Shared Mobility Accessibility Study

JUNE 2020

City of Oakland | Department of Transportation

Acknowledgments

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Study Purpose

THE CITY OF OAKLAND'S COMMITMENT

The City of Oakland has a long-standing history of working with the disability community to understand and address barriers that pose challenges to equal access to services and facilities. The Mayor's Commission on Persons with Disabilities (MCPD) serves as the City of Oakland's primary advisory body on Americans with Disabilities Act (ADA) compliance, disability access, and the advancement of disability rights. The Commission operates in an advisory, review, and advocacy capacity to ensure City of Oakland policies, programs, and actions provide consideration and accommodation for optimizing disability access.

As a branch of the City of Oakland, the Oakland Department of Transportation (OakDOT) is committed to serving the diverse transportation needs of residents from all walks of life, and relies on the MCPD for policy, program, and project review to identify ways travelers with disabilities can be better served by transportation programs and infrastructure within the City. This includes advising on the needs of the 12% of Oakland residents that identify as having one or more disabilities, as well as the 23% of residents who are older adults (39% of whom have a disability).[1] OakDOT also recognizes that nearly every person will experience a disability at some point in their life, whether temporary due to surgery or injury or a more permanent transition into a new phase of life.

1 *Oakland Disability Access Policy,* [https://cao-94612.s3.amazonaws.com/](https://cao-94612.s3.amazonaws.com/documents/City-of-Oakland-Administrative-Policy-Regarding-Accessibility-under-Americans-with-Disabilities-Act-ADA.pdf)
documents/City-of-Oakland-Administrative-Policy-Regarding-Accessibility-
under-Americans-with-Disabilities-Act-ADA.pdf

PROJECT PURPOSE

Recognizing the importance of providing an inclusive and equitable transportation system, OakDOT proudly offered the first Adaptive Bike Share program in the Bay Area for people with disabilities[2]. This vital program came together through partnership between OakDOT's ADA Programs Division, the MCPD, the Metropolitan Transportation Commission (MTC), Lyft, and Bay Area Outreach and Recreation Program (BORP). In 2019, OakDOT was also the first in the country to require that permitted scooter share providers develop an accessible scooter share service within the first year of operations.[3] In January 2020, OakDOT and Lime announced the first iteration of accessible scooter share with design modifications to the scooters themselves and new service options, such as door-to-door delivery of a rented scooter, longer duration of rental, and new pricing options.[4]

As these pioneering efforts unfold, OakDOT commissioned a study to evaluate the Adaptive Bike Share Pilot Program and the accessibility of other shared mobility services in Oakland and to identify new ways of expanding access to these services for persons with disabilities. The Oakland Shared Mobility Accessibility Study, summarized in this report, assesses barriers that travelers with disabilities encounter while using four primary shared mobility models that operate in the City of Oakland: bike share, scooter share, ridehailing, and carshare. At the time of this report, this included the following programs: Bay Wheels (operated by Lyft), OakDOT's Adaptive Bike Share Pilot Program, Bird, Lime, Lyft (scooter share, and ridehailing), Uber, Getaround, Turo, Gig, and Zipcar.

2 [https://sf.streetsblog.org/2019/05/13/](https://sf.streetsblog.org/2019/05/13/oakland-adds-bike-share-for-people-with-disabilities/)
oakland-adds-bike-share-for-people-with-disabilities/

3 [https://library.municode.com/ca/oakland/ordinances/](https://library.municode.com/ca/oakland/ordinances/code_of_ordinances?nodeId=917183)
code_of_ordinances?nodeId=917183

4 *The COVID-19 pandemic and shelter in place orders from the State and County interrupted the City of Oakland roll out of more adaptive scooters. https://www.oaklandca.gov/news/2020/oakdot-and-lime-launch-first-ever-e-scooter-pilot-program-designed-for-riders-with-disabilities*

The Shared Mobility Accessibility Study draws from both technical analysis and the lived experience of travelers with disabilities to better understand how Oakland's various shared mobility systems are meeting, exceeding, or underserving the disability community's diversity of needs. This project culminated in recommendations to:

1. Reduce Impacts to Persons with Disabilities Traveling by Modes Other than Shared Mobility

2. Modify Vehicle, Device, and Station Design

3. Provide Alternative Service Models

4. Expand User Information and Transaction Opportunities

5. Leverage New Partnerships, Planning, and Funding

UNDERSTANDING ACCESS TO SHARED MOBILITY

The accessibility of a complete trip can be defined in terms of an individual's ability to plan for, and execute, a trip from origin to destination without gaps in the travel chain. The links of this chain include:

- trip planning,
- travel to station or dockless vehicle location,
- station/stop use,
- boarding vehicles or devices,
- using vehicles/devices,
- leaving vehicles/devices,
- using the stop or transferring, and
- travel to destination after leaving the station/stop.

If one link is not accessible, then access to a subsequent link is unattainable and the trip cannot be completed. The inability to get to and from destinations is a persistent problem for travelers with disabilities. Accomplishing the complete trip is often handled by professional staff and agencies, but shared mobility presents new opportunities to allow users with disabilities to travel more independently. This can be done by providing the right tools, such as accessible options to enable individuals to develop the skills needed to prepare for travel, travel from their locations easily, and use shared mobility products, devices, services, and enabling technologies.

However, not all mobility service providers may offer accessible options, or these options may not provide an equivalent level of service (e.g., wait and journey times). Understanding disability access to shared mobility services includes recognizing that the disability community has a diverse array of transportation needs. Oakland residents with disabilities navigate the City with mobility challenges, limited vision, limited hearing, cognitive differences, chemical sensitivities, and varying combinations of these and other traits. Beyond the need for a complete trip, the need for a complete round trip is equally critical. Many shared mobility services are oriented toward one-way, point to point trips. While this can provide more choice and greater control in each leg of travel (e.g. taking the bus to the library and riding a bike share bike home), it also adds uncertainty and additional hurdles for persons with disability who have less flexibility in finding and choosing an accessible mode.

The Complete Trip: If one link in the trip is not accessible, the entire trip is not accessible.

| 1. Trip planning | 2. Traveling to station/crossing intersections | 3. Using station/stop | 4. Boarding/riding vehicles | 5. Using vehicles | 6. Leaving vehicles | 7. Transferring between vehicles | 8. Completing travel to destination |

Source: U.S. Department of Transportation

The City of Oakland Department of Transportation

? WHAT IS SHARED MOBILITY?

Shared Mobility is a growing category of transportation services that offer travelers the ability to rent rides using shared vehicles or small, lightweight personal devices, referred to as micromobility. Shared mobility allows riders more flexibility and convenience while trip planning and reduces reliance on personal vehicle use.

Bike Share

Bike share is the shared use of a fleet of bicycles (manual or e-bikes) which provides paying users with on-demand access to bicycles at a variety of pick-up and drop-off locations for one-way (point-to-point) or roundtrip travel. Bay Wheels (formerly Ford GoBike) is a regional program that serves Oakland.

Scooter Share

Scooter share is the shared use of a fleet of scooters which allows paying individuals access to scooters on-demand for one-way trips. To-date, in the U.S., scooter sharing programs offer electric scooters, are owned and managed by companies operating in multiple markets, and are dockless (or free-floating). Several scooter share programs are permitted in Oakland, including Bird, Lime, Gruv, and Lyft.

Ridehailing

Ridehailing is any service that provides prearranged and on-demand transportation services for compensation in which drivers and passengers connect via digital applications. Uber and Lyft are the most well-known ride hailing services, and are sometimes referred to as transportation network companies (TNCs). Both operate in Oakland, including the Lyft Access and UberWAV programs

Carshare

Carshare is any service that offers members access to vehicles by joining an organization that provides and maintains a fleet of cars and/or light trucks and/or mopeds. Members who join a car sharing organization typically pay a fee each time they use a vehicle. Several car share programs operate in Oakland, including Getaround and Turo, which are peer-to-peer roundtrip carsharing programs, Gig, which is a hybrid-electric fleet-based program that allows one-way point-to-point car rentals, and Zipcar, which is a fleet-based program for round trip rentals to and from designated parking spots.

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Study Process

PROJECT TIMELINE

The Shared Mobility Accessibility Study kicked off in early summer 2019 and concluded, with this report, in summer 2020. Major project milestones included:

- **June to July 2019:** Data collection and case study research
- **July to October:** Development, circulation, and analysis of the Share Mobility Accessibility Survey
- **August to September:** Assessment of ADA access conditions at and around bike share stations in Oakland
- **October to December:** Accessibility audit of shared mobility digital platforms and community member focus groups
- **November to January:** Development of recommendations and next steps
- **January 2020:** Presentation to Mayors Commission on Persons with Disabilities
- **February to June:** Draft and final report

COMMUNITY INPUT

The project team sought direct input and guidance from community members with disabilities and disability rights advocates. These efforts included meetings with City-appointed task forces and commissions, a broadly promoted Shared Mobility Accessibility Survey, and two focus groups.

The survey covered each of the four types of shared mobility services in Oakland and asked questions related to the services riders with disabilities currently access, the barriers that limit their access, the perceptions and experiences of users of the Adaptive Bike Share Pilot, and ideas for improvement. Available both online and in hard copy format, the survey was promoted through the OakDOT and partner organizations and continues to be available for community member input at this link. This study reflects the responses of 70 participants between August 2019 and February 2020.

In October 2019, the Community Transportation Association of America (CTAA) conducted two focus groups with Oakland community members who have disabilities. Each group followed the same structure including an overview of the study process and Oakland's current shared mobility services. The group discussed each shared mobility mode individually, using a preset series of questions about participants' experiences and perceptions using the service. Groups were encouraged to share ideas and insights into how the accessibility of each service might be improved to better serve individuals with disabilities in Oakland.

TECHNICAL ASSESSMENT

Technical assessment of shared mobility services in Oakland was multi-faceted and varied based on the mode and available information. It included:

- A Bike Share Station Assessment through field visits and Google Earth imagery analysis to determine where ADA access barriers exist at and around Bay Wheels Bike Share stations.

- An analysis of scooter share activity in relation to bike share station areas to identify potential sites to co-locate scooter parking areas.

- A Web Accessibility Analysis of all shared mobility provider apps operating in Oakland to determine what percentage of web elements pass WCAG disability access standards and what common issues contribute to low accessibility.

- Research of case studies from other cities in the U.S., as well as the existing policy context and available data for shared mobility in Oakland.

- A limited round of interviews with service providers and partners including Community Resources for Independent Living (CRIL), Bay Area Outreach & Recreation Program (BORP), BART's Mobility-on-Demand Program, and Uber and Lyft.

Accessibility of Shared Mobility

COMMON POLICY CONSIDERATIONS

While the Americans with Disabilities Act requires the provision of accessible transportation for people with disabilities, barriers impeding the accessibility of transportation for people with disabilities continue to exist. While many of these challenges manifest themselves as physical barriers, their fundamental cause and potential solutions are rooted in the policies guiding the transportation industry. Some of the barriers that make transportation inaccessible for people with disabilities are the high costs of use, physical inaccessibility of transportation systems, the accessibility of the areas surrounding transportation routes and difficulty gaining and understanding crucial transportation-related information. While these challenges present themselves in different segments of the transportation system, they can all be addressed through policy-driven solutions. Through the policy review, the following issues were identified:

PHOTO: OAKDOT LET'S BIKE OAKLAND! PLAN

Accessible Services

Overcoming barriers to shared mobility services for people with visual, auditory, cognitive, mobility, and other disabilities is critical. Shared mobility can present challenges when passengers with limited mobility do not have accessible services or equivalent accessible alternatives. In response to surcharges and regulations, a number of services have added accessible services. For example, in a number of cities, Uber has implemented UberWAV, allowing passengers with disabilities to request wheelchair accessible vehicles, and UberASSIST offers regular vehicles with specialized driver training. Other shared mobility operators offer similar programs. However, the lack of service availability in all markets or longer wait times for accessible vehicles can present equity challenges. In addition to Transportation Network Companies (TNCs), bikesharing and scooter sharing can affect people with disabilities in a few different ways. The availability of adaptive devices, such as tricycles, hand-pedaled cycles, recumbent cycles and others, have the opportunity to enhance access for individuals with disabilities who otherwise rely on cars, transit, or paratransit for most of their transportation needs.[1] Additionally, some riders with disabilities may find standing or balancing on scooters and bicycles difficult. Wider standing platforms, larger tires, more wheels, and seating options (with back and arm support) can help expand scooters to more users. Mobility service providers can also enhance accessibility of shared micromobility services by providing storage capability for small items and assistive devices, such as canes, crutches, walkers, and folding wheelchairs. Public agencies may be able to expand access for people with disabilities by requiring a percentage of a fleet includes adaptive devices and establishing incentives for the addition of adaptive devices into micromobility fleets.

EXAMPLE IN PRACTICE

In Seattle, SDOT is using permit fees to partner with operators to increase the availability of adaptive bicycles. Additionally, operators that deploy adaptive bicycles as part of their fleets could be eligible for up to an additional 1,000 micromobility device permits.

1   Transportation 4 America, 2019

PHOTO: OAKDOT LET'S BIKE OAKLAND! PLAN

Curb Space Management

Shared mobility can present challenges for people with disabilities when shared modes (typically bikes and scooters) block accessible paths of travel (e.g., ramps or curbs)[2]. Prudent curb space management policy (e.g., designated parking areas, lock-to requirements) coupled with education, outreach, and proactive enforcement is necessary to protect ADA access.

EXAMPLE IN PRACTICE

Santa Monica requires that devices parked improperly must be relocated within one hour after receiving notice of the violation between 7AM and 10PM daily. Other cities offer a two-hour window to correct the problem, generally between 6AM and 6PM during weekdays with a larger timeframe to correct violations during the evenings and weekends. More public awareness is needed to prevent users from leaving equipment that could pose challenges to people with disabilities.

2   Shaheen and Cohen, 2019

The City of Oakland Department of Transportation

Service Equivalency

People with disabilities should have equivalent service. This includes equal geographic coverage, affordable mobility options, equivalent travel modes, comparable hours and frequency of service, and similar wait times. For example, cities may require that shared mobility operators provide service coverage across an entire jurisdiction. In addition, public agencies may collect a fee to fund equivalent mobility services (e.g., paratransit or accessible taxi service) for people with disabilities.

EXAMPLE IN PRACTICE

In Seattle, the city required free-floating carsharing operators to serve the entire city within two years of initial launch.

EXAMPLE IN PRACTICE

In California, the legislature passed a law (SB1376) that requires that the California Public Utilities Commission (CPUC) administer a TNC accessibility program for persons with disabilities, including wheelchair users who need a wheelchair accessible vehicle (WAV). CPUC has established a TNC Access for All Fund requiring TNCs to pay into on a quarterly basis, a minimum, $0.10 for each TNC trip completed using the TNC's online-enabled application or platform that originates in one of the geographic areas selected by the CPUC for inclusion in the program. The CPUC has the authority to adjust the fee in each geographic area to different levels based on the cost of providing adequate WAV service within the area. TNCs may be exempted from the payment of the fee in an area if the TNC meets the level of WAV service designated by the CPUC.

Accessible Technology

In 2016, the Department of Justice made changes to the Americans With Disabilities Act requiring all mobile apps to be available to people with disabilities. The federal government has two different standards for accessibility, namely ADA Section 508, and WCAG 2.0 guidelines[3]. If an app uses multimedia, public agencies will need to consider how people with disabilities properly view and hear needed elements. Similarly, if an app relies too much on red and green colors, to convey information, other ways may be more appropriate for conveying information. Additionally, people with specific disabilities might not have full capability to understand error messages in an app. Accessibility features such as text-to-speech, haptic and gesture feedback can help overcome many of these challenges. Haptics refers to use of touch user interfaces to convey and reinforce information.

EXAMPLE IN PRACTICE

As part of the USDOT's MOD Sandbox program, Valley Metro, a public transportation agency in Maricopa County, Arizona has developed the Pass2Go app, an accessible mobile ticketing and multimodal trip planning interface that links to app-based transportation options. Valley Metro has consulted with digital accessibility specialists and stakeholder organizations to ensure that Pass2Go is accessible by people with disabilities.

3   For more information, please see: *https://www.ada.gov/regs2016/sanprm.html*

KEY CASE STUDIES

Adaptive BIKETOWN (Portland, OR)

In 2016, PBOT received two requests for physical accommodation with the launch of its BIKETOWN bike share system. Out of those requests PBOT started to conduct outreach, beginning with Wheel Connect (an event sponsored by Oregon Spinal Cord Injury Connection), the annual Adaptive Bicycle Clinic, and INCIGHT's Summer HandCycling Series, and interviewed a number of people with disabilities about their interest in an adaptive bikesharing service.

Many of the people interviewed by PBOT expressed a preference for a staffed service; storage for personal mobility devices; and a desire to ride on multi-use paths or trails. PBOT partnered with existing bike rental businesses located on or in close proximity to multi-use trails. PBOT initiated an online community survey and feedback from the Adaptive Bicycle Work Group (comprised of community members with disabilities and nonprofit and agency staff working on disability issues). These efforts culminated in an adaptive cycling pilot program from July through October 2017 and may through October 2018. Bicycles were purchased through a combination of public and private funds.

The service offers riders short-term (1- to 3-hour) adaptive bicycle rentals, fitting for available adaptive bikes, bicycle helmets, and mobility device storage and service animal crate storage during the rental. The program does not provide transfer or assistance from a mobility device to an adaptive bicycle and does not provide emergency pick-ups if a user cannot return to the bike shop on their own. TriMet Honored Citizens passholders (available for people with disabilities, seniors, and Medicaid recipients) pay a discounted rate of $5 per hour, or $12 for three hours. A limited number of fee waivers are available for those that can't afford that rate. Key lessons learned from the program include:

- Service is not truly providing accessible bikesharing. The service is limited to pick-up from a fixed location (e.g., bike rental), rather than the bikesharing service area.

- Additionally, reservations are required and users may require the assistance of a third-party to access/egress adaptive bicycles.

- The service is providing a number of supportive ancillary services to reduce barriers to adaptive cycling, such as storage of mobility devices and service animals.

Accessible Carsharing Services (Hayward and San Francisco, CA)

Until November 2019, an interesting aspect of the peer-to-peer carsharing service Getaround was that it could – and did – refer prospective users requiring wheelchair accessible vehicles in the City of Hayward to a two-vehicle accessible vansharing service operated by Community Resources for Independent Living (CRIL), in partnership with the City of Hayward. These two vans were the remnant of a fleet of vans and sedans, including some wheelchair accessible vans, that were operated by the Bay Area's City Car Share program from 2001 through 2016, when its operations were taken over by Getaround. However, CRIL's insurance carrier terminated coverage for the van share program in November 2019, whereupon it ceased operations.

City Carshare was a carsharing program that operated in the San Francisco Bay area. In 2016, the company ceased operations when Getaround acquired City CarShare's fleet, parking spaces, and member base. City CarShare offered two programs to enhance carsharing accessibility for disabled and low-income San Francisco Bay Area residents: AccessMobile and CommunityShare. In 2008 City CarShare introduced AccessMobile, the nation's first wheelchair-accessible carsharing program, in partnership with the City of Berkeley and Berkeley's Commission on Disability. AccessMobile's wheelchair accessible vans offered riders increased independence and the ability to reach locations that are often otherwise inaccessible or where travel would be cost prohibitive using mass transit, paratransit, TNCs, or taxi services. AccessMobile also allowed people with disabilities access to vehicles that meet the accessibility standards of the Americans with Disabilities Act without the cost of owning and retrofitting a private vehicle. The vans were able to seat up to six people and one wheelchair. People with disabilities who did not have a driver's license were able to have a family member or friend sign up and drive for them. When it was operational, the AccessMobile program had three vans located in Berkeley and San Francisco.

Today, Enterprise CarShare does offer some services for people with disabilities. Enterprise offers Hand controls, spinner knobs and pedal extender availability at no additional charge. Enterprise typically requires two business days' notice for mobility device equipped vehicles. However, at certain major airport locations, mobility device equipped vehicles may be available with as little as 24-hour notice.

For-Hire Services (New York City, NY)
The New York City Taxi and Limousine Commission (TLC) has steadily increased the number of accessible vehicles in the yellow and green taxi (street hail liveries) fleet for people with disabilities in recent years. TLC has set aside a designated number of taxi medallions for use only by wheelchair accessible vehicles (WAVs). There is a $0.30 WAV Improvement Surcharge added to each taxi trip. The Taxi Improvement Fund gives vehicle owners up to $14,000 to offset purchase costs of a WAV plus up to $4,000 per year for four years (up to $30,000 total over four years).   Drivers may receive $1.00 per trip completed in a WAV, even if the passenger is not a wheelchair user. Drivers can earn an additional dispatch fee payment of up to $30 for traveling to the passenger pickup under the NYC Accessible Dispatch Program. This program provides residents and visitors with disabilities access to green and yellow wheelchair accessible taxis in all five boroughs. Passengers with disabilities can book an accessible taxi trip using this program to e-hail or street hail an accessible taxi. As of 2018, there were approximately 2,100 wheelchair accessible yellow taxis on the road, and the TLC is committed to reaching fifty percent of the fleet (approximately 6,800 vehicles) by 2020.

Additionally, all livery, black car, and limousine bases are required to provide service in wheelchair accessible vehicles. Beginning in January 2019, dispatchers must either send a certain percentage of their trips to WAVs, or partner with an approved Wheelchair Accessible Vehicle Dispatcher to service WAV requests. These rules are meant to ensure that passengers can request a WAV from any local car service or app-based for-hire vehicle base and receive timely, safe service. Passengers can request

an accessible trip by calling their local car service directly, visiting their car service's website, or using any car service app available in NYC. There were approximately 240 wheelchair accessible green taxis available as of 2018.

In recent years, NYC's Metropolitan Transportation Authority (MTA) has begun leveraging the increasing accessibility of the taxi fleet to provide some paratransit trips. A portion of Access-A-Ride users have been provided with same-day, on-demand direct taxi service as part of an MTA-led pilot program. Access-A-Ride pilot users are able to obtain a taxi through either an e-hail mobile application or a dedicated call center as a same-day, direct service for a subsidized cost of $2.75. The taxi booking and payment platform, Curb, covers the rest of the metered fare, and then the MTA reimburses them.

Key lessons learned from these developments in NYC include:

- The increase in accessible taxis benefits more than just Access-A-Ride users, as many people with disabilities do not use paratransit and may use other non-paratransit transportation options available to them.

- While the previous Accessible Dispatch program required trips to begin in Manhattan, the program has been expanded city-wide allowing residents and visitors to request an accessible yellow or green taxi from anywhere by calling a dispatch center, dialing 311, scheduling a trip online, or through the "Accessible Dispatch NYC" app. To compensate them for traveling to the pickup location, drivers receive a dispatch fee payment from the TLC's Taxi Improvement Fund.

- According to MTA, a trip under the e-hail paratransit program cost $35.91 compared to $68.71 for a traditional Access-A-Ride paratransit trip. However, increased convenience of the on-demand service is believed to be contributing to induced demand (more use of the service).

Accessibility of Shared Mobility in Oakland

OVERVIEW

This study assessed barriers that travelers with disabilities encounter while using four primary shared mobility models: bike share, scooter share, ridehailing, and carshare. Across all modes, our analyses found that more often than not, people traveling with disabilities are not given equal consideration as new transportation technologies, business models, and services are developed and deployed. Travelers with disabilities can encounter a wide range of challenges when accessing shared mobility services, including:

- The physical design of the shared mobility vehicle or unit

- Digital access for locating vehicles and completing transactions, including inaccessible elements of smart phone applications

- Inconsistency in the locations of shared mobility vehicles or units due

- Limited ability to control the accessibility of return trip options

- Lack of or inconsistency in accommodations for mobility support items (e.g. wheelchair; cane) and service animals in vehicles

- Lack of clear or effective methods for informing shared mobility service providers what alterations to the service model would improve access

- Incomplete information about and inconsistency in the service experience (e.g. chemical exposure in some vehicles; variations in vehicle design)

Beyond these broad takeaways, the following section summarizes the key findings of our analyses specific to each mode.

KEY FINDINGS

Through the research and analysis of this Study, the project team determined that **the following are important considerations for any and all efforts to improve accessibility of shared mobility in the near-term:**

- Persons with disabilities, including persons with disabilities seeking to use shared mobility services, have a wide range of individualized needs. Different solutions will serve different needs, but no single solution will address all needs.

- Shared mobility services are managed through different schemes including Bay Wheels bike share managed through a regional franchise agreement in which OakDOT participates, ridehailing licensed by the state of California, and carsharing permitted locally through OakDOT. The ability of OakDOT to require advancements is directly related to the mechanism through which the service is governed.

- In the last six months in particular, shared mobility providers have either fully retreated from the U.S. market (such as Car2Go/ReachNow) or scaled back in U.S. markets. Private providers will evaluate new requirements for investment or new fees or revenue shares in the context of financial viability within the Oakland market.

- While frameworks for managing shared mobility services are still evolving, many local governments are testing incentives and partnerships with private providers in addition to requirements and regulations. This is a recognition of the potential benefits shared mobility services offer to the transportation system and an effort to invest locally in sustaining those benefits.

- Oakland is breaking new ground. While shared mobility services operate in cities of all sizes across the country, the newness of these services and the limited amount of research related to persons with disabilities, in particular, means there are very few "best practices" to look to.

BIKE SHARE ASSESSMENT

Existing Services

Bay Wheels bike share (formerly Ford GoBike) is a service offered through Lyft that allows travelers in and around Oakland to rent and ride a shared bike at a rate of $2 for 30 minutes and $3 per 15 minutes beyond the initial half hour. The program offers monthly and annual membership options, as well as a low-income fare program that offers $5 for annual membership registration. The service offers standard bikes, which are parked at docking stations, in addition to electric-assist pedal bikes, which can be locked to any bike rack (often referred to as "dockless").

In partnership with Lyft, the MCPD, the Metropolitan Transportation Commission (MTC), and Bay Area Outreach and Recreation Program (BORP), the City of Oakland launched an Adaptive Bike Share Pilot Program to expand the accessibility of bike share for riders with disabilities. The Adaptive Bike Share Pilot offers several varieties of adaptive cycles to meet a diversity of needs. Cycle types available for rental include:

- Upright hand cycles: A three-wheeled unit that allows users to sit in an upright position while powering the cycle with their upper body strength.

- Recumbent hand cycles: A three-wheel unit that allows users to sit in a semi-reclined position while powering the cycle with their upper body strength.

- Recumbent leg trikes: A three-wheeled unit that allows users to sit in a semi-reclined position while powering the cycle with their lower body strength.

- Side-by-side tandem cycles: A three to four wheeled unit that allows two users to sit shoulder to shoulder and power the same cycle with their lower body strength.

During the pilot program, these adaptive cycles were available for use on Wednesdays and Saturdays at no cost. Riders must pick up the unit from a staffed kiosk at either the program's 1335 Lakeshore Avenue location or the Snow Park location at Harrison and 19th Streets.. A host of free services are available with rental of the unit, including: storage of mobility devices or service animals, helmet rental, fitting, and training. The San Francisco Municipal Transportation Agency (SFMTA) later replicated this program with a similar one in Golden Gate Park.

Find Out More:

*Appendix 6 - BORP Adaptive Bike Share Pilot Program Results*

Pictured from left to right: Upright hand cycle, recumbent hand cycle, recumbent leg trike, and side-by-side tandem cycle

What We Heard

An overwhelming 77% of survey respondents had not tried standard Bay Wheels bike share service. 23% indicated that they have used Bay Wheels bike share. System incompatibility with rider disabilities emerged as the most common reason survey respondents had not utilized Bay Wheels, with 40% reporting they are unable to use the service. Concerns about the safety of the system, geographic constraints, limited interest or need for bike share, costs, and lack of service awareness were also reported. Geographic location was the most common barrier to bike share reported by survey respondents, with 39% encountering the issue. Vehicle design and digital access were also commonly reported by survey
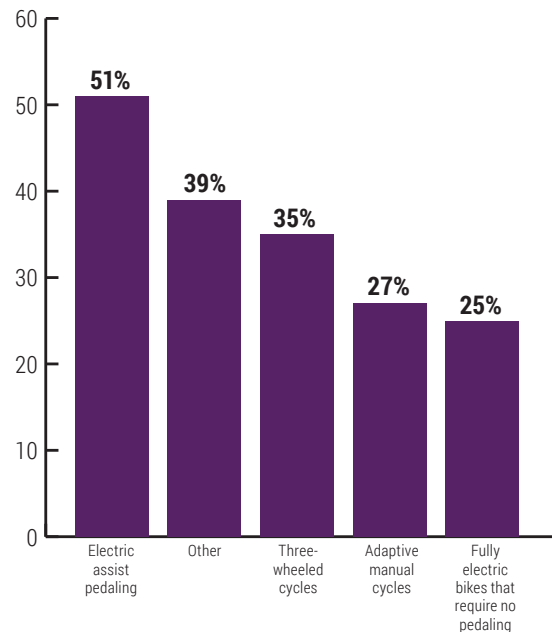
Did any of the following limit your access to bike share services? (N=49)
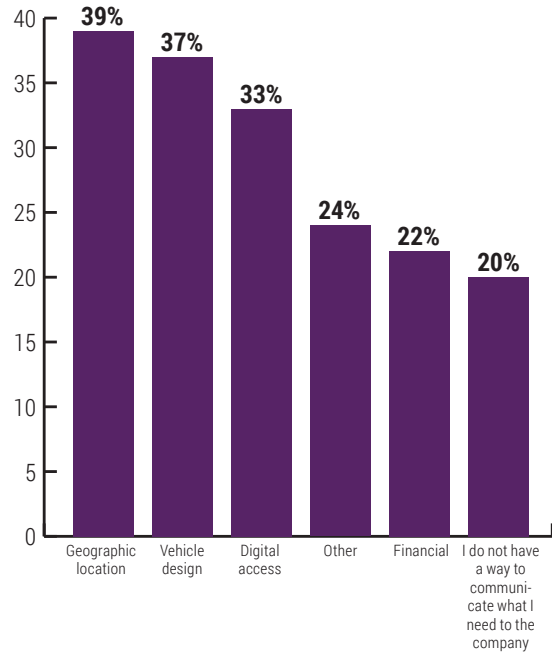
*Which of the following best describes why you have not used bike share? (N=50)*
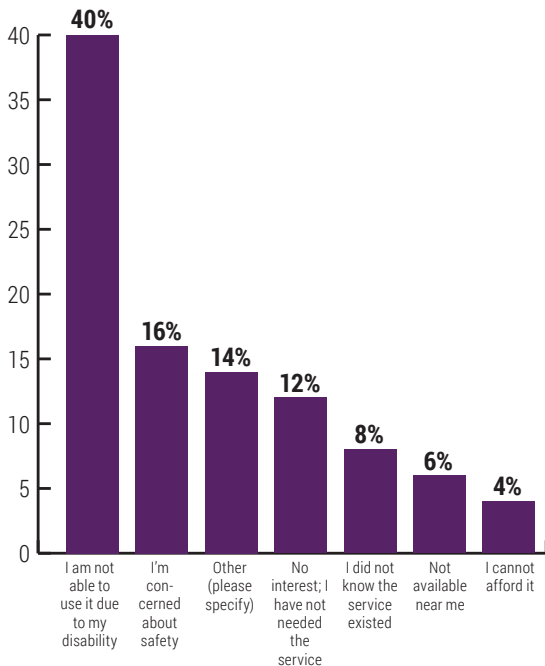
What vehicle design features would improve your access to bike share? (N=51)

respondents. Twenty-four percent (24%) of survey respondents reported "other" barriers to bike share service, with some examples including: the strength/energy required to ride a bike, preferences for a Wi-Fi and Bluetooth free option, and unreliable system balancing.

Most survey respondents were aware of Adaptive Bike Share Pilot program rentals in Oakland, with 51% reporting that they had heard of the program. Approximately 46% were not aware that adaptive cycles were available for bike share rental and 2% were unsure whether they had heard of the program. Those who had not tried the Adaptive Bike Share Pilot Program cited a diversity of reasons for not participating. The most commonly reported reasons for not participating included: lack of adaptive cycle types suitable for their disability, lack of interest in using the program, and lack of time or opportunity to join to try the system yet. Additional feedback from focus group participants emphasized that the current locations offered aren't easy to access. Focus group participants additionally emphasized that building

Which of the following best describes why you have not used the program? (N=33)
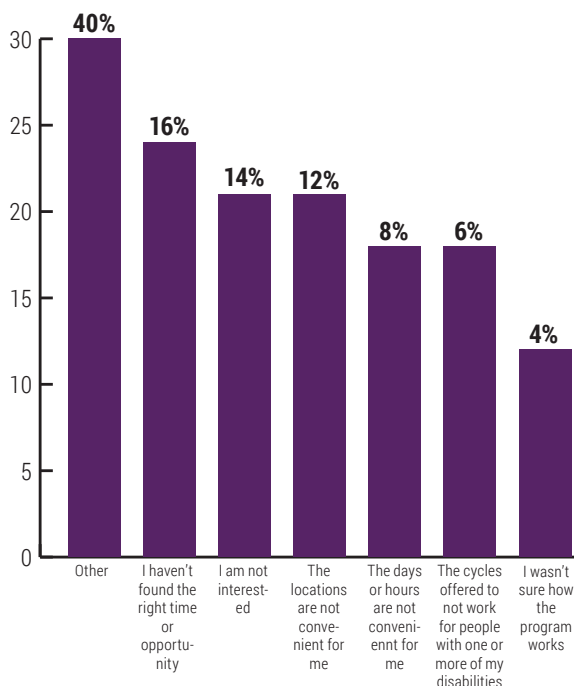
ridership is a process that would likely take several years. A total of four general survey pool respondents had participated in the Oakland Adaptive Bike Share Pilot Program prior to taking the survey. Two of these four chose to complete the pilot evaluation survey.

Technical Assessment

The technical assessment for BayWheels bike share included both a station area assessment and a digital accessibility audit of the program's smartphone application. The station area assessment considered accessibility for both persons wanting to check-out or return the bikes, as well as persons with disabilities not accessing the program, but passing through the station area. The project team found that:

- The most common barrier to accessible pedestrian access routes were tree wells and lighting posts
- Adjustments to station orientation can improve accessibility for program users
- Most bike share stations are installed in accordance with the site plan permitted by OakDOT

While many components of bike share stations are not required to be in compliance with ADA standards, assessing stations against these standards can help develop recommended guidelines related to bike share siting, and station and bike typology. In the City of Oakland, there are 79 bike share stations, with 62 stations being in-street, and 17 stations located off-street. In-street stations are bike share stations that are located within the curb-to-curb space of a street's right-of-way (ROW). Off-street stations are bike share stations that are located on sidewalks, in plazas, parks, or other locations not located within the curb-to-curb space of a street's ROW. In-street and off-street stations present different accessibility considerations.

The project team created a worksheet to use for evaluating the accessibility of a bike share station (see

Appendix 3). Technical staff visited and evaluated 19 bike share stations located in high activity areas::

- Madison St at 17th Ave
- Webster St at 19th
- Snow Park
- Lake Merritt BART Station
- Jackson St at 11th St
- Franklin at 9th St
- Washington St at 8th St
- 13th St at Franklin St
- 10th St at Fallon St
- MLK Jr Way at 14th St
- Frank H. Ogawa Plaza
- Grand Ave at Webster St
- Telegraph Ave at 23rd
- Telegraph Ave at 27th
- 19th St BART Station
- Telegraph Ave at 19th
- Lakeside Dr at 14th St
- Rockridge BART Station
- San Pablo at MLK Jr Way

Additionally, staff reviewed 59 of the remaining 60 Oakland stations through Google Earth satellite imagery and street view imagery. This review captured a more limited set of criteria that could be assessed through digital imagery. Up-to-date satellite and Google Street View Imagery was unavailable for the Fruitvale BART station bike share station. This analysis identified:

- 10 station locations without adequate sidewalk pedestrian access routes,
- 15 locations without clear floor space in front of the kiosk,

PHOTO: OAKDOT

- 49 near-station curb ramps oriented diagonally rather than perpendicular to the roadway
- 22 near-station curb ramps without truncated domes

The Bay Wheels digital accessibility audit required an evaluation of the smartphone application accessed through Lyft (which operates the Bay Wheels bike share program). The audit found that 85% of web elements within the app meet WCAG disability access standards. Of the 63 failing elements identified, low color contrast (creating barriers for renters with limited vision or color blindness), small touch size (creating barriers for renters with limited dexterity), and unnamed active views (creating barriers for renters that use screen readers or other adaptive software) were the most common. The Bay Wheels web-based multiscreen sign-up form performed much worse than the general app, with 23-27 failing elements identified per screen. Inadequate color contrast and improper input labeling were the two most common deficiencies identified.

SCOOTER SHARE ASSESSMENT

Existing Services

Scooter share companies currently operating in the City of Oakland include: Bird, Lime, Gruv, and Lyft. Each of these vendors is permitted to deploy up to 1,000 e-scooters within the City of Oakland.

The City of Oakland is planning for the near-term integration of adaptive scooters into the system, which would be accessible to people with various physical disabilities.[1] Scooter share providers are required to provide their plans for providing adaptive scooters as a condition of permit renewal. Scooter share providers operating in Oakland have been encouraged to consider a variety of accessibility options, including:

- Scooters with seats

- Three-wheeled scooters

- Wider standing platforms

- Larger tires with better shock absorption

- Providing cargo options

- Providing electric attachments for manual wheelchairs

- Providing tandem units

What we Heard

Roughly 76% of survey respondents had not tried scooter share services in the past, while 24% reported they have used scooter share service. Incompatibility of scooter share service with disabilities was the most prominent reason respondents had not tried the service, with 50% reporting they are unable to use the service. Safety was the next most common response with nearly one-quarter (23%) of respondents noting safety concerns. Geographic constraints and lack of interest or need were also reported. "Other" concerns were the most commonly reported access barrier to scooter use among survey respondents (37%), with open response comments reporting everything from a desire for micromobility access options

PHOTO: OAKDOT LET'S BIKE OAKLAND! PLAN

that do not require a wi-fi connection to respondents indicating they felt scooters were unsafe. Vehicle design was the second most commonly reported access barrier to scooter share use among survey respondents. One third of respondents reported financial barriers limited their access to scooter share (33%), while 30% reported digital access was a barrier, and 23% reported geographic barriers.

Additional feedback from focus group participants included suggestions for improving disability access to scooter share, such as:

- Scooter share companies taking a larger role in discussing and funding active transportation facility investments.

- Programming to increase the accessibility of helmets and pads.

- Three-wheeled units

- Subsidizing ownership of personal e-scooters for riders with disabilities.

- App accessibility improvements

- Electric attachments for manual wheelchairs

Technical Assessment

The technical assessment for the scooter share pilot program included both an evaluation of scooter share designated parking zones opportunities and a digital accessibility audit of each service provider's smartphone application. The scooter share designated parking zones

Which of the following best describes why you have not used scooter share? (N=40)
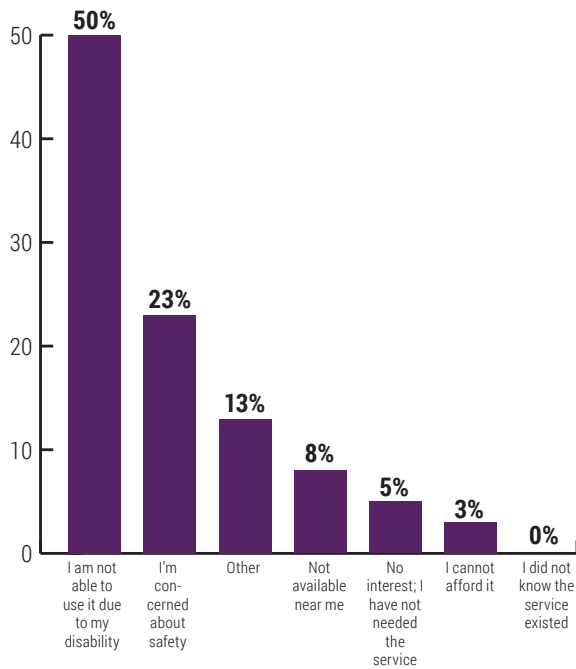
Did any of the following limit your access to scooter share services? (N=43)
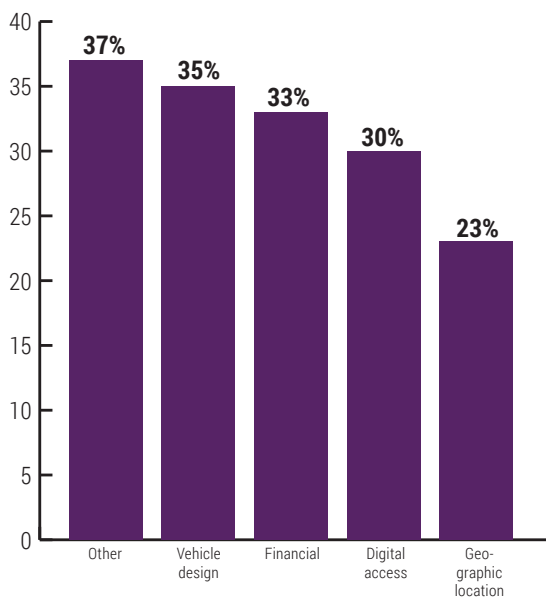
analysis identifies site-specific opportunities to improve or maintain sidewalk access for persons with disabilities (rather than focusing on access to the service itself by persons with disabilities). The project team used data provided by the City of Oakland to identify fifteen priority BayWheels bike share stations where a high level of scooter share parking activity may warrant a co-located parking zone. The project team found that:

• Designated parking can reduce incidence of obstructed sidewalk access

• Opportunities for allocating space that maintains a clear pedestrian zone is available at each of the 15 priority bike share station locations

The assessment of Bird, Lime, and Lyft's shared mobility app platforms found significant variation among permitted providers. With 88% of identified elements meeting WCAG accessibility standards, Bird's app platform scored the highest. Of the 14 failing elements, unnamed active views (creating barriers for screen reader users and those using other adaptive software) and small touch size (creating barriers for users with limited dexterity) were the most common deficiencies. Lyft's app performed similarly, with 85% of all identified elements meeting WCAG standards. Of the 63 failing elements identified, low color contrast (creating barriers for renters with limited vision or color blindness), small touch size (creating barriers for renters with limited dexterity), and unnamed active views (creating barriers for renters that use screen readers or other adaptive software) were the most common. With just 55% of elements meeting WCAG standards, Lime's app performed the worst out of evaluated scooter share apps. Of the 99 failing elements, almost half were related to unnamed active views. Low color contrast and small touch size were also common deficiencies.

