

# Distribution of the E-Bike Rebate and data collection for the analysis of travel behavior impact

Final Report

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Humphrey School of Public Affairs

CTS 25-09



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# **DISTRIBUTION OF THE E-BIKE REBATE AND DATA COLLECTION FOR THE ANALYSIS OF TRAVEL BEHAVIOR IMPACT**

## **FINAL REPORT**

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## LIST OF ABBREVIATIONS

<b>Acronyms</b>	<b>Definition</b>
AGI	Adjusted Gross Income
ACS	American Community Survey
DOR	Department of Revenue
e-bike	Electric bike
INIT	Individual Taxpayer Identification Number
IRS	Internal Revenue Service
MnDOT	Minnesota Department of Transportation
MNIT	Minnesota Information Technology
SSN	Social Security Number
ZCTA	Zip Code Tabulation Area

## EXECUTIVE SUMMARY

In 2023, the Minnesota State Legislature established a two-year electric bicycle (e-bike) rebate program, designed to help reduce the costs for Minnesota residents to purchase a new e-bike. After 2024, the first year of rebates were issued and used, there was a desire to understand who applied, received, and used the rebate. Additionally, there was a desire to understand how often and for what use these e-bikes were used and begin to understand the reasons that rebate recipients let rebates expire.

Through an analysis of both application data from the Minnesota Department of Revenue (DOR) and a University of Minnesota-designed survey, this report aims to answer these questions. The DOR shared a file with non-personally identifiable data of 14,600 applicants to the e-bike rebate program, of which 1,519 were recipients and 1,327 were users. The data contains demographic information from applications including age, reported 2023 adjusted gross income (AGI), DOR-verified 2023 AGI, tax filing status, and zip code. Notably, DOR does not collect race information. Researchers at the University of Minnesota also developed an online survey to collect feedback and additional information from applicants, recipients, and users of the e-bike rebate program. The survey questionnaire covered topics such as feedback on the application process, information about the use of the rebate, and demographic information. Comparative analysis was conducted to understand how representative the survey group was to the entire rebate pool.

This report breaks down different stages of the rebate application into groups of applicants, recipients, and users. We define an applicant as a person who applied to the rebate program, a rebate recipient as someone who applied for and received the rebate, and a rebate user as someone who applied for, received, and successfully used the rebate or submitted a purchase for reimbursement for the purchase of an e-bike and qualifying accessories. We also identify as a survey respondent as a person who responded to the survey. In addition, the DOR awarded e-bike rebates to recipients in two phases: Phase 1 in July 2024 and Phase 2 in October 2024.

### Findings from the application to the e-bike rebate

Minnesotans were interested in the e-bike rebate, with a total of 61,500 people accessing the application site and a total of 14,600 applicants. Of them, 1,519 received the rebate and 1,327 used it.

1. **A majority of applicants had a tax filing status of married, filing jointly:** About 60% of applicants, recipients, and users filed as married, filing jointly. All other statuses made up about 40% of applicants, recipients, and users.
2. **About 63% of applicants filing jointly had an AGI of \$100K or more, while 78% of applicants filing under all other tax statuses had an AGI of less than \$75K.** E-bike rebate applicants filing jointly had a median AGI of \$122.2K, which is 43.5% higher than the median household income in Minnesota. Applicants filing under all other tax statuses had a much lower median AGI of \$45.6K, which is 46.4% lower than the median household income in Minnesota. The median AGI of recipients filing jointly was 3.0% higher than that of applicants, while for those filing under all

other tax statuses, it was 10.1% lower. The median AGI of users was lower compared to recipients, about 1.0% for those filing jointly and 2.4% for those filing under all other tax statuses.

- 3. Users of the e-bike rebate were relatively younger than applicants; by three years, on average.** The difference was not statistically significant. Among those filing jointly, applicants were slightly older than recipients and users. Among those filing under all other tax statuses, recipients were slightly older than applicants and users.
- 4. Most rebate applicants, recipients, and users were from the Twin Cities Seven-County metropolitan area:** 66% of rebate applicants, 67% of rebate recipients, and 68% of rebate users were located in the metropolitan area, by number of applications. This was slightly more than representative, as 55% of Minnesota residents live in the Twin Cities metro region. The zip code with the largest number of applications across rebate groups was 55406 (which includes neighborhoods in Minneapolis). For applicants, the second most common zip code was 55044 (which includes part of Lakeville and Credit River) followed by 55901 (which includes neighborhoods in Rochester). An additional notable zip code for rebate recipients and users includes 55417 (which includes neighborhoods in Minneapolis).
- 5. An analysis of application data suggests a high level of interest in the e-bike rebate program across Minnesota.** Of the pool of 14,600 applicants, 10.4% received the rebate and 9.1% used it, with a rebate use rate of 87.4%. These suggest a high level of interest in these types of programs that reduce the costs of purchasing an e-bike. However, there were also some limitations that prevented recipients from using the rebate because 12.6% of recipients did not use their rebates.

### **Findings from the survey distributed to applicants to the e-bike rebate**

A total of 4,496 survey responses were submitted, which includes people that applied to the rebate (87.2%), people that received the rebate (11.0%), people that used the rebate (10.1%), and others such as people that did not apply to the rebate (12.8%). Most of the survey respondents were mature adults (over 55 years of age), 89% identified as white and came from a two-person, two-vehicle household.

- 1. Many survey respondents held a negative opinion of the rebate process:** Respondents referenced the technical challenges of the rollout and the time required to wait in the waiting room and fill out the application. Some respondents who held negative opinions on the initial rollout felt that the second rollout was much smoother. Some respondents felt that the process was unfair to those in rural areas, those not working desk jobs, those without multiple devices, and those who were not able to get into the rebate program during the first rollout.

Some respondents provided feedback on how to improve the program, including extending the application time window, shifting to a lottery-based system, and reducing the dollar amount of rebates. Many of these suggestions have been discussed and could be incorporated into rebate program modifications currently in negotiation at the state capitol.

2. **Many survey respondents held positive opinions of the process to claim the rebate.** The process was easy to follow and e-bike sellers handled most of the paperwork.
3. **Survey respondents identified as Phase 1 users used their e-bikes more than those identified as Phase 2 users.** About 39.1% of survey respondents identified as Phase 1 users reported using their e-bike at least three times per week, followed by those using it at least once per week (35.7%). In contrast, a majority of survey participants identified as Phase 2 users reported that they had not used their e-bike yet, followed by using it at least once per week (24.4%) and a few times per month (19.8%). This was consistent with seasonal weather conditions in Minnesota during each phase of the rebate rollout. Phase 1 coincided with more favorable riding conditions, while Phase 2 took place during colder months, limiting immediate e-bike use.
4. **The majority of survey respondents that were e-bike users used their e-bikes for exercise and recreation.** This applied to both phases of the rebate and for survey respondents who bought the e-bike with and without the rebate.
5. **A few survey respondents identified as rebate recipients did not use the rebate.** The reasons for not using it included the rebate not covering enough of the e-bike's cost and the rebate certificate expiring before they were able to use it.
6. **Most survey respondents did not acquire more traditional bikes during the rebate period.** During the rebate period, defined as June through December 2024, most respondents did not acquire more traditional bicycles, though some reduced the number of traditional bicycles, usually by one. Most respondents had two bicycles in their household both before and after the rebate period.
7. **Zip codes in the Twin Cities metro had the most survey responses statewide:** The most frequent home zip code reported in the survey was 55406 across all rebate groups (this is similar to the application data). Zip code 55901 was the second most common reported in the survey (and the third most common zip code in the application data).

The impact of the rebate program remains to be seen, as this study was conducted in early 2025, when most recipients had just received their rebate in fall 2024, so the ridership data might reflect that many e-bike users may not have felt comfortable biking in winter. Future research should focus on capturing year-round travel behavior, the effect of changes to the 2025 rebate program, analyzing other metropolitan areas throughout Minnesota, and studying opportunities to improve e-bike commuting support and infrastructure.

## CHAPTER 1: INTRODUCTION

Electric bicycles (e-bikes) are bicycles that provide pedal assistance to people. In recent years, more attention has focused on e-bikes due to their potential to promote sustainable transportation. E-bikes enable users to bike more often, travel longer distances, and carry more cargo with them, and they allow mobility for people who otherwise would not be able to bike due to physical limitations or proximity to locations (MacArthur et al., 2014). Shifting people from vehicles to e-bikes can help reduce traffic congestion, air pollution, and physical inactivity.

In 2023, the Minnesota State Legislature established a two-year e-bike rebate program, designed to help reduce the costs for Minnesota residents to purchase a new e-bike. After 2024, the first year rebates were issued and used, there was a desire to understand who applied, received, and used the rebate. Additionally, there was a desire to understand how often and for what use these e-bikes were used and begin to understand the reasons that rebate recipients let rebates expire. Through an analysis of both application data from the Minnesota Department of Revenue and a University of Minnesota designed survey, this report aims to answer these questions.

The rest of this report is organized as follows. The next chapter provides an overview of the rebate program. Chapter 3 discusses the results of the individual rebate applications, including income, age distribution, and location of the pool of those who applied for the rebate (applicants), who received the rebate (recipients), and who used the rebate (users) from data provided by the Department of Revenue. Chapter 4 discusses findings from the follow-up survey including the profile of survey respondents and the comparative analysis of this group against the pool of applicants, as well as survey respondents' perceptions on the rebate application and use. The final chapter concludes.

## CHAPTER 2: E-BIKE REBATE PROGRAM OVERVIEW

### 2.1 ABOUT THE REBATE PROGRAM

#### 2.1.1 Establishment of an e-bike rebate program

The 2023 Minnesota State Legislature established a two-year electric-assisted bicycle (“e-bike”) rebate program to reduce the costs for Minnesota residents to purchase a new e-bike. This program allocated up to \$2,000,000 for each calendar year 2024 and 2025 for individual rebates. Individuals who were approved and awarded a rebate certificate could use it to purchase e-bikes and eligible accessories. These qualifying accessories included a bicycle helmet, lights, lock, luggage rack, basket, bag or backpack, fenders, or reflective clothing ([HF 2887 Sec. 78 Subd 1 \(f\). \[239A.51\] ELECTRIC-ASSISTED BICYCLE REBATE. 93rd Minnesota State Legislature. March 27, 2024.](#)) The rebate was designed to be credited at point of sale as a discount to lower barriers to purchasing an e-bike. This differs from other forms of rebate, where recipients need to pay full price for the item and then receive the rebate amount back at a later date.

The maximum percentage of rebate was based on the 2023 adjusted gross income (AGI) of applicants. The maximum rebate amount was 75 percent of the total cost of eligible expenses if the applicant’s AGI was up to \$50,000 for an individual who was married, filing jointly; or \$25,000 for all other filers, including those who filed as single or married, filing separately. For each \$4,000 above the stated thresholds (\$50,000 for married, filing jointly; or \$25,000 for all other filers), the total rebate percentage was reduced by 1 percent until it equaled 50 percent. The amount of rebate, irrespective of the percentage, could not exceed \$1,500 ([HF 2887 Sec. 78 Subd 3. \[239A.51\] ELECTRIC-ASSISTED BICYCLE REBATE. 93rd Minnesota State Legislature. March 27, 2024.](#)) The discount percentage was calculated based on the total of e-bike and qualifying expenses, but the discount only applies to the e-bike ([“Acceptance email” template from DOR](#)).

An “eligible individual” for this rebate is an individual who (at the time of application) was “(1) at least 15 years old; (2) is a resident individual taxpayer at the time of application for a rebate certificate and in the previous calendar year; and (3) was not claimed as a dependent on another return in the taxable year” ([HF 2887 Sec. 78 Subd 1 \(d\). \[239A.51\] ELECTRIC-ASSISTED BICYCLE REBATE. 93rd Minnesota State Legislature. March 27, 2024.](#))

As stipulated in the funding bill, the commissioner was required to “reserve 40 percent of the certificates for a married taxpayer filing a joint return with an adjusted gross income of less than \$78,000 or any other filer with an adjusted gross income of less than \$41,000.” ([HF 2887 Sec. 78 Subd 4 \(b\). \[239A.51\] ELECTRIC-ASSISTED BICYCLE REBATE. 93rd Minnesota State Legislature. March 27, 2024.](#))

### 2.1.2 2024 Rebate program overview

*For individuals:* The Minnesota Department of Revenue (DOR) managed the rebate process. Interested individuals could sign up for email updates regarding the program through GovDelivery. Information regarding the rebates was also published on a new page on the DOR's website. The DOR, with a third-party service agency, created an application portal for individuals and retailers to apply for the program. Through the email list, DOR shared information on key dates and deadlines for the application, reminders, and provided a step-by-step video guide on how individuals could apply for the rebate.<sup>1</sup>

The e-bike rebate portal planned to accept applications until 10,000 applications were received. The e-bike rebate application portal for individuals was originally scheduled to open at 11 am CDT on June 5, 2024. Within minutes of the application period opening, the portal was overwhelmed with the number of applicants and crashed, resulting in only a few successfully completed applications. Over the next month, DOR and Minnesota Information Technology (MNIT) worked with the portal host to resolve these challenges and reopen the application, including a waiting room for applicants before they were provided access to the application.

