike safety.	Encourages students to follow bike safety rules.	Work with private and public donors in giving away free bike accessories to campus bicyclists.
Bike safety dorm challenge	A challenge to dorm students to gather as many bike safety pledges from their dorm-mates as possible.	A fun way to educate students on bike safety.	Launch a similar program through the University Housing Services.
Bike safety invention challenge	In partnership with the Stanford Biodesign Program, offered to students who can invent devices that will help improve bike safety.	Encourages students to apply their knowledge to improve bike safety.	Work with the College of Engineering to organize this event.
Online bike quiz	As a part of their bike	A quick and easy way to	Incorporate this into a

	registration, students have to take an online quiz; if they pass (96% of them do), they get a free bike light).	educate students on road rules and bike safety issues.	bike registration process administered by Transportation Solutions.
Stanford Trauma Bike Safety Summit	A forum attended by leaders from the many industries that are related to bike safety; discusses the current issues surrounding bike safety.	Campus bicyclists get to hear the alternative perspectives on bike safety; facilitates discussions and dialogues between leaders in the community.	Work with different departments and agencies outside the university in organizing a similar event.
Enforcement			
Bike citation diversion classes	Bike traffic violators get to waive their fines (which can cost as much as $200) if they attend a bike citation diversion class.	A stronger and more straightforward way of educating bike traffic violators.	Allow campus patrol officers to cite bike traffic violators.
Bike registration	The university's Traffic and Parking Code requires that all bikes on campus be licensed registered; registration costs $3.50 for three years.	Helps keep track of the number of bikes on campus; helps prevent bike theft by keeping a record of the bike's serial number and appearance.	Implement this as a part of the overall student registration process; incorporate this registration into the my.sjsu.edu website.
Helmet discount program	50% discount on helmet price or a voucher for a $10 helmet if you attend class.	Encourages students to bike safely.	Requires additional funding to procure bike helmets; a deal can be made with a local bike shop.
Bike helmet subsidy for FROSH	Freshmen students can pay $5 for a bike helmet worth $20.	Promotes bike safety.	Requires additional funding to procure bike helmets; a deal can be made with a local bike shop.
On-site departmental safety bike outreach	Outreach booths held by the Parking and Transportation Services on different areas on campus to reach out to students and inform them about bike safety and security; bike accessories are also given out in such events.	Disseminates information to students, helping foster a bike-friendly atmosphere on campus.	Do this near buildings or in areas that see high volumes of bicyclists.
Bicycle abatement	Bikes that are left unattended for two weeks are confiscated by the transportation office and are re-sold.	Frees up parking slots in bike racks; encourages students to ride their bikes.	UPD personnel can patrol the campus and take note of how long bikes have been unattended on bike racks.
Prevention: bike theft	A program, held in	Educates students on	Hold a similar program

	partnership with the Public Safety Department, that teaches students how to prevent bike theft.	how to secure their bikes on campus.	regularly.
Evaluation			
Bike count	A count of registered bikes on campus.	Allows the university to measure the volume of bike traffic on campus and make better decisions.	Count the number bicyclists during peak periods in the semester.
Dorm challenge survey-annual	A survey of students that evaluates the performance of the dorm challenge.	Allows the organizers of the challenge to further improve the program.	Work with University Housing Services in evaluating a program like this.
Survey of bike traffic school attendees	A count of the number of students who attend the bike traffic school.	Allows the university to monitor the growth of bicyclists who have been informed of the road rules.	Launch a bike traffic school program and survey those who attend it.
Dorm road show feedback	Students are asked of their opinion on the dorm road shows.	Allows the university to identify areas for improvement for the program.	Implement this through the University Housing Services.
University of California, Davis			
Engineering			
Separate Modal Facilities	Bike Facilities are paralleled by pedestrian facilities.	Reduces conflicts between bikes and pedestrians.	Separate modes by designating routes for each user type on SJSU's campus.
Universal Bike Parking Design	All bike parking facilities are of universal design, in high visibility and secure locations, and in front of buildings.	Reduces theft and confusion for bicyclists.	Create one universally accepted bike parking design and conform all bike parking areas to this design.
Bike Locker Rentals	Provides a safer weatherproof parking option.	Placed near high use areas and shower facilities for longer commuters.	Incorporate this into a universal bike parking design.
Plan Consistency	Bike Master Plan must be consistent with campus long range development plan and other major plans.	Integrates bike policies into the engineering and design of the campus as a whole so bike and pedestrian facilities are taken into account.	Synchronize a Bike Master Plan with the SJSU Facilities Master Plan and the Landscape Master Plan.
Tire Air Stations	Tire Air stations and bike maintenance stations located at various locations around campus.	Promotes safety and ease of maintenance for bicyclists.	Install near bike parking facilities where feasible.
Encouragement			
Bike Friendly Atmosphere	Roads and Bike paths lead to every destination	Creates a network of roads that makes biking	Designate, paint, or build bike routes on SJSU's

	on campus and parking is provided.	safe, convenient, and efficient.	campus.
Bike Storage	A storage for bikes; bike labels required at all times; ten dollars per bike, one bike per student.	A safer storage area for bicycle riders to encourage riding to campus.	Requires space on campus; institute a bike labeling program and designate an entity to manage bike storage.
Enforcement			
Temporary Parking Permits	For cyclists who don't have regular long term parking permits, but occasionally need to drive.	Allows flexibility in mode choice, but doesn't restrict students or faculty from driving if needed.	UPD should add flexible parking or policies that allow students/faculty more transport options.
Transportation and Parking Services (TAPS)	Part time students who patrol focusing on bike related issues, providing education services through maps, fliers, and videos.	Provides a presence on campus at peak times, issues citations for illegally parked bikes or infractions, and provides traffic school to reduce fines and educate.	UPD should recruit part time students to patrol, educate, and report.

Table 2-3 Best Practices and Policies from Gold-Ranked Campuses

Measure	Description	Benefits	Potential Application to SJSU
University of California, Santa Barbara			
Education			
LAB Road I	A course that produces web-based short videos on reducing bicycle crashes.	Helps promote bike safety through electronic media.	Can be handled by the School of Journalism and Mass Communication.
Engineering			
Significant bicycle infrastructure investment	Four bicycle underpasses; ten miles of shared bike routes; seven miles of Class I bicycle paths including six bicycle roundabouts.	Promotes safe bike travel on campus.	Increase funding for bike infrastructure projects.
Bicycle parking	Bike parking that meet the security and convenience guidelines recommended by the Association of Pedestrian and Bicycle Professionals (APBP)	Provides high-quality bike parking.	Apply the guidelines set by the APBP on bike parking.
Encouragement			
Transportation Alternative Program(TAP)	UCSB provides seven locations where students and staff can rent a bike locker at an affordable price.	Helps students and staff improve bicycle security.	Can be implemented by Transportation Solutions.

Associated Students Bicycle Shop	An on campus bike shop that provides nearly the lowest price for students who cannot get their bikes running safely and smoothly.	Helps student solve their bike problems at low cost.	SJSU bicycle groups can form a shop as well.
On Campus Air pump	Free air pumps throughout the entire campus.	Provides support for technical issues with bikes; promotes bike travel.	Provide air pumps in areas that receive high volumes of bike travel.
Bicycle Advisory Committee A.S. B.I.K.E.S. (Associated Students, Bicycle Improvements Keep Every One Safe)	A group that meets every week to discuss bicycle related issues with members of the community, the local government and non-profit organizations.	Maintains attention to bike safety in and outside campus.	Can be implemented by Transportation Solutions in partnership with Associated Students, the City of San Jose and the Silicon Valley Bicycle Coalition.
Enforcement			
Campus Planning Committee	Campus Planning Committee oversees all new construction projects and ensures that our campus bicycle accommodation policy stipulations are included in new construction.	Ensures substantial attention is given to making the campus environment bike-friendly.	Can be formed by the SJSU Administration.
Bicycle Manager	A dedicated bicycle manager of UCSB that works on bike-related issues.	A quicker way to solve bicycle related problem.	Hire a bicycle manager who well-informed about bicycle safety and planning.
Mandatory bike registration	Students have to register their bikes.	Prevents bike theft.	Have students register their bicycles as a part of the regular registration.
Law Enforcement Officers	Police officers patrol the campus to enforce campus traffic laws, providing tickets to violators.	Ensures that rules and regulations are abided by.	UPD can send out officers to enforce campus traffic laws.

Table 2-4 Best Practices and Policies from Silver-Ranked Campuses

Measure	Description	Benefits	Potential Application to SJSU
California State University, Long Beach			
Engineering			
Pedestrian Only Areas and Primary Pedestrian Zones	A map of designated pedestrian only areas is provided and signage posted.	Clarifies where non-motorized vehicles are not allowed to reduce conflict and increase safety.	Enforcement and signage through the SJSU Non-Motorized Vehicle Policy with maps provided.
Encouragement			

Transportation Demand Management Plan (TDM)	Includes enhanced bicycle infrastructure, improved parking management and technology solutions, and transit incentives.	Shifts campus away from being a commuter school, and invests in a transportation system that supports all modes of travel.	Adopt a TDM cooperatively with the City of San Jose to form a comprehensive transportation plan.
Lock & Roll Program	Bicycle theft prevention program.	Provides high quality U-locks for only $5 when registering a bike.	Provide incentives to register bikes and prevent bike theft.
University of California, Berkeley			
Engineering			
Covered bicycle parking facilities	Three covered bicycle parking facilities with required access code.	Ensures bicycle safety for bicyclists commuting to campus.	Existing bike enclosures can be modified to include roofs.
Campus bicycle plan	Comprehensive bicycle plan for the campus.	Improves access for bicyclists and integrates campus bicycling network with the city of Berkeley's bicycling network.	The Department of Urban and Regional Planning can work with the City of San Jose in integrating the campus' and the city's bike plans.
Encouragement			
Bicycle fix-it stations	Three bicycle fixit stations on campus that offer basic tools and an air pump.	Encourages bicycle usage by providing basic maintenance for bicycles.	Can be set up in areas on campus that receive high volumes of bike traffic.
Campus bicycle committee	A committee that handles bicycle issues on campus.	Ensures that the concerns of bicyclists are attended to.	AS and the SJSU Administration can amend campus policy to form a similar committee.
BikeCAL	A student bike cooperative that promotes and advocates for bicycling as a sustainable transportation option.	Offers bicycles to rent, bike events, workshops, and bicycle maintenance.	Encourage student clubs to work together in forming a cooperative.
Enforcement			
Bicycle licensing	The UC Police Department offers free licensing of bicycles.	Increases the likelihood of recovery in case of theft.	Introduce and implement this at student orientations.
University of California, Irvine			
Mandatory bicycle registration	All bikes on campus required to be registered with the university's transportation.	Deters theft; provides proof of ownership, and allows officials to contact bike owners before a bike is impounded.	Integrate this with the regular student registration before the start of semesters.
UCI Bike Shop	On campus bike shop that provides air to inflate tires, maintenance and repair, and low cost bicycles and parts.	Provides service to bicyclists; promotes bike-friendliness on campus.	Student organizations can partner with bike shops in setting up a similar shop.
Bicycle Education and	Partnership between	Educates students and	Provide bicycle safety

Enforcement Program	UCI's Transportation and Distribution Services Department and UCI's Police Department; educates students and law enforcers on bike traffic laws.	law enforcers; ensures that laws are in effect.	training to UPD personnel.
ReCycle Program	Abandoned bicycles are sold at a low price to the campus community in a monthly Bike Share; Unsold bicycles are donated.	Gives people the opportunity to purchase a bicycle at a low price; encourages bicycling.	Coordinate SJSU's Environmental Resource Center, Transportation Solutions and the UPD in gathering abandoned bikes and selling them at an affordable price to students.
University of California, Santa Cruz			
Encouragement			
Bike library	Students are allowed to borrow a bicycle for a quarter session if they write a short paper on why they need it and how they will be contributing to the overall bicycle community; a short seminar is also required.	Increases bicycle access to all students/faculty regardless of income level. Required seminar also promotes bicycle safety amongst riders.	Requires a building where bikes can be stored and transactions can be processed; can be managed by Transportation Solutions in partnership with other departments.
Fixit stations	Five repair stations around campus with basic tools to maintain/fix your bicycle.	Promotes safety by helping bicyclists fix minor issues with their bikes and ensuring that their bikes are in good condition.	Can be set up in areas on campus that receive high volumes of bike traffic.
0% interest bike Loan	Faculty and staff can borrow up to $750 for a bicycle or bicycle-related accessories.	Increases access to bicycles for faculty and staff by providing attractive financial packages.	Can be administered by Transportation Solutions.
Bike shuttles	Two shuttles that can take UCSC-affiliated bicyclists (with their bike) in and out of the UCSC campus.	Makes cycling a more viable option and promotes bicycle use beyond commuting.	Shuttles on SJSU can take bicyclists to and from the nearest transit stations.
Bike hazard report form	A form that cyclists can fill out if they spot a condition that is hazardous for riders.	A program that draws on riders to help maintain safe riding conditions.	Forms can be made available online or thru Transportation Solutions.
Emergency ride home program	Offers a free taxi voucher that can be used for an emergency ride home for faculty and staff who use an alternative form of transportation to get to	Supports alternative forms of transportation by offering convenience of driving during emergency situations.	Implement a similar program thru Transportation Solutions.

	campus (non-driving).		
Map of suggested bike routes to campus	Transportation and Parking services offers a map with the safest routes for bicyclists to get to campus.	Increases rider safety and encourages cyclists to commute to campus.	Improve the existing map of bike enclosures to include locations of safe bike routes to campus.
University of La Verne			
Education			
Public service announcements	Information on bike safety is disseminated through the campus newsletter, blogs and other media.	Raises awareness of bike safety among students, faculty and staff.	Can be implemented in partnership with Spartan Daily and Associated Students.
Encouragement			
Bike repairs on campus	A bike repair company comes to campus to repair bikes; first three bicyclists can get bikes repairs for free.	Promotes safe and secure bike travel on campus.	Already applied by SJSU during Bike to School day.
Organized Ride	The university holds bike rides like bike tours and president-led bike rides.	Encourages students, faculty and staff to bike; fosters a bike-friendly atmosphere.	Can be implemented thru Transportation Solutions in partnership with the Silicon Valley Bicycle Coalition, Transition or TransForm.
Bike support during campus events	The university holds bike support and refreshment stations at football games and homecoming.	Encourages bike travel by providing free support to bikers during campus events.	Can be implemented by Transportation Solutions and Associated Students.
Bike parking all over campus	The university provides bike racks in many areas on campus; students are allowed to park their bikes inside dorm rooms.	Contributes to a bike-friendly atmosphere and helps prevent bike loss or theft.	Dorm room parking can be implemented by University Housing Services
Bike library	A collection of donated bikes that students can rent for as long as they want; the bikes come with a free helmet and lock.	Encourages students to bike on campus; recycles bikes; helps students save money by not having them pay the whole cost of a bike.	Requires bike donations and a building where bikes can be stored; SJSU may be able to form partnerships with tech companies in the county and ask them to donate bikes to the university.
Free t-shirts	Free t-shirts are given to bikers that show good behavior by following bike traffic rules.	Encourages students to ride bikes.	Can be administered by Transportation Solutions.
Enforcement			
Mandatory bike registration	All bikes required to be registered with the university's transportation and parking office; registration comes with a	Helps keep track of the number of bikes on campus; helps prevent bike theft by keeping a record of the bike's serial number and appearance.	Do this as a part of regular school registration; ask students to do this thru my.sjsu.edu.

	free u-lock.		
An appointed law enforcement officer for issues regarding bike traffic and safety.	An appointed law enforcement officer whose is responsible for interacting with bicyclists.	Facilitates communication with the bicycle community on campus and law enforcers.	Appoint a primary point person for bike issues in the UPD.
Law Enforcement Bicycle Association Training	Training provided to campus police department to better inform them on enforcing laws on bikers.	Helps enforce bike traffic laws more effectively.	Provide bicycle safety training to UPD patrol officers.
Penalties against motorists for violating bike safety laws	Motorists are penalized for not yielding to bikers when turning and for driving or parking on bike lanes, except on intersections.	Helps protect bikers on the road.	Send UPD patrol officers randomly throughout campus to penalize violators of bicycle rules and regulations.
Evaluation			
Periodic tracking of bike usage on campus	The Transportation Services office regularly counts the number of bikes on campus.	Tracks the growth or decline of bike usage to gauge the effectiveness of the university's bike policies.	Conduct bike counts on campus intersections that receive high volumes of bike traffic.

