Shared Micromobility in the Denver Region

Considerations for local agency implementation and regional consistency

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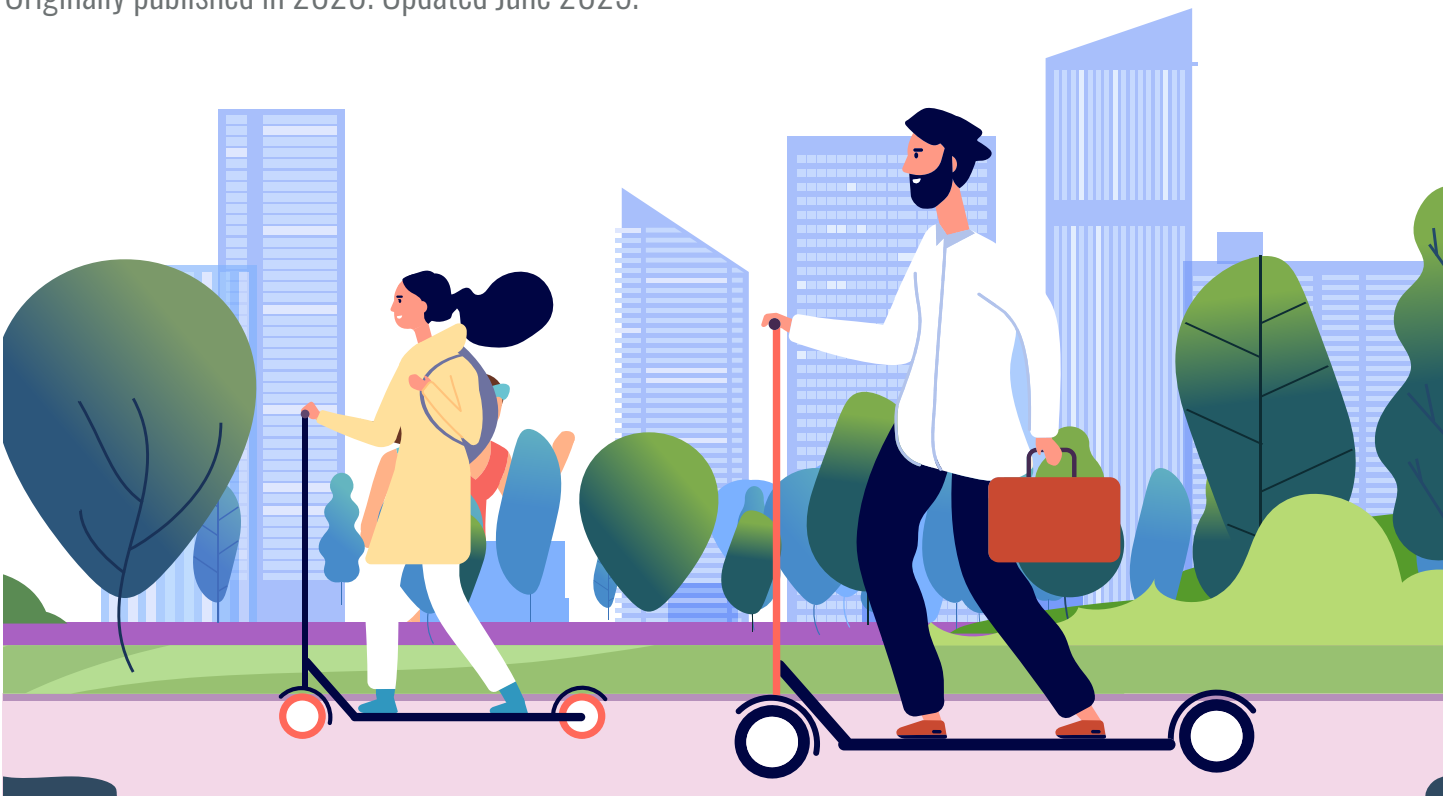

Denver Regional Council of Governments
Micromobility Work Group

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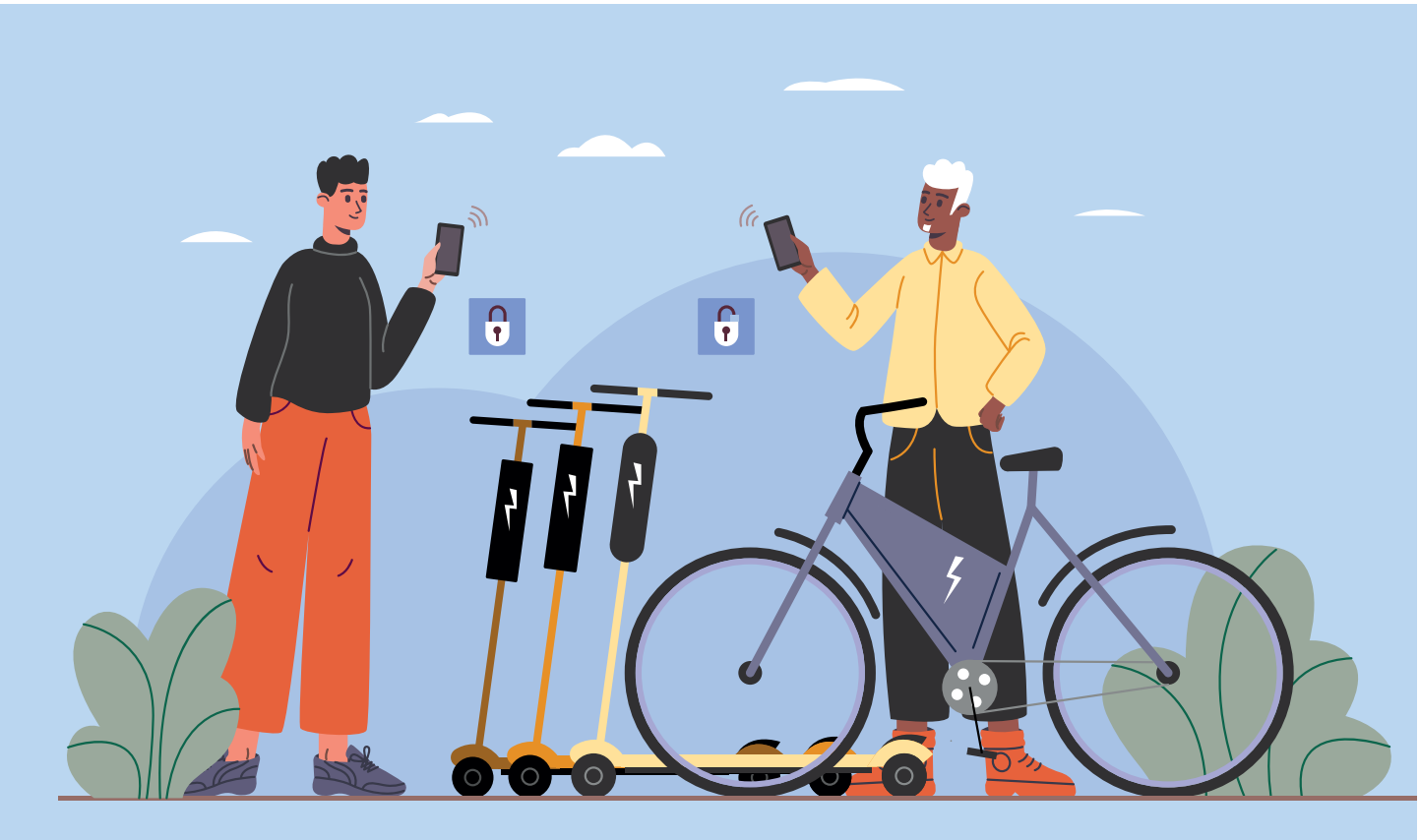

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Introduction

The Denver region is home to several robust shared micromobility programs. Since the Denver Regional Council of Governments, known as DRCOG, started collecting regional shared micromobility data in the Denver region in 2018, riders have taken over 25 million shared micromobility trips (Ride Report Dashboard, 2025). DRCOG staff have convened and partnered with member government staff to identify areas for discussion, coordination and partnership because shared micromobility travel crosses jurisdictional boundaries. Over the past few years, communities in the Denver region have been working to refine a regulatory environment that both enhances safety and mobility while simultaneously upholding civic goals. DRCOG staff support local, regional, state and federal agency conversations and foster collaboration with partners agencies on shared micromobility.

What is shared micromobility?

Shared micromobility may mean different things depending on the context in which the term is used. For this document, shared micromobility refers to shared, low-speed, lightweight, small, human- and electric-powered transportation solutions like bikes and scooters.

Shared micromobility includes traditional, station-based bike sharing, as well as dockless systems with devices like bikes, e-bikes and e-scooters. Devices are typically available for short-term rental in designated service areas. Shared micromobility vehicles are most often deployed, used and parked in the public right-of-way. Typically, shared micromobility services are operated by private companies, however, many nonprofit and community organizations also operate shared micromobility programs in the Denver region.

In DRCOG's 2019 active transportation plan, staff identified shared micromobility as an emerging trend and recommended convening local, regional and statewide stakeholders to coordinate policy efforts for such devices and programs. When DRCOG, the Colorado Department of Transportation, known as CDOT, the Regional Transportation District, known as RTD, and the Denver Metro Chamber of Commerce collaboratively developed the Mobility Choice Blueprint in 2019, they identified the importance of collaborative planning related to micromobility.

> *Distinct from shared micromobility, personal micromobility is an important part of the regional transportation system. Personally owned devices, like bikes and scooters, are considered as part of the regional transportation planning process. The use of personal devices is consistent with DRCOG planning outcomes associated with mode shift, air quality improvements, and healthy and active communities. While not addressed in this document, personal micromobility-related planning efforts are detailed in DRCOG's* 2019 active transportation plan.

Short trips

Data from shared micromobility programs indicates that it is particularly well suited to support short trips. National data suggest that average scooter trips are 11 - 12 minutes long (Shared Micromobility in the United States and Canada, 2023). In the Denver region, 58% of shared micromobility trips were less than 1 mile and 75% were less than 1.5 miles (Ride Report Dashboard, 2025). The City and County of Denver's Dockless Mobility Vehicle Permit Pilot Program Final Report 2021 found that a combined total of 58% of scooter trips ridden by both online and intercept survey respondents replace an automobile trip.

Why is it important to collaborate on shared micromobility in a regional context?

Shared micromobility programs often support local, regional and statewide mobility goals. Whether shared micromobility programs support outcomes around mobility choice, mode shift or environmental sustainability, DRCOG's staff believe there is an important link between shared micromobility programs and civic goals. Thoughtful policies can guide deployment and develop partnerships between the public sector (often the permitting or licensing agency), and the private sector (often the operating entity), in ways that further civic goals. Working together across jurisdictional boundaries provides the public sector with a variety of collaborative opportunities, such as learning from local deployments, coordinating regulatory requirements and evaluating pilot projects. DRCOG's Micromobility Work Group discussed dozens of policy areas and principles and identified several areas where regional collaboration on shared micromobility programs is essential.

People in the Denver region often cross jurisdictional boundaries on their way to work, school, family obligations, entertainment or recreation. Shared micromobility, especially in dockless systems, can facilitate their unfettered travel through and across jurisdictional boundaries. When an individual's journey crosses jurisdictional boundaries, their shared micromobility vehicle might start in one municipality, but end up in a neighboring city, town or county. Therefore, the work group identified cross-jurisdictional dialogue as an important component to efficiently facilitate shared micromobility for users, operators and jurisdictions.

Many stakeholders in the Denver region recognize the potential benefits of presenting shared micromobility operators with similar considerations for working within multiple jurisdictions in the region. There is also a potential benefit for jurisdictions to coordinate policies, shared micromobility frameworks and agreements. For example, coordinated policies may allow smaller jurisdictions to present viable market opportunities for micromobility providers operating elsewhere in the region.

