Promoting Sustainable Transportation with Campus Car Policies and Public Outreach

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Overview

In fall of 2016 at California State University Monterey Bay (CSUMB), the Environmental Studies undergraduate program began offering its first group-based capstone course that was based on its first Projects for Sustainable City Year course (ENSTU 471). Capstone projects are a senior-level, project based graduation requirement for an undergraduate degree. The Sustainable City Year projects focused on increasing sustainable transportation at two locations; one in the nearby city of Salinas, California, and one on the CSUMB campus. A majority of the community in Salinas drive which has limited the quality and effectiveness of the shuttle system provided by Monterey-Salinas Transit (MST). Our group seeks to help increase ridership and promote sustainable transportation in this region. At CSUMB, traffic congestion on campus is increasingly problematic as the student body continues to row. The majority of students drive to campus in single passenger vehicles which increases the traffic on campus. Sustainable transportation via buses, bicycling, and carpooling helps decrease traffic congestion. In the following paper, the CSUMB project covers a proposed freshman vehicle restriction policy to encourage sustainable modes of transportation and a bus-bicycle culture. For the Salinas project, we worked directly with MST to encourage common knowledge of bus usage by creating an informational and interactive booklet.

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California State University Monterey Bay – Campus Car Policy

Goal

The goal for the CSUMB project was to increase sustainable transportation use and build a sense of community on campus. Our approach to this goal is a proposed policy to prohibit freshmen from registering personal vehicles on campus. It is assumed that the implementation of this policy would initialize a shift in student culture towards busing and bicycling. As students cycle through four to six years of education at CSUMB, the usage of existing transportation infrastructure is expected to increase and reach the campus goal of sustainability.

History

In 1917 Fort Ord became a United States Army Base situated between Seaside and Marina, California. Then from 1950 to 1970 Fort Ord was a location for basic training for events such as the Vietnam War. During this time 1.5 million men and women received basic training. The special forces unit known as "Lightfighters" later became the name of a main road connected CSUMB to Highway 1. Inter-Garrison Road—a busy main road that runs through the CSUMB campus—was named because it connected the East and West Garrisons of the base (CSUMB History [date unknown])

In 1994 Fort Ord closed as a military base and was approved as the site for the newest California State University. CSU Monterey bay opened after Fort Ord's closure and held its first class in 1995. When the Fort Ord Reuse Authority [FORA] published their reuse plan in 1997, CSUMB envisioned 3,000 new jobs and an enrollment of 25,000 full time equivalent students that would make up for the lost economic activity of relocated military personnel. The new campus aimed to accommodate 80% of its students with housing that would be close to retail businesses and the TAMC Multi-Modal corridor between Marina and Salinas. CSUMB's community design objectives also included a "north-south vehicular circulation through campus, open to the public, to link adjacent districts and reduce unnecessary travel and vehicular trips" (FORA 1997, p 145). Today, there are over 7,000 students attending CSUMB, and the school is expecting to grow towards tens of thousands of students in the future. The growing number of students has led to traffic congestion and does not uphold CSUMB's vision for a sustainable campus. Therefore, funds have been allocated to promote bicycle use and reduce vehicle traffic on campus.

Around the time CSUMB began offering free access to all MST Routes, the California State University system published a Transportation Demand Management Manual in 2012 which featured CSUMB as a case study for sustainable transit use. The manual mentioned that the local community had sued CSUMB when it opened due to anticipated increases in traffic. Thus, CSUMB must follow a TDM program and collect data on traffic counts twice a year as well as transit ridership counts from the swipe-able student ID cards that were issued in the 2012-2013 school year. The case study explained that transit ridership was lower than expected because it had just been recently implemented, but also because CSUMB had more than twice the amount of parking spaces per capita than any other California State University at .73 spaces per student.

About 5,600 students were enrolled in the Fall 2012 semester (IAR 2012). In 2012, union contracts that subsidized parking costs were extended for another eight years, meaning the price of parking permits could not increase and parking spaces could not be removed until the renegotiation of contracts in 2020. The CSU TDM case study concludes, "it is very difficult to encourage transit or other sustainable mode use" (2012, p A-29).

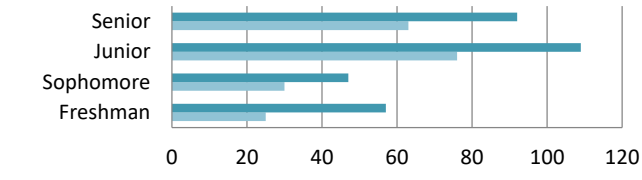
Data Collection

Data collected during past and present academic school years represent the vehicle usage on campus and revealed the necessity for a freshman vehicle restriction policy. Although the majority of the first-time freshman population who live on main campus did not bring a vehicle, a large portion of students reported they did not know how to the use MST buses around campus. The gap between bus literacy and admitted freshman class may have an impact on the students' commuting habits as they become upperclassmen and no longer live on main campus.

Per the CSUMB Factbook for the 2015-2016 Academic Years, the student population is broken down into four main categories which consisted of 1,855 freshmen, 808 sophomores, 1,746 juniors, and 2,237 senior students. Currently, 802 students represent the 2016-2017 population of first time freshmen enrolled at CSUMB (V. Chukwuemeka). Class levels are defined by the amount of obtained and compatible California State University course credits. The records do not differentiate between first-time freshmen, transfers, or seniors beyond four years of attendance (super seniors).

2015-2016 Transportation Survey

CSUMB Campus Planning and Development Department provided historical transportation survey data. The survey launched during the spring semester of the 2015-2016 academic year. The survey had 503 participants including faculty, staff, undergraduate and graduate students who lived on and off campus. Of those surveyed, 305 students participated (Fig. 1). The surveyed population was small and unrepresentative as the population for each grade level was approximately one thousand.



