Powered Scooter Evaluation Report

Prepared for:
San Francisco Municipal Transportation Agency (SFMTA)

September 11, 2023

SF22-1231.15

FEHR PEERS

Executive Summary

Powered scooters, which first appeared on San Francisco streets in Spring 2018, have been permitted to operate in the public right-of-way by the San Francisco Municipal Transportation Agency (SFMTA) through various program since June 2018. Two companies are currently permitted to provide scooter share in San Francisco: Lime and Spin. Both companies can operate up to 2,750 scooters each within the City.

SFMTA is currently considering the future of permitted scooter share in San Francisco, and the agency wanted to evaluate the performance of the existing permit system, including device utilization, instances of sidewalk riding, climate benefits, and equitable access to scooters. SFMTA currently provides permits to scooter companies on an annual basis, starting at the beginning of each City fiscal year, and the agency retained Fehr & Peers to conduct a comprehensive analysis of the existing program, including program data analysis, a rider survey, and peer city interviews. The agency also asked Fehr & Peers to provide recommendations for potential future iterations of scooter share in San Francisco.

Program Analysis

Analysis Period and Data Collection

SFMTA provided Fehr & Peers with a variety of data to analyze the performance of the current program, including anonymized trip information, the number of deployed devices, and low-income fare memberships and rides. Fehr & Peers used data from calendar year 2022 for this analysis. This period was selected to analyze seasonal changes in scooter deployment and ridership, and because most COVID-19 public health restrictions were lifted prior to the start of the year. This analysis period also includes rides from Bird, which operated in San Francisco through its subsidiary Scoot. Bird left the San Francisco scooter market in February 2023.

Program Ride Analysis

1.7 million rides were taken in 2022, across all permitted companies. Each scooter was used an average of 1.7 times per day, with an average ride distance of 1.5 miles. The average scooter trip was just under 16 minutes. Scooter ridership in San Francisco is highly seasonal, with ridership peaking in the summer months. August was the highest ridership month in 2022, with almost 200,000 rides, likely due to higher rates of tourism. December was the lowest ridership month, with just over 60,000 rides.

Scooter ridership in San Francisco is highly concentrated, with almost 80 percent of trips beginning or ending in the five neighborhoods groups displayed in **Table 1**. Ridership is likely concentrated in these neighborhoods because their dense built environment and lack of automobile parking makes driving difficult. Additionally, most scooter trips are local, with 60 percent of trips beginning and ending in the same neighborhood group. **Appendix A** includes a comprehensive analysis and review of this program ride analysis.

Table 1: Top Five Scooter Origin and Destination Neighborhood Groups

Neighborhood Group	Share of Trip Origins	Share of Trip Destinations
South of Market	24.0%	23.8%
Financial District	18.6%	17.9%
North Beach	17.5%	15.9%
Downtown/Civic Center	11.3%	12.2%
Mission	7.7%	7.7%
Total Share of Systemwide Trips	**79.0%**	**77.6%**

Rider Survey

Fehr & Peers and Corey, Canapary & Galanis (CC&G) prepared a rider survey that was distributed through the permitted companies' phone applications in May through July 2023. In total, the survey received 582 responses from scooter riders. The survey included a variety of questions, such as why the user selected scooter share, what transportation mode they would have used if the program was not available, and if the respondent connected with public transit for their trip. The survey also included demographic questions including questions on gender, race and ethnicity, income, and San Francisco residency. **Appendix A** includes a detailed analysis of this scooter rider survey.

Most scooter riders would have walked (33%), would have used ride-hailing services (28%), or would have used public transit (21%) if scooter share was not available. A limited number of respondents would have driven alone (5%), likely due to uncompetitive nature of driving in the core scooter ridership area. About 27 percent of respondents reported connecting with transit on their latest scooter trip, with most connecting to and from BART and Muni bus services.

In general, Lime respondents were more likely to be visitors to San Francisco, with 46 percent of Lime responses coming from people who live outside of the Bay Area. Only 33 percent of Lime respondents live in San Francisco, in contrast to 63 percent of Spin respondents. When compared to census data, the survey sample was more likely to be white and less likely to be Asian than the population of San Francisco. Hispanic or Latino responses were similar to the city population, while Black or African American responses were higher than the city population. The sample's income distribution was also similar to San Francisco's population.

Peer City Interviews

Fehr & Peers interviewed city staff from six peer cities to understand the structure and outcomes of similar powered scooter share programs in the United States. The selected cities were Seattle, Los Angeles, San Diego, Washington DC, Chicago, and Austin. The cities were chosen in coordination with the SFMTA, and they were selected due to their population and because of the success of their scooter share programs.

These peer cities shared a variety of information about their programs, including the permit process, sidewalk riding detection requirements, their approach towards adaptive devices for people with disabilities, and data reporting requirements. The information shared in these peer city interviews is available in **Appendix A**, and it was used to inform our program recommendations.

Recommendations

Fehr & Peers used the findings from our program analysis, rider survey, and peer agency interviews to develop recommendations for a potential future iteration of the scooter share program. These recommendations include:

- **Maintain a permit-based system**
- **Continue recent changes to financial penalties**
- **Increase micromobility competition**
- **Retain innovative permit requirements**
- **Further investments in bicycle infrastructure to avoid sidewalk riding**
- **Strengthen certain reporting requirements, while streamlining others**

Introduction

Powered scooters first appeared on San Francisco streets in Spring 2018, and they have been permitted to operate in the public right-of-way by the San Francisco Municipal Transportation Agency (SFMTA) through various programs since 2018. SFMTA currently provides permits to scooter companies on an annual basis. These permits start at the beginning of the City's fiscal year, which starts in July. Two companies are currently permitted to provide scooter share in San Francisco: Lime and Spin. Both companies can operate up to 2,750 scooters each within the City.

SFMTA retained Fehr & Peers to conduct a comprehensive analysis of the existing program, including program data analysis, a rider survey, and peer city interviews. The results of this program analysis are presented in a technical memorandum, which is intended to accompany this report and is attached as **Appendix A**.

As a part of this evaluation process, SFMTA asked Fehr & Peers to interview San Francisco elected and appointed officials to solicit feedback about the scooter program. SFMTA also requested recommendations for potential future iterations of scooter share in San Francisco. This evaluation report includes key findings from the program's technical analysis, the results from the stakeholder interviews, and our program recommendations.

Key Findings

The full results from the scooter evaluation data analysis, rider survey, and peer city interviews are available in **Appendix A**. This section outlines the key findings from this program evaluation.

Analysis Period and Data Collection

SFMTA provided Fehr & Peers with a variety of data to analyze the performance of the current scooter share program, including anonymized trip information, the number of deployed devices, and low-income memberships and rides. Fehr & Peers, in consultation with SFMTA, used program data from 2022 to conduct this analysis. This period was selected to analyze seasonal changes in scooter deployment and ridership, and because most COVID-19 public health restrictions were lifted prior to the start of the year. This analysis period also includes rides from Bird, which operated in San Francisco through its subsidiary Scoot. Bird left the San Francisco market in February 2023.

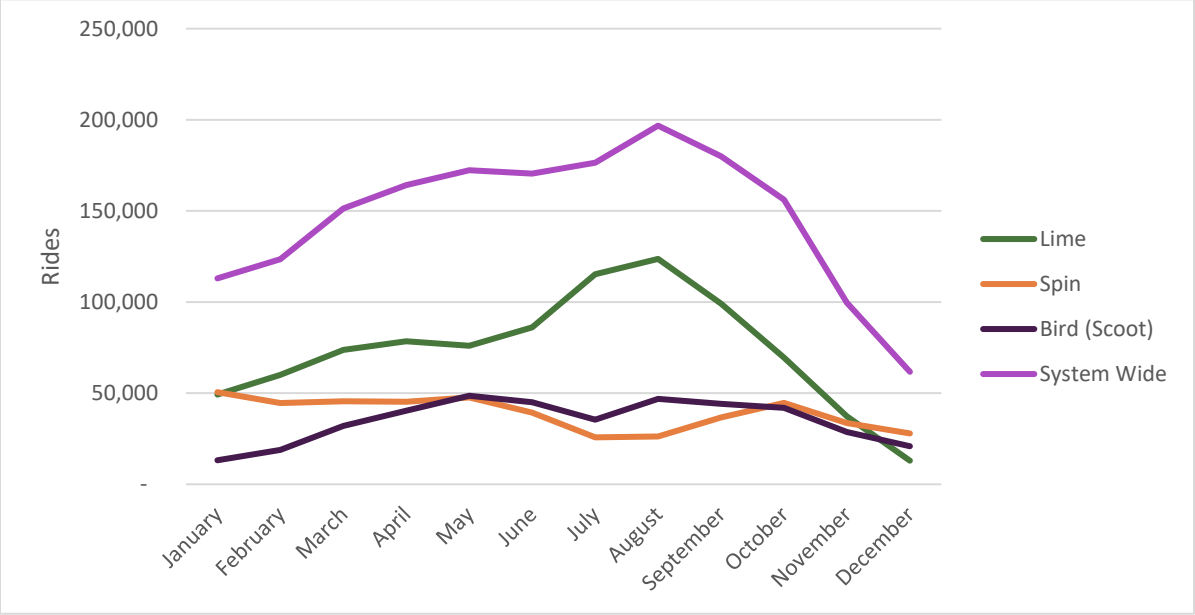
SFMTA receives a variety of data from the permitted companies, including data on rides, device deployment, low-income memberships and rides, collisions, and adaptive device trips. SFMTA receives a continuous real-time data feed of scooter device locations and ride data. Other data are reported to SFMTA by the permitted companies on a monthly, or quarterly, basis. This information is available to SFMTA through a web-based data portal. SFMTA provided Fehr & Peers with select data from this web-based portal to complete this evaluation.

SFMTA ensured that all data provided to Fehr & Peers for this evaluation was anonymized to protect user privacy. Individual ride data had trip origin and destination coordinates removed and the data only included date, time, distance, and duration information. Fehr & Peers also received summary information on the number of trip origins and destinations by neighborhood and by census tract. This origin and destination data only included neighborhood pairs with at least 20 rides per month, to further protect scooter rider privacy.

Ridership and Device Deployment Analysis

Fehr & Peers used data from permittee monthly and quarterly reports, individual trip data, and origin and destination pair data to analyze scooter ridership trends in San Francisco. In total, the three permitted companies provided over 1.7 million rides in 2022. As shown in **Figure 1**, scooter ridership is highly seasonal, with ridership peaking in August. This seasonality is mostly due to Lime, who provided almost half of total system rides in 2022. Lime experienced more seasonal changes in ridership than the two other permitted companies, most likely due to increased tourism during the summer months. The results from the rider survey, which included a question on residency and asked for the respondent's zip code, show that almost half of Lime users live outside of the Bay Area.

Figure 1: Monthly Scooter Ridership (2022)



As shown in **Figure 2,** on a program wide average, each device provided 1.7 rides per day. The average scooter trip was 1.5 miles, with an average ride duration of approximately 16 minutes. Over 80 percent of rides were shorter than 2 miles long. **Table 2** shows the monthly average ride distance by permitted company.

Figure 2: Average Rides per Deployed Device per Day (2022)

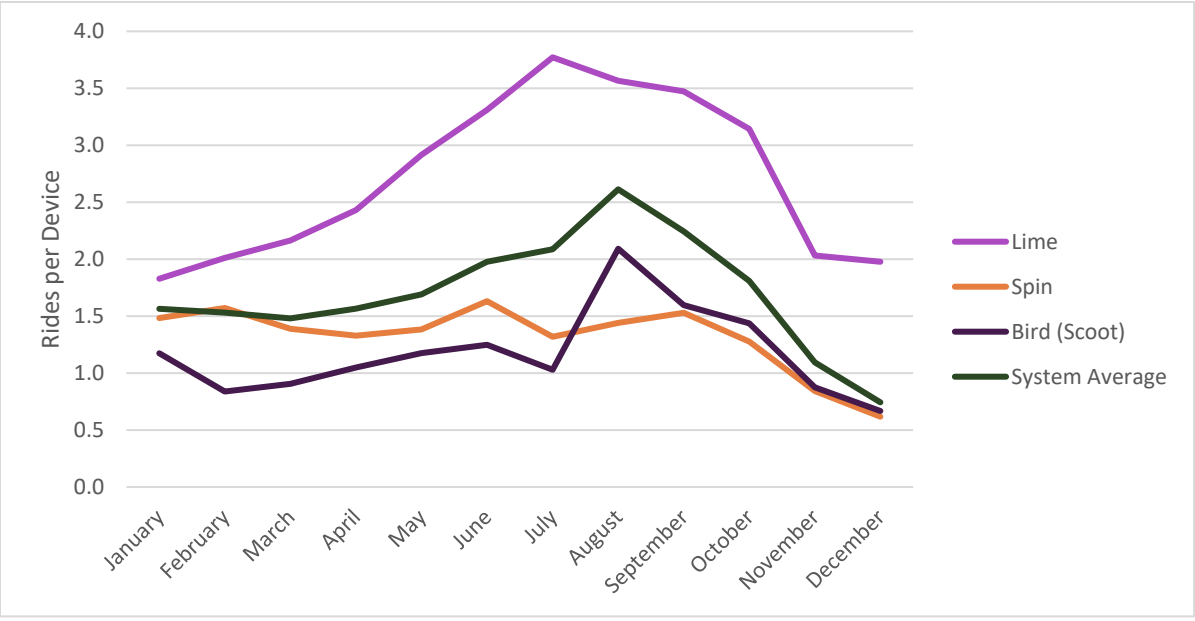


Table 2: Average Ride Distance by Month - Miles (2022)

Permitted Company	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Average
Lime	1.83	5.34	1.61	2.54	3.36	1.91	1.59	0.59	0.52	0.49	0.48	0.53	**1.72**
Spin	1.79	1.77	1.90	1.51	1.64	1.59	1.58	0.59	0.61	0.59	0.54	0.52	**1.29**
Bird (Scoot)	1.66	1.67	1.62	1.66	1.83	1.65	2.33	0.60	0.57	0.53	0.52	0.54	**1.25**
System Wide	**1.79**	**3.49**	**1.70**	**2.04**	**2.46**	**1.77**	**1.74**	**0.59**	**0.55**	**0.53**	**0.51**	**0.53**	**1.50**

Trip Origins and Destinations

SFMTA provided Fehr & Peers with summarized trip origin and destination information to analyze the locations of scooter trips. This trip origin and destination data was provided using San Francisco Planning Department neighborhood groups.

Scooter ridership in San Francisco is highly concentrated. In total, 79 percent of systemwide trips start in the five neighborhood groups listed in **Table 3**, and about 78 percent of trips end in these same five neighborhood groups. These five neighborhoods are also shown in **Figure 3**.

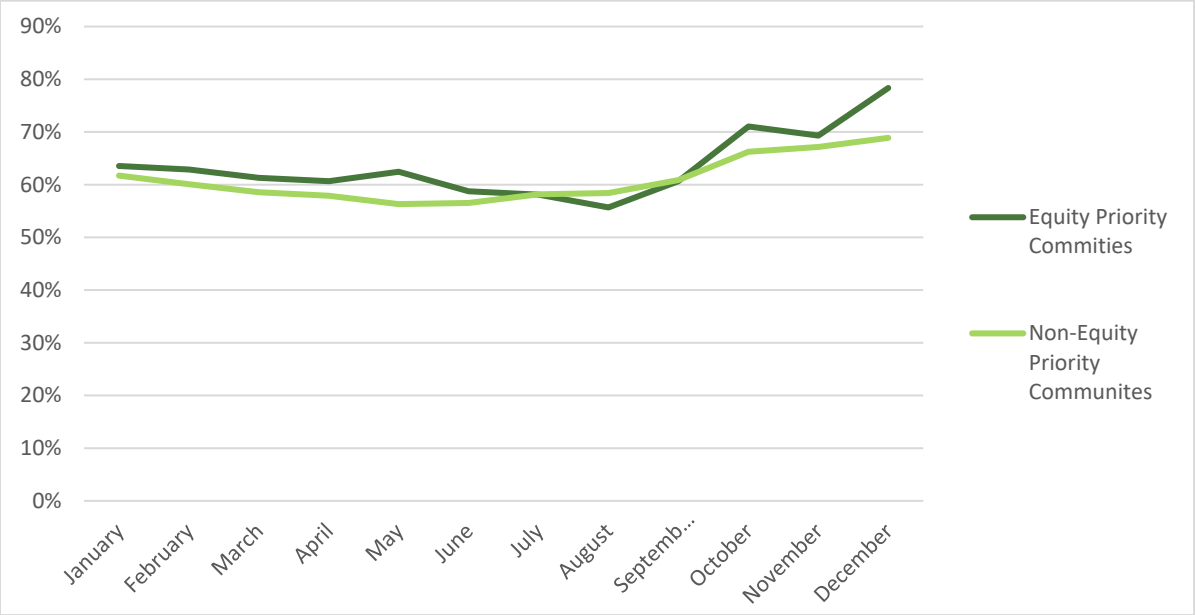
Table 3: Top Five Scooter Origin and Destination Neighborhood Groups (2022)

Neighborhood Group	Share of Trip Origins	Share of Trip Destinations
South of Market	24.0%	23.8%
Financial District	18.6%	17.9%
North Beach	17.5%	15.9%
Downtown/Civic Center	11.3%	12.2%
Mission	7.7%	7.7%
Total Share of Systemwide Trips	**79.0%**	**77.6%**

Figure 3: Top Five Scooter Origin and Destination Neighborhood Groups (2022)

Fehr & Peers also used this origin and destination information to find the share of trips that begin or end in the same neighborhood. As shown in **Figure 4**, about 60 percent of trips started and ended in the same neighborhood group. This rate was about the same for equity priority communities and non-equity priority communities.

Figure 4: Percent of Trips that Start and End in the Same Neighborhood (2022)



Sidewalk Riding Citation Analysis

SFMTA investigators issue financial penalties to the permitted companies for parking, riding, and permit violations. Riding violations include dangerous riding, riding against traffic, and sidewalk riding. Preventing sidewalk riding is a priority for SFMTA, and the agency is currently engaged in a public awareness and education campaign to reduce this behavior. SFMTA provided Fehr & Peers with the location of sidewalk riding violations to analyze if there is a relationship between sidewalk riding and on-street bicycle facilities.

Table 4 shows the results of this sidewalk riding analysis. Excluding the Embarcadero, which is a hotspot for sidewalk riding, only 35 percent of citations were issued on roads with a bicycle facility. Of those violations on streets with a bicycle facility, 82 percent occurred on streets that are designated bicycle routes (Class III), where there is no dedicated bicycle lane, and where scooters and bicycles ride in mixed automobile traffic.

Table 4: Sidewalk Riding Violations

Violation Type	2022 Citations	Citations per 1000 Rides	Omitting Embarcadero Citations (2022)	Omitting Embarcadero Citations Per 1000 rides
All Violations	10,856	6.15	8,644	4.90
Riding Violations	788	0.45	282	0.16
Sidewalk Riding Violations	683	0.39	234	0.13
Sidewalk Riding Violation on road with Bicycle Facility	501	0.28	84	0.05
Sidewalk Riding Violation on road with Class III Bicycle Facility	69	0.04	69	0.04

Rider Survey

Fehr & Peers and Corey, Canapary & Galanis (CC&G) prepared a rider survey that was distributed to scooter users in May through July 2023, through the permitted companies' phone application. This survey, which was available in English, Spanish, Mandarin Chinese, and Tagalog, included questions on the purpose of the user's scooter trips, how often the respondent rides scooters, and what transportation mode the user would have taken if scooter share was not available. Two separate survey links were used, with one link sent to Lime riders and the other sent to Spin riders. Bird was not included in these survey results, as they ceased operations in San Francisco prior to the distribution of the survey.