Micro-mobility	Elements	Elements Passing Standards	Elements Failing Standards	Total Score (out of 100%)
Lyft	293	231	63	85%
Lime	215	116	99	55%
Bird	111	97	14	88%

RIDEHAILING ASSESSMENT

Existing Services

Uber and Lyft are the primary ridehailing service providers operating in Oakland. Each of these providers offer programming that aims to increase the accessibility of the ridehailing service to riders with disabilities.

Uber WAV is a pilot program in select cities offering on-demand rides in wheelchair accessible vehicles at the same rate as a UberX trips (basic ride option). WAV drivers have received training and third-party certification in transferring wheelchair users to assist riders board and exit the vehicle.

Lyft offers an "Access Mode" app feature that allows riders in certain cities to request a wheelchair access

What We Heard

Unlike bike share and scooter share, a majority of survey respondents have used ride hailing services, with 76% reporting they had tried the model.

Find Out More:

Of those who have tried ride hailing, a majority used standard service, while 24% use a disability accessible program. Eight disability accessible

Appendix 4 - Survey Results and Focus Groups Summaries

ride hail users reported on their typical wait times while accessing the service. Four reported waiting less than 20 minutes on average and four reported waiting more than 20 minutes on average.

Nearly half of respondents (49%) reported "other" access barriers to ride hailing that the project team had not included in the options. A majority of these respondents described drivers refusing to accept wheelchair accessible requests and drivers cancelling rides when they arrive and see a rider with mobility challenges. Some reported believing drivers do this to avoid assisting riders transferring into the vehicle. As with other services represented in the survey, some respondents reported the need for Wi-Fi as a barrier to their access (without providing further details). Unique to this mode, some

respondents mentioned chemical sensitivities and pet allergies as barriers. Of the answer choices provided, financial constraints also prevented nearly half of respondents from accessing ride hailing (49%). About one-quarter of respondents also reported digital access and vehicle design barriers.

Some focus group participants offered their perspectives and experiences using wheelchair accessible ridehailing programs. Focus group participants who had tried these features generally found that:

- The current deployments of wheelchair-accessible vehicles (WAVs) by Lyft and Uber are limited, both in terms of geography and coverage. For instance, Lyft's WAV pilot program, strictly speaking, is only in San Francisco.

- The Lyft and Uber apps provide information on WAV location and availability, estimate wait time for the pickup, and travel time for the trip, but the limited experience reported in the focus group are that these are not always reliable estimates.

Did any of the following limit your access to ride hailing services? (N=35)
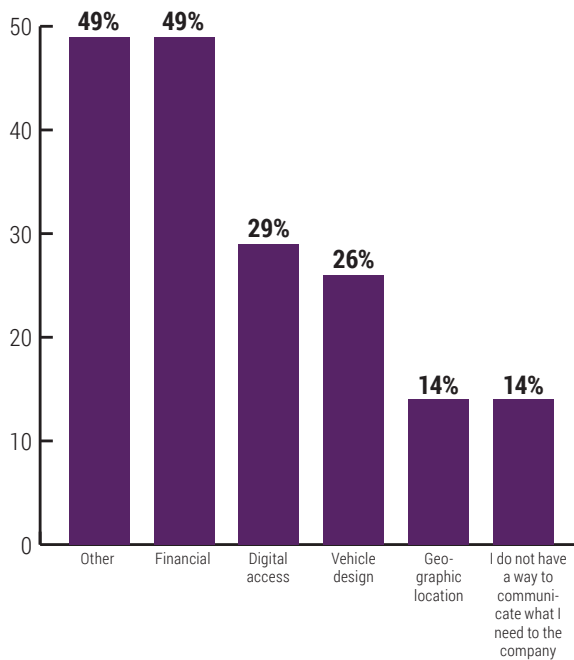
- WAV users encounter situations where it appears that Lyft and Uber drivers turn down trips that they don't want to do.

- There will be instances where a rider requiring a wheelchair accessible vehicle may not be able to schedule an on-demand ride in a timely manner. Similarly, there are instances where a rider successfully books a wheelchair accessible ridehailing vehicle to their destination but struggles to schedule a ride home.

When asked "Did you use a disability accessible ride hailing service such as Uber WAV or Lyft ACCESS", 24 percent responded "Yes" and 76% said "No" (34 participants responsed).

Technical Assessment

The California Public Utilities Commission (CPUC) requires registered ridehailing service providers to submit a (a) driver training plan, (b) accessibility plan, (c) plan on avoiding divide between able and disabled communities, and annual reports on (d) the provision of accessible vehicles, (e) provision of service by zip code, (f) problems with drivers, (g) hours logged by drivers, (h) miles logged by drivers, (i) drivers completing a driver training course, and (j) annual updates on the accessibility plan . These plans and reports are statewide in scope; neither Lyft, Uber nor any of the other ridehailing providers in California provide any data or narrative details that are broken down by specific counties or other jurisdictions. Since both Lyft and Uber operate throughout the state, their CPUC filings do not allow for an examination of their plans or data as they pertain specifically to Alameda County or the City of Oakland.

Overall, the ridehailing service options for the Uber and Lyft app platforms scored highly during this evaluation. Uber was identified as the most disability accessible micromobility app, with 92% of evaluated elements passing accessibility standards. For Lyft, 82% of evaluated elements passed accessibility standards.

Find Out More:

Appendix 2 - Ridehailing and Carsharing Accessibility Data Memo

Appendix 5 - Digital Accessibility Audit

Platform	Elements	Elements Passing Standards	Elements Failing Standards	Total Score (out of 100%)
Uber	223	206	19	92%
Lyft	346	283	64	82%

CARSHARING ASSESSMENT

Existing Services

Car share services in Oakland include free floating (Gig), point-to-point (Zipcar), and peer-to-peer (Turo and Getaround) service models.
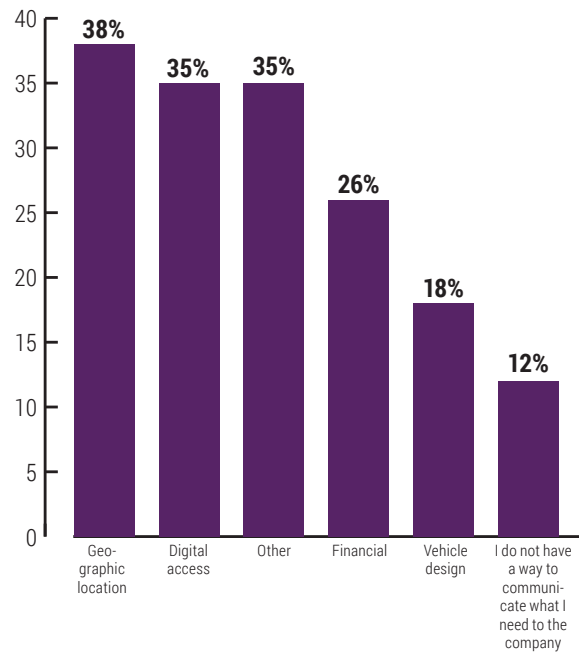
What we Heard

A majority of respondents have not tried car share services. Those who have tried car share were most likely to have used dedicated parking car share (20%) or free-floating car share (14%). Of survey respondents, 9% have used the wheelchair accessible van and 9% have used peer-to-peer car share. Geographic location, digital access, "other" barriers, and financial cost presented the most common challenges facing survey respondents while accessing car share. Over half of survey respondents (61%) identified "other" variables not included in the other answer choices, including improvements such as:

Find Out More:

Appendix 4 -
Survey Results
and Focus Groups
Summaries

- Automation of fold ramps

- Ability to reserve wheelchair accessible vehicle further in advance

- A preference for Wi-Fi/Bluetooth free options

- Low standing vehicles

- Better geographic distribution and balancing of car share

Fold out ramps were popular improvement requests, with 43% of respondents citing this as improving access to car share. Wheelchair accessible passenger spaces and hand and foot controls for brake/accelerator would improve car share access for 32% of the respondent pool, while a wheelchair accessible driver's seat would benefit 29% of respondents.

Did any of the following limit your access to car share services? (N=34)

What design features would improve your access to car share? (N=28)

The City of Oakland Department of Transportation
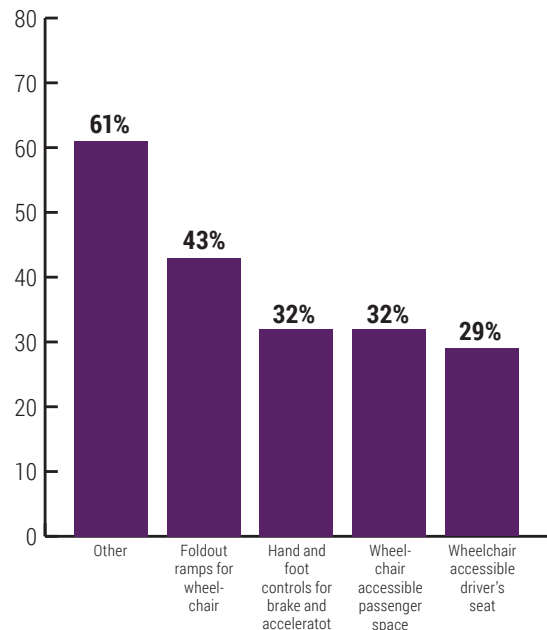
Technical Assessment

Gig and Zipcar are fleet-based carsharing programs, which is distinct from peer-to-peer programs in business model, service operations, and oversight.

Gig Car Share uses only Toyota Prius vehicles, and began operating the service with 250 Priuses deployed around Oakland and Berkeley in the spring of 2017. When the service was launched, there appeared not to be any goals or requirements to make wheelchair accessible vehicles available through this free-floating car share program. Zipcar advertises that it can make some forms of accessible vehicles available for use by its registered members, but data on the nature, availability and utilization of such vehicles appear not to be made publicly available. Vehicles equipped with hand controls require a 72-hour advance reservation by phone. Zipcar also has a company-wide policy that users' service animals can ride in its vehicles without having to be secured in a carrier. If Zipcar has established any goals or requirements concerning the provision of wheelchair accessible vehicles, this information is not publicly available.

The accessibility of vehicles in the two peer-to-peer car sharing services in Oakland – Getaround and Turo – is wholly a function of the vehicles made available by participating vehicle owners. In theory, private owners of wheelchair accessible vehicles could make those vehicles available to registered users of either Getaround or Turo, but there's no clear evidence whether this is occurring in Oakland. One of the defining characteristics of peer-to-peer car sharing is that vehicles are made available by their individual owners, so there is not a lot of data on aspects of accessibility.

Find Out More:

Appendix 2 - Ridehailing and Carsharing Accessibility Data Memo

Appendix 5 - Digital Accessibility Audit

Until November 2019, an interesting aspect of Getaround's peer-to-peer carsharing service was that it could – and did – refer prospective users requiring wheelchair accessible vehicles in the city of Hayward to a two-vehicle accessible vansharing service operated by Community Resources for Independent Living (CRIL), in partnership with the City of Hayward. These two vans were the remnant of a fleet of vans and sedans, including some wheelchair accessible vans, that were operated by the Bay Area's City Car Share program from 2001 through 2016, when its operations were taken over by Getaround. However, CRIL's insurance carrier terminated coverage for the van share program in November 2019, whereupon it ceased operations.

If these companies – Getaround, Gig Car Share, Turo and Zipcar – or the city of Oakland have mechanisms to receive complaints or other user input concerning the accessibility of Oakland's car sharing services, information on how to complain or comment is not readily apparent.

Two carshare companies' transaction platforms were available for digital accessibility audit. The two platforms scored high in the evaluation. For Turo, 84% of tested elements passed accessibility standards. For Getaround, 81% of scanned elements passed web accessibility standards.

Platform	Elements	Elements Passing Standards	Elements Failing Standards	Total Score (out of 100%)
Turo	477	403	75	84%
Getaround	205	167	38	81%

5

Recommendations

OVERVIEW

Based on the input received from the surveys and focus groups that were conducted in this project, the background analyses and best practices that were collected and compiled by the project team, and from meetings with key stakeholders in Oakland, a number of appropriate and important action items began to emerge. These recommendations are organized into five primary strategies for influencing the accessibility of shared mobility services:

1. Reduce Impacts to Persons with Disabilities Traveling by Modes Other than Shared Mobility

2. Modify Vehicle, Device, and Station Design

3. Provide Alternative Service Models

4. Expand User Information and Transaction Opportunities

5. Leverage New Partnerships, Planning, and Funding

Actions are recommended to advance each of the five strategies. Actions are organized based on whether the action is likely to be led or fully implemented by OakDOT and its partners or by the private sector mobility service providers. Icons indicate the type of shared mobility involved in the implementation of each action.

As an overarching recommendation, OakDOT should work directly with the Mayors Commission for Persons with Disabilities (MCPD) to develop a set of goal-oriented criteria that can be used to prioritize the timeline for and resources allocated for advancing the robust and varied set of actions proposed.

This icon indicates a strategy for bike share

This icon indicates a strategy for scooter share

This icon indicates a strategy for carshare

This icon indicates a strategy for ridehailing

STRATEGY 1: Reduce Impacts to Persons with Disabilities Travelling by Modes Other than Shared Mobility

City-led

1. Improve bike share station placement to avoid encroachment of pedestrian through zone. Resolve all ADA access deficiencies identified, including constructing missing sidewalk segments, providing clear path to kiosk, installing truncated domes, and curb ramp construction in applicable locations identified through this Study's technical assessment (see Appendix). In areas with high pedestrian volumes, build bike share station bulb-outs.

2. Require scooter share devices to have lock-to technology, so that they can be locked to bike racks or street poles. Also, establish scooter share (or other micromobility) designated parking to avoid obstruction of sidewalk pedestrian-access routes or ADA curb ramps. This may include painted zones or installation of scooter docking stations, which also provide charges to the devices.

3. Establish a curbside management program to identify and mitigate potential conflicts between microbility services and paratransit pick-up and drop-off locations.

Provider-led

1. Invest in and lead user education and enforcement strategies to eliminate scooter sidewalk riding and obstructive parking

2. Require ridehailing drivers to adhere to preferred pick-up and drop-off areas per the City's curbside management strategy and/or independent identification of paratransit and pedestrian (including ADA curb ramps) conflict areas and requiring ridehailing drivers to avoid those conflict areas

PHOTO: OAKDOT

STRATEGY 2: Modify Vehicle, Device, or Station Design

City-led

1. Require and/or incentivize private sector investments in alternative vehicle or device designs. Oakland has successfully pioneered this approach through its scooter share pilot program, which announced that one provider had modified its scooter design (in tandem with changes to its service options) to meet permit requirements.[1] The mechanism through which this can occur for other shared mobility modes is limited at this time,

1   https://www.oaklandca.gov/news/2020/oakdot-and-lime-launch-first-ever-e-scooter-pilot-program-designed-for-riders-with-disabilities

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but should be considered if/when the regulatory context for managing these providers changes. For example, bike share is managed through a regional franchise agreement that is already in place, carshare is managed through local City permits that are already enabled, and ridehailing is managed through the state California Public Utilities Commission (CPUC). Where regulation or incentives are not possible, OakDOT can seek partnerships that bring resources for design innovations to private service providers, outside of any policy leverage.

2. Establish a program that provides grants or subsidies for individuals with disabilities to purchase or lease alternative designs for scooters, bikes, or other personal micromobility transportation modes with the goal of adding to the marketability of these products and increasing availability and affordability of them to Oakland residents with disabilities.

3. Improve access to bike share stations for persons with disabilities using the program by making relatively minor adjustments to station design. For example, many in-street stations have payment kiosks that face the sidewalk curb. There is a gap between the payment kiosk and the curb necessary for drainage. The City of Oakland can work with bike share providers to develop a kiosk design with built-in clear floor space to bridge over the curb gap. The City can also ensure that this space is clear of street furniture, tree wells, and other barriers to station kiosk access. In other cases, re-orienting in-street stations so that there is a pedestrian route between the bike tire and the curb can improve their accessibility when stations are situated in wide parking lanes.

Provider-led

1. When a service provider also acts as fleet manager (i.e. scooter share, bike share, and some carshare platforms), invest in vehicle and design modifications led by industrial design and user experience experts and informed by direct input from persons with disabilities and the organizations that support their interests. This action will likely include identifying vehicle design modifications that serve the unique needs of as many persons with disabilities as possible while also providing a higher quality and highly desired design for customers of all abilities. In responding to the scooter share permitting request, Lime took a step in this direction by developing an adaptive scooter share with a seat, a wider handlebar, a longer and wider base, and on/off power switch. While ridehailing companies have taken steps to incorporate wheelchair accessible vehicles into their services, these companies largely operate as a platform for drivers and their vehicles to connect with riders, rather than as a fleet operator (see Leverage New Partnerships and Funding strategy below).

2. For peer to peer carsharing, where fleets are not owned/managed by the service company, track and identify vehicles available within the service that meet accessibility standards. This action requires that customers be able to easily view this information in an accessible format and have some control over selecting those that meet their specific needs. Complement this with incentives for owners of accessible vehicles to enroll in the platform and reduce any hurdles in their enrollment process.

STRATEGY 3: Provide Alternative Service Models

City-led

1. Extend the Adaptive Bike Share Pilot Program, given that it functions as an alternative service model to the Bay Wheels program. This action should include establishing clear performance measures that define success of the program. While the total volume of persons served and trip purposes of program users is inherently limited, an analysis of 2019 program users found that the program is largely attracting new participants not previously engaged in accessibility programs offered by Bay Area Outreach & Recreation Program (BORP), which has important implications.

Provider-led

1. Create a certification program for ridehailing drivers that allows them to elevate their profile as "preferred drivers" when they meet a set of criteria. Once drivers have participated in education and/or training on the purpose, requirements, and marketing opportunity associated with the certification, they would be better equipped to meet the needs of a broader range of users. Certified drivers could choose to identify themselves as "Service-Animal-Experienced" or "Chemical-Sensitivities-Friendly" or similar categorizations. This action would need to occur in conjunction with making this information searchable by customers seeking this type of ride, and no penalty to users who cancel a ride that does not meet the certification they require.

2. Create options for customers to select door-to-door delivery of shared micromobility devices, following the model of paratransit services, and consistent with the new service offered by Lime in response to the City's permit requirements for accessible scooter share. This action requires a method for identifying eligible recipients and creating a fee structure, duration of use, and device-charging options that fit within this alternative service model.

3. Provide "guaranteed rides home" that accommodate the unique round-trip needs of a person with disabilities who cannot rely on spontaneous, shared, one-way travel services. For ridehailing this could include giving priority to users who used an accessible ridehailing vehicle to arrive at a location - identifying that user as a priority for a response by an accessible vehicle drvier who may otherwise pick-up a new rider. For shared micromobility, this could include alternative fee structures with longer rental time windows that allow the person to reserve the device (making it un-rentable by another user) until their appointment or activity is complete and the same device can be ridden for the next leg of the trip.

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STRATEGY 4: Expand User Information and Transaction Opportunities

City-led

1. Ensure that the City's public information contacts and print and on-line materials clearly define the range of accessible transportation options available within Oakland and are frequently updated to reflect the often fast-changing environment of shared mobility services.

2. Require self-conducted web access analysis as a condition of permit issuance or renewal with established threshold for compliance with current federal guidance (WCAG), such as achieving a score of 90% or higher passing elements. This automated self-assessment should be complemented with user field testing to ground truth results and determine how accurate a measure compliance with WCAG standards is for enabling persons with disabilities to complete a digital transaction. A diversity of tools would be available for vendors to perform self-analysis at no cost, including:
   a. Axe (available for web, mobile, iOS, and Android)
   b. Google Lighthouse (for web)
   c. Accessibility Scanner (for Android)
   d. Accessibility Test Framework (for Android as a developer tool)
   e. Xcode Accessibility Inspector (for iOS as a developer tool)

3. Identify existing City-led or City-supported equity programs that provide alternative financial payment options and consider opportunities to incorporate shared mobility transactions. Persons with disabilities may benefit from programs designed for low-income or racially-, ethnically-, or language-diverse community members. This could include cash-payment options,

specially designed digital transaction platforms, integration with transit passes, subsidy programs, or others.

4. Conduct outreach to Oakland's disability, seniors, and other underrepresented communities to: explain to users (and even offer training for) how shared mobility transactions can be completed; generate awareness of alternative transaction options and how to access them; continue to learn about community members' barriers to accessing digital and physical payment platforms and ideas for improvement. The outreach could occur as newly created programs (e.g., a new media campaign, or targeted door to door visits) or could occur as new components of existing outreach (e.g., providing an informational handout or a questionnaire about shared mobility access to embedded community partners),

Provider-led

1. Set company targets for digital accessibility, proactively conducting self-assessments of smart phone applications and web platforms.

2. Provide clear, easy to access information about all accessible service options offered and how to request those within smart phone application interface and web platforms.

3. Provide platforms for shared mobility service transactions that do not require a web or smart phone application. This may include aligning programs designed for low-income or historically marginalized communities (e.g. cash payment) with opportunities for persons with disabilities to participate.

STRATEGY 5: Leverage New Partnerships, Planning, and Funding

City-led

1. Incorporate assessments of and new strategies for shared mobility accessibility into all City of Oakland transportation planning efforts. One example is as the upcoming East Oakland Plan, which will identify new strategies for improving transportation for East Oakland residents and will determine the area's transportation priorities.

2. Increase availability of wheelchair accessible vehicles (WAV) within ridehailing and carsharing fleets through incentives to drivers (for ridehailing) or vehicle providers (for carsharing) who own, purchase, or lease a WAV. This may also include piloting microtransit programs for door-to-door service in vehicles often designed with accessibility in mind (Utah Transit Authority and Salt Lake City are currently piloting such a program). Microtransit is a service that provides on-demand trips, which are requested through a smartphone and usually operated by a private company with a fleet of multi-passenger vans.

3. Identify existing providers or fleet managers who already have access to WAVs and connect these fleets with shared mobility service models. These partnerships have already been explored through efforts like the Getaround partnership with Community Resources for Independent Living (CRIL) described in this report and a new transit redundancy option being piloted by Bay Area Rapid Transit (BART) through a federal Mobility-on-Demand grant program.

4. Study opportunities to create an Access for All Fund generated through per trip fees assessed across all shared mobility services. Having a dedicated source of funding for improving accessibility can serve as a tool for more effectively engaging private sector and community partners, allow more flexibility in determining how money is invested, and increase the level of influence that the City of Oakland may have driving change. The per trip fee could be established through a new ordinance requiring each private sector mobility service provider to pay on a quarterly basis to the City of Oakland an amount equivalent to, at a minimum, $0.10 for each completed trip that either originates and/or concludes within the city limits. The ordinance would exempt transportation network companies (TNCs) from paying the per trip fee so long as a state per trip accessibility fee equal to or greater than $0.10 per a trip is paid to the State of California in accordance with SB 1376. The ordinance would reduce the per trip fee to $0.05 per a trip if the mobility service provider continually meets two of the following accessibility measures:

- At least 50% of the mobility service provider's fleet is wheelchair accessible;

- The mobility service provider's app is Web Content Accessibility Guidelines 2.0 compliant;

- The mobility service provider pays for accessible paratransit trips (or similar on-demand service) for all users requesting a trip/ride that cannot be fulfilled by their service;

The City of Oakland Department of Transportation

- Any other accessibility program requirement approved by the City of Oakland's City Administrator and the City Attorney.

The ordinance would require that revenue collected to be deposited into a City of Oakland Accessibility Enhancement Fund that could appropriate funds for accessibility improvements, such as but not limited to:

- Relocation and/or enforcement of vehicles and/or mobility devices blocking ADA accessibility;

- Capital and/or digital improvements that enhance ADA accessibility (i.e., ramps etc.);

- Paratransit service, or similar on-demand accessible service, within the City of Oakland;

- Grants and/or interest free loans to make inaccessible facilities physically accessible to people with disabilities;

- Grants and/or interest free loans to people with disabilities for the purchase of accessible mobility devices (i.e., bikes, scooters, etc.) for personal use;

- Grants and/or interest free loans for Internal Revenue Code 501(c)(3) tax-exempt charitable organization with the mission of enhancing accessibility for people with disabilities in the City of Oakland;

- Education and outreach to enhance ADA accessibility in the City of Oakland; and/or

- Any other accessibility program approved by the City of Oakland's City Administrator and the City Attorney.

A

Appendices

Appendix 1 - Shared Mobility Best Practices Memo

711 SE Grand Ave.
Portland, OR 97214
(503) 230-9862
www.altaplanning.com

To: Kerby Olsen, City of Oakland

From: Susan Shaheen and Adam Cohen

Date: October 11, 2019

Re: **Outline of Best Practices for Improving Accessibility of Shared Mobility Services**

Background

According to the U.S. Department of Transportation, Americans with Disabilities Act (ADA) regulations apply to transportation provided by both public and private entities, whether or not they are primarily engaged in the provision of transportation service. While much progress has been made to enhance accessibility for people with disabilities, a number of challenges still exist (Shaheen et al., 2017). This memorandum outlines best practices for improving accessibility to shared mobility services and is organized into five sections:

- First, this memorandum outlines the importance of complete trip mobility strategies for travelers with disabilities.
- Next, the memorandum summarizes four common policy considerations to keep in mind with respect to accessibility for travelers with disabilities (e.g., accessibility services, curb space management, service equivalency, and accessible technology).
- The third section discusses key accessibility issues by shared mode as well as example policies and programs to overcome these challenges.
- The fourth section discusses the role of the public sector with respect to shared mobility and accessibility to persons with disabilities.
- The final section summarizes key takeaways and recommendations for actions the Oakland Department of Transportation can take to improve the accessibility of shared mobility services in Oakland.

The Complete Trip

The accessibility of a complete trip can be defined in terms of an individual's ability to plan for, and execute, a trip from origin to destination without gaps in the travel chain. The links of this chain include:

- trip planning,
- travel to station or dockless vehicle location,
- station/stop use,
- boarding vehicles or devices,
- using vehicles/devices,
- leaving vehicles/devices,
- using the stop or transferring, and

- travel to destination after leaving the station/stop.

If one link is not accessible, then access to a subsequent link is unattainable and the trip cannot be completed. The inability to get to and from destinations is a persistent problem for travelers with disabilities.

Accomplishing the complete trip is often handled by professional staff and agencies, but shared mobility and mobility on demand (MOD) present new opportunities to allow users with special needs to travel more independently. This can be done by providing the right tools, such as accessible options to enable individuals to develop the skills needed to prepare for travel, leave their locations easily, and use shared mobility services and enabling technologies. However, not all mobility service providers may offer accessible options, or these options may not provide an equivalent level of service (e.g., wait and journey times).

The Complete Trip: If one link in the trip is not accessible, the entire trip is not accessible.

The accessibility of a complete trip can be defined in terms of an individual's ability to go from origin to destination without gaps in the travel chain. ATTRI-funded applications in the four technology areas will work together to enable the complete trip. By ensuring a complete trip, ATTRI aims to establish an accessible transportation network that is far more economical, extensive, and convenient than what currently exists.

1. Trip planning 2. Traveling to station/ crossing intersections 3. Using station/ stop 4. Boarding/riding vehicles 5. Using vehicles 6. Leaving vehicles 7. Transferring between vehicles 8. Completing travel to destination

Source: U.S. Department of Transportation

Four Common Policy Considerations

While the Americans with Disabilities Act requires the provision of accessible transportation for people with disabilities, barriers impeding the accessibility of transportation for people with disabilities continue to exist. While many of these challenges manifest themselves as physical barriers, their fundamental cause and potential solutions are rooted in the policies guiding the transportation industry. Some of the barriers that make transportation inaccessible for people with disabilities are the high costs of use, physical inaccessibility of transportation systems, concerns over pedestrian safety, the accessibility of the areas surrounding transportation routes and difficulty gaining and understanding crucial transportation-related information. While these challenges present themselves in different segments of the transportation system, they can all be addressed through policy-driven solutions. Through the policy review, the following issues were identified:

- **Accessible Services:** Overcoming barriers to shared mobility services for people with visual, auditory, cognitive, mobility, and other disabilities is critical. Shared mobility can present challenges when passengers with limited mobility do not have accessible services or equivalent accessible alternatives. A number of services have responded by adding accessible services. For example, in a number of cities Uber has implemented UberWAV allowing passengers with disabilities to request wheelchair accessible vehicles, and UberASSIST offers regular vehicles with specialized driver training. Other shared mobility operators offer similar programs. However, the lack of service availability in all markets or longer wait times for accessible vehicles can present equity challenges. In addition to TNCs, shared micromobility (bikesharing and scooter sharing) can affect people with disabilities in a few different ways. The availability of adaptive devices, such as tricycles, hand-pedaled cycles, recumbent cycles and others, have the opportunity to enhance access for individuals with disabilities who otherwise rely on cars or paratransit for most of their

transportation needs (Transportation 4 America, 2019). Additionally, some riders with disabilities may find standing or balancing on scooters and bicycles difficult. Wider standing platforms, larger tires, more wheels, and seating options (with back and arm support) can help expand scooters to more users. Mobility service providers can also enhance accessibility of shared micromobility services by providing storage capability for small item and assistive devices, such as canes, crutches, walkers, and folding wheelchairs. Public agencies may be able to expand access for people with disabilities by requiring a percentage of a fleet includes adaptive devices and establishing incentives for the addition of adaptive devices into micromobility fleets. For example, in Seattle, SDOT is using permit fees to partner with operators to increase the availability of adaptive bicycles. Additionally, operators that deploy adaptive bicycles as part of their fleets could be eligible for up to an additional 1,000 micromobility device permits.

▪ **Curb Space Management:** Additionally, shared mobility can present challenges for people with disabilities when shared modes (typically bikes and scooters) block American with Disabilities Act (ADA) access (e.g., ramps, curbs, etc.) (Shaheen and Cohen, 2019). Prudent curb space management policy (e.g., designated parking areas, lock-to requirements) coupled with education, outreach, and proactive enforcement is necessary to protect ADA access. For example, Santa Monica requires that devices parked improperly must be relocated within one hour after receiving notice of the violation between 7AM and 10PM daily. Other cities offer a two-hour window to correct the problem, generally between 6AM and 6PM during weekdays with a larger timeframe to correct violations during the evenings and weekends. More public awareness is needed to prevent users from leaving equipment that could pose challenges to people with disabilities.

Source: Emily Shryock

- **Service Equivalency:** People with disabilities should have equivalent service. This includes equal geographic coverage, affordable mobility options, equivalent travel modes, comparable hours and frequency of service, and similar wait times. For example, cities may require that shared mobility operators provide service coverage across an entire jurisdiction. In Seattle, the city requires free floating carsharing operators to serve the entire city within two years of initial launch. In addition, public agencies may collect a fee to fund equivalent mobility services (e.g., paratransit) for people with disabilities. For example, SB1376 requires that the California Public Utilities Commission (CPUC) administer a TNC accessibility program for persons with disabilities, including wheelchair users who need a wheelchair accessible vehicle (WAV). CPUC has established a TNC Access for All Fund requiring TNCs to pay into on a quarterly basis, a minimum, $0.05 for each TNC trip completed using the TNC's online-enabled application or platform that originates in one of the geographic areas selected by the CPUC for inclusion in the program. The CPUC has the authority to adjust the fee in each geographic area to different levels based on the cost of providing adequate WAV service within the area. TNCs may be exempted from the payment of the fee in an area if the TNC meets the level of WAV service designated by the CPUC.

- **Accessible Technology:** In 2016, The Department of Justice made changes to the Americans With Disabilities Act requiring all mobile apps to be available to people with disabilities. The federal government has two different standards for accessibility, namely ADA Section 508, and WCAG 2.0 guidelines.[1] In particular, the latter is generally used if an app gets built with native smartphone components. If an app uses multimedia, public agencies will need to consider how people with disabilities properly view and hear needed elements. Similarly, if an app relies too much on red and green colors, to convey information, other ways may be more appropriate for conveying information. Additionally, people with specific disabilities might not have full capability to understand error messages in an app. Accessibility features such as text-to-speech, haptic and gesture feedback can help overcome many of these challenges. For example, as part of the USDOT's MOD Sandbox program, Valley Metro, a public transportation agency in Maricopa County, Arizona has developed the Pass2Go app, an accessible mobile ticketing and multimodal trip planning interface that links to app-based transportation options. Valley Metro has consulted with digital accessibility specialists and stakeholder organizations to ensure that Pass2Go is accessible by people with disabilities.

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[1] For more information, please see: https://www.ada.gov/regs2016/sanprm.html

Policies and Programs to Overcome ADA Challenges

The inability to access shared mobility services limit access to on-demand transportation services, including access to jobs, healthcare, and other critical services. Additionally, the placement of some services in the public rights-of-way can present notable challenges for people with disabilities (e.g., when bicycles or scooters block curb or ramp access). The following section summarizes key accessibility issues by shared mode (e.g., carsharing, shared micromobility, and TNCs), and provides case studies that include sample policies and lessons learned for enhancing accessibility:

Shared Micromobility

A few studies have examined accessibility challenges and potential solutions for shared micromobility. MacArthur et al. (forthcoming) found that for people with disabilities and older adults, standard bicycles used in bikesharing are generally physically inaccessible for many users with special mobility needs due to users' lack of strength, balance, preexisting health conditions, or inability to operate the bicycle. The inclusion of adaptive bikes, such as electric bikes or tricycles, in bikesharing fleets may allow more people to use these services. However, there are barriers to increasing the accessibility of shared micromobility due to challenges with parking adaptive bicycles and difficulties dispersing adaptive services equally to meet the diverse mobility needs of users. A key challenge to increasing bikesharing accessibility is addressing a variety of user needs in a standardized fleet of bicycles. Adaptive cycles may include a variety of features and cycle styles such as handcycles, three- and four-wheeled cycles, tandem cycles, combination hand and foot cycles, and hand and foot cycles for children and smaller adults.

Alta Planning, a private planning and design firm, authored "Accessible Scooter Share", a document that discusses a variety of features that could be included in scooter sharing services to increase their usability by people with a range of abilities. For example, adaptive scooters could include cargo storage for assistive devices (e.g., walkers), thicker wheels and wider platforms for balance, tandem units to be used by assistants, and stable seating (Crowther, n.d.). Additionally, the user interface of shared micromobility apps should be accessible by people with cognitive, visual, or auditory impairments. More research is needed to expand the accessibility of shared micromobility for older adults and people with disabilities.

Adaptive BIKETOWN (Portland, OR): In 2016, PBOT received two requests for physical accommodation with the launch of its BIKETOWN bike share system. Out of those requests PBOT started to conduct outreach, beginning with Wheel Connect (an event sponsored by Oregon Spinal Cord Injury Connection), the annual Adaptive Bicycle Clinic, and INCIGHT's Summer HandCycling Series, and interviewed a number of people with disabilities about their interest in an adaptive bikesharing service. Many of the people interviewed PBOT expressed a preference for a staffed service; storage for personal mobility devices; and a desire to ride on multi-use paths or trails. PBOT partnered with existing bike rental businesses located on or in close proximity to multi-use trails. PBOT initiated an online community survey and feedback from the Adaptive Bicycle Work Group (comprised of community members with disabilities and nonprofit and agency staff working on disability issues). These efforts culminated in an adaptive cycling pilot program from July through October 2017 and may through October 2018. Bicycles were purchased through a combination of public and private funds. The service offers riders short-term (1 to 3 hour) adaptive bicycle rentals, fitting for available adaptive bikes, bicycle helmets, and mobility device storage and service animal crate storage during the rental. The program does not provide transfer or assistance from a mobility

device to an adaptive bicycle and does not provide emergency pick-ups if a user cannot return to the bike shop on their own. TriMet Honored Citizens passholders (available for people with disabilities, seniors and Medicaid recipients) pay a discounted rate of $5 per hour, or $12 for three hours. A limited number of fee waivers are available for those that can't afford that rate. Key lessons learned from the program include:

- Service is not truly providing accessible bikesharing. The service is limited to pick-up from a fixed location (e.g., bike rental), rather than the bikesharing service area.
- Additionally, reservations are required and users may require the assistance of a third-party to access/egress adaptive bicycles.
- The service is providing a number of supportive ancillary services to reduce barriers to adaptive cycling, such as storage of mobility devices and service animals.

In general, common questions associated with adaptive bikesharing include:

- How many adaptive bikes does a system need in order to provide sufficient access for riders with disabilities?
- How will the bikes integrate with the rest of the system?
- From a business perspective, how does the introduction of different types of bikes affect the economics and efficiency of a bikeshare program (e.g., equipment availability, rebalancing, etc.)?
- What types of policies are needed to ensure that shared micromobility devices (bikes and scooters) do not impede access to bus stops, sidewalks or other public infrastructure?

Carsharing

Generally, accessible carsharing vehicles have been relatively limited. Over the past twenty years, a few carsharing operators have offered wheelchair accessible vans and a few carsharing programs do offer adaptive equipment that can be installed into vehicles to enhance accessibility for people with a variety of abilities. This section discusses how two programs have expanded accessible vehicles to customers with disabilities.

Accessible Carsharing Services (Past Example from San Francisco, CA):

City Carshare was a carsharing program that operated in the San Francisco Bay area. In 2016, the company ceased operations when Getaround, a peer-to-peer (P2P) carsharing company, acquired City CarShare's fleet, parking spaces, and member base. City CarShare offered two programs to enhance carsharing accessibility for disabled and low-income San Francisco Bay Area residents: AccessMobile and CommunityShare. In 2008 City CarShare introduced AccessMobile, the nation's first wheelchair-accessible carsharing program, in partnership with the City of Berkeley and Berkeley's Commission on Disability. AccessMobile's wheelchair accessible vans offered riders increased independence and the ability to reach locations that are often otherwise inaccessible or where travel would be cost prohibitive using mass transit, paratransit, TNCs, or taxi services. AccessMobile also allowed people with disabilities access to vehicles that meet the accessibility standards of the Americans with Disabilities Act without the cost of owning and retrofitting a private vehicle. The vans were able to seat up to six people and one wheelchair. People with disabilities who did not have a driver's license were able to have a family member or friend sign up and drive for them. When it was operational, the AccessMobile program had three vans located in Berkeley and San Francisco.

Today, Enterprise CarShare does offer some services for people with disabilities. Enterprise offers Hand controls, spinner knobs and pedal extender availability at no additional charge. Enterprise typically requires two business days' notice for mobility device equipped vehicles. However, at certain major airport locations, mobility device equipped vehicles may be available with as little as 24-hour notice. Enterprise notes that their ability to provide mobility device equipped vehicles may vary based on the availability of mechanics who are qualified to install the devices. Enterprise also allows customers with disabilities that do not have a driver's license to rent a vehicle when accompanied by a designated driver with a license.

For-Hire Services (Taxis and TNCs)

As demand-responsive services continue to expand across the U.S., communities are beginning to grapple with how ensure TNCs enhance accessibility for all users, including people with a variety of disabilities. Common issues confronting public agencies include:

- The growth of TNCs have generally had an adverse impact on the taxi industry, including the number of available taxi cabs. Although data is limited, in some markets TNCs may be contributing to a decline in accessible taxis (due to an overall decline in the taxi industry). For example, SFMTA has reported an approximate 60 percent decline in accessible taxis from their peak (SFMTA 2019);
- TNC and taxi drivers may not accept rides or pick-up all passengers with disabilities, due to concerns about liability (if a person is injured and/or mobility devices are damaged); the refusal to accept working animals; and the lack of ramps, other equipment, or space for adaptive mobility devices, such as scooters and wheelchairs;
- The lack of accessible vehicles;
- The impact of taxis/TNCs blocking ADA access, such as ramps;
- The role of taxis/TNCs to provide supplemental and/or replacement paratransit services. For example, Pinellas Suncoast Transit Authority (PSTA) partners with TNCs, taxis, and paratransit providers to offer subsidized, on-demand rides during off-peak hours (i.e., 10 PM – 6 AM) for individuals living in Pinellas County, with an income less than 150% of the poverty guideline, and who cannot otherwise complete life-sustaining trips. The program may reduce dependency on paratransit for some riders for some use cases; and
- Data sharing requirements to monitor and enforce accessibility policies.

However, no single jurisdiction has addressed all of these policy issues. Broadly, common approaches include regulatory requirements, taxes or fees to support accessible projects or programs, and partnership programs. For example, driver training is important to ensuring the safety of both ambulatory[2] and non-ambulatory[3] passengers. Some jurisdictions, such as Portland, Oregon, require TNCs to provide accessible service. However, policies without monitoring and enforcement are ineffective. The Tri-County Metropolitan Transportation District of Oregon (commonly known as TriMet) found that in spite of the city's wheelchair accessible vehicle requirement for TNCs, TriMet users were unable to request an accessible vehicle as part trip planner beta test. This example highlights the

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[2] An ambulatory passenger is a passenger who is a capable of walking without assistance.
[3] A non-ambulatory passenger is a passenger who requires the assistance of mechanical aids, such as crutches, walkers and wheelchairs.

critical necessity for public agencies to monitor compliance of accessibility regulations. Additionally, many jurisdictions require a surcharge to fund wheelchair accessible services.

In California, local governments lack direct regulatory oversight of TNCs. However, the Public Utilities Commission (CPUC) requires TNCs to collect a ten cent ($0.10) fee on each trip in California. The funds generated from the fee support the expansion of on-demand transportation for non-folding wheelchair users who require a wheelchair accessible vehicle (WAV).

At a local level, Austin, Texas has a relatively robust accessibility policy that requires:
- TNCs to collect a ten cent ($0.10) fee on each trip to fund accessible services (similar to the CPUC policy);
- Service animals must be reasonably accommodated by TNC drivers. If a service animal cannot be reasonably accommodated by a driver, the TNC must identify an alternative transportation arrangement for the passenger and service animal.
- TNCs must make an accessible service request indicator available on their apps within three months of the execution of the TNC agreement with the city. Once the accessible service request indicator is available, if a driver cannot provide a passenger a requested accessible ride, the TNC must identify an alternative transportation arrangement for the passenger.
- TNCs may not allow its drivers to refuse to accept a passenger who is disabled, or to charge a higher fare or additional fee to a person who is disabled, based on the person's disability, use of a support animal, wheelchair, crutches, or other mobility assistance device.

