

February 2022

# Scooter and Bike Share Safety Survey

Final Report



**Seattle**  
Department of  
Transportation

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# Introduction

# Overview

## Purpose

Seattle Department of Transportation (SDOT) began a scooter share pilot program in October 2020. The pilot permitted four vendors to offer shared rental scooters in the public right of way. SDOT evaluated the pilot in fall 2021.

As part of that evaluation, SDOT hired PRR, an independent research firm, to conduct a statistically valid online survey with people who have used scooter or bike share in Seattle. The survey covered topics such as user demographics, trip-type and mode replacement, health and safety, and opinions.

Objectives for the scooter share pilot:

1. Reduce Seattle's carbon emissions by providing active, low-carbon, and congestion-reducing mobility options.
2. Ensure accessibility for and expand use by Black and indigenous people, non-black people of color, low-income people, immigrants and refugees, and people with limited English proficiency.
3. Be Safe and advance our Vision Zero objectives.
4. Ensure sidewalks are safe and accessible for people of all ages and abilities.
5. Provide accessible and adaptive mobility options and expand use by people with disabilities.

## Research Objectives

- Provide information that will support evaluation of the pilot program
- Learn about incentives and barriers to using scooter and bike share
- Understand safety experiences and opinions of scooter and bike share users
- Learn about trips and mode replacement among scooter and bike share users
- Examine demographic profiles of scooter and bike share users and opportunities for increasing accessibility

# Methods

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## Survey Data Collection

PRR fielded an online survey November 11-21, 2021. The survey had a call-in phone option too. Since all the scooter and bike share apps in Seattle only use English, the survey was only in English.

The survey included two sets of questions, one about scooter share, and the other about bike share. Respondents saw one or both sets of questions based on which services they had previously used. The survey also collected demographic information.

The survey received 5,609 valid responses (including two responses via phone), 5,189 from people who had used scooter share and 3,339 people who had used bike share in Seattle.<sup>1</sup>

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## Segmentation

This report presents findings for scooter and bike share users. The analysis segments results to summarize characteristics, issues, and concerns for each group. Segments are not mutually exclusive – respondents can use either or both scooter and bike share services.

Throughout the report, color-coded charts report results specific to scooter and bike share users. The goal of this analysis is to learn about both groups, not to make direct comparisons between the overlapping groups.

## Recruitment

Companies that provide scooter share (Lime, LINK, SPIN, and Wheels) or bike share (Jump/Lime) services sent invitations and reminders to people who had used their services in Seattle. Invitations and reminders arrived via email, in-app notification, or text message notification. They arrived about one week apart. Participants who completed the survey were eligible to enter a drawing to win one of five \$100 gift cards.

The recruitment methods were not intended to produce a representative sample of all Seattle residents, rather gather input from a diverse group of people who use these services in Seattle. For an overview of respondent characteristics, see the Demographic Profile (page 8).

-  **Scooter share (n=5,189)**  
Have used scooter share services (Lime, LINK, SPIN, and Wheels) in Seattle
-  **Bike share (n=3,339)**  
Have used bike share services (Jump/Lime) in Seattle

*1. The final number of respondents is higher than the preliminary topline because it includes partial responses excluded from the topline report.*

01

PRR used crosstabulations to look at differences between groups.

### How to Read this Report

About how often have you used scooter/bike share?

■ Scooter Share (n = 5,105) ■ Bike Share (n = 2,960)

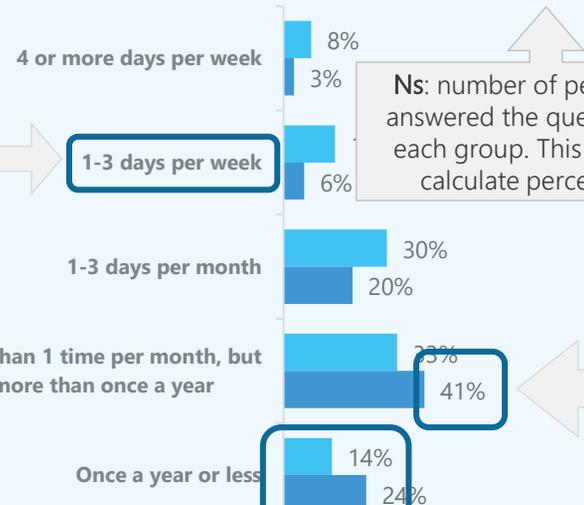


Figure Title: survey question, as it appears on the survey instrument.

**Items:** Answer choices to survey the question, as they appear in the survey instrument.

**Ns:** number of people who answered the question from each group. This is used to calculate percentages.

**Percentages:** the percent of respondents who selected a particular item.

**Colors:** Two shades of blue in charts and icons alongside text show data for scooter share users and bike share users.

02

PRR used correlation analysis and analysis of variance (ANOVA) to examine relationships.

Pairwise correlation analysis (with Bonferroni multiple-comparison correction) identified relationships between survey responses. PRR further examined these relationships using ANOVA, which allows for comparisons across multiple groups.



**This report only describes relationships that are statistically significant.**

When something is statistically significant, it means it is highly unlikely to be the result of random chance. To achieve the cut-off for statistical significance, estimates must have a 0.05 significance level (a 95 percent confidence level), and a coefficient of +/- 0.15, indicating a relatively strong association.

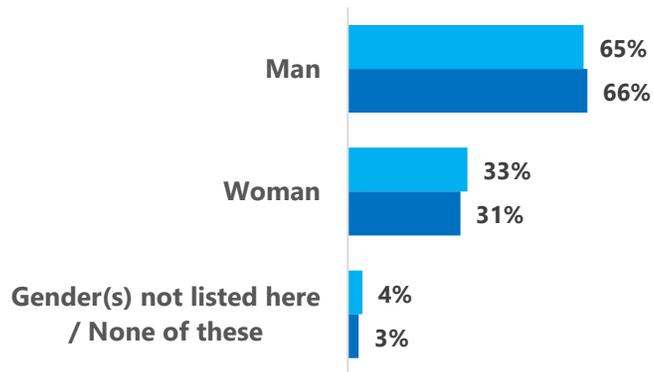


Percentage totals in some charts may add up to more or less than 100% due to rounding or if respondents were able to provide multiple responses. Additionally, the total number of respondents varies from chart to chart based on how many people answered each question. As part of the survey design, respondents may skip questions or see different questions based on their previous responses.

# Demographic Profile

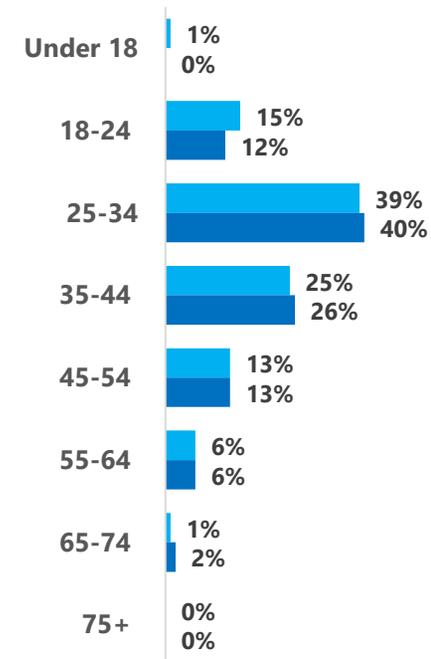
## Gender

■ Scooter Users (n = 4,185) ■ Bike Users (n = 2,611)



## Age

■ Scooter Users (n = 4,218) ■ Bike Users (n = 2,630)



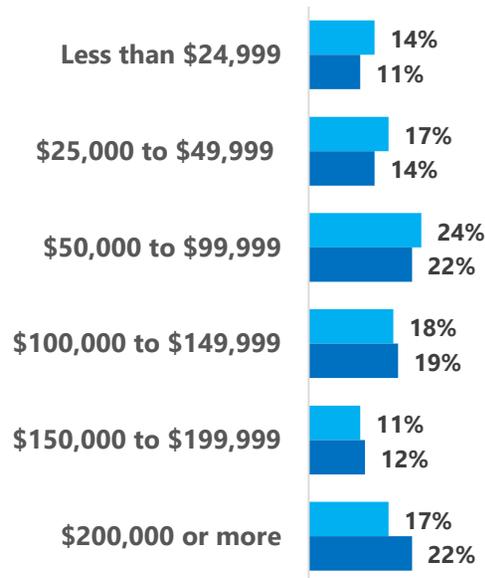
*Due to rounding, or options where participants could select multiple answers, percentages may not sum to 100%. Rounding occurs on all demographic slides.*

*The survey sample is not intended to be representative of the Seattle population or bike or scooter share users. Therefore, it is not accurate to compare survey respondent demographic information to Census estimates.*

