Spring 2012 Campus Bicycle Parking Survey

Institute for Sustainable Development
May 2012
CSU, Chico’s Institute for Sustainable Development (ISD) – Spring 2012 Campus Bicycle Parking Survey

Introduction

The ISD department conducted an initial campus bicycle parking survey to create foundation for a bicycle parking time series photography survey to be accomplished in the Fall 2012 semester. The goal of the initial campus bicycle parking survey was to assess the current state of the campus’s bicycle parking. ISD did not include in the parking survey the dorm room bicycle parking throughout the campus. The focus of the initial survey was on the short-term parking areas and not the long-term dorm room bicycle parking areas on campus. The survey was conducted to better analyze and predict the parking behavior. The initial survey wanted to identify (existing and non-existing) bicycle parking racks throughout the campus and update the current bicycle parking location map and website. Data was collected on eleven different elements that included direction, rack orientation, number of bikes and racks, proper lighting, and etc.

Bicycle parking data and analysis is a necessary step to help evaluate and identify Chico State’s campus bicycle parking issues and finding solutions. CSU, Chico’s transportation objectives is to adopt strategies and programs to increase and ensure students, faculty, and etc., that the university is set on providing adequate parking, improvement, and safety for the bicycle parking users. The lack of adequate parking is a widely cited barrier and hindrance to bicycle use, and proper and secure bicycle parking is essential part of the universities efforts. The initial survey will also help provide direction for the university, policy-makers, and transportation planners for monitoring, design, or improve the bicycle parking facilities throughout the Chico State campus.

Study Area and History

The initial study area includes the bicycle parking throughout the CSU, Chico campus. The long-term campus dorm facilities bicycle parking areas were not included in the initial survey. The initial survey investigated only the short-term campus bicycle parking. As of April 2008, the campus provided 44 bicycle parking areas with a total of 4,050 bicycle parking stalls (Fehr & Peers, 2009). The data indicates that only 37 percent of the total available spaces were utilized; however, individual parking area utilization greatly varied from 2 percent to 100 percent. The 10 most utilized parking areas are near Meriam Library, Bell Memorial Union, and Yolo, Plumas, and Tehama Halls. Collectively, these 10 areas provide 747 stalls (18 percent of the total supply) with 91 percent utilization observed on the survey date (Fehr & Peers, 2009). The historical data also indicates that bicycle parking utilization is greater in the fall than in the spring.
Data Collection Outline

Initial study period was conducted on three separate one hour walking observation surveys within the three designated areas/zones within Chico State’s campus. During the survey photos were taken at each of the observed bicycle parking locations to capture the entire parking area. Photos of each individual bicycle rack were taken and observed as part of the survey. The photos will be used in next semester’s full-scale time series parking photo survey. A member(s) of the survey team will begin the photo survey at their designated zones and starting place where the initial survey was taken. The same angle and view of the bike rack(s) will be utilized to benefit for proper data collection in the future bike photo survey.

NOTE** The bicycle survey will not include bicycles parked in lockers and/or those inside offices or hallways.

The eleven elements observed in the initial survey included: bike area, location/direction (N, S, E, W), type of bicycle rack (Standard, Park-A-Bike, & Wave), proper bike parking orientation, appropriate bike rack spacing, bikes locked to other non-bike rack structures, covered parking, number of bicycle stalls, number of bicycles in the stalls, condition of bike rack, and proper lighting.

Methodology

1. Establishing and designating three bike zones/circuits for the preliminary bicycle survey and the full-scale time series photo bicycle parking survey next semester. As shown in Figure 1.

   ![FIGURE 1 – Three designated bike zones/circuits](image)

2. Help UPD in updating the Bicycle Parking Location Map and website. The preliminary survey identified several bicycle parking locations that were either non-existed anymore, moved due to construction, or newly added. For example, the Student Services and WREC building bicycle parking area is not identified on the map and bicycle parking on the Northeast of the Performing Arts Center do not exist anymore.
3. Element 1 & 2 – Bike Area/building & Location/Direction (North=N, South=S, East=E, & West=W) of the survey bicycle parking area. Figure 2 show an example of bike area, building, and direction of a surveyed bike parking zone. Identification of new bicycle parking areas were observed and noted in the data collection. Non-existing bicycle parking areas were noted, as well.

4. The type of bicycle rack was identified in the preliminary bicycle survey. Figure 2 shows the three different bicycle racks observed in this initial survey. We determined and identified the bicycles parking structures as; Standard=S, the Wave=W, and Park A Bike=P.