More information on Austin's policy can be found at: http://www.austintexas.gov/edims/document.cfm?id=219353

For-Hire Services (New York City, NY):

New York City's Access-A-Ride is one of the largest paratransit providers in the country, currently providing more than six million trips annually to approximately 150,000 eligible New Yorkers. Access-A-Ride users are taken from pickup to destination anywhere in the five boroughs and certain parts of nearby Nassau and Westchester counties for the same price as the subway or bus fare ($2.75 per ride). Passengers typically have less flexibility because their trips must be booked by 5 P.M. the day before. This paratransit system typically leads to people either arriving to their destination: (1) very early with no place to wait, or (2) too late after spending a significant time in a vehicle that was dropping off or picking up other people around the city. The service is also expensive, with an average cost per ride estimated at more than $60.

The New York City Taxi and Limousine Commission (TLC) has steadily increased the number of accessible vehicles in the yellow and green taxi (street hail liveries) fleet for people with disabilities in recent years. TLC has set aside a designated number of taxi medallions for use only by wheelchair accessible vehicles (WAVs). There is a $0.30 WAV Improvement Surcharge added to each taxi trip. The Taxi Improvement Fund gives vehicle owners up to $14,000 to offset purchase costs of a WAV plus up to $4,000 per year for four years (up to $30,000 total over four years). Drivers may receive $1.00 per trip completed in a WAV, even if the passenger is not a wheelchair user. Drivers can earn an additional dispatch fee payment of up to $30 for traveling to the passenger pickup under the NYC Accessible Dispatch Program. This program provides residents and visitors with disabilities access to green and yellow wheelchair accessible taxis in all five boroughs. Passengers with disabilities can book an accessible taxi trip using this program to e-hail or street hail an accessible taxi. As of 2018, there were approximately 2,100 wheelchair accessible yellow taxis on the road, and the TLC is committed to reaching fifty percent of the fleet (approximately 6,800 vehicles) by 2020.

> **TNC Accessibility in New York City**
>
> In 2018, the New York City Council voted to stop the issuance of new TNC licenses for 12 months. Under the cap, TNCs were granted an exception and could still be granted licenses for wheelchair accessible vehicles (WAVs). In August 2019, the City Council extended the cap for an additional year.
>
> A report by the New York Lawyers for the Public Interest found that Lyft located a WAV 5% of the time rendering the service non-functional for wheelchair users while Uber had a 55% success rate. Combined, both TNCs only located a WAV 26% percent of the time while locating non-accessible vehicles 100% of the time. The report also noted in estimated waiting times between requests for accessible and inaccessible vehicles. The estimated wait time for a WAV was 17 minutes, versus a four-minute estimated wait for inaccessible service. Finally, the study was unable to locate a single WAV at two major NYC airports, while locating inaccessible vehicles at the same airports 100% of the time.

Additionally, all livery, black car, and limousine bases are required to provide service in wheelchair accessible vehicles. Beginning in January 2019, dispatchers must either send a certain percentage of their trips to WAVs, or partner with an approved Wheelchair Accessible Vehicle Dispatcher to service WAV requests. These rules are meant to ensure that passengers can request a WAV from any local car service or app-based for-hire vehicle base and receive timely, safe service. Passengers can request an accessible trip by calling their local car service directly, visiting their car service's website, or using any car service app available in NYC. There were approximately 240 wheelchair accessible green taxis available as of 2018.

In recent years, NYC's Metropolitan Transportation Authority (MTA) has begun leveraging the increasing accessibility of the taxi fleet to provide some paratransit trips. A portion of Access-A-Ride users have been provided with same-day, on-demand direct taxi service as part of an MTA-led pilot program. Access-A-Ride pilot users are able to obtain a taxi through either an e-hail mobile application or a dedicated call center as a same-day, direct service for a subsidized cost of $2.75. Curb covers the rest of the metered fare, and then the MTA reimburses them.

Key lessons learned from these developments in NYC include:
- The increase in accessible taxis benefits more than just Access-A-Ride users, as many people with disabilities do not use paratransit and may use other non-paratransit transportation options available to them.
- While the previous Accessible Dispatch program required trips to begin in Manhattan, the program has been expanded city-wide allowing residents and visitors to request an accessible yellow or green taxi from anywhere by calling a dispatch center, dialing 311, scheduling a trip online, or through the "Accessible Dispatch NYC" app. To compensate them for traveling to the pickup location, drivers receive a dispatch fee payment from the TLC's Taxi Improvement Fund.
- According to MTA, a trip under the e-hail paratransit program cost $35.91 compared to $68.71 for a traditional Access-A-Ride paratransit trip. However, increased convenience of the on-demand service is believed to be contributing to induced demand (more use of the service).

Shared Mobility and Equity: The Role of the Public Sector

There are numerous roles for the public sector. A few common roles for the public sector can include:

Knowledge Transfer and Partnership Facilitation: Public agencies can facilitate equity programs and partnerships between the public and private sectors that focus on improved access for persons with disabilities. Public agencies can also work to institutionalize accessibility efforts by integrating shared mobility into the transportation planning processes, such as long-range and general planning.

Pilot Projects: Cities and other public agencies can deploy pilot projects that leverage shared mobility to help achieve equity goals, by testing and evaluating the outcomes related to access for persons with disabilities.

Funding: There are a number of funding opportunities that the public sector can pursue to encourage shared mobility use in disadvantaged communities, including subsidies for shared mobility (e.g., first- and last-mile subsidies for paratransit and connections to public transit).

Bridging Information Gaps: Education and outreach to understand mobility challenges and share information about programs for vulnerable communities can help overcome information gaps. Additionally, in some cases websites and smartphone apps that provide mobility information or services may not be accessible for all users. Improvements to smartphone and web-based tools to support a variety of disabilities and provide wheelchair accessible information is also key.

Enforcing Equity Through Regulation/Legislation: Government can play an important role ensuring equitable access to shared mobility through regulation and legislation. Many of these laws and regulations already exist, though guidance for applying them to shared mobility may be needed. A few examples include:

- **Title VI of the Civil Rights Act of 1964:** This law prohibits discrimination based on race, color, and national origin in programs and activities that receive federal financial assistance.
- **Civil Rights Restoration Act of 1987:** This law clarifies the earlier definition of "programs and activities" in other civil rights legislation. Under this law, discrimination is prohibited throughout an entire organization or agency, if any part of that agency receives federal financial assistance.
- **Title 49 CFR Part 21:** This regulation implements provisions of Title VI for any program or activity receiving federal financial assistance from the U.S. Department of Transportation.
- **Title 49 CFR 37.105:** This regulation implements equivalent service provisions with the respect to schedules/headways, response time, fares, geographic area of service, hours and days of service, availability of information, reservations capability, constraints on capacity and service availability, and restrictions based on trip purpose.
- **National Environmental Policy Act (NEPA):** Under NEPA, an environmental impact statement (EIS) is used by federal agencies to ensure a full and fair participation in the review of all the significant environmental impacts of projects occurs and informs decision makers and the public of reasonable alternatives that would avoid, minimize, or mitigate the adverse impacts or enhance the quality of the human environment.
- **The Rehabilitation Act of 1973:** Section 504 of this act makes it illegal for government agencies, programs, or activities that receive federal financial assistance to discriminate against qualified individuals with disabilities. Section 508 requires federal information technology and electronic systems be accessible to people with disabilities.
- **Americans with Disabilities Act (ADA):** This law prohibits discrimination against people with disabilities. Title III of ADA requires that private transportation businesses provide accessible-ready vehicles and facilities to persons with disabilities.

In addition to federal requirements, California has implemented laws and regulations to support equitable access to transportation services, including:

- **The California Environmental Quality Act (CEQA)** requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.
- **The Unruh Civil Rights Act** prohibits discrimination against protected classes and guarantees the right to full and equal accommodations, advantages, facilities, privileges, or services in all business establishments (Civ. Code, §§ 51, 51.5, 51.6).
- **The Disabled Persons Act** protects Californians from discrimination based on disability. California's law states that individuals with disabilities shall be entitled to "full and equal access, as other members of the general public" to the "privileges of all common carriers, airplanes, motor vehicles, railroad trains, motorbuses, streetcars, boats, or any other public conveyances or modes

of transportation (whether private, public, franchised, licensed, contracted, or otherwise provided)" (Civ. Code, §§ 54.1).

Monitoring Equity Outcomes Through Data and Research: Data and research can be an important monitoring tool for public agencies to help understand if shared mobility services are meeting the needs of all users. To do this, public agencies should identify equity goals, including equivalent access for persons with disabilities, translate these goals into evaluation hypotheses, define metrics to measure equitable outcomes, identify data sources, and both define and implement methods of analysis. Examples of potential equity metrics for shared mobility that may correlate to accessibility for persons with disabilities include: 1) demographics of shared mobility users; 2) spatial distribution of locations served; 3) demographics of areas served; and 4) cost per trip or cost per mile, to name a few.

Key Takeaways

- Shared mobility can enhance access and opportunities for people with disabilities, but it may also have adverse impacts if people with disabilities bear a disproportionate share of the adverse impacts of shared mobility.
- A number of policies and programs can help overcome these barriers, such as:
  - Expanding access to accessible vehicles and adaptive mobility devices for people with disabilities;
  - Developing policies (backed with enforcement mechanisms) that prohibit blocking ADA access (e.g., curbs, loading zones, ramps, etc.);
  - Developing pilots and programs for priority communities to meet specific mobility needs of those community members across the range of factors for a "complete trip" such as subsidies, late night transportation options, and others.
  - Establishing policies and enforcement mechanisms that ensure equivalent level of service and prohibit discrimination against vulnerable users and communities;
  - Establishing a mobility fund to pay for additional mobility options for people with disabilities and disadvantaged communities;
  - Ensuring accessibility of all web-based and smartphone tools.

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Appendix 2 - Ridehailing and Carsharing Accessibility Data Memo

711 SE Grand Ave.
Portland, OR 97214
(503) 230-9862
www.altaplanning.com

To: Kerby Olson, City of Oakland

From: Jean Crowther (Alta) and Chris Zeilinger (CTAA)

Date: October 16, 2019

Assessing the accessibility of ridehailing and car sharing in Oakland: background analysis.

Accessibility and Ridehailing in Oakland

The California Public Utilities Commission (CPUC) requires registered TNCs to submit their (a) driver training plan, (b) accessibility plan, (c) plan on avoiding divide between able and disabled communities, and annual reports on (d) the provision of accessible vehicles, (e) provision of service by zip code, (f) problems with drivers, (g) hours logged by drivers, (h) miles logged by drivers, (i) drivers completing a driver training course, and (j) annual updates on the accessibility plan. These plans and reports are statewide in scope; neither Lyft, Uber nor any of the other TNCs in California provide any data or narrative details that are broken down by specific counties or other jurisdictions. Since both Lyft and Uber operate throughout the state, their CPUC filings do not allow for an examination of their plans or data as they pertain specifically to Alameda County or the City of Oakland.

For the two registered TNCs regularly operating in Oakland (Lyft and Uber), the following is what these statewide reports divulge with respect to how they serve persons with disabilities. Although they are aggregations of data from throughout the state of California, these reports are interesting. It should be noted that California is unique within the U.S. for requiring these reports from TNCs; comparable data are not collected from other states, nor on a national basis.

Accessibility of Services

CPUC requires all registered TNCs to provide data on the accessibility of the vehicles they operate. The reporting regime specifies these data elements be reported quarterly:

- Number of hours an accessible vehicle is available each month
- Number of accessible vehicles
- Number of customer requests for accessible vehicles
- Percentage of customer rides provided with accessible vehicles
- Number of fulfilled requests for accessible vehicles

- Percentage of completed requests for accessible service

Since neither Lyft nor Uber own or operate vehicles directly, they do not report data on the numbers nor hours of availability of accessible vehicles.

As would be expected, neither Lyft nor Uber expresses an unwillingness to comply with the ADA in their reports, nor do these TNCs argue in their accessibility plans that the ADA doesn't apply to their operations. Over the last four quarterly reporting cycles, Uber and Lyft reported the following statewide service data, which cover the period of October 1, 2017 – September 30, 2018:

- Approximate total number of all rides provided in California, regardless of accessibility or location of trip – 93.5 million (Lyft); 202.0 million (Uber)
- Percentage of customer rides provided with accessible vehicles, statewide – 0.03% (Lyft); 0.06% (Uber)
- Number of fulfilled requests for accessible vehicles, statewide – 28,000 (Lyft); 121,000 (Uber)
- Number of customer requests for accessible vehicles, statewide – 29,000 (Lyft); 146,000 (Uber)
- Percentage of completed requests for accessible service, statewide – 96.9% (Lyft); 82.2% (Uber)

Accessibility Plan: Lyft

In its most recent accessibility plan, filed in 2017, Lyft focuses on these elements of accessibility:

- The accessibility of Lyft's smartphone app, including how Lyft users can store accessibility-related needs in their user profile within the app, as well as steps Lyft is taking to make the app accessible to visually impaired users; and
- The commitment to ensuring that passengers with service animals, or who can have their wheelchairs or other mobility aids safely stowed in the vehicle's trunk while they ride in the vehicles' conventional seats, are transported without challenge or discrimination, as well as a more general commitment to assure that there is not discrimination against any passenger on the basis of disability.

Lyft's accessibility plan indicates that prospective passengers requiring a wheelchair-accessible vehicle (WAV) for their journey receive a text message from the Lyft app that includes a referral to an external transportation provider with whom the passenger may arrange for transportation in a WAV.

Accessibility Plan: Uber

In its most recent accessibility plan, filed in 2019, Uber presents five core elements:

- The intention to modify Uber's smartphone app so as to allow passengers to indicate accessibility-related needs in their user profile within the app;
- The commitment to ensuring that passengers who can have their wheelchairs or other mobility aids safely stowed in the vehicle's trunk while they ride in the vehicles' conventional seats, are transported without

challenge or discrimination, plus a mention to various WAV-related pilot programs that Uber is pilot-testing in various markets, including its WAV projects with MV Transportation in the cities of San Francisco and Los Angeles;

- The intention to modify Uber's user app so that it meets current accessibility guidelines;
- A commitment to assuring that passengers with service animals will have these animals safely accompanying the passenger in the vehicle when being transported by Uber's driver-partners; and
- A more general statement of Uber's commitment to assure that its passenger and driver-partner ratings systems are not to foster discrimination against any passenger on the basis of disability.

Aside from referring to its pilot projects, Uber's accessibility plan is nearly silent on the use or possible use of WAVs as a regular component of what it offers its users.

Accessibility Complaints

Uber: Between September 1, 2017, and August 31, 2018 (the most recent 12-month period for which these data are reported), a total of 3,321 disability-related complaints against Uber were reported to the state of California (the data do not indicate any more specific information about the locations or jurisdictions of these complaints). The breakdown of these complaints' topics is as follows:

- Refusal to accommodate an assistive device: 250 complaints (7.5% of all complaints against Uber)
- Refusal to accommodate an emotional support or therapy animal: 30 complaints (0.9% of all complaints)
- Refusal to provide service because of a person's disability or other "protected trait": 1,002 complaints (30.2% of all complaints)
- Refusal to accommodate a service animal: 1,331 complaints (40.1% of all complaints)
- Unspecified refusal to provide service: 708 complaints (21.3% of all complaints)

Accessibility Complaints: Uber
California, statewide, 2017 - 2018

Legend:
- Refused device
- Refused support animal
- Refused because of disability
- Refused service animal
- Other refusal

Accessibility Complaints: Lyft
California, statewide, 2017 - 2018

Legend:
- Refused support animal
- Refused wheelchair or device
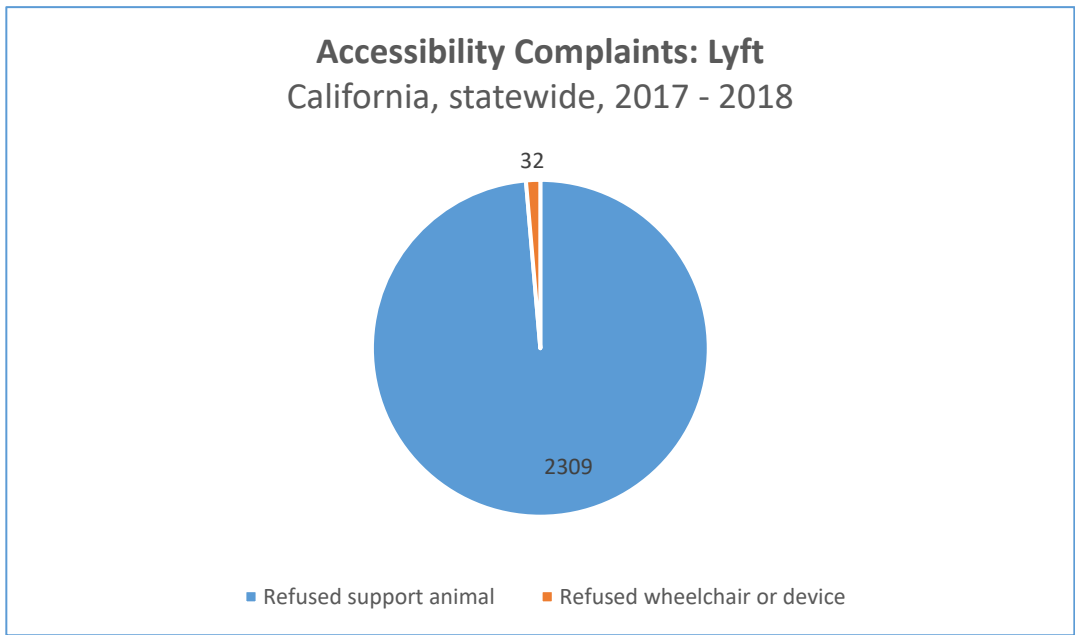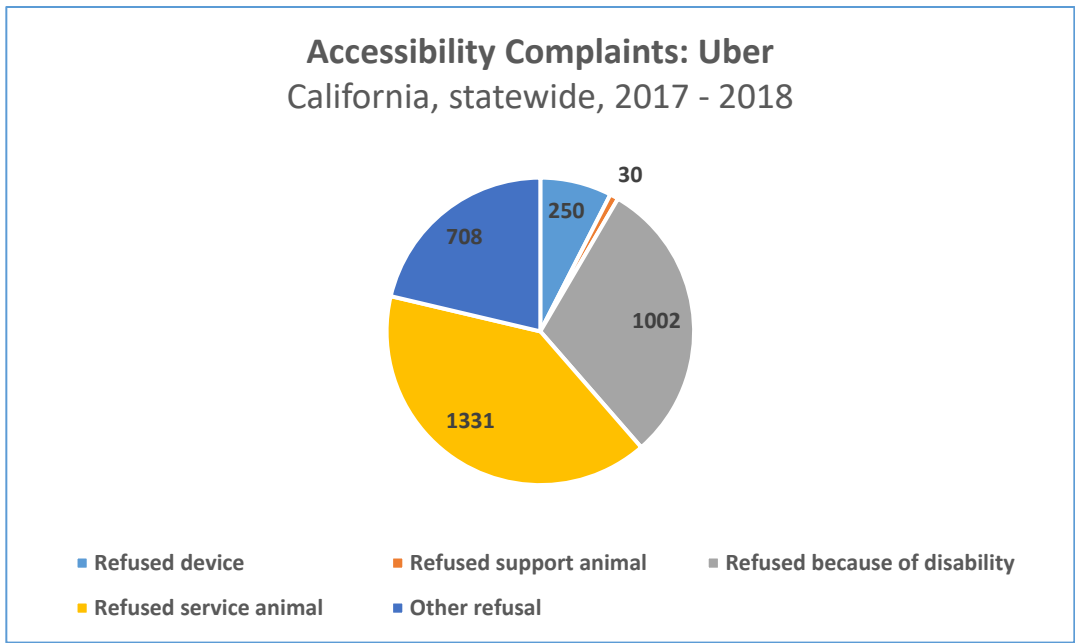
Lyft: During that same period of September 1, 2017 – August 31, 2018, Lyft reported a total of 2,341 accessibility-related complaints across the state of California, broken out along these lines:

- Refusal to accommodate a service animal: 2,309 complaints (98.6% of all complains against Lyft)
- Refusal to accommodate a wheelchair or other mobility aid: 32 complaints (1.4% of all complaints)

Again, the above numbers are statewide, and cover incidents that may have taken places at various points in time prior to being summarized and reported to the state during the 2017-2018 reporting cycle. TNCs in California do

not break down these data by jurisdiction and municipality, so it's hard to know how many, if any, of these accessibility-related complaints stemmed from incidents that may have occurred in Oakland. In addition, these data do not reflect how complaints may have been resolved, nor do they indicate if any complaints were found to be unsupported.

Nonetheless, it's relevant to note that the majority of complaints related to ridehailing services' are concerning drivers' refusals to accommodate service or therapy animals, with refusals to accommodate wheelchairs or mobility aids being the second leading basis of complaint.

Accessibility and Car Sharing in Oakland

Gig Car Share reportedly uses only Toyota Prius vehicles, according to local news media, at least when the service began operating with 250 Priuses deployed around Oakland and Berkeley in the spring of 2017. When the service was launched, there appeared not to be any goals or requirements to make wheelchair accessible vehicles available through this free-floating car share program.

Zipcar advertises that it can make some forms of accessible vehicles available for use by its registered members, but data on the nature, availability and utilization of such vehicles appear not to be made publicly available. Vehicles equipped with hand controls require a 72-hour advance reservation by phone. Zipcar also has a company-wide policy that users' service animals can ride in its vehicles without having to be secured in a carrier. If Zipcar has established any goals or requirements concerning the provision of wheelchair accessible vehicles, this information is not publicly available.

The accessibility of vehicles in the two peer-to-peer car sharing services in Oakland – **Getaround** and **Turo** – is wholly a function of the vehicles made available by participating vehicle owners. In theory, private owners of wheelchair accessible vehicles could make those vehicles available to registered users of either Getaround or Turo, but there's no clear evidence whether this is occurring in Oakland. One of the defining characteristics of peer-to-peer car sharing is that vehicles are made available by their individual owners, so there is not a lot of data on aspects of accessibility.

Until November 2019, an interesting aspect of Getaround's peer-to-peer carsharing service was that it could – and did – refer prospective users requiring wheelchair accessible vehicles in the city of Hayward to a two-vehicle accessible vansharing service operated by Community Resources for Independent Living (CRIL), in partnership with the City of Hayward. These two vans were the remnant of a fleet of vans and sedans, including some wheelchair accessible vans, that were operated by the Bay Area's City Car Share program from 2001 through 2016, when its operations were taken over by Getaround. However, CRIL's insurance carrier terminated coverage for the van share program in November 2019, whereupon it ceased operations.

If these companies – Getaround, Gig Car Share, Turo and Zipcar – or the city of Oakland have mechanisms to receive complaints or other user input concerning the accessibility of Oakland's car sharing services, information on how to complain or comment is not readily apparent.

How Oakland's Ridehailing and Car Sharing Services Present Themselves to Customers with Disabilities

None of the ridehailing or car sharing services in Oakland are going to declare an unwillingness to honor the letter and spirit of the ADA. And in varying ways, these companies do take some appropriate steps to present the accessibility of their services. There are several key points around which to gauge the nature and level of accessibility aspects, as detailed below.

1. Is information about the service accessible to persons with disabilities?

Since all of these services - Getaround, Gig Car Share, Lyft, Turo, Uber and Zipcar – require their users to use either a web-based platform or a mobile app to learn about and use the service, accessibility of these user interfaces is the first threshold to cross. Under Section 508 of the Rehabilitation Act, there are technical and functional requirements that define the accessibility of websites; these functional requirements apply to mobile phone apps, too, but technical requirements for mobile phone app accessibility have not yet been finalized.

Getaround: The company's website (https://www.getaround.com) may be 508-compliant, but there are no statements about the site's accessibility. The website provides general information about the company and how it operates. For any details about Getaround in Oakland, interested persons need to use the company's mobile phone app, which may or may not be accessible to mobile phone users with disabilities. Even if not a registered user of Getaround, prospective customers must download the app to their phone before they can learn more about its services in Oakland.

Gig Car Share: The company's website (https://gigcarshare.com) may be 508-compliant, but there are no statements about the site's accessibility. The website provides general information about the company and how it operates. For any details about Gig Care Share in Oakland, interested persons need to use the company's mobile phone app, which may or may not be accessible to mobile phone users with disabilities. Some generally descriptive information about the service is available on this site, but prospective customers must download the app to their phone before they can learn more about Gig Car Share's specific services in Oakland.

Lyft: All information about Lyft's services, whether in Oakland or elsewhere, is provided through its mobile phone app. In Lyft's official accessibility plans, they tout the accessibility of this app, and describe their approach to meeting Section 508 functional requirements through the app. Some information on Lyft's specific services,

including the opportunity to examine potential trips within Oakland, can be obtained through its website (https://www.lyft.com), which may be 508-compliant, although it has no statements to that possibility.

Turo: The company's website (https://turo.com) may be 508-compliant, but there are no statements about the site's accessibility. The website provides general information about the company and how it operates. It goes so far as to allow users to enter prospective pickup locations and periods of use from the website. The only details for which the company's mobile phone app are absolutely necessary are the checking out, unlocking and returning of a vehicle.

Uber: All information about Uber's services, whether in Oakland or elsewhere, is provided through its mobile phone app. In Uber's official accessibility plans, they tout the accessibility of this app, and describe their approach to meeting Section 508 functional requirements through the app. Information on Uber's specific services, including the opportunity to examine potential trips within Oakland, can be obtained through its website (https://www.uber.com), which may be 508-compliant, although it has no statements to that possibility.

Zipcar: The company's website (https://www.zipcar.com), may be 508-compliant, but there are no statements about the site's accessibility. The website provides general information about the company and how it operates. It goes so far as to allow users to enter prospective pickup locations and periods of use from the website, and to see what vehicles are available at any given moment. The only details for which the company's mobile phone app are absolutely necessary are the checking out, unlocking and returning of a vehicle.

2. Are persons with disabilities able to obtain information on trip-arranging?

For car sharing services (**Getaround**, **Gig Car Share**, **Turo**, **Zipcar**), this is a moot question, since trips are not arranged.

For **Lyft** and **Uber**, both their websites and mobile phone apps aim to be largely accessible to users with disabilities. A robust 508 assessment of their site, and a comparable analysis of their mobile phone apps, would determine the extent of both technical and functional accessibility of these platforms.

3. Does the service provide transportation that is accessible to persons with disabilities?

Peer-to-peer car sharing, such as **Getaround** or **Turo**, is accessible only when participating vehicle owners provide accessible vehicles. This theoretically could be possible, but there's no evidence of peer-to-peer car sharing in Oakland that is accessible to persons with disabilities.

If a person with disabilities is able to operate, or ride in, a Toyota Prius, then **Gig Car Share** is an option. If not, it's not.

Lyft has features on its mobile phone app that are designed for users to indicate accessibility-related needs in their profile, which is intended to assure that passengers can be provided transportation that is suited to their needs and preferences. The mobile phone app also provides voiceover technology that is designed facilitate the app's use by persons whose disabilities limit their ability to use conventional mobile phones. As a matter of policy, Lyft requires its drivers to accommodate service animals and to accept wheelchairs that can be folded and stowed in the trunk or rear cargo area of the vehicle.

Uber has features on its mobile phone app that are designed for users to indicate accessibility-related needs in their profile, which is intended to assure that passengers can be provided transportation that is suited to their needs and preferences. The mobile phone app also provides voiceover and other technology that is designed facilitate the app's use by persons whose disabilities limit their ability to use conventional mobile phones. As a matter of policy, Uber requires its driver-partners to accommodate service animals and to accept wheelchairs that can be folded and stowed in the trunk or rear cargo area of the vehicle.

Zipcar has a limited number of accessible vehicles available for its car sharing customers. To get one of these accessible vehicles, users must call a Zipcar telephone number 72 hours in advance, but cannot use the mobile phone app or website to make these arrangements.

4. Is the payment process accessible to persons with disabilities?

All of these ridehailing and car sharing services – **Getaround, Gig Car Share, Lyft, Turo, Uber** and **Zipcar** – are cashless, with payments happening behind the scenes, using the payment information that users have stored in their on-line profiles with these companies. In general, payment requires the use of a stored credit card account, but the payment platforms used by Lyft and Uber can be set up to work with third-party payment options (such as some pilot projects these companies are using in other places, in which all or part of participating users' ridehailing trips are subsidized by an external entity).

On the other hand, this cashless arrangement does have the effect of excluding persons who are "unbanked" from using any of these car sharing or ridehailing services, and may make participation difficult among persons with low credit limits on their cards or near-zero balances in their bank accounts.

5. Is there an accessible medium by which persons with disabilities can complain or comment on their service?

Getaround: There is no obvious way, whether from the website or by phone, to comment, complain or even seek assistance from this car sharing service.

Gig Car Share: This car sharing service provides both a toll-free phone number and an e-mail address through which persons can contact the company directly.

Lyft: There is in-app customer feedback, as well as a direct link to customer service representatives from within the Lyft website. Given the CPUC requirement to submit quarterly data on complaints, the lack of a clear spot within the website to initiate complaints is rather surprising, but the in-app experience is different.

Turo: There is both in-app and web-based links to roadside assistance and customer service. It's possible that the customer service links can be used to initiate comments or complaints about the service.

Uber: There is in-app customer feedback. On the Uber website, the "help center" pages can be used as a gateway by which Uber users can seek more specific customer service, possibly including the initiation of comments or complaints about the service. Given the CPUC requirement to submit quarterly data on complaints, the lack of a clear spot within the website to initiate complaints is rather surprising, but the in-app experience is different.

Zipcar: The on-line help center embedded in its website can be used to contact the car sharing service directly with questions and comments, and possibly to generate complaints.

Next Steps with this Information

The information presented above will be enhanced by the stakeholder input anticipated at the two upcoming focus group sessions. In addition, CTAA intends to conduct a closer examination of these services' mobile phone apps – not to look at strict Section 508 compliance, but rather to assess the quality and suitability of the user experience for customers with disabilities.

Already, though, some preliminary ideas may be possible avenues for the city of Oakland to explore as it seeks to enhance the accessibility of shared mobility services within the city. A few of the potential policy questions for the city to consider might include:

- What steps can or should the city take to promote the inclusion of wheelchair accessible vehicles among the car sharing services authorized to operate within the city?
- Given that the leading category of accessibility-related complaints among ridehailing users is that of accepting and accommodating service animals, would there be value in an outreach and education campaign designed to improve acceptance of service animals?
- To what extent are potential users of shared mobility services self-excluding themselves, or are in fact excluded, from using shared mobility services on account of being unbanked and/or having economic or physical limitations in their mobile phone use?
  Is there a need for more streamlined or transparent customer feedback or complaint processes among the various shared mobility services operating within Oakland?
- Do users' actual experiences with Lyft and Uber align satisfactorily with the statements presented by these TNCs in their reports to CPUC?

The above are simply illustrative questions. They do not represent policy or procedural recommendations being made to the city of Oakland at this time; instead, they are intended to help stimulated discussion as the result of the team's background work is synthesized with what is shared and learned from the imminent focus group sessions.

Appendix 3 - Bike Share Station Assessment with Scooter Parking Opportunities

OAKLAND BIKESHARE ACCESSIBILITY ASSESSMENT

Field Assessment Worksheet

Station Location Name _____

Name of Staff _____

Date and Time _____

Photos

_____ Station location in context to roadway and sidewalk

_____ Closest curb ramp(s)

_____ Path of travel between curb ramp and kiosk

Bikeshare Station

_____ Station On-street _____ Off-street

_____ Bikes exit into travel lane _____ Sidewalk _____ Bike Lane ____ Buffer

_____ Width of buffer, if applicable

_____ Station adjacent to corner _____ Midblock/ T-intersection

____ Y ____ N Station installation match permit?

If no, describe differences:

Nearest

Curb Ramp

Distance

_____ Distance from curb ramp to kiosk

_____ Distance from curb ramp to docking station (if different)

Ramp Features

____ Y ____ N Curb ramp present

____ Y ____ N Truncated domes present

____ Y ____ N Built-up curb ramp

_____ Perpendicular _____ Diagonal _____ Blended transition

Pedestrian Access Route (PAR) for People Going Around the Station

     ___ Y ___ N   48"-width pedestrian access route (PAR) around station

     _____ Max cross slope of PAR around station

PAR for People Accessing Station

     _____ Width of PAR from ramp to kiosk (if in street: measured from back of bicycle wheels if applicable to edge of travel lane)

     _____ Max cross slope of PAR

Map and Kiosk

     _____ Map facing sidewalk   ____facing street   ____facing bikes   ___facing opposite bikes

     ___ Y ___ N   Clear space present in front of Map (4ft x 4 ft, 2% max cross slope)

     If no clear space, describe:

| |
| |
| |

     _____ Kiosk facing sidewalk _____ Kiosk facing street

     _____ Height of kiosk push-buttons

     _____ Reach to kiosk push buttons

     ___ Y ___ N   Clear space present in front of Kiosk, excluding docking lip (4ft x 4 ft, 2% max cross slope)

     If no clear space, describe:

| |
| |
| |

Scooter-Share Parking

A parked electric scooter must not be within the PAR, against a building, or otherwise obstructing the path of travel, including curb ramp access. For sidewalk locations, a designated e-scooter parking area will be within the sidewalk furniture zone (designed to accommodate up to 6 shared micro-mobility devices) and a preferred minimum of 4ft by 10ft of dedicated space. Ideally designated parking areas should have additional space surrounding them so that if scooters tip over they would not constrict the PAR below 4 ft. Describe opportunity for nearby scooter share parking areas regarding on-street or off-street locations
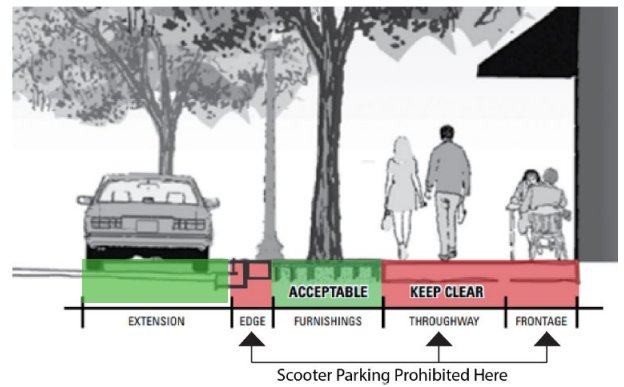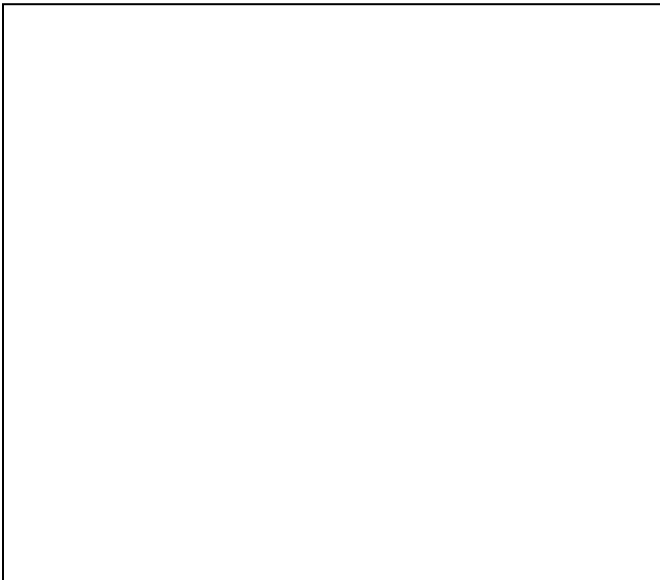
MEMORANDUM

304 12th Street, Suite 2A
Oakland, CA 94607
(510) 540-5008
www.altaplanning.com

To: Kerby Olson, Oakland DOT

From: Beth Martin and Jean Crowther, Alta Planning + Design

Date: February 6, 2019

Re: Oakland Bike Share Accessibility Review

Introduction

Alta Planning + Design conducted an accessibility assessment of the Bay Wheels bike share stations in Oakland as part of the Shared Mobility Accessibility Project. The City of Oakland is interested in looking at how bike share can be more accessible to people with disabilities. This question will be addressed in a number of other tasks in the Shared Mobility Accessibility Project, and is a key driver to the City's ongoing Adaptive Bike share Pilot offering adaptive bikes for short-term rental.

The goal of this report is to present the findings of the accessibility assessment across multiple bike share components. While many components of bike share stations are not required to be in compliance with ADA standards, assessing stations against these standards can help the City develop recommended guidelines related to bike share siting, and station and bike typology. This report outlines a number of recommendations the City can pursue to increase the accessibility of bike share stations.

As a supplement to this report, Alta Planning + Design conducted a review of e-scooter parking opportunities around bike-share stations in Oakland that can inform future decisions around bike share stations in the City of Oakland.

Metrics Reviewed

The U.S. Access Board has not established accessibility guidelines for bike share stations. However, the accessibility of the bike share program can be examined as a whole by examining the accessibility of individual components including:

- Bike share stations should not obstruct the pedestrian access route (Section 302 of ADA Standards)
- Bike share station payment system should be accessible (Section 309 of ADA Standards)

In addition, Alta gathered data on other bike share components that are not regulated within ADA standards. Alta gathered data on other features that in the spirit of the ADA provides metrics on station accessibility including:

- Nearest curb ramp
- Pedestrian access routes
- Station installation (compared to permit)

Stations Reviewed

In the City of Oakland, there are 79 bike share stations, with 62 stations being in-street, and 17 stations located off-street. Alta Planning staff conducted an in-person review of 19 bike share station in the field using the Accessibility Worksheet (see attached). These stations included:

- Madison St at 17th Ave
- Webster St at 19th
- Snow Park
- Lake Merritt BART Station
- Jackson St at 11th St
- Franklin at 9th St
- Washington St at 8th St
- 13th St at Franklin St
- 10th St at Fallon St
- MLK Jr Way at 14th St

- Frank H. Ogawa Plaza
- Grand Ave at Webster St
- Telegraph Ave at 23rd
- Telegraph Ave at 27th
- 19th St BART Station
- Telegraph Ave at 19th
- Lakeside Dr at 14th St
- Rockridge BART Station
- San Pablo at MLK Jr Way

In addition, staff reviewed 59 of the remaining 60 Oakland stations through Google Earth satellite imagery and street view imagery. This review captured a more limited set of criteria that could be assessed through digital imagery. Up-to-date satellite and Google Street View Imagery was unavailable for the Fruitvale BART station bike share station.

Off-street stations are bike share stations that are located on sidewalks, in plazas, parks, or other locations not located within the curb-to-curb space of a street's right of way (ROW). In-street stations are bike share stations that are located within the curb-to-curb space of a street's ROW.
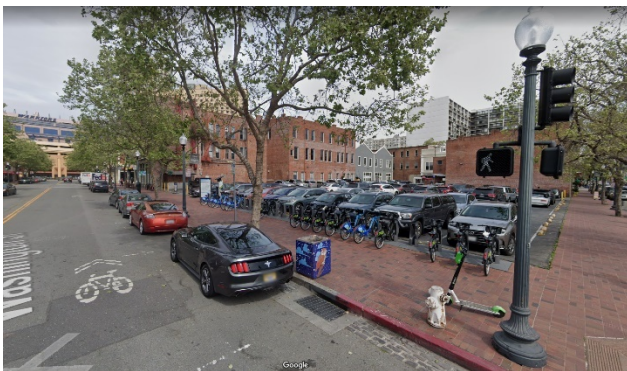
Figure 1: An off-street bike share station at Washington & 8th St.

Figure 2: An in-street bike share station at Broadway & 40th St.

Pedestrian Access Routes

A pedestrian access route must be maintained on the sidewalk around the station. As per Section 302 of ADA standards, the continuous clear width of pedestrian access routes shall be 4.0 ft minimum, exclusive of the curb, and have a maximum 2.0% cross slope. Fifty-one of the in-street stations had a pedestrian access route on the sidewalk while ten were lacking a pedestrian access route (See **Table 1**).[1] All 15 of the off-street stations had a pedestrian access route on the sidewalk. The most common items that prevented a pedestrian access route were tree wells and lighting posts.[2]

Table 1: Bike Share Stations Without Sidewalk Pedestrian Access Routes (PAR)		
Station	**In-street/ Off-street**	**Notes**
Foothill at Harrington Ave	In-Street	Tree well
21st Ave at International Blvd	In-Street	Tree well
10th St at Fallon St	In-Street	Slope of 2.7%
Jackson St at 11th St	In-Street	Slope of 2.1%
Jack London Square	In-Street	Lighting post obstructs access to kiosk
Franklin St at 9th St	In-Street	Slope of 4.7%
13th St at Franklin St	In-Street	Slope of 2.7%
Webster St at 19th St	In-Street	Slope of 2.9%
MLK Jr Way at 14th St	In-Street	Slope of 2.1%
Telegraph at 23rd St	In-Street	Slope on street of 5.2% (Station on-street between travel lane and bicycle lane)

---

[1] PAR for two in-street stations (Shattuck at 51st St and Dover St at 17th St) could not be determined due to unclear virtual imagery in addition to the missing imagery at the Fruitvale BART bike share station.
[2] Virtual station reviews could not measure cross-slope.

Accessible Routes to In-Street Stations' Bike Retrieval Zones

Designating an accessible route within the roadway ensures bike share users with disabilities can access bikes located in in-street stations. Alta staff found that no stations offered a 4.0 ft minimum route to the bike share station. Eight stations reviewed had buffers designated between the back of the bike share station and the bike lane or travel lane. However, none of these stations had a buffer that was at least 4.0 ft.

