

Bike Share Equity Strategies: Successes and Failures



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BIKE SHARE EQUITY STRATEGIES: SUCCESSES AND FAILURES

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Abstract

Across the country, many different cities and jurisdictions are implementing bike-share systems to provide active transportation options for community members and tourists alike. One of the primary struggles many systems in the U.S. are facing is the lack of equitable strategies promoting bike share to low-income and minority populations within each community. This study aims to identify the strategies existing bike-share systems have put in place to address the equity issues and distinguish which strategies have been successful, as well as those that have fallen short of their goal. Through interviews with nearly a dozen bike-share operators across the country, this research provides distinct characteristics for successful bike-share equity strategies for the City of Eugene to consider when implementing its bike-share system.

Executive Summary

There are more than 100 bike-share systems in the U.S. currently, providing a new type of public transportation. However, this form of transit follows the trend of all forms of biking in this country, which is done primarily by Caucasian men.

With such a small portion of the population using bike-share, programs from coast to coast are addressing the topic of equity. This study looks at 10 different bike-share programs throughout the U.S. to identify successful strategies, and those that have fallen short of their goals.

Current literature doesn't address equity in any detail when looking at bike-share programs, creating a significant gap in the research. This study's design is to interview several bike-share program representatives and ask each a set of questions regarding their current policies, their successful, and how they define success. The themes taken from these interviews address cultural barriers, bike-share station placement, and partnerships with community organizations. Implementing these themes correctly into future bike-share systems, like the one scheduled to launch in Eugene next year, could address concerns of bike-share equity and encourage low-income ridership across the city.

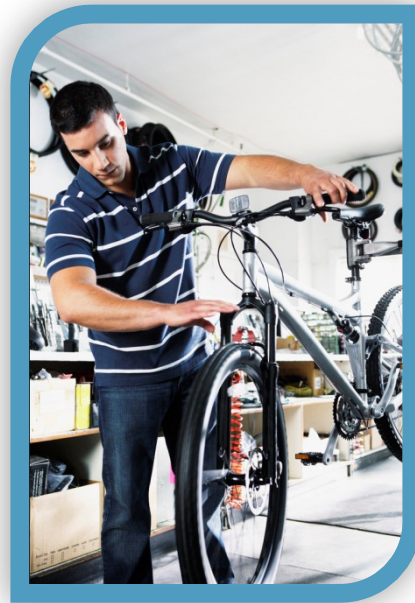


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Chapter 1 – Introduction to Bike Share

Background

Bike-sharing systems have been around for nearly half a century, with the first generation of programs beginning in the European countries of Denmark and the Netherlands. In recent years bike-sharing systems are starting to take hold in cities and jurisdictions across the globe. In 2008, Washington D.C. launched the first modern bike-share system in the U.S., a pilot program dubbed SmartBike DC, with 120 bikes and 10 stations. Two years later Washington replaced that system with Capital Bikeshare, a program that utilizes new technology. That same year Minneapolis and Denver launched new programs, setting the stage for cities across the country to implement similar systems. Today there are around 50 different bike share programs throughout the U.S., and hundreds more across the globe.

These programs have recently been asking a key question: How do you make bike-share equitable? The National Association of City Transportation Officials (NACTO) has recently awarded several grants to bike share operators and community organizations that are working to make their programs more equitable. Each of these programs and organizations is implementing a different strategy for improving equity. For example, Austin, TX is expanding Spanish-language outreach and education, while Chicago is implementing a subsidized membership program and engagement in a targeted neighborhood. This report will look at these and other bike-share programs across the country to determine the best strategy for implementing a system in Eugene, Oregon.



Austin B-cycle (credit Austin EcoNetwork)

Purpose and goals of this study

There is currently minimal information in existing literature on bike-share equity. The following literature review completed for this report demonstrates that there is plenty of documentation and material on bike-share implementation, but sparse language on launching an equitable program. When debuting a new bike-share program, most jurisdictions in the U.S. focus on financial sustainability over equity. In many cases, station locations are initially chosen to make money and prove the bike-share concept works. It's not until afterward that programs begin looking into providing equitable solutions, creating a gap this study looks to fill.

The City of Eugene recently received more than \$900,000 from the Oregon Transportation Commission to develop a citywide program. This fund will be combined with a match fund of \$227,300 from the riverfront Urban Renewal District and a contribution from the University of Oregon, which will be partnering with the city on this project. The system is expected to have no less than 28 stations, 4 of which will be on UO's campus, and 210 bikes. With the funds gathered and a feasibility study completed, the city is now researching consultants to help track down potential sponsors. The date of implementation for Eugene's bike-share is October 2017, but while that is being determined this report will provide strategies for improving equity when moving forward on the future program.

