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Milwaukee's Electric Scooter Program: A Review and Analysis of a Municipal Pilot Study of a Shared Micromobility Program

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by

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Abstract

Cities are implementing shared micromobility to provide on-demand transportation options. Shared micromobility services have gained popularity in recent yeas as an efficient and sustainable mode of transportation in urban areas such as Milwaukee. Privately-owned modes, such as electric scooters, are being integrated into urban planning and local policies as a convenient option for short-distance travel. The introduction of technology supported, shared micromobility services has improved transport equity by filling in network gaps. Cities look at how e-scooters conveniently fit into a multimodal transportation plan and how they serve a positive public purpose without negatively impacting the public right of way. This paper reviews how cities can safely implement new transport mobility options with the introduction of electric scooters. With the growing need for sustainable, accessible, and efficient transportation options, electric scooters have emerged as an option. This paper examines the various aspects of electric scooter pilot studies implemented in different cities across the United States: Milwaukee, Portland, Seattle, and Baltimore. To ensure the successful integration of electric scooters into existing transportation systems, conducting temporary pilot studies and having proper planning is essential. This paper reviews the many challenges that city officials faced during implementation, exploring the safety concerns, benefits, strategies and how cities created a harmonious framework of the terms and conditions to benefit the residents and the environment.

Introduction

This paper examines and expands on the Milwaukee Dockless Scooter Pilot Study (MDSPS) that I was heavily involved with throughout 2021-2023 during an internship with the City of Milwaukee – Department of Public Works. This paper examines one of the many ways that cities, including Milwaukee, are striving to incorporate new forms of shared micromobility to provide more on-demand transportation options. Micromobility technologies refer mostly to electric-powered modes of transportation, such as electric scooters and bikes, typically covering short distances to solve the first and last mile program; while mobility generally refers to the broader concept of the ability to move freely and easily with the accessibility of cars, public transit, walking, and cycling. Micromobility transportation has been implemented to reduce reckless driving, connect people to jobs, and to make the streets safer. In recent years, with the introduction of transportation technology that supports services of shared micromobility (e.g., bike and e-scooter sharing), transport equity has improved. This new addition to the transport system is seen to reduce the equity gap within the current transport network; shared micromobility services can be used to fill in public transport gaps in areas with reduced accessibility. It is important to highlight that, without proper planning and policies, shared mobility may exacerbate transport equity issues (Jiao, et al., 2021; Lewis, et al., 2021).

Micromobility has developed in Milwaukee in a variety of ways, with one form including the introduction of electric scooters. A formal written report that I helped produce during my internship related to the introduction of e-scooters (see appendix) will be used to assess the substantive material contained in the document, the Milwaukee Dockless Scooter Pilot Study Evaluation Report 2021. E-scooters (or electric scooters) refers to electric motor-powered standing scooters with a max speed of up to 18 mph (SAE International, 2019) that can be

personally purchased or rented and made available by shared e-scooter companies. These scooters can be rented when a user unlocks the device for a nominal fee, typically $1, and per-minute cost which range from $0.15-$0.40, depending on the city's regulations. Prior to an official pilot study, a scooter company named Bird had launched its own fleet of e-scooters into Milwaukee in June of 2018 only to have them all removed by that August following a statement issued by the City of Milwaukee's Office of the City Attorney declaring all e-scooters illegal (Pilot Study Report, 2019, p. 2). If the e-scooter operator companies were to be allowed to operate in Milwaukee, they would first need to conduct a small pilot study in preparation for an effective, large-scale, permanent program.

In 2019, the City of Milwaukee initiated its first Dockless Scooter Pilot Study for the purpose of determining how best to incorporate scooters into the transportation landscape and move forward to a permanent program. Between 2019 and 2023, there have been three pilot studies and an initiation for a permanent program. The purpose of a pilot study is to observe, solicit feedback on, manage, regulate and evaluate the effectiveness of a project before creating a permanent project. As part of my master's paper, I will review, expand, and critique elements of these studies.

The layout of this paper is as follows: (1) An overview of Milwaukee's Department of Public Works – Multimodal Unit and their work of implementing the Dockless Scooter Pilot Study to create a more comprehensive permanent program; (2) A brief literature review that examines the urban planning transition from car prioritization to a more pedestrian scale with a particular focus on shared micromobility; (3) A review of three cities that implemented pilot studies, and a review of the Milwaukee Dockless Scooter Pilot Study Evaluation Report 2021; (4) A conclusion section that includes a brief discussion of the significance regarding the

creation of pilot studies through the involvement of key actors. This paper serves as the basis of the *internship-based master's paper with a document, utilizing a substantive approach *(see p.50).*

Almost 60 percent of all car trips in 2017 were less than six miles. This statistic demonstrates the need for micromobility solutions (U.S. Department of Technology, 2018). In recent years, electric scooters have rapidly gained popularity as a practical and eco-friendly mode of transportation in urban settings. Since 2010, people have completed 342 million shared bike and e-scooter trips, and the total number of yearly trips increased by 424 times in 2019 compared to 2010 (NACTO, 2020). The shared bike and e-scooter trips are 11-12 minutes and 1-1.5 miles on average (NACTO, 2020), which could replace 35% of all personal car or taxi trips under 2 miles (NHTS, 2017). With growing demand, temporary programs have been established in hundreds of cities around the world to assess their impact on mobility. This paper discusses how electric scooters were promoted as an efficient and convenient mode of transportation in the City of Milwaukee through their own Dockless Scooter Pilot Study. Each of Milwaukee's three pilots have required different regulations for the scooter companies driven by city plans and goals, public feedback, statistical data collection, and troubleshooting issues.

Starting in June 2021, I carried out my internship with the Multimodal Unit in Milwaukee's Department of Public Works (DPW). The Unit consists of six full-time employees and three interns. The title for their interns is Transportation Operations Assistant (TOA). Approximately 27% of the overall budget is devoted to public works-related spending. Milwaukee's 2018 adopted budget included the development of the Multimodal Unit to improve the efficiency and safety of pedestrians and bicycles throughout the city. In the midst of my first semester of graduate school, I applied for an internship as a TOA with the Multimodal Unit in

February 2021 and I started the internship in June 2021. The Units' focus is to work together to prioritize the city's non-motorized vehicles, such as bicyclists and pedestrians, and their safety on the streets. The mission statement of the Multimodal Unit reads as follows:

> The Department of Public Works (DPW) Multimodal Unit works to create sustainable, vibrant, equitable and connected streets and public spaces that provide choice, safety, comfort and access for everyone in Milwaukee. We prioritize sustainable transportation through collaboration and engagement with other departments, outside agencies, community partners and residents.

In this paper, I will be using my experience in my internship to be the foundation of my review of the Dockless Scooter Pilot Study in Milwaukee. Much of my role as a TOA was assisting with the pilot study. My duties consisted of, but were not limited to, ensuring operators were complying with regulations through data analysis online and in person field work, creating monthly summary reports to share with each of the Aldermanic district's staff, creating educational graphics about scooter riding, and analyzing trip trends to make recommendations to develop permanent program changes. Some of these recommendations encompassed sidewalk riding and parking regulations. As the pilot changed its terms, my tasks changed with them to regulate each operator's compliance with their updated requirements; For example, based off the 2019 public survey, 41.4% of survey respondents mentioned how parking needed to be better managed. Because this was also a frequent complaint to DPW and the Mayor's office, my task was to determine the first 50 locations for the painted street parking corrals that were installed in 2021. Finding the locations for the corrals was part of my job and came from Ride Report, a shared mobility management platform that allows DPW and the scooter operators to see a heatmap of where most trips end.

Milwaukee's Dockless Scooter Pilot Study

Before introducing the pilot study, it is important to understand a broader set of city policies and programs that encouraged and set the stage for the development of electric scooters in Milwaukee. The City of Milwaukee passed its Complete Streets policy in 2018 (Legislative Research Center, Common Council, September 25th, 2018). Complete Streets is a policy designed to integrate people and place by making it safe, enjoyable, and convenient to walk, bike, take transit, drive, or simply experience our streets and public places – no matter one's age or ability (Complete Streets Health and Equity Report, 2021, p.2). As part of this policy, Milwaukee encourages physical activity, reduces negative environmental impacts, enhances the interconnected network, and provides efficient transitions between different modes of transportation.

Similarly, Milwaukee's city-wide Comprehensive Plan includes in its vision of success for transportation that, "emphasis will be placed on moving people between destinations rather than moving automobiles. Streets will be designed for multiple transportation options, including dedicated public transit lanes, bike lanes..." (p.74). There will be multiple modes of transportation to serve the mobility needs of the city. Furthermore, a goal of Milwaukee's Climate and Equity Plan is to reduce vehicle miles traveled by 20% by 2030 through providing other transit options, which includes the expansion of the use of electric vehicles (Climate and Equity Plan, pp. 8, 19, 71). Per these programs and policies, there is a strong alignment between electric scooters and city goals around mobility, and so the adoption of e-scooters would seem logical.

Still, the introduction of electric scooters in Milwaukee took city officials and residents by surprise. In June 2018, around 100 electric scooters landed in the City of Milwaukee, dropped off by a company named Bird. Alderman Robert Bauman, chair of the Public Works Committee and downtown's Alderman, sent out a press release that same day:

> It's irresponsible for this company to come into Milwaukee and place the unsuspecting public in legal jeopardy. Quite simply these vehicles are not authorized for use on sidewalks or city streets and for good reason (Bauman, 2018).

Aldermen and committee members of the Common Council expressed concern about a variety of issues relatedto the scooters, including the lack of helmet use, liability issues and Bird's user agreement (Milwaukee Journal Sentinel, 2018). In July 2018, the City's Public Works Committee (PWC) passed a resolution directing DPW to conduct a pilot study if state statutes were amended to legalize electric scooters. The city attorney ordered the scooters be removed by August 2018 because there was no definition for them in the state statues, and by August 15, they were all removed. Within weeks, legislators had worked on a bill to create a definition in the state statues for electric scooters that also gave municipalities authorization to govern and make regulations for shared micromobility. During these deliberations, a Bird representative provided a written statement noting how removing the option of scooters would have a negative effect on reducing people's reliance on cars for short trips. A year later in July 2019, Governor Tony Evers signed Senate Bill 152 legalizing electric scooters in Wisconsin. Following the state law's passage, an ordinance was also passed by Milwaukee's Common Council banning dockless scooter systems unless operators participated in a pilot study.

Milwaukee started accepting applications for its first Pilot Program in July 2019. A few weeks later, on July 23rd, Lime became the first company approved to participate in the city's

first scooter pilot study. The first Pilot Study deployed 350 dockless scooters and was intended to run through December 31st, 2019. Despite the support, the scooters were taken out in November due to lower ridership in the cold weather. The 2019 Pilot Study counted a total of 350,130 rides. Milwaukee's other existing shared micromobility, Bublr, saw a total of 74,702 rides taken in 2019. The main goals for the initial pilot study were to increase transportation options, expand access to transit, and evaluate the impact on access to the public right of way. The city conducted a public survey in September 2019, and 58.4% of the 7,650 responses cited "more transportation options in Milwaukee" was important to them. Fifty-eight percent of respondents indicated that scooters should be allowed. Because of the positive feedback, a second Pilot Study was conducted in 2021. The 2021 Pilot Study's goals were similar to the goals of the 2019 Pilot, but there were some changes that had been informed by the short-term 2019 Pilot. Some of these changes were to increase the fleet size to encourage accessibility throughout the city, require operators to conduct safety and educational events, create smaller geographic zones to encourage usage, and require operators to incorporate an adaptive scooter fleet that accommodates people of varying abilities.

Electric scooters have become a popular new trend in cities across the globe; In 2018, Populus, a transportation data analytics firm, surveyed 7,000 people across eleven major U.S. cities and found that 70% of respondents viewed e-scooters positively (Populus, 2018). They are a pay-by-app ride sharing option allowing people to commute at a cheaper rate than most other modes of transportation. Similar to bikeshare, the service provides personal transportation to rent for one-way trips. To begin a ride, companies typically require customers to download an app or text a number to unlock the device. To end a trip, these scooters are dockless and therefore they are not locked to a designated docking station, nor other street furniture such as bike racks.

Ideally, the user parks the scooter on the sidewalk close to the curb, but out of the public right of way. Bird and Lime, the first two e-scooter ridesharing companies that were both launched in 2017, have influenced a rapid expansion of other electric scooter companies and scooter use around the globe. Within the first year, Bird had provided 10 million rides and Lime hit 11.5 million rides in its first 14 months (Hawkins, 2018). Unexpected by both companies, the topic of e-scooters has become "polarizing," and the CEOs have been working towards finding ways to make their products more acceptable to the public in every city (Hawkins, 2018). Because of the right-of-way accessibility disruption that they brought to cities, some cities chose to suspend or ban operations immediately after the introduction or after a few years, the most notable being Paris, France. It is the great debate if e-scooters will continue to be a dangerous public nuisance or be a part of the future of urban mobility. Others have required cities to develop local studies and regulations to minimize safety concerns and maximize access to underserved neighborhoods.

Conducting a pilot study can be an effective tool for a municipality to reduce polarization and provide a framework to evaluate the needs and merits for a permanent program. For example, transportation accessibility is a growing problem, but these electric scooters are new to the city and will take time to survey users for feedback in hopes of creating a permanent program. Streets are congested and traffic safety is large public concern in Milwaukee, therefore people are looking for alternative modes of transportation. The pilot study allows e-scooters into the city as an alternative transportation option, but one that can be heavily regulated and managed by the city. Using the 2021 Dockless Scooter Evaluation Report as part of my master's paper will allow me to describe the process and identify the strengths, weaknesses, and opportunities for improvement and review of the overall performance of the pilot. The purpose of the pilot study was to observe, solicit feedback on, regulate, and evaluate the effectiveness of

dockless scooters in Milwaukee for the purpose of determining how to best incorporate scooters into the transportation landscape moving forward. This paper will discuss different aspects of Milwaukee's pilot studies, as well as other cities' pilots, and the several strategies used to address sidewalk riding, require adaptive scooters and ways to improve equity and integrate this technology into the transportation landscape.

Urban Planning and Mobility Transportation

Urban planning, in its modern context, started as a response to the chaos of the industrial age (Levy, 2017). In response to increasing pollution and resultant health concerns, one of the ways early urban planners aimed to improve the livability of cities was to alleviate congestion in streetscapes and through land use zoning. Planners create long-term visions and policies that focus on the priorities of residents and municipal leaders to shape communities. The rise of the auto, freeway construction, suburbanization, the car culture and the main policies that grew out of it have been an integral part of American society since the mid 20th century (Fink, 1975; Hayden; et al). As early as 1958, Lewis Mumford recognized a tension between the automobile and city dwellers. He argued that the pedestrian was the most efficient and flexible mode of transportation within a city, but that mass transportation and automobiles had their place (Mumford, 1961; McAslan, 2018). Autonomous vehicles still dominate today, but pedestrianization has brought some balance/challenges to them more recently, influenced by New Urbanism and sustainability goals. New Urbanism focuses on human-scaled urban design that will make cities far less dependent on automobiles. City development has historically prioritized automobiles, but city planners have realized people still need areas where they can gather, while reducing their dependence on automobiles such as creating urban rail systems and

bike lanes where parking previously existed. Urban mobility is more relevant due to the growth of cities, urban inequality, and the need for sustainable transportation. Quality of life and economic development also depends on safe and efficient transportation.

Advancements in transportation have continuously transformed society in numerous ways. Over the last three decades, influenced by New Urbanism and other planning movements in transportation, planners have been shifting to a more pedestrian scale to be able to create a more connected transit network through gaps between a person's first and last mile route. Multimodal transportation refers to the movement of goods or people using a combination of different modes of transportation. Planners generally assume that most transit users will not walk more than 0.25 miles to bus stops and 0.5 to 0.75 miles to rail stations (O'Neill, et al. 1992; Zhao, et al., 2003; Kuby, et al., 2004). A recent study found that 75 percent of pedestrians arriving at a rail transit station walked less than one mile or 12 minutes (Schlossberg, et al., 2007). When residents are farther away from stations, they are less likely to use public transit and more likely to drive to the station when they do. Micromobility offers the opportunity to individuals to replace taking a personal vehicle to their destination with other modes of transportation. It is important to optimize efficiency, cost-effectiveness, and accessibility in transportation networks to reach a distant destination. The view by planners and scholars is that multimodal transportation can lower transportation costs, reduce congestion on roads and contribute to carbon emissions reduction, and that cities should encourage this kind of transportation (Schlossberg, et al., 2007).

Advancing technology is transforming urban mobility worldwide, with new developments emerging every day. One of the more recent trends is the electrification of vehicles, facilitated by advancements in battery technologies, which is gaining more and more

space in the market (Muratori et al., 2020). Electric cars, buses, bicycles, and scooters are more sustainable and offer accessible alternatives for the population that reduce pollution and transportation costs. With the guidance of federal and state regulations being updated to accommodate the new transportation emissions regulations, issued by the California Air Resources Board, a renewed interest in electric vehicles was back. The Clean Air Act Amendments of 1990 in the United States also played an authority role in creating several initiatives to reduce mobile source pollutants for transportation purposes that laid the foundation for today's e-mobility.

Electric modes of transportation have played an important role in shaping the last decade's mobility and environmental landscape. Scientists, policy makers, and industry experts support the gradual electrification of road transportation as a strategy to reduce transport-related oil dependency, carbon dioxide (CO2) emissions, and urban air pollution. In pursuit of these objectives, mass-produced battery-electric cars were first introduced to the market around the year 2010 (Weiss et al., 2015). Efficient transportation systems require a reduction in the use of cars and a push towards sustainable modes of transportation such as biking, walking, and innovative shared modes (transportation modes that share vehicles and/or rides). This innovation, shared mobility, has the potential to offer environmental benefits, but it is crucial for city officials and planners to understand how to manage the implementation of effective policies.

Shared Micromobility

The most recent 2017 NHTS statistics indicate that over half of the total trips traveled in the U.S. were less than 4 miles (Federal Highway Administration, 2018). These trips could be

replaced by walking, biking, transit, or other alternative, sustainable transportation modes. Shared micromobility has become an integral part of cities' transportation across North America. Based on Milakis et al. (2020), "micromobility" is a term often used to describe a group of transportation modes that are typically electric, shared, accessed through an app and are used as a first/last mile solution. Since the introduction of shared electric scooters in 2017, more than 300 million trips have been made and services are currently available to users in more than 630 cities worldwide (Glavić et al., 2021). Twenty-eight percent of cities in the United States with bikeshare systems have fleets that include e-bikes, and all 151 e-scooter systems are dockless. Some companies, such as Lime and Spin, started out as bike-share companies and began to introduce e-scooters in 2018. E-scooters, as a dockless service, are more flexible to use compared to other similar services that require designated drop-off spots. Gössling (2020) found that e-vehicles represent a highly attractive new transport mode in the urban transportation system, but they compete with pedestrians, cyclists, and motorized transportation. Exploring this new mode of sustainable transportation means that policies should be prepared and supported by different stakeholder groups to enhance the user experience and create suitable terms and policies. Not only do shared micromobility options add new transportation options, but they also help reduce greenhouse gas emissions by replacing short car rides (Fan and Harper, 2022; Sun and Ertz 2022).

The launch of e-scooters in the 2010s can be described as an innovation trigger, with huge expectations and minimal concerns about its impact (Shah, 2022). See figure 1 of a broad timeline of the introduction of e-scooters. As cities grapple with the dramatic disruption, cities work through the different stages as noted in the figure. As shared mobility increases worldwide, city governments may struggle to regulate and manage this new form of transportation after its

sudden, and in some cities, unexpected launch. It is beneficial to assess the impacts of e-scooters from the perspective of a sustainable transportation system, and therefore evaluating scooter crashes, educating riders and researching the benefits of e-scooters brought to the city is important when developing an efficient program. The intention, expressed by companies, behind this innovative technology is to provide affordable and accessible travel options, expand micromobility to all neighborhoods, and reduce carbon emissions. City officials, residents, and visitors respond and react in different ways that inform city governments and other actors on how best to regulate the e-scooter programs. One common approach to ensure a systematic understanding of their impacts, including safety, equity goals such as accessibility in low-income areas, and achieving other policy goals is through the development of temporary pilot studies.

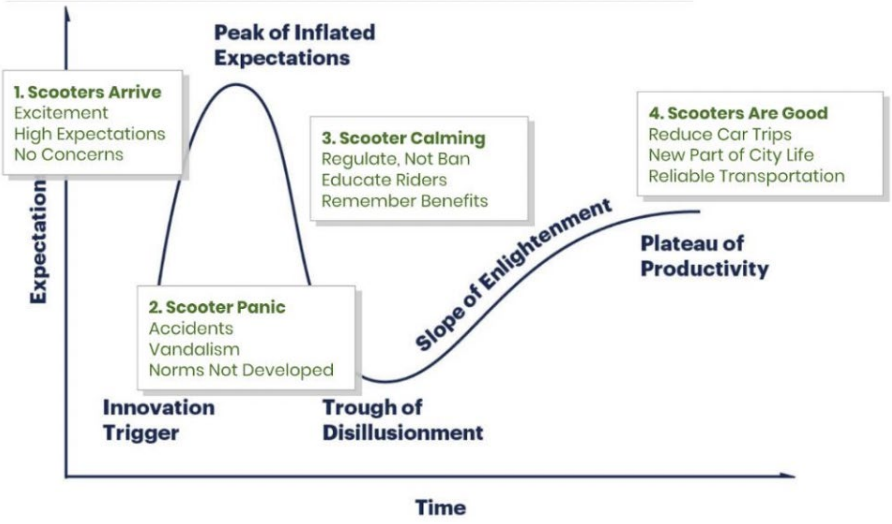

Figure 1 (Source: Kovacevich 2019)

Because e-scooters are still new, there are few scholarly sources, with most discussions found in city reports and newspaper articles that discuss a variety of issues associated about e-scooters such as safety concerns and accessibility, recommendations of e-scooters, and an overall

attempt to understand e-scooters. For example, headlines in newspapers such as Boston Globe read: “Fast, cheap, and sometimes out of control: Is Boston ready for electric scooters?” (Teitell, 2018) and Milwaukee Journal Sentinel “E-scooters need to get off the sidewalk or the program may be canceled” (Dirr, 2019) are representative and reflect the narrative that scooters are unsafe and require city regulation. Other articles are more forward looking and recognize this new reality such as Toronto’s Globe and Mail article, “E-scooters should be city-approved, but regulated” (Tanner, 2019) and Montreal's Edmonton Journal article, “Cities finding balance with e-scooter issues; Experts urge patience as two-wheelers hit the streets” (Campbell, 2019). Public perceptions, newspaper articles, and community blogs help city officials to understand the key issues related to using new technologies and help direct their focus on areas such as equity, safety and other concerns that should form the basis for a scooter pilot study.

Shared Micromobility Across Three Cities

In this section, I briefly review the experience of e-scooters in three cities that implemented a pilot study. This review was not part of the pilot study but serves to provide a broader context and comparison for Milwaukee’s pilot. After electric scooters emerged in 2017, some cities responded by fining the operators or sending out cease-and-desist orders. The cities chosen for this comparison chose a more cooperative path and created an e-scooter pilot study a year after the scooters emerged. This was also the case for Milwaukee, which I review after this section. Once e-scooter companies expanded to other cities, city governments began to regulate scooter operators and introduce permits to test the viability of e-scooters through regulating the demand, number of e-scooter companies allowed, each operators’ fleet size, geographic bounds, and the potential for expansion or downsizing operations (Janssen et al., 2020; NACTO, 2019).

Shared micromobility was generally viewed as positive, but the introduction of these electric scooters on the streets had created problems such as scooters being improperly parked in pedestrian right-of-way and leading to collisions with pedestrians. How are cities approaching the planning and implementation of their scooter programs? As a new amenity, e-scooters generally exist outside of existing regulatory frameworks and established guidelines, leaving planners and public officials to improvise their management techniques one day at a time (Wood, et al., 2019). Proper regulations are thought to be one way to reduce these problems, hence a main reason for cities conducting pilot studies before implementing a permanent program.

For this analysis, three US cities (Baltimore, Portland, and Seattle) that have previously conducted e-scooter pilot studies or are currently piloting an e-scooter study are reviewed. All three cities are mid-size and have a comparable population to Milwaukee, with one being a former industrial "legacy" city like Milwaukee. All three cities have established e-scooter program goals and objectives that align with larger city goals and objectives (e.g. Vision Zero, Complete Streets). This review identifies how each city incorporated e-scooters as a shared micromobility option through their respective pilot study. Previous studies have shown that new mobility solutions should require separate regulations from other vehicle types (Aono et al, 2019; Gossling 2020 Pike et al, 2020). Newly developed policies frequently contain regulations regarding maximum speed, data sharing, device capacity, equipment requirements, fees, and designated parking. Various implementations of e-scooter programs now exist across the world and with a growing interest and usage, also comes the impending challenges to transportation planners if proper planning is not implemented (Caspi et al., 2020, Moran et al., 2020). This review highlights e-scooter pilots in the following areas: terms and regulations for the operators; equity goals; and general challenges that have been faced in implementing the pilot study. All

available documentation relating to scooters was analyzed through local newspaper articles, ordinances, agreements, public surveys, and each city's pilot evaluation reports. Elements taken from these documents complement this paper's goal of examining how cities established regulations with scooter companies and serves to provide a comparative framework for Milwaukee's pilot study.

Portland, Oregon

A news release was sent out on July 25, 2018, by the Portland Bureau of Transportation (PBOT). It shared that Portland had issued the first two permits to operate shared electric scooters in the city. This first pilot ran for 120 days from July 23rto November 20, 2018, with three companies that had applied for a permit and were highly scored by PBOT (Skip, Bird, Lime) and were allowed to deploy a total of 2,500 scooters. A survey that was conducted indicated 34% of residents and 48% of visitors took an e-scooter instead of a personal car. People took 700,369 trips covering 801,887 miles on 2,043 e-scooters. Interim Transportation Director Chris Warner said in the release, "this is a rapidly changing industry, and we wanted to be flexible and nimble in setting up this pilot. Portlanders will now have a chance to try this new way of getting around, and we'll have the opportunity to see if scooters work in Portland and help us meet our safety, mobility, equity and climate action goals." The purpose of the pilot was to conduct an evaluation of the pilot through surveying residents and determining if scooters were compatible with the operation of Portland's transportation system. It was designed to feature a permitting framework that aligned the e-scooter business practices with four of the city's transportation objectives: to prevent fatalities on the streets; reduce traffic congestion by

shifting away from private motor vehicle use; expand access to underserved residents; and reduce air pollution.

There were some problems noted during this first pilot study that led to changes in subsequent pilot studies. During Portland's 2018 and 2019-20 e-scooter pilot programs, PBOT heard from residents who hold a variety of opinions about e-scooters. PBOT engaged residents about e-scooters at pop-up events, community organizations' meetings, through focus groups with Black, Indigenous, People of Color (BIPOC) residents, East Portland, and residents with disabilities; questionnaires; emails; phone calls; and a representative city-wide survey. In October 2020, PBOT presented its 2019 E-Scooter Findings Report to Portland City Council and received direction from the Council to develop a Request for Proposals (RFP) for a long-term program which was solicited in June 2022. In fall 2020, PBOT conducted community outreach to understand stakeholder perspectives on specific management strategies the agency should consider to ensure a long-term e-scooter program. Below is a high-level summary of what PBOT heard from the community during its outreach activities. PBOT took this feedback from the public and made several changes for the future of Portland's electric scooters including adding adaptive scooters to meet physical needs with a seated option, requiring a discounted loyalty program for low-income people, continuing to require equitable distribution in neighborhoods, and ensuring more education on rider safety.

During the first pilot, the operators were required to deploy a minimum of 20% of their fleet each day in historically underserved neighborhoods, defined by the City's 2035 Comprehensive Plan (p. I-36). PBOT (2018) reported that equity goals were not being fully realized due to a fear of racial profiling, lack of knowledge about e-scooter laws and low-income plans, and subpar infrastructure that inhibits access for persons who want to use e-

scooters but do not feel safe doing so. This was a major goal for implementing e-scooters that also aligned with the city's broader equity goals. As a condition to operate, both Portland's scooter companies (Spin and Lime) are required to offer discounted pricing for residents living on low incomes. These residents must be able to demonstrate eligibility for at least one of the following programs: SNAP, Medicaid, subsidized housing, social security supplemental income, and a few others. All rides are $1.00 to unlock and $0.20 per minute, whereas for people who are eligible for the discounted program, rides are $0.50 to unlock and $0.07 per minute to ride. Along with discounted rates, both operators were required to offer non-smartphone rental options and cash payment through a text-to-unlock service.

Portland's Transportation System (PTS) aspires to achieve the standard of zero traffic-related fatalities on the streets. The transportation system is "safe, complete, interconnected, multimodal, and fulfills daily needs for people and businesses" (Electric Scooter Findings Report, Goal 9.B). Goal 9.49.e states that by 2035, the mode share of daily non-drive alone trips will increase to 70 percent citywide. PBOT estimated that e-scooters replaced approximately 423,437 miles of walking, biking, and transit and 285,895 vehicle miles that would have been traveled in single occupancy vehicles (Scooter User Survey 2018). Many of these miles would have taken place downtown, in more congested traffic areas.

