

N A B S A

NORTH AMERICAN BIKESHARE & SCOOTERSHARE ASSOCIATION

4TH ANNUAL

Shared Micromobility

State of the
Industry Report

2022



NABSA is pleased to present our fourth annual Shared Micromobility State of the Industry Report. Shared micromobility emerged as one of the most resilient transportation options coming out of the COVID-19 pandemic. In 2022, trip-making re-established itself to pre-pandemic levels, and there was a rapid increase in the number of cities with shared micromobility. The ecosystem of shared micromobility vehicles continued to evolve, with e-devices (e-scooters and e-bikes) growing in usage and popularity. This report tracks the progress and presents new research demonstrating the impact of the industry across North America.

To inform this report, we have collected data across a wide variety of topics. Our data sources include surveys sent to shared micromobility operators and public agencies across North America, academic research on shared micromobility, census data, and other data that is tracked by NABSA.

The 2022 State of the Industry report shows a snapshot in time and tracks trends with previous years. It marks successes and challenges as the industry continues to evolve.

See page 19 for detailed notes on methodology.

The Report includes:



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- Transportation Equity

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Shared Micromobility in North America

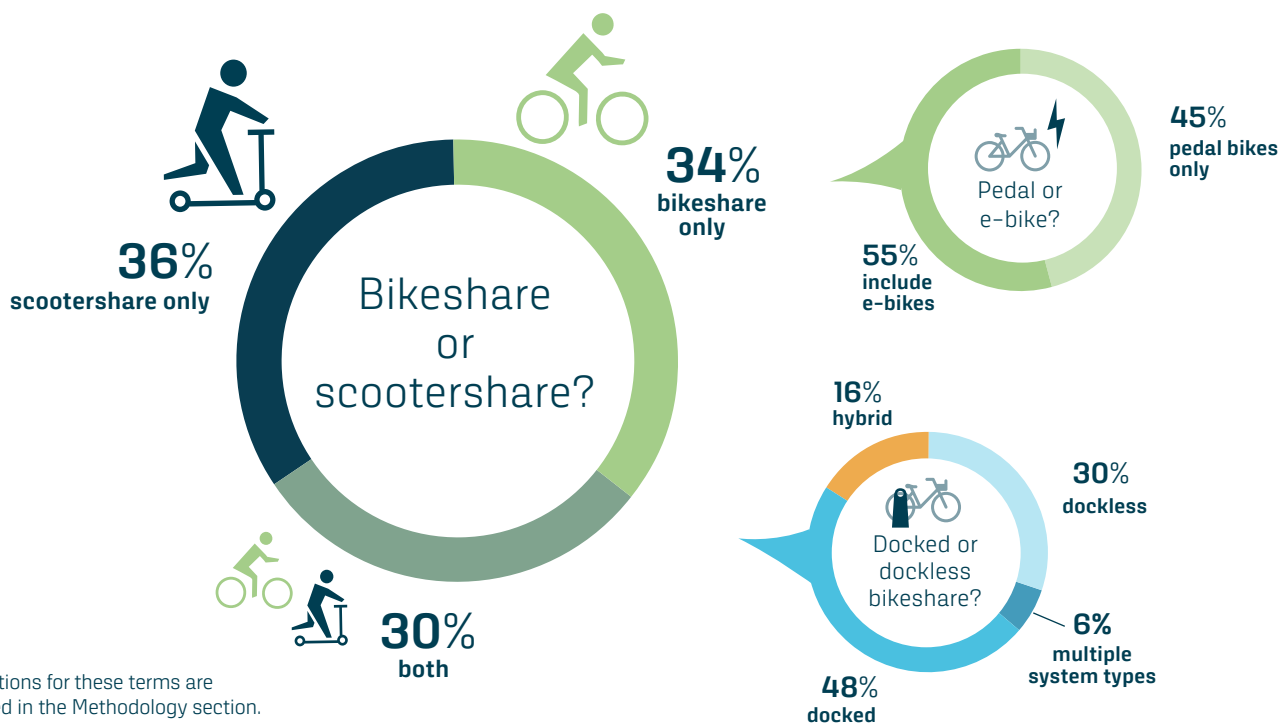
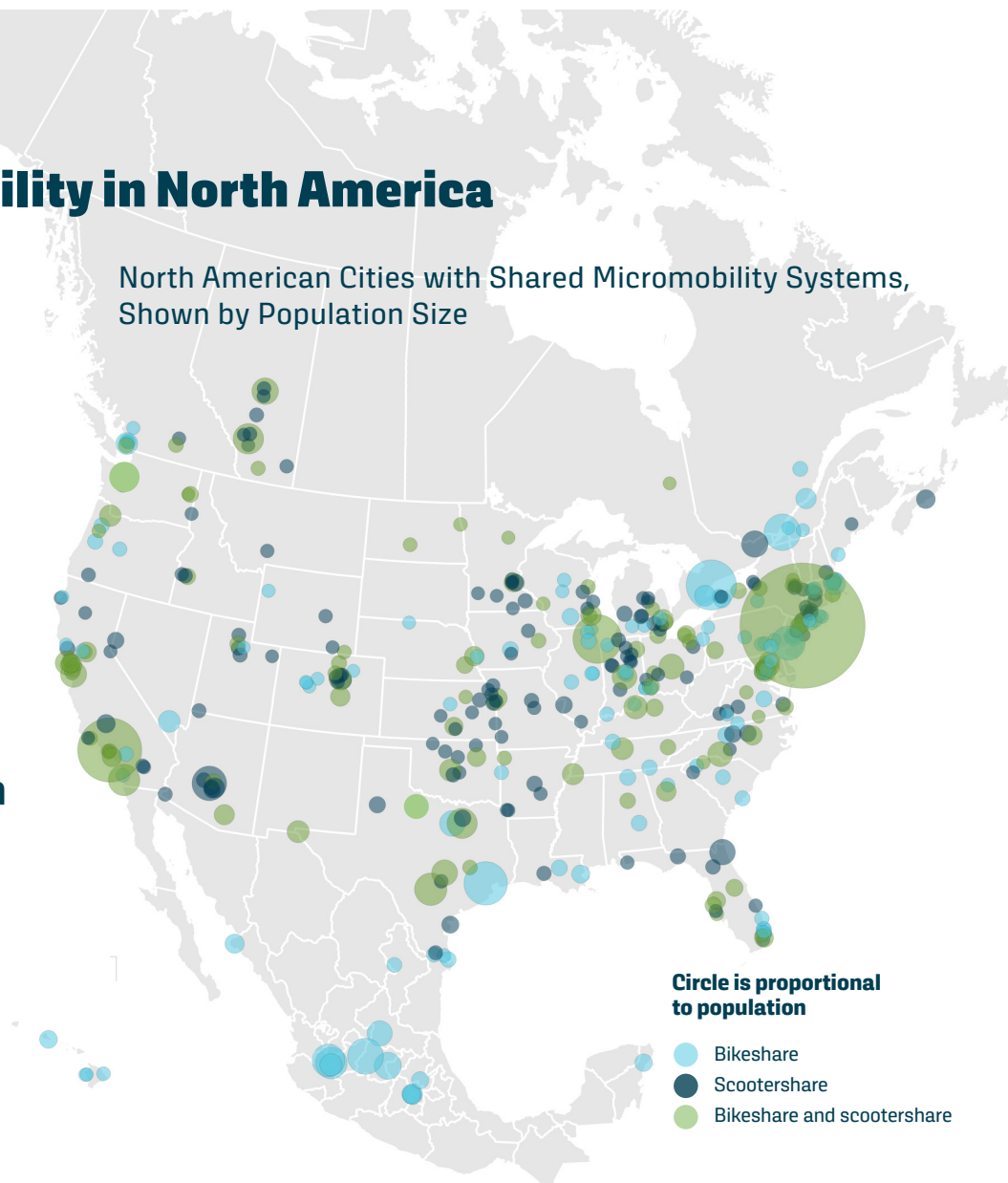
In 2022, an estimated 401 cities* had at least one bikeshare or e-scootershare system* and 121 had both. This is 35% more cities than in 2021 and includes:

- 363 cities in the United States
- 29 cities in Canada
- 9 cities in Mexico

Approximately 55% of bikeshare systems include e-bikes, and 79% of all systems include e-devices (e-scooters or e-bikes).

At least **401** cities in North America had a **scootershare or bikeshare** system in 2022.