# Demographic Profile (cont.)

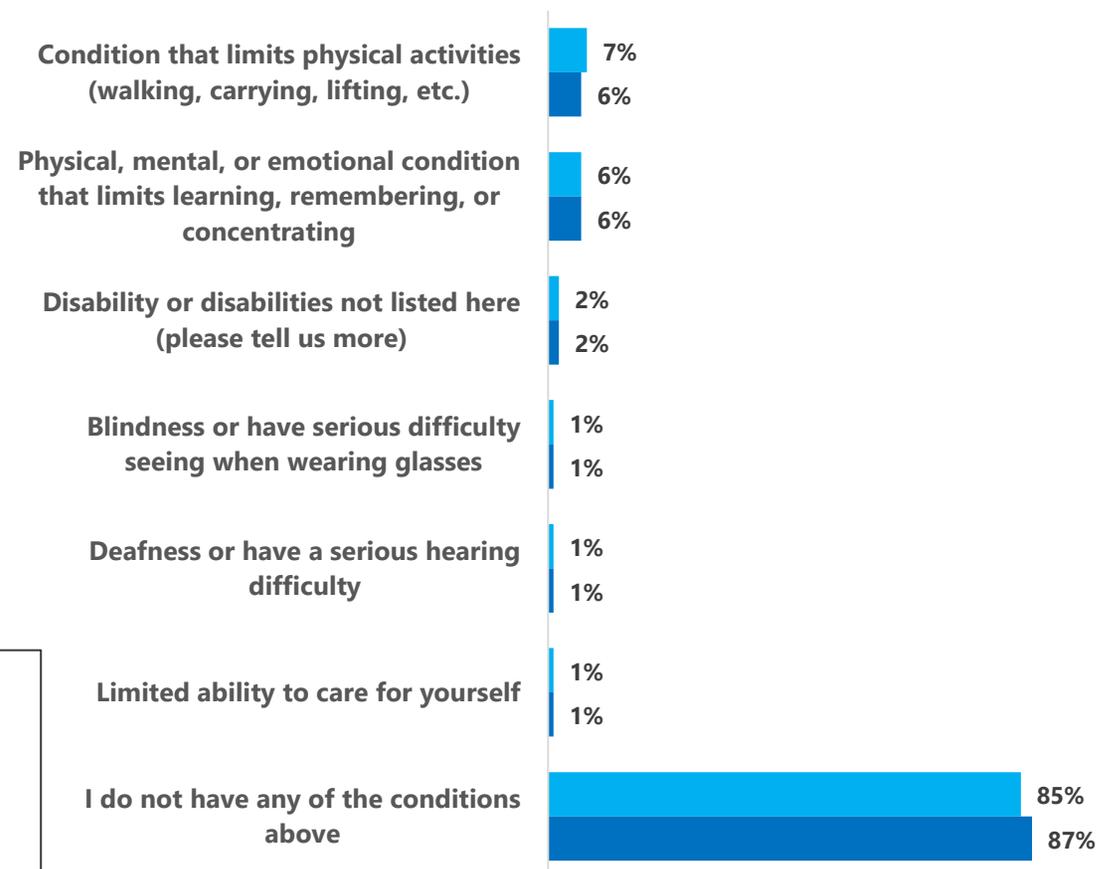
## Expected total household income in 2021, before taxes

■ Scooter Users (n = 4,007) ■ Bike Users (n = 2,505)



## Disability

■ Scooter Users (n = 3,656) ■ Bike Users (n = 2,282)



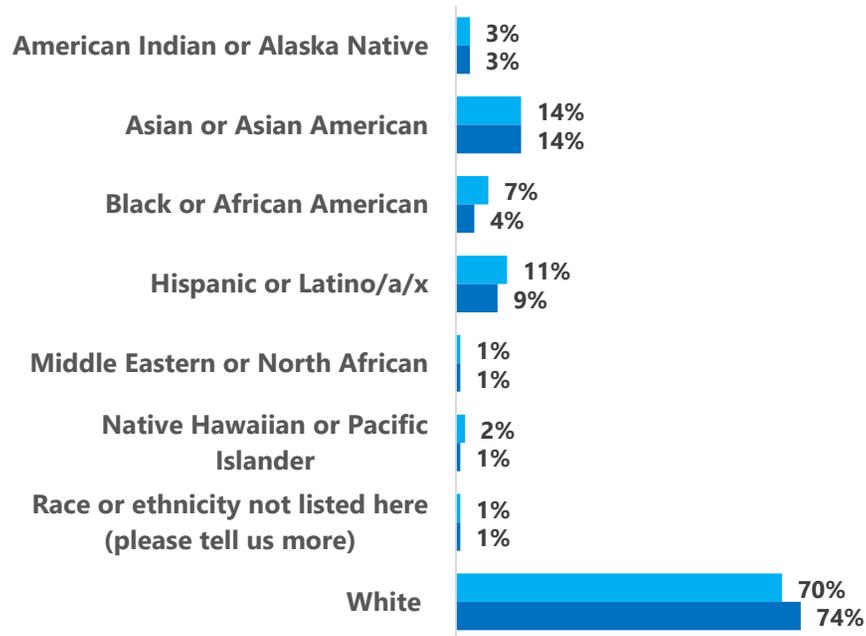
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# Demographic Profile (cont.)

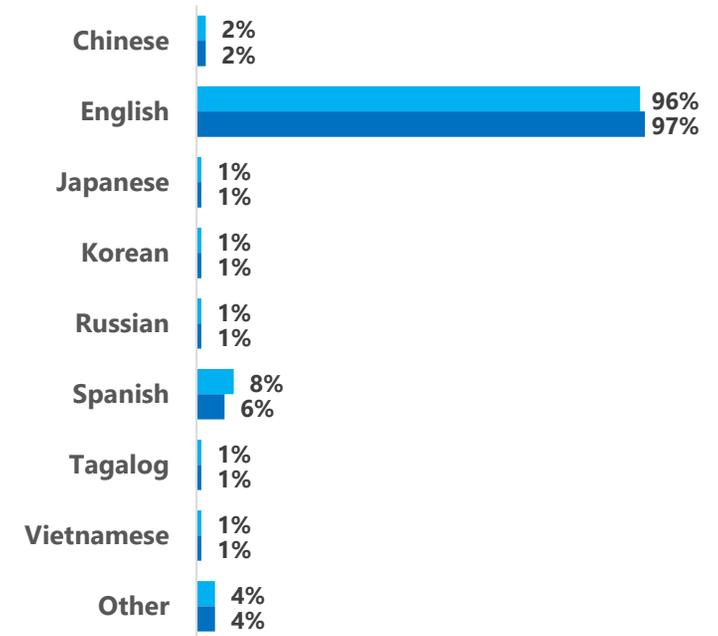
## Race and Ethnicity

■ Scooter Users (n = 4,131) ■ Bike Users (n = 2,573)



## Languages used at home

■ Scooter Users (n = 4,137) ■ Bike Users (n = 2,583)



Due to rounding, or options where participants could select multiple answers, percentages may not sum to 100%. Rounding occurs on all demographic slides.

The survey sample is not intended to be representative of the Seattle population or bike or scooter share users. Therefore, it is not accurate to compare survey respondent demographic information to Census estimates.

Scooter and bike share services are currently only available in English and require some English proficiency. Survey respondents are less likely to report using languages other than English.

# Key Findings

**Injuries are not common but road and sidewalk conditions, traffic, and weather pose safety concerns.**

Some respondents (12% of scooter share users and 5% of bike share users) reported injuries. The descriptions of injuries provided show a range of severity and contexts.

Respondents consistently identified weather, traffic, road and sidewalk conditions, and improperly working scooters and bikes as safety concerns.

**Many use scooter and bike share infrequently, and often during late afternoon-evening.**

Most respondents used scooter and bike share services infrequently (1-3 times per month or less).

Most respondents used scooter and bike share services in the late afternoon and evening.

This combination of inexperience and dark conditions may be a safety concern.

**Use is motivated by social/recreational purposes, as well as enjoyment and convenience.**

Many respondents used scooter and bike share for social or recreational purposes, and because it is quick, fun, relaxing, and prevents having to find and pay for parking. Effective safety campaigns would reference these motivators in messaging and visuals, for relevance to the audience.

Most use replaced walking and ride hail.

**Most scooter and bike share users do not wear a helmet, and barriers vary across age groups.**

Most scooter share users (70%) and bike share users (62%) said they never or almost never wear a helmet.

Barriers to wearing a helmet varied across age groups, offering an opportunity for targeted intervention.

The top concern among 18- to 24-year-olds was not owning a helmet, whereas planning and carrying a helmet were the top barriers for older age groups.

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# Detailed Findings

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# Travel behavior

# Survey respondents represented a mix of frequent (at least weekly) and infrequent users, providing a range of perspectives on the services.

Some respondents frequently used the services, riding them once per week or more.

Among scooter share users, 23% used the service at least once per week

- 8% used the service 4 or more days per week
- 15% used the service 1-3 days per week

Among bike share users, about 9% used the service at least once per week

- 3% used 4 or more days per week
- 6% used 1-3 days per week

However, the survey heard from many people who used the services less frequently.

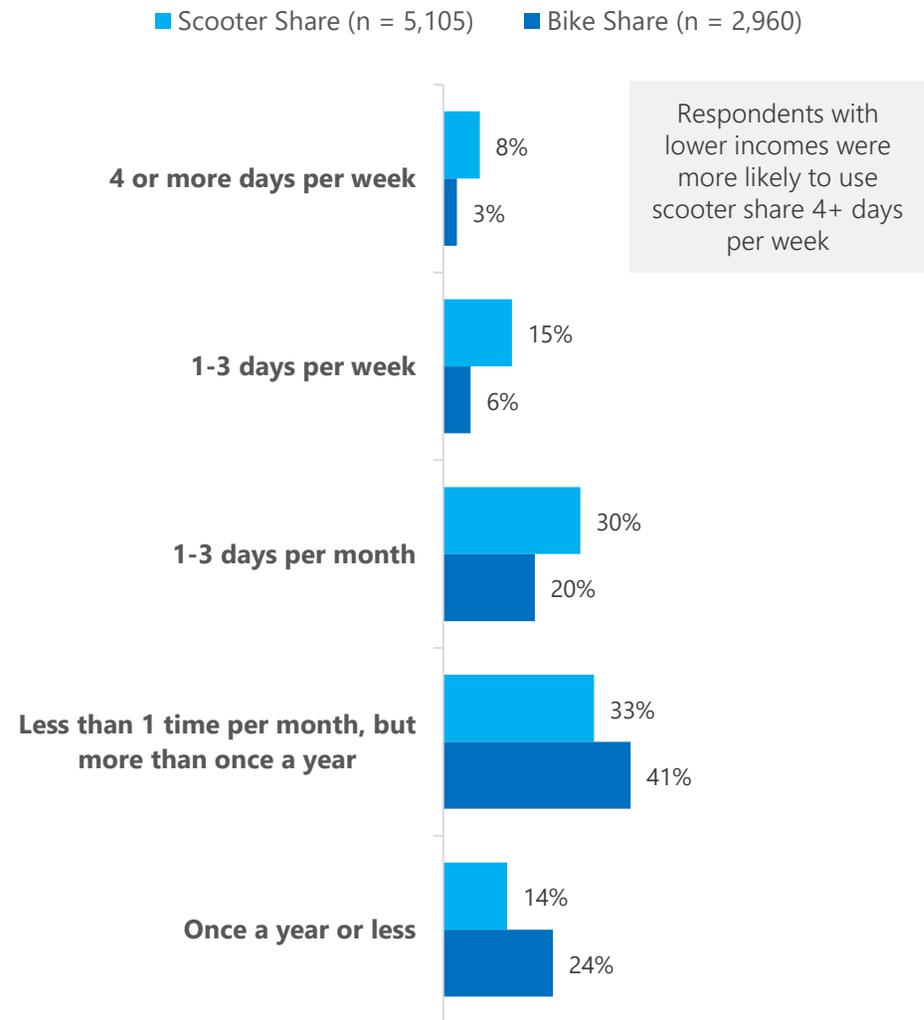
Among scooter share users,

- 30% used the service 1-3 days per month
- 33% used the service less than 1 time per month but more than once a year
- 14% used the service once in the last year