Continuing the pilot study, a more regulatory framework was to be followed based on previous pilots. By Oregon state law, e-scooter riders must wear a helmet and are prohibited from riding on the sidewalks, and on trails in parks. Because 90% of users that were measured by PBOT staff were not wearing helmets, going forward operators were required to improve rider education efforts. PBOT began issuing compliance warnings regarding deployment and performance. Two penalties were issued during the first pilot due to the failure of meeting the

fleet deployment requirement. One was issued because Skip Transport, Inc. failed to meet the equity goal of deploying at least 100 scooters in East Portland and the other was issued due to general citywide deployment requirements (E-Scooter Finding Report 2018, p. 12). PBOT's role in the pilot study was to educate and engage the community through demonstrating test rides at local events, placing warning signs at park trails, responding to 3,000 feedback comments online, and hosting an e-scooter safety event with information on the pilot. The e-scooter company's roles were to list the rules and safety information on the outside of the scooter, in the app and place flyers around the city and on social media. Each company was also required to have a helmet distribution plan, mailing out 2,292 free helmets to customers; Of all complaints received by PBOT in 2018, 1,754 (29.1%) were regarding users not wearing helmets.

For Portland's pilot, the speed limit was capped at 15 MPH, which is appropriate for bike lanes and low volume streets, but is too fast for sidewalk use. The number of reports (1,622) of sidewalk riding were submitted to PBOT's online feedback form. PBOT staff conducted user riding observations at five intersections with bike lanes to note riding violations, such as riding the wrong way in traffic, sidewalk riding and parking. Two intersections were chosen that had no bike facilities; data showed that 39% of riders then used the sidewalk whereas 21% of riders used the sidewalk at intersections with a bike lane. Riding on sidewalks continues to be a major concern.

Following Portland's first two pilots (2018 and 2019), another was launched which continues to this day with three companies operating. As of 2023, Portland is in the process of launching a permanent e-scooter program. The RFP was centered around three goals of reducing vehicle miles traveled to combat climate change, promoting safety and reducing racial disparities of transportation justice. There will be important changes to the program such as requiring the

scooters to have a lock when parking to reduce pedestrian conflicts and promote safety on the sidewalks. More e-scooters will be available city-wide, and the application process will choose less than three operators.

Baltimore, Maryland

The Baltimore City Department of Transportation (BCDOT) initiated a six-month evaluation study from August 15, 2018 to January 31, 2019, which allowed private companies to provide rental electric scooters as an alternative mode of transportation. In those six months, a total of 191,218 users took 723,252 rides, traveling 828,761 miles. Baltimore had a unique addition after the pilot ended and opened a 30-day public comment period on the pilot's regulations before they became law. In May 2019, the BCDOT Dockless Vehicle Program transitioned from an observational study to an officially permitted pilot. In August 2019, BCDOT awarded one year permits to four operators: Bolt, JUMP, Lime, and Spin. Over the year, an average of 1,900 dockless vehicles were deployed daily, resulting in 1,992,305 trips taken.

Similar to Portland, the goals for Baltimore included reducing car dependency and congestion, which are reflected in their Complete Street Ordinance, their Bike Master Plan, and the Green Network Plan. After the 2018 observational study, a pilot program was made permanent through municipal legislation. The application process, similar to Milwaukee's, laid out the rules and regulations permit holders would abide by for the one-year permit. These applicants were then scored by the BCDOT team. These rules and regulations were centered around the pilot's goals. Baltimore's June 2022-July 2023 Pilot allowed three operators (Bird, Spin, and Link) but Bird had received four citations during the year and was not offered to renew their permit for the 2023-2023 pilot.

Through equitable access, BCDOT hoped that dockless scooters could provide a means of reducing neighborhood barriers to access by allowing a new transportation option. To ensure equitable distribution of scooters across the city, the pilot agreement required that 25% of vehicles deployed daily must be placed in the "equity zones," which consist of 15 areas selected based on household income levels. Seventeen percent of daily trips originated in equity zones and 28% of vehicles ended their trip in equity zones. Based on community emails and the community survey from the 2018 study, it was viewed that there was a need for more education about safe riding and a need for more safe places to ride; therefore, the 2019 pilot study required in-app education (such as a quiz to be taken before the ride starts). Similar to Portland, as a way to promote access, the 2019 pilot study included the requirement to offer non-smartphone and low-income options for eligible users.

As the scooter pilot progressed, and was supported by these requirements, more people used scooters to commute to work, rather than for recreational use as was the case during the first year. In a 2018 survey that Baltimore conducted, the most common reason to use a scooter was for "socializing," whereas in 2019, the most common reason to use a scooter was for "commuting to/from work/school." This is likely partly the result of ensuring more accessible and equitable distribution of e-scooters in Baltimore.

Seattle, Washington

While many other cities started their pilot study in 2018 or 2019, quickly after electric scooters had emerged in 2017, Seattle outright banned electric scooters while studying the success and challenges from other cities' pilots. The city spent over 18 months developing their

scooter pilot, and in the meantime, Lime was demoing its scooters at neighborhood events to build support for a program. Nearby pacific northwest cities launched pilot studies, but Seattle had just finalized its permanent bike-share program regulations in May 2019. City Council members voted in September 2020 to allow scooters on roads and bike lanes. After crafting its terms and regulations, Seattle Department of Transportation (SDOT) launched a dockless scooter share pilot in fall of 2020 from October 1 to September 30, 2021. SDOT issued permits to three scooter vendors (Lime, Link, Wheels), for a fee, to operate shared scooters within the city limits. Each operator was chosen from a competitive selection process and Seattle wanted to evaluate four different offerings from each of the vendors. Lime already operated its bike share in Seattle; Link offered standing-style scooters; Wheels offered sitting-style scooters; and Spin was selected for their innovative technology of Drover Artificial Intelligence that improves rider behavior. Three operators were permitted to deploy up to 2,000 scooters each, and the other with a fleet up to 1,000.

During the year-long pilot, the total scooter trips taken amounted to 1,489,985 trips. The average scooter trip was 15 minutes and averaged 1.4 miles. The SDOT had five objectives for the scooter share pilot. The first one was to reduce its carbon emissions by providing low-carbon and congestion-reducing mobility options. Seattle has a goal of being carbon neutral by 2050 and having 90% of all personal trips be zero-emission by 2030 (Seattle's Transportation Electrification Blueprint). While there was no statistic noted in the report, the 2022 Report said that SDOT will work on a multimodal climate calculator to help quantify positive climate benefits in the future.

Another goal was to promote accessibility for, and expand use by, Black and indigenous people, non-Black people of color, low-income people, immigrants and refugees, and people

with limited English proficiency. In the first phase, scooter vendors did meet the goal of deploying at least 10% of their fleet in equity focused neighborhoods, averaging 15.5% deployed in equity focused neighborhoods. In a survey that was conducted at the end of the pilot, 14% of users reported incomes below $25,000. Similar to Portland, six community-based organizations conducted focus groups to better understand barriers to participation, particularly for Black, Indigenous, People of Color (BIPOC), and low-income residents. One finding indicated that often people don't know how to use the scooter apps, need safe infrastructure, access to helmets, and in-language customer support.

Promoting safety and advancing Seattle's Vision Zero objectives was a goal for the pilot study. SDOT conducted audits of parked scooters once a week and found that 29% of scooters were obstructions. This statistic did not meet the target for 3% or less of devices parked incorrectly. Geofencing, using GPS technology to create a virtual geographic boundary, was put in place in some areas to encourage proper parking. Along with promoting safe and accessible sidewalks for riders and non-riders, providing accessible and adaptive mobility options and expanded use by people with disabilities was an important goal for the study. Fifteen percent of scooter riders reported having some type of disability.

Seattle launched its first pilot during the COVID-19 pandemic, but still saw 1.4 million trips during its first year of operation. Operations for its second pilot (2022-2023) have been issued by Link, Lime and Bird and are allowed to deploy up to 2,000 scooters each. Seattle has a public dashboard on their city's website that shows a summary of the trip data and shows 6.1 million trips have been taken between January 2022 and December 2023. In the second pilot study, Seattle became stricter with the operators following the terms and conditions. Each operator must maintain a fleet of at least 1,000 vehicles. If a vendor does not deploy its minimum

fleet size, the pilot study manager may notify and reallocate unused fleet capacity. The operator has 15 days to reach the fleet size, if not, the city may temporarily or permanently reallocate the unused fleet capacity to other vendors. If a vehicle has been parked in the same location for more than seven days, the vendor shall relocate the scooter no later than 48 hours after receiving notice.

The Seattle pilot had made equity a centerpiece of its plan. All program materials should be translated into Seattle's Tier 1 languages which consist of seven languages. Vendors were required to distribute no less than 10% of its deployed fleet within the equity focused geographic areas. Vendors were also required to offer a reduced fare membership to users who provide documentation of eligibility for a government income-qualified assistance service. Seattle requires a user without a smartphone, or bank account, to still participate. The survey revealed that many of these users were not aware of how to sign up for a plan, and as a result, Seattle expanded outreach and education efforts, including offering incentives in their 2022 pilot study.

E-scooters are considered viable solutions to the problems of transportation such as cost and traffic congestion that characterize car use. They are also causing a shift from car dependency. Cities such as Milwaukee, Portland, Baltimore, and Seattle are able to show that they can replace a sizeable portion of car trips. Collecting data through pilot studies is an important step as it allows one to understand the public opinion of the e-scooters, make realistic and desired changes to the program, and evaluate if e-scooters will be a feasible alternative mode of transportation. These pilots provide low-income fares, alternative payment options and non-digital access and an increase in fleet deployment to equally be distributed. This review included policies and developing practices for electric scooter operator permits, including fleet sizes, equity distribution, accessibility, equipment requirements, strategies to enhance safety education,

and parking/right-of-way regulations. Some cities have chosen to establish clear objectives that guide micromobility policy and planning, through collaboratively implementing effective regulations between the operators and the city. Terms and Conditions varied throughout each city, but most had similar goals in mind to bring together all transportation options to make mobility in their city more affordable, sustainable, and equitable.

Milwaukee's Electric Scooter Program

Unannounced and without permission, a scooter company, Bird, illegally dropped off 100 rental scooters in Milwaukee in June of 2018. Following a false start from the company, the City of Milwaukee filed a lawsuit against Bird Rides Inc. and its founder a few weeks later, which also passed an ordinance to ban the presence of the electric scooters in Milwaukee and all current Bird scooters were to be seized by August 2018. There was nothing else to do until the state legislature acted to legalize them. When dockless scooters were legalized in Wisconsin. The next year, in July 2019, the city created a pilot study to allow for their introduction. Milwaukee allowed e-scooters to operate under two pilot studies in 2019 and 2021.

The application for the 2021 Pilot Study changed from a simple application to a more involved process. The DPW released a request for proposals to solicit applicants and these proposals were based on applicants' responses to a series of questions related to company experience, the Pilot goals, general operations, and staffing (see appendix, p.5). Six companies sent in their applications and were scored by the DPW staff. Bird, Lime, and Spin scored highest and were selected to participate. The 2021 Pilot ran from June 1, 2021, to November 15, 2021. A total of 481,706 rides took place over the five and a half-month pilot study with the average ride

distance being 0.9 miles. After positive feedback from these two pilots, the City of Milwaukee carried out its third pilot study from September 1, 2022, to November 19, 2023, in hopes of developing a permanent program. Kate Riordan, DPW Senior Transportation Planner, explains the rationale, “We've been working to establish permanent regulations. This [electric scooters] is a totally new thing for the city. It's taking some time for us to figure out how exactly that works out. That is one of the reasons why we made this a longer pilot study rather than the other ones that were a matter of months.” Across these three pilots, Milwaukee has seen more than 1.3 million scooter trips. Milwaukee’s vision is that bringing e-scooters to the city can promote transportation equity and increase transportation options for all residents. Improved transportation options are necessary in Milwaukee and have the power to bridge gaps in social and economic mobility, improve physical mobility options, sustainably improve our environment, and reduce traffic congestion.

During the first pilot study in 2019, scooter trips were mostly concentrated in zone 1, which was the smallest area of the three zones and consisted of Marquette University campus, downtown, and the East Side. Because of this data and noting a few comments from the end of the 2019 Pilot Study public survey such as, “there needs to be more scooters in minority neighborhoods. Only downtown and the east side have real access,” the zoning requirement changed from Milwaukee being separated into three zones to seven geographic service zones. See figure 2.

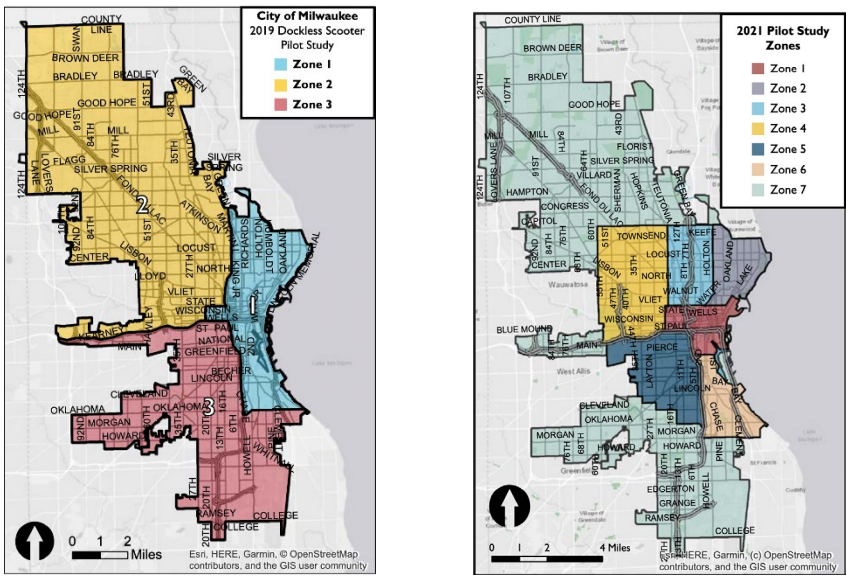

Figure 2 (2019 MKE Scooter Evaluation, p. 8; MDSPS 2021, p. 5)

Each operator was required to deploy a maximum daily average of 17-20% of their scooter fleet in Zone 1 and a minimum daily average of 12-16% of their scooter fleet in zones 2-6 (as referenced in 2021 Dockless Scooter Pilot Study Terms and Conditions 11.2.D) to improve access of scooters. The 2021 Pilot Study distributed more scooters throughout the City than in 2019. In 2019, 90% of all trips started or ended in areas that made up zones 1 and 2. In the 2021 Pilot, it is important to note that 47% of all trips started their trip outside of these two zones. The 2021 Terms and Conditions did not require DPW staff to monitor fleet deployment, so to ensure equitable access, the 2022-2023 Pilot evaluated operators on a weekly basis for opportunities for fleet expansion. If the operator did not comply with the average minimum requirement over a two-week period, the operator would face a suspension for a minimum of five days. Along with fleet compliance, any operator that had 40 or more unused scooters, scooters that have not been moved in 72 hours, would serve the same suspension (2021 DSPS Terms and Condition 11.5.C). The operator was required to relocate the scooters immediately after being notified.

The 2021 Pilot Study included a total of 6,000 responses from both scooter users and non-users throughout the Pilot and after it ended. An online public survey was released after the Pilot had ended and received 5,428 respondents who answered 30 questions, some open-ended, about their experience and opinion on scooters. Throughout the Pilot, other feedback was received through residents contacting the scooter operator, their district Alder person, the Mayor or the Multimodal Unit. According to the responses from the survey, 55.8% of people indicated support for e-scooters to be made permanent, with another 14.9% reported the scooters should stay, as long as stricter rules were in place. Following the two pilots, the Multimodal Unit significantly changed the Terms and Conditions each scooter operator was to follow (Milwaukee 2021 Scooter Report, pp. 43-48 . If new requirements were not met, the operator could be fined or suspended.

In urban planning, priorities on the streets focus on safety for walking, cycling, public transportation and other alternatives to driving a car. The 2021 Pilot Study had three main goals that formed the umbrella over the requirements. The first goal of the 2021 Pilot Study was to provide equitable transportation services that accommodate people of varying abilities and access to scooters for a wider customer base. The second goal was to increase transportation options through scooters having the potential to reduce reliance on motor vehicles and ride sharing services for short trips, decrease congestion and air quality impacts and provide better connections to public transit. The third goal was to have scooter operators show a commitment to keep the public right of way unobstructed by scooters for other street users, such as proper parking that maintains a clear path for people walking.

Milwaukee City Code 102.7.1 was amended to ban riding electric scooters on public sidewalks and other locations where riding a bicycle is also illegal. Sidewalk riding was at top

concern for residents during the 2019 Pilot Study, therefore several strategies were used in the 2021 Pilot to discourage sidewalk riding. Details of these resolution requirements can be found on page 6 of the 2021 Report. One of the resolution requirements said that if the percentage of scooters riding on the sidewalk is greater than 10% in Zone 1, the operator can no longer deploy scooters there. DPW also hired a consultant to conduct three 1-hour observations at intersections throughout the city and found that 25.5% of users rode on the sidewalk. In Zone 1, 29.7% of riders rode on the sidewalk, so DPW prohibited operators from deploying and allowing new trip starts, starting in August. Total rides in August (70,558) dropped almost 50% compared to July's 158,662 total trips. Respondents (48.3%) at the end of the pilot's survey had an unfavorable view of the Zone 1 prohibition, as they could not start or end a trip where they desired. Another requirement for the operators when applying for a permit was to provide a proposal on their sidewalk riding technology and unfortunately, this technology is still evolving in the 2023 Pilot. The scooter (Lime and Bird) is equipped to warn the rider with an audio and a visual to alert them that they have entered a no-ride zone (supplemented with geofencing), along with reducing their speed. Spin's technology consisted of a camera to distinguish between sidewalks, streets, and bike lanes.

Dockless e-scooters are left by riders throughout the city, resulting in sidewalk and public path obstruction that creates pedestrian hazards. Even though DPW staff received less direct feedback from residents than in 2019, the biggest concern was regarding improper parking. After the 2019 Pilot ended, a recommendation for the 2021 Pilot was to implement more general scooter safety tactics. One way was to use messaging to inform users where to park by requiring the user to take a short quiz before they start the ride, a practice common in other cities. Another way was to develop designated parking infrastructure and require scooter operators to attend

public events to talk about safety education. With funding from the City's settlement agreement with Bird, after Bird's unauthorized deployment of scooters in 2018 (2021 MDSPS Evaluation Report, p. 12), in September 2021, 58 scooter parking corrals were installed (painted rectangles with a scooter logo) in areas of high ridership. Finding the locations for the corrals came from Ride Report, a shared mobility management platform that allowed DPW and the scooter operators to see a heatmap of where most trips start and end. Fees from the 2021 Pilot were used to fund more in-street parking corrals with reflective plastic delineators. As of 2023, there are about 100 in-street parking corrals around the city. To incentivize parking in these designated corrals, some operators created an incentive for the user to receive a ride discount when they end their ride in a corral.

Similar to other cities researched for this paper, Milwaukee's own pilot had a requirement of its operators to offer a non-smartphone and a no credit/debit card option for users. Along with this option, operators must provide a low-income or reduced fare rental or membership option. In the pursuit of providing scooters that accommmodate varied accessibility needs, a requirement to have each operator deploy adaptive scooters was made for the 2021 Pilot. "Operators shall include an initial plan describing how they will operate a fleet of dockless scooters for people with varying abilities in their response to the Request for Proposals. Each operator was required to introduce dockless scooters for people of varying abilities that include, but are not limited to dockless scooters with seats, wider wheels, wider baseboards (2021 Dockless Scooter Pilot Study Terms and Conditions, 12.1.A). Unfortunately, while the 2021 terms and conditions called for a fleet of at least 100 adaptive scooters per operator, all operators faced challenges in achieving this goal due to supply chain issues, a short time frame, and the need to develop stronger local partnerships (p.13).

In 2021, 52% of all trips in the U.S., including all modes of transportation, were less than 3 miles (U.S. DOT, 2023). The survey from Milwaukee's 2021 pilot showed that 57% of users would have walked if a dockless scooter was not available at the time of their last scooter trip. Twelve percent said they would have driven a personal vehicle. This data could mean that their destination was only a short distance away or the user did not own or was not near their personal vehicle. The average time to walk a mile is between 15-22 minutes (Centers of Disease Control and Prevention, 2021) and the average time it takes to scoot a mile is between 3-6 minutes. This is a great example of cities having a better first/last mile connection. Moreover, some studies have indicated that micromobility has the potential to account for 8 to 15 percent of all the trips under five miles and grow to a market that is worth $200B to $300B in the U.S. (Shaheen and Cohen, 2019). In Milwaukee's 2021 pilot study public survey, 32% of survey respondents, who have never taken a scooter ride, indicated that a potential benefit of scooters is bringing an option for filling in the first mile/last mile connections to transit, and 69% of respondents who have taken at least two trips viewed that as a potential benefit.

Even though 49% of survey respondents from the 2021 survey did not take a scooter trip during the pilot, 50% of them indicated that a potential benefit for the scooters would increase support for walking, biking, and getting around without a car. At the same time, these respondents had three concerns for potential issues: rider behavior around people driving, riding on sidewalks, and blocking sidewalks when parked (MDSPS 2021, p.28).

Low-income inner-city residents tend to have lower rates of car ownership, and rely more heavily on public transport for commuting. DPW uses the City of Milwaukee's Neighborhoods Revitalization Strategy Areas (NRSAs) to measure progress towards equity goals. NRSAs are contiguous census tracts where at least 70% of the population earns 80% or less of the median

area income. In 2019, NRSAs saw an average of 477 e-scooter trip starts per day and during the 2021 Pilot Study, the average trips per day increased to 806. Forty percent of trips started in NRSAs in 2021 and 19.7% of trips started in NRSAs in 2019. According to census data for Milwaukee, 17% of households do not have a vehicle. This requirement to deploy more scooters in other areas greatly impact areas not well served by or do not have access to other forms of transportation. The 2021 Pilot Study required operators to deploy a greater number of scooters more broadly than in 2019.

At least 20% of Milwaukee County Transit System (MCTS) bus services could be eliminated by 2025, according to the Five-Year Financial Forecast 2024-2028. If MCTS cannot receive funding, 125,000 people would no longer live by a route (Ryan, 2023). In a diminished public transit environment, it is important to have access to multiple transportation options. Developing private operator companies, such as electric scooters, shows an ability to act on this recognition of urgency and are able to rely on private operations.

Milwaukee has established clear goals and objectives for their e-scooter pilots. E-scooters have been welcomed as a transportation option (once a pilot was established) that can expand transportation choice by replacing short trips by car in Milwaukee. Milwaukee's three pilots have provided insights of key factors associated with the demand of micromobility, generated knowledge for stakeholders to begin planning a permanent program and allowed for an examination of the overall impact of deploying e-scooters in the city.

Conclusion

The Significance of Pilot Study Policymaking

Each city identified a set of goals for their pilot studies that aligned with their larger plans such as Vision Zero and reducing carbon emissions. Through this approach, both operators and cities learned what is most safe and desirable, and possible, to execute these goals in an effective way. While scooter companies began deploying scooters, there was a lack of communication between the community and stakeholders leading to issues with unclear solutions. Pilot studies provided a way to build new administrative processes that can guide transportation projects. Waves of interventions show the urgency to respond to transportation problems that come up frequently. For example, the new shared micromobility of electric scooters in the immediate months following the onset of the COVID-19 pandemic in which over 100 cities around the world constructed experimental bicycle and pedestrian networks, helped address the immediate need for safe transportation options (NACTO 2020, Fields; et al., 2022). With careful planning and public policy, shared micromobility has the potential to enhance accessibility, sustainability, and other goals in cities.

Micromobility transportation is viewed positively in terms of increasing sustainable urban mobility, but also should be carefully developed by planners when integrating into city transportation systems. As of June 30, 2023, e-scooters operate in 156 cities (Bureau of Transportation Statistics, 2023). In order to permit scooters, many cities around the world created a pilot study to evaluate this new mode of transportation. It is not clear how many cities remain permitting e-scooters as rentable devices, but a few cities have banned them after a few years in service, the most notable being Paris, France. Paris was one of the first cities to allow e-scooters

in 2018 through a pilot study, but the public had come forward with a petition that garnered 18,000 signatures. Paris then put the question of whether rentable e-scooters should be banned on a referendum in April 2023 and 89% of the 104,000 voters elected to get rid of them. The e-scooter operators had until August 31, 2023, to get 15,000 electric scooters off the streets (Beardsley, 2023). This is an example of how the public may respond when a new program is launched in their city and suggests how this new technology may conflict with other urban goals.

The four cities reviewed for this paper all implemented bikeshare programs, a rentable-shared micromobility service of bikes, before e-scooters. With this bikeshare program, to some extent, these cities have experience in areas where there is most demand for transportation mobility. Despite having private scooters, it is important to maintain open communication with operators to understand how scooters interact with other modes of transport, and in reducing complaints. Each operator agrees to abide and comply with the terms and conditions when applying for a permit and negotiations between the operator and the city, which are mostly non-negotiable. E-scooter programs have been around for the last 6 years and operators have learned to act as planners. Throughout this process, companies promoted a certain vision and approach to influence and inform city government and protect their economic interests. For instance, in early May of 2023, the 11th annual National Association of City Transportation Officials (NACTO) conference, shared e-scooter operators (Bird, Lime, and Spin) unveiled a set of 10 recommendations to help North American cities better integrate shared micromobility devices onto their streets. With their experience of operating shared electric scooters in hundreds of cities over the past 7 years, the CEOs said in a joint statement:

> To ensure these options remain a valuable part of city transportation networks, we combined our expertise to develop recommendations to cities that we view as best-

> practices for regulating micromobility programs. This framework has the potential to greatly improve the experience for riders and non-riders alike, while allowing cities to better manage these services over the long-term. We look forward to working alongside our city partners on implementation so these services can continue to reach more riders in need of safe, affordable, and sustainable transportation options (Report can be found in Appendix B).

Terms and conditions varied throughout each city, but all had four similar goals: increase transportation options to make mobility more affordable, accessible, sustainable and equitable. Operators spend millions of dollars globally to put out tens of thousands of scooters on the streets. At the same time as these companies helping connect transportation networks, they have also been educating users on riding a scooter to possibly develop an interest in purchasing one of their own. Limited research has been done on the total number of personal e-scooters purchased since the emergence of shared micromobility. A study conducted by McKinsey Center for Future Mobility showed that 22% of respondents stated that they decided to purchase a private e-scooter after trying one out in a sharing service (Heineke, et al., 2021). The industry of providing shared electric scooter services is helping to promote and advertise the benefits of riding a scooter. A significant change in riders' most frequent reason for using scooters was seen in all four cities' first pilot study versus their second. In each city's first pilot study, users primarily used a scooter for fun or recreation and in the second pilot, users primarily used a scooter to travel to/from a specific destination, such as work or an event. This response shows that most users were over the novelty of scooter riding and started to see the shared service as a convenient mode of transportation to move throughout the city.

With the introduction of a new technology, like e-scooters, conflicts often arise among users and other constituencies. Policy makers need to find solutions and conducting these pilots is an approach that can lead to a positive outcome to resolve these conflicts. All four cities' pilot studies reviewed in this paper are very similar and have shown the effectiveness and benefits of implementing scooters through a pilot study to meet certain goals such as equity. Introducing e-scooters through pilot studies helped set regulations and provide for an agreement that can be updated at the conclusion of the pilot, possibly resulting in a permanent program. One finding is that all cities reviewed in this paper had a clearly defined equity goal of providing equitable access for lower-income and underserved communities. Ensuring a sufficient number of available scooters throughout the city is crucial to meet the demand and encourage usage. Portland offered a low-income fare for those eligible and required each operator to locate at least 100 scooters in underserved areas. Though 100 scooters out of Portland's 2,990 scooter fleet is not that many, equity trips accounted for 146,000 of the 1,011,000 total trips in 2022. Baltimore has a higher requirement of 10-25% of their fleet must be deployed in each district, a possible reason for this is that 30% of households do not own a vehicle. Seattle's 2021 pilot's equity requirement increased from 10% to deploying an average of 15% of all fleet must be present in equity focus areas. While the 2021 Terms and Conditions called for a fleet of at least 100 adaptive scooters per operator, all operators faced challenges in achieving this goal. Providing adaptive scooters that are accessible for more users is an important goal for Milwaukee's pilot. In response to the Request for Proposals, the 2022-2023 pilot, each prospective operator was required to describe an initial plan of how they would operate a fleet of adaptive scooters.

Each city touched on in this paper prioritizes sustainability practices in their e-scooter programs. E-scooters can be used in cities to help urban mobility achieve the following

sustainability goals: environmentally, socially, and economically. Ninety percent of e-scooter trips taken in 2022 in Portland traveled a distance of three miles or less and 56% traveled were one mile or less, potentially serving a crucial connection for the first and last mile to transit stops. Seattle's 2020-2021 Pilot Evaluation understands that scooter trips provide a low-carbon mobility option. Forty-seven percent of users said they would have taken a taxi/personal vehicle instead, meaning scooters can help support riders' low-carbon transportation choices. Baltimore's 2020 public survey showed 36.9% of users drove their own car less frequently as a direct result of scooters. Some statistics that are not shown in public surveys or evaluation reports is the social benefits of e-scooters, as people may feel safer riding them because they are smaller, and the possibility of wearing skirts and dresses that make it easier to stand on than a bicycle (Santacreu, et al., 2020). For economical purposes, e-scooter companies offer low-income payment options and are overall cheaper than a ride-share vehicle, such as Uber, and more cost-effective to owning a car (Schellong, et al., 2019).

Cities typically establish caps on fleet size to ensure reasonable use and accessibility of public right of way. A success found in each city was implementing a strategy to increase usage rates of scooters to meet the city's demands. Cities have introduced regulations to limit the number of companies and cap their fleet size. The cities select operators through an application process and create incentives to be able to deploy a larger fleet if the selected operators abide by the city's terms and regulation requirements, a carrot and stick approach. A notable change in Terms and Conditions for Seattle's previous pilot studies is that for its 2023-2024 permit year, operators can request a fleet increase based on their trips per vehicle per day performance metrics and adding new incentives.