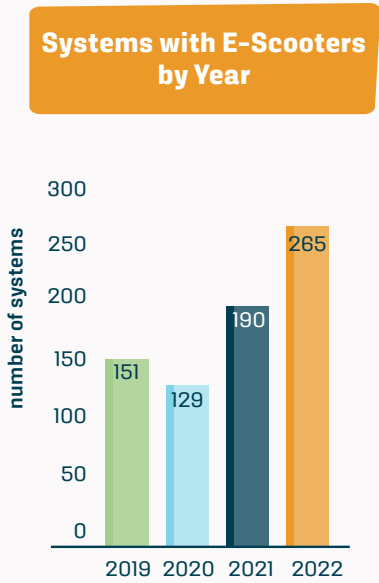
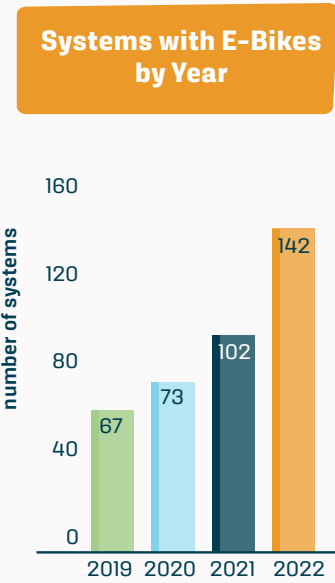
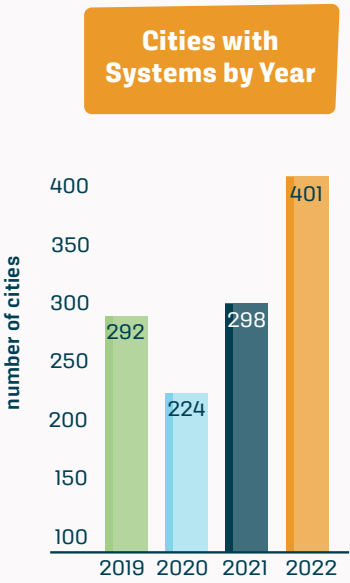
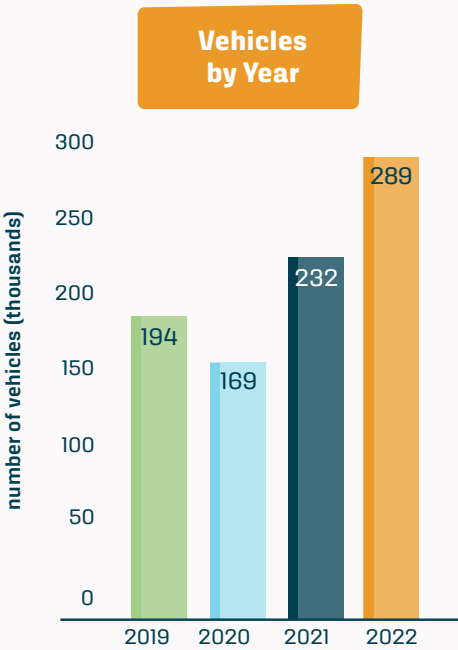
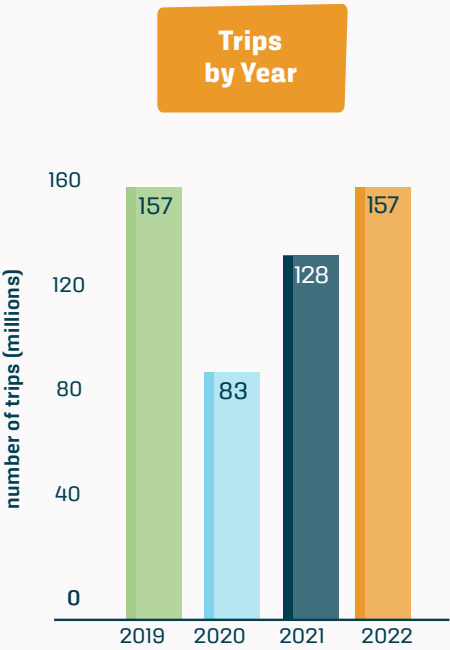
North American Cities with Shared Micromobility Systems, Shown by Population Size



*Definitions for these terms are included in the Methodology section.

Year Over Year Trends

Shared micromobility trips have returned to pre-pandemic levels, and the number of vehicles and cities with shared micromobility systems has increased significantly compared to all previous years. The number of systems with e-devices (e-bikes and/or e-scooters) continues to increase, reflecting industry trends toward electrification.



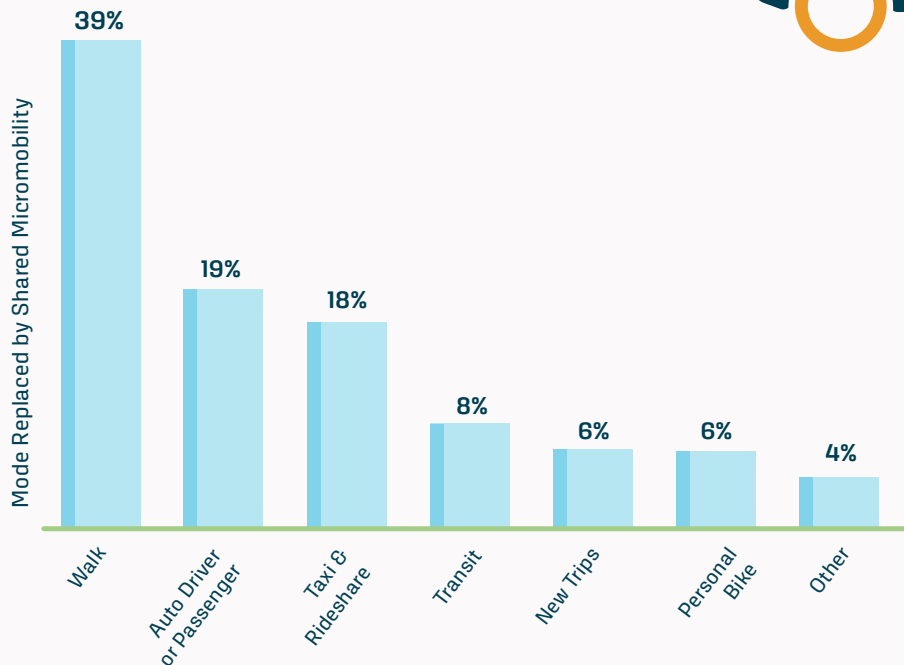
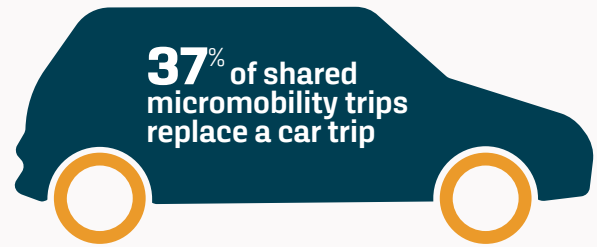


Why Shared Micromobility?

Shared Micromobility for Climate Action

Transportation Options

User surveys show that shared micromobility is used in place of a variety of modes, and that 6% of trips are new trips that would not have been taken otherwise.



Recent research from the University of Oklahoma found that **bikeshare can lower daily vehicle miles traveled per capita in urbanized areas by 1.46 miles**, and the effect is likely greater in cities that offer both bikeshare and scootershare.*

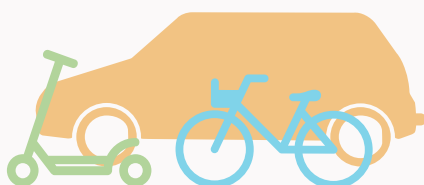
Reduced Greenhouse Gas Emissions

Riding shared micromobility produces considerably fewer greenhouse gas emissions than driving an automobile.

The US National Renewable Energy Laboratory found that at peak adoption, shared micromobility can save the equivalent of **2.3 billion gallons of gasoline** per year nationwide.*



In 2022, shared micromobility trips offset approximately **74 million pounds of CO₂ emissions (34 million kg)** by replacing auto trips.†



* See Methodology page for study information.

† These reduction factors do not take into account operations, externalities, or lifecycle costs for shared micromobility or for driving, as data for these calculations was unavailable.

Benefits of Shared Micromobility

Shared micromobility continues to provide a variety of benefits, employing thousands of people, improving access to jobs, and increasing physical activity. This is supported by trip purpose data compiled from user surveys in cities with shared micromobility.

