



MEMORANDUM

Public Works Department

DATE: September 25, 2019

TO: Bicycle/Pedestrian Advisory Committee

FROM: Nate Baird, Transportation Planner
Ria Hutabarat Lo, Transportation Manager

SUBJECT: Bike Share Program Evaluation and Scooter Share Pilot Program

RECOMMENDATIONS

1. Receive the Dockless Bike Share Pilot Program Evaluation, including the Operational Evaluation (Attachment 1) and Preliminary Survey Results (Attachment 2).
2. Recommend to Council that the Bike Share Program be made permanent with minor amendments to the Bike Share Permit Requirements (Attachment 3).
3. Recommend implementation of a Scooter Share Pilot Program and provide input on proposed requirements for the program.

BACKGROUND

Since 2010, shared micromobility has undergone substantial shifts in cities across the United States with the emergence of dockless bike share and, later, the decline of some bike share programs as shared e-scooter programs emerged.

Mountain View Bike Share Pilot Program Evaluation

In Mountain View, a bike share pilot program was launched in May 2018. This program permitted dockless bike share systems subject to regulations regarding safety, parking, data sharing, and operations such as fleet size.

Two operators, ofo and Lime, participated in the bike share pilot program. Both operators eventually withdrew from the program due to changes in organizational and financial priorities, including a shift toward e-scooter share operations for Lime. A third operator, Spin, initially applied to the program but withdrew their permit

application before the program launched. A fourth operator, JUMP, submitted a permit application and associated fees, but chose not to complete the application process due to changed organizational priorities and regional bike share conditions.

While ofo and Lime bike share programs were in operation in Mountain View, staff undertook a field survey, obtained operational data, and tracked social media input in order to understand the performance and public perceptions of the program. Staff also engaged consultants to undertake an evaluation of the program, including a survey of users and residents, as well as focus groups with operators.

Potential Scooter Share Pilot Program

While no bike share operators are currently participating in the bike share program, the City has received several inquiries from e-scooter share operators, and one e-scooter share operator has applied for a City business license. City staff has been tracking micromobility programs and have noted a general preference among private operators for scooter share over bike share operations.

On May 13, 2019, staff presented initial regulatory concepts for a potential scooter share pilot program to the Council Transportation Committee (CTC). The CTC supported implementing a scooter share pilot program and recommended against regulations that would impose an undue burden on scooter share businesses or tie e-scooter deployment to bike share deployment.

Feedback from the CTC was incorporated into potential scooter share program concepts presented to the Bicycle/Pedestrian Advisory Committee (B/PAC) on June 26, 2019. Key concepts presented to B/PAC included:

- Parking requirements that—at a minimum—reflect the bike share program regulations and Mountain View City Code (MVCC), with the option of restricting parking to designated areas throughout the City;
- Fleet size requirements that require a minimum of 200 scooters per operator and allow up to 400 scooters per operator and up to 800 scooters Citywide;
- Safety requirements that reflect bike share program requirements, specific State and local laws for e-scooters (including MVCC Chapter 19 Article VI), and mandated education and self-enforcement programs;

- Data sharing requirements, including use of a data partner and open APIs¹ to allow for analysis of anonymized trip information.
- Standard City insurance requirements.

B/PAC members were cautiously supportive and indicated that many members of the general public were interested in using the devices, and that the devices have potential to help people travel without an automobile. B/PAC members also raised concerns regarding issues of speed, device stability, operating under the influence of substances, helmet use, and injuries to pedestrians and users. To address these concerns, B/PAC members recommended that the program advance with careful oversight and regulation, including targeted enforcement, video training, data collection, and operator penalties for users not following rules correctly. B/PAC members also supported a hybrid approach to parking requirements to encourage use of designated parking areas without eliminating the option for free-floating parking and potentially jeopardizing the success of the program.

In order to allow time for the City to enact scooter share regulations and ensure that shared mobility devices are deployed in accordance with City regulations, the City Council adopted an urgency ordinance establishing a moratorium on shared mobility devices in the City of Mountain View on June 25, 2019. This ordinance prohibits the commercial operation of shared mobility devices for use by the general public, with an exemption for any permitted shared mobility device programs, including the Bike Share Program.

DISCUSSION

Bike Share Evaluation Findings

The evaluation of the bike share program provides insight into operational performance, user experience, public perception, and operator concerns. This feedback is presented in the following sections.

