Stationless Bikeshare Mid-Pilot Evaluation

Executive Summary

This document provides an interim evaluation of the SFMTA's Stationless Bikeshare Pilot Program, approximately 9 months after the start of the 18-month pilot period. The evaluation shows that the JUMP bikeshare system is generally performing well and complies with the terms and conditions set forth by the SFMTA. The evaluation also identifies several potential improvements. Based on this evaluation, the SFMTA recommends expanding the maximum fleet size for JUMP to 500 bikes for the duration of the 18-month pilot period. The SFMTA will complete its full evaluation of the pilot program in spring 2019, including recommendations for if and how to permanently permit the operation of stationless bikeshare in San Francisco.

This evaluation covers four primary topic areas, based on the stationless bikeshare permit terms and conditions as well as San Francisco's Guiding Principles for Emerging Mobility:

1. Compliance with permit terms and conditions;
2. System usage, trip details, ridership, and service provision;
3. Public feedback and public engagement; and
4. Equity.

Key Findings

- Demand for stationless, shared e-bikes is high.
- Stationless bikeshare complements the City's station-based bikeshare system, with different trip lengths, origins, and destinations.
- The lock-to design addresses major issues with sidewalk clearance.
- Stationless bikeshare leads to an increased demand for bike parking.
- Rebalancing guidelines for general redistribution and geographic equity should be improved.
- More robust equity engagement is needed to ensure stationless bikeshare effectively serves historically disadvantaged communities.
- Stationless bikeshare systems can serve the public interest when properly regulated.

Recommendations and Next Steps

- Continue the Pilot Program for further evaluation and expand the number of permitted stationless bikes to 500, contingent upon full compliance with all permit terms and conditions.
- Implementing the Emerging Mobility Data Specification and Application Programming Interface.
- Defining bike availability metrics for individual Communities of Concerns.
- Complete the final pilot evaluation by March 31, 2019, including recommendations for if and how to permanently permit stationless bikeshare in San Francisco.

Background and Policy Framework

San Francisco's first bikeshare system, Bay Area Bike Share, launched in August 2013 with 350 bikes and 35 stations in San Francisco. In 2015, the San Francisco Board of Supervisors unanimously approved legislation to join a regional bikeshare program managed by the Metropolitan Transportation Commission and operated by Motivate. The expanded system launched as Ford GoBike in June 2017, and will provide more than 320 stations and 4,500 bikes in San Francisco at full expansion. Currently, there are approximately 134 stations and 1,200 bicycles in service in San Francisco, with a mix of electric-assist and standard pedal bikes.

Even as the expansion of Ford GoBike continues, the stationless bikeshare systems emerged in North America in 2017. San Francisco amended its Transportation Code in March 2017 to include a definition of stationless bikeshare and to develop permit requirements and fees for operation of stationless bikeshare systems. The SFMTA initiated a pilot program permit with Social Bicycles (now doing business as JUMP Bikes) on January 9, 2018, including a Stationless Bikeshare Policy Directive describing the terms of the pilot and summarizing the legal and policy considerations that led to the creation of the pilot..

The pilot period is for 18 months, and expires on July 9, 2018. The SFMTA also has the sole discretion to allow JUMP to expand its operation in the City from 250 to 500 electric bikes (e-bikes) at the mid-point of the pilot (October 9, 2018). The Policy Directive includes guidance for pilot evaluation, which guided the inclusion of the metrics for this nine month mid-Pilot evaluation. The Pilot program provides an opportunity for a thorough evaluation and monitoring of stationless bikeshare expansion in San Francisco.

In addition to the Stationless Bikeshare Policy Directive, several other adopted policies guided the preparation of this evaluation.

Emerging Mobility Guiding Principles

In July 2017, the Transportation Authority (SFCTA) and the SFMTA adopted the following ten Guiding Principles as a framework for evaluating the benefits and impacts of all emerging mobility services and technologies, such as stationless bikeshare, in San Francisco.

1. Collaboration
2. Safety
3. Transit
4. Congestion
5. Sustainability
6. Equitable Access
7. Accountability
8. Labor
9. Disabled Access
10. Financial Impact

The SFMTA uses the Guiding Principles to as a tool to help guide new services and technologies into alignment with city policies while minimizing any potentially detrimental impacts on the city's transportation network. Through evaluations such as this one, these principles help the Agency to assess if and how stationless bikeshare meets city goals. The SFMTA is then able to use its findings to shape future policies, programs, and actions.