Electric scooters are privately owned and the companies that own them want to create a profit, but in the last 5 years, only Lime has reported having a profitable year, in 2023 (Young, 2023). Lime invested in creating a new scooter with a swappable battery, so instead of removing the scooter to recharge it, the scooter can charge without taking the scooter off the street. Many other operators, including Tier, Helbiz, and Superpedestrian had to lay off staff after not meeting the city's terms and being in an unprofitable market. For Milwaukee, although operators tried to negotiate some items included in the terms and conditions, such as lowering relocation fees and indemnification language, DPW refused to change its terms based on operator requests. Other forms of transportation (streets, transit, bike share systems) don't make a profit, so it's unique that the operators are allowed to leave their scooters in the public right of way.

Broader Implications and Discussion

Given the lack of scholarship on the impact and significance of micromobility, here I sketch out some broader thoughts and implications such as safety, how e-scooters may be seen as representing a neoliberal form of urban transport, the uses of the "carrot and stick" approaches, and general questions of urban governance and the power that cities have over these operators. The collection of usage and operation data during the pilot is important to perform an evaluation to inform decisions to improve shared micromobility systems. The terms and conditions are the blueprint for developing a pilot study and how it needs to be assessed. Each city's terms and conditions changed with each of their pilot studies. When developing terms and conditions, the first step is for the city to identify its goals and needs, then to assess those needs with rules that the operator must comply with. The last step is to review and analyze the progress of ridership data to determine the pilot's strengths and changes to be made for future studies. Electric

scooters are still a new technology and new things are almost always controversial; a parallel can be drawn to the introduction of the automobile to American culture. Because scooters are able to be left in the public right of way, city officials and residents see them as intrusions. This is comparable to people being able to leave their privately-owned vehicles in the street (the public right of way), but cars are now seen as the "norm" and scooters are seen as out of place. However, this technology is new in other ways that raise important questions.

A recommendation from the 2023 NACTO Conference was to establish and find an initial device cap (the limit of number of scooters able to be deployed per operator). This could have consequences due to the constraint of high demand or the size of a service area. The city could offer incentives for operators to apply for fleet increases, if the operator complies to specific criteria such as sustaining their fleet deployment requirements for 30 days. An example of a city implementing this is when Milwaukee saw its e-scooter usage was heavily concentrated in the city's downtown and east side. In order to encourage usage throughout the entire city, the 2021 pilot study increased the allowable fleet size and decreased zone sizes. There were previously three zones in 2019, but in 2021, seven zones were created. DPW offered the incentive that if the operators comply to deploy a certain percentage of their fleet across each zone, their max fleet capacity could get raised. Baltimore's pilot states compliance scores in their 2022-2023 terms and conditions that to be eligible for a fleet cap increase, the operator must score a minimum of 90% compliance in each district and equity zones as stated in "14.02.01.05.C Standards for Deployment." This recommendation would also help the success of accessibility to be able to deploy more scooters equally across the city.

Along with capping fleet deployment sizes, the question of how many operators is too many or too little was raised in each of the cities' pilot evaluations. Baltimore operated with four

operators in the beginning pilot, but in their 2023-2024 program, they only permitted two. Benefits of restricting the total number of operators in a city include better user experience due to fewer apps required, allowing a higher initial fleet, and possibly reducing the number of unused scooters on the street. Milwaukee is also weighing this option, whereas they have also hired at least three operators in their pilots previously, but are looking to allow permits to two. Increasing the number of scooters is positive for users, but as cities expand the total number of devices, the number of permits allowed by the city may shrink and the application process may become more competitive. It will be easier to monitor fewer operators, improve user experience, and boost the industry's profitability.

A wider implication and open question for operating electric scooters as a shared service in a city must be considered: scooter-related crashes. Operators were required to submit the number of crashes reported to them on a monthly basis, including scooter-car, scooter-pedestrian, and solo crashes. In Milwaukee's 2021 Pilot Study, 18 incidents resulting in injury were reported, compared to 67 that were reported in 2019. Seattle reported 17 collisions involving scooters during their second pilot study in 2021. This crash data is used to inform street design, education efforts, and traffic safety. In the four cities cities reviewed, over 50% of users reported not wearing a helmet, even though all four cities strongly encourage or require helmet use. During the pilots, signage was placed on each scooter of wearing a helmet, but public input had shared that bringing a helmet on their ride was inconvient. Seattle requires riders to wear helmet, but its 2021 user survey found that only 11% of riders said they almost always wore a helmet and 70% of riders reports never wearing a helmet due to not wanting to carry one or owning one (Seattle Master Plan 2020-2024, p.34). Per the terms and conditions,

each operator in all four cities were required to distribute helmets at their monthly public events to increase use and developed additional messaging to encourage safe behavior while riding.

Furthermore, the parking of dockless e-scooters remains a key challenge, as the infrastructural cost of implementing a docked e-scooter solution is high. They are free-floating and they are often organized in the best location where the operators are required to drop off the scooters in areas where there is high ridership trip starts and ends. A trend that was seen throughout each citys' pilot studies was the large number of complaints about improperly parked scooters. Some other cities, such as San Francisco, have adopted a lock-to design on e-scooters. Lock-to means that the scooters are still dockless and can be parked in permitted areas, but the user now locks the scooter to fixed objects. This is one way that operators have addressed major issues with sidewalk clearance to ensure the pedestrian right-of-way is kept clear of obstacles. San Francisco receives more ridership due to its population size and is able to use the program's funds for scooter infrastructure. With more research on pricing, Milwaukee could possibly require a number of the e-scooters fleet to have a lock. These locks could ensure that the scooter would be parked standing upright, out of pedestrian right-of-way, and attached to street furniture such as a bike rack.

There are negatives and positives to implementing a new technology and e-scooters are a great example of how over time, a disruptive technology can become a sustaining technology, but one that raises some important questions. The e-scooter operator, Lime, has made a goal to become a net zero company to further decarbonize the service, including hardware manufacturing. Worldwide, one in every four Lime trips replaces a car trip; so the service is helping reduce carbon, but also focusing on how to make the physical scooter object more sustinable is important. Another e-scooter operator, Spin, is pushing for their scooters to

eventually be transitioned to charging power with 100% renewable energy. It is important to note that the parts used on e-scooters are recyclable and have reusable parts.

Looking from the outside, an interesting note to address is the role of new technologies when directing and monitoring scooters. For example, Milwaukee's DPW does not have control over other modes of private transportation, but it can easily monitor and control where the scooters are allowed, prohibited, their speed control, and other variables. Since DPW has the ability to exercise control over the scooters, different groups and constituencies (district aldermen, MPD, general public), want to use these new powers to achieve transportation and other goals. One positive outcome of this control is fewer safety concerns when a neighborhood group hosts an event and requests that scooters be restricted in that area until the event is over. A negative outcome of this is that scooters have received blame for things that are not related to scooters, such as requesting them to be prohibited in certain areas when those areas are experiencing high crime, even though the crime is not related to scooters. Another negative aspect of this kind of restriction would be not being able to ride to said event and/or area, especially if a scooter is a primary mode of transportation for the user. Yet, this new technology, such as e-scooters, is providing easy access to micromobility data that is essential to their safe and equitable operation. To problem-solve the future of this new technology, most cities require the operators to upload real-time data of their GPS equipped scooters. This information is crucial in determining permit compliance, understanding e-scooter usage, identifying gaps in micromobility networks, evaluating impacts, and monitoring parking behavior.

A set of final thoughts that relate to how we might understand this particular development are its broader implications and significance. One thought is whether we can see this form of governance, as it relates to the adoption of a new type of urban transport, as a New Localism

production. New Localism is a problem-solving practice that focuses on linking the decline of local communities to the growth sectors of global challenges in inclusive and environmentally sustainable ways (Katz and Nowak, p.54). By integrating electric scooters into urban planning and local policies, New Localism can foster a more connected and sustainable community lifestyle through reducing traffic congestion, improving air quality and providing first/last mile connection to transit. Additionally, they can be integrated with existing forms of transportation infrastructure easily. We can also view this development in a neoliberal frame. Neoliberalism, a philosophy and set of policies advocating for free-market capitalism, can be understood with the rise of electric scooters and cities' reliance on private market solutions (Chomsky et al, 2011; Harvey, 2007).

Urban governance involves managing cities effectively and efficiently, and fulfilling responsibilities such as transportation, which also involves understanding complexity and providing transitioning to greater sustainability. These pilot studies provide valuable insights into issues of urban governance by offering a platform to test new approaches of privately-operated technologies before permanent implementation, and as a way to promote a clear set of goals. When conducting electric scooter pilot studies, cities deploy a "carrot and stick" approach which refers to cities using incentives ("carrot") and enforcement measures ("stick") to regulate the use of electric scooters. The four cities reviewed in this paper emphasized the "carrot over the stick," focusing on positive reinforcements, but still included enforcement and sanctions. As the cities conducted more pilots, increasing the operator's fleet was a reward when the operators complied consistently with the terms and conditions. Cities impose fines on operators when the operator is found to be incorrectly deploying the required number of scooters outlined in the terms and conditions. The analogy used a balanced approach to regulate the pilots and achieve safety,

accessibility, and sustainability. Lastly, this development raises questions and provides a glimpse of what smart technology in transit and other areas may look like in the future, such as restricting car speeds, or monitoring use and behavior.

Final Reflection on Internship

Integrating new and experimental technology like e-scooters into the community can ensure conflict and disruption, but it is important to promote these new modes and the city's larger sustainable long-term mobility goals. A lack of data and scholarly research on scooters could not be added to conversations of the scooter topic when discussing the implementation of an electric scooter program. Assumptions are naturally created when new technology is brought in. A pattern I have found as a scooter user, an intern on the pilot study and as a pedestrian of Milwaukee, is the perception of cars versus scooters when each vehicle has done something wrong. Since driving a car has been the "norm," when a car is parked in a public space or drives recklessly, most people don't blame the car; they blame the driver. Yet, when a scooter is parked in a public space or riding in the street, most people automatically blame the physical scooter as a whole. People rarely go against the system of cars.

Many of the projects I worked on during my internship with DPW engaged Milwaukee residents, but most of these projects did not produce as much public engagement (news reports, articles, social media, public surveys) as the topic of electric scooters. The topic of electric scooters was also frequently brought up in monthly Common Council meetings and Milwaukee's Pedestrian and Bicycle Advisory Committee meetings, whether it was to clarify, to question, or to share a concern. One of my main tasks was keeping track of these comments that were sent to the Mayor, Alderman, or directly to DPW. Milwaukee's first scooter program had just ended during the first year of my internship, and we were in the process of organizing the public

survey. This was my first experience collecting, reviewing, and analyzing feedback from the residents of Milwaukee. Many of these first survey responses helped guide the terms and conditions for the next pilot study. Having access to very detailed data on each of the scooters was also very helpful in terms of creating regulations, monitoring trip routes, and being able to organize important numbers to share with district aldermen, city officials, and residents who are interested in the e-scooters. Monitoring general public comments often was important because the comments highlighted for us those critical issues and informed the discussions we had to adjust a manageable framework of the Pilot's Terms and Conditions.

Direct engagement between the city and the scooter operators was a central part of the pilot studies. We kept an organized schedule to meet with each operator multiple times a month to go over any questions, concerns, updates on community events, and a run-down on any new data that had been collected. Along with open communication between the city and the operators, the requirement that each operator attend or host a public educational event helped to build relationships with city residents and e-scooter users. Seattle, Portland, and Baltimore had a higher standard of building relationships with community partners and being present with public events, requiring the operators to host multiple safety events a month during the pilot. In Milwaukee, requiring its operators to host safety education events was not as highly prioritized (one per month) and had less community collaborations. For Milwaukee, one of the key concerns was also the lack of general educational information on riding and parking. Moving forward Milwaukee could require its operators, even city staff and stakeholders, to be more involved with community partners and sharing educational material at events to address safety issues.

Working on an evolving transportation project taught me a variety of skills and gave me valuable experience and insights about the process. I learned about the environmental

considerations involved, collaborated with multidisciplinary groups (engineers, planners, and stakeholders), and acquired knowledge about sustainable transportation practices and technologies. With the Dockless Scooter Program, I was able to learn and use ArcGIS, visit neighborhoods, talk to residents, test new technology the operators were using, and collect different types of scooter user data, all for the sole purpose of bringing enhanced connectivity to the city's transportation network. Most importantly, it helped me understand and see first-hand the connection between a set of policy goals and their implementation, and how the city can advance and be improved for its residents and environment.

*This master's paper follows the internship option that is related to a document produced during an internship with a substantive material focus (section II. B of "Master's Paper Based on an Internship"). The text is reproduced below.

B. INTERNSHIP PAPERS USING A DOCUMENT AS A PART OF THE REQUIREMENT
Under this option, a project document which is a product of the work undertaken by the intern becomes the appendix to the Master's Paper. Reports, grant proposals, program designs, and the like generally meet this requirement. In this case the document may lack many of the features of the internship document which satisfies the requirement of "A" above. It may, for example, contain no literature review or it may be methodologically or analytically deficient. Thus the project document, its strengths and weaknesses, becomes the focus or subject of the Master's Papers. The paper itself is an analytical statement which explains some aspect of the internship as it relates to the document contained in the appendix. The analysis may focus on one or more of the following aspects:

(1) Methodology
(2) Substantive Material
(3) Organizational Process

(2) Substantive Material
The statement of an intern electing to address the substantive material contained in the document must show exceptional knowledge of the material. The areas of substantive knowledge may, of course, vary with the nature of the internship. Possible approaches which would exhibit evidence of substantive knowledge are the following:

2a) A critical review of relevant public or private programs or policies related to the

document.

2b) An analytical/theoretical review of the issues or problem area from a broader perspective than is contained in the project document.

2c) A survey and assessment of empirical research or studies related to the project document, such as national studies, demonstration projects in other cities, etc.

2d) An historical survey of a national/local program or policy development on issues relevant to the project document.

2e) An assessment to the limitations of current programs, policies, or studies and an outline of proposals to advance the current state of knowledge.

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City of Milwaukee
2021 Dockless Scooter Pilot Study
Evaluation Report

Acknowledgments

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Mayor Cavalier Johnson

Mayor Tom Barrett
Through December 2021

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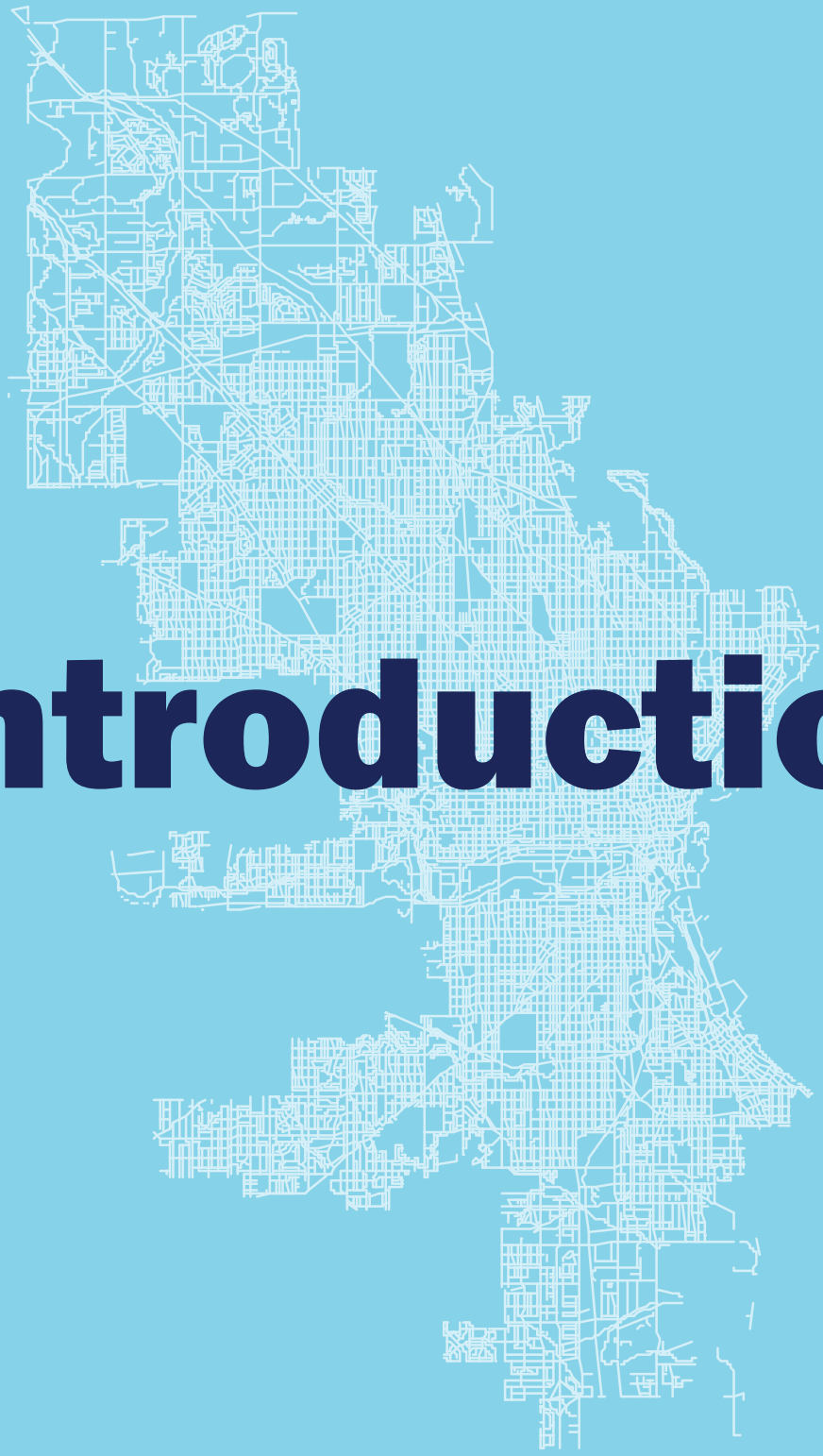


Introduction

In July 2019, electric scooters were legalized in the State of Wisconsin and municipalities were given broad authority to regulate both scooter usage and the operation of short-term scooter rental companies. Later that month, the City of Milwaukee Department of Public Works (DPW) launched its first Dockless Scooter Pilot Study (2019 Pilot Study) to allow scooter rental companies to deploy their vehicles in Milwaukee. The 2019 Pilot Study lasted from late July through late November.

The 2019 Pilot Study proved to be a success in many ways. Over 350,000 total rides, or an average of over 2,750 rides per day, were taken during the four-month pilot, demonstrating latent demand for new transportation options. A public survey conducted during the pilot showed that 58.4% of survey respondents cited "more transportation options in Milwaukee" as an important or very important benefit of dockless scooters. Smaller, electric, shared vehicles also have the potential to assist in achieving other City goals around health, equity, safer streets, and climate change.

Governor Tony Evers at the signing ceremony for SB 152 in July 2019

Due to these successes, the 2019 Pilot Study's short-term nature, and evolving transportation needs as a result of the COVID-19 pandemic, DPW recommended a second Pilot Study to gather more information. The following are some of the key changes implemented in the 2021 Dockless Scooter Pilot Study (2021 Pilot Study) based on lessons learned from the first pilot:

- Reconfigure zones to encourage usage throughout the City
- Increase allowable fleet size to encourage usage throughout the City
- Revise the fee structure to include a reduced per scooter fee and a new per trip fee
- Require operators to conduct regular safety and educational events to promote safe riding and proper parking
- Require operators to incorporate scooters that accommodate people of varying abilities

These changes are discussed in more detail on pages 4 – 14. The full 2019 Dockless Scooter Pilot Study Evaluation Report can be found at: milwaukee.gov/DocklessScooters.

Note that DPW did not conduct the second pilot study in 2020 due to shifting priorities and staff capacity during the COVID-19 pandemic.

The Pilot Study

Pilot Study Goals

The goals of the 2021 Pilot Study were:

Provide equitable transportation services
Dockless scooters can be deployed where the need is highest, providing transportation services where other options may be unavailable. Additionally, dockless scooters that accommodate people of varying abilities have the potential to improve access to dockless scooters for a wider customer base.

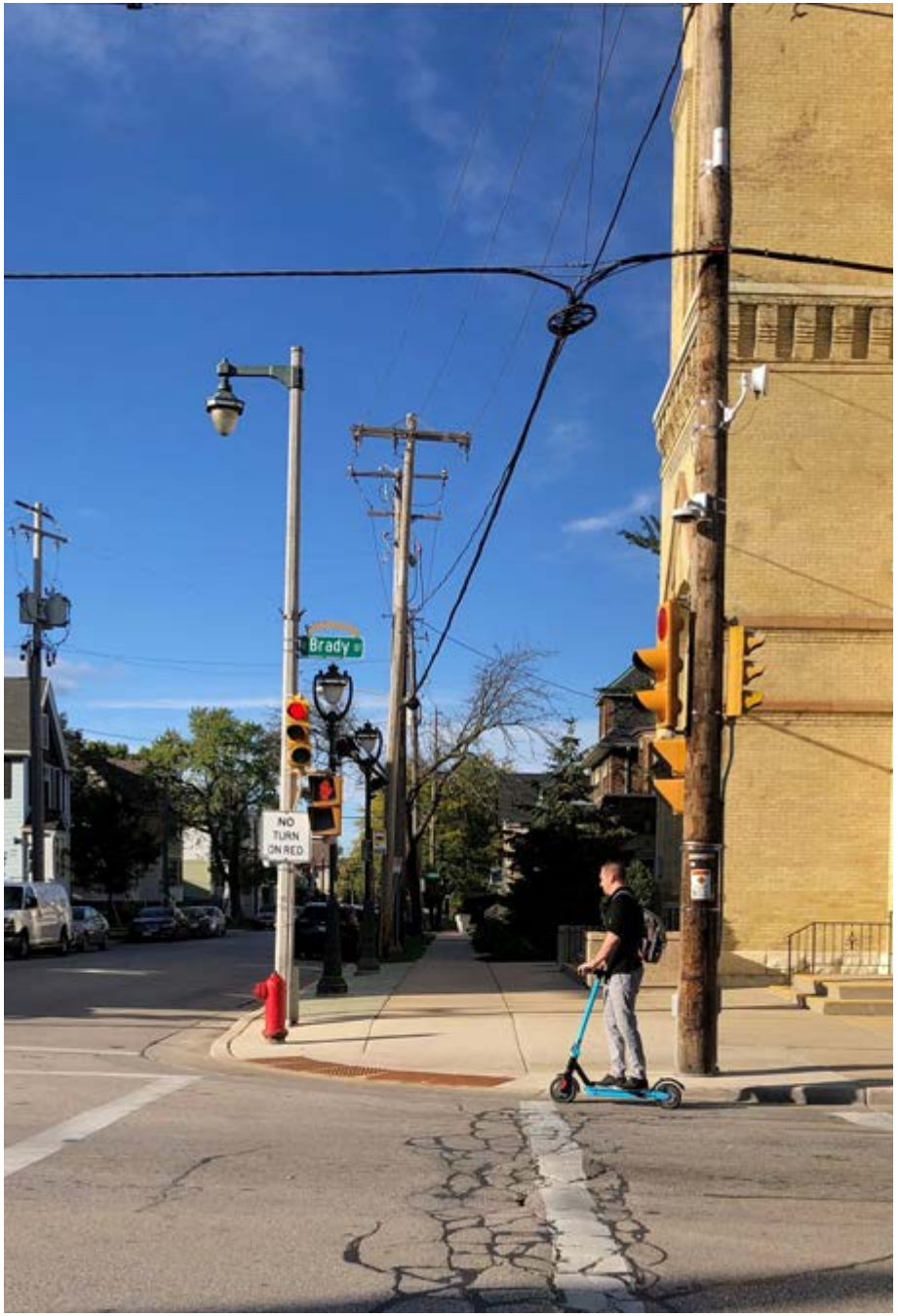
Increase transportation options
Dockless scooters have the potential to reduce reliance on motor vehicles and ride sharing services for short trips, decreasing congestion and air quality impacts. Dockless Scooters may also provide links to public transit, assisting with connectivity and solving the first-mile/last-mile problem.

Evaluate impact on access to the public right of way
Scooter operators must show a commitment to keeping pedestrian ways, streets, and other public rights of way unobstructed by dockless scooters for other street users. Most importantly, dockless scooters must be parked and maintained in a manner that provides a clear path for people walking and maintains access to businesses, residential units, and other buildings.

Rules and Regulations

The following pages summarize some of the regulations that governed the 2021 Pilot Study as outlined in its Terms and Conditions. The full Terms and Conditions document can be found in Appendix A on page 39 In addition to these local regulations, scooters are required to comply with Wisconsin State Statute requirements (Sections 347.489 (1), 347.489 (2), and 347.489 (3)).

Electric scooters purchased for personal use are not subject to the 2021 Pilot Study Terms and Conditions, but are subject to Wisconsin State Statute requirements.



Riding a personal scooter on E. Brady St.

Application

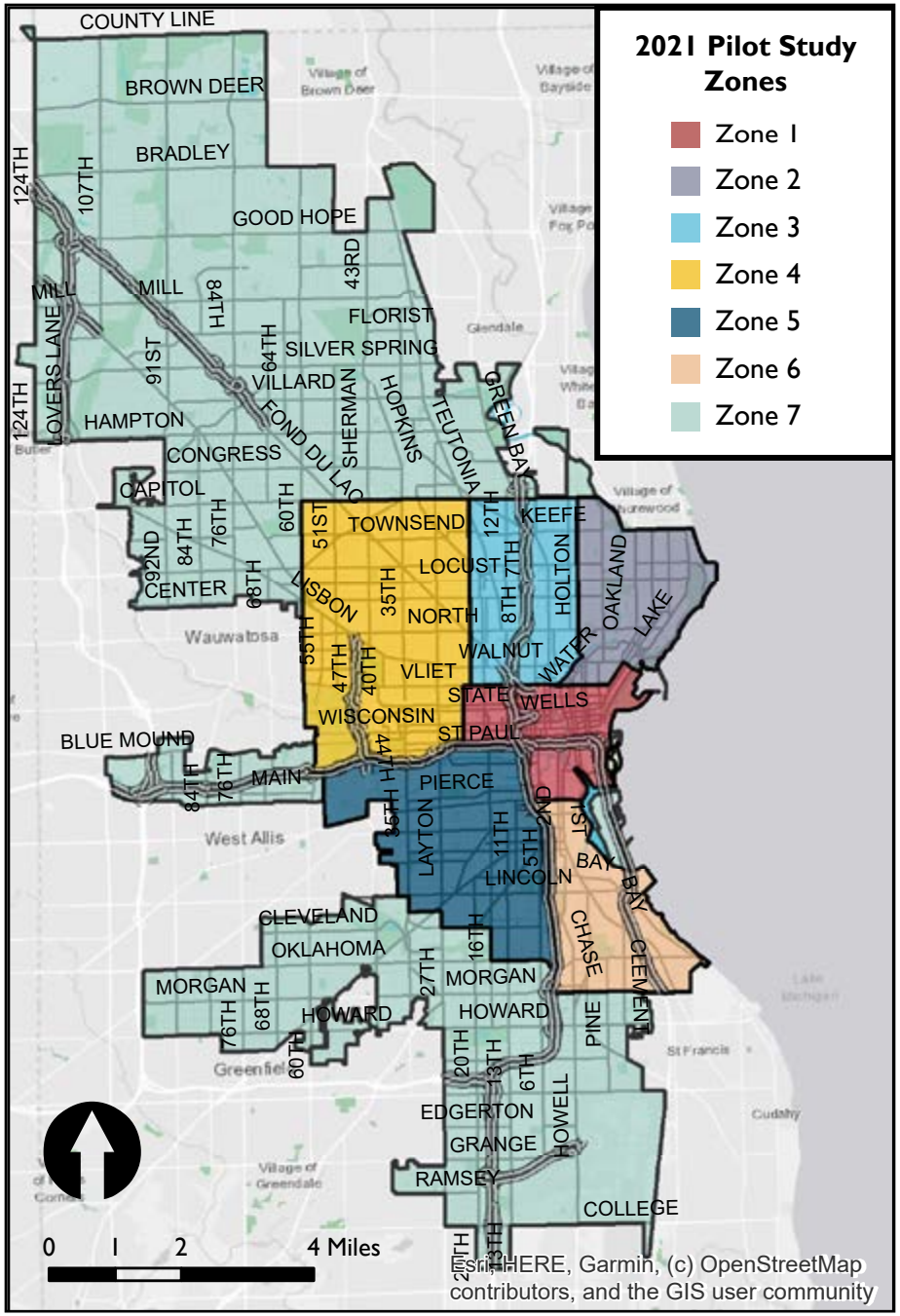
DPW released a request for proposals to solicit applicants to the 2021 Pilot Study with the intention of selecting up to three companies to operate dockless scooter systems in Milwaukee. Proposals were evaluated based on applicants' responses to a series of questions related to company experience, the 2021 Pilot Study goals, general operations, and staffing. Six companies applied to the 2021 Pilot Study. Bird, Lime, and Spin were selected to participate.

The 2021 Pilot Study Request for Proposals can be found in Appendix B on page 52.

Zone and Fleet Size Allowances

In the 2019 Pilot Study, dockless scooter usage was concentrated in a small area mainly in the city's downtown and east side, and near the Marquette University campus. In order to encourage deployment and usage throughout the entire city, the 2021 Pilot Study increased the allowable fleet size and decreased zone sizes. The map to the right shows the zones, and the table below outlines the fleet distribution requirements.

Fleet Distribution Requirements		
	Allowed / Required per Operator	**Allowed / Required Total**
Zone 1	100 maximum	300 maximum
Zones 2 - 6	160 minimum per zone	480 minimum per zone
Anywhere outside of Zone 1	100	300
Total	**1,000**	**3,000**



Riding on the sidewalk on N. Doctor Martin Luther King Jr. Dr.

