
Bike Share Equity:

Perspectives on Hubway in Cambridge's Area Four

Analysis of Focus Group Findings

Funding provided by the Centers for Disease Control's
Community Transformation Grant Program

January, 2015



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Abstract

Bike share systems across North America, including the Hubway system in Metro Boston, find that annual members are wealthier, more educated, and less ethnically diverse than the general population. Potential causes for this disparity include “hard barriers,” such as lack of access to credit/debit cards among low-income and minority populations, cost, and the concentration of bike share stations in higher-income areas; and “soft barriers,” such as sociocultural perceptions of bike share use or bicycling in general. MAPC conducted two focus groups with Black residents of Area Four, a mixed-income neighborhood in Cambridge, Massachusetts. The goal of the focus groups was to investigate the presence and significance of “soft barriers” to bike share use by low-income people and people of color.

We found that the most significant barrier may be simply a lack of information about how to use bike share and how much it costs. Financial barriers are important, but knowledge that a debit card can be used to sign up for the system, and the ability to pay in smaller monthly installments, may be at least as important as lowering the overall cost of membership. Sociocultural barriers, such as a lack of identification with bike share users or cyclists in general, and concerns about how others will perceive you if you ride a bike, were also present. However, these were primary concerns for a small minority of focus group participants, especially among younger, male participants.

Based on the feedback gained from these focus groups, MAPC has recommended policy changes to Hubway, including offering a monthly installment option, that will be implemented in 2015. In addition, MAPC and the Hubway municipalities are seeking funding for an outreach program to address the information gap and sociocultural barriers.

Background

The Metropolitan Area Planning Council is the regional planning agency serving the 101 cities and towns of Greater Boston. MAPC serves an ongoing role as regional coordinator of the Hubway bike share system, which includes the municipalities of Boston, Cambridge, Somerville and Brookline. MAPC brings an equity lens to all of our work, including Hubway; leading the region toward greater equity was recently adopted as one of four strategic priorities in MAPC’s new 5-year strategic plan.

Hubway, like most North American bike share systems, has a membership that does not match the demographic profile of the region overall (see tables on following page). Hubway users tend to be wealthier, more educated, and less ethnically diverse than the general population. In 2012 MAPC received a Community Transformation Grant from the Centers for Disease Control, in order to address the root causes of health disparities in Middlesex County, which includes the Hubway municipalities of Cambridge and Somerville. We used this funding to conduct preliminary research to identify barriers to bike share use among underrepresented populations, and to document best practices by cities and bike share systems to increase equity in bike share use. This research identified a complex interplay of both “hard” and “soft” barriers to bike share use. The hard barriers we identified through our preliminary research included: lack of credit/debit card needed to purchase membership; cost of membership; lack of stations in low-income and/or majority-minority neighborhoods; and language barriers.

	Population of Hubway municipalities*	Hubway Annual members 2012	Hubway Annual members 2013	Hubway Monthly members 2013
Race	Census 2010			
White	52.6	83.2	89.1	85.5
Black	18.2	2.1	1.3	0
Latino	14.8	3.9	4	3.2
Asian/Pacific Islander	10.1	6.9	5.7	11.3
Other	4.3	4.1	3.1	1.6
Income	ACS 2009-2013			
<i>Note: Certain fields are blank because ACS and Hubway surveys use different income brackets.</i>				
<\$20,000	22.1			
<\$35,000		10.3	11.4	7.8
\$20,000-\$39,999	14.4			
\$35,000-\$49,999		8.4	8.6	11.8
\$40,000-\$59,999	14			
\$50,000-\$74,999		15	15	25.5
\$60,000-\$74,999	8.4			
\$75,000 - \$99,999	11.3	13.3	12.4	15.7
>\$100,000	29.7	53	52.6	39.2
Education	ACS 2009-2013			
No high school degree	11.5	0.2	0	0
Completed high school/GED	19.3	0.6	0.5	0
Some college/2-year degree	20.1	6	5.1	9.3
Bachelor's degree or higher	45.4	93.3	94.4	90.8
<i>Master's degree (included in "Bachelor's or higher")</i>	–	35.2	36.1	26.2
<i>Doctoral degree (included in "Bachelor's or higher")</i>	–	15.7	16.5	9.2
Gender	Census 2010			
Female	52.1	35	34	51.6
Male	47.9	64.8	65.4	48.4
* Boston, Cambridge, Somerville and Brookline. Sources as noted. Sources for Hubway members are annual surveys emailed to members by Hubway.				