Bike Share Operators, Fleet Size and Ridership

During the first six months of Mountain View's bike share program, Lime and ofo served over 13,000 riders and 50,000 rides, with users traveling over 45,000 miles. During this time, Lime's bike share fleet size in Mountain View varied from 140 e-bikes in May 2018 to a high of about 300 in July 2018 and about 150 in November 2018. For

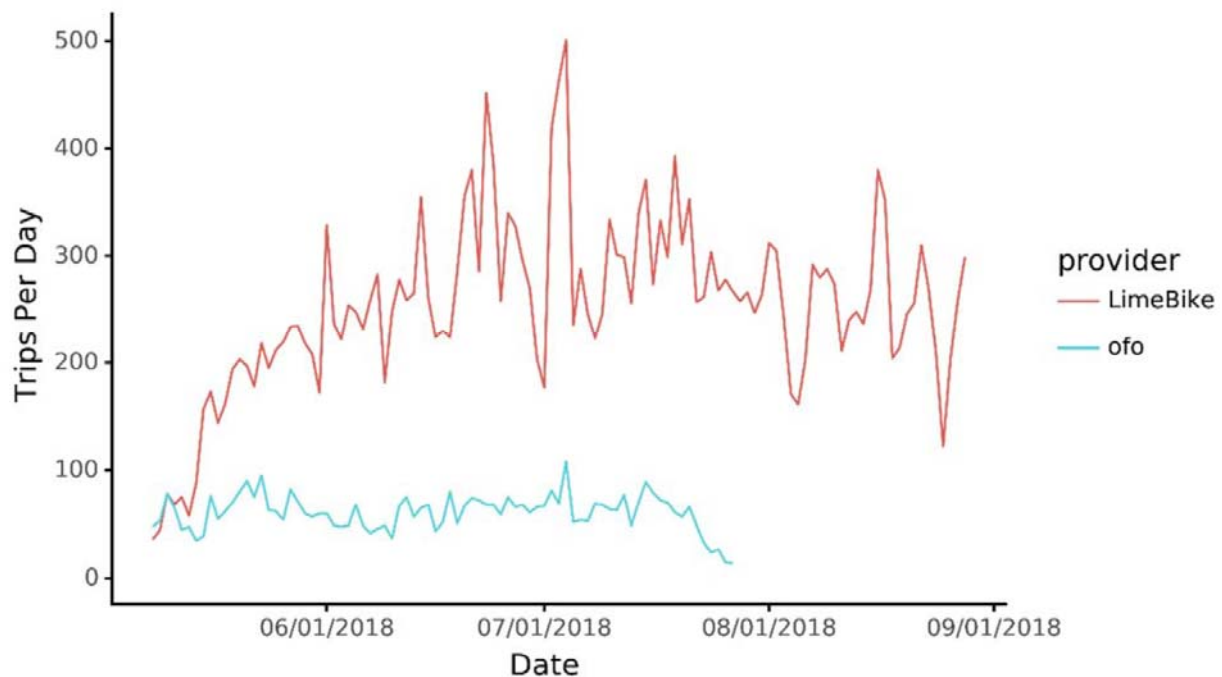
¹ Open APIs are publicly available application programming interfaces, which allow developers to access information from a central source and create apps to analyze, visualize, or combine the data.

ofo, an initial fleet of approximately 60 standard bikes was deployed, building up to almost 200 bikes by July 20, 2018, when staff received notice that the operator was withdrawing from the program.

An evaluation of ridership data provided by the operators is provided in Attachment 1. This ridership evaluation focused on total trip data from May 2018 through the end of August 2018 to assess the program before any operators began scaling back their fleets for closure. During this period, an average of 230 Lime bikes and 128 ofo bikes were made available to the public each day, leading to 33,532 trips taken in Mountain View.