Table 2-5 Best Practices and Policies from Bronze-Ranked Campuses

Measure	Description	Benefits	Potential Application to SJSU
California Institute of Technology			
Education			
Bike Workshop	Free Bike Workshop hosted by the Caltech Bike Lab; teaches students how to ride smarter on the streets.	Educates bicyclists on bicycle rules and regulations; fosters a safer walking and riding environment for both pedestrians and bicyclists.	SJSU can start a similar bike lab with the help of the College of Engineering and other campus entities.
Free bike repair class	A free class on how to maintain and repair bikes.	Teaches students how to keep their bikes in good condition.	Transportation Solutions can invite a bike repair shop to hold bike repair classes.
Encouragement			
Caltech bicycle program	Registered cyclists will receive three free daily parking per month.	Promotes bicycling among students and registration of bikes.	Can be implemented by UPD.
Folding bike program	A folding bike can be rented by Caltech students for free with $20 refundable deposit.	Provides bicycling among students.	Requires funds for foldable bikes.
Pomona College (Claremont College)			

Encouragement			
Green Bikes shop	Free bikes rental and maintenance for all the students and staffs each semester	Promotes a bike-friendly atmosphere; helps Pomona reduce CO2 emissions and becoming a more sustainable campus.	Transportation Solutions can partner with a bike shop to establish a similar bike shop on campus.
Bike Storage	A storage for bikes; bike labels required at all times; ten dollars per bike, one bike per student.	A safer storage area for bicycle riders to encourage riding to campus.	Requires space on campus; labeling can be administered by Transportation Solutions.
Enforcement			
Improperly parked bike policy	The Facility Department reserves the right to take away an improperly parked bike without notice; if the bike is not claimed in two weeks, it will be donated to Green Bike Shops.	Encourages students to properly park their bikes.	Can be enforced by UPD patrol officers.
Santa Monica College			
Education			
Educational workshops	A variety of educational workshops that relate to a variety of cycling related topics: purchasing, safety, touring, and maintenance.	Educates riders of all skill levels and through a myriad of different aspects of ridership.	Hold workshops regularly through Transportation Solutions and integrated into the SJSU Events Calendar to further disseminate the schedules of the workshop.
Encouragement			
Bicycle repair stations (Inside bicycle park)	Bicycle stands with air pumps and basic tools to maintenance bicycles.	Increases availability of equipment that will help ensure riders have properly working bicycles.	Install within high-use bicycle enclosures.
Get Lit Event	An event that gives away free rechargeable front and rear lights to students without these accessories.	Increases bike safety by ensuring all students have access to proper lighting. Also promotes sustainability.	Sponsor a similar event through Associated Students.
Helmet and Lock Scholarship Program	Students who show proof of financial aid can apply for a free helmet and lock.	Increases safety and bike security for students.	Implement this through the SJSU Financial Aid and Scholarship Office.
Partnership with Bikerowave	A partnership with a local bicycle co-op that includes free bike repairs for students with A.S. sticker as well as visits from bicycle advocates	A valuable link to a community organization that fosters access to maintaining bicycle safety	Transportation Solutions can reach out to local Bicycle shops for partnerships (IminusD, Bicycle Express, Mike's Bikes).

	who teach bicycle safety and riding techniques.		
Bicycle repair tent	An on-campus tent that offers free repairs to students twice a week at the Bicycle Park.	Convenient resource for riders to keep their bicycles well-maintained	Hold a bicycle repair tent twice a month in Plaza de Cesar Chavez.
Enforcement			
Cooperation with campus police	Campus officers attend bicycle workshops, patrol bike parking lot, and lock improperly locked bicycles for free	Enforces bicycle safety, and helps to prevent theft	Train UPD patrol officers about enforcing bicycle rules and regulations.
Bike SMC Group	Advocacy group dedicated to progress towards the wants and needs of bicyclists. Also involved in data collection and project planning.	Ensures that the needs of bicyclists are represented through a group involved with student government; obtains significant information about future projects geared towards promoting bicycling.	Transportation Solutions could dedicate a certain percentage of their time or labor to focusing on bicycle-related issues
University of San Diego			
Engineering			
Improved bicycle racks	Installation of 444 new bicycle racks that are better designed than previous racks.	Decreases bicycle theft and makes the use of U-Locks easier.	Current bicycle racks could be upgraded to reflect the quality of the bicycle racks located in the bicycle enclosures at SJSU.
Encouragement			
Outdoor adventures	A service program within the USD Student Life organization that offers opportunities for students to experience and learn about the outdoors.	Among other outdoor activities, bicycle tours, and trips are promoted through this group.	SJSU could offer bicycle touring or mountain biking to their existing Outdoor Adventures program.
Free bicycle tune-ups	Free bicycle repairs offered frequently by the Outdoor Adventures service program.	Increases bicycle safety by ensuring bicycles are well-maintained.	Free repairs are offered during special events like "Ride Your Bike to School Day."
Community bicycle stand and air pump	Free-to-use bicycle stand and air pump located outside of the Outdoor Adventures Office.	Increases access to tools necessary to maintaining properly functioning bicycles.	Could be installed within bicycle enclosures to promote their use.
Shower and locker access	Students, faculty, and staff are permitted to use showers and lockers for free.	Promotes long commutes through cycling by providing facilities to cyclists.	Showers at the Fitness Center are available for all students. Lockers could be offered to students with bicycle enclosure key.
University of California, Los Angeles			

Engineering			
Electronic bicycle lockers and racks	BikeLink lockers are accessed through a BikeLink card and cost a few cents per hour; Bicycle Parking Network Lockers are accessed through calling an 800 number.	Electronic locking provides extra security and helps prevent bicycle theft.	With enough funding, can be implemented by Transportation Solutions.
Bike boxes	An area for bicyclists to wait at an intersection.	Increases safety and visibility of bicyclists.	Applicable to the intersections adjacent to campus.
Bike counter	The counter displays the number of daily bikers and annual bikers to pass by it.	Shows that UCLA is a bicycle friendly campus and gives the bicyclists a sense of community.	Can be installed in areas receiving high volumes of bike travel such as in Plaza de Cesar Chavez.
Encouragement			
Bike repair stands	Four bike repair stand locations on campus that provide air pumps and basic tools for bicycle repair.	Gives cyclists the opportunity to repair their bikes; promotes bicycling.	Transportation Solutions can partner with local bike shops in setting up repair stands on campus.
Bike library	Bicycles for rent for $50 per quarter.	Provides students the opportunity to rent a bike for a quarter at a low cost.	SJSU may be able to form partnerships with tech companies in the county and ask them to donate bikes to the university.
Bike shop	On-campus bike shop offering repair service, bike rentals, maintenance and traffic skills classes.	Provides students with bicycle maintenance; encourages bicycling as their travel mode.	Transportation Solutions and a local bike shop can establish a similar on-campus shop.

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CHAPTER 3

BENCHMARKING ANALYSIS OF POLICIES, PROGRAMS, & PRACTICES FOR SJSU

Team 3:

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CHAPTER 3

BENCHMARKING ANALYSIS OF POLICIES, PROGRAMS, & PRACTICES FOR SJSU

C.1 Overview of the Benchmarking Analysis

This chapter identifies where SJSU stands in terms of adequate and safe bicycle master planning. Through interviews with various stakeholders associated with SJSU, this section reviews the results of the bicycle safety assessment (BSA) benchmarking analysis conducted on campus.

C.2 Methodology

SJSU's benchmark analysis of policies, programs and practices are in regards to bicycles on campus. This information was obtained through interviewing major stakeholders on campus, in conjunction with using the *Technical Guide for Conducting Bicycle Safety Assessments for California Communities*, published by the University of California, Berkeley's Technology Transfer Program to benchmark the consensus and evaluation of responses.

C.2.1 Interview questionnaire

The first step in the benchmarking process was to develop an interview questionnaire. We based the questionnaire on the *Technical Guide for Conducting Bicycle Safety Assessments for California Communities,* published by the University of California, Berkeley's Technology Transfer program, while also using the League of American Bicyclists' *Bicycle Friendly Universities* framework. Finally, a questionnaire was tailored to meet the needs of the campus' environment.

Q.1 In your opinion, does the SJSU campus have a well-connected bicycling network?

Q.2 From your perspective, is bike parking readily available throughout the SJSU campus?

Q.3 Do you believe that the SJSU campus is easily accessible by bike?

Q.4 Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan?

Q.5 Does SJSU have a designated bicycle program manager? If so, how may we contact this person?

Q.6 Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? How can we get more information on this training?

Q.7 Is there a program on the SJSU campus to prevent bike theft?

Q.8 Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes?

Q.9 Is there an active bicycle advocacy group at the SJSU campus?

Q.10 Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?

Q.11 What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?

a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?

b) Have you completed any bicycle projects recently? If yes, describe.

C.2.2 SJSU Stakeholders

Major stakeholders were identified at SJSU that could potentially provide relevant and reliable information regarding the current bicycle program on campus. In order to identify the stakeholders, research was conducted through the university website

and student representatives from this course, who spoke with Stacy Gleixner and aided in the process of identifying stakeholders.

Once a list of stakeholders was identified, phone calls and emails were made to verify that their roles would be significant to achieving the goal of the BSA. Once verified, we proceeded to schedule interviews in person or over the phone and proceeded to provide them with the interview questions before the scheduled interviews. Each stakeholder was asked an identical list of questions, as seen in the previous section.

Below lists the identified SJSU stakeholders:

Priority 1: SJSU Administration

1. Campus Administration- **Stacy Gleixner**
2. Facilities, Development, and Operations (FD&O)- **Chris Brown**
3. Faculty Senate Campus Planning Board – **Mark Van Solste**
4. Planning, Design and Construction – **Adam Bayer / Daniel No**
5. University Police Department (UPD)- **Peter Decena / Allan Cavallo**
6. Faculty Senate Transit/Traffic and Parking Committee- **Denny Yau**
7. VP for Administration of Finance- **Josee Larochelle**

Priority 2: SJSU Campus Services & Student Groups

8. Transportation Solutions- **Eyedin Zanobi/ Joanna Huitt**
9. Faculty Senate Sustainability Board-**Jennifer Davis**
10. Associated Students- President- **Aaron Miller**, Director of student resource affairs - **Ashlei McPherson**

Priority 3: Other SJSU Stakeholder Interests

11. Employment Accommodations Resource Center (EARC)- **Cindy Marota / Layma Ahmadzi**
12. Accessible Education Center (AEC) - they only have a Center for Accessible Technology and a Deaf and Hard of Hearing Center.

Priority 4: Relevant Public Agencies

13. City of San Jose
14. Santa Clara Valley Transportation Authority (VTA)- **Lauren Ledbetter**

Priority 5: External Stakeholders

15. Silicon Valley Bike Coalition
16. Bay Area Bike Share

C.2.3 Interviews

Most interviews were conducted in person, but due to practicality and conflicting schedules, some were done over the phone. In some cases the interview answers were written by the stakeholders and in other instances, the interviewers took notes and the responses were later recorded and reported. Below is a list of the stakeholders that were contacted.

Table 3-1. Stakeholders and Completed Interviews

Name	Department	Interview
Denny Yau	Traffic and Parking committee	Completed
Joana Huitt	Transportation Solutions	Completed
Mark Van Solste	Campus Planning Board	Completed
Stacy Gleixner	President's Cabinet	Completed
Chris Brown	FD&O	Completed
Frank Belcastro	UPD	Completed
Roger Elrod	Associate Vice President of Student Services	Completed
Adam Bayer	Planning Design and Construction	Declined
Daniel No	Planning Design and Construction	Declined
Jennifer Davis	ASU Sustainability Affairs	Contacted- No response
Cindy Marota	Employment Accommodations Resource Center	Did not contact
Layma Ahmadzi	Employment Accommodations Resource Center	Did not contact
Romando Nash/Renee Barnett	Student Affairs	Did not contact

C.2.4 Consensus

Once the interviews completed, a table was developed that depicted the response for each question and the consensus that was made between stakeholders. Once a

consensus was identified based on the aggregate of all the stakeholders' responses, a benchmarked consensus was made using the *Technical Guide for Conducting Bicycle Safety Assessments for California Communities* as a reference.

Table 3-2. Consensus of all interview answers

Interview Question	Consensus from all interview answers
Q1. In your opinion, does the SJSU campus have a well-connected bicycling network?	There are no well-connected bike paths or dedicated bike lanes. Poor signage.
Q.2 From your perspective, is bike parking readily available throughout the SJSU campus?	SJSU has bike parking available on campus but the locations are not always conveniently located or placed near the dismount zones.
Q.3 Do you believe that the SJSU campus is easily accessible by bike?	The campus is accessible by bike from the outer perimeter on all sides. However, during heavy traffic hours it may be unsafe to ride for some riders.
Q.4 Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan?	SJSU does not have a comprehensive bicycle master plan.
Q.5 Does SJSU have a designated bicycle program manager? If so, how may we contact this person?	SJSU does not have a bicycle program manager.
Q.6 Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? How can we get more information on this training?	UPD officers are trained at the academy on the rights of all road users.
Q.7 Is there a program on the SJSU campus to prevent bike theft?	We have some theft prevention measures but no cohesive theft prevention program.
Q.8 Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes?	The campus does not offer a bicycle education program at this time. The campus has some bicycle advocacy groups but the findings show that there is a disconnect in recognition between stakeholders and campus groups.
Q.9 Is there an active bicycle advocacy group at the SJSU campus?	There is bike share for rentals for students. However, there are no bike repairs offered on campus.
Q.10 Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?	There is BikeShare for rentals for students. However, there are no bike repairs offered on campus.
Q.11 What available funding does SJSU have for bicycle programs to address: building	No consensus amongst stakeholders.

Interview Question	Consensus from all interview answers
and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?	

C.3 Benchmarking

The table below depicts the final benchmarking assessment based upon the responses collected from the SJSU stakeholders.

Table 3-3. Policy, Programs, and Practices Benchmarks

Topic	Key Strength	Enhancement	Opportunity
Bicycle Network Connectivity	Has a well-connected bicycle network that includes features such as bicycle lanes, paths or colored bike lanes.	Includes some disjointed dedicated bicycle paths and lanes.	Does not have dedicated bike lanes or appropriate signage.
Bicycle Parking	A bicycle parking policy is enforced and known of by the campus community. There is a program in place to install and maintain adequate bike parking on campus.	A policy for on-campus parking is in place, but no program to install or maintain parking structures.	No bicycle parking policy or program in place.
Accessibility to Campus	Bicycles are accommodated on local transit vehicles and a well-connected network of bike lanes are within the community.	Limited accommodation and capacity for bicycles on public transit. Bike lane infrastructure is available but is not part of a well-connected network.	Bicycles are not accommodated for on transit and no bike lane infrastructure is readily available in surrounding neighborhoods.
Bicycle Master Plan	Has an updated bicycle or transportation plan coordinated with a campus General Plan; bicycle projects have been completed recently.	Has a bicycle master plan, but may be outdated; lacks implementation of completed projects from the plan.	Does not have a bicycle master plan.
Bicycle Program Coordinator	Has a coordinator on staff who solely manages a campus bicycle master plan.	Has staff from various departments helping to oversee certain aspects of the bicycle	Does not have a coordinator.