The requirement to use a credit or debit card to access bike share gets the most attention among barriers to bike share access, yet a report from the Federal Deposit Insurance Commission (FDIC) shows that this only impacts a small percentage of people in the Boston area. The percentage of “unbanked” households (households that do not have a credit or debit card) is lower in Metro Boston than the national average,

both overall (4.2% versus 8.2%), and for key demographic groups. However, unbanked rates among certain demographics in Metro Boston are still significant (see table).

The City of Boston subsidized membership program targets low-income Boston residents who do have access to a credit or debit card, but for whom the cost of an annual membership (\$85) is a barrier. This program has been successful: among Hubway members who live in the City of Boston, 18% have signed up through the subsidized membership program, which costs \$5 for an annual membership. Of the subsidized members, 83% have incomes of less than \$35,000 per year, 53% are people of color, 52% are women, and 92% signed up with their own credit or debit card. Subsidized members use Hubway at similar rates as all annual members, and have a similar renewal rate.¹

Unbanked Households in the Boston Region	
Household Type	Percentage Unbanked
Black	11.9%
Hispanic	20.9%
Single female-headed	11.5%
Income <\$15,000	19.8%
No high school degree	28.8%
Source: 2011 FDIC National Survey of Unbanked and Underbanked Households, Sept. 2012.	

Low-income communities and communities of color within the Hubway service area vary in terms of their level of access to Hubway stations. In Boston, low-income and minority residents are highly concentrated in the neighborhoods of Roxbury, Dorchester, Mattapan and East Boston, which are largely beyond the Hubway service area, although the system is gradually expanding into Roxbury and Dorchester. In Somerville, the neighborhoods with the highest proportion of low-income and minority residents are also on or beyond the edges of the Hubway system. Cambridge is less segregated by income and ethnicity, and has a more even distribution of Hubway stations throughout the city. The areas of Cambridge with higher concentrations of low-income and minority residents do have bike share stations—usually several—within walking distance.

However, the interplay of multiple barriers in addition to bike share station access is signaled by the performance of stations in these different areas. Six of the nine lowest-ridership stations in the Hubway system are in the neighborhoods of Boston that are primarily low-income and minority. While this is partly due to the fact that they are on the edge of the system, this is not the only factor, as these six stations in majority-minority neighborhoods are outperformed by nearly all of the other edge stations in the system. The average number of trips per day starting or ending at the six stations in majority-minority Boston neighborhoods is only 37% of the average trips per day for the other edge stations.

MAPC’s preliminary research included anecdotal reports of “soft” barriers to bike share use, such as complex status associations with adult bicycle riding in communities of color; lack of identification with the people typically seen on bicycles (bike share or personal bikes); and a lack of a sense of ownership over new public infrastructure. In the second phase of MAPC’s work funded by the Community Transformation Grant, we conducted focus groups in order to investigate these potential soft barriers, to determine the relative importance of the hard barriers we identified, and to see if there were any additional hard or soft barriers we had yet to identify.