5. Part of the elements surveyed during the initial survey was the proper bicycle parking orientation. Proper bicycle parking orientation was identified and mark as a Yes or No. Three properly oriented bicycles and bicycle racks is shown on Figure 3, for only the Standard bicycle parking type for this surveyed. Proper orientation consisted of the correct direction of the Standard bicycle rack and noted a Yes or Y. If the bicycle rack was oriented to face the wrong direction a No or N was noted. It was determined a N if the surveyors thought that cyclists are not able to properly park/secure their bicycle and may have a potentiality for theft of their bicycle. Figure 4 shows three examples of improperly oriented bicycle parking.
6. Appropriate bicycle rack spacing was observed during the initial survey. It was gauged if there was enough space to walk through and able to park multiple bicycles in the parking area. They were noted as Yes or Y. Figure 6 shows examples of appropriate bicycle rack spacing. If there was no enough room to walk and park multiple bicycles it was noted as a No or N. Figure 7 shows inefficient bicycle rack spacing.
7. Bikes locked to other structures were observed in the initial survey. Looking at bicycles locked to other structures may help determine if more bicycle rack are needed in certain impacted areas. The full-scale time series photo survey may help in determining this concern. A, Yes was noted if there were bicycles were locked to other structures and the number of bikes. A, No was noted when there were not bicycles locked to other structures. Figure 8 shows examples of bicycles locked to other structures.

![FIGURE 8 – Samples of bicycles locked to other non-bicycle parking structures](image)

8. Covered bicycle parking was noted at each of bicycle parking areas. A Yes or Y was noted when bicycles racks were covered and a No or N was noted when no structure covered the parking areas. Figure 9 shows examples of both covered and non-covered parking.

![FIGURE 9 – Shows samples of covered and non-covered bicycle parking areas](image)

9. The number of stalls and the number of bike in the stalls were observed and noted. For the full-scale time series bicycle photo series this will be counted at each interval. Figure 10 shows example of a partially empty bicycle rack and a full bicycle rack.

![FIGURE 10 – Shows samples of a partially empty stall and a full bicycle rack](image)
10. The condition of the bicycle rack were observed and noted. A three point grading scale was determined for the survey. A New bicycle rack was ranked as a 1, a Middle-Aged bicycle rack was ranked as a 2, and bicycle rack, Old Need of Repair was ranked as a 3. Examples of all three types are shown in Figures 11-13.

![FIGURE 11 – New=1, bicycle racks](image1)

![FIGURE 12 – Middle-Aged=2, bicycle racks](image2)

![FIGURE 13 – Old Need of Repair=3, bicycle racks](image3)

11. Proper lighting was observed and noted in the preliminary survey. Lighting was ranked a three point scale. Adequate=1, Minimal-Adequate=2, and Minimal=3, scale was used. Determination if the lighting is adequate will be observed during the full-scale bicycle time series photo survey conducted in Fall 2012. Adequate lighting will be judged after the sun goes down so lighting, safety, and other factors can be concluded. Figure 14 shows adequate bicycle parking lighting. The initial survey could only if lighting was in proximity to the bicycle parking areas.
RESULTS & CONCLUSIONS

A total of 42 different bicycle parking areas throughout the campus were observed in the survey. The preliminary survey observed approximately eight new bicycle parking areas and three bicycle parking locations that are now non-existent in the current Bicycle Parking Location Map. With this preliminary survey the ISD department will help Chico State’s UPD in updating the Bicycle Parking Location Map and website. The initial survey also looked at each bicycle parking rack structure to see the condition the rack are in and proper bicycle rack orientation. Varies bicycle racks were observed to be either “Middle-Aged” and/or “Old-Need of Repair”. This exact location of damaged bicycle racks varies throughout the campus. Some bicycle rack slots were bent, broken, and/or missing. Not all of the bicycle racks are fully intact. Some are in need of repair, replacement, and/or possible upgrades.

Types of Bicycle Racks

The collected data revealed only what type(s) of bicycle racks were in the area not the number of racks within the area. Of the 42 different bicycle parking areas observed, the total number of individual bicycle rack systems are still needed to be calculated in each surveyed area. Only three types of bicycles racks exist on the campus that include: the Standard (toaster style), Wave, and Park A Bike bicycle parking rack system. The conditions of each type vary. The Wave style of bicycle parking does not consist of needed repair. Only recommendations observed in this initial study was repainting due to high usage of the bicycle parking racks. The Park A Bike style of bicycle racks are fairly new and are not needed to be repaired or upgraded.

Recommendations

The results and recommendations from this report can help mitigate the bicycle racks repair and replacement throughout the campus. In the Fall of 2012 an extensive full-scale time series photography survey of each campus bike parking area will help further identify parking trends over full day of campus activity, areas that are most impacted and at what times, and which areas that are used more for long-term vs. short-term parking. The results of the extensive
survey will help in the development of the survey results & recommended actions that will be
developed into an Advisory Report and be delivered to the Campus Transportation Committee,
and the extensive full-scale survey will potentially be conducted on an annual basis.