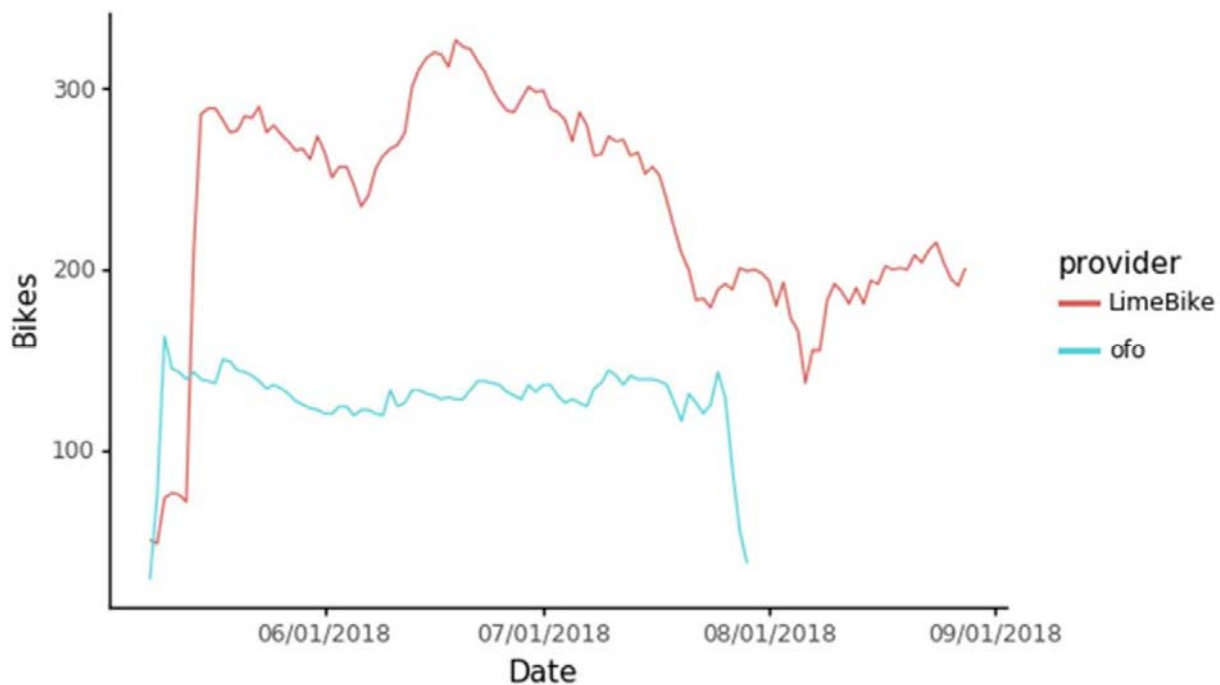
As seen in Figure 1, ridership on Lime generally increased during the first two months of operations, with substantial peaks and troughs reflecting weekly patterns, random variability, and specific events. Toward the end of summer, ridership plateaued and decreased slightly with continued variability from week to week. For ofo bikes, ridership was consistently lower than Lime and remained relatively consistent throughout the pilot program until the bikes were removed on July 29, 2018. Peak usage occurred on the Fourth of July holiday, when approximately 500 trips were taken on Lime bikes and 100 trips on ofo bikes.

Figure 1: Total Bike Share Trips by Day, Mountain View, May 2018 Through the End of August 2018



For both operators, the number of bikes available each day varied throughout the pilot period but never reached the anticipated level of 800 bikes overall or 400 bikes per operator. As shown in Figure 2, both operators ramped up their fleet size quickly, reaching almost 300 Lime e-bikes and over 150 ofo bikes by mid-May. The fleet size for Lime fluctuated more dramatically than ofo. For example, the number of Lime bikes reduced steadily during May and early June before a second influx of bikes in mid-June and then a steady reduction again from June through early August. The number of ofo bikes remained fairly steady until their bikes were removed on July 29, 2018 following closure of ofo's North American operations.

Figure 2: Daily Bike Availability, Mountain View, May 2018 Through the End of August 2018