Figure 3: Bikes exit into buffer and bike lane at DeFremery Park (Google Street View Imagery)

Figure 4: Bikes exit into buffer and bike lane at Broadway & Coronado Station (Google Street View Imagery)

The majority of Bay Wheels bike share stations (38) are sited so that users undock their bikes and immediately exit into the vehicle travel lane. Seventeen stations are sited such that users exit into a bicycle lane. The off-street stations have users undock their bicycles into the sidewalk.[3]

---

[3] Of the 16 off-street stations Alta was able to assess, all undocked into the sidewalk. As mentioned, the Fruitvale BART station could not be audited.

Payment System Accessibility

As part of Section 309 of ADA Standards, the payment system should be accessible to people with disabilities. Per Section 309, this entails that kiosks meet standards around clear floor space, height, and operation.

Kiosk Height

For side and forward reach, the operable parts of the kiosk must be between 15 and 48 inches. Bike share kiosks have payment s that range between 50 and 54 inches, above the defined accessible range. The field assessment confirmed that even where kiosks are installed in the roadway and accessed on the curb, operable buttons are above the 48-inch maximum.

Clear Floor Space

Clear Floor Spaces must be 30 inches by 48 inches, positioned at either a forward or parallel approach, and the maximum cross slope is 2.0% in any direction. **Table 2** highlights the stations where clear space is not available in front of the kiosk. Landscaped areas, tree wells, and sign posts were the most common barrier.

Figure 5: Newspaper kiosk blocks bike share kiosk at Grand Ave & Webster St

Table 2: Bike Share Stations without Clear Floor Space in Front of Kiosk[4]		
Station	**Kiosk Facing**	**Barrier to maintaining Clear Floor Space**
Fruitvale Ave at International Blvd	Sidewalk	White posts installed in sidewalk
21st Ave at International Blvd	Sidewalk	Grass well/landscaped area
San Antonio Park	Sidewalk	Grass well/landscaped area
Grand Ave at Perkins St	Sidewalk	Grass well/landscaped area
Telegraph Ave at 23rd St	Bike Lane	Bikes frequently pass kiosk space (using protected bike lane)
Telegraph Ave at 19th St	Sidewalk	Dirt and built-in cement space
Market St at 8th St	Sidewalk	Dirt, gravel, planter in front of kiosk
Grand Ave at Webster St	Sidewalk	Light post, newspaper box
Telegraph Ave at 27th St	Sidewalk	Light post and tree
Broadway at 30th St	Sidewalk	Kiosk directly faces tree well, imagery shows space temporarily used as e-scooter parking
Mosswood Park	Sidewalk	Grass
45th St at MLK Jr Way	Sidewalk	Parking Information Sign/Pole
49th St at Telegraph Ave	Sidewalk	Bike racks on sidewalk, tree well obstruct kiosk
Shattuck Ave at 51st St	Sidewalk	Tree well, dirt
24th St at Market St	Sidewalk	Grass, tree well

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[4] Unable to virtually audit 10 stations due to out-of-date or unclear digital imagery

Station Installation

The City of Oakland is interested to see where approved station permits do not match station installation. Through the virtual station audit, Alta identified ten stations where the permitted plan differed from the installed bike share station. Differences included:

1. different configuration of bicycle docks, kiosk, and map (for example, number of bicycle docks placed one either side of map differed)
2. map oriented on different side of station
3. different number of bicycle docks permitted than installed
4. Missing flexible delineators or thermoplastic striping outlined in permit (21st and International)

For example, the site plan for the Bay Wheels bike share station at Telegraph Ave and Alcatraz displays 15 bicycle docks on the permit. Three bicycle docking stations are depicted between the map and the kiosk (see Figure 3 below).
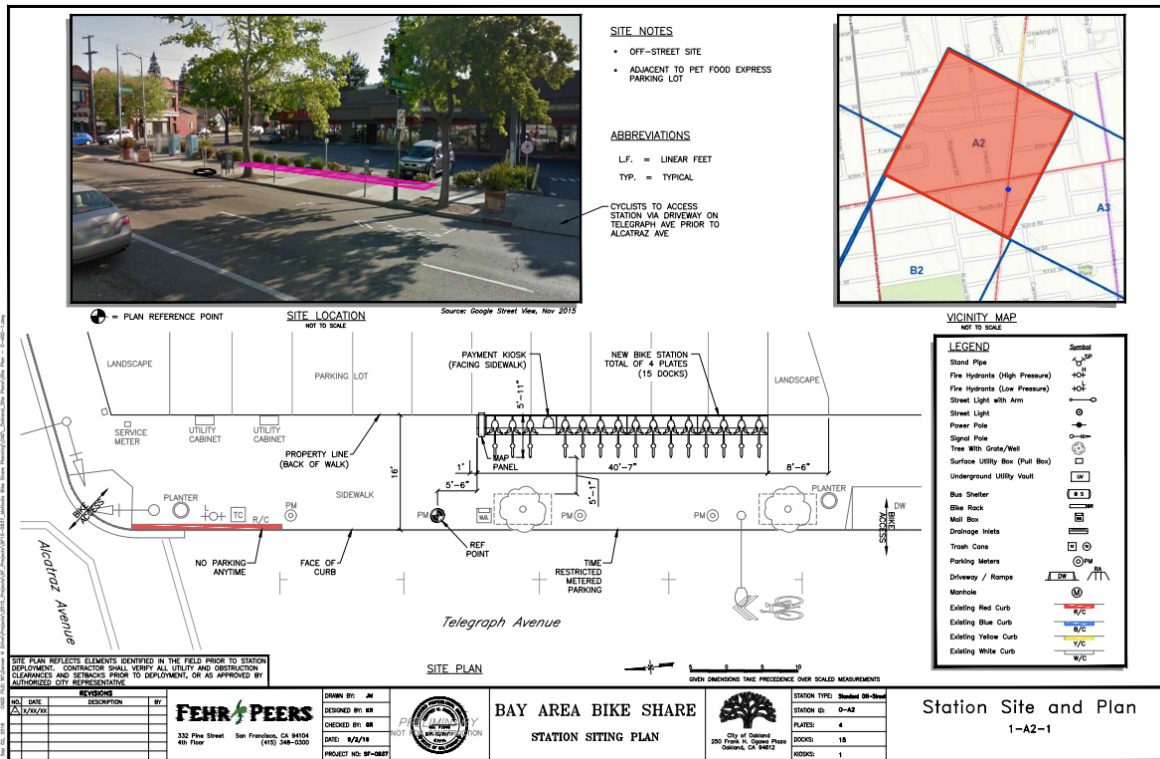
Figure 6: Site Plan A2, Bay Wheels Station at Telegraph Ave and Alcatraz Ave

Figure 7: Bay Wheels Station, Telegraph Ave at Alcatraz Ave (Google Street View Imagery)

Existing conditions at this station deviate from the site plan. Just 11 bicycle docks can be counted through Google Street View imagery and the configuration of the docks is different than pictured in the site plan. The site plan depicts three bicycle docking stations between the kiosk and map, but there are only two docking stations installed in that space (see Figure 4 above).

A full table of stations that did not match the site drawings can be found in **Appendix A**.

Nearest Curb Ramp

For bike share stations, curb ramps are important infrastructure piece that lets users access in-street bikes, or bring bikes from off-street stations to the roadway. Alta recorded a number of accessible features of the closest curb ramp, including type of curb ramp, and presence of truncated domes. Of the closest curb ramps, 49 were oriented diagonal and 27 were oriented perpendicular. Two stations had a "built up" curb ramp. There was one station that had no curb cut at the closest corner (Union St at 10th Street), and 22 stations where the closest curb ramp was missing truncated domes.

Appendix B lists all stations where the nearest curb ramp was missing truncated domes.

Figure 8: Built-Up Curb Ramp at Franklin & 13th St

Figure 9: Diagonal curb-cut at Washington & 8th St without truncated domes

Additional Observations

Alta captured information on bike share stations that may not unequally impact people with disabilities, but affects the usability and comfort for all bike share users.

In-street Bike Docking/Undocking

Alta observed across all in-street stations, bike share users pull bikes into a travel lane or bicycle lane to undock or redock a bike. This puts bike share users in potential conflict with vehicles and other people riding bikes. As noted above, a handful of bikes have a designated buffer between the back of the wheel and the travel lane or bicycle lane.

Orientation of the Map

All of the stations include an advertisement panel that displays an advertisement on one side, and a map of nearby bike share stations on the other side. In every observation, Alta staff noted that the advertisement was often facing away from the station, while the map was often facing inward and partially blocked by a bike share dock and bicycle.

Recommendations

The City of Oakland has many competing priorities for improving accessibility across the City of Oakland. Alta recommends that the City of Oakland consider these improvements, especially if the City is interested in including docked adaptive bikes within existing bike share stations.

Improve Payment System Accessibility

As many of the kiosks are placed in-street and face the sidewalk, there is a gap between the curb of the sidewalk and the kiosk necessary for drainage. The operable parts of the kiosk are outside the defined accessible reach given ADA standards. The City of Oakland may consider asking Bay Wheels to develop a kiosk design that places buttons within an accessible reach, and has a built in Clear Floor Space that bridges over the curb gap.

Figure 10: Gap between kiosk and sidewalk curb

Consider Alternative Bike Share Station Designs

The placement of bike share stations in Oakland currently fall under four typologies:

- Station placed in-street in parking zone facing travel lane
- Station placed in-street facing protected bike lane
- Station placed off-street in furnishing zone facing the pedestrian zone
- Station placed off-street adjacent to building zone facing pedestrian zone

Alta recommends the City consider different station typologies that provide accessible pedestrian access routes on the sidewalk and in the street. These typologies could include:

- **Flipped stations next to curbs**. In areas where there can be a wide parking lane, stations can be flipped to provide an accessible pedestrian route between the bike tire and the curb (See Figure 9)
- **Station bulb out.** In areas of high pedestrian traffic, Alta recommends building bike share bulb-outs. This design allows for the placement of a bike share station without constraining pedestrian travel (See Figure 10).

Figure 11: Citibike bike share station in New York City, NY (Source: NACTO)

Figure 12: Bike share bulb-out in Bethesda, MA (Source: NACTO)

o **Station facing separated bike lanes**. Where width is feasible, stations can be placed in floating parking lanes. This design uses the station infrastructure to create a protected bike lane, and also allows bike share users to pull bikes into a buffer, a lower conflict area than a travel lane. The existing bike share station at the intersection of Telegraph Avenue and 23rd Street is an example of this typology in the City of Oakland.

Figure 13: Bike share station facing separated bike lane at Telegraph and 23rd (Source: Google Street View)

Prioritize Updating Nearest Curb Ramps

The state of the nearest curb ramp should be considered as part of the station design and placement. A perpendicular, ADA compliant curb ramp offers the most comfortable and direct pedestrian entrance into the crosswalk area. The City of Oakland should include curb ramp updates as part of the bike share station permitting and installation process.

Scooter Parking Assessment

The City of Oakland is interested in identifying new opportunities for designated scooter parking around bike share stations while maintaining or improving the accessibility of the station area. Using information about scooter parking locations provided by the City of Oakland, Alta Planning + Design identified new opportunities for scooter parking at the Top 15 most parked-at bikeshare stations in Oakland. In addition to identifying new opportunities for scooter parking at these most parked-at bike share stations, this memo outlines additional recommendations for the City of Oakland to consider if it develops guidelines for scooter parking around bike share stations

Scooter Parking Assessment Overview and Methodology

The City of Oakland provided Alta Planning + Design with a heat map of scooter parking hot spots in the city. The City of Oakland also provided cumulative and daily counts of parked scooters at each bike share station in Oakland from July 1, 2019 to July 31, 2019. A full table with these counts can be found in the appendix.
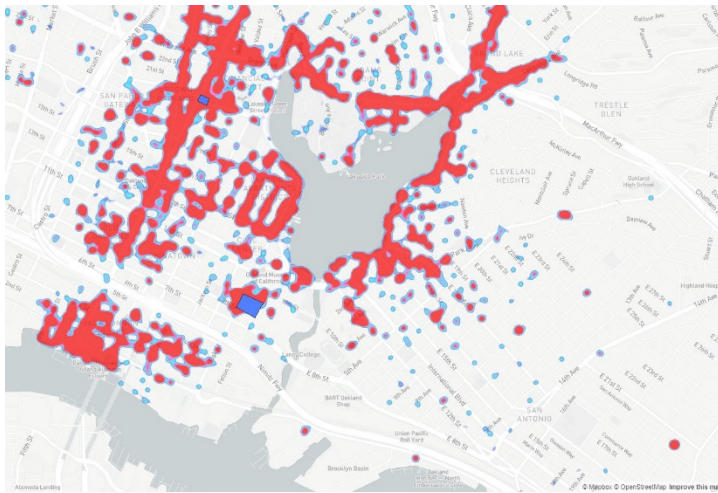

Figure 14: Heat Map of Scooter Parking In Oakland

During the period scooter parking data was collected, an average of 4.7 scooters parked at bike share stations each day; however, the daily number of parked scooters at each bike share station ranged from 0 to 71. The bike share stations with the highest daily number of parked scooters were located next to transit stations. The counts taken reveal that MacArthur BART Station and the 19th St BART Station had 71 and 58 parked scooters per day, respectively. The Lake Merritt BART Station and the West Oakland BART station are the next two bike share stations with the highest number of parked scooters per day.

Alta identified potential scooter parking recommendations at stations with above average numbers of scooters parked per day. These stations are shown on the following page in Table 3.

Scooter parking opportunities were identified at each of these stations. Using the most up-to-date Google Earth Imagery available, Alta Planning + Design staff highlighted opportunities for 4' x 6' scooter parking locations for the 15 bike share stations with the highest numbers of parked scooters per day.[5] Alta's recommendation for 4'x6' in-street or off-street corrals was based on precedents set by the City of Seattle, the City of Santa Monica, the City of Los Angeles, and tactical urbanism projects around the country. These cities have designed in-street or off-street designated parking areas for scooters and other shared mobility devices. Based on e-scooter dimensions, a 4'x6' corral could hold approximately 6 scooters, at a minimum. Flexibility and creativity with the design of scooter parking areas could open the possibility for more scooter storage space in limited areas. Cities around the country are still experimenting with scooter parking area design. Designs could intentionally limit the likelihood of scooters tipping over into travel lanes or pedestrian routes.

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[5] Up-to-date aerial imagery displaying the bike share station at Telegraph Ave & Alcatraz Ave was not available.

Google Earth imagery was fixed at between 47 – 57 ft above the ground level.[6] Each map displays potential sites for 4' x 6' scooter parking areas near the bike share station. Each 4'x6' scooter parking area could fit at least 6 scooters (confirm). The approximate measurements of the 4' x 6' boxes were cross-checked using the Google Earth Measurement tool on each map to control for the different imagery scales; however, these maps are only suitable for high-level, initial scooter parking area design estimates. When available, notes about potential scooter parking sites from the in-person bike share station audits informed the parking opportunity analysis.

Table 3: Bike Share Station w/Above Average Parked Scooters Per Day			
Station	**Cumulative Parked Scooter Count**	**Parked Scooters/Day**	**Bike Share Accessibility Assessment PAR?**
MacArthur BART	2918	71	N/A
19th St BART Station	1801	58	Yes
Lake Merritt BART Station	901	29	Yes
West Oakland BART	632	20	Yes
Grand Ave at Perkins St	532	17	Yes
El Embarcadero at Grand Ave	357	12	Yes
Bay Pl at Vernon St	342	11	Yes
Frank H Ogawa Plaza	303	10	Yes
10th St at Fallon St	273	9	No (excessive slope)
Telegraph Ave at 23rd	239	8	No (excessive slope)
Snow Park	226	7	Yes
Grand Ave at Webster St	215	7	Yes
13th St at Franklin St	188	6	No (excessive slope)
Telegraph Ave at Alcatraz Ave	185	6	Yes
Telegraph Ave at 19th St	184	6	Yes

Two examples of this scooter parking opportunity identification process are on the next page which is followed by a discussion of the limitations of this scooter parking identification process.

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[6] A limitation of Google Earth is the inability to fix reference points and keep them consistent across all Google Earth Imagery.

Scooter Parking Opportunity Maps

Figure 13 is an aerial image of the bike share station at the Lake Merritt BART Station. There are several potential off-street 4'x6' spaces near the bike share station where scooter parking could be designed or designated. If it is possible to relocate some of the planting and plaza furniture, there would be even more opportunities for scooter

parking around the bike share station.

Whenever possible, recommendations were made for off-street scooter parking sites. When off-street scooter parking locations would limit pedestrian access routes, recommendations were made for in-street locations as is the case in Figure 14. There is limited space for pedestrians along the sidewalk adjacent to the bike share station at 10th St and Fallon St. As a result, scooter parking was not recommended on the sidewalk to maintain pedestrian access routes. An additional constraint is the bus stop to the West of the bike share station.

Figure 15: Scooter Parking Opportunities at the Lake Merritt BART Bike Share Station

As an alternative, Alta identified room for two 4'x6' scooter parking areas in street space to the east of the bike share station. This space is currently designated as a parking spot for one car, but could serve as parking for at least 12 scooters instead.

A map of scooter parking opportunities at each bike share station listed in Table 3 can be found in Appendix E.

Figure 16: Scooter Parking Opportunities at the 10th St and Fallon St Bike Share Station

Limitations of this analysis

The scale of public space in the plaza at the Lake Merritt BART station in Figure 1 far exceeds the immediate station area analyzed on this map. Each bike share station Alta evaluated is situated on public streets or adjacent to other public spaces that may contain numerous alternative scooter parking locations. This potential scooter parking site identification can help lay the groundwork for a comprehensive study of scooter parking possibilities in the City of Oakland.

Although bike share stations are an existing space for emerging micro-mobility parking (and already mapped on the Bay Wheels mobile application and website), the areas adjacent to the bike share station may not always be the most-sought-after or ideal locations for scooter parking. More granular information about the individual locations of each parked scooter in Oakland could refine the heatmap analysis. In turn, this information could inform station siting and design that responds to existing scooter user behavior. For instance, people may prefer to park scooters as close to the entrances of BART stations as possible. In some cases, this may correspond to the existing bike share station sites, but in others this may not be the case. This information can be considered alongside the needs of other members of the public.

As mentioned in the description of this analysis, it was not possible to maintain the same scale across Google Earth imagery. Although the analysis measured each image to ensure that the 4'x6' spaces were close approximations of real-world measurements, more detailed, engineering level site design will be necessary to design and identify permanent scooter parking solutions.

Furthermore, some sites may be better suited to parking areas with different dimensions or shapes better suited to the individual site context.

Scooter Parking Siting and Design: Factors for Consideration and Additional Resources

There are many factors to consider when identifying and planning for scooter parking. National Association of Transportation Officials' Guidelines for the Regulations and Management of Shared Active Transportation guidebook provides additional guidance on Small Vehicle Parking in regards to encouraged placement, a "lock-to" design, and parking within the street. **Appendix E** provides aerial maps locating scooter parking opportunities on the sidewalk and within the street in proximity to bike share station locations.

Appendix A: Bike Share Station Permits

Table 1: Bike Share Stations That Do Not Match Permit		
Station	Site Drawing #	Observation
21st Ave at International Blvd	L13	Station appears to be missing thermoplastic striping, channelizer posts
Marston Campbell Park	K3	5 docks installed between map and kiosk instead of 6
Market St at 45th St	E2	Missing channelizer posts
49th St at Telegraph Ave	D4	Fewer docking stations installed than permitted, spacing measures differently than drawing, bike racks installed on sidewalk that aren't reflected in drawing
Shattuck Ave at 51st St	D3-2	2 docks between map & kiosk instead of 3
Genoa St at 55th St	D2	Map and kiosk installed on S side of Station instead of N side, 2 bikes between map & kiosk instead of 3, missing channelizer posts
College Ave at Taft Ave	B5	15 bike docks installed but 19 on site drawing
Telegraph Ave at Alcatraz Ave	A2	11 bike docks installed, 15 on site drawing
Telegraph Ave at 58th St	B3	2 docks between map and kiosk instead of 3
Shattuck Ave at 55th St	D3-1	2 docks between map and kiosk instead of 3

Appendix B: Bike Share Curb Ramps

Table 1: Bike Share Stations Where Nearest Curb Does Not Have Truncated Domes
Foothill Blvd at Fruitvale Ave
10th St at Fallon St
Washington St at 8th St
13th St at Franklin St
19th St BART Station
MLK Jr Way at 14th St
Market St at 8th St
27th St at MLK Jr Way
San Pablo Ave at 27th St
West St at 40th St
45th St at MLK Jr Way
Genoa St at 55th St
Rockridge BART Station
Telegraph Ave at 58th St

Appendix C: Bike Share Assessment Data

Station Name	Corresponding Permit	Date and Time	Name of Staff	Virtual or In-Person Audit	Street View Imagery Date	In-street or Off-Street	Bikes Exit Into:	Width of Buffer, if applicable	Station Adjacent to:	Permit Match?	If no, describe differences	Distance from curb ramp to kiosk (feet)	Distance from curb ramp to docking station (if different)	Curb Ramp Present?	Truncated Domes Present?	Built-up curb ramp?	Curb Ramp Style	PAR for people walking past the station on the sidewalk	If no sidewalk PAR, please describe	Max Cross Slope of PAR Around Station	Width of PAR from ramp to Kiosk	Max Cross Slope of PAR
19th St BART Station	K5-2	9-7-19 at 12 PM		In-Person		In-street	Travel Lane		Corner			111	32	Yes	No	No	Diagonal	Yes		1.20%	5'	1.70%
Lake Merritt BART Station	M7	9-5-19 at 9 AM		In-Person		Off-Street	Sidewalk		Corner			69		Yes	Yes	No	Diagonal	Yes		0.50%	4'7"	0.50%
West Oakland BART Station	M1	9-20-19	Nick	Virtual	April 2019	In-street	Bike Lane		Midblock	Yes		84	42	Yes	Yes	No	Perpendicular	Yes				
Grand Ave at Perkins St	I8	9-19-19	Nick	Virtual	May 2019	In-street	Bike Lane		Corner	Yes		Missing Imagery	Missing Imagery	Yes	Yes	No	Diagonal	Yes				
El Embarcadero at Grand Ave	I9	9-20-19	Nick	Virtual	February 2019	Off-Street	Sidewalk		Corner	Missing Imagery		Missing Imagery	Missing Imagery	Yes	Yes	No	Diagonal	Yes				
Bay Pl at Vernon St	I6	9-20-19	Nick	Virtual	May 2019	In-street	Travel Lane		Corner	Missing Imagery		Missing Imagery	Missing Imagery	Yes	Yes	No	Diagonal	Yes				
Frank H Ogawa Plaza	L5	9-6-19 at 1 PM		In-Person		Off-Street	Sidewalk		Corner			53	45	Yes	Yes	No	Perpendicular	Yes		0.70%	9'	1.30%
10th St at Fallon St	L8	9-6-19 at 11 AM		In-Person		In-street	Buffer	3	MIdblock			101	97	Yes	No	No	Diagonal	No		2.70%	4'	1.60%
Telegraph Ave at 23rd	J5	9-7-19 at 4 PM		In-Person		In-street	Buffer		Corner			60	22	Yes	Yes	No	Diagonal	No		5.20%		
Snow Park	J6-2	9-6-19 at 7 PM		In-Person		In-street	Travel Lane		Corner			118	43	Yes	Yes	No	Perpendicular	Yes		0.60%	4'	0.90%
Grand Ave at Webster St	J6-1	9-7-19 at 8 PM		In-Person		In-street	Bike Lane		Corner			124	67	Yes	Yes	No	Diagonal	Yes		1.60%	11'	105%
13th St at Franklin St	L6	9-7-19 at 8 AM		In-Person		In-street	Travel Lane		Corner			75	23	Yes	No	Yes	Diagonal	No		2.70%	10'	1.40%
Telegraph Ave at Alcatraz Ave	A2	9-23-19	Nick	Virtual	February 2019	Off-Street	Sidewalk		Corner	No	11 installed docks, 15 on drawing, different configuration	Missing Imagery	Missing Imagery	Yes	Yes	No	Diagonal	Yes				
Telegraph Ave at 19th St	K5-1	9-12-19 at 7 AM		In-Person		Off-Street	Sidewalk		Midblock			76	24	Yes	Yes	No	Perpendicular	Yes			4'	1.30%
Lakeside Dr at 14th St	L7-2	9-6-19 at 5:30 PM		In-Person		Off-Street	Sidewalk		Corner			92	30	Yes	Yes	No	Diagonal	Yes			4'	0.40%
49th St at Telegraph Ave	D4	9-23-19	Nick	Virtual	April 2019	In-street	Travel Lane		Corner	No	Less bike docks installed than on permit, spacing measures differently than drawing, bike racks have been installed that aren't reflected on construction drawing	78	39	Yes	Yes	No	Diagonal	Yes				
Grand Ave at Santa Clara Ave	H9-1	9-20-19	Nick	Virtual	February 2019	In-street	Travel Lane		Midblock	Yes		53	25	Yes	Yes	No	Perpendicular	Yes				
Isabella St at San Pablo Ave	J4	9-19-19	Nick	Virtual	May 2019	Off-Street	Sidewalk		Corner	Yes		21	19	Yes	Yes	No	Perpendicular	Yes				
Webster St at 19th	K6 Temp	9-6-19 at 9 PM		In-Person		In-street	Bike Lane	3	Corner			115	97	Yes	Yes	No	Diagonal	No		2.90%	5'	2.40%
Lakeshore Ave at Trestle Glen Rd	H9-2	9-20-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Midblock	Conditional Yes		54	23	Yes	Yes	No	Perpendicular	Yes				
2nd Ave at E. 18th St	K9	9-19-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Corner	Conditional Yes		59	18	Yes	Yes	No	Diagonal	Yes				
MLK Jr Way at 14th St	L4	9-7-19 at 12 PM		In-Person		In-street	Travel Lane		Corner			82	43	Yes	No	No	Diagonal	No		2.10%	5'11"	0.30%

Station Name	PAR for people accessing station (In-street)	Map Facing:	Clear Space present in front of map (4'x4')	If no clear space, describe:	Kiosk Facing:	Height of Kiosk Push-Buttons	Reach of kiosk push-buttons	Clear Space present in front of kiosk?	If no clear space in front of kiosk, please describe:	Description of opportunity for nearby scooter-share parking areas	Notes	Scooter Cumulative Count	Scooter Per Day
19th St BART Station		Bikes	No	Map on the street	Sidewalk	4'5"	4'	Yes		See images.		1801	58
Lake Merritt BART Station		Street	No	Bike delivery	Sidewalk	5'	4'	Yes		Planter in the back can be moved to make room for e-scooters		901	29
West Oakland BART Station	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				632	20
Grand Ave at Perkins St	1	Bikes	No	Docking Station obstructing map	Sidewalk			No	Grass			532	17
El Embarcadero at Grand Ave	N/A	Bikes	No	Docking Station	Sidewalk/Bike Docking Station			Yes				357	12
Bay Pl at Vernon St	1.5	Bikes	No	Docking Station	Sidewalk			Yes				342	11
Frank H Ogawa Plaza		Street	No	Bike Blocking Map	Sidewalk	4'11"	4'	Yes		There is a lot of space to add e-scooter parking		303	10
10th St at Fallon St		Bikes	No	Docking Station	Sidewalk	4'5"	4'	Yes	Yes but gap	Maybe between mail box and bus stop		273	9
Telegraph Ave at 23rd		Bikes	No	Slope is visible. Bikes pass frequently.	Street	4'10"	4'	No	Slope is visible. Bikes pass frequently.	Parking on the side is possible - see images		239	8
Snow Park		Street	No	Map on the street	Sidewalk	4'5"	4'	Yes		Possible space nearby but limited		226	7
Grand Ave at Webster St		Bikes	No	Dock blocking, map on street, gap between sidewalk	Sidewalk	4'6"	3'5"	No	Light post and newspaper boxes block space between kiosk	Limited space but possible		215	7
13th St at Franklin St		Bikes	No	Docking Station	Sidewalk	4'6"	3'6"	Yes	Gap between	Between passenger loading signs near bikes		188	6
Telegraph Ave at Alcatraz Ave	N/A	Bikes	No	Docking Station	Sidewalk/Bike Docking Station			Yes				185	6
Telegraph Ave at 19th St		Bikes	No	Dirt and built in cement space, but no direct access to kiosk	Sidewalk	4'8"	4'	No	Same issue as map	Yes there is a section on the right side of the map that can be set up (if lyft pays) to set up a cement base. If not, it may be possible near the white fire hydrant near Williamson Street.		184	6
Lakeside Dr at 14th St		Bikes	No	Docking Station	Sidewalk	4'10"	4'	Yes		Enough space - check images		157	5
49th St at Telegraph Ave	1.5	Bikes	No	Docking Station	Sidewalk			No	Bike racks, basin obstruct kiosk access			154	5
Grand Ave at Santa Clara Ave	1	Bikes	No	Docking Station	Sidewalk			Yes				153	5
Isabella St at San Pablo Ave	N/A	Bikes	No	Docking Station obstructing map	Sidewalk/Bike Docking Station			Yes				153	5
Webster St at 19th		Bikes	No	Docking Station	Sidewalk	4'5"	4'	Yes	There is a gap	Possible space - depending on row. See images.		149	5
Lakeshore Ave at Trestle Glen Rd	1.5	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery			Aerial Imagery shows trash cans, parked cars obstructing path between station and crosswalk. definitely potential to build out more protected space for station users	136	4
2nd Ave at E. 18th St	2	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery				132	4
MLK Jr Way at 14th St		Bikes	No	Map is on the street w gap between bikes and kiosk	Sidewalk	4'7"	4'	Yes	Yes but gap	There is some space near the (church)?		129	4

Station Name	Corresponding Permit	Date and Time	Name of Staff	Virtual or In-Person Audit	Street View Imagery Date	In-street or Off-Street	Bikes Exit Into:	Width of Buffer, if applicable	Station Adjacent to:	Permit Match?	If no, describe differences	Distance from curb ramp to kiosk (feet)	Distance from curb ramp to docking station (if different)	Curb Ramp Present?	Truncated Domes Present?	Built-up curb ramp?	Curb Ramp Style	PAR for people walking past the station on the sidewalk	If no sidewalk PAR, please describe	Max Cross Slope of PAR Around Station	Width of PAR from ramp to Kiosk	Max Cross Slope of PAR
Franklin St at 9th St	M6	9-7-19 at 9:30 AM		In-Person		In-street	Travel Lane		Corner			115	41	Yes	Yes	No	Perpendicular	No		4.70%	7'	0.60%
Telegraph Ave at 27th St	I5	9-6-19 at 9 PM		In-Person		In-street	Travel Lane		Corner			16	114	Yes	Yes	No	Diagonal	Yes		1.20%	4'	1.20%
Broadway at 40th St	F5	9-20-19	Nick	Virtual	May 2019	In-street	Travel Lane		Corner	Yes		62	15	Yes	Yes	No	Perpendicular	Yes				
Washington St at 8th	M5	9-7-19 at 9 AM		In-Person		Off-Street	Sidewalk		Corner			195		Yes	No	No	Diagonal	Yes			5'	1.80%
Rockridge BART Station	B4	9-5-19 at 11 AM		In-Person		Off-Street	Sidewalk		Midblock			97	94	Yes	No	No	Diagonal	Yes		1.90%	10'	1.90%
MacArthur Blvd at Telegraph Ave	G4	9-20-19	Nick	Virtual	May 2019	Off-Street	Sidewalk		Corner	Yes		72	33	Yes	Yes	No	Perpendicular	Yes				
San Pablo Ave at MLK Jr Way	K4	9-30-19 at 3 PM		In-Person		In-street	Buffer	2	Corner			54	62	Yes	Yes	No	Diagonal	Yes		1.60%	6'	0.90%
Jack London Square	N6	9-20-19	Nick	Virtual	March 2019	In-street	Travel Lane		Corner	Yes		120	56	Yes	No	No	Perpendicular	No	Lighting post situated in middle of sidewalk and would obstruct access to station kiosk			
Mosswood Park	G5	9-20-19	Nick	Virtual	May 2019	In-street	Buffer	2	Midblock	Yes		Missing Imagery	Missing Imagery	Yes	Yes	No	Perpendicular	Yes				
Shattuck Ave at 51st St	D3-2	9-23-19	Nick	Virtual	May 2019	In-street	Bike Lane		Midblock	No	BIke dock configuration doesn't match (two between map/kiosk instead of three)	50	10	Yes	No	No	Perpendicular	Unclear Imagery	Trash Can, Basin limit PAR			
Webster St at 2nd St	N7	9-20-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Corner	Yes		90	23	Yes	Yes	No	Perpendicular	Yes				
34th St at Telegraph	H4	9-20-19	Nick	Virtual	May 2019	In-street	Travel Lane		Corner	Yes		55	24	Yes	Yes	No	Diagonal	Yes				
Broadway at 30th St	H5	9-20-19	Nick	Virtual	February 2019	In-street	Bike Lane		Corner	Yes		93	85	Yes	Yes	No	Diagonal	Yes				
Shattuck Ave at Telegraph Ave	E4	9-23-19	Nick	Virtual	February 2019	Off-Street	Sidewalk		Consult	Missing Imagery		84	45	Yes	No	No	Non-compliant	Yes				
College Ave at Bryant Ave	C5	9-23-19	Nick	Virtual	May 2019	In-street	Travel Lane		Corner	Yes		60	4	Yes	Yes	No	Perpendicular	Yes				
4th Ave at E. 12th St (Temp Location)	L9	9-19-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Corner	Missing Imagery	Station may be missing white border striping, may be shorter in length than permitted drawing ?	66	22	Yes	Yes	No	Perpendicular	Yes				
24th St at Market St	J3	9-19-19	Nick	Virtual	February 2019	In-street	Travel Lane		Corner	Yes		60	16	Yes	Yes	No	Diagonal	Yes				
Fruitvale BART Station	N17			Missing Imagery	Missing Imagery	Off-Street	Missing Imagery		Missing Imagery	Missing Imagery		Missing Imagery	Missing Imagery	Missing Imagery	Missing Imagery	Missing Imagery	Missing Imagery	Missing Imagery				
West St at 40th St	F3	9-20-19	Nick	Virtual	February 2019	In-street	Bike Lane		Corner	Yes		65	15	Yes	No	No	Diagonal	Yes				
San Pablo Ave at 27th St	I3	9-20-19	Nick	Virtual		In-street	Travel Lane		Corner	Yes		59	17	Yes	No	No	Diagonal	Yes				
Union St at 10th St	M2	9-20-19	Nick	Virtual	April 2019	In-street	Travel Lane		Corner	Yes		131	83	No	No	No	N/A	Yes				
27th St at MLK Jr Way	I4	9-20-19	Nick	Virtual		In-street	Bike Lane		Corner	Missing Imagery		84	44	Yes	No	No	Diagonal	Yes				
32nd St at Adeline St	H2	9-20-19	Nick	Virtual	February 2019	In-street	Travel Lane		Corner	Yes		47	15	Yes	Yes	No	Diagonal	Yes				
Market St at 40th St	G2	9-23-19	Nick	Virtual	May 2019	In-street	Bike Lane		Corner	Yes		59	21	Yes	Yes	No	Diagonal	Yes				
37th St at West St	G3	9-20-19	Nick	Virtual	February 2019	In-street	Travel Lane		Corner	Yes		66	14	Yes	Yes	No	Diagonal	Yes				

Station Name	PAR for people accessing station (In-street)	Map Facing:	Clear Space present in front of map (4'x4')	If no clear space, describe:	Kiosk Facing:	Height of Kiosk Push-Buttons	Reach of kiosk push-buttons	Clear Space present in front of kiosk?	If no clear space in front of kiosk, please describe:	Description of opportunity for nearby scooter-share parking areas	Notes	Scooter Cumulative Count	Scooter Per Day
Franklin St at 9th St		Bikes	No	Gap Between	Sidewalk	4'5"	4'	Yes	Tree on left	between parking payment machine and light post		119	4
Telegraph Ave at 27th St		Bikes	No	Docking Station	Sidewalk	4'9"	4'	No	Light post and tree block access to kiosk	Not much space and furniture mauy be near city bike racks		118	4
Broadway at 40th St	1.25	Bikes	No	Docking Station	Sidewalk			Yes				115	4
Washington St at 8th		Bikes	No	Docking Station	Sidewalk	5'	4'	Yes		Enough Space behing sign. Make sure there is 4x4 2% cross then add parking		108	3
Rockridge BART Station		Bikes	No	Map is blocked by kiosk	Sidewalk	4'10"	4'	Yes		Plenty of space but not enough street furniture to put e-scooter in		105	3
MacArthur Blvd at Telegraph Ave	N/A	Bikes	No	Docking Station	Sidewalk/Bike Docking Station			Yes				95	3
San Pablo Ave at MLK Jr Way		Bikes	No	Map on the street, gap between sidewalk, bikes in the way	Sidewalk	4'5"	4'	Yes	Yes but gap	Possible - see images		86	3
Jack London Square	1-1.5	Bikes	No	Docking station, channelizer posts would obstruct access to map	Sidewalk			Yes				77	2
Mosswood Park	2.5	Bikes	No	Docking Station	Sidewalk/Bike Docking Station			No	Grass			67	2
Shattuck Ave at 51st St	2	Bikes	No	Docking Station	Sidewalk			No	Basin/dirt			63	2
Webster St at 2nd St	Missing Imagery	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery				58	2
34th St at Telegraph	2	Bikes	No	Docking Station	Sidewalk			Yes				56	2
Broadway at 30th St	1.5	Bikes	No	Docking Station	Sidewalk			No	Kiosk directly in front of tree basin, space also being used as e-scooter parking			51	2
Shattuck Ave at Telegraph Ave	N/A	Sidewalk	No	Docking Station	Sidewalk/Bike Docking Station			Yes				49	2
College Ave at Bryant Ave	2	Bikes	No	Docking Station	Sidewalk			Yes				48	2
4th Ave at E. 12th St (Temp Location)	Missing Imagery	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery				47	2
24th St at Market St	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			No	Grass			38	1
Fruitvale BART Station	Missing Imagery	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery			Missing Current Google Street View and Satellite Imagery	37	1
West St at 40th St	2	Bikes	No	Docking Station	Sidewalk			Yes				32	1
San Pablo Ave at 27th St	2	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				31	1
Union St at 10th St	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				30	1
27th St at MLK Jr Way	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				25	1
32nd St at Adeline St	1.5	Bikes	No	Docking Station	Sidewalk			Yes				24	1
Market St at 40th St	1.5	Bikes	No	Docking Station	Sidewalk			Yes				24	1
37th St at West St	1.5	Bikes	No	Docking Station	Sidewalk			Yes				23	1

Station Name	Corresponding Permit	Date and Time	Name of Staff	Virtual or In-Person Audit	Street View Imagery Date	In-street or Off-Street	Bikes Exit Into:	Width of Buffer, if applicable	Station Adjacent to:	Permit Match?	If no, describe differences	Distance from curb ramp to kiosk (feet)	Distance from curb ramp to docking station (if different)	Curb Ramp Present?	Truncated Domes Present?	Built-up curb ramp?	Curb Ramp Style	PAR for people walking past the station on the sidewalk	If no sidewalk PAR, please describe	Max Cross Slope of PAR Around Station	Width of PAR from ramp to Kiosk	Max Cross Slope of PAR
College Ave at Taft Ave	B5	9-23-19	Nick	Virtual	May 2019	In-street	Travel Lane		Midblock	No	15 bike docks installed but 19 permitted	48	10	Yes	Yes	No	Perpendicular	Yes				
College Ave at Harwood Ave	A4	9-23-19	Nick	Virtual	February 2019	In-street	Travel Lane		Midblock	Yes		31	19	Yes	No	No	Perpendicular	Yes				
Jackson St at 11th St	L7-1	9-7-19 at 10 AM		In-Person		In-street	Buffer	3	Midblock			81	45	Yes	Yes	No	Diagonal	No		2.10%	7'	0.20%
Genoa St at 55th St	D2	9-23-19	Nick	Virtual	February 2019	In-street	Travel Lane		Corner	No	Map Panel and kiosk Installed on S side of station instead of N side, configuration is off (2 bikes between map/kiosk instead of three), spacing between reference point/crossing is off, missing channelizer posts	29	25	Yes	No	No	Diagonal	Yes				
Market St at 45th St	E2	9-23-19	Nick	Virtual	February 2019	In-street	Bike Lane		Corner	No	Missing channelizer posts between station and street	104	66	Yes	Yes	No	Diagonal	Yes				
Fruitvale Ave at International Blvd	M16	9-19-19	Nick	Virtual	December 2017	In-street	Travel Lane		Corner	Yes		62	12	Yes	Yes	No	Diagonal	Yes				
55th St at Telegraph	C3	9-23-19	Nick	Virtual	May 2019	In-street	Travel Lane		Corner	Yes		57	15	Yes	Yes	No	Diagonal	Yes				
45th St at MLK Jr Way	E3	9-23-19	Nick	Virtual	May 2019	In-street	Bike Lane		Corner	Yes		57	15	Yes	No	No	Diagonal	Yes				
Broadway at Coronado	D5	9-23-19	Nick	Virtual	May 2019	In-street	Buffer	3.5	Corner	Yes		71	20	Yes	Yes	No	Diagonal	Yes				
Bushrod Park	B2	9-23-19	Nick	Virtual	May 2019	In-street	Bike Lane		Midblock	Missing Imagery		69	26	Yes	Yes	No	Perpendicular	Yes				
6th Ave at E 12th St (Temp Location)	L10	9-19-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Corner	Missing Imagery		Missing Imagery	Missing Imagery	Yes	Yes	No	Diagonal	Yes				
Market St at 8th St	M3	9-20-19	Nick	Virtual	May 2019	In-street	Bike Lane		Corner	Missing Imagery		Missing Imagery	Missing Imagery	Yes	No	No	Diagonal	Yes				
Miles at Cavour St	C4	9-23-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Corner	Missing Imagery		38	34	Yes	Yes	No	Diagonal	Yes				
Alcatraz Ave at Shattuck Ave	B1	9-23-19	Nick	Virtual	April 2019	In-street	Bike Lane		Corner	Yes		50	19	Yes	Yes	No	Diagonal	Yes				
45th St at Manila	E5	9-23-19	Nick	Virtual	January 2018	In-street	Travel Lane		Midblock	Yes		83	34	Yes	No	No	Perpendicular	Yes				
DeFremery Park	K2	9-19-19	Nick	Virtual	February 2019	In-street	Buffer	2.5	Corner	Yes		42	15	Yes	Yes	No	Diagonal	Yes				
Dover St at 57th St	C2	9-23-19	Nick	Virtual	April 2019	In-street	Travel Lane		Corner	Yes		303	269	Yes	Yes	No	Diagonal	Unclear Imagery				
Shattuck Ave at 55th St	D3-1	9-23-19	Nick	Virtual	May 2019	In-street	Bike Lane		Corner	No	Configuration (2 docks between map/kiosk instead of 3)	62	28	Yes	Yes	No	Diagonal	Yes				
San Antonio Park	L12	9-19-19	Nick	Virtual	March 2019	In-street	Travel Lane		Corner	Yes		48	15	Yes	Yes	No	Diagonal	Yes				

