

Keeping Detroit Moving

Lessons from the
2020 Essential Workers
E-Bike Pilot



Acknowledgments

We would like to acknowledge the following key partners for their leading roles in designing and implementing the pilot:

The City of Detroit's Office of Mobility Innovation (OMI), the New Urban Mobility Alliance (NUMO), NextEnergy, and MoGo. In addition, we would like to acknowledge NUMO and OMI for their roles in preparing this report, as well as the M-DICE (Michigan – Data Informed Cities for Everyone) team at the University of Michigan for analysis and presentation of the data included in this report.

2020 Essential Workers Micromobility Pilot

I / Introduction

2020 was a year of crisis. The COVID-19 pandemic has shaken our country to its core, starkly highlighting existing inequities and giving rise to new transportation and economic challenges. Essential service providers, including hospitals, pharmacies, and grocery stores, are at the frontlines of these challenges, and their employees were and continue to be critically important in our country's battle to overcome this pandemic. Unfortunately, many essential workers – particularly those that are transit-dependent – have long faced daily challenges, like a lack of reliable transportation to and from work. With the spread of COVID-19, these ongoing daily challenges were exacerbated by fears about the risk of transmission on public transportation¹ and by dramatic cuts in transit service made in response to work from home orders and associated ridership declines.

In response to this crisis, the City of Detroit's Office of Mobility Innovation (OMI) partnered with the New Urban Mobility alliance (NUMO) and NextEnergy to launch the 2020 Essential Workers Micromobility Pilot. The pilot supported the transportation needs of essential workers by providing individually-leased electric bicycles to employees of hospitals, nursing homes, grocery stores, and pharmacies at a highly subsidized rate. Through this program, approximately 60 employees of critical healthcare and food industry employers – such as Henry Ford Health System, Detroit Medical Center, Whole Foods and others – were able to lease e-bikes from May through October 2020 to more affordably and reliably reach their jobs and provide critical services to the public. Though the pilot was small in scale, it has resulted in important insights that will shape future pilots and programs seeking to make active transportation a more accessible and central aspect of Detroit's transportation system.

¹ Over the past months, epidemiologists have conducted significant research on steps that need to be taken to minimize this risk of transmission, and transit authorities around the country have implemented many of these measures, ranging from mask mandates to ventilation to deep cleaning. These measures have significantly reduced the risk of transmission, but the damage to transit systems cannot be remedied without significant federal funding support. See CITE NUMO ARTICLE.

II / Goals of the 2020 Essential Workers Micromobility Pilot

The 2020 Essential Workers Micromobility Pilot was launched with three key goals:

- Enhancing the **ease of commute** for essential workers during the pandemic

Through the pilot, the project partners sought to offer participating essential workers a commuting option that was convenient and affordable. Ease of commute was defined largely by the duration of the commute, though other factors related to convenience, such as 24/7 access to the vehicle, were also considered. Due to funding provided by NUMO, the pilot program was able to highly subsidize the monthly leases, thereby ensuring affordability. In future phases of the pilot, the project partners will explore other, more sustainable means of ensuring affordability.

- Providing access to a **safe** commuting option for essential workers during the pandemic

Because the pilot was designed as a response to COVID-19, one of its primary purposes was to allow essential workers to commute without being in close proximity to others. But reducing the risk of transmission is only one facet of transportation safety. The project partners also wanted to measure safety, as well as perceived safety, more broadly to ensure that reducing the risk of transmission through use of e-bikes did not come at the cost of increased traffic accidents and injuries.

- Expanding the **constituency** among employees and employers for micromobility as a commuting solution

The pilot sought to increase the constituency for micromobility as a commuting option in the City of Detroit. With this in mind, the project partners measured support for e-biking as a transportation mode at different stages of the pilot, as well as any change in participants' perceptions of e-biking over the course of the pilot.

III / Pilot Program Summary

The 2020 Essential Workers Micromobility Pilot aimed to provide participating employees with a safe, reliable means of getting to work during the COVID-19 pandemic through 24/7 access to a leased, micromobility vehicle. MoGo, Detroit's local bikeshare organization, managed the day-to-day operations of the e-bike leasing program.² The e-bikes used in the pilot were donated by General Motors.

