Shared Micromobility and Equity

What is micromobility?

The Federal Highway Administration (FHWA) is advancing research on the rapidly evolving field of micromobility. FHWA defines micromobility as:

> *Any small, low-speed, human or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles (e-bikes), electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.*

Micromobility and active transportation are healthy forms of physical activity and low-carbon alternatives to other modes of travel. Electric propelled devices such as e-bikes and e-scooters have become increasingly available due to recent innovations in low-cost batteries and related technology, and their use has grown rapidly in popularity with people of all ages and abilities. According to the National Association of City Transportation Officials, travelers took 136 million shared micromobility trips in 2019, representing a 60 percent increase from 2018.

Over this period, the ownership of privately owned micromobility devices (particularly e-scooters) has increased. However, the recent proliferation of devices in municipalities is primarily due to deployments of bikeshare and e-scooter fleets by private operators of shared micromobility systems in coordination with local jurisdictions.

What is shared micromobility?

Shared micromobility refers to fleets of micromobility devices that are available to the public for shared use. Operators deploy shared micromobility fleets in defined service areas to fully satisfy trips and to serve demand for short trips such as "first- and last-mile" connections to transit. Fleets are predominantly located in public rights-of-way such as on sidewalks or in public parking spaces. Devices may be stationed at a fixed dock or as "dockless" where operators set them up or where users leave them after a trip. Users typically unlock the devices using a smartphone application for on-demand access. FHWA's micromobility fact sheet provides a complete overview of shared micromobility including information on safety, regulation, ridership data, and mobility.

What is equity in transportation?

Equity refers to the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved and disadvantaged communities that have been denied such treatment.

Examples of these communities include Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders, and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural and urban areas; and persons otherwise adversely affected by persistent poverty or inequality.

Transportation equity seeks to achieve fairness in terms of providing mobility and access to meet the needs of all populations. A central goal of transportation is to facilitate social and economic opportunities by providing equitable levels of access to affordable and reliable transportation options based on the needs of the populations being served, particularly populations that are traditionally

underserved and disadvantaged. Figure 1 illustrates bicycle use by various individuals to highlight the distinction between equality and equity.

Figure 1. Image demonstrating the difference between equality and equity in transportation.

Source: Robert Wood Johnson Foundation, 2017

Shared micromobility devices can provide an affordable transportation option that is primarily or entirely free of tailpipe emissions. When used in lieu of motor vehicle trips, micromobility can help to curb the impacts of climate change and improve access and mobility for communities underserved by the existing transportation system. In order to achieve these goals and ensure that micromobility is used to complement existing transportation services, cities and municipalities are enacting equitable policies and programs to ensure that individuals have access to shared micromobility devices regardless of where they live, their income, race, or physical ability.

How can shared micromobility advance transportation equity?

Local governments and transportation providers, private micromobility operators, and community-based organizations can collaborate to incorporate equity considerations into shared micromobility programs. Infrastructure and operational strategies include piloting new program elements or requiring certain program elements as part of the local permitting processes. FHWA has identified ten areas of action that municipalities can pursue so that micromobility enhances equity:

1. **Create Safe Spaces for Micromobility Use** – Similarly to bicyclists and pedestrians, it is essential for an infrastructure network to be in place to make shared micromobility a viable and safe mode of travel. Many underserved and disadvantaged communities suffer from a lack of adequate infrastructure, which leads to unsafe conditions for shared micromobility. To enhance equity, it is essential for jurisdictions to invest in safe spaces for micromobility use, which can take the shape of off-street paths, bicycle lanes, or Complete Streets.

2. **Non-Digital Access and Options for Unbanked Individuals** – Most shared micromobility services are app-based, which inhibits access for individuals without smartphones or credit/debit cards. To ensure that these devices remain accessible to all, micromobility operators can provide additional payment options. These may be pre-paid cards, cash payment options, key fobs, and call centers to allow individuals to schedule rides.

3. **Discounted Fare Structures** – Shared micromobility device user fees place a higher cost burden on low-income populations, including students and youth. Permitting agencies may coordinate with shared micromobility operators to introduce discounted fee structures to ensure that devices are available to all. Operators identify and enroll eligible individuals in discounted fare programs, as is done for transit fare or other municipal fee discounts.

4. **Distribution of Micromobility Devices** – Shared micromobility operators rebalance—or relocate—devices daily to meet public demand at different times and locations. Micromobility operators can use this regular process to ensure that they rebalance devices to areas that are underserved or economically distressed. Permitting agencies could even require operators to rebalance a percentage of their fleet in specific areas based on sociodemographic information, or where the devices are needed to better connect users with transit, school, jobs, and other critical destinations.

Figure 2. E-scooters parked in a designated drop zone. Image courtesy of the city of Santa Monica.

5. **Adaptive Equipment** – In recent years, micromobility operators have begun to offer adaptive equipment for individuals with physical disabilities who may be unable to ride traditional stand-up scooters or bicycles. Adaptive devices can take the shape of seated scooters, recumbent bicycles, hand-pedaled cycles, powered cycles that attach to wheelchairs, and others. Permitting agencies could require adaptive equipment, and work with community disability advocacy groups to identify the best locations to assist people with disabilities, for example, in neighborhoods with schools or other civic and institutional facilities that serve people with disabilities. Integrating these devices into the broader shared micromobility system helps to build an inclusive transportation environment that meets the needs of all individuals regardless of ability.

