E-SCOOTER

PILOT EVALUATION SUMMARY

CITY OF CHICAGO — MAYOR LORI LIGHTFOOT

JANUARY 2020

CHICAGO

LETTER FROM THE COMMISSIONERS

Dear Chicagoans,

You might have seen people riding electric scooters in some neighborhoods last summer. The City of Chicago piloted this emerging mobility alternative for the first time in 2019 with 10 providers renting e-scooters in west and northwest side neighborhoods. We wanted to use the pilot to test if e-scooters fit our priorities of increasing equitable neighborhood access to safe and affordable transportation options while lowering congestion and emissions. We hoped that people might use them to replace cars for short trips, connect to public transit and reduce their environmental footprint. We also wanted to see how challenges inherent to this new form of mobility, including sidewalk clutter, impact on people with disabilities and safety concerns played out over the duration of the pilot.

We are excited to see this comprehensive analysis and evaluation of the pilot being made available to the public. We applaud our BACP and CDOT teams for carefully designing the pilot program with a focus on equity and inclusivity, and for effectively managing the pilot without major issues. However, the program was not without challenges, specifically in regards to compliance, sidewalk management and concentration of rides. This evaluation provides a detailed analysis of those successes and challenges, along with lessons learned and ideas for going forward.

The City also encouraged feedback from the community and stakeholder groups on the e-scooter pilot and used this information as part of the following evaluation. The responses received highlight opportunities and challenges of e-scooters. While it is encouraging that e-scooters improved transportation access for many within the pilot area, it is also clear that they raise challenges that still need to be addressed as this mobility option is considered as a longer term option in our city.

We recommend a second pilot to put the findings of this evaluation into action. Over the next few weeks and months we will be listening to the public and stakeholders and we look forward to continuing the conversation into 2020.

Sincerely,

Rosa Escareno
Commissioner, Business Affairs
& Consumer Protection

Gia Biagi
Commissioner, City of Chicago
Department of Transportation

CHI | BACP | CDOT

EXECUTIVE SUMMARY

Overview

Electric scooters, or e-scooters, are emerging as an alternative mode of transportation in cities across the United States due to the promise that they will enhance mobility, replace short car and ride-hail journeys and bridge the 'last mile' to and from public transit. However, this new mobility option has also brought operational challenges to cities, including safety concerns, sidewalk clutter and impacts on people with disabilities. To evaluate whether e-scooters can provide a sustainable, safe and equitable method of transportation for residents and to analyze the performance of e-scooters in conjunction with riders' characteristics and behaviors, the City of Chicago hosted a shared E-Scooter Pilot Program from June 15, 2019 to October 15, 2019.

Ten companies were issued Emerging Business Permits through the Department of Business Affairs and Consumer Protection (BACP) to operate 250 e-scooters each within a specified area on the northwest and west sides of the city. The characteristics of the service area enabled the City to evaluate the impact of e-scooters in a diverse demographic and geographical area with variations in access to transit or other forms of mobility. The framework and defining characteristics of Chicago's pilot program drew upon previous shared e-scooter programs in other cities as well as experience from the City's 2018 dockless bikeshare pilot. This evaluation provides an overview of the pilot along with an analysis of the key findings, focusing on utilization, equity, safety, company compliance and impact on the community.

E-scooter Utilization

Between June 15 and October 15, 821,615 e-scooter trips were reported by participating companies. Due to data downloading issues stemming from the difficulty involved with achieving perfect data compliance, 664,975 trips were available for analysis. As would be expected with a new transportation technology like e-scooters, a significant portion of the rides available for analysis appear to have been test rides or 'laps' that started in much the same place as they ended. To focus on e-scooter use as a transportation mode, those 'lap' rides were excluded for this analysis, leaving 407,296 trips to be analyzed.

Over the duration of the pilot, there was a significant decrease in e-scooter trips – the last week of the pilot saw half of the number of trips as the first week. E-scooters were used most frequently during the evening rush period on weekdays and between 3 and 4 pm on weekends. Despite regulations requiring e-scooter placement in priority areas, 77 percent of trips started or ended in the eastern, non-priority area of the pilot zone. The demand for e-scooters was concentrated in denser areas with other transportation alternatives available.

The data collected show that nearly half of all e-scooter trips started or ended near public transit[1], which includes bus stops. However, this does not provide any insight as to whether users were using e-scooters to replace a trip that could otherwise have been made by transit, versus connect to transit (i.e. using it for a first-mile or last-mile connection), or neither. Of survey respondents, 34 percent indicated they used e-scooters to connect to transit, but 22 percent indicated that they rode the bus less often and 13 percent indicated that they rode the train less often than prior to the pilot. Overall, there is still reason to question if e-scooters will increase transit use.

Finally, it is important to note that 30 percent of survey respondents indicated that they used an e-scooter to replace a trip that they would have otherwise made by walking. While this type of shift may have benefits for increasing convenience and overall transportation choices, it also has implications for sustainability and public health that should be considered.

