



BIKE SHARE IN LOS ANGELES COUNTY

An analysis of LA Metro Bike Share
and Santa Monica Breeze

Commissioned by:



Prepared by:



ACKNOWLEDGMENTS

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01 PROJECT PURPOSE AND GOALS

The Southern California Association of Governments (SCAG), in partnership with Los Angeles Metro (Metro), commissioned a study to better understand the role of bike share within the Los Angeles regional transportation system. The results are intended to guide decision-making related to future system investments and new shared mobility programs in the region.

While the analysis was originally conceived to evaluate just two bike share programs of the metro area - the Downtown Los Angeles Pilot Program and Santa Monica Breeze¹ – the study team expanded this to include the full Metro Bike Share program (excluding a now inactive program in Pasadena) and to consider Breeze in the context of Bike Share Connect, which is an integrated bike share network including Santa Monica’s Breeze Bike Share, WeHo Pedals, UCLA Bruin Bike Share, and Beverly Hills Bike Share systems.

The specific goals of the study are to:

1. Develop recommendations for optimizing existing bike share programs within Los Angeles County;
2. Identify lessons learned related to the planning and implementation of bike share in Los Angeles County; and
3. Develop considerations for regional interoperability.

Understanding the broader changing landscape of mobility is important for interpreting results of the study process and proposing relevant next steps for the system. This study comes at an historic time within the transportation sector due to changes in travel patterns² and the rise of shared and micro-mobility solutions.

1 While the majority of data analysis isolates Santa Monica Breeze usage, revenue from April 2018 onward is for the entire Bike Share Connect Regional Network.

2 Examples of such shifts include five straight years of declining Metro transit usage (discussed in [this report](#)).

The study centered on five core phases of analysis:

- **User Survey:** An online and intercept survey targeted existing bike share users, available for 2 months in spring of 2019, which garnered 351 valid responses (201 from Metro users and 150 from Santa Monica users) and provided a 95 percent confidence level and a margin of error of ±5.2 percent overall.
- **Focus Groups:** Four independent sessions with 26 total individuals, consisting of bike share users and non-users who were recruited through survey outreach and local community organizations.
- **Statistical Analysis:** System usage data (anonymized and aggregated), provided by the system owners and analyzed by the study team based on a range of factors related to system performance and target outcomes.

- **Agency and Operator Interviews:** Private interviews conducted with each system owner (Metro and City of Santa Monica) and each system operator (Bicycle Transit Systems and CycleHop) using a common set of interview questions.
- **Contextual Framework:** A scan of new mobility trends in Los Angeles and an interview with staff of the Cities of Los Angeles and West Hollywood

This report provides an executive summary of the findings and conclusions of this work and proposes actionable next steps for consideration by Metro and City of Santa Monica, in partnership with system operators. More detailed technical reports are provided as appendices.



Quick Reference Glossary

New Mobility refers to transportation services enabled, defined, or refined by digital technology

Shared Mobility³ is the shared use of a vehicle (motorcycle, scooter, bicycle, or other travel mode) to provide users with short-term access for one-way or round trips

Shared Micro-mobility encompasses all shared-use fleets of small, fully or partially human-powered vehicles; bikesharing and scooter sharing are types of shared micro-mobility

Bikesharing is the shared use of a fleet of bicycles (manual or e-bikes) which provides users with on-demand access to bicycles for one-way (point-to-point) or roundtrip travel.

Scooter sharing is the shared use of a fleet of scooters which allows individuals access to scooters for on-demand for one-way trips. To-date, in the U.S., scooter sharing programs offer electric (rather than manual) scooters, are private sector owned and managed by companies that operate in multiple markets, and are dockless (or free-floating).

Carsharing offers members access to vehicles by joining an organization that provides and maintains a fleet of cars and/or light trucks. Members who join a carsharing organization typically pay a fee each time they use a vehicle.

Microtransit is a privately or publicly operated, technology-enabled transit service that typically uses multi-passenger/pooled shuttles or vans.

Ridesharing (also known as carpooling and vanpooling) is defined as the formal or informal sharing of rides between drivers and passengers with similar origin-destination pairings. Vanpoolers share the cost of a van and operating expenses, and may share driving responsibility.

Ridehailing services (also known as ridesourcing and transportation network companies (TNC)) are prearranged and on-demand transportation services for compensation in which drivers and passengers connect via digital applications.



Types of bikesharing systems include:

Dock-based – a bike can only be retrieved at and returned to a station with technology-enabled docks; user transactions can occur through web, smartphone application, or kiosks; may include manual bikes or e-bikes (e.g. B-Cycle)

Dockless – a bike can be retrieved at and returned anywhere within the service area, and the bike locks to itself (rather than an object) using a rear wheel lock enabled or disabled with a smart phone application; user transactions occur through a smartphone application (e.g. Lime-E)

Hybrid – a bike can be retrieved at and returned to a station which consists of a series of bike racks, or anywhere within the designated service area; bikes are typically referred to as “smart bikes” due to the on-board technology hardware; user transactions can occur through hardware on the bike, web, and/or smartphone application; may include manual bikes or e-bikes (e.g. Social Bicycles and JUMP)

³ For more information on new terms in mobility, refer to the Society of Automotive Engineers J3163™, Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies and the National Association of City Transportation Officials 2019 report Shared Micromobility in the U.S.: 2018.



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02 A TALE OF TWO SYSTEMS

Bike share evolved in a unique fashion in Los Angeles County. Breeze Bike Share launched in November 2015 in Santa Monica with 500 bicycles and 80 stations, with partial capital funding from Metro and the Air Quality Management District. Breeze operates as a hybrid system; it has stations where a bike can be docked but uses a smart bike that allows the bike to be parked anywhere in the service area. This system expanded to Beverly Hills, West Hollywood, and UCLA in 2016 and 2017. Expansion was catalyzed by a “me-too” clause included in the original procurement. The systems operate under different names and with separate contracts, but with the same operator and equipment. In April 2018, the systems were unified under Bike Share Connect, and the system area was expanded to be contiguous. The City of Long Beach also utilizes the same smart bike equipment, and contracted with the same operator until August 2017.

Metro Bike Share was launched in July of 2016 with a fleet of 1,000 dock-based bicycles, funded and operated by the Los Angeles County Metropolitan Transportation Authority (Metro). Originally focused on downtown Los Angeles, the system expanded to the Port of Los Angeles, Venice, and Pasadena in 2017, with additional bikes placed at Metro Stations in Santa Monica. The Pasadena program closed in August 2018.

With the advent of scooter share and additional smart bike and dockless bike share systems, cities in the Los Angeles region have begun permitting micromobility programs. In September 2018, Santa Monica launched a 16-month Shared Mobility Pilot Program, which permitted four scooter share and one dockless e-bike vendors to operate 2,000 e-scooters and 500 e-bikes. In December 2018, LADOT issued a One Year ‘Dockless On-Demand Personal Mobility Conditional Use Permit’, which includes scooter share, e-bikes, manual bikes, and adaptive bikes. As of April 2019, three vendors currently offer 22,500 e-scooters, and an additional three vendors are pending with 4,000 scooters and 5,000 e-bikes, and another five vendors are being considered which would add another 2,100 scooters and 500 bicycles.⁴

This study comes at a time of uncertainty for the future of micro-mobility across the region:

1. Will the introduction of thousands of additional shared scooters and shared bikes from private companies have a lasting impact on public bike share system ridership? What, if any, impact will they have on the viability of public systems?
2. Will the overlap of Breeze and Metro Bike Share along with other vendors in Los Angeles County offer greater mobility at a lower cost to the public, or, simply cause confusion as the number of operators continues to expand?
3. Are new privately-funded and operated micro-mobility options economically viable and will they still exist several years from now?

⁴ Note that several other companies continued to operate within an existing conditional-use permit and vehicle cap while working to comply with the one-year permit requirements.

Metro Bike Share and Breeze are distinctly different bike share systems, each playing a different role in the Los Angeles region. They share a common geography, with service area boundaries linking one to the other.

Understanding Each System

	METRO BIKE SHARE	SANTA MONICA BREEZE BIKE SHARE
Launch Date	July 2016	November 2015
Capital Funding	50% Metro (various grants) 50% Partner Agencies	65% Metro (funding from Measure R) 22% AQMD 13% City of Santa Monica
Operations Funding	65% Partner Agencies 35% Metro (Includes Membership and Usage Revenues)	City of Santa Monica (Usage Charges; Sponsored by Hulu)
Owner	Metro	City of Santa Monica
Operator	Bicycle Transit System	CycleHop
Bicycle manufacturer	BCycle, LLC	Social Bicycles (now owned by Uber)
Expansion dates	Piloted E-bikes in November 2018 ⁵ ; Added Smartbikes to fleet in March 2019	Bike Share Connect launch in April 2018
Number of bikes/stations	1000+ bikes / 100+ stations (currently undergoing expansion)	Breeze: 500 bikes / 86 stations Bike Share Connect: 830 bikes / 135 stations
Average Annual Trips	242,593 (2017 and 2018 only, does not include Pasadena)	240,171 (2016 - 2018 only, trips in Santa Monica only)
Service area	Downtown LA, Central LA, the Westside, Port of LA, and Venice ⁶	Santa Monica, Beverly Hills, West Hollywood, and UCLA ⁷
Program partners	Metro, City of Los Angeles and Port of LA	Bike Share Connect Network: City of Santa Monica, City of Beverly Hills, City of West Hollywood, University of California – Los Angeles ⁸
Pricing	Pay-Per Ride: \$1.75 per 30 minutes 24-Hour Access: \$5 per day 30-Day Pass: \$17 per month 365-Day Pass: \$150 per year Discounts available for Reduced Fares, Buy-in-Bulk, and Bike Share for Business participants.	Pay as You Go: \$0.12 per minute Monthly: \$25 per month Annual: \$99 per year Academic: \$7 per month Bike Share for All ⁹ : \$5 per month (verification required)
Payment options	TAP wallet, Station kiosk (credit or debit accepted)	Online, SoBi Mobile App, Station kiosk (credit or debit accepted)
Other Shared Micro-Mobility Options in the Service Area	Permitted scooter share and other shared micro-mobility since September 2018	Scooters introduced in September 2017 (interim vending permit); scooter and e-bike share pilot program since September 2018 (ends January 2020)



5 Metro Bike Share added E-bikes to the fleet in May 2019.

6 The City of Pasadena, not listed here, was part of the service area from July 2017 to August 2018, but not included within the study analysis.

7 This study analyzed only the Santa Monica portion of the Breeze Bike Share system.

8 The City of Long Beach, not listed here, launched in 2016 with the same bikes and software, which enables customers of Bike Share Connect to also use their system.

9 Bike Share for All provides discounted memberships to low-income individuals.



04 WHAT THE DATA TELLS US

Key Findings

An analysis of usage data¹⁰ from the LA Metro Bike Share and Santa Monica Breeze programs reveals that:

- **Breeze usage steadily increased for the first two and a half years of operation.** The system had consistent strong performance starting from launch both in total trips per month and trips per bike per day (t/b/d); usage has decreased since the introduction of scooter share.
- **Metro Bike Share usage has steadily increased since launch.** Usage data shows an overall increase in both total trips per month and also trips per bike per day (t/b/d). The impact of scooter share on Metro Bike Share is not yet available due to the later launch of scooter share in Los Angeles.
- **Both systems are used for both daily transportation and occasional use.** Both systems show consistent spikes at morning and afternoon commute times for Member users, but not for Casual users.
 - » This is true for all types of Breeze Member users - including Students and Bike Share for All.
 - » Metro also shows an additional spike in usage at lunch time for Member users (but not Casual).
- **Summer is a peak season at the beach.** Breeze shows a consistent yearly spike in usage during summer months.
 - » Breeze's Casual users (Pay-as-you-go) are major contributors to the spikes in 2016 and 2017 summer months.
- » Metro's Casual users (Walk-up) and Member users track closely during summer months until 2018, when Casual users showed a higher spike.
- **Member user trips are shorter than Casual user trips for both systems.**
 - » Metro Casual user trips are more than triple the duration of Member user trips.
 - » Breeze Casual user trips are more than double the duration of Member user trips.
- **Members provide baseline revenues, and Casual users add ride-based revenues**

TYPES OF BIKE SHARE SYSTEM USERS

Casual Users are generally spontaneous or opportunistic bike share users that do not become ongoing or long-term members. This includes the Breeze "Pay-as-you-go" option that has no time limit and no time-overage usage fees and the Metro "Day Pass" that requires an upfront fee with time limit and assigns time-based usage charges beyond that.

Members are active passholders that have multiple pricing plans to choose from. For Metro Bike Share, a membership sign-up fee gives you access to unlimited 30-minute trips with overage charges for any usage beyond the 30 minutes per trip. For Breeze, it offers unlimited trips up to a total of 90 minutes of bike usage per day and applies per minute charges beyond for any usage beyond the 90 minute daily allocation.