Topic	Key Strength	Enhancement	Opportunity
		master plan.	
Campus Safety and Law Enforcement Officers Training	Campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including motorist, bicyclists and pedestrians	Has some training on the rights and responsibilities of all road users.	Does not have a program to train safety/law enforcement officers on how to deal with all road users.
Theft Prevention	Has a theft prevention program including a security surveillance system, safe designated parking areas and lockers.	Has bicycle lockers but does not have a bicycle theft prevention program to ensure safety for users.	Does not have a theft prevention program.
Community, On-Campus Education	Conducts education campaigns to include effectively disseminating information including brochures and regularly offers bicycle safety workshops.	Has a bicycle safety education program, but is not consistently offered.	Does not have a bicycle safety education program.
Campus Advocacy Groups	Has an active and effective bicycle advocacy group.	Has a loosely organized advocacy group.	Does not have an advocacy group.
Services that Promote Bicycling	The campus offers rentals and repair stations.	Some bike rentals and repair stations available on campus.	Bicycle-supportive amenities are not offered on campus.
Bicycle Project and Program Funding	Has a dedicated annual funding source for bicycle projects and programs from reliable sources.	Grants are dependent on bike projects or programs, but are successful in obtaining grants.	Only moderately successful in obtaining grant funding or has trouble spending funds when given grants.

C.4 Conclusion

SJSU provides some accommodations for bicyclists, and is relatively safe. However, there are some opportunities to increase safety, infrastructure, advocacy, education, and support services. The League of American Bicyclists has not awarded SJSU a rating in accordance to their criteria, but with some improvement, SJSU could potentially receive a Bronze rating.

The first and most urgent step in improving SJSU's bicycle program would is to create a master plan and appoint a plan coordinator. This would allow the campus to clearly identify specific areas of improvement and create a plan to address the most needed services and funding to provide safety for all modes of transportation on campus.

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Exhibit 1. Completed Interview Questionnaire Responses

The following outlines the completed interviews that were conducted in order to help facilitate the appropriate decision in the benchmarking process.

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office:	Facilities, Development, and Operations	Date:3/11/2015	Time:11:00AM
Stakeholder Name:	Christopher Brown		
Stakeholder Title:	Associate Vice President	Stakeholder Phone #:(408) 924-1950	
Relevance to BSA:	He oversees the maintenance, operations, and builds any type of facility on campus. He also deals with any type of safety related issue at SJSU		
Project Purpose:	The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.		

Questions to Ask Stakeholder

Question 1:	**In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**
Notes:	On campus, we are too well connected, and with bicycling brings a lot of hazards for bikes, pedestrians, and skate boarders.
Question 2:	**From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**
Notes:	Yes, parking is readily available. If there isn't enough, they will add more. As for the locations, they are currently in the wrong spot, should be outside of the dismount zone.
Question 3:	**Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**

Notes:	Yes, easily accessible to get to school with bike lanes from the City. He does not think the school can improve accessibility to campus. He does not think there is an accessibility problem on campus, because it is easily walkable with its density.
Question 4:	**Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**
Notes:	No, there is no comprehensive bike plan. He does not think there is a need for a bike plan.
Question 5:	**Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**
Notes:	No. He does not think a bike program manager is needed on campus.
Question 6:	**Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**
Notes:	Yes, police officers receive training on rights of all road users. UPD should be contacted about the logistics of the training. There should be more social policing.
Question 7:	**Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**
Notes:	He thinks everyone should be responsible for the safety of their own bikes by locking it with an appropriate lock. No one should have to manage it.
Question 8:	**Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**
Notes:	Unsure if there is a bicycle education class on campus. Some initiatives, such as the U-lock exchange, done by Transportation Solutions. He is unaware of any funding to support a bicycle education class.

Question 9:	**Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**
Notes:	He is not sure of there being a bike advocacy on campus. People who are for biking on campus do show up more to public meetings than non-bikers.
Question 10:	**Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**
Notes:	There are repairs for bikes through student government. The only bike rentals he knows of is the bike share program from the city.
Question 11:	**What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?** **a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?** **b) Have you completed any bicycle projects recently? If yes, describe.** Funding would come from student fees, not the university for these types of issues. Currently working on a plan to quantify the number of biking spots that are needed, and going to move the spots outside of the dismount zone.
Notes:	

Additional Notes

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office:	Campus Administration	Date:3/11/2015	Time:4:00PM
Stakeholder Name:	Stacy Gleixner		
Stakeholder Title:	Interim President's Chief of Staff	Stakeholder Phone #:	(408) 924-1177
Relevance to BSA:	One of her roles include being a liaison between campus (students and staff) and the President and vice versa, in regards to issues on campus. Bicycle and pedestrian safety has been a big concern on campus lately.		
Project Purpose:	The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.		

Questions to Ask Stakeholder

Question 1:	**In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**
Notes:	Because the campus is so small and dense, there is no real network within campus. However, coming to campus, the City of San Jose's new bike lanes have made it a lot more safety getting through the downtown area to campus.
Question 2:	**From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**
Notes:	Yes more bike parking is needed, but unsure where they should be located.
Question 3:	**Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**
Notes:	Yes, people are able to get to or close to campus with a bike, and the bike network and lanes on the streets have made it safer.

Question 4:	**Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**
Notes:	No, SJSU does not have a comprehensive bike plan. She hopes that through a series of urban planning classes, the process will be possible. There is currently no other department or student group aiding in this process.

Question 5:	**Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**
Notes:	Because of the balance of funding sources, she doubts that there will be enough money to fund a bicycle program manager. Currently, there is someone in Transportation Solutions that does some bicycle work in encouraging bike commuters to campus, but she has other tasks besides this.

Question 6:	**Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**
Notes:	UPD, like on other campuses, are sworn police officers that go through a very aggressive training program. She does not know about the details of police officers training in regards to safety in particular.

Question 7:	**Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**
Notes:	There is a UPD program that prosecutes bike thefts. Transportation Solutions has a U-lock campaign, to exchange cable locks for a U-lock, and informs students how to properly lock their bikes.

Question 8:	**Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**
Notes:	She is unaware of any bicycle training for students or staff. A possible funding source for students would be through Associated Students after an idea/program is pitched.

Question 9:	**Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**

Notes:	Transportation Solution is the only advocacy group she knows of that advocated for bike commuters. Unsure of any student clubs or organizations that may be advocating for bikes on campus.
Question 10:	**Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**
Notes:	There is no rental or bike repair on campus. If there was a student driven need for bike repair/rentals, associated students would be a possible funding source.
Question 11:	**What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?** **a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?** **b) Have you completed any bicycle projects recently? If yes, describe.**
Notes:	There is no specific funding set aside for bicycles. All funding comes from the state, and divided between divisions, and the list above are within different divisions. It is up to the division to incorporate bicycles into the funding. Transportation Solutions is currently applying for a grant for more bike racks on campus.

Additional Notes

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office:	University Police Department	Date:3/18/2015	Time:12:00PM
Stakeholder Name:	Frank Belcastro		
Stakeholder Title:	Captain	Stakeholder Phone #:(408) 924-2176	
Relevance to BSA:	Deals with any safety issue on campus, in regards to crime and traffic (traffic regulations and California Vehicle Code apply to bicycles too).		
Project Purpose:	The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.		

Questions to Ask Stakeholder

Question 1:	**In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**
Notes:	Off campus, there are plenty of bike lanes and good infrastructure. On campus, does not think bicycling is conducive because of the high volumes of pedestrians and safety issues.
Question 2:	**From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**
Notes:	There are a lot of bike racks and bike cages, and believes that it is adequate for the amount of bikes that come to campus. If needed, can work with administration to get more.
Question 3:	**Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**
Notes:	Getting to campus is fine with the bike lanes from City of San Jose. Within campus, a bike is not really needed.
Question 4:	**Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**

Notes: He doesn't think there is a plan. He thinks that if there will be a plan in the future, it should be planned between Transportation Solutions and Facilities.

Question 5: **Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**

Notes: No, there is no bicycle program manager. It depends on student need ,campus interest, and president's cabinet.

Question 6: **Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**

Notes: UPD gets comprehensive training on the California Vehicle Code that applies to vehicles, bikes, and pedestrians. They are trained through the academy and if there are any updates they are discussed at briefings.

Question 7: **Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**

Notes: UPD manages it, the patrol operations in particular. For bike theft, at MLK library, there are video cameras faced towards bike racks to help catch thieves, and are always being monitored. There are different proactive programs that the UPD manages.

Question 8: **Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**

Notes: He had no answer for this question.

Question 9: **Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**

Notes:	If there is a bicycle advocacy group, he does know of it.
Question 10:	**Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**
Notes:	There is no repairs or rentals on campus.
Question 11:	**What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?** **a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?** **b) Have you completed any bicycle projects recently? If yes, describe.**
Notes:	Training officers comes from the UPD budget. He think Transportation Solution has access to alternative transportation funding. Dismount Zones were done by the UPD, which were in effect at least 6 months ago.

Additional Notes

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office: Transit/Traffic and Parking Committee Date: 3/12/15 Time: 12:30pm

Stakeholder Name: Denny Yau

Stakeholder Title: Committee Chair Stakeholder Phone #: (408) 924-2219

Relevance to BSA: The Transit/Traffic and Parking Committee oversee all matter related to transportation on the campus of San Jose State.

Project Purpose: The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.

Questions to Ask Stakeholder

Question 1: **In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**

Notes: Not through the campus. There are plenty of biking routes to and around campus, but they all "dead end" at the campus boundaries, major gaps exist at 7th, 9th and San Carlos sts.

Question 2: **From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**

Notes: Yes, for the existing users, though bike parking may not necessarily be located at the most convenient locations. It would not hurt to add additional parking to address future growth.

Question 3: **Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**

Notes: Yes, bicycles can easily access the campus. The challenge is in where to direct the bicycles once they reach the campus boundaries. We need to better accommodate "pass-though" or neighborhood traffic coming through campus via existing city bicycle routes.

Question 4:	**Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**
Notes:	No, this could be a function of the alternative transportation and/or campus sustainability programs.

Question 5:	**Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**
Notes:	No, campus needs would determine the feasibility for such a position, but this could also be a function of the alternative transportation and/or campus sustainability program.

Question 6:	**Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**
Notes:	Yes, because it is part of their standard academy training, however the actual practice of this training remains limited with respect to bicycle rider enforcement.

Question 7:	**Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**
Notes:	Yes, UPD offer voluntary registration though the National Bicycle Registration and distributes promotion materials on locking bicycles effectively.

Question 8:	**Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**
Notes:	No. However, SJSU offers a space at King Library to the Silicon Valley Bicycle Coalition to conduct free bicycle rider clinics in partnership with bay area bike share.

Question 9:	**Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**

Notes:	Yes, there are several groups on campus with varying levels of interest in bicycle advocacy. Their effectiveness will be largely dependent on receptiveness of the administration.
Question 10:	**Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**
Notes:	No, we generally refer such requests to off-campus neighborhood bicycle retailers.
Question 11:	**What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?** **a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?** **b) Have you completed any bicycle projects recently? If yes, describe.**
Notes:	Funding for bicycle programs would be paid out of the Fines and Forfeitures (parking citation) account, whose revenues can only be spent on alternative transportation programs. Alternative transportation expenses currently exceed the revenues in the Fines and Forfeitures account, so the shortfall is regularly paid out of the general Parking account. Recent bicycle-related expenditures from the Fines and Forfeitures account would include hanging bicycle racks and the locks used in Transportation Solutions' bicycle lock exchange program. We have not applied for grant funding for bicycle projects as that has traditionally been the responsibility of Transportation Solutions. The most recently completed bicycle project was the installation of hanging bicycle racks in the bicycle enclosures several years ago.

Additional Notes

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office:	Vice President's Office	Date: 4/16/2015	Time:4:30p.m.
Stakeholder Name:	Roger Elrod		
Stakeholder Title:	Interim Associate VP, Campus Life	Stakeholder Phone #:(408)924-6112	
Relevance to BSA:	Student affairs office programs and services that support student success and enhance the student experience at San José State University.		
Project Purpose:	The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.		

Questions to Ask Stakeholder

Question 1:	**In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**
Notes:	Yes, we have wide paths but no coordinated pathways.
Question 2:	**From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**
Notes:	There is many bike racks through campus, however many of them are not close to the dismount zones. More racks are needed near the dismount zones.
Question 3:	**Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**
Notes:	The campus is accessible by bike from the surrounding streets, however riding on the surrounding streets during peak hours might not be safe.
Question 4:	**Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**

Notes: We don't have a master plan. I don't know who would be the best coordinator for such a plan. Maybe someone from transportation solutions.

Question 5: **Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**

Notes: I don't think so. Someone from the planning committee might be a good candidate bicycle program manager.

Question 6: **Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**

Notes: I assume so.

Question 7: **Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**

Notes: I don't know but we definitely need a bicycle theft prevention program.

Question 8: **Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**

Notes: I Don't know. I think ASU might offer some.

Question 9: **Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**

Notes:	Yes, ASU has some student advocacy groups but they haven't seen any measurable results yet.
Question 10:	**Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**
Notes:	There isn't an on-campus bike center for rentals or repairs. ASU might have some funding available to establish one.
Question 11:	**What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?** **a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?** **b) Have you completed any bicycle projects recently? If yes, describe.**
Notes:	I think ASU provides grant funding for bicycle programs.

Additional Notes

Ideas for improvements:

- Having a bicycle education session as part of new SJSU student orientation.

We need better signage.

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office: Transportation Solutions Date: 3/13/15 Time: 1pm

Stakeholder Name: Joanna Huitt

Stakeholder Title: Assistant Manager Stakeholder Phone #: (408)924-7433

Relevance to BSA: Transportation solutions manages the bike enclosures for the San Jose State that located on campus. This organization also surveys the student population for travel mode choice to get to campus.

Project Purpose: The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.

Questions to Ask Stakeholder

Question **1:** **In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**

Notes: SJSU does not have a well-connected bicycle network. The campus lacks designated bike paths and signage. Some of the deficiencies are due to the continual construction on campus.

Question **2:** **From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**

Notes: For the most part, bike parking is readily available on campus. Due to the demand for bike parking during certain hours of the day however, it appears that more is needed. Long-term storage is also necessary for students living on campus.