The following goals summarize the guiding principles of this study:

- To record the barriers bike share organizations in the U.S. have faced when implementing specific policies
- To better understand the physical, social and organizational obstacles to bike share equity strategies

- To identify specific approaches that have brought success to bike share equity, while defining what success truly means
- To contribute to the evolution of bike share and encouraging policies that promote low-income ridership

Searching for successful strategies will also reveal weaknesses. With the identification of both successful policies and those producing minimal impact, future programs can avoid common hurdles while stimulating equitable growth. This is an important part of the research process to build upon existing knowledge with new insight.

Structure of this report

This report has begun by laying the contextual foundation for the setting of bike share equity. The purpose for the study has been identified as examining the successes and failures of equitable bike share policy. The next chapter will build upon the existing knowledge and academic literature in the field of bike share. The fundamental research questions and methodology will be discussed in Chapter 3. Chapter 4 will outline bike-share operator interviews. Findings and Implications will follow in Chapter 5 discussing key findings from the interviews and implications based on those findings. This will lead into Chapter 6, the conclusion of this report presenting the study's limitations, areas for future research, and use by Eugene and other cities.

Chapter 2 – Context and Literature on Bike Share Programs

Given the recent birth of bike-share programs in the U.S., studies on equity issues are severely limited in number and scope. There is still fairly little information available on the successes and failures of equity strategies implemented by bike-share systems. The following information has been gathered to demonstrate the status of bike-share equity policies and their status on improving usage from low-income individuals.

Existing literature on bike share

Review of the existing literature has categorized the topic of bike share into several key areas. There is measurable information on bike share currently that focuses on topics such as feasibility of networks, the value bike share members place on convenience, the importance of helmet use, and how users are substituting from automobile use to a more sustainable mode of travel. Sustainability has the most significant literature currently available on bike share, emphasizing the importance this form of public transportation provides for the environment and the health of community members who use it. But what has been glossed over in many of these studies is the importance, and lack of, equity in bike share programs. It's this lack of attention that creates a considerable gap in research, and the purpose of this study. For the sake of this report only the areas related to equity have been examined, which range from general studies to those specific to equitable bike share policies.

Jurisdictions Using Equity Strategies

An academic study done in late 2012 by a Virginia Tech graduate student focuses on 20 bike-share systems across the country. This report concentrated on specific equity strategies

programs have implemented or planned to implement in the future (Buck, 2012). This study does not look at the successes and failures of these programs, creating a gap in the research. The goal of the following study is to fill this gap and provide insight into what strategies are succeeding, which ones are struggling, and what may be effective for Eugene to employ for the upcoming program.

Optimizing Station Placement

One of the most important aspects of implementing a bike-share program is determining the optimal locations for docking stations. One study utilizes a GIS approach for establishing the most cost-effective locations for stations in relation to potential demand (Garcia-Palomares et al, 2012). This report focuses on the spatial distribution of possible demand trips and the main characteristics and accessibility of each station. This study does not look at station locations in relation to low-income neighborhoods, but does provide some insight into determining where docking stations should be located.

Repositioning Bicycles

A key factor for the success of a bike-sharing system is its ability to meet the fluctuating demand for bikes and vacant lockers at each docking station. One report looks at an approach for operating a fleet of trucks and determining routes these vehicles should follow, along with the number of bikes that should be removed or placed at each station on each visit (Raviv et al, 2013). This study uses a convex objective function to generalize existing routing models, but doesn't take into account equity or stations in low-income areas.

Chapter 3 – Research Questions and Methodology

Research Questions

- What are current bike-share programs doing to promote usage by low-income individuals?
- Which approaches have seen success, and which have not?
- What strategies can Eugene implement for its bike-share program?

These research questions all focus around the area of equity in bike-share programs that address the gap in existing literature between strategies currently in place, and their effectiveness. Success in this sense is defined as strategies or policies that have enhanced low-income ridership, but as will be described in Chapter 4, success is also defined by each respondent before answering questions on what has been successful. There may be other areas of bike-share closely related to the topic and themes discussed in this research; however, equity is the subject for this study.

Research Design

The methodology used to focus this research on equity builds upon Darren Buck's 2012 study titled, *Encouraging Equitable Access to Public Bikesharing Systems* a study that utilized surveys to gather data. Buck looked into 20 different bike-share programs across North America to determine if these programs have implemented, were planning on implementing, or had no plans on implementing a strategy for encouraging low-income ridership. His stated goal was to "obtain the current status and details about the plans of bikesharing systems to pursue programs that attempt to lower access barriers to low-income communities" (Buck, 2012). Buck's research provides rich insight into the area of strategies and policies being used to promote and enhance ridership from low-income individuals.