Among bike share users,

- 20% used the services 1-3 days per month
- 41% used the service less than 1 time per month but more than once a year
- 24% used the service about once a year or less

**About how often have you used scooter/bike share? Your best guess is fine.**



# A majority of respondents use scooter and bike share services in the late afternoon and evening.

Afternoon and evening was the most frequently reported time of use.

- Among scooter share users, 74% used the service between 2pm-7pm
- Among bike share users, 78% used the service between 2pm-7pm

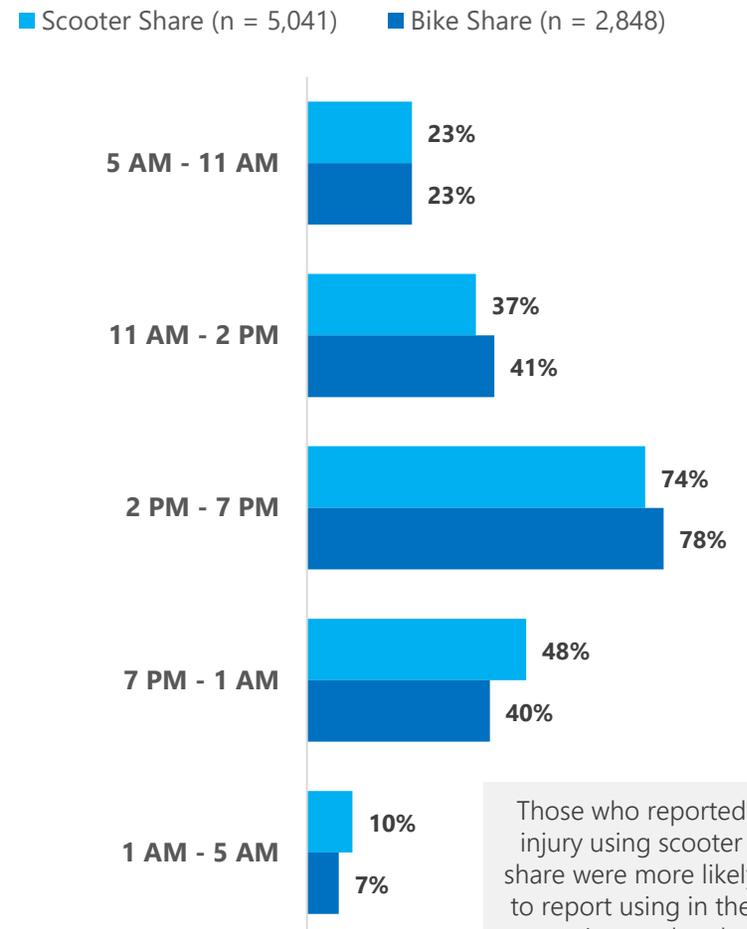
Many respondents also used services during late night and in the early afternoon.

- Among scooter share users, 48% used the service between 7pm-1am, and 37% between 11am-2pm
- Among bike share users, 40% used the service between 7pm-1am, 41% between 11am-2pm

About a quarter of respondents reported using services in the morning. Fewer respondents use services in the early morning.

- Among scooter share users, 23% used the service between 5am-11am, and 10% use it between 1am-5am
- Among bike share users, 23% used the service between 5am-11am, and 7% used it between 1am-5am

Think about all the times you have used bike/scooter share. In general, what time(s) of day were you using the service? Please select all that apply.



Those who reported injury using scooter share were more likely to report using in the morning, and early morning (1am to 5am) in particular

# Many respondents used scooter or bike share for social and recreational purposes.

When asked what the main purpose of their last trip was, many said it was social/recreational (park, seeing friends or family, concerts, movies, etc.). Many respondents also reported commute (getting to or from work, school etc.) as their main purpose.

**Location pin icon:** Scooter share users said the main purpose of their last trip was:

- Social/recreational (43%)
- Commute (22%)
- Restaurant, bar, or take-out (15%)

**Location pin icon:** Bike share users said the main purpose of their last trip was:

- Social/recreational (43%)
- Commute (24%)
- Errands (bank, post office, medical visit, etc.) (15%)

Respondents who selected "something else" mentioned other trip purposes, including:

- For gig work, including food delivery
- To avoid traffic, finding and/or paying for parking
- For sight-seeing as a tourist
- To help with mobility issues

**What was the main purpose of your LAST bike/scooter share trip?**

■ Scooter Share (n = 4737) ■ Bike Share (n = 2662)



Respondents with lower incomes were more likely to report using scooter share for commute trips, compared to other types of trips

# Scooter or bike share commonly replace walking or using a mobility aid.

Many also said their scooter or bike share would have otherwise happened via taxi, ride hail, personal vehicle, or public transit.

For scooter share users, top replacement modes were:

- Walking or use a mobility aid (56%)
- Taxi or ride hail (30%)
- Personal vehicle (24%)
- Public transit (22%)

For bike share users, top replacement modes were:

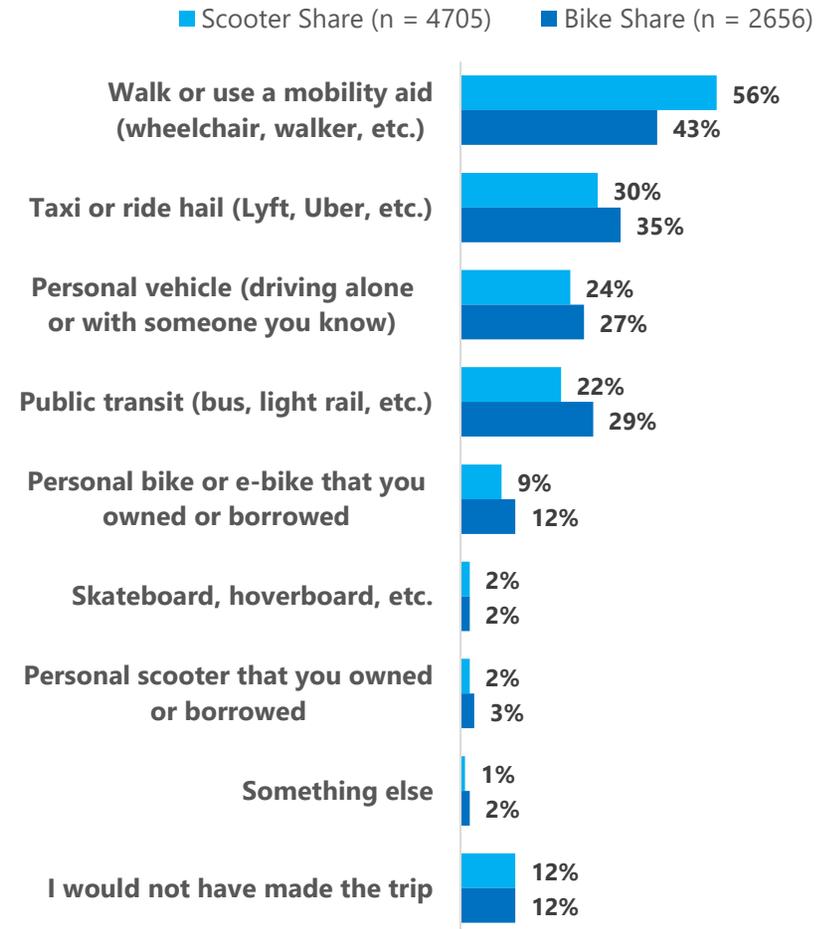
- Walking or use a mobility aid (44%)
- Taxi or ride hail (35%)
- Public transit (29%)
- Personal vehicle (27%)

Among both scooter and bike share users, 12% reported they would not have made the trip if they did not use the service.

Respondents who selected "something else" mentioned:

- Using a different bike/e-bike rental service
- Renting or using a car service
- Staying-in and ordering food delivery

Still thinking about the LAST time you used scooter/bike share, how would you have made the trip if you did not use that service? Please select all that apply.



# Top reasons for using scooter and bike share in Seattle: get places quickly, have fun and relax, and don't worry about parking.

Most respondents were motivated to use the services by convenience and enjoyment.