In total, 59 e-bikes were provided to employees from 6 different employers, primarily in the health-care and food industries.³ Participating employers worked with OMI to identify employees living within an 8 mile radius of their place of employment. Each participating employee paid a subsidized, one-time \$10 lease fee for the full 4.5 months of the pilot. In return, each employee received an

2 The pilot program initially offered both e-bikes and electric kick scooters (e-scooters) to participating employees. The e-scooters were provided to users through a partnership with Spin, which resulted in several innovations, including Spin's development of a new app to manage long-term leasing models that may be implemented in other locations in the future. However, due to very limited demand for e-scooters among the participating employees in Detroit, the pilot was refocused almost exclusively on e-bikes. In addition, given the very small number of e-scooters used as a part of this pilot, it was not possible to conduct any meaningful data gathering or evaluation of e-scooter usage. For this reason, the e-bike model is the focus of this report.

3 Participating employers included: Henry Ford Health Systems; Detroit Medical Center; Whole Foods; Meijer; Detroit Planning and Development Department (PDD); Central Market

A PARTICIPANT'S PERSPECTIVE

The Eternal OptimistInterview with **Akil Talley, Whole Foods****Could you tell me about your transportation experience during the pilot?**

The convenience was best! I live about 4 miles away from my job, and it would take me only 10 to 12 minutes on the bike. Before I got the bike, it took longer and cost more.

I am kind of a health nut... I am outside a lot, working out, biking. It was summer, so it was perfect. It was the main way that I got to work. I used it to get to work 90% of time. 10% of the time it was just me riding around, biking, getting a little exercise.

In what ways did your employer support your participation in this pilot?

My employer (Whole Foods) posted pamphlets about the program. I really hadn't seen the flyer because there are so many flyers - it's a really community-oriented store with a community board and tons of flyers. So I didn't really pay attention. But I got turned onto it by another employee.

The area where the store is located has gone through a really big remodel over the last 10

to 15 year. Bike lanes and making transit more accessible has been a big focus. There are tons of bike racks in front of the store. You can also store your bike in the store, charge it in the store. It was pretty convenient and seamless.

How could the program be improved?

I guess, you could call me an eternal optimist, but if you factor in everything--cost, proximity to work, exercise--it was really great as is.

Everywhere I went, when I was stopped with the bike, people were like 'Where did you get that bike? That's so cool.' They always asked how they could be part of the program. It's a really good program for a city that for the longest time was a car city and also a city that is really spread out. So having access to bikes and scooters is ideal.

e-bike, as well as helmet, lock, and additional safety equipment and guidance. Employers served as the points of contact for distribution and pick-up of the vehicles.

IV / Evaluation Strategy

The pilot project was designed to include five separate data-gathering milestones.⁴

1. Registration process: Outreach was conducted to 160 individuals who met program criteria, including employment with one of the partner employers and distance of commute. Responses were recorded by City staff on the registration form.
2. Benchmarking survey: 108 of the 160 individuals contacted by the City as part of the registration process responded to a benchmarking survey

⁴ The e-bikes used for the pilot were not GPS-enabled. For this reason, the pilot relied on intake forms and surveys to gather data for evaluation purposes.

3. First feedback loop survey:
 - ◆ This survey was conducted after the first month and a half of the pilot
 - ◆ 21 of 33 e-bike users responded
4. Second feedback loop survey:
 - ◆ This survey was conducted after the first two and a half months of the pilot
 - ◆ 40 of 59 e-bike users responded
5. Final evaluation survey:
 - ◆ This survey was conducted upon completion of the pilot
 - ◆ 34 of 59 e-bike users responded

Responses to all four surveys were anonymous, but the registration process was not. Given staggered distribution of vehicles, the number of e-bike users continued to rise throughout the pilot, as indicated by the respondent numbers above.

Based on the three pilot goals, OMI, NUMO, and Next Energy developed a series of questions to be answered using the data gathered from participants.⁵ We have divided these questions into four categories, the first of which includes basic questions about participant e-bike usage during the pilot, while the remaining three track the goals outlined above: ensuring ease of commute, ensuring safe transportation, and expanding support among employees and employers for first mile/last mile transportation solutions.