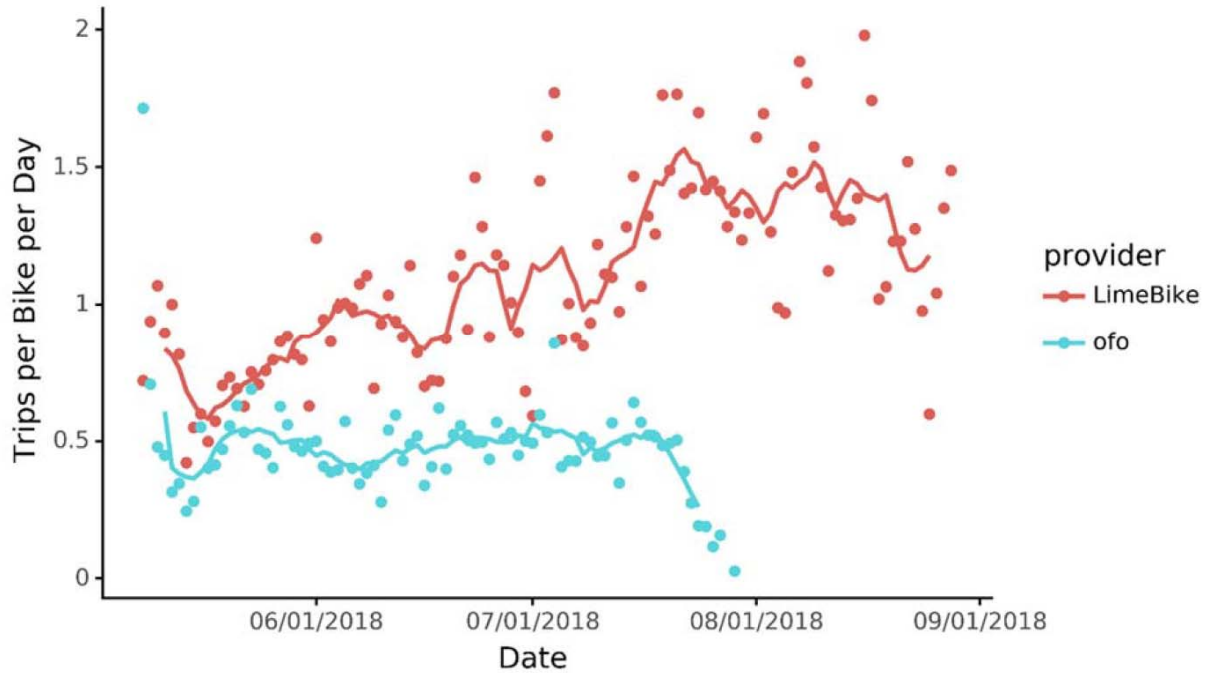


A common metric for evaluating the performance of bike share programs is bike utilization measured in the number of trips per bike per day. During the ridership evaluation period, average bike utilization was 0.84 trip per bike per day for the total program, with 1.10 trips per bike per day for Lime and 0.47 trip per bike per day for ofo.

The bike utilization rate for Lime bikes increased from the start of the pilot through to mid-August when it reached almost two trips per bike per day before gradually declining through the end of the pilot. For ofo, the number of trips per bike per day stayed relatively consistent at around 0.5 trip per bike per day. These trends in bike

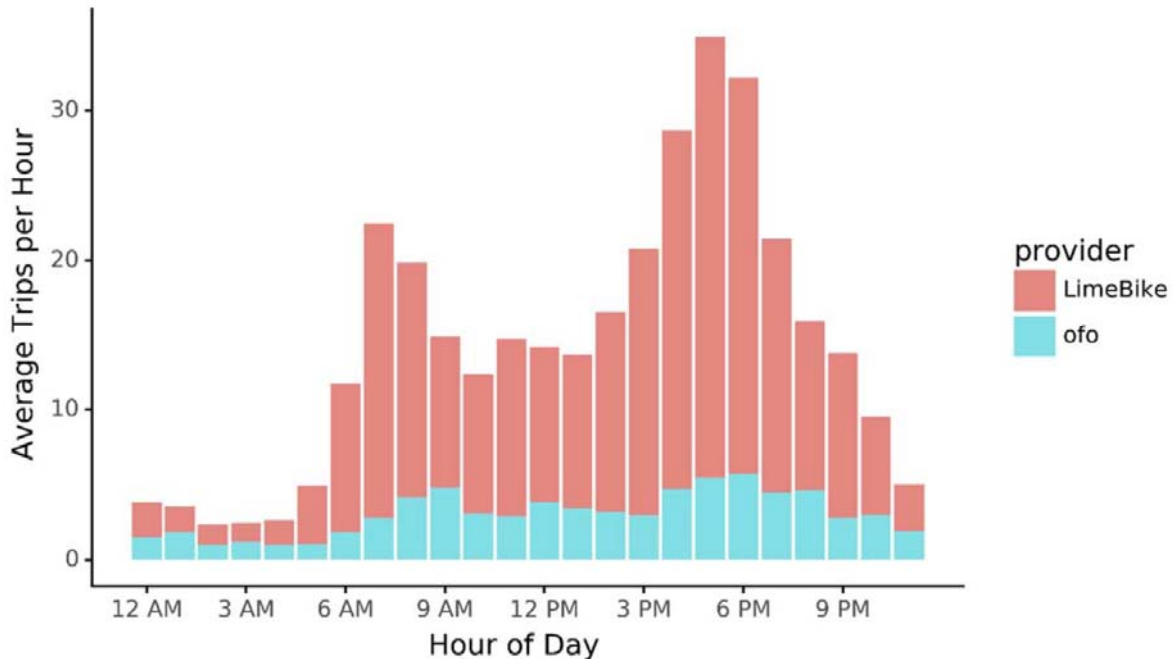
utilization are shown in Figure 3 below (from Attachment 1) in terms of daily utilization (points) and a seven-day moving average (lines) for each operator.