Among scooter share users, top reasons were:

- It can quickly get me places (72%)
- Fun and/or relaxing (67%)
- Not having to worry about finding or paying for parking (50%)

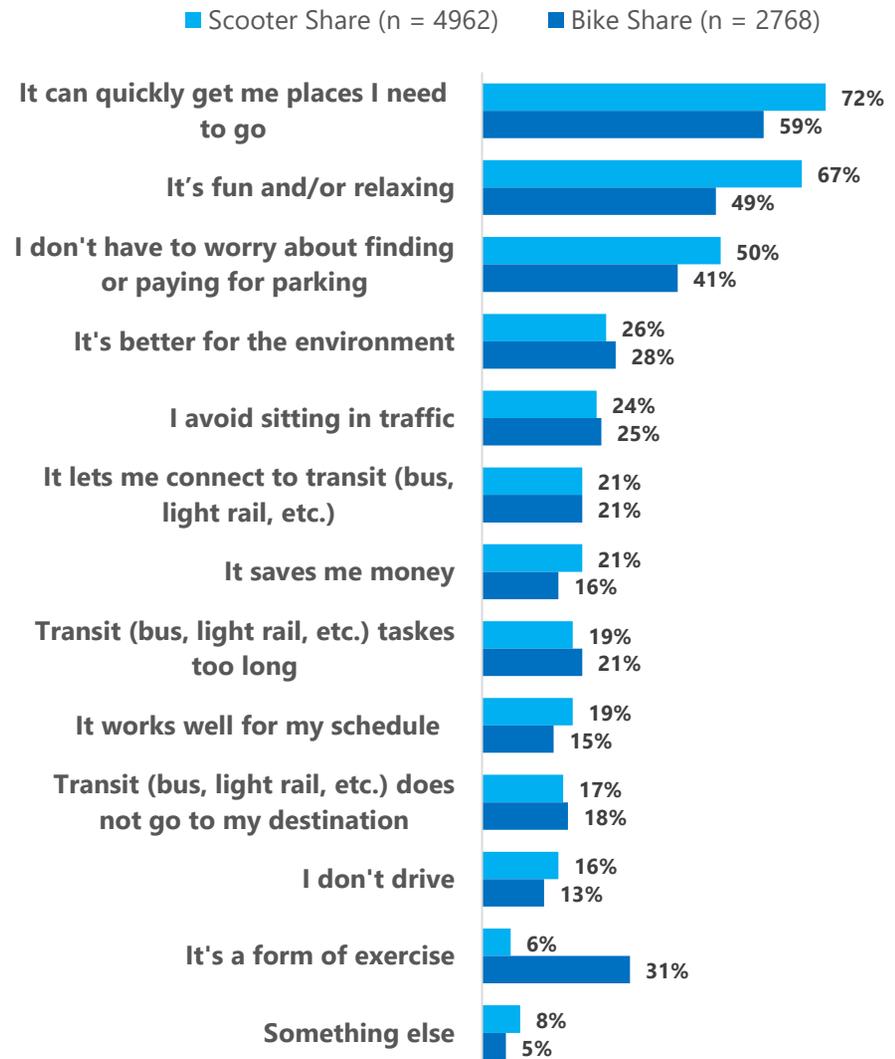
Among bike share users, top reasons were:

- It can quickly get me places (59%)
- Fun and/or relaxing (49%)
- Not having to worry about finding or paying for parking (41%)
- It is a form of exercise (31%)

Respondents who selected "something else" added:

- Avoiding driving while intoxicated
- Preventing exposure to Covid-19 on public transit
- Temporarily replacing a personal vehicle (e.g., a personal scooter, bike, or car undergoing repairs)
- Sense of safety while traveling alone, and to avoid theft of personal scooter or bike

Why do you use scooter/bike share to get around Seattle? Please select up to five reasons.



# Working condition, availability, and cost made many trips difficult or unenjoyable. Unsafe drivers and bad weather also were causes for concern.

Respondents reported a variety of concerns, including safety issues, make trips difficult or unenjoyable.

Among scooter share users, top concerns were:

- Bad weather (36%)
- Scooter not in working condition (34%)
- Scooter share is not available near me (29%)
- Scooter share is too expensive (24%)
- Unsafe drivers (23%)

Among bike share users, top concerns were:

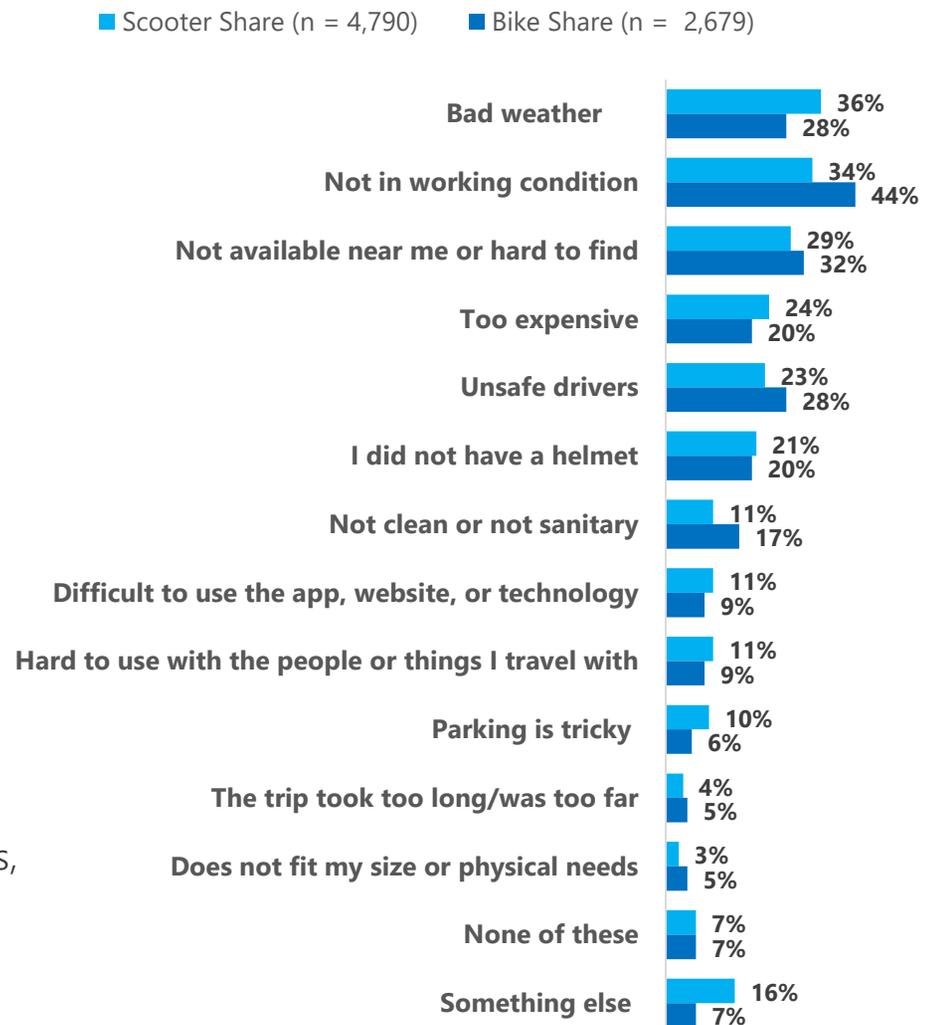
- Bike not in working condition (44%)
- Bike share is not available near me (32%)
- Bad weather (28%)
- Unsafe drivers (28%)
- Bike share is too expensive (20%)

Respondents who selected "something else" added:

- Obstructions on the road or sidewalk, including potholes, debris, bumps, construction, blocked roads and sidewalks, and detours.
- People experiencing homelessness
- Technical or navigational issues near restricted riding zones
- Difficulty navigating, including finding safe routes, and not having GPS while riding

## When using scooter/bike share, what has made your trip(s) difficult or unenjoyable?

Please select up to five options.



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# Safety

# Top reasons scooter and bike users felt unsafe: poor road and sidewalk conditions, cars, traffic, and aggressive or rude drivers.

- Top safety concerns among scooter share users:
  - Road or sidewalks were bumpy, blocked, or had trash (52%)
  - Cars, traffic, and aggressive or rude drivers (43%)
  - Bad weather (31%)

- Top safety concerns among bike share users:
  - Cars, traffic, and aggressive or rude drivers (46%)
  - Road or sidewalks were bumpy, blocked, or had trash (39%)
  - Bike was not being in working condition (32%)

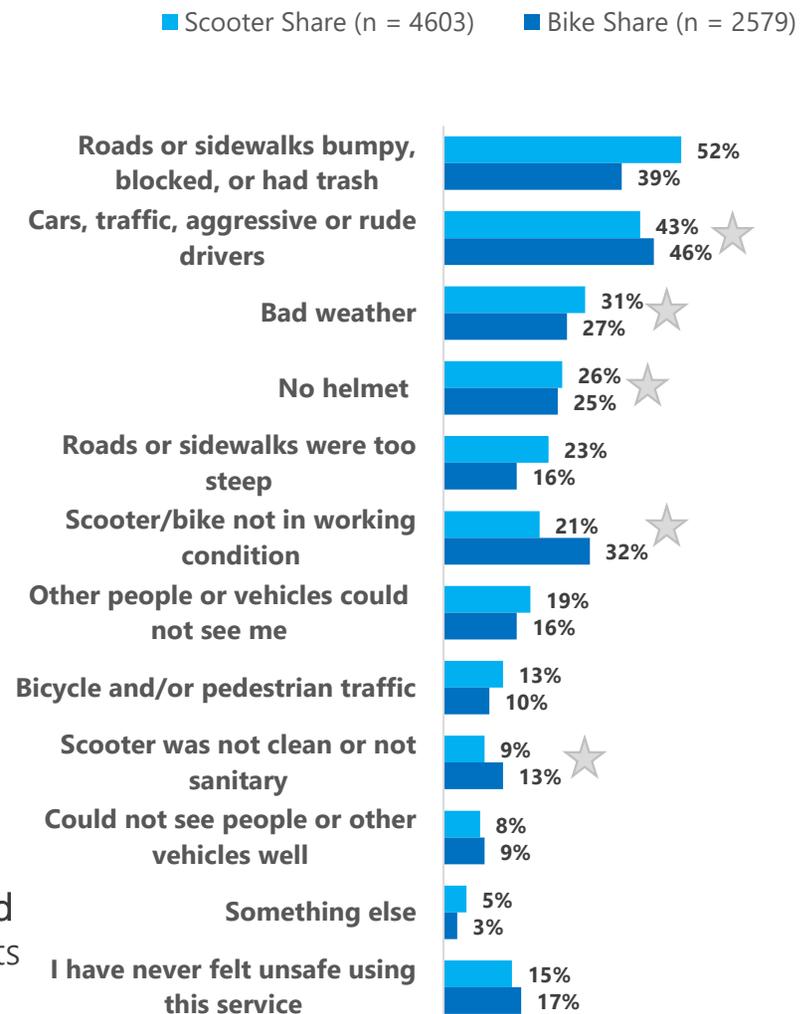
Some respondents shared that they have never felt unsafe while using shared services (15% among scooter share users and 17% among bike share users.)

