

# Current Efforts to Make Bikeshare More Equitable

## Survey of System Owners and Operators

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The number of public bikeshare systems has been increasing rapidly across the United States over the past 5 to 10 years. To date, most academic research around bikeshare systems in the United States has focused on the logistics of planning and operationalizing successful systems. Investigations of system users and effects on the local community are less common, and studies that are focused on efforts to engage underserved communities in bikeshare systems are rarer still. This paper relies on a survey of representatives from 56 U.S. bikeshare systems to better understand and document current approaches toward serving low-income and minority populations. The survey asked about equity policies and metrics, the degree to which equity considerations affect a variety of system practices, what the existing barriers to utilizing bikeshare are for target populations, and what challenges the bikeshare system entity faces in addressing those barriers. Results indicate that nearly one in four bikeshare systems has written policies around equity; nearly half of bikeshare systems with more than 500 bikes have such policies. However, many more systems consider equity in various aspects of their systems. Equity considerations affected station siting, fee structure and payment systems, and promotion and marketing in a majority of systems (68%, 72%, and 57%, respectively), and operations and data collection and analysis, though to a lesser extent (42% each). Bikeshare systems reported cost, access, and outreach as the largest barriers to equity, in addition to overall funding and staff levels.

In 2015, there were more than 800 bikeshare programs around the world, with approximately 1 million bicycles, a substantial increase from the handful that existed in the late 1990s (1). Because of this growth, research interest in public bikeshare systems has increased rapidly. A search of titles in the Transportation Research International Documentation database (<http://trid.trb.org>) for titles containing the terms “bike share,” “bike sharing,” “bicycle share,” “bicycle sharing,” and “public bikes” found that the number of documented studies more than tripled from 31 during the period from 2007 to 2010 to more than 100 during the period from 2011 to 2015. However, relatively few studies have focused on bikeshare systems and equity or bikeshare systems and low-income populations. Most

research to date has concentrated either on the logistics of designing and operating systems or else on broad transportation system impacts. Investigations of system users and approaches to increase ridership among underserved communities have only just begun.

Despite the appeal and success of bikeshare systems in the United States and abroad, there is growing evidence that certain groups are participating less and enjoying fewer benefits. Bikeshare system users tend to have higher incomes (1, 2), more education (1, 3, 4), and are more often white (3, 4). For example, surveys of Washington, D.C.’s Capital Bikeshare users found that members were more educated and more likely to identify as Caucasian than was the city population as a whole, and there was extremely low participation among African-American residents, whether among members or occasional users (4).

A bikeshare system has the potential to benefit disadvantaged communities if service better matched their needs. In London, a study found that residents in poorer areas would use a bikeshare system if stations were sited locally and prices were affordable relative to other modes (5). A bikeshare system can serve as an important link to transit and to work; a survey of annual members in Boston, Massachusetts, found that trips to and from work were the most common trips (6). Bikeshare systems have also been identified by underserved groups in Philadelphia, Pennsylvania, as a potentially lower-cost and more reliable substitute for transit (7). Bicycle ownership costs and lack of secure bicycle storage at home (problems that bikeshare systems can solve) were both identified as important barriers to cycling among specific low-income and minority populations in Portland, Oregon (8).

Station siting is an important factor in participation and access to bikeshare systems. Smith et al. found that only four of the larger bikeshare systems have more than 40% of stations located in communities categorized as having high economic hardship (9). Ursaki and Aultman-Hall reported an inequitable distribution of bikeshare access in seven cities, with significant differences in access based on race, education, and income (10). Research in London has also found lower bikeshare station density in less affluent neighborhoods (11).

Station siting is not the only factor affecting use by diverse and lower-income populations. Models of bikeshare use in three U.S. systems revealed lower expected use at stations located in neighborhoods with lower incomes and higher shares of nonwhite residents (12). Another study reported that siting stations in low-income communities in Minneapolis, Minnesota, yielded limited ridership, likely because of a lack of ongoing community engagement (13). Credit card requirements and equipment liability absent credit holds pose additional barriers to use by low-income and minority populations

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(14). A recent set of case studies discussed several American cities' attempts to connect low-income individuals to bikeshare, finding some success with subsidized memberships to overcome cost barriers (15). However, difficulties persisted because of station siting and low use of stations in diverse communities (15).