Transit First Policy

The SFMTA Transit First Policy prioritizes pedestrians, bicyclists, and public transit, and strives to reduce traffic and improve public health and safety. Bikeshare contributes to this goal by providing a first/last mile connection to public transit and by lowering barriers to bicycling.

2018 SFMTA Strategic Plan

The 2018 Strategic Plan establishes SFMTA's vision for a city of excellent transportation choices, with a mission to connect San Francisco through a safe, equitable, and sustainable transportation system. The plan sets forth four goals; bikeshare helps move the City closer to achieving three of these goals:

- **Goal 1**: Create a safer transportation experience for everyone;
- **Goal 2**: Make transit and other sustainable modes of transportation the most attractive and preferred means of travel; and
- **Goal 3**: Improve the quality of life and environment in San Francisco and for the region.

Bikeshare increases the attractiveness of sustainable modes and improves mobility and quality of life in San Francisco. Additionally, the Strategic Plan's Objective 3.1 commits the SFMTA to *use Agency programs and policies to advance San Francisco's commitment to equity*.

Evaluation

This pilot evaluation covers the following topics drawn from the policies described in the previous section:

1. **Accountability**: Under the pilot program, permittees must share relevant data so that the City and the public can effectively evaluate the bikeshare system's benefits to and impacts on the transportation system;
2. **Equity**: Bikes must be made available in disadvantaged communities, and memberships must be affordable to people with low incomes;
3. **Disabled Access**: The public right-of-way must be maintained in a way that doesn't allow stationless bikes to be a nuisance (i.e. blocking paths of travel or cluttering sidewalks);
4. **Safety**: The pilot program must be consistent with the City's goal for achieving Vision Zero and ensuring public safety and security; and
5. **Collaboration**: Emerging Mobility Services and Technology providers and the City must engage and collaborate with each other and the community to improve the city and its transportation system.

Consistent with the themes described above, the SFMTA used the following evaluation metrics for this report:

- Permit compliance;
- Ridership and demand;
- Trip locations, duration, and length;
- Bike availability;
- Disabled access;
- Public engagement;
- Public feedback; and
- Equity and low-income usage.

The following sections summarize the findings for each of these metrics.

Permit Compliance

To date, JUMP has fulfilled all permit terms and conditions with one exception. The permit requires that "*The emblem of the Stationless Bicycle Share Operator and a unique identifier are prominently displayed on both sides of Stationless Shared Bicycle.*" JUMP is only partially in compliance with this term. Some bikes currently display a unique identifier on the rear fender of the bike, others on the fender and both sides, and others on the fender and one side as shown in Figure 1.

The SFMTA instructed JUMP to add unique identifiers to all bikes to be consistent with the requirement, and JUMP is in the process of adding these unique identifiers to all bikes.

Figure 1. Photos Showing JUMP's Unique Identifiers

Ridership

Ridership data rely on monthly reports from JUMP bikes. Some sections use data from selected months, but not all months from January to August were included due to the lag in data processing. For future evaluations, the agency must have full access to trip data and other regular reporting requirements.