Although there are opportunities to collaborate with regional partners, DRCOG's staff recognize

the importance of local decisions in guiding shared micromobility programs. DRCOG staff do not intend to develop rules or regulations for jurisdictions, rather, their goal is to provide resources for how regional collaboration can benefit various stakeholders. The Micromobility Work Group played a key role in developing Shared Micromobility in the Denver Region in 2020, and DRCOG staff continues to update the report and other resources as shared micromobility programs evolve

DRCOG's Micromobility Work Group

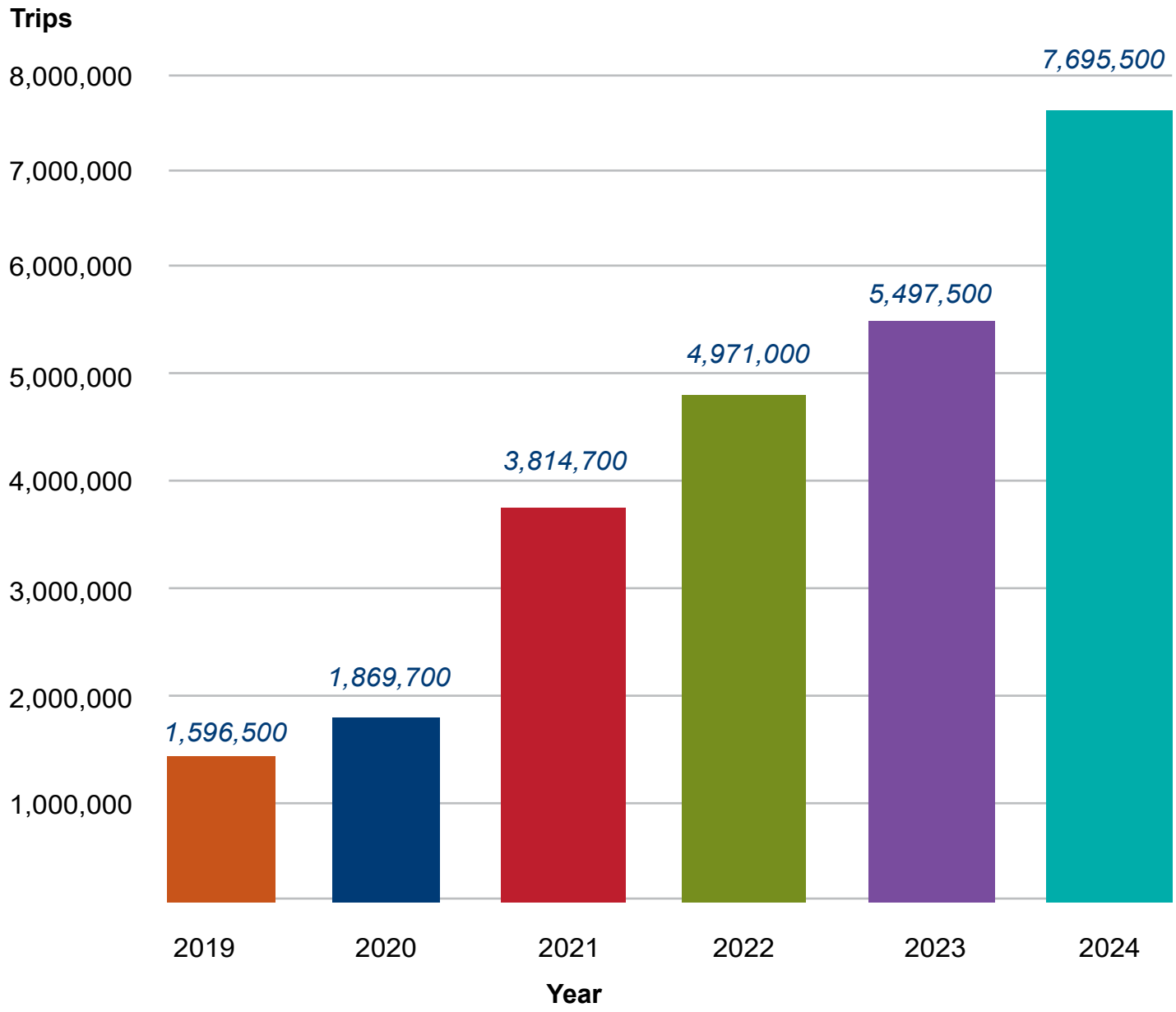
DRCOG established the Micromobility Work Group (the work group) in early 2019 to discuss shared micromobility policy considerations and to collaborate across jurisdictions. The work group convenes quarterly and is made up of representatives from local governments; transportation management associations (also known as transportation management organizations); and regional, state and federal agency staff. The participants in the work group have discussed considerations for local agency implementation of shared micromobility programs and identified principles for which regional consistency is important. DRCOG's staff support local member governments and their work to tailor shared micromobility programs to meet local needs. The purpose of the 2025 update to Shared Micromobility in the Denver Region is to provide baseline regional considerations as shared micromobility programs continue to be deployed in the region.

What changed as a result of the COVID-19 pandemic?

In March 2020, the COVID-19 pandemic significantly disrupted travel patterns. With the deployment of emergency stay-at-home orders and the increase in remote work options, travel throughout the region significantly decreased from pre-2020 levels. Shared micromobility services also saw a decrease in ridership during the early weeks of the pandemic and some operators temporarily removed vehicles to encourage people to stay home (Baines, 2020). However, as summer brought warmer weather, travelers' desire to stay outdoors increased. Their desire to be outside, coupled with RTD's transit service reductions, caused shared micromobility trips to gradually rebound.

As the pandemic response continued, many shared micromobility operators stepped in to provide free or subsidized rides for front-line workers, while others expanded shared micromobility travel options into areas where transit service was less frequent or eliminated (Rubino, 2020). The shared micromobility industry was initially challenged by the reduction in commuter and leisure travel to central business and entertainment districts. However, since the lows at the beginning of the pandemic, ridership across the region has rebounded and continues to increase annually as more jurisdictions launch programs and existing programs increase vehicle caps. Micromobility, both personal and shared, continues to provide sustainable and active transportation options for residents of the region and visitors alike.

Figure 1: Number of shared micromobility trips per year



Shared micromobility trip trends

DRCOG staff have convened partners and managed a shared mobility data collaborative since 2019 through a platform called Ride Report (which was acquired by Inrix in 2023). Since 2019, riders took over 25 million shared micromobility trips across the Denver region.

Micromobility trip frequency, like other forms of active transportation, varies greatly depending on the season. Due to the seasonal variability in Denver's weather, analysts find it useful to view ridership data on a quarterly basis. The quarterly data shows a consistent trend where ridership is lower at the start of the year (January through March) and peaks in quarter three (July through September). There was a 308% increase in the number of trips from quarter three in 2019 to quarter four in 2024.