The operating model for a bikeshare system may also influence equity outcomes. Throughout the United States there is a variety of operation models: nonprofit, privately owned and operated, publicly owned and operated, publicly owned and contractor operated, and vendor operated (7). For example, Divvy (in Chicago, Illinois) is operated by a privately held company, Motivate, for the Chicago Department of Transportation. Meanwhile, Denver B-cycle (in Denver, Colorado) is owned and operated by Denver Bike Sharing, a nonprofit organized under §501(c)(3) of the Internal Revenue Code. The reliance on private funding for capital and operating costs may influence station siting and other operating decisions, with varying implications for equity outcomes. For instance, the profit motive in private funding may foreclose the possibility of locating stations in potentially low-use areas to help reach targeted equity populations.

Efforts are under way to address these issues. In a survey of North American bikeshare operators, 35% ( $n = 20$ ) of respondents located stations on the basis of equity reasons, 35% subsidized membership, and 25% assisted low-income members with payment options (16). Another study found that 43% ( $n = 23$ ) of surveyed bikeshare programs factored equity considerations into station siting decisions (6). The Better Bike Share Partnership, a multiorganizational collaboration funded by the JPB Foundation, aims to build equitable and replicable bikeshare systems. At the time of writing, the partnership had funded 15 bikeshare operators, cities, and local nonprofits to help U.S. cities develop and implement strategies to increase bikeshare use in underserved communities.

This paper presents findings from a survey of bikeshare system owners and operators aimed at understanding how they are approaching service to underserved, low-income, and minority communities. The research provides a snapshot of the extent of current efforts to address equity and reveals opportunities and challenges for improvement. Additional research is necessary to fully understand the impact of these efforts.

## METHODOLOGY

By use of the Pedestrian and Bicycling Information Center's list of bikeshare programs (17), web searches, and help from the National Association of City Transportation Officials, 75 U.S. bikeshare systems that were either operational or prelaunch were identified. The focus was on public bikeshare systems intended to serve a wide range of residents, although a handful of larger university systems was included. Systems with fewer than 40 bikes were excluded.

For each of the 75 systems, researchers sought to identify a key contact who could speak to overarching initiatives involving the system and any efforts to provide service to potentially underserved populations. In some cases, the identified contact was a representative of the public agency that owned, operated, or oversaw the bikeshare system. In other cases, the contact was a representative of a private vendor charged with managing the system. The introductory e-mail to each contact explained that he or she had been identified as a representative of the bikeshare system, and that researchers wanted someone who could speak about decisions about system operations, policies, and programs. Each contact was asked to inform researchers if someone else within the bikeshare system would be better

suited to respond. The initial request was e-mailed in March 2016. Up to three additional reminders were sent to each of the cities.

Respondents were provided with several example definitions of equity from organizations working in the bicycle realm. These included the following:

- League of American Bicyclists. "The guarantee of fair treatment, access, opportunity, and advancement for all, while at the same time striving to identify and eliminate barriers that have prevented the full participation of some group," and
- Advocacy Advance. "Recognizing and reacting to the underrepresentation of youth, women, and people of color in advocacy efforts and local transportation decisions."

Some would also add low-income and older adults and further recognize the ramifications of past inequity along with ongoing inequity. Instructions also informed respondents that they were not limited to these definitions.

The survey started with basic information, including the role of the respondent's organization in the bikeshare system, type of organization, operational status of the system, and number of bikes. The survey then asked if the bikeshare system had an equity statement or policy (and, if so, to provide the text), and whether the system had established specific metrics to measure equity (and, if so, what those metrics were). The next section asked what role, if any, equity considerations played in several key bikeshare system operational areas, including station siting; fee structure and payment systems; system operations, including employment; promotion, outreach, and marketing; and data collection, including assessment of user (and potential user) demographics. For each role, contacts were also asked to explain how equity was incorporated.

Where respondents were asked to identify how much equity influenced that part of their system, analysis of variance (ANOVA) was used to test group differences. A majority of the analysis focused on the open-ended responses that allowed system respondents to explain how equity was considered in each section. An inductive coding scheme to identify key words or themes was used. More than 200 codes were identified through analysis of open-ended responses, many of which were combined in some way.