6. **Multimodal Networks** – Multimodal transportation networks that are designed equitably can help provide safe and convenient access for all micromobility users. When designed with adequate facilities for their context—considering micromobility user volume and latent demand, and the presence, volume, and speed of other modes—transportation networks can help ensure all community members have safe and convenient access via micromobility. Transportation networks designed for all user types provide equitable access between neighborhoods, schools, jobs, transit, and other essential destinations, so that micromobility users are not penalized or made less safe when traveling to and from such places. This is especially important in communities that have populations with limited to no access to personal vehicles, and with infrequent and/or limited access to transit. These communities typically suffer from having large transportation gaps, which work to limit access to critical destinations. Particularly for accomplishing short trips or for addressing first-and-last mile gaps, such populations can benefit from having micromobility options, particularly when the transportation networks themselves are designed to accommodate all user types.

7. **Operational Characteristics** – Cities and jurisdictions have developed a set of requirements dictating how micromobility devices can operate. These strategies include establishing an operating area, specifying device speed, and indicating the data that micromobility operators provide to jurisdictions. Areas not intended for micromobility use can be geofenced off, and micromobility apps can prevent users from riding or parking devices in prohibited areas. This can be an effective strategy for preventing micromobility use in heavily trafficked pedestrian areas helping to mitigate modal conflict as well as removing obstructions for people with impaired vision.

8. **Local Hiring** – Shared micromobility operators may also integrate equity considerations into their hiring and training practices.[1] A number of micromobility operators have developed targets for hiring including partnering with local workforce organizations, paying staff above minimum wage, and hiring staff from underserved and disadvantaged communities. These practices ensure that micromobility operators are providing resources to contribute to equitable community development and supporting efforts to advance transportation equity.

9. **Public Transportation Partnerships** – Shared micromobility offers a potentially useful solution to the first-/last-mile problem by providing the public with improved connection to public transit options. Communities can coordinate with shared micromobility operators to target the placement of micromobility stations in proximity to transit stops in order to encourage multimodal connectivity in underserved areas.

10. **Continuous Evaluation and Monitoring** – Continuous monitoring is needed to holistically evaluate the effectiveness of shared micromobility programs and ensure that they are meeting programmatic goals. This process should examine whether shared micromobility programs are increasing access and mobility for underserved and disadvantaged communities and may rely on established performance metrics for a specified service area. This will help jurisdictions know whether equity goals are being met and where to target improvements.[2]

Case Studies

Portland, Oregon Requires Operators to Place Micromobility Devices in Traditionally Underserved Neighborhoods

Portland, Oregon began a shared electric scooter pilot in 2018 allowing several operators to provide a total of 2,500 shared e-scooters in the city. To ensure the devices would be available to traditionally underserved populations, Portland required each operator to deploy a minimum of 100 shared e-scooters, or 20 percent of the operator's fleet, in historically underserved "East Neighborhoods" as defined by the city of Portland's 2035 Comprehensive Plan. This policy is in alignment with Strategy 4: Distribution of Micromobility Devices and helped to encourage adoption in these communities and prevent them from being excluded from the program.

San Francisco Launches Adaptive E-Scooter Pilot Program

[1] Local hiring preferences may not be allowed on Federally-assisted projects without a SEP-14 exception or other program. FHWA recommends that you review this with your state's bike/ped contact if using Federal dollars.

[2] Title VI of the Civil Rights Act of 1964 and FHWA regulations and guidance provide that recipients must collect demographic data on beneficiaries and other impacted persons (23 CFR 200.9(b)(4)). Recipients must also conduct periodic reviews to ensure their programs and activities do not have a disparate impact (23 CFR 200.9(b)(5) and (7). Finally, the DOT Title VI Order provides that recipients must conduct public outreach in an equitable manner (DOT 1000.12C, pp. 12-14).

The San Francisco Municipal Transportation Agency (SFMTA) worked with three scooter operators to launch an adaptive micromobility pilot program in 2020, which made 50 adaptive scooters available to the public. The pilot delivered two-wheeled seated scooters and a three-wheeled seated device with a basket that were designed for riders who are unable to stand for the duration of the trips they would be taking and demonstrates the implementation of Strategy 5: Adaptive Equipment. Users were able to reserve devices ahead of time and had the option to pick them up from a selected location or have them delivered to a residence. SFMTA is continuing to work with the operators, using the results of the pilot program to further improve micromobility options for individuals with disabilities.

Chicago's Divvy for Everyone Program Expands Access to Micromobility Services for Low-Income Households

The Chicago Department of Transportation and city of Evanston developed the Divvy for Everyone program to offer residents affordable and accessible access to Divvy's shared micromobility devices, including both e-scooters and bicycles. The program provides a first-year annual membership fee of $5 to qualifying residents of Chicago and Evanston, aged 16 and older, who meet income eligibility thresholds and/or qualify for Federal and State assistance programs. Individuals can enroll online or at in-person centers and may pay with cash, credit, debit, or a prepaid card. The City completed an evaluation on its shared e-scooter pilot program and found that the locally established equity goals were largely met. This case study highlights Strategy 2: Non-Digital Access and Options for Unbanked Individuals and Strategy 3: Discounted Fare Structures.

Related Resources

Federal Highway Administration

- Micromobility: A Travel Mode Innovation
- Micromobility Fact Sheet
- U.S. DOT Micromobility Activities
- FHWA Micromobility Activities
- Pursuing Equity in Pedestrian and Bicycle Planning

Transportation for America

- Equity – Shared Micromobility Playbook

Portland State University Transportation Research and Education Center

- National Scan of Bike Share Equity Programs
- Evaluating Efforts to Improve the Equity of Bike Share Systems

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