Figure 2: Quarter 1 shared micromobility trips from 2019 to 2024

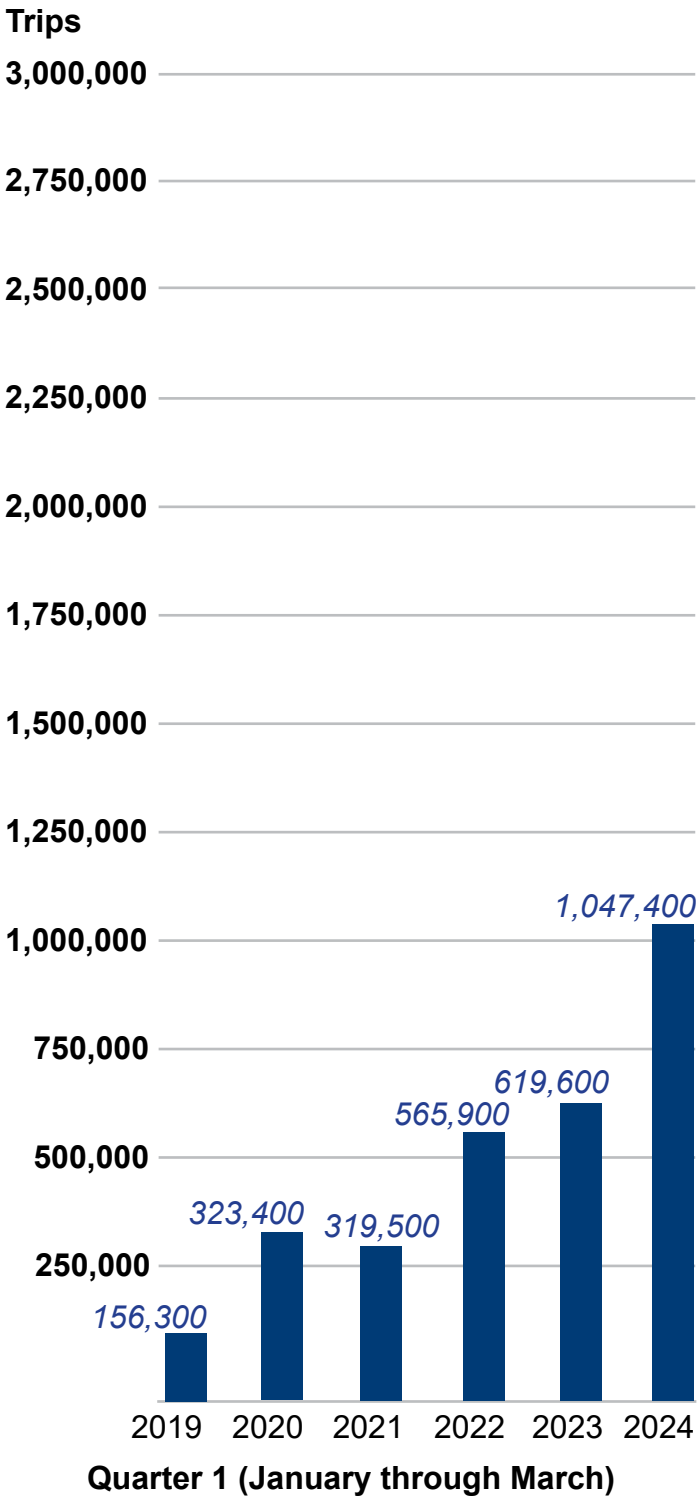


Figure 3: Quarter 2 shared micromobility trips from 2019 to 2024

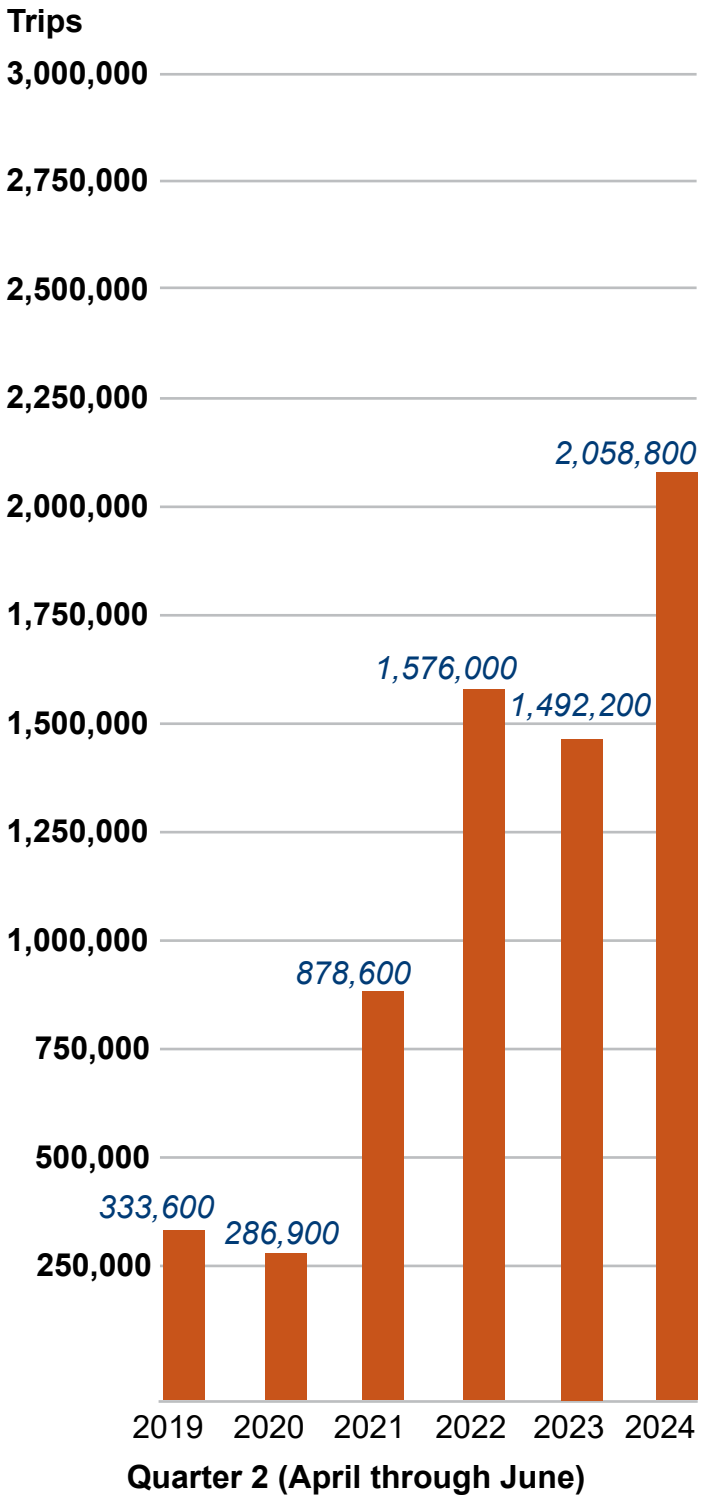


Figure 4: Quarter 3 shared micromobility trips from 2019 to 2024

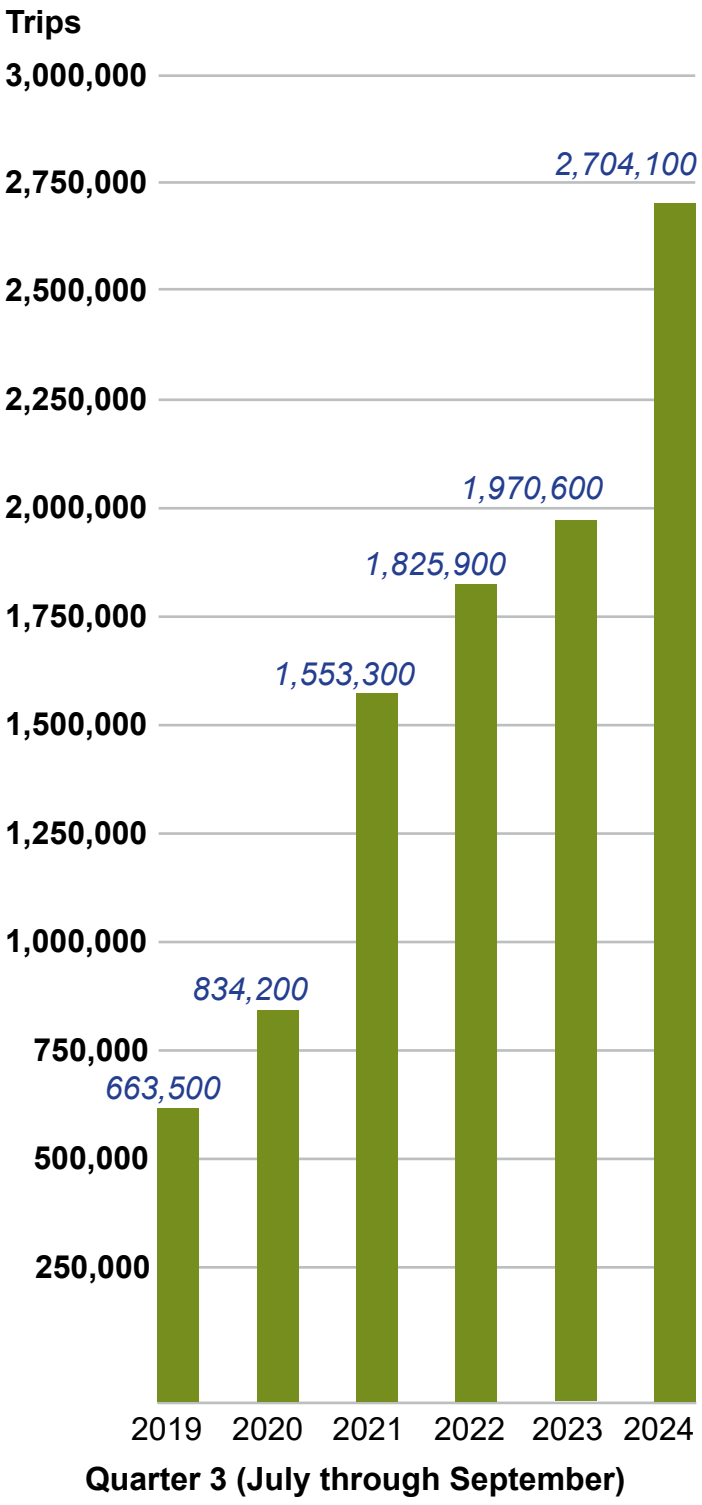


Figure 5: Quarter 4 shared micromobility trips from 2019 to 2024

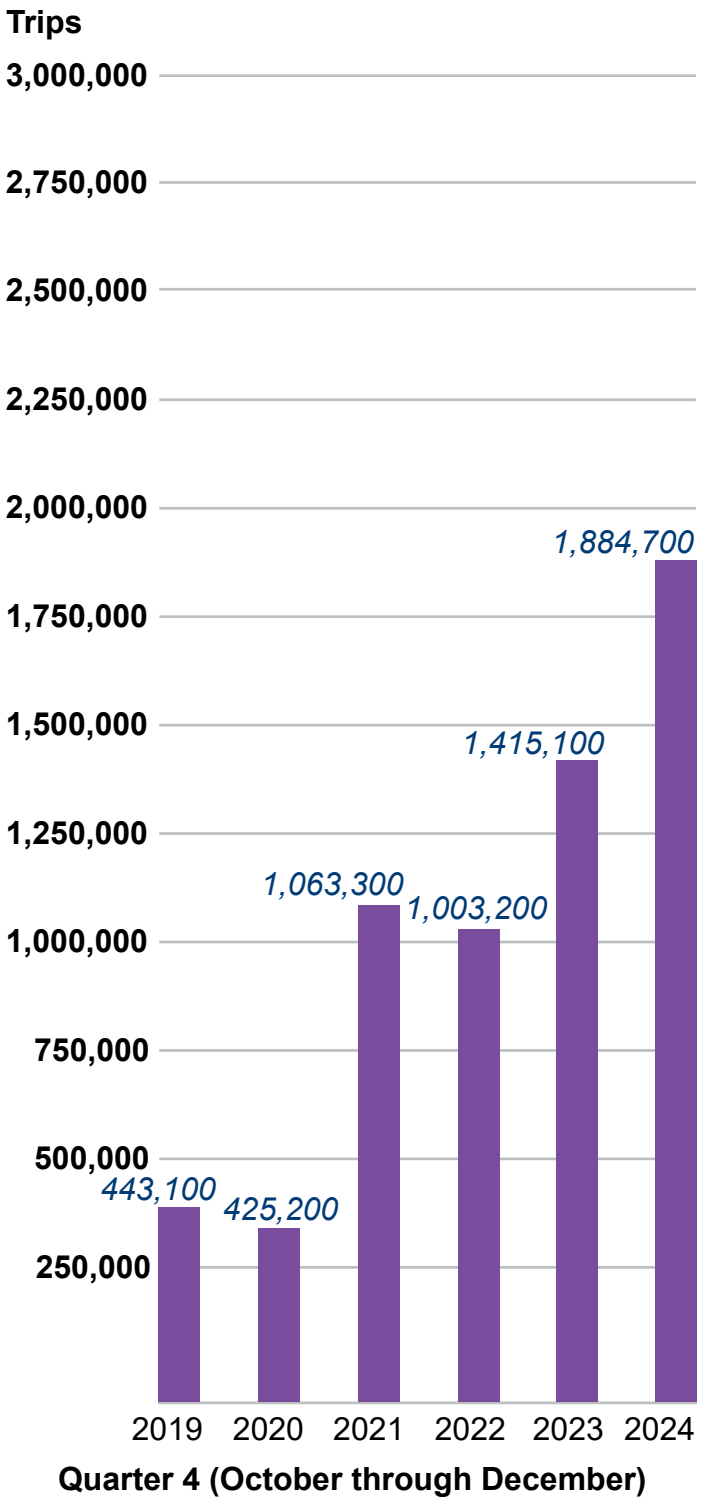


Table 1: Trips per day compared with fleet size

Year	Total trips	Trips per day	Active vehicles	Trips per vehicle per day
2019	443,100	4,900	1,487	3
2020	425,200	4,900	2,175	2
2021	1,063,300	11,800	4,234	3
2022	1,003,200	11,000	6,312	2
2023	1,415,100	15,700	7,422	2
2024	1,884,700	22,100	7,421	3

As shared micromobility use has increased and become a more reliable form of transportation, vehicle fleet size has also grown. Comparing quarter four from 2019 to 2024, Table 1 shows that trips per day are increasing quarter over quarter (with a slight decline in 2022) while the number of active vehicles is also steadily increasing. Staff selected quarter four to demonstrate that trips per day and vehicle fleet size are still increasing even beyond the warmer spring and summer months that represent peak shared micromobility ridership periods.

DRCOG staff averaged trips per vehicle per day, known as TVD, across quarter four in 2019, 2020, 2021, 2022, 2023 and 2024.

For the past six years each micromobility vehicle (both scooters and e-bikes) was used, on average, for three trips each day.

For a majority-scooter fleet, three trips per vehicle per day exceeds national averages. In 2024, 82% of the fleet in the Denver region consisted of e-scooters. Research by the U. S. Department of Energy indicates that “in North America, e-bikes had the highest utilization rate at 3.9 trips per bike per day. Pedal bikes were close behind, with 3.4 trips per day, while e-scooter utilization was 1.4 trips per day. The average for all shared micromobility was 2.7 trips per vehicle per day” (North American Bikeshare and Scootershare Association, 2023).

Table 2: Fleet size by vehicle type and average trips per vehicle per day in 2024

City	Scooters	Bicycle	Average trips per vehicle per day
Arvada	200	0	1.3
Boulder	900	300	4.0
Denver	6,600	1,300	2.8
Total bikes and scooters	**7,700**	**1,600**	**2.7**

Shared micromobility programs

DRCOG staff have worked with communities across the Denver region to better understand the benefits and challenges inherent in micromobility pilots, ongoing programs and discontinued arrangements.