V / Evaluation Results

The 2020 Micromobility for Essential Workers Pilot demonstrated that e-bikes are a viable and desirable means for Detroit employees living within 6-8 miles of their workplace to access their jobs. When surveyed about the overall program upon its completion, only 3% of respondents indicated that they were not satisfied, while 94% stated that they would like to have access to the e-bikes either seasonally or year round. In addition, 70% of respondents stated that they would consider using MoGo bikes in the future, and 91% said they felt safe riding their bikes. Finally, about 60% said they used their bike either as their main mode of transportation to get to work or used it to get to work when their main mode was not available. These numbers are particularly telling given that almost 70% of users said that they rarely or never used a bike to commute to work before the program.

5 In developing these questions, OMI, NUMO, and Next Energy relied heavily on NUMO's online tool, Micromobility and Your City.

1 Data on E-bike Usage during Pilot

Demographic data on pilot participants was gathered as part of the intake process to better understand *who* used the e-bikes. In addition, data on *how* the bikes were used was gathered through participant surveys.

a. Who used the leased e-bike service as part of the pilot?

Demographic data on pilot participants was gathered as part of the intake process. As shown in the charts below, the majority of participants were between 25 and 44 years old, over 60% identified as Black/African-American, and nearly 25% reported an annual income of below \$25,000.



Figure 1: Three Charts on Demographics

b. How did participants use the e-bikes?

As part of the final evaluation, participants reported on their frequency of use per week, average daily mileage, and average trip duration. The majority of respondents used the e-bikes for six or fewer trips per week and reported a daily mileage of under three miles and an average trip duration of under 30 minutes.

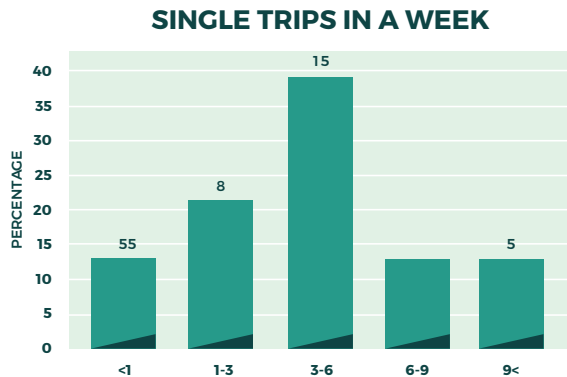


Figure 2: Frequency of Use/Week

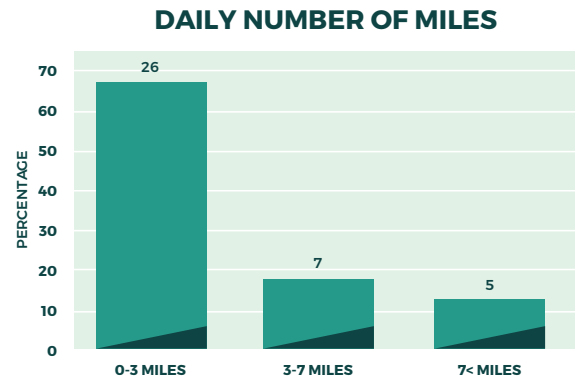


Figure 3: Average mileage/day

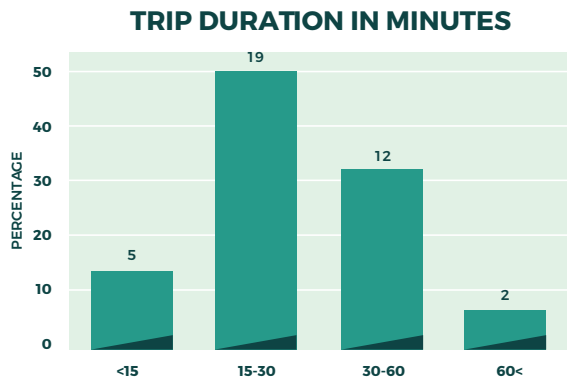


Figure 4: Average Trip Duration

On average, participants used the e-bikes for commuting more than for any other purpose. However, the percentage of users identifying errands as their main trip purpose increased from 29% in the first survey to 41% in the final evaluation survey, whereas the percentage of respondents identifying commuting as their main trip purpose decreased from 65% in the first survey to 53% in the final evaluation survey.