As with any survey, there were limitations with respect to sampling and response. Although there was an attempt to identify all current or planned bikeshare systems, appropriate contacts could not be identified for some systems. In other cases, researchers learned of bikeshare systems after completing the survey. It is difficult to assess the potential response bias for this survey without a complete and accurate inventory of systems. Very little difference was found between the systems that responded and those that did not respond in terms of city size, nonwhite population, and poverty rates. Another limitation of the survey lay in having a single person respond. Although attempts were made to identify the most knowledgeable person, as noted in some findings, a single individual may not be aware of all aspects of the system.

## FINDINGS

The analysis first looked at the closed-ended questions on whether the respondent said they had equity policies or metrics and how they rated the role of equity in each of the different areas of their bikeshare operations. Responses to the open-ended questions, where respondents were asked to describe their equity policies, metrics,

and the role of equity in areas of their bikeshare operations, were then analyzed. Considering that not every respondent answered the open-ended questions and those that did might not have given the most detailed answers they could have, the analysis was focused more on what was present rather than what was absent. Terms such as “low-income,” “diversity,” “underserved,” and “disadvantaged communities” were the respondents’ terms and often were not well defined. In exploring equity implications, it is important to recognize the differences between strategies that target low-income users and those that target specific racial or ethnic groups, as these are neither the same nor mutually exclusive.

## Organization and System Descriptors

Fifty-six of the 75 systems (75%) completed the survey, while three provided partial responses. One system refused. The analysis only included those that returned a reasonably complete survey. Table 1 shows how respondents classified their organizations. Respondents to the survey were split between owner (30%), operator (27%), and owner and operator (30%). Most respondents represented either a government agency or a nonprofit organization. Three systems self-identified as universities (including one returning a partially completed survey), which were excluded from the analysis except in Table 1. The equity dimensions on college campuses were thought likely to be different from those of citywide systems. Most responding systems were already operational (82%). Just over half of the bikeshare systems were considered medium-sized (100 to 500 bikes),

while around a quarter were small systems (fewer than 100 bikes) and a quarter were large systems (more than 500 bikes). In terms of geographic spread, around a third of responding organizations were from the West U.S. Census region, just over half were split between the South and Midwest regions, and only 13% were located in the Northeast region.

## Equity Policies and Statements

Only 23% of respondents reported that their systems had some form of equity statement (Table 2). Large systems with more than 500 bikes were more likely to have an equity statement (46%). Systems with equity statements had a median percentage of nonwhite populations in their cities that was 21 percentage points higher than those without such statements. Those responding “Other” almost unanimously stated having equity policies in development.

Whether systems were already operational and looking at expanding, were planning their initial system, or were in any stage between, there was wide variance in equity approaches. Many system respondents said they were in the process of drafting an equity statement or policy. Three systems provided extensive statements or policies. Their statements were much more specific, typically outlining who their equity goals targeted, how, and to what end.

Several systems had brief statements employing general language, such as “providing accessible and affordable bicycles for all,” or some variation of this, or pointed to Title 6 requirements (a federal law requiring transportation agencies receiving federal money to abide by nondiscrimination laws). However, a reliance on Title 6 may be inadequate in addressing equity concerns (18). General language, where phrases such as “for all” are used, does not address the different ways in which population groups benefit from bike-share programs and the strategies necessary to bridge those differences and ensure that everyone does benefit. In most cases where the statements had “for all” or references to “all backgrounds,” “all cultures,” or “all social statuses,” statements also lacked specificity about any particular groups.

System size appeared to have some influence on how extensive an equity statement was. Two of the three extensive statements or policies were from large systems. This made sense, considering that cities with large systems had an average percentage of nonwhite population that was nearly 10 percentage points higher than midsize systems and

**TABLE 1 Responding Organizations and Bikeshare System Characteristics**

Characteristic	Responding Organizations (%)
Responding Organization Role in Bikeshare System, <i>n</i> = 56	
Owner	30
Operator	27
Owner and operator	30
Partner, not owner or operator	13
Responding Organization Type, <i>n</i> = 56	
Government	48
Nonprofit organization	41
Private operator	6
University	5
Launch Status, <i>n</i> = 56	
Operational	82
Prelaunch	18
Number of Bikes in System, <i>n</i> = 56	
Up to 100 bikes, small	25
101 to 500 bikes, medium	52
501 or more bikes, large	23
U.S. Census Region, <i>n</i> = 56	
Northeast	13
South	25
Midwest	29
West	34