The application was reopened on July 2, 2024 at 11 am CDT. When the waiting room opened at 11am, 50,500 potential applicants entered, and over 61,500 applicants entered the waiting room in total (DOR, 2024c). The rebate portal was open for 18 minutes total and received 14,428 applications. Those who were still completing an application when the period closed could complete their application. Applicants were given up to 15 minutes to complete their application.

Applicants needed to provide their name and contact information (including email and mailing address), date of birth, Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN), tax filing status for 2023 (e.g., individual, married filing jointly), and 2023 AGI (DOR, 2024a).

Rebate recipients received a rebate certificate over email and would present that email at the time of purchase (either in-person or online) for an e-bike at an approved retailer. The list of approved retailers is published on the e-bike rebate [program website](#).

*For retailers:* E-bike retailers who wished to accept the rebate at their business were required to apply for the program. As required by the Legislature, retailers must have been “actively involved in the business of retail sales of new electric-assisted bicycles for at least six months” prior to applying ([HF 2887 Sec. 78 Subd 5. \[239A.51\] ELECTRIC-ASSISTED BICYCLE REBATE. 93rd Minnesota State Legislature. March 27, 2024.](#)). DOR opened this application portal for retailers on May 2, 2024.

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<sup>1</sup> See Appendix A for the list of emails sent through the email list.

### **2.1.3 Rebate application review and certificate award**

Applicants received an automatic notification confirming the submission of the application when it was successfully submitted. DOR reviewed applications in the order they were received. Applicants were either approved, asked to provide additional information, added to a waitlist, or denied. Approved applicants were sent a rebate certificate by July 10, 2024, which included an expiration date two months after the issue date. Some applicants were asked to provide additional information, such as additional income verification and/or residency information. Applications were denied if applicants were unresponsive after multiple contact attempts from DOR or if they did not meet the eligibility requirements of the rebate, including: the applicant must be at least 15 years old at time of application, was a Minnesota resident in the current year and the previous year, not have been claimed as a dependent in the previous tax year, and not have been subject to a claim for refund under MN Statute Chapter 270A (DOR, 2024b).

Due to the volume of applications, many applicants were added to the waitlist. Those added to the waitlist were contacted if more rebate certificates became available due to issued certificates expiring. Some applicants on the waitlist were contacted the week of October 14, 2024. Applicants contacted off of the waitlist were issued a certificate with an expiration date two months after the issue date.

Applicants who remained on the waitlist on December 31, 2024, were denied due to the program year ending and the lack of additional available certificates. Individuals on the waitlist received a denial email that also encouraged them to apply for a rebate certificate in 2025.

## CHAPTER 3: E-BIKE REBATE APPLICATIONS

The DOR shared a file with non-personally identifiable data of all applicants to the e-bike rebate program. The file contains information for 14,600 total applicants. The data includes demographic information from applications such as age, reported 2023 adjusted gross income (AGI), DOR-verified 2023 AGI, and tax filing status.

The data also included information about applications and the status of rebates as of January 2025. Application information includes application status and percentage of rebate amount approved. Information about the status of rebates includes whether the rebate was used, the dollar amount of the total eligible purchase, and the dollar amount that was rebated.

The DOR was able to verify the AGI of 97.5 percent of all rebate recipients. In the 2.5 percent (38 recipients) of recipients where AGI could not be verified, applicants still were able to receive a 50 percent rebate. For the analysis we provide in this report, we use the applicant-reported AGI. This provides a clearer picture of who applied.

Some applicants reported an AGI for 2023 that was negative, this accounts for 1.7 percent of all applicants.

The DOR collected tax filing statuses from applicants to determine the maximum AGI for the legislative requirement that 40 percent of rebates go to joint filers under \$78K and all other filers under \$41K. Tax filing statuses included single; married, filing jointly; married, filing separately; and head of household. For the purposes of the legislative requirement, “all other filers” includes married, filing separately; single; and head of household.

Tax filing statuses used for the rebate are the same statuses used federally. According to the United States Internal Revenue Service (IRS), someone filing as “Single” is considered unmarried and does not qualify for another status. “Married Filing Jointly” is for someone who is legally married and both spouses agree to file a joint return, while “Married Filing Separately” is for someone who is legally married and both spouses do not agree to file a joint return and if you do not qualify for the Head of Household status. The Head of Household status for filing is met if all of the following requirements are met: 1) if the filer is unmarried or considered unmarried on the last day of the year, 2) if the filer pays more than half of the cost of keeping up a home for the year, and 3) if a qualifying person lived with the filer for more than half the year (except for temporary absences, such as school); however if the qualifying person is a dependent parent, the dependent parent does not have to live with the filer (IRS, 2024).

This report breaks down different stages of the rebate application in groups of applicants, recipients, and users. We define an applicant as a person who applied to the rebate program, a rebate recipient as someone who received the rebate, and a rebate user as someone who successfully used the rebate or

submitted a purchase for reimbursement for the purchase of an e-bike and qualifying accessories. We present the demographics of these groups in this section. An overview of data provided by the DOR can be found in Appendix B.

Researchers also present some analysis on a per capita basis. For this, we use 2020 American Community Survey (ACS) population data from the United States Census Bureau at the Zip Code Tabulation Area (ZCTA) for population ages 15 years and older.

### 3.1 E-BIKE REBATE APPLICANTS, RECIPIENTS, AND USERS

The e-bike rebate program had a total of 14,600 applicants; 1,519 recipients; and 1,327 users in 2024. The DOR awarded e-bike rebates to recipients in two phases: the first phase was awarded beginning July 10, 2024 and the second phase was awarded beginning the week of October 14, 2024. In total, there are 1,170 rebate recipients in the first phase and 349 rebate recipients in the second phase. Rebate recipients were given an expiration date two months after the issue date of the certificate, and all rebates expired by December 31, 2024. Rebate recipients had two months to use the rebate certificate. In total, 1,068 people used the rebate in Phase 1 and 259 in Phase 2. This reflects a rebate usage rate of 91.3 percent and 74.2 percent for Phase 1 and Phase 2, respectively. Table 3-1 presents the distribution of people in each category per tax filing status and phase.

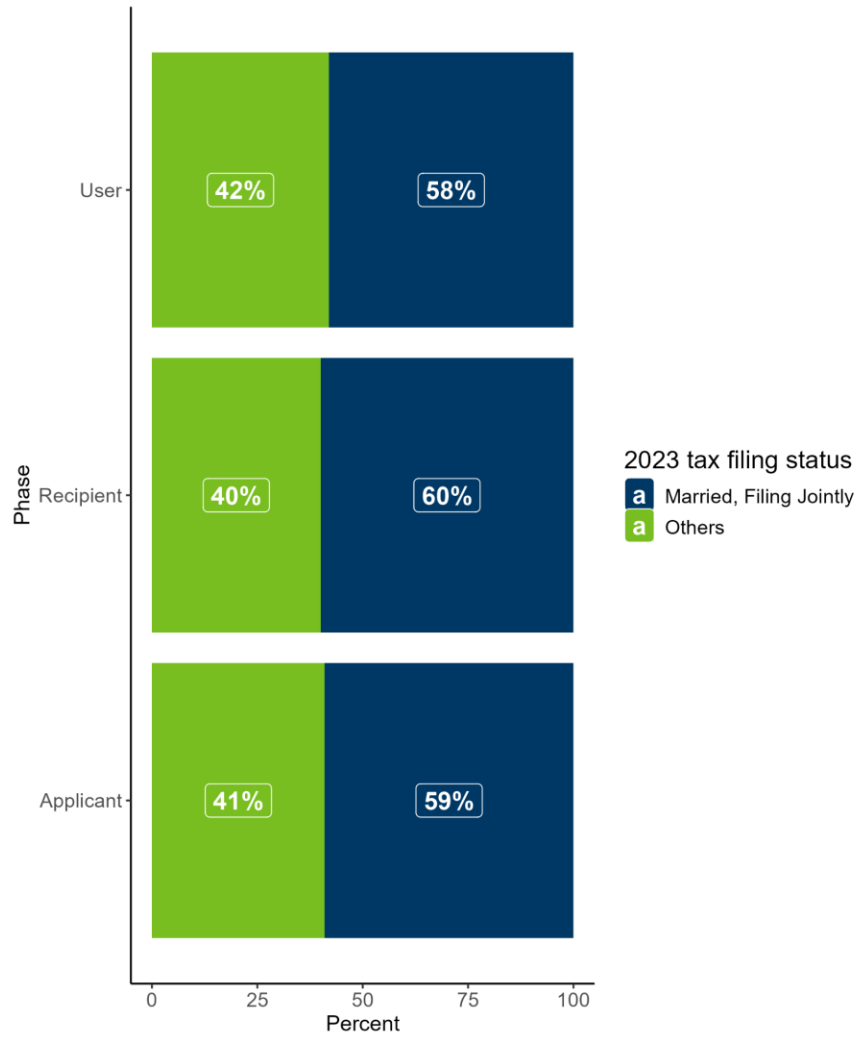
**Table 3-1 E-bike rebate number of applicants, recipients, and users**

Category	Total		Phase 1 (July 2024)		Phase 2 (October 2024)	
	Filing Jointly	Others	Filing Jointly	Others	Filing Jointly	Others
Applicants	8,614	5,986	N.A.	N.A.	N.A.	N.A.
Recipients	872	647	663	507	209	140
Users	770	557	620	448	150	109

**Notes:** N.A. Not applicable. **Source:** (DOR, 2025)

#### 3.1.1 Tax filing status

People married, filing jointly represent about 60 percent of applicants, recipients, and users. The other 40 percent is composed of those applying under all other tax statuses including single (about 35%), head of household (about 4%), and married filing separately (about 1%). Figure 3-1 breaks down the filing statuses of all applicants, recipients, and users.



Source: (DOR, 2025)

Figure 3-1 Tax filing status for applicants, recipients, and users

### 3.1.2 Adjusted gross income

Table 3-2 presents income statistics for all e-bike rebate applicants, recipients, and users and the population of the state of Minnesota.

**Table 3-2 Income of e-bike rebate for applicants, recipients, and users by filing status and all Minnesotans**

Income Level (thousands)	Applicants		Recipients		Users		Minnesota
	Filing Jointly	Others	Filing Jointly	Others	Filing Jointly	Others	
Less than \$24	4.95%	29.03%	5.39%	27.36%	6.10%	28.55%	12.20%
\$25-\$49	8.67%	26.41%	10.89%	30.45%	11.04%	30.70%	15.50%
\$50-\$74	10.52%	22.59%	10.67%	21.33%	11.04%	21.36%	16.20%
\$75-\$99	12.83%	11.63%	9.63%	10.66%	9.87%	10.59%	14.00%
\$100-\$149	26.27%	6.97%	25.46%	7.57%	23.51%	5.92%	19.40%
\$150-\$199	16.72%	2.04%	17.78%	1.70%	17.27%	1.97%	10.40%
\$200 or more	20.05%	1.34%	20.18%	0.93%	21.17%	0.90%	12.30%
Median Income	\$122,220	\$45,621	\$125,828	\$41,031	\$124,630	\$40,048	\$85,086

**Notes:** Household income in Minnesota is the household income in the last 12 months. **Source:** (U.S. Census Bureau, 2023b).

E-bike rebate applicants filing jointly had a median AGI of \$122.2K, which is 43.5% higher than the median household income in Minnesota. Applicants filing under all other tax statuses (separately, single, or as a head of household) had a much lower median AGI of \$45.6K, which is 46.4% lower than the median household income in Minnesota. About 63% of applicants filing jointly had an AGI of \$100K and more, while 78.03% of applicants filing under all other tax statuses had an AGI of less than \$75K.

The median AGI of recipients filing jointly was 3.0% higher than that of applicants, while for those filing under all other tax statuses, it was 10.1 percent lower. About 63.4% of recipients filing jointly had an AGI of \$100K and more, while 74.1% of recipients filing under all other tax statuses had an AGI of less than \$75K.

The median AGI of users was lower compared to recipients, around 1.0% for those filing jointly and 2.4% for those filing under all other tax statuses.

### **Income by region**

The median household income in the Twin Cities Seven County Metropolitan Area is 47.4% higher than in Greater Minnesota. A similar trend is observed when comparing e-bike rebate applicants by region. The AGI of those filing jointly in the Metropolitan Area was higher than in Greater Minnesota; in particular 24.7% for applicants, 42.4% for recipients, and 52.2% for users. For applicants, recipients, and users filing under all other tax statuses, the difference was 26.2%, 28.9%, and 26.3%, respectively.

Of those filing jointly in the Metropolitan area, 68.3% of applicants, 71.2% of recipients, and 70.3% of users had incomes above \$100K. About 75.4% of applicants, 74.3% of recipients, and 75.8% of users filing under all other tax statuses had incomes below \$75K. Table 3-3 presents income statistics for all e-bike rebate applicants, recipients, and users, and the population for the state of Minnesota in the Metropolitan Area.