2 Outcomes and Lessons Learned

The following sections assess to what extent the pilot achieved its three goals: (1) ease of commute; safe access to jobs; and an expanded constituency for micromobility as a commuting option.

a. Achieving Goal 1 : Ease of Commute

To assess whether the pilot achieved its first goal (ease of commute), respondents to the final evaluation survey were asked about their commute duration, commute frequency, on-time arrival rate, and the importance of having 24/7 access to their leased e-bike.⁶

Commute duration

Duration of commute is one of the most important measures of convenience. Over 50% of respondents to the final survey indicated that their commute duration using the e-bike was

⁶ Not all survey respondents responded to every question. Thus, the respondent numbers vary from question to question, as indicated on the charts.

less than 30 minutes. This result is not surprising, given that participants were selected in part based on their proximity to their location of work.

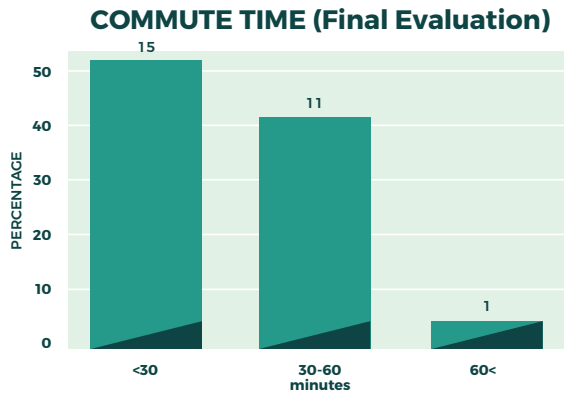


Figure 5: Commute Time

Change in Commute Duration

Use of the e-bikes does not appear to have significantly changed average commuting time when compared both to the respondents' pre-pandemic commutes and to their commutes during the pandemic, but prior to their participation in the pilot. The number of commutes under 15 minutes decreased slightly, as did the number of commutes over 60 minutes. On the other hand, the number of commutes between 15 and 30 minutes, as well as those between 30 and 60 minutes, both increased. These results indicate that e-biking was not significantly more or less convenient than other modes of commuting. The high rates of satisfaction with the program as a whole suggest that participants were not seeking a significant increase in convenience, but rather were satisfied that the e-bikes provided a similarly convenient commute to their previous commuting options.



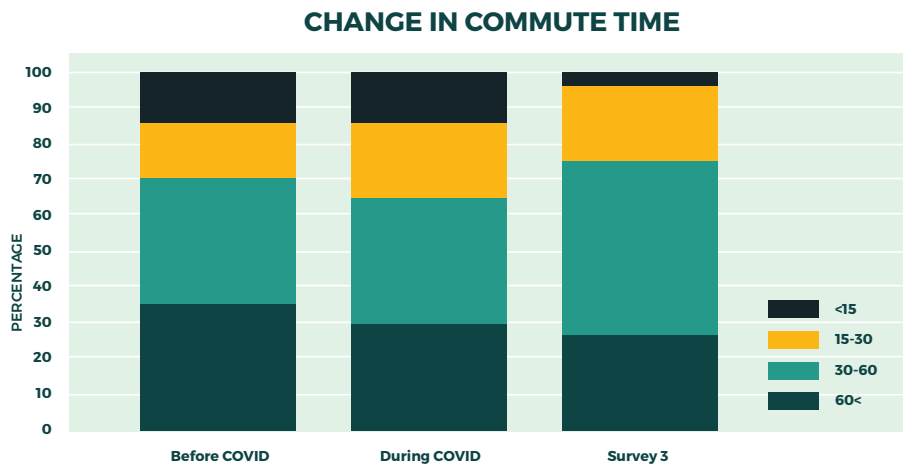


Figure 6: Commute duration with e-bike vs. pre-pandemic and pre-pilot⁷

Frequency of E-Bike Usage

Usage frequency is another indicator of convenience. The more convenient the service, the more likely participants presumably would be to use it frequently. A majority of respondents used their e-bikes for six or fewer single trips per week, suggesting that the e-bike was only one of several modes used for commuting purposes during this time. Further exploration would be required to understand why participants chose not to use e-bikes for more trips throughout the week.