**TABLE 2 Presence of Equity Policy and Metrics, by System Size**

Equity	Up to 100 Bikes	101–500 Bikes	501 or More Bikes	All
Equity Policies				
Have equity statement or policy (%)	18	14	46	23
No equity statement or policy (%)	73	69	39	62
Other (%)	9	17	15	15
Total respondents	11	29	13	53
Equity Metrics				
Have equity metrics (%)	9	17	46	23
No equity metrics (%)	82	69	46	66
Other (%)	9	14	8	11
Total respondents	11	29	13	53

14 percentage points higher than cities with small systems. Additionally, the two large systems that provided extensive statements were in cities with the highest proportion of nonwhite population among the large government-run systems sampled. Only one small system provided an equity statement or policy. For all systems, it should be noted that not having an equity policy did not necessarily mean they did not incorporate equity in some way in their system.

The most common themes across the provided equity statements were references to access and affordability. Access is a complicated word; it can mean many different things, and no system directly connected relevant policies with how they affected access. Access can refer to density of stations, coverage, disability accommodations, and payment systems, and the meanings of access had to be inferred in later sections of equity statements, such as in station siting and fee structures. Where affordability was mentioned in equity statements or policies, systems typically also referred to low-income populations, but none mentioned minority populations. As respondents provided more detail in answers to later questions, it was clear that many, but not a majority of, bikeshare systems do have goals or strategies to target populations based on their race or ethnicity, even if that was not apparent in their initial statements.

## Metrics and Data Collection

As might be expected, the share of systems reporting defined metrics relating to equity and bikeshare (22%) was similar to those that had an equity statement or policy (Table 2). As with an equity statement, specificity helps to ensure that goals are achieved. However, few of the systems surveyed offered clear metrics to use in rating success in achieving equity statement goals. When systems did have clear metrics, they typically referred to collecting demographic data or specified race, income, gender, age, educational attainment, and location. Most systems alluded to general demographic information or just race, income, and location, and typically did not tie these back to their equity goals. Only two systems specified gender as something they wanted to measure. Four of the systems had goals to ensure that a certain percentage of stations were near target populations, typically

a low-income population. The system with the most specific set of metrics focused specifically on its equity program, tracking how many trips their equity program participants were taking and monitoring the amount of overage charges they accrued. One of the two systems looking to measure gender of riders had specific targets for the share of subsidized memberships held by women and the share of women among all bikeshare members.

Among 21 responding organizations that included details about equity metrics, nearly all wanted to collect data to understand who their users were, generally through user surveys of some type. However, the timing of the surveys, how often they were done, who was targeted for surveys, and how they were conducted varied substantially. For example, it was unclear which riders were targeted for surveys in most systems, but four systems specified only surveying members, one of which said they also do surveys of walk-up users. Several respondents said their data collection efforts were still in development, being redone, or dependent on securing funding. Five systems specified using collected data to measure progress toward equity goals.

Responses to questions about equity considerations are illustrated in Figure 1. (Percentages do not total 100% because of “don’t know” or “not applicable” responses. Possible responses were not considered; considered, no impact; considered, minor role; considered, considerable role; consideration, primary driver. Minor role, considerable role, and primary driver were consolidated into the considered–impacted category.)

## Equity Considerations

Equity considerations appear to play the largest role in station siting and fee structure and payment systems, followed by promotion, outreach, and marketing (Figure 1). Few systems said that equity considerations had no role in their bikeshare system. Only 11% did not consider equity in station siting or fee and payment systems. About a quarter of systems said that equity was not considered in their operations (27%) or data collection (25%). A similarly small number of systems responded that they did not know or that the particular aspect