**Table 3-3 Income of e-bike rebate for applicants, recipients, and users by filing status and all Minnesotans in the Twin Cities Seven County Metropolitan Area**

Income Level (thousands)	Applicants		Recipients		Users		Minnesota
	Filing Jointly	Others	Filing Jointly	Others	Filing Jointly	Others	
Less than \$24	4.13%	26.44%	5.01%	24.20%	5.61%	25.19%	10.06%
\$25-\$49	7.21%	25.71%	8.94%	28.66%	8.82%	29.14%	13.48%
\$50-\$74	9.04%	23.22%	7.69%	21.87%	7.82%	21.48%	14.43%
\$75-\$99	11.28%	12.57%	7.16%	12.95%	7.41%	13.09%	12.89%
\$100-\$149	25.66%	8.00%	27.19%	9.13%	25.65%	7.65%	19.79%
\$150-\$199	17.92%	2.46%	18.96%	1.91%	18.84%	2.22%	12.12%
\$200 or more	24.76%	1.60%	25.04%	1.27%	25.85%	1.23%	17.21%
Median Income	\$133,306	\$48,259	\$139,504	\$45,521	\$139,936	\$44,068	\$105,212

**Notes:** Household income in Minnesota is the household income in the last 12 months. Median income in Minnesota corresponds to the median of the median income in the counties in each region. **Source:** (U.S. Census Bureau, 2023b).

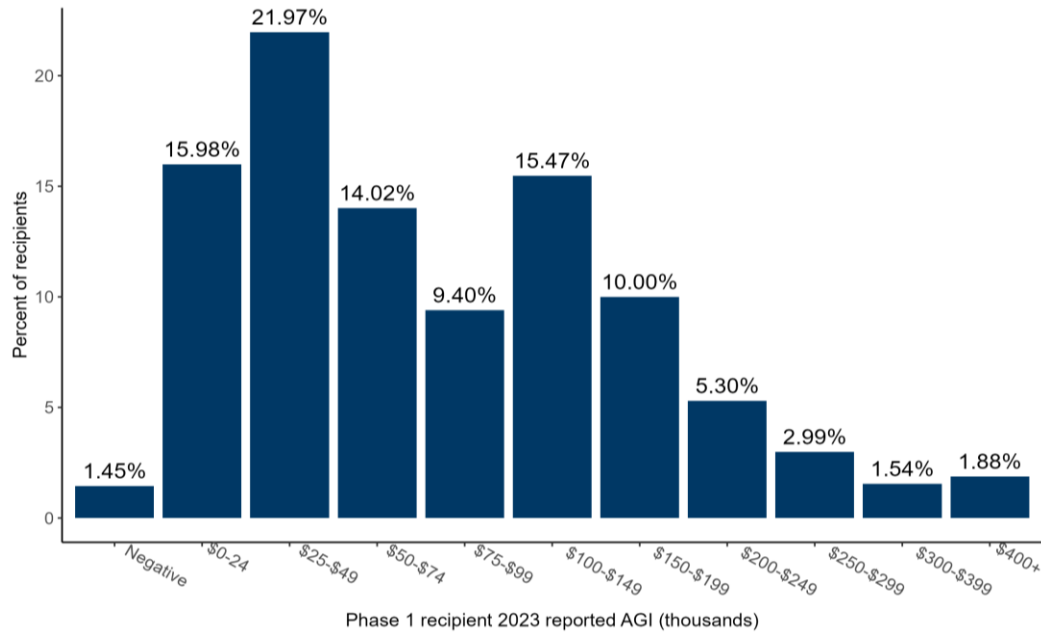
Of those filing jointly in Greater Minnesota, 57.4% of applicants had incomes between \$75K-\$200K, while 74.3% of recipients had incomes of less than \$75K. About 50.9% of users had incomes between \$50K-\$150K. About 84.6% of applicants, 90.9% of recipients, and 93.4% of users filing under all other tax statuses had incomes below \$75K. Table 3-4 presents income statistics for all e-bike rebate applicants, recipients, and users, and the population for the state of Minnesota in Greater Minnesota.

**Table 3-4 Income of e-bike rebate for applicants, recipients, and users by filing status and all Minnesotans in Greater Minnesota**

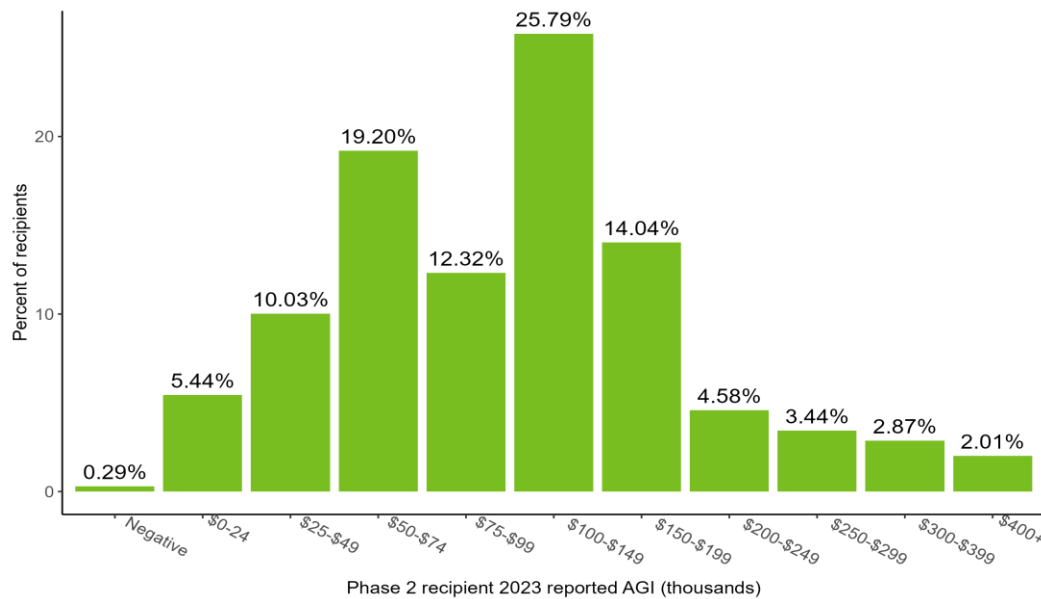
Income Level (thousands)	Applicants		Recipients		Users		Minnesota
	Filing Jointly	Others	Filing Jointly	Others	Filing Jointly	Others	
Less than \$24	6.31%	35.46%	24.20%	35.80%	7.01%	37.50%	13.82%
\$25-\$49	11.10%	28.15%	28.66%	35.23%	15.13%	34.87%	17.72%
\$50-\$74	12.98%	21.01%	21.87%	19.89%	16.97%	21.05%	17.34%
\$75-\$99	15.39%	9.29%	12.95%	4.55%	14.39%	3.95%	14.25%
\$100-\$149	27.30%	4.41%	9.13%	3.41%	19.56%	1.32%	19.53%
\$150-\$199	14.71%	0.99%	1.91%	1.14%	14.39%	1.32%	9.42%
\$200 or more	12.21%	0.70%	1.27%	0.00%	12.55%	0.00%	7.94%
Median Income	\$106,890	\$38,242	\$97,973	\$35,306	\$91,950	\$34,893	\$71,399

**Notes:** Household income in Minnesota is the household income in the last 12 months. Median income in Minnesota corresponds to the median of the median income in the counties in each region. **Source:** (U.S. Census Bureau, 2023b).

Figure 3-2 shows the distribution of 2023 reported AGI of e-bike rebate recipients by phase. As shown in the figure, the reported AGI for the Phase 2 rebate recipients was slightly higher than for Phase 1 rebate recipients. While Phase 1 rebate recipients had a median income of \$67.9K, Phase 2 rebate recipients had a median income of \$104.2K. Similarly, the average income for Phase 1 and Phase 2 rebate recipients was \$104.1K and \$136.8K, respectively.



**Panel A. Phase 1 Rebate Recipients**



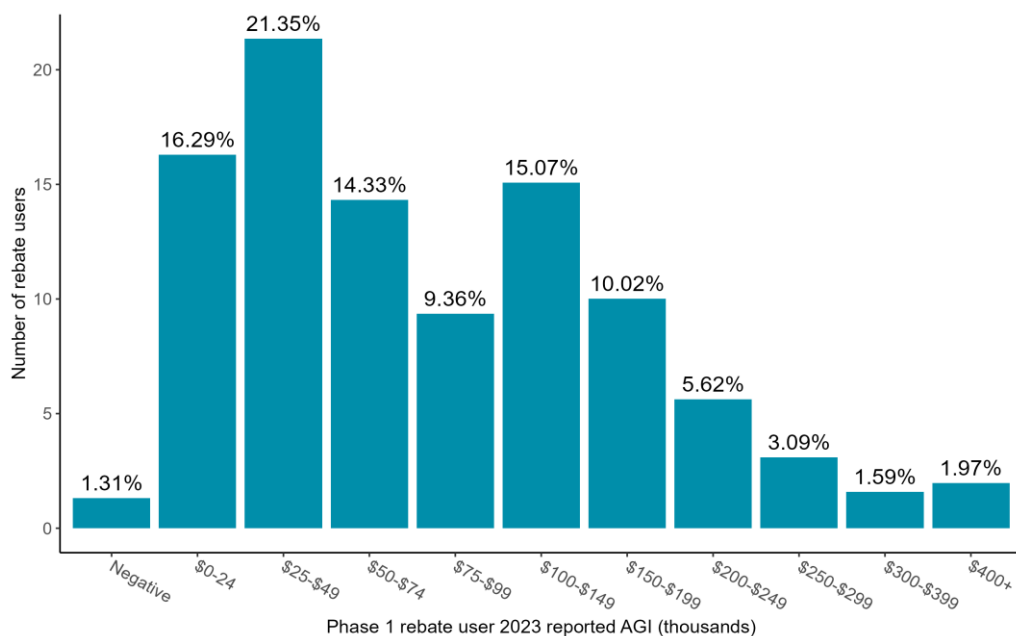
**Panel B. Phase 2 Rebate Recipients**

Source: (DOR, 2025)

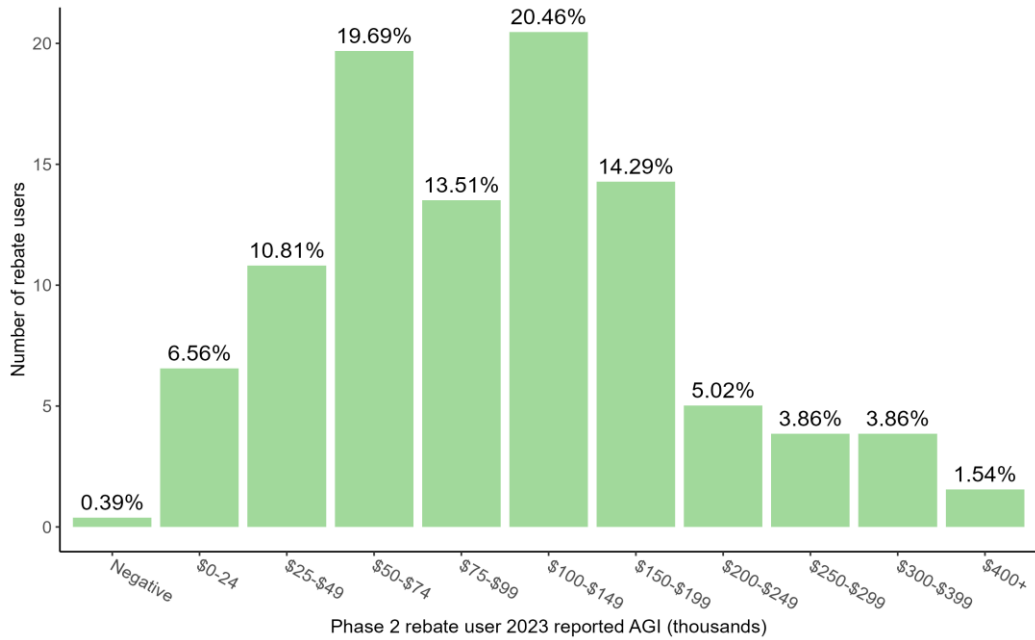
Figure 3-2 Adjusted gross income of rebate recipients by phase

Figure 3-2 shows the distribution of 2023 reported AGI of e-bike rebate recipients by phase. As shown in the figure, the reported AGI for the Phase 2 rebate recipients was slightly higher than for Phase 1 rebate recipients. While Phase 1 rebate recipients had a median income of \$67.9K, Phase 2 rebate recipients had a median income of \$104.2K. Similarly, the average income for Phase 1 and Phase 2 rebate recipients was \$104.1K and \$136.8K, respectively.

Figure 3-3 shows the distribution of 2023 reported AGI of e-bike rebate users by phase. As shown in the figure, the reported AGI for the Phase 2 rebate users was slightly higher than for Phase 1 rebate users. While Phase 1 rebate users had a median income of \$68K, Phase 2 rebate users had a median income of \$99K. In both phases, the AGI distribution of users is similar to that of the recipients.



**Panel A. Phase 1 Rebate Users**



**Panel B. Phase 2 Rebate Users**

*Source: (DOR, 2025)*

**Figure 3-3 Adjusted gross income of rebate users by phase**

**3.1.3 Age of applicants, recipients, and users**

Table 3-5 Age of e-bike rebate for applicants, recipients, and users by filing status and all Minnesotans Table 3-5 presents the age of applicants, recipients, and users by tax filing status. Among those filing jointly, applicants were slightly older than recipients and users. Around 47.0% of applicants in this group were ages 55-75, while 44.5% of recipients and 44.8% of users were ages 35-54. Seniors (over 65 years old) made up about one-fifth of applicants, recipients, and users in this group, comparable with Minnesota’s statistics.