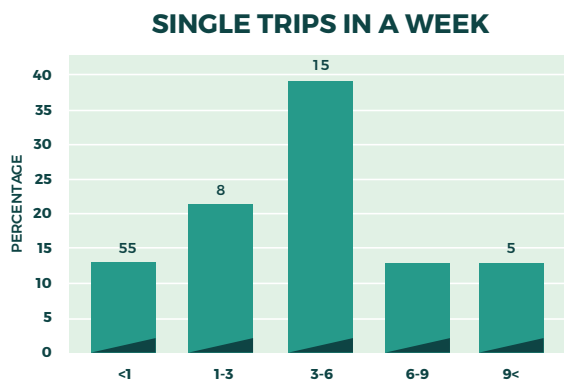


Figure 7: Frequency of e-bike use per week

⁷ The information on commute time pre-pandemic as well as during the pandemic but prior to launch of the pilot was taken from the benchmarking survey. The information on commute time using the e-bike during the pilot was taken from the final evaluation survey.

On-Time Arrival Rates

Just over 80% of respondents reported that their on-time arrival rate was the same or better during the pilot than before the pilot, with 41% stating that they got to work on time more often during the pilot than before. This data point should be of particular interest to employers who might consider supporting future e-bike commuting programs.

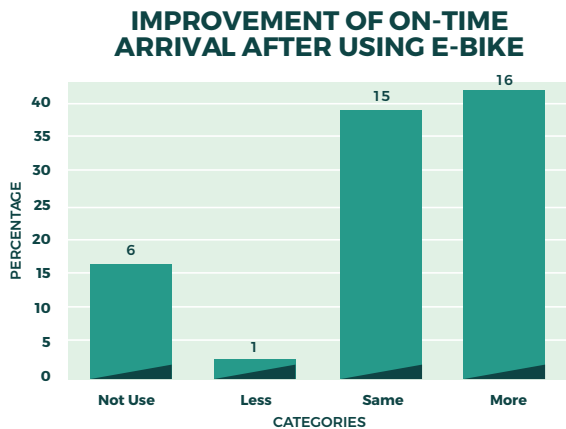


Figure 8: On-Time Arrivals

24/7 Access to E-Bike

Finally, nearly 95% of respondents in the final evaluation survey reported that having access to the e-bike 24/7 was very convenient. This information confirmed the project partners' hypothesis that long-term leasing would prove particularly helpful to the participating essential employees. As long-term leasing currently is not a common approach, we hope that this pilot and subsequent iterations of the pilot can help inform future leasing models for micromobility.

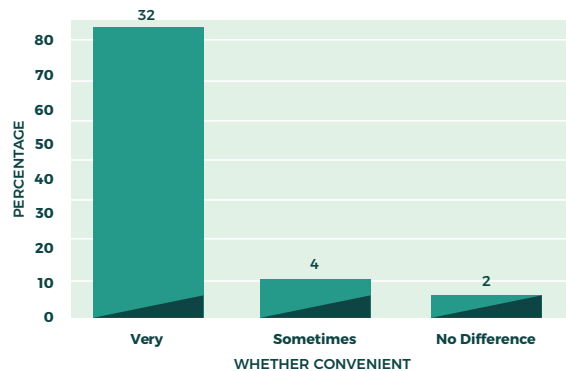


Figure 9: Convenience of 24/7 Access to E-Bike



b. Achieving Goal 2 : Safe access to jobs

To assess the safety of this service, respondents were asked to report on actual crashes in each of the three surveys. In addition, the final survey included questions regarding perceived safety among participants.

Perceived Safety

In the final evaluation, participants were asked if they felt safe while riding the e-bike.” Nearly 90% of respondents stated that they did feel safe, with 11% stating that they felt unsafe.

Reported Crashes

This perception was largely supported by the actual crashes documented throughout the pilot. In the final evaluation survey, 95% of respondents reported having experienced no crashes.