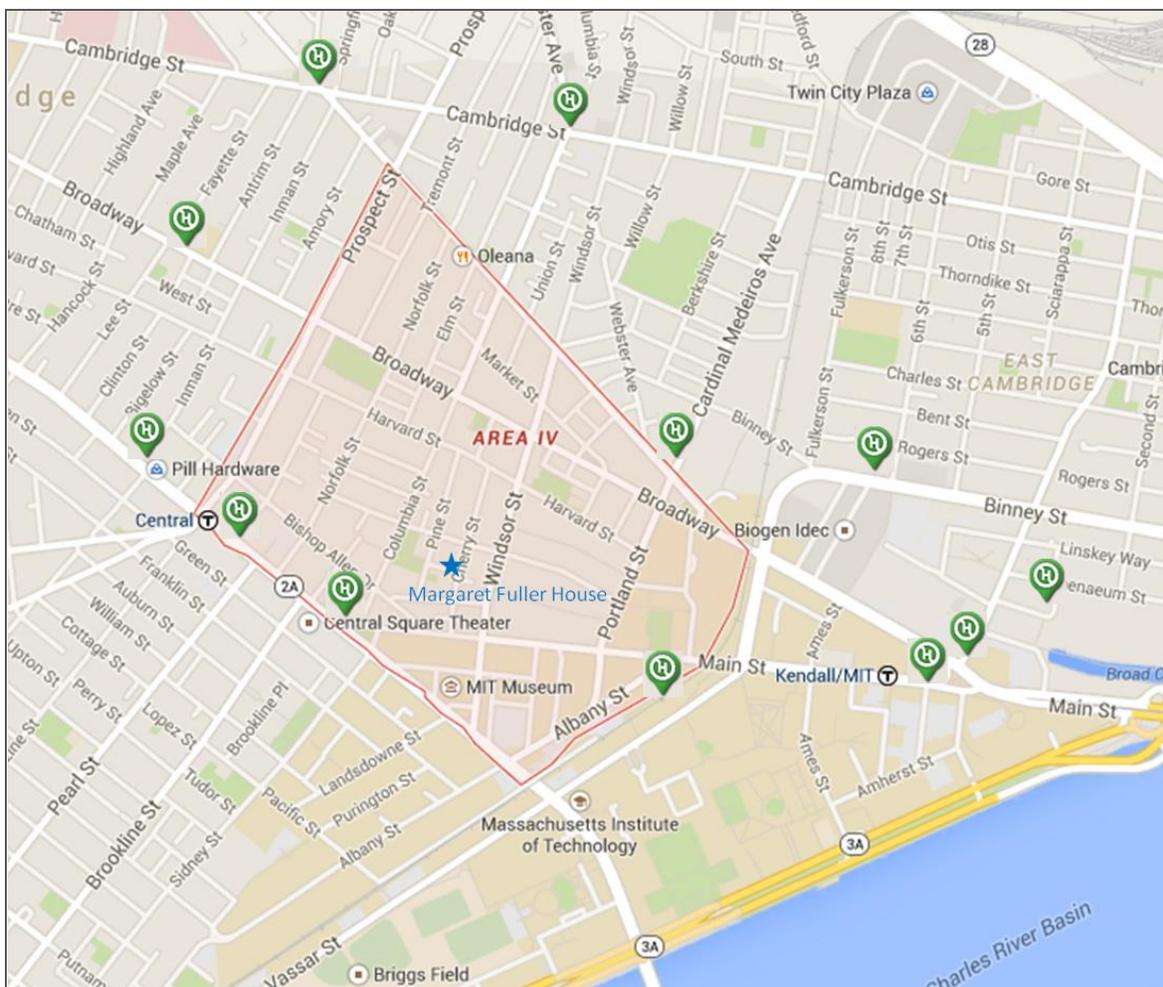
¹ Data provided by the City of Boston.

Recruitment

Soft barriers to bike share use are the least well understood, and therefore were MAPC's primary research objective for focus groups. Poor station access and language barriers are the most well-understood barriers, with the most straightforward solutions, so we attempted to minimize as much as possible the impact of these barriers on our participant sample, by selecting participants whose native language is English, and who live in a neighborhood well-served by Hubway.

We selected Cambridge as the location for our focus groups, specifically Area Four (see map below), which is ringed with Hubway stations, while having a high proportion of both low-income residents and people of color.

To recruit for our first focus group we reached out to the City of Cambridge, which connected MAPC with the Community Engagement Team, a program run by the Cambridge Public Health Department. This program employs members of communities that are the target audience for public health initiatives to conduct outreach and engagement in their own communities. A member of the Community Engagement Team and a staff member at the Cambridge Public Health Department both recruited members for the first focus group, and also participated themselves. For the second focus group, participants were recruited by a staff member at the Margaret Fuller House, a community center located in Area Four. Both focus groups took place at the Margaret Fuller House.



Participant Characteristics

Overall, MAPC was successful in recruiting participants that fit the target research population. There were 11 men (55%) and 9 women (45%) across both focus groups, all of whom self identified as Black (85%) or Black and at least one