In total, the rider survey received a total of 582 responses, including 532 completed surveys and 50 partially completed surveys. Approximately 69 percent of responses were from Lime riders and 31 percent of responses were from Spin riders. The rider survey also included several optional demographic questions, including questions on respondent gender, ethnicity, income, and San Francisco residency. The full survey results are included in **Appendix A**.

Key Transportation Question Results

The survey results show that most scooter riders would have walked (33 percent of responses), would have used ride-hailing services (28 percent), or would have used public transit (21 percent) if scooter share was not available. **Table 5** shows the full results of this mode choice question. A limited number of survey respondents would have driven alone (5 percent). This is likely because driving is a less competitive mode choice in the core scooter service area, due to limited automobile parking.

Table 5: Respondent Mode Choice if Scooter Share Was Not Available

Mode	Lime	Spin	Total
Bike	22 (5%)	4 (2%)	26 (4%)
Drive Alone	20 (5%)	14 (8%)	34 (6%)
Drive with Others/Carpool	4 (1%)	2 (1%)	6 (1%)
Motorcycle or Moped	1 (0%)	1 (1%)	2 (0%)
Personal Scooter	4 (1%)	2 (1%)	6 (1%)
Private Transit or Shuttle	1 (0%)	0 (0%)	1 (0%)
Public Transportation	85 (21%)	55 (31%)	140 (24%)
Regular Taxi	1 (0%)	1 (1%)	2 (0%)
Ride-Hailing (Lyft and Uber)	112 (28%)	38 (21%)	150 (26%)
Walk	131 (33%)	60 (33%)	191 (33%)
Other	10 (2%)	1 (1%)	11 (2%)
Would Not Have Taken Trip	11 (3%)	2 (1%)	13 (2%)

Approximately 27 percent of scooter users reported using the service to connect to and from transit on their most recent journey. Respondents who connected to and from transit primarily used BART or Muni bus services.

Respondents were also asked the purpose of their most recent scooter trip. As shown in **Table 6**, these trip purposes were mostly evenly distributed between the four options. A higher share of Spin riders rode scooters to reach work or school, and Lime had a higher share of recreational trips.

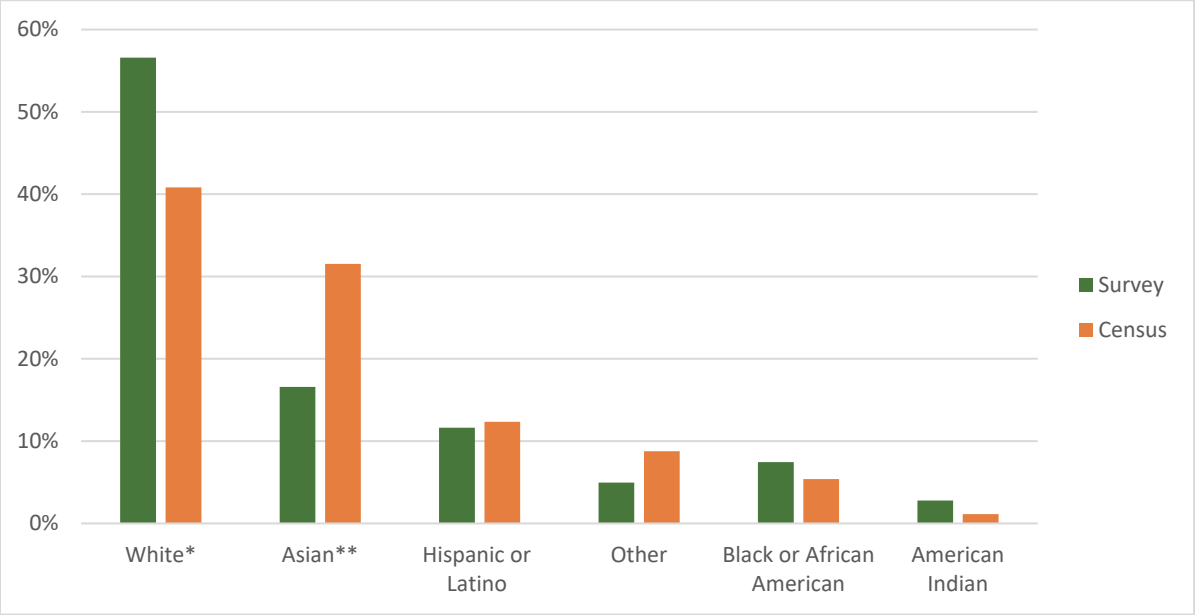
Table 6: Purpose of Most Recent Scooter Trip

Permittee	For Fun or Recreation	Shopping or Errands	To Get To or From a Social Activity or Entertainment	Work or School
Lime	110 (27%)	67 (17%)	128 (32%)	97 (24%)
Spin	33 (18%)	40 (22%)	46 (26%)	61 (34%)
Total	**143 (25%)**	**107 (18%)**	**174 (30%)**	**158 (27%)**

Key Demographic Results

The total scooter survey sample had a large majority of male responses, with 74 percent of respondents identifying as male in the survey. As shown in **Figure 5**, survey respondents were more likely to be white and less likely to be Asian than the San Francisco population.

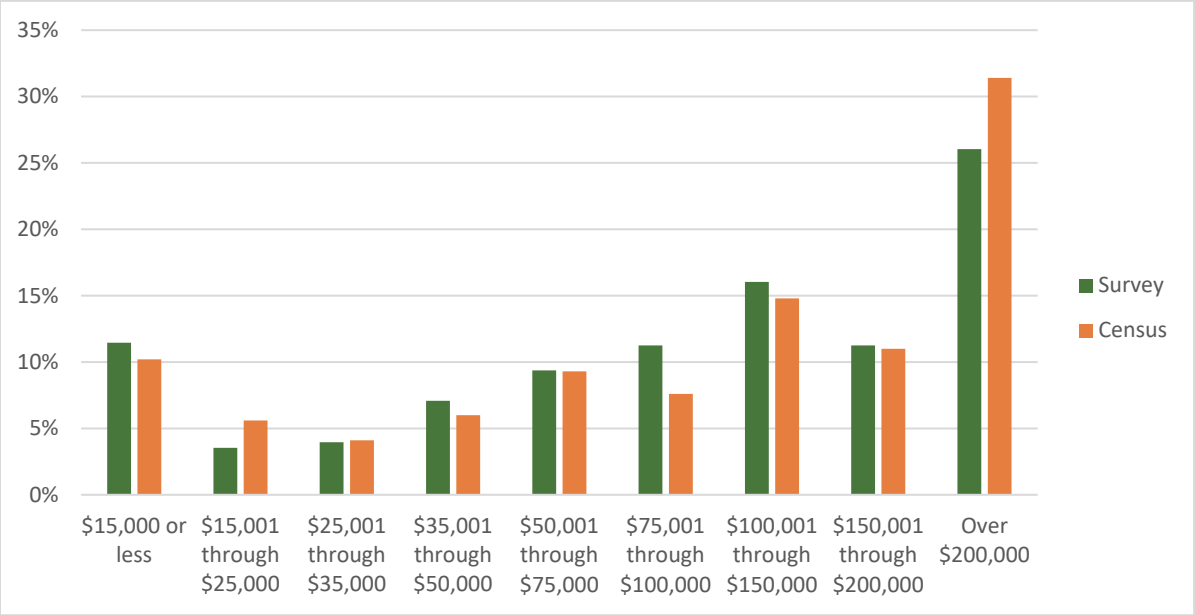
Figure 5: Survey Sample Race and Ethnicity Compared to San Francisco Population



Source: American Community Survey (ACS) 2021 1-Year Estimates, United States Census Bureau
** Includes Middle Eastern and North African*
*** Includes Pacific Islander*

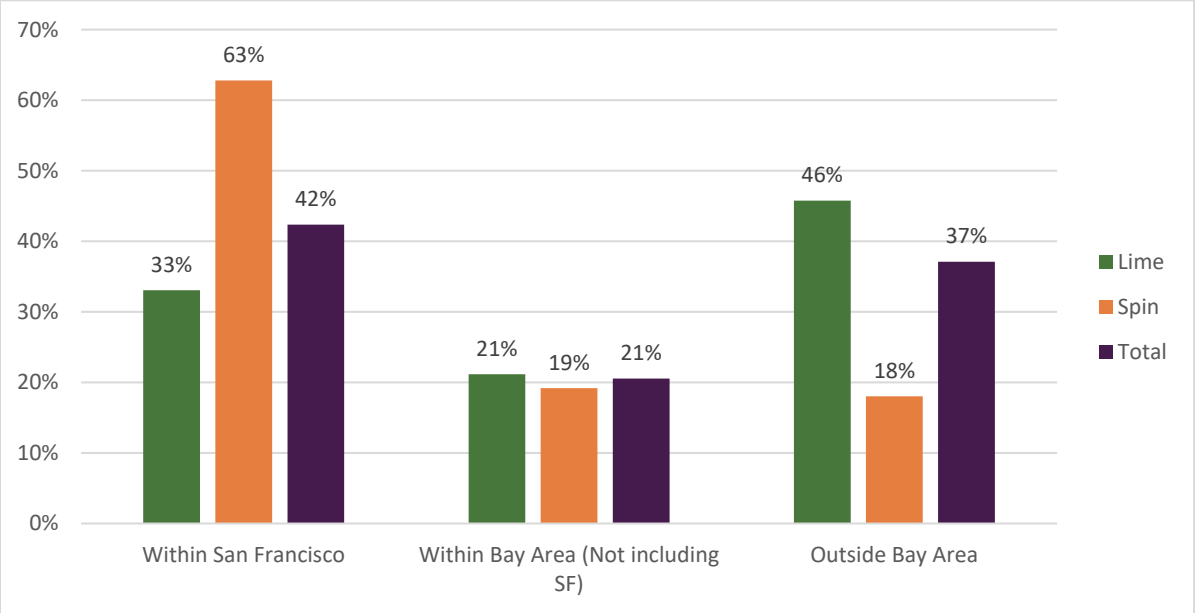
Survey respondents were also asked for their total household income before taxes. **Figure 6** shows a comparison of the total scooter survey sample's household income to San Francisco's population. In general, the survey sample had a similar income breakdown to the city's population.

Figure 6: Survey Sample Household Income Compared to San Francisco Population



Finally, the scooter survey asked for respondent zip codes, which were used to determine San Francisco or Bay Area residency. **Figure 7** shows the zip code location of survey respondents. Based on this data, a majority of Spin users live within San Francisco. Lime is more popular with Bay Area visitors. Almost half of Lime respondents live outside of the Bay Area. This visitor focused user base may explain why Lime's ridership has more seasonal variation than Spin's ridership.

Figure 7: Survey Respondent Zip Codes



Peer City Interviews

Fehr & Peers interviewed city staff from six peer cities to understand the structure and outcomes of similar powered scooter share programs in the United States. The selected cities were Seattle, Los Angeles, San Diego, Washington DC, Chicago, and Austin. The cities were chosen in coordination with SFMTA, and they were selected due to their population and because of the success of their scooter share programs. The information shared in these peer city interviews is available in **Appendix A**. These interviews covered topics such as equity requirements, adaptive device requirements, and each city's approach to sidewalk riding.

Of the peer cities we interviewed, five have permit-based systems, and one uses a request for proposal (RFP) approach. The permit-based cities issue permits that range from six-months in duration to two-years. In general, the cities with shorter permit terms provide a more streamlined renewal process. San Diego, the single city with an RFP system, offers three-year contracts, with two one-year extension options.

Elected and Appointed Official Interviews and Meetings

Fehr & Peers, in consultation with SFMTA staff, conducted two interviews with elected and appointed City officials. The first interview was held with Supervisor Aaron Peskin, the President of the San Francisco Board of Supervisors, on June 14th, 2023. Supervisor Peskin was interviewed as the district he represents, District 3, covers most of the core ridership area for the scooter share program. Supervisor Peskin said that his primary concern about the scooter share program is sidewalk riding and its potential to cause collisions and injuries. He mentioned that requiring sidewalk riding detection technology, which SFMTA added to the permit requirements in June 2023, is his highest priority.

The second interview was held with Chair Amanda Eaken, the Chair of the SFMTA Board of Directors, on September 8, 2023. Chair Eaken shared that she sees scooter share as a sustainable transportation option that can connect people to transit and replace ride-hailing trips, and that she wants to ensure that the program's requirements do not constrain that first and last mile potential. Chair Eaken also mentioned that she sees investing in safer bicycle infrastructure as the most effective way to reduce sidewalk riding.

In addition to these two interviews, Fehr & Peer staff attended a meeting of the San Francisco Mayor's Disability Council on May 19, 2023. At that meeting, SFMTA staff provided an update on the scooter share program and this program evaluation. Members of the council and the general public shared their thoughts on the scooter share program, and how sidewalk riding and improperly parked devices can disproportionately affect people with disabilities. SFMTA also shared information on their sidewalk riding prevention public awareness campaign.

Recommendations

Based on the data analysis conducted on the existing scooter share program, the results of the scooter user survey and the information gathered in the peer city interviews, Fehr & Peers has prepared a series of recommendations for potential future iterations of the scooter share program. Fehr & Peers provides the following six recommendations if San Francisco decides to retain a scooter share program in the future.

Maintain a Permit-Based System

Switching to an RFP system requires many months of administrative and legislative attention, while providing somewhat unclear advantages towards achieving the SFMTA program's needs and goals. The primary benefits of an RFP system are increased flexibility to change program terms and requirements mid-cycle, and the ability to limit the number of permitted companies. San Francisco has a mature regulatory environment for scooter share, with limited year-to-year changes, which makes the additional flexibility less valuable at this time. Additionally, based on our interviews with the peer cities, our previous work on bike share systems, and a review of news articles on micromobility, the current nationwide economic environment for micromobility providers appears to be challenging, and it is unlikely that San Francisco will see a large influx of potential permitted companies in the near to medium term.

Of the six peer cities we interviewed, only one city has switched to an RFP system, although other cities are considering moving towards one in the future. Fehr & Peers recommends maintaining a permit-based approach at this time, as San Francisco's program goals can still be achieved in a permit-based environment. We recommend SFMTA consider issuing two-year permits, or a providing streamlined renewal process. The peer cities we interviewed have permit terms that range from six months to two-years, and some cities provide a streamlined reapplication process for permitted companies that meet certain program goals and metrics.

Continue Recent Changes that Reduce Financial Penalties to the Permitted Companies

When compared to the peer cities we interviewed, San Francisco has been an outlier in issuing financial penalties to the permitted companies, as most of the cities we interviewed avoid issuing citations to the permittees, partially due to concerns about the financial viability of micromobility as a business.

In recent months, the SFMTA has made changes to fines, by creating the Safe Micromobility Parking Incentive Policy, which provides discounts to company financial penalties if the permittees respond to improperly parked devices within one to two hours. These fine discounts are based on average response times over a two-week period. This policy recalibrates fines, and it retains financial penalties as a regulatory tool, while providing the permittees with an incentive to maintain prompt response times to complaints.

Increase Micromobility Competition

Affordability was a concern in the scooter user survey, especially in the answers to free response questions. San Francisco has fewer permitted companies than all of the peer cities we interviewed. The City has two current permittees, while most of the peer cities have three to four permitted companies, although these often include dockless bikeshare providers. Additionally, like San Francisco, four of the six peer cities also have docked bikeshare systems that provide a similar micromobility service.

Having fewer permitted companies limits rider options and may have an effect on prices. Attracting one additional permitted company would result in more competition in the scooter market, which could result in lower prices and increase access.

Retain Innovative Permit Distribution Requirements

San Francisco's coverage requirements, which are based on the percentage of a neighborhood that is within a ¼ mile of a scooter during certain time periods, are an innovative way to promote equitable distribution of scooters. Some of the peer cities we interviewed use boundary-based distribution requirements, which require that a certain percentage of scooters are located within a neighborhood boundary, regardless of their distribution inside that community.

One peer city reported issues with companies placing scooters on the edge of an equity priority community, so they can serve neighboring affluent areas outside of the neighborhood boundary. The San Francisco approach avoids this issue, and it ensures a more effective distribution of scooters within these equity priority communities.

Further Investments in Bicycle Infrastructure to Avoid Sidewalk Riding

Outreach that informs riders to not ride on sidewalks, along with device sidewalk riding detection technology, are important tools to reduce sidewalk riding, and we recommend SFMTA continue its efforts in those areas. SFMTA has an ongoing public awareness campaign about sidewalk riding and scooter safety, which includes signage on agency bus stops and transit vehicles.

Fehr & Peers included questions about sidewalk riding in the peer city interviews, and many of the cities mentioned that investing in safer bicycle infrastructure was the most effective way to reduce sidewalk riding. Our analysis of sidewalk riding citations shows that violations were much more frequent on streets without bicycle lanes. On streets with at least some form of designated bicycle facility, over 82 percent of sidewalk violations occurred on streets with Class III infrastructure, where scooters and bicycles ride in mixed traffic with automobiles.

Strengthen Certain Reporting Requirements, While Streamlining Others

SFMTA requires that the permitted companies supply a variety of data on program rides, performance, and other metrics. SFMTA includes these data requirements as an appendix to the program's permit terms and conditions, and the agency has the opportunity to update this required data during the permit renewal process.

Some of this required data is provided in a direct data feed to SFMTA, through the MDS data standard, while other information is reported monthly or quarterly by the permitted companies. This company provided data is often incomplete and includes information that is important for the equity and environmental goals of the program, such as the number of adaptive scooter users and low-income fare memberships, and the miles driven by company operational vehicles. Other reported data, while useful, are less important for the goals of the scooter share program.

In May 2023, Fehr & Peers provided recommendations on changes to Appendix 4 and Appendix 5 of the Powered Scooter Share Program Permit terms, which cover these data reporting and distribution requirements. These recommendations aimed to improve the reporting consistency of important program data, while reducing the administrative burden of analyzing less valuable information. SFMTA took these recommendations into consideration during their most recent revision to the program's permit terms. Additionally, the move to MDS 2.0, the newest iteration of the MDS data standard, will expand the information that is provided to SFMTA through a direct data feed, which will further improve data reporting to the agency.

Appendix A: Powered Scooter Evaluation Task A Memorandum

FEHR PEERS

Memorandum

Date: September 11, 2023

To: Forest Barnes and Danny Yeung, SFMTA

From: Erin Ferguson, Alex Murray, and Nina Price, Fehr & Peers

Subject: Powered Scooter Evaluation Task A

SF22-1231.15

Introduction

This memorandum outlines the data analysis approach used to evaluate the Powered Scooter Share Permit Program in San Francisco. Scooters, which first appeared on San Francisco streets in Spring 2018, have been permitted to operate in the public right-of-way by the San Francisco Municipal Transportation Agency (SFMTA) through various programs since June 2018. SFMTA currently provides permits to scooter companies on an annual basis, starting at the beginning of each fiscal year. Two companies are currently permitted to provide scooter share in San Francisco: Lime and Spin. Both companies can operate up to 2,750 scooters each within the City.

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Fehr & Peers used data from calendar year 2022 to complete this performance analysis. This analysis period was selected to analyze seasonal changes in scooter deployment and ridership, and because most COVID-19 public health restrictions were lifted prior to the start of the year.