	Freshman	Sophomore	Junior	Senior
Total Surveyed	57	47	109	92
Total single passenger commuters	25	30	76	63

Figure 1: The surveyed population and the amount of single passenger commuters in each class.

With the provided data, we assumed that half of the upperclassmen with vehicles also had vehicles during their freshmen year at CSUMB. We assumed this percentage because CSUMB did not provide data regarding the population of first-year on-campus freshmen who brought vehicles to campus. The survey showed about 57%-60% of juniors and seniors commuted to campus in single passenger vehicles a couple times a week or every day. Data also indicated that

15%-21% of the freshman and sophomores that lived on Main Campus (Area 1, Area 2, North Quad or Promontory) had regular access to vehicles.

Students who lived on Main Campus were minimal kept a minimal amount of vehicles. As students became upperclassman, the car usage increased around threefold. Upperclassmen were pushed to live in off-campus units in East Campus Housing such as apartments managed by Alliance Housing partnership with CSUMB, or rental of condominiums, apartments, and houses in neighboring communities. The transition of upper classmen to further locations increased the amount of car usage to and from campus.

2016-2017 Freshman Vehicle Survey

Surveys targeting the fall 2016 freshman class provides concurrent data of on-campus students who brought their vehicles to campus. Qualtrics—a survey application with free CSUMB access—was used to distribute our surveys. The survey had 205 participants from the total first-year freshman population of 802. The survey took place in First Year Seminar courses, via email from Residential Advisors of Main Campus residence halls, and online from the Class of 2020 Facebook page during the fall from October to November. Students were asked six questions with yes or no answers and multiple choice options. The average elapsed survey time was between one to two minutes. Although the entire population was not surveyed, about 25% of the first-time freshman population was covered. The collected concurrent data has a confidence level of 90% and a margin of error of 5% (Qualtrics 2016). The survey is available in Appendix A of this report.

		Do you know how to ride the MST buses lines?		
		Yes	No	Total
Do you live on Main Campus?	Yes	103	67	170
	No	16	18	34
	Total	119	85	204

Figure 2: The surveyed population who do and do not know how to ride the bus sorted by living location.

A portion of the surveyed population did not know how to use the MST buses (Fig. 2). About 85 (41.67%) of the 204 of the surveyed population did not know how to use the bus. About 67 (32.84%) of those students lived on Main Campus as first-time freshman. The remainder of the 119 (58.33%) students living on and off campus knew how to ride the bus. One of the 205 students did not succeed in completing the survey. About 49 of the 205 students kept vehicles on campus (Fig. 3). About 48 (23.53%) students planned to keep a vehicle for the whole academic year. From the individuals who brought vehicles to campus, 32 (65.31%) of them did not know how to use the Monterey Salinas Transit bus services.

				How many vehicles do you keep on campus? (Includes automobiles, motorcycles, mopeds, etc.)			
				0	1	2+	Total
Do you know how to ride the MST buses lines?	Yes	Do you plan to keep your vehicle(s) on campus for the Academic Year?	Yes, one vehicle	0	17	0	17
			Yes, more than one vehicle	0	0	0	0
			No, I only have a vehicle for 1 semester	0	0	0	0
	No		Yes, one vehicle	0	29	1	30
			Yes, more than one vehicle	0	1	0	1
			No, I only have a vehicle for 1 semester	0	1	0	1
			Total	0	48	1	49

Figure 3: A chart representing the total of students living on Main Campus who keep a vehicle on site and do or do not know how to use the MST buses.

Case Study

While CSU Monterey Bay continues to grow in size, it also strives to become a sustainable campus that creates green spaces, efficient buildings, and eco-friendly commutes. CSUMB struggles with the need for efficient and convenient transportation services to decrease the amount of single-passenger commuting vehicles. Transportation strategies implemented by other campuses around the world serve as an example for our campus. Campuses with the similar attributes to CSUMB provide a structure for future implementation of the vehicle restriction for first time freshmen. A campus located in the east coast of the United States, University of North Carolina at Asheville, implemented a vehicle restriction for incoming first year freshmen in 2004 (AASHE [date unknown]).

Case Study: University of North Carolina at Asheville

University of North Carolina at Asheville (UNCA) has a population of 3,800 students. The school was founded in 1927 as Buncombe County Junior College. Two years later, it merged with Asheville City College and changed its name to Biltmore College. The Board of Trustees began to manage the school in 1934 and built the first campus parking lot in 1947 holding 80 vehicles. By 1961, the campus expanded and held its first class in current day Phillips and Rhoades Hall. Eight years later, the college joined the University of North Carolina System to become the University of North Carolina at Asheville. In 1979, enrollment increased to around 2,000 students. Three years later, enrollment grew beyond 2,500 students. By 2004, enrollment increase to about 3,450 students. In 2015, the college enrolled about 1,000 students including 737 first-year freshmen. Currently, it costs about $15,000 dollars per year to attend the school for in-state students. The campus houses 37% percent of undergraduates on campus. UNCA implemented the first-year on-campus freshmen vehicle ban in 2004. A study was conducted

from 2002 to 2004 about the incoming parking policy, but the school did not share its research with CSUMB. The UNC Asheville campus proved ideal for a case study comparison.

UNCA Freshman Parking Policy

At the University of North Carolina in Asheville (UNCA), the first-year on campus freshmen are not allowed to bring vehicles with them to campus. Restrictions would encourage the use of other modes of transportation that are offered on campus. Although most freshmen are required to live on campus, few exceptions are made for students who are living off-campus and in need of a vehicle. Enforcement of parking rules is carried out with transportation programs and privilege penalties.

"All first-year students (including transfer and early college students) are not permitted to bring cars to campus for the duration of their freshman year (fall through spring semesters)."