Station Name	PAR for people accessing station (In-street)	Map Facing:	Clear Space present in front of map (4'x4')	If no clear space, describe:	Kiosk Facing:	Height of Kiosk Push-Buttons	Reach of kiosk push-buttons	Clear Space present in front of kiosk?	If no clear space in front of kiosk, please describe:	Description of opportunity for nearby scooter-share parking areas	Notes	Scooter Cumulative Count	Scooter Per Day
College Ave at Taft Ave	1.5	Blkes	No	Docking Station	Sidewalk			Yes			15 bike dock installed and on drawing, but 19 docks permitted?	23	1
College Ave at Harwood Ave	1.5	Bikes	No	Docking Station	Sidewalk			Yes				23	1
Jackson St at 11th St		Bikes	No	Gap between sidwalk. Tree can grow and block sign	Sidewalk	4'6"	4'	Yes	Gap between	Location adjacent to bike racks - see pictures		22	1
Genoa St at 55th St	1.5	Bikes	No	Docking Station	Sidewalk			Yes			Is the station off because road work/maintenance disrupted original station placement?	21	1
Market St at 45th St	3.5	Bikes	No	Docking Station	Sidewalk			Yes				20	1
Fruitvale Ave at International Blvd	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			No	White posts installed in sidewalk to buffer metal box? seem to infringe on 4x4 space			19	1
55th St at Telegraph	1.5	Bikes	No	Docking Station	Sidewalk			Yes				17	1
45th St at MLK Jr Way	1.5	Bikes	No	Docking Station	Sidewalk			No	City of Oakland Parking Info sign/pole within 4x4 space in front of kiosk			16	1
Broadway at Coronado	4	Bikes	No	Docking Station	Sidewalk			Yes				16	1
Bushrod Park	1.5	Bikes	No	Docking Station	Sidewalk			Yes				14	0
6th Ave at E 12th St (Temp Location)	Missing Imagery	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery				12	0
Market St at 8th St	Missing Imagery	Bikes	No	Docking Station obstructing map	Sidewalk			No	Dirt, gravel, planter in front of kiok			12	0
Miles at Cavour St	Missing Imagery	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery				12	0
Alcatraz Ave at Shattuck Ave	2	Bikes	No	Docking Station	Sidewalk			Yes				11	0
45th St at Manila	1.5	Sidewalk	No	Docking Station	Sidewalk			Yes				10	0
DeFremery Park	2.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				9	0
Dover St at 57th St	1.5	Bikes	No	Docking Station	Sidewalk			Yes				9	0
Shattuck Ave at 55th St	1.5	Bikes	No	Docking Station	Sidewalk			Yes				9	0
San Antonio Park	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			No	Grass			8	0

Station Name	Corresponding Permit	Date and Time	Name of Staff	Virtual or In-Person Audit	Street View Imagery Date	In-street or Off-Street	Bikes Exit Into:	Width of Buffer, if applicable	Station Adjacent to:	Permit Match?	If no, describe differences	Distance from curb ramp to kiosk (feet)	Distance from curb ramp to docking station (if different)	Curb Ramp Present?	Truncated Domes Present?	Built-up curb ramp?	Curb Ramp Style	PAR for people walking past the station on the sidewalk	If no sidewalk PAR, please describe	Max Cross Slope of PAR Around Station	Width of PAR from ramp to Kiosk	Max Cross Slope of PAR
Marston Campbell Park	K3	9-19-19	Nick	Virtual	February 2019	In-street	Buffer	2	Corner	No	Five docks installed between Map and kiosk instead of six (total number matches)	108	76	Yes	Yes	No	Diagonal	Yes				
14th St at Mandela Pkway	L3	9-19-19	Nick	Virtual	May 2019	Off-Street	Sidewalk		Corner	Yes		55	53	Yes	Yes	No	Perpendicular	Yes				
Telegraph Ave at 58th St	B3	9-23-19	Nick	Virtual	April 2019	Off-Street	Sidewalk		Corner	No	Bike dock configuration (2 between map/kiosk instead of 3)	115	111	Yes	No	No	Diagonal	Yes				
14th St at Filbert	L3	9-19-19	Nick	Virtual	May 2019	In-street	Bike Lane		Midblock	Yes		126	121	Yes	Yes	No	Perpendicular	Yes				
Foothill Blvd at 42nd	L18	9-19-19	Nick	Virtual	April 2018	In-street	Travel Lane		Corner	Yes		51	17	Yes	Yes	No	Diagonal	Yes				
Foothill Blvd at Fruitvale Ave	L16	9-19-19	Nick	Virtual	January 2018	In-street	Travel Lane		Corner	Yes		55	21	Yes	No	No	Diagonal	Yes				
10th Ave at E. 15th Street	L11	9-19-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Corner	Missing Imagery		Missing Imagery	Missing Imagery	Yes	No	No	Perpendicular	Yes				
Market St at Brockhurst	H3	9-20-19	Nick	Virtual	February 2019	In-street	Bike Lane		Corner	Yes		74	33	Yes	Yes	No	Perpendicular	Yes				
23rd Ave at Foothill Blvd	L14	9-19-19	Nick	Virtual	Missing Imagery	Off-Street	Sidewalk		Corner	Conditional Yes		70	68	Yes	Yes	No	Perpendicular	Yes				
21st Ave at International Blvd	L13	9-19-19	Nick	VIrtual	Missing Imagery	In-street	Travel Lane		Corner	No	Station appears to be missing white barrier striping,channelizer posts	38	6	Yes	No	Yes	Perpendicular	No	Basin brings PAR under 4'			
Foothill Blvd at Harrington Ave	L17	9-19-19	Nick	Virtual	February 2019	In-street	Travel Lane		Midblock	Yes		96	47	Yes	Yes	No	Perpendicular	No	Basin brings PAR under 4'			
26th Ave at International Blvd	L15	9-19-19	Nick	Virtual	Missing Imagery	In-street	Travel Lane		Corner	Conditional Yes		86	77	Yes	Yes	No	Diagonal	Yes				
Madison St at 17th St	K7	9-6-19 at 6 PM		In-Person		Off-Street	Sidewalk		Corner			57		Yes	Yes	No	Diagonal	Yes			4'	1.40%

Station Name	PAR for people accessing station (In-street)	Map Facing:	Clear Space present in front of map (4'x4')	If no clear space, describe:	Kiosk Facing:	Height of Kiosk Push-Buttons	Reach of kiosk push-buttons	Clear Space present in front of kiosk?	If no clear space in front of kiosk, please describe:	Description of opportunity for nearby scooter-share parking areas	Notes	Scooter Cumulative Count	Scooter Per Day
Marston Campbell Park	3.25	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				8	0
14th St at Mandela Pkway	N/A	Bikes	No	Docking Station obstructing map	Sidewalk/Bike Docking Station			Yes				7	0
Telegraph Ave at 58th St	N/A	Bikes	No	Docking Station	Sidewalk/Bike Docking Station			Yes				7	0
14th St at Filbert	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				5	0
Foothill Blvd at 42nd	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				3	0
Foothill Blvd at Fruitvale Ave	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes				3	0
10th Ave at E. 15th Street	Missing Imagery	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery				3	0
Market St at Brockhurst	2-3.5	Bikes	No	Docking Station	Sidewalk			Yes				3	0
23rd Ave at Foothill Blvd	N/A	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery			Unclear if there is 4' of diagonal clearance between bike share and sidewalk planter; siting seems right, can't confirm # of docks	2	0
21st Ave at International Blvd	1	Missing Imagery	Missing Imagery		Missing Imagery			No	Grass		Better curb design at international blvd, but closest to corner of Solano and 21st	2	0
Foothill Blvd at Harrington Ave	1.5	Bikes	No	Docking Station obstructing map	Sidewalk			Yes			Measured from station to Harrington	1	0
26th Ave at International Blvd	1	Missing Imagery	Missing Imagery		Missing Imagery			Missing Imagery			Missing Google Maps Streetview Imagery, aerial siting seems right, cannot confirm # of docks	1	0
Madison St at 17th St		Bikes	No	Kiosk in the way of the map	Sidewalk	4'10"	2'	Yes		There is space right of the map - see images			

Appendix D: In-Person Assessment Photos

Photos taken of the Bay Wheels bike share stations during the in-person assessments can be downloaded with the following link and password:

https://altaplanning.egnyte.com/fl/n4xGrZPSTw

Password: cuk27ykK

Appendix E: Scooter Parking Opportunity Maps

MacArthur BART Station
71 parked scooters/day

MacArthur BART Access Road
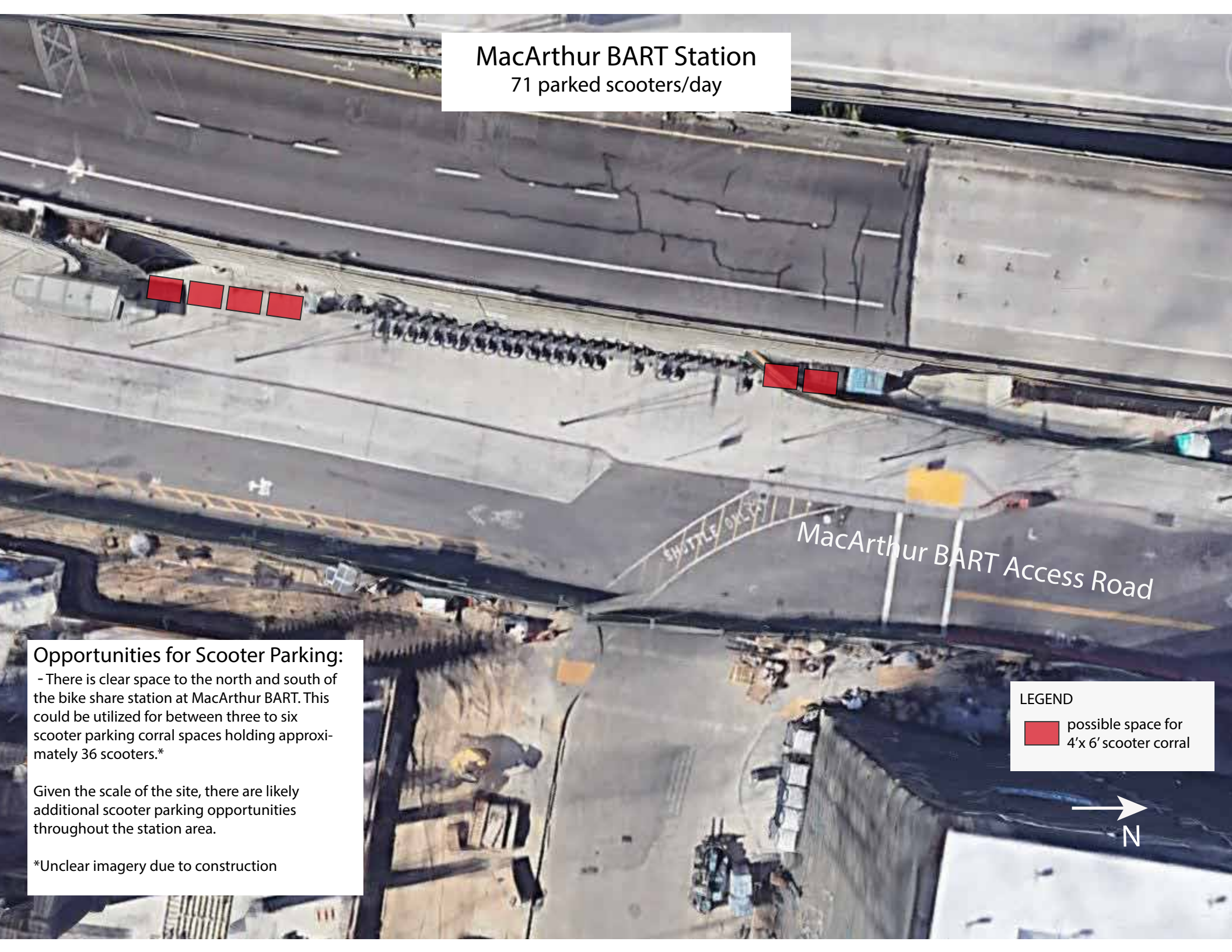
Opportunities for Scooter Parking:
- There is clear space to the north and south of the bike share station at MacArthur BART. This could be utilized for between three to six scooter parking corral spaces holding approximately 36 scooters.*

Given the scale of the site, there are likely additional scooter parking opportunities throughout the station area.

*Unclear imagery due to construction

LEGEND

possible space for 4'x 6' scooter corral

N

19th St BART Station
58 parked scooters/day

Thomas L Berkley Way

Broadway Ave

Opportunities for Scooter Parking:
 - There may be opportunities for scooter parking on the north and south sides of the bike share station.

Given the scale of the site, there are likely additional scooter parking opportunities throughout the station area.

N

LEGEND

possible space for
4'x 6' scooter corral

© 2018 Google

Google E

Lake Merritt BART Station
29 parked scooters/day

Opportunities for Scooter Parking:
- By rearranging plaza furniture, bike lockers, and planters, there could be room for scooter parking corrals adjacent to and near the bike share station.

Given the scale of the plaza, there are likely additional scooter parking opportunities throughout the station area.

LEGEND

possible space for 4'x 6' scooter corral

N

© 2018 Google

57 ft

Google

West Oakland BART
20 parked scooters/day

Center Street

7th Street

Opportunities for Scooter Parking:
 - There are opportunities for on-street scooter parking to the east and west of the bike share station. There could also be space for off-street scooter parking.

Given the extent of the site, there are likely many other opportuniites for scooter parking in the station area

N

LEGEND

☐ possible space for 4'x 6' scooter corral

© 2018 Google

Grand Ave at Perkins St
17 parked scooters/day

Perkins

Opportunities for Scooter Parking:
- There may be opportunities for scooter parking in space currently designated as car parking on the West side of the bike share station.

Given the scale of public space around Lake Merritt, there are likely additional scooter parking opportunities throughout the station area.

Grand Avenue

N

LEGEND

possible space for 4'x 6' scooter corral

44 ft

© 2018 Google

Google

Grand Ave at El Embarcadero
12 parked scooters/day

Lakeshore Ave

Opportunities for Scooter Parking:
- There are opportunities for scooter parking corrals on pedestrian routes and paved public spaces near the bike share station; however, care must be taken to preserve a walkable, vibrant public realm

Given the scale of public space around Lake Merritt, there are likely additional scooter parking opportunities throughout the station area.

El Embarcad

LEGEND

possible space for 4'x 6' scooter corral

N

© 2018 Google

49 ft

Google

Bay Place at Vernon St
11 parked scooters/day

Vernon Street

Bay Place

Opportunities for Scooter Parking:
- There are opportunities for scooter parking corrals in space currently designated as public car parking to the south of the bike share station.

LEGEND

possible space for 4'x 6' scooter corral

N

47 ft

© 2018 Google

10th St at Fallon St
9 parked scooters/day
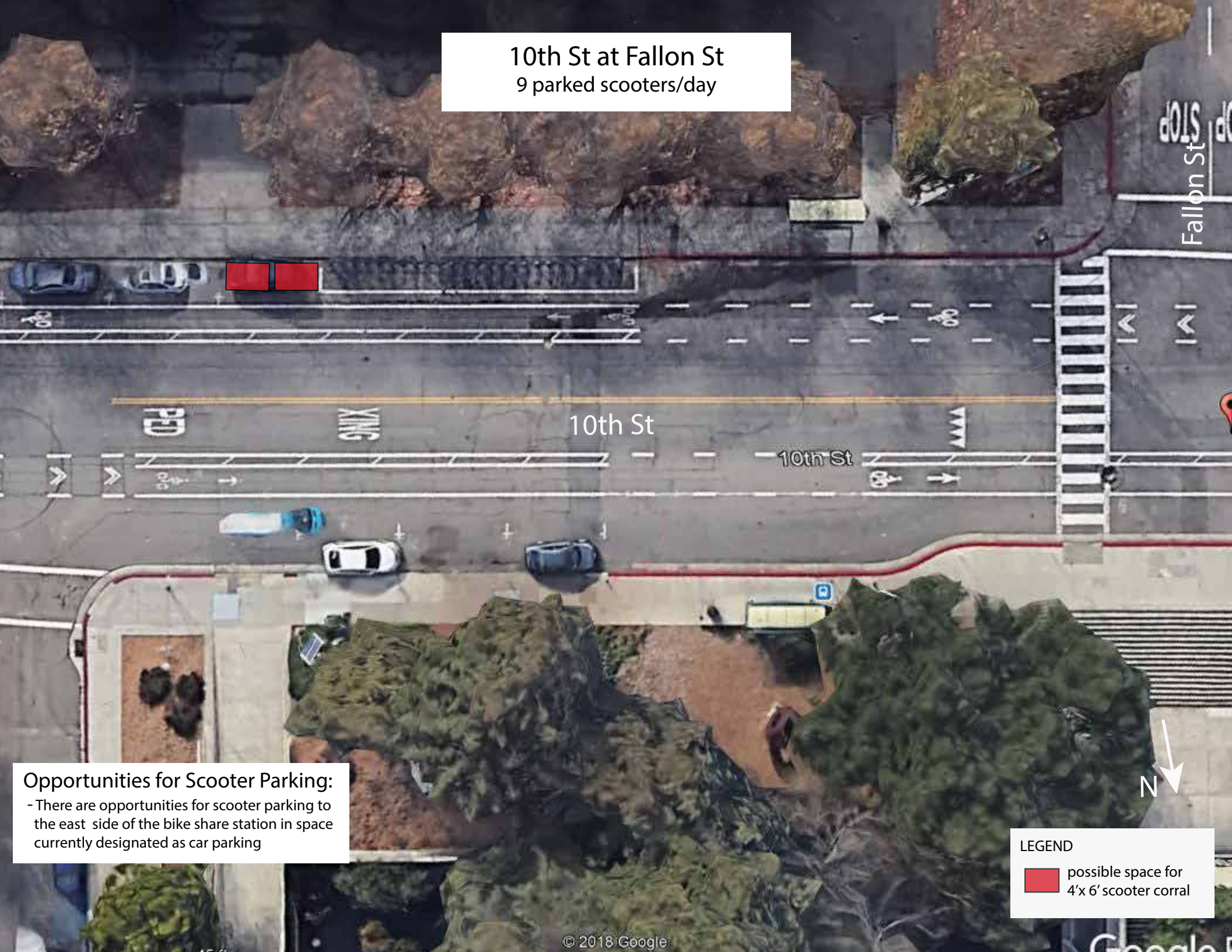
Fallon St

STOP

PED XING

10th St

10th St

Opportunities for Scooter Parking:
- There are opportunities for scooter parking to the east side of the bike share station in space currently designated as car parking

N

LEGEND

possible space for 4'x 6' scooter corral

Frank H. Ogawa Plaza
10 parked scooters/day

Broadway Avenue

14th St

14th St

Opportunities for Scooter Parking:
- There are many opportunities for scooter parking within the Frank H. Ogawa plaza space.

N

LEGEND

possible space for 4'x 6' scooter corral

© 2018 Google

Google

Telegraph Ave at 23rd St
8 parked scooters/day

Opportunities for Scooter Parking:
- There are opportunities for scooter parking to the north of the bike share station in space currently designated for car parking.

Telegraph Ave

N

Telegraph Ave & 23rd St

23rd St

© 2018 Google

49 ft

Google

LEGEND

possible space for 4'x 6' scooter corral

Snow Park
7 parked scooters/day

Harrison Street

Opportunities for Scooter Parking:
 - There are opportunities for scooter parking to the south of the bike share station in space currently designated for car parking.

Given the scale of Snow Park, there are likely other opportunities for scooter parking in the area.

N

LEGEND

possible space for
4'x 6' scooter corral

© 2018 Google

Grand Ave at Webster St
7 parked scooters/day

Grand Ave

Opportunities for Scooter Parking:
- Bus loading zones and CalTrans loading zone limit opportunities for sooter parking directly adjacent to the stations, but there are opportunities for scooter parking in nearby locations currently designated as car parking.

N

LEGEND

possible space for 4'x 6' scooter corral

13th St at Franklin St
7 parked scooters/day

13th St

N
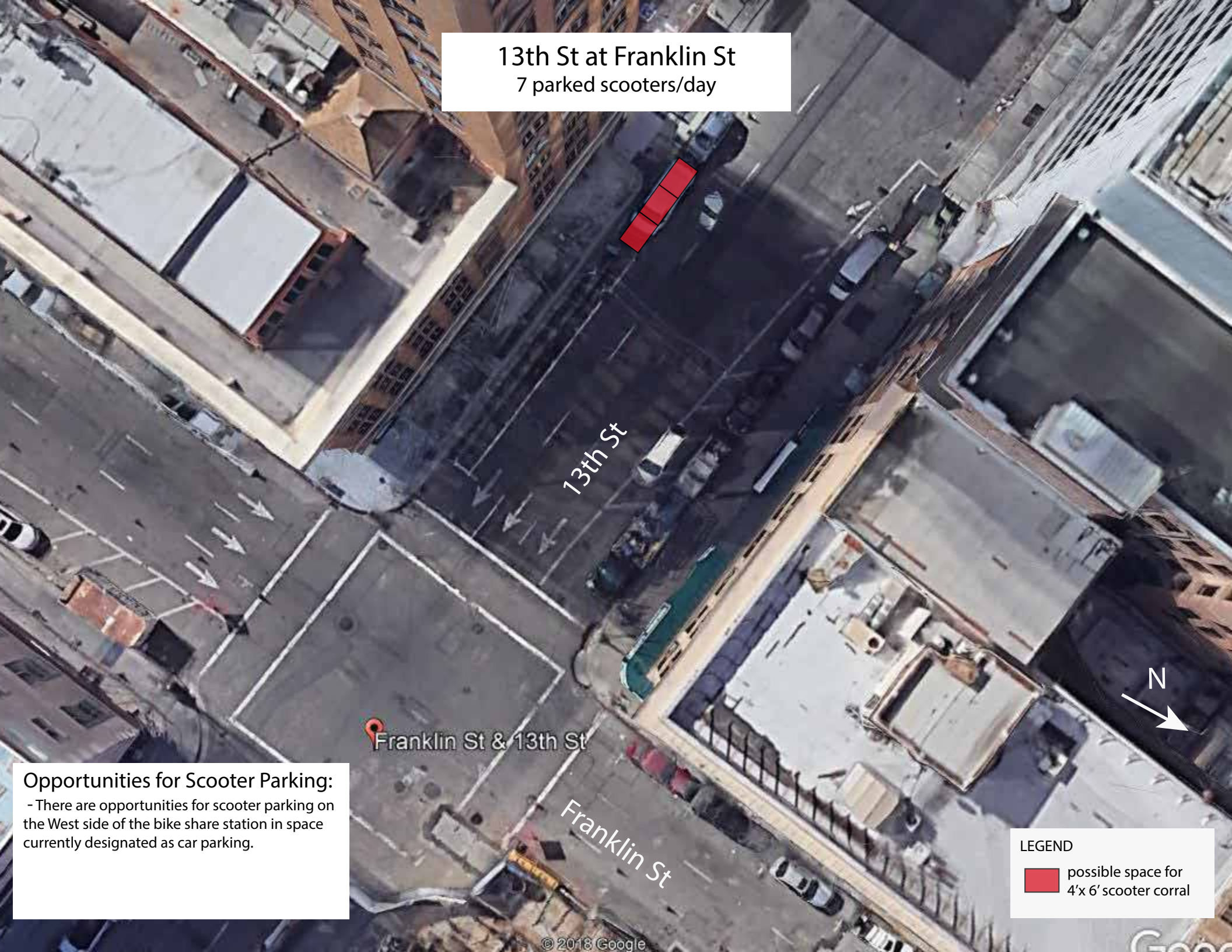
Franklin St & 13th St

Franklin St

Opportunities for Scooter Parking:
- There are opportunities for scooter parking on the West side of the bike share station in space currently designated as car parking.

LEGEND

possible space for 4'x 6' scooter corral

© 2018 Google

Telegraph Ave at 19th St
6 parked scooters/day

Telegraph Avenue

N

LEGEND
possible space for 4'x 6' scooter corral

Opportunities for Scooter Parking:
-There may be opportunities for scooter parking in pace adjacent to the bike share station that is currently under construction. There may also be space in sites currently designated as car parking.

© 2018 Google

Appendix 4 - Survey Results and Focus Groups Summaries

711 SE Grand Ave.
Portland, OR 97214
(503) 230-9862
www.altaplanning.com

To: Kerby Olsen, City of Oakland

From: Jean Crowther and Logan Telles, Alta Planning + Design

Date: February 26, 2020

Re: Oakland Shared Mobility Accessibility Survey, Updated Feb. 2020

Background

OakDOT conducted a survey to inform the study of accessibility of shared mobility services for persons with disabilities in Oakland. Survey input reflects the user experience of persons with disabilities while accessing or considering shared bike, scooter, ridehailing, and carshare services. The survey also garnered feedback on the City of Oakland's Accessible Bike Share Pilot Program. Respondents were surveyed on a multitude of topics, including:

- Disability status
- Mobility services used
- Barriers that prevent access to mobility services
- Perceptions of potential improvements to mobility services
- Performance of Oakland's Accessible Bike Share Pilot Program

The survey collected a total of 70 responses between late summer 2019 and late winter 2020, 61% of which represent the lived experience and expertise of people with disabilities.

Survey Respondents

Of the 61% who either identified as having a disability (58%) or completed the survey on behalf of a person with one or more disabilities (3%), mobility challenges emerged as the most commonly cited disability "type." As Figure 1 illustrates, 41% of question respondents reported having one or more disability that impacts mobility.

The "other" category made up 27% of respondents, and included a diversity of challenges. It should be noted that several respondents represented in this category perceived Wi-Fi and Bluetooth as posing significant risks to their short-term wellness and long-term health, and cited electromagnetic sensitivities as a disability that impacts their ability to access shared mobility services.

Additionally, approximately 13% of residents reported limited vision and 13% reported cognitive effects, while only 6% reported hearing difficulties.

Many respondents reported that their disability or disabilities impact more that one of the answer choices provided, and are represented across multiple categories.

Figure 1:

What type of disability do you (or the person on whose behalf you are answering) identify with? (N=66)
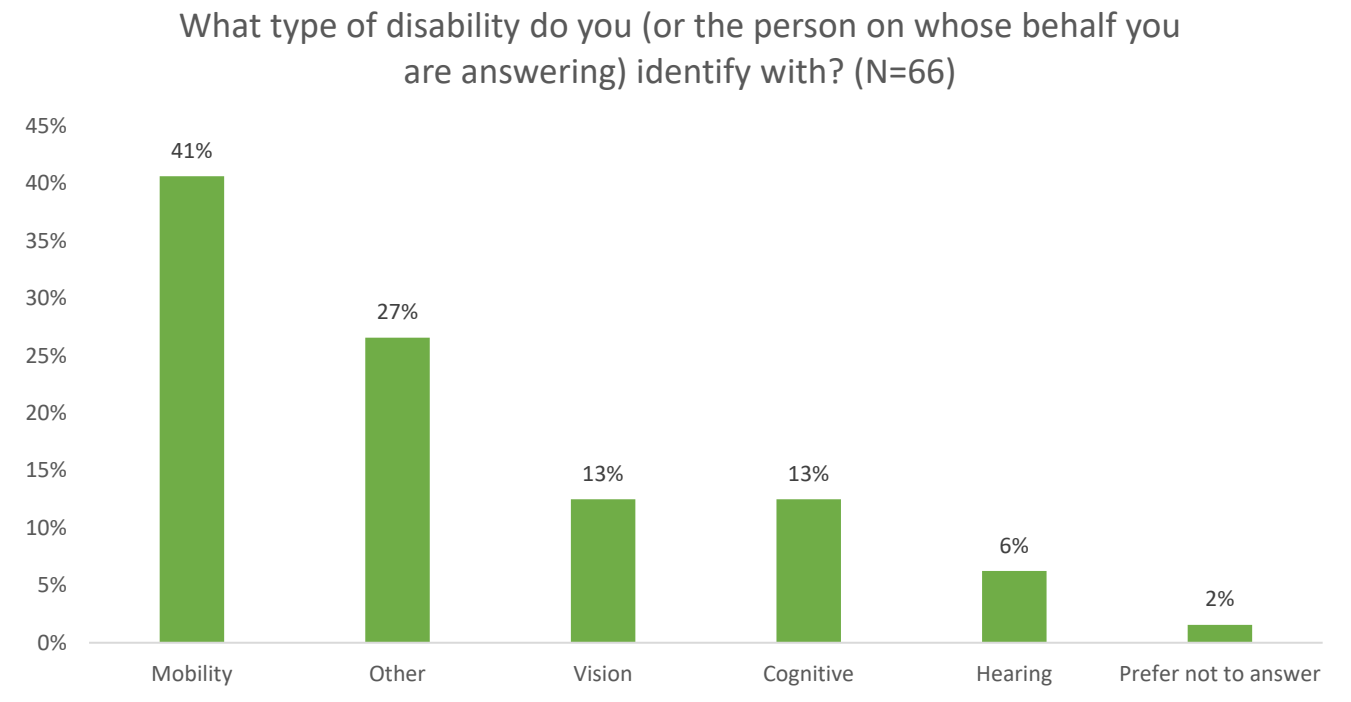
Reasons for Travel

When identifying reasons for travel in Oakland, respondents could choose all answers that applied to their current relationship with the city. Approximately 59% of survey respondents live within the City of Oakland, while 27% report working in Oakland and 49% visit Oakland for recreation or shopping. About 2% of responses are from people who attend school in Oakland or have none of the above relationships to Oakland, respectively.

Figure 2:

Respondent Relationship to Oakland (N=41)
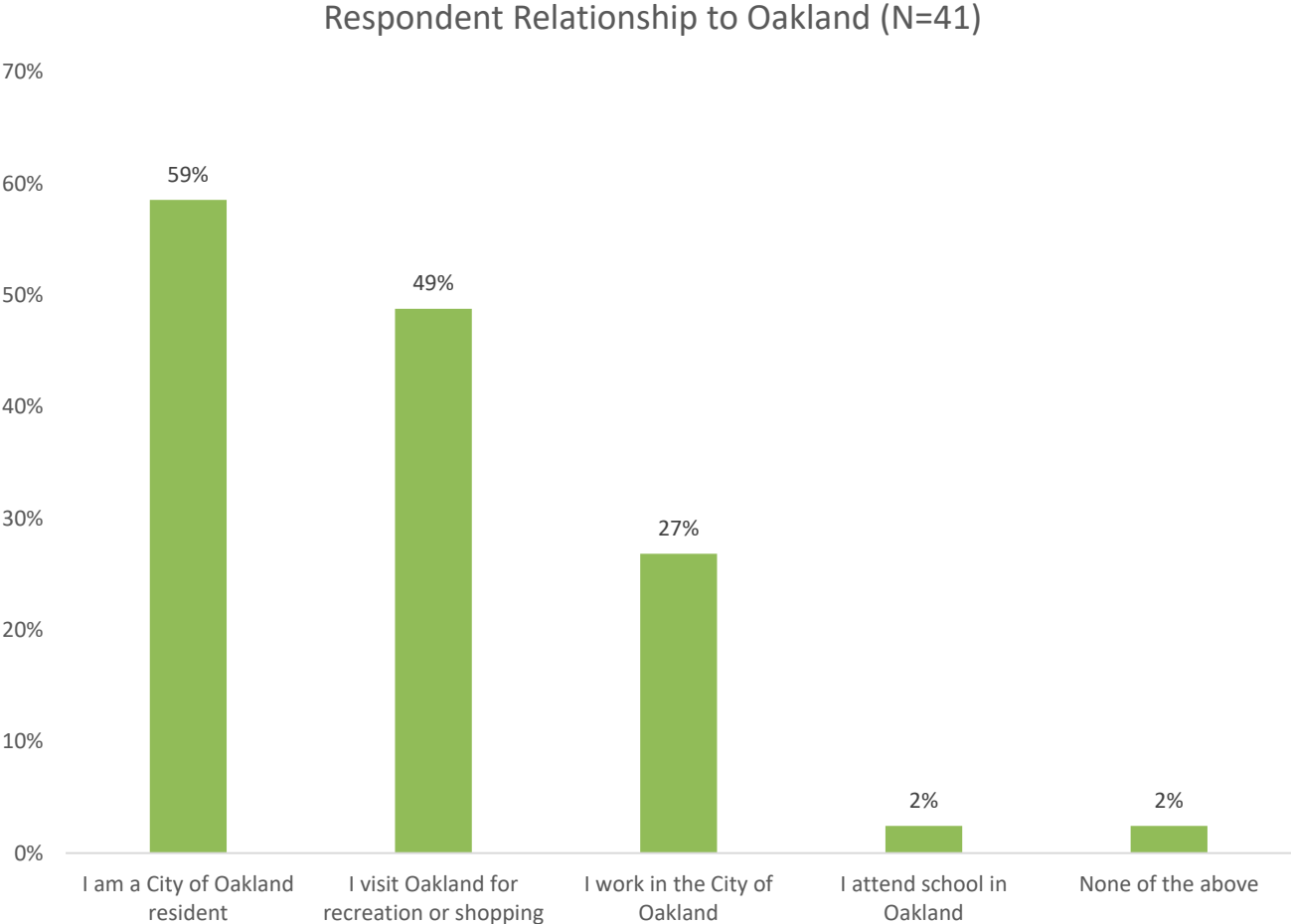
Shared Mobility Accessibility and Barriers

Bike Share

As highlighted in Figure 3, an overwhelming 77% of survey respondents had not tried standard Bay Wheels bike share service. About 23% indicated that they have used Bay Wheels bike share.

Figure 3:

Have you used Bay Wheels bike share (formerly Ford GoBikes) - not including the Adaptive Bike Share Pilot Program? (N=61)
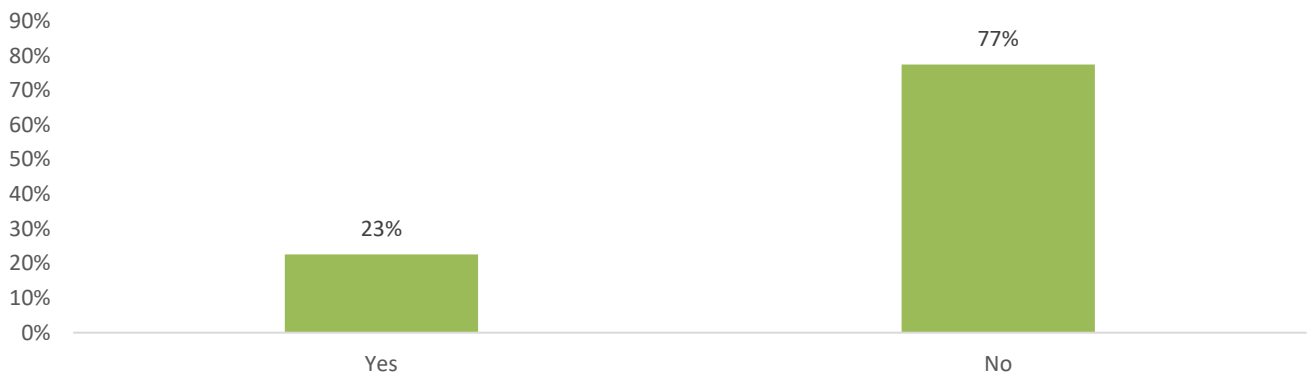
System incompatibility with rider disabilities emerged as the most common reason survey respondents had not utilized Bay Wheels, with 40% reporting they are unable to use the service for this reason (Figure 4). Concerns about the safety of the system, geographic constraints, limited interest or need for bike share, lack of service awareness, and cost were also reported.

Figure 4:

Which of the following best describes why you have not used bike share? (N=50)
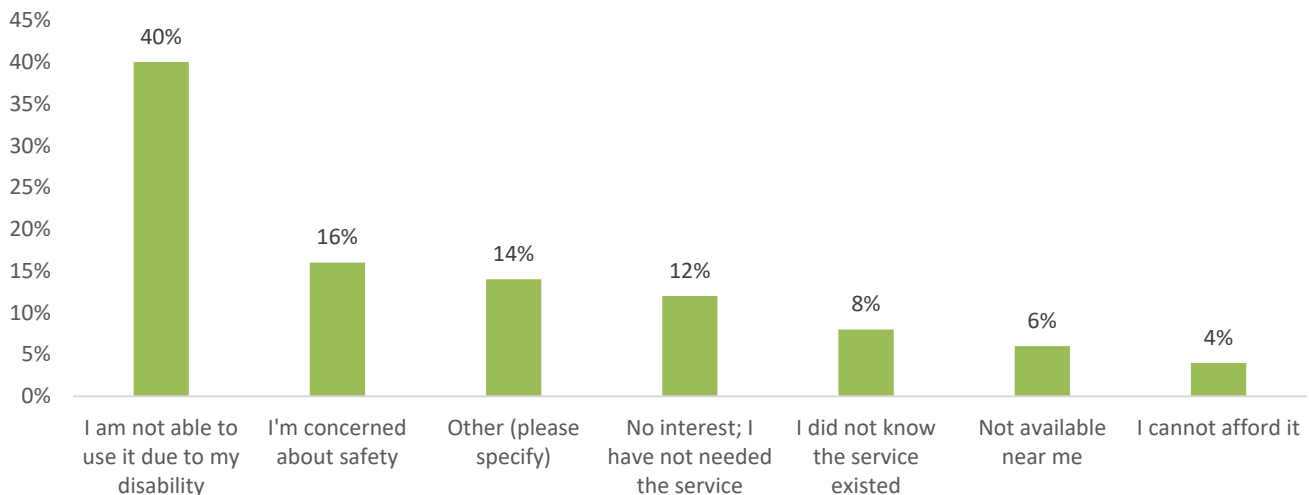
Geographic location was the most common barrier to bike share reported by survey respondents, with 39% encountering the issue (Figure 5). Vehicle design and digital access were also commonly reported by survey respondents at 37% and 33% respectively. Twenty-four percent (24%) of survey respondents reported "other" barriers to bike share service, with some examples including: the strength/energy required to ride a bike, preferences for a Wi-Fi and Bluetooth free option, and unreliable system balancing.

Figure 5:

Did any of the following limit your access to bike share services? (N=49)
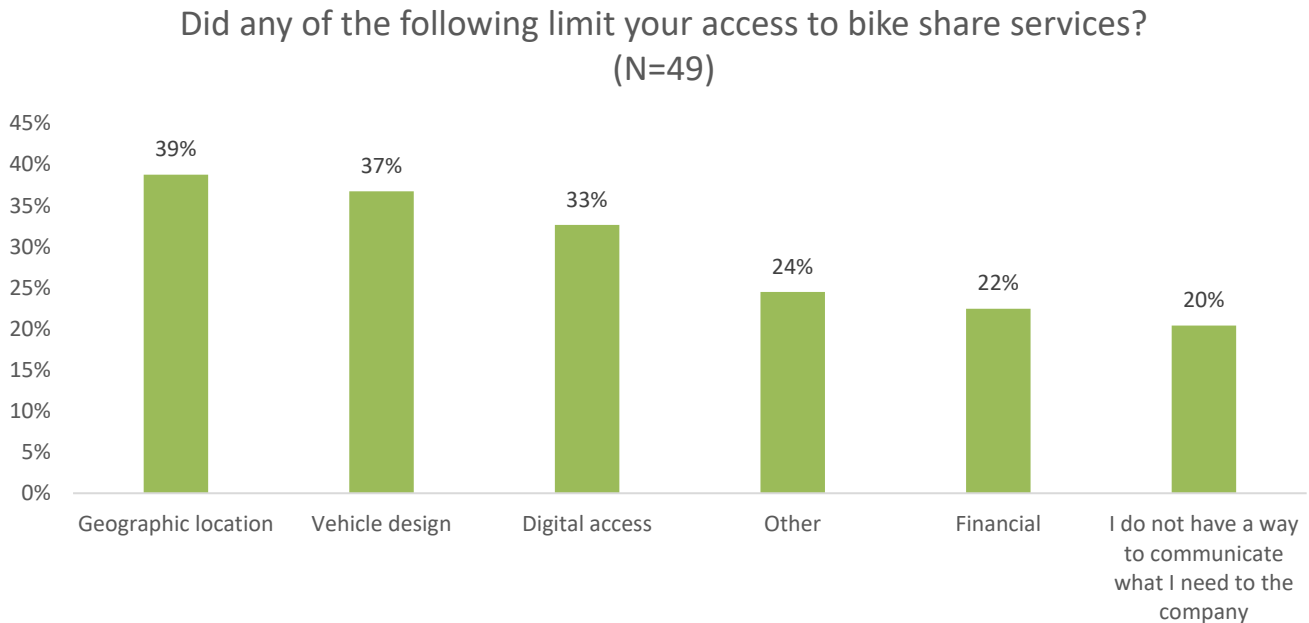
As Figure 6 indicates, respondents had a diversity of perspectives on what features might improve their access to bike share. Electric assist bikes were the most commonly requested improvement, with 51% indicating electric assist pedaling would increase their access to bike share and 25% reporting fully electric bikes that require no pedaling would improve their access. Three-wheeled cycles were requested by 35% of respondents and 27% reported that adaptive manual cycles would improve their access to bike share.