Three companies provided permitted scooter share in San Francisco in 2022: Lime, Spin and Bird. Bird, which operated in San Francisco through its subsidiary Scoot, left the San Francisco market in February 2023.

Data Collection

SFMTA receives a variety of data from the permitted companies, including data on rides, device deployment, low-income memberships and rides, collisions, and adaptive device trips. SFMTA receives a continuous real-time data feed of scooter device location and ride data, while other data are reported to SFMTA by the permitted companies on a monthly, or quarterly, basis and are accessed through a web-based data portal.

SFMTA provided Fehr & Peers with select data from this web-based portal. The agency ensured that these data were anonymized to protect user privacy. Individual ride data had trip origin and destination coordinates removed and only included date, time, distance, and duration information. Fehr & Peers also received summary information of the number of trip origins and destinations by neighborhood and by census tract, but only for neighborhood or census tract pairs with at least 20 rides per month to further protect user privacy.

The other tasks analyzed in this memorandum rely on information provided by the permitted companies. In general, these data are complete and have reported data for each month of 2022. However, the data for some metrics, such as adaptive device trips and the vehicle miles traveled for operational activities, are incomplete for all three permitted companies.

Ridership and Device Deployment Analysis

Fehr & Peers used data from permittee monthly and quarterly reports, individual trip data, and origin and destination pair data to analyze scooter ridership trends in San Francisco. In total, the three permitted companies provided over 1.7 million scooter rides in 2022, with each deployed device providing an average of 1.7 rides per day. The average scooter ride was about 1.5 miles with an average ride time of about 16 minutes. Over 80% of system rides were shorter than 2 miles long.

As shown in **Figure 1**, scooter ridership is highly seasonal, with ridership peaking during the summer months, likely due to higher rates of tourism and more favorable weather conditions. In response to this higher level of demand, the permitted companies increase their deployed fleet during the summer. **Figure 2** shows the average number of devices deployed on San Francisco streets each day, and **Figure 3** displays the average number of rides per device per day, broken down by provider.

Figure 1: Monthly Ridership (2022)

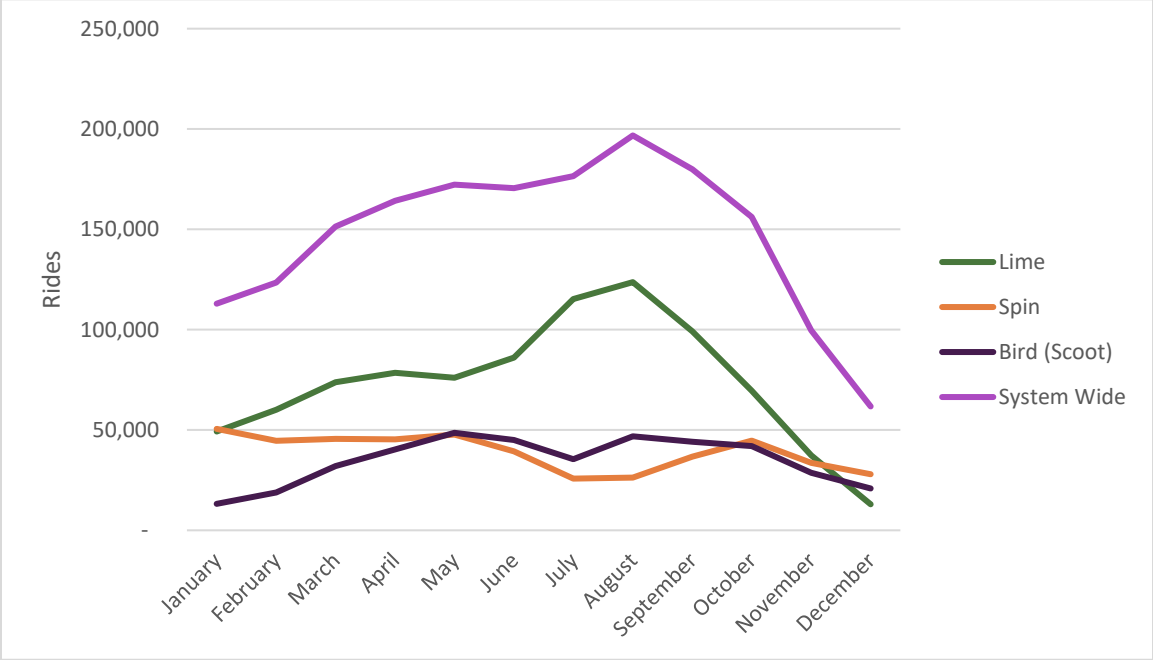


Figure 2: Monthly Average Deployed Devices (2022)

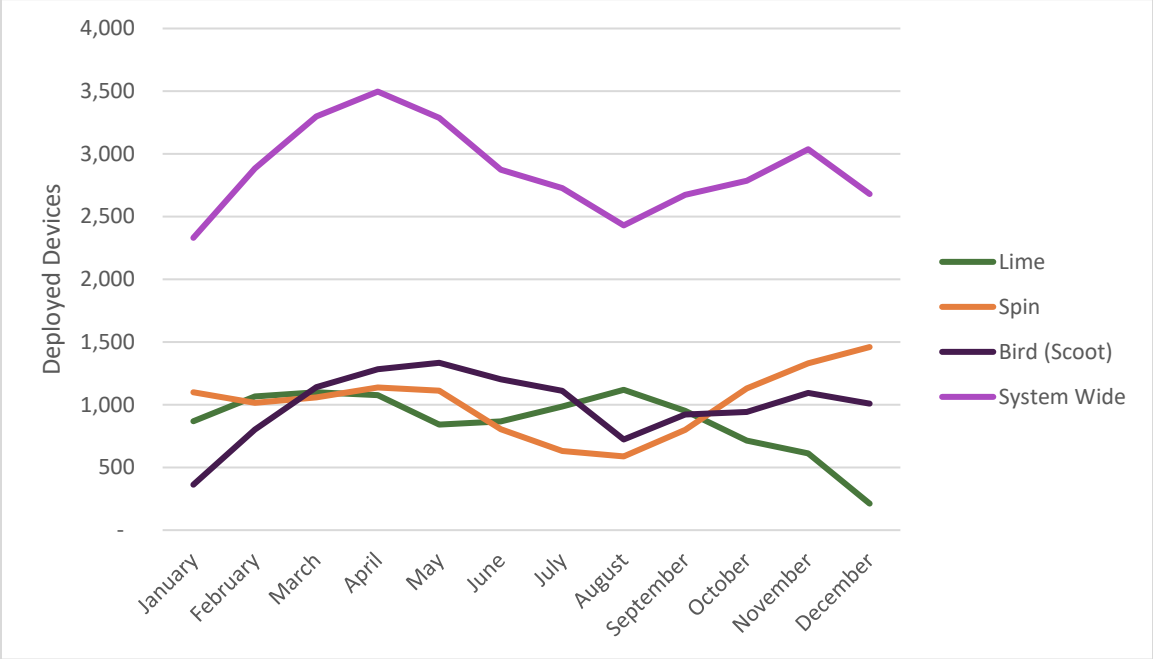
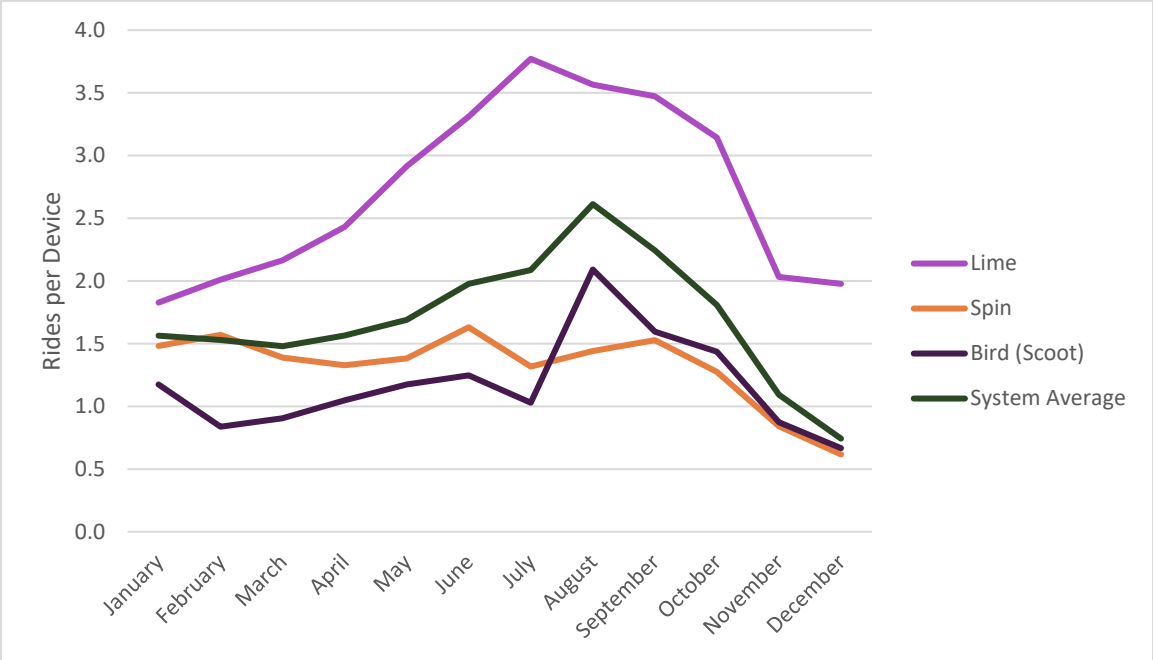


Figure 3: Average Rides per Deployed Device per Day (2022)



A.1 Conduct and Analyze Rider Survey

Fehr & Peers and Corey, Canapary & Galanis (CC&G) prepared a rider survey that was distributed to scooter users through the permitted companies' phone applications in May through July 2023. This survey, which was available in English, Spanish, Mandarin Chinese, and Tagalog, included questions on the purpose of user scooter trips, how often the respondent rides scooters, and what transportation mode the user would have taken if scooter share was not available. Two separate survey links were used, with one link sent to Lime riders and the other sent to Spin riders. Bird was not included in these survey results, as they ceased operations in San Francisco prior to the distribution of the survey.

Number of Responses

SFMTA's Powered Scooter Share Permit Terms require that permittees distribute an annual survey, which is prepared by the SFMTA, to a survey population specified by the agency. For this 2023 survey, the SFMTA asked for a statistically significant sample of each company's ridership. **Table 1** displays April and May 2023 ridership data for both permittees. The average monthly ridership for this two-month period was used to determine the appropriate survey sample size for each permitted company: 382 responses for Lime and 380 responses for Spin.

Table 1: Permittee Monthly Ridership and Survey Responses

Permittee	Ridership			Survey Responses	
	April 2023	May 2023	Period Average	Survey Response Target	Survey Responses
Lime	50,346	48,751	49,548 (56%)	382	402 (69% of total)
Spin	34,450	43,708	39,079 (44%)	380	180 (31% of total)

In total, the rider survey received a total of 582 responses, including 532 completed surveys and 50 partially completed surveys. Approximately 69 percent of responses were from Lime riders and 31 percent of responses were from Spin riders. Lime exceeded their survey target by 20 responses, while Spin were 200 responses short of their target. Riders were provided an incentive, in the form of rider credits, to encourage participation in the survey. Lime provided an incentive through their phone application, while Spin included a $10 rider credit code that was directly included in the rider survey.

Trip Purpose and Mode Choice

The scooter user survey included several questions on trip purpose, mode choice, and frequency using scooter share. **Table 2** shows the trip purpose for respondents' most recent scooter trip. Trip purposes were mostly evenly distributed between the four options. A higher share of Spin users rode scooters to reach work or school, and Lime had a higher share of recreational trips.

Table 2: What Was the Purpose of Your Most Recent Scooter Trip?

Permittee	For Fun or Recreation	Shopping or Errands	To Get To or From a Social Activity or Entertainment	Work or School
Lime	110 (27%)	67 (17%)	128 (32%)	97 (24%)
Spin	33 (18%)	40 (22%)	46 (26%)	61 (34%)
Total	**143 (25%)**	**107 (18%)**	**174 (30%)**	**158 (27%)**

Table 3 displays which transportation mode respondents would have used if powered scooter share was not available. In general, most scooter users shifted from walking, ride-hailing services, and transit. A small number of users would have driven alone or carpooled to their destination.

Table 3: Mode Choice if Scooter Share Not Available

Mode	Lime	Spin	Total
Bike	22 (5%)	4 (2%)	26 (4%)
Drive Alone	20 (5%)	14 (8%)	34 (6%)
Drive with Others/Carpool	4 (1%)	2 (1%)	6 (1%)
Motorcycle or Moped	1 (0%)	1 (1%)	2 (0%)
Personal Scooter	4 (1%)	2 (1%)	6 (1%)
Private Transit or Shuttle	1 (0%)	0 (0%)	1 (0%)
Public Transportation	85 (21%)	55 (31%)	140 (24%)
Regular Taxi	1 (0%)	1 (1%)	2 (0%)
Ride-Hailing (Lyft and Uber)	112 (28%)	38 (21%)	150 (26%)
Walk	131 (33%)	60 (33%)	191 (33%)
Other	10 (2%)	1 (1%)	11 (2%)
Would Not Have Taken Trip	11 (3%)	2 (1%)	13 (2%)

The survey included a question on why respondents selected scooter share over other modes of transportation. Users could select up to three reasons. As shown in **Table 4**, the question's options included reasons such as convenience, speed, and the environment.

Table 4: Why Did You Choose Scooter Share? (select up to three reasons)

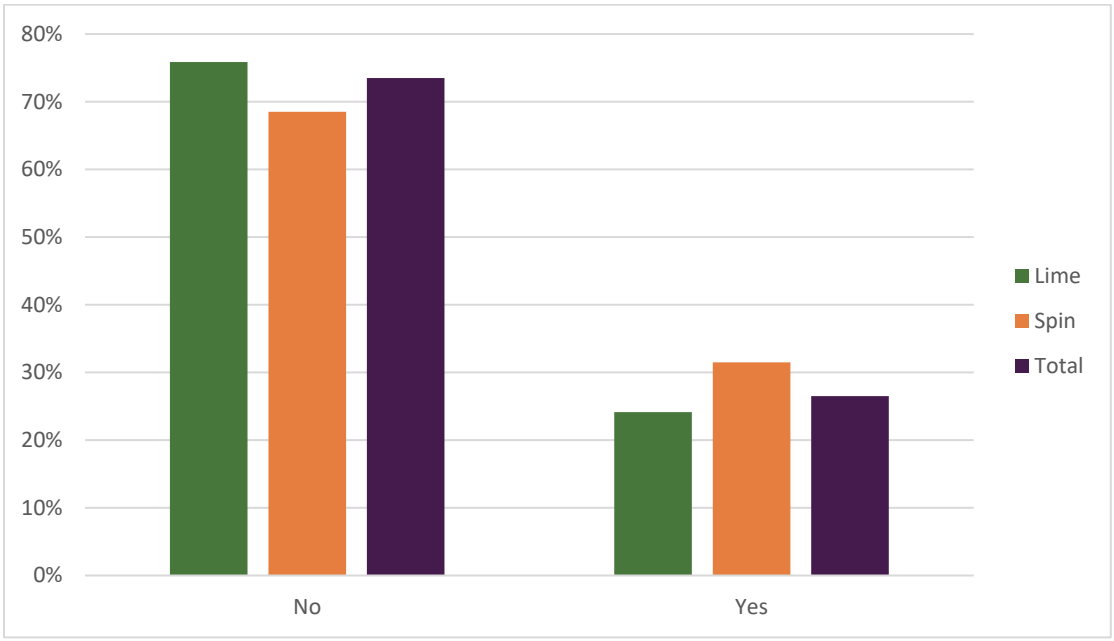
Reason	Lime	Spin	Total
Affordability	96 (29%)	48 (27%)	144 (28%)
Convenience	291 (88%)	130 (72%)	313 (82%)
Speed	209 (63%)	104 (58%)	313 (61%)
Safety and Comfort	16 (5%)	12 (7%)	28 (5%)
Fun	194 (58%)	78 (43%)	272 (53%)
Environmentally Friendly	61 (18%)	27 (15%)	88 (17%)
Health	11 (3%)	6 (3%)	17 (3%)
My Primary Mode Was Not Available	24 (7%)	10 (6%)	34 (7%)
Other	17 (5%)	5 (3%)	22 (4%)

Respondents who answered "other" were asked to provide more specific information in a free response follow up question. Reasons for selecting scooters included lack of access to Bay Wheels, needing transportation when BART is out of service, and pedestrian safety at night.

Connecting To and From Transit

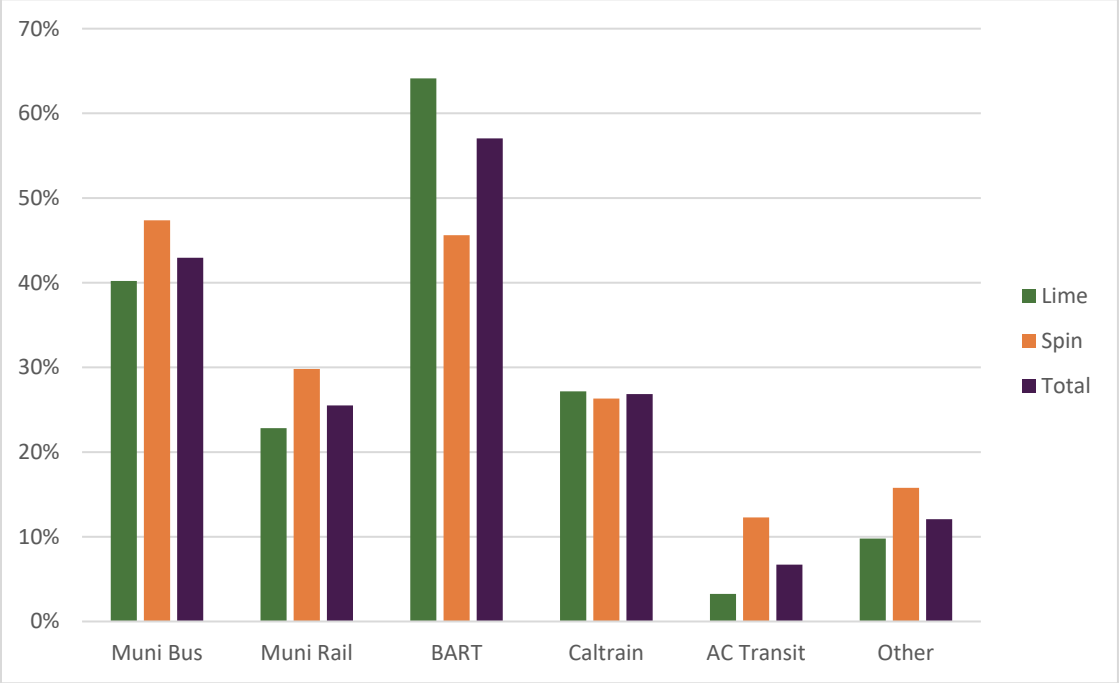
Respondents were asked if they used scooter share to get to and from public transportation. As shown in **Figure 4**, approximately 24 percent of Lime riders and 31 percent of Spin riders used scooter share to get to and from public transit.

Figure 4: Did you use scooter share to get/from transit?