Figure 3: Daily Bike Utilization, Mountain View, May 2018 Through the End of August 2018



The ridership evaluation also considered trip patterns by time of day, day of week, and spatially. Consistent with broader travel patterns, a higher number of trips was observed on Tuesdays, Wednesdays, and Thursdays relative to other days of the week. For weekdays, the evening peak was substantially higher than the morning, which could suggest that the shared bikes were used for more recreational or time-elastic trip purposes.

**Figure 4: Weekday Trips by Hour of Day, Mountain View,
May 2018 Through the End of August 2018**



Almost one-third of trips were between five and ten minutes long, which represents a distance of one-half to one mile. The vast majority of trips started or ended in Mountain View; however, a small proportion started or ended in the neighboring cities of Sunnyvale (3 percent), Los Altos (3 percent), and Palo Alto (2 percent).

Throughout the pilot period, some of the most popular origins and destinations for bike share trips were:

- Downtown Mountain View, with approximately half (50 percent) of all trips starting or ending in the area bounded by Central Expressway, Calderon Avenue, El Camino Real, and South Shoreline Boulevard;
- Mountain View Station, with 20 percent of all trips starting or ending at the station;
- Google Campus, with 16 percent of trips starting or ending at the Googleplex; and
- Shoreline Amphitheatre, with 5 percent of all trips and large-event based peaks.

Other areas with high activity included neighborhoods southwest of Mountain View Caltrain Station (likely making trips to and from the train station), other large employers, including Samsung and NASA, and the San Antonio Station area (see Figure 10 in Attachment 1).

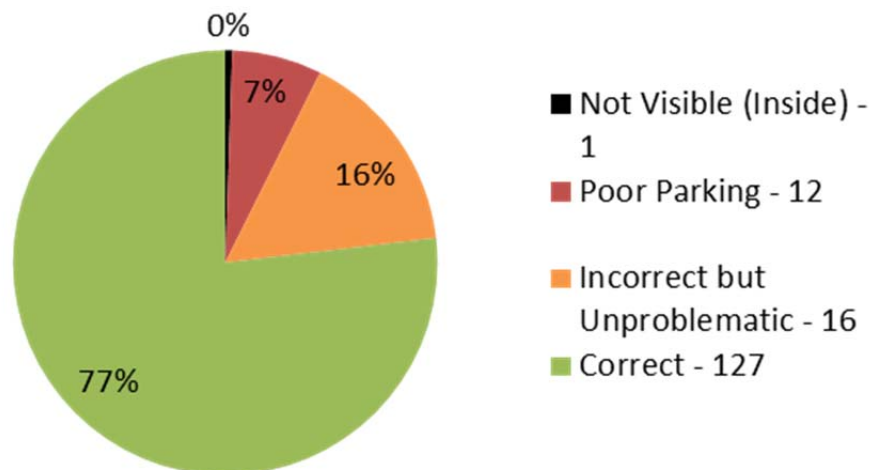
Public Perceptions and Parking Conditions

Throughout the duration of the program, staff tracked public reaction to bike share, including social media posts (mostly on Twitter and NextDoor) and formal comments submitted by phone, e-mail, or the *Ask Mountain View* system.

When the program was initially launched, feedback was mixed, with some people supportive of expanded multi-modal transportation options in Mountain View, and others expressing concerns about the program. The most common concern related to bike share parking under the free-floating system—particularly in residential neighborhoods and areas with narrow sidewalks.

Following an initial flurry of social media comments on the program, staff conducted a field survey of parking conditions in late May 2018. In the field survey, staff located available (parked) bikes using the bike share apps and then observed and documented parking performance. The field survey assessed parking performance for 190 bicycles, including 156 Lime and 34 ofo bicycles. Of these bikes, 93 percent were parked in a correct or unproblematic manner; 7 percent were parked poorly on the sidewalk, curb ramp, or other location; and one bike was not publicly visible. All bicycles were parked in an upright position.

Figure 5: Observed Parking Performance, Late May 2018



In the first six months of the program, staff received five comments, complaints, or requests for bike relocation or removal via *Ask Mountain View* or phone calls from members of the public. One comment related to a bike share operator who did not have a permit to operate in the City. Staff worked with the respective bike share operators to follow up and promptly resolve each of these issues. Lime directly received 18 to 20 complaints a month in July 2018 and August 2018 and reported resolving 95 percent of those complaints within 10 hours. From September through December 2018, the average number of complaints per month dropped to under six, with a similar number resolved within 10 hours.