Nature of Crashes

Only 10% of the crashes reported in the second survey involved another vehicle. Unfortunately, the surveys did not capture any more specific details about the nature of the crashes. However, informal communications with participants suggested that uneven pavement and other road conditions were among the primary sources of crashes.

Given the anecdotal evidence that road and/or pavement conditions were among the primary sources of crashes, it is worth noting that the vast majority of users (63%) stated that they preferred using a combination of roads, sidewalks, and bike lanes when riding. Future iterations of the pilot should explore road usage and conditions more closely in order to help shape future infrastructure investments that will make biking as safe as possible for Detroiters.

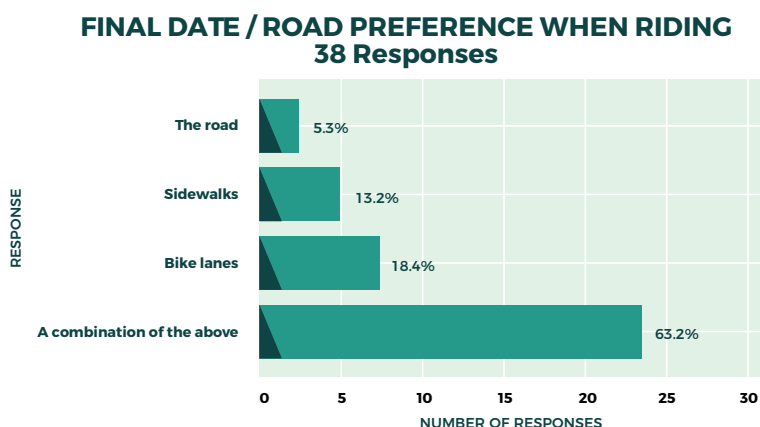


Figure 10: Road Preference

3 Achieving Goal 3: Expanded constituency for micromobility as a commuting option

Participants were asked specific questions related to their perception of using e-bikes at three different points: at registration, in the second survey, and in the final evaluation. By analyzing their responses to several of these questions, a picture of whether their perceptions changed begins to emerge.

Pre-Pilot Perceptions of Using E-Bikes

As part of the registration outreach, individuals were asked whether they felt that e-biking would support their transportation needs. 55% predicted that the e-bike would support their transportation needs, while 23% felt that e-bikes might support their transportation needs. The remaining 22% did not feel that e-bikes would support their transportation needs.⁸

Interest in Extended Pilot

In the second survey, pilot participants were asked whether they would like to keep their e-bikes for an additional month beyond the originally-scheduled end date for the pilot. Of the respondents, 73% indicated they would like to keep their e-bikes for the additional month.

Overall Satisfaction with Pilot

On the final evaluation survey, 68% of respondents stated that they were very satisfied with the pilot, 29% stated that they were somewhat satisfied, and only 2.6% stated that they were not satisfied.

Additionally, on the final evaluation, 55% of respondents expressed an interest in having access to an e-bike year-round in the future, 40% expressed an interest in having access to an e-bike every spring and summer in the future, while only 5% stated that they had no interest in having access to an e-bike in the future.

Thus, at these three different stages of the pilot, a majority of participants showed support for e-biking as a means of transportation. The degree of support may have been influenced, of course, by the affordability of participating in this pilot due to the highly subsidized leasing fee of \$10 for the entire 4.5 months. Thus, the surveys included questions about the maximum amount participants would be willing to pay for such a program in the future. The majority (61%) of respondents stated that they would be willing to pay a maximum of \$10/month, 29% of respondents selected a maximum of \$30/month, and 5% selected a maximum of \$50/month, with the remaining respondents stating they were not interested in future participation.⁹ This information will be incorporated into planning for future programming.

8 Interestingly, in all three categories (yes, maybe, and no), the most frequently specified reason for the level of interest in e-biking was convenience. Respondents were offered a pull-down menu of options, as well as an "other" option. In the case of the "yes" respondents (i.e., those who agreed that the e-bikes would support their transportation needs), 56.8% entered no reason, while 34.1% stated "convenience" as a reason. Of the "maybe" respondents, 37.8% gave no response, 27% stated "other," and 16.2% stated "convenience." Of the "no" responses, 32.3% stated "other," while 29% stated "convenience" and another 29% stated "physical comfort." Other possible options included "health-related," "age-related," "safety-related," "safety at night," and "weather."