Benefits to the Community



Environmental benefits



Personal health / exercise benefits



Increased travel options



Reduce traffic or time driving

Why People Ride

25%

Work or school

33%

Social activities, entertainment and dining out

15%

Shopping, errands, and appointments

27%

Exercise and recreation



Job Access

A study from New Urban Mobility Alliance and Transport for Cairo of four diverse global cities found that **shared micromobility can provide access to jobs that is competitive with cars for shorter trips (<15 minutes)**, and can match job access by cars for longer trips (30, 45 and 60 minutes) if a robust public transportation network is available.*

Physical Activity & Exercise



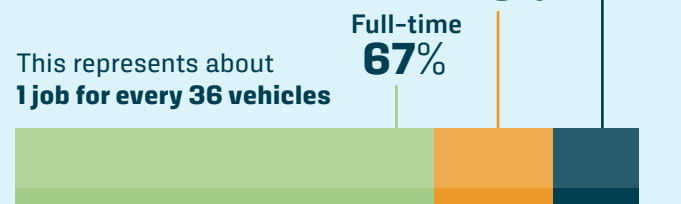
North Americans gained almost

18.7 million hours

of additional physical activity

through shared micromobility creating new trips and replacing motorized trips.

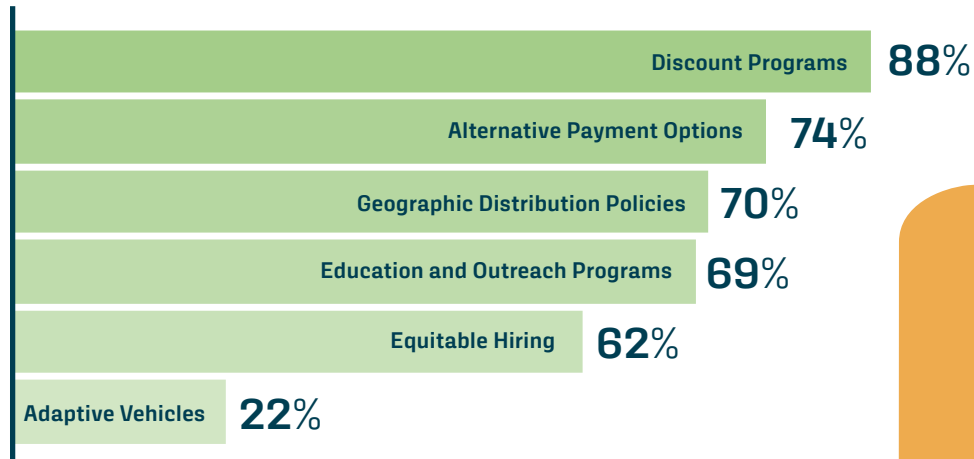
It is estimated that shared micromobility employs at least: 8,100 people



* See Methodology page for study information.

Transportation Equity

While shared micromobility systems continued to offer a range of programs to advance equity, the influx of new systems that have yet to establish equity programs meant that there was a small decrease from 2021 to 2022 in the percentage of bikeshare and scootershare systems that offered certain equity programs.



A University of Oregon study of 239 shared micromobility programs across the United States found that **62% of programs had requirements related to equity.***

Research is ongoing on the most effective equity programs, but the most common include **smart-phone alternative access, cash payment options, and a reduced fare option.**

Agencies and operators reported lower participation in NABSA's Workforce Diversity Toolkit initiatives:

- 77%** stated that diversity is part of every hiring conversation.
- 68%** reported that their staff have completed cultural competency or diversity training.
- 67%** reported that women and people of color are represented at all levels of their organization.
 - 18%** of leaders of companies or departments overseeing shared micromobility identify as Black or Indigenous, or as a person of color;
 - 32%** of leaders identify as female or non-binary.
- 56%** reported that staff is representative of the populations being served.

Shared micromobility providers continued to offer heavily discounted access for low-income and other qualified individuals.



* See Methodology page for study information.

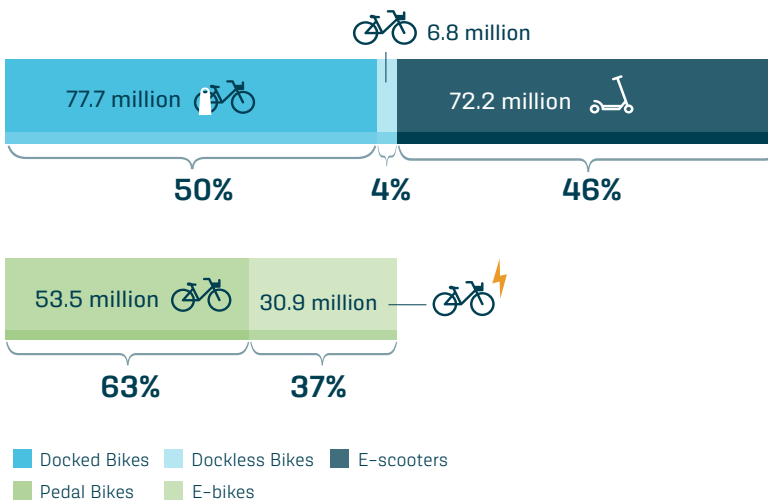


Shared Micromobility by the Numbers

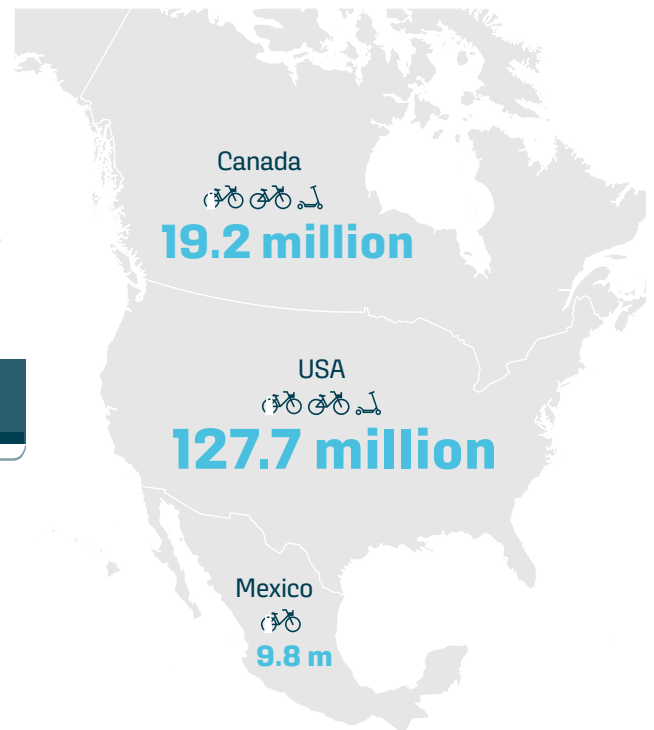
Comparison of Trip Trends

North Americans took an estimated 157 million trips on shared micromobility vehicles in 2022. This is approximately 23% more trips than the total taken during 2021, and equal to trip-making in 2019. Like 2021, e-scooters accounted for almost half of all trips. Pedal bike trips increased 14% from 2021, and e-bike trips grew 64% from 2021.

157 Million Trips Across North America in 2022



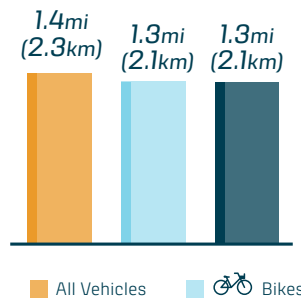
Country-by-Country Shared Micromobility Trip Breakdown



The average shared micromobility vehicle was used for 1.5 trips per vehicle per service day. The average trip length was 1.4 miles (2.3 kilometers) long, unchanged from 2021. The average trip duration was slightly shorter than in 2021, reducing from 15 to 14.1 minutes. These numbers are based on aggregate data; individual cities will have variation based on local conditions.