Sidewalk Riding

Along with the passage of the resolution allowing the 2019 Pilot Study, Milwaukee City Code 102.7.1 was amended to ban riding electric scooters on public sidewalks and other locations where riding a bicycle is also illegal. Sidewalk riding emerged as a top concern for Milwaukee residents during the 2019 Pilot Study, both in complaints received by DPW and in the public survey. Several strategies were used in the 2021 Pilot Study to discourage or prohibit sidewalk riding.

2021 Pilot Study Resolution

The resolution approving the 2021 Pilot Study (File #201461) established that sidewalk riding was a top concern for Milwaukee residents. It included the following requirements:

- DPW must hire a consultant to conduct periodic, systematic observations of intersections to determine the percentage of dockless scooter riders using the sidewalk.
- If the percentage of an operator's dockless scooter riders using the sidewalk is greater than 10% over a specified period of time **in Zone 1**, the operator can no longer deploy scooters or allow new trip starts in Zone 1.
- If the percentage of an operator's dockless scooter riders using the sidewalk is greater than 10% over a specified period of time **outside of Zone 1**, the operator must present a plan to decrease sidewalk riding in those zones.

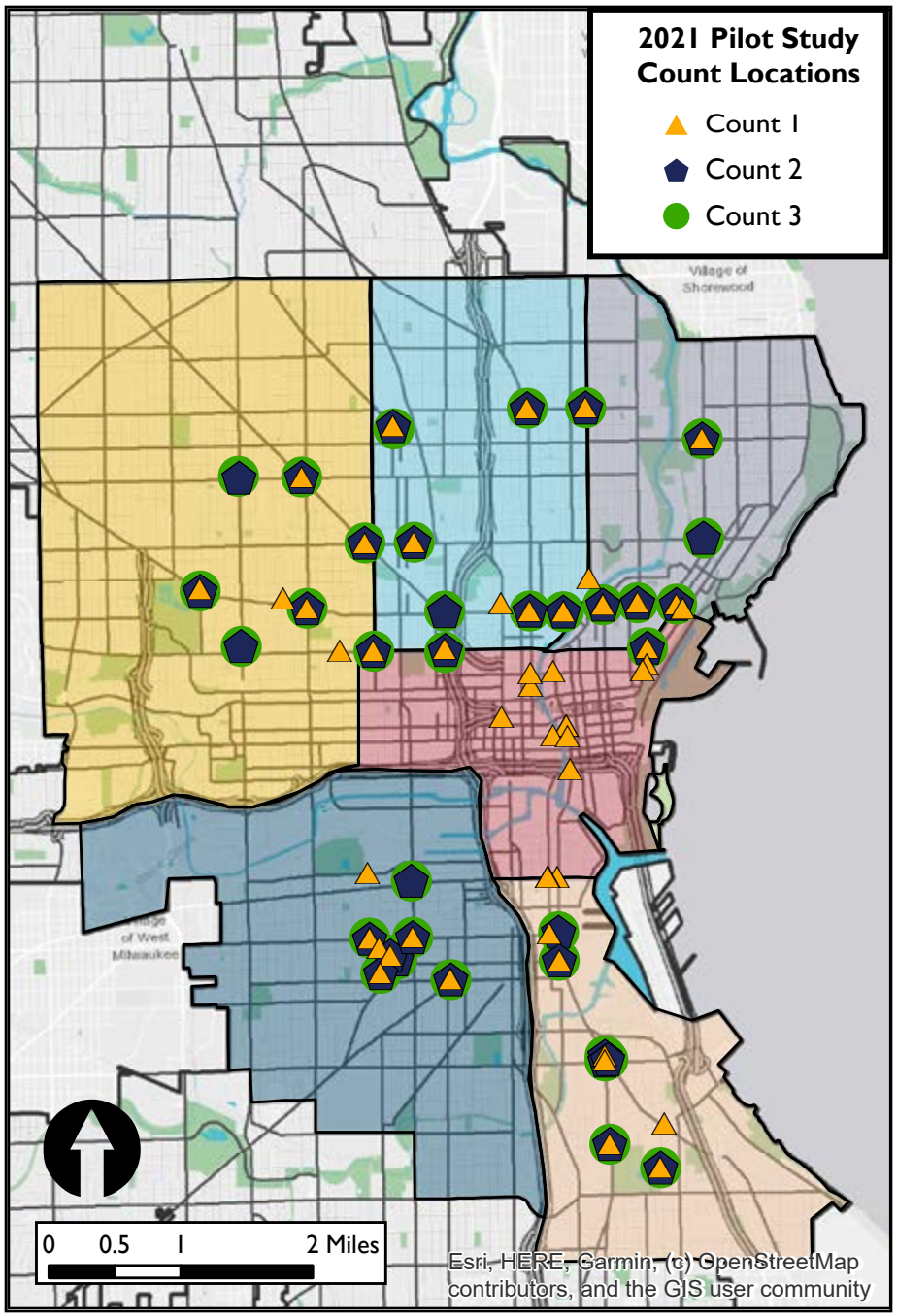
The resolution did not provide a mechanism to return dockless scooter operations to Zone 1 if an operator was banned from deploying and allowing new trip starts.

The full resolution can be found in Appendix C on page 54 and details on the methodology for observations can be found in the "Intersection Counts Scope of Services" in Appendix D on page 56.

Intersection Observations

DPW hired a consultant to conduct hour-long observations of dockless scooter riding at intersections throughout the city. The map on the following page shows the locations where observations were conducted. Intersections and observation times were selected through an analysis of ridership data. Details and results for each count period are listed table below. Raw data collected can be found at milwaukee.gov/DocklessScooters.

Intersection Observations					
	Number of Intersections	**Number of Observations**	**Sidewalk Only**	**Street Only**	**Switched Street / Sidewalk**
Count 1: 6/25 - 7/9					
Zone 1*	15	123	24.4%	57.7%	17.9%
Zone 2	7	68	17.6%	61.8%	20.6%
Zone 3	7	14	42.9%	35.7%	21.4%
Zone 4	7	11	81.8%	9.1%	9.1%
Zone 5	7	37	29.7%	62.2%	8.1%
Zone 6	7	7	71.4%	0.0%	28.6%
Total	50	260	28.1%	54.6%	17.3%
Count 2: 8/6 - 8/20					
Zone 1	N/A	N/A	N/A	N/A	N/A
Zone 2	7	32	34.4%	53.1%	12.5%
Zone 3	7	5	0.0%	60.0%	40.0%
Zone 4	7	4	25.0%	75.0%	0.0%
Zone 5	7	7	14.3%	42.9%	42.9%
Zone 6	7	41	9.8%	75.6%	14.6%
Total	35	39	19.1%	64.0%	16.9%
Count 3: 9/10 - 9/24					
Zone 1	N/A	N/A	N/A	N/A	N/A
Zone 2	7	21	14.3%	61.9%	23.8%
Zone 3	7	4	4.8%	14.3%	0.0%
Zone 4	7	3	33.3%	66.7%	0.0%
Zone 5	7	4	75.0%	25.0%	0.0%
Zone 6	7	11	18.2%	63.3%	18.2%
Total	35	43	23.3%	60.5%	16.3%
Grand Total	**120**	**392**	**25.5%**	**57.4%**	**17.1%**



Zone 1 Prohibition

During the first count period, more than 10% of each operators' riders were observed riding on the sidewalk. DPW considered instances labeled "sidewalk only" and "street only" when analyzing the data. Overall, 29.7% of riders observed in Zone 1 rode on the sidewalk only when traveling through an intersection, and 70.3% of riders rode in the street only when traveling through an intersection. Based on this data, DPW prohibited all operators from deploying and allowing new trip starts in Zone 1 beginning August 3.

Although riders could end trips in Zone 1, only Bird allowed riders to do so, with Lime and Spin citing the operational burden of collecting and redistributing scooters that ended trips in Zone 1 but could not be used to start a new trip. Lime and Spin scooters automatically slowed to a stop when a rider approached the Zone 1 border. As a result, several riders left scooters on the streets that bordered Zone 1.

The Zone 1 prohibition had a significant impact on overall ridership. Total rides in August dropped to 70,558, or 44.5% of July's 158,662, and continued to decrease in subsequent months. Additional analysis of the impact of rides and user feedback on the prohibition can be found on pages 17 and 29, respectively.

Technology

Each participating scooter operator proposed to use sidewalk riding detection technology to either warn riders that they were riding on the sidewalk or to stop the scooter when a rider used the sidewalk. City staff received demonstrations of the technology from each operator. The following describes the technology used in the 2021 Pilot Study. This technology is constantly evolving and additional methods to regulate dockless scooters' speed and location is likely in the future.

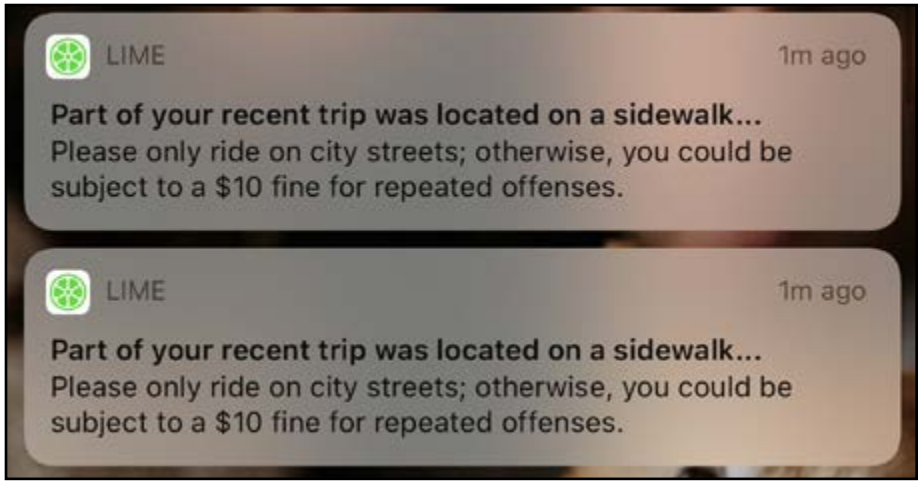
City staff receive a demonstration of Bird's technology

Bird

Bird's technology uses GPS and calculates inertial measurements and wheel speed to detect when a rider is on the sidewalk. In the 2021 Pilot Study, approximately half of the deployed scooters were equipped with this technology beginning in the fall. When a rider mounted a sidewalk, they received an audio and visual alert via their mobile device warning them that they entered a no-ride zone and must return to the street. If a rider did not return to the street, the scooter slowly reduced its speed until it came to a complete stop.

Lime

Lime's technology involved collecting accelerometer and speed data from local surfaces. From this data, the vibration of the riding surface, such as asphalt, brick, sidewalks, etc., can be detected through a statistical model. This data was supplemented with geofencing technology to detect sidewalk riding, leading to more accuracy. Riders that spent more than 50% of their trip on the sidewalk were given a push-notification on their mobile device alerting them that they rode on the sidewalk and could face a fine if they continued to do so; see image below. This technology was on every device from the beginning of the 2021 Pilot Study. No riders were fined for sidewalk riding.



Example of Lime's push-notification

Spin

Spin's scooters consisted of a camera mounted on the scooter that was able to distinguish between sidewalks, streets, and bike lanes. Approximately 100 of Spin's scooters had the technology. Riders that entered a sidewalk heard a consistent tone, which stopped when the rider re-entered the street. A bike bell also sounded when the scooter entered a bike lane. The scooters equipped with this technology were initially deployed in Zone 1 but were placed throughout the city after the Zone 1 prohibition went into effect.

City staff try Spin's sidewalk detection technology

Education and Safety Outreach

Operators were required to conduct two events per month: a general safety event and targeted outreach in areas where sidewalk riding had been observed. Each operator prepared a report of the events on a monthly basis. One event from each operator is highlighted on the following pages.

In addition to events, all operators were required to have visible language on the stem of each dockless scooter or on a tag attached to the dockless scooter's handles and on the operator's website and smartphone application which notifies the user that:

- Helmet use is encouraged while riding a dockless scooter
- Sidewalk riding is prohibited
- Riding and parking on the Riverwalk are prohibited
- Users are required to follow all rules of the road
- Scooters must be parked responsibly

Examples of required messaging on a Bird scooter

In July, Bird tabled at the Fondy Farmers Market. Staff interacted with over 100 people and distributed 50 helmets. Visitors also received safety information and cards promoting various discount programs.

Lime held a First Ride Academy at McKinley Park in September. Visitors to the outreach event took a safety quiz, received a helmet, and were able to participate in a ride course to learn how to ride safely. Lime also promoted its adaptive scooters at this event.

Spin was a sponsor for Near West Side Week in September. Spin staff provided safety demonstrations before a Walk and Ride event, and participants were able to ride scooters from the Near West Side to the Hank Aaron State Trail.

Parking Corrals

In September, 58 scooter parking corrals were installed in areas of high ridership, mainly concentrated in Zones 2, 3, and 6. The corrals were funded through the City's settlement agreement with Bird after Bird's unauthorized deployment of scooters in Milwaukee in 2018. Parking corrals were located both on the sidewalk outside of the walking path and on-street in no parking zones. Sidewalk corrals were designated with a painted outline and image of a scooter. In-street corrals had the same paint and image and were accompanied by reflective plastic delineators.

Operators were provided with the locations of parking corrals and either required or incentivized riders to park in them. The corrals were also used as deployment areas by operators.

An in-street parking corral

Adaptive Fleet

Each operator was required to provide a plan for incorporating adaptive scooters into its operations that better served people of varying abilities. Operators met with the City's ADA Coordinator and local disability advocacy groups to understand Milwaukee's needs. Bird and Spin deployed seated scooters throughout the city alongside their standard non-adaptive scooters. Lime opted to provide its adaptive scooters through a reservation and delivery system.

While the 2021 Pilot Study Terms and Conditions called for a fleet of at least 100 adaptive scooters per operator, all operators faced challenges in achieving this goal. These challenges included supply chain issues, the short time frame to incorporate adaptive scooters, and the need to develop stronger local partnerships. Operators agreed that incorporating these vehicles into their fleets is an important goal and have learned lessons to increase success in the future.

Lime's adaptive scooter

Bird used a seated Razor brand scooter as its adaptive vehicle

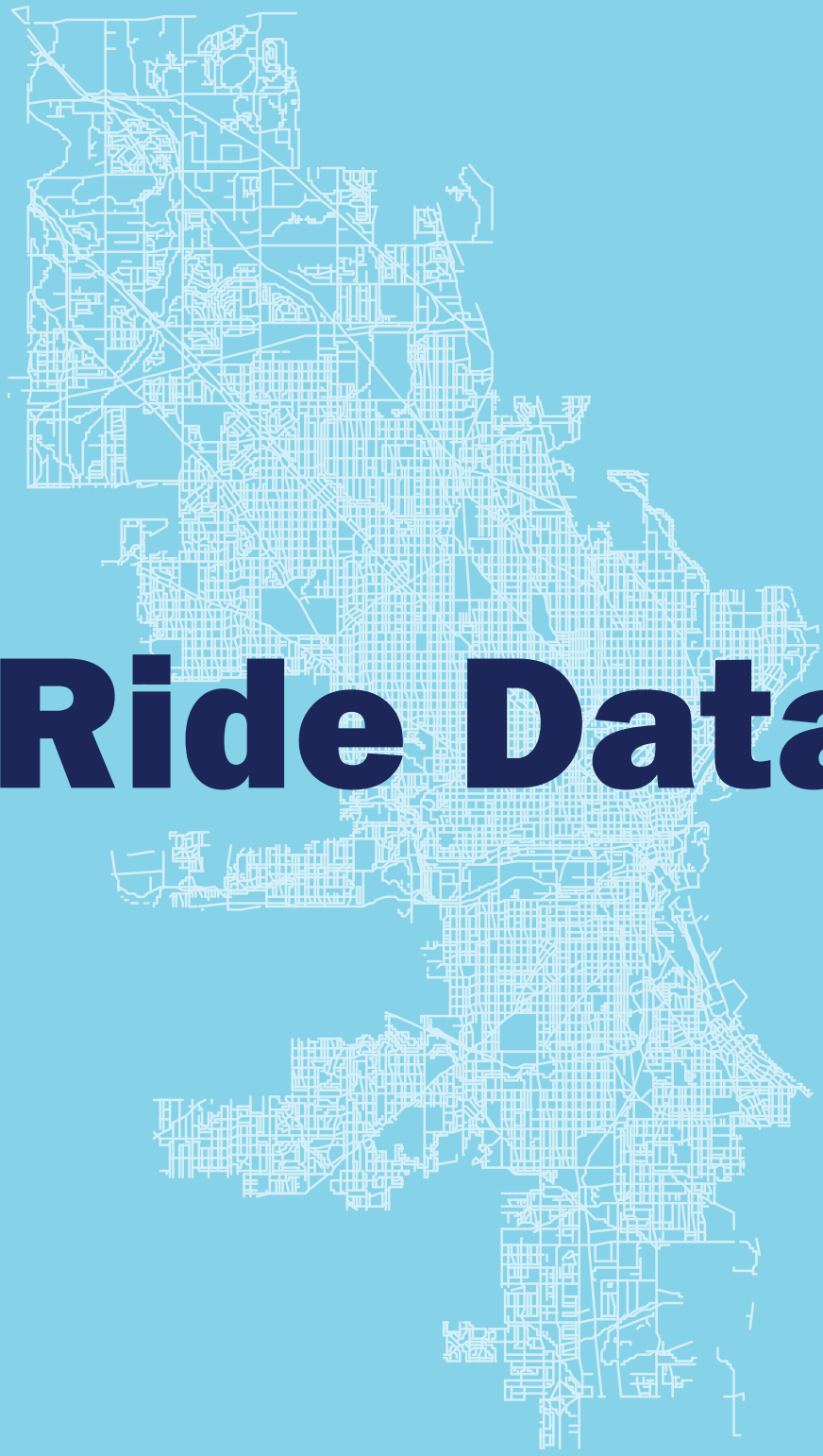
A rider tries Spin's adaptive scooter at an outreach event

Fees Collected

The following fees were collected during the 2021 Pilot Study:

Fees Collected		
Fee Type	**Rate**	**Fees Collected**
Application Fee	$300 per application	$1,800.00
Device Fee	$25 per dockless scooter	$75,000.00
Consultant Fee	$10 per dockless scooter	$30,000.00
Trip Fee	$0.15 per dockless scooter trip	$72,763.35
	Total fees collected	**$179,563.35**

Fees covered staff time to manage the 2021 Pilot Study, the consultant contract to conduct intersection observations, and a shared mobility management platform.



Ride Data

Overall Ridership

Riders in Milwaukee took a total of 481,706 rides over the course of the five and a half-month pilot study, which averages out to 2,452 rides per day. Average trips per vehicle per day is an industry metric that describes the number of times a scooter is used each day. Three trips per day is considered healthy usage of scooters; Milwaukee's rate of 2.6 trips per scooter per day is slightly under this benchmark.

481,706
Total Rides

2,452
Average Rides per Day

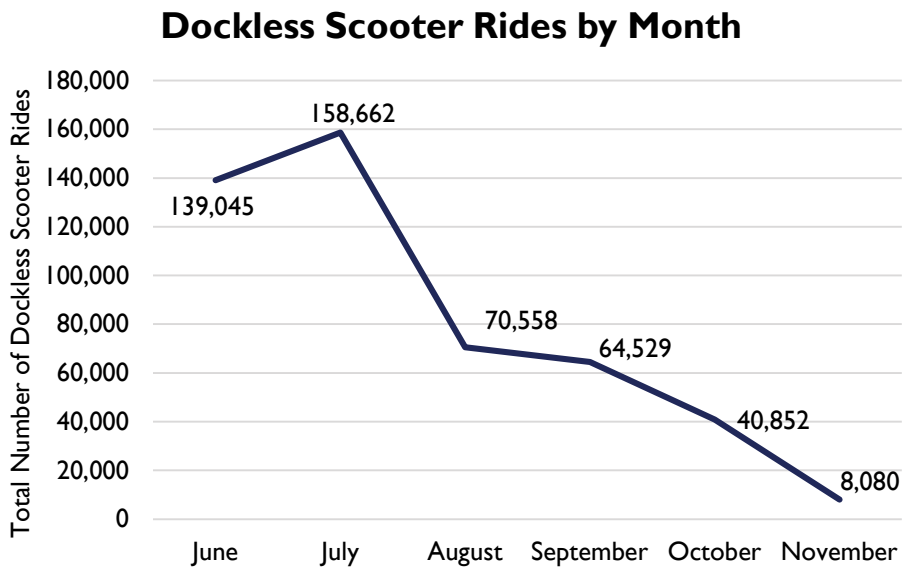
2.6
Rides per Vehicle per Day

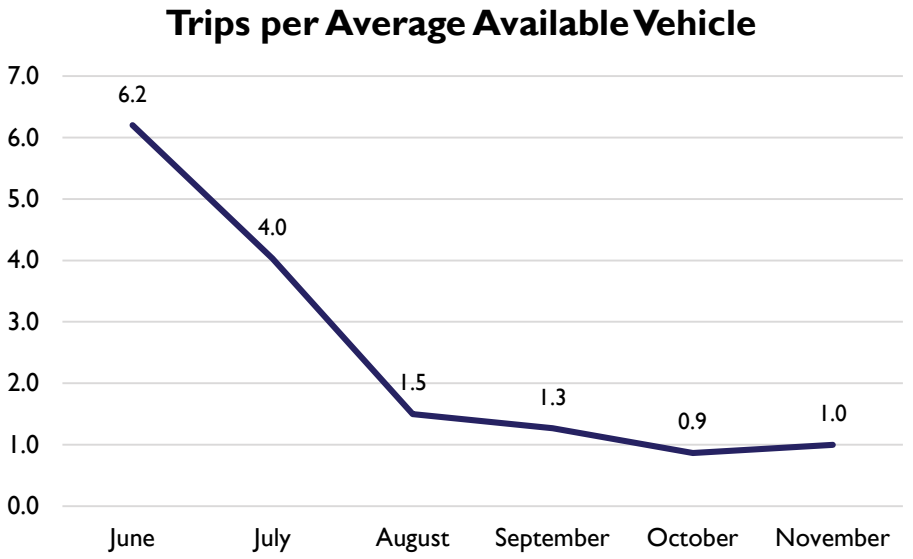
10 minutes
Average Ride Time

0.9 mile
Average Ride Distance

Riding through Kosciuszko Park

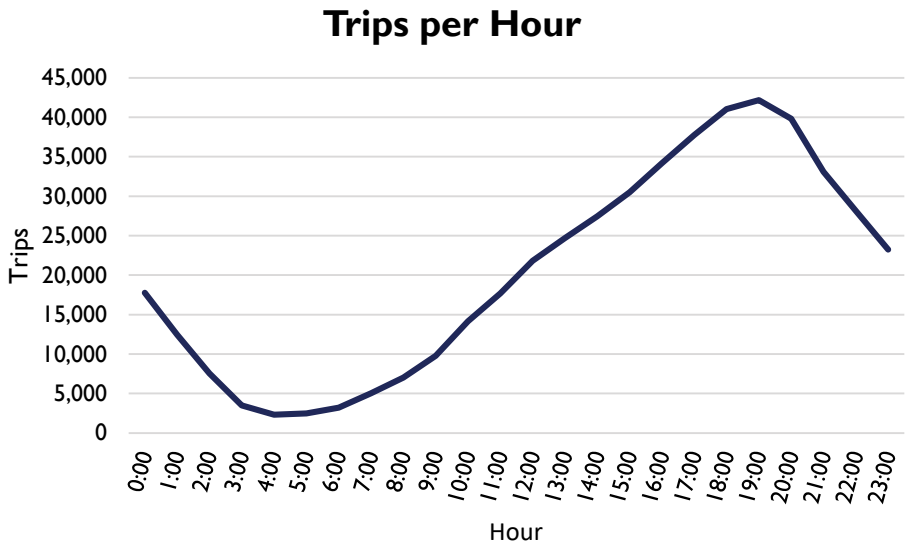
Monthly Ridership





Ridership was significantly impacted by the prohibition of new trips and deployments in Zone 1 beginning on August 3rd. The 297,707 rides taken in June and July accounted for 61.8% of all trips taken during the 2021 Pilot Study. Cooler weather also impacted rides taken, with a drop of 23,677 rides from September to October. After the Zone 1 prohibition went into effect, rides per vehicle per day stayed well below 2.0, demonstrating the significance of Zone 1 for the overall success of the program.

Ridership by hour



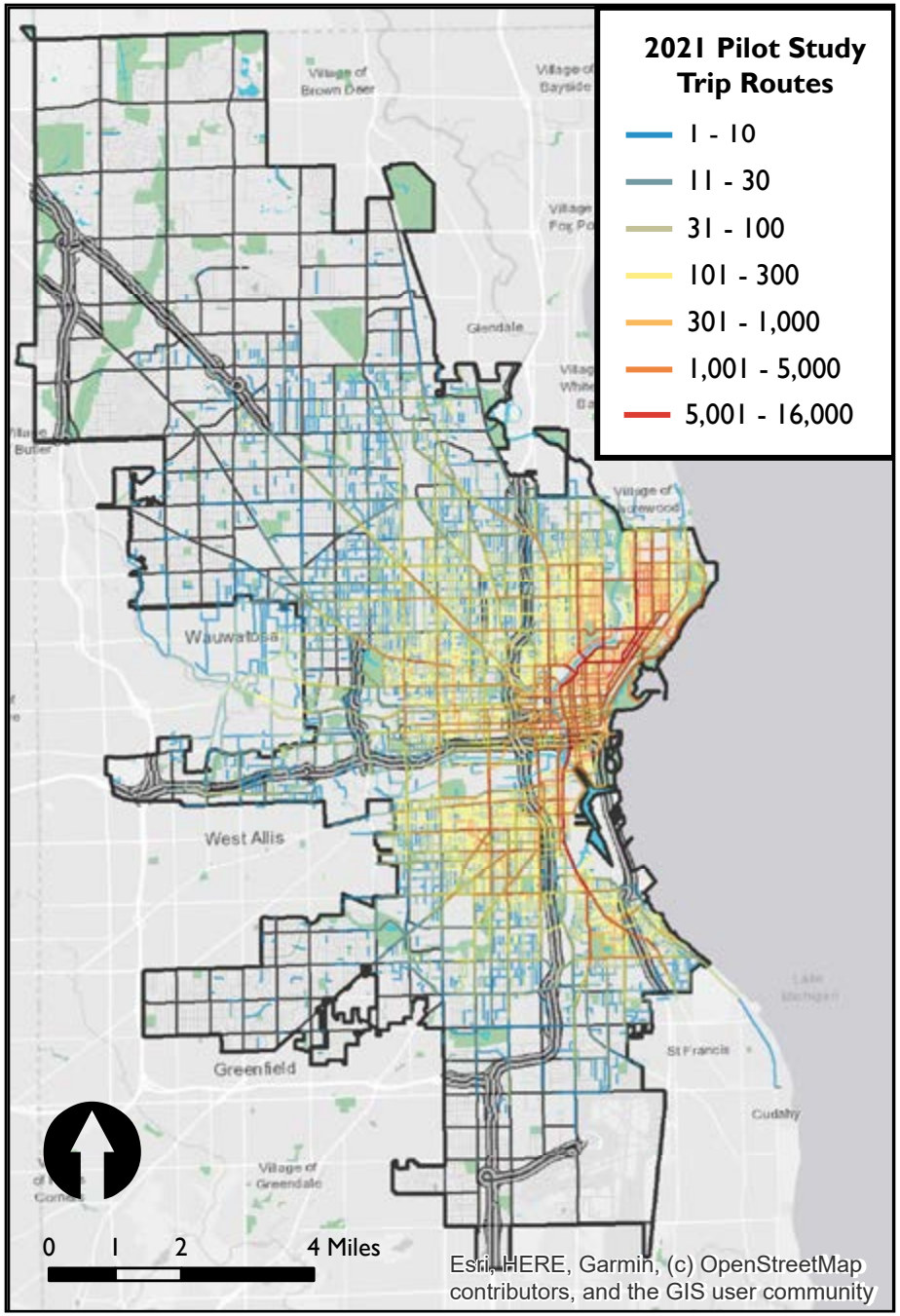
The 2021 Pilot Study did not restrict hours of operation. All operators' dockless scooters were available 24 hours per day. Rides steadily increased throughout the day, with peak ridership happening around 7:00 PM. The time distribution of rides during the 2019 Pilot Study was similar; however, the curve between 12:00 PM and that year's peak at 6:00 PM was flatter. The change in 2021 data may be due to changing workplaces during the COVID-19 pandemic, with fewer people working in offices and taking rides during lunch.