9 The questions did not provide respondents with the opportunity to fill in a number, but instead provided the options of \$10, \$30, or \$50 maximum.

Changes in Participant Perceptions of Using E-Bikes

In addition to assessing participant satisfaction, the evaluation mechanisms attempted to track changes in participants' perception of e-biking over the course of the pilot. These changes could help assess the pilot's success in expanding the constituency for e-biking as a commuting option. However, the small sample size, the differing response rates between surveys, and the fact that the surveys (though not the registration outreach) were completed anonymously are all factors that complicate this assessment. With the available data, it is not possible to track changes in an individual participant's perceptions. Nevertheless, the data can begin to build a rough picture of the impact of the pilot.

Figure 11 below identifies changes in perception for those 36 individuals who (1) registered, (2) participated in the pilot, and (3) responded to the question about overall satisfaction in the final survey. The majority of these participants had initially stated that they expected the e-bikes to support their transportation needs and remained very satisfied at the end of the pilot. Six individuals who had initially stated only that e-bikes might support their needs ended up very satisfied with the program, but another eight individuals who predicted that e-bikes would support their needs ended up only somewhat satisfied.

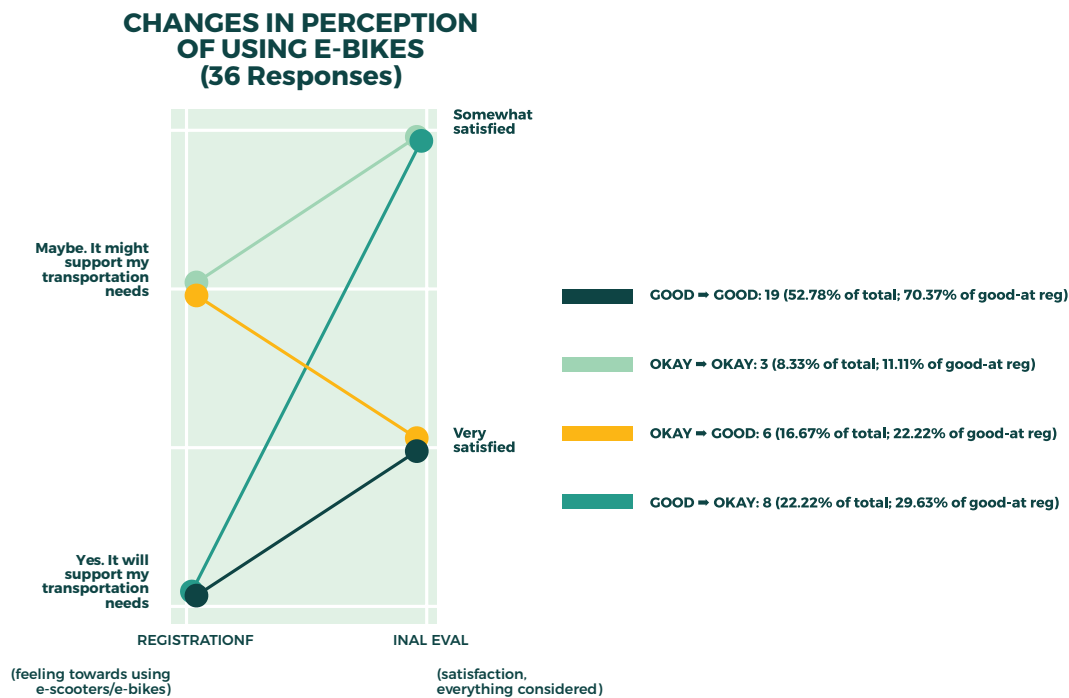


Figure 11: Changes in Perception of Using E-bikes

The overall picture that emerges is not one of dramatic change. In fact, the pilot appears to have largely enabled those who already had positive perceptions about e-bikes to have easier access to that mode of transportation. The small sample size and the difference in questions posed between surveys caution against drawing any strong conclusions from this data. However, the data does raise strategic questions about the focus of future iterations of this pilot. Specifically, should future iterations of the pilot prioritize removing barriers to e-bike access for those who already have a positive perception of e-biking, or should they prioritize outreach to those who do not yet have a positive perception? The answer is almost certainly some combination of the two, but further data could help clarify the value of these strategies and the most effective interventions for each.