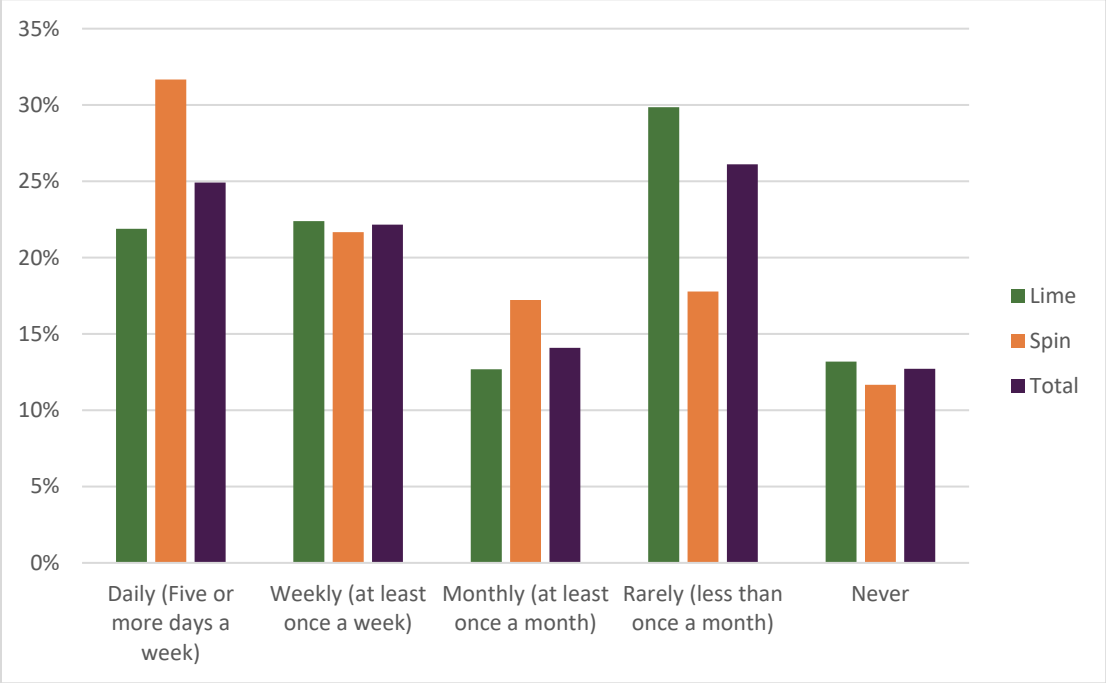
Respondents who selected yes were asked a follow up question asking which transit service they connected with. Respondents could select multiple transit options for this question. As shown in **Figure 5**, of the 149 respondents who used the service to connect with public transit, 57 percent used BART, 43 percent used Muni bus services, and 26 percent used Muni rail services.

Figure 5: If Yes, Which Transit Agency Did You Use?



Respondents were also asked how often they use public transit. 87 percent of users take public transit at least once per month or more, with nearly half using transit at least once per week or more. As shown in **Figure 6**, Spin riders use public transit more frequently than Lime riders.

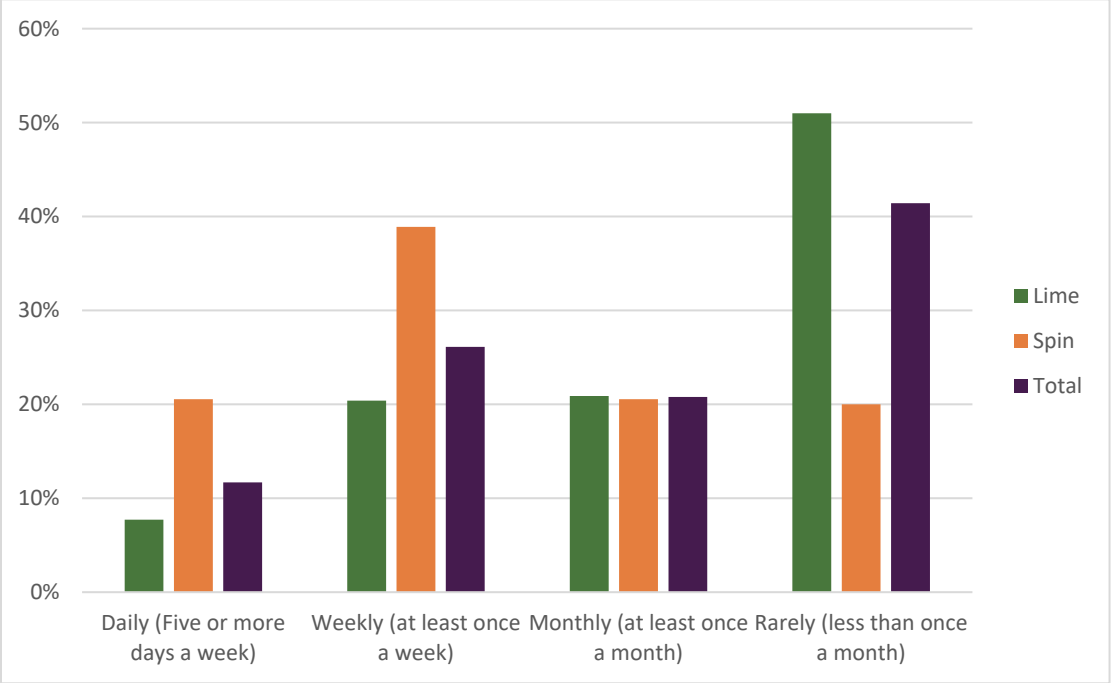
Figure 6: How Often Do You Take Public Transportation?



Scooter Riding Frequency and Views on Service

Respondents were asked how frequently they use shared scooters. The survey included four options for this question: daily, weekly, monthly, and rarely. As shown in **Figure 7**, approximately 59 percent of program wide users ride scooters at least once per month or more. In general, Spin respondents used scooter share more frequently than Lime users.

Figure 7: How Often Do You Use Lime/Spin Scooters?



Respondents were also asked to rate their experience using scooter share in San Francisco, with a rating of one meaning poor, and a rating of five meaning excellent. **Figure 8** shows the range of ratings from respondents, while **Figure 9** shows the average score for each permittee. In total, the program wide average rating of scooter share was 3.54.

Figure 8: How Would You Rate Your Experience Using Scooters in San Francisco?

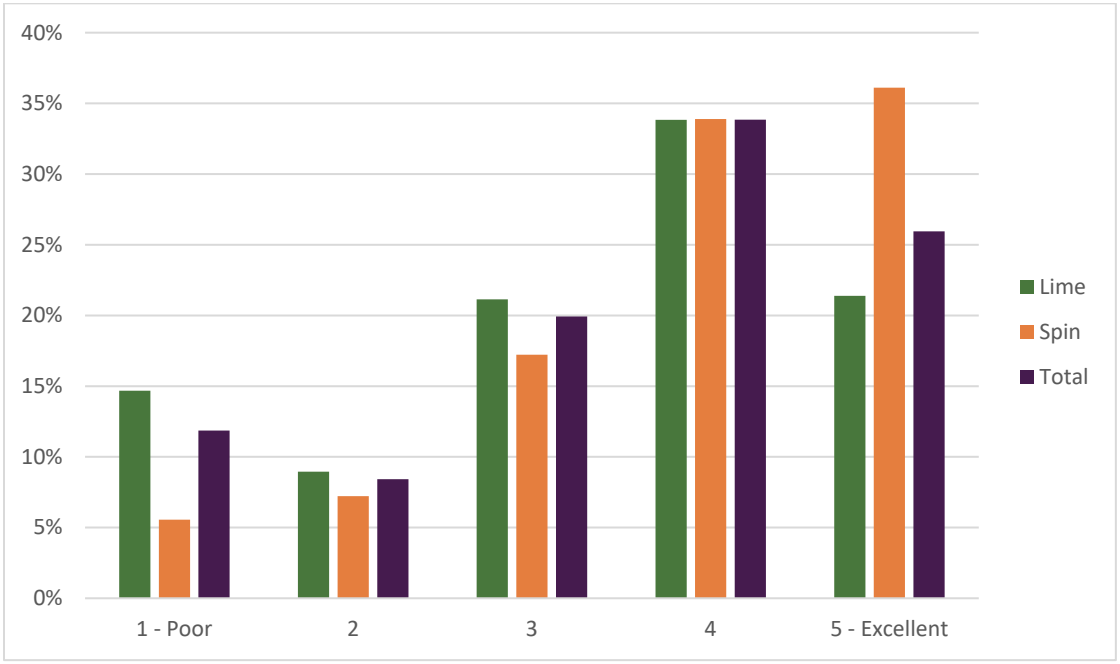
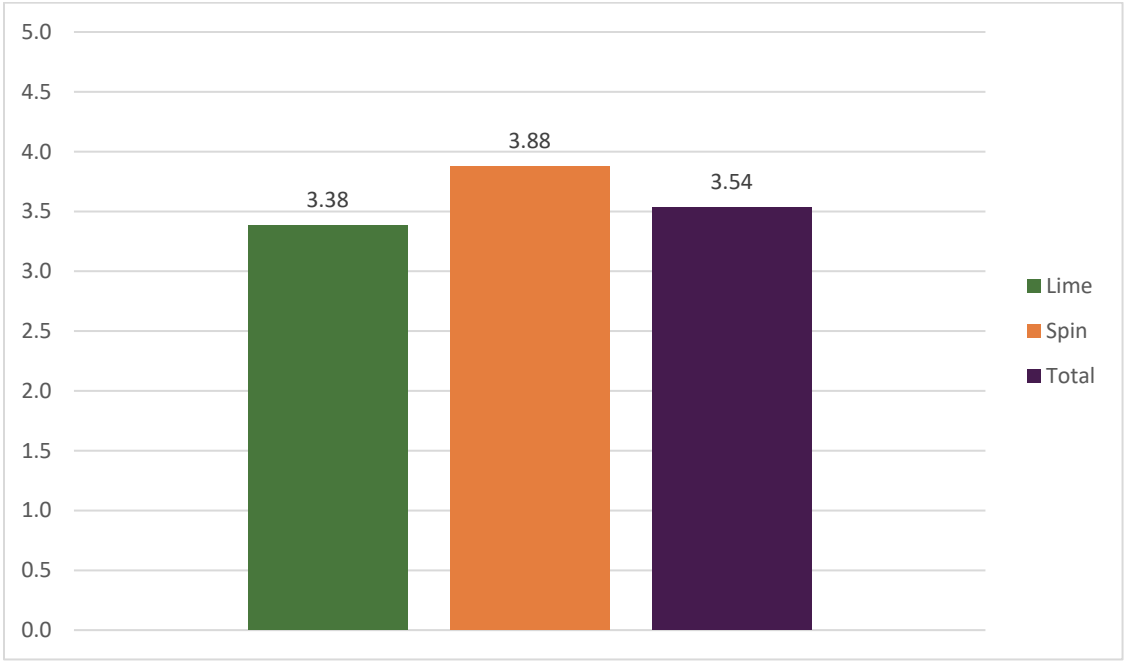


Figure 9: Average User Rating by Permittee



Adaptive Devices

To determine if the user selected an on-street adaptive device, the scooter survey included a question that asked if the respondent used a seated scooter for their most recent trip. **Table 5** shows the results by permittee.

Table 5: For Your Most Recent Trip, Did You Use a Seated Scooter?

Selection	Lime	Spin	Total
Yes	2 (1%)	6 (3%)	8 (1%)
No	400 (99%)	174 (97%)	313 (99%)

Respondents who selected yes were asked in a free response question why they chose a seated scooter. The reasons provided included availability, comfort, and needing to transport items.

Respondent Demographics

Gender

The scooter user survey included optional demographic questions, including questions on respondent gender, ethnicity, and income. As shown in **Table 6**, the survey sample had a large majority of male respondents, with 74 percent of respondents self-identifying as male in the survey. 558 of the 582 respondents (96%) answered this optional gender identity question.

Table 6: What is Your Gender?

Permittee	Male	Female	Genderqueer / Gender Non-Binary	Trans Male	Trans Female	Not Listed
Lime	290 (74%)	84 (22%)	7 (2%)	0 (0%)	2 (1%)	7 (2%)
Spin	123 (73%)	35 (21%)	6 (4%)	0 (0%)	2 (1%)	2 (1%)
Total	**413 (74%)**	**119 (21%)**	**13 (2%)**	**0 (0%)**	**4 (1%)**	**9 (2%)**

Race and Ethnicity

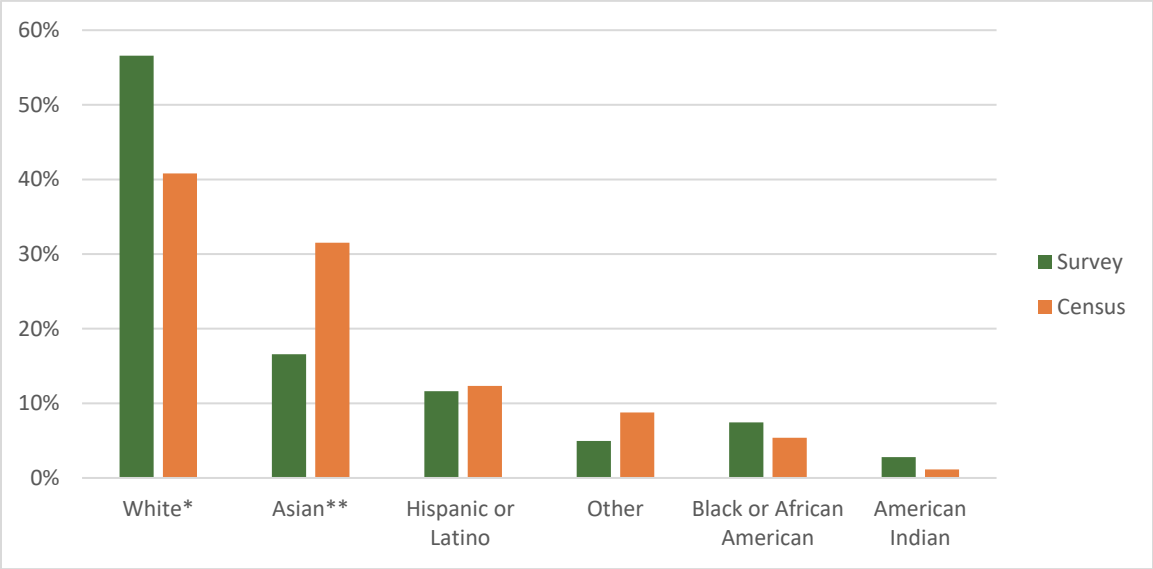
Table 7 shows the race and ethnicity of survey respondents. Survey respondents could select all groups of which they consider themselves to be a member. 549 of the 582 (94%) answered this optional race and ethnicity question.

Table 7: What Ethnic Groups do You Consider Yourself a Member Of? Select all that apply

Permittee	Asian/ Pacific Islander	Black or African American	Hispanic or Latina/a/x	Middle Eastern or North African	Native American	White	Another Race or Ethnicity
Lime	72 (19%)	24 (6%)	45 (12%)	10 (3%)	13 (3%)	257 (67%)	20 (5%)
Spin	35 (21%)	24 (15%)	30 (18%)	5 (3%)	5 (3%)	93 (56%)	12 (7%)
Total	**107 (19%)**	**48 (9%)**	**75 (14%)**	**15 (3%)**	**18 (3%)**	**350 (64%)**	**32 (6%)**

The results from this race and ethnicity survey question were compared to San Francisco's population with the United States Census Bureau's American Community Survey (ACS) 2021 one-Year Estimates. As noted in **Figure 10**, the Census Bureau uses separate demographic categories than the City and County of San Francisco, and some groups had to be combined for this comparison. Overall, the total survey sample was more likely to be white and less likely to be Asian than the population of San Francisco. Hispanic or Latino responses were similar to the city population, while Black or African American responses were higher than the city population.

Figure 10: Survey Race and Ethnicity Results Comparison to ACS Census Estimates

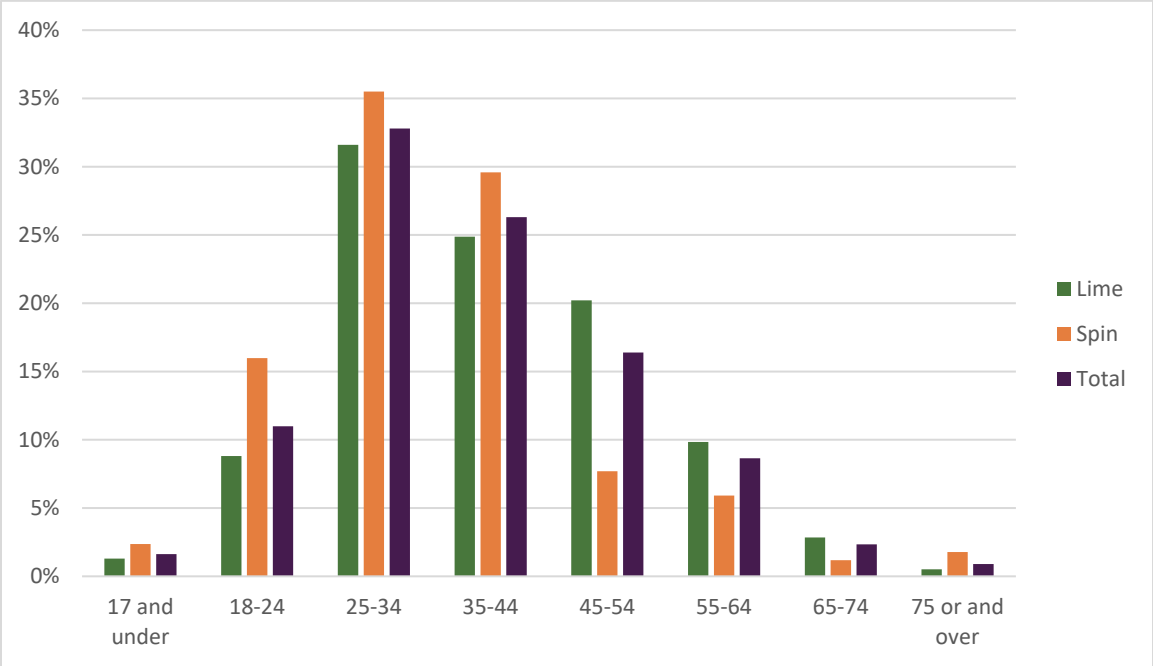


* *Includes Middle Eastern and North African*
** *Includes Pacific Islander*

Age

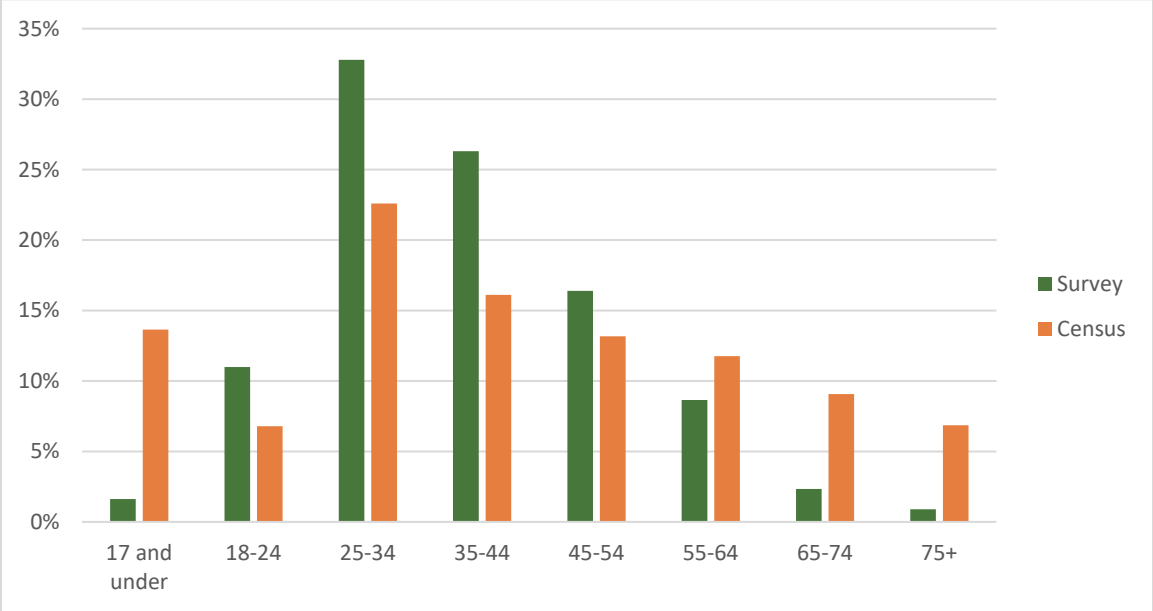
Figure 11 displays the age breakdown of survey respondents. Using the midpoint of each age option, the average survey respondent was 38 years old, with Spin respondents being slightly younger (35 years old) than Lime respondents (39 years old). 555 of the 582 (95%) survey respondents answered this optional age question.