The statement above is the university policy for first time freshmen students who live on campus (UNCA [date unknown]). Freshmen students are defined as students who are attending the university for the first time, are under the age of 21, and have not completed a full year of post-secondary education prior to enrollment. Students with enough credits for sophomore standing during the freshman year must also comply with the policy.

Overview of UNCA Parking Policies

The policy supports green space, local transportation, and vehicle parking for other resident students. UNCA provides accessible on campus employment and campus social activities for freshmen students. In time, the campus hopes to create minimal vehicle usage on campus. Students who obtain a parking permit through an upper classman, park their vehicle in adjacent neighborhoods, or fabricate information in waivers risk losing privilege to future parking permission for the duration of the academic career on campus. Acceptable information for waivers include living off-campus, employment or volunteer off-campus throughout the academic school year, providing consistent care for immediate family members or for oneself.

Students beyond freshman standing are allowed to purchase parking permits. It costs $100 per vehicle for an entire school year while moped permits cost $35 dollars. Motorcycle permits cost the same as a permit for a second vehicle for $20 dollars. Permits are distributed in categories of Resident, Non-Resident, and freshman.

Offered Modes of Transportation

The campus offers a variety of free transportation systems to students on campus. The bus shuttle offers regular transportation Monday through Thursday from 7:30 AM until 9:30 PM, Fridays from 7:30 AM until 5:15 PM, and Sunday from 5:30 PM until 9:30 PM. One bus line rotates around main campus while the other rotates to the immediate community surrounding campus visiting grocery stores and drugs stores. Each line is scheduled to arrive every 12 minutes beginning at the hour. The buses are free to all students. The campus offers transportation for students who have a medical emergency or need an emergency ride to campus.

Freshmen students who live on campus are allowed three Emergency Rides to Campus (ERC) per semester. Other enrolled students are allowed three rides per academic school year. The ERC can only be used if the shuttle is not available. MedCab offers student who have a medical emergency a taxi if they are unable to bike, walk, carpool, or use public transit to travel to the medical center. Taxis must be ordered by the University Police, Student Health Services, or Student Health and Counseling Center. Students are suggested to tip the taxi drivers for service, but all other expenses are paid for by the driver.

UNCA also offers pay-per-use transportation for students. U-haul Carshare is an hourly car rental program. Students are allowed to reserve one of two vehicles using a smart-phone app or online. Current costs for renting the vehicle is $4.95 per hour plus $0.46 per mile driven while reserved. Zimride UNC Asheville Rideboard, a rideshare program, offers a platform for students to offer and receive rides when commuting to and from campus. Students are required to sign into the platform using their UNCA emails to use the free program. UNCA also has a partnership with Enterprise Rent-A-Car. Students who are 18 years and older with a valid driver's license, credit card, and a UNCA ID are offered a 5% discount for some fees. Students may rent a vehicle at any Enterprise throughout the United States if the local state laws allow rentals to individuals under the age of 25.

Future Implementation

CSUMB campus is projected to increase student population to 12,500 students. An increase in students will increase the need for sustainable transportation to decrease traffic congestion and the need for parking structures. Implementation of a freshman vehicle restriction allows the campus to transition from using personal vehicles to public transportation or bicycling systems. Along with implementation of the policy, exceptions must be made for special situations.

CSUMB Policy Exceptions

There is the reality in which exceptions must be made on behalf of select incoming freshmen students. All exceptions will be made in accordance with the campus transportation department. These exceptions will have limitations and each require prove of circumstance. Following a model made by New Paltz, State University of New York, exceptions can be made on a case-by-case bases under the following circumstances: medical reasons, employment, academic, and other (Balsas 2003). Medical reasons will require the student to produce a written letter from a licensed physician indicating immediate need for a personal vehicle. This letter must explain why the student requires immediate access to a personal vehicle and include an expected duration of need. Employment reasoning will require the student to provide proof of employment and a written letter from the employer to express why the student requires immediate access to a personal vehicle. Academic reasoning requires students to provide a letter from campus faculty expressing immediate need for a personal vehicle and how long the duration of the need is expected to last. The campus transportation department will determine the legitimacy of any appeals for exemption.

Offered Modes of Transportation

Along with the existing MST bus system, ZipCars were introduced during the fall 2016 semester. In addition to the bus system and accessible campus vehicle rental programs, the campus may also implement a bicycle friendly system to campus in the future (Balsas 2003). For the time being, ZipCars on the CSUMB campus have been increasingly popular at no cost of CSUMB. The program expanded its vehicle selection by two-fold from two to four vehicles during its first semester of implementation.

CSUMB ZipCar

Zipcar is a type of car share in which the operator of the vehicle applies for membership of Zipcar's network of vehicles. Once approved, the operator may reserve a vehicle in as little as an hour after receiving their Zipcard by mail. The rider may access Zipcar vehicles with a membership card called a Zipcard. The card may take 3-7 days to arrive by mail. Locking and unlocking the vehicle may also be accessed using the Zipcar app. Zip car covers gasoline, mileage, insurance, and maintenance costs. Rented Zipcars may be returned at any designated Zipcar parking location on the CSUMB campus.

The general policy for Zipcar riders states the vehicle operators must be 21 years of age or older. This may create a dilemma for the incoming freshmen because 99% of first-time freshmen are between the ages of 18-20 years of age (CSUMB demographic stats page citation). However, college students are permitted to use the campus service at 18 years of age. It is also necessary for the student to have a valid United States driver's license. Therefore, freshmen students are able to reserve a Zipcar for an hour to seven days at a time. CSUMB currently keeps three Zipcars on campus; one vehicle costs $7.50 per hour, the other two vehicles may be rented for $8.50 per hour. All Zipcar vehicles have a daily flat rate of $69; this makes Zipcars accessible to all first-time freshmen students.