Respondents who selected "something else" shared additional reasons :

- Lack of bike lanes
- Scooter or bike design (difficulties steering, small wheels, frustrations with vehicle speed, etc.)
- Difficulties navigating without being able to safely hold a GPS while riding scooter or bike

Factors that make trips difficult or unenjoyable are correlated with factors that make trips unsafe. For example, respondents who said bad weather made the trip difficult or unenjoyable also said bad weather made them feel unsafe during the trip. This finding held true for the items starred in the chart.

Please select every item that has made you feel unsafe using scooter/bike share.



# Most respondents rode on a street during their last trip.

When asked where they rode most of the time during their last trip:

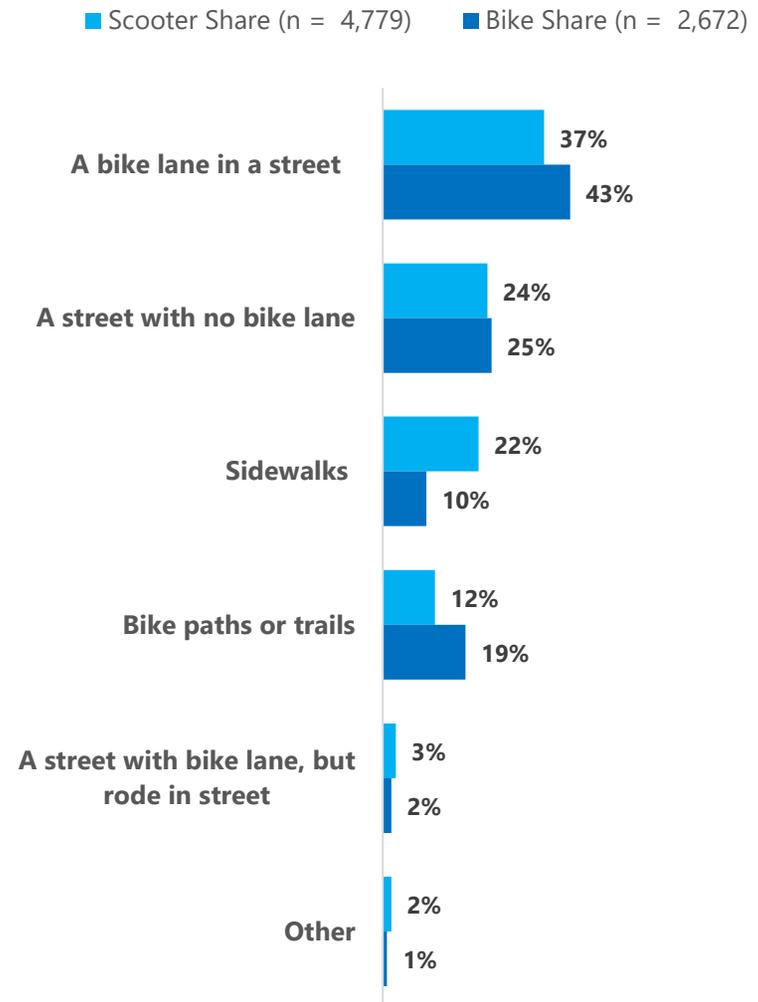
- Among scooter share users,
  - Many reported using a bike lane (37%)
  - Some rode in a street without a bike lane (24%) or on sidewalks (22%)
  - A smaller proportion used bike paths or trails (12%)

- Among bike share users,
  - More reported using a bike lane (43%)
  - Some rode in a street without a bike lane (25%)
  - Other used bike paths or trails (19%)
  - Few used sidewalks (10%)

Respondents who selected "other" explained why they chose to ride where they did:

- Felt unsafe in traffic/dangerous drivers
- Avoided road because they were unsure about proper road use/road laws
- Were unfamiliar with the scooter/bike share vehicle
- Rode on the sidewalk for safety

Where did you ride most of the time on your LAST scooter/bike share trip? Please select all that apply.



# Both scooter and bike share users choose where they ride based on safety.

Safety was a top priority for people choosing whether to ride on the sidewalk or the street. Whether a bike lane was available and if there were a lot of cars on the road were also top factors in their decision-making.

- Among scooter share users:
- I choose the one I think will be safe (69%)
  - If there are a lot of cars on the road I ride on the sidewalk (47%)
  - If there is a bike lane on a street, I use the bike lane (46%)

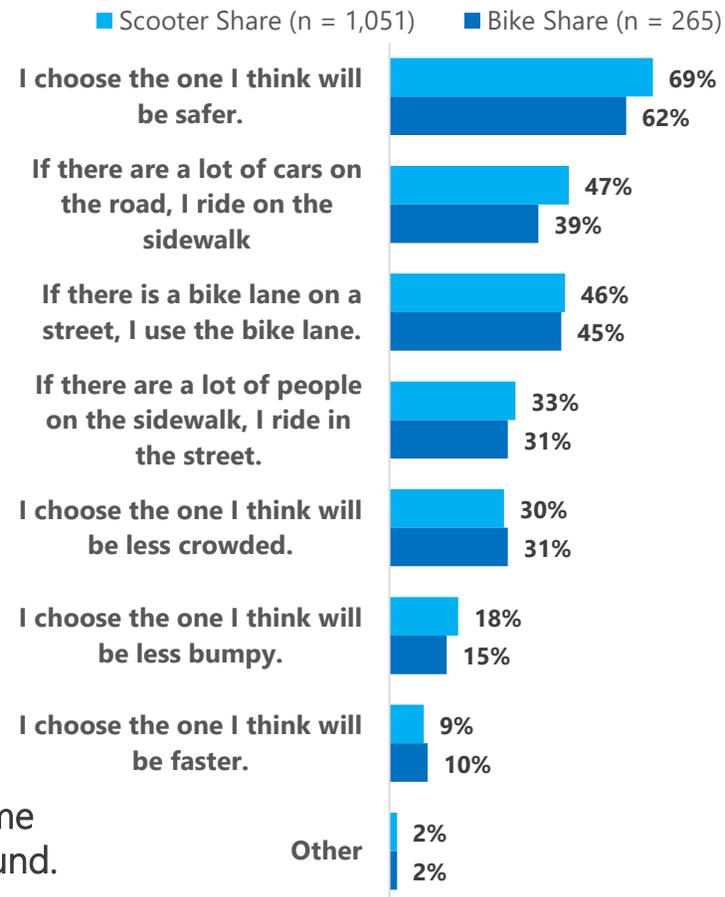
- Among bike share users:
- I choose the one I think will be safe (62%)
  - If there is a bike lane on a street, I use the bike lane (45%)
  - If there are a lot of cars on the road I ride on the sidewalk (39%)

Respondents who selected "other", mentioned:

- Aggressive drivers
- Weather conditions

When choosing where to ride a shared scooter or bike, some respondents considered how many other people were around. People who reported they ride on the sidewalk when there are a lot of cars on the road were more likely to say they ride in the street when there were a lot of people on the sidewalk.

When you use scooter/bike share, how do you decide whether to ride on the sidewalk on the street? Please select all that apply.



# Most scooter and bike share users never or almost never wear a helmet.

Most respondents did not wear a helmet.

Among scooter share users, 70% said they never or almost never wear a helmet.

Among bike share users, 62% said they never or almost never wear a helmet.

Helmet use varies significantly across age groups, with younger respondents generally less likely to wear one.

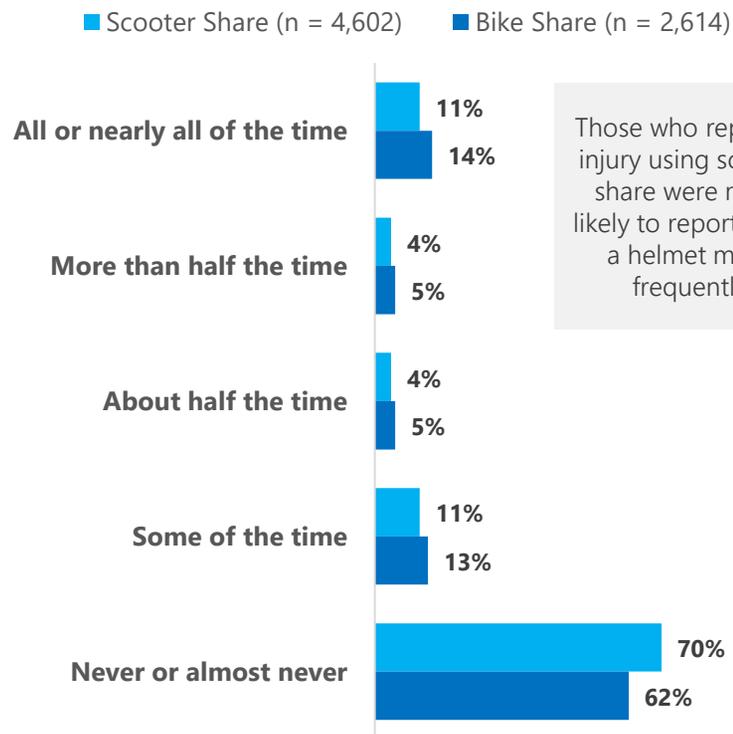
Among scooter share users:

- People ages 18-24 were least likely to wear a helmet, with 72% saying they never or almost never wear a helmet
- People ages 65-74 were most likely to wear a helmet, and even so 58% of them said they never or almost never wear a helmet
- In the other age groups, 62%-73% of respondents said they never or almost never wear a helmet

Similarly, among bike share users:

- People ages 18-24 were least likely to wear a helmet, with 69% saying they never or almost never wear a helmet
- People ages 65-74 were most likely to wear a helmet, and even so 52% of them said they never or almost never wear a helmet
- In the other age groups, 62%-73% of respondents said they never or almost never wear a helmet

### How often do you wear a helmet when using scooter/bike share?



# Not wanting to carry a helmet around and not planning to use a bike or scooter were the most common barriers to wearing helmets.