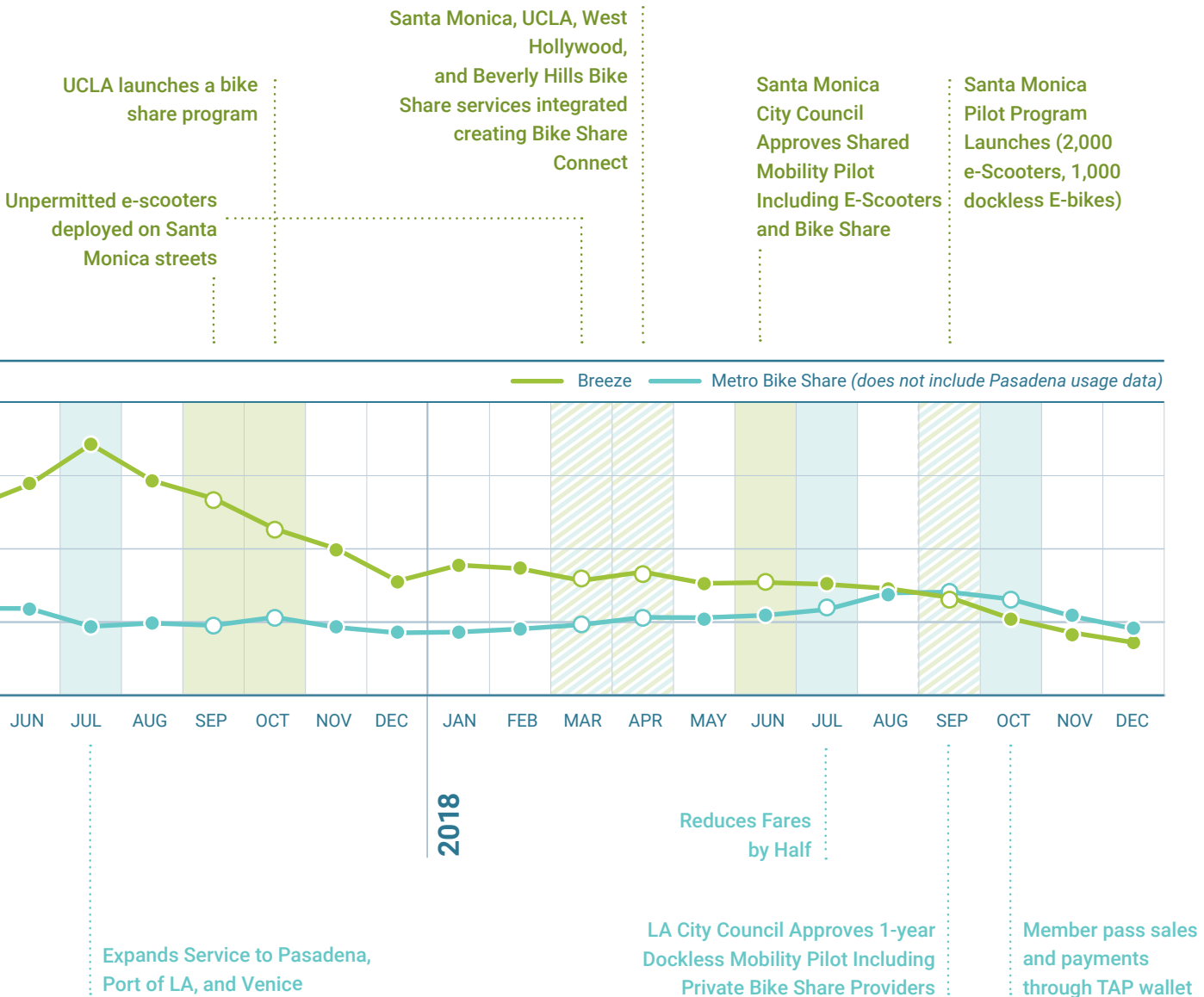
¹⁰ Anonymized and aggregated data provided by Metro and City of Santa Monica; Because Breeze Trip data was not available for March and April of 2017, values were imputed to calculate annual statistics.



Both internal and external factors influence system usage and user trends. Trips per bike per day (t/b/d) is the most commonly used metric for bike share system performance. When t/b/d is considered in relation to major events and decision points over the course of the study period, the impact of program expansions, pricing changes, and scooter share programs is evident.

When considering the relationship to land use context, the study team found that the following factors are correlated with the number of trips taken from a station in the Metro system (the level of positive correlation is noted):

- Employment density (strong)
- Population density (moderate)
- Proximity to light rail or bus rapid transit (moderate)
- Other bike share stations within a half mile (strong)
- The number of docks at the station (moderate)



For the Breeze system, the following factors are correlated with the number of trips taken from a station (the strength of the correlation is noted in parenthesis):

- Employment density (moderate)
- Other bike share stations within a half mile (moderate)

The project team found no correlation between regular bus service and trips in either system.

Who Is Using Bike Share?

While data related to the demographics of Breeze users was not available for this study because the system does not collect demographic data, an analysis of Metro Bike Share user demographic data and the make-up of survey participants (discussed further in section 05) indicate the bike share users are not representative of the region. For Metro Bike Share passholders, Black and Latino community members were underrepresented in the demographic data. Latino users represent 49 percent of Los Angeles residents, but comprised just 19 percent of Metro Bike passholders and Black residents make up 9 percent of Angelenos, but just 5 percent of pass holders. On average, 64 percent of pass holding members identified as male, while only 36 percent of pass holders identified as female. Approximately 55 percent of Metro Bike Share pass holders earn an annual income of \$95,000 or more, and approximately 15 percent earn less than the median income for Los Angeles (\$55,909). The results suggest that barriers to bike share entry for women, ethnic minorities, and middle to low income populations exist.

Users of the systems have a range of options when accessing a bike. Casual users are generally

spontaneous or opportunistic bike share users that do not become ongoing or long-term members, even if they might use the systems multiple times. Members of the systems are active passholders with multiple pricing and term options.

Breeze’s active member trends (members only, not casual users) reveal that annual passes generally sell best amongst their customer base. Subscriptions to memberships declined in December 2017. While student memberships saw the sharpest decline, the volume of student trips remained steady, suggesting the drop may have been due to an update member records. Subscriptions to other pass types experienced minor decreases at that time.

For Metro Bike Share, monthly passes and flex passes are the best-selling membership plans. Monthly pass sales experience spikes in sales during certain months, followed by a notable increase in membership lapses the subsequent month. This suggests many who choose to try monthly membership during these spikes only do so for a single month. Flex pass membership increases and decreases at a more gradual and stable rate than monthly passes due to the annual nature of renewal.



CASUAL USERS

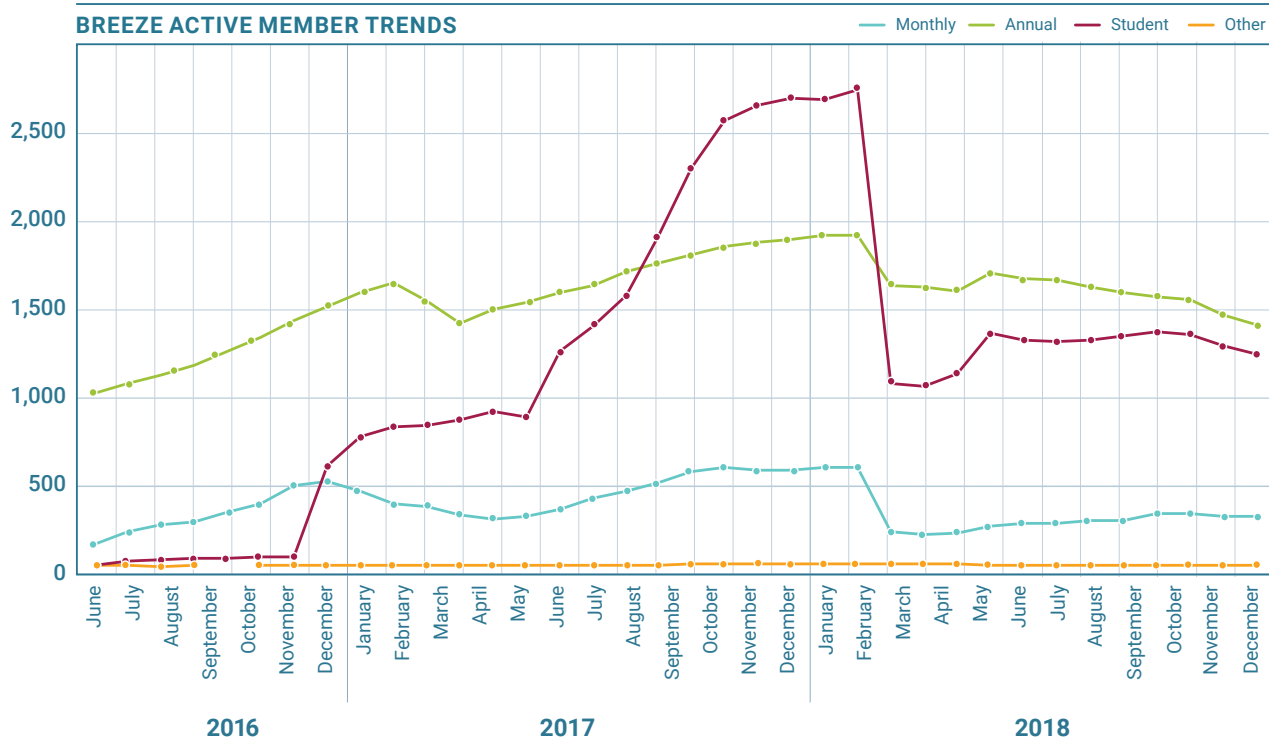
- **Breeze** offers a “Pay-as-you-go” option that charges by the minute for only the minutes used, has no time limit, and has no time-averge usage fees
- **Metro** offers a “Day Pass” that requires an upfront fee for a set amount of time and assigns time-based usage charges beyond that. Metro introduced a “Pay Per Ride” pass in January 2019.



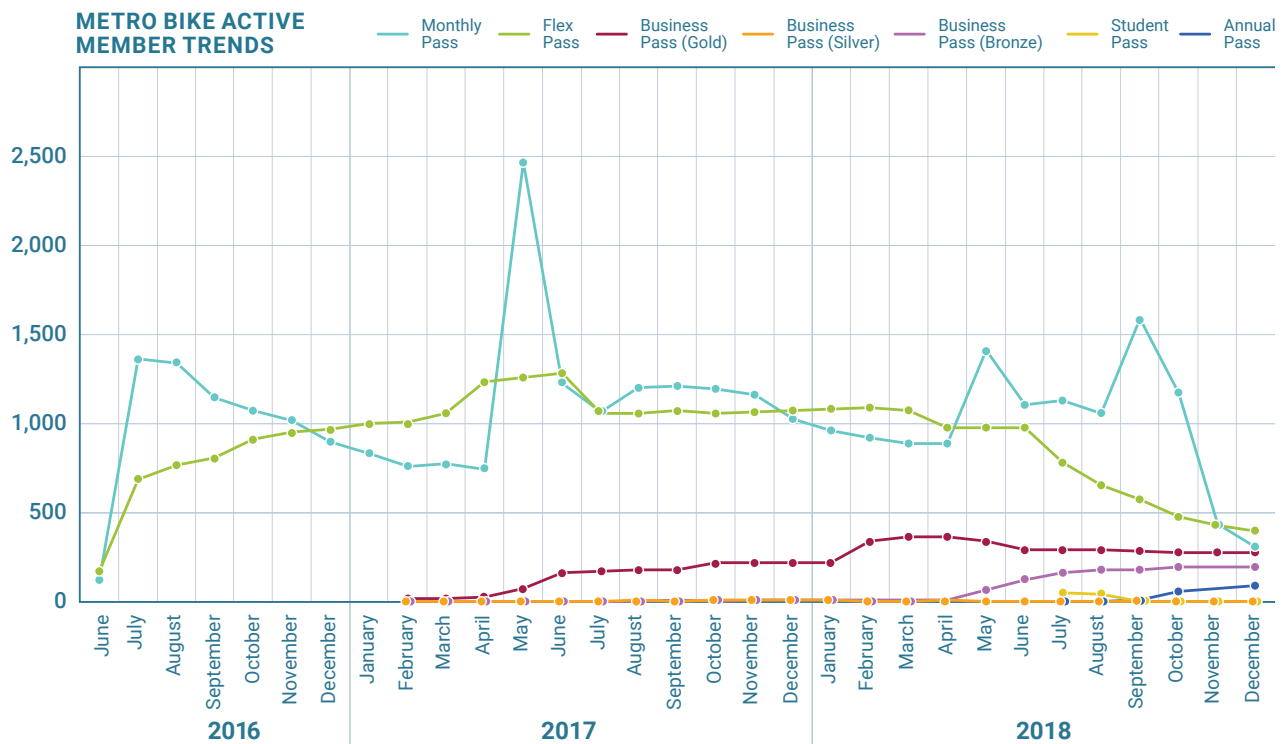
MEMBERS

- **Breeze** offers 6 different member pricing plans, available at various points of the study period
- **Metro** offers 8 different member pricing plans, available at various times of the study period