CSUMB MST

While students are allowed to rent a ZipCar when in need of a vehicle, students can also use the MST bus for free. Bus fares included in student tuition gives CSUMB students unlimited access to all MST bus routes. These routes include, but are not limited to local, primary, regional, and commuter routes. Students also have access to MST's On Call services. The On Call services offer shuttle requests from anywhere in Marina, California, to any MST On Call designated location. CSUMB currently has four bus lines servicing the campus which connect to the entire Monterey County and to areas south such as King City and Gonzales to the north such as Santa Cruz and San Jose (MST 2006).

Unintended Consequences

The implementation of a new policy may bring unintended consequences to the campus. Prospective students may be deterred from the campus. Freshman may have limited transportation options if the bus is an only option. The increase of students on alternative modes of transportation may reach maximum capacity. To address these consequences, students deterred by campuses with vehicle policies are offered alternative modes of transportation.

Currently, ZipCar allow students to rent vehicles hourly and daily; MST bus routes are free of charge; and the Otter Cycle Center allows bicycles to be rented for days, months, semesters, and an academic year. Buses are also not the only free option for students. A rideshare application called Muv allows students to carpool with each other. The campus can make arrangements with MST, Muv, ZipCar, and the Otter Sports Center to accommodate increased student usage. With these accommodations, the campus can plan a "ride-the-bus" day for students; educate prospective students at orientation and prospective student events about these transportation services; and hold bicycling, busing, or ZipCar workshops for students.

Salinas (Monterey-Salinas Transit) – Survey and Public Outreach Project

Salinas Background

The "Salad Bowl of the World" known as Salinas, California has experienced a slow and steady growth since it began developing in the 1830s. The area had originally been a wetland area occupied by Ohlone Native Americans until Spanish settlers arrived in the late 1700s (FWS 2008). According the Kent Seavey (2010) of the Monterey Historical Society, the Spanish missions of California transitioned into divisions of large portions of land--specifically Rancho Nacional and Rancho Sausal in the Salinas Valley. While Rancho Nacional has remained an agricultural area throughout history, Rancho Sausal began acquiring town features in the 1860s. Nearly 150 years later, the City of Salinas continues to uphold its reputation as a prominent center for agricultural production (Community Profile 2016). With a current population of 161,042 individuals, the need to provide and improve public transportation grows stronger each year (Seavey 2010).

Between 1950 and 2010, the population of Salinas grew from 14,000 to over 150,000 people; and the post-war era led to the development of wide streets and urban sprawl of single family homes which made automobiles a preferable mode of transportation (MST 2012). Monterey-Salinas Transit (2012) first began analyzing service in the Salinas area in 2005 which resulted in increased ridership, but lack of funding during the 2008 recession led to decreased ridership which prompted another service analysis in 2012. Results from the analysis showed that 70.9% of the population drive alone and 2.4% use public transit, while the rest of the population carpools, walks, uses some other mode of transportation, or walks from home (MST 2012). Our group is interested in exploring ways Salinas can be move towards sustainable transportation by increasing the use of public transit. Our approach for the Salinas project will involve a public outreach approach and creating a generalized informational booklet that shows people how navigate various situations while riding the bus.

Transit Issues

Monterey-Salinas Transit received 559 complete survey responses in their Salinas Area Service Analysis-II (SASA-II) Report (2012). About 77% of respondents indicated that they were satisfied or very satisfied with the service on the route they took. However, our group assumes that this survey result may be somewhat high since passengers who took the survey

were likely regular passengers who rely on transit on a daily basis. Timothy Miguel, former Student Trustee at Hartnell College, responded less positively about MST's service with Hartnell College in a stakeholder interview from the SASA-II report. According to Miguel, students are unable to rely on transit when taking night classes because service is no longer available by the time night classes end. Miguel also noted that Hartnell College has considered adding additional costs to student fees to cover full bus passes for students, but students were also underusing the Salinas Trolley which already provides students with free rides between main campus and the Salinas Transit Center (MST 2012). Based on these findings in the SASA-II report, our group narrowed the focus of our project towards Hartnell students' perceptions of MST service. We believe connecting with young, college educated adults about considering transit as a primary mode of transportation could help the City of Salinas transition towards sustainable transportation in the future, which relates to our Sustainable City Year goals for the semester.

According to Brown et al. (2003), public transit needs to be on par with the social, physical, and economic benefits of automobiles for society to shift towards public transit. Since the 1950s, cars have been a symbol of status, comfort, and independence. These associations are still being pushed on society with over $40 billion spent annually on automobile advertisements. These associations have also overshadowed the costs of automobiles including traffic accidents and congestion, dependence on fossil fuels, and various forms of pollution, and social inequality. Almost one-third of resident populations have unequal access to work, education, and community because their age, physical condition, and economic status limits their driving abilities. To address these issues, communities can address two important social barriers. The first barrier is that people feel more confident about using public transit if they have experienced using public transit in the past. Many children do not grow up with this experience as parents provide transportation with personal vehicles, and this practice does not reinforce the idea of transit as a viable mode of transportation. The second barrier is the lack of easy access to goods and services with transit. People rely on cars for household activities including traveling with children and buying groceries. Developing transit-oriented infrastructure so that goods and services are easily accessible with transit will help create a transit-oriented culture. (Brown et al. 2003).