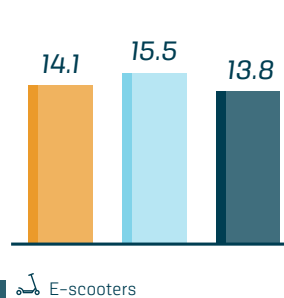
1.4 miles (2.3 km) per trip

Average trip distance



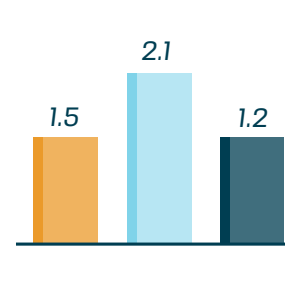
14.1 minutes per trip

Average trip duration



1.5 trips/vehicle/day

Average utilization per deployed service day

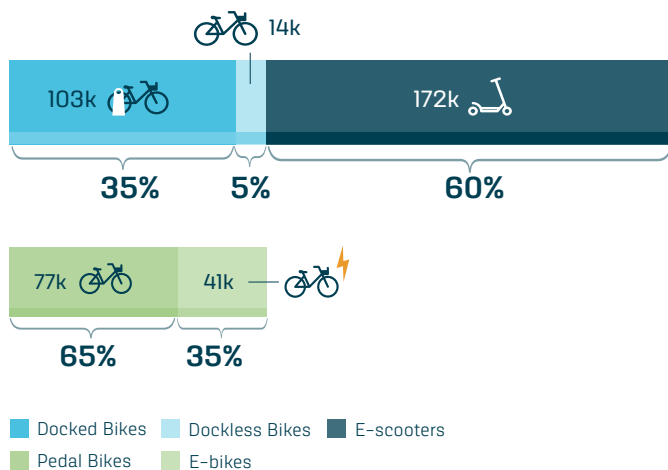


Comparison of Vehicle Trends

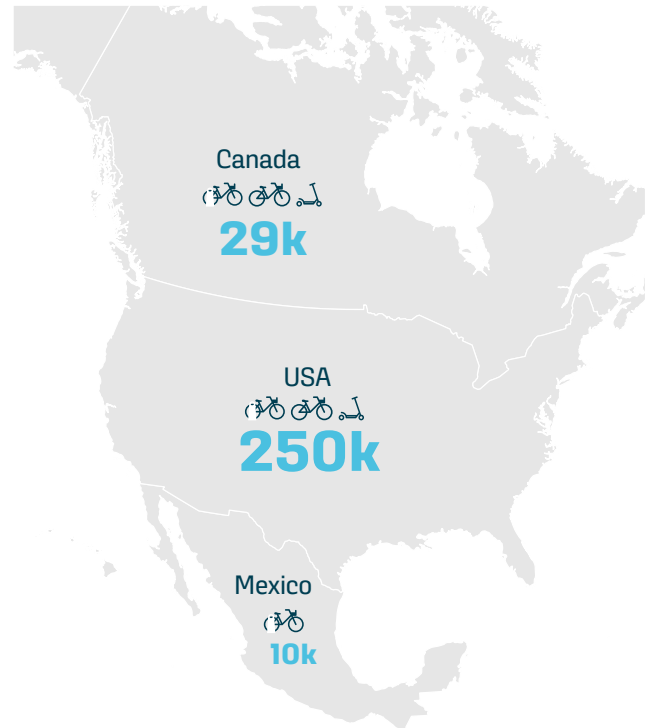
North Americans had access to an estimated 289 thousand shared micromobility vehicles in 2022. This was approximately 25% higher than in 2021. The number of e-scooters increased by 28% from 2022, and now represents 60% of the fleet. The number of bikes increased by 34%, and the share of e-bikes is now over one-third of the bikeshare fleet.

289 Thousand Vehicles

Deployed Across North America on an average day in 2022

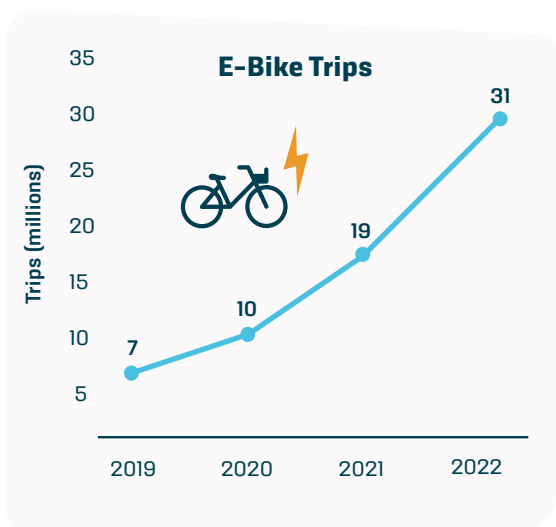


Country-by-Country Shared Micromobility Vehicle Breakdown



Electrification Trends

Electrified shared micromobility fleets are growing in popularity and usage.



Despite the COVID-19 pandemic, e-bike trips continued to increase over time.

The number of e-bikes increased by **71%** from 2021, and the number of e-scooters grew by **28%**.

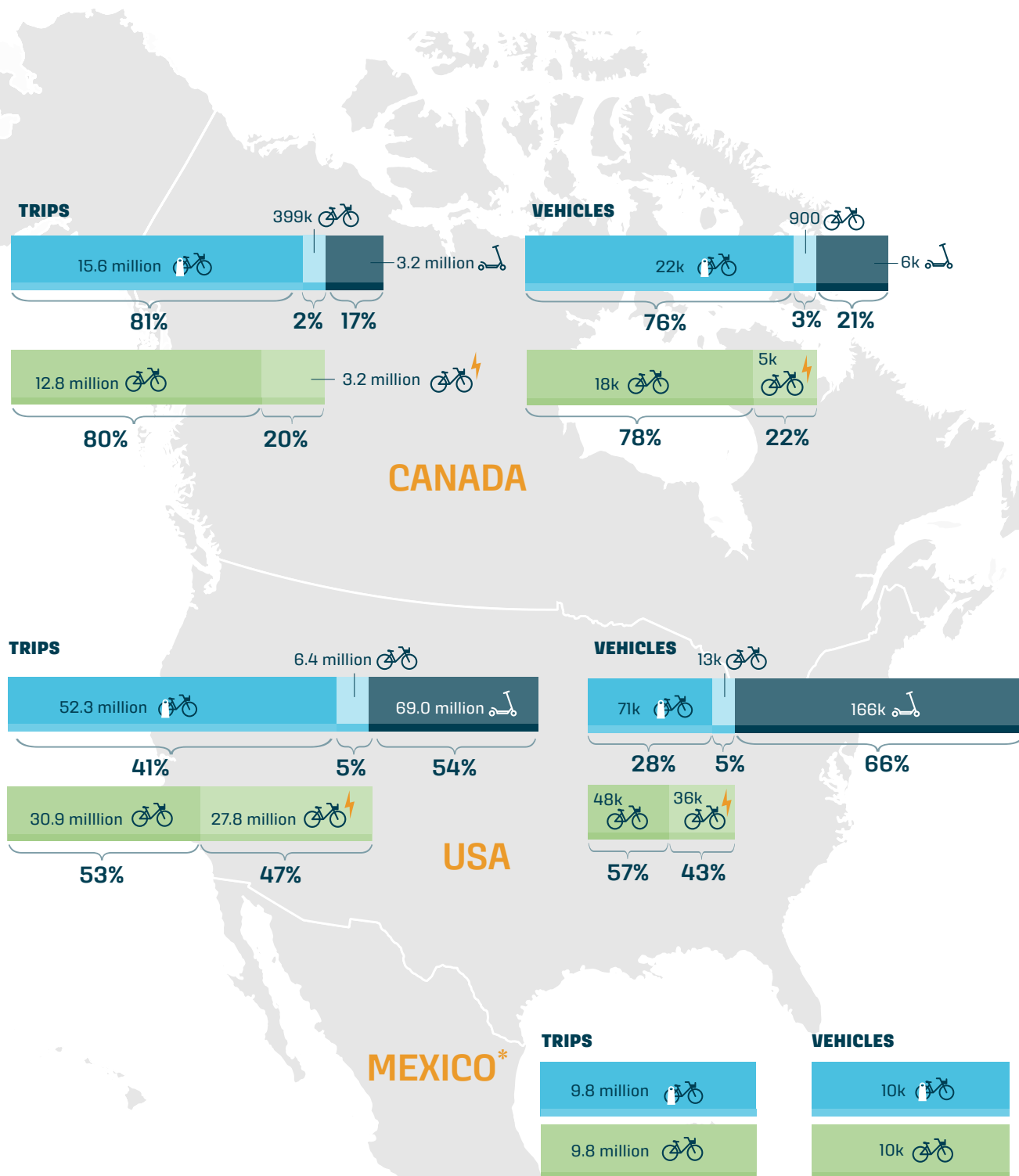
E-bikes were ridden approximately **56%** more than pedal bikes in systems that have both.

E-scooters recorded **10 million** more trips in 2022 compared to 2021.

E-bikes are ridden further than pedal bikes, with an average trip distance of **1.9 miles (3.1 km)** compared to **1.4 miles (2.3 km)** for pedal bikes.

Country-by-Country Breakdown of Trips and Vehicles

This page provides a detailed breakdown of trips and vehicles in Canada, the United States, and Mexico.



■ Docked Bikes
 ■ Dockless Bikes
 ■ E-scooters
■ Pedal Bikes
 ■ E-bikes

* All known systems in Mexico are docked fleets of pedal bikes.

System Statistics by City Size

Shared micromobility systems have different operating characteristics in cities of different sizes. The number of systems, average vehicle counts, system densities, utilization, and the median number of operators for small-, medium-, and large-sized cities are shown below.