In August 2019, a survey was launched via Mountain View's Open City Hall site and publicized via various social media platforms. While survey participation was limited, with only 41 participants, respondents were roughly split between stakeholders who had tried the system (56 percent) and those who had not (44 percent). Most respondents were at least familiar with bike share systems (more than two-thirds of nonparticipants and more than 96 percent of bike share users surveyed). Attachment 2 provides preliminary analysis results.

Several key findings include:

- People who used bike share in Mountain View see it as a useful way to get around and think it provides multiple benefits.
- Opinions of bike share were split between people who tried or did not try the program. Overall, people who used the system reported high satisfaction, while those who did not use it had a less favorable perception of it (see Figure 6).
- There is broad demand for more trails and protected bike lanes, especially among nonparticipants (see Figure 7).
- The bike share parking requirements were generally clear but less so in downtown Mountain View.
- Two-thirds of users reported using bike share to replace car trips, including drive-alone, taxi, and transportation network company (TNC) trips.
- Over half of users reported using bike share to connect to Caltrain.
- The main elements that people stated would make them more likely to use bike share were:

- Electric-assist bicycles;
 - Ability to ride between cities;
 - Easy and reliable connections to transit; and
 - More trails and protected bikeways.
- Half of survey respondents would like to see an e-scooter share program in Mountain View.

Figure 6: The Bike Share Program Made it Easier and Faster for People to Get Where They Needed to Go

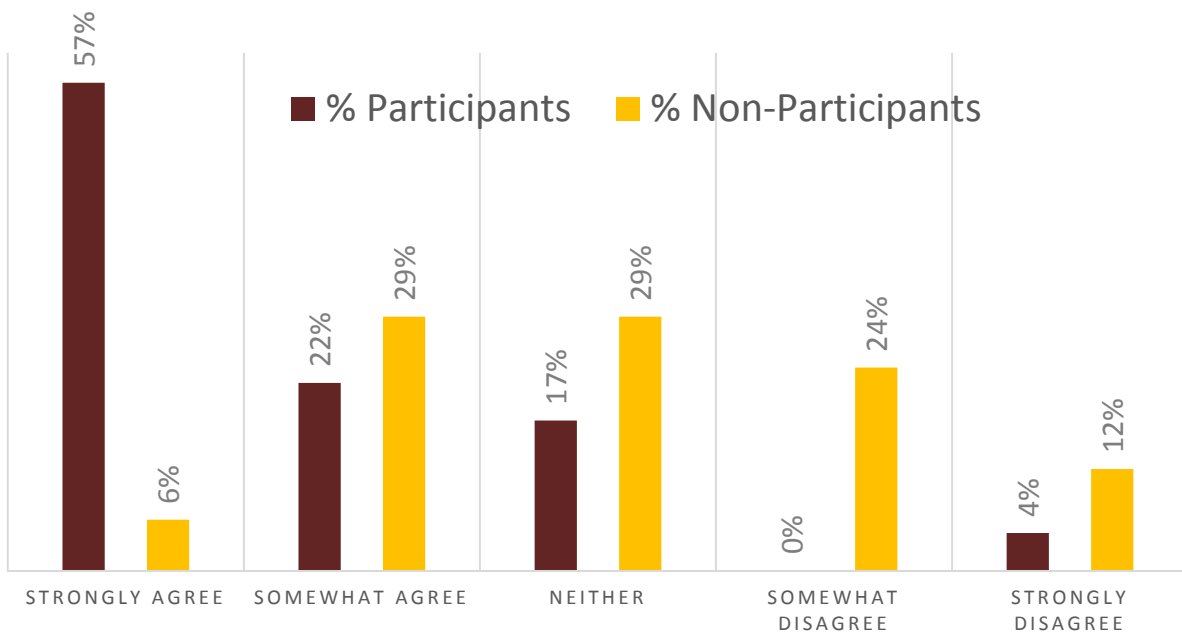
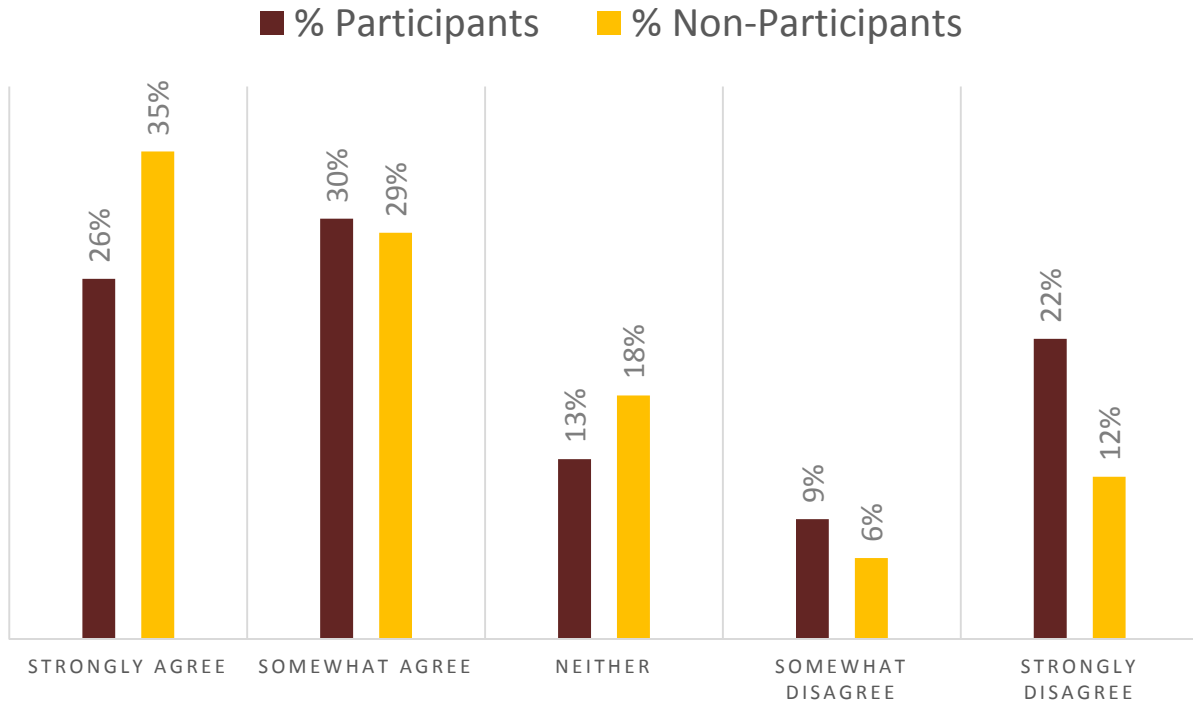