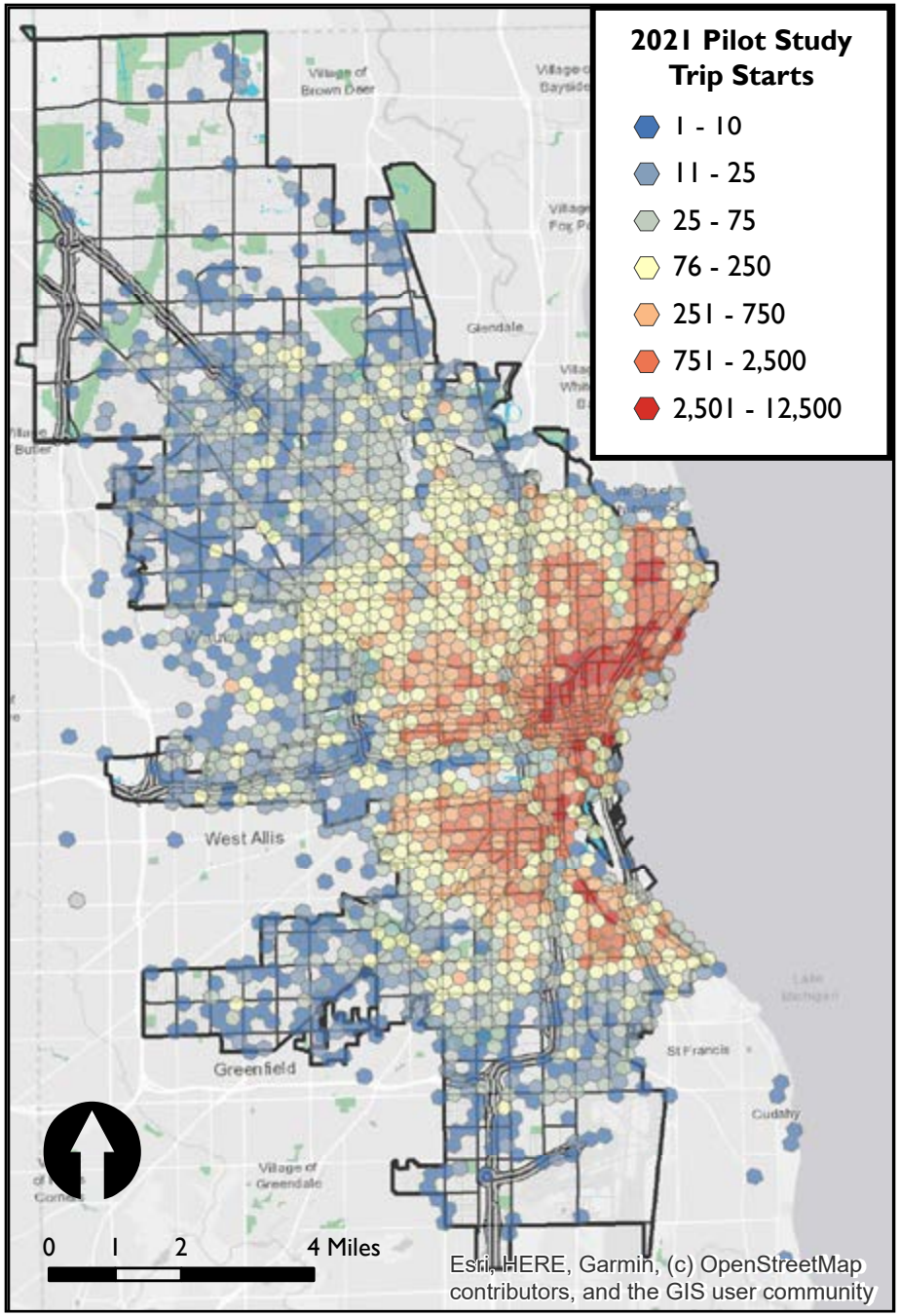
Where Trips Happened

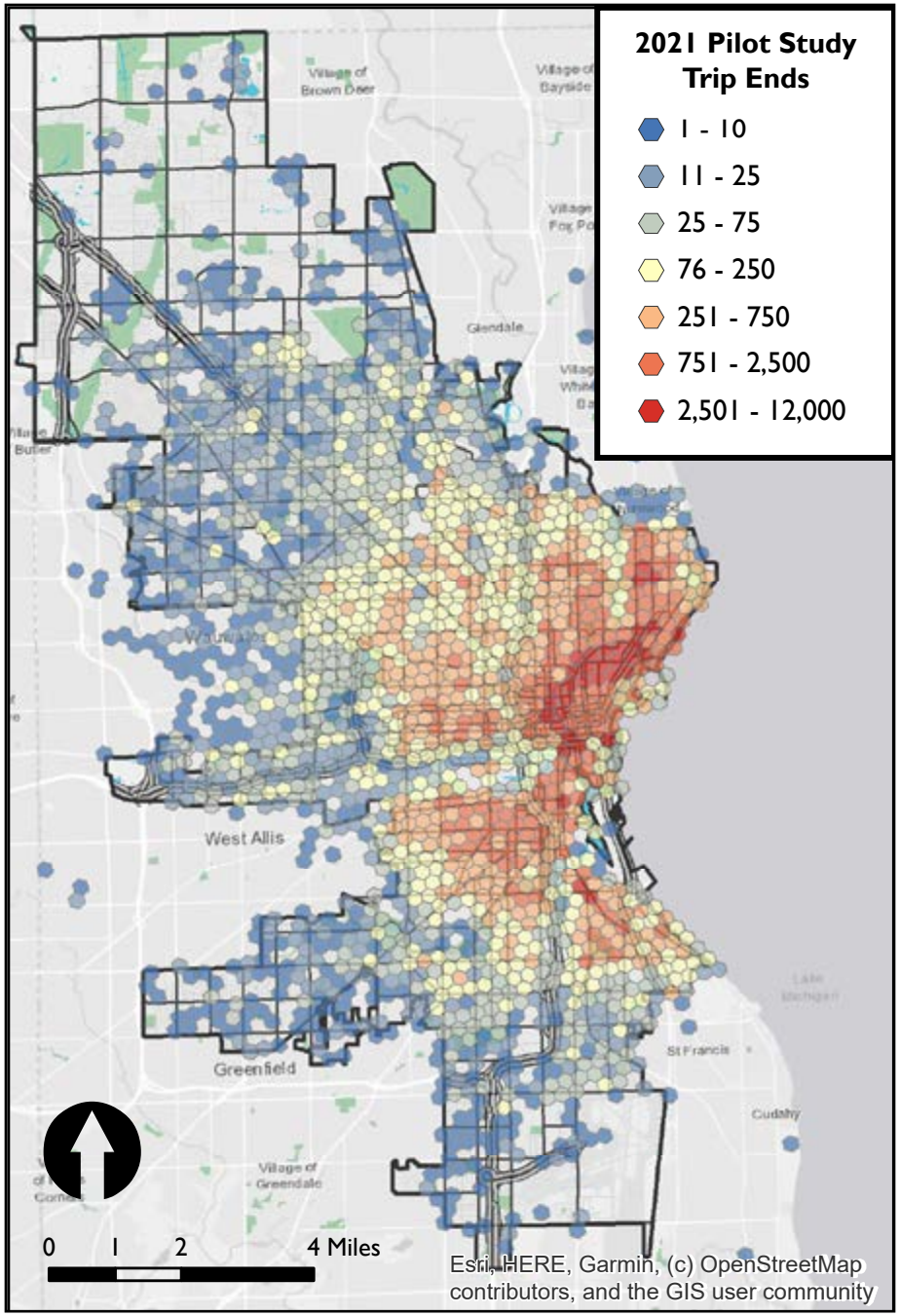
Trips in the 2021 Pilot Study were more distributed throughout the City than in the 2019 Pilot Study. In 2019, about 90% of all trips started or ended in the areas that made up Zones 1 and 2 in the 2021 Pilot Study. While these zones remained significant start and end points in 2021, nearly half (47.3%) of all trips started outside of Zones 1 and 2.

Trips by Zone		
Zone	**Trip Starts**	**Trip Ends**
1	88,139 (18.3%)	94,876 (19.7%)
2	167,038 (34.7%)	165,103 (34.3%)
3	48,098 (10.0%)	44,490 (9.2%)
4	46,933 (9.7%)	46,624 (9.7%)
5	59,655 (12.4%)	59,543 (12.4%)
6	46,505 (9.7%)	43,240 (9.0%)
7	26,608 (5.5%)	29,045 (6.0%)

The maps to the right and on the following page show routes taken by frequency, trip starts, and trip ends.




2021 Pilot Study
Trip Starts
1 - 10
11 - 25
25 - 75
76 - 250
251 - 750
751 - 2,500
2,501 - 12,500
Village of Brown Deer
Glendale
West Allis
Greenfield
St Francis
Cudahy
Village of Greendale
0 1 2 4 Miles
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community


2021 Pilot Study
Trip Ends
1 - 10
11 - 25
25 - 75
76 - 250
251 - 750
751 - 2,500
2,501 - 12,000
Village of Brown Deer
Glendale
West Allis
Greenfield
St Francis
Cudahy
Village of Greendale
0 1 2 4 Miles
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

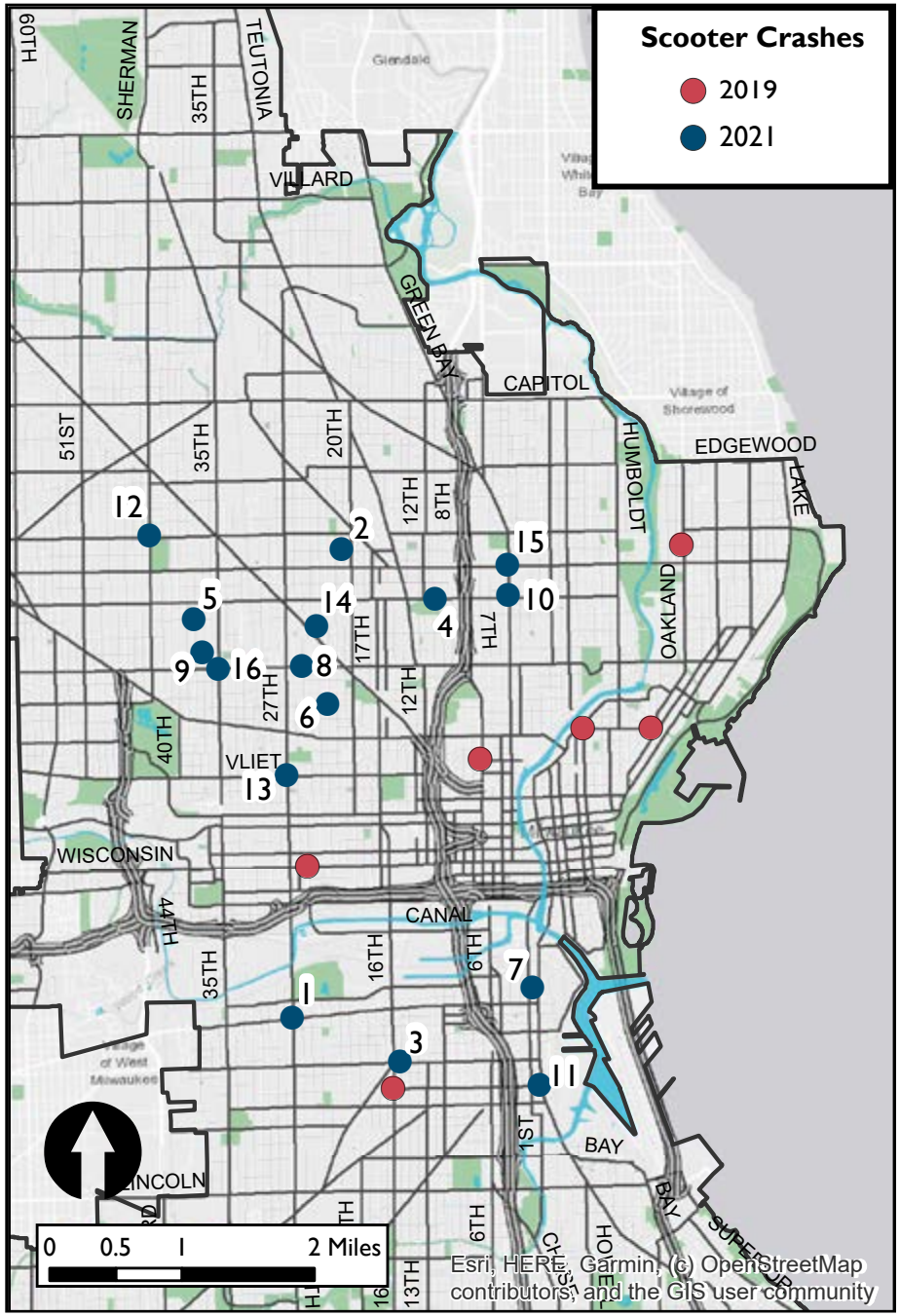
Crashes

Milwaukee Police Department

The Milwaukee Police Department (MPD) reported 15 dockless scooter – motor vehicle crashes. These crashes are described below and on the following page. The map to the right shows the locations of these incidents along with the locations of reported crashes during the 2019 Pilot Study. Seven crashes were reported in 2019. Crashes in 2021 were more concentrated on the northwest side of the city.

1. June 11, 2021, N. 21st St. & W. Chambers St.: A person driving eastbound struck two people riding a single scooter going eastbound on the street.
2. June 12, 2021, S. 15th St. & W. Greenfield Ave.: A person driving southbound failed to stop at a stop sign and hit a person riding a scooter eastbound on the street.
3. June 12, 2021, N. 11th St. & W. Center St.: A person driving westbound swerved around another person driving and hit a person riding a scooter traveling eastbound against traffic in the bicycle lane.
4. June 17, 2021, N. 38th St. & W. Clarke St.: A person riding a scooter was hit by a person driving; both were traveling westbound on the street.
5. June 19, 2021, N. 23rd St. & W. Brown St.: A person riding a scooter failed to stop at a stop sign and was hit by a person driving a car.
6. July 13, 2021, W. Pierce St., & S. 1st St.: A person riding a scooter was traveling through a gas station parking lot and was struck by a person driving.
7. July 20, 2021, N. 25th St. & W. North Ave.: A person driving northbound hit a person on a scooter also traveling northbound.
8. July 22, 2021, N. 37th St. & W. Meinecke Ave.: A person driving turned left and hit a person on a scooter.

List continues on next page.



Continued from previous page.

9. August 1, 2021, N. Martin Luther King Jr. Dr. & W. Center St.: A person driving turned right and hit a person riding a scooter in the crosswalk; the person had been riding on the sidewalk.
10. August 11, 2021, S. 1st St. & W. Lapham Blvd.: A person riding a scooter attempted to leave the sidewalk and hit a car turning right.
11. August 29, 2021, N. Sherman Blvd. & W. Burleigh St.: A person driving turned right and hit a person riding a scooter traveling against traffic.
12. September 8, 2021, N. 27th St. & W. Vliet St.: A person driving turned right and hit a person riding a scooter in the crosswalk going northbound; the person had been riding on the sidewalk.
13. September 14, 2021, N. 24th St. & W. Monroe St.: A person driving hit a person on a scooter; details are unknown.
14. October 4, 2021, N. Martin Luther King Jr. Dr. & W. Locust St.: A person riding a scooter entered an intersection on a red signal and was struck by a person driving.
15. November 8, 2021, N. 35th St. & W. North Ave.: A person driving turned left and struck a person on a scooter.

Operators

Operators were required to submit the number of crashes customers reported to them on a monthly basis. Eighteen incidents that resulted in an injury were reported to DPW. The level of detail and information provided varied by operator and makes it difficult to draw any conclusions about these crashes. In the 2019 Pilot Study, 67 crashes were reported. Again, the information submitted by operators was inconsistent and lacking in details.

Riding on N. Prospect Ave.

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Public Feedback

DPW

DPW staff received 89 emails or phone calls providing feedback on the 2021 Pilot Study, down from 141 in the 2019 Pilot Study. Similar to the 2019 Pilot Study, the frequency of complaints decreased after the initial launch of the 2021 Pilot Study. June saw 34 or 38.2% of the complaints, with numbers dropping from there. August had slightly more complaints (21 or 23.6%) than July (17 or 19.1%), likely due to the increased media attention on scooters after the Zone 1 prohibition went into effect. Over one-third of the complaints (38.2%) came from repeat individuals.

The chart below shows how comments to DPW staff were categorized. Much of the feedback received included more than one type of complaint, so the total complaint types in the chart below is greater than the 89 comments received.

DPW Feedback	
Improper Parking	45 (42.1%)
Sidewalk Riding	27 (25.2%)
Improper Street Riding	15 (14.0%)
General Concern / Other	8 (7.5%)
Perceived Underage Riding	5 (4.7%)
Scooter Parked on Private Property	4 (3.7%)
Operator Unresponsive to Complaint	3 (2.8%)

Compared to the 2019 Pilot Study, concerns about sidewalk riding decreased from 67.4% to 25.2% of comments received. The 2021 Pilot Study saw new types of issues not reported in 2019, including that operators were unresponsive to complaints and the perception that riders were under the age of 18. Wisconsin State Statutes, Milwaukee City Code, and the 2021 Pilot Study Terms and Conditions do not include an age requirement, though each operator specifies riders must be at least 18 years old.

Mayor's Office

The Mayor's Office received 13 comments during the 2021 Pilot Study, far fewer than the 243 it received during the 2019 Pilot Study. Two of the comments were positive, requesting the return of scooters in general and to Zone 1 after the August prohibition. Three comments were neutral, with suggestions for improving the program and rider behavior. The remaining eight were negative, citing issues with sidewalk riding, improper parking, improper street riding, underage riding, and the potential for crimes to be committed while using scooters.

Riding on W. Greenfield Ave.

Public Survey

The City of Milwaukee released an online public survey on October 13. The survey was distributed through DPW's e-notify email service and on its social media pages. It was also shared by some aldermanic offices and received media coverage. All three operators sent the survey to their customers. The survey was available in English, Spanish, and Hmong. It closed on December 31, and was taken by **5,428 people.**

Pages 26 – 30 show selected results from the survey; the full results can be found in Appendix E on page 58. Most of the responses displayed below are reported by respondents who took no trips, took one trip, and took two or more trips. To the right are highlights from the survey.

Riding on N. Water St.

- About half of respondents (50.6%) had taken at least one scooter trip.
- The most frequent reason respondents rode a scooter was to travel to or from entertainment or an event; riding for fun or recreation was the most popular response for survey takers who had only ridden a scooter once.
- Scooter riding is most often a replacement for walking (39.0%), driving a personal vehicle (24.2%), or taking a taxi or rideshare (23.2%); respondents report that 11.4% of scooter trips replaced riding the bus, the Hop streetcar, or a personal or Bublr bike share bike.
- The biggest concern for people who have never ridden a scooter is people riding scooters on the sidewalk; for those who had taken at least one scooter trip, the greatest concern was that there isn't a safe, connected network of bike facilities and trails to use.
- The highest ranked potential benefit of dockless scooters regardless of number of trips taken was increased support for walking, biking, and getting around without a car.
- A little less than half (48.3%) of respondents had an unfavorable view of the Zone 1 prohibition, with not being able to start or end a trip where desired as the top ways it affected riders. One-third (33.9%) of survey takers had a favorable view of the ban.
- When asked if they were supportive of the City of Milwaukee developing permanent regulations for dockless scooters, 55.8% of respondents said yes, they should be allowed; 29.3% said no, they should be prohibited; and 14.9% think they should be allowed but that aspects of the program should change.

How many dockless scooter trips have you taken in Milwaukee?	
0	49.4%
1	6.9%
2 - 10	26.2%
11 - 20	8.3%
More than 20	9.2%

What is the most frequent reason you've ridden a dockless scooter?	1 trip	2+ trips	All
Traveling to / from entertainment or event	24.3%	35.0%	33.5%
Riding for fun or recreation	46.4%	22.4%	25.7%
Traveling to / from a restaurant	12.0%	16.3%	15.7%
Traveling to / from work	3.4%	11.3%	10.2%
Running errands or shopping	3.0%	5.8%	5.4%
Traveling to / from a work-related meeting or appointment	1.7%	3.1%	2.9%
Traveling to / from school or campus	1.4%	2.6%	2.5%
Other (please specify)	6.4%	1.6%	2.3%
Connecting to transit (bus / streetcar)	1.4%	1.9%	1.8%

Think about your last dockless scooter trip in Milwaukee. If you hadn't taken a dockless scooter, how would you have traveled?	1 trip	2+ trips	All
Walked	57.2%	35.5%	39.0%
Driven a personal vehicle	11.9%	26.7%	24.2%
Taken rideshare (Uber or Lyft) or taxi	16.5%	24.6%	23.2%
Taken transit (bus or streetcar)	5.1%	5.1%	5.1%
Ridden a personal bike	5.5%	4.3%	4.6%
Ridden Bublr Bike Share	2.1%	1.6%	1.7%
Ridden as a passenger in a personal vehicle	0.4%	0.9%	0.8%
Other (please specify)	1.3%	0.8%	0.8%
Ridden a skateboard or longboard	0.0%	0.3%	0.3%
Ridden a personal electric scooter	0.0%	0.2%	0.2%

Crossing W. Galena St.

Before riding a dockless scooter, did you have enough information to do so safely?			
	1 trip	2+ trips	All
Yes	70.5%	91.3%	88.3%
No	18.3%	4.6%	6.5%
Unsure	11.2%	4.1%	5.2%

How frequently did you ride on the sidewalk?			
	1 trip	2+ trips	All
Never	52.7%	63.3%	61.8%
Less than 50% (half) of the time	20.2%	25.5%	24.8%
About 50% (half) of the time	10.8%	6.6%	7.1%
More than 50% (half) of the time	8.8%	2.9%	3.7%
Always	7.4%	1.8%	2.6%

Respondents who answered anything other than "Never" for the above question were asked what changes would encourage them to ride in the street. The top responses were:

- A physically separated space for dockless scooters in the street, such as a protected bike lane (67.4%)
- A separated space for dockless scooters in the street that is not physically separated, such as a painted bike lane (55.5%)

Those that indicated they would never ride in the street most often cited feeling safer riding on the sidewalk and dangerous driving as reasons for choosing to ride on the sidewalk.

Did you know sidewalk riding was illegal in Milwaukee?				
	0 trips	1 trip	2+ trips	All
Yes	86.9%	81.4%	90.5%	88.1%
No	13.1%	18.6%	9.5%	11.9%

Crossing W. Historic Mitchell St.

"Very High" or "High" Concern for Potential Issues	0 trips	1 trip	2+ trips	All
Dockless scooter rider behavior around people driving	71.6%	47.6%	21.4%	48.4%
People riding dockless scooters on sidewalks	72.2%	46.6%	20.9%	48.4%
Dockless scooter rider behavior around people walking	70.0%	40.6%	15.8%	44.8%
Dockless scooters blocking sidewalks when parked	68.4%	41.2%	12.3%	42.5%
Dockless scooter rider behavior around people biking	58.1%	28.8%	9.2%	35.1%
There isn't a safe, connected network of bike facilities and trails to use	45.2%	40.3%	30.3%	38.4%
Driver behavior around people riding dockless scooters	44.8%	35.9%	29.0%	37.5%
People riding dockless scooters appear to be under 18 years old	47.6%	31.0%	15.6%	32.7%
People riding more than one person to a dockless scooter	45.2%	26.4%	17.3%	32.0%
Dockless scooters are not safe to ride	39.1%	23.5%	4.7%	23.2%
There are not enough dockless scooters in the City of Milwaukee	4.0%	11.8%	29.9%	15.6%

"Very High" or "High" Importance for Potential Benefits	0 trips	1 trip	2+ trips	All
Increased support for walking, biking, and getting around without a car	50.2%	72.1%	84.6%	66.4%
More transportation options in Milwaukee	39.7%	62.5%	84.7%	60.6%
Better first mile/last mile connections to transit	32.4%	47.2%	69.1%	49.2%
Fewer cars on the street	30.2%	39.9%	61.7%	44.4%
Scooter riding is a fun activity for visitors	23.0%	51.4%	74.9%	47.3%
Scooter riding is a fun activity for residents	20.0%	45.8%	70.6%	43.5%
Scooter riding is a fun activity for residents	20.0%	45.8%	70.6%	43.5%

On August 3, 2021, new dockless scooter trips were prohibited from starting in Zone 1. What was your opinion of this prohibition?				
	0 trips	1 trip	2+ trips	All
Very favorable opinion	46.5%	21.5%	5.0%	26.9%
Somewhat favorable opinion	10.5%	7.3%	2.9%	7.0%
Neutral / no opinion	24.0%	22.6%	10.1%	17.9%
Somewhat unfavorable opinion	8.2%	13.5%	16.5%	12.2%
Very unfavorable opinion	10.8%	35.1%	65.6%	36.1%

Riding on W. Lincoln Ave.

How did the prohibition of new dockless scooter rides in Zone 1 affect you?				
	0 trips	1 trip	2+ trips	All
It did not affect me	53.6%	52.0%	17.3%	37.9%
I was unable to start a ride where I wanted	3.9%	21.7%	60.2%	29.3%
I was unable to end a ride where I wanted	2.5%	22.1%	60.8%	28.9%
I was unable to reach a destination or end point because I couldn't ride through Zone 1	1.7%	19.6%	52.9%	24.9%
I felt safer walking in Zone 1	31.0%	11.4%	4.0%	18.1%
I felt safer driving in Zone 1	29.7%	10.7%	3.6%	17.2%
I changed my route to avoid Zone 1	0.7%	4.3%	20.7%	9.5%
I felt safer biking in Zone 1	14.0%	7.1%	1.7%	8.2%
Other (please specify)	6.9%	6.1%	8.6%	7.6%

At the conclusion of this pilot study, do you support the City of Milwaukee developing permanent regulations to allow dockless scooter share in Milwaukee?				
	0 trips	1 trip	2+ trips	All
Yes, they should be allowed	28.8%	62.1%	86.7%	55.8%
No, they should be prohibited	51.2%	23.9%	4.3%	29.3%
Yes, but with some changes	20.0%	14.0%	9.1%	14.9%

Top responses to, "Yes, but with some changes":

- 41.4% of responses mentioned parking, with the majority of responses mentioning adding docks for parking.
- 31.1% of responses mentioned sidewalks, with a large portion citing issues with parking on sidewalks; others called for better enforcement of the no sidewalk riding law, while a small number of repsondents want sidewalk riding to be legal.
- 26.8% of responses mentioned enforcement, with comments mentioning both riders and dockless scooter companies.
- 14.3% of responses mentioned the need for increased safety or helmets.
- 12.1% of responses mentioned Zone 1, with the majority requesting that riding in Zone 1 be allowed.
- 11.2% of responses mentioned the need for better infrastructure for riding scooters.
- 9.0% of responses mentioned the need for updated rules and regulations, though a small portion requested fewer or more lenient rules.

What is your overall opinion of dockless scooters in Milwaukee?				
	0 trips	1 trip	2+ trips	All
Very favorable opinion	11.9%	38.0%	77.7%	42.0%
Somewhat favorable opinion	15.8%	23.6%	15.4%	16.1%
Neutral/no opinion	7.6%	7.4%	1.9%	5.1%
Somewhat unfavorable opinion	18.4%	14.8%	1.9%	11.1%
Very unfavorable opinion	46.3%	16.2%	2.9%	25.7%

Riding at N. Water St. and E. Wisconsin Ave.

Comparison to 2019

Overall, responses to the 2021 Pilot Study public survey closely mirrored those from the 2019 Pilot Study public survey. Some questions asked in 2021 were not asked in 2019, including questions about sidewalk riding and the Zone 1 prohibition.

The most significant changes were in riders' most frequent reason for using scooters. In 2019, 28.6% of survey respondents selected "riding for fun or recreation" as their top purpose; this percentage dropped slightly to 25.7%. The top choice for survey takers in 2021 was "traveling to/from entertainment or an event," up to 33.5% from 2019's 25.2%. Another significant change was seen in respondents selecting "traveling to/from a work-related meeting or appointment," which dropped from 6.2% in 2019 to 2.9% in 2021. This change may be due to the shifting of work places and reliance on virtual meetings during the COVID-19 pandemic.

Attitudes towards scooters and developing permanent regulations largely remained the same, as demonstrated in the chart below.

At the conclusion of this Pilot Study, do you support the City of Milwaukee developing permanent regulations to allow dockless scooter share in Milwaukee?		
	2019	**2021**
Yes	57.5%	55.8%
No	27.4%	29.3%
Yes, but with changes	15.1%	14.9%

What is your overall opinion of dockless scooters in Milwaukee?		
	2019	**2021**
Somewhat or Very Favorable Opinion	54.6%	58.1%
Neutral / No Opinion	6.4%	5.1%
Somewhat or Very Unfavorable Opinion	39.0%	36.8%

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Goals Analysis

Provide equitable transportation services

DPW uses the City of Milwaukee's Neighborhood Revitalization Strategy Areas (NRSAs) to measure progress towards equity goals. NRSAs are contiguous Census tracts where at least 70% of the population earns 80% or less of the median area income. In 2019, the NRSAs saw an average of 477 trip starts per day. In the 2021 Pilot Study, the average trips per day increased to 806. Overall in 2021, 40.0% of trips started in the NRSAs; whereas in 2019 19.7% of trips originated in these areas.

The 2021 Pilot Study required operators to deploy a greater number of scooters more broadly than in 2019. This requirement resulted in a greater geographic distribution of trip starts, bringing scooters to areas not well served by other forms of transportation. The Zone 1 prohibition enacted in August had an impact on trips starting in NRSAs, despite the fact that only a small portion of Zone 1 falls within the NRSA boundaries. In July, 63,700 trips began in the NRSAs. In August, this number dropped to 28,748, indicating that access to Zone 1 is an important component of providing equitable transportation services as it serves as a popular destination for trips originating in NRSAs.

As described on page 13, the 2021 Pilot Study required operators to provide adaptive scooters. While each operator used its own model, all three vehicles consisted of a traditional scooter with a seat attached. Though these scooters serve a wider demographic than traditional scooters, they are not accessible to all individuals with ability differences. More information is needed to understand the type of vehicle or vehicles and method of deployment that will work best in Milwaukee.

A rider on a seated Spin scooter on E. Brady St.

Increase transportation options

According to the public survey, 70.2% of respondents most frequently used scooters for transportation-related purposes, including the most frequent reason for riding – traveling to/from entertainment or an event (33.5%). The percentage of respondents choosing this reason increased from 2019's 25.2%, and surpassed that year's most frequent reason of riding for fun or recreation. Other transportation-related reasons for riding and the corresponding percentage of respondents include:

- Traveling to/from a restaurant: 15.7%
- Traveling to/from work: 10.2%
- Running errands or shopping: 5.4%
- Traveling to/from a work-related meeting or appointment: 2.9%
- Traveling to/from school or campus: 2.5%

Riding on N. Prospect Ave.