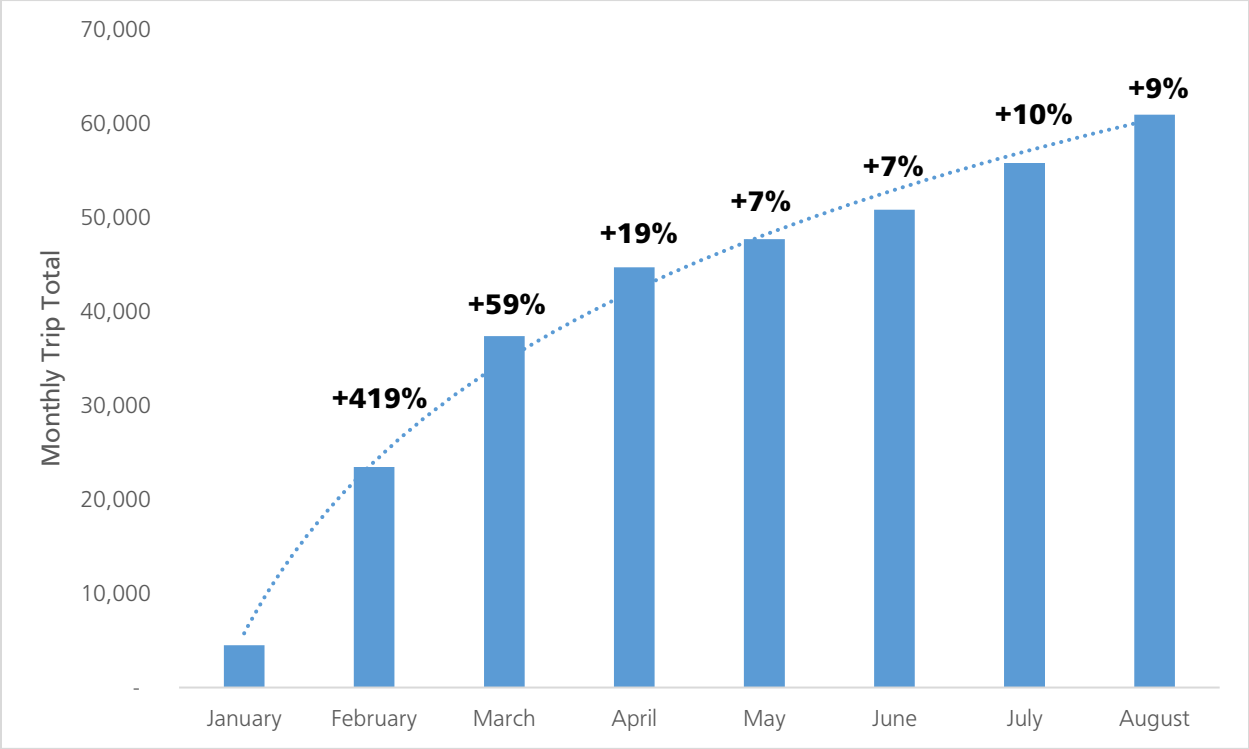
Unique Users

JUMP identified 38,000 unique users in San Francisco as of August 2018. The number of users is defined as the total number of unique accounts. Following JUMP's acquisition by the ride share Transportation Network Company Uber in August 2018, Uber members could check out JUMP bikes in the Uber app under the name Uber Bike. JUMP has not yet provided data on the number of users who have checked out a bike from this app.

Demand

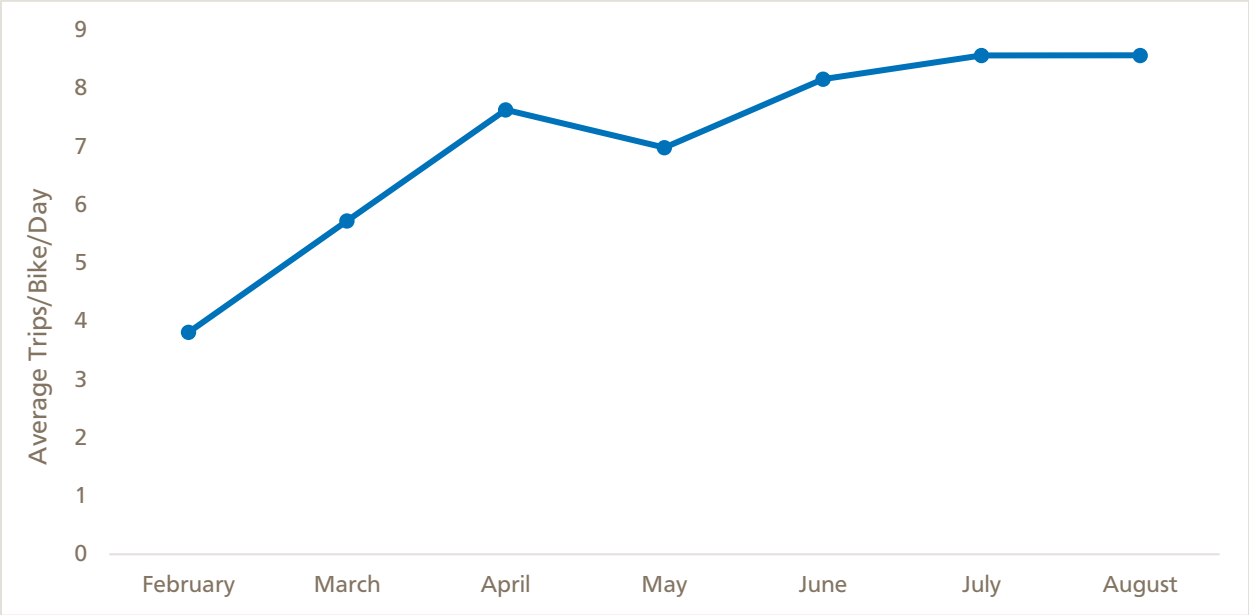
Users have taken 325,000 trips on JUMP bikes since system launch in January through August 2018. The number of trips per month continues to increase each month, despite a fixed cap on the number of bikes, as shown in Figure 2.