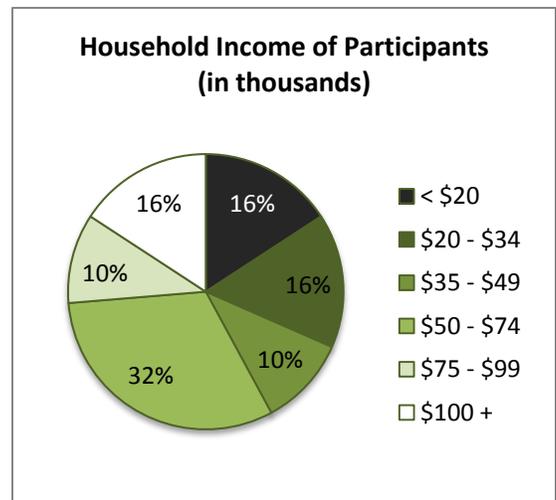
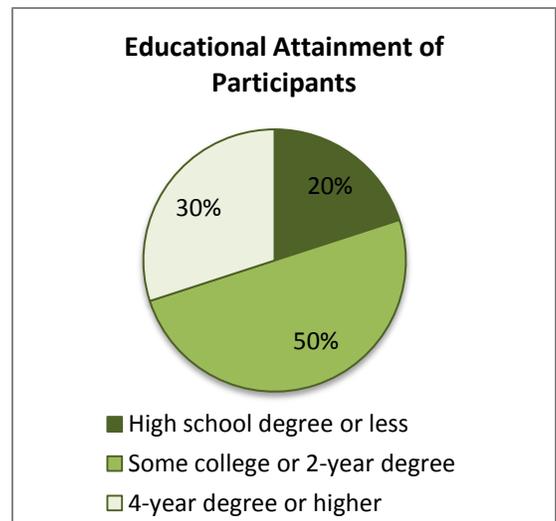
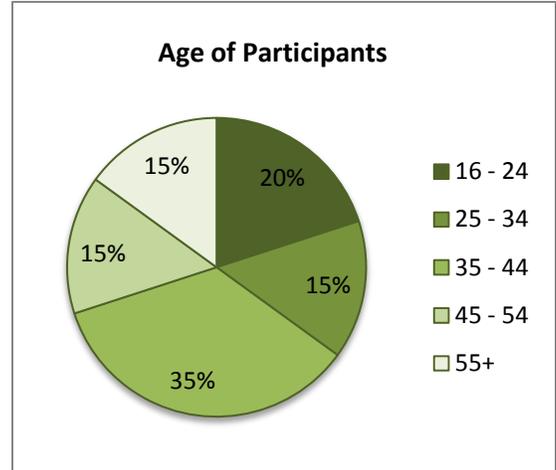
other race (15%).

More than half the participants fell in the 25-54 year old target age range, with some outliers on either end. This age range was chosen to mirror the most represented demographic of Hubway users.

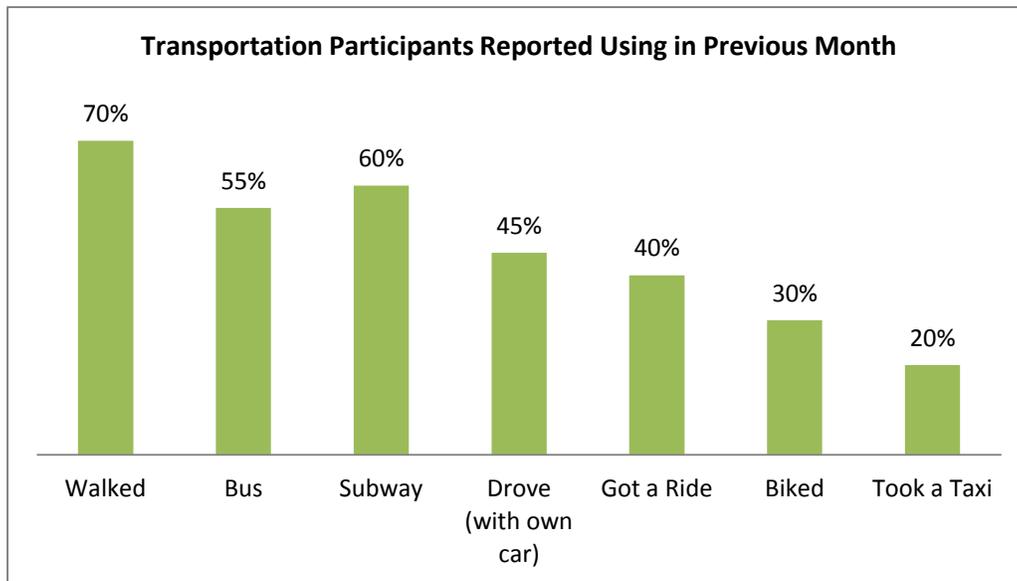
Less than half of the focus group participants completed a college education, with 4 of the 20 having completed only high school. Sixty percent of participants reported having at least one child under the age of 16 in their home and about a third report a household income under \$35,000/year.