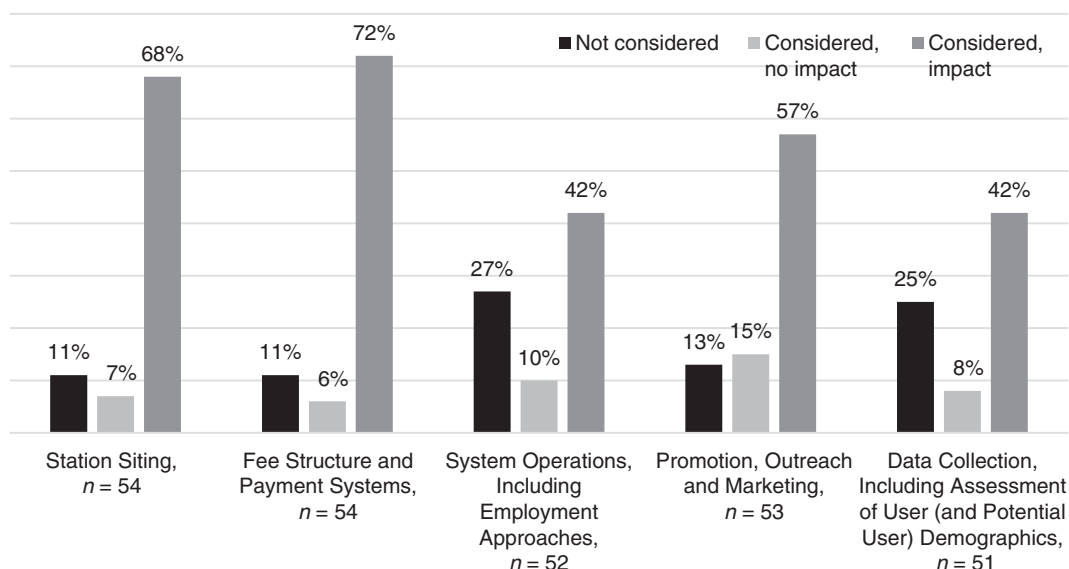


FIGURE 1 How equity is considered in various areas.



was not applicable to their system. This was likely an effect of having the survey answered by only one person in the organization. The stated impact of equity on these aspects of bikeshare did vary by system size. Across all five areas, large systems were significantly more likely to have considered equity than the smaller systems (one-way ANOVA,  $\alpha = .05$ ). Significant differences between the smallest and midsize systems were not seen.

The share of systems indicating that equity was a consideration in specific aspects of their systems was generally much higher than the share that had adopted equity statements (23%). This implies that an equity statement is not necessary for equity to influence actions. However, those reporting having an equity statement also had higher mean responses to specific equity consideration and impact in all surveyed areas. The differences in fee structure, promotion, and data collection decisions were significant (one-way ANOVA,  $\alpha = .05$ ). This indicates that having a defined equity statement, although it is not necessary, may help systems give greater consideration to equity when making bikeshare system decisions.

The sections below provide examples of how systems incorporated equity in various areas on the basis of answers to the open-ended questions on the survey.

### Station Siting

Figure 1 provides selected examples by level of equity consideration and whether that consideration affected decisions. Accessibility was a prominent feature in station siting. For example, some systems addressed access by promoting transit connectivity and placing stations at public housing complexes. Others prioritized connections to jobs, retail centers, and recreation as important areas in which to locate stations for their targeted equity populations. Some system respondents referred to a goal of large coverage areas and having walkable distances between stations. Three of the 14 large systems stated they included quotas on siting stations in low-income and minority neighborhoods.

Table 3 contains quotes from system respondents' replies to questions about the role of equity in station siting. This table outlines how systems viewed the role of equity and the range of actions that occurred, given how important equity was to the process. There was no clear relationship between the actions that systems took to promote equity in station siting and the role equity played in the process. Similar tables for other system aspects are not included.

### Fee Structure and Payment Systems

As with station siting, many more systems (40) said they incorporated equity in how they set up their fee structure and payment systems than had provided equity statements or policies (13). Fee structure strategies primarily fell within three categories: cost, discounts, and payment systems. Incorporating any of the three could be seen as increasing access to the system by removing barriers to use.

For cost, some systems started off with pricing that they deemed to be attractive for a broad range of users. Others reevaluated their pricing and lowered pass costs across the board. Some systems discovered that having bank holds act as deposits for bikes was an equity barrier and either eliminated or reduced the holds. To address some cost concerns, seven systems opted to offer more variation in their membership options, such as adding monthly and weekly options, or free membership with a pay-per-ride structure. Some changed their annual memberships to be paid monthly to help those who found a large up-front payment too burdensome. One system prioritized simplifying the fee structure and making it easier to understand. Additionally, one system used the contract bid process to encourage applicant operators to provide "innovative fee structures."