Figure 2. Monthly Trips Since JUMP Launch



The average number of trips per bike per day (t/b/d) is eight, with some days reaching 10 t/b/d, as shown in Figure 3. Battery constraints, uneven demand throughout the day, and bike rebalancing needs likely limit the number of t/b/d. For reference, in August 2018 GoBike had an average of 1,100 bikes available daily in San Francisco. That month, there were nearly 136,000 GoBike trips in the city, resulting in an average of four t/b/d. GoBike Plus bikes (i.e., e-bikes) had reportedly significantly higher t/b/d than standard GoBikes and had t/b/d numbers comparable to JUMP bikes.

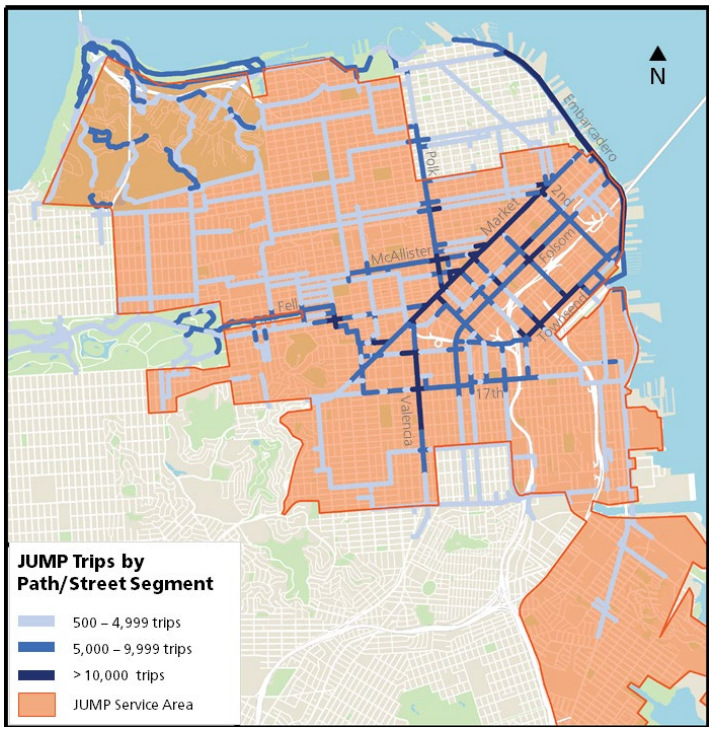
Figure 3. JUMP Trips per Bike per Day



Trips by Corridor

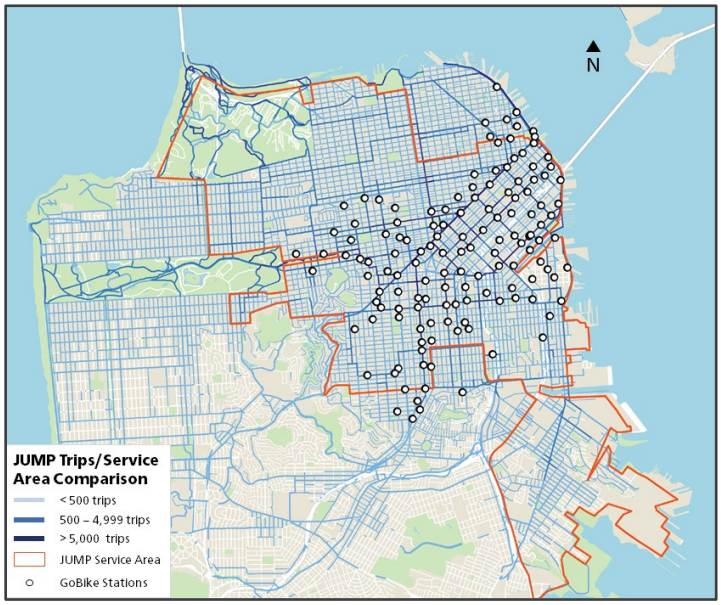
Trips taken on JUMP bikes occur across the city, beyond both the JUMP service area and the GoBike service area. Predictably, JUMP bike use is similar to general bike usage, primarily on the established bike network—on Market Street, Howard Street, Folsom Street, Townsend Street, the Wiggle, Valencia Street, 5th Street, 17th Street, the Embarcadero, and Polk Street. Many JUMP trips also traverse the Presidio and Golden Gate Park, which are outside of the SFMTA's jurisdiction. Figure 4 shows paths & street segments that had more than 500 trips between January and May 2018. Figure 5 shows JUMP's aggregated trip routes across the city street grid and bicycle paths during the same period.