Goal

The goal of the Salinas project was to help increase transit use so that the city could benefit from transit as a community. The American Public Transportation Association [APTA] (2007) lists nine benefits of public transportation which address economy, fossil fuel dependence, traffic issues, pollution, and various community needs. It strengthens local economies by creating and maintaining jobs; and it helps address the social inequality noted by Brown et al. by providing reliable mobility for workers in rural and suburban areas and passengers of all ages. Around 1.4 billion gallons of gasoline are saved each year in the United States due to public transportation use. For air quality, carbon emissions, and pollution, APTA reports that "public transportation produces 95% less carbon monoxide, 90% less volatile organic compounds, and half as much carbon dioxide and nitrogen oxide, per passenger mile, as private

vehicles" (2007, p 7). Public transportation is also crucial as reliable transportation for evacuations during disasters and emergencies. According to Kalczuk (2016), the benefits of transit are well understood, but statistics is not a motivating factor that convinces people to use public transit. Public outreach needs to include a visual or human element that people can connect with, and this our approach for the Salinas project.

Our group corresponded with MST Mobility Specialist Erin Heatley to discuss what kind of materials would suit MST's needs regarding public outreach. Since MST is will be producing a how-to-ride-transit video series sometime in spring 2017, Ms. Heatley suggested we create a simple, illustrated how-to-ride booklet for the general public (Personal Communication 2016). The completed booklet is available in Appendix C. We also designed a ten-question survey for Hartnell students to gauge their knowledge and perceptions of MST service. This survey is available in Appendix B. Part of the survey also served as an opportunity for outreach about transit services that are available to Hartnell students, such as free rides when traveling away from campus. Responses to these outreach questions helps us understand the level of transit awareness at Hartnell College. We also decided to supplement the Hartnell transit survey with additional public outreach materials to help increase ridership for MST and address the sustainable transportation needs in the City of Salinas. By better understanding how Hartnell students feel about transit Salinas, we hope to inspire some change towards increased ridership for MST. As ridership increases, MST could generate more funds which could be spend on further improving MST's service and image in the City of Salinas.

Survey Data

We gathered survey data in the student center of Hartnell college in the mid-morning and midafternoon for greatest coverage of students on campus. Some under coverage is expected in groups of students who work, only take early morning or late evening classes, and students who don't take breaks in the student center. Surveys were only distributed on the main campus and did not include students in online courses or students attending the Alisal Campus or King city campus. Overall 213 surveys were collected during certain times in the student center and distributed personally in some classes. This accounts for 2.13% of the 10,000-student population of the campus. Ideal coverage would include uniform distribution throughout the school day, multiple locations on campus, online students, and students from all three campuses. Due to time constraints, ideal coverage could not be achieved for this project. The ideal sample size of a population of 10,000 students would be 370, this would provide a 95% confidence level with a 5% margin of error (Qualtrics 2016).

Conclusion

CSUMB's drive to become a more sustainable campus while also expanding for a growing student enrollment would be aided by adopting our suggested policy regarding campus freshmen and personal vehicles. By removing cars not essential to campus, space for commuter

students increases and leads to a greener campus: less short distance drives by around campus and fewer commuters circling looking for parking spaces can lead to reduced carbon emissions. Reducing the amount of single-car drivers and moving to more eco-friendly options reduces the environmental impacts of transportation on campus and encourages a tight-knit student culture. Shifting towards transportation that brings students together allows them to form more connections with each other and make more friends with a stronger sense on community.

After working with MST and developing more methods of public outreach we hope that more residents of Salinas being using the transit system. By creating another resource of for riders and determining the concerns of both riders and non-riders, we hope that MST takes our data into account when looking to improve their system. By improving their system and drawing more riders onto the bus system, MST could continue to improve the transit system in Monterey county.

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Appendix A – CSUMB Freshman Vehicle Survey

Q1 Do you live on Main Campus?
- ❍ Yes
- ❍ No

Q2 Do you know how to ride the MST buses lines?
- ❍ Yes
- ❍ No

Q3 Do you live in Freshmen Housing? (Asilomar, Manzanita, Cypress, etc.)
- ❍ Yes
- ❍ No

Q4 How many vehicles do you keep on campus? (Includes automobiles, motorcycles, mopeds, etc.)
- ❍ 0
- ❍ 1
- ❍ 2+

Q5 Do you plan to keep your vehicle(s) on campus for the Academic Year?
- ❍ Yes, one vehicle
- ❍ Yes, more than one vehicle
- ❍ No, I only have a vehicle for 1 semester

Q6 What was the main reason you brought a vehicle to campus?
- ❍ I commute home often
- ❍ I work/volunteer off campus
- ❍ My parents suggested it
- ❍ I don't like to take public transportation
- ❍ Other (please type) _____

Appendix B – Hartnell Transit Survey

Q1 What age group are you in?
- ❍ Under 18
- ❍ 18 - 25
- ❍ 26 - 30
- ❍ Over 30

Q2 What city do you live in?
- ❍ Salinas
- ❍ Monterey
- ❍ Marina
- ❍ Seaside
- ❍ Soledad
- ❍ Greenfield
- ❍ King City
- ❍ Other _____

Q3 Which of these sustainable transportation options do you want in your community? (Select all that apply)
- ❑ Improved Bus Routes/Schedules
- ❑ Bike Share
- ❑ Protected Bike Lanes
- ❑ Zip Car
- ❑ Pedestrian-only Streets
- ❑ Light Rail Transit in Monterey County
- ❑ Rideshare (carpool) App
- ❑ I don't care
- ❑ None

Q4 How do you travel to campus? (Select all that apply)
- ❑ Car - Drive Alone
- ❑ Car - Carpool
- ❑ Car - Dropped of/Picked up
- ❑ Motorcycle
- ❑ Bicycle
- ❑ Bus
- ❑ Walk
- ❑ Other _____

Q5 Did you know Hartnell students must pay the regular fee to ride an MST bus towards a Hartnell campus (Main, Alisal, King City)?
- ❍ Yes
- ❍ No