Respondents who said they wear a helmet “some of the time” or “never or almost never,” were asked what reasons prevent them from wearing a helmet.

Among scooter share users, top reasons for not wearing a helmet were:

- Not wanting to carry a helmet around (58%)
- Not plan on using scooter share that day (50%)
- Not owning a helmet (40%)

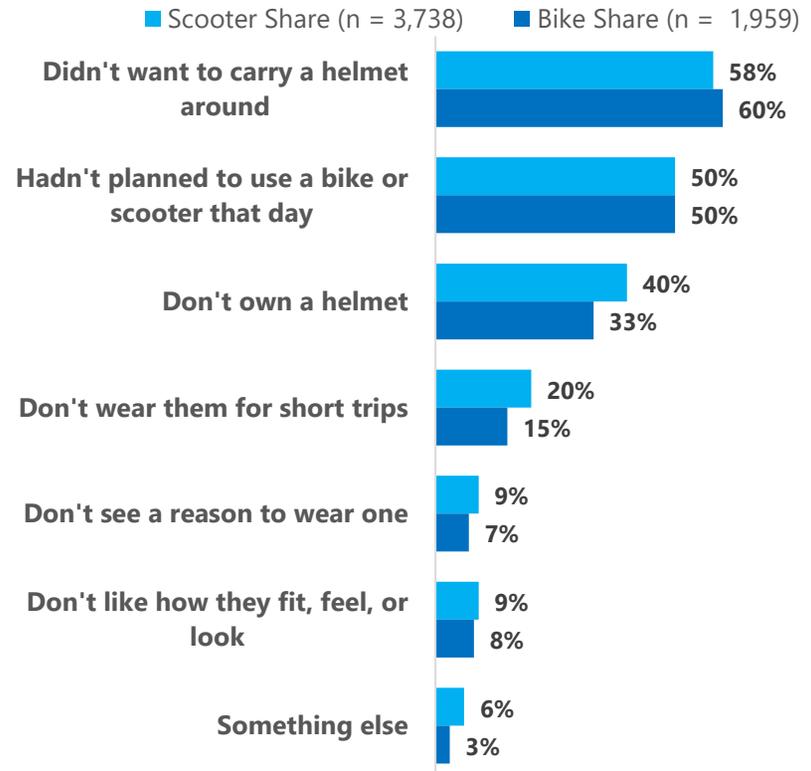
Among bike share users, top reasons for not wearing a helmet were:

- Not wanting to carry a helmet around (60%)
- Not plan on using scooter share that day (50%)
- Not owning a helmet (33%)

The main barrier to wearing a helmet was logistics so that people can access a helmet when they need it. Knowledge did not appear to be a barrier for helmet use. Few people said they don't see a reason to wear a helmet, don't like the fit, feel or look

Reasons for not wearing a helmet varied by age – Not owning a helmet was especially prevalent among 18- to 24-year-olds, whereas older age groups were more likely to mention challenges with carrying a helmet around and planning ahead to ride scooter or bike share.

There are many reasons why people may not wear helmets. What are the reasons you have not always worn a helmet? Please select all that apply.



# Most respondents said they had never been injured using scooter or bike share services, but that was not the case for all respondents.

Some respondents reported injuries.

Among scooter share users, 88% have never been injured and about 11% were injured at least once, with

- 9% injured once
- 2% injured twice
- Less than 1% injured three or more times

Among bike share users, 95% have never been injured and about 5% were injured at least once, with

- 4% injured once
- 1% injured twice
- Less than 1% injured three or more times

Men were less likely to report being injured.

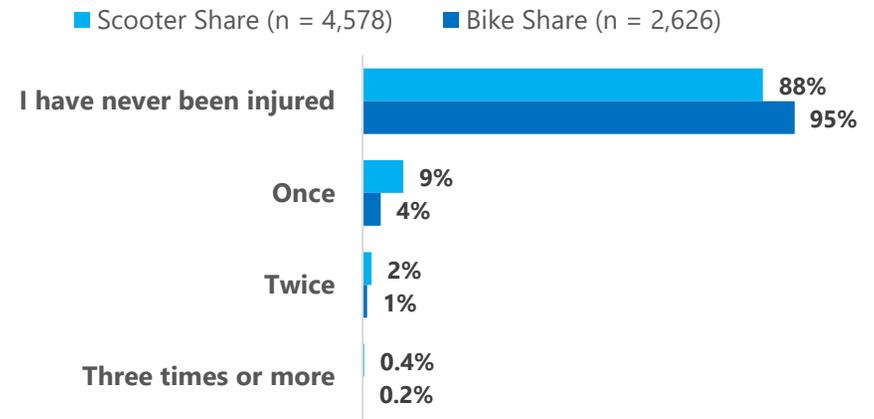
Among scooter share users, about 10% of those who identified as men reported being injured at least once, compared to 14% of those who did not identify as men.

Among bike share users, 4% of those who identified as men reported being injured at least once, compared to 7% of those who did not identify as men.



*This is self-reported data and cannot be compared to other data sources on injuries.*

How many times have you been injured using scooter/bike share?



Reported injuries varied across age groups. Older respondents were less likely to report being injured.

Age Group	% of respondents who reported being injured at least once	
	Scooter Share Users	Bike Share Users
18-24	15%	6%
25-34	12%	5%
35-44	10%	5%
45-55	10%	3%
55-64	9%	5%
65-74	8%	7%

# Of those who experienced injuries, about one in five sought professional medical attention.

Respondents who reported injuries were asked if they sought professional medical attention. Overall, the rates of seeking medical care are low.

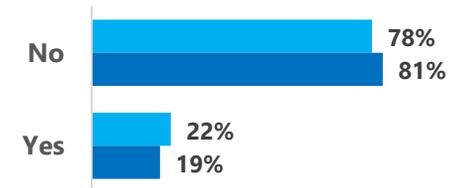
- Among scooter share users, 22% of those injured sought medical attention.
- Among bike share users, 19% of those injured sought medical attention.

Respondents were also invited to share more about what happened (see question text below.) The quotes on the following pages were selected to represent a range of experiences reported in the open-ended question about injury experiences. These were chosen without referring to respondents' demographics, but we have included that demographic information with each quote for reference.

*Survey question: "If it feels comfortable, please tell us more about what happened in as much detail as you like. What happened? How badly were you injured? Was anyone else injured? What type of medical care did you seek? Please share anything else that helps us better understand what happened. Thank you!"*

## Did you seek professional medical attention? (ER, clinic, urgent care, etc.)?

■ Scooter Share (n = 534) ■ Bike Share (n = 135)



*This is self-reported data and cannot be compared to other data sources on injuries.*



## Respondents who reported injuries shared information about their experiences showing a wide range of severities.



"Traveling in the bike lane late at night, [I] hit a rock or something and went flying. I had some road rash, but was otherwise okay." – *male, white, 35-44, \$50k to \$99k*

"Riding a scooter down first towards the stadiums. I hit a spot in the sidewalk where it had buckled and my front tire caught and I jumped off losing control of the scooter. Busted my hand up pretty good for about 6 weeks. I couldn't go to the ER due to the pandemic and not having insurance." – *male, white, 35-44, \$100k to \$149k*

"There was a change in sidewalk height that I did not see the scooter was unable to clear the bump and tossed me headfirst into traffic I landed on my face and was very nearly hit by a car I was taken to the emergency room I suffered facial lacerations causing permanent scarring to my brow a concussion a broken foot in two places requiring physical therapy to regain movement of my toes." – *demographics not available*



"My bike got caught between the rail tracks in the middle of the road in downtown. I slipped and fell. My knee and palm were bleeding... I did first aid on myself and didn't see a doctor." – *female, Asian or Asian American, 25-34, \$100k to \$149k*

"I hit a pothole on the University of Washington campus while riding a JUMP bike. I was thrown over the front of the handlebars, hit my head, and separated my shoulder from the collar bone. Thankfully, I had health insurance. I then Ubered to the ER." – *male, white, 25-34, \$25k to \$49k*

"Car came too close and I had to avoid it by diverting onto a sidewalk. Couldn't divert quick enough and bike went over a curb and caused the bike to slam down." – *male, Hispanic or Latino/a/x, 35-44, \$25k to \$49k*

"I got hit by a car when I was riding in the street, I had no major injuries but went to urgent care to get x rays and concussion test. Wish I rode a scooter on the sidewalk." – *male, white, 18-24, \$150k to \$199k*

## Weather and road conditions were common causes of injuries described by respondents who reported information about their injuries.