Figure 4. JUMP Trips by Corridor



Note: Street segments with fewer than 500 JUMP trips during the January – May period are not shown.

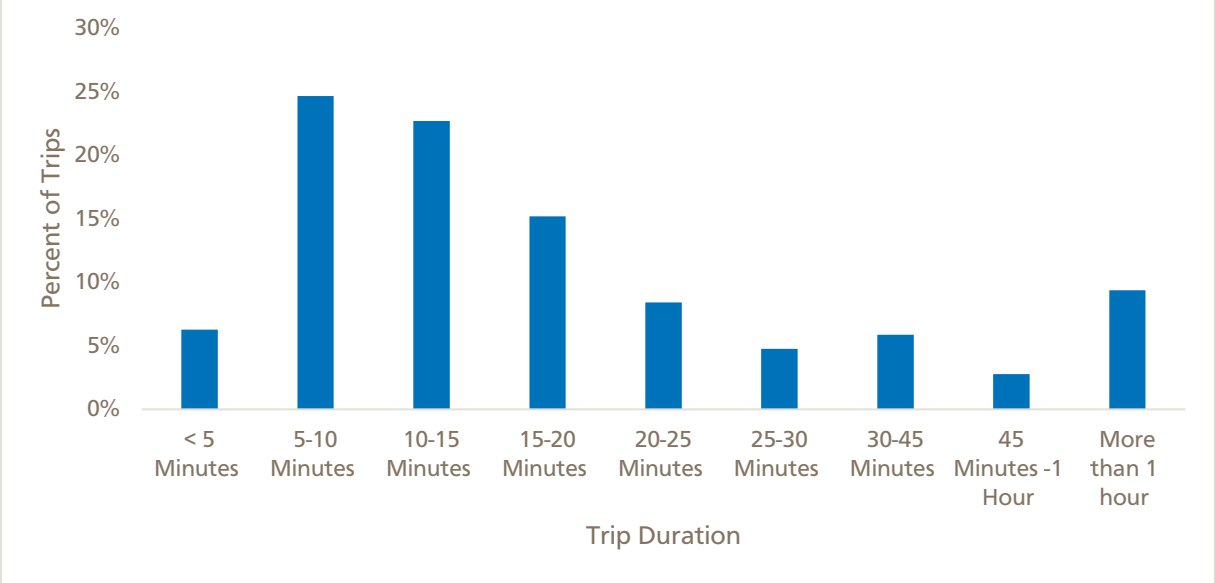
Figure 5. JUMP Trips and Bike Share Service Areas



Trip Duration and Length

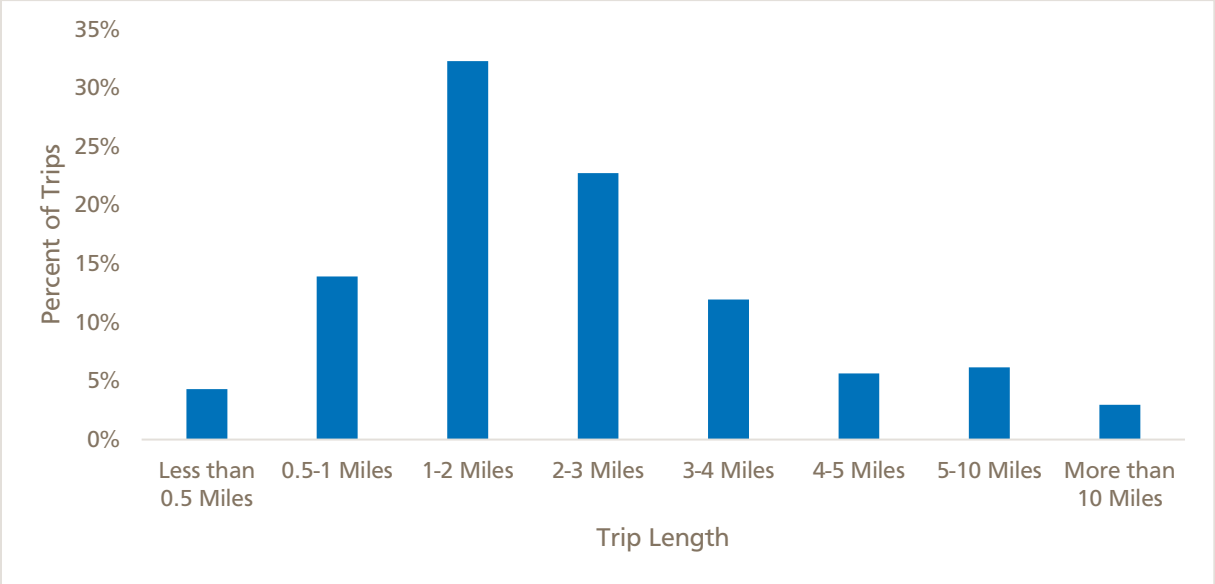
The average JUMP bike trip duration for the most recent month available was 27 minutes, while the median trip time was 14 minutes, as shown in Figure 6. Fewer than 10 percent of trips were longer than one hour, while over 90 percent of JUMP trips were shorter than one hour.[1] The average JUMP bike trip is 2.6 miles, while the median trip distance is two miles (Figure 7).