BREEZE ACTIVE MEMBER TRENDS



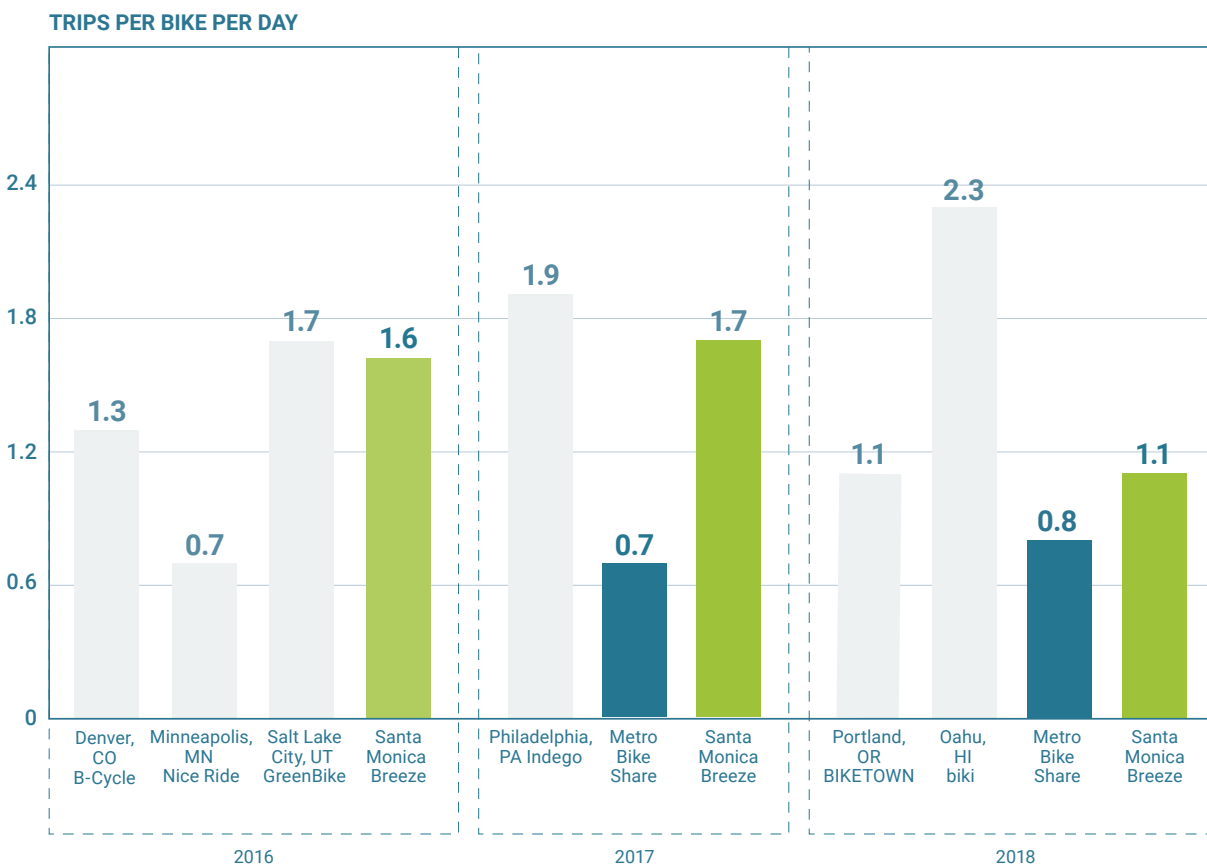
METRO BIKE ACTIVE MEMBER TRENDS

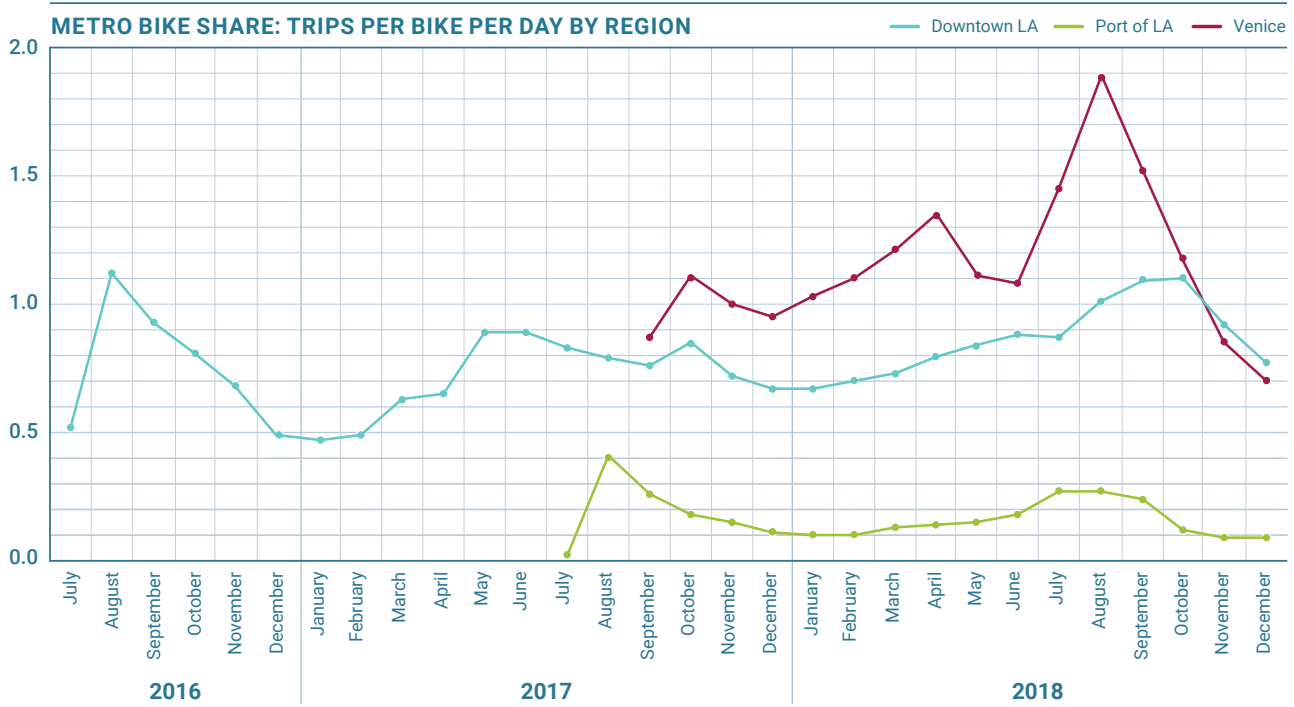


How are the Systems Performing?

Bike share system performance is most commonly measured in trips per bike per day (t/b/d). This metric is helpful for understanding value gained in relation to system scale and operations costs. However, it is important to note that this metric does not account for other factors of system success that may be related to local transportation goals, such as transportation choice, mode shift, increased access to destinations, user experience, transportation equity, and sustainability.

There is no peer to Los Angeles, or to the unique context of Santa Monica, however the visualization below provides a point of reference for bike share context. When compared to systems in other U.S. cities, Metro Bike Share underperforms in usage averages, but continues to be on an upward trend. Trips per bike per day is a representation of higher performing areas like Venice combined with lower usage areas like Port of LA. Santa Monica Breeze has historically outpaced or tracked with other systems.





METRO

Trips per bike per day (t/b/d) have ranged from an average of 0.5 to 1.1 t/b/d over the analysis period. Taking seasonality into account, t/b/d have grown slowly but steadily. In 10 of 12 months, trips per bike per day were higher in 2018 than 2017.

Trips per bike per day vary by region within the Metro system, with the Port of LA seeing a much lower usage rate than the other regions in the system. Population, employment, and station density are much lower surrounding the Port of LA stations, compared to Venice and Downtown LA.

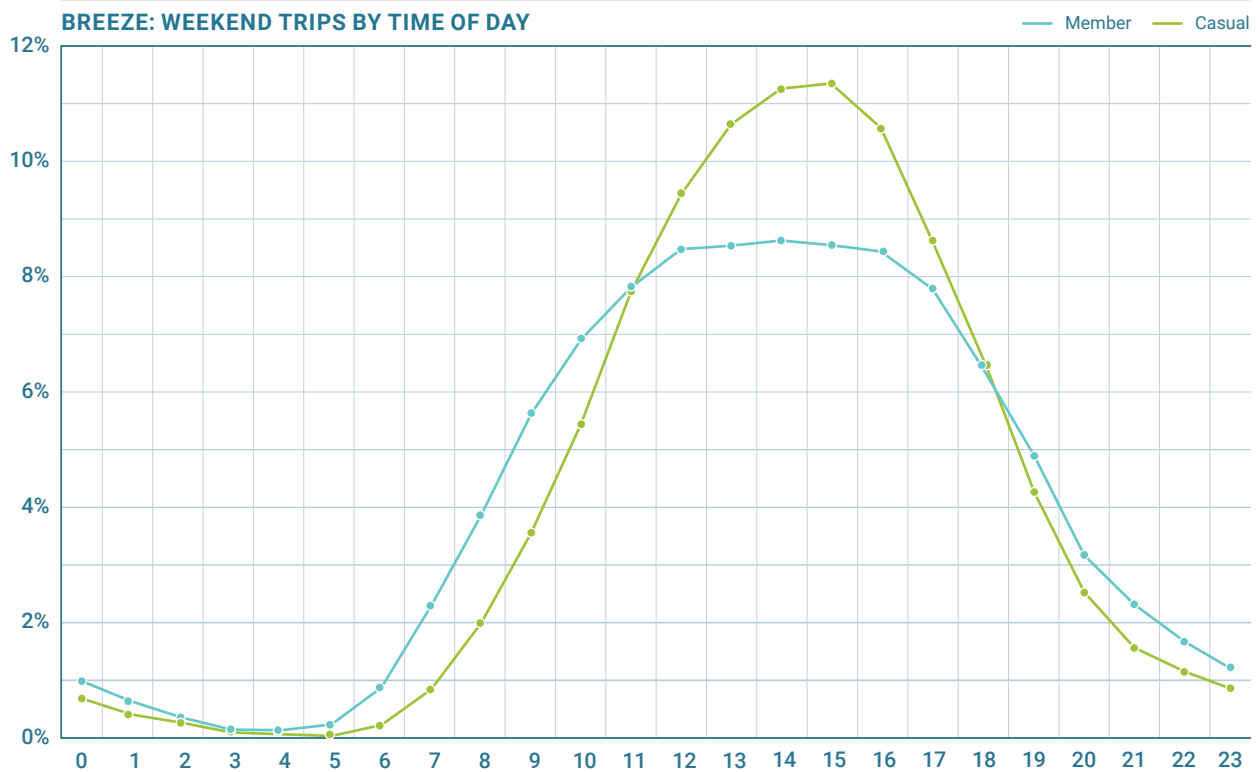
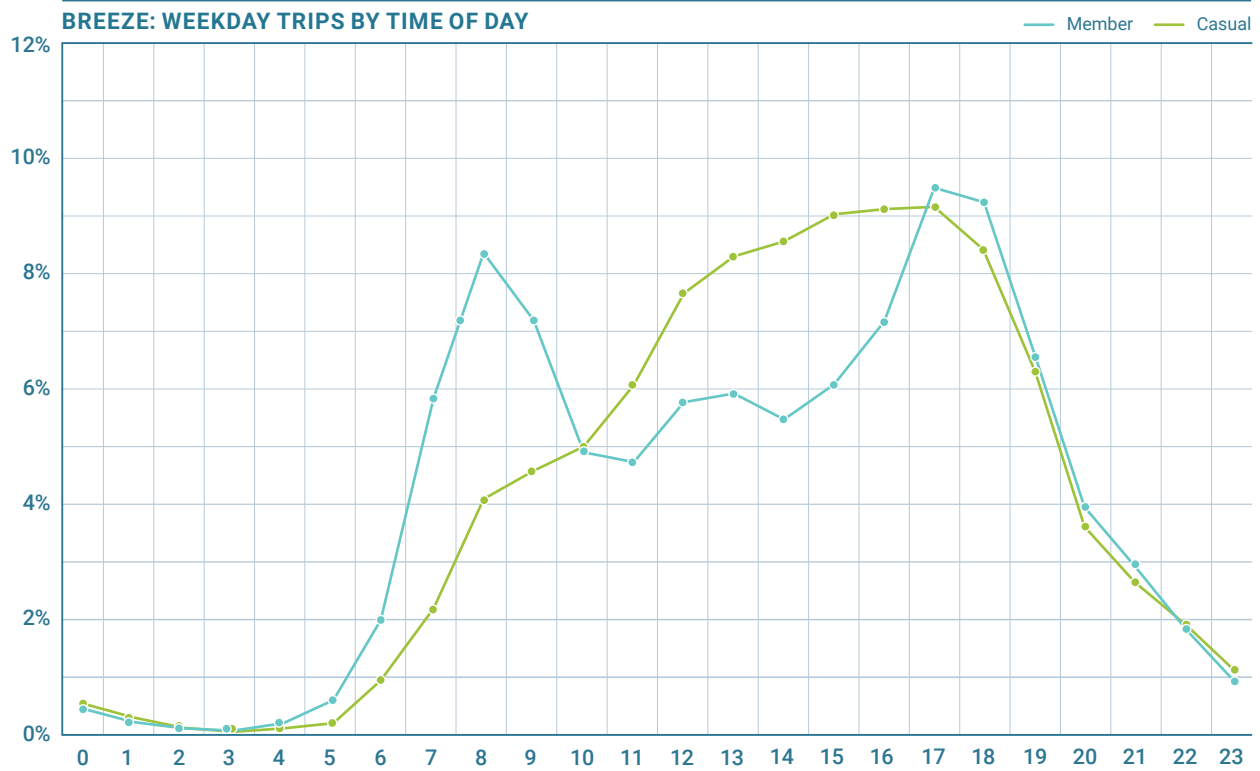
BREEZE

Trips per bike per day (t/b/d) have ranged from an average of 0.5 to 2.6 t/b/d over the analysis period. In both 2016 and 2017, t/b/d remained over 1.5 from May through November, with both years peaking in July with approximately 2.5 t/b/d. In 2018, t/b/d remained steady from January through April, before declining over the rest of the year. The major spikes in t/b/d in Summer 2016 and 2017 were primarily pay-as-you-go trips.

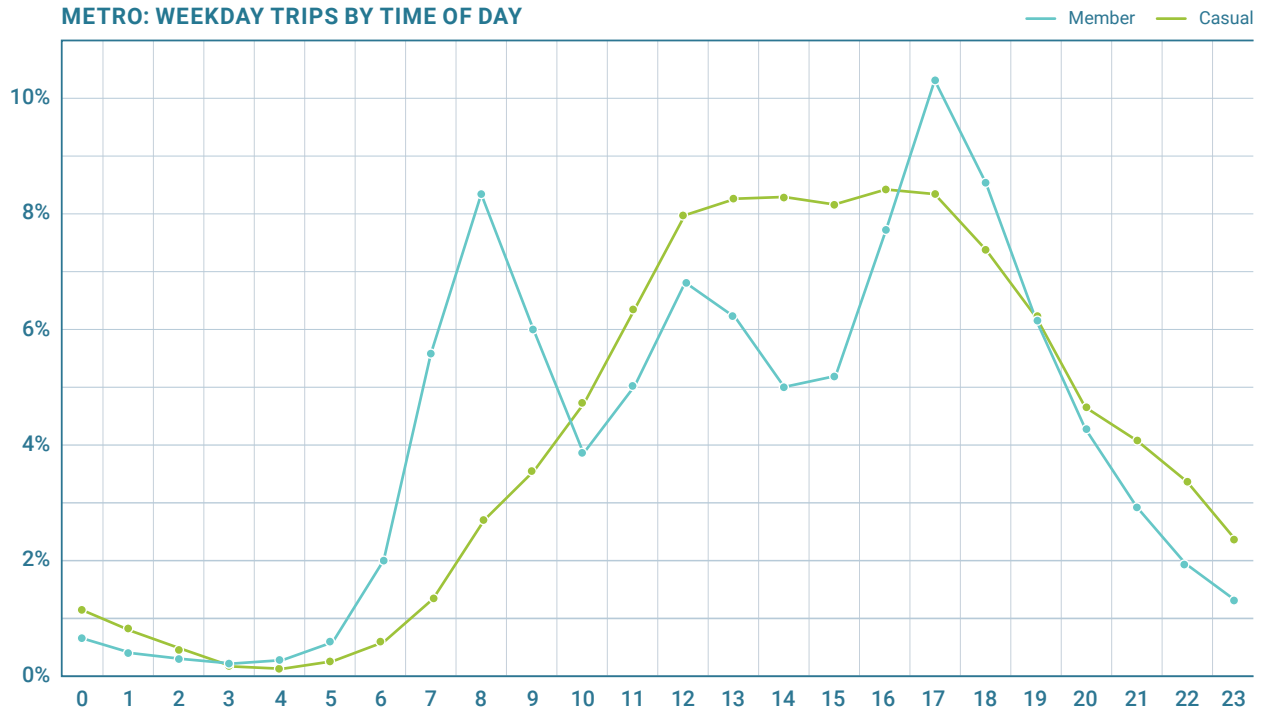
When Are Bike Share Trips Occurring?

For both systems, usage varies throughout the day, and over 90 percent of trips occurred between 7 am and 9 pm. On weekdays, members and casual users exhibit different travel patterns. Members show commute activity (spikes in usage from 7-10 am and 4-7 pm), and sustained usage throughout the day. In the Metro system there was also increased activity around lunchtime. All four membership options offered by Breeze (annual, monthly, bike share for all, and student) exhibited a similar commute pattern. Casual usage of both systems increased throughout the day with a sustained peak from noon-7pm. On the weekends, members and casual users exhibit similar behavior with the daytime peak occurring between 2-4pm; casual users made a higher proportion of those mid-day trips.