Figure 11: Age of Survey Respondents



The results from this age question were compared to the ACS population estimates for San Francisco. As shown in **Figure 12**, the survey's respondents were generally younger than the city's population, with the exception of residents 17 or under.

Figure 12: Survey Age Results Comparison to ACS Census Estimates

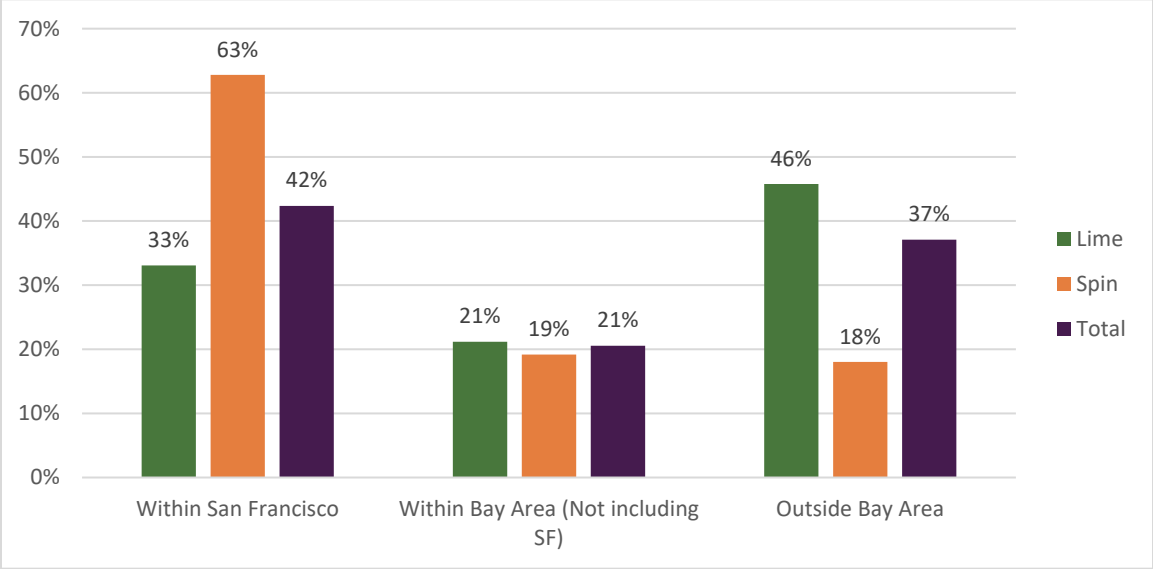


Residency

The rider survey included a question asking respondents how long they have lived in San Francisco. However, the question did not include an option for non-residents. Therefore, residency was analyzed based on a separate question asking respondents for their zip code. This zip code information was compared to a list of San Francisco and Bay Area zip codes, which are available on DataSF, the City's data portal. 550 of the 582 (95%) survey respondents answered this optional zip code question.

Figure 13 shows the zip code location of survey respondents. Postal codes from outside the United States are included in "Outside the Bay Area" results. Based on this zip code data, a majority of Spin users live within San Francisco. Lime is more popular with Bay Area visitors, with almost half of respondents living outside of the nine county Bay Area.

Figure 13: Respondent Zip Codes



Household Income

As shown in **Figure 14**, respondents were also asked for their total household income before taxes. 480 of the 582 (82%) survey respondents answered this optional income question.

Figure 14: Annual Household Income (Before Taxes)

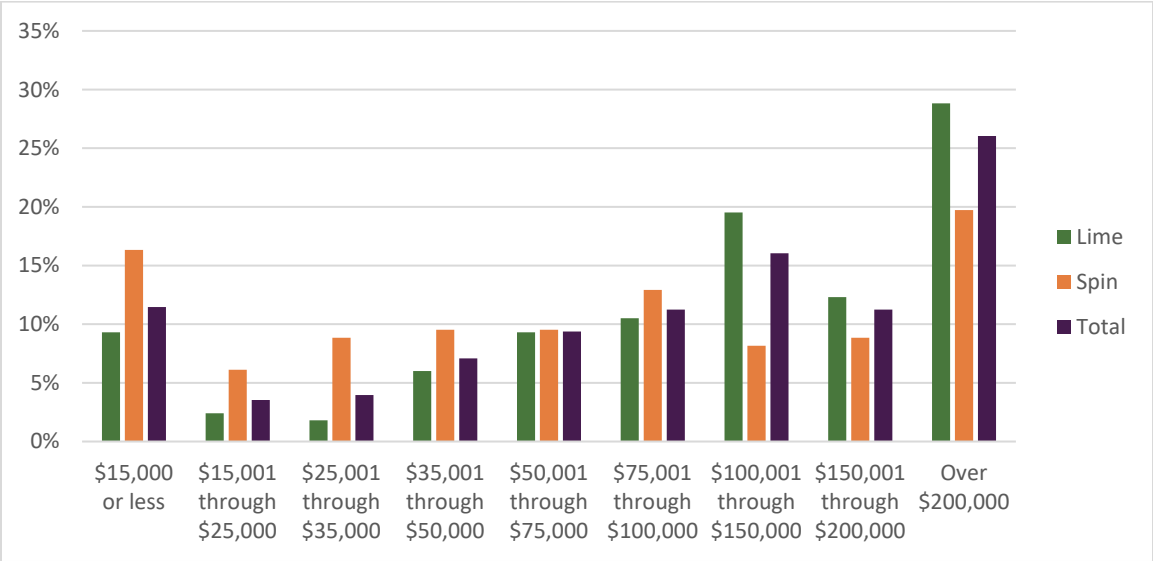
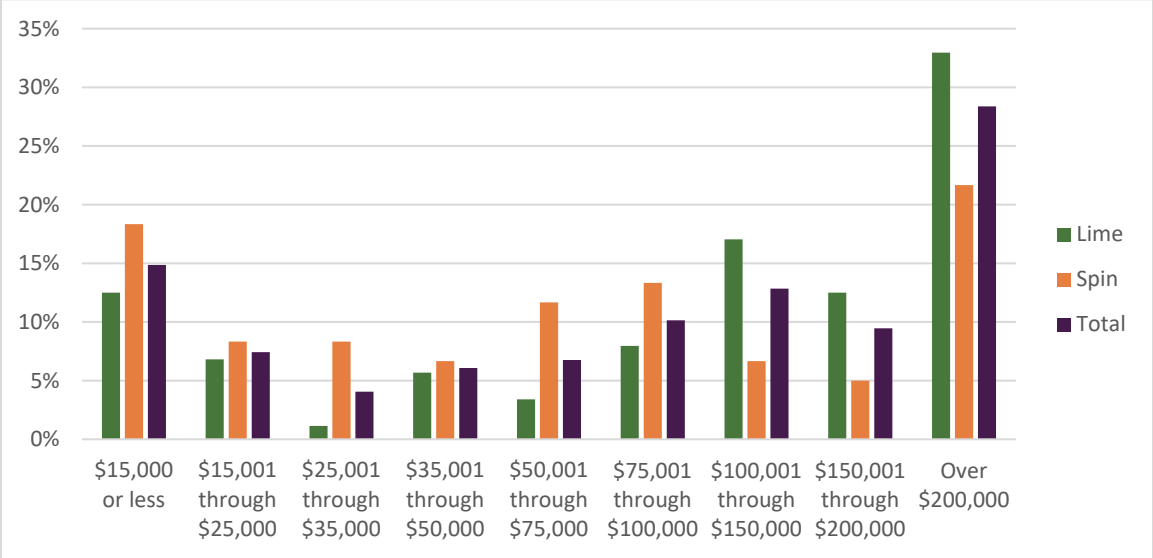


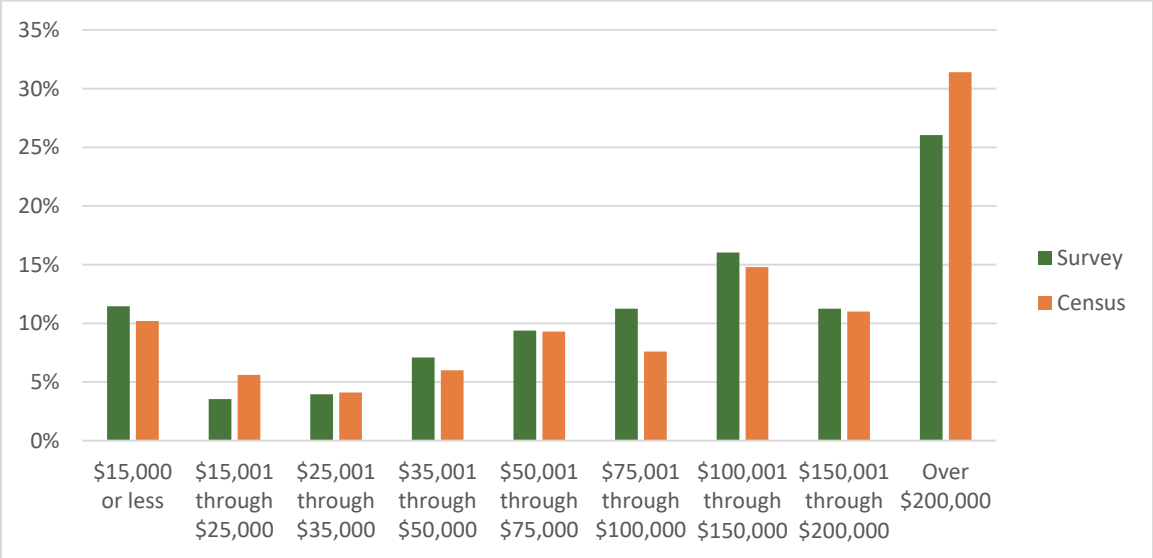
Figure 15 also shows the results of this household income question, but only with respondents with a San Francisco zip code. Overall, the reported income from SF residents were similar to the total survey population.

Figure 15: Annual Household Income - SF Residents Only



Finally, **Figure 16** shows a comparison of the reported incomes from the total scooter survey sample to the ACS estimated breakdown for San Francisco. In general, the survey's sample had a similar income breakdown to the city's population.

Figure 16: Survey Income Results Comparison to ACS Census Estimates



Language

The scooter user survey was available in four languages: English, Spanish, Chinese (Mandarin), and Tagalog. One survey question asked respondents what their primary language spoken at home was. **Table 8** includes the results by permittee. 509 of the 582 (87%) survey respondents answered this optional language question.

Table 8: What is Your Primary Language Spoken at Home?

Language	Lime	Spin	Total
English	323 (90%)	131 (86%)	454 (89%)
Spanish	7 (2%)	9 (6%)	16 (3%)
Cantonese	3 (1%)	2 (1%)	5 (1%)
Filipino or Tagalog	4 (1%)	3 (2%)	7 (1%)
Russian	2 (1%)	2 (1%)	4 (1%)
Vietnamese	0 (0%)	1 (1%)	1 (0.2%)
Other	18 (5%)	4 (3%)	22 (4%)

Respondents who answered "other" were asked to provide more specific information in a free response follow up question. These languages included Chinese, French, Hindi, Armenian, Korean, Italian, German, Portuguese, and Dutch.

As shown in **Table 9**, the survey included a question asking how well the respondent spoke English. Most users did not respond to this question, with only 54 of the 582 (9%) survey respondents answering this optional language question.

Table 9: How Well Do You Speak English?

Response	Lime	Spin	Total
Very Well	23 (68%)	9 (45%)	32 (59%)
Well	4 (12%)	5 (25%)	9 (17%)
Not Well	4 (12%)	4 (20%)	8 (15%)
Not At All	3 (9%)	2 (10%)	5 (9%)

Disability

The survey included a question that asked respondents if they have a disability that affects their daily life. **Table 10** displays the results of this question, by permitted company. 507 of the 582 (87%) survey respondents answered this optional disability question.

Table 10: Do You Have a Disability or Health Condition that Affects Your Daily Life?

Selection	Lime	Spin	Total
Yes	52 (15%)	29 (19%)	81 (16%)
No	303 (85%)	123 (81%)	426 (84%)

Respondents were asked in a following question to select all of their relevant disabilities. 78 of the 81 respondents (96%) who answered yes to the previous question selected at least one reason. **Table 11** below shows the results of this question. The results have been aggregated to include both Lime and Spin responses, to protect respondent privacy.

Table 11: What is Your Disability? Select All That Apply

Disability	Total
Blindness or Vision Impairment	11 (10%)
Hearing Impairment	4 (4%)
Mobility Disability	20 (19%)
Cognitive or Mental Impairment	29 (27%)
Not Listed	42 (40%)

A.2 Evaluate Safety Requirements and Data

Permit Terms and Compliance

The Powered Scooter Program permit terms outline three logs for scooter permittees to report and evaluation metrics which are used to determine safety performance of their operations: Collisions, Safety Trainings & User Compliance, and Complaints.

Collisions

Permit terms require permittees to collect date, time, and location of collisions, demographics of the involved party, and collision severity. Collisions are self-reported by riders upon the conclusion of their ride. It was evident from disparities among data sources and incomplete records that the required data identified in the permit terms is not consistently or reliably being collected. As shown in **Table 12**, out of the over 1.7 million scooter rides in 2022, seven e-scooter collisions were reported by the permittees.

Table 12: Reported Collisions

Permittee	Date	Type	Injury Severity	Bike Facility
Lime	3/22/2022	Collision with pedestrian	Complaint of Pain	None
Spin	6/3/2022	Single vehicle crash	Other Visible Injury	None
	6/6/2022	Collision with pedestrian	N/A	None
	6/13/2022	Single vehicle crash	N/A	None
	6/15/2022	Single vehicle crash	N/A	None
	6/19/2022	Single vehicle crash	Severe	Yes, Class IV
	10/21/2022	Collision with motor vehicle	No Injury	Yes, Class I

Citations and Complaints

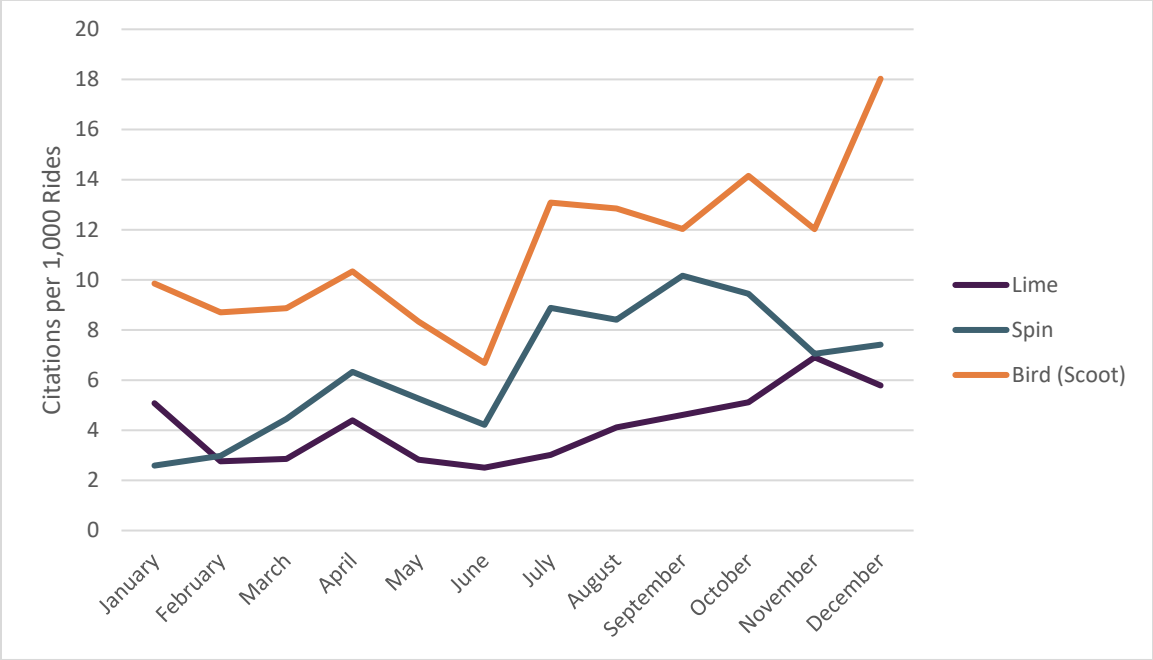
As shown in **Table 13** and **Figure 17**, there were a total of 10,879 citations issued to permittees in 2022, most of which were issued by SFMTA investigators in response to complaints. 92 percent of citations were issued for parking violations, including obstructing building access, obstructing pedestrian space, failure for permittees to respond to a parking violation within two hours, and impeding emergency access. 7 percent were moving violations, including sidewalk riding, dangerous riding, or riding against traffic. The remaining one percent of citations were issued for vehicles which did not meet the requirements for permitted devices, such as missing unique device identifier or missing required stickers.

In addition to the citations, 1,574 public 311 complaints were filed related to scooter operations. All but four of these complaints were related to parking.

Table 13: Citations and 311 Complaints by Permittee

Permittee	Citations				311 Complaints
	Total	Parking	Riding	Permit	
Lime	3402	3035 (89%)	332 (10%)	35 (1%)	522
Spin	2852	2581 (90%)	223 (8%)	48 (2%)	387
Bird (Scoot)	4602	4362 (95%)	233 (5%)	7 (0%)	665

Figure 17: Citations per 1,000 trips (2022)



Safe Micromobility Parking Incentive Policy

In March 2023, the SFMTA launched a citation fine reduction policy that offers a $50-100 fine discount if the permittees respond to improperly parked devices within 1-2 hours. In May 2023, these discounts were increased to $75-150. The policy based these discounts on permittee response times over a two-week billing period. The policy offers up to $150 discounts per citation if the permitted companies respond to 50% of complaints within an average of one hour and if they respond to 90% of complaints within an average of two hours over a two-week period.

The SFMTA audits these responses to ensure that the permittees are complying with this policy.

Safety Trainings

From January 2022 to December 2022, Lime hosted four safety training courses and Spin hosted 10 safety training courses. Bird did not report hosting any safety training courses in 2022. The SFMTA permit terms and conditions require at least one safety training class per quarter.

Peer City Interviews

Fehr & Peers interviewed six peer cities to understand the structure and outcomes of similar powered scooter share programs in the United States. The selected cities were Seattle, Los Angeles, San Diego, Washington DC, Chicago, and Austin. The cities were chosen in coordination with the SFMTA. These cities were selected due to their population and because of the success of their scooter share programs. The information contained in this report was collected from interviews with city staff, from publicly available data, and from data provided by the cities. Some data were not shared with Fehr & Peers because they were not readily available or they were withheld for privacy concerns, which has been noted in **Table 14**.