Among those filing under all other tax statuses, recipients were slightly older than applicants and users. Around 49.9% of applicants were ages 25-44, while 47.9% of recipients were ages 55-74. Users in this group are the youngest with 54.7% aged 25-54. Seniors made up about 14% of applicants and users in this group.

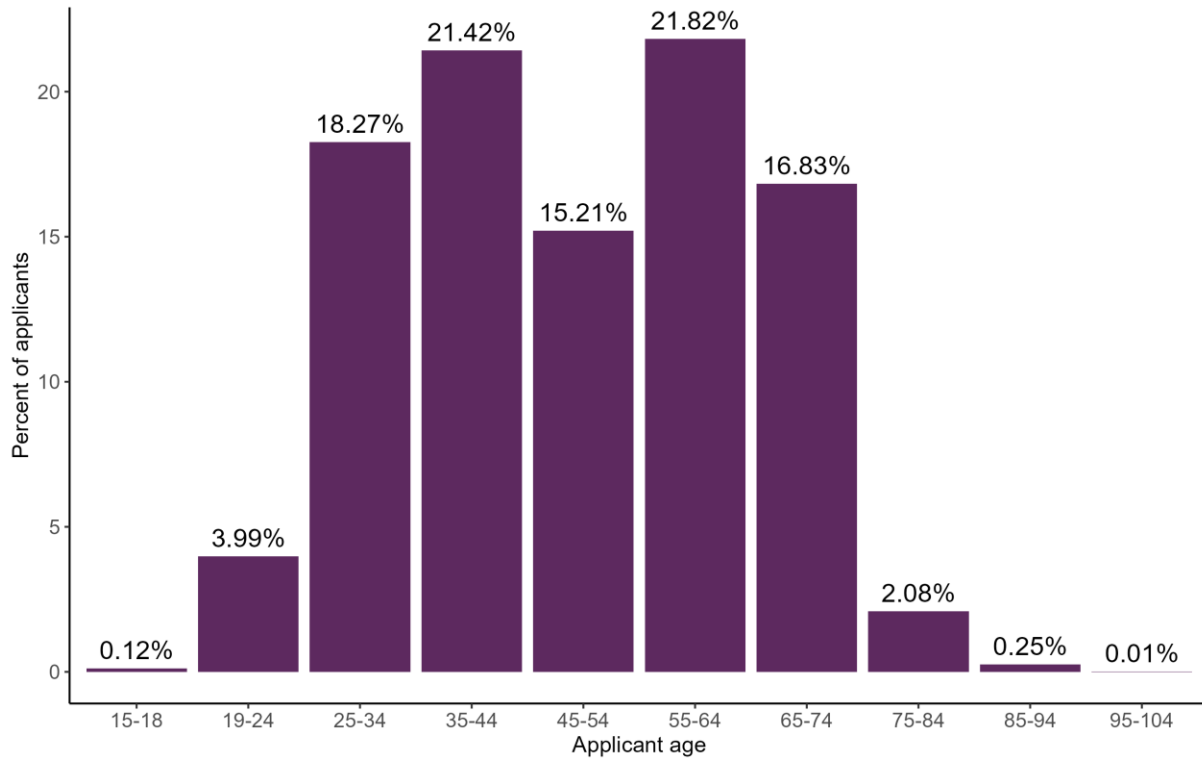
Regardless of the taxing filing status, users are relatively younger than applicants (by three years, on average). However, the difference is not statistically significant.

**Table 3-5 Age of e-bike rebate for applicants, recipients, and users by filing status and all Minnesotans**

Age Category	Applicants		Recipients		Users		Minnesota (1)
	Filing Jointly	Others	Filing Jointly	Others	Filing Jointly	Others	
15-24	0.37%	9.47%	0.11%	0.40%	0.13%	9.71%	15.71%
25-34	10.97%	28.77%	12.50%	10.84%	11.43%	33.09%	15.82%
35-44	22.18%	20.32%	26.49%	21.79%	26.62%	21.58%	19.78%
45-54	17.10%	12.50%	18.00%	17.07%	18.18%	11.69%	14.24%
55-64	26.40%	15.22%	23.28%	26.86%	23.38%	10.25%	15.51%
65-74	20.62%	11.38%	17.66%	21.03%	18.18%	10.61%	12.97%
75-84	2.19%	1.92%	1.83%	2.24%	1.95%	1.98%	6.54%
85 and older	0.16%	0.42%	0.11%	0.17%	0.13%	1.08%	2.43%
Median Age	54	40	51	55	51	37	39

**Note:** (1) As a share of people 15 and older. Median age is for the entire population in Minnesota. **Source:** (U.S. Census Bureau, 2023a).

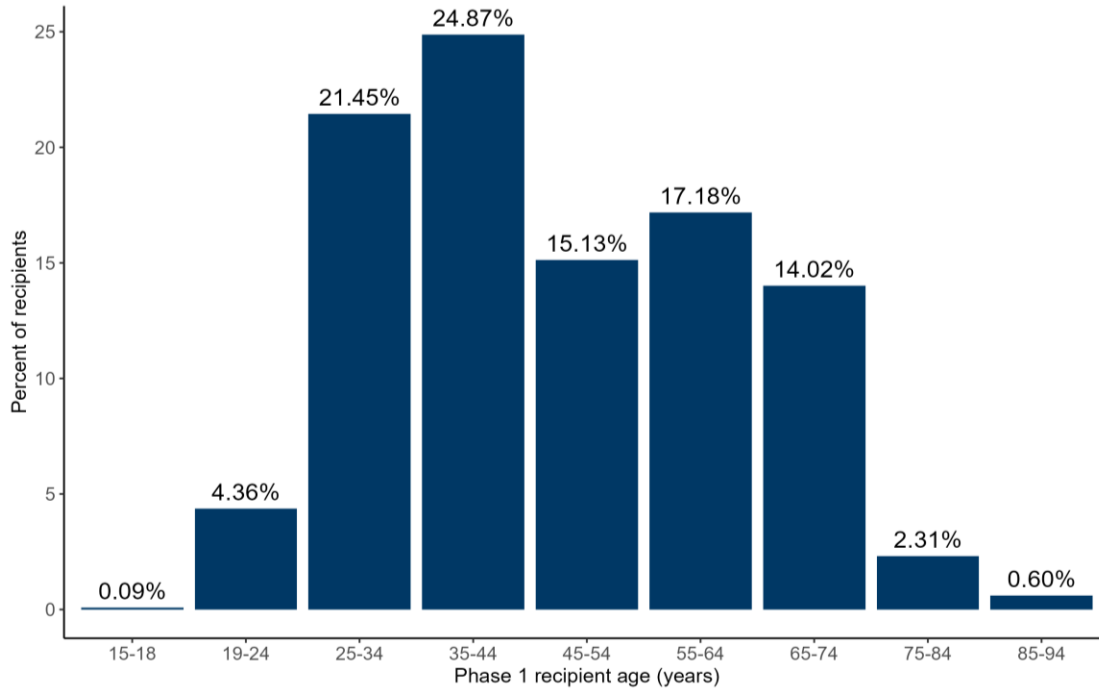
Of all applicants, about 44% (6,393 applicants) are young to middle-aged adults (ages 25-44 years old) and 37% (5,406 applicants) are older adults (ages 45-64 years old). Applicants to the e-bike rebate are on average 49 years old. Seniors made up about 19% of applicants (2,800 applicants). The average age of applicants was 49 years old. Figure 3-4 shows the age distribution for all applicants to the e-bike rebate program in 2024.



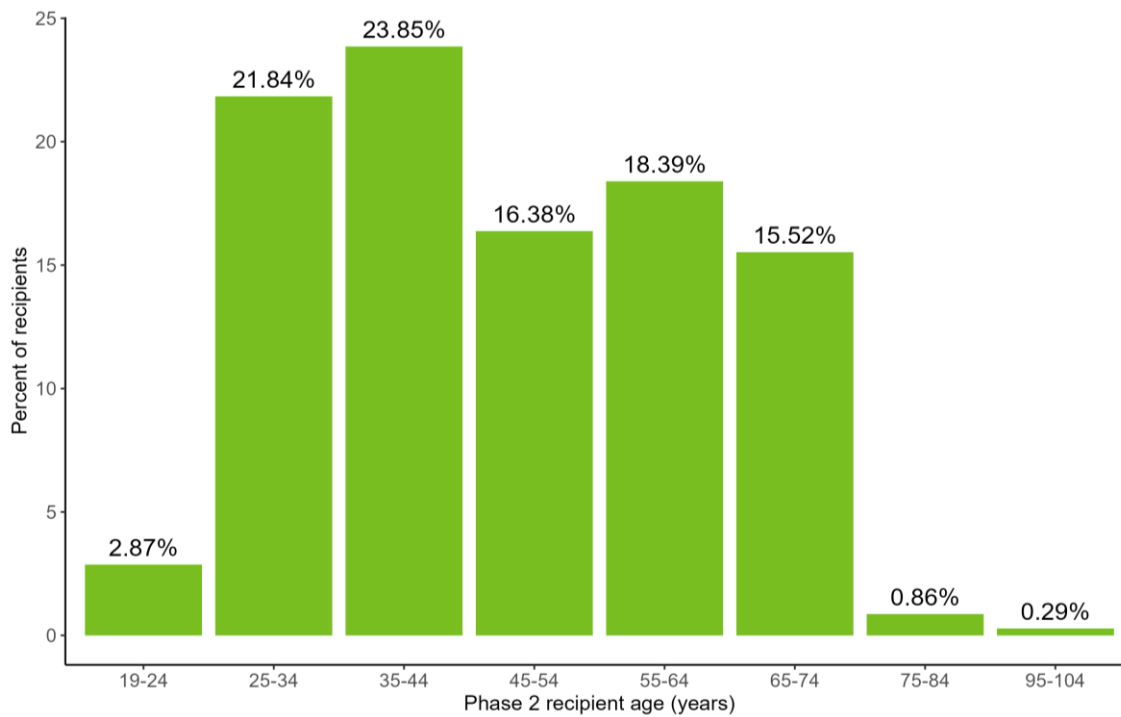
**Source: (DOR, 2025)**

**Figure 3-4 Applicants age**

The ages of recipients in Phase 1 and Phase 2 were very similar. The median age for those who were awarded a rebate in Phase 1 was 44 years old. Similarly, the median age for Phase 2 recipients was 46 years old. The average age for recipients of both Phases was 47 years old. In Phase 1 and Phase 2, 46 percent of rebate recipients were between 25 to 44 years old. Seniors represent 17% of all recipients in both phases. Figure 3-5 below shows the distribution of recipients for both phases across age groups.