The best format determined for acquiring more comprehensive qualitative information on bike-share equity is testimony taken from current bike-share operators through interviews. Buck established a solid framework for understanding the approaches taken by bike-share systems, but to build off this research and identify which strategies are performing well, interviews provide the best opportunity. Phone interviews were conducted with representatives of bike-share operators in U.S. cities similar in size to Eugene, as well as operators who have been in service for three-to-six years, and one operator representing bike-share systems in several cities. The original themes taken from existing literature were then compared and discussed alongside the emergent themes discovered from responses given during the phone interviews. The resulting analysis will complement existing information on the topic of alternative transportation with the experiences of current operators.

Study Participants

The participants chosen for this study represent a wide array of bike-share operators across the U.S., ranging in size and length of operation. Each of these operators face unique and difficult challenges when dealing with equity and encouraging low-income ridership. 27 operators were contacted regarding this study, along with a follow-up request to participate. Based on feedback from operators and willingness to participate, 10 bike-share operators were chosen to take part in the study representing cities of all different sizes, all four U.S. time-zones, and different lengths of operation.

Interview Process

Once the study participant bike-share operators were chosen, representatives of each were selected as the interviewee. Phone interviews were recorded through verbally approved audio recording. Participants were also asked to be quoted in the final report. The interviews were suggested to take between 15 and 30 minutes. Initial interview recruitment emails were

distributed starting February 29th, 2016. Once an affirmative email was received, a phone interview was scheduled.

The terms used in this report to signify interview subjects vary by their position, but they are also categorized as interviewee or respondent. It was important that these interviews be conducted with professional staff members, and not volunteers or those not familiar with policies and programs put in place to encourage low-income ridership. Ensuring so made this report more accurate and allows for future study on bike-share equity.

Interview Questions

The interviews were guided by one introductory question, five topical questions, and one inclusionary question. These questions were created from themes and topics talked about in the literature review. Questions were worded to allow open-ended answers and discussion. The focus of the questions aimed to examine the programs and policies previously implemented and discuss the successes and drawbacks from each. The term “success” is also defined by each interviewee to aid in understanding of what is deemed an accomplishment for bike-share equity. Below are the interview questions asked to each bike-share organization representative, in order.

1. What is the history of your bike-share program?
2. In your opinion, what are the most important strategies or policies you’ve implemented for encouraging low-income ridership?
3. How much of a voice has the community had in making your bike-share program more equitable?
4. How do you consider success when it comes to equitable bike-share policy?
5. Based on your answer to the previous question, what has been successful for encouraging low-income ridership for your program?
6. Are there policies or strategies that you’ve seen as producing minimal or lower than expected results?

7. Is there anything you'd like to add about bike-share equity for your program?

The answers to these interview questions are discussed in the next chapter.

Chapter 4 – Interviews

Study Group Demographics

The study group is represented in the table below, outlining the city of each bike-share operator, the name of the bike-share program, the population of that city, and the year in which that specific program began. Note: Motivate represents several bike-share operators in several cities across the country.

Table 1: Bike Share Study Demographics

City	Population	Operator Name	Year Started
Austin, TX	885,400	Austin B-Cycle	2013
Boulder, CO	103,166	Boulder B-Cycle	2011
Washington, D.C.	658,893	Capital Bikeshare	2010
Chattanooga, TN	173,366	Bike Chattanooga	2012
Denver, CO	649,495	Denver B-Cycle	2010
Chicago, IL	2,719,000	Divvy	2013
Greenville, SC	61,397	Greenville B-Cycle	2013
Omaha, NE	434,353	Heartland B-Cycle	2015
Madison, WI	243,344	Madison B-Cycle	2011
Multiple	N/A	Motivate	N/A

Interview Responses

Representatives from each of the bike-share operators provided a slew of information, feedback and insight through the answers to each question and open conversation regarding programs

and opinions regarding policies. The phone interviews outlined in Chapter 3 represent the principal qualitative data set for this research.

The interview responses are listed after each interview question. Responses from bike-share representatives tended to express shared attitudes on similar topics, with distinctive explanations and details. The greatest difference between interviews can be extensively attributed to different city demographics, as well as differing funding availability toward equitable programs each program identified at the time of interview. The common themes allowed the responses from individual interviews to be summarized. However, there is insight in the actual phrasing used by the interviewees, which allows for quotations to be included with the findings to add support. Identities of the interviewees are left out of the study because they don't represent the subject of the interview.