Figure 7: There Aren't Enough Bike Trails or Protected Bike Lanes Where I Want to Go



Overall, staff considers the program to have been well received by both bicyclists and community stakeholders, with occasional concerns regarding bikes that were parked in a manner that blocked the public right-of-way and needed to be moved by the operator.

Operator Perceptions and Performance

Staff conducted exit interviews with both ofo and Lime after they left the bike share pilot program. Both cited business reasons for their companies' decisions:

- Lime shifted to focusing on scooters, except for in larger and denser cities, such as Seattle. They cited much higher trips per device per day for scooters as the main reason, and scooters provided a better business case.
- ofo cited a global strategy to focus on a handful of larger U.S. cities and less costly, less-regulated countries.

Scooter Share Pilot Program

The bike share pilot program permit and program evaluation has been used as a starting point for considering a proposed pilot permit program for scooter share. The current permit requirements for the bike share program are provided as Attachment 3. As recommended by B/PAC on June 26, 2019, a potential scooter share program would need to incorporate more stringent requirements than that of bike share to address California State laws regarding scooters as well as lower levels of user familiarity and CTC and B/PAC feedback related to scooter operations, parking, safety, and business viability. Staff proposes to replicate the bike share requirements for the scooter share pilot program with a number of adjustments as outlined in the following sections.

Federal Consumer Product Safety (S1)

While bicycles and electric bicycles are subject to Federal consumer product safety regulations, motorized scooters do not yet have equivalent standards. Staff proposes that the permit requirements require scooter share operators to follow all relevant Federal standards or guidelines, including any that may be established in the future. To ensure that scooter share includes only low-speed devices, staff recommends that the requirements stipulate that scooters must be incapable of exceeding a speed of 15 miles per hour—which is the speed limit for City trails—when operating solely by motor. Additionally, staff recommends that the proposed requirements allow the City to terminate any permit if the battery, motor, or any other aspect of a motorized scooter or fleet of motorized scooters is determined to be unsafe for public use.

Other Equipment Safety Requirements (S2)

Staff proposes that the requirements impose equivalent standards to the City's bike share permit requirements for brakes, lights, and reflectors, with reference to the relevant sections of the California Vehicle Code (CVC 21223, 21235a, and 21235h) that deal with equipping motorized scooters.