Q6 Did you know Hartnell students can ride an MST bus for free when leaving a Hartnell campus (Main, Alisal, King City)?
- ❍ Yes
- ❍ No

Q7 Do you know how to ride the bus?
- ❍ Yes
- ❍ No

Q8 What is confusing about riding the bus? (Select all that apply. Detailed explanations are welcome.)
- ❑ Bus Schedule _____
- ❑ Using the Bike Rack _____
- ❑ Fares _____
- ❑ Boarding _____
- ❑ Requesting a Stop _____
- ❑ Bus Stop Locations _____
- ❑ Transferring between buses _____
- ❑ Other _____
- ❑ None of the Above

Q9 Which of these resources would help you, or other people, learn how to travel by bus? (Select all that apply)
- ❑ Illustrated Booklet
- ❑ Brochure
- ❑ Website
- ❑ Internet Video
- ❑ A Person
- ❑ Other _____

Q10 What deters you from using the bus? (Select all that apply)
- ❑ Does not arrive on time
- ❑ Travels too slow
- ❑ Too crowded
- ❑ Other passengers
- ❑ Inconvenient bus stop locations
- ❑ Poor customer service
- ❑ Long wait time between buses
- ❑ Other _____
- ❑ None of the above

Appendix C – How-to-Ride-the-Bus Booklet

How to Ride the Bus

(To the Beach!)

An Illustrated Public Outreach Project

Monterey-Salinas Transit
CSUMB Environmental Studies
Fall 2016

Michelle dela Cruz
Stephanie Samos
Kelcey Tern
Nathaniel Todd

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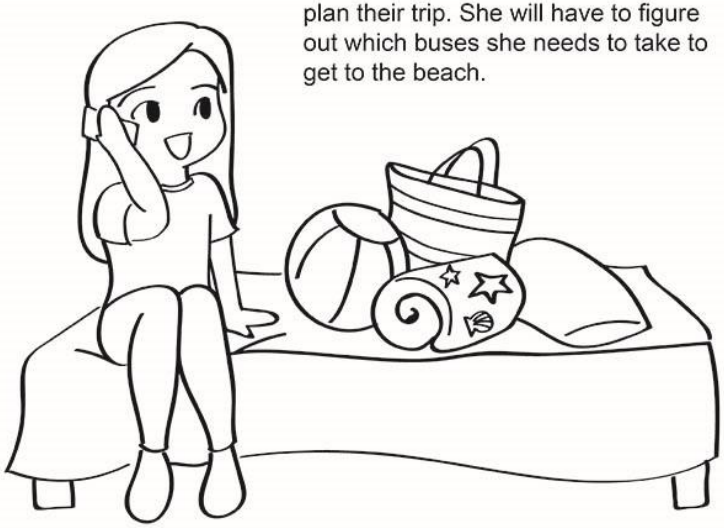
Going to the Beach... by Bus!

Alex is a high school girl that wants to go to the beach. She calls up a friend and invites her to come along. They decide to take the bus.



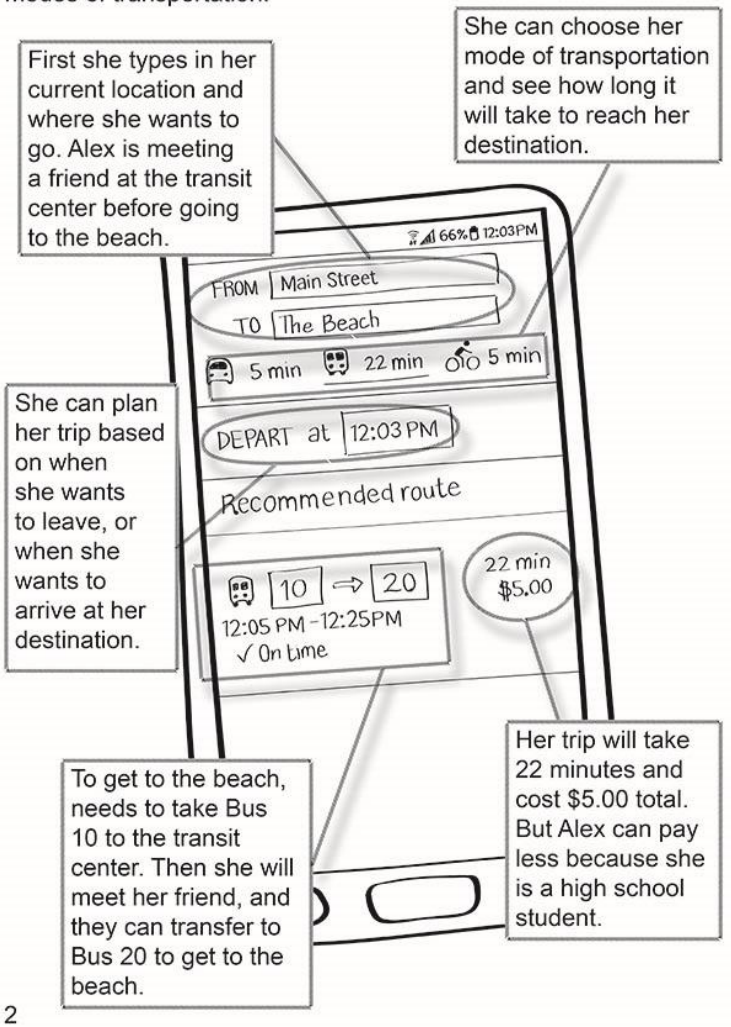
Before they head out, Alex needs to plan their trip. She will have to figure out which buses she needs to take to get to the beach.

Alex hasn't taken the bus before and she is nervous. She did a little bit of research to learn about how to ride the bus.

She knows what to expect, but this will be a new experience for her. She decides to be observant and see what she could learn along the way.