- **San Diego**, which began their permitted scooter program in 2019, recently moved to a "Request for Proposal" based program in 2022. The city has contracts with four providers, three of which are currently operational in the city. Contracts are a three-year agreement with two one-year options based on operator performance.
- **Los Angeles** began their program in 2018 with conditional use permits, and the City now uses a standard permit process. There are currently six companies permitted to provide micromobility services in the city.
- **Seattle** initiated their permitted scooter program in October 2020. The permit application process is competitive in the initial round, but SDOT renews permits based on compliance with permit terms. Currently, three companies operate in the city.
- **Washington DC** runs a permit program for both scooters and dockless e-bikes, which operate in parallel with the city-wide contracted bikeshare program. The District Department of Transportation (DDOT) has issued four of the five allotted permits for scooters.
- **Chicago** scooter share began in 2019, which works in parallel with the city-wide contracted bike and scooter share system, Divvy. Permit agreements last two years, and renewal is based upon the past performance of the permittee.
- **Austin** has been issuing micro-mobility permits since 2018 and currently has four active permits in the city. The city issues a license to companies to operate micro-mobility, and then permits are issued for each individual device based on device type.

As shown in **Table 14,** the selected peer cities have comparable or higher rates of ridership when compared to San Francisco's program. In total ridership terms, San Francisco has the second lowest ridership of the cities we analyzed. However, when taking population into account, San Francisco performs well on a ridership basis. San Francisco has the lowest number of average deployed devices of the cities we analyzed, likely due to the city's smaller geographic size and smaller population.

San Francisco issues the highest number of financial penalties to permitted companies compared to these peer cities. Most of the peer cities strive to avoid issuing financial penalties to the permitted companies, and any financial penalties they do issue are for smaller dollar amounts. San Francisco is denser than the other peer cities, with about 18,600 residents per square mile the next two densest cities among the peer cities are Chicago and Washington DC, with over 10,000 residents per square mile.

Most of the peer cities we interviewed have publicly available program data, including charts and maps, available through web-based applications. These dashboards, depending on the city, include information on monthly trips, the number of deployed devices, equity metrics, and hotspot areas where rides are most common.

Public data sharing is a priority for SFMTA, and San Francisco has the most comprehensive library of publicly available data of the peer cities we interviewed. The San Francisco data dashboard includes a wide variety of maps, figures, and data, including information on citations, 311 complaints, trip origins and destinations, and permittee complaint response times.

Table 14: Peer City Data (2022)

	San Francisco	San Diego	Los Angeles[1]	Seattle	Washington DC	Chicago	Austin[1]
Population (2022)[2]	808,437	1,381,162	3,822,238	749,256	671,803	2,665,039	974,447
Population per Square Mile (2020)[2]	18,629	4,255	8,304	8,791	11,280	12,059	3,006
Annual Scooter Ridership	1,765,583	1,826,329	7,816,009	2,668,422	4,952,300	1,491,962	3,705,073
Rides per Population (2022)	2.18	1.32	2.04	3.56	7.37	0.56	3.80
Average Scooter Devices Deployed per Day	2,875	4,740	3,800	4,665	8,022	3,500	9,320
Reported Collisions	7	Data Unavailable	Data Unavailable	7	Data Unavailable	53	163
Number of Citations (per 1000 trips)	7.3	1	Data Unavailable	N/A	N/A	Data Unavailable	0.0062
Number of 311 Complaints (per 1000 trips)	0.89	5.02	Data Unavailable	1.08	0.2	0.53	1.4
Number of Financial Penalties Issued to Permittees	10,856	255	N/A	435	N/A	Data Unavailable	16
Dollar Amount of Financial Penalties Issued to Permittees	$1.6 Million	$18,845	$610,000	$8,700	N/A	Data Unavailable	$8,400

[1] This data from this city includes all micromobility devices, including dockless bikeshare services.

[2] United States Census Bureau Population Estimates

A.3 Evaluate Sidewalk Riding Detection Technologies

Sidewalk Riding Violations and Complaints in San Francisco

Citations for scooters are issued by SFMTA investigators based on parking, riding, and permit violations. Riding violations include dangerous riding, riding against traffic, and sidewalk riding. The following analysis uses the recorded citations from investigators, and therefore these data are influenced by SFMTA's personnel deployment decisions.

Relationship with On-Street Bicycle Facilities

In addition to evaluating the overall rates of sidewalk riding in San Francisco, the location of sidewalk riding citations were evaluated based on whether on-street bicycle facilities were available on the road where the citation was recorded. The California Department of Transportation (Caltrans) recognizes four classifications of bicycle facilities, as described below.

- **Class I – Shared-Use Pathway**: Provides a completely separated right-of-way for the exclusive use of cyclists and pedestrians with cross-flow minimized (e.g., off-street bicycle paths).
- **Class II – Bicycle Lanes**: Provides a striped lane for one-way travel on a street or highway. It may include a "buffer" zone consisting of a striped roadway between the bicycle lane and the nearest vehicle travel lane.
- **Class III – Bicycle Route**: Provides for shared use with motor vehicle traffic; however, they are often signed or include a striped bicycle lane.
- **Class IIIB – Bicycle Boulevard**: Provides for shared use with motor vehicle traffic in conjunction with traffic calming measures that reduce vehicle traffic and speeds.
- **Class IV – Separated Bikeway**: Provides a right-of-way designated exclusively for bicycle travel adjacent to a roadway protected from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

The sidewalk riding violations adjacent to bicycle facilities are further subcategorized by those which were issued on a Class III facility. Class III facilities may be less evident as bicycle facilities to people who are unfamiliar with the bicycle network in San Francisco. Additionally, Class III facilities on roadways with heavy vehicle traffic and high travel speeds are often only accessible for use by confident riders.

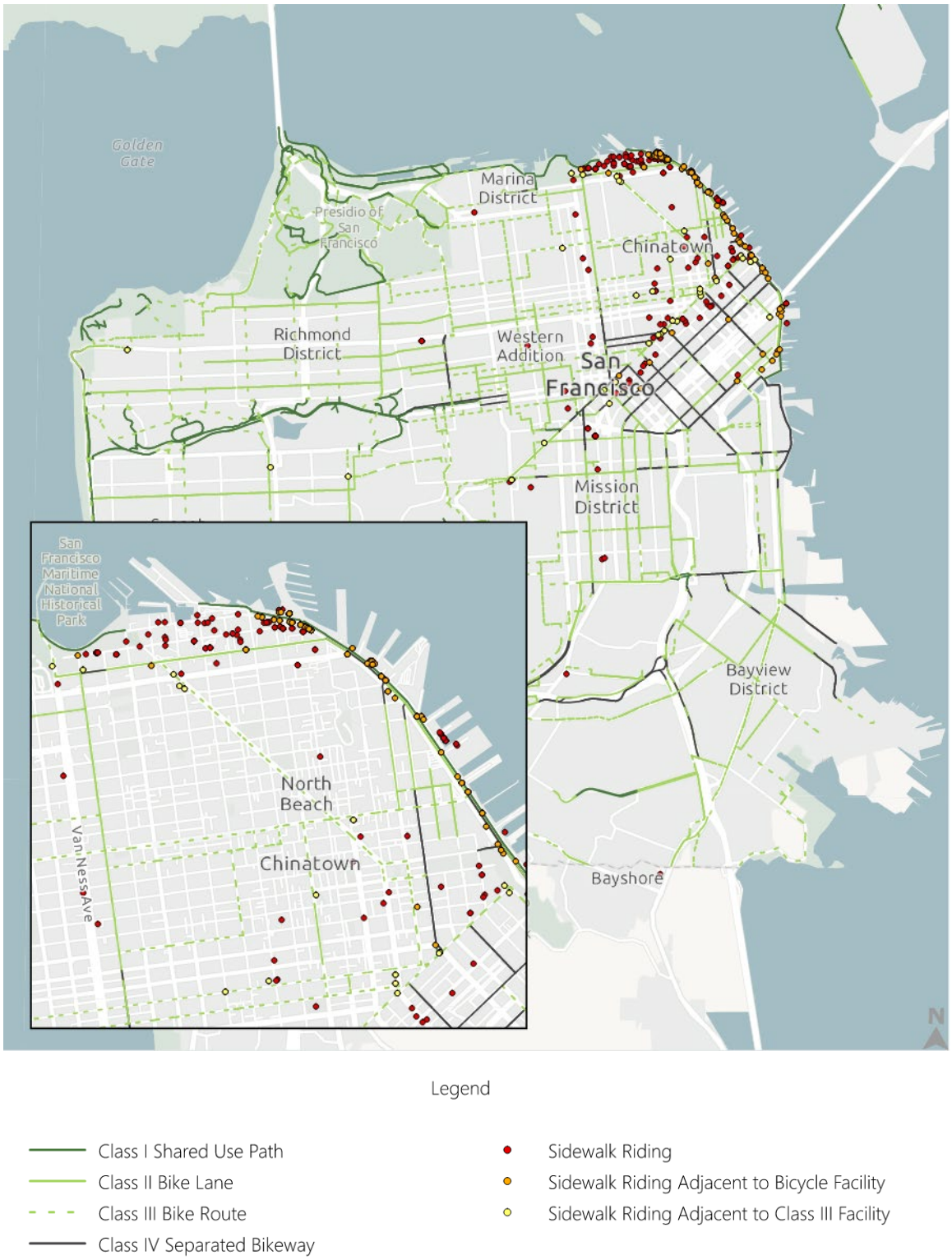
Table 15. Sidewalk Riding Violations

Violation Type	2022 Citations	Citations per 1000 Rides	Omitting Embarcadero Citations (2022)	Omitting Embarcadero Citations Per 1000 rides
All Violations	10,856	6.15	8,644	4.90
Riding Violations	788	0.45	282	0.16
Sidewalk Riding Violations	683	0.39	234	0.13
Sidewalk Riding Violation on road with Bicycle Facility	501	0.28	84	0.05
Sidewalk Riding Violation on road with Class III Bicycle Facility	69	0.04	69	0.04

As shown as **Table 15**, 83% of sidewalk riding violations that occurred adjacent to an on-street bicycle facility happened along the Embarcadero. Omitting all citations issued along the Embarcadero reveals that sidewalk riding citations are issued for 13 in every 100,000 scooter rides (234 total for 2022). 84 (or 35 percent) of those sidewalk riding citations were issued on roads equipped with a bicycle facility. However, 69 (or 82 percent) of those instances were along Class III facilities, meaning that only 6.4% of sidewalk riding citations occurred on roads which have a dedicated bicycle facility (i.e., Class I, Class II, or Class IV).

Figure 18 shows a map of sidewalk riding violation locations in San Francisco.

Figure 18: Sidewalk Riding Map



Sidewalk Riding Detection Technology

There are two primary sidewalk riding detection technologies that have been developed by third party companies, with which some scooter companies have begun equipping devices.

The first is GPS-based detection, which uses device-specific GPS data and roadway geometry information to estimate the location of the device relative to sidewalks. GPS detection is more cost-effective relative to other solutions because it utilizes tracking technology which is already a standard feature of scooters. However, there is limited reliability of GPS to detect the precise location (down to feet) of a device. Concerns associated with GPS detection technology is dependent on the method of enforcement. For example, enforcement may be to reduce device speeds to 3 mph if sidewalk riding is detected, which would present safety concerns for a device riding in vehicle traffic that is incorrectly detected to be on the sidewalk. Additionally, the efficacy of the technology is dependent on the surrounding built environment, which may be constrained by building heights in the highest ridership neighborhoods in the city.

The second is camera-based detection, which uses a camera on the front of the device and artificial intelligence to register whether the under-wheel material is a sidewalk. This technology has greater accuracy relative to GPS detection but has a high per-unit cost that makes it prohibitively expensive for at-scale adoption by scooter permittee. Additionally, the high cost of the cameras may heighten concerns related to theft and vandalism for devices.

Peer City Testimonies

Sidewalk riding is a concern shared across cities with scooter share programs.

- **San Diego**: Sidewalk riding is prohibited, and detection is required as part of contract terms, but the technology type is left to the discretion of scooter operators. Device speeds must be reduced to three miles per hour if sidewalk riding is detected. The city requires that high-pedestrian areas are geofenced to prevent riding in those locations. If sidewalk riding technology does not work sufficiently along a corridor (e.g., in areas where tall buildings interfere with the efficacy of GPS detection) the city requires that the corridor be geofenced as a no-ride area until detection is possible.

- **Los Angeles**: Sidewalk riding is not allowed, but sidewalk riding technology is not required in permit terms. Scooters are equipped with stickers that read "No Sidewalk Riding." Additional deterrence measures, like markings on the sidewalk, are added in areas where there is a high concentration of 311 complaints.

- **Seattle**: Sidewalk riding is not permitted. The city receives complaints from people who are concerned about sidewalk riding and others who worry about riding in unsafe street conditions.

- **Washington D.C.**: Sidewalk riding is not allowed in the Central Business District but is allowed in other areas. The city has had challenges educating riders about zones where sidewalk riding is prohibited.

- **Chicago**: Sidewalk riding is not allowed although it has not been a significant issue for the city.

- **Austin**: Sidewalk riding is allowed throughout the city, and it is viewed to be safer than on-street riding.

A.4 Evaluate Adaptive Devices

Ride and User Analysis

Fehr & Peers reviewed the data reported by the permitted companies on adaptive device trips. These data include on-street adaptive devices, which are deployed in the public right-of-way like traditional standup scooters and are available for use by the general public, and complementary adaptive device trips, which use a separate reservation system and are delivered to user's home addresses. **Figure 19** shows the monthly reported on-street adaptive device trips by provider. Please note that the data reported by all three permitted companies in 2022 is incomplete, especially the data reported by Bird.

Table 16 displays the monthly reported complementary device trips. The data reported by the permitted companies is incomplete and inconsistent when observed on a month-to-month basis. For example, Lime reported a large number of trips in November, which likely include all of their trips for 2022, Bird only reported providing two complementary device trips throughout the year. In contrast, Spin had consistent complementary device reporting throughout the year.

Figure 19: Reported On-Street Adaptive Device Trips (2022)

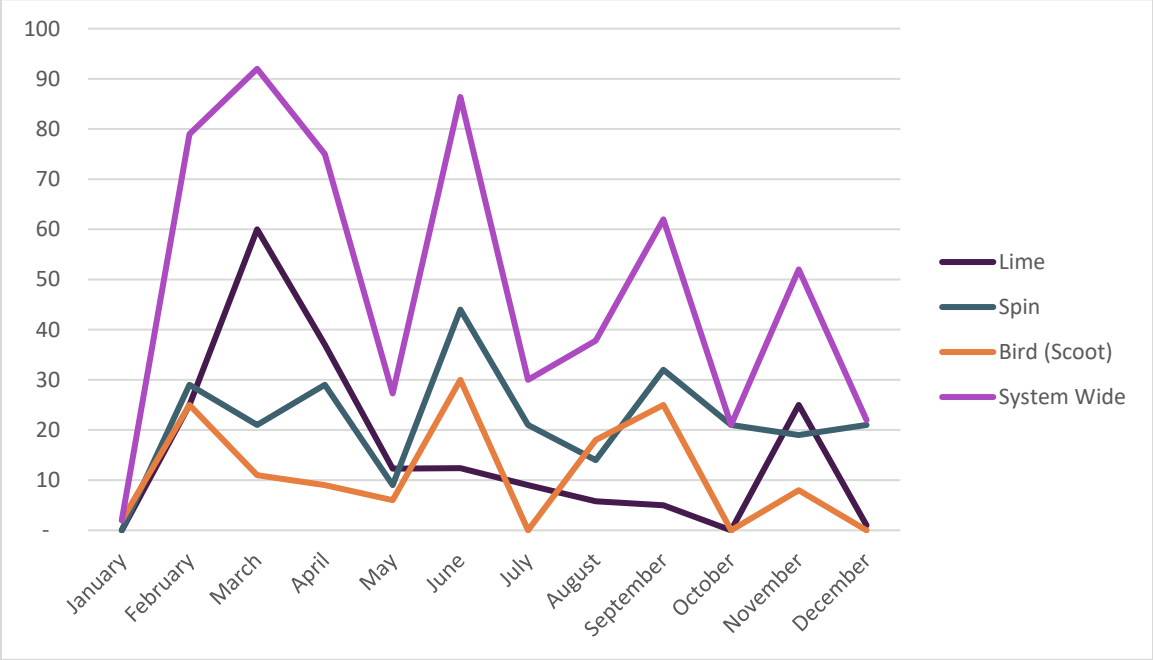
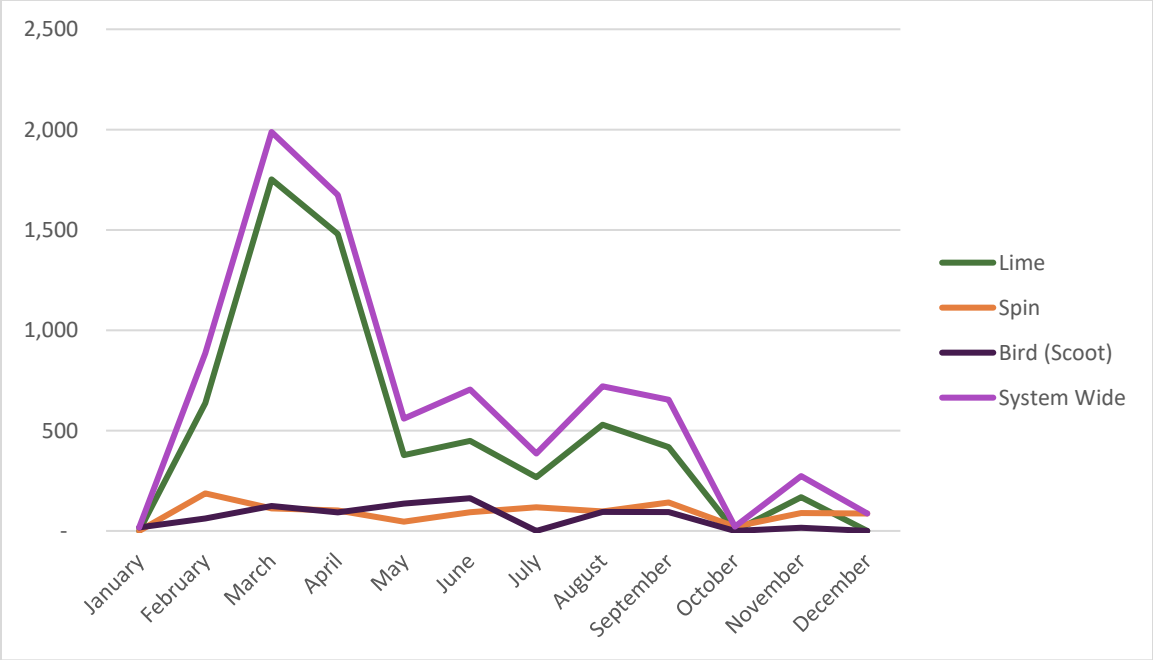


Table 16: Reported Monthly Complementary Adaptive Device Trips (2022)

Permitted Company	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec	Total
Lime	-	-	-	-	-	-	-	-	-	-	232	-	**232**
Spin	-	24	14	6	9	17	16	19	18	16	7	13	**159**
Bird (Scoot)	-	-	-	1	-	1	-	-	-	-	-	-	**2**
System Wide	**-**	**24**	**14**	**7**	**9**	**18**	**16**	**19**	**18**	**16**	**239**	**13**	**393**

Data on the number of unique adaptive users in 2022 is also incomplete. Monthly unique adaptive users are unique user accounts that have used an on-street adaptive scooter that month. As shown in **Figure 20**, the data that is available on these unique users may also be underreported, as there are large swings in the number of unique users from month to month, and some months, such as January and October, have close to zero members reported.

