Best Practice Review: Bike Rental System at Western Michigan University

John Ihling

ENVS 4100: Appropriate Technology & Sustainability

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Best Practice Review: Bike Rental System at Western Michigan University

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Executive Summary

The goal of this project was to determine the feasibility of Western Michigan University implementing a bike rental program on campus. In order to determine how successful the program can be, a best practice review of similar programs around the United States and Canada has been conducted. Before any research could begin, I had to clearly define the scope of my project. To do this, I researched the different styles of bike rental programs being used, which are bikes clipped from bike racks and donated to the program, or bikes purchased new by the school. Each system has both pros and cons, which can be found in the methodology section.

With the scope for the project defined, the next part of the project was to determine what criteria of each program needed to be recorded for the best practice review. After working with Matt Hollander, and Kevin Martini, I was able to compose a list of questions for each program. These questions varied from bike models to rental costs/times to where maintenance was done.

Once the list of questions had been finalized, I needed to identify college campuses with established bike rental programs within a three hour radius. The three hour radius was chosen because the continuation of the best practice review is to actually visit some of these programs, and driving across the country isn’t feasible. Once a school was identified, I contacted them with my list of questions. After all of the data for the schools within three hours was compiled, I then began looking at schools across the US and one in Canada. The expansion of the list was to get an accurate portrayal of these programs in various climates, and how the climate might affect their program. I know have a list of 16 schools within the United States and one in Canada with active bike rental programs. After completion of the data table, I began researching the benefits and detriments of each rental system.

Introduction

As Mark Twain once said, “Get a bicycle. You will not regret it if you live.” Bike rental programs have been rapidly growing on college campuses across the United States, and Western Michigan University could be the newest addition to that list. It’s not a secret that Americans tend to live a more sedentary lifestyle than many other nations. One way for our society to change this is by promoting bicycle commuting on campus and within local communities.

Commuting by bike increases overall physical health, saves money, and helps the environment by not releasing excess greenhouse gas (GHG) emissions into the atmosphere. Also, riding a bike has been proven to reduce stress. You are no longer forced to sit in traffic during the hot summer months, and cold winter months. Bicycle commuters tend to arrive on time more often, are often happier when they get to their destination, and are more productive while they are in the office/classroom. Physical activity has been proven to also improve mental health, and is important for the vitality of muscles, bones, and joints.

The numbers don’t lie, and bicycle commuting has been proven to save the rider money. The cost of operating a car for one year is approximately $5,170, not including the $300 parking pass
at WMU, while the average cost of operating a bicycle for a year is $120. If WMU were to adopt more bike friendly practices, including a bike rental program, the overall health of the student population is likely to increase.

As a student, being able to rent a bike for a semester or year would be very convenient. Cycling gives students both a means of transportation, as well as a way to enjoy the outdoors in a way they might not have growing up. Western Michigan University (WMU) has two bike friendly trails within riding distance of campus: the Kalamazoo River Valley Trail (KRVT), and Kal-Haven Trail. The KRVT begins in the same place as the Kal-Haven; however, the KRVT travels away from the Kal-Haven, through downtown Kalamazoo, and out towards the Kalamazoo Nature Center. While the Kal-Haven trail isn’t paved like the KRVT, it does travel from Kalamazoo to South Haven on an old rail road bed, and has been groomed with a limestone base. Both trails pass through places in the city and outskirts that wouldn’t normally be experienced by the average student or city-goer.

Methodology and Data

Before I begin with my methodology, I would first like to distinguish between a bike rental program, and a bike share program. When people hear these two terms, many don’t recognize the difference between them. A bike rental program provides a bike to the renter, at a standard fee, for a set period of time. These programs have been very popular in tourist towns where people want to see the city, but may not have a car or don’t want to drive. College campuses are similar to these cities, in that many students don’t bring a car with them.

Bike share programs are set up with either kiosks or direct card readers on the bike racks. Once a card is scanned, a bike is released from the rack, and the renter is able to ride anywhere within city limits. They also get charged per hour or day until the bike is returned. Users can also purchase a yearly subscription which would be used like a bus pass. Racks are placed all over the cities where bikes can be rented, so the bikes can be returned more conveniently. Very popular in Europe, bike share programs have been spreading to the United States at a rapid rate.