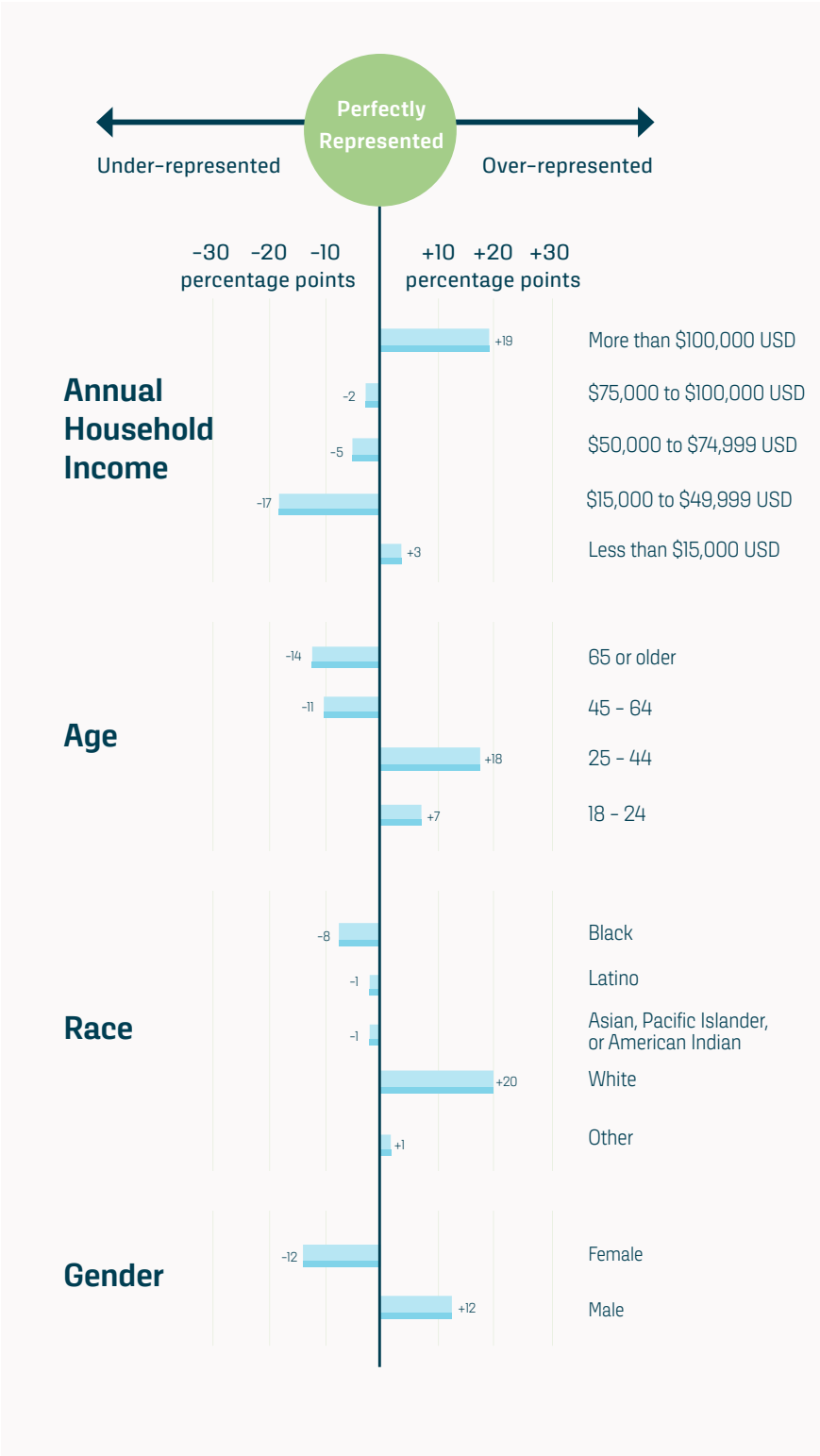


Small cities saw a large increase in the number of systems, vehicles per system, and vehicles per capita compared to 2021.

Bikeshare and scootershare densities were lower in large cities, but utilization was higher.

Larger cities continued to have more shared micromobility operators than small and medium cities.

Who Uses Shared Micromobility?



The chart shows the average number of percentage points by which shared micromobility users over- or under-represent local demographics. For example, if women represent 50% of the population of a particular city, but they represent only 40% of that city's shared micromobility users, then women are under-represented by 10 percentage points.

The following trends are noted:

- **Income:** the highest income earners continued to be highly over-represented in 2022; the lowest earners were also over-represented; low-to-middle incomes were the most under-represented in 2022.
- **Age:** the 18-24 and 25-44 year age brackets continued to be over-represented; older adults were still under-represented.
- **Race:** People of Color were slightly better represented in 2022; however White populations were still substantially over-represented.
- **Gender:** female participation continued to be under-represented.

Shared micromobility user demographics in 2022 were consistent with 2021.

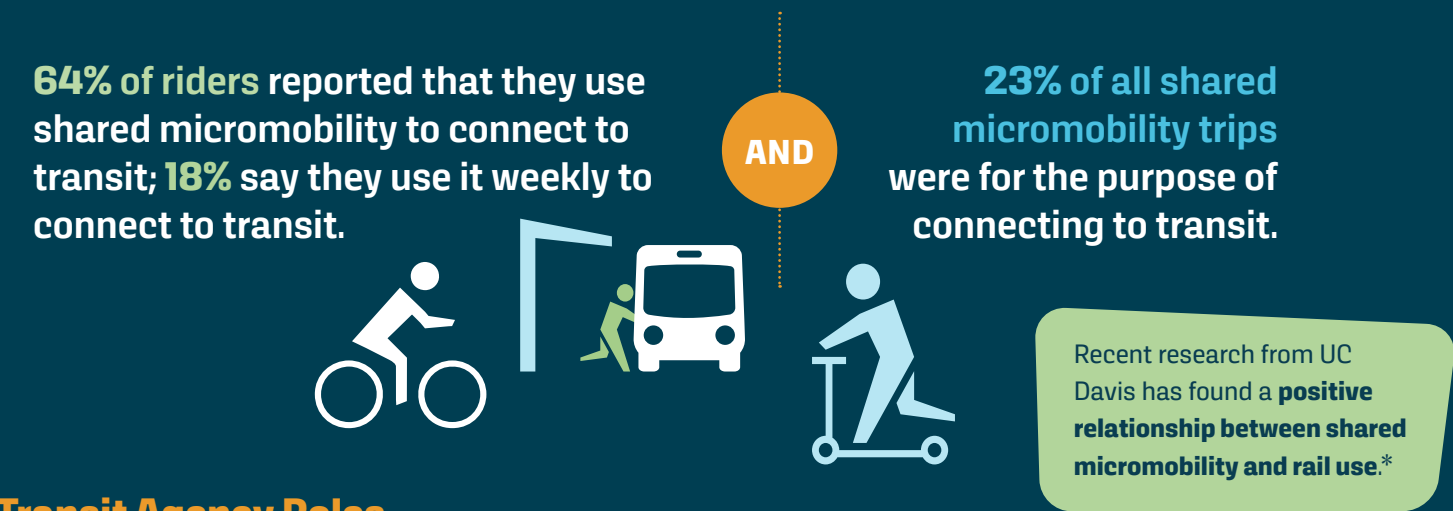
*Since data was unavailable, people under 18 years old were omitted from the analysis, as were nonbinary and other genders not counted in the Census.



Shared Micromobility as Transportation

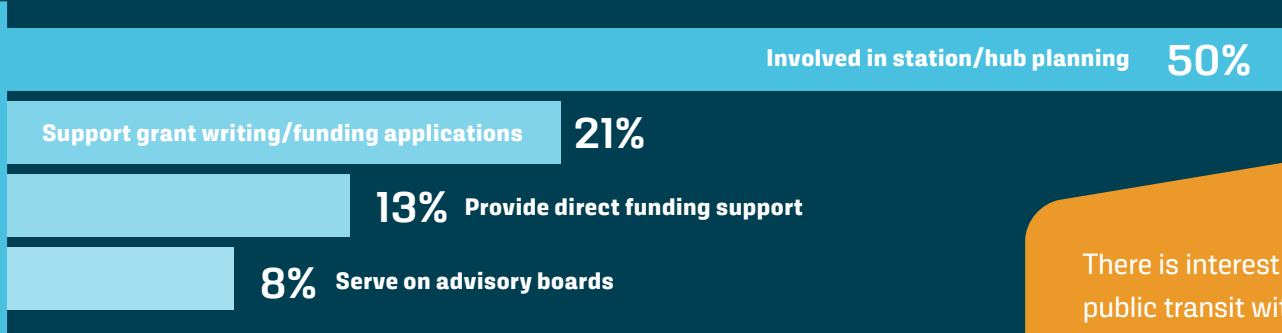
Connections to Transit

Shared micromobility is part of the public transportation ecosystem. As a flexible transportation option with comparatively low overhead and operating costs, shared micromobility can complement higher-volume fixed-route transit services and offer mobility services for many trips at a lower per-traveler cost. Below is a summary of shared micromobility's effectiveness as a public transportation option and how it complements other forms of public transportation.