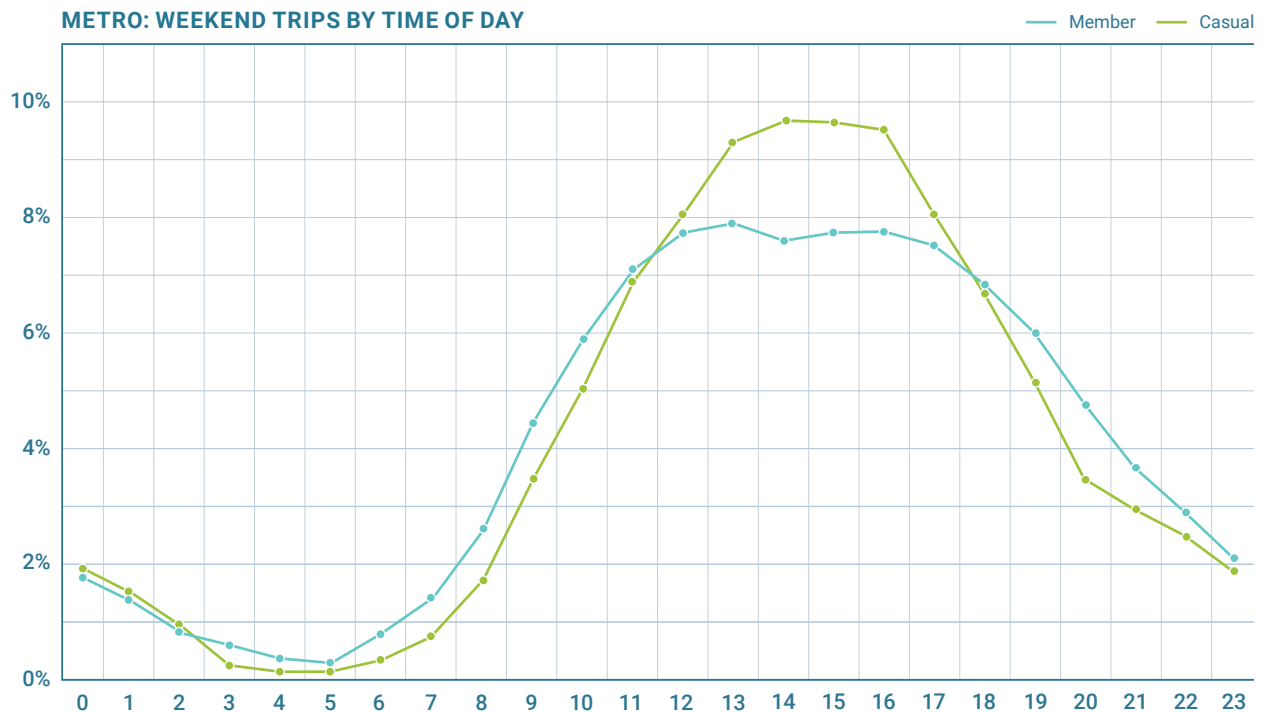




METRO: WEEKDAY TRIPS BY TIME OF DAY



METRO: WEEKEND TRIPS BY TIME OF DAY





Where Are Bike Share Trips Going?

The following maps of Downtown Los Angeles, Santa Monica, and Venice display the most popular trips between stations or hubs.¹¹ Thicker lines indicate a higher volume of trips (i.e. more popular) over the full study time period

BREEZE



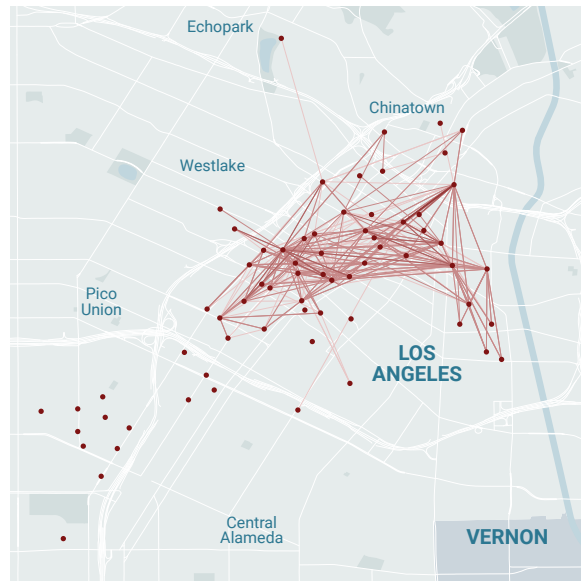
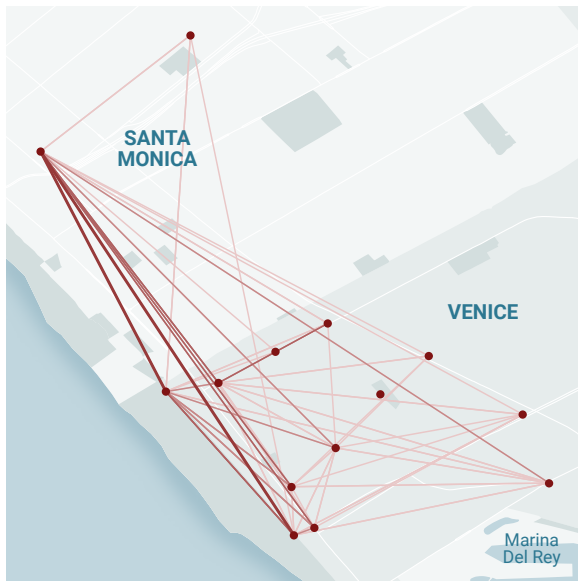
IN SANTA MONICA

Breeze usage data shows:

- **The top five most popular trips** are between stations along the beachfront.
- **The most popular trips** are either between beachfront stations or between downtown stations, but not between downtown and the beach.
- **A hub of activity was found downtown centered on the intersection of Arizona Street and 4th Street.**
- **The most popular trip** is between Colorado Ave and 17th St, and Santa Monica College at 17th St.

¹¹ Breeze does not use stations and bikes are not required to be returned to designated hubs though it is encouraged. Thus, for the purposes of this analysis, trips were joined to the nearest hub, if they began within 1,000 feet of a hub.

METRO BIKE SHARE



IN VENICE

Metro Bike Share usage data shows:

- **By far, the most popular trips** connect the Expo Line's Downtown Santa Monica station across city limits to docked stations in Los Angeles (8 of the 10 most popular trips start or end at Downtown Santa Monica Expo Line).
- **Of those, the top two trips that occur most frequently are** between the Downtown Santa Monica Expo Line Station and locations along Venice Beach.
- **Other popular trips are** 1) between stations along Rose Avenue and 2) between Venice Beach and more inland centers of activity

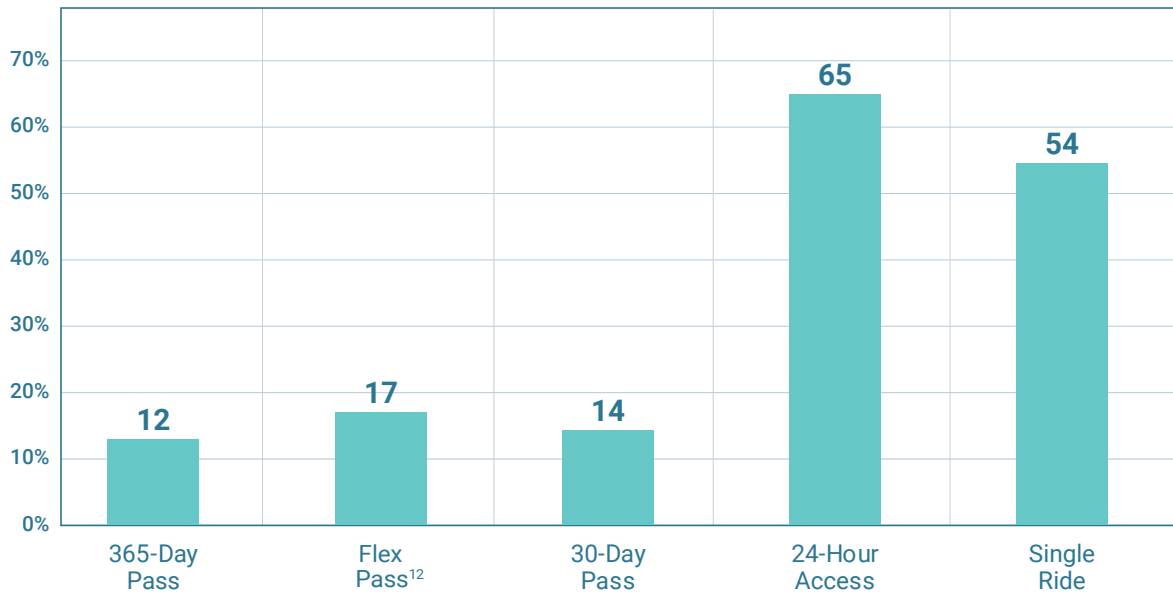


IN DOWNTOWN LA

Metro Bike Share usage data shows:

- **The most popular trip** is between Union Station and 1st and Main St; this trip occurs twice as frequently as the next most popular trip
- **The next most popular trip** is between the stations at 7th and S Flower Streets and 7th and S Spring Streets; this trip is more than double the frequency of the next most popular trip
- **Many of the most popular trips** are circulating internally within the Financial District near Pershing Square
- **Other popular trip origin and destinations** are within the Arts District near E 4th and S Alameda Streets and connect to Downtown to the west (linking district to district rather than circulating internally)

METRO: AVERAGE TRIP DURATION (MINUTES)

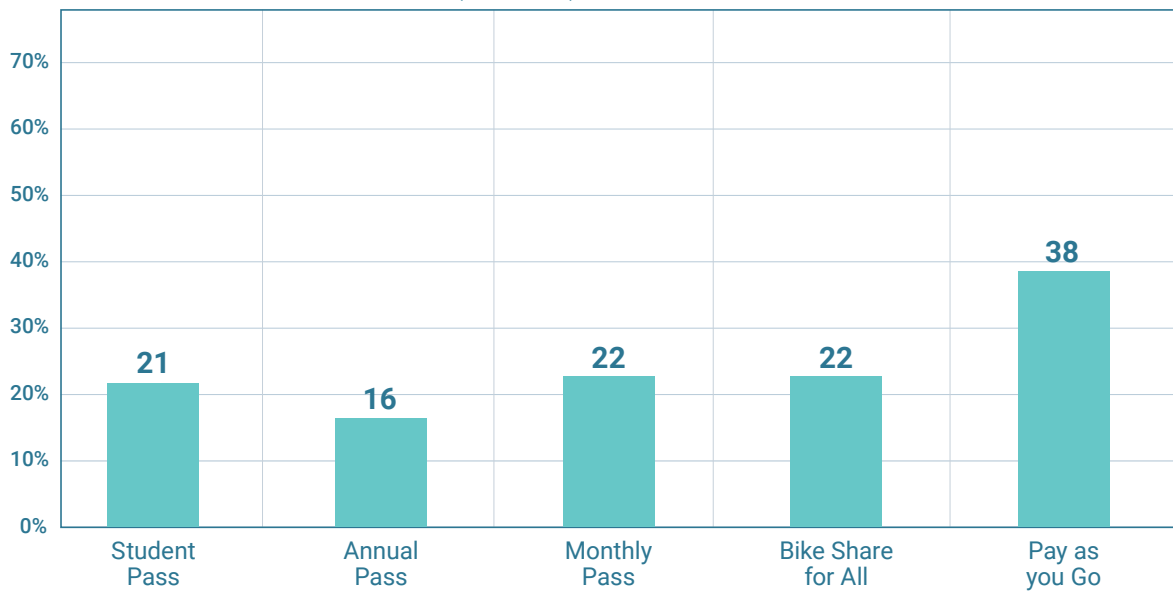


METRO

The average casual user trip on Metro Bike Share is over three and a half times longer than the average duration of a member trip. Members average 14.5 minutes per trip, while casual trips average 56 minutes.

¹² A Flex Pass was available for a limited time within the study period. For an annual fee of \$40, all trips 30 minutes or less were \$1.75 and then a charge of \$1.75 per 30 minutes thereafter.

BREEZE: AVERAGE TRIP DURATION (MINUTES)



BREEZE

Breeze members average 19 minutes per trip while casual users average 39 minutes. Amongst the different members, annual members take the shortest trips with an average of just over 15 minutes per trip.



Metro Bike Share Customer Service 2018 Snapshot



13,176
INCOMING
CALLS



1,970
INCOMING
EMAILS



1,024
INCOMING
TEXTS



15,600
ROUTINE BIKE
INSPECTIONS



97%
AVERAGE CUSTOMER
SATISFACTION RATE



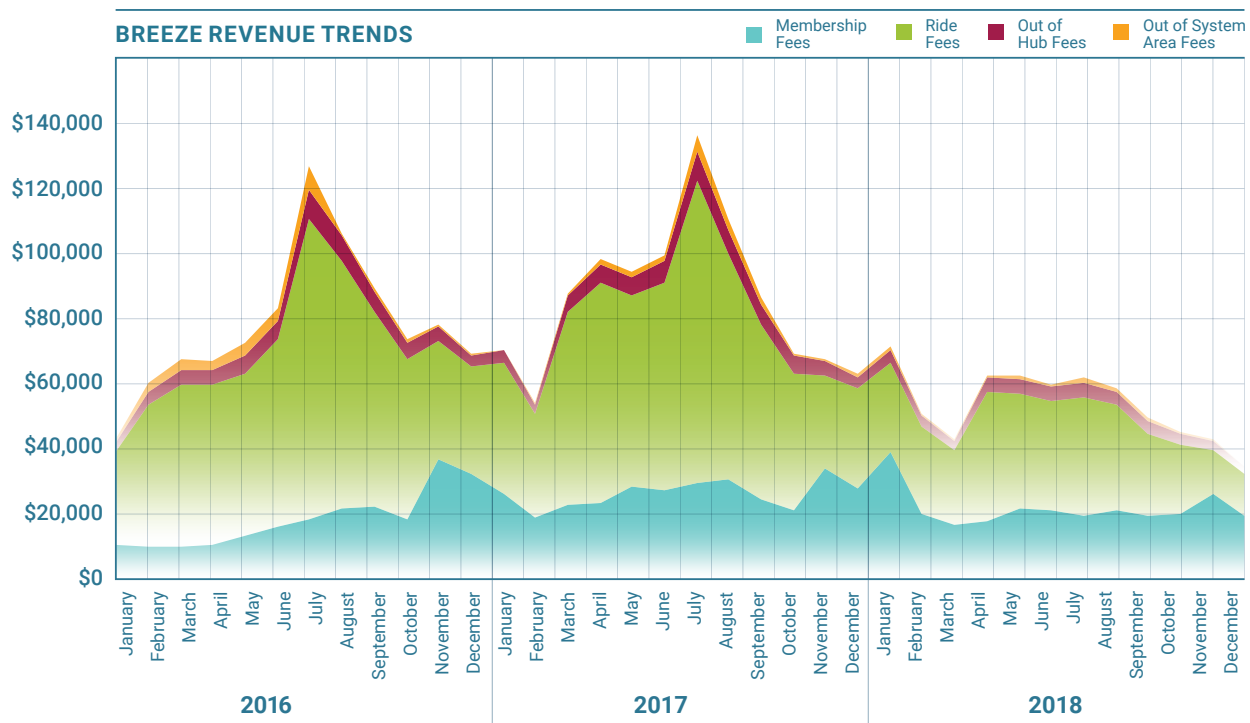
EXCEEDED SERVICE
TARGET RATES IN
9 ^{out}
of 9 METRICS

What is the State of System Revenues and Operations?