Finally, none of the focus group participants had ever used a Hubway bike before each meeting but about a third reported using their own bike as a means of transportation in the previous month (see table on following page).

Although similar recruiting tactics were used for both focus groups, important differences existed between them. The first focus group was younger, with an average age of 33, compared to an average age of 48 for the second focus group. The participants in the first focus group had a wide distribution of education attainment levels, including one participant with no high school degree, two with only a high school degree, and three participants with a masters degree. In the second focus group, educational attainment levels were concentrated in the middle of the range, with most participants reporting some college, a 2-year degree, or a 4-year degree. Similarly, the first focus group had a wider range of income levels, while the incomes of the participants in the second focus group were concentrated in the middle of the range. In both focus groups, educational levels and income levels were broadly correlated, but did not track precisely for all participants.



The most important difference between the two groups was that all of the participants who already used biking as a means of transportation were members of the *first* focus group, while the second focus group consisted exclusively of drivers and users of other modes of public transportation.



**Analysis
Methods
Definitions**

Dedoose, which is an online qualitative and mixed methods platform, was used to analyze all the data for this project. Since there were only 20 participants in this project all of whom are Black residents of Cambridge’s Area IV, the findings of this study may not be generalizable to other populations and should be interpreted with caution for those outside the study area.

Participants were coded and grouped according to the demographic information which they provided at the *end* of each focus group, so that it did not bias their perspectives during the discussion.

When analyzing the data, we group barriers to Hubway usage into Hard Barriers and Soft Barriers, which for the purposes of this study were defined in the following way:

- Hard Barriers are external obstacles to accessing Hubway. These can include financial barriers, such as lack of a credit or debit card or cost of membership; physical barriers, such as lack of station access, lack of safe bicycling facilities, or physical disability; and language barriers.
- Soft Barriers are sociocultural or perceptual phenomena that lead people to choose not to access Hubway. These can include a perception of who rides bikes or who Hubway is meant to serve that does not align with a person’s self-perception; a lack of information about how to use the system; or a heightened perception of risks associated with Hubway use, including physical risks from urban cycling, financial risks of unanticipated charges, and simply fears about using the system improperly.

All other codes were developed using the “ground-up” approach based on the content of the focus group discussion. The sub codes used for analysis are shown below:

Barriers to Hubway Use Reported in Focus Groups	
Hard Barriers	Financial <ul style="list-style-type: none"> • Holds on Debit Cards • Lack of a Credit Card • Cost of Membership is too high • Other Financial Barriers Station Placement
Soft Barriers	Perceived Financial Burden Perceived Liability Issues Perceived Convenience/Utility of Hubway Program Information Gap (i.e. “I didn’t know that...”) <ul style="list-style-type: none"> • Debit Card Knowledge Gap • On Membership Cost • On Station Location • Marketing and Outreach Gaps • Usage Barriers, Perceived Burdensome/Confusing Logistics Perceived Safety of Hubway Bikes and System <ul style="list-style-type: none"> • Lack of Safe Road Practices • Hubway Bike Design • Lack of Helmets • Safety from Traffic Socio-Cultural Barriers <ul style="list-style-type: none"> • “It’s not part of my culture” • “I’m not a biker” • “Not for women” • “Not for Black people” • Comfort/Cleanliness • Style/Dress

Results

While much of the research to date has focused on hard barriers to Hubway usage amongst racial and ethnic minorities, we found that when we engaged this group directly they dedicated substantially more time to discussing soft barriers. This is illustrated by the orange code cloud on the following page (the size of the text indicates the frequency with which each theme was raised). Of the soft barriers, those that were most commonly cited overall were Information Gap and Socio-

Cultural Barriers.

The most surprising finding of this study was that the information gap around Hubway usage and membership costs was present regardless of age, gender, or income, and manifested regardless of whether

participants self-identified as bikers. Our results indicate that a simple lack of information may be a more significant barrier than other issues, such as lack of credit/debit card, previously thought to be the primary barriers to this population’s usage of the Hubway program.

The Information Gap

More than any of the hard barriers, there seems to be a lack of information with regards to the Hubway program and how it works. Our data suggests that this information gap extends to all aspects of the program—from how much it costs to how to use the stations and bikes.