Discounted or free memberships were noted by 14 responding organizations. Free memberships usually consisted of either a \$0 registration or membership with per-ride charges (in some cases tied to the cost of a transit fare). One of the four systems that reported free membership had a zero-cost program for its target equity population that was funded by an external grant. Systems administering

**TABLE 3** Examples of Equity Consideration in Station Siting

Category	<i>n</i>	Specific Examples
Considered but did not change outcome	4	"Stations were placed in low-income areas that fit within the overall connectivity of the system." "Our smaller bike share system and the design of our downtown doesn't afford us too many options to reach the equity population. That said we ensured we addressed new multifamily equity housing. The density and location of the complex meant it would have been serviced regardless of the equity consideration."
Minor role	19	"We looked at addressing equity in siting by colocating stations at transit hubs to serve low income residents as last mile connections and siting stations at partnering affordable housing communities." "We took a look at age. We placed one of our stations with a trike at the community center that has a senior focus to ensure that seniors could utilize the bikes." "Only if the funding source required equity considerations." "[W]e placed a few stations in 'underserved areas.'" "Evaluated based on MPO [ . . . ] definition which looks at ethnicity, income, car ownership, language spoken, seniors as % of population, children as % of population, etc."
Considerable role	17	"[System expansion has] committed a significant percentage of stations to [specific] neighborhoods, bus stops, and commercial areas frequented by [the] Latino community." "Over 80% of the [ . . . ] stations we will add this year will be in low-income neighborhoods." "City made sure that the vendor placed at least 20% of their system in regionally defined [equity areas]." "[W]e intentionally sited stations near low income housing." "We identified areas made up of specific demographics that are typically underserved by bike share programs. Once those areas were identified, we located nearby bus and transit stops along with parks and community centers. Bike stations were then permitted and installed in those areas."
Primary driver	1	"We've sited stations for reason of equity in areas where we don't see adequate demand and otherwise would not have placed them there."

NOTE: "Minor role," "considerable role," and "primary driver" reference the considered-impacted category in Figure 1. "Considered but did not change outcome" refers to the considered, not impacted category.

discounted passes often qualified participants on the basis of receiving other public assistance or meeting certain income thresholds. Thus, they were often tied to income but not necessarily targeted toward specific racial or ethnic groups. The range of the discounted memberships varied considerably; for example, one system reported offering \$5 annual memberships while another offered \$5 monthly passes. At least two of the systems reported administering subsidized passes through community organizations.

Serving unbanked populations was a barrier that 13 systems specifically reported trying or planning to address. Cash payment options were the most common policy response, typically provided through commercial establishments, such as grocery or convenience stores. One system reported they were offering cash payments through the library system. Some systems addressed cash payment needs by allowing prepaid credit or debit cards and gift cards. One respondent stated that its strategy for attracting unbanked riders included efforts to incorporate homeless populations.

### *System Operations*

In systems where equity was incorporated into operations, paying a living wage and hiring locally were policies used by six responding systems. Five systems partnered with local workforce development organizations or public housing to find potential hires. At least one system specifically hired people from its program's targeted equity populations as advocacy staff to help with outreach.

For overall operations, many stated that the organization of their operations made it difficult to implement equity strategies. This happened with systems where cities contracted with an operator, where there was a multijurisdictional arrangement, or where particular municipal rules limited flexibility. However, two systems used the bidding process, either to choose an operator that identified equity considerations in hiring or to sway the selected operator to incorporate equity considerations.

### *Promotion, Outreach, and Marketing*

As with many other equity considerations of responding systems, promotional activities done for equity purposes were quite varied. However, there were some common elements among systems. Eleven respondents had promotional materials translated into Spanish or other languages. Nine systems specifically targeted low-income communities. Five specifically targeted people of color, either by incorporating people of color in advertising materials, conducting outreach in specific neighborhoods, or both. Eight stated that their promotional activities were either inclusive or representative of the community. Three systems stated they had or were trying to form partnerships with organizations ranging from public housing authorities to neighborhood organizations active in specific communities to help with outreach. Another three systems stated they were utilizing community events to promote the system in targeted communities.