Figure 20: Reported Unique Adaptive Users (2022)



Adaptive Device Deployment

The permitted companies are evaluated on the percentage of their deployed fleet that are on-street adaptive devices. SFMTA's permit terms require that 5% of the deployed fleet must be seated adaptive scooters. The permitted companies report the number of deployed adaptive devices in their required monthly reports, and SFMTA's data dashboard includes the percentage of the monthly deployed fleet that are adaptive devices. In general, the permitted companies did not meet this 5% threshold in 2022. **Figure 21** and **Table 17** display the percentage of the deployed monthly fleet that were on-street adaptive devices in 2022.

Figure 21: Percent of Deployed Fleet that was an Adaptive Device (2022)

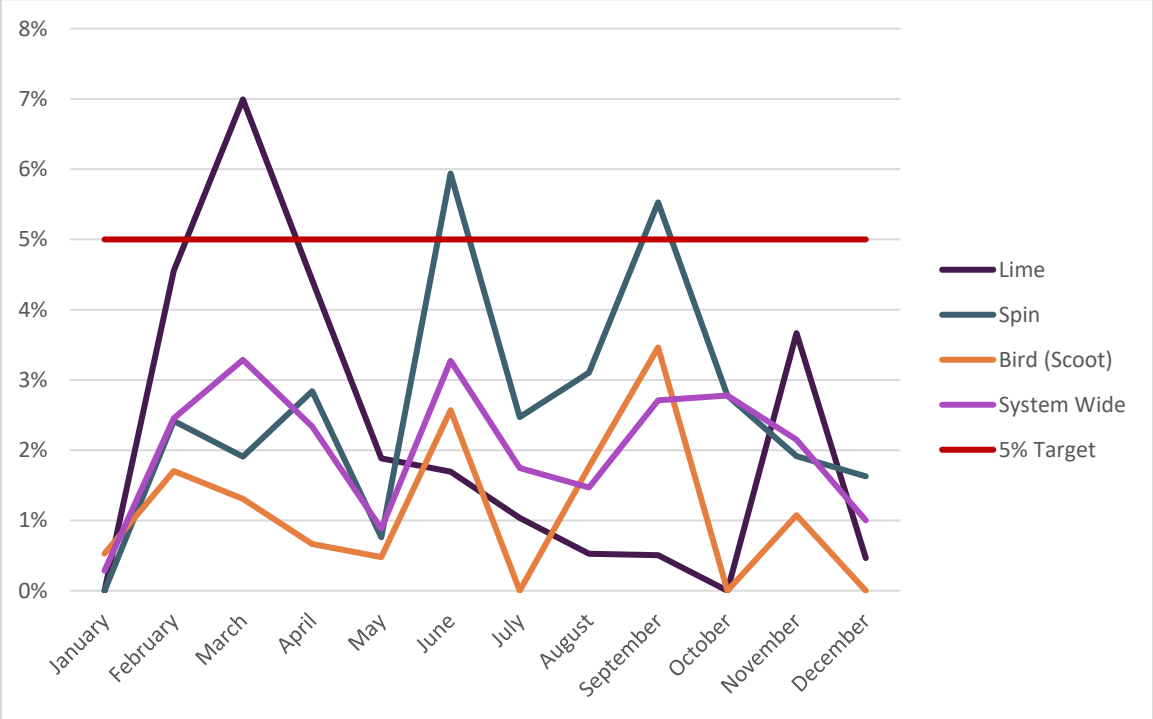


Table 17: Percent of Deployed Fleet that was an Adaptive Device (2022)

Permitted Company	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Average
Lime	0%	5%	7%	4%	2%	2%	1%	1%	1%	0%	4%	0%	**2%**
Spin	0%	2%	2%	3%	1%	6%	2%	3%	6%	3%	2%	2%	**3%**
Bird (Scoot)	1%	2%	1%	1%	0%	3%	0%	2%	3%	0%	1%	0%	**1%**
System Wide	**0%**	**2%**	**3%**	**2%**	**1%**	**3%**	**2%**	**1%**	**3%**	**3%**	**2%**	**1%**	**2%**

However, the number of deployed devices used to calculate this percentage is not consistent with other device count reports found on the SFMTA data dashboard, such as the average monthly deployed devices on the citation dashboard. **Table 18** compares the monthly device count used in the separate adaptive device dashboard and the citation dashboards. Our analysis shows that the deployed adaptive device percentage would be lower if the higher average monthly device count on the citation dashboard is used for this metric.

Table 18: Percent of Deployed Fleet that was an Adaptive Device - Citation Dashboard Device Count (2022)

Permitted Company	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Average
Lime	0%	2%	5%	3%	1%	1%	1%	1%	1%	0%	4%	0%	**2%**
Spin	0%	3%	2%	3%	1%	5%	3%	2%	4%	2%	1%	1%	**2%**
Bird (Scoot)	1%	3%	1%	1%	0%	2%	0%	2%	3%	0%	1%	0%	**1%**
System Wide	**0%**	**3%**	**3%**	**2%**	**1%**	**3%**	**1%**	**2%**	**2%**	**1%**	**2%**	**1%**	**2%**

Monthly Narrative Reports

The permitted companies are also required to provide monthly narrative reports to SFMTA about the status of the adaptive device program. These reports include information such as adaptive device trips, which educational messages are available in the permittee's mobile applications, community outreach meeting reports, and other general operational information.

One frequent issue reported by the permitted companies is theft and vandalism of the adaptive device fleet, and how high levels of theft and vandalism made it difficult for the companies to meet their 5% device requirement.

Peer City Approach

Fehr & Peers also discussed adaptive device programs and requirements in the peer city interviews. In general, the peer cities had less stringent adaptive device requirements. Some cities, such as Los Angeles, issue the same permit to dockless bikeshare and dockless scooter share providers, and only require adaptive bicycles to be deployed within their cities.

- **San Diego**: Operators are required to provide on-street adaptive devices, but the contract does not include a specify the amount or style of these devices.

- **Los Angeles**: No adaptive scooters are currently deployed. Adaptive dockless bicycles are included in the permit application process.

- **Seattle**: No permit requirement for adaptive devices, instead revenue redirected to adaptive nonprofit (Outdoors for All) who operates an adaptive device library.

- **Washington D.C.**: No adaptive requirement is included in the permit requirements, but permittees are allowed to provide adaptive scooters without it counting against their deployment cap.

- **Chicago**: 5% of fleet must be seated adaptive devices.

- **Austin**: Permittees are encouraged, but not required, to provide on-street adaptive devices.

A.5 Investigate New Device/Vehicle Types

Fehr & Peers included questions about new devices in the peer city interviews and conducted publicly available sources for the types of vehicles that may be deployed in the future. The amount of information available about new devices is limited. In the peer city interviews, the cities shared their approach to new devices, including their device requirements and inspection procedures. Fehr & Peers also interviewed one of the permittees: Lime. Lime did not indicate that they have plans in the near future to release any new devices that have not been previously seen by SFMTA staff.

A.6 Investigate Climate Impacts

Mode Shift

The user survey included questions on trip purpose, which mode the rider would have used if scooter share was not available, and the reason why the rider selected scooter share as their transportation mode. These results are displayed in **Table 2**, **Table 3**, and **Table 4**. In general, riders shifted from ride-hailing services, public transportation, and walking. A small number of respondents (7%) shifted from drive alone or carpool trips. This is likely due to the short nature of scooter trips, with a vast majority of trips being shorter than 2 miles, and due to the built environment where most scooter trips occur, in the northeast quadrant of the City, where automobile parking is limited.

Additionally, the survey asks riders how often they ride public transportation and if they used scooter share for first-mile/last-mile purposes. As shown in **Figure 4**, most riders (73%) do not use scooter share to connect with public transportation. For the riders who do connect with public transportation (27%), most connected with BART and Muni bus services.

Trip Distance

The individual trip data included in the SFMTA data dashboard includes information on trip length and duration. Overall, 83% of program rides in 2022 were two miles or less. **Figure 22** shows the average ride distance by month in 2022, while **Figure 23** shows the cumulative total of monthly rides by distance.

Figure 22: Average Ride Distance (2022)

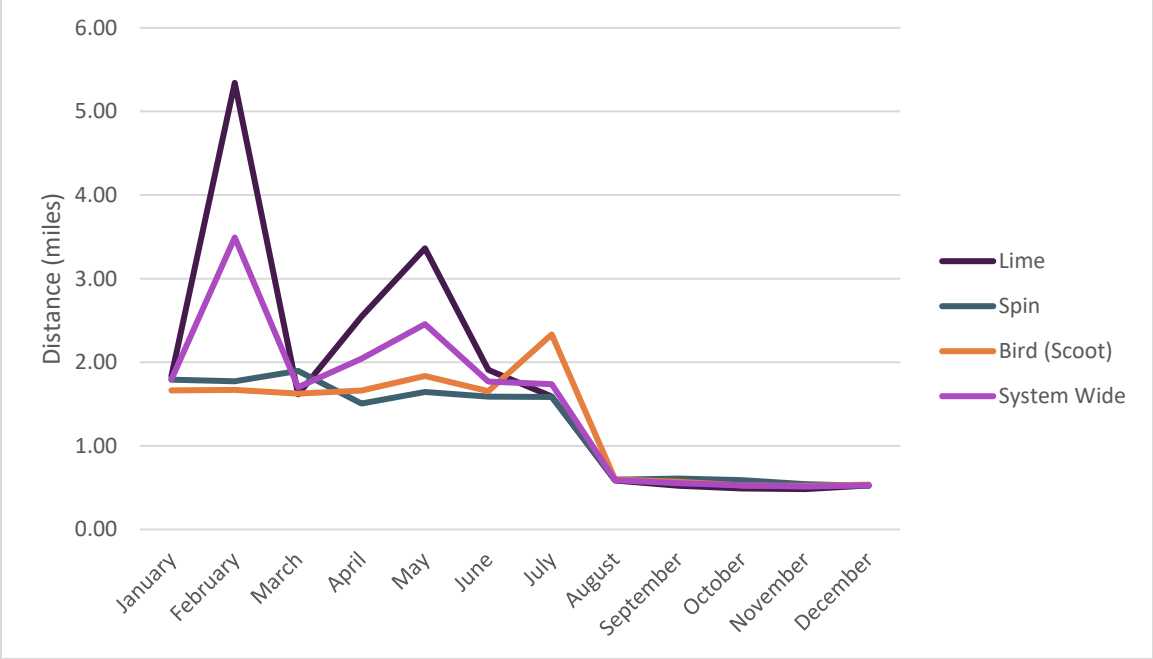
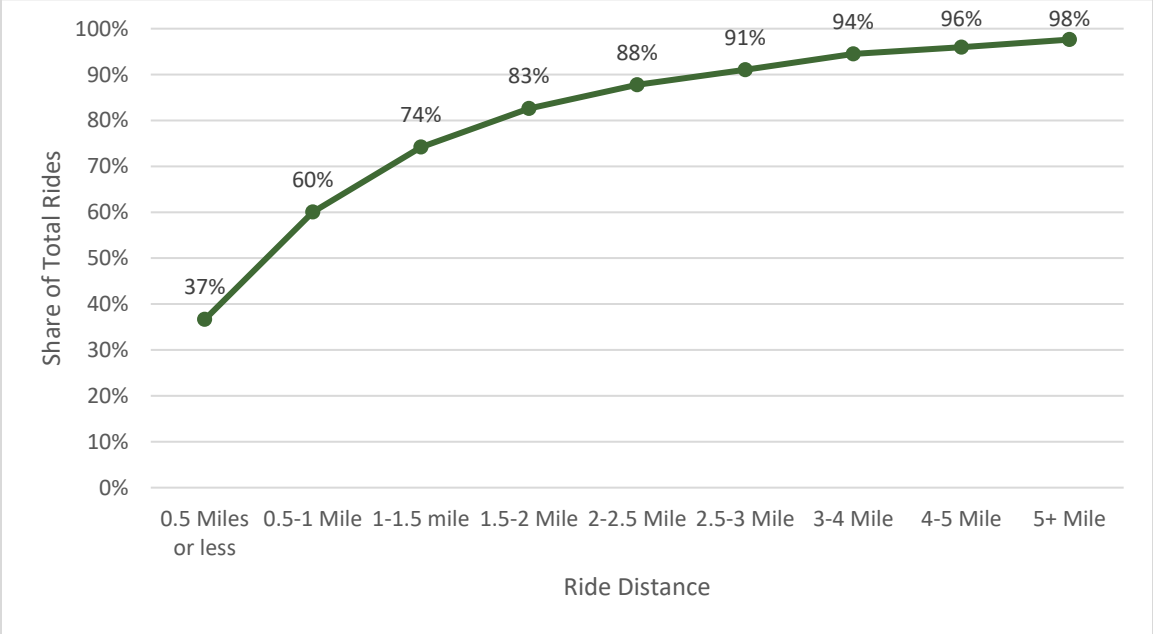


Figure 23: Cumulative Share of Rides by Distance (2022)



Overall, the average system trip length was 1.5 miles. **Table 19** shows the average trip length by permitted company by month. The average ride distance for all three permitted companies was much lower in the second half of the year.

Table 19: Average Ride Distance by Month - miles (2022)

Permitted Company	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Average
Lime	1.83	5.34	1.61	2.54	3.36	1.91	1.59	0.59	0.52	0.49	0.48	0.53	**1.72**
Spin	1.79	1.77	1.90	1.51	1.64	1.59	1.58	0.59	0.61	0.59	0.54	0.52	**1.29**
Bird (Scoot)	1.66	1.67	1.62	1.66	1.83	1.65	2.33	0.60	0.57	0.53	0.52	0.54	**1.25**
System Wide	**1.79**	**3.49**	**1.70**	**2.04**	**2.46**	**1.77**	**1.74**	**0.59**	**0.55**	**0.53**	**0.51**	**0.53**	**1.50**

Operational Vehicle Miles Traveled

SFMTA requires that the permitted scooter companies report climate related information, such as scooter waste and the number of batteries sent to landfill. Most notably, the permitted companies are required to report information on the vehicle miles traveled (VMT) associated with their operations. This VMT is generated during device rebalancing, repair, and other operational needs.

VMT and greenhouse gas emissions are closely linked, especially if electric vehicles are not used for these purposes.

As shown in **Table 20**, the data reported by the permitted companies on their non-revenue VMT is inconsistent, with some months having no data reported, and others having the same mile total for several months. It is unclear if these data accurately reflect the operational needs of providing scooter share in San Francisco.

Table 20: Non-Revenue Vehicle Miles Traveled by Month (2022)

Permitted Company	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total VMT
Lime	-	5,187	6,044	-	3,500	3,500	-	3,500	1,619	2,096	2,141	778	**28,365**
Spin	-	79,936	10,543	-	10,628	8,496	-	9,697	8,097	-	9,062	7,195	**143,654**
Bird (Scoot)	-	1,730	2,027	-	1,796	2,047	5,669	5,913	4,092	4,956	4,813	3,157	**36,200**
System Wide	**-**	**86,853**	**18,614**	**-**	**15,924**	**14,043**	**5,669**	**19,110**	**13,808**	**7,052**	**16,016**	**11,130**	**208,220**

- Indicates that no data was reported

Life Cycle Analysis

As required by the SFMTA permit terms, the three permitted companies completed and submitted life cycle analyses (LCA). The permittees hired third-party environmental consultants to conduct this analysis, and these reports were originally prepared to meet the scooter share requirements in Portland, Oregon. These LCAs included information on carbon emissions and waste from device manufacturing, assembly, transportation, usage, operations, and device end-of-life recycling.

These LCA reports state that device charging and recycling have a minimal effect on carbon emissions, and that the emissions associated with scooter share are primarily from the manufacturing process and automobile vehicle miles traveled from device rebalancing and maintenance. Ensuring device durability to reduce manufacturing emissions, reducing device rebalancing through rider incentive programs, and shifting operational vehicles to zero emission vehicles are the most effective ways to reduce the carbon emissions associated with scooter share.

A.7 Investigate Equity Impacts

For this equity analysis, we used a combination of trip origin and destination information, low-income fare rides and memberships, and availability of scooters by neighborhood to determine if the permittees are meeting the equity requirements outlined in the scooter permit terms.

For the origin and destination analysis, SFMTA provided summarized trip origin and destination to protect scooter rider privacy. This trip origin and destination data was provided using San Francisco Planning Department neighborhood groups.

As shown in **Table 21** and **Figure 24**, we used this summary data to find the top origin and destinations of scooter rides in San Francisco. In total, 79% of systemwide trips start in these five neighborhood groups and about 78% of trips end in these neighborhood groups.

Table 21: Top Five Scooter Origin and Destination Neighborhood Groups (2022)

Neighborhood Group	Share of Trip Origins	Share of Trip Destinations
South of Market	24.0%	23.8%
Financial District	18.6%	17.9%
North Beach	17.5%	15.9%
Downtown/Civic Center*	11.3%	12.2%
Mission	7.7%	7.7%
Total Share of Systemwide Trips	**79.0%**	**77.6%**

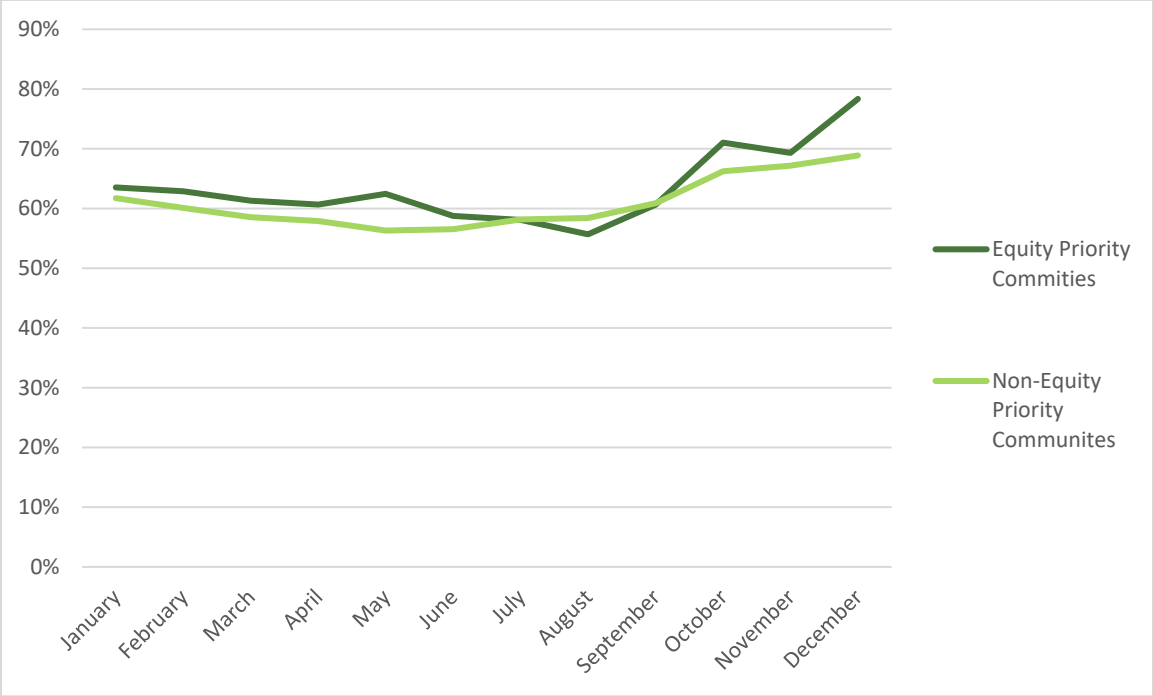
* SFMTA Equity Priority Community

We also used this origin and destination data to find the share of trips that begin and end in the same neighborhood. In 2022, about 60% of trips started and ended in the same neighborhood group.