Since Breeze’s launch in 2015, a majority of the revenue generated from the system has historically come from usage fees (costs to the user beyond an initial base membership fee or pass fee, including time overage fees and pay-as-you go fees).¹³ Ride fees made up 56 percent of revenue generated in 2018, 63 percent in 2017, and 69 percent in 2016. Membership fees, out of hub fees, and out of system area fees account for 50 percent of the systems generated revenue in 2018, 39 percent in 2017, and 35 percent in 2016. These consistent revenue streams are critical, and provide a baseline for Breeze, whose revenues are closely tied to pay-as-you-go usage trends. Breeze’s Hulu sponsorship, which supports annual operations, offers additional consistency in funding.

Breeze’s 2016 and 2017 fiscal years saw similar revenue patterns to one another, with summer peaks centered on the month of July and winter drop-offs. The 2018 revenue has dropped due to a decline in usage fees generated from rides.

Metro Bike Share has experienced a gradual increase in revenue over the course of the 2018 fiscal year, with peaks in the fall and early summer. Passholder fees represented 61 percent of revenue generated in 2018 while usage fees represented only 34 percent. Metro carries a strong foundation of pass and member fees that are less impacted by sways in usage trends. Metro Bike Share does not have an external sponsor.

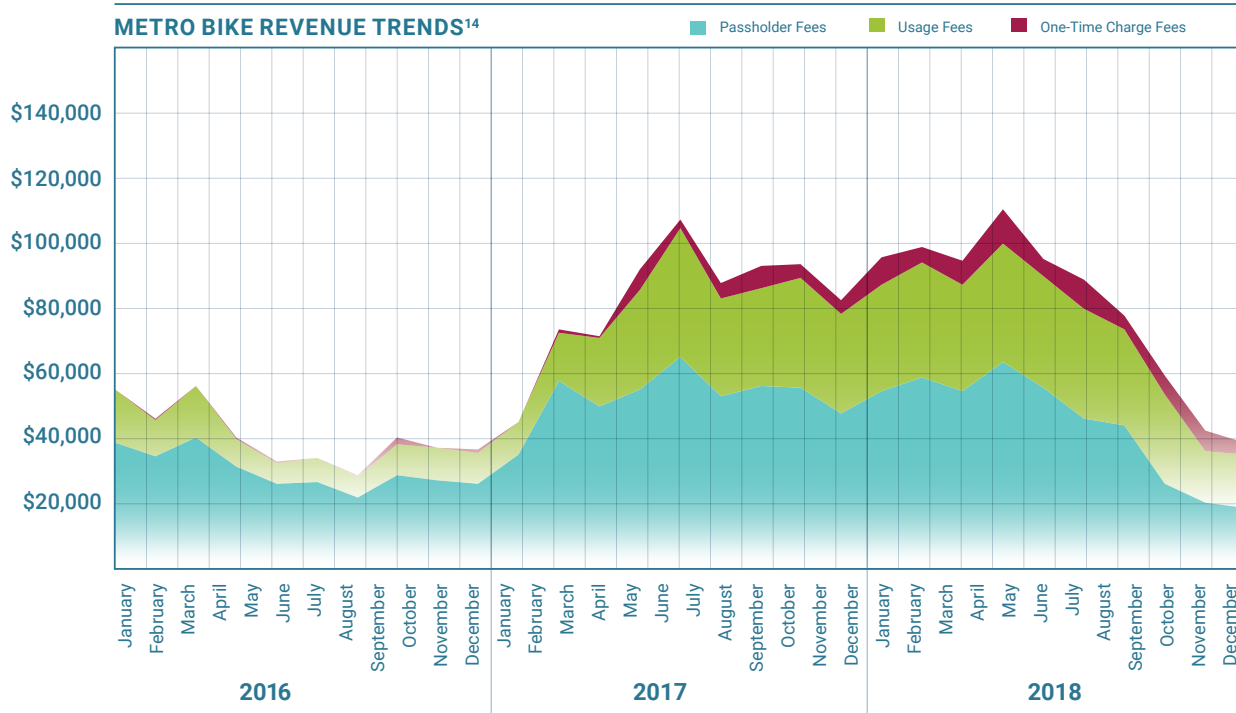


¹³ Revenue from April 2018 onward includes the entire Bike Share Connect Regional Network which includes UCLA, West Hollywood, and Beverly Hills Bike Share Systems. Prior to that is Santa Monica Breeze only.

The Metro Bike Share system is relatively expensive to operate on a per trip basis due to the relatively low ridership and robust service obligations. Both Metro and Breeze have fixed costs with operator contracts based on a fixed per bike cost.

Over the course of 2018, Breeze’s customer service center responded to over 7,000 inquiries. Of these instances, inquiries from members regarding their membership represented the largest portion of customer interactions (28%). Account management (17%) and billing inquiries (15%) were also major causes for customer contact. Issues with bicycle functionality represented 11 percent of customer service center contacts.

In 2018, Metro Bike Share’s customer service center fielded over 16,000 inquiries. Customer contact with Metro Bike Share was primarily to report station issues (32%) and resolve billing and accounts requests (28%). Of station issues reported, 86 percent were regarding difficulties with docking bicycles. Billing and accounts inquiries were primarily regarding account cancellation (60%) and charge clarification (23%). Accounts that were canceled through customer service cited a number of motivating factors, the most common of which was lack of use (12%). Tourists (5%), customers moving (5%), and seasonal use (3%) were also reported more frequently than other factors. Less than 1 percent of canceling customers cited poor service as a motivating factor in canceling their account.



14 The first two quarters of the 2018-2019 fiscal year have seen a more substantial seasonal lull than the year prior. This may be partially attributable to unusually heavy rain conditions that occurred over the fall and winter.



05 WHAT COMMUNITY MEMBERS TELL US

A bike share system is more than the sum of its data points. To gain insight into user experiences and opportunities for improvement, the study team conducted a user survey and convened four focus groups.

User Survey

Available both online and in a paper format for intercept surveying, translated versions of the survey in English, Spanish, and Mandarin provided additional access to feedback opportunities for non-English speakers in the region. The survey remained open for 2 months (February 3 through April 8, 2019) and garnered 351 valid responses (201 from Metro users and 150 from Santa Monica users).¹⁵

Demographics of the survey respondents generally matched findings from the statistical analysis of ridership data. According to the survey results, the typical bike share user in the Los Angeles region:

- Speaks English;
- Is between the ages of 25 and 44;
- Is more frequently male than female;
- Earns a household income of at least \$75,000;¹⁶
- Uses the pay-as-you-go/single-ride option;
- Would like to see a station/kiosk closer to destinations as well as a larger service area;
- Has used bike share for at least one year, but is not a regular rider;
- Does not receive an employer-subsidy towards membership;
- Believes the cost of the service to be reasonable and is satisfied with the fare options available;
- Would walk if bike share were not available;
- Has decreased the number of vehicle trips made because of bike share;
- Perceives a positive impact on personal health from riding; and
- Prefers the bike share service over other shared mobility options.

Looking more closely at results differentiated by system revealed a more granular understanding of user experience and insights.

By the Numbers

 **2** MONTHS OF SURVEY AVAILABLE

 **4** BILINGUAL SURVEYORS

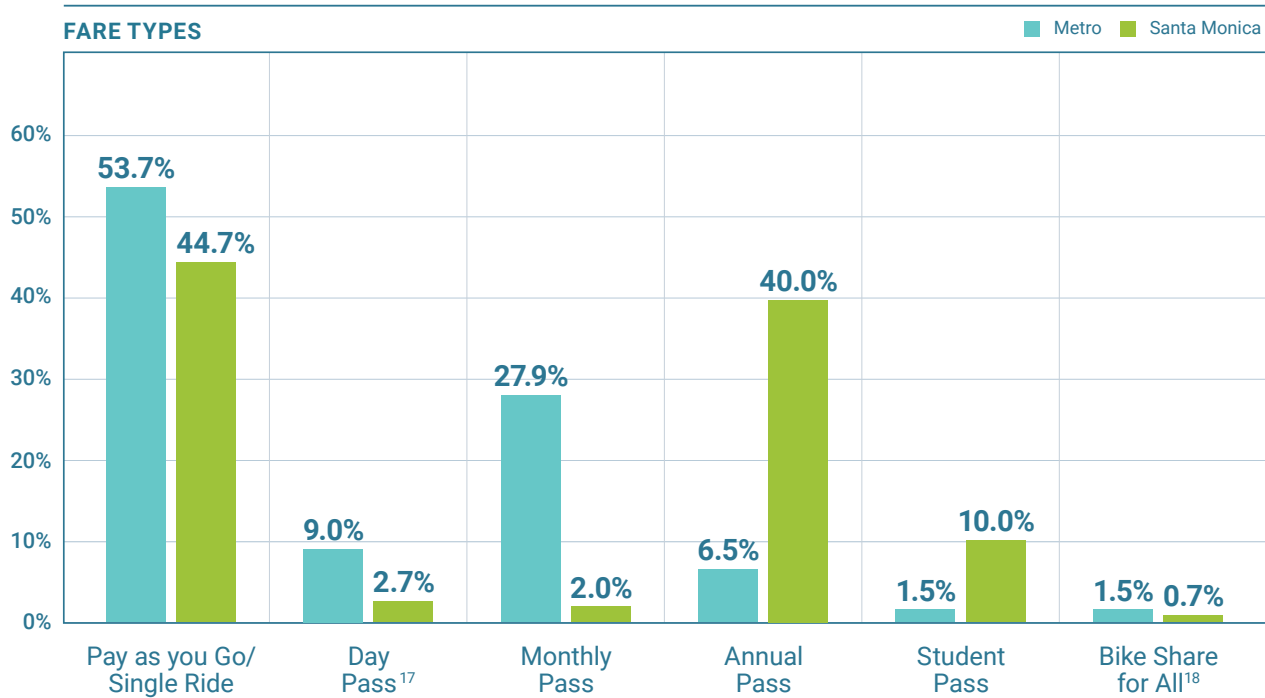
 **8** INTERCEPT SURVEY LOCATIONS

 **351** VALID RESPONSES

201	150
from Metro bike share users		from Santa Monica bike share users

¹⁵ This results in a confidence level of 95 percent and a margin of error of ± 5.2 percent overall.

¹⁶ The low-income limit for the Los Angeles metropolitan area, adjusted for high housing costs, was \$55,440 in 2018. Around one-fourth of survey respondents qualify as low-income, according to this threshold.



FARE AND PAYMENT OPTIONS

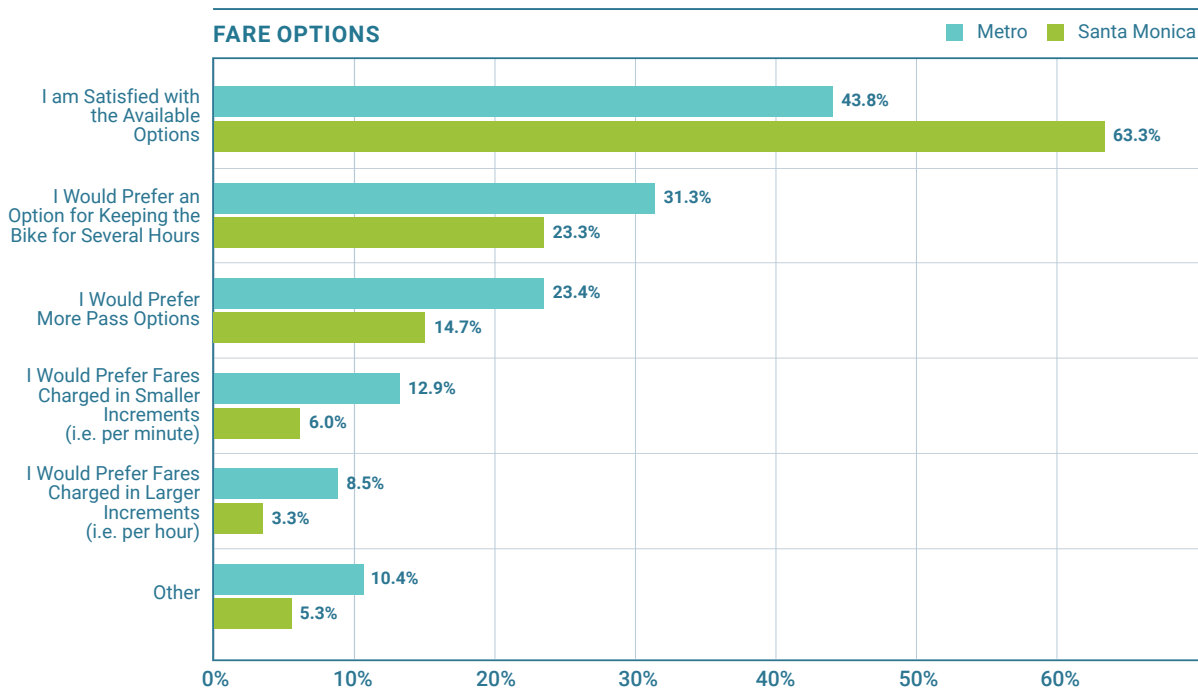
Respondents indicated they most commonly use the pay-as-you-go/single-ride fare type. When becoming members, Santa Monica participants more often use the annual pass, whereas Metro participants prefer the monthly pass.

The majority of respondents found the cost of both programs to be reasonable (67 percent for Metro users; 82 percent of Santa Monica users). Users of both services would prefer an option for keeping the bike longer, while Metro participants expressed a desire for additional fare/payment options.

The majority of respondents found the cost of both programs to be reasonable (67 percent for Metro users; 82 percent of Santa Monica users). Users of both services would prefer an option for keeping the bike longer, while Metro participants expressed a desire for additional fare/payment options.

¹⁷ Breeze does not offer a day pass.

¹⁸ Metro Bike Share does not offer a Bike Share for All pass.



Respondents appreciated student pricing options, particularly among Santa Monica users.