Using an Online or Mobile App

Alex could plan her trip online or on her phone with a map directions app. It is a convenient way to plan a trip with different modes of transportation.



Reading Schedules and Fares

If Alex doesn't have access to the internet, she can plan her trip with a transit schedule and bus fare card.

20 The Beach

Daily*

Notes	Transit Center	The Beach
A	8:23	8:50
A	9:23	9:50
C	10:23	10:50
C	11:23	11:50
C	**12:23**	**12:50**
	1:23	**1:50**
	2:23	**2:50**
	3:23	**3:50**
B	**4:23**	**4:50**
B	**5:23**	**5:50**
B	**6:23**	**6:50**

Notes:
A Monday through Friday
B Weekdays and Sundays (no service on Saturdays)
C Weekdays and Saturdays (no service on Sundays)
* No holiday service.

This column shows when the bus will depart from this location.

This column shows when the bus will arrive at this location.

The light font means AM

The **bold font** means PM.

Discount fares are available to the following groups:

- 18 years & under
- 65 years & older
- Individuals with disabilities
- Medicare card holders
- Veterans

BUS FARES
TARIFAS
* Prices subject to change

Route / Ruta	Regular / Normales	Discount / Descuento
10 Main St – Transit Center	$2.50	$1.25
20 Transit Center – The Beach	$2.50	$1.25
30 Downtown – Main St	$1.50	$.75

Have the Bus Fare Ready

Before heading out to the bus stop, Alex needs to make sure she has the exact change for the fare for each bus ride.

Having her money ready when the bus arrives allows her to pay quickly so that the bus doesn't get delayed.

In order to receive the discounted fare, she also needs proof of her age. Her high school ID card will give her a discounted fare.

Waiting for the Bus

When Alex arrives at the bus stop, a bus is already approaching.

She notices it is Bus 30 heading for Downtown. Alex needs to take Bus 10 so she can meet her friend at the transit center.

It is not the bus she is waiting for, so she politely shakes her head as it passes by to let the driver know she does not want to board.

Boarding the Bus

When her bus arrives, Alex waits for the bus to reach a complete stop and for the driver to open the doors before approaching.

She boards the bus and greets the bus driver with a friendly "Hello."

Before sitting down, she pays her fare at the kiosk next to the driver.

First she shows her student ID to receive the discount, then she inserts her money.

Alex sits down in one of the seats at the front of the bus.

Priority Seating

At the next bus stop, a man in a wheelchair and an elderly woman boards the bus.

Alex remembers reading that elderly, disabled, and pregnant passengers have access to priority seating at the front of the bus.

They have the right to be seated directly behind the bus driver.

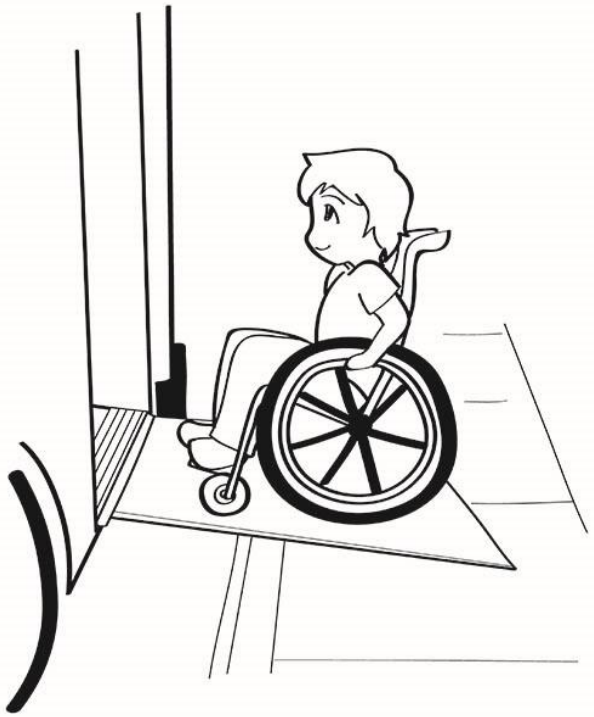
Since she is able to stand comfortably, she kindly offers her seat to the elderly woman.

Wheelchair Accessibility

While the elderly woman sits down, the bus driver begins lowering an accessibility ramp for the man in a wheelchair.

The bus driver is able to lift up some seats to make room for the passenger.

After he pays his fare, the bus driver helps secure the passenger and his wheelchair so he can ride safely and comfortably.



No Loud Music, Please!

Alex hears someone listening to some loud music.

The person is wearing headphones, but the other passengers could still hear the music

This behavior is distracting for other passengers which can be annoying--not everyone shares the same taste for music!

Thankfully the bus driver asked the passenger to turn his music down.

On a similar note, talking on a cellphone while riding the bus is also incosiderate to other passengers. Alex didn't notice anyone doing that on this trip.

Passengers with Bicycles

Two passengers with bicycles are waiting at the next stop.

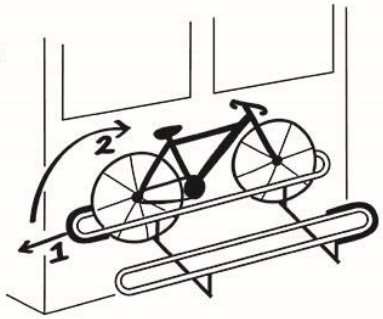
Before boarding, they let the bus driver know they are going to use the bike rack.

The bus driver signals to the passengers to load their bikes.

First, they squeeze the handle to lower the rack.

Then they place their bikes in the slots on the rack.

To secure their bike, they pull the tire hook outward and then over the tire.



When exiting the bus, the bicyclists let the driver know they are going to unload their bikes.

They lift the tire hooks off of the tires and return the hooks to their original position.