The following responses to the seven interview questions represent the most common and emphasized responses given across the study group. Each response section will include a general interpretation, along with a summary of select individual responses that relate most specifically to the area of current policies in place encouraging equity and low-income ridership.

Question One – Responses

What is the history of your bike share program?

Responses to question one were the most wide-ranging in length among all of the questions asked. The longest response lasted more than a dozen minutes and consisted of a detailed history of the program, extensive background on the different policies put in place for enhancing ridership for all individuals, and tended to answer a few later questions. The history covered the origins of funding for establishing a bike-share operation, sponsors for the program, feasibility studies completed, and current numbers related to members, kiosk locations, and

membership funding requirements. The shortest replies were representatives who broke down the basic information on bike share operations (year started and reason for operation).

Each respondent had a different ability to emphasize detail on bike-share program history. This was most likely due to tenure at that specific operation, as a few respondents had been working for just a few of months. Each respondent also had a unique personality that allowed them to dive deeper into their program's history, or keep it simple and await the next question, so as not to provide excess information not related to the study. Most interviewees were able to signify the specific date their program got off the ground.

Responses summarized:

- Longest running modern bike share programs are Capital Bikeshare and Denver B-Cycle, both launching in 2010.
- Programs are both non-profits as well as private entities, with money coming from different areas.
- Greenville B-Cycle launched as a partnership with Upstate Forever and Greenville health systems, a local hospital system.
- Chicago's Divvy program just went under its first major expansion in this past year to 475 stations, making it the largest bike-share system in North America based on geographic footprint.
- Funding for Denver B-Cycle came from the Democratic National Convention in 2008, much of Heartland B-Cycle's funding came from Blue Cross/Blue Shield, and Madison B-Cycle started with a donation to the city from Trek bicycles.
- Capital Bikeshare has expanded from its inception to include four jurisdictions, with a fifth coming online this year.

Question Two – Responses

In your opinion, what are the most important strategies or policies you've implemented for encouraging low-income ridership?

This question was answered in a number of different ways, but two key pieces came out. The first was representatives diving into detail on what they're planning to rule out or what has been discussed within the organization. The more telling side for this study were the responses that addressed specific policies and strategies the interviewees deemed important. Outreach seemed to be the key theme taken from most, if not all, interviews. Even when not spoken to directly, interviewees described strategies that required people to hit the streets in order to enhance low-income ridership. Interviewees were not hesitant to give their opinion when asked this question, which allows for more conversation within the rest of the interview.

Responses summarized:

- Many bike-share operators utilize some form of partnership agreements with well-established organizations within different communities to promote ridership and get the word out about bike-share.
- Promoting bike-share as a means of daily commuting, not just a form of travel for tourists was a focus of several bike-share operators.
- Part of community engagement in Austin was incorporating stations near public housing units, and working with the neighborhood to help understand the program.
- Capital Bikeshare has been working with an organization called Back On My Feet to assist individuals experiencing homelessness, with participants receiving transportation benefits, including bike-share memberships.
- Creating accessibility for low-income communities is key when developing outreach strategies for many bike-share programs.

- Greenville B-Cycle tried numerous approaches to engage participants in a low-income community, with little to no success.
- Omaha B-Cycle and Madison haven't done much, but don't specifically feel the need to with the demographics using the system.
- Divvy in Chicago works with the city's job skills training program, targeting people that face unemployment or are ex-offenders to work for the program and get the word out about its possibilities.

Question Three – Responses

How much of a voice has the community had in making your bike-share program more equitable?

Question three was interpreted in two different ways. Some interviewees answered on the basis of how the low-income community has made its voice heard for more equitable bike share. A smaller group of interviewees answered with the idea that community members across the board, including sponsors and city officials, were voicing their concerns over lack of equity. No matter how the question was answered, valuable information was construed pertaining to who each bike-share representative felt needed to be heard the most. Some operators looked toward the internet and social media for community input, with results then taken toward potential future policies.

Responses summarized:

- Several operators have utilized community outreach strategies to encourage low-income individuals to voice their opinions on bike-share options in their specific communities.

- Capital Bikeshare and Divvy have launched social media campaigns to allow community members to contribute to bike-share policies, including those of equity.
- Denver B-Cycle and Boulder B-Cycle had each stated that it wasn't much on the forefront of their communities mind when launching, but the industry is pushing both operators to pursue community input on equity.
- Madison B-Cycle and Heartland B-Cycle understand the importance of an equitable voice from the community, but haven't felt the need to pursue much in form of outreach or policies.
- Bike Chattanooga instituted slow rides where representatives ask community members where they'd like to see future bike stations.
- Austin B-Cycle received a grant focusing on a low-income initiative, funding stations in a predominantly low-income area of the city. The bike-share operation worked with the housing authority to allow the community to voice their opinions.