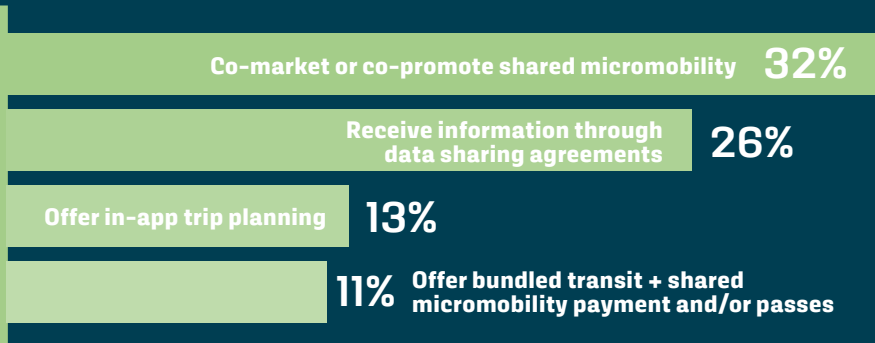
Transit Agency Roles

Transit agencies are playing an active role in shared micromobility. Agencies responding to NABSA's survey showed the following involvement from local transit agencies:




Transit Integration

Some of the ways that transit agencies are integrating with shared micromobility include the following:



There is interest in integrating public transit with shared micromobility. Global research from the University of St. Gallen found that riders would be willing to pay an average of **22%** more for a monthly transit pass that includes shared micromobility, and **25%** more for a single transit ticket that includes 10 minutes of shared micromobility use.*

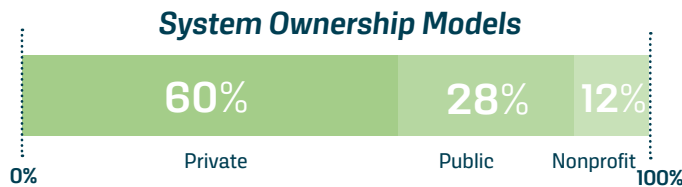


* See Methodology page for study information.

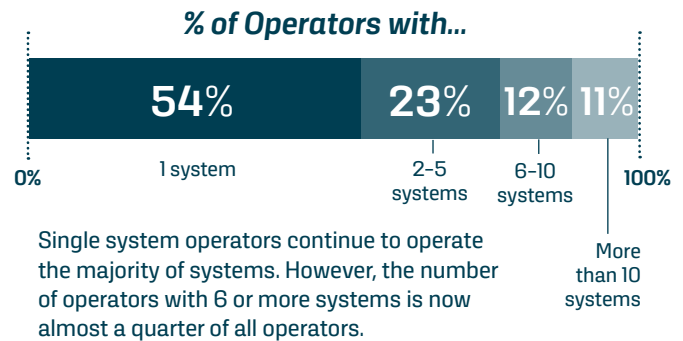
Operating Characteristics

The way that shared micromobility operates continues to evolve. This page shows a 2022 snapshot of system ownership models, the range of sizes of operators, as well as an overview of agency-related shared micromobility revenues and operator costs based on responses to NABSA's survey.

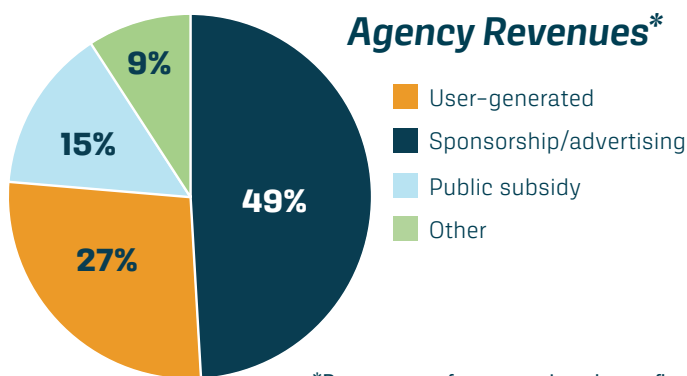
There were **55** active operators in 2022, a 13% decrease from 2021.



The number of public and nonprofit systems represented 40% of systems, a slight decrease from 2021. Private systems, including those operated under an agency permit, represented 60% of systems, a slight increase compared to 2021.



Single system operators continue to operate the majority of systems. However, the number of operators with 6 or more systems is now almost a quarter of all operators.

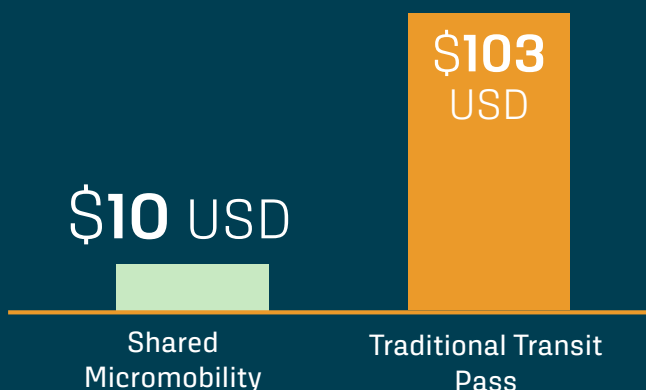


*Revenues are from agencies who are financially responsible for their shared micromobility system. See Methodology page for more information.

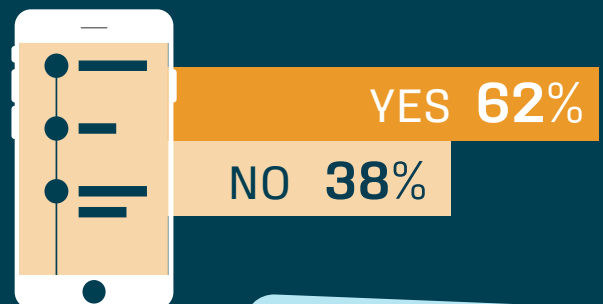
Operators identified their Top 3 program costs as:

- 1 Rebalancing and recharging
- 2 Vehicle maintenance and repair
- 3 Other overhead (insurance, credit card processing fees, etc.)

Monthly Cost to Users



Does your agency require GBFS feeds from operators?



While the percentage of agencies requiring GBFS is lower than 2021, this reflects the influx of new cities with shared micromobility programs that are not yet requiring datafeeds.

Shared Micromobility in Policy



In Canada, **11/13 provinces** codify e-bikes for use in the right of way.

----> that's **84%** (no change from 2021)

In the U.S., **50/50 states** codify e-bikes for use in the right of way.

----> that's **100%** (no change from 2021)



In Canada, **7/13 provinces** codify e-scooters for use in the right of way (all pilot programs).

----> that's **54%** (+4 provinces since 2021)

In the U.S., **36/50 states** codify e-scooters for use in the right of way

----> that's **72%** (+2 states since 2021)

State Benefits and Subsidies:

Although the United States Inflation Reduction Act of 2022 did not include commuter benefits for shared micromobility, subsidies and tax benefits are still being pursued on a state level in the U.S.



Colorado passed the Alternative Transportation Option Tax Credit, **a refundable income tax credit for employers** who provide alternative transportation options including shared micromobility to their employees.



Massachusetts is considering a bill that would allow individuals to **deduct bikeshare membership fees over \$50 USD** from their taxable income.



California's Clean Cars 4 All Program allows residents to trade their gas cars for vouchers and expanded in 2019 to include **bikeshare vouchers worth up to \$7,500 USD**.



Shared micromobility and active transportation infrastructure support each other

Protected and connected on-street infrastructure for micromobility improves safety and leads to higher ridership. A FHWA study of five US cities found that **bicycle collisions are reduced after the installation of separated bike lanes**.*

Across North America, studies show that adding protected bike lanes significantly increases ridership, with rates ranging from **21% to 171%***.

Trip data from shared micromobility operators can be used to measure the impact of active transportation infrastructure upgrades.



* See Methodology page for study information.

Industry Innovation

In 2022, the shared micromobility industry saw new innovations in technologies, equity initiatives, and a focus on electrification and sustainable operations. Trends and highlights from operators who responded to NABSA's survey included:



Multiple operators added e-bikes to their fleets or transitioned to an **all-electric fleet**. Systems also **electrified stations**, which allow for more convenient and cost-effective vehicle charging.