RTD

While RTD does not directly operate or manage a shared micromobility program, many people use shared micromobility devices to connect to and from RTD transit stops, including bus, commuter rail and light rail. RTD does not require any formal agreements for shared micromobility operators deploying devices on RTD property, but the agency proactively

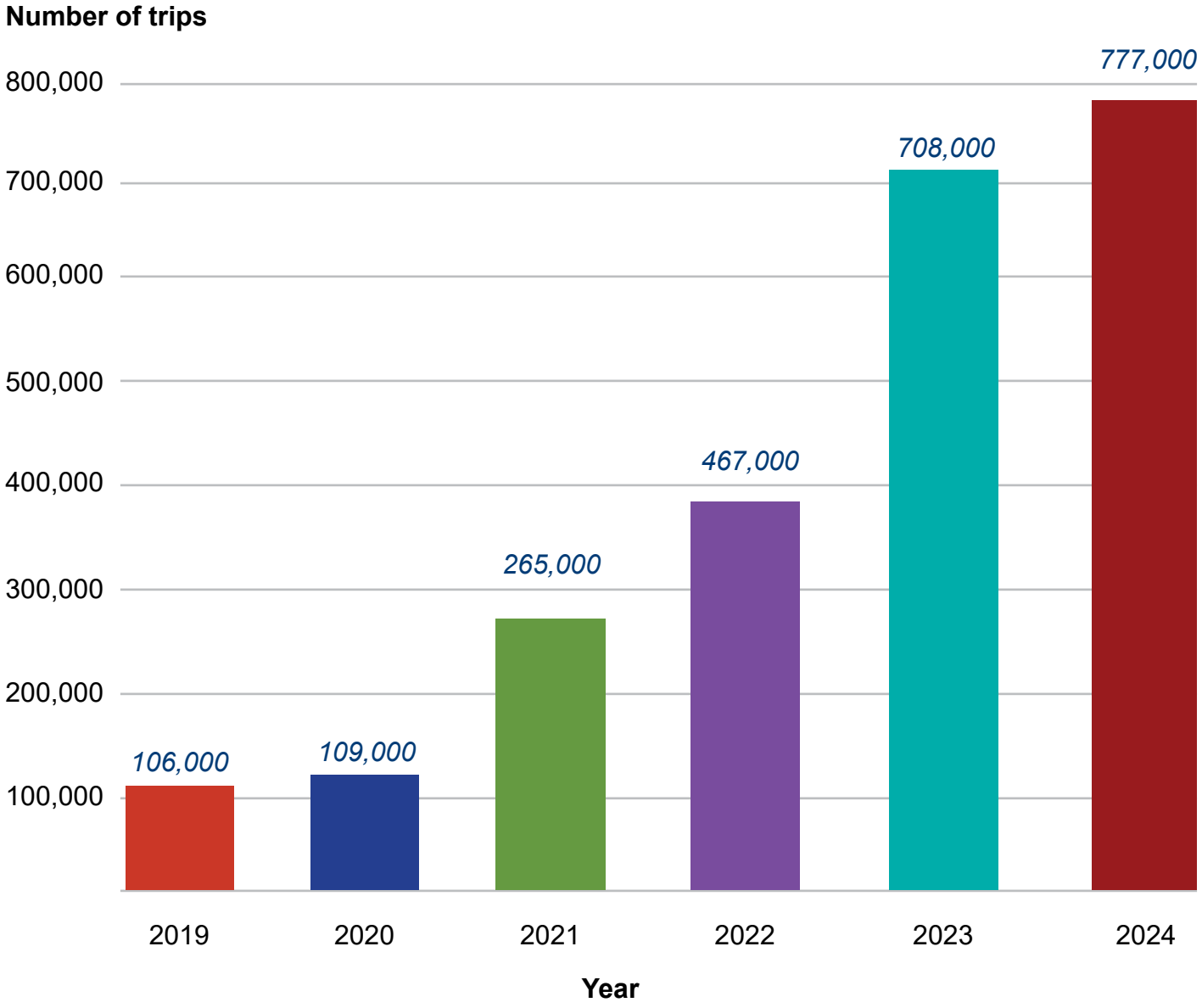
works with operators and local jurisdictions to ensure micromobility operations do not negatively affect transit service. RTD has designated areas at many transit stations with stencils where micromobility devices should be parked. Rules for micromobility parking on RTD property can be found on the RTD website.

City of Arvada

In August 2021, the Arvada City Council approved a dockless shared micromobility pilot program for both e-scooters and e-bikes. The devices were located near Olde Town and the RTD G Line commuter rail station to improve first- and last-mile connectivity. The program launched in January of 2023 with Bird operating e-scooters. After receiving community feedback and making a few changes to the program, the city extended the pilot. Today, the pilot operates on an annual permit basis. Bird ceased its operations in September 2023 and Lime became the city's new vendor. The city has incrementally expanded the service area. The new program also allows for a maximum of two vendors, each with a 200-vehicle limit. As of 2024, Lime is the sole operator and only dockless e-scooters are deployed in Arvada. Since the start of the pilot program, riders in Arvada have taken over 110,000 trips. In summer 2025, staff will report on the micromobility program's progress to the Arvada City Council and recommend that it become a permanent program.

Photo courtesy of the City of Arvada.

Figure 6: Boulder BCycle trips from 2019-2024



City of Aurora

In 2017, the City of Aurora issued permits to Ofo and Lime, implementing the first local dockless bike-sharing permit program in Colorado. In August 2018, both Ofo and Lime stopped serving Aurora. As a result, the city revised its rules and regulations to include a broader focus on shared mobility.

In May 2021, Bird received a permit to operate and deploy e-scooters throughout the city. The e-scooter program was active for over a year, with Bird eventually ceasing operations in August 2022. During the program, users of the system took over 15,000 trips. City leadership remain interested in shared micromobility programs and new companies can apply for available operational licenses.

Communities in Boulder County

Commuting Solutions, a transportation management organization, partnered with Boulder BCycle and local governments in the northwest subregion to conduct a regional bike-sharing program study to explore expanding the Boulder BCycle program. The study investigates the feasibility of expanding Boulder BCycle to Broomfield, Boulder County, Erie, Lafayette, Longmont, Louisville, Superior and Westminster. The proposed system would allow riders to check out an e-bike and travel anywhere among these communities. The Northwest Regional Bike Share Feasibility Study was published in 2024. Commuting Solutions partnered with local governments to submit a Community Accelerated Mobility Project application through the Colorado Energy Office with the City of Longmont as lead applicant. In November 2024, the project was selected and awarded $1.5 million to implement the bike-sharing program. The three-year grant will provide initial funding for capital and operations costs, as well as support outreach and education efforts to encourage use of the new system.

City of Boulder

The City of Boulder is home to a robust shared micromobility program with both e-bikes and e-scooters. Boulder's shared micromobility program was originally launched in May 2011 as a traditional docked system with bikes only, operated by BCycle LLC. For over a decade, the BCycle fleet was managed by the nonprofit Boulder Bike Sharing, but Bicycle Transit Systems acquired BCycle from Trek in October 2024.

In 2021, the City of Boulder, in partnership with the University of Colorado, created a new shared micromobility program to include both e-bikes and e-scooters. Through a competitive request for proposals process, BCycle LLC was selected to continue as the shared e-bike operator, acquiring Boulder Bike Sharing and creating Boulder BCycle. BCycle pays a per trip fee to the city. As a part of the contract, Boulder BCycle also converted its fleet to all pedal-assist electric bikes, and placed additional docking stations around the city to expand operations. As of February 2025, BCycle's fleet consisted of approximately 300 bicycles and 50 docking

stations. Between 2019-2024, riders of the BCycle system took 2.4 million rides (Moore-Farrell, 2025).

As of 2023, over 40% of Boulder BCycle riders reported they replaced a car trip with riding a BCycle e-bike (BCycle, 2023). BCycle's operations and maintenance staff use electric cargo bikes to service its fleet and replace bike batteries, rather than conducting fleet maintenance by car.

As a part of the shared micromobility program, the city selected Lime to operate its e-scooter component through a competitive request for proposals process. Lime pays the city a per trip fee. The program is dockless, however, in 2023, the city worked with Lime to establish mandatory parking zones and mandatory parking corrals, called "Lime Groves." The corrals are typically in areas with high ridership, areas where commercial or delivery vehicles load or unload, or areas with frequent passenger pick-up and drop-off. Within mandatory parking zones, riders are required to park in the corrals. The city has also implemented several low-speed zones, no-parking zones and no-riding zones. Many of the no-parking and no-riding zones are on or near open space and trails. In 2024, riders using Boulder's e-scooter system took over 692,000 trips.

City of Brighton

In April 2022, the Brighton City Council passed a shared electric scooter ordinance to authorize the operation and licensing of shared e-scooters. Just two months later, Bird launched 200 e-scooters in the city. The program included several geofenced no-riding zones and two slow zones throughout the city (Ward, 2022). In December 2022, Bird had a temporary lapse in service, which was reinstated by April 2023. From April through December 2023, Bird e-scooters reappeared in the Brighton market. However, at the end of 2023, Bird declared bankruptcy and ceased operations in Brighton at the end of November (Gibson, 2023). During the program, riders in Brighton took almost 9,000 trips. As of 2024, there are no shared micromobility operators in the city.

Chatfield State Park

CDOT, in partnership with Colorado Parks and Wildlife and Drop Mobility, launched an e-bike-sharing pilot program in Chatfield State Park, called “Chat E-Bikes” in May 2024. The goal for the program was to demonstrate the feasibility of deploying micromobility fleets in recreational settings. The program featured a docked system with 20 e-bikes. Users downloaded the Chat E-Bikes app on a smartphone to unlock and use e-bikes. By the end of the one-year pilot program, riders took 847 trips on the shared system, with only 1% of park visitors using the program. While the e-bikes were popular and successfully introduced e-bikes as recreational option, the program faced significant challenges that hindered its long-term viability. After additional analysis, CDOT ended the pilot in September 2024. Moving forward, any operator interested in providing shared micromobility services in state parks will follow the same process outlined for other private recreational companies such as boat rentals and horseback rides.

City and County of Denver

In 2010, the City and County of Denver led the nation's first major, citywide bike-sharing program with the launch of Denver BCycle, owned and operated by the nonprofit Denver Bike Sharing. The program was station-based with traditional bikes as the system fleet. Ridership peaked in 2016 with over 419,000 annual rides. Although it served many travelers in the Denver region for a decade, Denver BCycle discontinued service in early 2020.

Just two years before Denver BCycle ceased operations, e-scooter companies launched unauthorized shared micromobility devices in Denver in May 2018. City and County of Denver quickly responded by implementing a Dockless Mobility Vehicle Pilot Permit Program in June 2018. The pilot program developed dockless mobility policies and created a permit system to prevent e-scooters and e-bikes from being further deployed without authorization. Under the pilot program, the city issued five e-scooter permits and two e-bike permits to various operators. City staff collected data and engaged stakeholders to better understand safety, parking and user demographics. The dockless pilot program lasted approximately two and half years, with riders traveling more than 7.3 million miles on the shared devices.

According to online and in-person surveys conducted during the pilot, approximately 31% of scooter rides by online survey respondents replaced automobile trips (City and County of Denver, 2021).

After the dockless pilot program was completed, Denver City Council approved the city proceeding with formal license agreements. After a competitive request for qualifications process, the city entered into formal license agreements with Lyft and Lime to operate e-bikes and e-scooters in May 2021. This agreement does not include a fee structure but requires operators to build parking corrals and provide free or reduced fares in certain areas and for qualifying individuals.

In November 2024, Lyft transferred its shared e-bike and e-scooter license and all its requirements to Bird, and Bird began operations in December 2024. The program remains dockless, however, as of March 2025, city staff were working with Bird and Lime to install over 400 parking corrals throughout Denver. City staff have also identified “no-parking” and “no-riding” zones throughout the city which are marked by a virtual boundary, known as a geofence. Riders took over 19 million trips on the system between May 2021 and November 2024. Both license agreements will expire in May 2026, and Denver is preparing to open a new request for proposals process to award new licensing agreements in summer 2025. To inform the process, the city launched a public survey in fall 2024.