When asked how bike share could best be improved to provide access for persons with disabilities, survey respondents presented a range of ideas, some of which include:

- Staff or volunteers to help with transfers and account set ups
- Voice activated access
- Units that feature three wheels and electric assist capability
- Greater geographic dispersion of adaptive cycles that would be accessible 7 days a week
- Smartphone/Wi-Fi free options

Figure 6:

What vehicle design features would improve your access to bike share? (N=51)
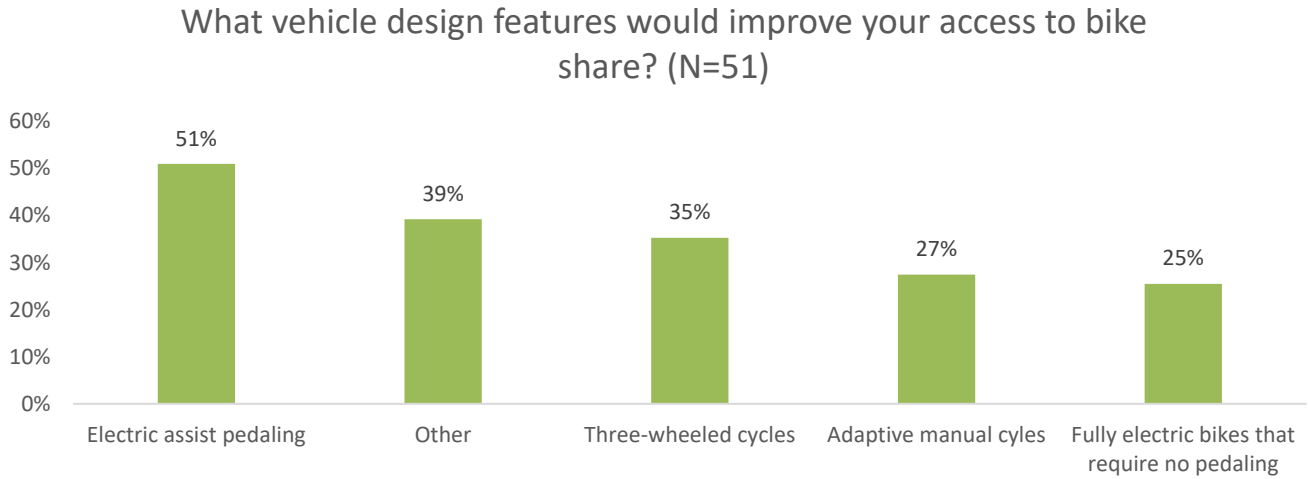
Scooter Share

Roughly 76% of survey respondents have not tried scooter share services in the past, while 24% reported they have used scooter share service (Figure 7).

Figure 7:
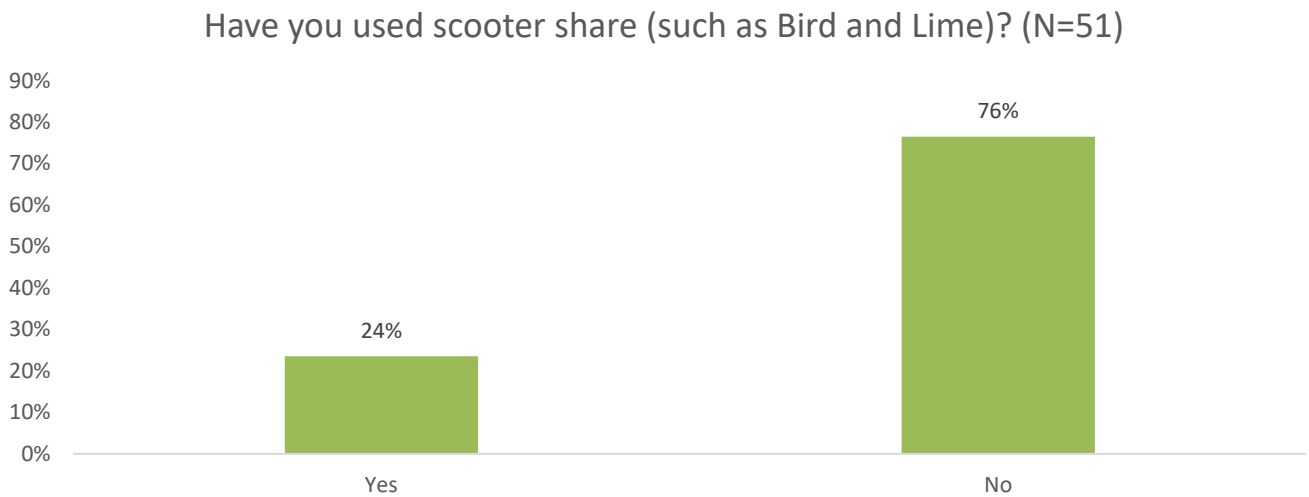
Have you used scooter share (such as Bird and Lime)? (N=51)

Incompatibility of scooter share service with disabilities was the most prominent reason respondents had not tried the service, with 50% reporting they are unable to use the service (Figure 8). Safety was the next most common responses, with nearly one-quarter (23%) of respondents noting safety concerns. Concerns about geographic constraints, and lack of interest or need were also reported.

Figure 8:
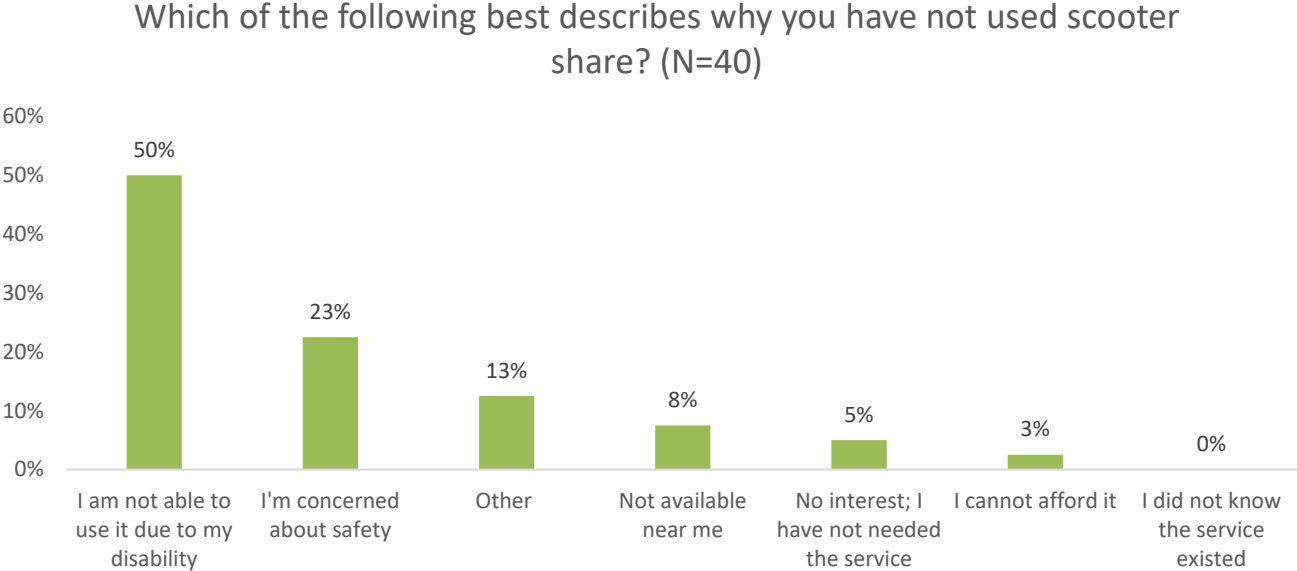
Which of the following best describes why you have not used scooter share? (N=40)

"Other" concerns were the most commonly reported access barrier to scooter share use among survey respondents (37%; Figure 9), with open response comments reporting everything from a desire for Wi-Fi free micromobility access options to respondents indicating they felt scooters were unsafe. Vehicle design was the second most commonly reported issue (35%). One-third of respondents reported financial barriers limited their access to scooter share (33%), while 30% reported digital access barriers and 23% reported geographic barriers.

Figure 9:

Did any of the following limit your access to scooter share services? (N=43)
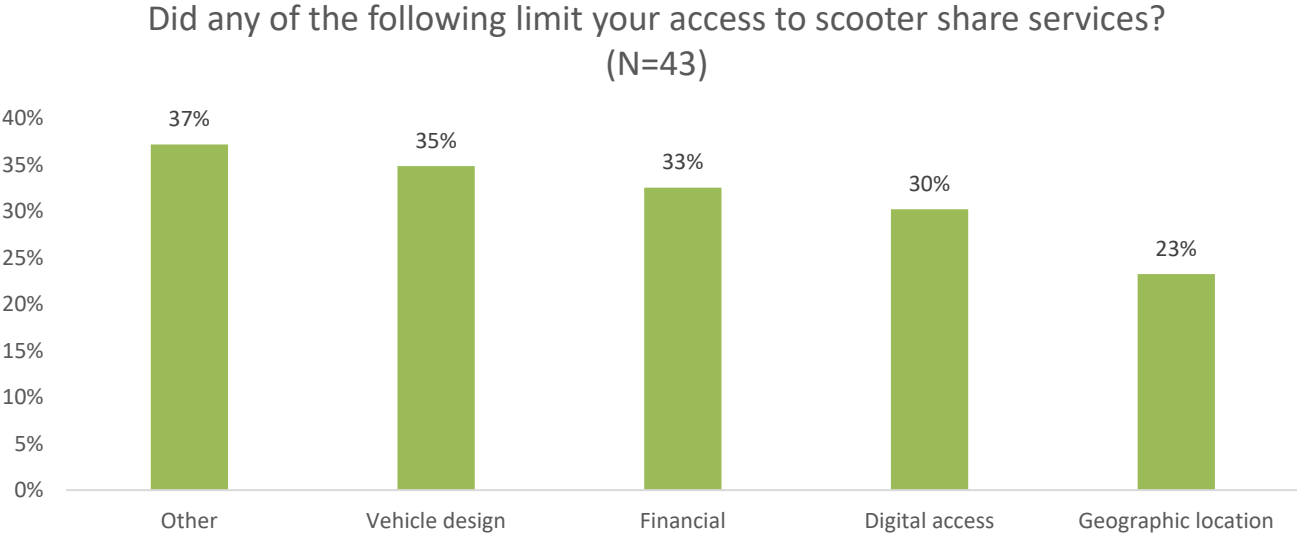
There was fairly popular support for all scooter design improvements provided in the answer choices, however three or more wheels and a larger standing base were the two most popular (Figure 10). Respondents proposed "other" solutions ranging from thicker tires to transfer assistance.

Figure 10:

What scooter design features would improve your access to e-scooters? (N=43)

Feature	Percentage
More than two wheels for added stability	42%
A larger standing base	37%
A seat	35%
Other	35%
Wheelchair add-on compatibility	33%
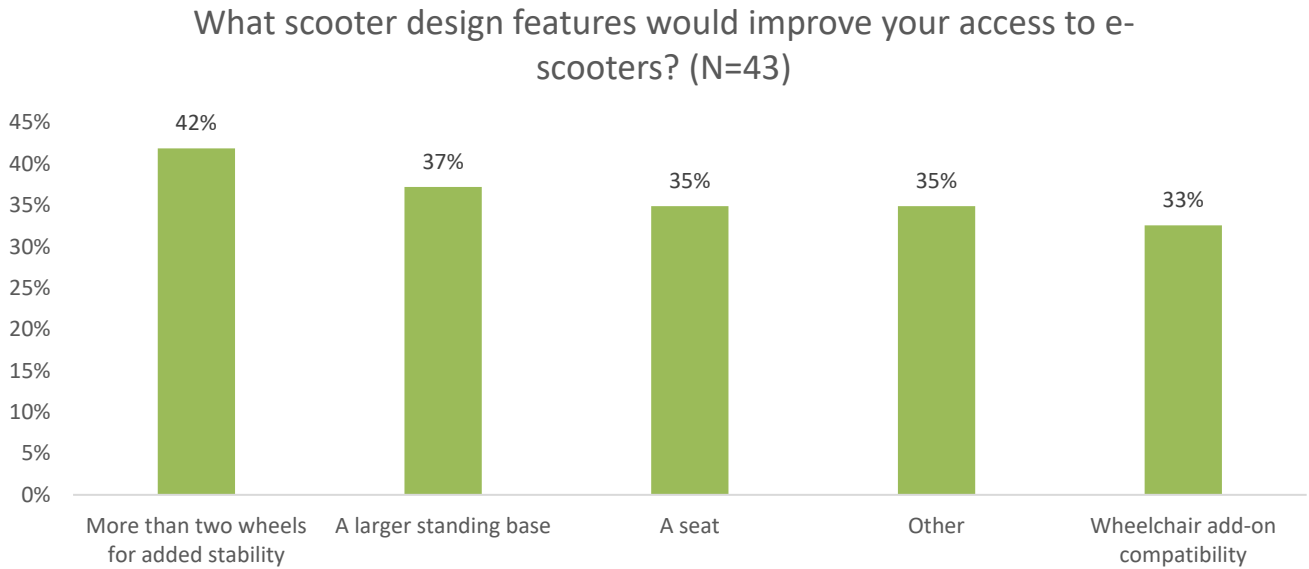
Ride Hailing

Unlike bike share and scooter share, a majority of survey respondents have used ride hailing services, with 76% reporting they had tried the service (Figure 11).

Figure 11:
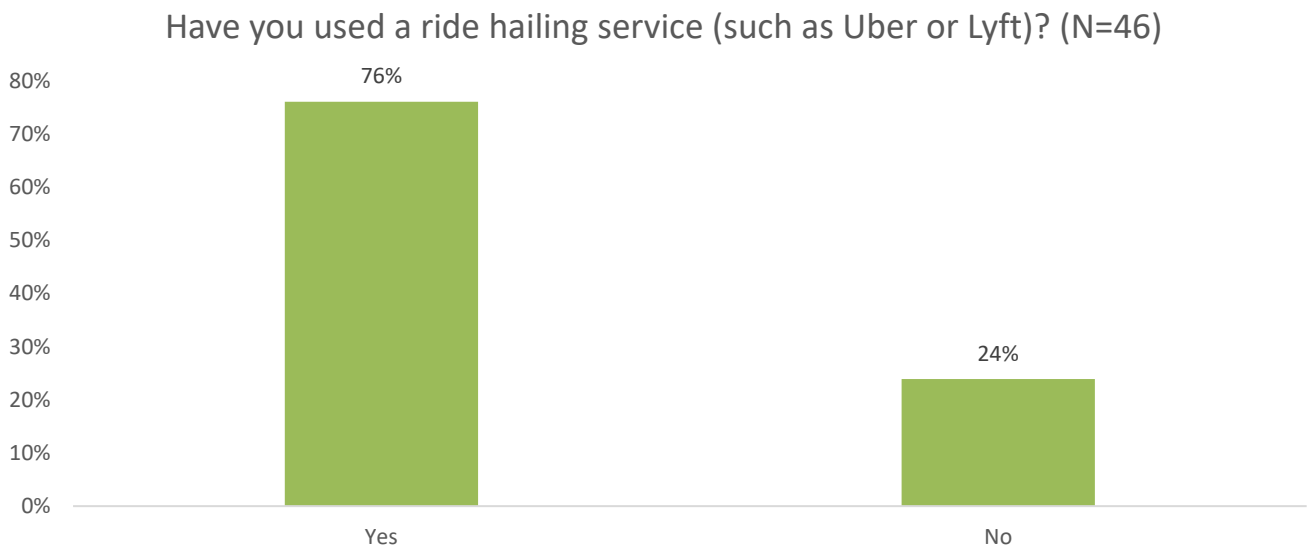
Have you used a ride hailing service (such as Uber or Lyft)? (N=46)

Response	Percentage
Yes	76%
No	24%

Of those who have tried ride hailing, a majority used standard service, while 24% use a disability accessible program (Figure 12). Eight disability accessible ride hail users reported on their typical wait times while accessing the service. Four reported waiting less than 20 minutes on average and four reported waiting more than 20 minutes on average.

Figure 12:
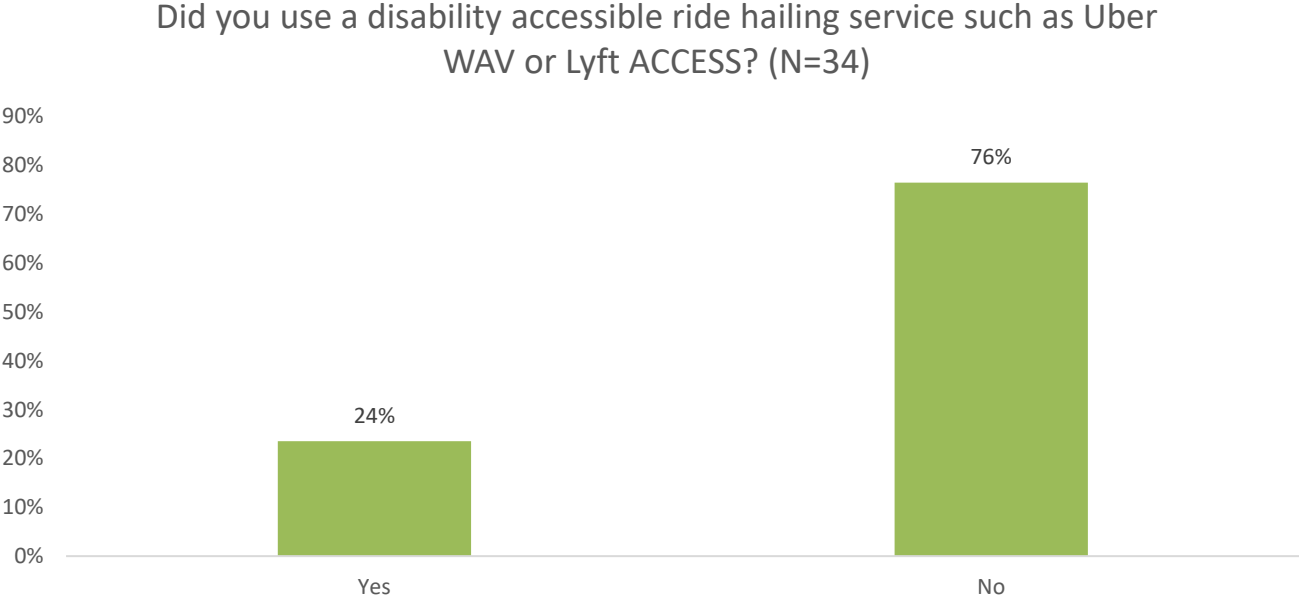
Did you use a disability accessible ride hailing service such as Uber WAV or Lyft ACCESS? (N=34)

Nearly half of respondents (49%) reported "other" access barriers to ride hailing that the project team had not included in the options. A majority of these respondents described drivers refusing to accept wheel-chair accessible requests and drivers cancelling rides when they arrive and see a rider with mobility challenges. Some reported believing drivers do this to avoid assisting riders transferring into the vehicle. As with other services represented in the survey, some respondents reported Wi-Fi as a barrier to their access. Unique to this mode, some respondents mentioned chemical sensitivities and pet allergies as barriers. Of the answer choices provided, financial constraints also prevented nearly half of respondents from accessing ride hailing (49%). About one-quarter of respondents also reported digital access and vehicle design barriers.

Figure 13:

Did any of the following limit your access to ride hailing services? (N=35)

Category	Percentage
Other	49%
Financial	49%
Digital access	29%
Vehicle design	26%
Geographic location	14%
I do not have a way to communicate what I need to the company	14%
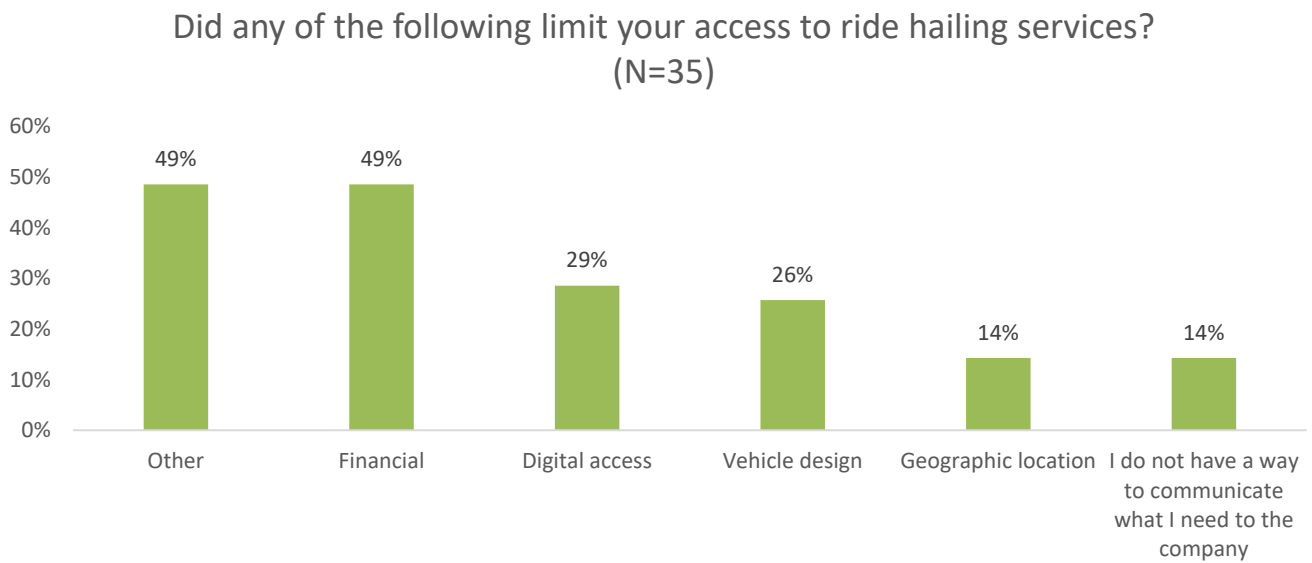
Car Share

A majority of respondents have not tried car share services. Those who have tried car share were most likely to have used dedicated parking car share (20%) or free-floating car share (14%). Of survey respondents, 9% have used the wheelchair accessible van by Getaround and 9% have used peer-to-peer car share.

Figure 14:
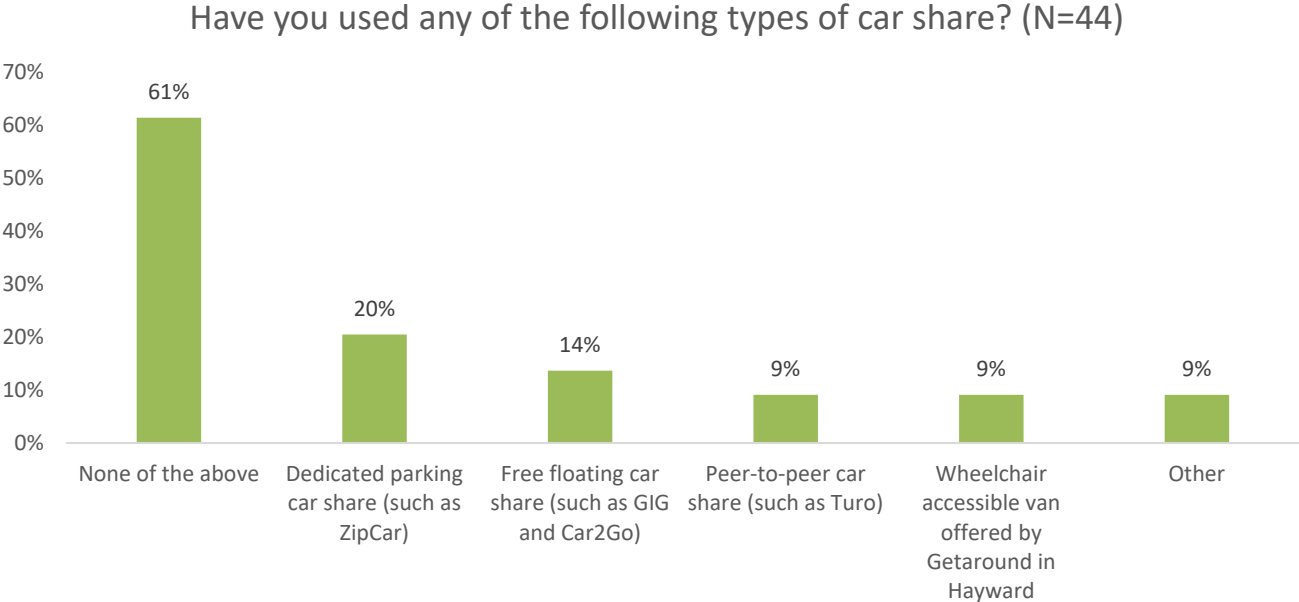
Have you used any of the following types of car share? (N=44)

Geographic location, digital access, "other" barriers, and financial cost presented the most common challenges facing survey respondents while accessing car share.

Figure 15:

Did any of the following limit your access to car share services? (N=34)
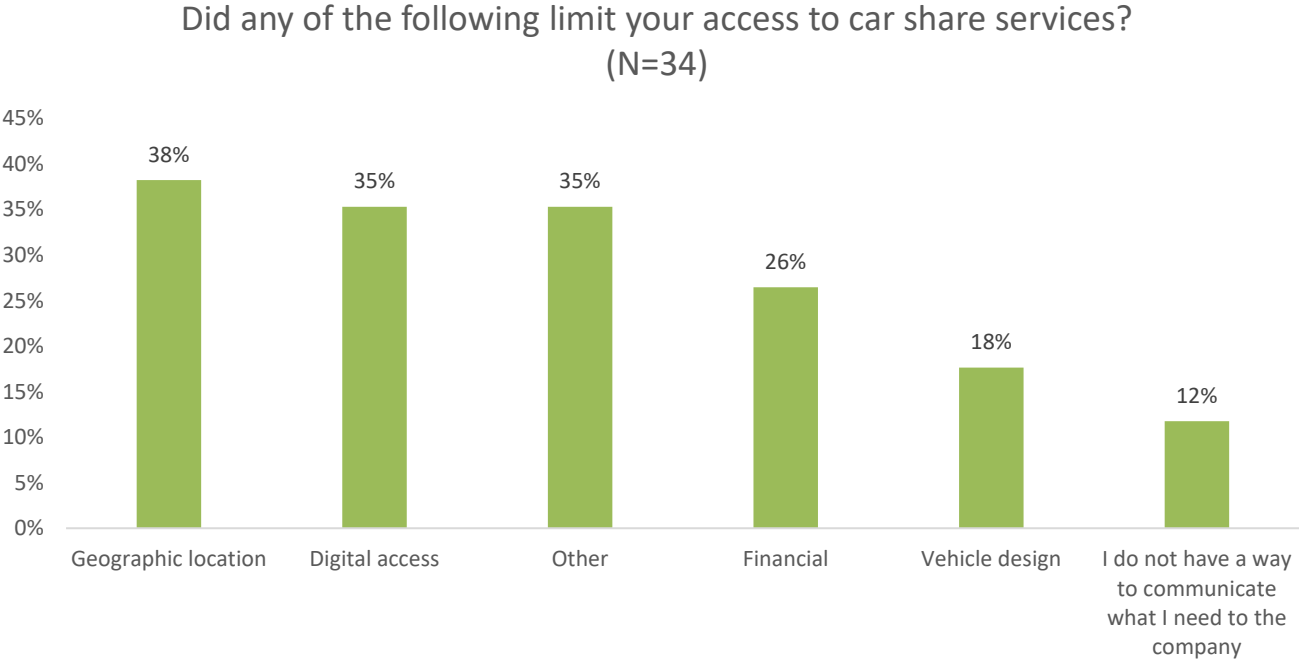
Figure 16 shows design features that would improve access to car share. Over half of survey respondents (61%) identified "other" variables not included in the other answer choices, including improvements such as:

- Automation of fold ramps
- Ability to reserve wheelchair accessible vehicle further in advance
- A preference for Wi-Fi/Bluetooth free options
- Low standing vehicles
- Better geographic distribution and balancing of car share
- Fragrance-free vehicles

Fold out ramps were popular improvement requests, with 43% of respondents citing this as improving access to car share. Wheelchair accessible passenger spaces and hand and foot controls for brake/accelerator would improve car share access for 32% of the respondent pool each, while a wheelchair accessible driver's seat would benefit 29% of respondents.

Figure 16:

What design features would improve your access to car share? (N=28)
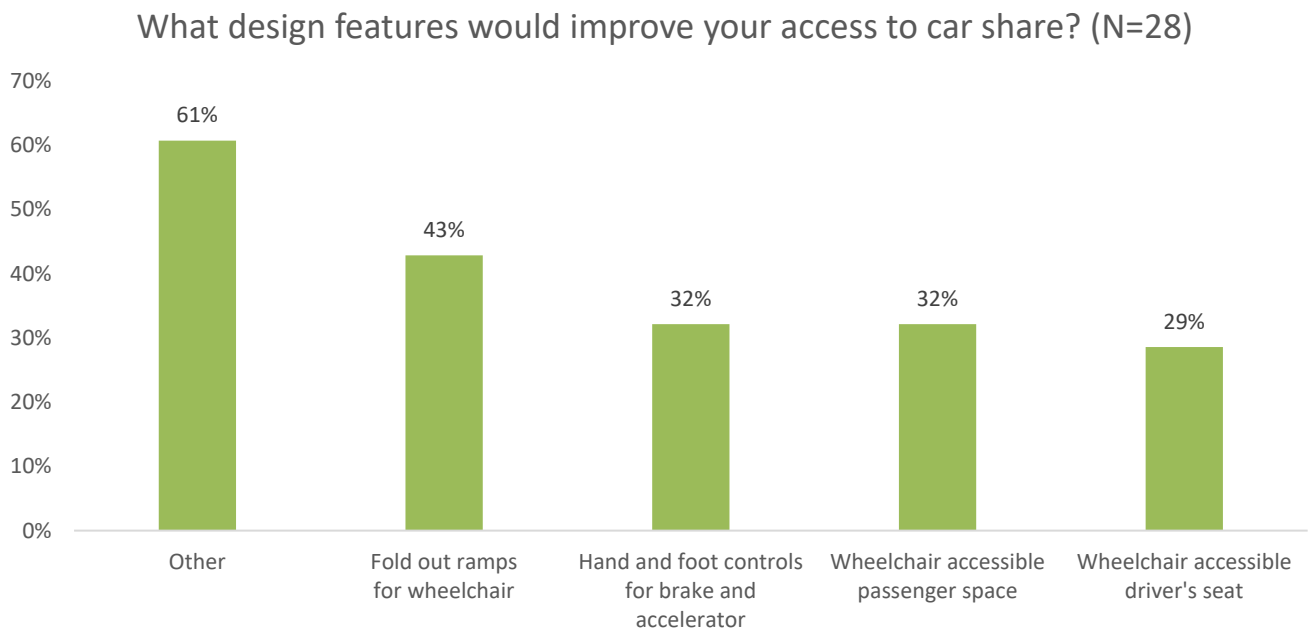
Adaptive Bike Share Pilot Program Survey Results

Awareness and Communication Strategies

Most survey respondents were aware of Adaptive Bike Share Pilot program rentals in Oakland, with 51% reporting that they had heard of the program (Figure 17). Approximately 46% were not aware that adaptive cycles were available for bike share rental and 2% were unsure whether they had heard of the program.

Figure 17:

Did you know that Oakland has a new Adaptive Bike Share Pilot program that offers short term adaptive cycle rentals for people with disabilities and those who are not comfortable using traditional, two-wheeled Bay Wheels (N=41)?

	Yes	No	I'm not sure
	51%	46%	2%
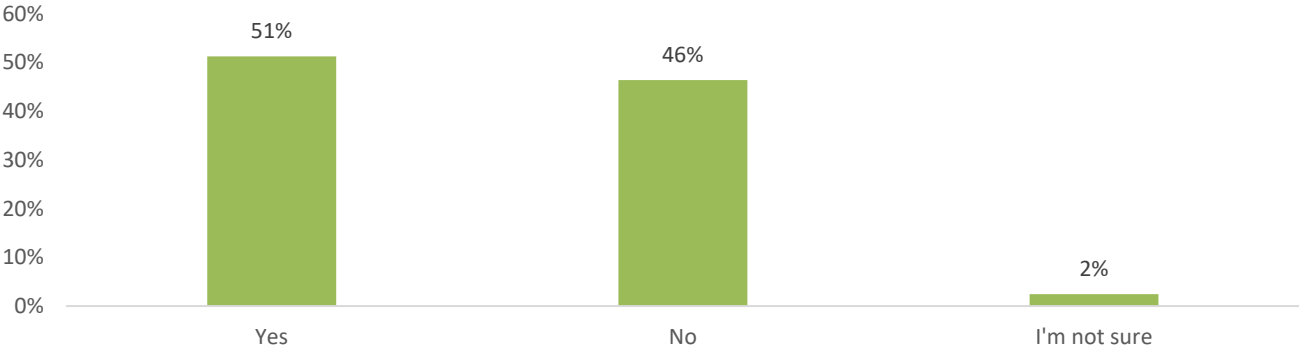
Survey respondents reported that seeing/encountering adaptive cycles in Oakland, social media, and word of mouth were the best methods of distributing information about adaptive bike share (Figure 18). Groups or organizations, websites, and news sources were also commonly reported as effective communication methods. Fewer participants thought the community event or bulletin boards were effective at distributing the information, with 25% finding the prospect helpful. "Other" communication strategies reported included integrating the Adaptive Bike Share Pilot Program into the larger Bay Wheels fleet, brand, and marketing.

Figure 18:

What would the best way for you to get this news? (N=20)
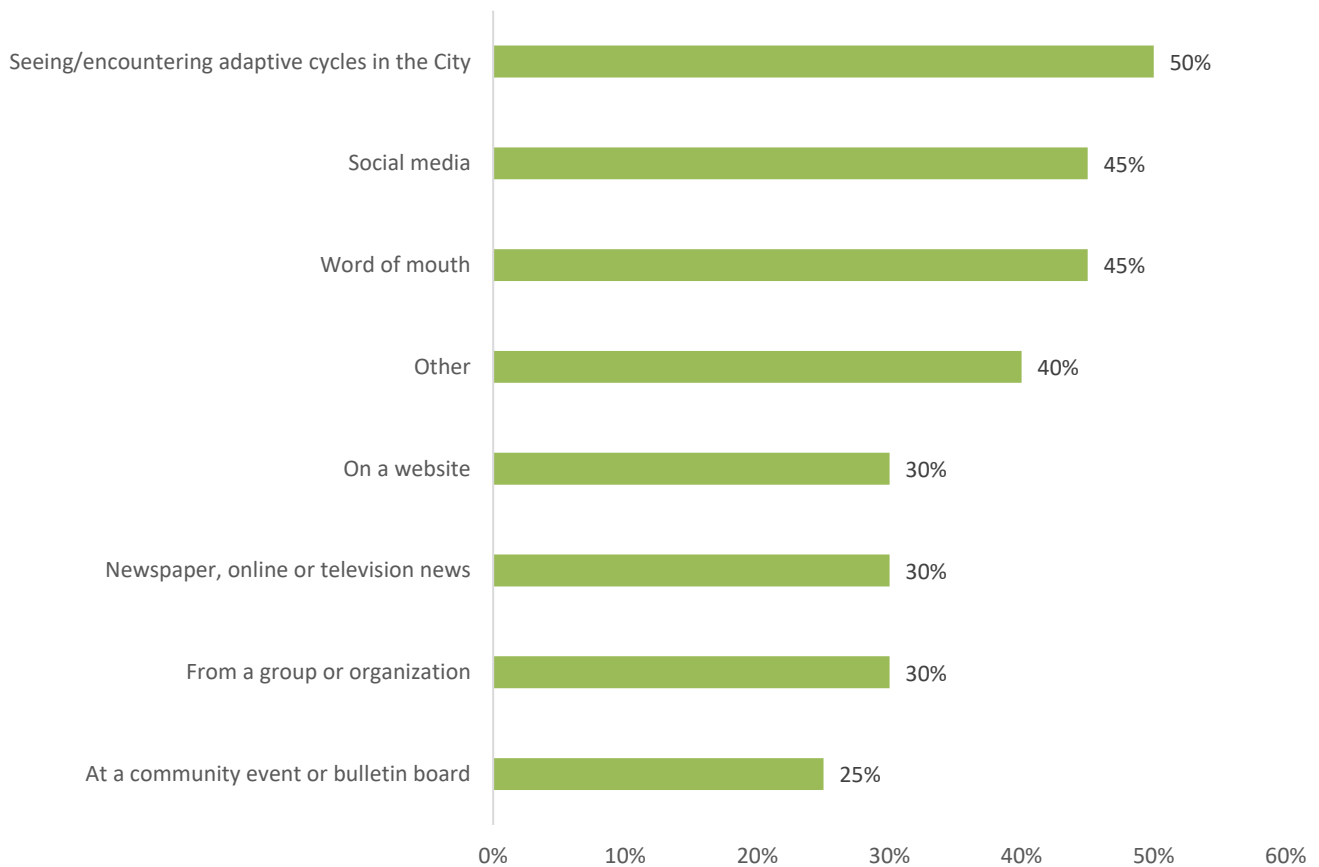
Pilot Program Non-Participant Feedback

Those who had not tried the Adaptive Bike Share Pilot Program cited a diversity of reasons for not participating (Figure 19). The most commonly reported reasons for not participating included: lack of adaptive cycle types suitable for their disability, lack of interest in using the program, and lack of time or opportunity to join to try the system yet.

Figure 19:

Which of the following best describes why you have not used the program? (N=33)
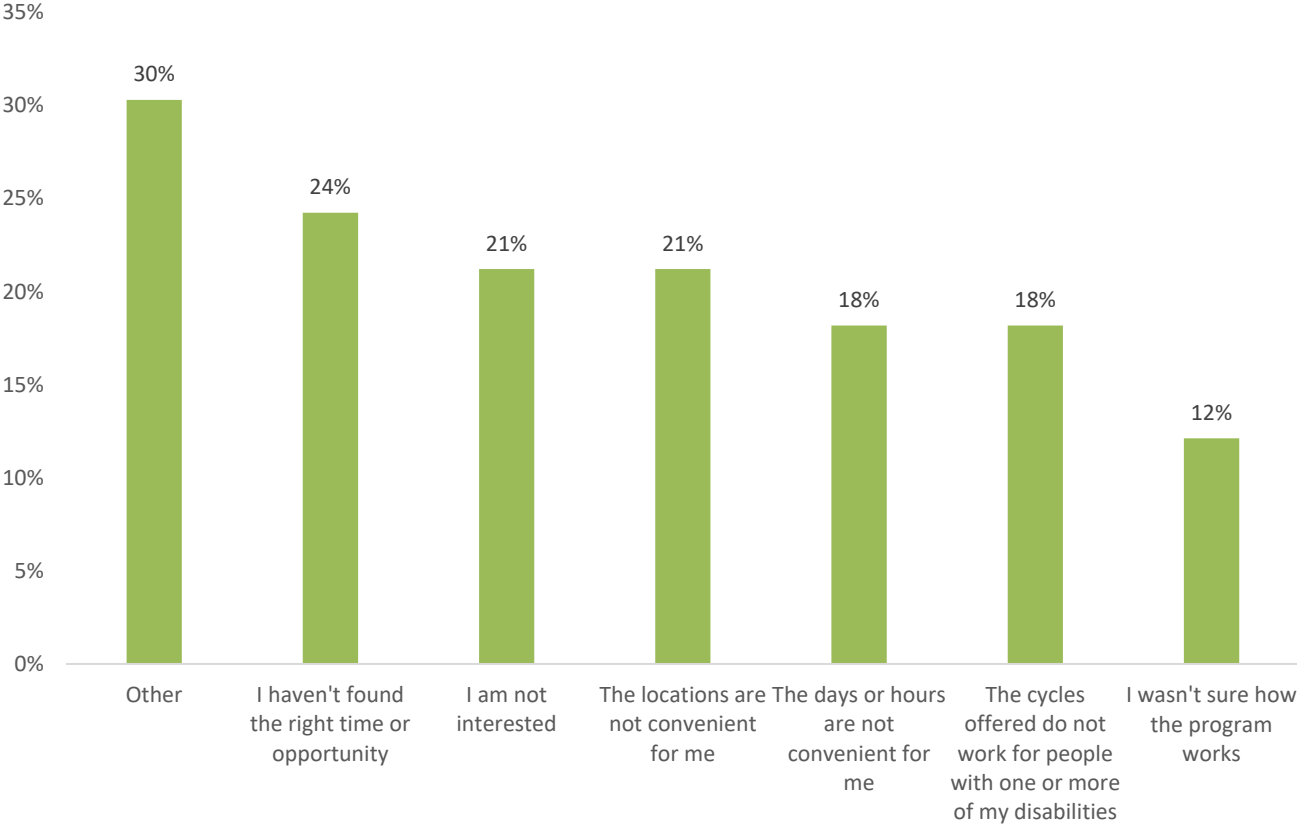
Pilot Program Participant Feedback

A total of four general survey pool respondents had participated in the Oakland Adaptive Bike Share Pilot Program prior to taking the survey. Two of these four chose to complete the pilot evaluation survey.

During the course of the program:

- Both respondents rented recumbent hand cycles and one also tried the upright hand cycle.
- One rated the cycle(s) they rented good while the other reported the cycle(s) were fair.
- Both used the program provided cycling helmet and mobility device storage service.
- One reported they used the Adaptive Bike Share Pilot Program for exercise, while the other used the program for recreation.
  - One respondent expressed that they would like to use Adaptive Bike Share for general travel needs throughout the week, rather than during the times/days and at the locations that the current program offers.
- Both respondents used the service exclusively on weekends.
- Both respondents rode the adaptive cycles by themselves.
- Both respondents were comfortable riding the adaptive cycles on multi-use paths/off-road trails, on-streets with bike lanes, and on quiet/local streets. Only one respondent was comfortable riding on-street without bike lanes.
- Different program elements worked well for each of the respondents, including:
  - Promotion and communication of the program
  - The Snow Park location
  - Hours of operation
  - Customer service
  - Being available at no cost
- Both respondents agreed that adding more locations and expanding promotion of the program would be important ways to improve the pilot program.
  - They also individually reported a preference for:
    - Better communication of what the program offers
    - Different locations than the current ones
    - Increased level of customer service
    - Classes, events, and activities for program participants
    - More types of adaptive cycles
    - Reduced cost for the City to run the program
- When asked how they would like to see the program operate in the future, one respondent stated a preference for integrating adaptive cycles into the Bay Wheels bike share fleet and the other suggested a similar program to the existing pilot with expanded hours or locations.
- One respondent strongly agreed and the other respondent strongly disagreed that the program is easy to understand and participate in.
- One respondent strongly agreed that they enjoyed cycling through the program, while the other abstained from the question.
- When asked if the program met their needs for cycling, one respondent somewhat disagreed, while the other held neutral opinions.