Then they unload their bikes onto the curb side of the bus.

The bike rack was empty so they squeezed the handle and lifted the rack back to the upright position until they heard it lock into place.

Foods, Drinks, and Animals

Eventually the bus becomes less crowded and Alex can sit down and relax. She is a couple of stops away from the transit center where she would meet her friend.

Then she smells something good. The passenger sitting next to her is holding a closed container of food. She didn't know you could bring food on the bus. As long as it can't spill, it's probably okay.

The woman sitting across from her is holding a cute service dog. She remembers reading that pets are allowed on the bus, but only in caged carriers. Service animals are allowed on the bus without a carrier.

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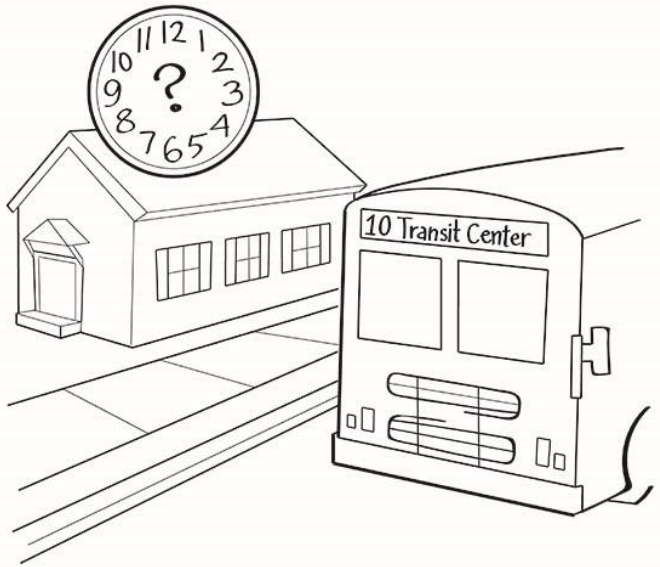
Time for a Time Check

Alex is almost at the transit center. She is excited to go to the beach with her friend.

Then the bus pulls over even though there are no passengers waiting to board.

Alex is confused and then she checks her watch. They were five minutes ahead of schedule.

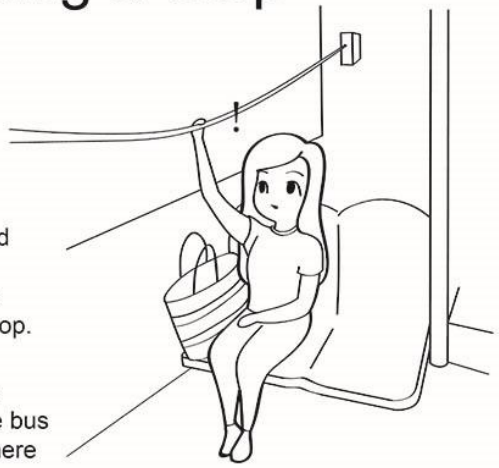
The bus pulls over for a time check so that it stays on schedule. Passengers will miss their bus if it arrives too early or too late.



12

Requesting a Stop

Finally, they are approaching the transit center!



Alex is so excited, she pulls on the cord to let the bus driver know she wanted to get off at the next stop.

She feels silly when she realizes that the bus was going to stop there anyway.

In any other situation, she should pull the stop cord after she passes the stop just before hers.

If she pulls it too early or too late she might confuse the driver and miss her stop.

Don't pull here, the bus will stop too soon.

Pull the cord when your stop is the next stop.

Don't pull when you're too close, the driver needs time to slow down.

Now you've already missed your stop!

Transferring to Another Bus

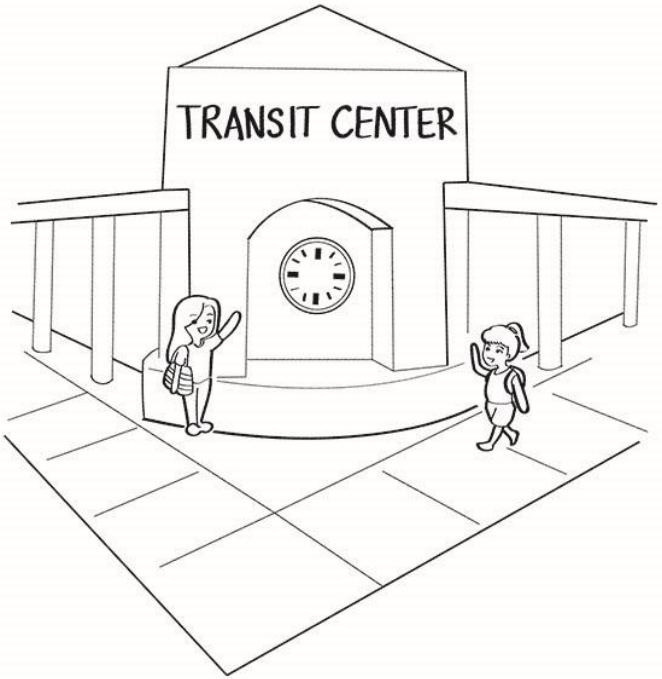
When they arrive at the transit center, Alex makes sure to thank the bus driver as she exits.

Alex finds her friend at the transit center.

Based on the directions from the map app on her phone, they should transfer to Bus 20 to get to the beach.

On the way to the beach, Alex wants to tell her friend about all the different things that happened during her bus ride.

They can chat while they are traveling.



Benefits of Riding the Bus

Riding the bus was much easier than Alex expected:

- She received a student discount.

- She didn't have to deal with the hassles of driving like paying for gas, or looking and paying for parking.

- She could check her phone, text, read, or rest without the danger of being a distracted driver.

- She was able to spend quality time with her friend while traveling.

- And she made it to the beach! Yay!