Other programs in Denver

The City and County of Denver is home to other shared micromobility programs, such as Northeast Transportation Connections e-bike libraries. The organization, known as NETC, operates three community e-bike libraries in the Globeville, Elyria-Swansea neighborhoods. Members can check out a bike for up to a week at a time at no cost. Since launching the program, NETC has expanded it to include e-bikes, e-cargo bikes and children’s bikes. NETC staff provide hands-on safety training, rules of the road information and route-finding assistance. They also provide helmets and bike locks (Northeast Transportation Connections).

West Corridor, another transportation management association, piloted free e-bike libraries near several affordable housing communities and low-income communities in Denver. West Corridor partnered with an urban planning consulting firm, UrbanTrans North America, for the effort. As of 2023, the e-bike libraries have closed. At the end of the pilot, West Corridor gave the fleet’s remaining e-bikes to local residents.

In 2024, the Montbello Organizing Community launched an e-bike program in the Montbello neighborhood (Montbello Organizing Committee). Thanks to a partnership with NETC, residents of the community can rent an e-bike or an e-cargo bike from the Montbello Community Building for up to three days at a time. Rentals come with helmets and bike locks.

City of Golden

In 2016, the City of Golden launched a locally operated bike library. The bike library allowed residents and visitors to check out a bike for a limited time for local use in and around Golden. The rentals were free for rides of two hours or less and $10 for a full day. The library had 45 bikes with both adult and children's bikes available. Each bike rental came with a helmet and a lock. The bike library was funded in part by a federal transportation grant awarded through the Denver Regional Council of Governments Transportation Demand Management Services Set-Aside program.

In 2018, Ofo, a dockless bike-sharing company, launched a pilot program in Golden. The pilot lasted only a few weeks before Ofo left the North American marketplace (Yellow ofo bikes leave Golden, 2018).

In 2020, the Golden bike library closed due to the COVID-19 pandemic and difficulty staffing the bike library. As of May 2025, the City of Golden does not have an active shared micromobility program but is studying the feasibility of implementing a fully electric, docked bike-sharing system. DRCOG's Innovative Mobility Set-Aside Program is funding this study.

City of Greenwood Village

In April 2024, the City of Greenwood Village announced the launch of a one-year e-scooter pilot program with Spin. The pilot area is in the Greenwood Consolidated Metropolitan District covering a portion of Greenwood Village and, as of May 2025, had recently expanded into a portion of Centennial. The program is managed by the Greenwood Consolidated Metropolitan District. At the March 17, 2025 City Council Study Session, the council agreed that the pilot should be expanded and extended for another year to continue analyzing the potential need for a permanent program.

City of Littleton

In August 2021, the City of Littleton launched a one-year shared micromobility pilot program with Bird as the operator. The program consisted of e-scooters only. Bird paid the City of Littleton initial licensing fee, as well as a 10 cents per ride fee to cover the city's administrative costs. While the fleet cap was 125 scooters, only 80 scooters were deployed. Bird halted operations and the pilot program ended a month early (Campbell-Hicks, 2022). Riders took over 7,500 trips during the pilot phase. In 2024, the City of Littleton decided to halt further deployment, but is partnering with Arapahoe County on a Transit and Micromobility Study. The study will make recommendations for shared micromobility programs across the county.

City of Lone Tree

In 2018, Ofo operated a dockless bike-sharing pilot program in Lone Tree and at RTD light rail stations in Lone Tree. The pilot ended when Ofo ceased operations in the North American market in summer of 2018. As of May 2025, there were no shared micromobility operators in the City of Lone Tree.

City of Longmont

The City of Longmont launched a station-based bike-sharing program in 2017 operated by Zagster. In 2019, the program rebranded to Pace and evolved to include dockless bikes. Due to COVID-19, Zagster discontinued service and the program ended in June 2020.

Meridian Metropolitan District

In November 2021, Spin launched a fleet of 75 e-scooters and 25 e-bikes in the unincorporated community of Meridian in Douglas County (Gilman, 2022). Program managers established 12 parking stations around the district and several no-riding zones to better manage parking and sidewalk riding (Meridian Metropolitan District). The program is managed by the Meridian Metropolitan District.

City of Thornton

In July 2022, the City of Thornton launched a one-year e-scooter-sharing pilot program with Bird as its operator. The program had a fleet minimum of 100 e-scooters and a maximum cap of 300 scooters (Scooter) Riders on the Storm: A New Bird in Thornton, 2022). Unfortunately, due to operator challenges, scooters were pulled from the city at the end of 2022. Bird reintroduced scooters in the city in June 2023. Following the announcement of Bird's bankruptcy, the program ceased operations by November 2023. City staff remain open to the implementation of a shared micromobility program in the future.

City of Westminster

The City of Westminster, along with community partners, launched its first bike-sharing program in 2016, operated by Zagster. The program ultimately ended in 2018 due to a lack of funding. Riders took approximately 1,500 trips during the span of the program. In 2021, the city published its Transportation and Mobility plan, which indicates the city will continue to evaluate potential micromobility programs and participate in the work group.

Smart Commute

Smart Commute, a transportation management organization, is working with Thornton, Northglenn and Westminster to launch rentable e-bikes at newly developed mobility hubs starting in April 2025. This effort is part of Smart Commute's eMobility Hub Pilot project. Funding for the demonstration project is provided through CDOT, RTD, the Adams County Open Space Advisory Board and the local communities of Northglenn, Thornton and Westminster.

Colorado Department of Transportation Office of Innovative Mobility

CDOT does not operate or manage a shared micromobility program, but the Mobility Services team, located in the Office of Innovative Mobility, supports local shared micromobility and related initiatives. Key initiatives of the Mobility Services team include supporting the implementation of transportation demand management strategies, emerging mobility (such as shared micromobility and personal e-bike use), and mobility data integration to improve access, reduce congestion and enhance the overall multimodal transportation experience. The Mobility Services team offers funding to local partners through a Transportation Demand Management Innovation grant program to help support such services.

As part of its portfolio, the Office of innovative Mobility team launched the E-Bike Safety Campaign, an outreach initiative to promote the safety of e-bike users and promote a culture of responsible riding.

To support the campaign, the Office of Innovative Mobility team also developed a suite of educational resources — including informational videos, detailed handouts, and rider training sessions.

Regulatory environment

Since original publication of Shared Micromobility in the Denver Region in 2020, shared micromobility program managers in the Denver region have collaborated on various regulatory frameworks and approaches. In general, most regulatory frameworks around the region are based on the best practices they identified and tailored to the individual context of each community. This section outlines such practices and example frameworks.

State law (House Bill 19-1221)

In 2019, the State of Colorado passed a law regulating electric scooters. The law authorized the use of electric scooters on roadways. Previously they had been considered toy vehicles and therefore were not authorized for use on roadways. The law, House Bill 19-1221, defines an electric scooter as a device that weighs less than 100 pounds, has handlebars, is powered by an electric motor and has a maximum speed of 20 mph. The law authorizes local governments to regulate the operation of an electric scooter in a manner that is no more restrictive than the manner in which the local government may regulate an electric bicycle.

Regulatory approach

At a basic level, regulatory approaches include providing an operator with an agreement to deploy and manage devices in the public right-of-way. Such agreements ensure the operator is held to an agreed-upon standard and allow a jurisdiction to revoke the right to operate should standards not be met. Jurisdictions can provide permits or licenses through an open application process or through a selective, competitive request for proposal process. Based on the community's goals, and often on the guidance of the city council or other leadership, the jurisdiction may issue permits and licenses for a limited-time pilot or permanent program. Many established shared micromobility programs in the Denver region started as pilot programs.

When the City and County of Denver first launched its shared micromobility program, staff noted that having more than one operator created healthy competition and provided a variety of choices and services at various price points. A jurisdiction's preference for a single operator versus multiple operators may be determined by several factors, including how long its shared micromobility program has been operating. A local government may prefer to work with a single operator because there are fewer permits or agreements to manage, and having one operator allows users to download only one application to use the entire system. Allowing only one operator also provides a city or county with more up-front negotiation power when requesting certain features or safety requirements, flexibility in pricing for various communities and data-sharing capabilities.

Licenses

Using a competitive selection process to award a license to operate allows jurisdictions to focus on selecting operators based on a set of

public outcomes detailed in a formal request for proposals or qualifications. For example, in 2020, the City and County of Denver issued a request for qualifications to solicit proposals for shared micromobility services via a license to operate. Based on the outcome of the solicitation process, the city entered into five-year license agreements with two different operators. The City of Aurora, on the other hand, has an open application for licensing. An open application requires operators to submit a set of questions to the city, and the application remains live on its website. City staff accept applications on a rolling basis as they are submitted. Once an application is approved, the operator is awarded a license.

Permits

Some communities, like the City of Arvada, opt for permit-based programs. The benefits of permit-based programs may include faster turnaround times as compared with a competitive selection process, and many jurisdictions already have permitting protocols in place. Some jurisdictions favor permit-based programs because they provide terms of revocability should the operator not comply with regulations. Permit programs also provide flexibility to operators as many permit programs accept applications on an ongoing basis.

Fee structure

There are various fee structures for programs throughout the region. Jurisdictions typically use fee revenue to support the program's administration and invest in supportive infrastructure, such as bike lanes, shared-use paths and parking corrals. Fee types include application fees, annual permit fees, annual license fees, per-device fees, per-trip fees and sales tax. Many jurisdictions around the region use a combination of these fees in their programs. During the City of Littleton's active program, the city collected a flat $1,000 annual licensing fee from the operator and a $0.10 per-ride fee. Although it did not have an active micromobility program as-of publication date, the City of Aurora charges operators an annual fee based on the number of devices they deploy combined with a $0.05 per-ride fee (City of Aurora). Once active, the City of Aurora's fees will go into a mobility infrastructure fund to be used primarily for bike-related infrastructure improvements.

Some jurisdictions charge various additional fees. The City of Arvada has five categories of fees:

- Municipal service fee: Upon selection, an operator pays an initial fee of $5,000 to cover municipal expenses associated with oversight and program administration. The operator is also required to pay a $10 per-vehicle-fee that will be dedicated to the installation and maintenance of pavement markings, signs and other traffic control devices supporting micromobility.

- Expansion fee: If an operator would like to expand the size of its fleet, they must apply to the City of Arvada for an expansion. If the city agrees to increase the number of devices, the operator will have to pay an additional $500 municipal service fee, a $10 maintenance fee, and a $30 per vehicle maintenance bond.

- Refundable deposit: The city uses the maintenance bond of $30 per deployed vehicle as needed for costs associated with auditing, removing and storing improperly parking devices. The city reimburses to the operator any maintenance bond remaining at the end of the permit cycle.

- Yearly permit renewal fee: Operators pay a yearly permit renewal fee of $5,000 which goes towards staff time, oversight, communications, enforcement and program user education.

- Monthly operations fee: Operators pay a monthly operations fee of 10 cents per ride.

The City of Arvada places the fees it acquires through its shared micromobility program into a separate account for reinvestment into the program. The funds will go toward painted parking corrals, signage and other mobility improvements (City of Arvada, 2022). As of May 2025, the program's fee revenue was insufficient to support larger infrastructure projects like bike lanes or sidepath improvements.

The City and County of Denver's program operates on a value exchange agreement, which means the operator pays no application, permit or licensing fees, nor does the city require any per-trip fees. Instead, operators must build parking corrals and provide substantially free use for riders who qualify for public assistance programs like the Supplemental Nutrition Assistance Program or Medicaid.

Data sharing

DRCOG's Micromobility Work Group members ranked data collection and data sharing as key areas for regional collaboration. Local partners reached consensus that reliable data is an integral part of program management (from collecting data in the same format to having resources to analyze and use the data). Therefore, the work group considers it important that local program managers outline data sharing as a requirement in their agreements with operators.