## **Equity Barriers**

### *Perceived Barriers to Targeted Equity Users*

The survey included two questions (both open-ended) on barriers as seen from the operator's perspective; one was related to users and one was related to their organization. Forty-four systems shared what they perceived to be the key barriers to targeted equity users.

Generally, these barriers fell into the categories of pricing and payment systems, access, perceptions, and awareness and understanding of how the system works.

Twenty-two systems stated that a key barrier was related to the price or payment system of the bikeshare system. Of these 22 systems, 15 stated that the cost to use the system was a key barrier and 15 also stated those without credit or debit cards would face large barriers to use the system. Most of those systems have made some effort to address those barriers through cash payments, prepaid card acceptance, and discounted passes. Five systems recognized the difficulty they will have in attracting targeted equity populations to bikeshare with either cash payment options or subsidized passes and that they really need both to be successful. Many also recognized the issues of access to smart phones and the Internet for low-income and minority populations.

Various aspects of access to stations were cited as a key barrier to underserved users by 19 systems. Bike infrastructure was cited as a barrier by six systems while lack of transit connections was cited by one system. For instance, one system said, "No one advocates or values bike infrastructure in poorer areas of town, so they don't get investment." Nearly all systems that listed access as a problem stated that their system had not expanded to areas where targeted equity users could use the system or their station network was not dense enough in low-income and minority neighborhoods for it to be useful. Similarly, several systems stated that low population density in such neighborhoods and their location in the city made it difficult to include those neighborhoods in the system.

Eleven systems saw perceptions of bikeshare systems as a significant barrier. Most of the perceived barriers revolved around bicycling in general. For example, systems noted that target demographics for their equity programs see bicycling as something that is not for them, and more for the "epic outdoor folks" or "people in spandex." Three systems saw perceptions of safety while riding a bike as a significant barrier. Some systems also believed that their target equity populations are unlikely to join because of the stigma associated with bicycling, particularly around the status symbol of owning a car versus riding a bike. Perceptions of bikeshare systems contributing to gentrification were cited as a barrier by one system.

How much potential users know about and are aware of bikeshare systems and how to use them were reasons that 14 systems cited as barriers for bikeshare uptake by their target equity populations. Three systems felt their target demographics were unaware of the system. Another three recognized that the lack of multilingual instructions at stations is a large barrier to some target populations. However, most in this category (10 of 14) cited confusing language in their instructions and fee structures, as well as ineffective or poor communication and educational outreach, as limiting the uptake of bikeshare by their target equity populations.

### *Barriers for Organization*

A large majority of the responding bikeshare systems (24 of 37 responses) saw their operational funding and staff levels as the biggest barrier to succeeding in their equity strategies. Several systems stated they had such small staff levels that it was impossible for them to focus on equity strategies. But even the large systems had difficulty finding staff time.

Second to funding and staff levels was the ability to convince necessary stakeholders, such as city governments and decision makers, funding partners, operators, and the general population, that pursuing equity strategies was a worthwhile effort. One system indicated that

the operator could be a barrier; given its objective of running a business, opening low-use stations in neighborhoods targeted for equity programming could be a tough sell. However, this points to what is perhaps more of a funding barrier, as many systems rely on private operators, with minimal or no public funding.

Other barriers were mentioned by only a handful (fewer than five) of the systems. These included difficulties developing effective education and marketing materials and outreach programs, organizational partnerships (including finding the right groups that have the best connection to the target populations), the inability to accept cash, the threat of losing bikes without having a credit card on file, and organizational (provider) limitations.

## Future Plans

Bikeshare systems that provided statements on their future plans were likely to be either just becoming operational, starting their equity programming, or actively looking to expand. Many of the statements for future plans follow the path of those who are currently operating full-scale equity programs, such as discounted passes, cash payment, hiring community advocates, expanding stations into low-income and minority neighborhoods, and making promotional materials more representative of the populations they are targeting. Some stated that they hope to have an equity program in the future and are seeking the funding necessary to do so. One is exploring opportunities to make bikeshare programs more accessible to users of all abilities, a feature only once mentioned as currently existing.