Question **3:** **Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**

Notes:	The SJSU campus is easily accessible by bike. The recent infrastructure additions (green lanes etc.) around campus and the downtown area created by the City of San Jose have increased accessibility and contributed to increased safety for cyclists. Infrastructure should be added beyond the downtown core.
Question 4:	**Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**
Notes:	SJSU does not currently have a comprehensive bicycle plan. Development of the plan should be impartial, be a complete mobility plan not restricted to only bicyclists, and the implementation of the final plan should be guaranteed by campus administration.
Question 5:	**Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**
Notes:	SJSU does not have a designated bicycle program manager. In the absence of this, TS monitors developments regarding bicycling across campus and advocates for bicycling to the best of our ability. This is done with limited authority and a lack of financial resources. We feel that the campus needs a bicycle program manager and that this position should reside within Transportation Solutions.
Question 6:	**Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**
Notes:	We are unaware of any programs where campus safety / UPD officers receive training on the rights and responsibilities of all road users.
Question 7:	**Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**
Notes:	There are programs on campus to help reduce bicycle theft. At TS, we operate six bicycle enclosures which provide a more secure form of bicycle parking for the SJSU community. Enhancements to these enclosures, such as networking and cameras, would increase protection from theft. With funding from UPD, TS administers a U-Lock exchange program that allows students to exchange their old cable or chain lock for a new Kryptonite U-Lock for free. To our knowledge, UPD has a bike bait program to combat theft.
Question 8:	**Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**

Notes: SJSU does not regularly offer bicycle education classes for students and staff. We believe that partnerships with Silicon Valley Bicycle Coalition may have the potential to be created, but at this time, there is no identified funding source to pursue this.

Question 9: **Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**

Notes: At AS Transportation Solutions we advocate for increased infrastructure and planning for bikes on campus. Other than ASTS, we are not aware of any other active bike advocacy group.

Question 10: **Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**

Notes: There is not an on-campus bike center for rentals and repairs at SJSU

Question 11: **What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?**

a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?

b) Have you completed any bicycle projects recently? If yes, describe.

Notes: There is no dedicated funding source for bicycle programs. TS works with UPD to purchase Kryptonite U-Locks to address theft prevention – we recently secured the funding from UPD and purchased 150 new U-Locks for our U-Lock exchange program. Additionally, we are working with FD&O to complete a grant application to fund the purchase of additional bike racks for campus.

Additional Notes

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office: Campus planning board Date: 4/2/15 Time: 6pm

Stakeholder Name: Mark Van Selst

Stakeholder Title: Chair of campus planning board Stakeholder Phone #: (408) 924-5674

Relevance to BSA: The campus planning board role and function is to: When requested by the President, or to advise the President of the University in regard to long-range physical planning for the campus and the surrounding area, including preparation and review of the Campus Master Plan. To advise the President (subject to applicable CSU regulations and university policies) in regard to the planning, location, construction and operation of lesser physical structures, facilities and equipment on or near the campus.

Project Purpose: The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.

Questions to Ask Stakeholder

Question **1:** **In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**

Notes: Yes and no. Yes if you mean a cross access for bike to travel across campus. No if you mean a holistic network of connectivity for bicycling on campus.

Question **2:** **From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**

Notes: Differ to F.D.N.O.

Question 3: **Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**

Notes: Yes. Except for construction zones.

Question 4: **Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**

Notes: No does not. Office of the president would the stakeholder to issue such plans.

Question 5: **Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**

Notes: No. and No.

Question 6: **Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**

Notes: Yes they do. UPD should have the information.

Question 7: **Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**

Notes: Several, transportation solutions, UPD, ect.

Question 8:	**Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**

Notes: **No Idea.**

Question 9:	**Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**

Notes: Yes there are some groups on campus.

Question 10:	**Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**

Notes: Bike share is the one that come to mind, however housing should someday be able to supply rentals for student who live on campus. Not to his knowledge but if there is bike repair it would be through A.S.

Question 11:	**What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?** **a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?** **b) Have you completed any bicycle projects recently? If yes, describe.**

Notes: No. No. No.

Additional Notes

(URBP256) Transportation Planning: Local Issues
Bicycle Safety Assessment (BSA) for the SJSU Campus
Stakeholder Interview Questionnaire

[redacted]

Stakeholder Office: Campus planning board Date:4/2/15 Time:6pm

Stakeholder Name: Mark Van Selst

Stakeholder Title: Chair of campus planning board Stakeholder Phone #:(408) 924-5674

Relevance to BSA: The campus planning board role and function is to: When requested by the President, or to advise the President of the University in regard to long-range physical planning for the campus and the surrounding area, including preparation and review of the Campus Master Plan. To advise the President (subject to applicable CSU regulations and university policies) in regard to the planning, location, construction and operation of lesser physical structures, facilities and equipment on or near the campus.

Project Purpose: The BSA focuses on the initials steps of the bicycle master planning for college campuses and lays out broad, preliminary, conceptual safety improvement options for future consideration.

Questions to Ask Stakeholder

Question **1:** **In your opinion, does the SJSU campus have a well-connected bicycling network? If not, what do you think are the major gaps in the bicycling network?**

Notes: Yes and no. Yes if you mean a cross access for bike to travel across campus. No if you mean a holistic network of connectivity for bicycling on campus.

Question **2:** **From your perspective, is bike parking readily available throughout the SJSU campus? If not, where do you think more bike parking might be needed?**

Notes: Differ to F.D.N.O.

Question 3: **Do you believe that the SJSU campus is easily accessible by bike? If not, how do you think we could improve the bike accessibility of the campus?**

Notes: Yes. Except for construction zones.

Question 4: **Does SJSU have a current comprehensive bicycle plan? If so, how can we access the plan? If not, who do you think should spearhead the development of this plan?**

Notes: No does not. Office of the president would the stakeholder to issue such plans.

Question 5: **Does SJSU have a designated bicycle program manager? If so, how may we contact this person? If not, do you think the SJSU campus needs a designated bicycle program manager?**

Notes: No. and No.

Question 6: **Do SJSU campus safety/law enforcement officers receive training on the rights and responsibilities of all road users, including bicyclists and pedestrians? If so, how can we get more information on this training? If not, do you think such training would be beneficial to the SJSU campus?**

Notes: Yes they do. UPD should have the information.

Question 7: **Is there a program on the SJSU campus to prevent bike theft? If so, who manages this program? If not, do you think such a program would be needed at the SJSU campus?**

Notes: Several, transportation solutions, UPD, ect.

Question 8:	**Does SJSU offer bicycle education classes for students and staff? If so, how can we get more information on these classes? If not, are you aware of available funding that could support such classes?**

Notes: **No Idea.**

Question 9:	**Is there an active bicycle advocacy group at the SJSU campus? If so, what is your perception of their effectiveness in achieving change for the bicycling conditions on campus?**

Notes: Yes there are some groups on campus.

Question 10:	**Is there an on-campus bike center for rentals and repairs at the SJSU campus? If so, who manages this service? If not, are you aware of available funding that could support such a service on campus?**

Notes: Bike share is the one that come to mind, however housing should someday be able to supply rentals for student who live on campus. Not to his knowledge but if there is bike repair it would be through A.S.

Question 11:	**What available funding does SJSU have for bicycle programs to address: building and maintaining bicycle infrastructure, training officers, educating students and staff, theft prevention, parking, creating and implementing a bicycle master plan, rentals and repairs on campus?** **a) Have you applied for grant funding for bicycle projects? If so, how will the funds be used?** **b) Have you completed any bicycle projects recently? If yes, describe.**

Notes: No. No. No.

Additional Notes

Exhibit 2. Interview Question Summary

Exhibit 2 illustrates the summarized answers provided by the respective stakeholders during the interview. The summarized answer aided in the process for assessing an appropriate benchmark for current bicycle safety measures on campus.

Stakeholders	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6
Transit/Traffic and Parking Committee: **Denny Yao**	Not through the campus. There are plenty of biking routes to and around campus, but they all "dead end" at the campus boundaries, major gaps exist at 7th, 9th and San Carlos streets.	Yes, for the existing users, though bike parking may not necessarily be located at the most convenient locations. It would not hurt to add additional parking to address future growth.	Yes, bicycles can easily access the campus. The challenge is in where to direct the bicycles once they reach the campus boundaries. We need to better accommodate "pass-though" or neighborhood traffic coming through campus via existing city bicycle routes.	No, this could be a function of the alternative transportation and/or campus sustainability programs.	No, campus needs would determine the feasibility for such a position, but this could also be a function of the alternative transportation and/or campus sustainability program.	Yes, because it is part of their standard academy training, however the actual practice of this training remains limited with respect to bicycle rider enforcement.
Transportation Solutions: **Joanna Huitt**	The campus lacks designated bike paths and signage. Some of the deficiencies are due to the continual construction on campus.	bike parking is readily available on campus. Due to the demand for bike parking during certain hours of the day however, it appears that more is needed. Long-term storage is also necessary for students living on campus.	The SJSU campus is easily accessible by bike. The recent infrastructure additions (green lanes etc.) around campus and the downtown area created by the City of San Jose have increased accessibility and contributed to increased safety for cyclists. Infrastructure should be added beyond the downtown core.	SJSU does not currently have a comprehensive bicycle plan	SJSU does not have a designated bicycle program manager	UPD officers receive training on the rights and responsibilities of all road users.
Campus planning board: **Mark Van Solste**	Yes if you mean a cross access for bike to travel across campus.	Defer to F.D.N.O.	Yes. Except for construction zones.	No does not.	No.	Yes they do
Facilities, Development and Operations: **Christopher Brown**	We are too well connected on campus, which brings many safety hazards for bikes, pedestrians, and skate boarders	Yes, parking is readily available.	Yes, especially with the new bikes lanes from the City.	No.	No.	Yes, police officers receive training on rights for all road users

Stakeholders	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6
Campus Administration: **Stacy Gleixner**	Because the campus is small and dense, there is no real network within campus. Accessibility coming to campus with the City's bike lanes have made it much safer to get through downtown to campus	More bike parking is needed, but unsure of where they should be located.	Yes, people are able to get to or close to campus with a bike.	No.	No, but there is someone through Transportation Solutions who works with bicycling to campus, along with other transportation related issues	Yes, UPD are sworn police officers that go through aggressive training.
University Police Department: **Frank Belcastro**	Off campus, there is good bike infrastructure. On campus, bicycling is not conducive because of the high volumes of pedestrians and safety related issues.	There is adequate bike parking. If needed, can work with administration to get more.	Getting to campus is accessible, but within campus, a bike is not needed.	No.	No.	UPD gets comprehensive training on the CVC that applies to vehicles, bikes and peds. They are trained through the academy and updates are discussed at briefings.
VP of Student Affairs: **Roger Elrod**	No connectivity	Parking not readily available near dismount zones.	Yes, accessible from surrounding streets, however they are busy and not very safe.	No	No	I don't know, but I imagine they do.
Findings						
	There are no well-connected bike paths or dedicated bike lanes. Poor signage.	There are no well-connected bike paths or dedicated bike lanes. Poor signage.	The campus is accessible by bike from the outer perimeter on all sides. However, during heavy traffic hours it may be unsafe to ride for some riders.	SJSU does not have a comprehensive bicycle master plan.	SJSU does not have a bicycle program manager.	UPD officers are trained at the academy on the rights of all road users.

Stakeholders	Questions 7	Question 8	Question 9	Question 10	Question 11
Transit/Traffic and Parking Committee: **Denny Yao**	Yes, UPD offer voluntary registration though the National Bicycle Registration and distributes promotion materials on locking bicycles effectively.	No. However, SJSU offers a space at King Library to the Silicon Valley Bicycle Coalition to conduct free bicycle rider clinics in partnership with bay area bike share.	Yes, there are several groups on campus with varying levels of interest in bicycle advocacy. Their effectiveness will be largely dependent on receptiveness of the administration.	No, we generally refer such requests to off-campus neighborhood bicycle retailers.	Funding for bicycle programs would be paid out of the Fines and Forfeitures (parking citation) account, whose revenues can only be spent on alternative transportation programs. Alternative transportation expenses currently exceed the revenues in the Fines and Forfeitures account, so the shortfall is regularly paid out of the general Parking account. Recent bicycle-related expenditures from the Fines and Forfeitures account would include hanging bicycle racks and the locks used in Transportation Solutions' bicycle lock exchange program. We have not applied for grant funding for bicycle projects as that has traditionally been the responsibility of Transportation Solutions. The most recently completed bicycle project was the installation of hanging bicycle racks in the bicycle enclosures several years ago.
Transportation Solutions: **Joanna Huitt**	U-Lock exchange program that allows students to exchange their old cable or chain lock for a new Kryptonite U-Lock for free. To our knowledge, UPD has a bike bait program to combat theft.	SJSU does not regularly offer bicycle education classes for students and staff	At AS Transportation Solutions we advocate for increased infrastructure and planning for bikes on campus.	There is not an on-campus bike center for rentals and repairs at SJSU	There is no dedicated funding source for bicycle programs.
Campus planning board: **Mark Van Solste**	Several, transportation solutions, UPD, etc.	No Idea.	Yes there are some groups on campus.	Bike share is the one that come to mind	No.
Facilities, Development and Operations: **Christopher Brown**	No one should have to manage bikes. Everyone should be responsible for their own bikes.	Unsure if there are bike education classes on campus	Unsure of any bike advocacy groups on campus.	There are bike repairs through student government. Bike share program is the only bike rental he knows of.	He is currently working on a plan to quantify the number of bike parking spots that are needed, and will move the spots outside of the dismount zone.
Campus Administration: **Stacy Gleixner**	UPD prosecutes bike thieves on campus.	She is unaware of any bike training classes for student or staff.	Transportation Solutions is the only advocacy group she knows of that pushes for bike commuters	There are no rentals or bike repairs on campus.	There is no specific funding set aside for bicycles. All funding, which comes from the state, is divided between divisions on campus. Different bicycles issues may fall under different divisions.

Stakeholders	Questions 7	Question 8	Question 9	Question 10	Question 11
University Police Department: **Frank Belcastro**	UPD manages the bike theft prevention, in particular the patrol operations.	N/A	There is no bike advocacy group to his knowledge.	There are no repairs or rentals on campus.	Training police officers come from UPD budget.
VP of Student Affairs: **Roger Elrod**	Don't know.	Don't know	Yes, but not sure who they are.	No there are no bike repairs.	ASU grant funding.
Findings					
	We have some theft prevention measures but no cohesive theft prevention program.	The campus does not offer a bicycle education program at this time. The campus has some bicycle advocacy groups but the findings show that there is a disconnect in recognition between stakeholders and campus groups.	There is BikeShare for rentals for students. However, there are no bike repairs offered on campus.	There is bike share for rentals for students. However, there are no bike repairs offered on campus.	No consensus amongst stakeholders.

CHAPTER 4

TRAVEL MODE CHOICE ANALYSIS FOR THE SJSU CAMPUS

Team 4:

Team Leader: Micah Hilt

Victoria Chong
Jacob Pearl
Carlson Ka-Chun Shum

CHAPTER 4

TRAVEL MODE CHOICE ANALYSIS FOR THE SJSU CAMPUS

D.1 Overview

The purpose of this chapter is to provide an assessment of travel mode choice between students at San Jose State University, students at six other Northern California universities, residents of the City of San Jose and Santa Clara County. This analysis of transportation mode share is pertinent for this Bicycle Safety Assessment because it depicts the current trends of travel from a micro level (SJSU) to a more macro level, such as Santa Clara County. Further, the relationship between travel mode share and the three entities may show how transportation programs and infrastructure investments need prioritization, in order for there to be more safety measures for alternatives modes of transportation. Using sources from SJSU's Transportation Solutions and the U.S. Census, a comparison of travel mode choice was conducted. Results showed that students at SJSU utilized more alternative modes of transportation than residents of San Jose and Santa Clara County. However, in order for SJSU to increase users of different travel modes, it is imperative that local and regional jurisdiction invest funds to prioritize safe transportation practices.