"Rough road. Poor lighting at night. Lost control. Fell off - against curb - going 12-13 mph. Severe road rash." – *female, Middle Eastern or North African, 45-54, \$25k to \$49k*

"Bad weather made the road slippery and I fell and scrapped my knee." *male, white, 25-34, \$25k to \$49k*

"Well, it was dark. I was traveling at too great of speed for the road conditions. It was raining & I drove into a pothole. Scooter stopped immediately, I didn't." – *male, white, 55-64, <\$25k*

"Crack in bike path caused a topple over and I got some road rash. Scooter wheels are small so small cracks and holes that are not a problem for bikes swallow scooter wheels." – *male, white, 45-54, >\$200k*

"Pothole caught the front tire and flipped me over. Split my chin open. Went to the ER, needed 6 stitches." – *male, white, 18-24, <\$24k*

"There was a large bump on the sidewalk that was not visible to the eye. It threw me forward from the scooter, and I scraped my hands, elbows, and ripped my suit jacket and pants." – *male, 25-34, \$100k to \$149k*



"The front tire got caught crossing trolley tracks. I broke a bone in my left hand." – *male, white, 55-64, <\$24k*

"Was going down a steep hill in Queen Anne and hit a large bump in the road and lost control of the bike. Needed stitches for some wounds on my face." – *male, white, 25-34, \$50k to \$99k*

"I hit an obstruction in the dark in a bike lane, fell off, skinned my knee and palms." – *female, white, 35-44, \$100k to \$149k*

"I think I hit a pothole while turning and fell to the ground. I had bruises and hurt my shoulder. I saw a doctor for the shoulder. It happened on a designated neighborhood bike/walk street, but the street is in awful condition." – *male, white, 55-64, \$50k to \$99k*

"I was riding the bike and the pedals are not grippy enough so my foot slipped off in the rain and the pedals flew back and hit me on my shin cutting me." – *male, Black or African American, 55-64, \$25k to \$49k*

"The road was wet and I slipped on some wet leaves going around a corner and fell." – *female, Asian or Asian American and white, 25-34, \$25k to \$49k*

## Respondents who reported injuries also frequently described interactions with drivers and vehicles as the cause of their injuries.



"I was riding on a road with no bike lane, and a car behind me decided to pass me, and was pretty close to me - I flinched and the whole scooter wobbled and I fell on the sidewalk (better than falling towards the left/road). Hand was pretty scratched up but better than getting run over." – *male, Middle Eastern or North African and white, 25-34, \$150k to \$199k*

"I was riding a scooter down a bike path, as I was instructed. I began to pass the next car in a series of parked cars at full speed when some guy flew his door open right as I was too close to avoid it, causing me to run right into it and flip over the door and straight into the traffic. The crash split the center of my ear completely open it took an ambulance ride...[they] ended up putting my stitches in." – *male, Hispanic or Latino/a/x, 25-34, <\$24k*

"A driver cut me off, causing me to slam on the brakes and fly 30ft off the scooter. I woke up in the ER with a broken bone, multiple fractures and open wounds from the accident. The accident caused a concussion that affected me for weeks." – *male, Hispanic or Latino/a/x and white, 35-44, \$25k to \$49k*



"Was clipped from behind by a car on a quiet residential street. The car left the scene. [...] I suffered a concussion and some abrasions on my head, knee, and hands." – *male, white, 35-44, >\$200k*

"Uber driver pulling out from being illegally parked side-swiped me. Received a few scrapes and a big bruise. Uber driver just kept driving. Officer saw it happen, asked if I needed an ambulance, and left when I said no. Officer didn't bother reporting the Uber driver." – *male, white, 25-34, \$50k to \$99k*

"I was struck by a red-light runner at a 4 way stop light intersection on first hill." – *male, white, 18-24, >\$200k*

"I don't want to bore you with details just your everyday vehicular manslaughter." – *gender not listed, race/ethnicity not listed, 75+, \$150k to \$199k*

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# Appendices

# Appendix A: Recruitment Material – Email, email reminder, text message, and in-app notification

## Email

Subject: Take the SDOT Scooter and Bike Share Safety Survey for a chance to win \$100!



Hello!

The Seattle Department of Transportation (SDOT) wants to learn about people's experiences using bike share (Lime/Jump) and scooter share (Lime, LINK, SPIN, Wheels) to get around Seattle. Please take our brief survey (less than 10 minutes) to share your opinions and experiences. The information you provide will help SDOT develop programs and policies to help people get where they need to go in safe, accessible, and sustainable ways.

**After the survey, adult participants (18+) can share their name and email address for a chance to win one of five \$100 gift cards.** If you share your contact information, your survey answers will still be anonymous.

**Please complete the survey by November 21, 2021.**

You can take the survey in one of the following ways:

- Online (type the link in the website address bar, do not use a search engine):  
<https://sdot2021safetysurvey.com/MA>
- Call (877) 697-9627 to take the survey by phone.

SDOT has hired PRR, an independent firm, to conduct this research. Please contact Anne Frugé at [afruge@prrbiz.com](mailto:afruge@prrbiz.com) or 206-462-6387 if you have questions about participating. Please contact the SDOT Micromobility Program Manager, Becky Edmonds, at [becky.edmonds@seattle.gov](mailto:becky.edmonds@seattle.gov) or 206-684-5104 if you have questions about the study.

Thank you!

The Seattle Department of Transportation

## Reminder email

Subject: You can still take the SDOT Scooter and Bike Share Safety Survey for a chance to win \$100!

Hello!

Last week the Seattle Department of Transportation (SDOT) invited you to take a short survey about using bike share (Lime/Jump) and scooter share (Lime, LINK, SPIN, Wheels) to get around Seattle. If you have already taken our survey, thank you! If not, please take it by **November 21, 2021**.

The information you provide will help SDOT develop programs and policies to help people get where they need to go in safe, accessible, and sustainable ways. By taking this survey, you will make your voice heard and help improve travel in Seattle.

**After the survey, adult participants (18+) can share their name and email address for a chance to win one of five \$100 gift cards.** If you share your contact information, your survey answers will still be anonymous.

You can take the survey in one of the following ways:

- Online (type the link in the website address bar, do not use a search engine):  
<https://sdot2021safetysurvey.com/MA>
- Call (877) 697-9627 to take the survey by phone.

SDOT has hired PRR, an independent firm, to conduct this research. Please contact Anne Frugé at [afruge@prrbiz.com](mailto:afruge@prrbiz.com) or 206-462-6387 if you have questions about participating. Please contact the SDOT Micromobility Program Manager, Becky Edmonds, at [becky.edmonds@seattle.gov](mailto:becky.edmonds@seattle.gov) or 206-684-5104 if you have questions about the study.

Thank you!

The Seattle Department of Transportation

## Text and in-app notification

The Seattle Department of Transportation wants to learn about your experiences using bike and scooter share. **Take a short survey for a chance to win \$100.** Go to <https://sdot2021safetysurvey.com/TE> or call (877) 697-9627.



# Appendix B: Survey Instrument

## INTRODUCTION

The Seattle Department of Transportation (SDOT) wants to learn about people's experiences using bike share (Jump/Lime) and scooter share (Lime, LINK, SPIN, Wheels) to get around Seattle. This survey takes less than 10 minutes to complete and will help SDOT develop programs and policies to help people get where they need to go in safe, accessible, and sustainable ways.

**Please complete this survey by November 21, 2021.**

**After the survey, adult participants (18+) can share their name and email address for a chance to win one of five \$100 gift cards.** If you share your contact information, your survey answers will be anonymous.

Thank you!

*Privacy Statement:* Personal information entered on this form is subject to Washington Public Records Act, and may be subject to disclosure to a third-party requestor. At the City of Seattle, we are committed to protecting your privacy and will ensure that any disclosures are done according to law. To learn more about how this information is managed please see our [Privacy Statement](#).

## SCOOTER OR BIKE

Which of the following have you used in Seattle? Please select all that apply.

- Bike share (Jump/Lime)
- Taxi or ride hail (Lyft, Uber, etc.)
- Car share (GIG, Zipcar, Car2Go/SHARENOW, Getaround, etc.)
- Scooter share (Lime, LINK, SPIN, Wheels)
- None of the above

**TRIP CHARACTERISTICS-  
SCOOTER**

The following questions ask about your experience using scooter share.

About how often have you used scooter share? Your best guess is fine.

- Once in the last year
- Less than 1 time per month, but more than once a year
- 1-3 days per month
- 1-3 days per week
- 4 or more days per week

Think about all the times you have used scooter share. In general, what time(s) of day were you using the service? Please select all that apply.

- 5 AM – 11 AM
- 11 AM – 2 PM
- 2 PM – 7 PM
- 7 PM – 1 AM
- 1 AM – 5 AM

Why do you use scooter share to get around Seattle? Please select up to five reasons.

- It saves me money
- It's a form of exercise
- I avoid sitting in traffic
- It works well for my schedule
- I don't have to worry about finding or paying for parking
- Transit (bus, light rail, etc.) takes too long
- It lets me connect to transit (bus, light rail, etc.)
- It can quickly get me places I need to go
- I don't drive
- It's fun and/or relaxing
- Transit (bus, light rail, etc.) does not go to my destination
- It's better for the environment
- Something else (please tell us more)

When using scooter share, what has made your trip(s) difficult or unenjoyable? Please select up to five options.

- It is difficult to use the app, website, or technology
- Scooter share is not available near me or hard to find
- Scooter was not in working condition (flat wheels, damaged or missing parts, not well maintained, etc.)
- Scooter was not clean or not sanitary
- Hard to use scooter share with the people or things I travel with
- I did not have a helmet to use on the scooter
- Parking is tricky (rules are unclear, hard to find spots, etc.)
- Unsafe drivers
- Scooter share was too expensive
- Scooter does not fit my size or physical needs
- Bad weather
- The trip took too long/was too far
- Something else (please tell us more)
- None of these

What was the main purpose of your LAST scooter share trip?