Figure 6. JUMP Trips by Duration



Note: Data are from a representative sample from August 1-31st, 2018 (n=60,914)

Figure 7. JUMP Trips by Length



Note: Data are from a representative sample from August 1-31st, 2018 (n=60,914)

[1] This information is from a representative sample of JUMP data for August 1-31st, 2018. Because JUMP provided the SFMTA with limited data for other periods of the Pilot, this was the only month for which these detailed calculations could be made.

Bike Availability

In October 2018, the JUMP service area included some or all of the Castro, the Mission, Potrero Hill, SoMa, Hunters Point, Bayview, Pacific Heights, the Haight, and Inner Richmond neighborhoods. In September 2018, JUMP also expanded its service area to include the Presidio through a separate permit under the Presidio Trust jurisdiction. The service area may be modified again commensurate with any increase to the number of permitted bicycles.

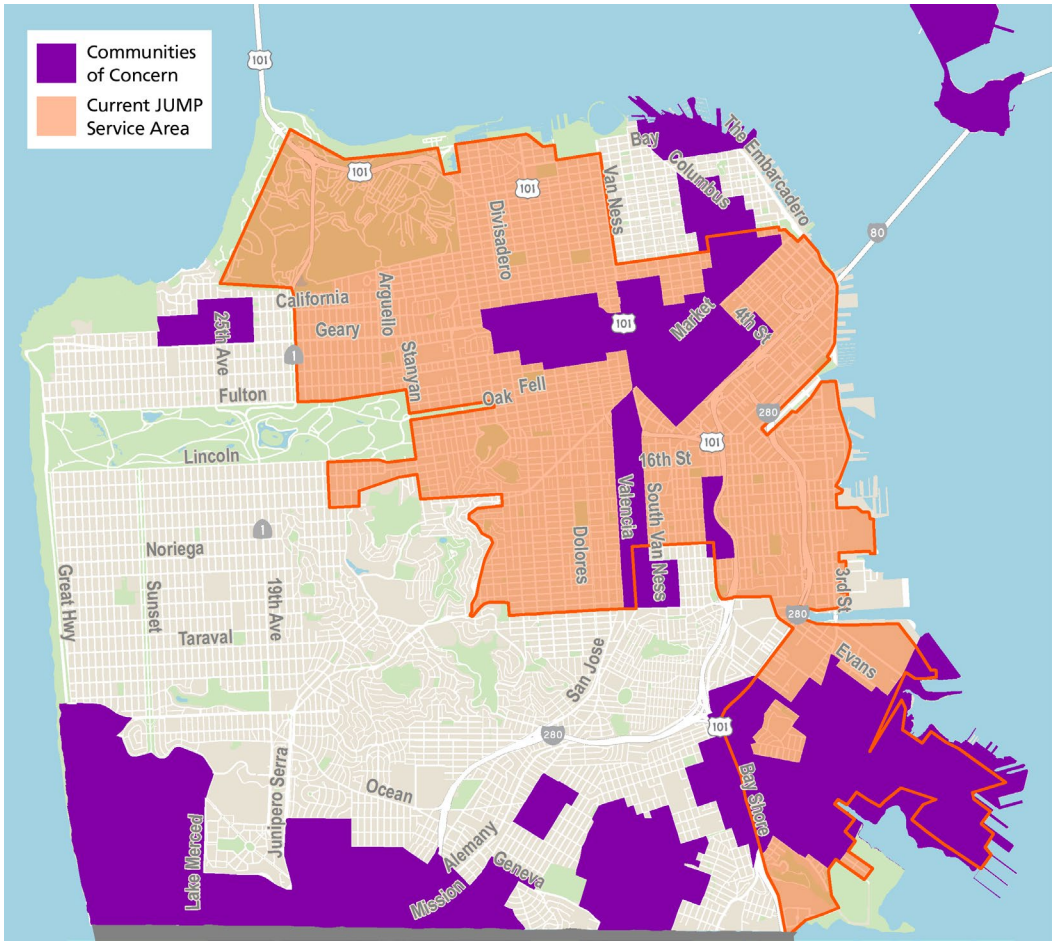
During the most recent month of available data (August 2018), an average of 230 JUMP bikes were available in San Francisco each day. Under the current terms and conditions of the permit, JUMP may only operate up to 250 bikes throughout the city (excluding the Presidio, where JUMP has an agreement to operate 50 bikes). The current service area—including Communities of Concern served—is shown in Figure 8.