D.2 Travel Mode Share Comparison: San Jose State University (SJSU), City of San Jose, and Santa Clara County

The following compares the travel mode choice data between Santa Clara County, the City of San Jose, and SJSU. The data highlights the similarities and differences in travel mode choices between these three entities, while also addressing the suitability of sustainable mode shifts for the students, faculty and staff at SJSU. The travel data describing mode share for Santa Clara County and the City of San Jose were collected through the U.S. Census 2013 American Community Survey, one-year estimate, while the SJSU data was obtained through the campus-based Transportation Solutions, a department of SJSU's Associated

Students, who is responsible for gathering campus transportation data and providing trip planning advice.

Figure 4-1. Travel Mode Share – Santa Clara County, City of San Jose, and SJSU

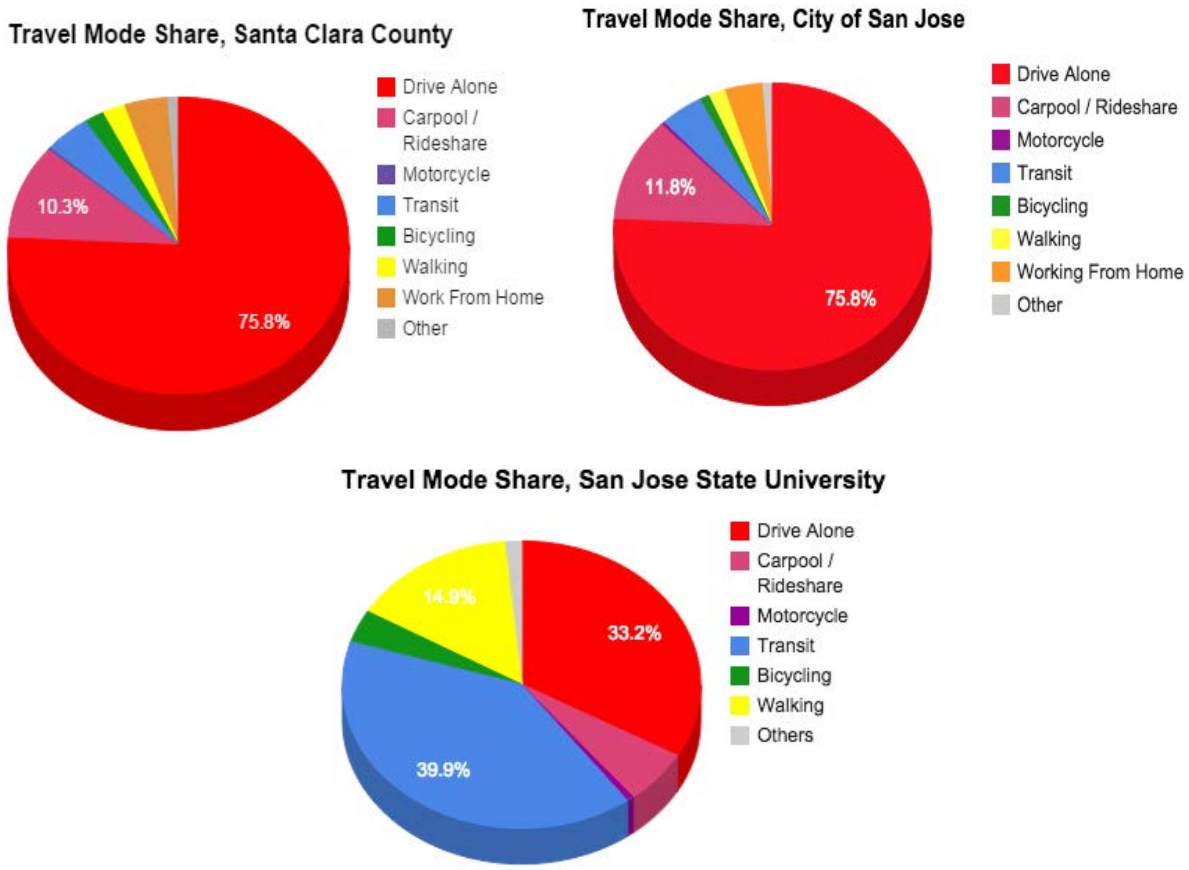


Table 4-1 Means of Transportation to Work: City of San Jose, Santa Clara County, and San Jose State University

	City of San Jose[10]	Santa Clara County[1]	SJSU[11]
Total Survey Respondents	471,724[12]	843,453[3]	3619[13]
Drove alone	75.8%	75.8%	33.2%
Carpool & Rideshare	11.8%	10.3%	6.1%[14]
Motorcycle	0.3%	0.3%	0.6%
Public transit	4.5%	4.4%	39.9%
Bicycle	1.0%	1.9%	3.7%
Walking	1.7%	2.1%	14.9%
Work from home	3.9%	4.1%	NA[15]
Other[16]	4.9%	1.1%	1.6%

D.2.1 Data Analysis

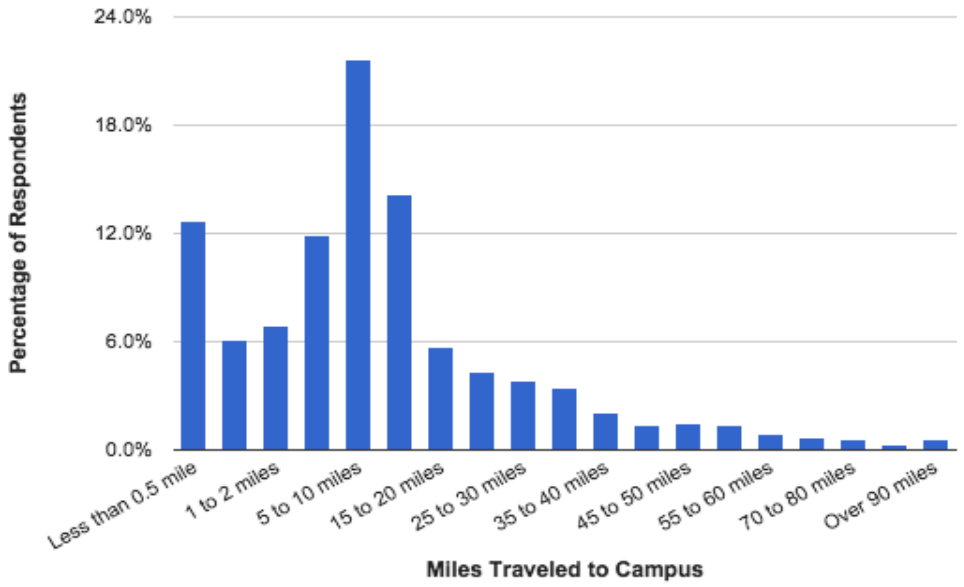
Overall, when comparing mode share at SJSU against the City of San Jose and Santa Clara County, SJSU exhibits a more diverse range of commuter mode share usage, such as public transit (39.9%), walking (14.9%), and bicycling (3.9%) when compared to the city and county. However, in terms of the bicycle being the primary mode of transportation, the rates of all three entities are generally low, the City of San Jose at 1.0%, Santa Clara County at 1.9% and SJSU at 3.0%. Students at SJSU also rely on transit at a rate ten times that of the City of San Jose and County of Santa Clara, and walking at a rate around seven times that of the City and County, respectively, while using cars two times less. However, the campus figures represent a much smaller sample size on an urban-center campus, as opposed to the more broadly represented, and larger sample of the American Community Survey city and county level data. In addition to the travel data above, an analysis of commute distance and time for SJSU students as well as average time traveled to

[10] Means of Transportation to Work by Selected Characteristics, 2013 American Community Survey 1-Year Estimates
[11] San Jose State University, Transportation Solutions, Associated Students – Transportation Survey (Fall, 2014)
[12] Total number of ACS commuters
[13] Total number of surveyed students
[14] The category "Carpool/Rideshare" combines counts of carpools with students who are dropped off and students using the park and ride lot shuttle
[15] This is not an applicable category in the context of San Jose State University.
[16] For San Jose State University, the "Others" category combines surveyed counts of paratransit outreach and skateboard users. For the City of San Jose and Santa Clara County, the "Other" category combines data of the ACS "other" category and taxicab users.

work for residents in the City of San Jose and County of Santa Clara County provide further clarification and detail with regard to the specific travel mode choices.

D.2.2 Commute Distance to San Jose State University

Figure 4-2. Distribution of Miles Traveled to SJSU Campus[17]



As seen in Figure 4-2, approximately 60 percent of students surveyed live within ten miles of campus. Amongst the different miles grouped, the largest percentage of students (21.6%) live five to ten miles from SJSU. These finding may suggest appropriate distances to utilize alternative modes of transportation other than driving. The average commuter distance was unable to be found for the City of San Jose and Santa Clara County.

[17] San Jose State University, Transportation Solutions, Associated Students – Transportation Survey (Fall, 2014)

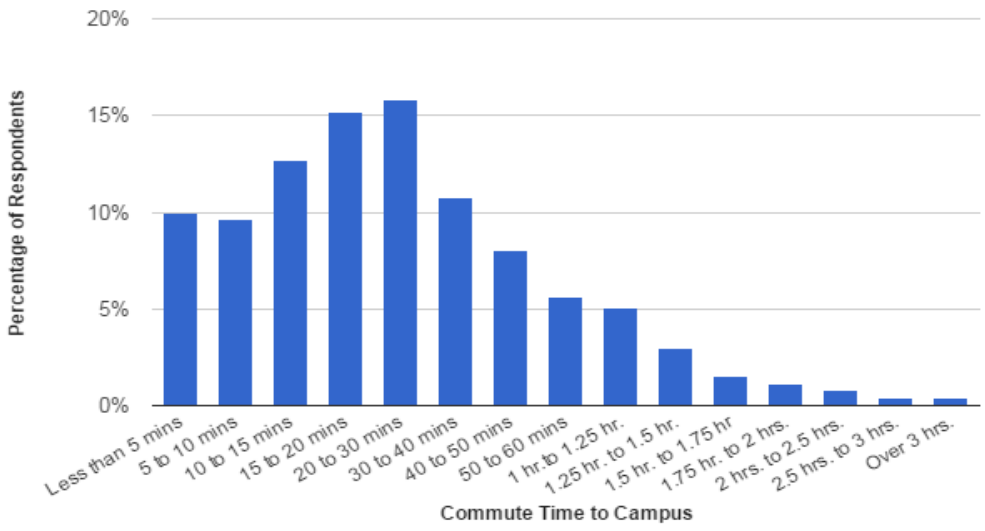
Table 4-2. Mode Choice Compared to Commuter Miles from Campus

Mode Choice	Mileage	% of Surveyed Participants
Walking	1 mile	18.8%
Biking	1 to 5 miles	18.8%
Transit	5 to 20 miles	41.5%
Auto	20 miles or more	20.9%

Table 4-2 describes the comparison of transportation modes that could be used for students. When comparing these results to Table 4-4 of actual mode share at SJSU, only transit riders were close to what actual transit riders or students living within 5 to 20 miles from campus at 39.9 percent. The actual mode share for SJSU students is much different compared to what could be utilized depending on the mileage from campus, such as walking (14.9%), biking (3.7%), and driving alone (33.3%). Further, the high ridership of transit could potentially be due to the free Eco Passes offered by the university, which is included in students' tuition.

D.2.3 Average Commute Time for SJSU, City of San Jose and Santa Clara County

Figure 4-3 - Distribution of Commute Time to SJSU Campus[18]



[18] San Jose State University, Transportation Solutions, Associated Students – Transportation Survey (Fall, 2014)

Table 4-3. Average Commute Time to Work – Santa Clara County and City of San Jose

	Santa Clara County[19]	**City of San Jose[20]**
Mean Travel Time	26.3 minutes	27.3 minutes
Drove Alone	24.9 minutes	25.5 minutes
Carpooled	27.9 minutes	28.6 minutes
Public Transit (Excluding Taxi)	54.7 minutes	56.1 minutes

As seen in Figure 4-3, around 63 percent of students surveyed commute 30 minutes or less to SJSU, with the largest percentage of students (15.8%) traveling 20 to 30 minutes to campus. On the other hand, Table 4-3 shows the average commute time for residents in the City of San Jose and Santa Clara Count are both slightly more than 25 minutes. These findings may also suggest that people surveyed collectively as the three entities usually spend 20 to 30 minutes during their average commute.

D.2.4 Key Findings

When considering travel mode choice a significant percentage of SJSU students live within ten miles, or a thirty-minute one-way commute to campus. Although the City of San Jose is ranked within the top ten most populated cities in the United States (U.S Census, 2010), the City and Santa Clara County are largely sprawling auto-centric areas, limiting the viability of and choice to use alternative modes of transportation. As seen in Table 4-3, the average commute time riding public transit is more than double the time for a resident who drives alone. These findings suggest difficulty in shifting to other transportation modes as the car allows for more convenience and reliability compared to public transit for individuals.

D.3 Travel Mode Share Comparison: San Jose State University and Six Other Northern California Universities

[19] Means of Transportation to Work by Selected Characteristics, 2013 American Community Survey 1-Year Estimates
[20] Means of Transportation to Work by Selected Characteristics, 2013 American Community Survey 1-Year Estimates

The travel mode share data for the following six universities are compared below in the table and chart:

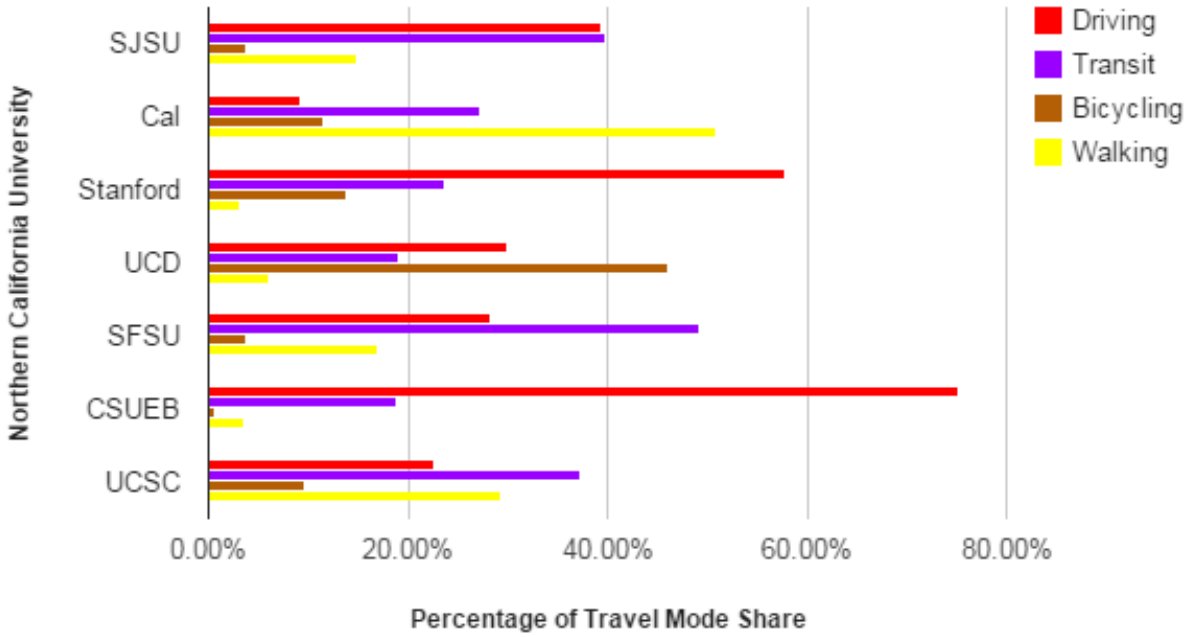
- University of California at Berkeley (UCB)
- University of California at Davis (UCD)
- Stanford University (Stanford)
- San Francisco State University (SFSU)
- University of California at Santa Cruz (UCSC)
- California State University at East Bay (CSUEB)

We attempted to also look at travel mode data for Santa Clara University (SCU) and California State University at Sacramento (CSUS) through online research and email inquiry. However, no relevant data regarding students' travel mode choices at these campuses could be found.