Question Four – Responses

How do you consider success when it comes to equitable bike-share policy?

The answers to question four all revolve around the key concept of increasing ridership.

However, the idea on what this means varies throughout each interview. Several interviewees mentioned the correlation between the cities' demographics and the usage of the bike-share program. This reflection on the city to the program could come from either membership registration, or how many people actually end up using the system on a regular basis. In a sense, equitable bike-share policy reflects on the people working with the community to encourage ridership from low-income individuals. To some it's just to get people onto the bike, but others see success as something that focuses on the methods of outreach.

Responses summarized:

- A key aspect of bike-share equity is increasing ridership.
- Bike Chattanooga and Austin B-Cycle each stated that if ridership reflected the makeup of their cities, they'd deem their strategies a success.
- The Boulder B-Cycle representative stated that communities need to define their own terms, and policies shouldn't force them to accept biking as a realistic mode of transportation.
- On the opposite side, the Denver B-Cycle representative said successful bike-share equity breaks down those barriers that keep people off bikes.
- For two operations, usage of any form was considered successful.
- Working with the community through partnerships was vital for many bike-share operations to be considered successful.

Question Five – Responses

Based on your answer to the previous question, what has been successful for encouraging low-income ridership for your program?

The answers to question five build upon those given in answer two for many bike-share representatives. Building relationships with community partners to reach different neighborhoods was a common idea between many interviewees. Each gave an example of how working with a different organization helped get in touch with a larger audience than what was previously knowledgeable of the system. Along with community partners, membership discounts associated with that partnership played a role in the success of many bike-share organizations.

Station location was also a popular answer with interviewees. Several respondents stated that placing stations in locations that allowed for ease of access has been positive in terms of

encouraging low-income riders in that area. Community members tend to emphasize station location when discussing barriers with bike-share representatives.

Responses summarized:

- Partnering with organizations with a current presence in the community allows bike-share operators to communicate their message through a voice that neighbors are familiar with.
- Bike Chattanooga offered five-dollar one-year memberships that led to a significant uptick in rides.
- Divvy in Chicago established themselves as a successful program before rolling out an equity focus, which helped make the equity focus itself successful.
- Greenville B-Cycle hasn't found a lot of success with its previous policies, but is still optimistic about future strategies currently being discussed.
- Station location was big for Denver B-Cycle and Austin B-Cycle, placing kiosks in low-income neighborhood locations for ease of access.
- In some instances, partnerships haven't seen as much success as what's been seen by Capital Bikeshare and Divvy.

Question Six – Responses

Are there policies or strategies that you've seen as producing minimal or lower than expected results?

This question resulted in the broadest variety of answers between each of the interviewees. Each bike-share operation had a different policy or strategy that the representative felt produced little to no results. From a lack of pricing understanding by community members to offering free memberships to individuals, each program saw different issues that caused specific

strategies to fall short. Some bike-share representatives named more than one policy that didn't work for promoting equity. Representatives didn't hesitate to name at least one area of equity that they've struggled addressing, but a few felt that these drawbacks provided future strategies to succeed.

Responses summarized:

- Austin B-Cycle is trying to work with employers after working with community groups didn't produce more low-income ridership.
- Distributing a free membership was very unsuccessful for Denver B-Cycle.
- Capital Bikeshare pricing was difficult for people to understand, which was one of the primary causes of low ridership in low-income communities.
- Media campaigns that got the word out about Bike Chattanooga through ad buys and articles didn't affect ridership in the city.
- Greenville tried several strategies with unsuccessful results that encouraged more ridership of a low-income audience.

Question Seven – Responses

Is there anything you'd like to add about bike-share equity for your program?

This question offered a blank canvas for interviewees to use to wrap up the interview and explain equitable bike-share related to their program. Many took this and ran with the future plans they have for policies to address the issue, while others simply stated it's an evolving practice in the field. A few interviewees encouraged this study to contact bike-share programs in specific cities with a history of addressing equity.

Responses summarized:

- Shifting bike-share from a tourist activity to a commute option is key for the future of programs.
- When people don't return bike-share bikes, it's not because of theft, but rather a mistake by the user.
- One of the biggest barriers for people to use bike-share is the lack of knowledge on how it works.