- Only one respondent reported they agreed that they would use the program again, while the other abstained from the question.
- When asked if they would recommend the program to others, one respondent reported neutral opinions while the other abstained from the question.

MEMORANDUM

711 SE Grand Ave.
Portland, OR 97214
(503) 230-9862
www.altaplanning.com

To: Kerby Olsen, City of Oakland

From: Jean Crowther (Alta), Beth Martin (Alta) and Chris Zeilinger (CTAA)

Date: November 8, 2019

Re: **Assessing the accessibility of shared mobility in Oakland: summary of focus groups**

Introduction and Context

As part of the City of Oakland's engagement with Alta Planning +Design ("Alta") to conduct a "Shared Mobility Accessibility Needs Assessment," Alta and its subcontractor, the Community Transportation Association of America (CTAA), conducted focus group discussions with Oakland residents having disabilities. These focus groups met on the afternoon of October 24, 2019, at Oakland's city hall. There were two focus group sessions, one in the early afternoon and one in the late afternoon. Although there were repeated notices and invitations to encourage attendance from across Oakland's communities of individuals with disabilities, each session had only three people in attendance. Chris Zeilinger (CTAA) facilitated these discussions; Beth Martin (Alta) helped Chris lead the discussions, and also took notes and recorded these sessions.

Prior to convening the first of these focus groups, Beth and Chris met with Kerby Olsen and Anh Nguyen (City of Oakland) to review the format and expectations for what would be achieved with these sessions. Since the focus groups were only one part of how the Alta team and the City of Oakland were engaging with and receiving input from Oakland's disability community stakeholders, the low attendance, while not what was hoped for, nonetheless was felt sufficient, as the groups' input builds on two prior surveys, plus information and comments that have been received through the team's presentations and attendance at a variety of meetings and events in Oakland during the course of this project.

The below notes are a summary of what was discussed in these focus groups. Both groups' inputs are reflected under each of the topical headings. Since both group's discussions followed the same outline, and touched on many of the same points, there was no apparent need to single out or differentiate the discussions of the two groups.

Focus Group Session Outline

Each group followed the same structure:

- Introductions of participants and facilitators, including overview of the study's objectives, short housekeeping and safety briefings, securing all participant's oral assent to having the session recorded, and definitions of shared mobility modalities
- Discussion around the shared bicycle modality

- Discussion around the shared scooter modality
- Discussion around the ride-hailing modality
- Discussion around the car-sharing modality
- Concluding comments

For each modality, the starting point of the discussion were a series of questions about participants' experiences and perceptions of these modalities, which led into some discussion around how each modality might be most meaningful and accessible to individuals with disabilities in Oakland.

Focus Group Comments, Summarized

Bike Share

- The limited-scale adaptive bike share pilot at Lake Merritt is interesting, but hard to know how instructive it might be, especially as the path around the lake is crowded and hard to navigate. Even if ultimately successful, the experiences in other cities, such as Berkeley and Portland, suggest that acceptance and use of adaptive bike share may take at least a year to begin to materialize.
- The Lake Merritt pilot appears aimed solely at recreational users; it's hard to say how attractive this is for would be users with disabilities, who have to resolve access issues just to get from their homes to the lake. For instance, when a wheelchair user is able and interested in using such a bike, what are they to do with their chair while on the bike, and what if they need assistance getting on and/or off the bike; will there be lifts, aides, accessible restrooms near boarding or docking locations?
- Focus group participants all felt that adaptive bike share programs might eventually be adopted by some individuals with disabilities as a form of active recreation, but many individuals' disabilities will preclude their use of these bikes, and it's hard to see how adaptive bike share could become more of a transportation solution for individuals with disabilities.
- In general, wheelchair users and other individuals with disabilities tend to view even an adaptive bike share program a "something that's not for me."
- Given the diversity of disabilities, a serious approach to accessible bike sharing would embrace different kinds of equipment, so that fewer would-be users are excluded from the service on account of their particular disabilities. For example, some recreational bicycling could be accommodated through conventional tandem bikes that allow a person with visual impairments or disability-related balance issues to ride one seat of the bike, while a less-disabled person is in the other seat, guiding and controlling the movement of the bike. An accessible app-based bike share interface could – in theory – help match interested users with the nature and location of appropriate, available bike-like vehicles.
- More generally, it might be possible and reasonable to look at dedicated accessible lanes in road corridors that keep safely copacetic modes in shared lanes, and otherwise-conflicting modes in separate lanes (e.g., scooters and conventional bikes in one set of lanes, and pedestrians and wheelchair users in another set of lanes), all done in a way that reduces demand for conventionally fueled automobiles, motorcycles, trucks and buses, and keeps these vehicles' exhaust at a safe distance from pedestrians.

Scooter share

- Among individuals with disabilities, the number one concern about scooters and accessibility is the way these devices invariably are obstacles in otherwise accessible pathways. One way in which Oakland could

use scooters to promote accessibility would be by removing the scooters altogether from the streets and sidewalks of Oakland. At the very least, it would be good if the city had designated and widespread docking or parking areas for scooters, set up in places and ways that encouraged their use, and that discouraged scooter users from leaving these vehicles strewn across streets and sidewalks. There needs to be widespread education for everyone in Oakland about the needs and values of assuring accessible pathways. And if there were an effective accessible way to report scooter parking violations that presented challenges to safety or accessibility, that would be wonderful.

- If the city of Oakland is asking scooter companies to come up accessibility plans, what's in these plans, and what's enforceable?
- Some individuals might find value in some forms of adaptive scooters, whether it's the motorized "Firefly" that attaches to some wheelchairs, or scooters with seats, three or more wheels, scooters with larger platforms, or other forms of adaptation. Scooters or scooter-like devices that are to be used by individuals with disabilities probably will need to be sturdier than many conventional scooters, and their deployment will require extensive outreach and user education.
- For wheelchair users and many other individuals with disabilities, their use of scooters or related devices would need to be set up so that these people can keep their chair or mobility aid with them during the journey; otherwise, what's the point?
- If the scooter companies deploy a variety of adaptive scooters and related devices, their smartphone apps will need to be ready to match would-be users with disabilities with the scooter(s) or device appropriate to their disability.

Ridehailing

- The current deployments of wheelchair-accessible vehicles (WAVs) by Lyft and Uber are limited, both in terms of geography and coverage. For instance, Lyft's WAV pilot program, strictly speaking, is only in San Francisco. The concept of WAV ridehailing is promising, but there needs to be more coverage, as focus group participants reported long wait times, inconsistent responses, and a number of glitches in these pilots (e.g., how to cancel a ride, how to have accessible communications, clarity about whether the WAVs are dedicated or are used also to pick up passengers who don't require a WAV).
- The Lyft and Uber apps provide information on WAV location and availability, estimate wait time for the pickup, and travel time for the trip, but the limited experience reported in the focus group are that these are not always reliable estimates. Accessible use of Lyft and Uber is very hard to discern from their apps.
- How is a prospective WAV user supposed to respond when they see no vehicles are available when they want (or need, in some cases) a ride? If the Uber and Lyft WAV pilots can't provide timely, reliable service to destinations such as employment, medical services, or airports or rail stations, this is a concept that will remain interesting, but not useful, to many would-be WAV users.
- A leading concern is how to complete the entire trip. What if the shared-mobility WAV can get you to your destination but isn't available for getting you home? Ambulatory shared-mobility users will have a range of options, but those who require a WAV have far fewer options.
- WAV users encounter situations where it appears that Lyft and Uber drivers turn down trips that they don't want to do.
- Are the drivers of Lyft and Uber WAVs trained to proficiency in assisting passengers with disabilities and their wheelchairs? Are they trained in how to use the ramps or other accessibility features of the vehicle

without risking injury to the driver or the passenger? Based on focus group participants' limited experience with the Lyft and Uber WAV pilots, there is uncertainty about this from the passengers' perspective.

- If the WAV pilots lead to successful, more widely spread WAV availability by Lyft and Uber, this could be a good thing, in that more passengers with disabilities could make spontaneous travel arrangements, and could enjoy a "liberating" level of mobility more comparable to that enjoyed by persons who do not require WAVs to get to their destinations.

Car share

- From 2001 until 2016, City CarShare was a pioneering car-share operation that included a small number of WAVs in its fleet. Some of those WAVs are still around, now being managed through a limited-scale program managed Community Resources for Independent Living (CRIL), but they are getting old now.
- Aside from the limited legacy of City CarShare, there seem to be no other providers of car-share WAVs, now or in the foreseeable future.
- Zipcar does provide some vehicles with hand controls.
- The challenge with accessible car-share as a concept is that different people may have vastly different requirement for the accessibility of the vehicle.
- One current alternative is to rent a van from Mobility Works, but it's very expensive and cost prohibitive.
- Even if accessible car-share vehicles are available, who will be responsible for maintenance of their accessibility features, and how are renters or other users trained in the proper use of these accessibility features?
- Where do you situate the cars? In all likelihood, an accessible car-share service would have a small number of vehicles, and if they're not right near your location, they may as well not exist. And what's going to happen when a user without disabilities has taken an accessible car-share vehicle, and thus deprived a WAV-dependent person of the mobility they might have had?
- One alternative that can work for some people and some situations is for the individual with a disability to have the account with a car-sharing program, but they have someone else named as the driver, so that the vehicle needs accessibility for the passenger, but not the level of adaptive technology required for the individual with a disability to operate the vehicle themselves.

Cross-cutting and other comments

- Focus group participants were very aware of their limited numbers, and stressed the importance of engaging with a larger number of stakeholders, especially to include a greater range of disability-related perspectives.
- For everyone in the focus groups, their leading issue of accessibility was not the shared mobility, but the fundamental accessibility of the city's infrastructure; it repeatedly was noted that if there's no accessible path to the shared mobility vehicle, whether it's a car, van, scooter, bike or whatever, the accessibility of the shared mobility is immaterial.
- Another recurring comment was that of training and awareness, on several fronts, including accurate and extensive outreach on what accessible services are in place, and how individuals with disabilities are to use them, and also including training on awareness and accessibility for non-disabled users of shared mobility services, so they can learn how to use scooters and bikes in ways that don't impinge on curb cuts and accessible pathways, for example.

Appendix 5 - Digital Accessibility Audit

711 SE Grand Ave.
Portland, OR 97214
(503) 230-9862
www.altaplanning.com

To: Kerby Olsen, City of Oakland

From: Jean Crowther, Alta Planning + Design

Date: October 11, 2019

Re: Micromobility Application Evaluation Methodology

Background

As of May 2019, the City of Oakland's Scooter Sharing Program Terms & Conditions specify that operators must provide adaptive scooters for persons with disabilities (the total fleet split will be determined by expected need, performance, and usage) and provide accessible mobile app and customer interface platforms. The City specifies that operators unable to comply with these conditions at the time of permit issuance must submit a plan within the first three months of the permit term detailing a timeline for the incorporation of adaptive scooter share technology.

Proposed App Evaluation Methodology

An important step in evaluating the overall accessibility of micromobility services, is evaluating the accessibility of the smartphone-based platforms riders utilize to sign up and rent bike share and scooter share units.

The proposed evaluation would include all service operators with actively deployed bike share and scooter share units in Oakland. These companies include:

- Bike Share Systems:
    - Bay Wheels (by Lyft)
- Scooter Share Systems:
    - Bird
    - Lime
    - Lyft

Comprehensively evaluating the accessibility of these smartphone applications will include performing an audit on both sign-up processes and unit reservation flow screens. This audit will be conducted by Alta's web developer using software-based and/or online web accessibility evaluation tools designed to highlight and score elements of a web page or app that may pose access issues for users with a diversity of disabilities, including those with mobility challenges, low vision or blindness, photosensitivity, and learning or cognitive disabilities. The web accessibility evaluation tools used will test the real-world performance of these apps against WCAG standards, which are designed to ensure that web content is perceivable, operable, and understandable to the widest base of users possible. This analysis process will evaluate how these platforms perform for both Android and IOS users. In the instance of Bay Wheels, an analysis of the Lyft desktop-based screen that users must access to receive a Bay Wheels verification code will also be performed (as it is a component of the sign-up process).

The outputs of these tools will be distilled into an evaluation write-up that summarizes design elements of each app that may create access barriers for users with disabilities or underserve users with disabilities. The identification of these problematic web elements could inform the City of Oakland as micromobility providers seek permit renewal.

MEMORANDUM

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PLANNING + DESIGN

711 SE Grand Ave.
Portland, OR 97214
(503) 230-9862
www.altaplanning.com

To: Kerby Olsen, City of Oakland

From: Jean Crowther and Zane Taylor, Alta Planning + Design

Date: November 12, 2019

Re: **Oakland Micromobility App Accessibility Audit**

Methodology

The consultant team conducted web accessibility testing on apps associated with each of the active shared micromobility platforms in Oakland, including Lyft, Lime, and Bird. The webpage for Bay Wheels was also evaluated, as it is a necessary step in accessing the bike share portion of Lyft's app in Oakland.

To evaluate the performance of these three shared mobility apps and the Bay Wheels sign up webpage, the consultant web developer used axe (by Deque). Axe is a popular web accessibility testing toolkit that allows for the identification and resolution of web accessibility errors covered by WCAG standards.

This accessibility testing focused on screens associated with the sign-up/sign-in process, as well as screens associated with the reservation of micromobility units.

Common Issues

Table 1:

Issue	Definition
Unnamed Interactive Elements	Elements that users can interact with must have an associated name or label. Labeling interactive elements is necessary for screen reader users to identify what each interactive element does.
Color Contrast	Elements should adequately contrast with the surrounding webpage or app screen background and other adjacent elements. This ensures colorblind users can access the content and promotes ease of visibility for viewers with limited or strained vision.
Inadequate Touch Target Size	Interactive elements should adhere to WCAG touch target size requirements to promote ease of element selection for users with limited dexterity, coordination, or vision.
Lack of Alternative Text	Focusable informative views, such as images or graphics, should be accompanied by a text description of the element to provide context for screen reader users.
Unassociated Input Names	Views that have modifiable values (such as lines that collect a user's name, payment information or phone number) should get their name from a nearby label
Improper Input Labeling	Form input elements must have an associated label to alert screen reader users to what information is being requested of them.

Figure 1:

Sample Screen

Issues Identified

1. An invisible element placed here provides an example of a focusable view without a name, label, or alternative text. Screen reader users would be unable to identify the meaning or importance of the element.

2. This back button provides an exampe of an interactive view that lack proper naming/labeling. Screen reader users would be unable to identify the meaning or importance of the element.

3. This text input element provides an example of an editable view/input that lacks an adjacent name/lable. While screen reader users may contextually understand what information is being requested, the input box itself would not read a clear prompt.

4. This button provides an example of both insufficent color contrast and insufficient touch target sizing.

Summary of Results

All App Summary Data

Table 2:

Platform	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Total Score (out of 100%)
Lyft	293	231	63	**85%**
Lime	215	116	99	**55%**
Bird	111	97	14	**88%**

This testing process identified Bird as the most disability accessible micromobility app, with 88% of evaluated elements passing accessibility standards. Lyft was identified as the second most disability accessible micromobility app evaluated, with 85% of tested elements passing accessibility standards, however, the Bay Wheels web based multiscreen sign-up form performed poorly during accessibility testing. This multiscreen Bay Wheels sign-up process utilizes Typeform, which struggles with screen reader performance. Lime was the lowest performing app during this testing process, with 55% of evaluated elements failing accessibility standards.

Lyft App Evaluation

Overview

Table 3:

Screen	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Page Score (out of 100%)
Landing/Sign-up/Login	16	13	3	81%
Phone Sign Up Page 1	16	14	2	88%
Phone Sign Up Page 2	18	17	1	94%
Find a Ride	119	90	29	76%
Ride Options	91	66	25	73%
Confirm	33	31	3	94%
Total Score	**293**	**231**	**63**	**85%**

The Lyft app was evaluated for compliance with WCAG standards to identify potential in-app access barriers that may exist for riders with a range of disabilities, including those that result in limited vision and limited dexterity. A total of 6 screens exist from service sign-up to unit reservation, all of which were tested and scored.

Figure 2:

Lyft App Web Accessibility Issues Identified

- Unlabeled Image 2.3%
- Unlabeled Text Input 9.3%
- Unnamed Active View 27.9%
- Small Touch Size 30.2%
- Low Color Contrast 30.2%
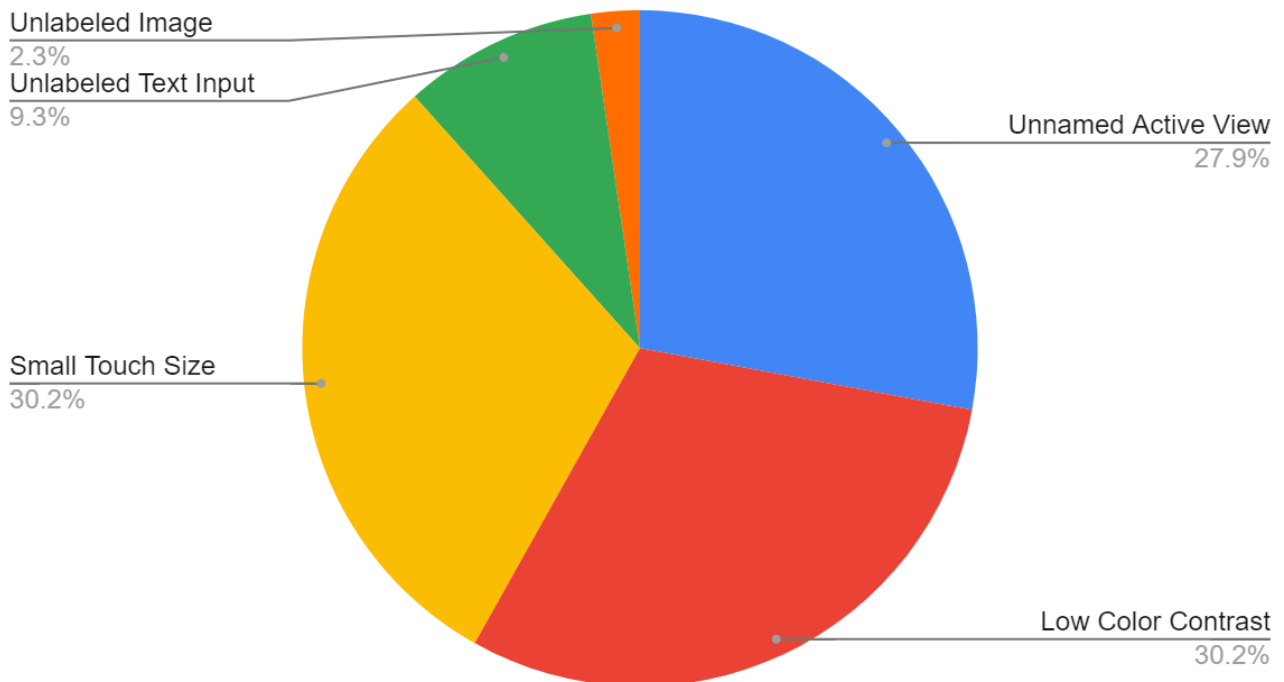
Issues identified within Lyft's evaluated screens were most commonly pertaining to:

- Inadequate color contrast
- Inadequate touch size for selectable elements
- Unnamed active views

Landing/Sign-up/Login

Of the 16 web elements on the landing/sign-up/login page, 81% passed accessibility testing. The three elements failing accessibility testing were flagged for deficiencies in:

- Color contrast between text and background ("Log in" element)
- Interactive views lacking name
- Compliance with WCAG Touch Target Size requirements

Phone Sign Up

The phone sign up process within the Lyft app has 2 required pages. The first sign-up page contains 16 web elements, 88% of which passed accessibility testing. Page 2 of the phone sign up process contains 18 web elements, 94% of which passed accessibility testing. The 2 failing elements on page 1 and 1 failing element on page 2 were flagged for deficiencies in:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements
- Views with modifiable values should draw name from nearby label

Find a Ride

Of the 119 web elements onscreen at the time of testing, 76% passed accessibility testing. The 29 failing web elements were flagged for deficiencies in:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements
- Focusable informative views must have text or a content description
- Views that users can interact with must have a name
- Unnamed interactive elements

Ride Options

Of the 91 web elements on the Ride Options screen at the time of testing, 73% passed accessibility testing. The 25 elements that failed were flagged for being deficient in:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements
- Unnamed interactive elements

Confirm

Of the 33 web elements on the confirmation screen, 94% passed accessibility testing. The 3 elements that failed accessibility testing had multiple deficiencies, including:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements

- Unamed interactive elements
- Unassociated input names

Lyft App Audit Summary

The 6 Lyft screens evaluated contained a total of 293 web elements, 231 of which passed accessibility testing. This give the Lyft app a total score of 85%.

Bay Wheels Web-based Multiscreen Sign-up Evaluation

Overview

Activating the Bay Wheels component of Lyft's app requires accessing the Bay Wheels sign-up webpage. As a desktop based multiscreen form, outputs from the evaluation of this component of the sign-up process differed from those app-based testing.

Axe identified 23-27 failed elements per screen within the multiscreen form that the Bay Wheels sign-up process requires. These elements were flagged for accessibility issues related to:

- Inadequate color contrast
- Improper input labeling

This multiscreen form utilizes Typeform as a third-party platform, which is known to have screen reader access deficiencies.

Lime App Evaluation

Overview

Table 4:

Screen	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Page Score (out of 100%)
Phone Sign-up Page 1	23	18	5	78%
Phone Sign-up Page 2	16	7	9	44%
Sign in Page 1	16	6	10	38%
Sign in Page 2	18	8	10	44%
Find a Ride	54	29	25	54%
Ride Options/Reserve	79	41	38	52%
Confirm	9	7	2	78%
Total	**215**	**116**	**99**	**55%**

The Lime app was evaluated for compliance with WCAG standards to identify potential in-app access barriers that may exist for riders with a range of disabilities, including those that result in limited vision and limited dexterity. A total of 7 screens exist from service sign-up to unit reservation, all of which were tested and scored.

Figure 3:

Lime App Web Accessibility Issues Identified

Unlabeled Image
4.2%

Unlabeled Text Input
4.2%

Small Touch Size
29.2%

Unamed Active View
45.8%

Low Color Contrast
16.7%
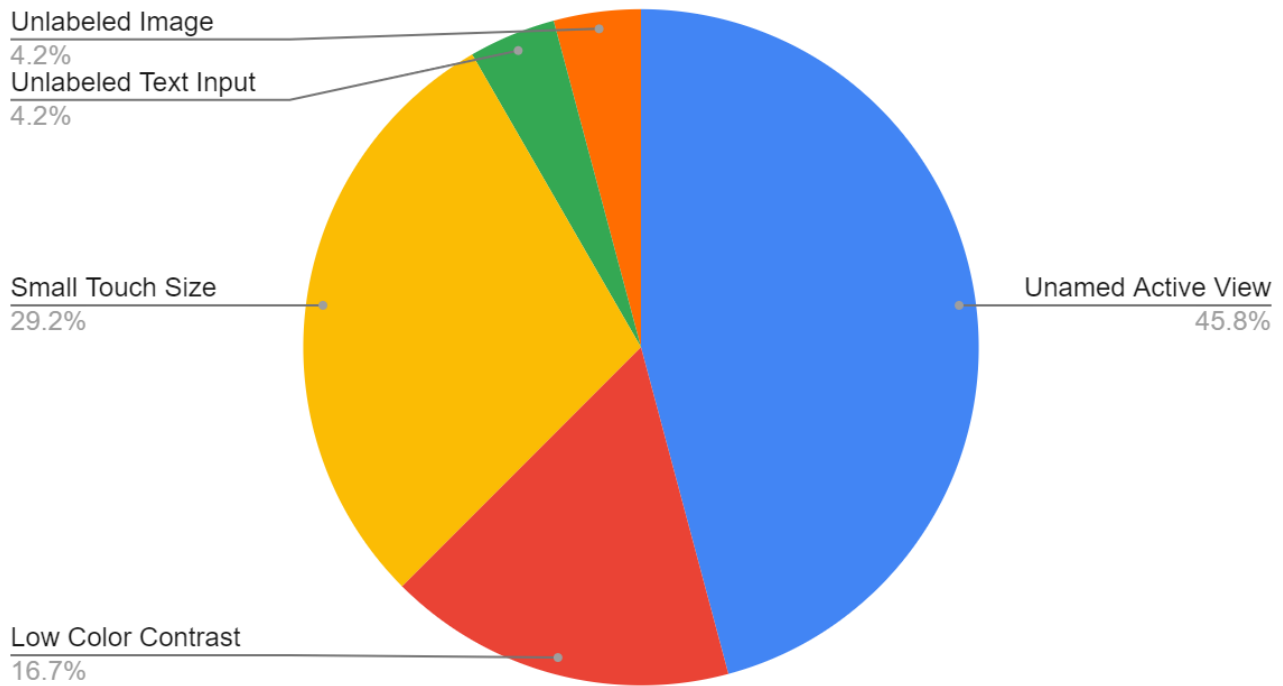
Lime's app platform was most frequently flagged for accessibility barriers related to unnamed active views, which accounted for 46% of failing elements. Insufficiently sized selectable elements were the second most common barrier identified in the app, representing 29% of failing elements. Color contrast deficiencies, accounted for 17% of Lime's failing elements.

Phone Sign-up Page 1

Lime's phone sign-up process consists of 2 pages, the first of which contains 23 web elements. Of these elements, 78% passed accessibility testing. The 5 elements that failed to meet web accessibility standards were flagged for issues including:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements
- Unassociated input name

Phone Sign-up Page 2

Lime's second phone sign-up page contains 16 web elements, 44% of which passed web accessibility standards. The 9 elements that failed accessibility testing were flagged for issues including:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements
- Unassociated input names
- Alternative text
- Unnamed interactive elements

Sign in Page 1

Lime's first sign in page contains a total of 16 web elements, 38% of which passed the accessibility evaluation. The 10 elements that failed were flagged for reasons including:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements

Sign in Page 2

Page 2 of Lime's sign in contains 18 web elements, 44% of which passed accessibility testing. The 10 failing elements were flagged for issues including:

- Color contrast between text and background
- Alternative text
- Unassociated input name
- Unnamed interactive elements
- Compliance with WCAG Touch Target Size requirements

Find a Ride

Lime's Find a Ride page contains 54 web elements, 54% of which passed the accessibility evaluation. The 25 failing elements were flagged for issues including:

- Color contrast between text and background
- Alternative text
- Unnamed interactive elements
- Compliance with WCAG Touch Target Size requirements

Ride Options/Reserve

Lime's Ride Options/Reserve screen included a total of 79 elements during the time of testing, 52% of which passed the accessibility testing. A total of 38 web elements failed the test, and were flagged for issues including:

- Color contrast between text and background
- Alternative text
- Unnamed interactive elements
- Compliance with WCAG Touch Target Size requirements

Confirm

Lime's reservation confirmation screen includes 9 web elements, 78% of which passed the accessibility screening. The 2 web elements that failed were flagged for issues pertaining to:

- Color contrast between text and background
- Compliance with WCAG Touch Target Size requirements

Lime App Audit Summary

The 7 evaluated screens within Lime's app contained a total of 215 web elements, 116 of which passed accessibility testing. 99 web elements evaluated within Lime's app failed accessibility testing. This gives Lime an overall score of 55%.

Bird App Evaluation

Overview

Table 5:

Screen	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Page Score (out of 100%)
Email Sign-up Page 1	9	8	1	89%
Email Sign-up Page 2	25	22	3	88%
Find a Ride	29	24	5	83%
Ride Options/Reserve	25	23	2	92%
Confirm	23	20	3	87%
Total	**111**	**97**	**14**	**88%**

Bird's app was evaluated for compliance with WCAG standards to identify potential in-app access barriers that may exist for riders with a range of disabilities, including those that result in limited vision and limited dexterity. A total of 5 screens exist from service sign-up to unit reservation, all of which were tested and scored.

Figure 4:

Bird App Web Accessibility Issues Identified

Unlabeled Text Input 12.5%

Unamed Active View 43.8%

Small Touch Size 37.5%

Low Color Contrast 6.3%
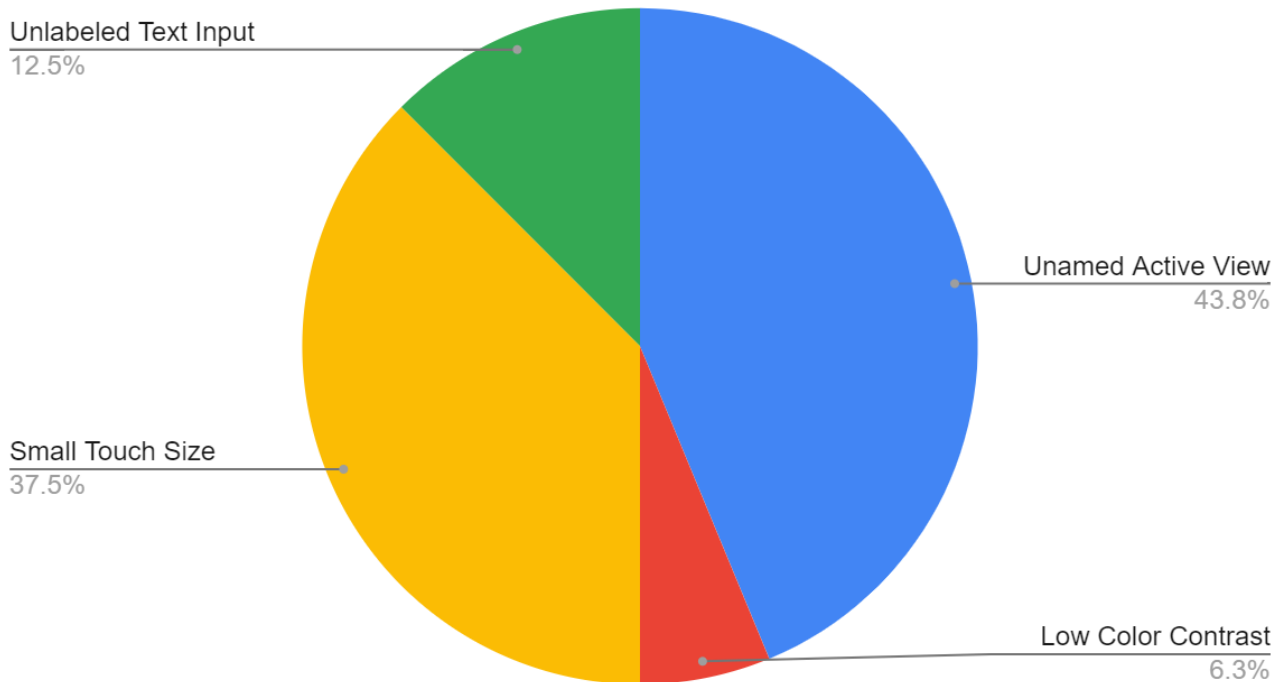
Elements within the Bird app were most recently flagged for active views being unnamed and selectable elements being insufficiently sized. Approximately 13% of accessibility flags were related to unlabeled elements that collect text input, while 6% were related to low color contrast.

Email Sign-up

Bird's email sign-up process includes 2 pages, the first of which contains 9 elements. Of these 9 elements, 89% passed accessibility testing, while 1 failed. This element was flagged for unassociated input name.

Page 2 of the email sign-up process contained 25 elements, 88% of which passed. A total of 3 elements within the screen failed accessibility testing. These elements were flagged for color contrast issues.

Find a Ride

Bird's Find a Ride screen includes 29 elements, 83% of which passed accessibility testing. 5 elements failed this accessibility testing process for issues including:

- Unassociated input names
- Inadequate touch target sizes

Ride Options/Reservation

Bird's Ride Options/Reservation screen contains 25 elements, 92% of which passed accessibility testing. A total of 2 elements within the screen failed test; these were flagged for:

- Unnamed interactive elements
- Inadequate touch target size

Confirmation

Bird's Confirmation screen contains 23 elements, 87% of which passed accessibility testing. Of these 23 elements, 3 failed accessibility testing for reasons including:

- Inadequate color contrast
- Unnamed interactive elements
- Small touch target size

Recommendations

The City of Oakland may wish to consider adding web accessibility reporting and performance standards to their permit application and renewal process for micromobility providers. This could include a minimum required score, such as 90%.

A diversity of tools would be available for vendors to performing self-analysis at no cost, including:

- Axe (available for web, mobile, iOS, and Android)
- Google Lighthouse (for web)
- Accessibility Scanner (for Android)
- Accessibility Test Framework (for Android as a developer tool)
- Xcode Accessibility Inspector (for iOS as a developer tool)

Appendix: App Screens

Lyft Landing
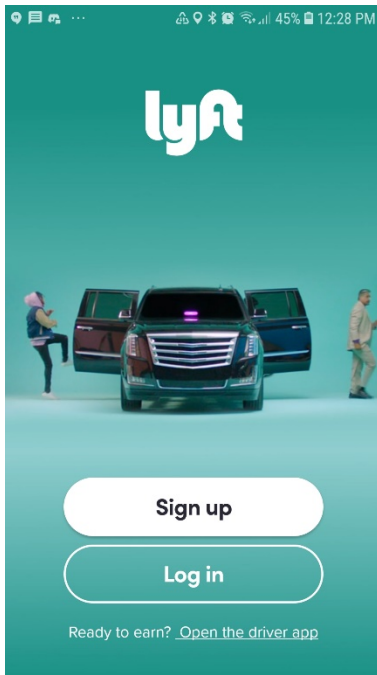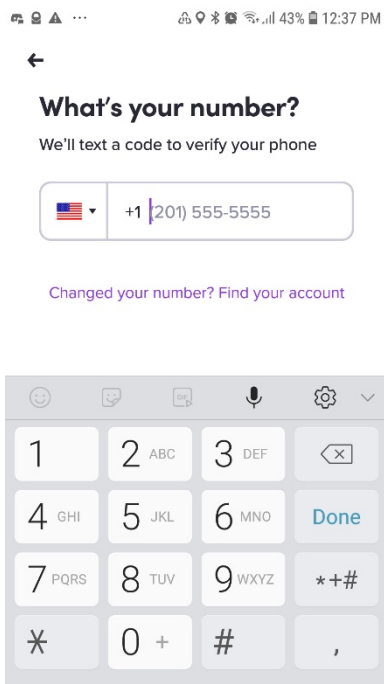
Lyft Sign-up Page 1
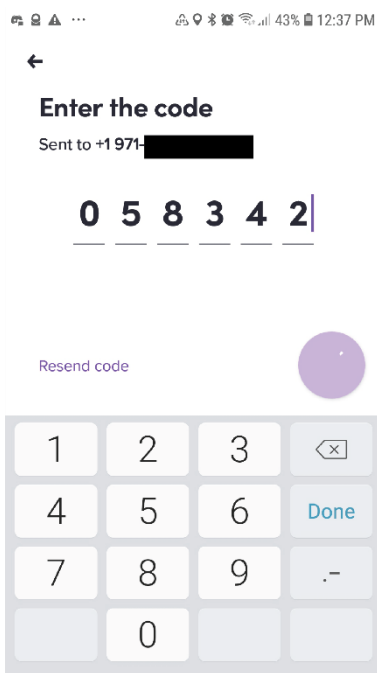
Lyft Sign-up Page 2
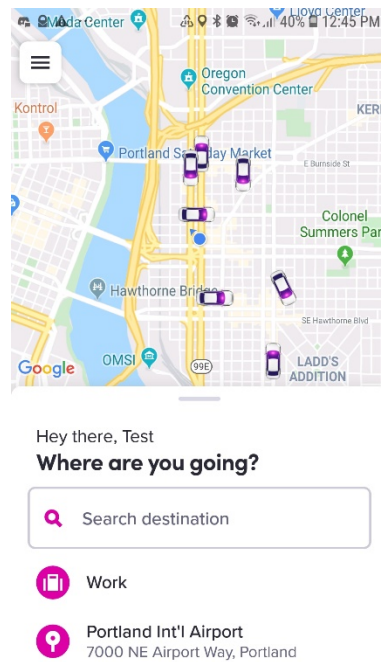
Lyft Find a Ride
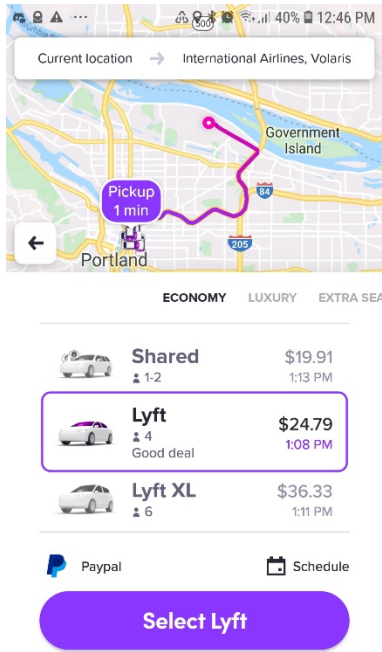
Lyft Ride Options
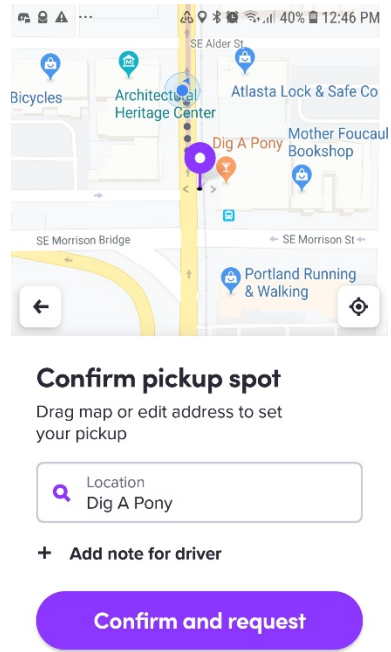
Lyft Confirmation

Lime Sign-up
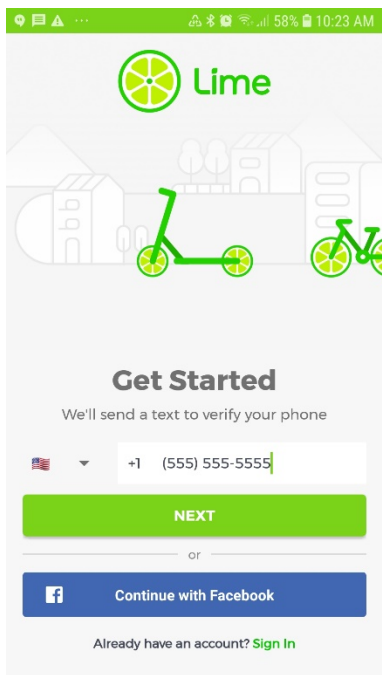
Lime Sign-in Page 1
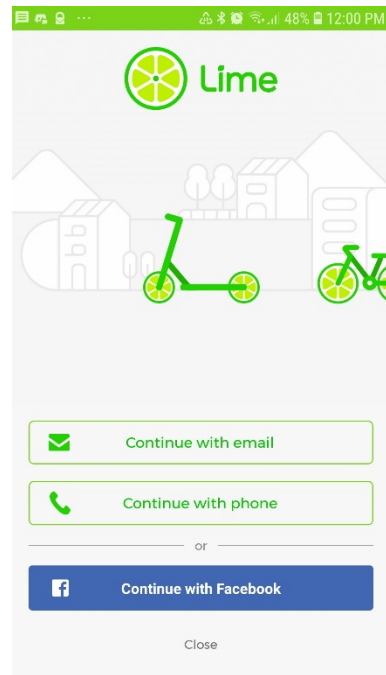
Lime Sign-in Page 2
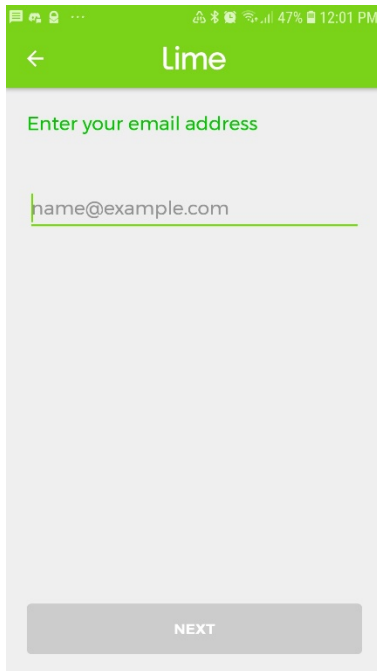
Lime Find a Ride
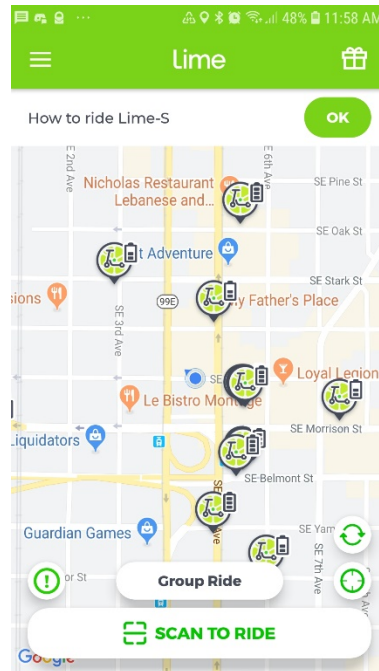
Lime Ride Options
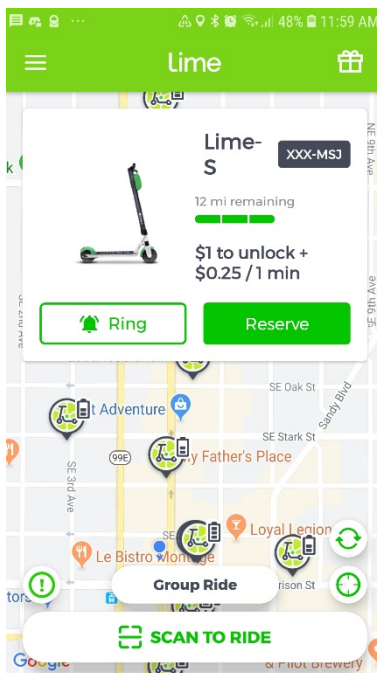
Lime Confirmation
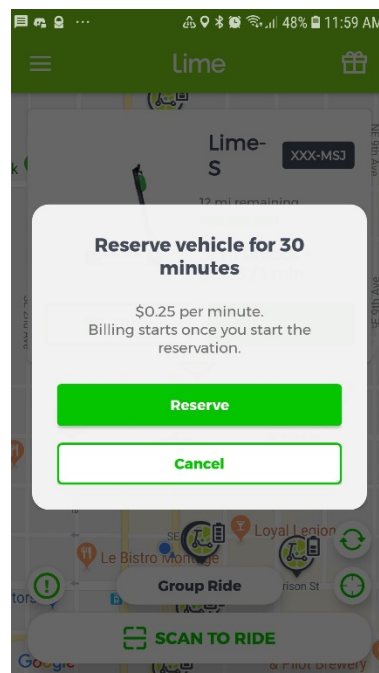
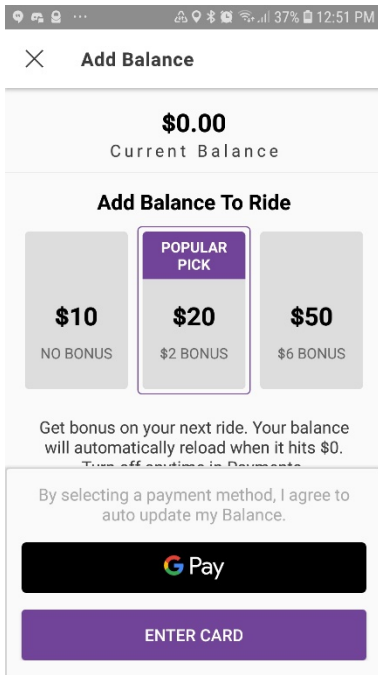## Bird Sign-up Page 1
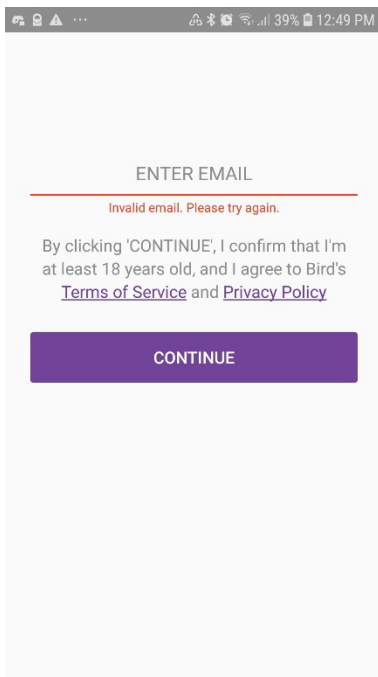
Bird Sign-up Page 2
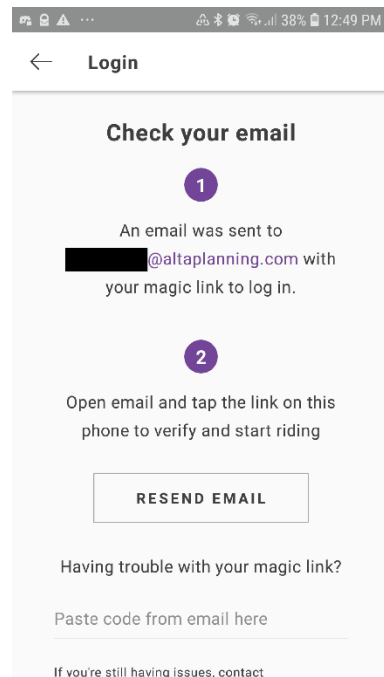
Bird Find a Ride
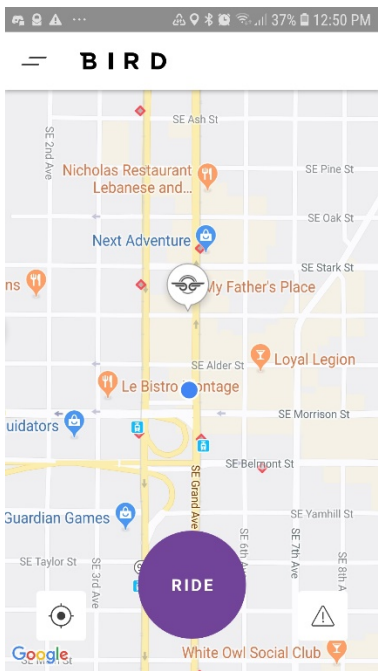
Bird Ride Options
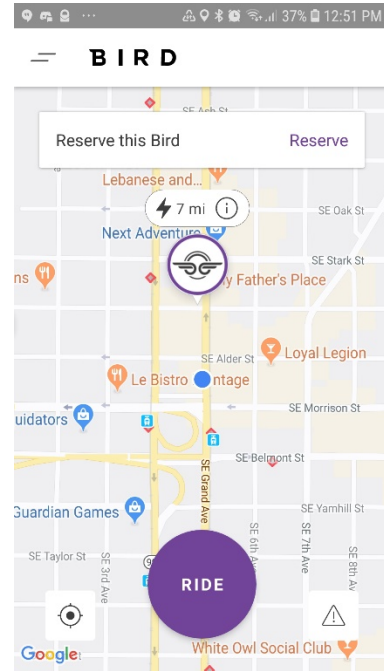
Bird Confirmation

MEMORANDUM

To: Kerby Olsen, City of Oakland

From: Jean Crowther and Zane Taylor, Alta Planning + Design

Date: December 27, 2019

Re: Oakland Ridehail and Car Share App Accessibility Audit

Methodology

The consultant team conducted web accessibility testing on apps associated with four ridehailing and car share platforms in Oakland, including Uber, Lyft, Turo, and Getaround.