Yearly Membership Costs

While several participants had at least some knowledge around the cost of one-day bike rentals, not one was aware of the full year membership cost. In fact, when we informed participants of the cost of a yearly membership, the responses were overwhelmingly positive regardless of yearly reported income.

One participant told us *“they should really advertise that more, I don't think people know that [cost of membership].”*

Other feedback we heard included: *“\$85 a year I feel is a fair price”* and *“that’s not bad. Membership is pretty cheap.”*

Interestingly, once informed, many thought \$85 for an annual membership was actually a fair price, despite the fact that our focus group participants reported lower household incomes when compared to the average Hubway user (32% of our focus group participants have incomes of less than \$35,000, compared to only 20% of Hubway members). These data suggest that the lack of information around membership cost may actually be a greater barrier than the cost itself.

Despite this, some participants did feel that cost could be a barrier for those who were lower income.

One person told us that a price *“between \$25 and \$50...may be more realistic.”*



Debit Card Knowledge Gap

Another surprising finding of this study is that there may be an important distinction between credit and debit cards. Comprehensive national statistics on unbanked rates compiled by the Federal Deposit Insurance Commission lump credit cards and debit cards together, but focus group participants and Margaret Fuller House staff indicated that while debit cards are common among Area Four residents, credit cards are very uncommon. This is an important distinction because these focus groups revealed that many people do not know that debit cards can be used to sign up for annual Hubway memberships.

One participant described Hubway users by saying *“they got credit cards, basically. Not too many people of color got credit cards to waste on a bike ride.”*

Another participant told us, *“The biggest issue for me is the credit card. I just tried yesterday and I couldn’t use [Hubway].”*

Our data suggest that this gap may be due to the gap in information around annual memberships rather than debit cards specifically, as participants cited the \$101 hold placed on debit cards used to purchase short-term Hubway passes as a significant barrier.

Perceived Burdensome/Confusing Logistics

Participants in both focus groups also highlighted the confusing and/or burdensome logistics of bike share use as barriers. The time limits and fee structure were considered confusing by some, and there were concerns about the ability to bike all the way to one’s destination within the 30 minute free riding time. Some participants were also concerned about what to do in the event that the destination station is full, while numerous participants cited a desire to be able to lock a bike share bike anywhere in order to do a quick errand, rather than returning the bike to a station.

When discussing how to use the station kiosk one participant noted, *“I thought I was a fairly intelligent person but that machine was confusing to me.”*

Others thought the benefit of Hubway was not worth the burden. One person told us, *“It’s just not feasible, period. Going through too much figuring out where the stations are, where to drop it, locking it, you know what I mean? I just wouldn’t do that.”*

Logistical barriers were more likely to be cited in the second focus group, which had a higher median age and consisted primarily of non-bikers. Although the sample size is too small to draw generalized conclusions, this trend suggests that these barriers might be more important to new bikers and/or older riders when compared to younger people or people who already use bikes as a means of transportation.

Socio-Cultural Barriers

While the information gap was clearly present in both focus groups, younger participants tended to focus more on socio-cultural barriers, while older participants tended to focus more on safety and liability issues.

“It’s not part of my culture”

In our focus groups, we heard participants express a lack of identification with bike share users, and even cyclists in general. There was a sense that bike share is targeted toward hipsters and professionals, while the focus group participants who are cyclists often feel like they don’t conform with either the typical idea of who rides a bike, or the cultural expectations of other groups that they do identify with (African-Americans; working-class; moms).

One participant echoed this sentiment clearly when she said *“Not one of my friends rides a bike. It’s about seeing yourself as a biker”* while another commented *“it might be based on culture and age and what you see on TV. Nobody is on a bike. The Hubway bikes you don’t really see black people on them.”*

Gender issues also emerged as part of this conversation. When describing how she felt about biking as a black woman one participant told us *“You have to see yourself as a non-traditional black woman, it’s a rare thing.”*

Perceptions of Bikers

When asked who typically rides Hubway bikes, participants in both focus groups overwhelmingly agreed that tourists and students were the biggest users. Bikers and Hubway users were often perceived as healthy and financially better off as well.

One participant said *“those I see riding them are students...or probably just tourists.”*

Financial Barriers

Although participants primarily focused on soft barriers to Hubway usage, there was still a sentiment that the cost is a barrier to some potential members, especially when the total fee must be paid up front.