A PARTICIPANT'S PERSPECTIVE

A Big Thumbs Up

Quote from Lauren Clark, Meijer

Even growing up I was a bike rider, so upgrading to the e-bike was great... I can give it a big thumbs up... I used the bike most days, especially if it was nice outside. I work midnights. So I turned on my lights, put on my vest, and I got there in 15-20 minutes. It was quick and fun! When I got to work, I could store it in one of the rooms at work. It wasn't going to be in anyone's way. I brought it right on in with me.

EMPLOYER PERSPECTIVE

Henry Ford Health System

Interview with AJ Evans

Why did Henry Ford Health System choose to participate in the pilot program?

HFHS chose to participate because we have system goals around sustainability and employee wellness. But, we knew our challenge was transportation when the pandemic hit, we really had to quickly regroup and rethink how we were doing things. So, the e-bike and biking solutions really worked for those employees

How did you know about employee transportation challenges?

Some of our departments completed surveys in order to assess challenges our employees were facing. But, a lot of the information received was anecdotal. Many supervisors of our entry level staff were acutely aware of what was going on. Their staff have been vocal in sharing their challenges.

One of the things I really like about our organization is that it's focused on people and doing the right thing and being fair. We believe in a collaborative approach to addressing employee issues and not just automatically resorting to a punitive resolution for someone being late if we haven't addressed/discussed their problems getting to work.

What benefits did you hope to see from the pilot?

A few key benefits we hoped to see from the pilot was an opportunity to help our employees get to work in a smarter way, keep them healthier, encourage alternate travel solutions,

and have a simultaneous positive impact on the environment. For our office of sustainability, the benefit was providing a "greener" option.

It also supported our goal of having a healthier workforce, even though, I will say most of the employees that were utilizing the e-bikes already do a lot of walking. They are walking all day, sometimes up to eight hours during their shift!

What benefits did you see from the pilot?

We saw the same benefits as our goals. Also, it increased our urgency related to any upgrades or repairs to bike racks.

Are there any changes you'd like to see in terms of how it was run?

On our side, we wanted to have the capacity to act faster and then expand the program to where we can reach more people. So, review of any contracts or agreements that our employees would be required to sign upfront would be great in order to provide time for legal review.

Conclusion

In planning for the recovery from the COVID-19 crisis, the City of Detroit must (1) reduce the barriers to employment faced by Detroiters, including inadequate transportation access to jobs, and (2) reduce overall household costs, of which transportation is a significant component. Approximately 34% of Detroit residents do not own a car and are therefore dependent on transit.¹⁰ At the same time, according to pre-pandemic data from the Southeast Michigan Council of Governments, 20% of transit-dependent households in the region are beyond a 30-minute walk to fixed-route transit service, and only 22% of the region's jobs are accessible within a 90-minute fixed-route transit trip. While pre-pandemic transportation improvements (ConnectTen, DART, Mobile Ticketing, etc) have significantly improved the reliability and user experience of the DDOT system, lingering first-mile/last-mile and service hours/frequency gaps still limit Detroiters' ability to rely on the system for job access, and these gaps have only grown more severe with service and funding cuts due to COVID-19. With inadequate access to jobs and high cost of personal transportation still posing critical challenges to the financial stability and economic potential of Detroit residents, the need for alternative modes of commuting, including biking, remains high.

Based on the results of the 2020 Essential Workers Micromobility Pilot, OMI and its partners are now planning the Phase Two Leased E-bike Program for 2021. To ensure increased impact, however, the program partners are thinking bigger and bolder: together with the Phase Two Leased E-Bike Program, the City will also launch a Detroit Bike Challenge that aims to fundamentally change the way Detroit employees and employers think about biking. The goal is to build a powerful biking constituency among employees and employers alike, one sees biking not as mere recreation, but as an affordable, healthy, and convenient means to access jobs, as well as other daily needs.

10 <https://detroitssurvey.umich.edu/wp-content/uploads/2019/09/W2-Transportation-F.pdf>