A majority of survey respondents (60.6%) indicated that "more transportation options in Milwaukee" is an important or very important benefit of dockless scooters. Riders in Milwaukee took 481,706 trips on dockless scooters throughout the duration of the 2021 Pilot Study. Based on survey results, 54.8% of these trips, or 263,975, were trips the rider would have taken if a scooter were not available, indicating they were likely transportation trips. While walking was the most commonly replaced form of transportation, with 39.0% of respondents stating they would have walked for their last trip if they had not taken a dockless scooter, 47.3% of dockless scooter trips replaced a car trip, either in a personal vehicle or by rideshare/taxi.

These results indicate that dockless scooters did provide Milwaukee residents and visitors with a different transportation option; however, it is important to note that the Zone 1 prohibition greatly impacted the usefulness of scooters as a transportation option. Nearly 30% of survey respondents stated that the prohibition impacted their ability to take trips, with an even greater impact on those who had taken two or more trips as indicated below.

How did the prohibition of new dockless scooter rides in Zone 1 affect you?		
	All	**2+ Trips**
I was unable to start a ride where I wanted	29.3%	60.2%
I was unable to end a ride where I wanted	28.9%	60.8%
I was unable to reach a destination or end point because I couldn't ride through Zone 1	24.9%	52.9%

Evaluate Impacts on Access to the Public Right of Way

Compared to the 2019 Pilot Study, sidewalk riding was a lesser concern during the 2021 Pilot Study. Of the complaints received by DPW, 25.2% mentioned sidewalk riding, down from 67.4% in 2019. The public survey reflected a small change in opinion as well, with 48.4% citing "people riding dockless scooters on the sidewalks" as a very high or high concern, down from 51.9% during the previous Pilot Study.

Observations of rider behavior showed 25.5% of riders exclusively using the sidewalk. This percentage is greater than observed during the 2019 Pilot Study (17.2%); however, the locations included in 2019 were concentrated in current Zones 1 and 2 and may not reflect the broader range of data collected in 2021. Dockless scooter operators implemented technology intended to decrease sidewalk riding. The overall impact of this technology is unclear and varies by operator, but there is an opportunity to utilize this evolving technology to regulate scooter use and speeds on sidewalks.

Concerns about improper parking increased from the 2019 Pilot Study. The percentage of people responding to the survey who believe "dockless scooters blocking sidewalks when parked" to be a very high or high concern was 45.2%, up from 37.4% in 2019. The number of complaints DPW received that mentioned parking also increased from 17 to 45, or 42.1%, in 2021. Parking corrals have potential to alleviate these concerns. While some were installed in the 2021 Pilot Study, greater availability and required compliance in certain areas would decrease impacts to sidewalk access.

Improperly parked scooters on N. 21st St.

Appendix A:
2021 Pilot Study Terms and Conditions

City of Milwaukee

Department of Public Works

Dockless Scooter Pilot Study 2021

Terms and Conditions v.2

Contents

1. Introduction

Purpose

The City of Milwaukee Department of Public Works (DPW) is initiating a second Dockless Scooter Pilot Study (pilot) to observe, solicit feedback on, and evaluate the effectiveness of dockless scooters in Milwaukee for the purpose of determining how to best incorporate scooters into the transportation landscape moving forward.

Dockless scooters, as defined herein, means a system of self-service scooters made available for shared use to individuals on a short term basis, which may be rented via a smart-phone app, vendor website, vendor customer service number, or a pre-paid PIN and which do not require structures at permanent, fixed locations where rides must begin and end.

The 2019 Dockless Scooter Pilot Study was successful in many ways. The high ridership demonstrated that there is latent demand for new transportation options, and 58.4% of survey respondents cited "more transportation options in Milwaukee" as an important or very important benefit of dockless scooters. Smaller, electric, shared vehicles also have the potential to assist in achieving other City goals around climate change, health, access to opportunity, and safer streets.

The COVID-19 pandemic has greatly impacted the way people move around Milwaukee. Typical travel patterns have been disrupted by work from home arrangements and restrictions on transit ridership. It is impossible to know what residents' and visitors' transportation needs will be in 2021. A second pilot study will give the City the flexibility it needs to respond to a changing transportation environment.

Goals

1. **Provide equitable transportation services**

   Dockless scooters can be deployed where the need is highest, providing transportation services where other options may be unavailable. Additionally, dockless scooters that accommodate people of varying abilities have the potential to improve access to dockless scooters for a wider customer base.

2. **Increase transportation options**

   Dockless scooters have the potential to reduce reliance on motor vehicles and ride sharing services for short trips, decreasing congestion and air quality impacts. Dockless Scooters may also provide links to public transit, assisting with connectivity and solving the first-mile/last-mile problem.

3. **Evaluate impacts on access to the public right of way**

   Scooter operators must show a commitment to keeping pedestrian ways, streets, and other public rights of way unobstructed by dockless scooters for other street users. Most importantly, dockless scooters must be parked and maintained in a manner that provides a clear path for people walking and maintains access to businesses, residential units, and other buildings.

2. Terms

2.1 Agreement

These Terms and Conditions are made in conjunction with each Participant's Application response to the Request for Proposals. Together, these documents record our agreement in relation to use of the Public Right of Way in Milwaukee.

2.2 Priority

If there is any inconsistency between these Terms and Conditions and/or any other agreements, the Terms and Conditions shall prevail.

2.3 Pilot Subject to Change

A. The Terms and Conditions of the Dockless Scooter Pilot Study (pilot) are subject to change, without limitation, by the Commissioner of Public Works.

B. Participants will be notified by electronic mail of any changes to the pilot. Participants unwilling or unable to comply with proposed changes may voluntarily suspend or terminate participation in the pilot.

C. Participants terminating participation in this pilot must immediately cease offering their equipment for rent and remove their equipment from the City of Milwaukee's streets.

D. Should a participant temporarily suspend their participation to perform mechanical changes to their equipment or their rental application, equipment may be left on the street if the changes take less than 24 hours. Otherwise, all equipment must be removed from the street until the changes are complete.

2.4 Application

A. Completed applications shall be submitted by electronic mail.

B. Payment must be made at time of application.

C. Completed applications shall be sent to:

1. Mike Amsden: mamsde@milwaukee.gov
2. Kate Riordan: kriord@milwaukee.gov

D. Checks should be made payable to the City of Milwaukee, ATTN: Donnell Rushing

E. Payment may be sent to:

CITY OF MILWAUKEE

Attention: Mike Amsden

DPW-Infrastructure Services Division

841 North Broadway, Room 501

Milwaukee, WI 53202

3. Definitions

"**Applicant**" means any person who submits an application to the Department of Public Works for the pilot.

"**Application**" means a formal request filed with the Department of Public Works for participation in the pilot.

"**Business**" means engaging in activities over time for the purpose of sustained financial gain.

"**Customer**" means a person who has downloaded the operator's app to their smart phone or other device.

"**Deploy**" means to make available to users in a public place.

"**Dockless**" means a system of self-service mobility devices made available for shared use to individuals on a short-term basis, which may be rented through a smart-phone app, vendor website, vendor customer service number, or a pre-paid PIN and which do not require structures at permanent, fixed locations where rides must begin and end.

"**Equipment**" means dockless scooters.

"**Fleet**" means equipment owned or leased by the operator which is intended for use as part of a dockless scooter system in the city.

"**Holidays**" means New Year's Eve, New Year's Day, Martin Luther King Jr. Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving and the day after, and Christmas and the day before.

"**Mobility device**" means a vehicle, whether motorized or not, including a bicycle, a scooter, a skateboard, or any other micro-mobility vehicle which is exempt from state registration under ch. 341, Wis. Stats.

"**Objection**" means any information that could form the basis of denial, non-renewal, suspension or revocation of participation in the pilot. An objection may result from information provided by any resident or from written reports filed by the Chief of Police.

"**Operator**" means any person engaged in the activities of owning or operating a dockless scooter system.

"**Participant**" means any individual or partner, and any officer, director or agent of any corporate applicant which has been approved by the Department of Public Works for entry into the pilot.

"**Person**" means any individual, firm, corporation, limited liability company, partnership or association acting in a fiduciary capacity.

"**Scooter**" means a device weighing less than 100 pounds that has handlebars and an electric motor, is powered solely by the electric motor and human power, and has a maximum speed of not more than 20 miles per hour on a paved level surface when powered solely by the electric motor.

"**Service area**" means the entire city.

"**Service zone**" means a geographic area of the city, the boundaries of which are described herein.

"**Unsafe**" means any dockless equipment that could cause harm or injury to a user or anyone else within the public right-of-way despite being operated in a reasonable manner.

"**User**" means an individual who pays a fee to unlock dockless equipment for the purpose of transportation or recreation.

"**Unused dockless equipment**" means any dockless scooter parked in one location for more than 72 consecutive hours without being used.

4. Pilot Duration

4.1 Initial Term

A. The pilot shall begin no earlier than June 1, 2021.

B. Participation in the pilot shall commence upon review and approval of a participant's application by the Department of Public Works and upon payment of all applicable fees.

C. The pilot shall end on November 15, 2021.

4.2 Extension

A. The City of Milwaukee reserves the right to extend the pilot beyond November 15, 2021, if further evaluation is required.

B. Participants will be notified at least one (1) month in advance by electronic mail if the pilot is extended beyond November 15, 2021.

C. If a participant chooses not to extend their participation in the pilot, the participant shall notify the City of termination at least two (2) weeks prior to the expiration of the then-current term.

D. Upon notice of an extension of the pilot, participation will automatically renew upon payment of all applicable fees as outlined in Section 10.2 of the Terms and Conditions.

4.3 Termination

A. The pilot may be terminated at any point. Upon termination of the pilot, participants shall be provided written notice of said termination by the Commissioner of Public Works via certified and electronic mail.

B. Participants shall cease to offer equipment for rent in the City of Milwaukee immediately upon receiving notice of termination. Participants shall have 24 hours from the time of receipt of the termination notice to physically remove equipment from the City streets.

C. If participants fail to retrieve equipment within 24 hours of receipt, the City will remove said equipment.

4.4 Modification and Suspension

A. Participation in this pilot may be modified or suspended, at any point, and for any reason, without limitation, by the Commissioner of Public Works. Should participation be modified or suspended, participants shall be notified in writing via certified and electronic mail by the Commissioner of Public Works of the nature and the reasons for the change.

5. Pilot Participation

5.1 Voluntary Participation

A. Participation in this pilot is voluntary. As stated below, participation in the pilot is not a prerequisite for the grant of a Dockless Scooter Operator's License, should the City of Milwaukee opt to create such a license in the future. By signature below, the Applicant acknowledges that they have agreed to participate in the pilot knowingly, voluntarily, and free from duress or coercion. The Applicant also acknowledges that participation in the pilot does not guarantee the issuance of a Dockless Scooter Operator's License, should the City of Milwaukee opt to create such a license in the future. In addition, all Applicants have the right to consult with counsel regarding this application.

B. Participation in this pilot study DOES NOT guarantee the issuance of a Dockless Scooter Operator's License at the conclusion of this study, or at any time in the future, should the City of Milwaukee create such a license.

C. Non-participation in the pilot study DOES NOT preclude future issuance of a Dockless Scooter Operator's License at the conclusion of this study, or at any time in the future, should the City of Milwaukee create such a license.

D. Modification, suspension, or termination of participation in this pilot shall not, by itself, be grounds for denial of an application for a Dockless Scooter Operator's License, should the City of Milwaukee create such a license.

5.2 Local Operations

A. Participants shall have a locally based operations manager prior to deploying scooters in Milwaukee. Participants shall provide the name, phone number, and email address of the locally based operations manager upon application to the pilot, or participants shall acknowledge on their application that a locally based operations manager will be in place prior to launch. Participants shall inform the Commissioner of Public Works within 24 hours of any change in the operations manager.

5.3 Outstanding Fines and Forfeitures

A. The City of Milwaukee will not process any application for participation in the pilot made on behalf of an individual or corporation that owes outstanding fines or forfeitures to the City of Milwaukee.

5.4 Number of Participants

A. The number of participants shall be limited to no more than three unique operators (affiliates or subsidiaries are not considered unique operators). Applicants will be evaluated according to the scoring criteria included in the Request for Proposals.

6. Insurance Requirements

6.1 General Requirements

A. A certificate of insurance acceptable to the City evidencing the insurance requirements is to be provided. The certificate shall state that the issued insurance policies meet the requirements as outlined below. All certificates are to be provided before a participant places any dockless equipment in the City of Milwaukee. If such certificate is not received, the City of Milwaukee has the authority to remove the participant from the pilot. If such certificate expires prior to the end date of this pilot, a current certificate shall be provided within one business day of the previous certificate's termination and must demonstrate that no lapse in coverage has occurred.

B. All policies shall state that the City shall be afforded a thirty (30) day written notice of cancellation, non-renewal or material change by any insurers providing the coverage required by City for the duration of this pilot.

C. Insurance companies must be acceptable to the City and should have a current A.M. Best rating of A-VIII or better.

D. All policies shall be written on an occurrence form.

E. If subcontractors are used, each must meet all requirements in Sections 6.1 and 6.2 of the Terms and Conditions.

F. Applicants must provide the City either a copy of their Commercial General Liability and Auto Liability insurance policies, including all endorsements, or policy language and endorsements showing the Commercial General Liability and Auto Liability insurance policies meet the requirements of the Terms and Conditions.

G. Applicants must provide the City with a copy of their user agreements.

6.2 Minimum Insurance Requirements

A. Workers' Compensation and Employer's Liability

1. Workers' Compensation – Statutory Limits

2. Employer's Liability

Bodily Injury by Accident	$100,000 each accident
Bodily Injury by Disease	$500,000 policy limit
Bodily Injury by Disease	$100,000 each employee

3. Employer's Liability at limits noted above or higher limits if needed to meet Umbrella underlying insurance requirements.

4. Coverage shall be modified to include a Waiver of Subrogation Endorsement in favor of City including its directors, officers, agents, employees and volunteers.

B. Commercial General Liability*

Commercial General Liability	$7,000,000 each occurrence
General Aggregate	$7,000,000 aggregate
Personal & Advertising Injury Limit	$7,000,000 each
Occurrence Products – Completed	
Operations Aggregate	$7,000,000 aggregate

* Note that the limits specified above may be met through a combination of primary coverage and an umbrella policy that follows the form of the underlying Commercial General Liability policy.

1. Coverage must be equivalent to ISO form CG0001 or better.
2. The City of Milwaukee shall be added as an additional insured using ISO form CG2026 or its equivalent.
3. Coverage shall be modified to include a Waiver of Subrogation Endorsement in favor of City including its directors, officers, agents, employees and volunteers.
4. The policy shall include independent contractors (owners/contractors protective) and contractual liability.
5. Coverage will apply on a primary and non-contributory basis. The City of Milwaukee suggests the following wording:

   "If you have agreed in a written contract that this policy will be primary and without right of contribution from any insurance in force for an Additional Insured for liability arising out of your operations, and the contract was executed prior to the bodily injury, property damage, personal injury or advertising injury, then this insurance will be primary over, and we will not seek contribution from, such insurance."
6. Coverage shall apply to the risks associated with or arising out of the services provided under this pilot.

C. Auto Liability

Combined Single Limit	$1,000,000 each accident

1. If the Applicant owns or has any long term leased vehicles, coverage must be for Any Auto (Symbol 1) or Any Owned Auto (Symbol 2). If there are no owned or long term leased vehicles, then coverage must be for Hired and Non-Owned Auto Liability (Symbols 8 and 9).
2. Coverage shall be modified to include a Waiver of Subrogation Endorsement in favor of the City including its directors, officers, agents, employees and volunteers.

3. The City of Milwaukee shall be added as an additional insured.
4. Coverage shall include contractual liability for risks assumed in this pilot/Application.
5. Coverage shall apply to the risks associated with or arising out of the services provided under this pilot/Application.

7. Indemnification

Notwithstanding any references to the contrary in the application documents, Applicant assumes full liability for all of its acts in the performance of the pilot. Applicant will save and indemnify and keep harmless the City against all liabilities, judgments, costs and expenses which may be claimed by a third party against the City in consequence of approving Applicant's application and allowing Applicant to participate in the pilot, or which may result from the negligence or willful misconduct of the Applicant, or the agents, employees, workmen, customers, or users of the Applicant, except to the extent arising out of or resulting from the City's negligence or willful misconduct. If judgment is recovered, whether in suits of law or in equity, against the City by reason of the negligence or willful misconduct of the Applicant or Applicant's agents, employees, workmen, customers, or users participating in the pilot, or utilizing Applicant's equipment, the Applicant assumes full liability for such judgments not only as to the amount of damages, but also for the cost, attorneys fees, or other expenses resulting there from. The City may tender the defense of any claim or action at law or in equity to the Applicant or Applicant's insurer, and upon such tender it shall be the duty of the Applicant or the Applicant's insurer to defend such claim or action without cost or expense to the City or its officers, agents, or employees. Applicant shall be entitled to have control over the defense and settlement of tendered lawsuits, including the selection of counsel; provided that Applicant may not settle any lawsuit on behalf of the City without the City's written consent that either (1) requires the City to admit liability, or (2) exceeds the limits of Applicant's insurance policies. City shall cooperate in all reasonable respects with the Applicant and its attorneys in the defense or settlement of such lawsuit; provided, that City shall be entitled to reasonably participate in the defense of such lawsuit and to employ its own counsel at its own expense to assist in the handling of such lawsuit.

8. Public Records

Applicant understands that the City is bound by the Wisconsin Public Records Law, and as such, all of the terms of this pilot are subject to and conditioned on the provisions of Wis. Stat. sec. 19.21 et. sec. Applicant acknowledges that it is obligated to assist the City in retaining and producing records that are subject to the Wisconsin Public Records Law and that the Applicant must defend and hold the City harmless from liability due to its fault under that law. Except as otherwise authorized, those records shall be maintained for a period of seven years. This provision shall survive termination of this application, Applicant's right to participate in the pilot, and the pilot itself.

9. Privacy

Participants shall provide a copy of their user agreements and privacy policies with their application. Participants must provide notice to the City regarding any changes to their terms of service, user agreements, or privacy policies throughout the duration of the pilot. Relevant portions of participants' user agreement or terms of service must be consistent with the provisions of this Application, the Milwaukee Code of Ordinances, Wisconsin State Law, and applicable federal law. Changes to a participant's user agreement or terms of service inconsistent with the provisions of this Application, the Milwaukee Code of Ordinances, Wisconsin State Law, or applicable federal law may be grounds for termination from participation in this pilot.

10. Pilot Fees

10.1 Initial Payment

A. Prior to participation in the pilot, the participant shall pay the appropriate non-refundable fees.

1. Application Review fee of $300.
2. Occupancy fee of $25 for each dockless scooter to be deployed.
3. Consultant fee for intersection counts of $10 for each dockless scooter to be deployed.

B. Fees will be used to address costs incurred by the City related to administration and monitoring of the pilot, including monitoring and use of the public way, and to hire a consultant to conduct intersection counts of sidewalk and street riding.

C. The Occupancy fee is valid through December 31, 2021.

10.2 Per Trip Fee

A. The participant shall pay a fee of $0.15 per dockless scooter trip, billed on a monthly basis.

10.3 Relocation Fee

A. Each participant shall pay a $25 non-refundable Relocation fee for each dockless scooter requiring relocation by the City of Milwaukee as described in Sections 11.5.C.3 and 11.5.C of the Terms and Conditions.

10.4 Redemption Fee

A. Each participant shall pay a $50 non-refundable Redemption fee for each dockless scooter requiring impoundment by the City of Milwaukee as described in Section 11.7.C of the Terms and Conditions.

10.5 Accrued Fees

A. Participants with a total accrued fee amount of over $1,000 shall be immediately suspended from participation in the pilot by the Commissioner of Public Works until such time as payment arrangements are made to address said fees.

B. If payment to the City is not received, or payment arrangement is not made within ten (10) business days after notification via certified and electronic mail, participation in the pilot shall be automatically terminated by the Commissioner of Public Works. Upon termination, operator must remove all equipment within 24 hours.

10.6 Appeals

A. Participants may appeal fees by sending written correspondence to the Department of Public Works within (10) ten business days of receiving notice of a fee. The Department shall respond in writing within (20) business days of receipt of appeal.

B. Appeals may be sent to the following address:

CITY OF MILWAUKEE

Attention: Mike Amsden

DPW-Infrastructure Services Division

841 North Broadway, Room 501

Milwaukee, WI 53202

10.7 Payment

A. Payment may be sent to the following address:

CITY OF MILWAUKEE

ATTN: Donnell Rushing

DPW-Administration Division

841 North Broadway, Room 501

Milwaukee, WI 53202

11. Operating Regulations

11.1. Minimum Equipment Requirements

A. Safety

1. Each dockless scooter shall meet the requirements described in Sections 347.489 (1), 347.489 (2), and 347.489 (3) of the Wisconsin State Statutes.
2. The maximum motor-assist speed for dockless scooters shall be 15 MPH.
3. All operators shall have visible language on the stem of each dockless scooter or on a tag attached to the dockless scooter's handles and on the operator's website and smartphone application which notifies the user that:
   a. Helmet use is encouraged while riding a dockless scooter
   b. Sidewalk riding is prohibited

c. Riding and parking on the Riverwalk is prohibited

d. Users are required to follow all rules of the road

e. Scooters must be parked responsibly

B. Technology

1. The operator shall equip each dockless scooter with an on-board GPS device capable of providing real-time location data to the operator and the Commissioner of Public Works, and shall maintain a continuous feed of the required data at all times for dockless scooters made available to customers.
2. Each dockless scooter must be equipped with wheel-lock technology to prevent unauthorized use.
3. Dockless scooters shall not be equipped with an audible alarm which sounds continuously when activated.

C. Dockless Scooter Identification

1. Each dockless scooter must be assigned a unique identifying number.
2. Each dockless scooter must be clearly and visibly labeled with the operator's name, a toll-free phone number for 24-hour customer support, and the dockless scooter's unique identification number.

11.2. Service Zones and Allowable Fleet Size

A. The City shall be divided into seven (7) geographic service zones as shown in Appendix A. A layer package of geographic service zones is available on City of Milwaukee's Department of Public Works website (milwaukee.gov/DocklessScooters). Alternate file versions may be requested electronically from Kate Riordan: kriord@milwaukee.gov.

B. The Commissioner of Public Works shall establish the minimum and maximum number of dockless scooters per operator that may be deployed.

C. Fleet Size. Each operator may deploy up to 1,000 dockless scooters.

D. Deployment. By 7:30 a.m. each weekday and by 9 a.m. on Saturdays, Sundays and holidays, each operator shall deploy its fleet of dockless scooters as follows (if less than 1,000 dockless scooters are deployed, the same proportion of scooters to zones will determine deployment by zone):

1. **Zone 1**: 100 maximum
2. **Zones 2 – 6**: 160 minimum per zone
3. An additional 100 may be deployed anywhere outside of Zone 1.

E. Fleet Evaluation and Opportunities for Expansion.

1. The Commissioner of Public Works shall conduct an evaluation of fleet performance no later than 60 days after the beginning of the pilot to determine if expansions are warranted.

2. Opportunities for fleet expansion will be evaluated for individual operators and will be based on trips per scooter per day, complaints received, community feedback, and other factors.
3. Operators will be notified by electronic mail if they qualify for a fleet expansion.
4. Operators must pay the fees set forth in Section 10.1.A.2 and 10.1.A.3 of the Terms and Conditions prior to deploying additional dockless scooters.
5. Fleet deployment requirements for scooters beyond the initial fleet described in Section 11.2.D shall be determined at the time of expansion.

F. The Commissioner of Public Works reserves the right to cap the number of dockless scooters at any time.

11.3. Dockless Scooter Availability

A. The operator shall redistribute dockless scooters to ensure dockless scooters are distributed throughout Service Zones.

B. At a minimum, the operator shall redistribute the dockless scooters throughout the Service Zones daily between the hours of 6 a.m. and 10 p.m.

C. By 7:30 a.m. each weekday and by 9 a.m. on Saturdays, Sundays and holidays, dockless equipment must be redistributed to ensure distribution across zones as described in the participant's response to the Request for Proposals.

D. These requirements are subject to change based on performance of the pilot. Participants will be notified via certified and electronic mail of changes to distribution requirements. Participants will have 48 hours from the time of receipt of the notice to comply with the revised distribution requirements. The current Service Zone distribution requirements will be posted on the City of Milwaukee's Department of Public Works website (milwaukee.gov/DocklessScooters). Failure to comply with Service Zone distribution requirements shall be grounds to terminate participation in the pilot.

11.4. Severe Weather Operations.

A. Operators must submit a plan detailing their response to severe weather, including, but not limited to the following situations:

1. Snow
2. Extreme cold
3. Extreme heat
4. Heavy rainfall
5. Extreme wind

B. Operators must ensure that deployed scooters do not impede City of Milwaukee or resident snow removal and ice control operations.

2. Opportunities for fleet expansion will be evaluated for individual operators and will be based on trips per scooter per day, complaints received, community feedback, and other factors.
3. Operators will be notified by electronic mail if they qualify for a fleet expansion.
4. Operators must pay the fees set forth in Section 10.1.A.2 and 10.1.A.3 of the Terms and Conditions prior to deploying additional dockless scooters.
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A. Operators must submit a plan detailing their response to severe weather, including, but not limited to the following situations:

1. Snow
2. Extreme cold
3. Extreme heat
4. Heavy rainfall
5. Extreme wind

B. Operators must ensure that deployed scooters do not impede City of Milwaukee or resident snow removal and ice control operations.

C. Operators may remove equipment without prior authorization in the case of severe weather. Operators must inform the Department of Public Works by electronic correspondence within two hours of the decision to remove equipment.

11.5. User Fees

A. User fees must be clearly and understandably communicated to the user prior to dockless scooter use.

11.6. Dockless Scooter Riding Regulations

A. Sidewalk riding.

1. Dockless scooters shall not be operated upon any public sidewalk, including the Riverwalk, or any pedestrian path in the public parks pursuant to Section 102-7 of the Milwaukee Code of Ordinances.
2. Operators shall include the following information in an in-app notification:
   a. Sidewalk riding is prohibited.
   b. Riding on the Riverwalk is prohibited.
3. Evaluation of sidewalk riding.
   a. The Commissioner of Public Works shall contract with a third-party consultant to evaluate sidewalk riding as described in Appendix B: Intersection Counts Scope of Services.
   b. Operators shall be prohibited from deploying and allowing new trip starts of dockless scooters in Zone 1 if it is determined that more than 10% of their scooter operations in Zone 1 are occurring on public sidewalks, as described in Attachment A: Intersection Counts Scope of Services
   c. Operators shall be subject to sidewalk riding performance metrics outside of Zone 1 as described in Appendix B: Intersection Counts Scope of Services.

B. Geo-fenced speed and no-ride zones.

1. Operators must use geo-fencing to require operating speeds of no more than 10 miles per hour in the following areas:
   a. Lakeshore State Park
   b. Other areas as directed by the Commissioner or Public Works
2. Operators must use geo-fencing to establish a "no ride zone" in the following areas:
   a. The Riverwalk
   b. Other areas as directed by the Commissioner of Public Works

11.7. Dockless Scooter Parking

A. General

1. The operator shall provide instructions for properly parking dockless scooters to customers and users in easily understandable formats through multiple media types.
2. The operator shall keep the sidewalk free from obstructions to pedestrians by requiring users to park dockless scooters such that a walk space not less than 5 feet wide shall at all times be kept open for pedestrians.
3. All dockless scooters shall be parked in an upright position with 2 wheels making a point of contact with the ground.
4. Operators must use geo-fencing to prohibit parking in the following areas:
    a. Bridges
    b. The Riverwalk
    c. Lakeshore State Park
    d. The Hank Aaron State Trail
    e. University of Wisconsin – Milwaukee main campus
    f. Marquette University
    g. Other areas as directed by the Commissioner of Public Works
5. Dockless scooters shall be parked in accordance with the following guidelines.
    a. Where possible, without impeding the flow of pedestrian traffic, a dockless scooter may be parked on a sidewalk or in a bicycle rack or other similar area designated for bicycle parking.
    b. Dockless scooters shall not be parked between the sidewalk and the curb where such area is less than 3 feet wide.
    c. Dockless scooters shall not be parked on the sidewalk at the intersection of two or more streets between the points of curvature, measured along the curb.
    d. On blocks without sidewalks, dockless scooters may be parked in the roadway if the right-of-way and the pedestrian way are not obstructed.
    e. Except at existing, permitted bicycle facilities, dockless scooters shall not be parked in the terrace or furniture zone where adjacent to or within the following locations:
        1. Parklets
        2. Loading zones
        3. Accessible parking spaces
        4. Curb ramps
        5. Entryways
        6. Driveways
        7. Street furniture requiring pedestrian access
        8. Bus stops, including shelters, passenger waiting areas, and rear passenger unloading areas
        9. Streetcar stops, platforms, and passenger waiting areas

B. Parking Corrals
    1. Operators shall work with the Commissioner of Public Works to identify priority areas for painted parking corrals.
    2. Operators shall incentivize users to utilize parking corrals if available.

C. Improper Parking
    1. Access to parking meters shall not be obstructed.
    2. Upon notification by the Commissioner of Public Works or a designee, or through the operator's app, electronic mail, or customer service lines, of any dockless scooter that is improperly parked, the operator shall relocate the dockless scooter in accordance with the following requirements:
        a. Within 2 hours of notice between 6 a.m. and 10 p.m.
        b. By 8 a.m. for notices received between 10 p.m. and 6 a.m.
    3. The City may relocate improperly parked dockless scooters which are not remedied in accordance with this provision and the participant shall pay the fee(s) set forth in Section 10.3 of the Terms and Conditions.
    4. Department of Public Works staff that observe an improperly parked dockless scooter may immediately remedy the situation. The responsible operator shall pay the fee(s) set forth in Section 10.3 of the Terms and Conditions.

D. Unused Dockless scooters
    1. Unused dockless scooters shall be relocated by the operator.
    2. Any operator that has 40 or more unused dockless scooters in the service area shall be immediately suspended from participation in the pilot by the Commissioner of Public Works for a minimum of five business days.