D.3.1 Methodology

The travel data describing mode share for students at UCB was collected through the 2008 Student Transportation Survey, while data for students at UCD was obtained through the 2011 to 2012 UC Davis Campus Travel Survey. SFSU travel mode data was obtained from the 2014 Transportation Survey Results report, although the data also includes its faculty and staff. On the other hand, data for CSUEB was obtained from a carbon reduction analysis by professors from Salt Lake Community College and CSUEB for the Hayward Campus. Travel data describing mode share for only students at Stanford was also unavailable, although the mode share for students, faculty, and staff at Stanford are surveyed annually and the data in this report was obtained through the 2013 Stanford Transportation and Commute Mode Study performed by Stanford University Parking & Transportation Services. UCSC students' travel mode choice data was obtained from the online Travel Survey conducted in the Spring Quarter of 2014 by the UCSC Transportation and Parking Services (TAPS).

Figure 4-4. Travel Mode Share – SJSU, UCB, UCD[21], UCSC[22], Stanford, SFSU, CSUEB



Note: For the purpose of this chart, "driving" includes groups that drove alone and/or used carpool and rideshare to their respective college campuses.

[21] "Walking" for UCD combines respondents who walk and/or skate
[22] "Transit" for UCSC combines respondents who rode SCMTD Metro Transit, campus shuttle and owl service, and/or bike shuttle

Table 4-4. Travel Mode Choice in Commute Transportation (in percent) – SJSU, UCB, UCD, UCSC, Stanford, SFSU, CSUEB

	SJSU[23]	UCB[24]	UCD[25]	UCSC[26]	Stanford[27]	SFSU[28]	CSUEB[29]
Total Survey Respondent[30]	3619	2125	3116	10155	N/A	N/A	1412
Drove alone	33.2%	7.3%	24.0%	12.2%	41.9%	19.7%	68.1%
Carpool & Rideshare	6.1%[31]	1.8%	6.0%	10.3%	15.0%	8.6%	7.2%
Motorcycle	0.6%	0.7%	N/A	0.5%	N/A	0.4%	0.2%
Public Transit	39.9%	27.8%	19.0%	37.4%[32]	23.6%	49.3%	18.9%
Bicycle	3.7%	11.5%	46.0%	9.7%	13.9%	3.8%	0.6%
Walking	14.9%	50.8%	6.0%[33]	29.3%[34]	3.1%	17.0%	3.5%
Other	1.6%	0.6%[35]	N/A	0.7%[36]	1.0%	1.0%	1.6%

D.3.2 Analysis

When comparing the mode choice data amongst the six university campuses in Northern California, the data set varies due to the different geographical locations of the campuses. Likewise, it is important to note how the relationship between the campus' mode shares differ or similarly reflect the policies of the local jurisdiction. The following is a description of the various mode share datasets shown in Table 4-4, placing each university's mode share in the context of its environment.

- <u>San Francisco State University (SFSU):</u>

[23] San Jose State University, Transportation Solutions, Associated Students – Transportation Survey (Fall, 2014)
[24] "2008 Student Transportation Study" conducted by UCB Parking and Transportation Office (for Students)
[25] Campus travel survey from 2011-2012 conducted by UCD Institute of Transportation Studies and Transportation Parking Services (for Students)
[26] "Online travel survey conducted in Spring 2014 by UCSC Transportation and Parking Services (for Students)
[27] "2013 Stanford Transportation and Commute Mode Study" performed by Stanford University Parking & Transportation Services
[28] "2014 Transportation Survey Results" by SFSU Parking and Transportation (for both Staff and Students)
[29] "Transportation Survey and Carbon Reduction Efficacy Analysis at California State University, East Bay and Contra Costa College" by Professor Chris Johnson at Salt Lake Community College and Professor Michael Lee at CSUEB; Data for Hayward Campus only (for both Staff and Students)
[30] N/A for Total Survey Respondent = Raw data not available
[31] The category "Carpool/Rideshare" combines counts of carpools with students who are dropped off and students using the park and ride lot shuttle
[32] The "Transit" for UCSC combines count for SCMTD Metro Transit, campus shuttle and owl service, and bike shuttle
[33] The "Walking" for UCD combines count for walking and skating
[34] This mode share realistically must partially roll into the public transit share as few students begin their walk away from the base of campus and only walk to and from lecture and residence halls across the expansive campus.
[35] The "Other" for UCB combines count for rollerblade and wheelchair
[36] The "Other" for UCSC combines count for Zipcar and Electric Vehicle

Amongst the different mode shares employed at SFSU, transit is the most utilized form, which includes MUNI bus and light rail, BART, Caltrain, and the university's bus shuttle. Aside from the use of transit, however, the university also has a significant use of the single occupancy vehicle, at almost 20 percent. It is also important to note that, although the SFSU campus has a bicycle ban within campus, there are designated bike paths that allow for accessibility throughout the area.

- University of California, Berkeley (UCB):
  Compared to the other campuses in the assessment, UC Berkeley has the highest travel mode share of walking. This mode share may be due to the density and compactness of the city and campus, which allows for accessibility and easy connectivity between nearby dorms and housing to campus. The second most utilized mode at UC Berkeley is transit, which includes AC Transit, Amtrak, BART, and the campus shuttle. This difference in travel behavior, compared to other campuses, may be due to the fact that the campus is located in downtown Berkeley, whilst the university's parking structures are located along the periphery of the main campus, on all sides. In addition, parking on local city streets near the campus are heavily regulated and enforced.

- Stanford University (Stanford):
  Stanford's most utilized travel mode choice is driving alone (41.9%). Although the university has a high percentage of vehicle drivers to campus, the mode share has significantly changed over the years, as the university has implemented more sustainable modes through their transportation demand management strategy. By executing a travel demand management (TDM) plan for the university, transit and bicycling have gained more prominence among the different mode shares. It is also important to note that the university offers free Caltrain, VTA and East Bay express buses for eligible commuters, alongside with discount-priced options for alternative modes of transit to and from campus (Stanford Parking and Transportation Services).
- University of California, Davis (UCD):

The City of Davis and UC Davis have become well known with regard to its policies for a well-planned bicycle network. Amongst all campuses examined, UC Davis has the highest mode share of bicyclists, at 46 percent. The university has a distinct bicycle plan with a sustainable vision that aligns well with the City of Davis' General Plan. UC Davis embodies the characteristics of a college town, which may support the high mode share of bicycles. Although, driving alone to campus was the second most utilized mode share, public transit, which includes Unitrans and Amtrak, was also widely used amongst students.

- California State University, East Bay (CSUEB):
  Amongst the campuses examined, CSUEB most heavily uses the single occupancy vehicle at 68.06 percent and is commonly known as a "commuter school." The campus is located in a suburban area of the Bay Area, within the Hayward Hills, which may explain why the vehicle mode share possesses such dominance over the other modes. Transit, which includes BART, the campus shuttle that transports students to and from the BART station, and AC Transit, is the second most used mode of transportation for the campus.

- University of California, Santa Cruz (UCSC):
  The data available for UCSC shows that a majority of student respondents (37.4%) take public transit to and from campus, consisting almost exclusively of Santa Cruz Metropolitan Transit District (Santa Cruz Metro) buses. Because the 2,000 acre campus is located on the old Cowell Family Ranch on a hill above the rest of the City of Santa Cruz, this may pose a plausible reason why there is a relatively high ridership of public transit to campus. Santa Cruz Metro also provides a connector from San Jose with the 17 Express bus route operating from the Diridon Station transit hub in downtown San Jose to downtown Santa Cruz via Highway 17. The large public transit mode share is due to the fact that UCSC is located on a hillside and does not lend itself well to walking or biking up the 1.5 to 2 mile ascending hillside. In addition, it is the only University of California campus between Berkeley

and Santa Barbara, thus largely serving the needs of commuting students from the South Bay and Monterey Bay Areas.

- San Jose State University (SJSU):
  At SJSU, the highest percentage of travel mode share is public transportation at 39.85 percent. This level of ridership could partially be due to the campus' distribution of Associated Student Eco-Passes through Transportation Solutions, which allows students to ride buses of the Santa Clara Valley Transportation Authority (VTA) for free. Despite the fact that the university does provide free VTA bus passes, 33.2 percent of respondents drive alone to campus. However, almost 15 percent of surveyed respondents walk to campus, which is comparable to other universities in urban areas. Although SJSU is located in a downtown urban area, no form of travel mode share ranks the highest between the urban campuses in this study, except for driving alone to campus.

D.3.3 Key Findings

From the varying travel mode share data found at different universities, there are both similarities and differences when comparing SJSU to other urban universities in Northern California. The most comparable universities to SJSU, in terms of density and location within an urban area, are UCB and SFSU. Many other universities in this assessment are within more suburban or "college towns," which appears to yield different results in terms of transportation mode choice for students, faculty, and staff. Amongst the six universities compared in this study, the drive alone rate of SJSU ranked third, where CSUEB had a drive alone rate at 68.1 percent, Stanford at 41.9 percent, and SJSU at 33.24 percent. However, amongst the other two universities with higher drive alone percentages, SJSU is situated within the most urban area. Furthermore, amongst the densest urban campuses analyzed, the drive alone rates at SJSU are significantly higher when compared to UCB (7.3%) and SFSU (19.7%).

However, when comparing the ridership of public transit for students, SJSU (39.8%) was just behind SFSU, which utilized mass transit the most at 49.3 percent. This ridership level, in part, could be due to the Eco-Passes that are free with paid tuition at SJSU, as discussed previously.

D.4 Conclusion

Through conducting this analysis on travel mode share between users from the six Northern California universities, SJSU, San Jose, and Santa Clara County, it is evident that the City of San Jose and Santa Clara demonstrate auto-oriented patterns, while SJSU's transportation patterns are more dispersed amongst different modes of transportation. Universities within a suburban area also displayed more trends of automobile dependence. However, compared to other California universities, there are many aspects that SJSU can improve upon, in terms of alternative transportation options. However, because the City lacks a connected bike network, this may pose a barrier for SJSU students, faculty, and staff to utilize alternatives means of transportation, especially since the campus is located in the heart of the downtown San Jose. Without the prioritization for safe and reliable transportation programs and infrastructure by local and regional jurisdictions, behavioral shifts may be difficult for current and future, potential multi-modal users at SJSU. It is vital to make investments and implement policies that favor multi-modal transportation within San Jose and Santa Clara County to not only give options to users, but also mitigate negative environmental impacts and create more social-equity for people who may not be able to afford a motorized vehicle. Facilitating stronger relationships between the university and the City of San Jose and Santa Clara County will be crucial in providing safer and reliable transportation options at SJSU.

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University of California, Santa Cruz Transportation and Parking Services, "Online travel survey conducted in Spring 2014"

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CHAPTER 5

MANAGEMENT OF FIELD AUDITS AND ON-SITE REVIEWS

Team 3:

Team Leader: Nick Danty

Benyam Aghegnehu
Michael Ferreira
David Suan

CHAPTER 5

MANAGEMENT OF FIELD AUDITS AND ON-SITE REVIEWS

E.1 Overview of Field Audits and On-Site Reviews

The purpose of conducting the field audits was to gain a better understanding of the existing bicycling conditions on the San Jose State University campus. This was an important section of the BSA because it collects and provides specific details for decision makers and analysts to use when proposing changes to the campus network. Data pertaining to the execution of such decisions include:

- Condition of facilities;
- Location of facilities;
- Presence of obstructions;
- Presence and quality of transportation signage; and
- Location of conflict intersections

The compilation of campus policies is also necessary to gauge the attitude of the administration towards bicycle planning, but it is the results of the field audits that show how and where this attitude should be directed.

E.2 Audit Planning

E.2.1 Location Organization

The first step in the audit-planning phase was to divide the campus into quadrants so that the project was more manageable and each team could be assigned an area to survey. Creating the quadrants was accomplished by drawing two intersecting lines on a campus map and using the resulting squares as the quadrant boundaries. Each quadrant contained a major arterial pathway that provided a link to smaller

paths in addition to the Cesar Chavez Plaza, the main gathering space on campus. Additionally, the quadrants encompassed 1-2 activity centers so that no single quadrant generated more non-motorized activity than the others (Table 5-1).

Table 5-1. Campus Quadrants and Select Elements

Quadrant	Arterial(s)	Activity Centers
Northwest (Team 1)	Paseo de San Antonio; Cesar Chavez Plaza	Martin Luther King Jr. Library
Northeast (Team 2)	Ninth Street Plaza; Cesar Chavez Plaza	Student Union (including AS bookstore and Union Square)
Southeast (Team 3)	Paseo de San Carlos	Campus Village A, B, and C dormitories, SJSU Event Center
Southwest (Team 4)	Paseo de San Carlos; 7th Street	7th Street Parking Garage; Royce, Washburn, and Hoover dormitories

E.2.2 Content Development

The audits for this BSA were modeled after those defined within the University of California Berkeley's *Technical Guide for Conducting Bicycle Safety Assessments for California Communities* (hereon referred to as "guidebook" or "Technical Guidebook"). This guidebook is designed specifically for urban areas and towns, so some of the criteria and suggestions for auditing needed to be altered to reflect the built environment of a college campus. In general, this meant removing sections related to the urban streetscape, building form, land use, and motorized vehicle interactions. The results of these changes were two data collection forms, one of which was to be used while walking through the campus, and the other to be employed while bicycling. The logic behind the creation of two surveys was to gain a sense of the bicycling network from the view of a pedestrian *and* a cyclist. These two modes operate in a shared space, so planning for one means recognizing the physical needs of the other.

In addition to utilizing the existing audit from the guidebook, Team 5 refined their survey forms following comments from transportation planner and designer John Ciccarelli.

E.2.3 Route Planning

In addition to the four-way division of the SJSU campus, walking and biking routes for each quadrant were planned so that four out of the five URBP 256 class teams had a pre-defined path to follow and record their observations (See Figure 5-1). The routes were determined based upon the identification of major pathways, conflict intersections, and activity centers. Although largely subjective, the goal of route planning was to direct the four audits to areas with the most non-motorized transportation traffic. These heavily trafficked areas were almost consistently located around each of the major activity centers and arterials listed in Table 5-1. Furthermore, the first-hand experience of Team 5 as students who regularly traverse the campus area assisted in the designation of each route.

The audit routes were further organized following their initial development. In order for the subsequent observations to be easily traced back to campus locations, the routes were broken up into segments (links) and conflict points. These designations were labeled on a map of each team's quadrant, and were also referenced in the body of the audit form to assist in data collection management. This decision greatly improved the ease of data recording while in the field, and also assisted Team 5 in digesting the content of the forms following the audits. Breaking down each route into defined segments and points also led to more robust data due to the fine-grained level of detail at which the observations were made.

E.3 Performing the Audits

The class teams performed their respective audits under the direction of one member from Team 5. A minimum of two members from each team were present for the audit, with one portion performing the pedestrian audit and the other recording bicycling observations given to them from a fellow team member or Team 5 supervisor riding a bike. Each audit

lasted for approximately two hours and commenced between 10am and 3pm on Monday, Tuesday, Wednesday, or Thursday. This criteria was set in the Technical Guidebook and by the instructor.