Chapter 5 – Findings and Implications

Key Findings

The interviews addressed a select number of different themes and topics. The recurrent and intermittent topics, including those absent from the literature review are: Membership Funding/Affordability, Culture, Station Placement, and Community Partnerships. These findings were identified and organized through the examination of interviews for unique and common answers. These answers were then scanned for common statements, phrases, terms and arguments. For example, comments on partnerships with current community organizations were quite common, and these comments expressed their significance to bike-share equity. Community Partnerships, therefore, was chosen as a key finding.

Membership Funding & Affordability

One of the vital aspects for encouraging low-income ridership for bike-share programs is the price structure for membership. Throughout many of the interviews conducted, this topic came up when discussing successful policy implementation, with a recurring theme of producing a structure that promotes equity. Instead of developing a pricing structure that forces all members to pay one lump sum, successful bike-share programs have adjusted to allow first time members to pay a reduced price. For example, Divvy in Chicago allows for low-income

individuals to show their proof of income and with that the operator provides a subsidized, five-dollar, one-time, one-year membership. Then, as the Divvy representative stated, “once they are deemed eligible by the program, there on the spot they are registered for their Divvy membership, and they are provided with a Divvy key that is activated on sight. And they are given all the same privileges and responsibilities as regular Divvy members.”

Other programs have instituted similar membership incentives for local and first-time members. Bike Chattanooga offered a reduced rate for local members, but has also ventured out into low-income communities to offer five-dollar annual membership. With this strategy those individuals are using the system and the Bike Chattanooga representative said, “We tracked the use of these promotional memberships and we’re getting good numbers. They’re out there riding both on weekends and during the week, rush hour kind of times, so they’re using it as something to commute with, which is one of the goals of the system.”

Capital Bikeshare has also instituted a form of membership funding, where individuals experiencing homelessness participate in a program called Back on My Feet to get transportation benefits. “One of options people had was a Capital BikeShare membership, and what they found was that people loved it for the amount of money you would get in a transportation stipend, you could put it towards a membership which offered 24 hours per day, 365 days a year transportation,” the Capital Bikeshare representative said. “The money goes further than any other mode out there.” This strategy gives people the option to use the bike-share system or other modes of public transportation, and many are choosing to use bike-share because of its ease.

Not all membership funding incentives have been a complete success. Boulder B-Cycle had a grant funded program they did with Boulder Housing Partners to encourage ridership of low-income individuals. The partnership, as the Boulder B-Cycle representative stated, “really

allowed us to start looking at that lower income market and how we reach out to them to get us riding some bikes.” However, despite having a lot of up-tick in ridership, that increase was not felt in actual usage of the program, meaning many people would use the system once or twice, and not use it again.

Culture

Perhaps the most difficult barrier to grasp and overcome is the cultural barrier of bicycling. As many interviewees alluded to, biking in the U.S. is a predominantly wealthy, male, Caucasian driven activity. Warping this mindset is a difficult task that each program has discussed tackling in different ways. For some, it’s crucial that bike-share programs find ways to get into diverse communities and change minds. For others, it may be best to let communities simply voice their opinion and build around that mindset.

Denver B-Cycle has utilized public education and marketing to work with many different, diverse groups that don’t perceive biking as being very socially acceptable. As the representative stated, “A lot of them are unfamiliar or feel unsafe on the roads, so showing them the ways of the bike lanes, wearing a helmet, signaling, things like that, eliminating that barrier.” In this particular instance they felt the foreign concept of biking could be dealt with through community engagement. The program made an effort to work with the community on the cultural barriers and promote biking.

On the other end, Greenville B-Cycle put in a bike-share station in a low-income residential neighborhood location and tried several ways to promote activity at that spot. But, as the representative put it, “the community had a pretty strong voice and basically the outcome was it’s just not something that’s going to be very useful in this community. So what we worked with the community to do was to relocate that bike share location to another location and replace it with what they thought would be more useful, a custom made bicycle rack.” In that particular

case the community felt that spot was being underutilized, and worked with the bike-share operator to put the kiosk in a more feasible spot, and replace it with something that represented the members of that neighborhood more accurately, enhancing location and design.

Station Placement

While it may seem like a simple issue to address when developing a feasibility study for a bike-share program, station placement has come across as an important component for developing an equitable system. The goal many interviewees stated is not to place a station in a low-income neighborhood just to make it equitable, because as seen in the Greenville example above, people may not utilize it or see its value. Station placement is, as several interviewees implied, a no-brainer, but challenging as well.

Austin B-Cycle is in the process of applying several new equity strategies that they feel optimistic about, and while discussing ideas with individuals throughout the community, many highlighted where stations are located. The Austin B-Cycle representative put it, “I can’t emphasize enough how much people bring up station location as being a kind of barrier.” People within the community of Austin are voicing their ideas on station placement, showing the programs that it’s something to be looked at.