Equity

A key characteristic of Chicago's e-scooter pilot program was the requirement that companies distribute half of their e-scooter fleets within the designated northern and southern priority areas each morning, in order to ensure accessibility to underserved community areas. Compliance with this requirement varied, with none of the 10 companies consistently meeting the 25 percent requirement in each area for their first deployment in the morning. Despite failing to achieve this metric, the rebalancing requirements did appear to increase e-scooter availability in underserved communities, particularly earlier in the day. However, the data submitted showed that e-scooter availability fluctuated based on time of day and location. By the evening rush period, potential riders in the West Loop and Milwaukee Avenue corridor were more than likely to find at least one available e-scooter within a half mile, while in the other pilot areas, e-scooter availability was less dependable the majority of the time.

[1] Trips were identified as near transit if they were within 60 feet of a bus stop or 300 feet of a rail station. The reason for the larger radius for rail stations versus bus stations is that the rail station locations are based on platform location and not entrance location; as a result, 60 feet is too short of a distance to capture e-scooters parked near the entrance to, for example, Blue Line stations in the middle of the expressway.

Company Compliance

To further regulate the geographical operation of e-scooters, geofencing technology was used to set e-scooter boundaries to remain within the pilot area, and to prevent use on trails such as the 606. While compliance preventing use on the 606 improved over the course of the pilot as the City continued to engage with the companies, geofencing trails and smaller geographies proved to be challenging. However, the geofencing of the pilot area as a whole proved to be successful, with relatively few e-scooters operating outside of the designated zone.

The City used data feeds and field enforcement to bring about compliance from the companies participating. However, inconsistencies in the data feeds from some of the companies made full compliance difficult, and the inclusion of 10 companies created challenges that could have been avoided with fewer companies participating.

Safety

The safety implications of e-scooters as a mode of transportation is still being determined. During the pilot, the Chicago Department of Public Health asked Illinois hospitals to report e-scooter injuries. In total, 192 probable Emergency Department visits were reported from June 15 to October 15 due to e-scooters. However, these results should be interpreted very cautiously due to a number of limitations outlined in the e-scooter injury analysis section.

Impact on the Community

To assess the performance and public reception of the e-scooter pilot, the City engaged with various stakeholders to develop the pilot and throughout its duration. Meetings were held with transportation groups, disability advocates, local chambers of commerce, community organizations and other stakeholders. Recommendations from these groups were used to develop the terms of the pilot, to make changes during the pilot and to inform the recommendations in this evaluation.

Additionally, the City conducted a month-long public online survey between September 24 and October 27, 2019. The demographics of the survey respondents represented a higher share of white, higher income and more educated participants than the overall demographics of the pilot geography, although rider respondents were more diverse than non-rider respondents.

In addition, most e-scooter riders were infrequent users, with 49 percent of riders having taken only one ride on a given company's e-scooters, while only 15 percent took five or more rides.

Survey respondents indicated that they were using e-scooters as alternatives to multiple modes, including ride-hailing services, walking, driving a personal vehicle or taking a CTA bus. However, when compared with actual data on ride-hail and Divvy trips, it appears that survey responses may overestimate the extent to which e-scooter use caused significant mode shift. All told, 59 percent of survey respondents thought shared e-scooters companies should continue operating in Chicago. However, responses differed greatly for non-riders and riders: 86 percent of riders thought the program should continue, compared to only 21 percent of non-riders.

Conclusion

The City is committed to providing equitable, accessible, affordable, sustainable and safe transportation options for all residents, particularly for those with limited transportation access. The e-scooter pilot showed promise that e-scooters could aid in filling transportation gaps by providing another alternative to cars for getting around the neighborhoods. However, the pilot also revealed some of the challenges. Ridership was geographically concentrated in areas with a high density of other options such as Divvy, bus and rail, rather than in areas with fewer options. Analysis of the data also indicates that the jury is still out on whether e-scooters connect riders to public transit or replace private car or ride-hailing trips. More work also needs to be done to lower the environmental impact of the short life cycle of e-scooters and business operations and to increase companies' rates of compliance with the City's equitable rebalancing requirements, as well as compliance in providing data in a complete and timely manner. It is clear that the regulations the City required prevented many of the problems experienced in peer cities, and the City is committed to continuing to explore innovative regulations to aid in any future e-scooter programs. Ultimately, providing an additional sustainable and equitable transportation option in the city has public safety, health, congestion, environmental, and social equity benefits for all residents. The City is committed to further exploring if e-scooters can be an effective mobility option in Chicago and implementing lessons learned from the first pilot in 2020.