11.6. Submerged Scooters

Participants acknowledge that Section 118 of the City of Milwaukee Code of Ordinances delineates the City's waterways. Participants also acknowledge that submerged scooters may discharge a hazardous substance as defined in Section 236-41 of the Code. If an operator's scooter is in the City's waters as defined in Section 118 of the Code, the operator shall commence removal as required in Section 236-41-3 of the Code. If the operator fails to comply with the removal requirements, the City may cause removal and require reimbursement for actual expenses incurred.

11.7. Equipment Maintenance

A. Each dockless scooter must be inspected at least once per month in accordance with the Maintenance Plan submitted upon admittance into the pilot.

B. Any dockless scooter deemed unsafe or inoperable shall be placed out of service immediately upon notice to the participant and removed from the public right-of-way by the operator within 2 hours of notice. Notice to the participant includes notification from the general public, or electronic mail notification from the City of Milwaukee.

C. The City may impound dockless scooters that are deemed unsafe or inoperable and not remedied in accordance with this provision. The operator shall reimburse the City for costs of doing so per Section 10.4 of the Terms and Conditions.

11.8. Reporting and Data Sharing

A. Participants shall be required to attend coordination meetings and provide periodic reports as requested by the Commissioner of Public Works.

B. Operators shall expose a public unauthenticated General Bikeshare Feed Specification (GBFS) feed (https://github.com/NABSA/gbfs).

C. Operators shall provide data in the Mobility Data Specification (MDS) "Provider" specification (https://github.com/CityOfLosAngeles/mobility-data-specification/blob/dev/provider/README.md).

D. Data provided through GBFS and MDS shall include the following APIs or endpoints:

1. Trips
2. Status changes
3. Vehicles
4. A real-time status feed

E. Data provided through GBFS and MDS shall format to Milwaukee and any authorized third-party contractor of the City of Milwaukee through an application program interface made available to the City of Milwaukee.

F. Any MDS compatible API must expose data where:

1. The trip starts in the City of Milwaukee, or
2. The trip ends in the City of Milwaukee, or
3. The Trip passes through the City of Milwaukee

G. Operators shall maintain or develop connections to ingest all MDS "Policy" endpoints that the City of Milwaukee populates information for.

H. Operators shall maintain compliance with the most current published version of MDS, including the addition of any new APIs or fields not listed in these permit requirements, unless the Commissioner of Public Works provides a written exception. Any changes or updates to the API will require at least 90-day notification to the operator.

I. The Commissioner of Public Works may adopt additional data sharing requirements that provide the City and any authorized third-party contractor of the City with real-time and collected shared mobility device data available through the operator's application program interface. The City may require operators to distribute surveys to their users.

J. Operators shall anonymize all data shared with the City of Milwaukee or any authorized third-party contractor of the City of Milwaukee.

K. The following information shall be required on the 7th of each month for the previous calendar month throughout the duration of the pilot, or as directed by the Commissioner of Public Works:

1. List of reported parking complaints including: description, location of incident, description of company response, response time
2. Complaints
3. Number of users participating in discount programs disaggregated by program type (low income, students, etc.), if applicable
4. Accident/crash information including: date, time, location, and description of incident if available

L. Operators shall comply with applicable federal, state, and local data privacy laws to protect the privacy of any personal information they receive.

11.9. Community Outreach

A. Participants shall implement any community outreach plans at their own cost.

B. The operator shall provide a multi-lingual website, a call center, and a mobile application customer interface that is available 24 hours a day, 7 days a week.

C. The operator shall conduct at least one safety event per month throughout the duration of the pilot.

1. Events shall adhere to the guidelines posted to the Moving Milwaukee Forward Safely website (https://city.milwaukee.gov/MMFS) and may occur virtually.
2. The operator shall inform the Commissioner of Public Works or their designee of the event date, time, and location at least three days in advance of the event.
3. The operator shall submit a report to the Commissioner of Public Works within one week of the event with the number of event participants, community-based organizations involved in the event, and information on the event promotion.

D. The operator shall also conduct targeted sidewalk riding outreach once per month in areas where sidewalk riding has been identified as a concern by the Commissioner of Public Works or their designee.

12. Dockless Scooters for People of Varying Abilities

12.1. General

A. Operators shall include an initial plan describing how they will operate a fleet of dockless scooters for people with varying abilities in their response to the Request for Proposals.

B. Dockless scooters for people of varying abilities include, but are not limited to:

1. Dockless scooters with seats
2. Dockless scooters with wider wheels
3. Dockless scooters with wider baseboards

C. Operators shall propose an additional fleet of a minimum of 100 dockless scooters for people of varying abilities.

D. Operators shall meet with the following people and groups within one month of approval of their application to the City of Milwaukee Dockless Scooter Pilot Study 2021 to finalize their plan, including an agreed upon launch date:

1. City of Milwaukee ADA Coordinator
2. Disability advocacy groups as recommended by the City of Milwaukee ADA Coordinator

E. Operators shall submit a final plan describing how they will operate a fleet of dockless scooters to the Director of Public Works within one month of beginning of the pilot.

12.2. Pilot fees

Dockless scooters for people of varying abilities are subject to the fees as set forth in Section 10.2 of this Terms and Conditions.

12.3. Operating regulations

Dockless scooters for people of varying abilities must meet the operating regulations as described in Sections 11.1, 11.2.F, 11.4, 11.5, 11.6, and 11.8 of this Terms and Conditions.

13. Acknowledgement of Receipt

The undersigned declares that the information provided in this application is true, that they have read and agree to the Terms and Conditions as described herein, and that they agree to all rules and regulations set forth in the Milwaukee Code of Ordinances.

Participation in this pilot is voluntary. Participation in the pilot is not a prerequisite for the grant of a Dockless Scooter Share Operator's License, should the City of Milwaukee opt to create such a license in the future. By signature below, the Applicant acknowledges that they have agreed to participate in the Pilot knowingly, voluntarily, and free from duress or coercion. The Applicant also acknowledges that participation in the pilot does not guarantee the issuance of a Dockless Scooter Share Operator's License, should the City of Milwaukee opt to create such a license in the future. In addition, all Applicants have the right to consult with counsel regarding this application.

Name (Printed): _____

Title _____

Signature: _____

Date: _____

Appendix B: *Request for Proposals*

City of Milwaukee – Department of Public Works
2021 Dockless Scooter Pilot Study
Request for Proposals

Program Contact:
Kate Riordan (she/her/hers)
DPW Transportation Planner
kriord@milwaukee.gov | 414-416-3229

Program Website:
milwaukee.gov/DocklessScooters

The City of Milwaukee Department of Public Works (DPW) is seeking qualified applicants to operate and manage a fleet of dockless scooters through its 2021 Dockless Scooter Pilot Study (pilot). DPW will select up to three operators to participate in the pilot. Applicants will be evaluated based on their responses to the questions below.

Proposals are due by Monday, May 3, at 5:00 PM CDT, and should be emailed to Mike Amsden (mamsde@milwaukee.gov) and Kate Riordan (kriord@milwaukee.gov).

Required documents:

- Application
- Terms and Conditions signed acknowledgement
- Proof of insurance
- Sanitation procedures (including COVID-19-related procedures)
- Technical specifications of scooters to be deployed
- Responses to questions on following page in a single PDF
- Application review fee*
- Device and consultant fees*

* Two separate checks made out to City of Milwaukee, attn.: Donnell Rushing

If accepted into the pilot, operators must submit the following by May 24, 2021:

- Maintenance plan
- Severe weather plan
- Name and contact information of locally based operations manager

	Page Limit (single-sided)	Scoring %
General information Provide a brief background on your company and the following information: • Interest in operating in Milwaukee • Proposed dates of operation (if different than June 1 – November 15) • Proposed fleet size and distribution (including any variations throughout pilot)	1	5%

Company experience
• List up to 10 U.S. cities with populations of over 250,000 in which you have operated a fleet of dockless scooters, including the dates of operation and fleet size.
• Provide the name, phone number, and email address of public agency references for three cities in which you have operated previously.
  ○ Cities should preferably be in the Midwest or in cities with similar climates to Milwaukee.
  ○ At least one contact must be from a city with a population of at least 250,000.
• Demonstrate that no governmental agency in the U.S. has successfully revoked its scooter sharing license or permit since January 1, 2019.
	1	10%

Goal: Provide equitable transportation options • Provide up to three (3) examples of successful programs you have implemented in other cities to ensure dockless scooter access to people of all abilities, races, and income levels. • Describe your plan to engage residents, community-based organizations, businesses, etc., specifically in Zones 3, 4, and 5, including specific groups with whom you propose to partner. • Cite specific examples of your experience providing scooters for people of varying abilities, including scooters with seats, wider baseboards, wider wheels etc. Outline how you will develop a plan to deploy these scooters in Milwaukee. • List the languages in which your website and app are available. • Describe any discounted rate programs, cash payment options, and if customers can participate without smartphones.	4	25%
Goal: Increase transportation options • Provide up to three (3) examples of how you have partnered with transit and/or bike share agencies in other cities to complement their services. • Describe your approach to rebalancing dockless scooters per Section 11.2.D in the Terms and Conditions, including when and why you do it, and how the location of deployed scooters is determined.	2	20%
Goal: Evaluate impacts on access to the public right of way • Describe how you encourage or require proper parking and your process for remedying improper parking, including any incentives, disincentives, and technologies, and your process for responding to complaints related to improperly parked scooters. • Provide up to three (3) successful examples of how you have discouraged sidewalk riding in other cities and what you plan to implement in Milwaukee. • Per Sections 11.9.C and 11.9.D in the Terms and Conditions, monthly safety and sidewalk riding outreach events are required. Describe how you will promote, market, and provide education on your service, including partnerships with local advocacy, community benefit, and youth organizations.	3	25%
General Operations • Provide up to three (3) examples of how you have responded to and alerted users of severe weather, including snow, extreme cold, extreme heat, heavy rainfall, and extreme wind, and describe your approach to severe weather in Milwaukee. • Describe how you would retrieve scooters from local waterways in Milwaukee, including but not limited to rivers, Lake Michigan, and other inland lakes and ponds. • Describe how you will retrieve scooters from other municipalities. • Describe your plan to maintain clean and sanitary devices and workplaces to ensure compliance with the *Moving Milwaukee Forward Safely* guidelines during the COVID-19 pandemic.	4	10%
Staffing • Describe your proposed staffing plan, including a breakdown of employees by category, and any locally based hiring practices. • Please provide the name, phone number, and email address of your locally based operations manager, or your plan to ensure a locally based operations manager is in place prior to launch. • Indicate the targeted ratio of local staff to deployed scooters. • Provide up to three (3) examples of your previous approaches to working with third-party trip data aggregators.	2	5%

Appendix C:
File #201461

City of Milwaukee

200 E. Wells Street
Milwaukee, Wisconsin 53202

Legislation Details (With Text)

File #:	201461 **Version:** 3		
Type:	Resolution	**Status:**	Passed
File created:	3/2/2021	**In control:**	COMMON COUNCIL
On agenda:		**Final action:**	4/13/2021
Effective date:			
Title:	Substitute resolution directing the Department of Public Works to conduct a 2021 dockless scooter pilot study.		
Sponsors:	ALD. BAUMAN		
Indexes:	CYCLING, LICENSES		
Attachments:	1. 2021 Dockless Scooter_Terms and Conditions 2021 0331, 2. Dockless Scooter Pilot Study Zones 2021, 3. Proposed Substitute B, 4. Letter of Support -- Bicycle and Pedestrian Task Force, 5. Downer BID Support for 2021 Dockless Scooter Pilot, 6. East Side Support for Dockless Scooter Study 2021, 7. Letter of Support_VISIT Milw, 8. MD BID 21 Support Letter for Scooter Pilot Return, 9. 2019 Dockless Scooter Pilot Study Evaluation and Recommendation Report, 10. Dockless Scooters Letter of Support_Newaukee, 11. Support for 2021 Dockless Scooter Study, 12. Dockless Scooter Letter, 13. 2019 Dockless Scooter Pilot Study Evaluation and Recommendation Report, 14. Mohr email, 15. Cummings email, 16. winter email, 17. Port Email, 18. Scooter Testimony by L.Hoffman 3.31.21		

Date	Ver.	Action By	Action	Result	Tally
3/2/2021	0	COMMON COUNCIL	ASSIGNED TO		
3/10/2021	1	PUBLIC WORKS COMMITTEE	HELD TO CALL OF THE CHAIR	Pass	5:0
3/10/2021	0	PUBLIC WORKS COMMITTEE	SUBSTITUTED	Pass	5:0
3/31/2021	2	PUBLIC WORKS COMMITTEE	SUBSTITUTED	Pass	5:0
3/31/2021	3	PUBLIC WORKS COMMITTEE	RECOMMENDED FOR ADOPTION	Pass	5:0
4/13/2021	3	COMMON COUNCIL	ADOPTED	Pass	15:0
4/22/2021	3	MAYOR	RETURNED NOT SIGNED		

201461
SUBSTITUTE 2
180606, 180607, 190443, 200646
ALD. BAUMAN
Substitute resolution directing the Department of Public Works to conduct a 2021 dockless scooter pilot study.
This resolution directs the Department of Public Works to conduct a second dockless scooter pilot study (the first pilot study was completed in 2019). The pilot study, which shall be conducted in accordance with the *Dockless Scooter Pilot Study 2021 Terms and Conditions* document prepared by the Department, will run until December 31, 2021, unless earlier terminated in accordance with the *Dockless Scooter Pilot Study 2021 Terms and Conditions*. The Department shall submit a final report on the results and effectiveness of dockless scooters in the city after the end of the 2021 dockless scooter pilot study.
Whereas, The Department of Public Works conducted a 2019 Dockless Scooter Pilot Study; and

Whereas, Based on the findings and results of the 2019 Dockless Scooter Pilot Study, significant

concerns were raised regarding the operation of scooters on public sidewalks, regarding the safety of scooter operation in travel lanes of major roadways, and regarding scooters left unattended on public rights-of-way and private property creating safety concerns and egress/ingress problems; and

Whereas, In particular, the 2019 Dockless Scooter Pilot Study found that, based on 32 hour-long counts at 18 intersections, 17.2% of scooter riders were observed operating scooters on sidewalks; and

Whereas, The 2019 study also showed that there is public support for the availability of dockless scooters; and

Whereas, The Department of Public Works recommends a second pilot study to determine whether scooter pilot study participants can adequately police and monitor the use and operation of scooters to minimize the concerns raised during the first pilot study; now, therefore, be it

Resolved, By the Common Council and the City of Milwaukee, that the Department of Public Works is directed to conduct a second dockless scooter pilot study in accordance with the *Dockless Scooter Pilot Study 2021 Terms and Conditions*; and, be it

Further Resolved, That scooter pilot study participants shall have the specific responsibility to enforce all operating regulations for dockless scooters, with failure to do so resulting in the immediate disqualification of that participant from further participation in the pilot study; and, be it

Further Resolved, That the Department of Public Works shall base its determination of the level of scooter operation occurring on public sidewalks on periodic, systematic field counts of scooter operations at various locations and times conducted by a consultant retained by the Department for the purpose of collecting this information, with the costs of the consultant's services to be borne by scooter pilot study participants and the details of the field observation program to be set forth in the *Intersection Count Scope of Services*; and, be it

Further Resolved, That, given public safety concerns related to the operation on scooters on public sidewalks, pilot study participants shall be prohibited from deploying and allowing new trip starts of scooters in Zone 1 if it is determined that more than 10% of their scooter operations in Zone 1 are occurring on public sidewalks as set forth in the *Intersection Count Scope of Services*; and, be it

Further Resolved, That, if it is determined that more than 10% of a participant's scooter operations in any Zone outside of Zone 1 are occurring on public sidewalks, pilot study participants shall notify the Department of efforts to be taken to reduced instances of sidewalk riding as set forth in the *Intersection Count Scope of Services*; and, be it

Further Resolved, That, if it is determined that more than 10% of a participant's scooter operations in any Zone outside of Zone 1 continues after additional efforts are made rto reduce sidewalk riding, the Department has the option to prohibit deployment and new trip starts in applicable zones, as set forth in the *Intersection Count Scope of Services*; and, be it

Further Resolved, That this dockless scooter pilot study shall end on December 31, 2021, unless earlier terminated in accordance with the preceding "Further Resolved" clause or the *Dockless Scooter Pilot Study 2021* terms and conditions; and, be it

Further Resolved, That the Department of Public Works shall submit a final report on the results and effectiveness of dockless scooters in the city after the end of the 2021 dockless scooter pilot study.

Department of Public Works
LRB176602-4
Jeff Osterman
03/31/2021

Appendix D:
Intersection Counts Scope of Services

Milwaukee Dockless Scooter Pilot Study
Intersection Counts Proposed Scope of Services

Summary

In the 2019 Dockless Scooter Pilot Study, sidewalk riding emerged as a top concern for Milwaukee residents. Observations taken by DPW staff in 2019 showed approximately 17% of scooter users riding on the sidewalk. In the 2021 Dockless Scooter Pilot Study, a consultant will be hired to conduct counts at various intersections throughout the City to determine the percentage of users riding on the sidewalk, as described below.

Operators shall be prohibited from deploying and allowing new trip starts of their scooters if it is determined that more than 10% of their scooter operations in Zone 1 are occurring on public sidewalks. Outside of Zone 1, if sidewalk riding exceeds 10%, operators shall notify the Department of Public Works of measures that will be taken to reduce instances of sidewalk riding. If sidewalk riding continues to exceed 10% after efforts are made to reduce sidewalk riding, operators may be prohibited from deploying and allowing new trip starts of their scooters in affected zones.

Schedule

- Pilot Study launch date: 6/1
- Intersection Count Period #1: 6/25 – 7/9
- Consultant submits report of intersection counts to DPW by 7/12
    - DPW reports results to operators, including any prohibitions in Zone 1 operations by 7/14
    - DPW develops metrics for Zones 2 – 6 and reports to operators by 7/16
    - Operators take action to reduce sidewalk riding in any of the Zones 2 – 6 that exceed 10% sidewalk riding
- Intersection Count Period #2: 8/6 – 8/20
- Consultant submits report of intersection counts to DPW by 8/23
    - DPW reports results to operators, including any prohibitions in Zones 1-6 operations by 8/25
- Intersection Count Period #3 (if needed): 9/10 – 9/24
    - Consultant submits report of intersection counts to DPW by 9/27
    - DPW reports results to operators, including any prohibitions in Zones 1 – 6 operations by 9/29

Methodology

Number of Intersection Count Locations

The consultant shall conduct **50 intersection counts** at locations throughout the City as described below, up to three separate times. Final count locations will be based on initial data provided by third party data manager:

- Zone 1
  - 15 count locations
- Zones 2 – 6
  - 7 count locations in each zone

Frequency and Time of Intersection Counts

The consultant shall conduct **a one-hour-long count** at each count location. Final count times will be determined based on data provided by the third party data manger to ensure counts are conducted during times of peak ridership.

Data Collection

The consultant shall collect **turning movements of people riding electric scooters** that includes the following information:

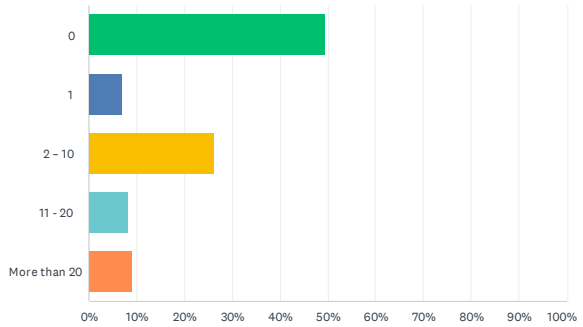
- Total number of people riding electric scooters on the sidewalk differentiated by operator
- Total number of people riding electric scooters who entered the intersection on the sidewalk and switched to the street differentiated by operator
- Total number of people riding electric scooters in the street differentiated by operator
- Total number of people riding electric scooters who entered the intersection in the street and switched to the sidewalk differentiated by operator

The consultant shall also take various representative pictures of people riding scooters, by operator, and by location riding.

Appendix E:
Public Survey Full Results

Q1 How many dockless scooter trips have you taken in Milwaukee in 2021?

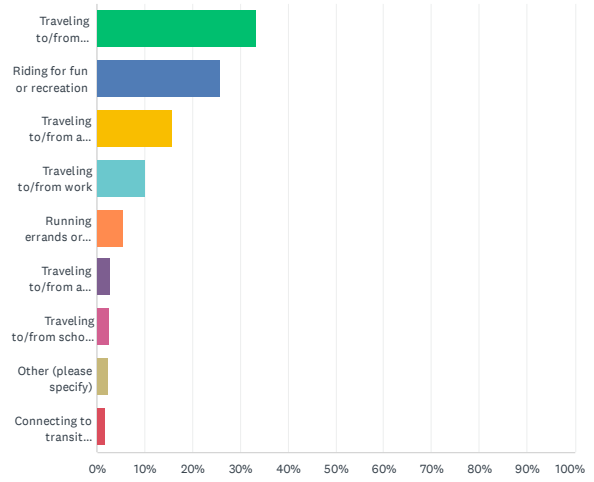
Answered: 5,415 Skipped: 5



ANSWER CHOICES	RESPONSES	
0	49.36%	2,673
1	6.94%	376
2 – 10	26.17%	1,417
11 - 20	8.31%	450
More than 20	9.22%	499
TOTAL		5,415

Q2 What is the most frequent reason you've ridden a dockless scooter?

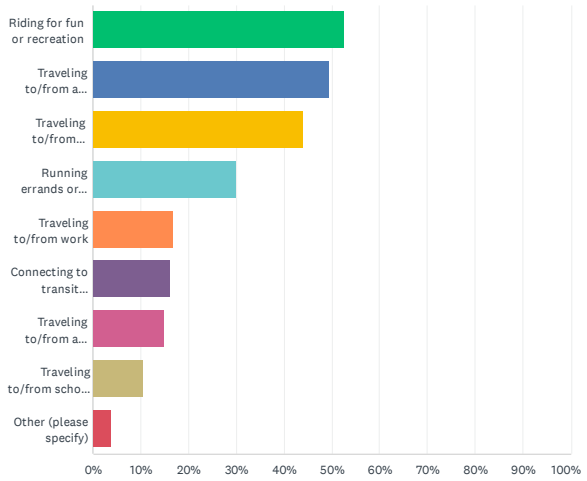
Answered: 2,629 Skipped: 2,791



ANSWER CHOICES	RESPONSES	
Traveling to/from entertainment or event	33.47%	880
Riding for fun or recreation	25.71%	676
Traveling to/from a restaurant	15.71%	413
Traveling to/from work	10.23%	269
Running errands or shopping	5.44%	143
Traveling to/from a work-related meeting or appointment	2.85%	75
Traveling to/from school or campus	2.47%	65
Other (please specify)	2.32%	61
Connecting to transit (bus/streetcar)	1.79%	47
TOTAL		2,629

Q3 Other than your most frequent reason for riding a dockless scooter, why else have you ridden a dockless scooter? Select all that apply.

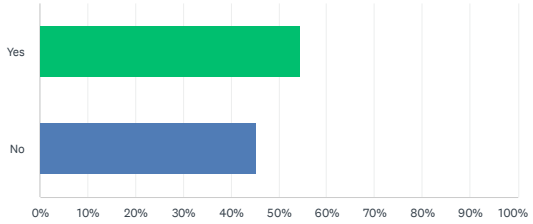
Answered: 2,468 Skipped: 2,952



ANSWER CHOICES	RESPONSES	
Riding for fun or recreation	52.71%	1,301
Traveling to/from a restaurant	49.43%	1,220
Traveling to/from entertainment or event	44.21%	1,091
Running errands or shopping	30.02%	741
Traveling to/from work	16.77%	414
Connecting to transit (bus/streetcar)	16.21%	400
Traveling to/from a work-related meeting or appointment	14.99%	370
Traveling to/from school or campus	10.66%	263
Other (please specify)	3.85%	95
Total Respondents: 2,468		

Q4 Think about your last dockless scooter trip in Milwaukee. If a dockless scooter hadn't been available, would you have taken the trip?

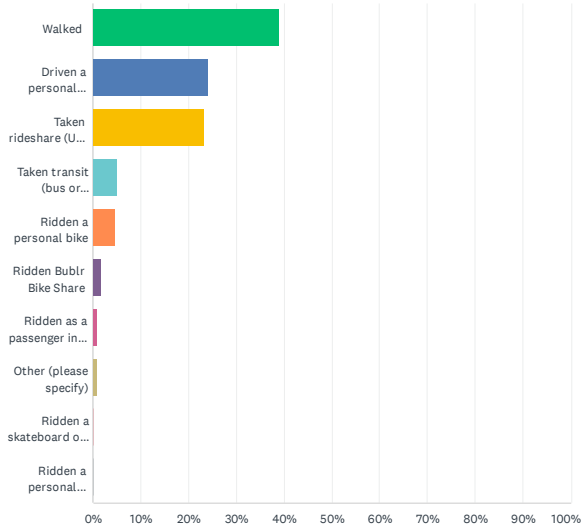
Answered: 2,621 Skipped: 2,799



ANSWER CHOICES	RESPONSES	
Yes	54.48%	1,428
No	45.52%	1,193
TOTAL		2,621

Q5 Think about your last dockless scooter trip in Milwaukee. If you hadn't taken a dockless scooter, how would you have traveled?

Answered: 1,424 Skipped: 3,996

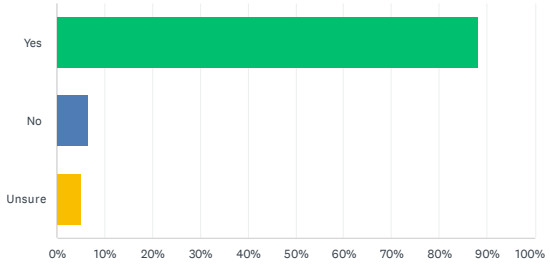


City of Milwaukee 2021 Dockless Scooter Pilot Study Public Survey

ANSWER CHOICES	RESPONSES	
Walked	39.04%	556
Driven a personal vehicle	24.16%	344
Taken rideshare (Uber or Lyft) or taxi	23.17%	330
Taken transit (bus or streetcar)	5.13%	73
Ridden a personal bike	4.63%	66
Ridden Bublr Bike Share	1.69%	24
Ridden as a passenger in a personal vehicle	0.84%	12
Other (please specify)	0.84%	12
Ridden a skateboard or longboard	0.28%	4
Ridden a personal electric scooter	0.21%	3
TOTAL		1,424

Q6 Before riding a dockless scooter, did you have enough information to ride it safely?

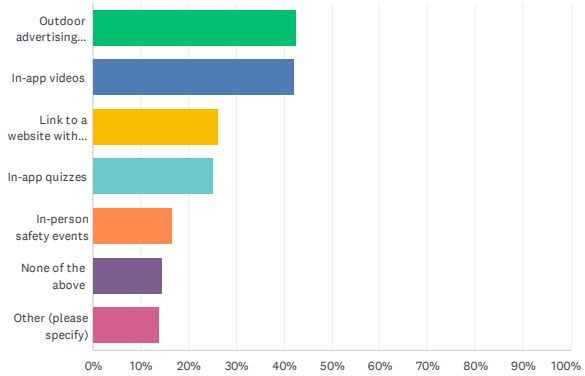
Answered: 2,606 Skipped: 2,814



ANSWER CHOICES	RESPONSES	
Yes	88.30%	2,301
No	6.52%	170
Unsure	5.18%	135
TOTAL		2,606

Q7 What types of information would have helped you to understand how to ride a dockless scooter safely? Select all that apply.

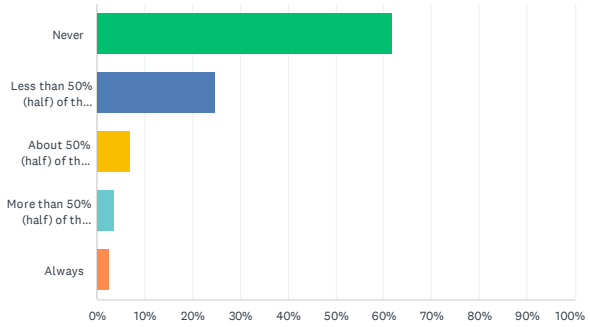
Answered: 305 Skipped: 5,115



ANSWER CHOICES	RESPONSES	
Outdoor advertising with safety tips	42.62%	130
In-app videos	42.30%	129
Link to a website with videos	26.23%	80
In-app quizzes	25.25%	77
In-person safety events	16.72%	51
None of the above	14.43%	44
Other (please specify)	13.77%	42
Total Respondents: 305		

Q8 Think about all the rides you have taken on dockless scooters in Milwaukee in 2021. How frequently did you ride on the sidewalk, other than at the beginning or end of your ride?

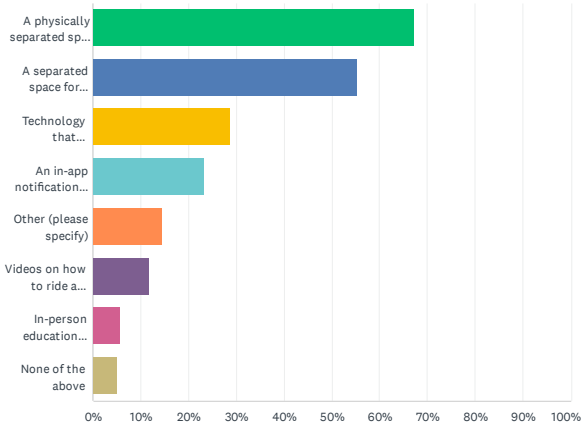
Answered: 2,590 Skipped: 2,830



ANSWER CHOICES	RESPONSES	
Never	61.81%	1,601
Less than 50% (half) of the time	24.75%	641
About 50% (half) of the time	7.14%	185
More than 50% (half) of the time	3.71%	96
Always	2.59%	67
TOTAL		2,590

Q9 What would encourage you to ride a dockless scooter in the street? Select all that apply.