Mobility Data Specification

The Mobility Data Specification, known as MDS, is a digital tool that standardizes communication and data sharing between program managers and private mobility operators (Open Mobility Foundation). MDS is an open-source specification managed overseen by the Open Mobility Foundation. Collecting MDS data reduces or eliminates the need for operators to develop custom data fields unique to each jurisdiction. The work group considers it important for program managers to request MDS-conforming data from operators and ensure their agreements with operators include third-party data-sharing provisions.

Analysts can leverage software, such as third-party data aggregators, to understand the larger context of multiple programs at the county, regional or state level. For example, DRCOG staff contract with a third-party data aggregator called Ride Report. The Ride Report platform consolidates data on each shared micromobility program in the Denver region into a single platform. Ride Report allows shared micromobility program managers to easily access, download and analyze data on their programs. Program managers also use Ride Report's heatmaps and bar graphs features in reports to city leadership and the public. The dashboard allows DRCOG staff to better understand travel patterns and ridership behavior at the regional level. The work group has cited access to Ride Report as an extremely important storytelling tool.

Although DRCOG contracts directly with Ride Report, local agencies each sign a letter of intent and cost-sharing agreement. The cost to local agencies is minimal, because DRCOG, CDOT and RTD also contribute funding. The Ride Report platform provides both time and cost savings, because individual agencies do not need to develop the expertise and tools needed to analyze raw data or MDS feeds. Additionally, regional data sharing provides cross-jurisdictional metrics and access to aggregated and summarized information.

Use cases

The work group considers it important for public agencies to have shared micromobility data to better manage the public right-of-way. When public agencies identify use cases and implement data privacy policies, they help clarify the purpose for data collection and can better inform the public and operators of their commitment to protect personal privacy.

Some potential data collection use cases include:

- Daily management of the program, such as keeping track of idle devices and fleet numbers.
- Generating invoices for operators.
- Regulating and monitoring program policies, such implementing geofenced boundaries and creating no-riding and no-parking zones.

- Providing quarterly data summaries to the city council, city manager and other leadership.

- Communicating with the public.

- Conducting planning analyses, such as reviewing heatmaps and areas of high ridership to inform active transportation infrastructure planning efforts, including curbside management, implementing bike lanes or removing parking spaces.

- Keeping track of ridership trends to calculate program use.

- Connecting program statistics to civic goals, such as reduced vehicle miles traveled or greenhouse gas emissions reductions.

- Refining transit planning efforts, such as first- and last-mile connections.

Privacy considerations

Coordinating mobility data at the regional level offers participating communities the opportunity to discuss and implement consistent privacy practices regarding collection and use of shared micromobility data. Individual shared micromobility trip data is sensitive and DRCOG staff recommends treating it as protected information.

A coordinated, regional approach to data sharing

The work group suggests that any agencies intending to implement shared micromobility pilots and programs should consider the following data sharing requirements in their program management:

- Require data in a standard, machine readable format.

- Request and collect data that supports program goals so managers can properly evaluate pilots and ongoing programs.

- Request access to Mobility Data Specification-conforming application programming interfaces to participate in regional data sharing and platform access in coordination with DRCOG staff.

- Require a publicly available General Bikeshare Feed Specification feed.

- Request vehicle-generated data, not information collected through a user's mobile app.

- Require data-sharing agreements such that data can be shared with third parties, like state and regional public agencies like DRCOG, RTD and CDOT and third-party data vendors.

- Work with operators to understand the data they collect about users and how that data is used.

- Review operators' user agreements and data privacy policies for consistency with privacy best practices.

- Implement mobility data privacy policies.

Local agencies may also wish to consider:

- Participating in DRCOG's regional mobility data collaborative, which provides access to a platform and dashboard to view local agency data using MDS application programming interfaces from operators.

- Developing policies that consider how to treat shared micromobility data when requested by law enforcement.

- Collaborating with operators to survey riders at a regular interval to better understand shared micromobility effects.

- Allocating resources for training on applicable laws and best practices for safeguarding data.

- Joining the Open Mobility Foundation and participating in the ongoing development and improvements to the MDS.

Access for all

In the rapidly changing transportation technology sector, historically underrepresented communities can often have limited access to shared micromobility systems. The work group suggests that providing equal access across all communities should be a primary consideration as programs are planned and deployed.

A starting point for local agencies is to be specific in defining the desired outcomes for their communities and shared micromobility programs. It is important to include goals to provide equal access in agreements with operators and communicate these goals to external stakeholders. When it comes to shared micromobility, there are various types of access considerations for agencies to consider, including location-based and population-based solutions. Depending on the community context, shared micromobility program managers may want to focus on one or both.

Location-based access includes ensuring that devices are distributed across all geographies and areas that have been historically disadvantaged. This is done by identifying zones or areas in which people have less access to transportation options, such as areas that are not served frequently or reliably by transit. Many location-based access policies require that operators deploy a percentage of the fleet in the identified zones.

Population-based access includes providing free and reduced fare and pass programs throughout the entire service area to vulnerable populations. An example may include cash or nondigital payment methods for individuals without smartphones or credit cards or accommodations for people with physical disabilities, such as adaptive bikes. The City of Boulder has a Lime Assist program, which provides access to shared micromobility to people with diverse abilities. The adaptive devices are available at no cost and can be requested through the app or website.

Policies may also be combined to create a well-rounded program that strives to provide access for all. For example, the City and County of Denver requires operators to deploy 30% of their fleet in identified “opportunity areas.” Many of these areas are in low income and historically underrepresented communities. On top of the required deployment, rides that start or end in an opportunity area are heavily discounted.

The City and County of Denver also requires its operators to give out need-based passes. These passes cover the entire city service area and allow for near-free rides for those who qualify. Qualifying individuals include those on public assistance (Denver’s Shared Bike and Scooter Program).

Other communities in the Denver region have discussed incentives like dynamic fleet size increases if an operator deploys more devices in opportunity areas and low-income fare or pass programs that are integrated with existing programs. DRCOG staff will continue to monitor current practices and share information with local agencies throughout the Denver region. The work group suggests that engagement and outreach is an essential component of any access-related considerations and should be built into the process of program or pilot deployment.

A coordinated, regional approach to access for all

The work group suggests that agencies looking to implement access policies in their shared micromobility pilots and programs should consider the following in their program management:

- Define the desired outcomes and potential challenges of a shared micromobility program with respect to access for all.
- Conduct outreach and education activities that engage people in opportunity zones or opportunity areas and from vulnerable populations.
- Require operators to have methods for cash or credit card-free payment to allow people without smartphones or those who are unbanked to use shared micromobility services.
- Encourage fleet mix or adaptive libraries such that adaptive options are made available for people with mobility challenges (for example, offering hand-trike or seated scooter options alongside other shared micromobility devices).
- Provide information on income-based discount programs and credit-free access programs.
- Local agencies may also wish to consider:
- Requiring operators to develop an access-for-all plan.
- Coordination of reduced fare passes and programs with existing local and regional programs.
- Identification of a micromobility ambassador at a local agency to provide guidance and resources for those who need help accessing shared micromobility services.

Getting started and program administration

After determining a regulatory framework, the work group recommends local agency staff follow a series of steps to help set shared micromobility programs up for long-term success.

Plan support and local context

When contemplating how shared micromobility might fit in your community, first consider the goals and actions outlined in existing transportation, mobility or sustainability plans along with the local context. For example, the City and County of Denver tied its pilot program to broader mobility goals stated in Denver's Mobility Action Plan. Similarly, the City of Littleton tied its pilot program to the city's goals around affordable transportation alternatives and mode shift. Participants of the work group recommend clarifying the relationship between the dockless

mobility pilot and local civic priorities as a critical step to introducing and gaining support for the pilot program. Establishing this relationship also led staff to create evaluation metrics for the pilot.

Stakeholder engagement

When beginning conversations around launching a pilot or ongoing program, consider both internal and external stakeholder engagement to ensure the long-term success of the program. Involving both internal staff members and external public stakeholders creates a cohesive sense of understanding and streamlines program management.

Internal stakeholders

For local jurisdictions, members of the work group have found it important to get perspectives from a variety of internal departments, including public works, transportation and community planning, parks and recreation, enforcement or safety teams and legal teams.

Work group members from all communities that have developed pilot programs in the Denver region have stressed the importance of starting with an interdisciplinary team. Cross-divisional conversations can inform the fee requirements and resources needed to implement a shared micromobility program and better position communities to make sure their regulatory structure and requirements are set up in a way that works for all internal stakeholders.

For example, the City and County of Denver continues to work with its police and safety teams throughout deployment on enforcement and evaluation efforts. Denver staff suggest it's important to consider enforcement and ticketing efforts with police department and public safety partners ahead of initial deployment. However, Denver staff consider it important to be mindful of enforcement when supporting the continuing success of a shared micromobility program.

Photo courtesy of the City and County of Denver.

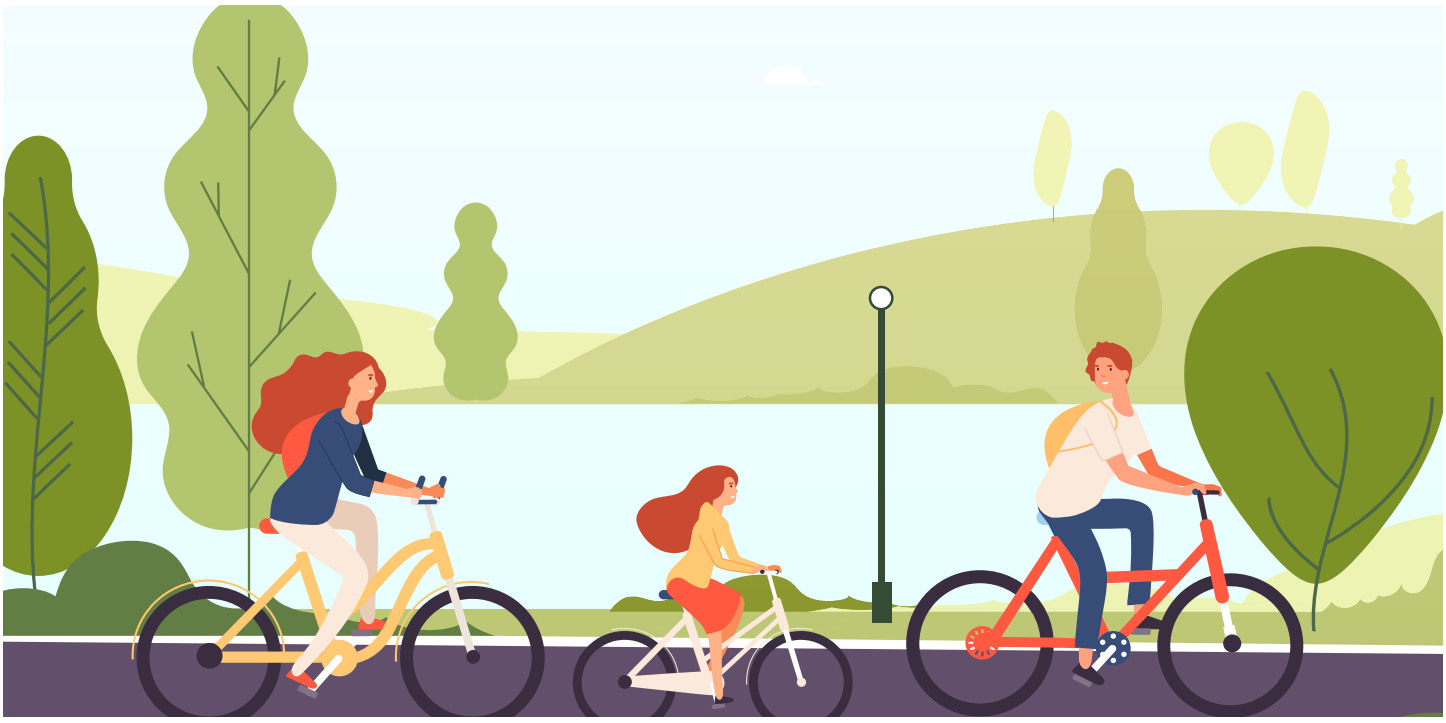
Shared micromobility users are considered vulnerable road users, and depend on protected, comfortable and high-quality active transportation infrastructure. While sidewalk riding is generally discouraged or forbidden in jurisdictions around the region, the work group encourages law enforcement to consider whether users have access to a safe alternative.