Similar instances have occurred in Denver. The Denver B-Cycle representative said, “Location of our stations has been really big. We have many of them near their housing communities and near their community centers. So simple ease of access has been big as far as encouraging them to use it where the bus might take them 30 minutes, showing them the option of bike share might take them 10 instead of the 30 to get across town from one location to their community center.” Creating an option that allows individuals to get through town faster is beneficial for the program to illustrate to low-income neighborhoods.

Divvy has utilized station placement to address the first-mile, last-mile equation for a wide array of people commuting throughout the city of Chicago. The Divvy representative stated, “46% of the people who are served by our system are non-white based on U.S. census data. 25% of our stations are within one block of a train station, and 90% of our stations are within one block of a bus stop. When we say that individuals are served by the program, that means residents who live within a half-mile of a station.” Station placement in Chicago allows for users to access different modes of transit, as well as other bike-share stations.

Community Partnerships

Partnerships with different community organizations are the most important aspect of bike-share equity policy according to the interviewees, and are also imbedded in each of the key findings provided in this report. Each respondent touched on this strategy in some fashion during the interviews. Determining which organization to reach out to is different based on the makeup of the city and the community that the bike-share program is trying to reach. For example, the demographics in Chicago for Divvy are going to be different from that of Boulder for Boulder B-Cycle. Understanding these differences has helped many of the programs interviewed make significant steps in the right direction toward equitable bike-share policy.

Capital Bikeshare has partnered with several different organizations to provide affordable membership to low-income individuals. One of these, as the representative explains, is with “Bank On D.C., which is an organization that finds people that don’t have bank accounts and gets them banks, which is for the broader goal of financial literacy and sustainability. And if you sign up for Bank On D.C. then you’re eligible for a low-cost membership through them.” This is a small-scale strategy compared to the one with Back on My Feet described earlier in this report, but shows the wide range of organizations they’ve teamed up with.

One of the benefits of partnering with an organization with ties already in the community is the enhanced trust you can gain. Austin B-Cycle's representative explained, "I think the strategies that have worked very well are partnering with organizations throughout the area. People are wary of the fact that you don't own it, but might be held financially responsible. Hearing it from someone from bike share, or someone with the city sounds like a little bit of a sales pitch. We want that message to not necessarily come from us, but come from perhaps other stakeholders who are looking to improve the mobility and economic situation of people in the community."

Heartland B-Cycle in Omaha is currently not pursuing policies in the form of bike share equity due to staffing constraints. However, the representative was a former employee at Denver B-Cycle and said from his time there, "not working with people in the neighborhood you're trying to promote the system in can backfire." It's a policy they hope to utilize in the future when staffing and finances allow for equitable bike-share policy.

Implications

The implications taken from the key findings indicate that any bike-share program in the U.S. must address the cultural, and historical, aspects of bicycling in order to address any equity issue. Finding strategies and policies that work with community organizations in low-income neighborhoods to promote bicycling as a realistic option is critical. While it's important for operators to allow each community and neighborhood to promote its own identity, working with established organizations can allow bike-share usage to grow in a practical way. This can be done through public education strategies and locations near affordable housing and transit.

The City of Eugene has a unique identity that already has a strong bike culture attached, meaning the bike-share program may face some different challenges than the cities interviewed for this study. However, there is still a large portion of the community that doesn't bike. If this is because either they fear a stolen bike or the cost is too high, a bike-share program is an option

they could possibly get behind. But as each of the interviewees stated, utilizing organizations currently established in the community will provide great assistance with increasing knowledge, and potential ridership. There is also an opportunity for membership funding options for low-income individuals tied to community partnerships. The city could utilize a strategy similar to Bike Chattanooga where they travel to neighborhoods with the highest need for reduced price memberships, or it could have individuals come to them and provide their proof of income to receive low-cost memberships.

The feasibility study has been completed by the city, which indicates preliminary phasing and station plans (seen in Figure 1). This shows a presence in the low-income areas of town,