To evaluate the performance of these four shared mobility apps, the consultant web developer used axe (by Deque). Axe is a popular web accessibility testing toolkit that allows for the identification and resolution of web accessibility errors covered by WCAG standards.

This accessibility testing focused on screens associated with the sign-up/sign-in process, as well as screens associated with the reservation of wheelchair accessible vehicles.

Common Issues

Table 1:

Issue	Definition
Unnamed Interactive Elements	Elements that users can interact with must have an associated name or label. Labeling interactive elements is necessary for screen reader users to identify what each interactive element does.
Color Contrast	Elements should adequately contrast with the surrounding webpage or app screen background and other adjacent elements. This ensures colorblind users can access the content and promotes ease of visibility for viewers with limited or strained vision.
Inadequate Touch Target Size	Interactive elements should adhere to WCAG touch target size requirements to promote ease of element selection for users with limited dexterity, coordination, or vision.
Lack of Alternative Text	Focusable informative views, such as images or graphics, should be accompanied by a text description of the element to provide context for screen reader users.
Unassociated Input Names	Views that have modifiable values (such as lines that collect a user's name, payment information or phone number) should get their name from a nearby label
Improper Input Labeling	Form input elements must have an associated label to alert screen reader users to what information is being requested of them.

Figure 1:

Sample Screen

Issues Identified

① An invisible element placed here provides an example of a focusable view without a name, label, or alternative text. Screen reader users would be unable to identify the meaning or importance of the element.

② This back button provides an exampe of an interactive view that lack proper naming/labeling. Screen reader users would be unable to identify the meaning or importance of the element.

③ This text input element provides an example of an editable view/input that lacks an adjacent name/lable. While screen reader users may contextually understand what information is being requested, the input box itself would not read a clear prompt.

④ This button provides an example of both insufficent color contrast and insufficient touch target sizing.

Summary of Results

All App Summary Data

Table 2:

Platform	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Total Score (out of 100%)
Uber	223	206	19	92%
Lyft	346	283	64	82%
Turo	477	403	75	84%
Getaround	205	167	38	81%

Overall, these four app platforms scored highly during this evaluation. Uber was identified as the most disability accessible micromobility app, with 92% of evaluated elements passing accessibility standards. Turo was identified as the second most disability accessible app evaluated, with 84% of tested elements passing accessibility standards. Lyft scored the third highest in this evaluation process, with a score of 82% and Getaround scored the lowest, with 81% of scanned elements passing web accessibility standards.

Uber App Evaluation

Overview

Table 3:

Screen	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Page Score (out of 100%)
Landing/Phone or Social Sign Up	5	5	0	100%
Phone Sign Up Page 2	17	15	2	88%
Sign Up Confirmation	31	25	6	81%
Find a Ride	6	6	0	100%
Ride Options	132	125	7	95%
Confirmation Page 1	25	23	2	92%
Confirmation Page 2 (Payment)	7	7	0	100%
Total Score	**223**	**206**	**17**	**92%**

The Lyft app was evaluated for compliance with WCAG standards to identify potential in-app access barriers that may exist for riders with a range of disabilities, including those that result in limited vision and limited dexterity. A total of 7 screens exist from service sign-up to unit reservation, all of which were tested and scored.

Lyft App Evaluation

Overview

Table 4:

Screen	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Page Score (out of 100%)
Landing/Sign Up/Login	16	13	3	81%
Phone Sign Up Page 1	16	14	2	88%
Phone Sign Up Page 2	18	17	1	94%
Find a Ride	119	90	29	76%
Ride Options	91	66	25	73%
Confirm	33	31	2	94%

Accessibility Settings	53	52	1	98%
Total	**346**	**283**	**63**	**82%**

The Lyft app was evaluated for compliance with WCAG standards to identify potential in-app access barriers that may exist for riders with a range of disabilities, including those that result in limited vision and limited dexterity. A total of 7 screens exist from service sign-up to unit reservation, all of which were tested and scored.

Turo App Evaluation

Overview

Table 5:

Screen	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Page Score (out of 100%)
Landing/Sign Up/Login	11	9	2	82%
Email/Social Sign Up Page 1	22	17	5	77%
Email Sign Up Page 2	38	27	11	71%
Find a Ride Page 1	35	34	1	97%
Find a Ride Page 2	119	110	9	92%
Ride Options	133	111	22	83%
Confirmation Page 1	56	39	17	70%
Confirmation Page 2	28	26	2	93%
Confirmation Page 3	35	30	5	86%
Total	**477**	**403**	**74**	**84%**

Turo's app was evaluated for compliance with WCAG standards to identify potential in-app access barriers that may exist for riders with a range of disabilities, including those that result in limited vision and limited dexterity. A total of 9 screens exist from service sign-up to unit reservation, all of which were tested and scored.

Getaround App Evaluation

Overview

Table 5:

Screen	# of Elements	# of Elements Passing Standards	# of Elements Failing Standards	Page Score (out of 100%)
Social Sign Up/Login	6	6	0	100%

Find a Ride (search list)	43	39	4	91%
Ride Options	33	31	2	94%
Confirmation Page 1	32	27	5	84%
Confirmation Page 2 (Facebook ID)	53	31	22	58%
Confirmation Page 3 (terms)	38	33	5	87%
Total	**205**	**167**	**38**	**81%**

Getaround's app was evaluated for compliance with WCAG standards to identify potential in-app access barriers that may exist for riders with a range of disabilities, including those that result in limited vision and limited dexterity. A total of 6 screens exist from service sign-up to unit reservation, all of which were tested and scored.

Recommendations

The City of Oakland may wish to consider adding web accessibility reporting and performance standards to a permit application and renewal process for shared mobility providers. This could include a minimum required score, such as 90%.

A diversity of tools would be available for vendors to performing self-analysis at no cost, including:

- Axe (available for web, mobile, iOS, and Android)
- Google Lighthouse (for web)
- Accessibility Scanner (for Android)
- Accessibility Test Framework (for Android as a developer tool)
- Xcode Accessibility Inspector (for iOS as a developer tool)

Appendix: App Screens
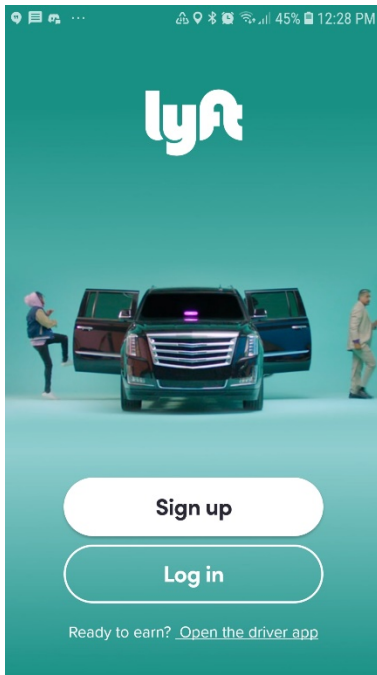
Lyft Landing
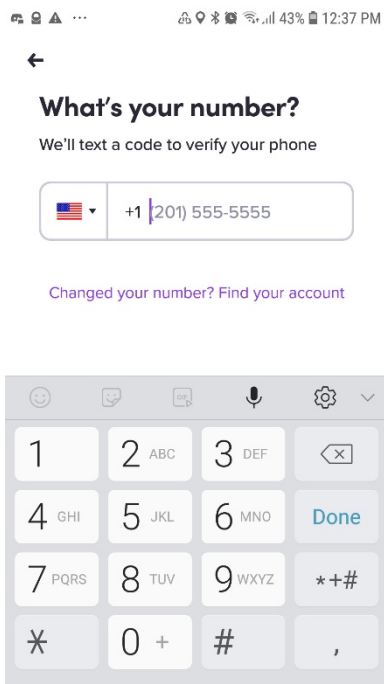
Lyft Sign-up Page 1

Lyft Sign-up Page 2
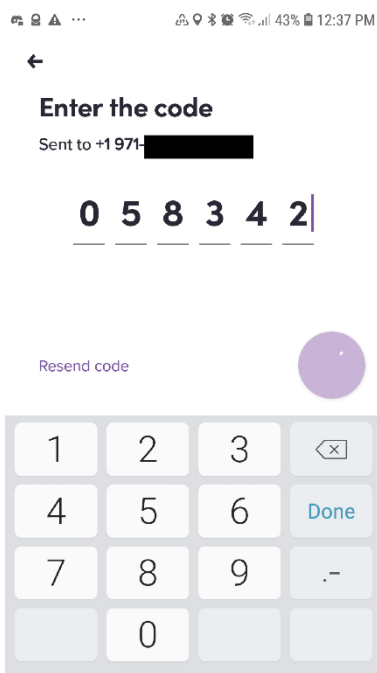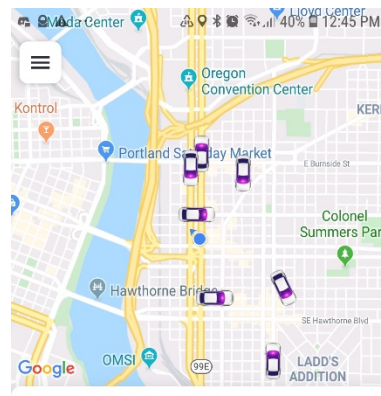
Lyft Find a Ride
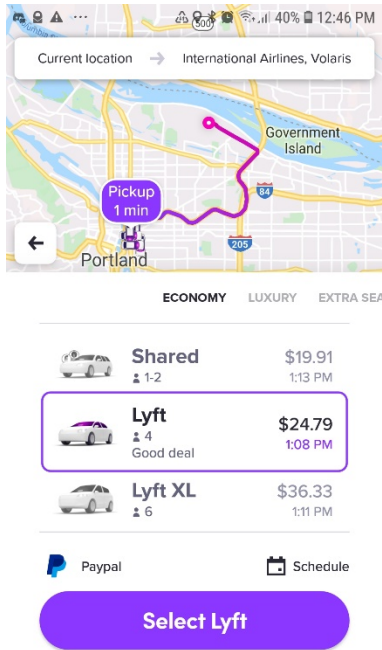
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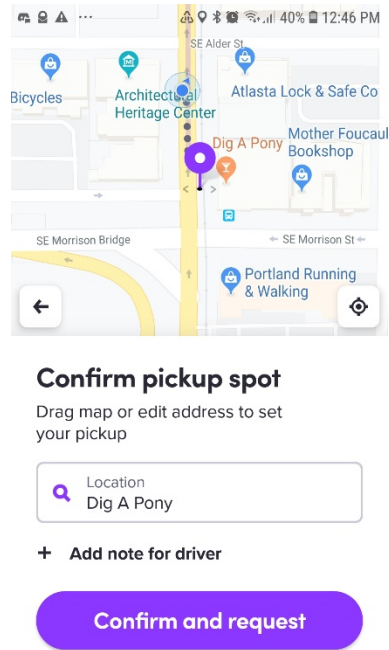
Lyft Confirmation

Lyft Accessibility Settings
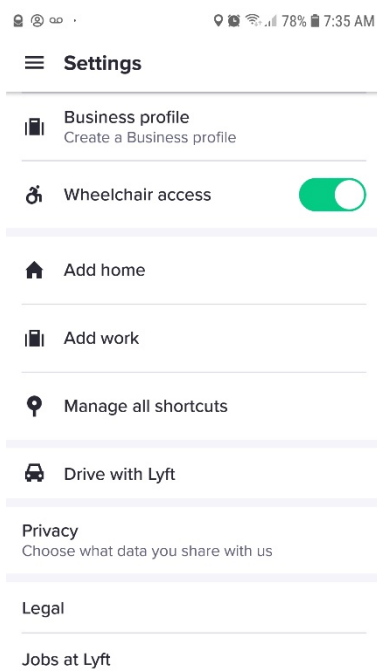
Uber Landing/Phone or Social Sign Up
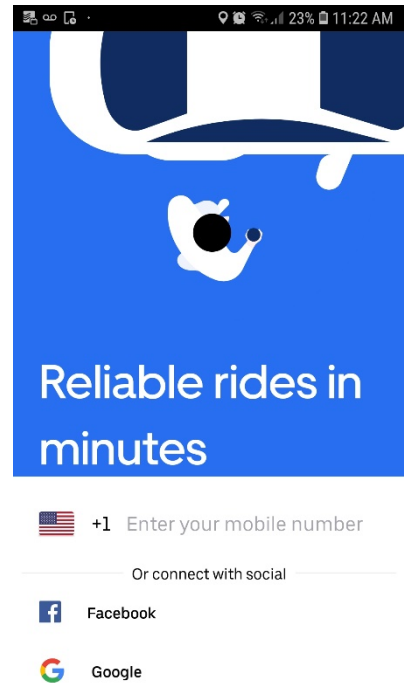
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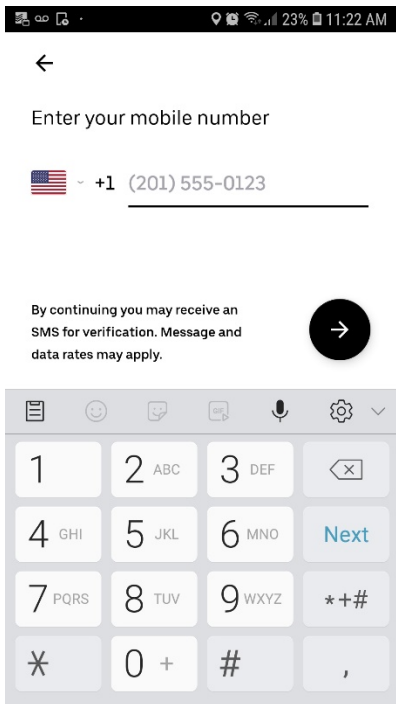
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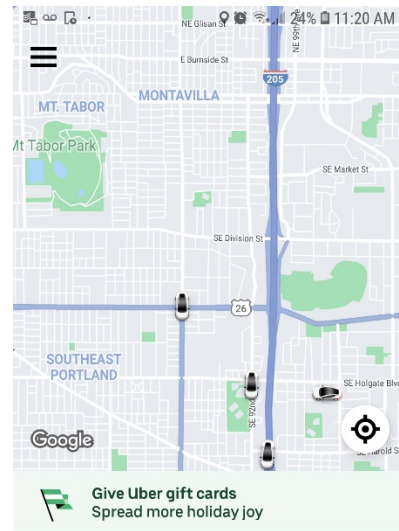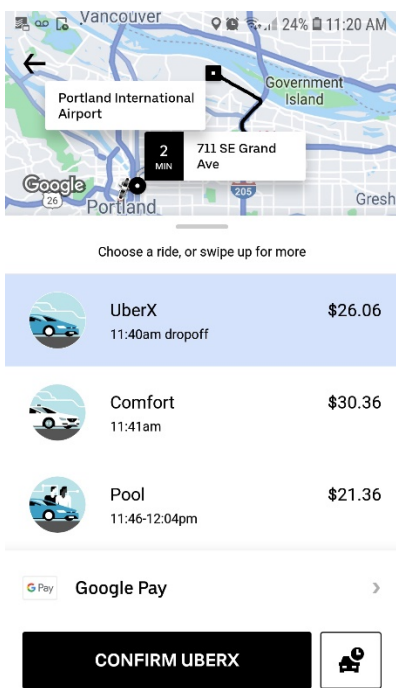
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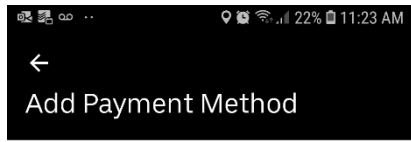

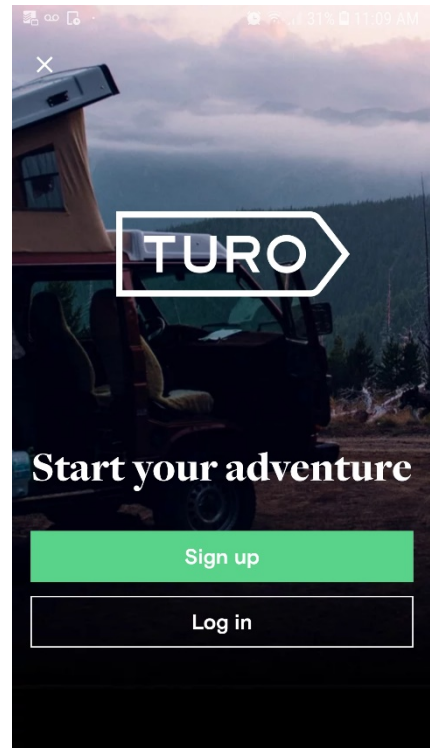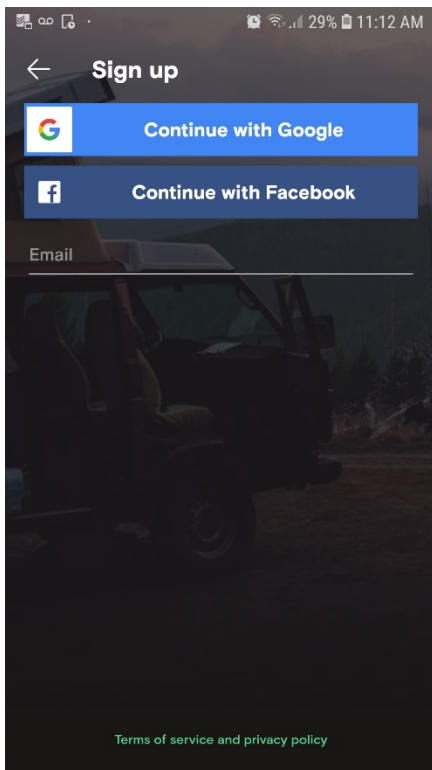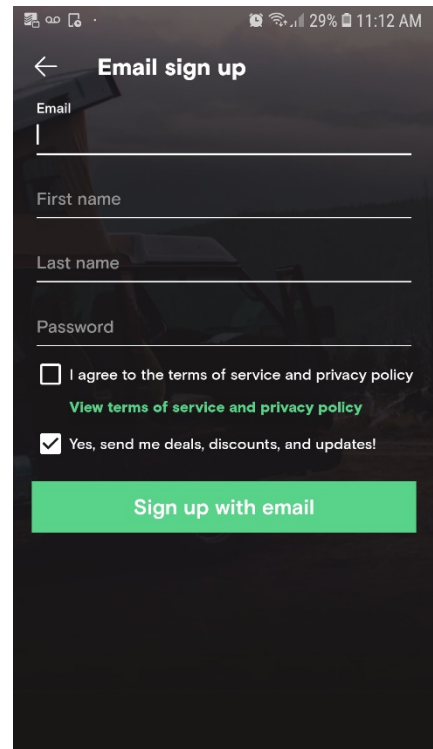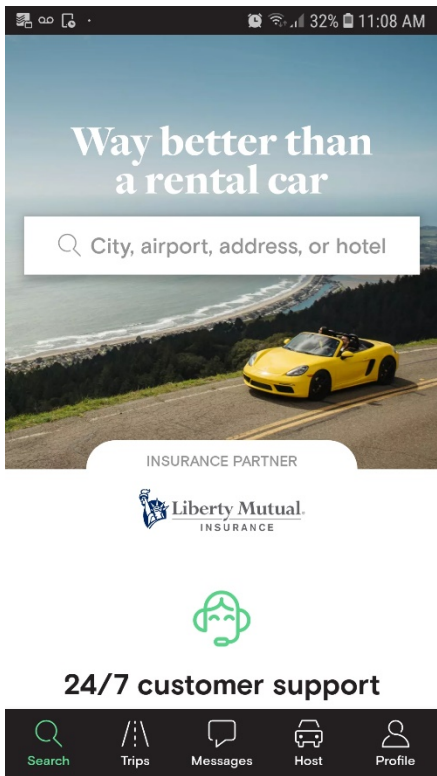## Uber Confirmation 1
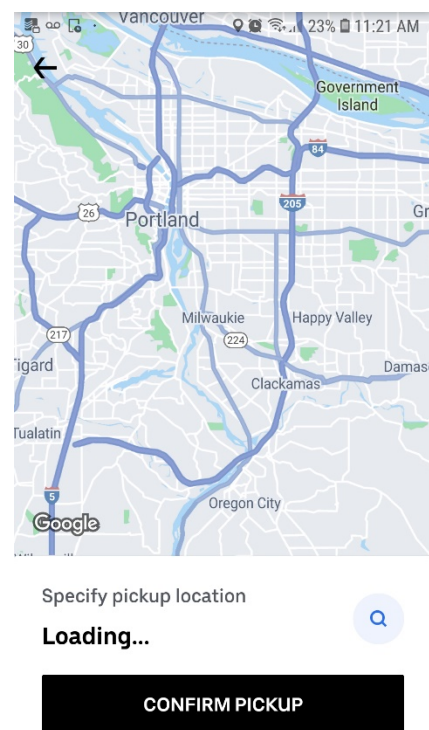
Uber Confirmation 2

Turo Landing

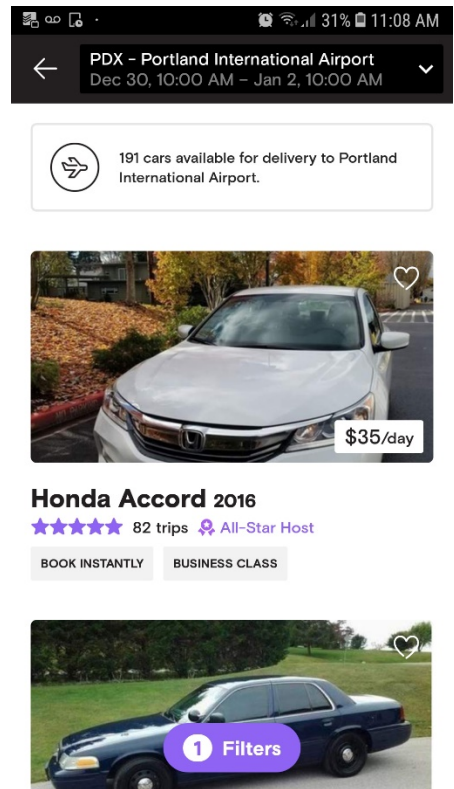

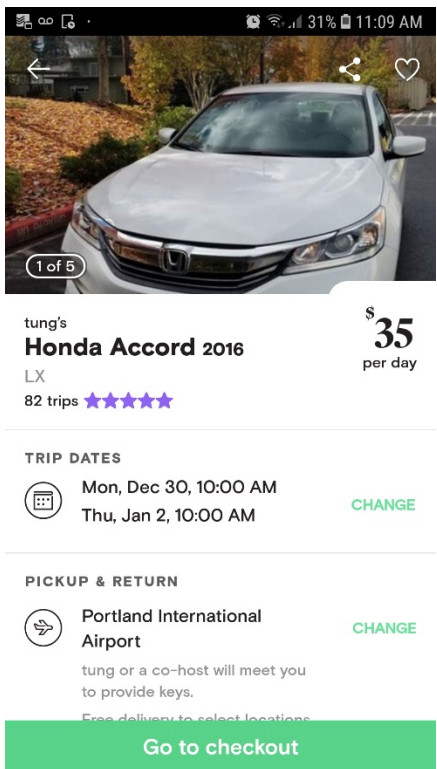## Turo Sign Up 2

Turo Sign Up 3
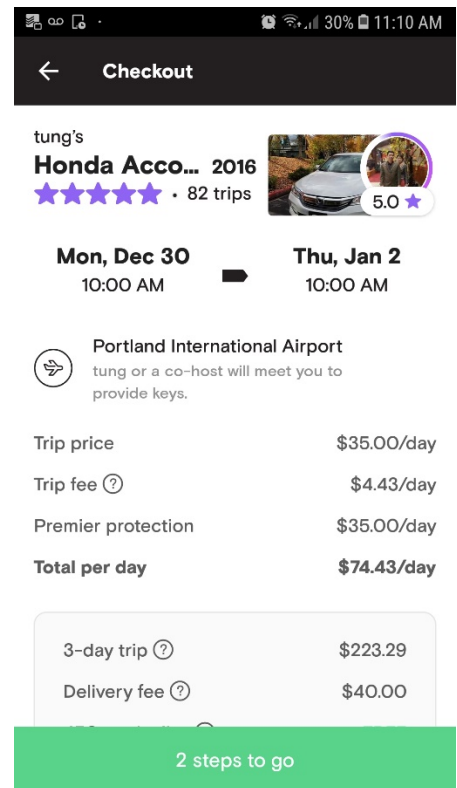
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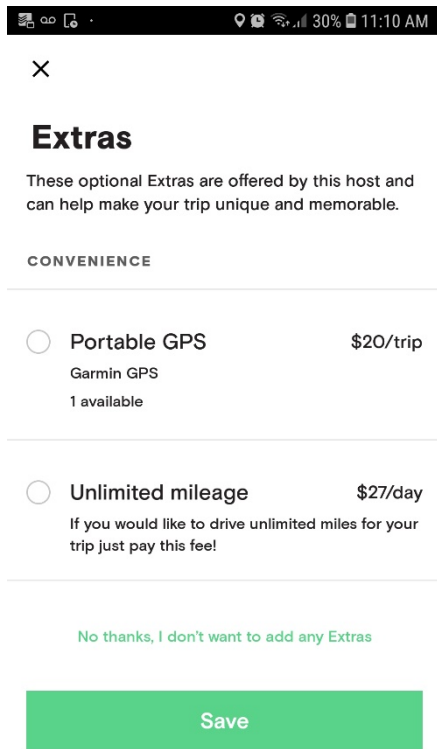

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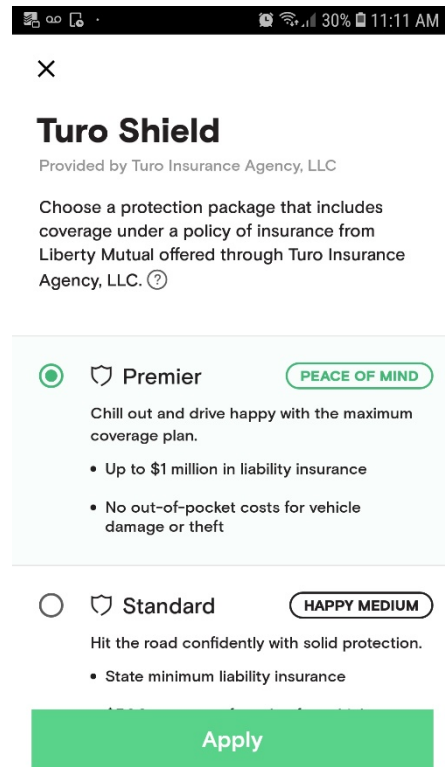

Turo Ride Options

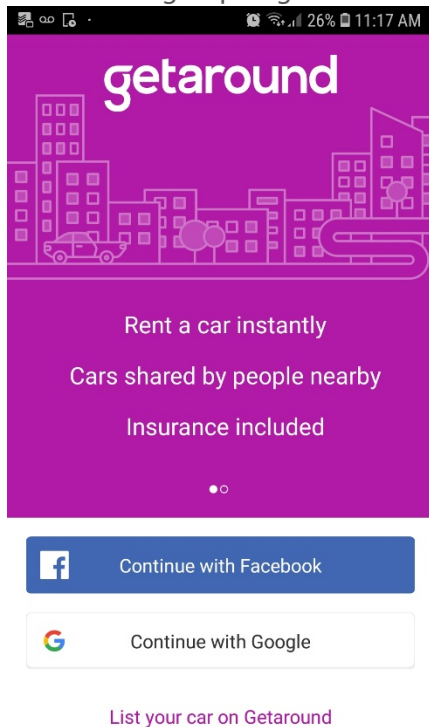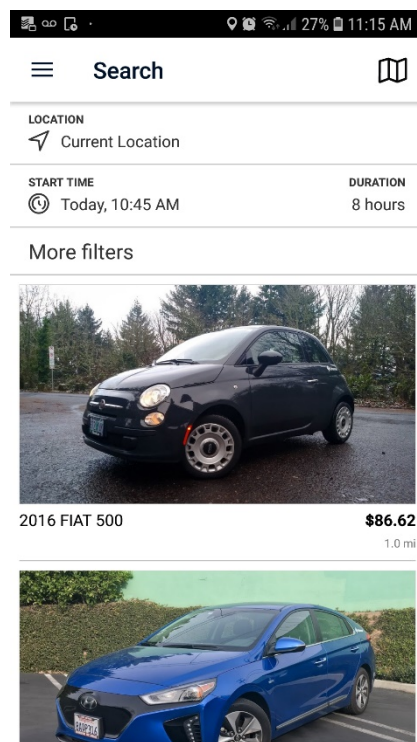## Turo Confirmation 1
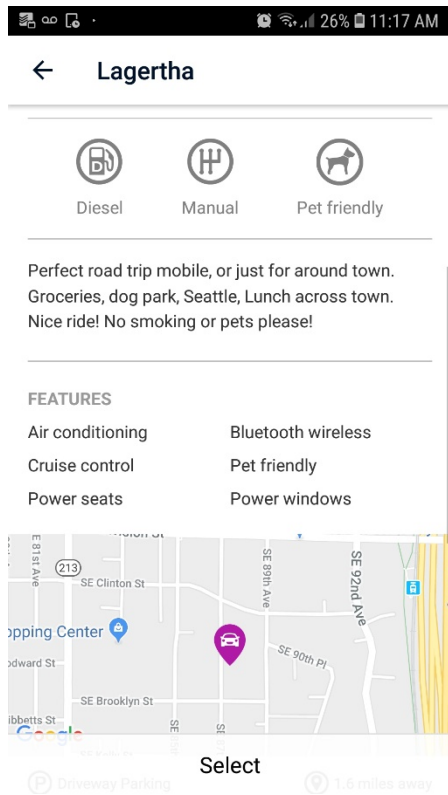
Turo Confirmation 2

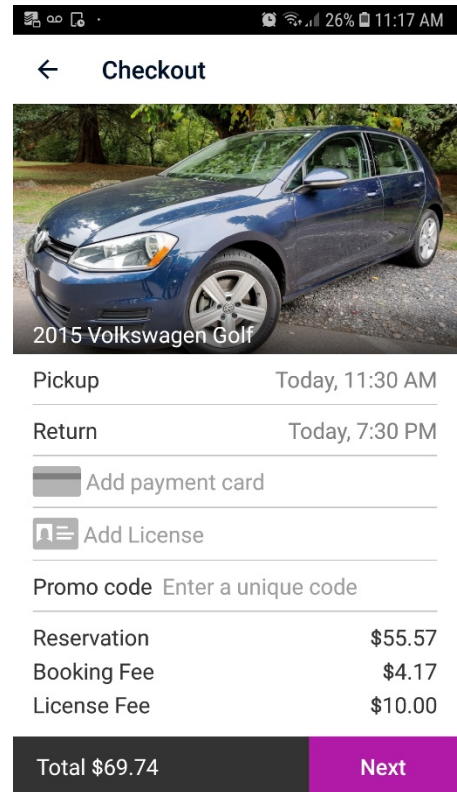## Turo Confirmation 3

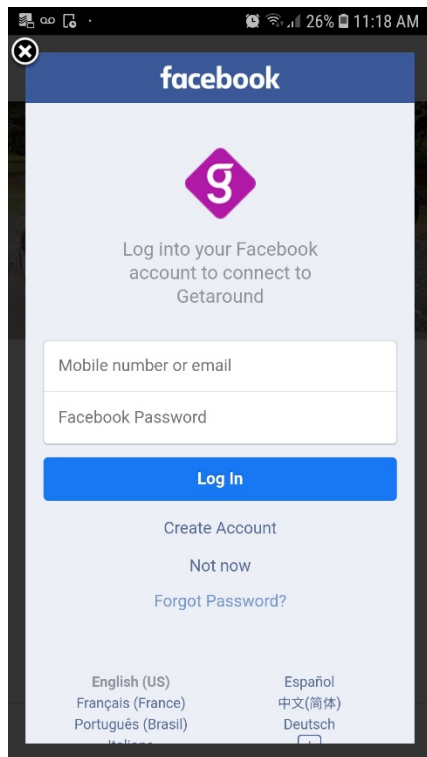## Getaround Sign Up/Login
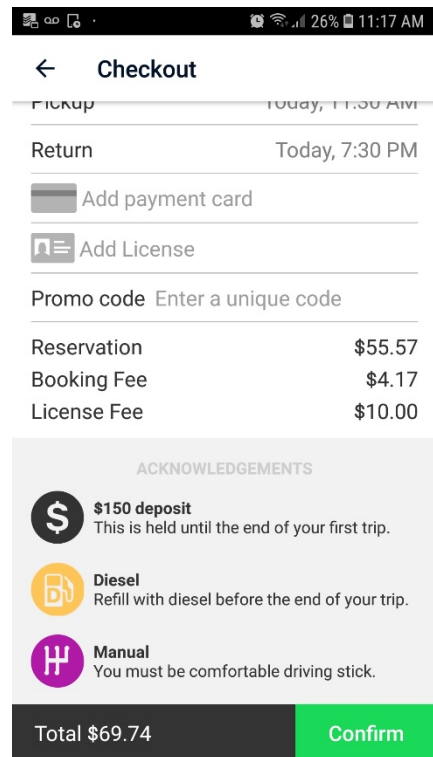

Getaround Find a Ride

Getaround Ride Options

← Lagertha

Diesel · Manual · Pet friendly

Perfect road trip mobile, or just for around town. Groceries, dog park, Seattle, Lunch across town. Nice ride! No smoking or pets please!

FEATURES

Air conditioning	Bluetooth wireless
Cruise control	Pet friendly
Power seats	Power windows

Select

Driveway Parking · 1.6 miles away

Getaround Confirmation 1

← Checkout

2015 Volkswagen Golf

Pickup	Today, 11:30 AM
Return	Today, 7:30 PM

Add payment card

Add License

Promo code Enter a unique code

Reservation	$55.57
Booking Fee	$4.17
License Fee	$10.00

Total $69.74   Next

Getaround Confirmation 2

facebook

Log into your Facebook account to connect to Getaround

Mobile number or email

Facebook Password

Log In

Create Account

Not now

Forgot Password?

English (US)	Español
Français (France)	中文(简体)
Português (Brasil)	Deutsch
	Italiano

Getaround Confirmation 3

← Checkout

Pickup	Today, 11:30 AM
Return	Today, 7:30 PM

Add payment card

Add License

Promo code Enter a unique code

Reservation	$55.57
Booking Fee	$4.17
License Fee	$10.00

ACKNOWLEDGEMENTS

$150 deposit
This is held until the end of your first trip.

Diesel
Refill with diesel before the end of your trip.

Manual
You must be comfortable driving stick.

Total $69.74   Confirm

Appendix 6 - BORP Adaptive Bike Share Pilot Program Results

TAC Meeting Adaptive Bike Share Update   10/30/2019

Overall the Oakland Adaptive Bike Share Pilot was able to connect people with physical disabilities to adaptive bicycles. Specifically, we had 59 participant visits with 47 unique riders. This new opportunity invigorated the community to continue the conversation around the availability of adaptive cycling in the Bay Area. Having multiple locations to cycle allows people to expand their ability to ride in new places. Direct feedback from participants suggests that low turnout is in part a result of lack of parking and poor bathroom conditions.

Lessons Learned: BORP participants say that they prefer the Cycling Center because there are more bicycles, parking is easy, the ride around Aquatic Park is not congested, the bathroom is functional, and it is a place to meet up with friends and family. It's important to remember that it takes time for the word to get out and for people to get comfortable.

Things That Surprised Us
1) Rate of damage to bicycles and rental trucks is higher than expected. We had one break in. These damages raised the overall amount spent on rental vehicles & bicycles. Possible reasons for bicycle damage; transporting, multiple curbs/ changing surfaces, and rough braking to avoid pedestrians. Pedestrian traffic on the bike way around Lake Merritt is high.
2) Bathrooms at Lake Merritt consistently unsanitary or locked and/or out of order.
3) There is only one handicapped parking area at Snow Park.
4) There isn't a loading zone for our staff to off and on load equipment.

To increase participation we recommend;
1) Increased outreach to specific groups as well as organized rides.
2) Corrective action on bathrooms.
3) Increased parking.
4) Facilities to store bicycles.

Questions:
Can we change the venue to a location that addresses these issues?

Oakland Bike Share July 10, 2019 to October 23, 2019

Unique Riders: 47

Month	Up Handcycle	Low Handcycle	Foot Trike	Side By Side	Total
July	5	1	6	8	20
August	2	3	4	6	15
September	4	1	6	10	21
October		1	1	1	3
Total	11	6	17	25	59