Figure 1: Cumulative E-scooter Trip Origins

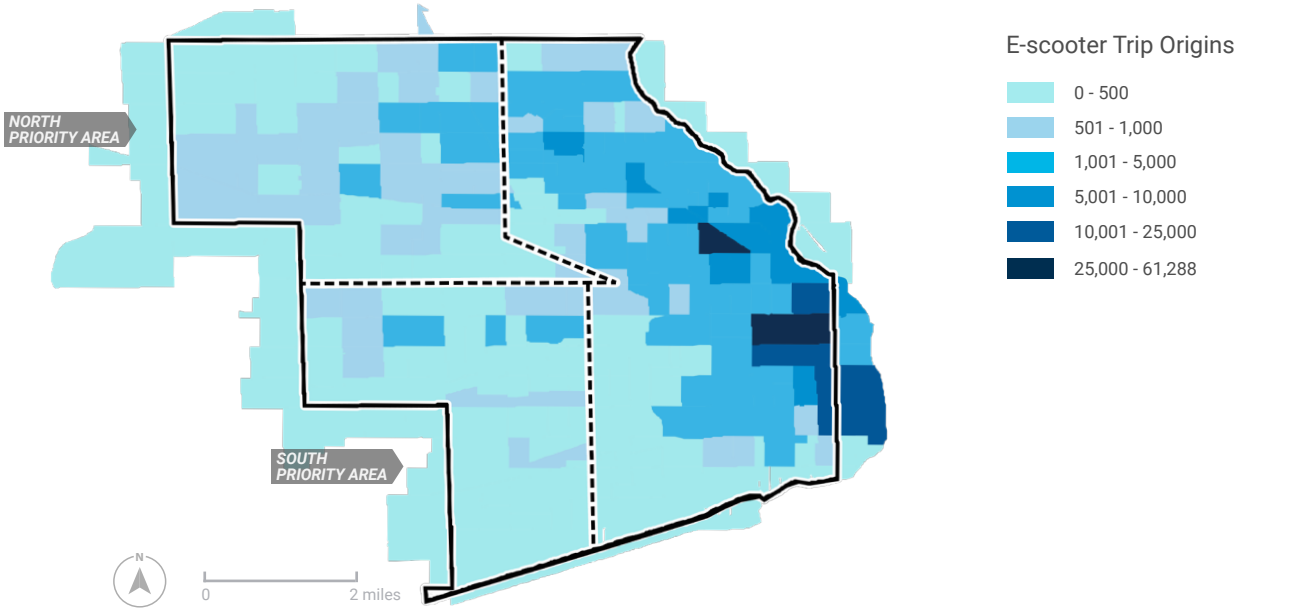
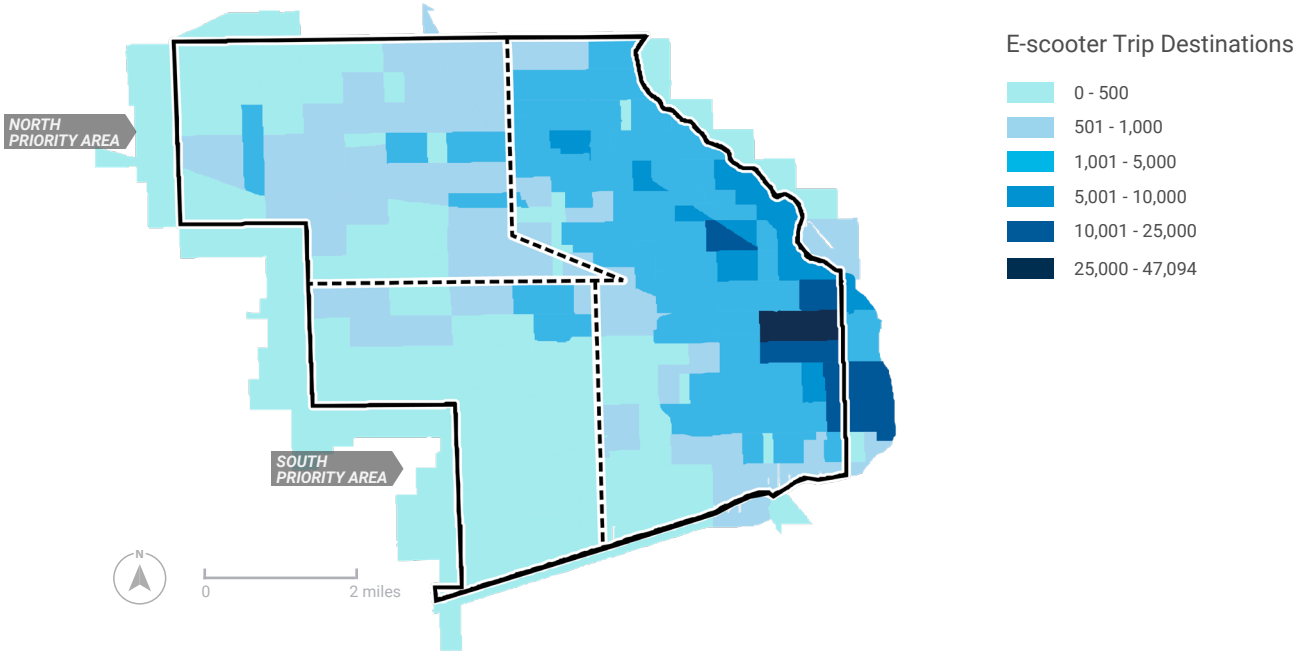


Figure 2: Cumulative E-scooter Trip Destinations

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