Respondents wanted:



FREE TRANSFERS TO OTHER TRANSIT MODES



MORE ACCESSIBLE DAY PASSES



INTEGRATION WITH TAP STORED VALUE



LOWER PRICES



CLEARER NOTIFICATION OF SUCCESSFUL PARKING (Metro program)

"I'd like to pay with TAP stored value. And have it work like a transfer on bus/train." (Metro rider)

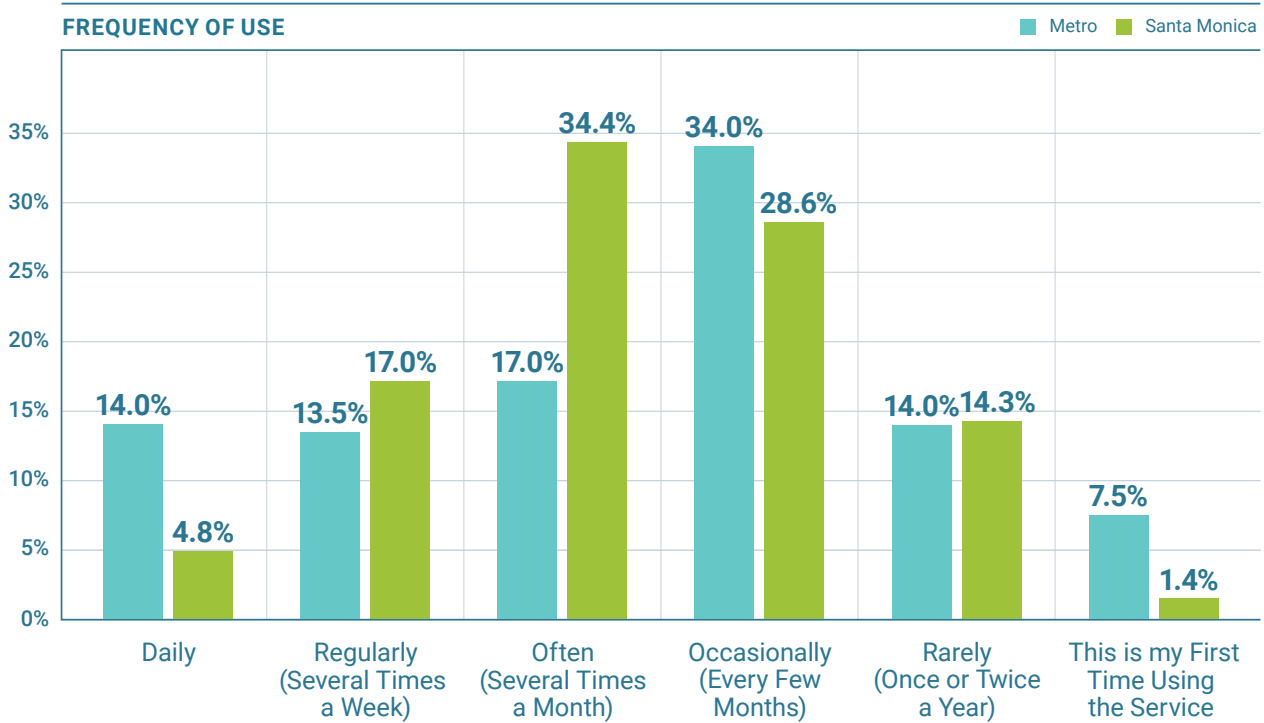
"Cheaper options for leaving bikes out of the dock." (Santa Monica rider)

"Day pass is useful but confusing to get at Metro kiosk" (Metro rider)

"Sometimes, it's difficult to know if you've docked the bike into the station." (Metro rider)

PROGRAM USE, FREQUENCY, AND PURPOSE

Santa Monica participants were more likely to have used the service for at least one year (77%) compared to Metro participants (53%). While relatively few respondents reported riding daily, more Metro riders than Santa Monica riders use the service every day.



The survey asked about a range of reasons for taking a bike share trip. Trips for recreation, exercise, social activity, and tourism provide important physical activity and quality of life benefits. In some cases, those trips also provide transportation to and from destinations (such as tourists that bike from a hotel to the beach rather than drive).

Over
50%
OF METRO SURVEY
RESPONDENTS

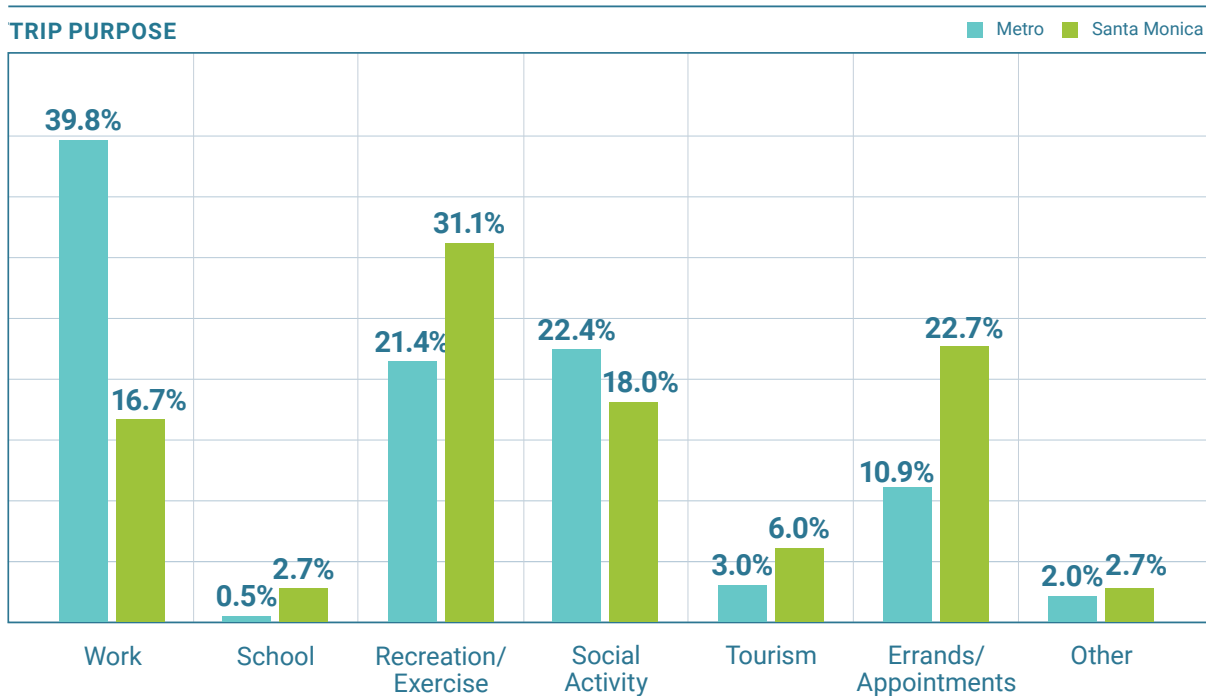
and over
43%
OF SANTA MONICA
SURVEY RESPONDENTS

reported using bike share **primarily for transportation.***



THESE TRIPS SUGGEST THAT BIKE SHARE IS INFLUENCING MODE CHOICE AND EXPANDING TRANSPORTATION ACCESS.

*When trips to/from work, school, and errands or appointments are combined.



CONNECTING TO BIKE SHARE

Walk times to and from the bike share locations were comparable for both systems. Both Metro and Santa Monica participants walk an average of 5.5 minutes to reach the kiosk/station and an average of 5.3 minutes and 4.9 minutes, respectively, to their destinations.

Fifty percent of Metro respondents transfer to a bus, train, or light rail as part of their use of bike share. In Santa Monica 17 percent transfer to transit.

Around 60 percent of Santa Monica and 48 percent of Metro respondents reported checking ahead of time regarding the availability of a bike. The app was more popular than the website for both systems.



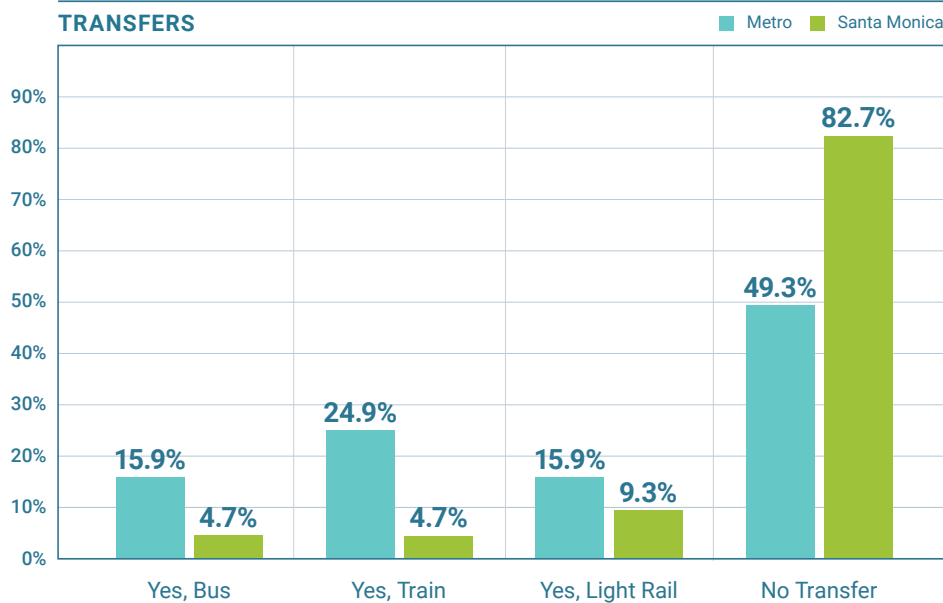
50%
OF METRO SURVEY
RESPONDENTS



and
17%
OF SANTA MONICA
SURVEY RESPONDENTS

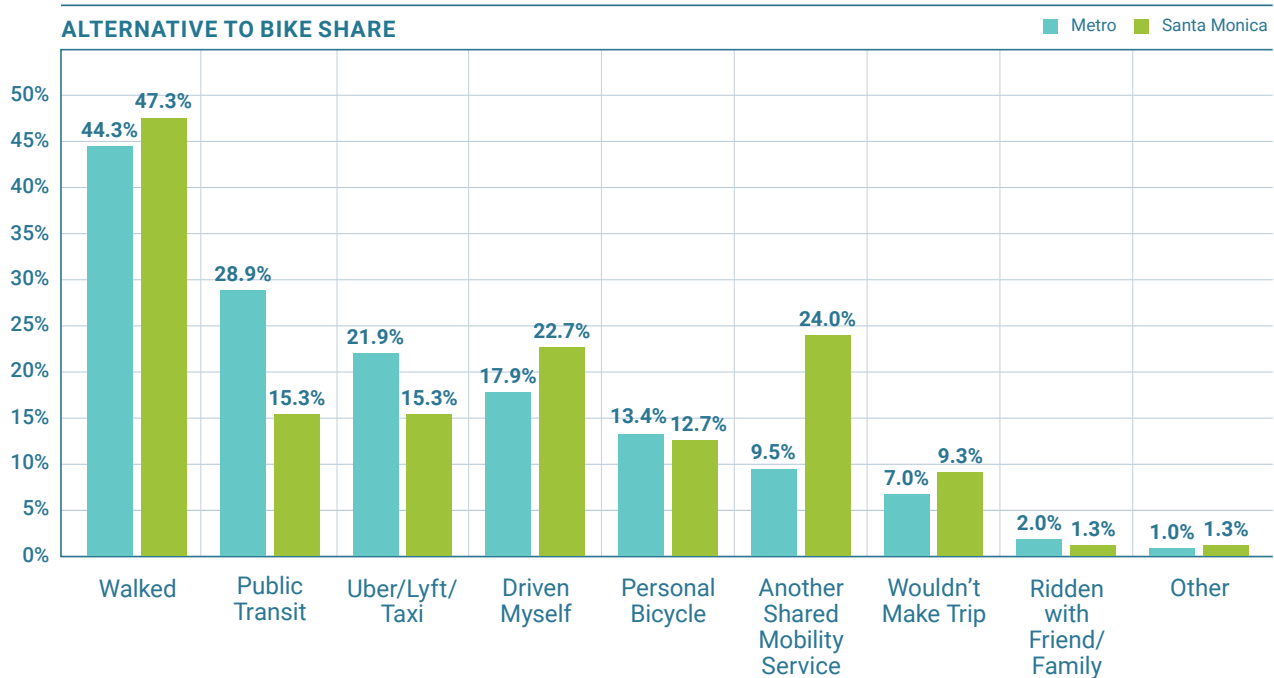


**transfer to a bus, train,
or light rail as part of
their use in bike share.**



ALTERNATIVES TO BIKE SHARE

For both systems, users were most likely to walk if bike share was not available (47.3 percent of Santa Monica participants; 43 percent of Metro participants). Metro respondents were also likely to use public transit or Uber/Lyft/taxi, while Santa Monica users were likely to drive themselves or use another shared mobility service.

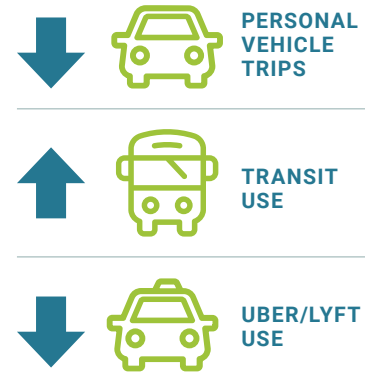


IMPACTS OF THE SERVICE

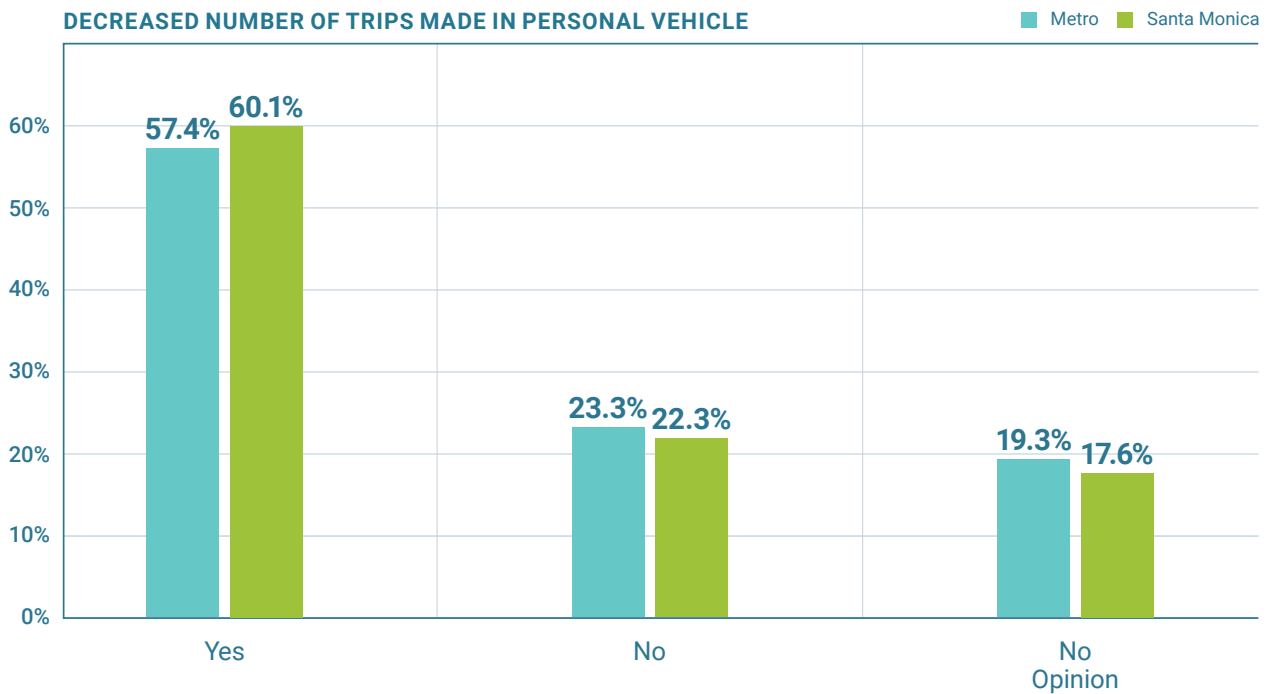
Bike share is influencing mode choice. **Around 60 percent of both Metro and Santa Monica participants indicated that bike share has decreased the number of trips made in their personal vehicles.**

Similarly, approximately two-thirds of the users of both programs felt that bike share has improved their health. **Fifty-seven percent of Metro and 36 percent of Santa Monica respondents said that bike share has increased their use of transit.** Half of the participants reported that bike share has decreased their use of ridehailing services (identified as Lyft and Uber in the survey).