E.4 Results of Audits

Sections E.5 through E. 8 describe the auditing process and outcomes of the BSA on-site reviews for San Jose State using the following criteria:

- Location and condition of facilities;
- Dimensions of pathways;
- Presence of obstructions;
- Presence and quality of transportation signage; and
- Intersection safety

Each section begins with an overview of the issues witnessed on campus and a general analysis of the campus as a whole. This is then followed by a review of specific facilities encountered in each quadrant.

E.5 Location and Condition of Facilities

The observations contained in this section pertain to the spatial distribution and capacity of bike storage facilities on the SJSU campus. Two types of facilities exist: standalone bicycle racks, and gated bicycle enclosures. The indicator used for the analysis of location was the presence of storage facilities relative to the major buildings within each quadrant. This was accomplished during the audits by each the marking on their survey forms whether or not a facility was available at the buildings specified on the forms. Additionally, the audits examined how adequate the existing facilities were in accommodating bicycle storage. This was based on the relative crowding of bicycles on racks and whether or not students were locking their bikes to handrails, benches, poles or other campus infrastructure.

Overall, the campus suffered from a lack of standalone facilities. Many buildings that were observed did not have racks at their entrances and, those that did, were often overcrowded

resulting in the use of other campus infrastructure as storage facilities. However, certain bicycle enclosures were observed as being underutilized, with the remaining empty spaces of such a quantity that they might have been able to take the load off of the standalone racks. The following sections contain the observations of each quad and the specific locations and capacity issues of the facilities identified through the audit.

E.5.1 Northwest Quadrant - Team 1

The five buildings identified from the pre-audit analysis of the northeast quadrant are listed in the following table, which also includes whether or not the facilities were adequately accommodating bicycles.

Table 5-2. Northwest Quadrant Audit

Campus Area	Yes	No
Uchida Hall	☒	
Paseo de Cesar Chavez	☒	
Clark Hall		☒
MLK Library	☒	
Washington Square Hall	☒	

The bicycle racks around Clark Hall are conveniently located, but they do not provide sufficient storage. This results in bikes being locked to handicap rails, obstructing their intended use.

E.5.2 Northeast Quadrant – Team 2

The five buildings identified from the pre-audit analysis of the northeast quadrant are listed in the following table, which also includes whether or not the facilities were adequately accommodating bicycles.

Table 5-3. Northeast Quadrant Audit

Campus Area	Yes	No
Industrial Studies Building	☒	
Engineering Building		☒
Student Union		☒
Art Building	☒	
Boccardo Business Center		☒

The Industrial Studies building was found to have a gated bicycle enclosure at the southeast corner of its building footprint. This facility offered sufficient space for the storage of bicycles, but it was observed as being underutilized due to the presence of bicycles locked to the cage itself as opposed to residing inside the enclosure; additionally, benches on the east side of the building had bikes locked to them. The reason for this could be that not all students possess keys to the bicycle enclosures, which in turn requires them to lock their bikes to other objects. Normally, a standalone rack might be available to those that do not use the enclosures, however none of these racks were present outside the Industrial Studies building, resulting in the locking of bikes to the cage itself and other stationary objects.

Team 2's audit identified the Engineering building as an area that offered standalone facilities, but could not accommodate the current demand for storage. Bikes were overcrowded on the rack and those that could not find an available space were locked to surrounding light poles and rails. A total of seven bikes were counted that were locked to the ADA rails outside of Clark Hall, presenting a challenge to those needing to use the rails. A simple solution to this would be to install a second standalone rack or provide signage that directs students to the bicycle enclosure behind Clark Hall or the Industrial Studies building.

The major activity center that was identified in the northeast quadrant was the Student Union. This is a primary destination for the campus population and houses several eating establishments as well as conference areas and a campus information desk. Team 2 observed a single bike rack on El Paseo de Cesar Chavez between the Student Union and the Music building, which was not overcapacity at the time of the survey. However, the rack offered a very minimal amount of parking capacity for the traffic generated from the Student Union, and was not conveniently located at the entrance to the building. A similar condition was experienced at the Boccardo Business Center, which was observed as having a small standalone overcapacity rack at its entrance.

E.5.3 Southeast Quadrant – Team 3

The four buildings identified from the pre-audit analysis of the northeast quadrant are listed in the following table, which also includes whether or not the facilities were adequately accommodating bicycles.

Table 5-4. Southeast Quadrant Audit

Campus Area	Yes	No
Campus Village A		☒ (No bike rack)
Campus Village B		☒
Campus Village C		☒
Joe West Hall		☒

The Campus Village area contains three buildings used for student housing. There is very minimal bike storage, with one standalone rack located outside of Campus Village B. This rack was observed as being over capacity, and several bikes were seen locked to stationary tables and chairs, which made them unusable to patrons of the Village Market. However, students are allowed to bring their bikes into the dorms, leading to the assumption that some students do not want to deal with, or

might be physically unable to carry their bikes to their rooms, and thus use the tables and chairs because they are more convenient.

E.5.4 Southwest Quadrant – Team 4

The six buildings identified from the pre-audit analysis of the northeast quadrant are listed in the following table, which also includes whether or not the facilities were adequately accommodating bicycles.

Table 5-5. Southwest Quadrant Audit

Campus Area	Yes	No
Macquarie Hall	☒	
Sweeney Hall	☒	
Hoover Hall		☒
Washburn Hall		☒
Royce Hall		☒
Duncan Hall		☒

Macquarie Hall was the site of another gated bicycle enclosure. The enclosure provided ample bicycle storage and no bikes were seen locked to objects outside the cage. The cage itself was set back from the main entrance to the building, but this did not seem to affect its accessibility. For this reason, Team 4 deemed this location and its associated facility as adequate.

The facilities located at Sweeney Hall consisted of one standalone rack at the entrance to the building along 7th Street. The rack was visible and conveniently located, however bikes were observed being locked to benches due to the racks inability to address capacity issues.

E.6 Presence of Obstructions

E.6.1 Northwest Quadrant - Team 1

Team 1 identified several sites along the planned route with obstructions. The first was a garbage can along Link 1, which is not in line with the benches creating an obstacle, which pedestrians and bicycles have to navigate. This problem can easily be fixed by moving the garbage can back off the path. At conflicts points 1, 2, and 8, Team 1 noted that trees were obstructions in the pathways, which had the potential to create choke points for pedestrians and bicyclists. At Conflict Point 7, a planter box obstructs the straight pathway and can also be a hazard to bicyclists who might not see the box due to its height if there is heavy pedestrian traffic.

E.6.2 Northeast Quadrant – Team 2

The obstacles in the northeast quadrant mostly consist of temporary fencing that divides construction zones and pathways. Construction fencing is located on the left side of Link 2. The large fence does not cover the entire length on the Link 1, however a significant amount of the pathway is reduced. Spacing near Conflict Point 1 is narrow enough to cause safety concerns for both pedestrians and bicyclists. Along Link 4 there is also more fencing due to the same construction at the student union, however the spacing is not significant enough to alter the safety of students. Link 5 is a bit of concern for bicyclists who are not allowed to travel on the street. Conflict Point 6 and Link 6 are also areas of temporary fencing. The pathways are lessened to where there is only spacing for pedestrians. Dismount zones or alternative routes signs can help reduce traffic congestion in the area.

The copious amount of construction fencing in the Northeast Quadrant is not indicative of the potential for the area to accommodate cycling travel. When the fencing is removed once construction is completed, there will be less obstructions to cyclists and pedestrians.

E.6.3 Southeast Quadrant – Team 3

Team 3 witnessed two sets of obstructions: a set of bollards and series of stone benches. The bollards were located on Link 4 at its intersection in San Salvador

Street. The bollards, while intentionally designed to prevent bicycle traffic, were easily navigated by the audit team.

Four stone benches and two waste receptacles were located in the middle of Link 4. They are pedestrian amenities as such and also did not constitute a severe impediment to the audit team. Overall, the presence of obstructions was minimal in the southeast quad, and the objects that did exist were not significant enough to affect bicycle travel.

E.6.4 Southwest Quadrant – Team 4

There was one obstruction noted in the southwest area of campus. The object was a flagpole between Macquarie Hall and Sweeney Hall at Conflict Point 6. While the location of the flagpole was at an intersection of two paths, it was set back from the path a sufficient distance to where it did not obstruct travel or vision.

E.7 Signage and Dismount Zones

E.7.1 Northwest Quadrant - Team 1

There were no dismount zones along the planned route. This did not present an issue however, as each link was sufficiently wide enough to accommodate bicycle and pedestrian travel. The one exception was Link 5, which could have benefited from having a dismount zone due to the width of the path. Nonetheless, the existence of an alternate route running north-south beginning at the confluence of Link 5 and Link 4 provided adequate dimensions.

E.7.2 Northeast Quadrant – Team 2

The northeast quadrant contains signs that accurately represent important safety measures for bicyclists and pedestrians in the area. The spacing and location of signs are visible and well maintained. Dismount zones for bicyclists are adequate and easy to read.

E.7.3 Southeast Quadrant – Team 3

No signage was observed on any section of the route for the Southeast Quadrant. Dismount zones would not necessarily be useful due to the exceptional width of

Links 1 and 4. Link 2 could have potentially benefited from having a dismount zone due to the width of the existing path, which was too small to safely accommodate bikes and pedestrians.

E.7.4 Southwest Quadrant – Team 4

Ample signage was observed on Link 1 but not on any other links. Due to Link 1's role as a connecting route from 4th Street to the campus interior, and the site of a bicycle-related fatality, Team 4 believed that the existing signage was necessary. A painted dismount decal was located at the beginning of the route on the pavement, but was not entirely visible while biking the route. However, multiple dismount signs exist on light poles flanking Link 1. Additionally, the width of the path necessitated the dismounting of cyclists for safety reasons, but was unnecessary once the width widened in front of Sweeney Hall at the intersection with 7th Street.

E.8 Conflict Intersections

E.8.1 Northwest Quadrant - Team 1

Team 1 identified that the bike cage located north of Clark Hall created a major blind spot for cars leaving the parking lot as well as blocking the line of sight for bicycles heading north on El Paseo de Cesar Chavez.

E.8.2 Northeast Quadrant – Team 2

Conflict points along the Northeast Quadrant share common conflicts points as in other sections of campus. The Northeast quadrant is unique in terms of conflict points due to the significant presence of temporary construction activity.

Conflict point 1 is located near the new student union. Barricades located near construction often reduce the walkway by nearly 50%. Bicyclists traveling at faster speeds often overtake student walking in the same area. It is necessary to properly mark where construction is happening as well as alternative routes pedestrians and bicyclists can take.

E.8.3 Southeast Quadrant – Team 3

Four primary conflict points were identified in the southeast quadrant, but only two presented significant problems. Conflict Point 1 was located in between Campus Village C and the San Jose State University Cooling Plant. Here, Campus Village C proved to be a major factor hindering the visibility of cyclists traveling on Link 4, also known as the 10th Street Plaza. While approaching the conflict point from 10th Street, the audit team was unable to identify an adequate line of sight towards the left due to the large Campus Village C building obstructing the view. If two cyclists were approaching the intersection from the east and south, it is hypothesized that they would collide.

Conflict Point 2 was located at the intersection of Link 2 and Link 3 (San Salvador Street). While approaching the intersection from the north, the auditing team noted that a raised planter box with overgrown vegetation obscured the line of sight towards the left. Towards the right, Washburn Hall blocked the view of cyclists traveling eastbound on San Salvador Street.

The two remaining intersections, Conflict Points 2 and 4, did not present any issues in regards to lines of sight. Both were free of objects or structures that might have obscured vision while approaching the intersections.

E.8.4 Southwest Quadrant – Team 4

The majority of the conflict points identified in the southwest quadrant presented safety hazards due to inadequate lines of sight while approaching the intersections. Conflict Point 1 was located at the intersection of El Paseo de San Carlos and 7th and, although marking the beginning of an adequately widened pathway, did not offer a safe line of sight to the right while traveling eastbound along the paseo due to the presence of Sweeney Hall. However, the paseo is a marked dismount zone, which, if observed, promotes safety at the intersection. Additionally, the temporary

construction occurring at Conflict Point 1 did obscure vision but, when normalized, was discussed by Team 4 as not being a barrier.

Conflict Point 3 on this route was the same location as Conflict Point 3 for the southeastern quadrant. Thus, it suffered from an obscured line of sight when approaching from the north towards San Salvador Street. A raised planter box with significant vegetation on the left, and Washburn Hall on the right, blocked the view of cyclists traveling eastbound on San Salvador Street.

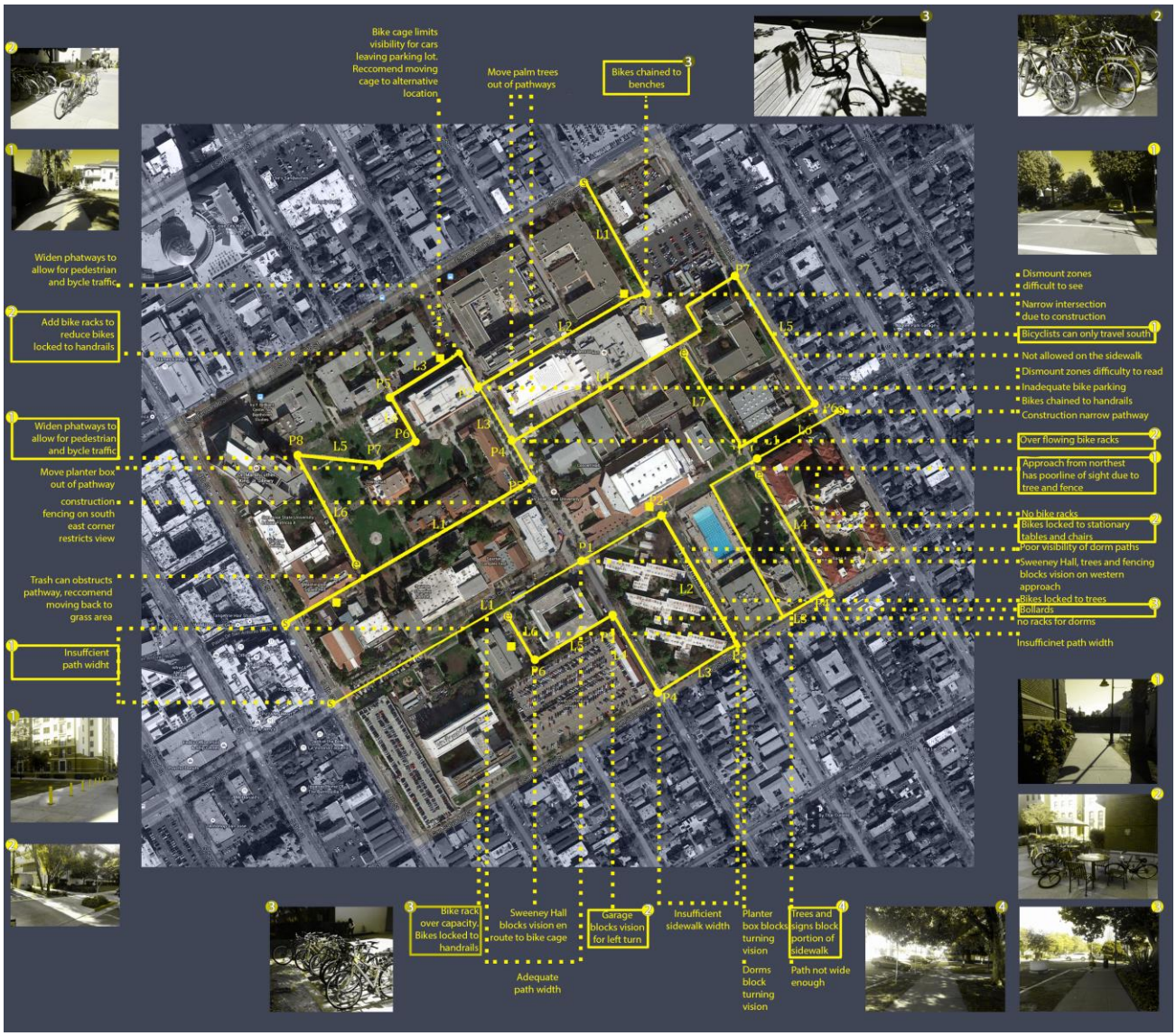
Another significant conflict point (Conflict Point 5) was observed at the intersection of 7th Street and Link 5. Link 5 acts more as a service road than an actual path, but it was observed being used by cyclists and pedestrians. When approaching Conflict Point 5, the audit team was not able to see traffic traveling eastbound down Link 5 due to the presence of an electrical utility box and a large tree. While this is an important observation to note, a dismount sign or mounted mirror could alleviate this hazard.