**Panel A. Phase 1 Rebate Recipients**

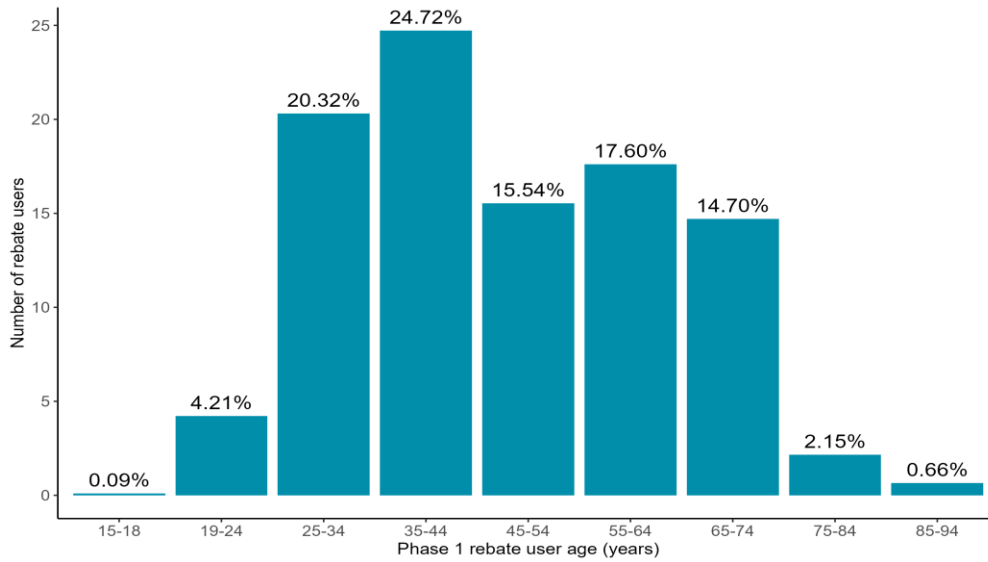


**Panel B. Phase 2 Rebate Recipients**

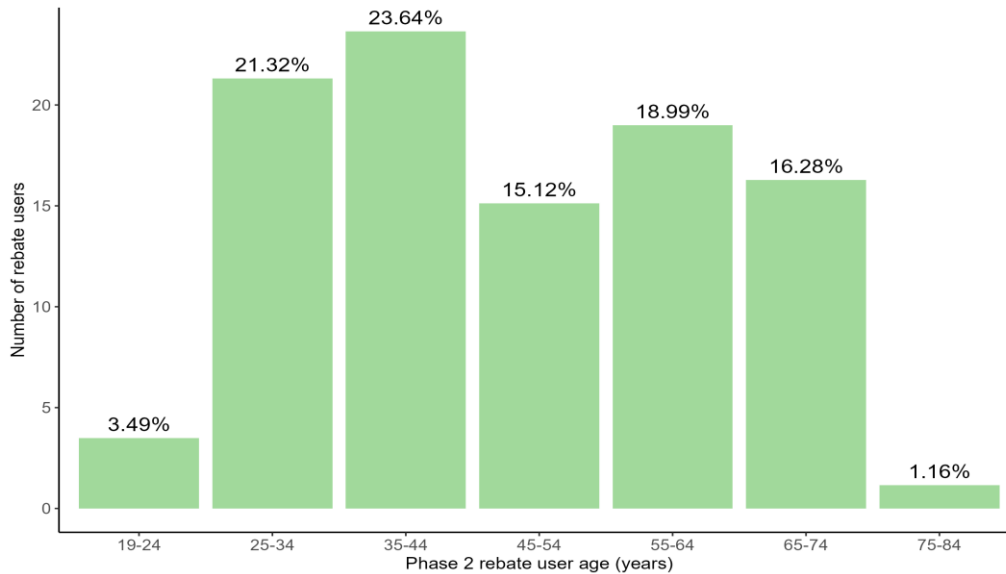
*Source: (DOR, 2025)*

**Figure 3-5 Age of rebate recipients by phase**

The ages of e-bike rebate users were very similar to the recipients in each of the phases. The median age for those who used the rebate was 45 years old in Phase 1 and 46 years old in Phase 2. In Phase 1 and Phase 2, 45 percent of rebate users were between 25 to 44 years old. Seniors represent 17% of all recipients in both phases. Figure 3-6 shows the distribution of rebate users for both phases across age groups.



**Panel A. Phase 1 Rebate Users**



**Panel B. Phase 2 Rebate Users**

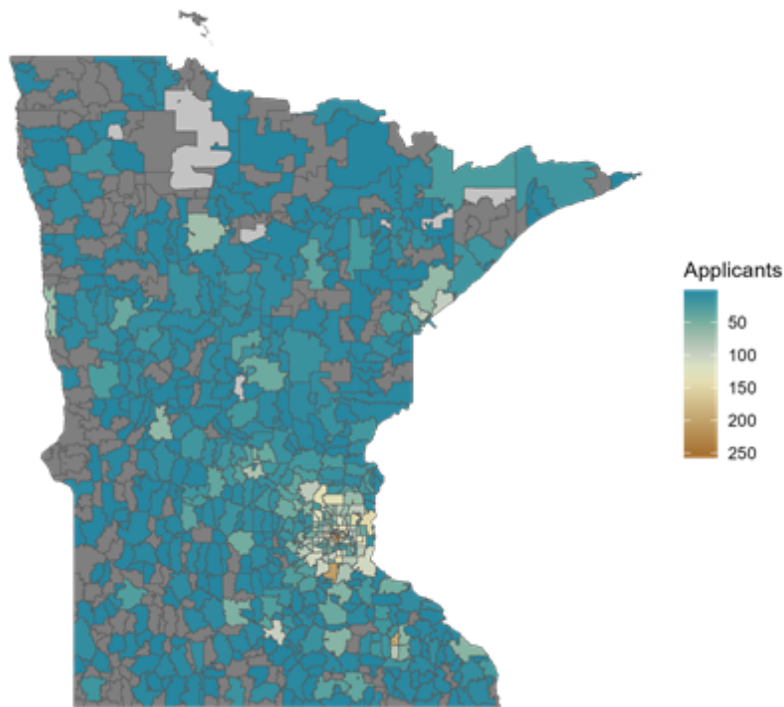
*Source: (DOR, 2025)*

**Figure 3-6 Age of rebate users by phase**

### 3.1.4 Locations of applicants, recipients, and users

Applicants, recipients, and users of the e-bike rebate were scattered throughout the state, with high concentrations in the Seven County Twin Cities Metropolitan Area.

Of all applicants, 66% were from the Metropolitan Area and 34% from Greater Minnesota. By number of applicants, the top three zip codes include 55406<sup>2</sup> with 1.8 percent of applicants (257 applicants), 55044 (includes part of Lakeville and Credit River) with 1.4 percent of applicants (204 applicants), and 55901<sup>3</sup> with 1.3 percent of applicants (189 applicants). Other areas with a significant number of applicants include Duluth, Moorhead, Bemidji, and Mankato. Figure 3-7 shows the number of applicants throughout the state (in Panel A) and in the Metropolitan Area (Panel B).

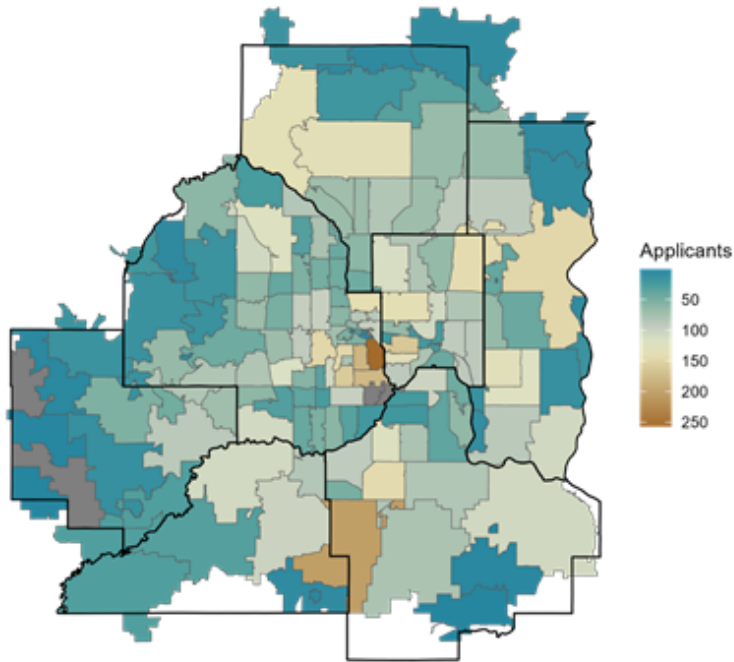


**Panel A. Applicants in Minnesota**

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<sup>2</sup> Zip code 55406 includes the Minneapolis neighborhoods of Longfellow, Seward, Howe, Cooper, Standish (partial), Ericsson (partial), and Hiawatha (partial).

<sup>3</sup> Zip code 55901 includes the Rochester neighborhoods of Northwest Rochester, Golfview, Linconshire - Arbor Glen, John Adams, Elton Hills, John Marshall, Lowertown (partial), and Kutzky Park (partial).



**Panel B. Applicants in the Twin Cities Seven-County Metropolitan Area**

**Notes:** Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. **Source:** (DOR, 2025; U.S. Census Bureau, 2024b, 2024a)

**Figure 3-7 Applicant location by zip code**

When analyzing the number of applications on a per capita basis, the zip codes with the greatest number of applicants include 56685<sup>4</sup> (0.01709 applicants), 55415<sup>5</sup> (0.01190 applicants), and 56731<sup>6</sup> (0.01075 applicants).

Of all rebate recipients, 67.81% were from the Metropolitan Area and 32.19% from Greater Minnesota. Of both phases of recipients, Zip Code 55406<sup>7</sup> had 2.3 percent of all rebate recipients, or 35 recipients.

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<sup>4</sup> Zip code 56685 includes Waskish, MN.

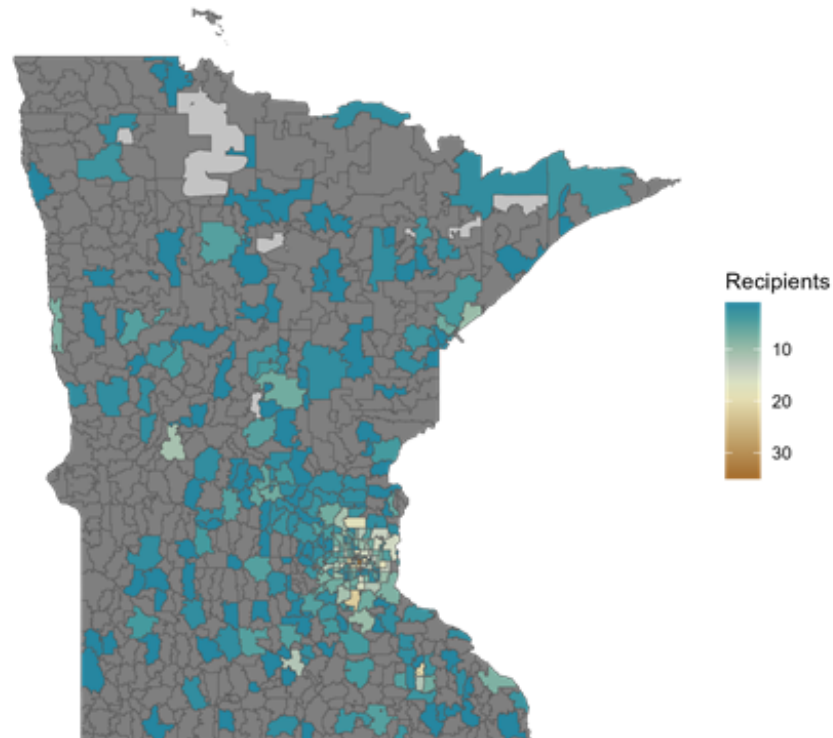
<sup>5</sup> Zip code 55415 includes the Minneapolis neighborhood of Downtown East.

<sup>6</sup> Zip code 56731 includes Humboldt, MN.

<sup>7</sup> Zip Code 55406 includes the Minneapolis neighborhoods of Longfellow, Seward, Howe, Cooper, and part of Standish, Ericsson, and Hiawatha.

Zip codes 55044 (includes part of Lakeville and Credit River) and 55417<sup>8</sup> had the next most recipients, with 22 recipients each. Figure 3-8 shows the number of recipients of the e-bike rebate throughout the state (Panel A) and in the Metropolitan Area (Panel B).

By recipients per capita of both phases of recipients, the highest number of recipients per capita by zip code include 56685<sup>9</sup> (0.00855 recipients), 56089<sup>10</sup> (0.00645 recipients), and 55615<sup>11</sup> (0.00391 recipients).



**Panel A. Recipients in Minnesota**

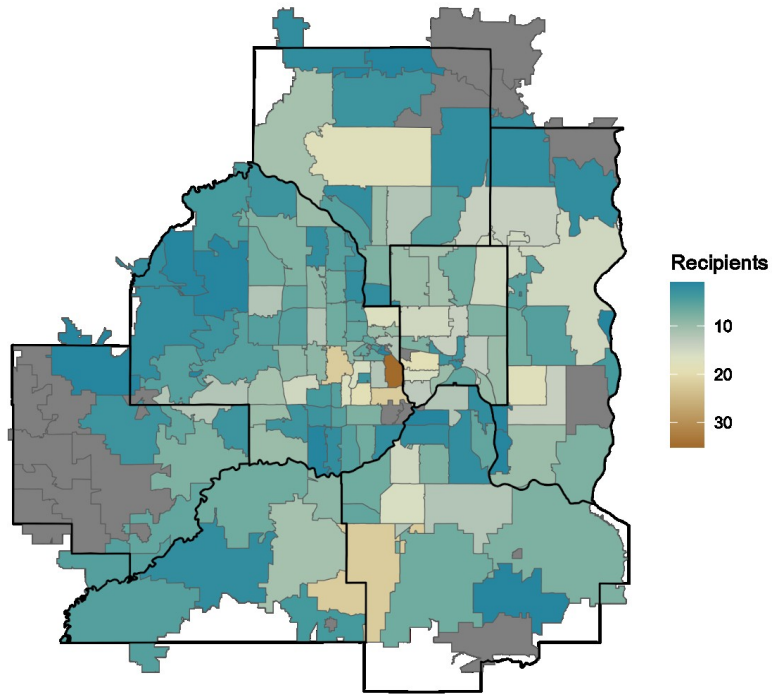
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<sup>8</sup> Zip Code 55417 includes the Minneapolis neighborhoods of Nokomis, Minnehaha, Wenonah, Morris Park, and part of Diamond Lake.

<sup>9</sup> Zip code 56685 includes Waskish, MN.

<sup>10</sup> Zip code 56089 includes Twin Lakes, MN.

<sup>11</sup> Zip code 55615 includes Tofte, MN.



**Panel B. Recipients in the Twin Cities Seven-County Metropolitan Area**

**Notes:** Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. **Source:** (DOR, 2025; U.S. Census Bureau, 2024b, 2024a)

**Figure 3-8 Recipient location by zip code**

Of all rebate users, 68.12% were from the Metropolitan Area and 31.88% from Greater Minnesota. By number of users, the top three zip codes include 55406<sup>12</sup> with 2.5 percent of users (33 users), 55417<sup>13</sup> with 1.6 percent of users (21 users), and 55044 (includes part of Lakeville and Credit River) with 1.5% of users (20 users). Other areas with a significant number of users include Duluth, Moorhead, Bemidji, and Mankato. Figure 3-9 shows the number of users throughout the state (in Panel A) and in the Metropolitan Area (Panel B).