Users of both systems report:

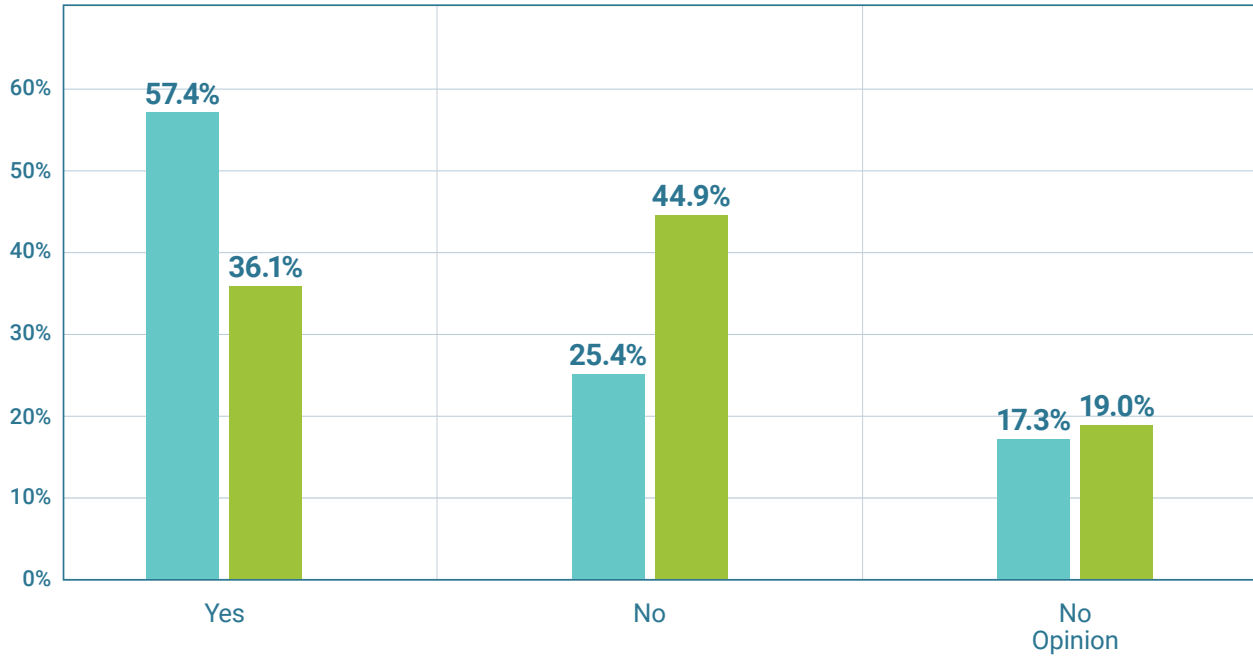


DECREASED NUMBER OF TRIPS MADE IN PERSONAL VEHICLE



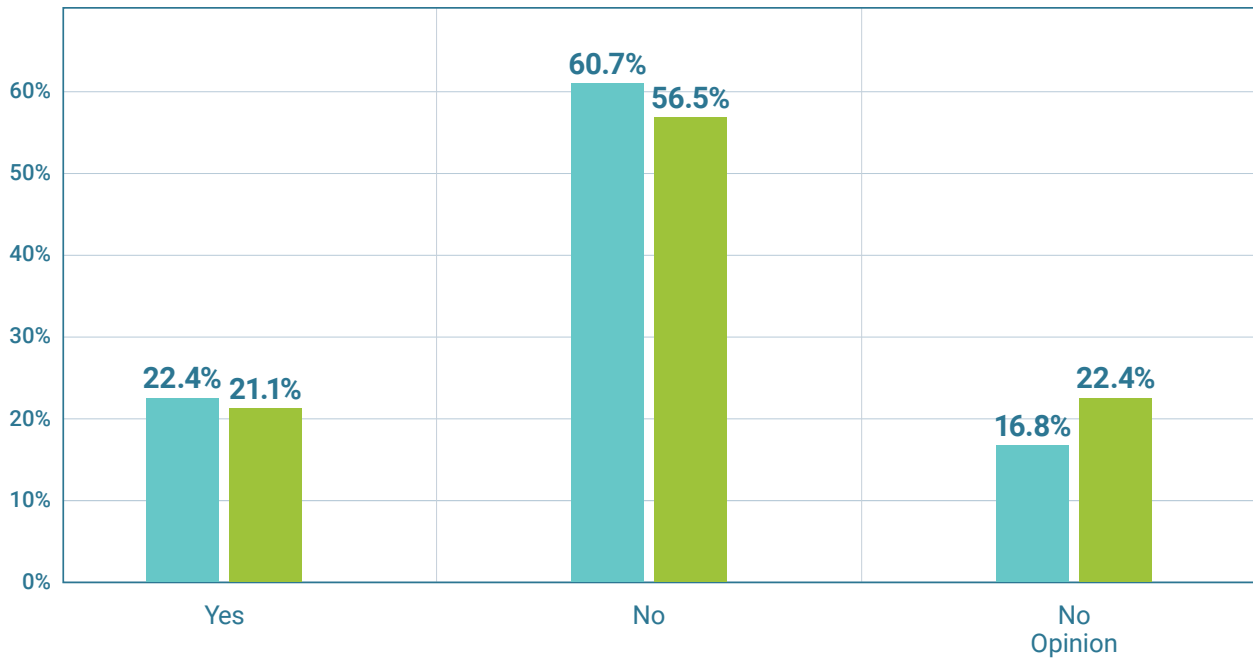
INCREASED USE OF PUBLIC TRANSIT (I.E., BUS, TRAIN, ETC.)

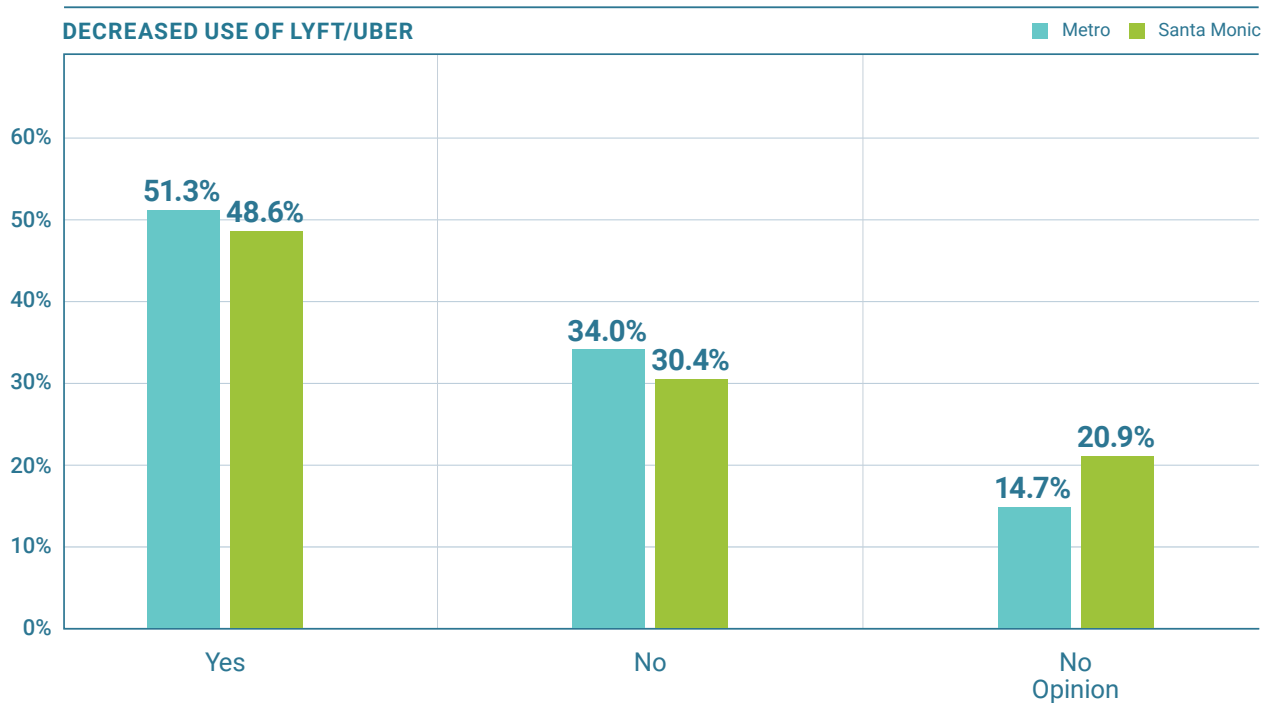
Metro Santa Monica



DECREASED USE OF PUBLIC TRANSIT (I.E., BUS, TRAIN, ETC.)

Metro Santa Monica





SATISFACTION

Overall, bike share users were satisfied with the programs' operations and maintenance. The following shows overall satisfaction and the top three highest rates attributes of each system based on mean rating on a scale of one to four by respondents:

Metro Bike Share:

- 3.63 for overall satisfaction
- 3.70 for customer service (highest rated attribute)
- 3.68 for cleanliness of equipment
- 3.61 for condition of equipment

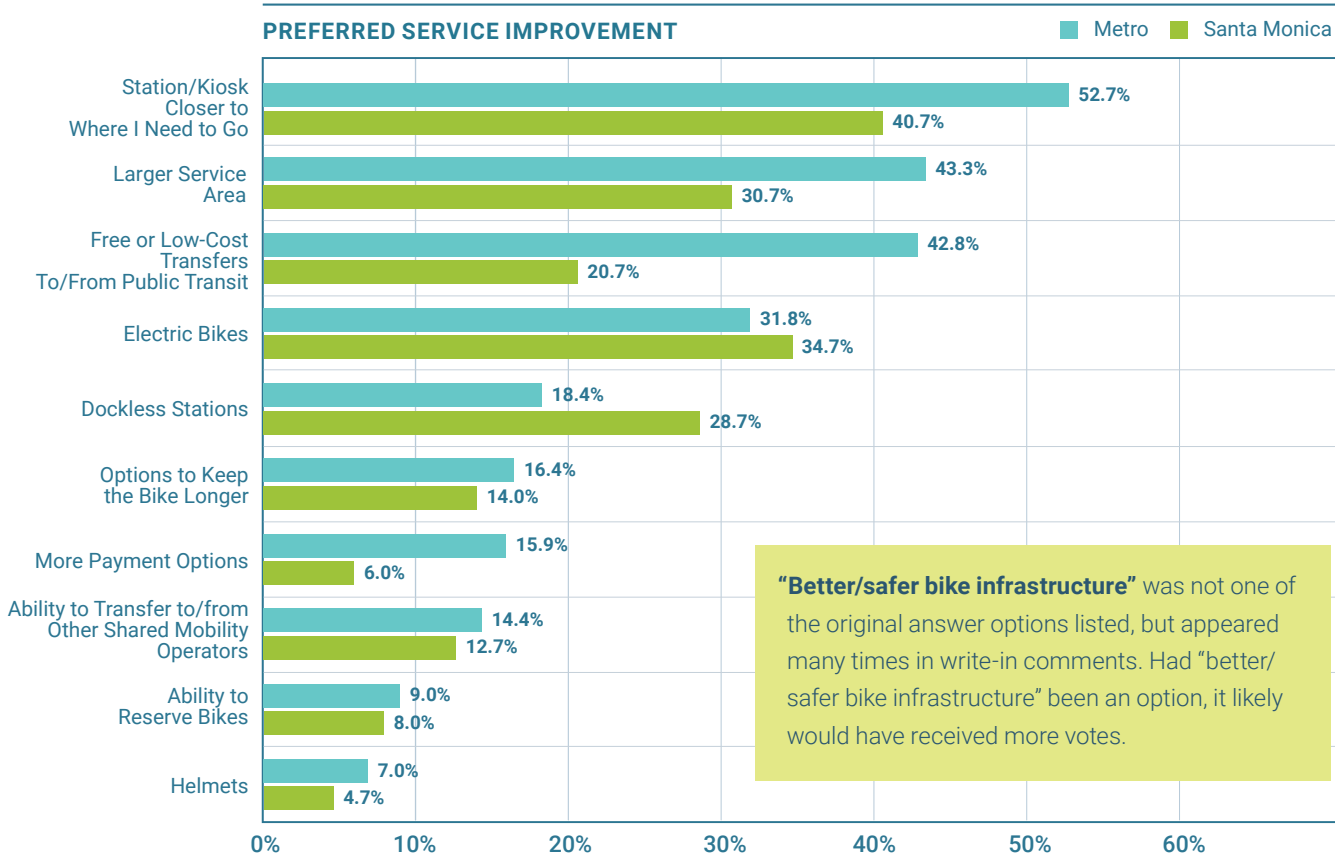
Santa Monica Breeze:

- 2.97 for overall satisfaction
- 3.21 for ease of payment (highest rated attribute)
- 3.07 for ease of registration
- 2.96 for customer service

WAYS TO INCREASE RIDERSHIP

Across both programs, installing stations/kiosks closer to where they need to go and expanding service areas would increase respondents' bike share usage.

- For Metro respondents, the top three preferred service improvements were the proximity of stations/kiosks closer to user destinations, a larger service area, and free or low-cost transfers to/from public transit.
- For Santa Monica respondents, the top three preferred service improvements were the location of stations/kiosks closer to user destinations, electric bikes, and a larger service area.



Respondents who selected “other” specified a desire for:

- Better bikes, particularly in Santa Monica (e.g., lighter, faster to unlock, better maintained, increased legibility and functionality of computers)
- Enhanced TAP card integration (Metro riders)
- Coverage in un/underserved neighborhoods (Boyle Heights, Mid City, Silver Lake, San Fernando Valley)
- Safer streets and infrastructure

“I should be able to use my phone to unlock a bike. Pressing the buttons on the bikes is increasingly frustrating as they are often unresponsive.” (Santa Monica rider)

“No stations in my neighborhood, Boyle Heights.” (Metro rider)

“Safer roads. This one is a top priority. There are too many crazy drivers with no regards to bikers.” (Metro rider)

“More protected bike lanes and places I feel like I won’t be run over by angry drivers.” (Metro rider)

Focus Groups

In focus groups held in both downtown Los Angeles and Santa Monica, a mix of 26 non-riders, Metro users, and Santa Monica users shared insights that echoed findings from the community survey.