Figure 24: Top Five Scooter Origin and Destination Neighborhood Groups (2022)

Figure 25 shows that this share of intra-neighborhood trips remained steady throughout 2022, with a small increase towards the end of the year. This rate of intra-neighborhood trips was about the same in equity priority communities and non-equity priority communities. About 61% of trips in equity priority communities remained within the same neighborhood in 2022, while about 59% of trips in non-equity priority communities remained within the same neighborhood.

Figure 25: Percent of Trips that Start and End in the Same Neighborhood (2022)



Scooter Availability

SFMTA defines neighborhood scooter coverage as the percentage of a neighborhood that is within at least ¼ mile of a scooter during hourly snapshots of time. The agency also tiers fleet increases with coverage requirements in key neighborhoods, with the number of those neighborhoods increasing with each fleet increase tier. In 2023, both Lime and Spin are currently permitted to provide up to 2,750 scooters each citywide. **Table 22** shows the average 2022 scooter coverage of the neighborhoods in that expansion tier. Please note that this data includes coverage from Bird, which no longer operates in San Francisco.

Table 22: Average Scooter Coverage by Time Snapshot - 2,000 Device Fleet Neighborhoods (2022)

Neighborhood	8am	12pm	4pm	8pm	Total Average Coverage
Mission	99.9%	99.9%	99.9%	99.9%	**99.9%**
Bayview, Hunters Point, Vis. Valley*	76.3%	76.2%	76.0%	76.0%	**76.1%**
SFSU, Ingleside, Excelsior*	78.3%	78.1%	78.0%	78.3%	**78.2%**
Western Addition*	100.0%	100.0%	99.9%	99.9%	**100.0%**
Inner Richmond	97.7%	97.5%	97.1%	97.2%	**97.4%**
Outer Richmond	94.8%	94.4%	94.5%	94.6%	**94.6%**
Inner Sunset	76.8%	76.7%	76.7%	76.7%	**76.7%**
Outer Sunset	88.7%	88.2%	87.8%	88.3%	**88.3%**

* SFMTA Equity Priority Community

Table 23 shows the average scooter coverage in equity priority communities.

Table 23: Average Scooter Coverage by Time Snapshot - Equity Priority Communities (2022)

Neighborhood	8am	12pm	4pm	8pm	Total Average Coverage
Bayview	76.3%	76.2%	76.0%	76.0%	**76.1%**
Chinatown	100.0%	100.0%	100.0%	100.0%	**100.0%**
Downtown/Civic Center	100.0%	100.0%	100.0%	100.0%	**100.0%**
Excelsior	78.3%	78.1%	78.0%	78.3%	**78.2%**
Ocean View	87.1%	86.6%	85.9%	86.4%	**86.5%**
Western Addition	100.0%	100.0%	99.9%	99.9%	**100.0%**

Low-Income Memberships

Equitable access to scooter share also includes providing access to memberships such that lower income households can use the program's scooters. The permitted companies are required by SFMTA to offer a low-income customer plan that offers either a 50% discount on rides or a plan that offers unlimited trips under 30 minutes. **Figure 26** shows the monthly low-income fare memberships by permitted company in 2022, while **Figure 27** shows the monthly low-income rides by provider. Please note the sharp decrease in rides in July 2022, which may be due to inconsistent monthly reporting.

Figure 26: Low Income Fare Memberships (2022)

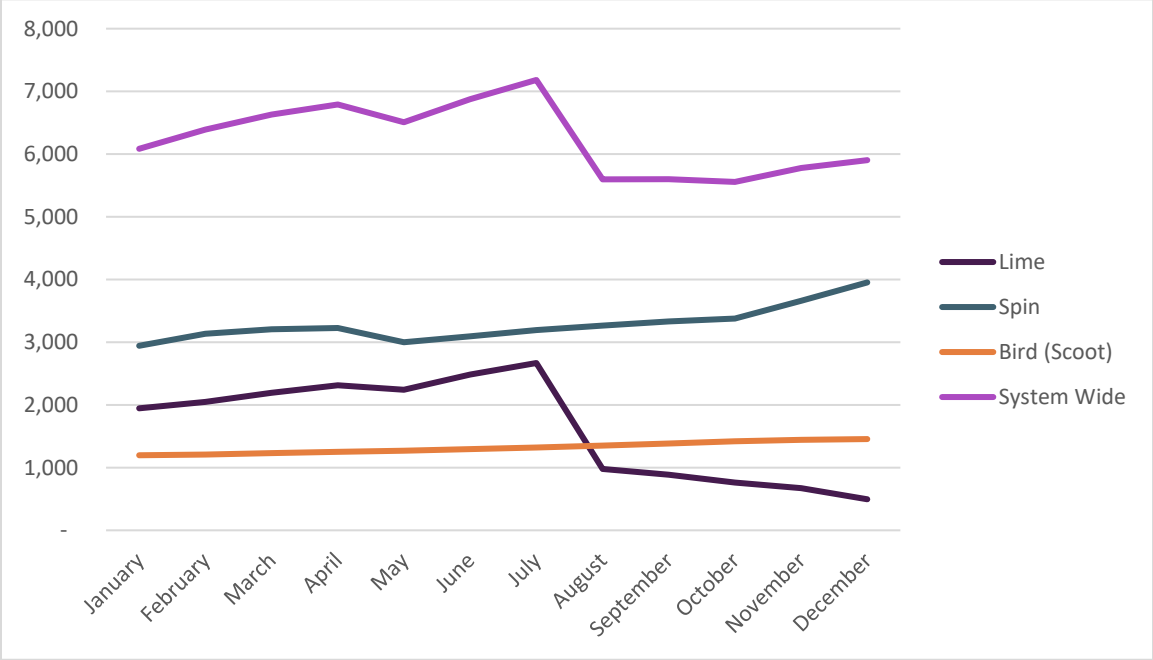
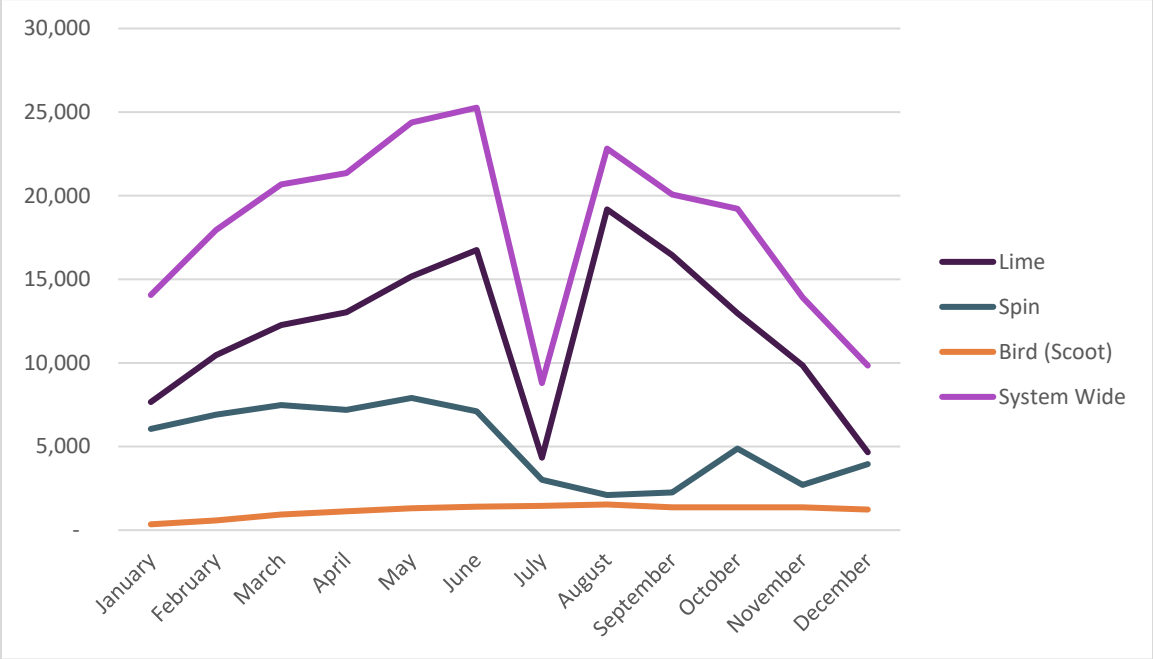


Figure 27: Low Income Fare Rides (2022)



shows the average monthly low-income fare rides per low-income fare plan member. The data reported by Spin and Bird was consistent throughout 2022, but the data reported by Lime sees a large spike in ridership in the second half of the year.

SFMTA's permit terms require that the permitted companies register one low-income member for every two scooter devices. As shown in **Figure 28**, the three permitted companies all exceeded this goal in 2022. Finally, **Figure 29** shows the average monthly low-income fare rides per low-income fare plan member. The data reported by Spin and Bird were consistent throughout 2022, but the data reported by Lime sees a large spike in ridership in the second half of the year.

Figure 28: Low Income Memberships per Device (2022)

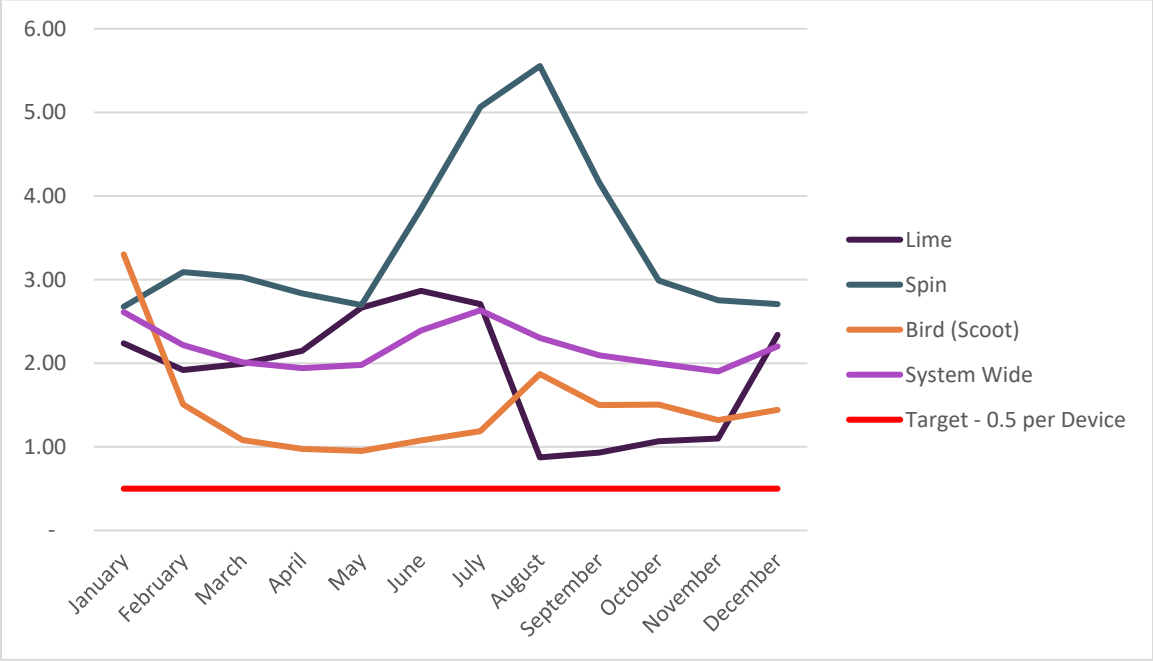
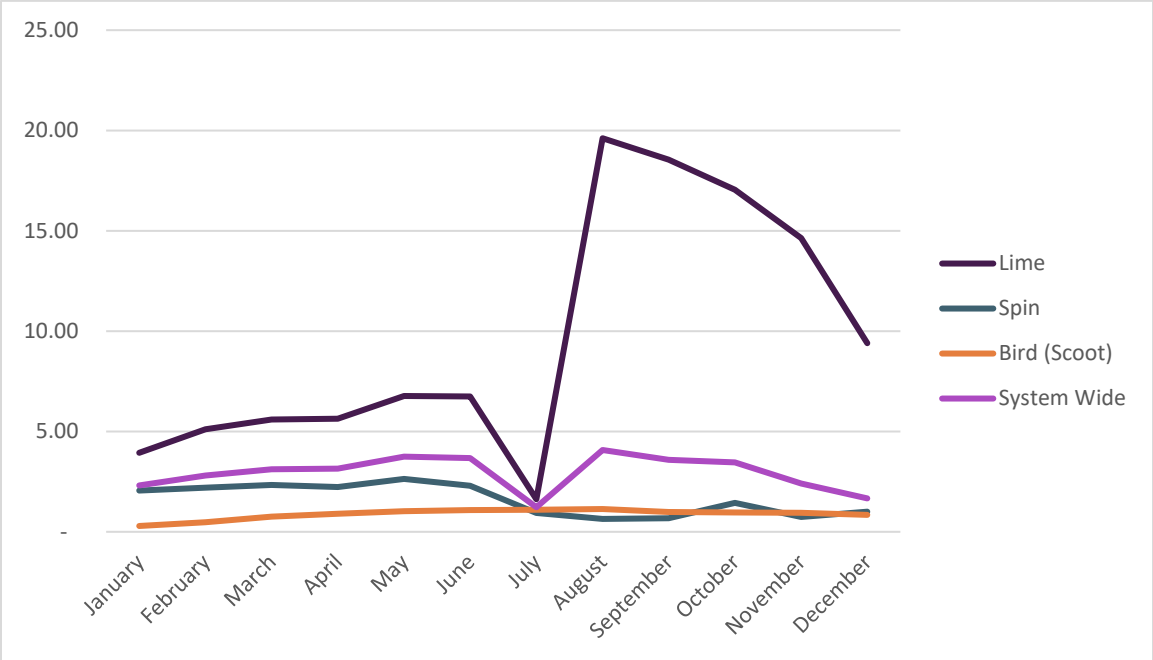


Figure 29: Low Income Rides per Low Income Member (2022)



Peer City approach

Fehr & Peers also discussed equitable based distribution and low-income fare program requirements with the peer cities:

- **San Diego**: San Diego has equity-based distribution requirements. The City uses a corral-based parking system, where scooters must be picked up and dropped off at a designated City approved corral. This system also helps guide scooter distribution, as the City selects corral locations. The City can also limit neighborhoods where the providers can deploy if they do not meet equity targets.

  The City requires the providers to offer a low-income fare program. The specifics of that program are determined by the provider and are included in the RFP process.

- **Los Angeles**: LADOT does not charge per ride fees for scooter trips that begin or end in equity focus areas. Permittees must deploy 20 percent of their fleet in equity priority areas if they deploy scooters in designated high demand areas. These high demand areas are determined by LADOT.

  Permittees must offer a low-income fare plan, which includes unlimited 30-minute trips. The cost of that low-income plan is determined by permittees. Permittees must allow for cash payments and for non-smartphone payments and reservations of devices.

- **Seattle**: Minimum deployment for equity priority neighborhoods (10%), but permittees usually exceed that amount (16-18% coverage)

  Permittees must offer a reduced fare plan (fares no more than $1.50 an hour), but each permittee can propose their own low-income fare structure.

- **Washington D.C**.: Distribution is based on DCs eight Wards (council districts) and are not based on specific equity priority areas. The minimum distribution requirement is at least 3% of system devices must be deployed in each ward, and the maximum distribution is 35% devices per ward.

  Washington DC requires permittees to maintain low-Income program that provides unlimited 30-minute rides and has outreach requirements. Permittees must hit participation threshold in order to qualify for fleet expansion.

- **Chicago**: Chicago has equity priority area-based distribution requirements. At least 50% of devices must be deployed in an equity priority neighborhood. Additionally, at least 3% of total devices must be deployed in each of the City's equity sub areas (10 in total).

  All companies have a low-income program, discounts and pricing were proposed by the permittees in their applications. The fare structure varies by company.

- **Austin**: Austin does not have equity-based deployment areas or use special deployment areas for other purposes.

  Permittees are required to have a low-income fare program. The specific fare structure of that program is determined by the permittee.

A.8 Evaluate Reporting Requirements

Fehr & Peers will continue to evaluate the data reporting requirements as we complete our program evaluation, and we will present our findings in the final report. In general, the data reporting requirements used in San Francisco are robust and include a variety of valuable information to the City. The SFMTA's data dashboard includes useful data visualizations of the scooter share program's data and displays the key performance indicators the permitted companies are evaluated by.

However, some of the data that is reported by the permitted companies is of lower quality and includes many months of unreported or underreported data. These underreported data include adaptive device trips and low-income program memberships, metrics that are valuable to SFMTA for planning and evaluation purposes. We caution against using some of these data for analysis purposes until the SFMTA receives more consistent months of reported data from the permitted

companies, and the SFMTA has the opportunity to assess the extent to which the companies are in compliance with SFMTA's data reporting requirements.

A.9 Evaluate Permit Application Process

Fehr & Peers included questions about the permit application procedure and process in the peer city interviews. The interviews also included questions about permit fees and scooter parking requirements. The peer cities shared the following about their programs:

- **San Diego**: San Diego switched from a permit system to an RFP process in 2022. The City offers three-year minimum contracts, with two one-year options. San Diego charges the contracted companies an annual contract fee, and the City also levies a per device per day fee. This fee is designed to provide an incentive for the contracted companies to reduce their deployed fleet during lower ridership months. The City uses a corral-based parking system for its program. Scooter trips must begin and end in a designated area in the public right of way.

- **Los Angeles**: Los Angeles issues annual scooter share permits on a rolling basis, and the City renews these permits if the company is in good standing. Los Angeles charges a permit applicant fee and a per trip fee. The standard per trip fee is 20 cents, but this trip-based fee can range from no cost to 40 cents, depending on the trip's origin and destination. Rides that begin and end in high demand neighborhoods are charged the highest fees, while the City charges no fee to rides that begin or end in equity priority neighborhoods.

- **Seattle**: Seattle issues annual scooter share permits. These permits are not automatically renewed, and the City is considering moving towards a streamlined process for renewing permits for existing permitted companies who comply with the program's terms and conditions. The City charges an annual per device fee of $150 per device per year.

- **Washington D.C.:** DDOT issues two-year scooter share permits. The District is considering moving to an RFP process in the future. DDOT charges a monthly per device fee of $10 per scooter per month. Washington DC has a lock-to requirement for scooter parking.

- **Chicago:** Chicago issues two-year scooter share permits. Permit renewals are based on past performance and compliance with the City's terms and conditions. CDOT charges a fee that is equal to $1 per device per day fee. The fee is paid upfront for the entire two-year permit term. Chicago has a lock-to requirement for scooter parking.

- **Austin:** Austin issues six-month scooter share permits, which are automatically renewed after each permit term. The City charges a $750 semi-annual permit fee, a $40 semi-annual per device fee, and a 15 cents per ride fee. Austin provides scooter parking corrals, but the City does not require that riders park in them.