The stationless bikeshare permit requires JUMP to maintain an availability of three bikes per square-mile. Without designating which square-mile areas needed to have three bikes, this evaluation used an aggregate metric. With a roughly 10 square-mile service area, as long as JUMP maintained 30 available bikes, they satisfied this requirement. However, bikes are often scarce in parts of the service area depending on the time of day and day of the week.

The permit also required at least 20% of all bicycle availability to be maintained within Communities of Concern as designated by the MTC. In a sampling of bike availability on a weekday in August, JUMP demonstrated compliance with this term by maintaining 21% of total bike availability in Communities of Concern. The **Opportunities for Improvement** and **Equity** sections provide further review for metrics related to bike availability for the total system and in Communities of Concern.

The SFMTA's forthcoming Emerging Mobility Application Programming Interface (API) will provide accurate and timely available bike statistics. This will allow the Agency to monitor availability in the service area at hourly intervals. The data will be accessible in real time, allowing the SFMTA to directly monitor compliance.

Figure 8. Current JUMP Service Areas and Communities of Concern



Disabled Access

Improperly parked stationless bikes have the potential to block the public right of way and accessible path of travel. JUMP's lock-to system encourages locking devices to bike racks, reducing the likelihood of improper bike parking. JUMP specifically instructs its customers not to park bikes next to curb cuts, in pedestrian pathways, or immediately adjacent to another JUMP bike. Between January and May, the SFMTA received 10 complaints of improperly parked JUMP bikes blocking the public right of way or accessible path of travel. However, since June the SFMTA has not received any additional complaints of this manner.

Incident Reports and Collisions

JUMP provided the SFMTA with incident reports filed by users between January and August 2018. During this period there were 15 incidents with a reported injury, of which three were reported to police.[2] Eight incidents involved a third party and four resulted in property damage. No fatalities were reported on the JUMP system. Data collected by JUMP allows the agency to cross check injuries and ensure the safety of the system. As part of SFMTA's Vison Zero, these incidents will be cross-checked with statewide traffic injury databases and admissions to San Francisco General Hospital.

Public Engagement

At the time of this evaluation, JUMP had hosted or attended 32 community events in San Francisco. Examples of these events include Vision Zero meetings, Sunday Streets, San Francisco Bike Coalition events, and YMCA Urban Services Ride Along and Training. JUMP also participated in 53 stakeholder meetings, some including Board of Supervisors, the Mayor's office, SFMTA workshops, and other city departments. JUMP surpassed the minimum requirement of offering two safety classes. Classes were offered in partnership with the San Francisco Bike Coalition on June 28, August 21, and September 15, 2018. At those classes, the Boost low-income membership plan was also advertised.

Public Feedback

The SFMTA has received 90 complaints about the JUMP system and 14 expressions of support during the pilot period. These totals include emails to the Agency and complaints submitted through the City's 311 system. The most common complaints pertained to blocked public right-of-way and abandoned bikes, while the most common expression of support was to request removal of the 250 bike cap.

In general, the number of complaints received per month has diminished significantly since the start of the Pilot. For the period from January through March, the SFMTA received an average of nine complaints per month. The Agency received 11 complaints per month during February, March, and April. During the June through August period, the number of complaints received by the SFMTA had significantly decreased to an average of two per month.

Additionally, a petition with over 850 signatures authored by the bikeshare advocacy group OurBikes.com expressed support for removing any kind of cap for the total number of JUMP bikes.

BOOST Low-Income Plan

226 customers registered with the Boost low-income membership plan, as of September 2018. The membership provides qualifying members with 60 minutes of daily ride time for $5 per year. JUMP reported that Boost members take an average of 6.5 trips per week compared to 2.5 trips per week for users who pay per rider. In August 2018, the most recent month with available data, Boost rides accounted for 2.5% of all trips. There were nearly 1,500 trips taken by Boost members in August; since system launch Boost members have taken over 10,000 rides.

[2] JUMP does not collect data on injury severity.