During the development of its pilot program, the City of Thornton took a similar, collaborative approach and consulted multiple teams including the city manager's office, planners, police and public works staff.

External stakeholders

In addition to working with internal stakeholders, several shared micromobility program managers noted the importance of working with other local and regional partners. For example, regional coordination might include linking shared micromobility goals to DRCOG's regional Metro Vision targets and working with transportation management associations. In addition, using other local jurisdictions with existing pilot or permanent programs as a resource for best practices, lessons learned, and inspiration for policy is a great way to ensure shared micromobility program managers do not repeat the same mistakes. The work group serves as a platform for local jurisdictions and other shared micromobility program managers to connect with each other and share best practices.

For example, the City of Thornton worked with the North Area Transportation Alliance when it developed its bike-sharing pilot program guidance. City staff took the ideas that had been discussed at the North Area Transportation Alliance to the Thornton city manager before moving forward with the pilot. Staff said having outside support helped move the pilot through the approval process.



Communications and community engagement

Work group members consider it equally important to communicate with the public and riders as external stakeholders. Making sure residents are thoroughly informed of pilot programs and any changes to the transportation landscape can prevent future pushback. Engaging with the public can help inform the program's policies and procedures, such as understanding where to initially implement geofenced areas or where shared devices may help close a mobility gap. Engaging with active riders allows managers to better understand how and why the program is being used.

The City and County of Denver surveys both dockless mobility users and non-users on their thoughts about e-scooters and e-bike sharing programs. The city also evaluated efforts with a survey midway through its dockless mobility pilot program (February 2019) alongside other evaluations such as in-person observation and on-location surveys. Denver staff used external stakeholder input to develop a strategy for shifting the pilot program into a more permanent program, and continue to survey both shared micromobility users and non-users to inform the next phase of their program.

As with any community engagement process, work group members consider it important to solicit feedback on shared micromobility programs from a variety of perspectives and provide multiple platforms for community members to give feedback. Work group members believe engagement efforts should ensure fair representation of community members regardless of age, race, gender and income level, as well as use a variety of virtual and in-person methods to collect feedback. Using engagement methods that accurately reflect the populations agencies serve can prevent skewed data and make sure program managers have a more accurate representation of how the community at large interacts with shared micromobility.

The work group encourages community staff and operators to work together, alongside DRCOG, CDOT, RTD and local transportation management associations, to inform the public about how to use shared micromobility as a travel option, along with transportation demand management-related initiatives that may be part of any shared micromobility program. Encouraging operators to provide educational opportunities about the basics of using shared micromobility helps residents and visitors accept and understand the new mode as it is introduced to communities.

A coordinated, regional approach to stakeholder engagement

In the Denver region, the work group suggests that agencies looking to implement shared micromobility pilots and programs should consider the following in their stakeholder engagement and community outreach processes:

- Provide educational opportunities (in-app, online and in-person) to visitors and residents. The education opportunities should address no-riding and

no-parking zones; device usage including how to find a device, start a trip, ride and park a vehicle; safety rules and regulations; and engaging the local agency or operator if there is a problem.

- Provide materials in English and other languages that best accommodate potential users in the service area.

- Engage with DRCOG's Way to Go program to represent micromobility in the suite of smart commute options.

Local agencies may also wish to consider:

- Requiring operators to develop and share outreach and engagement plans.

- Working directly with DRCOG staff and local transportation management associations to market and offer education and outreach activities associated with the launch of a shared micromobility program.

Working with operators

Through their participation in the work group, shared micromobility program managers noted the importance of coordination with the operators. When operators and communities were aligned on initial pilot or program goals, they were encouraged by the various ways their partnerships improved. Establishing clear goals, guidelines, deliverables, schedules and expectations around communication can help set programs up for success.

As the shared micromobility landscape continues to change, so do operators. The emergence of shared micromobility in the Denver region in the late 2010s and early 2020s included an initial boom of operators. In just five years, many operators have left the market, gone out of business or have consolidated with other companies.

When working with an operator, work group members emphasize the importance of specific language around communication protocols and tools to enforce policies in legal agreements, such as additional fees for non-compliance. Including cancellation clauses in contracts or permits and being prepared for operator turnover and service changes is very important, according to work group members. They consider it advisable to have a plan in case an operator goes out of business or decides to change its service offerings. For example, an operator may declare bankruptcy and completely go out of service, or it may decide to change its offerings and cease offering e-bikes. An operator may also decide to switch from dockless to docked devices and vice versa. Preparing for operator changes in advance, with contingency plans, will help ensure continuation of services.

Additionally, as highlighted in the Data Sharing section, work group members consider it important for program managers to establish clear communication and expectations around data sharing and mobility data specification feeds with operators. Although mobility data specification feeds are becoming increasingly common, not all operators include such data feeds in their operations.

Some shared micromobility programs in the region have had challenges obtaining useful data from operators.

Finally, making sure the local community understands that many shared micromobility operators are for-profit can help both agency program managers and operators work together toward success. For-profit operators may have primary goals related to revenue and business operations that aren't necessarily the same primary goals as a jurisdiction. However, recognizing that an operator needs to stay in business to continue providing services may help both parties find a balance between fees, regulations and level of services.

Pilot programs

Pilot programs provide local agencies an opportunity to study vehicle deployments and the effects of shared micromobility programs on local goals and to receive feedback from constituents about their considerations before developing an ongoing or permanent program. The work group considers it important for agencies to consider flexibility in deploying pilot programs because shared micromobility is part of a transportation technology sector that is rapidly changing. The work group supports the recommended actions outlined in Urbanism Next's Perfecting Policy with Pilots report.

Urbanism Next studied new mobility pilots and developed its Perfecting Policy with Pilots: New Mobility and Automated Vehicle Urban Delivery Pilot Project Assessment report which details findings, emerging trends and considerations regarding new mobility pilots (Urbanism Next Center, 2020). It recommends 10 actions for pilot projects:

1. Define the pilot goals and outcomes at the beginning of the process and make sure every pilot activity is designed to achieve them.

2. Study what happened and put those findings into a final evaluation report.

3. Foster relationships and build trust.

4. Create a policy framework (such as regulations, contracts, agreements) for each pilot project that advances the public good and is easy to understand.

5. Build in compliance mechanisms.

6. Measure the impact on equity, health, safety, the environment and the economy.

7. Measure the impact of the pilot project on transit.

8. Collect information needed to ensure the public good (while protecting privacy) and produce useful information to make relevant policy decisions.

9. Apply these lessons learned and recommendations to autonomous vehicle and other types of pilots.

10. Plan for volatility.

Operations and safety

Operations

Shared micromobility travelers typically use active transportation facilities where possible. Roadway conditions and the availability of on-street bicycle facilities or shared-use paths influence the choice to use a shared micromobility device and the route an individual might travel.

In 2024, The League of American Bicyclists and Lime launched the Mobility Insights Competition. The study revealed the effect of bike infrastructure on ridership and safety in Washington, D.C., and Bloomington, Indiana (The League of American Bicyclists and Lime, 2024). In Washington, D.C., streets with new bike lanes had a two times greater increase in trips than streets without bike lanes. In Bloomington, while only 25% of street segments had bike infrastructure, nearly 60% of Lime trips occurred on bike lanes. The study also found that protected bike lanes drive ridership. The installation of a protected bike lane resulted in a 100% increase in trips, over five times the growth as on streets without bike lanes. The results from the Mobility Insights Competition report demonstrated that users of shared micromobility devices prefer to ride in dedicated bike facilities.

The work group considers building more safe, comfortable, and connected active transportation facilities to be a critical component in delivering a successful shared micromobility program. Members consider connectivity and safe facilities more important than ever with additional small and lightweight devices using the transportation system. DRCOG's 2019 active transportation

plan details facility design guidance and recommendations for micromobility devices. The 2025 update will also include details on micromobility-related design considerations.

Parking management strategies for shared micromobility devices depend on the type of system deployed. For docked systems, in which parking is limited to a certain location, a bike rack or physical parking corral is required to end a ride. Devices must start and end at specific physical locations. Work group members recommend that parking locations for docked systems be strategically placed to fill mobility gaps and serve as first- and last-mile solutions, such as at transit stations and major destinations like shopping and entertainment districts.

On the other hand, with a dockless program, a user has the option to end a ride wherever they choose. While dockless systems allow users to more efficiently get from their origin to their destination, the ability for users to leave devices anywhere has led to accessibility concerns such as sidewalk clutter and tipped over devices. As dockless shared micromobility programs have increased around the region, parking has become one of the top challenges for shared micromobility program managers and residents alike. In a 2024 survey conducted by the City of Arvada, 80 percent of respondents agreed or strongly agreed that e-scooters were often improperly parked.

To address the challenge of improperly parked shared micromobility devices many programs throughout the Denver region have implemented a hybrid approach, combining policies and infrastructure. For example, the City of Boulder has identified and implemented several no-parking zones. No-parking zones, which are geofenced, include areas around open space and trails, local parks and the University of Colorado campus. In addition to the no-parking zones, the city has also deployed mandatory parking corrals. If a user wishes to end their ride within the identified area, they must park within the outline of the corral, marked pavement boxes which are an easy, low-cost solution because they are often spraypainted on the ground.

In Denver, the city has partnered with its operators to create a variety of designated parking corrals. It encourages riders to park within designated areas when possible, and city staff have explored policies giving riders discounts for properly parking in corrals. Parking corrals take various forms, including marked pavement boxes with and without racks. In general, parking corrals are rectangular painted pavement boxes with flexible delineator posts in the corners to make the corral visible. Some corrals have U-shaped bike racks within the rectangle. Some corrals have signage with the operator’s name. Most corrals have a “P” either painted or included in signage to indicate parking. The city has evolved its parking guidance to build new corrals at the street level to help reduce sidewalk riding.

As shared micromobility program managers continue to improve parking policy and operations, the work group will monitor best practices for parking and explore digital tools for reporting and analysis.

A coordinated, regional approach to operations

In the Denver region, the work group suggests that agencies intending to implement shared micromobility pilots and programs should consider the following in their facilities and operations management:

- Coordinate with operators to ensure that rules and regulations do not impede the ultimate success of the program.
- Define the shared micromobility service area.
- Invest in high-comfort active transportation facilities that support safe, comfortable and connected transportation networks for micromobility travelers.
- Work with operators to support the expansion of safe, comfortable active transportation infrastructure.
- Encourage the use of shared micromobility in areas where active transportation facilities are of high quality and widespread, and discourage the use of shared micromobility devices on sidewalks.
- Identify parking regulations for shared micromobility devices that do not interfere with pedestrian travel or restrict access to or from pedestrian facilities such as curbs, crosswalks and transit stops.
- Identify fleet size minimums, maximums or consider dynamic fleet sizing based on program performance.
- Require devices to be parked upright and in the public right-of-way.
- Require operators to rebalance devices in the service area.
- Require operators to develop and share operations plans.
- Require operators to provide education materials and in-app instruction on correctly parked shared micromobility devices.
- Communicate with operators the location of no-riding or no-parking zones and encourage in-app geofencing.
- Require operators to provide education materials and in-app instruction as to the presence of no-ride or no-parking zones in the service area.
- Leverage best practices from successful shared micromobility programs and reach out to other shared micromobility program managers for peer learning.