In fact, most of the *hard barriers* participants cited were financial and focused on the \$101 debit card hold, the cost of the daily pass, and the high cost of returning your Hubway bike after 30 minutes. Rather than focusing on the issues though, the participants in our focus groups spent a great deal of time suggesting changes to the program that they thought would increase usage amongst their peers.

Some of the ideas we heard relating to financial barriers included:

- Payment plans
- Seasonal memberships
- Senior/Disabled discounts
- Subsidized/Reduced prices for low-income residents

Some participants noted that it was similar to a one-month transit pass, and therefore thought it was a good deal at only a few dollars per month. Some people even thought it was more expensive than it actually is, which highlights the information gap discussed above.

The only other hard barrier that we really heard mentioned was the need for more stations. On this issue, one participant noted *“if it had broader locations, then I’d run into it, then I could make the decision, do I want to do this or something else.”*

Next Steps

MAPC and Hubway are taking steps to address numerous potential barriers to Hubway use among low-income people and people of color. As a result of the information gained from these focus groups, we are better able to target these programs and policy changes, and we are implementing new changes based entirely on focus group feedback.

Through the focus groups, MAPC learned that the official unbanked statistics obscure the difference between credit cards and debit cards: while many people in the community studied have debit cards, credit cards are much less common. Furthermore, we learned that the \$101 hold placed on debit cards used to purchase short-term Hubway memberships presented a major barrier to use of the system. Based on these learnings, MAPC reached out to other bike share systems around the country to see if there were any that did not place a hold on debit cards, and if so, if they had experienced any negative consequences such as an increase in bike theft. Numerous systems² responded that they had eliminated the hold, or never instituted it in the first place, as a way to make the system more accessible to lower-income users. None reported increased theft as a result. MAPC proposed to the Hubway Advisory Committee that the \$101 hold be removed for Hubway users purchasing memberships with a debit card. This change has been adopted, and in the coming weeks the hold will decrease to \$1.

MAPC’s focus groups also included a lot of discussion of the affordability of Hubway memberships. While there were mixed opinions as to whether \$85 is affordable, there was consensus that this price would be much more affordable if a monthly installment option were available. Based on this feedback and consistent reports from City of Cambridge-run focus groups, the Hubway Advisory Committee moved to implement a monthly installment option for annual members. This change will go into effect in Spring 2015, and the cost will be \$8 per month.

In addition to the monthly installment option, many focus group participants agreed that a slightly lower price would be more affordable for low-income residents. Boston currently offers a subsidized membership to City of Boston residents for \$5. Cambridge, Somerville and Brookline are currently pursuing grant funding that would allow them to offer a discounted membership to their residents for \$50. If funded, this program will also begin in Spring 2015.

The grant program being proposed by Cambridge, Somerville and Brookline also focuses on increased outreach to lower-income communities and communities of color. This outreach will be designed to address the information gap and sociocultural barriers. In addition, the grant will enable posters to be installed in Hubway stations in the three municipalities that show people of color riding Hubway bikes with messages in a number of different languages encouraging people to “join your community”. The

² Boulder, CO; Chicago, IL; Minneapolis, MN; Omaha, NE; Charlotte, NC; Austin, TX; San Antonio, TX; Salt Lake City, UT.

proposed grant program includes funding for data collection and analysis, in order to evaluate the success of the initiative and determine which aspects of the program to continue beyond the grant period.

Conclusion

Focus groups conducted by MAPC confirmed the existence of sociocultural barriers to bike share use among mixed-income Black residents of the Area Four neighborhood of Cambridge, Massachusetts. However, the focus groups uncovered a significant information gap, which may be the most important barrier to bike share use in this population. Participants were broadly unaware of the cost of the Hubway bike share system and the logistics of how to use it, despite the system being present in their neighborhood for several years. Cost is also a barrier, but the ability to use debit cards and to pay for an annual membership in smaller monthly installments were widely perceived as solutions to the cost barrier.

Hubway is already using the results of this research to craft policies and develop outreach and informational programs. We hope that these results can be helpful to other bike share systems that are also making efforts to increase participation by low-income people and people of color. We further hope to see this type of research replicated in other contexts, and we are eager to see the results of interventions aimed at addressing the information gap and sociocultural barriers in Greater Boston and beyond.