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<sup>12</sup> Zip code 55406 includes the Minneapolis neighborhoods of Longfellow, Seward, Howe, Cooper, Standish (partial), Ericsson (partial), and Hiawatha (partial).

<sup>13</sup> Zip code 55417 includes the Minneapolis neighborhoods of Nokomis, Minnehaha, Wenonah, Morris Park, and Diamond Lake (partial).

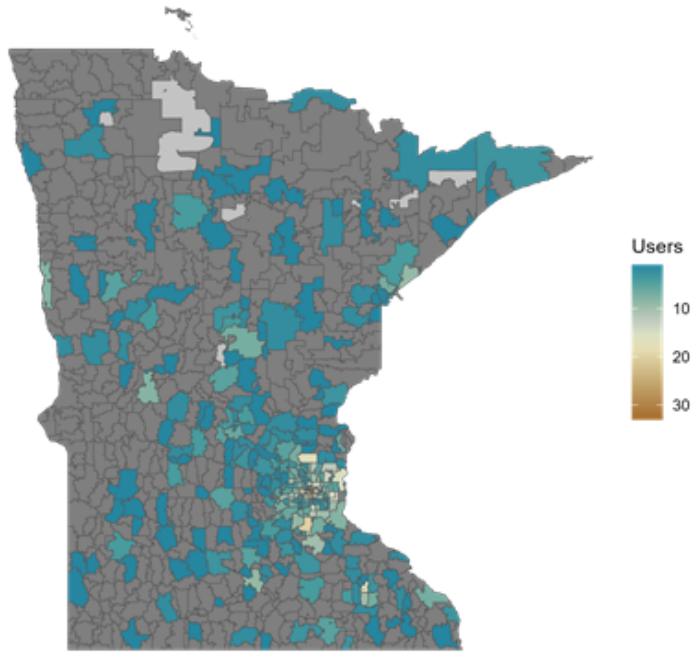
By users per capita, the zip codes with the greatest number of users include 56685<sup>14</sup> (0.00855 users), 56089<sup>15</sup> (0.00645 users), and 55615<sup>16</sup> (0.00391 users).

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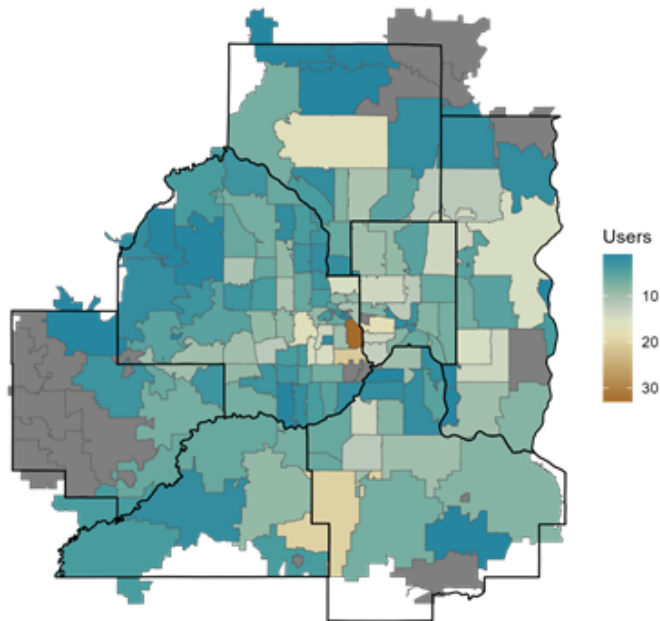
<sup>14</sup> Zip code 56685 includes Waskish, MN.

<sup>15</sup> Zip code 56089 includes Twin Lakes, MN.

<sup>16</sup> Zip code 55615 includes Tofte, MN.



Panel A. Users in Minnesota



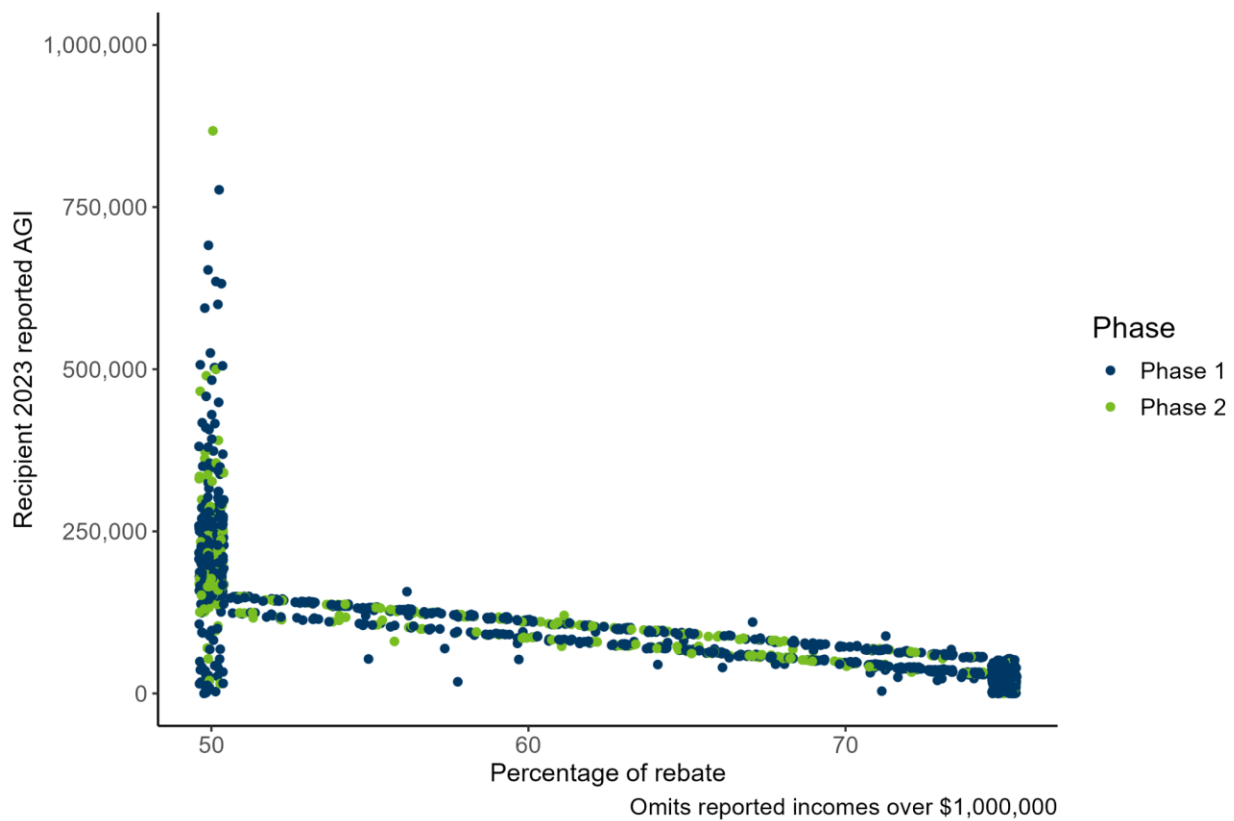
Panel B. Users in the Twin Cities Seven-County Metropolitan Area

**Notes:** Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. **Source:** (DOR, 2025; U.S. Census Bureau, 2024b, 2024a)

**Figure 3-9 User location by zip code**

### 3.1.5 Dollar amount of the e-bike rebate

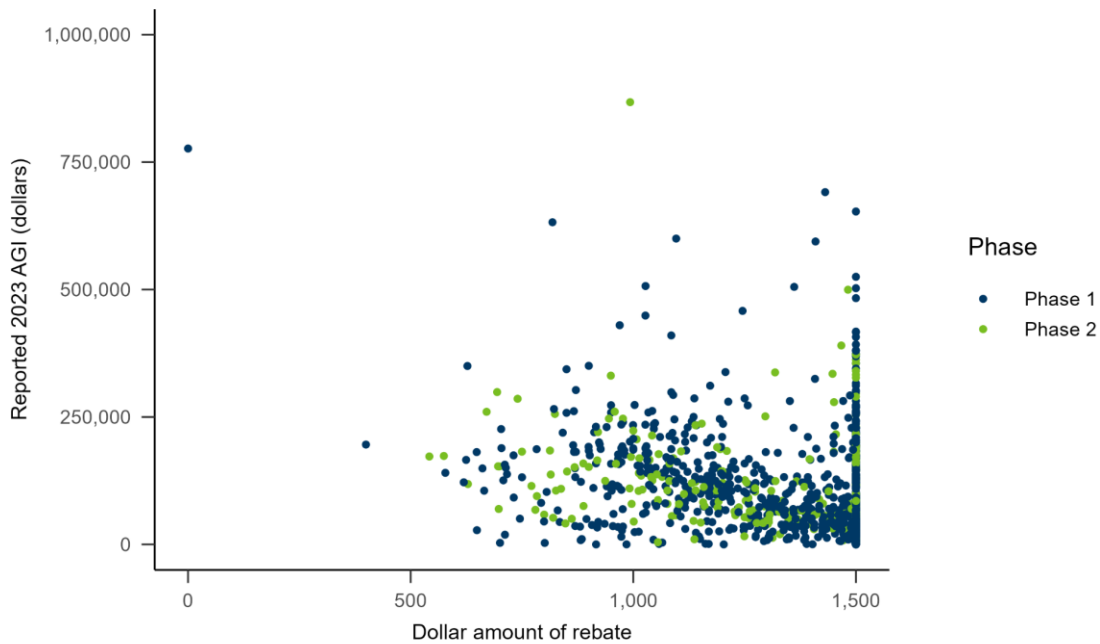
As mentioned earlier, the percentage of the rebate was based on the AGI of applicants and the tax filing status. The maximum rebate was 75 percent of the total cost of eligible expenses for applicants whose AGI was up to \$50,000 (married, filing jointly) or \$25,000 (for all other filers). The total rebate percentage decreased by 1 percent for each \$4,000 above the stated thresholds until reaching 50 percent. As shown in Figure 3-10, the percentage of the rebate was between 50 and 75 percent and the percentage rate decreases as AGI increases. However, applicants with incomes below the threshold could still get a lower percentage rebate (of 50%) in cases where the DOR could not verify the reported income (these are observed in the left-lower corner of the graph).



**Notes:** Reported incomes over \$1,000,000 are omitted in the graph. **Source:** (DOR, 2025)

**Figure 3-10 Percent of rebate by reported AGI**

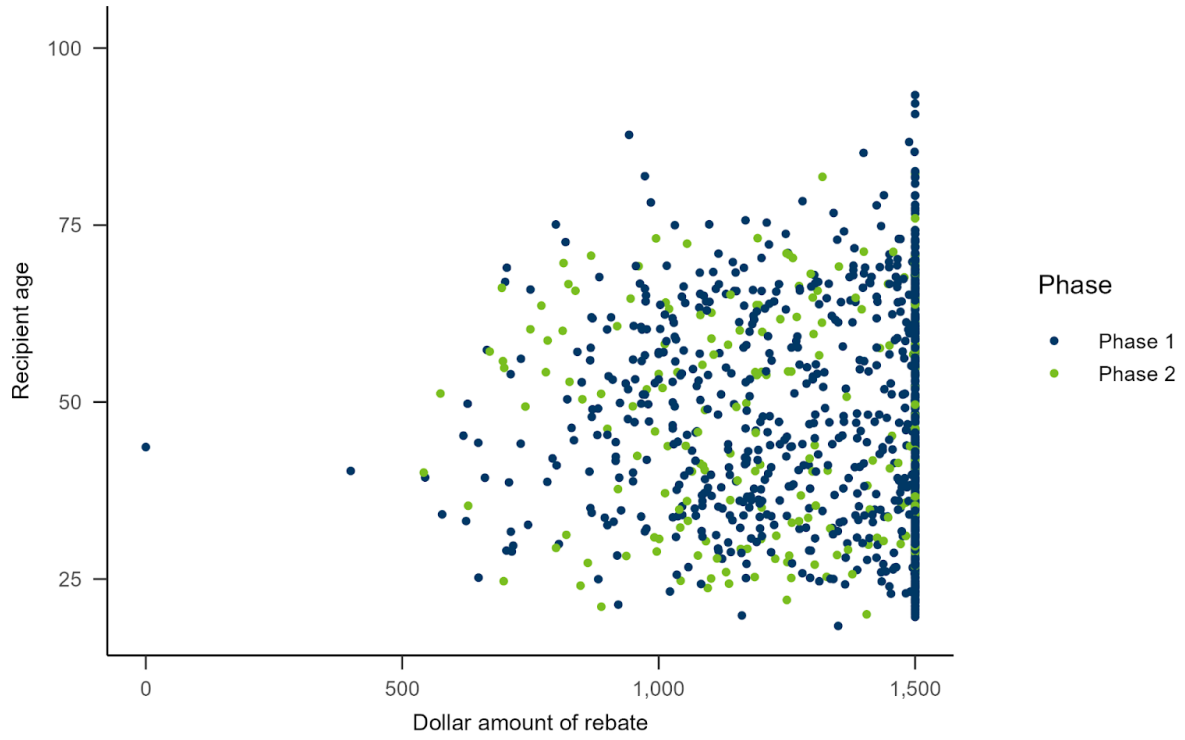
The total dollar amount of the rebate received varies with the cost of eligible expenses. Similar to the percentage, the total dollar amount received in the e-bike rebate increases as AGI decreases (see Figure 3-11). Although the maximum rebate was 75 percent of the total cost of eligible expenses it could not exceed \$1,500. As seen in Figure 3-11 no rebates were above that amount.