Local agencies may also wish to consider:

- Micromobility devices' relationship and connectivity to transit, if transit operates in its service area.
- Device use rate requirements.
- Rebalancing strategies and procedures.
- Parking corral locations and other parking requirements.
- The timeframe in which operators are responsible for removing improperly parked devices once reported to them.
- Procedures and costs associated with removal or storage of improperly parked devices if operators do not remove them from unauthorized locations.
- Fees associated with each ride or deployed device.
- Physical signage designating no-riding zones.
- Micromobility parking areas (for example, on-street corrals, bike racks, painted zones).

Equipment and safety

The work group suggests that as new micromobility devices are introduced to the market, standards, operator practices and policies must be able to adapt. Given the relationship between vehicle classification and regulatory environments, the work group believes agencies must work together to ensure equipment is classified correctly and meets the State of Colorado's legal definitions.

Many shared micromobility companies require riders to be at least 18 years old to use their devices. When users sign up for the app, they are required to provide a valid driver's license or state identification to verify their age.

As communities develop, adopt and implement Vision Zero plans, the work group believes shared micromobility should be discussed as part of a comprehensive safety strategy, because micromobility users are vulnerable road users. The work group encourages public agency staff to consider how to include shared micromobility and electric micromobility users in their efforts to track crashes. DRCOG staff will continue to track local practices in the collection and analysis of such data. DRCOG staff will convene future discussions on micromobility safety through the Regional Vision Zero Work Group.

A coordinated, regional approach to safety

The work group suggests that agencies in the Denver region that intend to implement shared micromobility pilots and programs should consider the following safety requirements:

- Require shared micromobility devices to clearly display a unique vehicle ID and contact information for the operator.
- Require each device to be equipped with a GPS to provide location information for the device.
- Require devices to meet the legal definitions as identified by applicable laws.Require devices comply with safety standards defined by the Consumer Product Safety Commission and other applicable federal, state and local standards.
- Require operators to provide education to users regarding state and local laws both in-app and through additional materials available through the operator.
- Require operators to provide contact information in-app and online so customers can notify operators of safety or maintenance issues with a vehicle.
- Require operators to include information about maintenance, inspections and repairs in their operations plans.

Focus areas for collaboration

Regional coordination

DRCOG staff will continue to collaborate with local, regional, state and federal partners. Ongoing communication and coordination regarding shared micromobility will inform DRCOG staff's future work and revisions to Shared Mobility in the Denver Region. DRCOG staff consider collaborating across jurisdictions and providing support to local agencies to be a critical component of ensuring a successful, multimodal transportation network in the Denver region.

Statewide coordination

DRCOG staff have been involved in the Colorado Electric Vehicle Coalition's micromobility subgroup meetings. Convened by the Colorado Energy Office, the Colorado Electric Vehicle Coalition is a stakeholder group consisting of representatives from communities, the electric vehicle industry, nonprofits, academia and advocates from other industries to further the adoption of electric vehicles and electric vehicle charging throughout the state. The micromobility subgroup focuses on electric micromobility programs throughout the state, facilitating peer learning and collaboration.

National coordination

Since late 2019, DRCOG staff have studied national and international examples on shared micromobility efforts and best practices. DRCOG staff participate in various national efforts and conversations as part of the Open Mobility Foundation and Ride Report's Micromobility Managers Working Group. DRCOG provides resources from its staff's participation in such efforts to partner agencies through the work group. The work group encourages local governments in the Denver region to participate in national collaboratives on shared micromobility, such as those organized by National Association of City Transportation Officials.

Next steps

Shared micromobility offers a distinct opportunity for DRCOG's member governments to support the region's mobility goals. DRCOG staff are committed to ongoing regional coordination on shared micromobility. Staff continue to host work group meetings and facilitate educational opportunities for local agency and regional partner staff. The work group continues to serve as a forum to facilitate the sharing of lessons learned and discuss new considerations. Additionally, as innovation in the micromobility sector continues, DRCOG staff will update Shared Micromobility in the Denver Region to reflect the latest information pertaining to best practices and focus areas for collaboration. DRCOG's staff believe that by working together and sharing what program managers learn, shared micromobility programs will continue to be an integral part of the Denver region's mobility landscape.

Resources

General

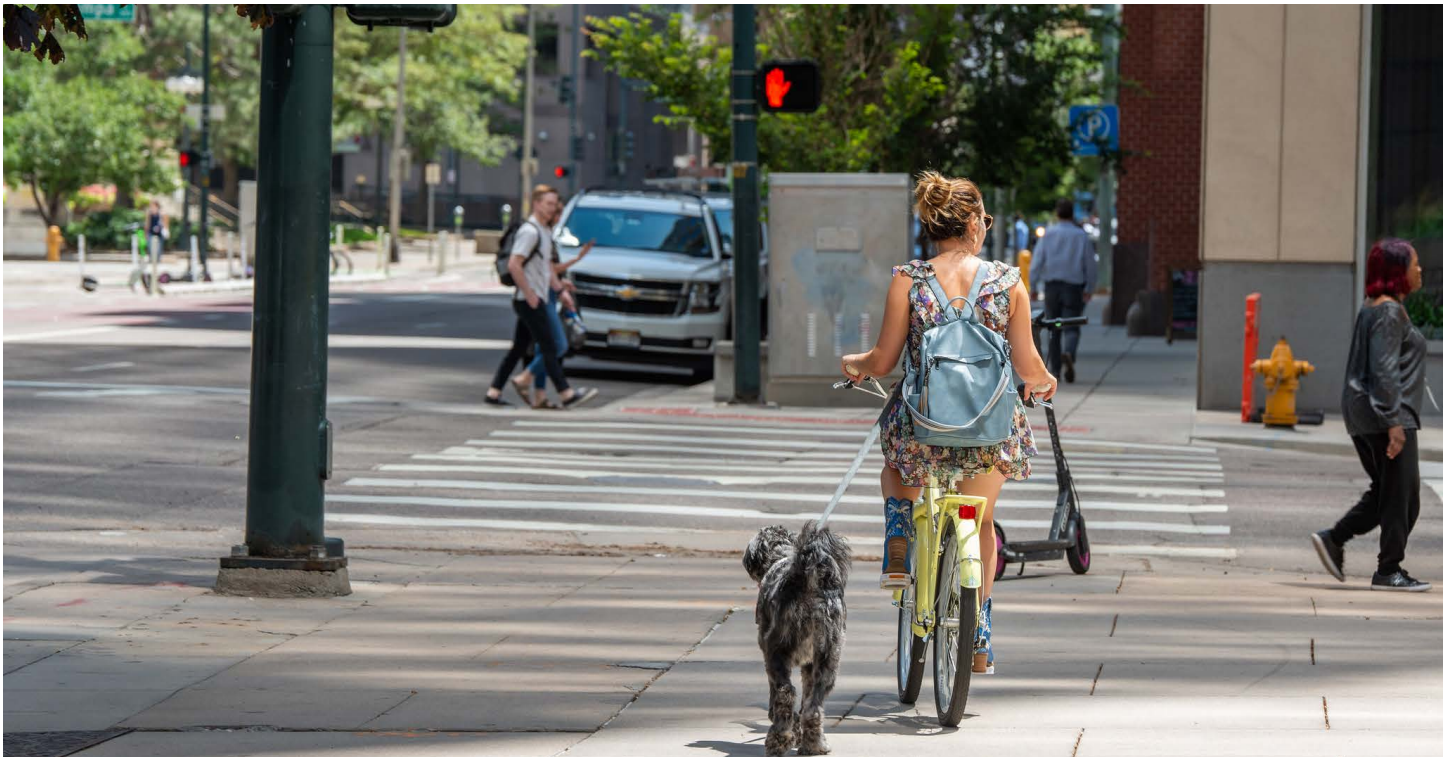
- The National Association of City Transportation Officials has several free resources available:
  - Guidelines for Regulating Shared Micromobility.
  - Shared Micromobility in the U.S.
  - Shared Micromobility Permitting, Process, and Precipitation
- Transportation for America, cities from the Smart Cities Collaborative and industry stakeholders worked together to develop a Shared Micromobility Playbook. The playbook is meant to be an evolving document and can be accessed on the Transportation for America website.
- Urbanism Next published a study designed to help public agencies understand what activities are most likely to achieve their pilot project goals. Researchers describe 10 recommended actions for all pilot projects, regardless of the mode, which are outlined in their report titled Perfecting Policy with Pilots: New Mobility and AV Urban Delivery Pilot Project Assessment.
- The World Economic Forum developed a resource titled Guidelines for City Mobility: Steering Towards Collaboration to establish a framework for cooperation between cities and mobility partners.

Data and privacy-specific

- For more information on how to manage mobility data, refer to Managing Mobility Data on the National Association of City Transportation Officials website.
- The National Cooperative Highway Research Program also developed a framework for managing data. Learn about how data can support decision making at the National Academies website.
- The New Urban Mobility Alliance provides various use cases to demonstrate how to leverage data to achieve policy outcomes. Learn more on the New Urban Mobility Alliance website.
- Open Mobility Foundation developed a MDS Privacy Guide for Cities. Visit the Open Mobility Foundation website for more information.
- SAE International Mobility Data Collaborative brought partners, across various sectors, together to establish a framework for mobility data sharing. They developed the Mobility Data Sharing Assessment and the Data Privacy and Governance resource.

Sources

- Lyft, Lime, Razor, Bird and Spin rethink their fleet presence in Denver amid COVID-19 pandemic. Learn more on the 9News website.



- BCycle. (2023, December 6). BCycle elevates sustainable operation with cargo bikes. Visit the BCycle website for more information. Littleton ends e-scooter pilot program early. Read more about the report on 9News.

- The City and County of Denver launches a dockless mobility vehicle permit pilot program. Read the final report.

- Denver's shared bike and scooter program.

- City of Arvada Shared Micromobility Pilot Program Report.

- City of Aurora Shared Mobility Program.

- Bird, the electric scooter maker, files for bankruptcy. Learn more on CBS news' website.

- A Spin presentation on its Colorado operations, on the Denver South website.

- Lime offers a Lime Assist program which offers all day rentals that are delivered to your front door. Learn more about the Lime Access program on Lime's website.

- The Meridian Metropolitan District launched a pilot program with Spin. Visit the Merdian Metropolitan District's website to learn about the program boundaries.

- Montbello Organizing Committee offers access to free electric bikes through their e-bike library. More information on the program can be found on the Montbello Organizing Committee website.

- The City of Boulder provided an update on the city's shared micromobility program at the February Transportation Advisory Board meeting. Check out the at the City of Boulder website.

- North American Bikeshare and Scootershare Association's Shared Micromobility State of the Industry Report.

- Learn about Northeast Transportation Connections' e-bike libraries.

- Open Mobility Foundation's Mobility Data Specification standards.

- The Denver Post highlights how electric scooter brands Lyft, Spin, offered free rides to health care workers in April 2020.

- Colorado Community Media article on the launch of scooters in Thornton.

- A report from Lime and the League of American Bicyclists titled "Lessons from lime data: How cities can use shared micromobility data for transportation planning and policy."

- Urbanism Next Center's report titled "Perfecting policy with pilots: New mobility and AV urban deliverable pilot project assessment."

- A Brighton Standard Blade article about Bird scooters entering the market.

- A Colorado Community Media article about Ofo bikes leaving the City of Golden.

Photo courtesy of the City and County of Denver.