Fleet rebalancing using **e-trikes and e-vans** reduced the need for gas-powered vehicles, and **upgraded lithium batteries** for docks increased station up-time and lifespan.



Innovative equity initiatives included free access to transportation for **women who are the heads of low-income households**, and re-purposing pedal bikes no longer used in converted e-bikeshare programs into a **free bike loan program** for community organizations.

Rural Shared Micromobility

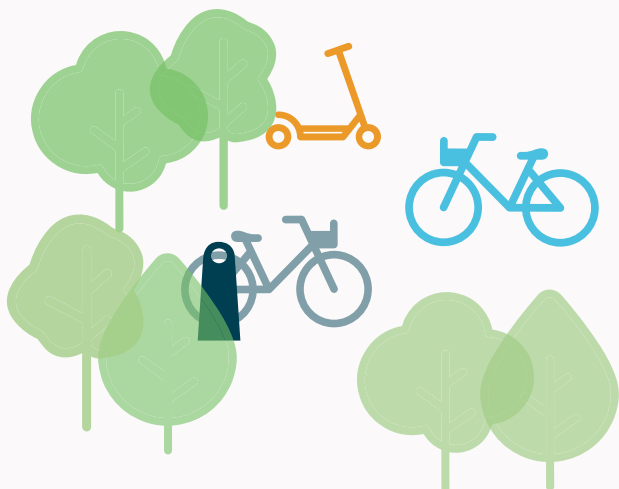
Shared micromobility is not just an urban amenity, it also provides meaningful benefits to rural communities. Systems in rural settings are often regional and connect more than one city, town, or county to the same network. This benefits communities by spurring economic development, connecting people in rural locations to urban centers, increasing access to local and state park nature trails, providing access to bikes and particularly e-bikes, and adding vibrancy, quality of life, and a fun way to engage with the community.

North Central Kansas: KANcycle

KANcycle's slogan is "bike sharing for rural Kansas!" The system currently includes eight communities, with the goal of building a statewide rural network. As part of transportation services and programs offered by the Occupational Center of Central Kansas, KANcycle is integrated into the Transit app to encourage mode shift away from cars for short trips.

Meadville, PA: CATA Bike Share

The Crawford Area Transportation Authority (CATA) formed a nonprofit organization to bring bikeshare to Meadville, a rural community in Pennsylvania. Now in its third year, the program's 30 bikes provide access to several natural trails in the area as well as the local college and downtown Meadville. CATA hopes to expand to 200 bikes in five rural communities in Crawford and Venango counties.

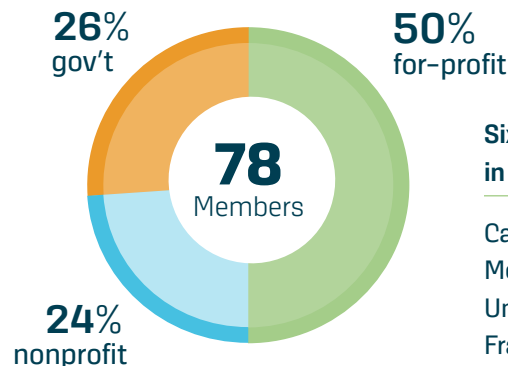


Sarpy County, NE: Heartland Bike Share

Heartland Bike Share has more than 90 bikeshare stations throughout the Omaha Metro region, including six stations located in rural Sarpy County, Nebraska. All six Sarpy County stations consistently rank in the top 12 utilized stations in the system. Heartland Bike Share is operated by the nonprofit ROAM, who also operates a bikeshare station in rural Valentine, Nebraska that connects people from downtown to a pedestrian bridge that is only accessible by foot or bike.

How NABSA Supports the Industry

The North American Bikeshare & Scootershare Association (NABSA) collaborates across sectors to grow shared micromobility and its benefits to communities, creating a more equitable and sustainable transportation ecosystem. NABSA is a nonprofit organization dedicated to providing resources, education, and advocacy for the shared micromobility industry, and to creating spaces for the industry's public, private, and nonprofit sectors to convene and empower each other. In 2022, NABSA had 78 members from six countries.



Six Countries in 2022

Canada
Mexico
United States
France
Norway
United Kingdom

NABSA Highlights for 2022



227

NABSA Annual
Conference
attendees



586

Webinar
registrants



194

Bills tracked
affecting the
industry



330

Knowledge
Share and
Member Center
users



3,240

Website sessions
per month by 2,175
average unique
users per month



4,224

Followers and
subscribers

Methodology

Survey Tools

Primary data for this report was collected through two surveys: an Operator Survey and an Agency Survey. The Surveys were distributed to all known shared micromobility operators and agencies and included questions about the attributes of shared micromobility systems operating within those agency jurisdictions and operator markets.

The word operator refers to a company or organization responsible for day-to-day operations of one or more shared micromobility systems. The word agency refers to a public agency responsible for oversight of one or more shared micromobility systems in their jurisdiction.

Page 1 – Shared Micromobility in North America

Population data sources for the map include:

- The US American Community Survey 5-Year Estimates, 2017-2021
- The 2021 Canadian Census of Population
- Mexico's Population and Housing Census 2020

System data was derived from an internal database of all known shared micromobility systems in North America that is maintained and updated by NABSA.

The word “cities” is used to denote local jurisdictions or municipalities throughout this report. On occasion, the word cities is used as a catch-all that may include metro regions or counties in which shared micromobility systems operate; when this happens, the geography will be specified in the text and/or the methodology section.

A “system” is defined as at least 3 stations or 20 dockless devices that are not on a closed campus. In addition, systems are automated with a back-end management software.

A “hybrid system” is defined as a system that uses branded stations or hubs and that also allows some degree of free-floating use of devices outside of branded stations.

Page 2 – Year-over-Year Trends

Year-over-year trend data was based on data collected from the Agency and Operator Surveys from 2019-2022.

Page 4 – Shared Micromobility for Climate Action

Mode Replacement

Mode replacement statistics (for all modes) were calculated as averages of published survey data collected in 15 systems or cities between 2019 and 2022: Alexandria, Arlington, Bird (national data), Calgary, Chicago, Hoboken, Lincoln, Los Angeles, Norfolk, Oakland, Portland, San Antonio, Santa Monica, Seattle, and Tucson. “Other” modes include other shared micromobility, personal e-scooters, and non-identified “other” options.

The statistic on VMT reduction per capita is reported directly from *Can shared micromobility replace auto travel? Evidence from the US urbanized areas between 2012 and 2019* (Choi et al, 2023). Available at <https://doi.org/10.1080/15568318.2023.2179444>

Reduced Greenhouse Gas Emissions

Reduction in total Greenhouse Gas (GHG) emissions was calculated based on taxi, rideshare, and auto driver/passenger trip replacement; an estimate of total trips taken on shared micromobility modes; and average trip distance calculated from responses to the Operator and Agency Surveys. Reduction factors do not take into account externalities, operations, or lifecycle costs for shared micromobility or for driving.

The statistic on gasoline gallons saved by peak shared micromobility adoption is reported directly from *Estimating energy bounds for adoption of shared micromobility* (Sun et al, 2021). Available at: <https://doi.org/10.1016/j.trd.2021.103012>.

By replacing auto trips, shared micromobility trips reduced GHG emissions from vehicles by 100% for pedal bikes, 97% for e-bikes, and 98% for e-scooters. The GHG emission factors for e-bikes and e-scooters were calculated based on energy factors from the following sources: *Electric Two-Wheelers in China: Analysis of Environmental, Safety, and Mobility Impacts* (Cherry 2007) and *The Environmental Impacts of Shared Dockless Electric Scooters* (Hollingsworth et al 2019); and average US Grid emission factors were obtained from the *US EPA eGrid2018 Database* (EPA, 2020). The automobile emission factor was taken from the *US EPA Memorandum on GHG Emissions from a Typical Passenger Vehicle* (EPA, 2018).

Page 5 – Benefits of Shared Micromobility

Why People Ride

Trip purpose statistics (for all modes) were calculated as averages of published survey data collected in 14 systems or cities between 2019 and 2022: Alexandria, Arlington, Baltimore, Bird (national data), Calgary, Chicago, Honolulu, Lincoln, Milwaukee, Ottawa, Pittsburgh, Santa Monica, Somerville, and Tucson.

Health Benefits

This information was based on data from the following research: *Health Impacts of Bike-Sharing Systems in the U.S.* (Clockstone and Rojas-Rueda, 2021). Available at <https://doi.org/10.1016/j.envres.2021.111709>

Job Access

This information was based on data from the report *All Possible Commutes: How Micromobility and Realistic Car Travel Times Impact Accessibility Analyses* (New Urban Mobility Alliance and Transport for Cairo, 2023). Available at: <https://www.numo.global/resources/all-possible-commutes-accessibility-analysis-micromobility-paper>.