Source: (DOR, 2025)

Figure 3-11 Amount of rebate and reported income

In addition to the AGI, no other demographic characteristics influenced the percentage of rebate received. As a result, for example, the rebate percentage (and thus the amount) is not correlated with age of rebate users as shown in Figure 3-12.



Source: (DOR, 2025)

Figure 3-12 Amount of rebate and reported age

# CHAPTER 4: SURVEY

## 4.1 SURVEY METHODOLOGY

Researchers at the University of Minnesota developed a survey to collect feedback and additional information from applicants, recipients, and users of the e-bike rebate program. The survey questionnaire covered topics such as feedback on the application process, information about the use of the rebate, and demographic information. The survey questionnaire is available in Appendix D.

The survey was available online through Qualtrics<sup>17</sup> and distributed by the Department of Revenue through the email list “Subscribers of Electric Bike (e-bike) Rebate Certificate Applicants or Electric Bike (e-bike) Retailers”. The survey was available between March 17, 2025, and April 5, 2025.

*Survey Limitations:* Some factors may have limited the possibility that respondents may not fully represent the broader pool of e-bike rebate applicants and the quality of responses. First, rebate recipients were not notified at the time of rebate application that there would be an opportunity for feedback. This resulted in some confusion and potential nonresponse to the survey. Second, demographic and zip code information were optional. This resulted in incomplete information for some survey respondents (there was around a 17% nonresponse rate per question). While this allowed for respondent privacy, it made direct comparisons across demographics more challenging given the different sample size per question.

## 4.2 SURVEY RESULTS

The research team received a total of 4,496 survey responses from e-bike rebate applicants and non-applicants. Table 4-1 shows the distribution of survey responses.

**Table 4-1 Distribution of survey responses**

Response Category	Number of responses	As a share of all responses
Total Survey responses	4,496	100%
Applicants	3,920	87.18%
Recipients	496	11.03%

---

<sup>17</sup> An online survey tool for survey development and distribution and data collection.

Users	455	10.12%
Others	576	12.81%

A series of questions was used throughout the survey to filter respondents into comparable categories to the application data. Survey respondents categorized as **applicants** include those responding to whether or not they received the rebate, this is, those who received it, did not received it, and did not know if they received it. If the respondent did not answer that question, they were placed in the category **other**, as we cannot ascertain whether the respondent applied.

Survey respondents marking the “Yes, I received the rebate in July, August, or September” option fell within the first phase of **recipients**. If the response was “Yes, I received the rebate in October or November” they fell within the second phase of **recipients**.

Respondents who stated that they received the rebate were asked whether they used the rebate to purchase an e-bike. If the respondent answered “Yes” they were categorized as a **user**.

#### 4.2.1 Profile of survey respondents

The survey asked for demographics information of participants; however, this information was optional. For each demographic question, the response rate was around 83 percent. About 16% of survey participants completed all demographic information. Demographic information requested included household income; age; number of vehicles in the household; number of people in the household; whether the respondent was retired, does not work, or otherwise works inside the home; respondent-identified race and ethnicity; the number of traditional bicycles before and after the rebate period; the number of e-bikes before and after the rebate period; home zip code; and work zip code.

Respondent household income was spread across income groups, with over half of respondent incomes falling between \$25K and \$149K. As compared to income levels throughout the state, those with incomes under \$25K and over \$150K were underrepresented. About 22% of survey respondents did not provide household income information. Table 4-2 shows the distribution of incomes across survey respondents and the state of Minnesota.

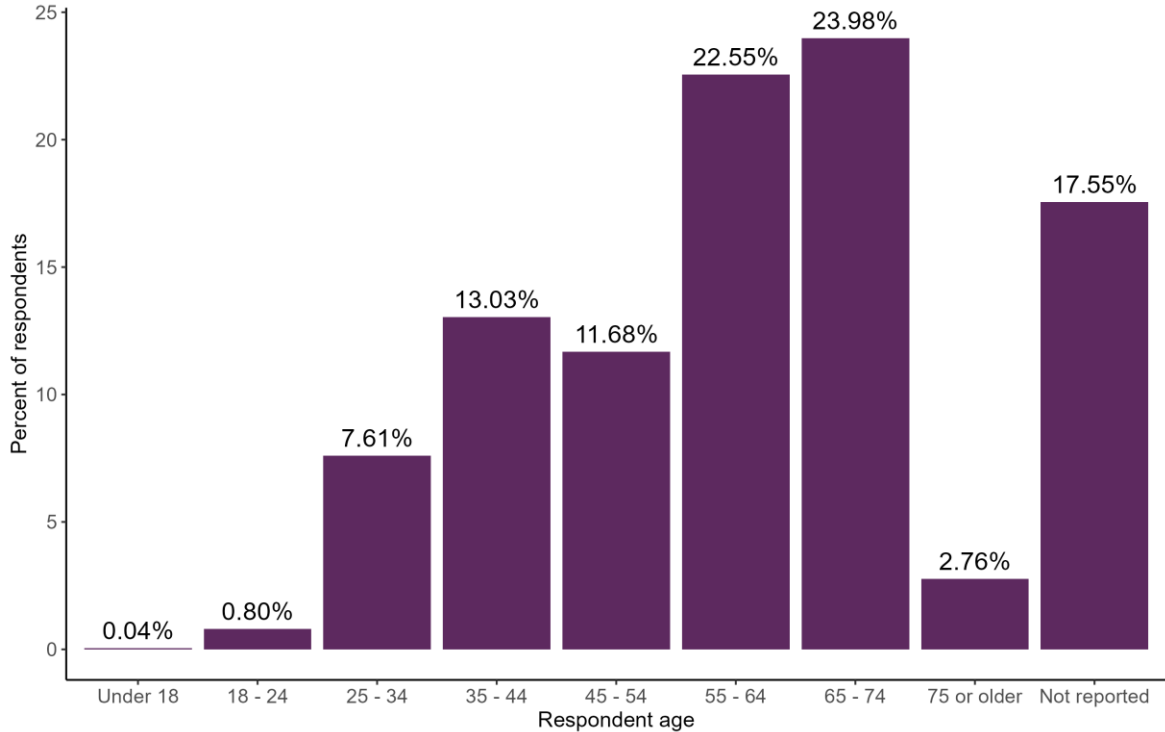
**Table 4-2 Income of survey respondents compared to all Minnesotans**

Income Level (thousands)	Household income of survey respondents	Household income in Minnesota
Less than \$24	7.32%	12.20%

\$25-\$49	13.28%	15.50%
\$50-\$74	15.32%	16.20%
\$75-\$99	13.59%	14.00%
\$100-\$149	16.19%	19.40%
\$150-\$199	5.83%	10.40%
\$200 or more	6.14%	12.30%
Not reported	22.33%	Not applicable

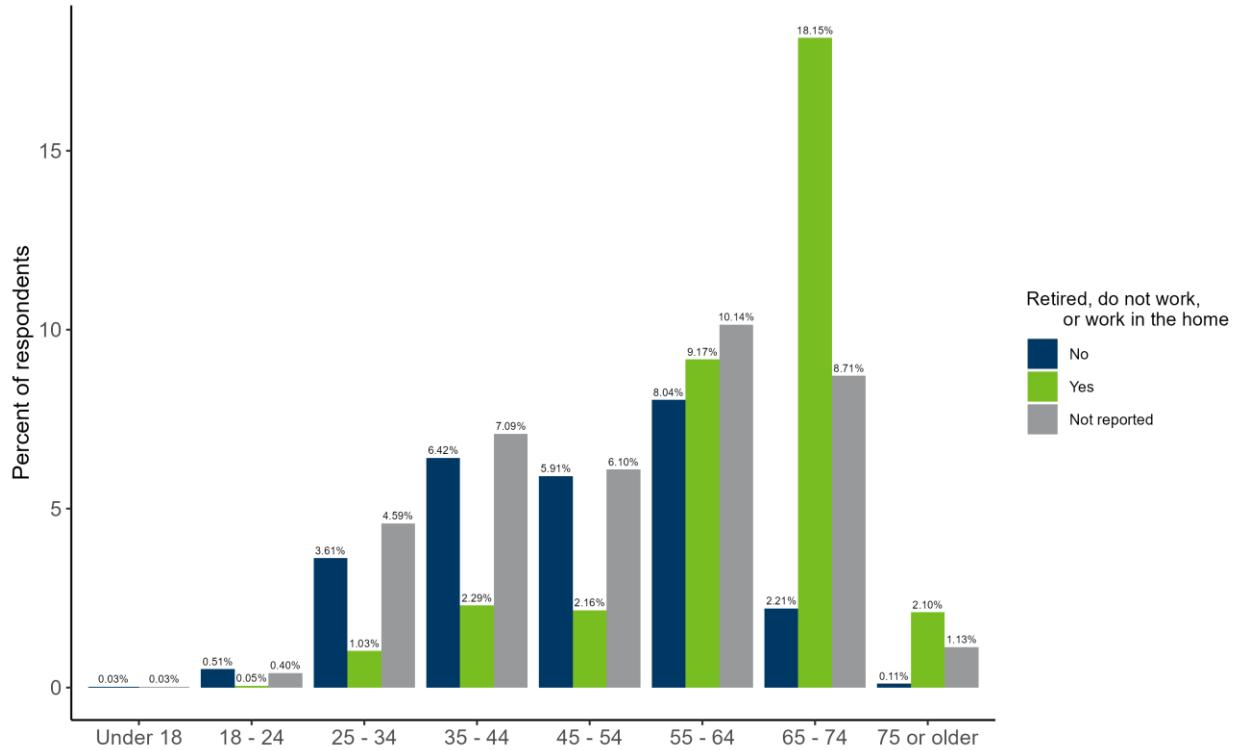
**Notes:** Household income in Minnesota is the household income in the last 12 months. **Source:** (U.S. Census Bureau, 2023b).

About half of the survey respondents were older adults, including mature adults (ages 55 to 64) and seniors (ages 65 and above), representing 22.6% and 26.7%, respectively. Figure 4-1 shows the age distribution of survey participants.



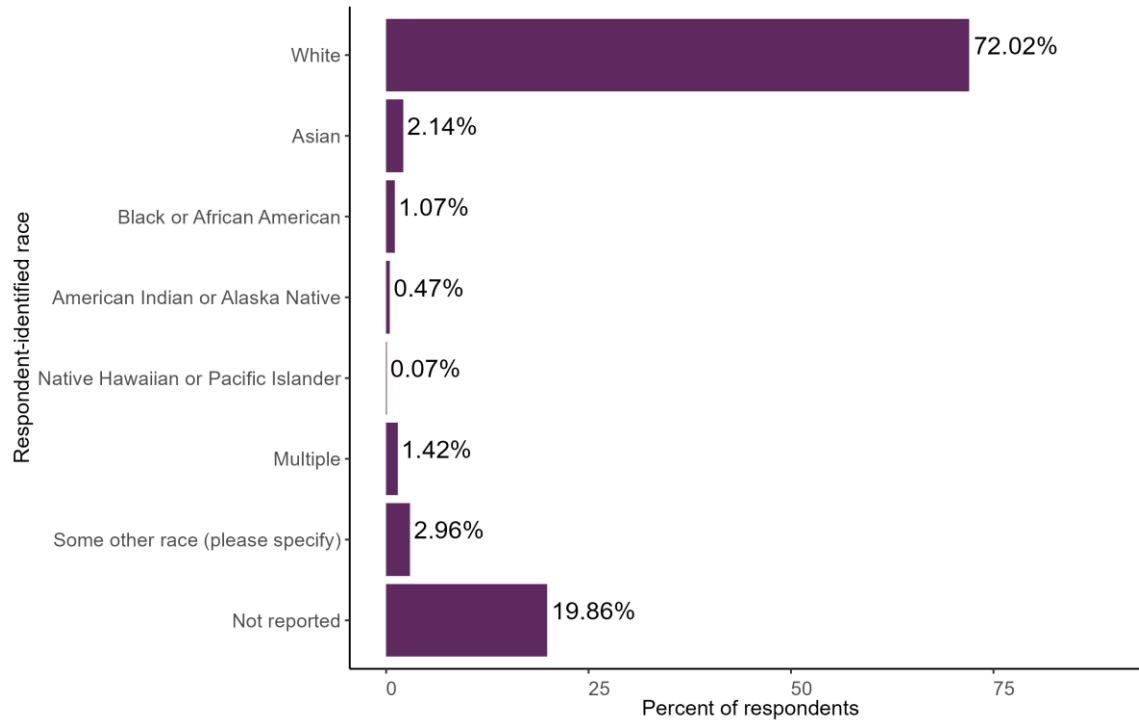
**Figure 4-1** Distribution of survey respondents' age

Of survey participants age 55 or more, 49% reported that they are retired, do not work, or otherwise work in the home. The largest percentage of respondents that reported this status fell within ages 65 to 74, at 18.15% of all respondents. Figure 4-2 provides the distribution of this status by age group, with percentages as a measure of all respondents.