Answered: 966 Skipped: 4,454



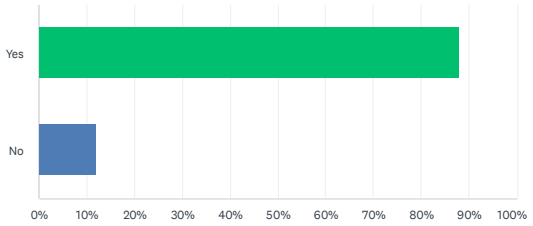
ANSWER CHOICES	RESPONSES	
A physically separated space for dockless scooters in the street, such as a protected bike lane	67.39%	651
A separated space for dockless scooters in the street that is not physically separated, such as a painted bike lane	55.49%	536
Technology that automatically drops the scooter speed to 5 MPH when ridden on a sidewalk	28.78%	278
An in-app notification that sidewalk riding is illegal	23.29%	225
Other (please specify)	14.49%	140
Videos on how to ride a dockless scooter safely in the street	11.70%	113
In-person education events on how to ride a dockless scooter safely in the street	5.80%	56
None of the above	5.18%	50
Total Respondents: 966		

Q10 If you answered "none of the above" to the previous question, please state why.

Answered: 34 Skipped: 5,386

Q11 Did you know that riding an electric scooter on the sidewalk is illegal in Milwaukee?

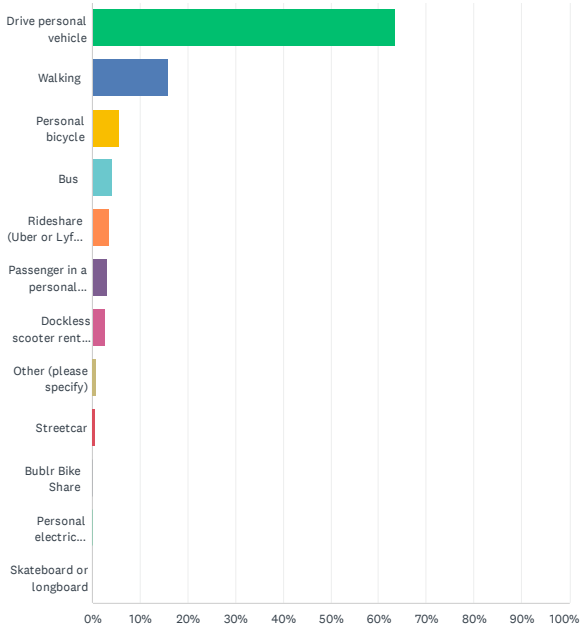
Answered: 4,587 Skipped: 833



ANSWER CHOICES	RESPONSES	
Yes	88.12%	4,042
No	11.88%	545
TOTAL		4,587

Q12 What type of transportation do you use most often when traveling around Milwaukee?

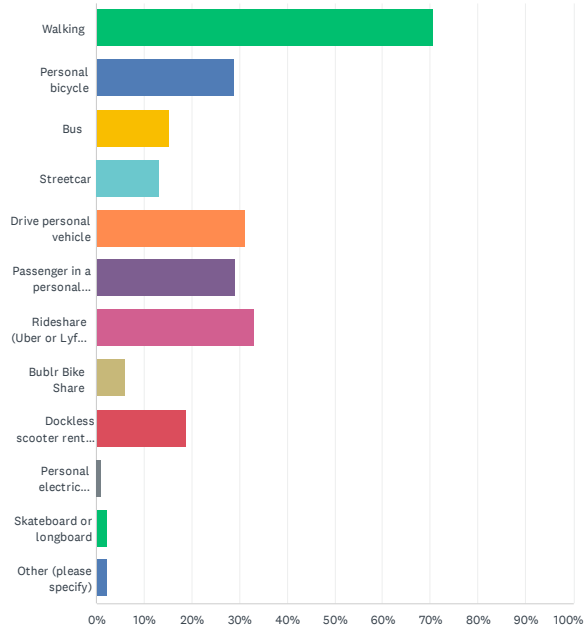
Answered: 4,587 Skipped: 833



ANSWER CHOICES	RESPONSES	
Drive personal vehicle	63.46%	2,911
Walking	15.83%	726
Personal bicycle	5.62%	258
Bus	4.05%	186
Rideshare (Uber or Lyft) or taxi	3.44%	158
Passenger in a personal vehicle	2.94%	135
Dockless scooter rented through Bird, Lime, or Spin	2.57%	118
Other (please specify)	0.96%	44
Streetcar	0.65%	30
Bublr Bike Share	0.24%	11
Personal electric scooter	0.13%	6
Skateboard or longboard	0.09%	4
TOTAL		4,587

Q13 Other than the type of transportation you use most often, what other types do you use in a typical week when traveling around Milwaukee? Select all that apply.

Answered: 4,540 Skipped: 880



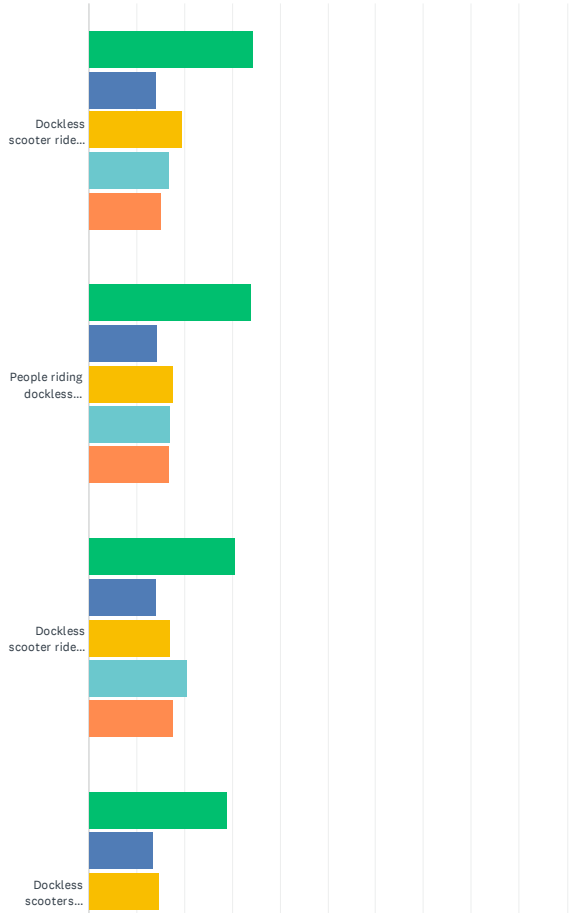
City of Milwaukee 2021 Dockless Scooter Pilot Study Public Survey

ANSWER CHOICES	RESPONSES	
Walking	70.53%	3,202
Personal bicycle	28.79%	1,307
Bus	15.15%	688
Streetcar	13.26%	602
Drive personal vehicle	31.12%	1,413
Passenger in a personal vehicle	28.94%	1,314
Rideshare (Uber or Lyft) or taxi	33.15%	1,505
Bublr Bike Share	5.93%	269
Dockless scooter rented through Bird, Lime, or Spin	18.68%	848
Personal electric scooter	1.15%	52
Skateboard or longboard	2.11%	96
Other (please specify)	2.05%	93
Total Respondents: 4,540		

City of Milwaukee 2021 Dockless Scooter Pilot Study Public Survey

Q14 Thinking about potential issues regarding dockless scooters, please indicate how concerned you are with the following:

Answered: 4,596 Skipped: 824



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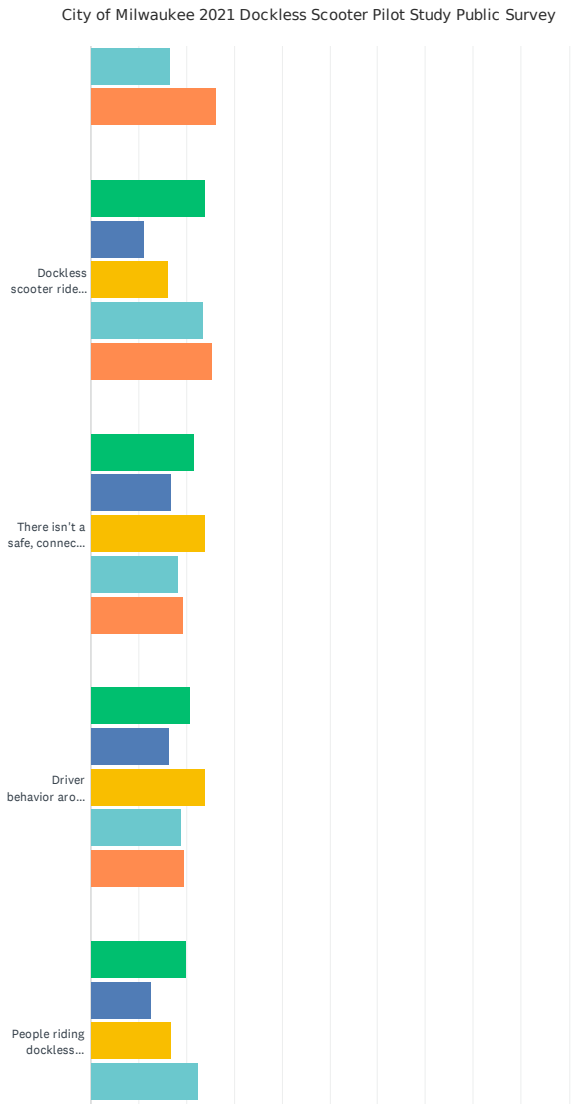
City of Milwaukee 2021 Dockless Scooter Pilot Study Public Survey
Dockless scooter ride...
There isn't a safe, connec...
Driver behavior aro...
People riding dockless...

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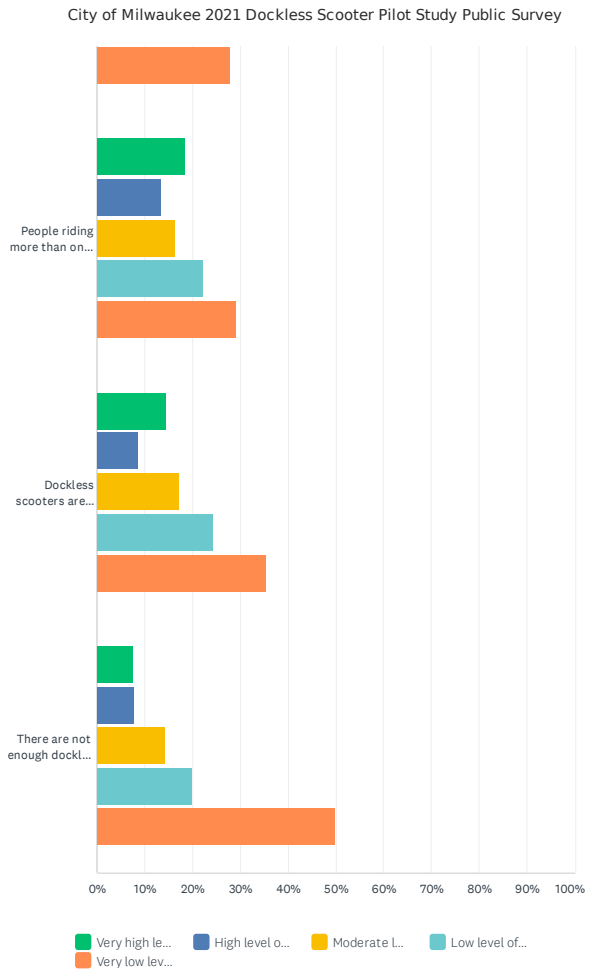
City of Milwaukee 2021 Dockless Scooter Pilot Study Public Survey
People riding more than on...
Dockless scooters are...
There are not enough dockl...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Very high le...
High level o...
Moderate l...
Low level of...
Very low lev...

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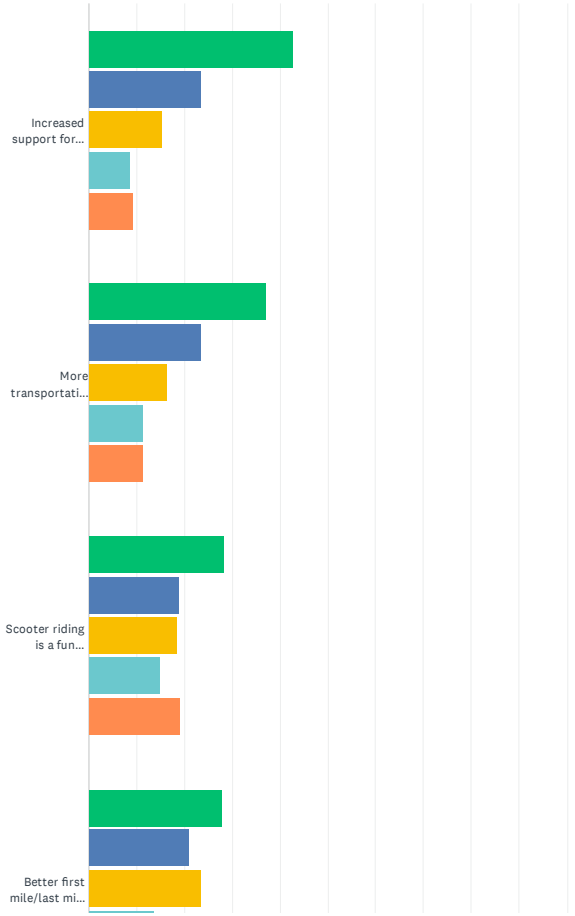
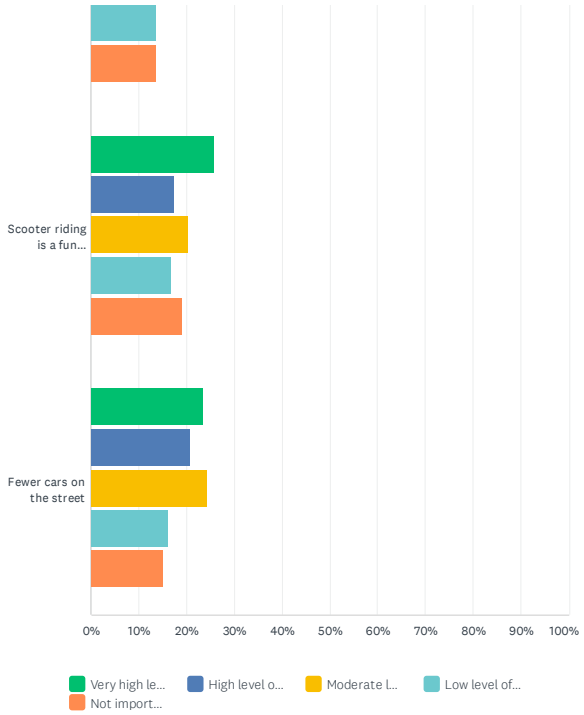
	VERY HIGH LEVEL OF CONCERN	HIGH LEVEL OF CONCERN	MODERATE LEVEL OF CONCERN	LOW LEVEL OF CONCERN	VERY LOW LEVEL OF CONCERN	TOTAL
Dockless scooter rider behavior around people driving	34.38% 1,576	14.01% 642	19.61% 899	16.95% 777	15.05% 690	4,584
People riding dockless scooters on sidewalks	34.10% 1,565	14.32% 657	17.63% 809	17.02% 781	16.93% 777	4,589
Dockless scooter rider behavior around people walking	30.73% 1,407	14.02% 642	16.97% 777	20.60% 943	17.67% 809	4,578
Dockless scooters blocking sidewalks when parked	29.10% 1,335	13.39% 614	14.67% 673	16.57% 760	26.27% 1,205	4,587
Dockless scooter rider behavior around people biking	23.89% 1,094	11.20% 513	16.23% 743	23.37% 1,070	25.31% 1,159	4,579
There isn't a safe, connected network of bike facilities and trails to use	21.66% 992	16.77% 768	23.78% 1,089	18.36% 841	19.43% 890	4,580
Driver behavior around people riding dockless scooters	20.95% 959	16.52% 756	23.81% 1,090	19.07% 873	19.64% 899	4,577
People riding dockless scooters appear to be under 18 years old	20.06% 918	12.67% 580	16.87% 772	22.53% 1,031	27.88% 1,276	4,577
People riding more than one person to a dockless scooter	18.57% 850	13.39% 613	16.38% 750	22.35% 1,023	29.31% 1,342	4,578
Dockless scooters are not safe to ride	14.50% 665	8.70% 399	17.27% 792	24.23% 1,111	35.30% 1,619	4,586
There are not enough dockless scooters in the City of Milwaukee	7.67% 351	7.97% 365	14.31% 655	20.12% 921	49.92% 2,285	4,577

Q15 Thinking about potential benefits of dockless scooters, please indicate the level of importance for the following:

Answered: 4,577 Skipped: 843

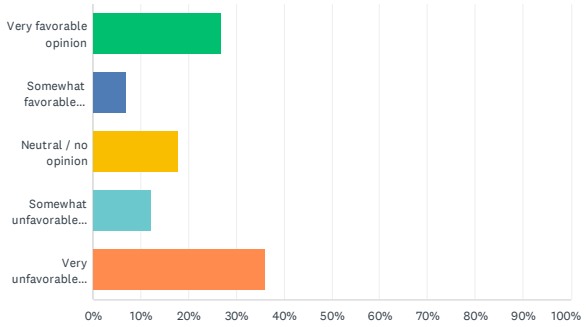




	VERY HIGH LEVEL OF IMPORTANCE	HIGH LEVEL OF IMPORTANCE	MODERATE LEVEL OF IMPORTANCE	LOW LEVEL OF IMPORTANCE	NOT IMPORTANT AT ALL	TOTAL
Increased support for walking, biking, and getting around without a car	42.86% 1,958	23.53% 1,075	15.46% 706	8.73% 399	9.41% 430	4,568
More transportation options in Milwaukee	37.13% 1,696	23.45% 1,071	16.44% 751	11.51% 526	11.47% 524	4,568
Scooter riding is a fun activity for visitors	28.35% 1,292	18.92% 862	18.52% 844	14.99% 683	19.22% 876	4,557
Better first mile/last mile connections to transit	28.03% 1,278	21.18% 966	23.42% 1,068	13.73% 626	13.64% 622	4,560
Scooter riding is a fun activity for residents	25.89% 1,182	17.56% 802	20.54% 938	16.84% 769	19.16% 875	4,566
Fewer cars on the street	23.49% 1,072	20.93% 955	24.30% 1,109	16.13% 736	15.14% 691	4,563

Q16 On August 3, 2021, new dockless scooter trips were prohibited from starting in Zone 1. What was your opinion of this prohibition?Click here for a map of the Zone 1 boundaries.

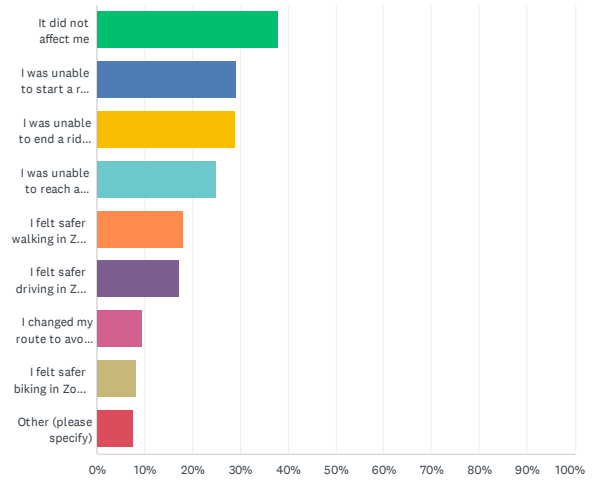
Answered: 4,551 Skipped: 869



ANSWER CHOICES	RESPONSES	
Very favorable opinion	26.94%	1,226
Somewhat favorable opinion	6.99%	318
Neutral / no opinion	17.91%	815
Somewhat unfavorable opinion	12.15%	553
Very unfavorable opinion	36.01%	1,639
TOTAL		4,551

Q17 How did the prohibition of new dockless scooter rides in Zone 1 affect you? Select all that apply.

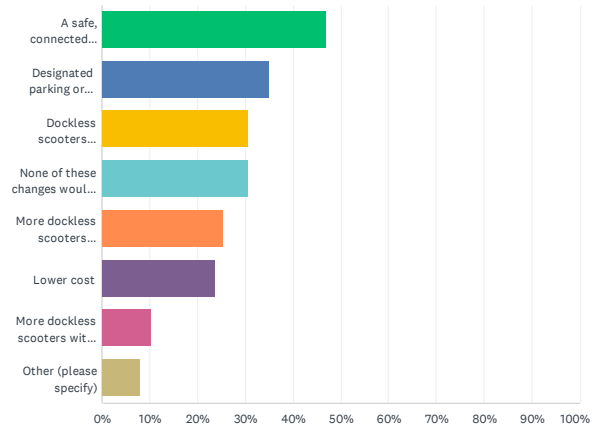
Answered: 4,544 Skipped: 876



ANSWER CHOICES	RESPONSES	
It did not affect me	37.85%	1,720
I was unable to start a ride where I wanted	29.31%	1,332
I was unable to end a ride where I wanted	28.90%	1,313
I was unable to reach a destination or end point because I couldn't ride through Zone 1	24.93%	1,133
I felt safer walking in Zone 1	18.13%	824
I felt safer driving in Zone 1	17.23%	783
I changed my route to avoid Zone 1	9.53%	433
I felt safer biking in Zone 1	8.23%	374
Other (please specify)	7.59%	345
Total Respondents: 4,544		

Q18 What changes would encourage you to use dockless scooters more often? Select all that apply.

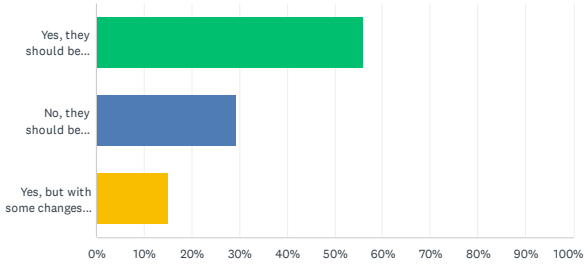
Answered: 4,561 Skipped: 859



ANSWER CHOICES	RESPONSES	
A safe, connected network of bike lanes and trails to use	46.92%	2,140
Designated parking or docking areas for scooters	34.99%	1,596
Dockless scooters available in more neighborhoods throughout the city	30.80%	1,405
None of these changes would encourage me to use more	30.80%	1,405
More dockless scooters available	25.41%	1,159
Lower cost	23.61%	1,077
More dockless scooters with seats	10.48%	478
Other (please specify)	8.20%	374
Total Respondents: 4,561		

Q19 At the conclusion of this pilot study, do you support the City of Milwaukee developing permanent regulations to allow dockless scooter share in Milwaukee?

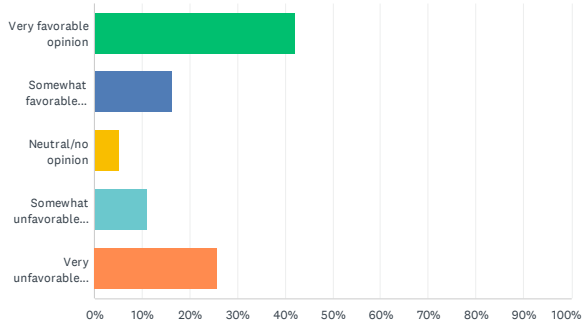
Answered: 4,544 Skipped: 876



ANSWER CHOICES	RESPONSES	
Yes, they should be allowed	55.79%	2,535
No, they should be prohibited	29.27%	1,330
Yes, but with some changes (please specify)	14.94%	679
TOTAL		4,544

Q20 What is your overall opinion of dockless scooters in Milwaukee?

Answered: 4,563 Skipped: 857



ANSWER CHOICES	RESPONSES	
Very favorable opinion	41.99%	1,916
Somewhat favorable opinion	16.11%	735
Neutral/no opinion	5.11%	233
Somewhat unfavorable opinion	11.09%	506
Very unfavorable opinion	25.71%	1,173
TOTAL		4,563

Q21 Please share any additional comments or feedback you have regarding the Dockless Scooter Pilot Study in the City of Milwaukee.

Answered: 1,702 Skipped: 3,718

Q22 Zip code

Answered: 3,800 Skipped: 1,620

Top Responses

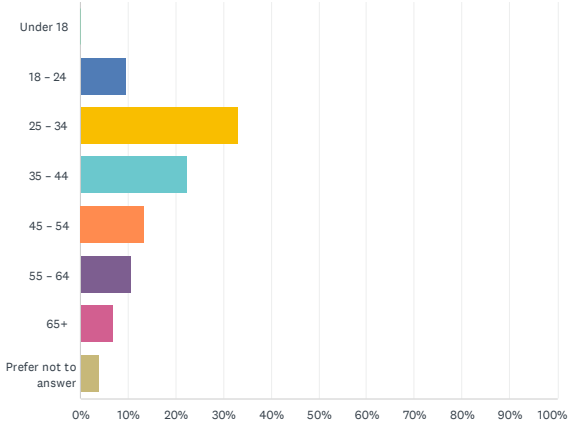
53202: 892
52307: 536
53211: 491
53212: 435
53204: 173
53208: 151
53213: 106
53215: 85
53222: 69
53219: 61
53203: 55
53221: 55
53214: 54
53217: 45
53226: 44
53233: 38
53210: 35
53209: 32
53220: 26
53235: 24
53216: 22
53224: 20
53206: 20
53227: 20
53218: 17
53154: 16
53110: 15
53051: 14
53188: 14
53172: 12
53129: 11
53205: 10
53225: 10
53132: 10

Q23 If you live in the City of Milwaukee, please enter the closest intersection to your residence. For example: 64th & Silver Spring

Answered: 2,960 Skipped: 2,460

Q24 Age

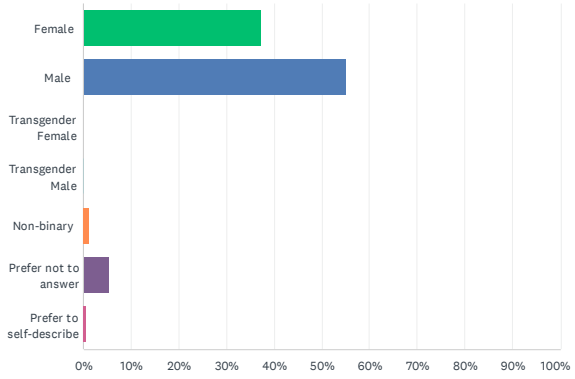
Answered: 4,091 Skipped: 1,329



ANSWER CHOICES	RESPONSES	
Under 18	0.29%	12
18 – 24	9.66%	395
25 – 34	33.02%	1,351
35 – 44	22.39%	916
45 – 54	13.44%	550
55 – 64	10.63%	435
65+	6.72%	275
Prefer not to answer	3.84%	157
TOTAL		4,091

Q25 Gender

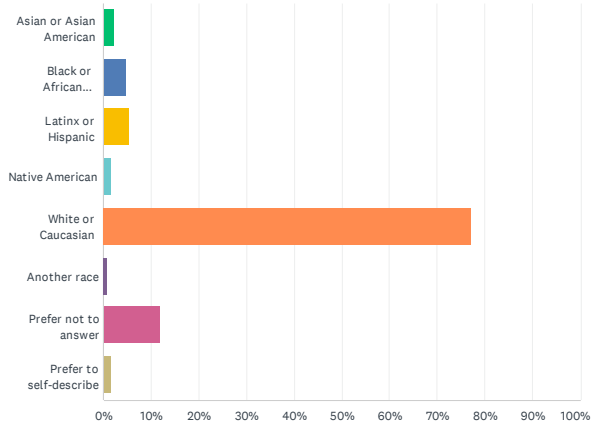
Answered: 4,083 Skipped: 1,337



ANSWER CHOICES	RESPONSES	
Female	37.40%	1,527
Male	54.94%	2,243
Transgender Female	0.10%	4
Transgender Male	0.29%	12
Non-binary	1.22%	50
Prefer not to answer	5.34%	218
Prefer to self-describe	0.71%	29
TOTAL		4,083

Q26 Race (select all that apply)

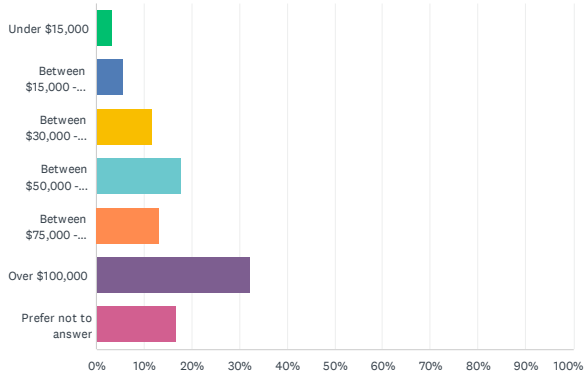
Answered: 3,984 Skipped: 1,436



ANSWER CHOICES	RESPONSES	
Asian or Asian American	2.03%	81
Black or African American	4.74%	189
Latinx or Hispanic	5.37%	214
Native American	1.46%	58
White or Caucasian	77.28%	3,079
Another race	0.88%	35
Prefer not to answer	11.97%	477
Prefer to self-describe	1.56%	62
Total Respondents: 3,984		

Q27 Household income level

Answered: 4,009 Skipped: 1,411



ANSWER CHOICES	RESPONSES	
Under $15,000	3.09%	124
Between $15,000 - $29,999	5.46%	219
Between $30,000 - $49,000	11.77%	472
Between $50,000 - $74,999	17.76%	712
Between $75,000 - $99,999	13.17%	528
Over $100,000	32.20%	1,291
Prefer not to answer	16.54%	663
TOTAL		4,009

Appendix F:
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