Shared Micromobility Job Estimates

Employment statistics were calculated from responses to the Agency and Operator Surveys. However, the sample was limited in size and coverage. Industry employment was estimated from the aggregate number of vehicles and applying average employment rates observed in the sample.

Physical Activity

Reported physical activity statistics were calculated from shared micromobility trips replacing taxi, rideshare, auto driver or auto passenger, transit, and new trips and applying the average trip duration calculated from responses to the Operator and Agency Surveys.

Research citations for the benefits of light physical activity include: *Association of Light Physical Activity Measured by Accelerometry and Incidence of Coronary Heart Disease and Cardiovascular Disease in Older Women* (LaCroix et al 2019), and *Dose-Response Associations Between Accelerometry Measured Physical Activity and Sedentary Time and All Cause Mortality: Systematic Review and Harmonised Meta-Analysis* (Ekelund et al 2019).

E-bike riders use about 76 percent of the energy expenditure of pedal-bike riders. Riding an e-bike provides moderate metabolic activity on flat segments (metabolic equivalent of task [MET] of 3) and vigorous activity on uphill (MET of 6). This is based on the research in *Comparing Physical Activity of Pedal-Assist Electric Bikes with Walking and Conventional Bicycles* (Langford et al 2017).

E-scooters provide light physical activity (MET of 2.5). This is based on the research in *Evaluating the Physical Activity Impacts of Riding Electric Kick Scooters* (poster session presented at the 2019 Conference on Health and Active Transportation, Washington D.C; Wen et al 2019).

Page 6 – Transportation Equity

The distribution and median number of equity programs were calculated from responses to the Agency and Operator Surveys. Equity program categories are adapted from *Evaluating Efforts to Improve the Equity of Bikeshare Systems* (McNeil, MacArthur, Dill, and Broach, 2019).

The statistics on number of programs that include equity requirements were directly reported from *Mobility for the People: Evaluating Equity Requirements in Shared Micromobility Programs* (Brown, Howell, and Creger, 2022). Available at: <https://nitc.trec.pdx.edu/research/project/1401>

Annual costs were calculated as averages based on publicly available data for the full and discounted prices of annual, monthly, or weekly passes or subscription costs for shared micromobility systems in the following cities: Atlanta, Austin, Boston, Boulder, Chicago, Cincinnati, Detroit, Fort Worth, Honolulu, Indianapolis, Los Angeles, Milwaukee, Minneapolis, New York, Philadelphia, Portland, San Francisco, St Petersburg, Tampa, Vancouver, BC, and Washington D.C.

All other statistics were calculated from responses to the Agency and Operator Surveys.

Page 8 – Comparison of Trip Trends

Trip data was obtained from responses to the Agency and Operator Surveys and supplemented by online data. Some data for smaller systems was unavailable and supplemented by online data.

Reported overall utilization rates were calculated from aggregate industry-level data. Duration and distance statistics were calculated from trip-weighted Operator Survey responses. It is noted that docked bikeshare and bikeshare not fitted with GPS uses only point-to-point data and may result in data showing shorter trip lengths.

Page 9– Comparison of Vehicle Trends

Vehicle data was obtained from responses to the Agency and Operator Surveys and supplemented by online data. Unavailable and missing data was estimated based on that system's number of trips and the calculated utilization rate and average number of service days for the technology type as estimated from the Agency Survey responses. Systems reported as hybrid systems were classified into either docked or dockless systems based on their technology type and operating characteristics.

The e-bike and pedal bike system statistics were calculated from NABSA's shared micromobility system database and utilization comparisons were calculated from system average utilization rates.

Page 10 – County-by-Country Breakdown of Trips and Vehicles

Vehicle and trip data is a subset and calculated using the same methodology described for pages 8 and 9.

Page 11 – System Statistics by City Size

The number of systems was derived from NABSA's shared micromobility system database. All other statistics were calculated as averages of system data collected from the Agency and Operator Surveys; city population and size were drawn from the 2017-2021 American Community Survey 5-Year Estimates, the U.S. Census Bureau, Mexico's Population and Housing Census 2020, and Canada's 2021 Census of Population.

Page 12 – Who Uses Shared Micromobility

These statistics were calculated based on a comparison of the demographics of shared micromobility users (as reported by a selection of cities conducting their own user surveys) and the equivalent demographic data for those cities from the 2021 American Community Survey (ACS). User survey data from 2019 to 2022 collected in the following cities was used in this analysis: Alexandria, Aspen, Atlanta, Baltimore, Boston, Cambridge, Chicago, Dayton, Denver, Honolulu, Ithaca, Jersey City, Lincoln, Los Angeles, Miami, Milwaukee, Minneapolis, New York, Norfolk, Oakland, Ottawa, Philadelphia, Phoenix, Pittsburgh, Portland, Quebec, Salt Lake City, San Antonio, San Diego, San Francisco, San Jose, Santa Monica, Seattle, Somerville, Tampa, Toronto, and Washington D.C. Not all cities reported in all categories. Over-/under-

representation for each demographic is an average of the over-/under-representation for each city. People under 18 years old were omitted from the analysis, as were non-binary and other genders not counted in the Census since data was unavailable.

Page 14 – Connections to Transit

Usage and connection to transit statistics were calculated from responses to the Operator and Agency Surveys.

The relationship between shared micromobility and rail was reported directly from *Micromobility Trip Characteristics, Transit Connections, and COVID-19 Effects* (Fukushige et al, 2022). Available at: <https://doi.org/10.7922/G2639NIX>

Transit agency role and integration statistics were calculated from responses to the Agency Survey. The statistics on public interest in integrating transit with shared micromobility were taken directly from *Putting Micromobility at the Center of Urban Mobility* (Lang et al, 2022). Available at: <https://www.bcg.com/publications/2022/the-future-of-urban-mobility>

Page 15 – Operating Characteristics

Ownership model statistics and the reported number of systems per operator is based on an internal database of all known shared micromobility systems in North America that is maintained and updated by NABSA.

Reported agency data requirements were calculated from Agency Survey responses.

Monthly user cost was calculated as an average of publicly available data on the cost of monthly passes for shared micromobility and transit systems in the following cities: Atlanta, Austin, Boston, Boulder, Chicago, Cincinnati, Detroit, Fort Worth, Honolulu, Indianapolis, Los Angeles, Milwaukee, Minneapolis, New York, Philadelphia, Portland, San Francisco, St Petersburg, Tampa, Vancouver, BC, and Washington D.C. These cities were chosen as a sample of different geographies and system types.

Average agency revenues were calculated based on 23 Agency Survey responses from agencies who are financially responsible for shared micromobility systems. User-generated revenue includes revenues generated from usage fees, membership fees, trip fees, or other fees charged to users of the program; Sponsorship/advertising revenue includes revenues generated from advertising contracts, sponsorship agreements, and donations; Public subsidy revenue includes funds provided from grants, local, regional, or state budgets, or from public agency partners; and Other revenue includes any revenue not defined in other categories.

Page 16 – Shared Micromobility in Policy

E-bike and e-scooter codification statistics are based on a review of provincial and state regulations governing vehicles and their use in the public right-of-way.

The statistic on bicycle collision reduction is from the report *Developing Crash Modification Factors for Separated Bicycle Lanes* (Dixon et al, 2023), Available at: <https://highways.dot.gov/sites/fhwa.dot.gov/files/FHWA-HRT-23-025.pdf>

The statistic on ridership increases is from the report *Equitable bike share means building better places for people to ride* (National Association of City Transportation Officials, 2016). Available at: <https://nacto.org/equitable-bike-share-means-building-better-places-for-people-to-ride>

Page 17 – Industry Innovation and Rural Shared Micromobility

Industry innovation examples were taken from responses to the Operator Survey. Case studies in rural shared micromobility were drawn from research conducted by NABSA.

Page 18 – How NABSA Supports the Industry

These statistics were drawn from data recorded by NABSA.

Acknowledgments

The North American Bikeshare & Scootershare Association (NABSA) collaborates across sectors to grow shared micromobility and its benefits to communities, creating a more equitable and sustainable transportation ecosystem. NABSA is a nonprofit organization dedicated to providing resources, education, and advocacy for the shared micromobility industry, and to creating spaces for the industry's public, private, and nonprofit sectors to convene and empower each other.

North American Bikeshare and Scootershare Association (NABSA) (2022):

4th Annual Shared Micromobility State of the Industry Report.

<https://doi.org/10.7922/G20R9MRM>



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