On average, prelaunch systems reported higher levels of equity consideration and impact in all aspects of planning and operations. This is consistent with the notion that equity is becoming a more integral part of bikeshare systems in the United States as time goes on. It is also consistent with equity aspirations that may not be attainable because of resource and other barriers that arise after launch.

## Strengths and Limitations

The survey had a high response rate (75%), and many respondents provided a good amount of information in the open-ended questions. However, a lack of detail in some responses does not necessarily reflect a lack of equity consideration. Conducting interviews with system owners and operators would allow researchers to ask clarifying questions to better understand how systems are defining and addressing equity, and how they reached these decisions. Having more than a single respondent from each system would also be useful in gathering that additional data. Also, it is worth reiterating that a survey of operators may not always accurately reflect the perceptions and opinions of the targeted equity populations themselves.

## CONCLUSIONS

The number of bikeshare systems in the United States has grown rapidly. As with any new service or technology, there have been growing pains. Several systems have been criticized for lack of ethnic or income diversity among users, and, overall, systems appear to be responding to these concerns. Some 23% of surveyed systems have adopted an equity statement or policy, and 7% are in the process of developing one. Moreover, for a majority of surveyed systems, equity had influenced several aspects of their planning and operations. In particular, 68% of the systems stated that equity influenced

their station siting decisions. This figure is notably higher than the figure found in surveys conducted a few years ago of 35% (16) and 43% (6). A similar share (72%) indicated that equity influenced the fare structure or payment system. Pricing, payment systems, and access to stations were also cited by the respondents as the largest barriers to having more diverse populations use bikeshare. More than half (57%) of the systems considered equity in their promotion, outreach, and marketing. This could help address the third-most-cited barrier to having more diverse people use bikeshare—individual perceptions of bikeshare. Respondents felt that many nonwhites and lower-income groups have negative perceptions of bicycling or bikeshare, or at least perceptions that bicycling or bikeshare was not for them.

Although many more systems indicated that equity influenced their decisions than had official equity statements or policies, it was found that systems with such policies were more likely to have taken actions related to equity. Therefore, there is likely to be value in having systems adopt explicit equity policy statements. For example, such statements may help maintain equity as a priority over time, particularly as leadership changes. However, many of the equity statements, and particularly the metrics used to measure equity, lacked specifics. As systems mature, having specific metrics to gauge progress is important if equity is an actual goal. Similarly, the language used in equity statements can be key for focusing on outcomes. The use of language such as “for all” has implicit equity considerations, but it lacks the specificity that helps develop the metrics and programming necessary to ensure the system is actually for all. For instance, being African-American does not automatically mean a person cannot afford to use the bikes, but it does relate to issues of historic and continuing racial segregation and what and where transportation investments are made and whom the investments benefit. At the same time, being low-income is a status shared by all racial and ethnic groups, but when it is geographically constrained it also often is a sign of a minority neighborhood. Thus it is critical to define the “who” in equity and the strategies necessary to achieve equity in the system with each group.

Large systems were more likely to have equity statements and to have considered equity in the major aspects of their system. There may be several (likely related) explanations for this. The survey respondents indicated that funding or staffing was their biggest barrier to addressing equity. Larger systems may have more financial and staff capacity to address equity concerns; having more bikes also likely makes it easier to locate stations in more diverse neighborhoods. It is worth noting here that the financing model for a system can play a major role in station siting. Systems that rely more on user and advertising revenues for operations may be reluctant to site stations in neighborhoods with high shares of lower-income households where they believe ridership will be low.

Although this survey revealed the current level of activity that bikeshare systems are taking to address equity, as well as many specific examples of actions, it did not assess the effectiveness or outcomes of these efforts. Given limited resources, providers need information on those efforts—particularly fare structures, payment systems, and marketing and outreach—that are most effective at improving the diversity of system users. In addition, if such efforts are successful, it would also be useful to assess what effects access and increased use have on lower-income users. For example, a large body of literature links transportation access to positive economic outcomes, such as job placement and retention. Does bikeshare use have similar outcomes? Bicycling has also been linked to higher levels of physical activity and other health indicators. Does bikesharing improve these

outcomes for lower-income and nonwhite populations? Bikeshare system operators could play a key role in facilitating research that answers these questions.

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