- Social/recreational (park, seeing friends or family, concerts, exercise, movies, etc.)
- Shopping (grocery store, pet store, mall, etc.)
- Commute (getting to/from work, school, etc.)
- Restaurant, bar, or take-out
- Errands (bank, post office, medical visit, etc.)
- Something else (please tell us more)

Where did you ride most of the time on your LAST scooter share trip?

- A bike lane in a street
- Sidewalks

- A street with bike lane, but I rode in the street (please tell us why)
- Bike paths or trails
- A street with no bike lane
- Other: (please tell us more)

When you use scooter share, how do you decide whether to ride on the sidewalk or the street? Please select all that apply.

- If there are a lot of cars on the road, I ride on the sidewalk
- I choose the one I think will be less bumpy.
- If there are a lot of people on the sidewalk, I ride in the street.
- I choose the one I think will be less crowded.
- If there is a bike lane on a street, I use the bike lane.
- I choose the one I think will be safer.
- I choose the one I think will be faster.
- Other (please tell us more)

Still thinking about the LAST time you used scooter share, how would you have made the trip if you did not use that service? Please select all that apply.

- Public transit (bus, light rail, etc.)
- Walk or use a mobility aid (wheelchair, walker, etc.)
- Skateboard, hoverboard, etc.
- Personal bike or e-bike that you owned or borrowed
- Personal scooter that you owned or borrowed
- Personal vehicle (driving alone or with someone you know)
- Taxi or ride hail (Lyft, Uber, etc.)
- I would not have made the trip
- Something else (please tell us more)

## SAFETY - SCOOTER

For the following questions, please think about all the times you have used scooter share.

Please select every item that has made you feel unsafe using scooter share.

- Bicycle and/or pedestrian traffic
- No helmet (I did not use my own helmet, no helmet provided by the company, etc.)
- Bad weather
- Cars, traffic, aggressive or rude drivers, etc.
- Roads or sidewalks were bumpy, blocked, or had trash
- Scooter was not in working condition (flat wheels, damaged or missing parts, not well maintained, etc.)
- Other people or vehicles could not see me (poorly lit roads, rain, lights on vehicle did not work, etc.)
- Roads or sidewalks were too steep
- I could not see people or other vehicles well (poorly lit roads, rain, lights on scooter did not work, etc.)
- Scooter was not clean or not sanitary
- I have never felt unsafe using this service
- Something else (please tell us more)

How often do you wear a helmet when using scooter share?

- Never or almost never
- Some of the time
- About half the time
- More than half the time
- All or nearly all of the time

There are many reasons why people may not wear helmets. What are the reasons you have not always worn a helmet? Please select all that apply.

- I hadn't planned to use a bike or scooter that day
- Don't wear them for short trips
- Don't like how they fit, feel, or look
- Don't see a reason to wear one

- Don't own a helmet
- I didn't want to carry a helmet around
- Something else (please tell us more)

How many times have you been injured using scooter share?

- I have never been injured
- Once
- Twice
- Three times or more (please tell us how many times)

We are very sorry that you were injured. Did you seek professional medical attention (ER, clinic, urgent care, etc.)?

- No
- Yes

If it feels comfortable, please tell us more about what happened in as much detail as you like. What happened? How badly were you injured? Was anyone else injured? What type of medical care did you seek? Please share anything else that helps us better understand what happened. Thank you!

### TRIP CHARACTERISTICS - BIKE

The following questions ask about your experience using bike share.

About how often have you used bike share? Your best guess is fine.

- I have not used the service in the last three years
- About once a year or less

- Less than 1 time per month, but more than once a year
- 1-3 days per month
- 1-3 days per week
- 4 or more days per week

Think about all the times you have used bike share. In general, what time(s) of day were you using the service? Please select all that apply.

- 5 AM – 11 AM
- 11 AM – 2 PM
- 2 PM – 7 PM
- 7 PM – 1 AM
- 1 AM – 5 AM

Why do you use bike share to get around Seattle? Please select up to five reasons.

- It's a form of exercise
- It saves me money
- I don't drive
- It works well for my schedule
- It's better for the environment
- Transit (bus, light rail, etc.) takes too long
- It can quickly get me places I need to go
- I don't have to worry about finding or paying for parking
- I avoid sitting in traffic
- It lets me connect to transit (bus, light rail, etc.)
- Transit (bus, light rail, etc.) does not go to my destination
- It's fun and/or relaxing
- Something else (please tell us more)

When using bike share, what has made your trip(s) difficult or unenjoyable? Please select up to five options.

- Bike share was too expensive

- Bike was not in working condition (flat wheels, damaged or missing parts, not well maintained, etc.)
- Parking is tricky (rules are unclear, hard to find spots, etc.)
- Bike does not fit my size or physical needs
- The trip took too long/was too far
- Unsafe drivers
- Bike share is not available near me or hard to find
- I did not have a helmet to use on the bike
- It is difficult to use the app, website, or technology
- Bad weather
- Bike was not clean or not sanitary
- Hard to use bike share with the people or things I travel with
- Something else (please tell us more)
- None of these

What was the main purpose of your LAST bike share trip?

- Commute (getting to/from work, school, etc.)
- Restaurant, bar, or take-out
- Social/recreational (park, seeing friends/family, concerts, exercise, movies, etc.)
- Shopping (grocery store, pet store, mall, etc.)
- Errands (bank, post office, medical visit, etc.)
- Something else (please tell us more)

Where did you ride most of the time on your LAST bike share trip?

- A bike lane in a street
- Bike paths or trails
- Sidewalks
- A street with no bike lane
- A street with bike lane, but I rode in the street (please tell us why)
- Somewhere else (please tell us more)

When you use bike share, how do you decide whether to ride on the sidewalk or the street? Please select all that apply.

- If there are a lot of people on the sidewalk, I ride in the street.
- I choose the one I think will be safer.
- I choose the one I think will be faster.
- I choose the one I think will be less bumpy.
- If there are a lot of cars on the road, I ride on the sidewalk
- I choose the one I think will be less crowded.
- If there is a bike lane on a street, I use the bike lane.
- Other (please tell us more)

Still thinking about the LAST time you used bike share, how would you have made the trip if you did not use that service? Please select all that apply.

- Taxi or Ride hail (Lyft, Uber, etc.)
- Personal vehicle (driving alone or with someone you know)
- Skateboard, hoverboard, etc.
- Personal scooter that you owned or borrowed
- Walk or use a mobility aid (wheelchair, walker, etc.)
- Public transit (bus, light rail, etc.)
- Personal bike or e-bike that you owned or borrowed
- I would not have made the trip
- Something else (please tell us more):

## SAFETY BIKE

**For the following questions, please think about all the times you have used bike share.**

Please select every item that has made you feel unsafe using bike share.

- I could not see people or other vehicles well (poorly lit roads, rain, lights on bike did not work, etc.)
- Bike was not clean or not sanitary

- Roads or sidewalks were bumpy, blocked, or had trash
- No helmet (I did not use my own helmet, no helmet provided by the company, etc.)
- Bicycle and/or pedestrian traffic
- Bad weather (rain, wind, ice, etc.)
- Other people or vehicles could not see me (poorly lit roads, rain, lights on vehicle did not work, etc.)
- Cars, traffic, aggressive or rude drivers, etc.
- I have never felt unsafe using this service
- Roads or sidewalks were too steep
- Bike was not in working condition (flat wheels, damaged or missing parts, not well maintained, etc.)
- Something else (please tell us more)

How often do you wear a helmet when using bike share?

- Never or almost never
- Some of the time
- About half the time
- More than half the time
- All or nearly all of the time

There are many reasons why people may not wear helmets. What are the reasons you have not always worn a helmet? Please select all that apply.

- Don't see a reason to wear one
- Don't wear them for short trips
- Don't own a helmet
- Don't like how they fit, feel, or look
- I didn't want to carry a helmet around
- I hadn't planned to use a bike or scooter that day
- Something else (please tell us more)

How many times have you been injured using bike share?

- I have never been injured

- Once
- Twice
- Three times or more (please tell us how many times)

We are very sorry that you were injured. Did you seek professional medical attention (ER, clinic, urgent care, etc.)?

- No
- Yes

If it feels comfortable, please tell us more about what happened in as much detail as you like. What happened? How badly were you injured? Was anyone else injured? What type of medical care did you seek? Please share anything else that helps us better understand what happened. Thank you!

### DEMOGRAPHICS AND BACKGROUND

The following demographic questions help ensure we hear from a diverse group of people. They are optional and your answers will be analyzed only in combination with answers from other people.

How old are you?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75+

How do you identify? Please select all that apply.

- Man
- Woman
- Gender(s) not listed here
- None of these

How do you identify? Please select all that apply.

- American Indian or Alaska Native
- Asian or Asian American
- Black or African American
- Hispanic or Latino/a/x
- Middle Eastern or North African
- Native Hawaiian or Pacific Islander
- White
- Race or ethnicity not listed here (please tell us more)

What languages do you speak at home? Please select all that apply.

- Chinese (please tell us more - Mandarin, Cantonese, etc.)
- English
- Japanese
- Korean
- Russian
- Spanish
- Tagalog
- Vietnamese
- Other (please tell us more)

Do you have any of the following? Please select all that apply.

- Condition that limits physical activities (walking, carrying, lifting, etc.)

- Blindness or have serious difficulty seeing when wearing glasses
- Deafness or have a serious hearing difficulty
- Limited ability to care for yourself
- Physical, mental, or emotional condition that limits learning, remembering, or concentrating
- Disability or disabilities not listed here (please tell us more)
- I do not have any of the conditions above

What is your expected total household income in 2021 before taxes? Your best guess is fine.

- Less than \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 to \$199,999
- \$200,000 or more

## **SWEEPSTAKES**

As a thank you for participating in this survey, you can enter a sweepstakes for a chance to win one of five \$100 gift cards.

Do you want to enter the sweepstakes to win one of five \$100 gift cards?

- No
- Yes (this will redirect you to a new page where you can enter contact information for the sweepstakes)