Notification of Rules for Motorized Scooters (S5)

Staff proposes that requirements for notifying users of rules reflect the more stringent State rules that govern the use of motorized scooters. Specifically, staff proposes that there must be visible language to notify users that all State and local laws must be followed and to make users aware of California rules regarding:

- Not riding motorized scooters on sidewalks;

- Operating in same direction as vehicles;
- Not carrying any passengers;
- Using a helmet for users under 18 years of age; and
- Not riding under the influence of alcohol or any drugs.

Robust User Education (S6)

Based on B/PAC input and concerns regarding scooter injuries, staff proposes that user education be expanded to incorporate mandatory video or in-person training as well as randomized learning and assessment tests aimed at reinforcing training and ensuring that users:

- Understand how to operate scooters;
- Are aware of City and State laws regulating scooter operations and parking;
- Are aware of the main risks associated with use of motorized scooters, including the potential for head injuries; and
- Are encouraged to follow rules and implement strategies to minimize risks including use of helmets, safe riding speed, and sober riding.

Driver's License Requirements (S7)

In addition to the above safety requirements, staff proposes that operators must ensure and verify that all users have a valid driver's license as stipulated under State law.

Updating Designated Parking Areas (P3)

While proposed parking requirements for a scooter share pilot would build upon the bike share requirements, a number of cities across the nation have reported persistent problems and issues with free-floating scooter parking. In order to reduce potential problems of parked scooters obstructing pedestrian traffic flow or creating a safety hazard, staff recommends that the option of free-floating parking be eliminated for scooter share. Instead, staff recommends scooters be allowed to park only in designated parking areas, as approved and permitted by the City.

Expansion of Designated Parking Areas Throughout the City (P10)

In order to ensure an ample number of parking locations are available for the success of the program, staff recommends that scooter operators be required to work with the City to identify and mark designated parking areas. These will include Castro Street, San Antonio Road, the two Caltrain stations, areas within City parks, City-owned facilities, and other areas within the public right-of-way. Marking may include pavement marking and/or signage that makes the designated parking areas available to all permitted mobility device share operators as well as privately owned mobility devices.

Furthermore, staff proposes that operators be required to implement strategies such as bonuses, discounts, surcharges, and/or penalties that incentivize users to park only at designated parking areas throughout the City and incentivize operators to provide parking hubs at sufficient hub density. In other jurisdictions, an additional fee as low as \$1 helped incentivize users to seek out and utilize designated virtual hubs (marked with paint and signs). Users would then earn a \$1 ride credit by riding devices not parked at hubs back to designated hubs.

Additional parking related permit requirements could include performance standards for moving scooters parked incorrectly, rebalancing devices, and ensuring devices are not abandoned.

Minimum Number of Scooters (O5)

In seeking to achieve balance and consistency with the pilot bike share program, staff recommends that under the pilot scooter share program, each operator would be required to provide a minimum of 200 scooters. The minimum will ensure that each company has a large enough presence to provide full-time staff within the City for rebalancing the scooters and responding to calls to move or repair them.

Maximum Number of Scooter Devices (O6)

Likewise, staff recommends retaining a cap of 400 scooters per operator, with a City cap of 800 scooters for all scooter share operators collectively. The City maximum would help curtail the potential problem of too many devices that may be underutilized or may clutter the right-of-way. The operator cap of 400 scooters also ensures there could be at least two operators in the program.

NEXT STEPS

Staff requests B/PAC input into the following bike share evaluation question:

- Does B/PAC have comments on the Bike Share Program Evaluation?
- Does B/PAC concur with the staff recommendation to make the bike share permit program permanent, with minor amendments to the permit requirements?

Staff will finalize the Scooter Share Pilot Program requirements based on proposed adjustment of the Bike Share Permit requirements outlined above as well as consideration of B/PAC and internal comments. Staff also plans to identify an initial list of potential designated parking areas.

Staff requests B/PAC input into the following scooter share questions for a proposed one-year pilot program:

- Does B/PAC concur with staff recommendations regarding:
 - Notification of rules regarding motorized scooters?
 - Robust user education?
 - Expanding and incentivizing designated parking areas?
 - Minimum and maximum fleet numbers?
- Does the B/PAC have any comments regarding the potential requirements or pilot program implementation?

~~NB-RHL/6/PWK~~
~~935-09-25-19M~~

Attachments: 1. Bike Share Operational Evaluation
2. Bike Share Preliminary Survey Results
3. Mountain View Bike Share Permit Requirements