E.9 Dimension of Pathways

Pathway width is an important indicator of a campus's ability to accommodate cyclists and pedestrians, and was measured during the walking audits. Due to time and material constraints, measuring tape was not used and instead the teams approximated path width by walking 2-abreast[37] along the route. The following sections contain the observations of each quad in respects to whether or not the paths encountered along the audit were sufficient to accommodate pedestrian and bicycle travel. Due to the varying degree of path width along the audit routes, path dimensions will be discussed in reference to their link number, which can be viewed on the map in Figure 5-1.

[37] The 2-abreast measurement was taken from John Ciccarieli's notes on the design of the audit. This approximates to a minimum width of 4 feet.

Figure 5-1. Overview of Audit Study Area



E.9.1 Northwest Quadrant - Team 1

Figure 5-2. Norwest Quadrant

Team 1 noted that the majority of pathways in the quadrant were sufficiently wide enough to accommodate pedestrians and bicycles safely. However, there were two stretches of pathway, which were identified as being too narrow. The first was the northern section of pathway of El Paseo de Cesar Chavez which ends at San

Fernando St. The path is not wide enough for bicycles and pedestrians side by side, and is also lined with signage for parking which creates obstacles. Link 5 on the planned route going towards MLK library was the second pathway identified as being too narrow. Team 1 observed that the path was not wide enough to accommodate pedestrians walking side by side.

E.9.2 Northeast Quadrant – Team 2

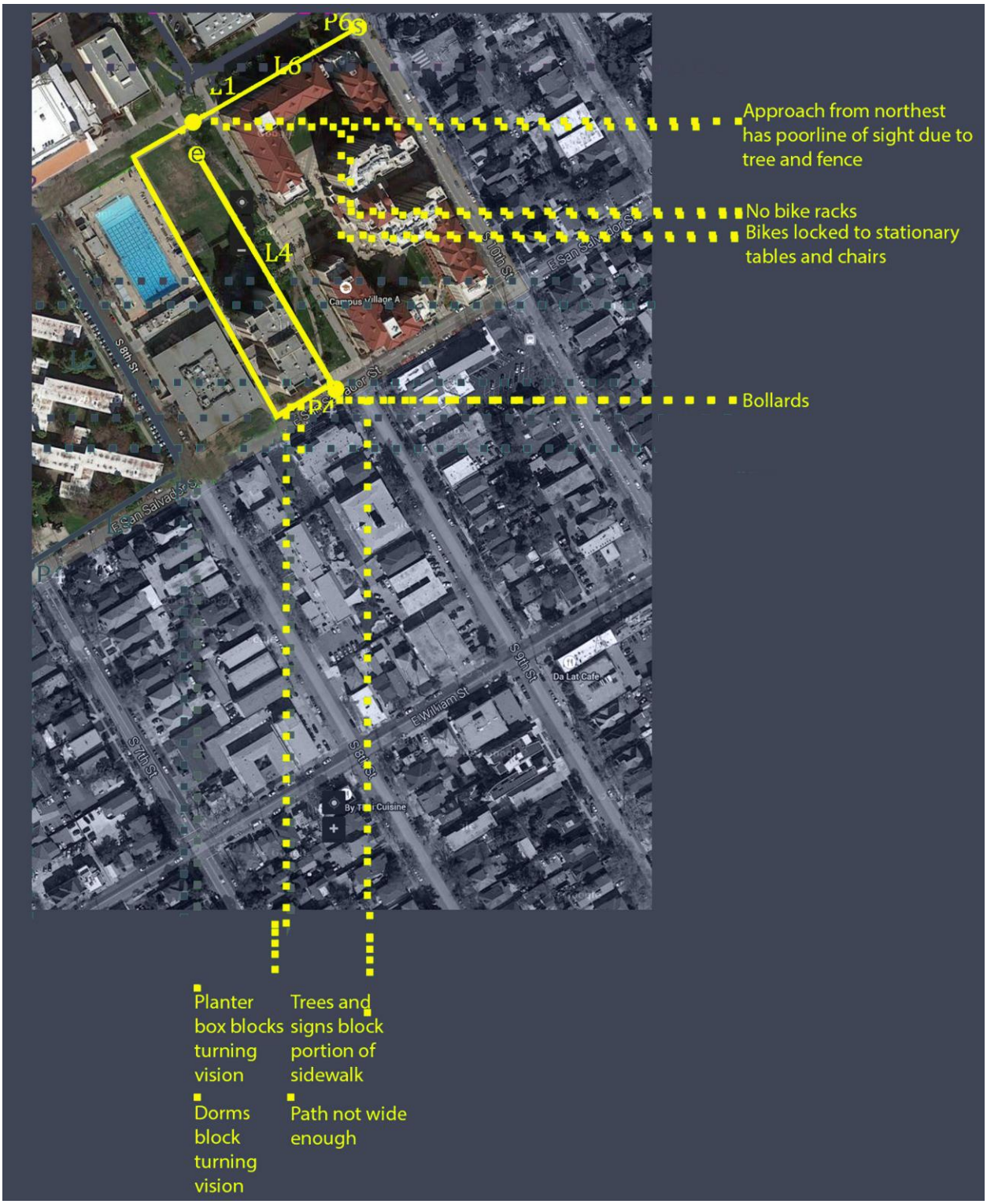
Figure 5-3. Northeast Quadrant

The northeast quadrant includes obstacles due to construction near the student union. Path dimensions are occasionally reduced depending on the location of construction on campus. Conflict point 1 indicates pathways are decreased by approximately 60%. Conflict point 6 also is an area of concern for bicycle and pedestrian safety. The narrow pathways confirm issues with bicycle and pedestrian

safety. Construction occurring near the cooling plant near the new student village has decreased pathways to nearly 5 feet. The narrow pathway is an indication that bicyclists and pedestrians cannot travel the same path when foot traffic is increased.

E.9.3 Southeast Quadrant – Team 3

Figure 5-4. Southeast Quadrant

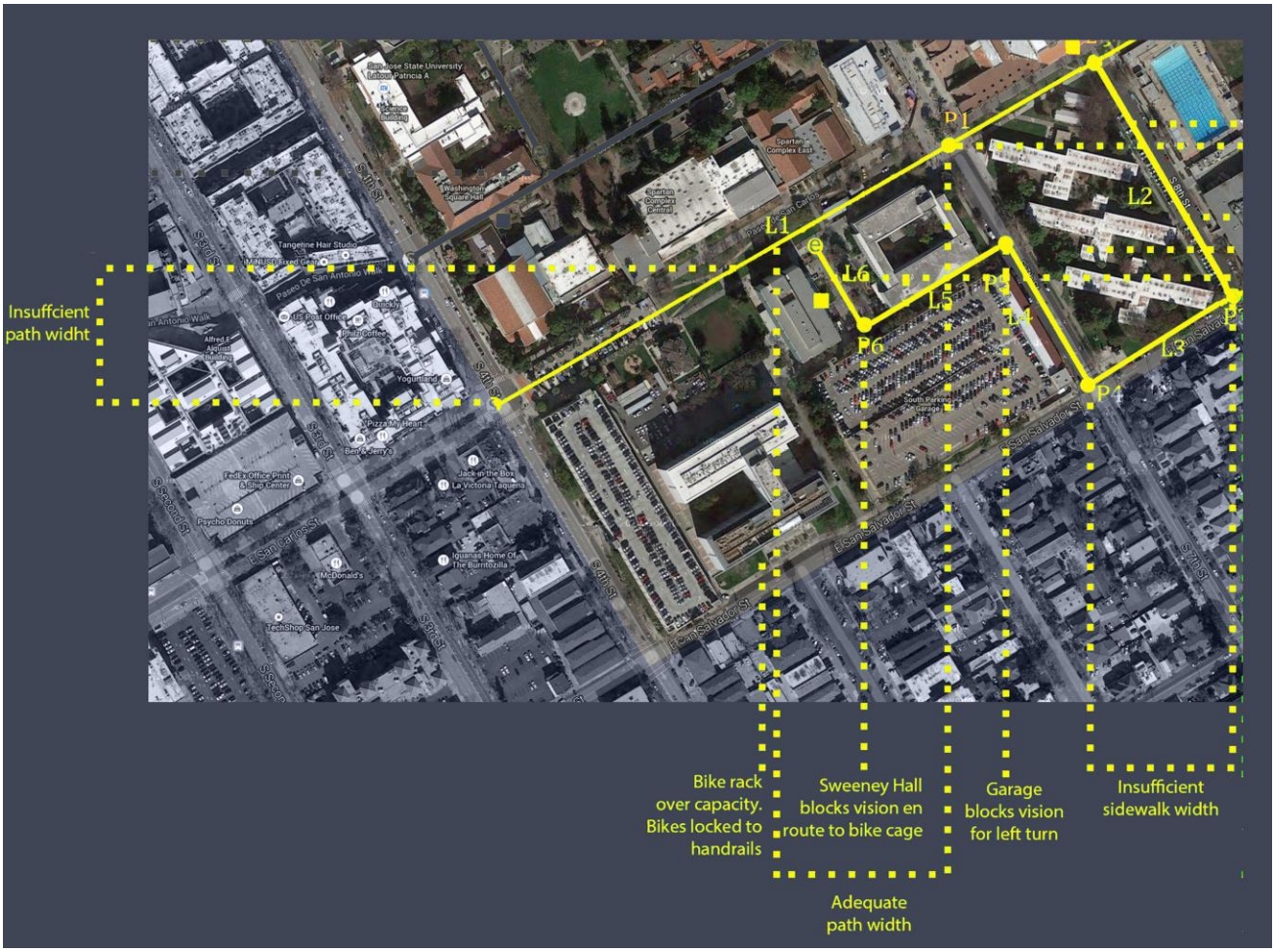


The path observations for the southeast quadrant were varied, with some needing to be normalized due to construction along their links. Overall the width was acceptable even when this normalization occurred. Link 1 and Link 4 provided ample space for bicyclists and pedestrians to operate, with only the initial 100 feet of Link 1 being of insufficient width due to construction.

The sections that had problems were Links 2 and 3. These paths were sidewalks similar to those found on city streets. Link 3 was in fact a sidewalk running parallel to San Salvador Street. These two links were designed to be compatible with pedestrian use but not for bikes. A large amount of pedestrians and few bikes were witnessed on these sections, leading to the rationale that bikers are not using those paths due to their width and potential to result in a pedestrian collision. However, the fact that Link 2 runs alongside the Washburn, Royce, and Hoover Hall dormitories means that at some point cyclists must use Link 2. This begs the question as to whether or not this path should be widened into the surface road running between the dining commons and the three dormitories.

E.9.4 Southwest Quadrant – Team 4

Figure 5-5. Southwest Quadrant



The pathway dimensions for the southwest quadrant were of mixed quality similar to the southeast quadrant. The southwest quad experienced a significant amount of bicyclist and pedestrian traffic, demonstrating a need for more robust infrastructure. Link 1, which connects 4th Street to the interior of the campus, exhibited poor width from the beginning of the route but opened up approximately halfway down from its origin outside of Sweeney Hall. This second section of Link 1 allowed for the efficient movement of both bikes and pedestrians traversing the campus between 10th Street and El Paseo de Cesar Chavez.

Dimensional problems persisted again on Link 2. This segment ran adjacent to the Royce, Washburn, and Hoover Hall dorms, and took on the characteristics of sidewalks, which allowed for efficient pedestrian movement but lacked sufficient space for bicycle travel. Link 3 ran parallel to San Salvador Street and provided excellent pedestrian access and a Class III bike lane. This facility terminated at the intersection of 7th Street and San Salvador Street, which marked the beginning of Link 4 and the access road for the South Parking Garage. This road offered sufficient width for bicyclists traveling from the periphery of campus on San Salvador Street towards the interior of the school on El Paseo de Cesar Chavez.

Links 5 and 6 six provided adequate width for bicycle travel. The auditing team was able to safely and comfortably walk 2-abreast on both segments and, when performing the bicycling section of the audit, did not feel hindered by the width of the path.

E.10 Conclusion

In conclusion, the SJSU campus is not conducive to bicycling activity. While the overall safety of cyclists and pedestrians is not greatly impacted by the built environment, the efficiency of bicycle movement is. By analyzing the campus using quadrants, Team 5 was able to identify the main variables affecting movement. These consist of the width of campus pathways, location of bicycle storage facilities, and poor line of site at critical intersections.

Campus pathways were, in general, too narrow for cyclists to travel from different activity centers within the school's boundaries. In addition, during the walking audits, pedestrians were not able to comfortably walk 2-abreast while coming into contact with bicycle travel. In order to remedy this situation, Team 5 suggests that the university administration take into account the following recommendations:

- Widen pathways;
- Create new bicycle-only routes; or
- Mark pathways that show the suggested direction of traffic.

The location of bicycle storage facilities was also an issue identified by the audits. By not allocating enough space for adequate bicycle storage (capacity), cyclists are more likely to lock their bikes to campus infrastructure such as handrails and benches. Team 5 identified specific areas of campus during the field audits and subsequent analysis that would benefit from more rack space. These locations can be found in section E.5.

Finally, the line of sight experienced at certain intersections at SJSU was deemed unsafe by the auditing teams. In particular, the intersection of Paseo de San Carlos and 7th street, San Salvador Street and the service road by the aquatic center, and the 4-way path intersection east of Tower Hall proved to be the most troublesome. The source of these problems is the positioning of buildings relative to the intersections. While traveling down a length of pathway between two buildings, it is difficult to see traffic approaching from the left or right due to the structure. Unfortunately, little can be done in the way of moving buildings. Thus, the recommendations for this issue consist purely of installing mirrors at eye-level for cyclists to look at to see users approaching from other directions.

ABOUT US

San Jose State University, Department of Urban and Regional Planning

The Department of Urban and Regional Planning offers graduate study leading to the degree of Master of Urban Planning. This program, accredited by the Planning Accreditation Board, is designed to prepare skilled professionals who are well grounded in the theories, methods, and techniques of planning in local, regional, and state government for the purpose of improving the quality of urban regions. In addition, it provides students with an opportunity for developing a significant background in a particular area of specialization. The department offers five primary areas of specialization: 1) Applications of Technology in Planning, 2) Community Design and Development, 3) Environmental Planning, 4) Real Estate Development, and 5) Transportation and Land Use Planning. A special mission of the department is to promote planning education opportunities for a diverse student population, including working students who prefer to attend the program on a part-time basis.

Eduardo C. Serafin, PE, AICP, Principal Investigator

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