This, however, doesn’t mean that bike rental programs are becoming impractical. Most of the bike share bikes are heavy and cumbersome, not ideal for a daily commute or exercise. St. Paul, MN, implemented a bike share program in 2010, and some of the bike rental stores actually saw an increase in business. This was because people were riding their bike share bikes down to one of these stores and rent a comfortable bike they could ride all day.

When considering implementing a bike rental program, the procurement of bikes is typically the first question asked. In many cases, there are two main ways to acquire said bikes. The first is receiving donated bikes that have been clipped from bike racks on campus and throughout the city. These are known as gorilla bikes, and are typically painted a very visible color to let everyone know they are university property. The second way is to purchase new bikes from a local bike shop. This is the most expensive way to start a program, but also the most efficient in the long run, when done correctly.
Gorilla bikes are typically donated by local police after they have been clipped from a bike rack. They are usually held from a certain period of time to allow the owner to claim it in case there has been a mistake. After that period of time, if the bike hasn’t been claimed, it is then donated to the bike rental program. This is how Grand Valley State acquires their bikes, which can be seen to the right. The bikes are collected by Grand Rapids and Allendale Police, and held for 90 days before they are donated to the program. They are then painted blue, and embossed with GVSU letters. This serves two purposes:
1. It shows that the bike belongs to GVSU’s bike rental program, 2. It also shows that GVSU has made a commitment to assist their students in living a more sustainable lifestyle.

New bikes can be bought in bulk from a local bike shop, usually resulting in a discount. Purchasing from a local bike shop both supports local business, and means the shop is close in case the mechanics on campus have an issue with a bike. Michigan State University is a Fuji University, and rents out two different models of Fuji bikes, the Nevada, and the Absolute. The Nevada is a moderately priced mountain bike, while the Absolute is an equally priced road bike. Both can be seen to below. Renting only two different bike models keeps the amount of knowledge and equipment required for maintenance lower than with the gorilla bikes.
Examples of Best Practice on Other Campuses

Grand Valley State University

Location: Allendale, MI

Rental Fees: $40 refundable deposit + $25 per semester (Fall/Winter), $15 per semester (Spring/Summer), $40 per year

Rental Bikes: Gorilla Bikes donated by G.R. Police Dept.

Number of Bikes: 35 + 20 more in Spring 2013

Length of Rental: Minimum of 1 semester, Maximum of 1 year

Description: Paperwork is handled by one paid staff member in Campus Operations, while the returns and repairs are handled by staff in Housing. Bikes are distributed by staff members in the Sustainability Office on campus, and repairs are handled by maintenance or a local bike shop if necessary. The bikes themselves are registered through campus police, and tracked by staff using a spreadsheet. Funding originally came from Transportation, and the program has been active since Fall 2011.

Michigan State University

Location: East Lansing, MI

Rental Fees: $30 per week, or $75 per semester. Hourly and Daily rates vary by season and availability.

Rental Bikes: Fuji Nevada and Absolute

Number of Bikes: 75-80

Length of Rental: Hourly, Daily, Weekly, Semester

Description: MSU is a Fuji dealer, so rent and sell Fuji bikes. The program began renting clipped bikes before they became a Fuji University. Now, when clipped bikes are donated, they are either recycled, or sold to help fund the program. While the program isn’t yet profitable, it is very close. Maintenance for the rental bikes is done in-house by students and staff. Along with the required maintenance, the bike shop is also used to help students repair their bikes, even if they haven’t been purchased or rented from MSU.
Albion College

Location: Albion, MI

Rental Fees: Free

Rental Bikes: Purchased new cruiser and mountain bikes

Number of Bikes: 5-9

Length of Rental: 24 hours maximum

Description: A student organization proposed a grant five years ago to start a bike rental program on campus. They purchased seven bikes, and began renting them out of the Student Organization Center. The program is up to 9 bikes, which are free to rent with a student ID. The student organization that wrote the grand is responsible for the bikes, but they are maintained by facilities maintenance at GVSU.