“This program totally encourages people to ride a bicycle who wouldn’t normally do so.”
- Joe, Focus Group Participant

As with survey respondents, focus group participants who predominantly use the Metro program expressed a desire for:

- free transfers between bike share and other public transit;
- easier processes for purchasing a day pass and renewing business memberships;
- clearer integration with the TAP card and stored value;
- a faster check-out process of the bikes (e.g., through an app); and
- more flexibility in docking locations,

Santa Monica users, on the other hand, noted that inputting numbers via the built-in keypad and reading the computer screens can be difficult, particularly during the day time.

Safety came up as being both a deterrent to riding (due to dangerous drivers and inadequate bike facilities, and concerns about the night-worthiness

of built-in lights), as well as an impetus for riding: for some, bike share allows users to zip through areas they would otherwise feel unsafe walking in. Others reported they do not bike—and instead opt for other options such as scooters—because the bike share programs do not serve the areas they want to go. With regards to infrastructure concerns, participants voiced a lack of faith in political will to change roadway conditions and expressed frustration about elected leaders denying bike projects even when the community had demonstrated their support.

Participants shared that they have used bike share both in place of and in conjunction with transit, noting for some routes that **riding a bike is faster than a multi-legged bus trip, and that stations at transit stops help circumvent the need to bring a personal bike on the train.** Similarly, some reported that the availability of bikeshare eased concerns about owning, maintaining, and preventing theft of a personal bike, ultimately helping them bike more.

E-bikes are an attractive addition to the bike share fleet. However, attendees wanted to ensure that fleets would be reliable and regularly recharged so that they

“I can’t take the bike share because there is no dock near my work. A lot of places are a “transit deserts.”
-Maylin, Focus Group Participant

would not find the battery depleted only part-way up a hill. Other areas for improvement include station siting to ensure they are more visible, intuitive to find, and placed near existing bike facilities.

With regards to getting more people to try bike share, participants recommended including celebrities in marketing campaigns.

“LeBron James uses bike share when he comes down here.”

-Michael, Focus Group Participant





05 RECOMMENDATIONS FOR THE FUTURE

Key Takeaways

More than a decade ago, bike share made its mark as the original shared mobility system to come to the streets of U.S. cities. **Over the last four years, in Los Angeles County, bike share has shown its staying power and ability to influence the local transportation system.** Within that time, the rapid emergence and evolution of new transportation technologies and business models dramatically changed the landscape in which it operates.

This study reviewed the performance of two bike share systems in Los Angeles County. Analyzing the data of both systems clearly shows the link between bike share and first and last mile access to transit, access to jobs (by way of employment density), and transportation choice (specifically, an alternative to ridehailing and personal vehicles), in addition to simply getting more people on bikes and expanding public demand for active transportation infrastructure.

Users are happy with what these systems offer and for the most part simply want more of it – more availability of bikes, more flexibility for trip times, more e-bikes, more geographic reach, and more integration with transit.

The study has also shown a distinction between regional shared mobility operations and local operations. The two serve different needs and different contexts - and there is room for both. Metro Bike Share plays a critical role in leveraging the Metro

transit system, providing a reliable commuter option, and serving high density areas of the Los Angeles metro region. Breeze – along with the Bike Share Connect network – is an essential part of filling mobility gaps at the local level and supporting a range of trip types (including a high volume of trips for errands and appointments). Metro Bike Share is operated from a regional vantage point where areas with less trips and revenue generation can be balanced by areas of high demand. Metro is a large regional agency with the capacity to invest in bike share as an extension of transit and substantial staff resources for devoting time and expertise to ongoing operations and monitoring. The City of Santa Monica, and other bike share communities of similar size, have more limited resources by nature but also have the benefit of more nimbleness. This factor is important for the ongoing success of bike share at the local level and in the context of a fast-changing environment.

Local control in decision-making for bike share planning, operations, and financing are important to remaining nimble.

In the Los Angeles County context, smaller communities are choosing between:

- Joining the Metro Bike Share system (like Port of LA)
- Self-funding a system (like City of Santa Monica and West Hollywood), or
- Inviting a private mobility provider (such as JUMP or Lime-E).



Many factors play into this decision. Even if buying into the station-based regional bike share system offers long-term benefits, some communities may not have the resources to do so, or may see working with a private provider as the more feasible option despite possible trade-offs. Additionally, it is unknown what effect the introduction of 30,000 scooters in the City of Los Angeles may have Metro Bike Share. This could include impacts to ridership, as well as the ability to attract a major sponsor. And there are other unknowns related to private mobility providers. The permitted scooter and dockless bike systems have very different cost structures and service/equipment requirements than public systems, and reports show that permitted systems are not yet recovering costs. This complexity necessitates broader consideration of service quality, equity, and public subsidy needs for shared mobility.

Given these takeaways, a variety of actions will be needed to achieve the goal of optimizing bike share systems and advancing mobility options for Los Angeles County in the future. The following recommendations are presented as:

- actions to continue that are working well now,
- short-term actions to develop and implement in the near future, and
- longer-term considerations to keep in mind into the future.

Some actions are specific to Metro Bike Share only, as a regional system, and are noted as such.



What to Continue

1

PRIORITIZE THE CUSTOMER EXPERIENCE

To-date, operator contracts have required a focus on consistency in customer service and system operations and maintenance. The existing level of customer satisfaction has established a positive reputation and engendered loyalty among users. This reputation and consistency in service and product is an important differentiator in the face of new privately owned and operated micro-mobility programs whose track records are still limited in tenure, and where maintenance needs and replacement cycles of vehicles are still undetermined.

2

REMAIN NIMBLE, LEARN FROM OTHERS

Both bike share systems have taken steps to be nimble, while also remaining stable, in the face of industry disruption. Examples of this include the Santa Monica Breeze's Bike Share Connect program offering regional operability, as well as Metro Bike Share's pilots of smartbikes and e-bikes intermingled within a station-based system. Additionally, scooter share and dockless bike share programs showed customer demand for new pricing structures. This led to Metro Bike Share dramatically reducing prices, which spurred new usage. Continuing to learn from new tactics in the industry can ultimately benefit existing systems.

3

INTEGRATE WITH TRANSIT

Payment integration, and shifts towards mobility-as-a-service (MaaS) models, must continue to be a priority. Metro's role as a bike share system owner has enabled the development of one of the first successful payment integration platforms for shared mobility and transit in the country (via the TAP wallet). This is critical for remaining relevant in the changing mobility landscape. It improves access to bike share for low-income populations, while also demonstrating the role that government can play in advancing a platform that is highly valued by the private sector and by customers but to-date has been difficult to establish.

FOR METRO BIKE SHARE

Lead with Transit

As a transit provider and a bike share program owner and operations funder, Metro has solidified bike share's role as "transit by bike" and as a feeder mode for accessing transit in LA. Metro Bike Share should continue to be positioned as an extension of transit and be funded, priced, and evaluated as an integral part of the system:

- Matching fare options to transit passes.
- Mirroring transfer fees with those applied to other transit modes in the system.
- Evaluating the system using the same standards as bus and rail transit instead of cost-per-trip basis.
- Consider expansions of bike share around transit hubs

Invest in a Bigger Footprint and Expand Contiguously

The Metro Bike Share system was likely rolled out far too small for a city the size of Los Angeles. After the initial downtown pilot, expansions of Metro Bike Share underperformed due to isolation from high density areas and separation from the larger bike share network. In May 2018, the Metro Board shifted to focus on contiguous geographic expansion. Beyond system performance, expansion will also be critical for serving equity goals and for expanding access to the full customer base of the TAP card, as integration with that program continues to develop.





What to do Next



1 INVEST IN EQUITABLE ACCESS

Both bike share systems should expand access for low-income community members while also taking steps to increase usage among equity-based passholders. This will not only serve transportation equity goals but may also bolster bike share performance and usage data. Metro Bike Share's users' demographics are not representative of the demographics of the LA community, which suggests there is an opportunity to capture a broader market of users. Breeze's Bike Share for All passes make up 20% of all Breeze members, but only 3% of member trips (as of December 2018). This suggests an opportunity to encourage more use among targeted members. Additionally, prices for using permitted e-bike and scooter shared mobility services have fluctuated significantly in the last year (in some cases more than doubling). This underscores the importance of offering consistent and affordable prices through public bike share systems.

Case Study in Equity Biketown for All

With Portland, OR's bike share program Biketown, **discounted passholders (known as Biketown for All) make up 7% of Portland's members but have taken 20% of trips.** Steps taken by Biketown to encourage this include:

- removed all fees as these users are typically more sensitive to unexpected costs (out of service area, out of hub, per minute fees over the included minutes)
- still provide the \$1 credit for returning to stations (helps with re-balancing and operating costs)
- cash payment (65% of members use this option)
- hosted 38 workshops led by the Community Cycling Center through other community organizations (e.g. Street Roots, Sisters of the Road).

2

IDENTIFY NEW USER REVENUE AND SPONSOR OPPORTUNITIES

Both systems may have opportunities to target gaps in user revenues. Breeze’s user revenues are closely tied to Pay-as-you-go usage trends. Marketing to casual users (particularly repeat casual users) to encourage purchasing a membership, may create added stability in revenues. For Metro Bike Share, data shows that efforts to recruit new members through promotions are successful but those members are often not renewing. Develop strategies to retain monthly members past the first month of joining. This can include marketing to large employers to establish employee memberships that are renewed in bulk. Additionally, Metro Bike Share should continue the effort to identify a presenting or title sponsor of the system. Breeze has benefited from a successful sponsorship by Hulu since the program’s launch, which has provided an important financial backstop for the system during the current fast-changing context. As Metro Bike Share expands, sponsors will have increased opportunities for brand exposure.

3

INCENTIVIZE OPERATORS

The current bike share contracts in Santa Monica and Los Angeles are based on number of bicycles in service per year. While this is a simple approach that is standard practice across public bike share systems and is easy to oversee, it also lacks the incentives for operators to maximize usage and efficiency. We recommend that, at contract renewal, the contracts be modified to reward operators for increased usage/ revenue and cost efficiency.

4

UPDATE SYSTEM EQUIPMENT

Both systems need to evaluate the life cycle of the equipment and establish a replacement strategy. This will be important for maintaining the positive reputations these programs have for quality maintenance and customer service.

5

MAKE STREETS SAFER, BUILD MORE BIKE INFRASTRUCTURE

Identify high demand or high priority station locations where bike infrastructure is lacking and prioritize those for improvements. While some regional programs lack direct control over right-of-way and roadway design, community members would like to see emboldened political leadership on bicycle safety, educational efforts about safe bicycling, and the need for bike facilities.

6

INTEGRATE WITH MOBILITY HUBS

In addition to serving as an extension of transit service, bike share systems should be considered for dedicated space in all mobility hub planning. Mobility hub design should assess the need for bike share stations or smart bike hubs, as well as the use of flexible secure bike parking structures where demand is sufficient to include universal chargers for electric bikes and scooters. This will maximize the usefulness and the systems and micro-mobility users in general, while keeping sidewalks clear and free of parked vehicles.

FOR METRO BIKE SHARE**Open Communication between Operators and Local Government**

Close coordination between a city/municipal agency and the contracted operator is a unique relationship and an important strength of the existing bike share program. Metro Bike Share should improve and expand coordination between each city/municipal agency and the contracted operator. This could include engaging local agencies in a discussion around what aspects of decision-making they would like to lead or be more involved in and how that can work as a collaborative and also timely process. Clarifying how this occurs within the parameters of Metro's contract with the operator may also be needed. This move will not only improve coordination but also enable customized solutions, new innovations, and strategic decision-making, particularly regarding pilots and expansions.





Looking Ahead



COORDINATE REGIONALLY TO MANAGE MOBILITY SERVICES

New shared micro-mobility modes and business models present both an opportunity and challenge for public agencies. Opportunities include better mobility services for the general public at lower costs or no cost to public agencies. Challenges include uncertainty around the long-term commitment of the operating businesses, fluctuating usage fees, and a lack of public oversight and management for public safety and welfare.

Actively managing these services through contracting or permitting processes with associated rules/regulations (used by both Santa Monica and City of Los Angeles) as well as through right-of-way management (such as parking zones) is critical. This will stabilize the context within which Metro Bike Share and Breeze operate, while also supporting an overall increase in demand for and use of shared micro-mobility services.

Contracts and permits issued to scooter and bike share operators should include specific requirements on maintenance practices, safety education, data sharing, customer service, and related items, with enough fees to cover the administration and oversight of these items by the public agency, and clear, graduated penalties/fines (including suspension and termination) where appropriate to enforce the contract terms. Across the region, finding ways to make the management of these services more effective and relatively consistent across jurisdictions will create a more seamless user experience and also may offer new efficiencies for local agencies. Local jurisdictions should have access to resources about strategies and lessons learned and to identify areas where there is overlap. A regional agency such as SCAG may serve as a resource and, based on needs identified by the participating jurisdictions, lead the development of guidance for successfully managing mobility services.

2

**EXPLORE NEW WAYS TO
INTEGRATE REGIONALLY**

Given the region's multiple bike share systems and operators, the rapid growth in technology and companies offering these services, and the desire to provide safe and effective micro-mobility for the public, we recommend that SCAG regularly analyzes the following along with appropriate recommendations for all systems in Los Angeles County:

- Performance of the overall municipal owned as well as privately owned bike share and micro-mobility systems
- Financial performance and stability
- Service to low income residents
- Summary of adjustments to permitting requirements, fees and penalties and bike share contracts
- Expansion recommendations based on a reliable micro-mobility demand model
- Best practices for oversight of operator compliance with contract requirements and/or with permitting requirements
- Greater coordination between systems for user convenience
- Review of equipment quality and maintenance, safety education, and customer service
- Recommendations to protect subsidized systems where appropriate
- Recommendations on how to better integrate micro-mobility into Metro transit services and use of mobility hubs

Metro and local bike share systems operate parallel to and in competition with each other including in overlapping service areas. This poses a potential market issue for competition when synergy could encourage greater use of the system. Recognizing this complexity and the unique value that both systems offer, Metro should explore more ways to partner with interested jurisdictions within a contiguous expansion area. Additionally, opportunities to capture cost efficiencies across operators should be considered if areas of mutual benefit can be found. This could include collaborating on the work of servicing or rebalancing bikes in overlapping service areas or creating combined marketing campaigns that promote bike share use across multiple types of systems. This type of shared investment of funding, staff time, or resources from operators would require a formal agreement.

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