Opportunities for Improvement

The SFMTA finds that the Stationless Bikeshare Pilot Program is performing well. Nonetheless, this evaluation identified potential opportunities for improvement, as described below. These observations will factor into the final pilot evaluation, and could result in amendments to the Transportation Code and/or modifications to terms and conditions for future permit programs.

Equity

The SFMTA identified the following ways to ensure more equitable access to the JUMP system.

1. The permit requires that 20% of bikes be available in Communities of Concern. In practice, this does not ensure equitable access across different communities. Observation suggests that Hunters Point and the Bayview have notably less access to JUMP bikes than neighborhoods like SoMa, the Tenderloin, and the Western Addition. Stationless bikeshare program requirements should be modified to ensure regular access to all Communities of Concern.
2. Limited effort was made to advertise and promote the low-income stationless bikeshare program, or to generally advertise the service in low-income areas. More outreach should be conducted regarding the low-income plan. The number of Boost members is small compared to the total number of unique members. JUMP should market the program in the JUMP (and Uber) apps and provide in-app eligibility verification for the Boost program.
3. JUMP conducted some outreach to promote its system. Targeted outreach for the Boost program, and a directed equity plan should address community needs beyond service provision. Some community stakeholders expressed an inconsistent effort in developing a Memorandum of Understanding about how business models and operations of a private enterprise could support neighborhood stakeholder needs of the most vulnerable communities to be socially responsible and empowering.
4. The SFMTA cannot determine if trips that begin or end in Communities of Concern were taken by disadvantaged individuals. Although 55% of trips start or end in Communities of Concern, there is no way to determine if those trips are serving residents of those communities. Once the SFMTA's Emerging Mobility API is operational, staff will be able to determine how many of these trips belong to Boost members.

Bike Parking Demand

Lock-to stationless bikeshare systems encourage more orderly parking; they also increase demand for bike rack parking. Bike rack demand will be further increased by other shared dockless mobility options, such as electric shared scooters. More bike racks are needed to meet this demand.

Recommendations and Next Steps

- *Continue monitoring the pilot program.* At the midpoint, the Pilot demonstrates strong demand for stationless e-bikes in San Francisco. The SFMTA analysis shows that the program supports Agency policies and goals.
- *Expand the number of bikes allowed in the stationless bikeshare pilot to 500, contingent upon full compliance with all permit terms and conditions.* Stationless bikeshare has enhanced the mobility of people in San Francisco, warranting an expansion for the remainder of the pilot period. This expansion is strictly contingent upon the following:
    - Expanding outreach and advertising of the Boost membership. This includes adding an option to sign up for the Boost program in the JUMP app;
    - Working with the SFMTA to implement the Emerging Mobility API (discussed in more detail below); and
    - Adding unique identifying numbers on both sides of JUMP bikes.
- *Complete user survey.* The SFMTA will finalize its annual Emerging Mobility user survey, which JUMP will distribute to members. This will facilitate an analysis of program usage across different demographic groups. Furthermore, the survey will help determine the degree to which JUMP is helping the SFMTA meet its strategic goals.
- *Implement the Emerging Mobility Data Specification and API.* The agency will require agreement to all data and API specifications. This data sharing system should be in place for the majority of the second half of the 18-month pilot period. Analysis will inform any changes to the Transportation Code or permanent permit program terms and conditions.
- *The SFMTA should define more specific metrics for general and equitable bike availability.* Current requirements fail to create reliable distribution for the overall service area, nor in communities of concern. The SFMTA should prescribe areas where bikes need to be regularly available—for example near transit hubs and larger trip generators.
- *Complete pilot evaluation and continue compliance monitoring.* The SFMTA will continue to ensure permit compliance. It will also continue to research and evaluate how system usage changes with an expanded number of bikes. The Agency will also monitor how these suggestions are incorporated for the duration of the Pilot. The SFMTA will complete a full evaluation of the pilot program in spring 2019. This evaluation will include, but not be limited to, the following topics:
    - Use of existing bikeshare systems to identify geographic and/or demographic gaps where stationless bikeshare should be promoted;
    - Impact of stationless bike share on the public right-of-way, including maintaining accessible pedestrian paths of travel, as well as the enforcement/maintenance burden on City staff; and
    - The degree to which JUMP addresses the opportunities for improvement and recommendations identified in this report during the second half of the Pilot.

  JUMP's permit conditions require that the company provide data to SFMTA sufficient for this final evaluation. The evaluation will be documented and will result in policy recommendations for stationless bikeshare operations going forward, including amendments to the Transportation Code if necessary. This includes if and how to permanently permit stationless bikeshare in San Francisco.