University of Colorado – Boulder Buff Bikes

Location: Boulder, CO

Rental Fees: Free

Rental Bikes: Worksman Cycles single speed cruisers

Number of Bikes: 90

Length of Rental: 48 hours max

Description: The program is funded by the mandatory student bus and bike program fee, and managed by the Sustainable Transportation Program Manager. All the maintenance is done in-house by two Buff Bike student mechanics. These mechanics work at each of the two bike stations Monday through Friday, 9am-5pm. While the program isn’t profitable, it does save the students and the university a great deal of money in parking reductions every year.
UC – Davis Bike Barn

Location: Davis, CA

Rental Fees: $20/day, $30/weekend, $60/first week, $20/ each additional week

Rental Bikes: Biria Citibikes

Number of Bikes: 170

Length of Rental: 24 hours minimum, no maximum

Description: The bike shop costs about $19,000 annually, including labor costs and capital depreciation. The total income for the last year was $24,500, creating a net profit of $5,500. UC-Davis has the largest staff out of any researched, with one part time rental manager, one assistant rental director, and 26 part time mechanics.

Discussion

The overall goal of my project was to perform a best practice review of bike rental systems at various universities. This was done with the idea that another student in ENVS 4100 or from the Office for Sustainability would want to continue the project in the future. While gorilla bikes seem to be the easiest to acquire, they also seem to be the hardest to maintain. This is because each bike is typically different, and the interchangeability of parts is slim to none. Interchangeability of parts is key in the implementation of a bike system; because, parts requiring maintenance can be switched with a good part in a relatively short amount of time. This means the student can bring the bike in, get their broken part replaced, and be on their way in a matter of minutes, depending on the part. Once the student is on their way, the mechanic can then inspect the part and determine what is causing the malfunction.
Conclusions/Recommendations

If WMU were to buy a fleet of new bikes, replacement parts could also be purchased in the same order, and usually at a discount. This would lead to higher productivity rates, and reduced maintenance costs because parts could be bulk ordered when needed, rather than individually. Mechanics would also only need to be trained on servicing one or two bike models, rather than an entire fleet of different bikes.

The University of California – Davis has a bike rental system with over 170 Biria Citibikes. Their rentals are more oriented toward long term rental; however, daily and weekend rentals are available. In 2012, the annual cost of the program, including labor and capital depreciation, was $19,000, while the total income was $24,500, resulting in a profit of $5,500. When UC-Davis receives new bikes, they are immediately painted blue and yellow, Aggie colors, to distinguish them among the rest of the bikes on campus. When WMU does implement a bike rental system, it should be modeled similar to the program at UC – Davis.

References


Appendix 1 - Contact List

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<tr>
<th>Name</th>
<th>Phone Number</th>
<th>Email</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basile Senesi</td>
<td>530-752-2575</td>
<td><a href="mailto:bikebarnmgr@asucd.ucdavis.edu">bikebarnmgr@asucd.ucdavis.edu</a></td>
<td>UC - Davis</td>
</tr>
<tr>
<td>Brandon Smith</td>
<td>303-492-8414</td>
<td><a href="mailto:bicycle@colorado.edu">bicycle@colorado.edu</a></td>
<td>Univ. Colorado - Boulder</td>
</tr>
<tr>
<td>Jalyn Kamp</td>
<td>616-331-7251</td>
<td><a href="mailto:kampja@gvsu.edu">kampja@gvsu.edu</a></td>
<td>GVSU</td>
</tr>
<tr>
<td>Tim Potter</td>
<td>517-432-3400</td>
<td><a href="mailto:bikes@msu.edu">bikes@msu.edu</a></td>
<td>MSU</td>
</tr>
<tr>
<td>Matt Hollander</td>
<td></td>
<td><a href="mailto:Matthew.f.hollander@wmich.edu">Matthew.f.hollander@wmich.edu</a></td>
<td>WMU</td>
</tr>
<tr>
<td>Kevin Martini</td>
<td></td>
<td><a href="mailto:Kevin.p.martini@wmich.edu">Kevin.p.martini@wmich.edu</a></td>
<td>WMU</td>
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Appendix 2 – Gorilla Bikes
GVSU Blue Bikes

University of Western Ontario Purple Bikes

Appendix 3 – Bikes Purchased New
MSU - Fuji Nevada

MSU - Fuji Absolute

UC – Davis - Biria Citibikes