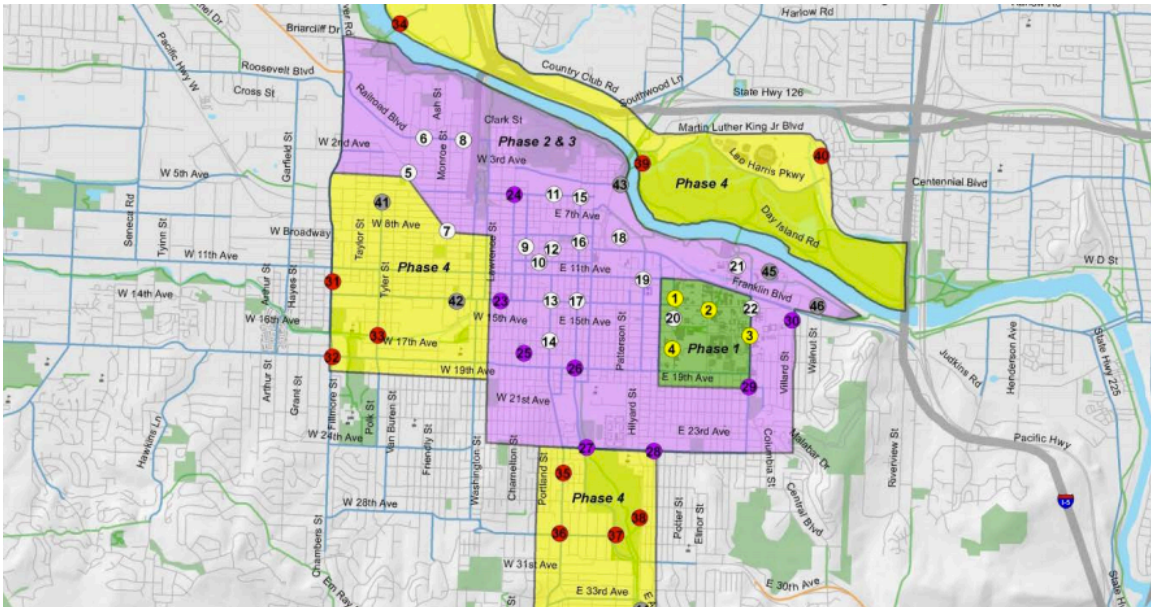


Figure 1: City of Eugene Preliminary Phasing & Station Plan

specifically the Whiteaker neighborhood. The Whit has a strong sense of community as well, allowing for non-profit and historical preservation entities to work alongside the city. Based on interviews, it might be instrumental for the city to look over these stations, coordinate with community leaders and organizations, and discuss where people would like to see stations. That input could impact the preliminary station plan, but may reinforce the current plan.

Chapter 6 – Conclusion

Study Limitations

The final part of the analysis phase of this research must consider any methodological limitations to accurately interpret the results and interpretations of the bike-share representative interviews. The first limitation to this study is the limited number of interviewees. This was due to the lack of responses to the initial recruitment email and follow up emails. One respondent said they didn't want to participate because of their participation to similar studies in recent years. Several interviewees indicated that this study interview Philadelphia's Indego program due to its significant work on the topic. One such example is they allocated 20 of the 60 initial bike-share stations to low-income neighborhoods to reduce common barriers to bike-share. However, Indego failed to respond to several emails and phone calls.

The second limitation relates to the first, in that one of the respondents was Tulsa Townies, a bike-sharing program in Tulsa, Oklahoma. The representative failed to identify that their bike-share program is a free one before the interview, making the interview unusable.

The third limitation is the lack of equitable bike-share policies put in place by two interviewees, making their interviews difficult to utilize in this research.

The last major limitation of this research relates to the culture of bicycling in these cities. Eugene has a much higher percentage of the population commuting to work by bike compared to many of the cities in this study. This could make the policies they've implemented difficult to relate to.

Areas for Future Research

This study was limited to ten bike-share programs that volunteered to participate in a bike-share equity study. The method of requesting qualitative information from current bike-share operators has potential that reaches far beyond the scope of this study. A larger sample from bike-share programs across the country could be collected. Additionally, the methodology could be expanded from solely interviewing bike-share program representatives, to including GIS mapping for station location and census data. With policies currently in place and new ones currently being established, it would be beneficial to conduct a similar study in the coming months and years to determine which strategies are having a lasting impact, and which are seeing minimal returns.

Conclusion

Active transportation is a growing subject in the transportation planning field, with a growing emphasis on equity specific to bike-share. This study has shown that equity issues are a focus for communities and bike-share programs across the country. The transition from our current bike-share situation to where programs are aiming to be will need to be riddled with similar studies. New challenges are sure to arise, and new solutions will need to be tried, in order to find successes and failures in equitable bike share policy.

References

- Darren Buck *Encouraging Equitable Access to Public Bikesharing Systems* (Virginia Tech, 2012)
- Juan Carlos Garcia-Palomares, Javier Gutierrez and Marta Latorre *Optimizing the location of station in bike-sharing programs: A GIS approach* (Applied Geography, 2012)
- Tal Raviv, Michal Tzur and Iris A. Forma *Static repositioning in a bike-sharing system: models and solution approaches* (Journal on Transportation and Logistics, 2013)