**Figure 4-2 Distribution of survey respondents reporting that they are retired, do not work, or work in the home by age**

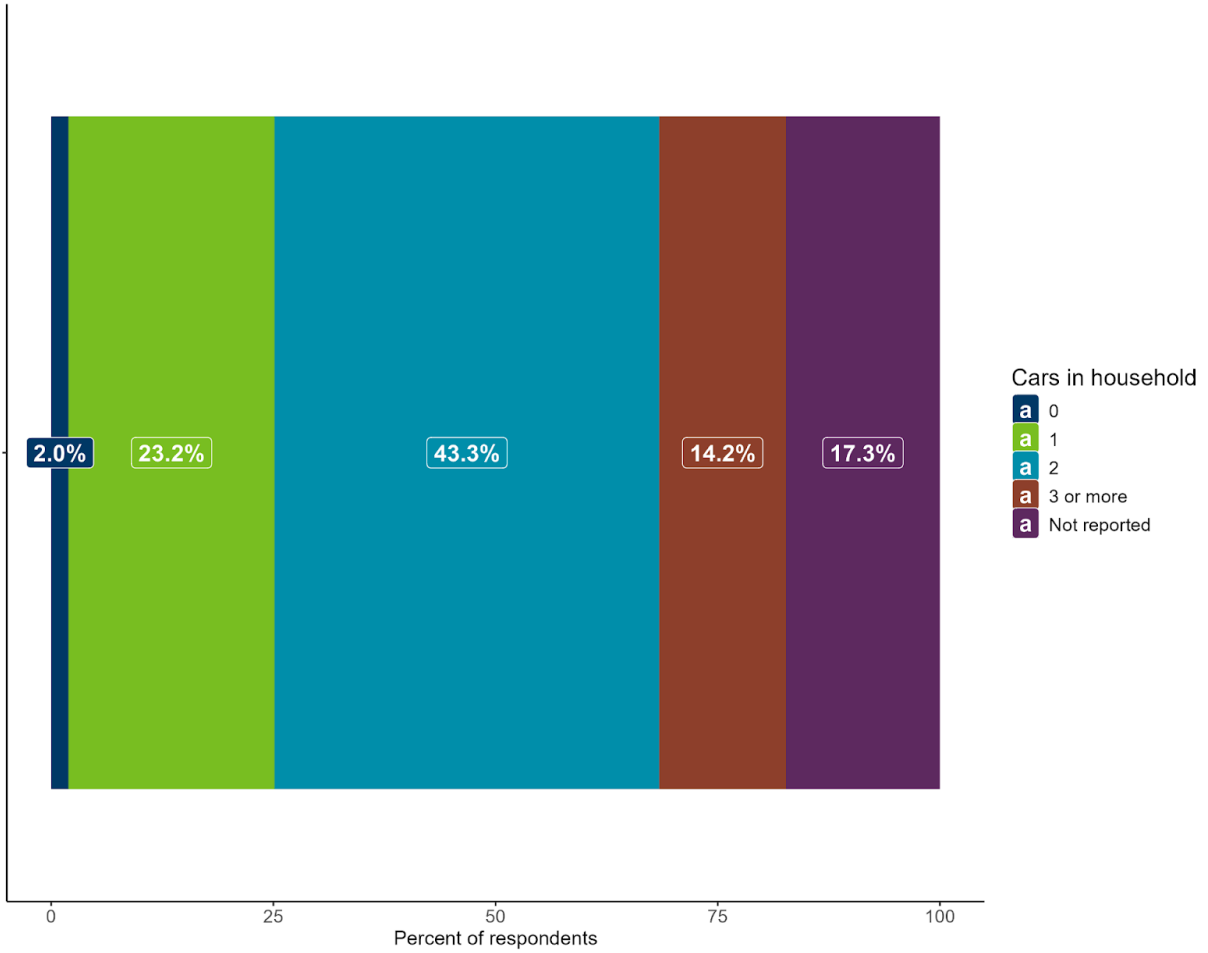
Most respondents identified as white, 72.02%. Figure 4-3 shows the distribution of survey respondents' race. When asked whether respondents identify as Hispanic or Latino, 78.02% said no, 1.56% indicated that they do identify as Hispanic or Latino, and 20.42% did not respond.



**Figure 4-3 Distribution of survey respondents' race**

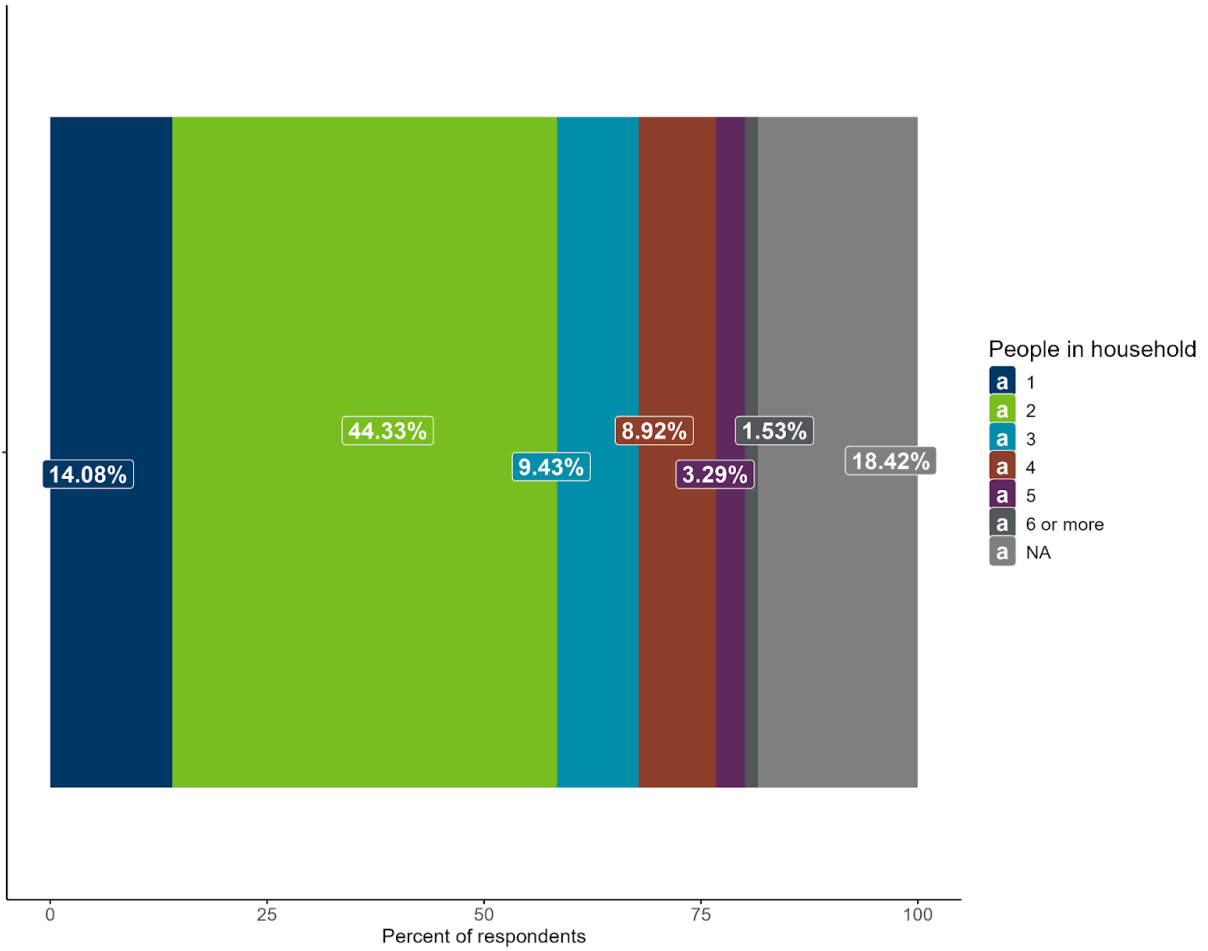
Over half of the respondents had at least one vehicle in their household, with a two-vehicle household reported most often, for 43.3% of respondents. Figure 4-4 shows the distribution of the number of household vehicles. The number of vehicles was not measured before and after the rebate, though the acquisition of an e-bike may have enticed rebate recipients to reduce the number of vehicles in the household.

*“[O]ur family of 4 didn't change the number of regular bikes, but we did go from a 2 car household to a 1 car household because of it [receiving the e-bike rebate].” -Survey respondent*



**Figure 4-4 Distribution of survey respondents' number of vehicles in the household**

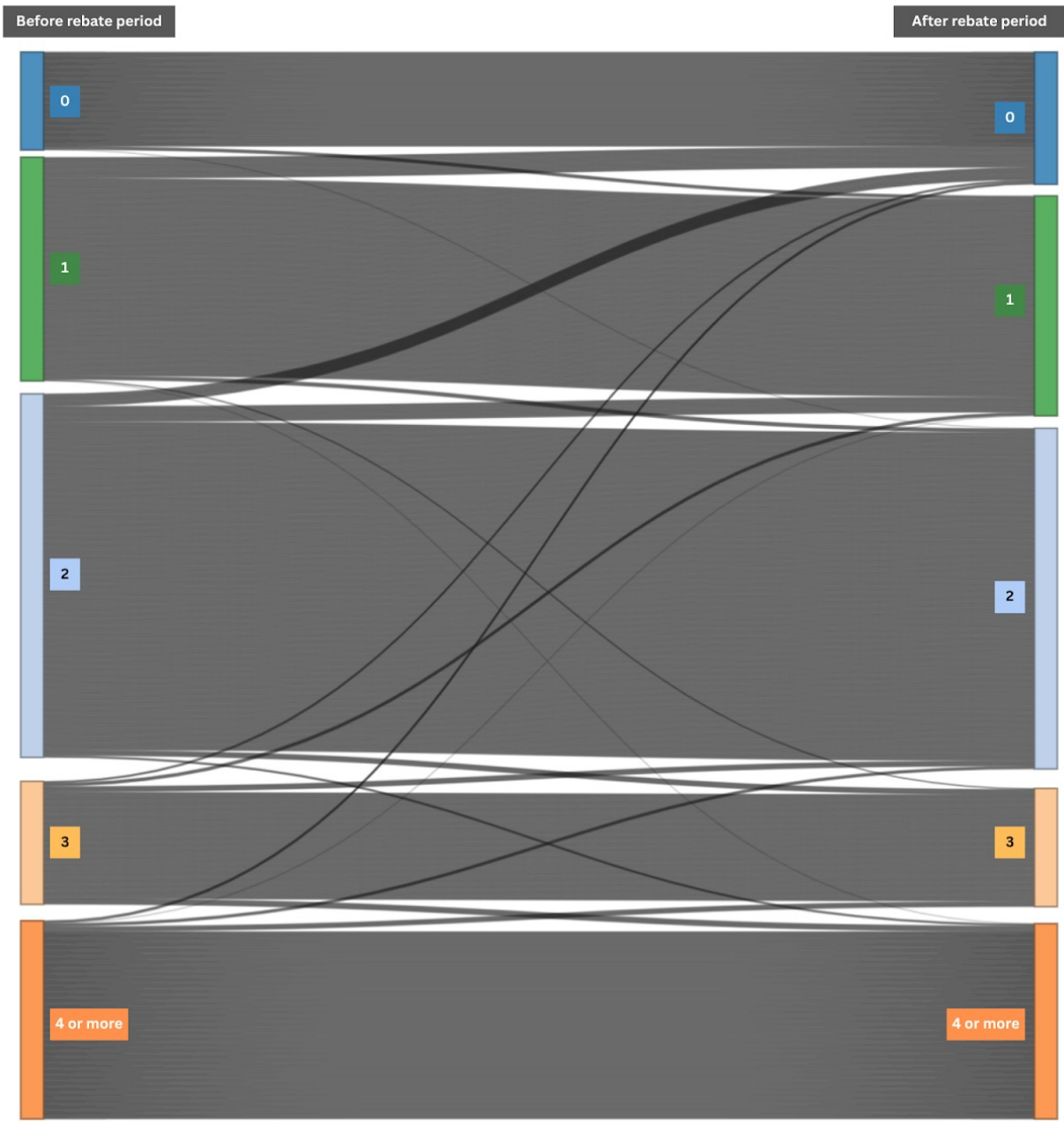
Majority of survey respondents were from a two-person household, at 44.33%, followed by those from a one-person household at 14.0%. Figure 4-5 shows the number of people in a household among survey respondents.



**Figure 4-5 Distribution of survey respondents' number of people in the household**

Respondents were asked how many electric bicycles they had before and after the rebate period, with the rebate period defined June through December of 2024. A traditional bicycle is defined as a bicycle that uses pedaling to propel forward, while the e-bike can be run on electric power as well as pedaling.

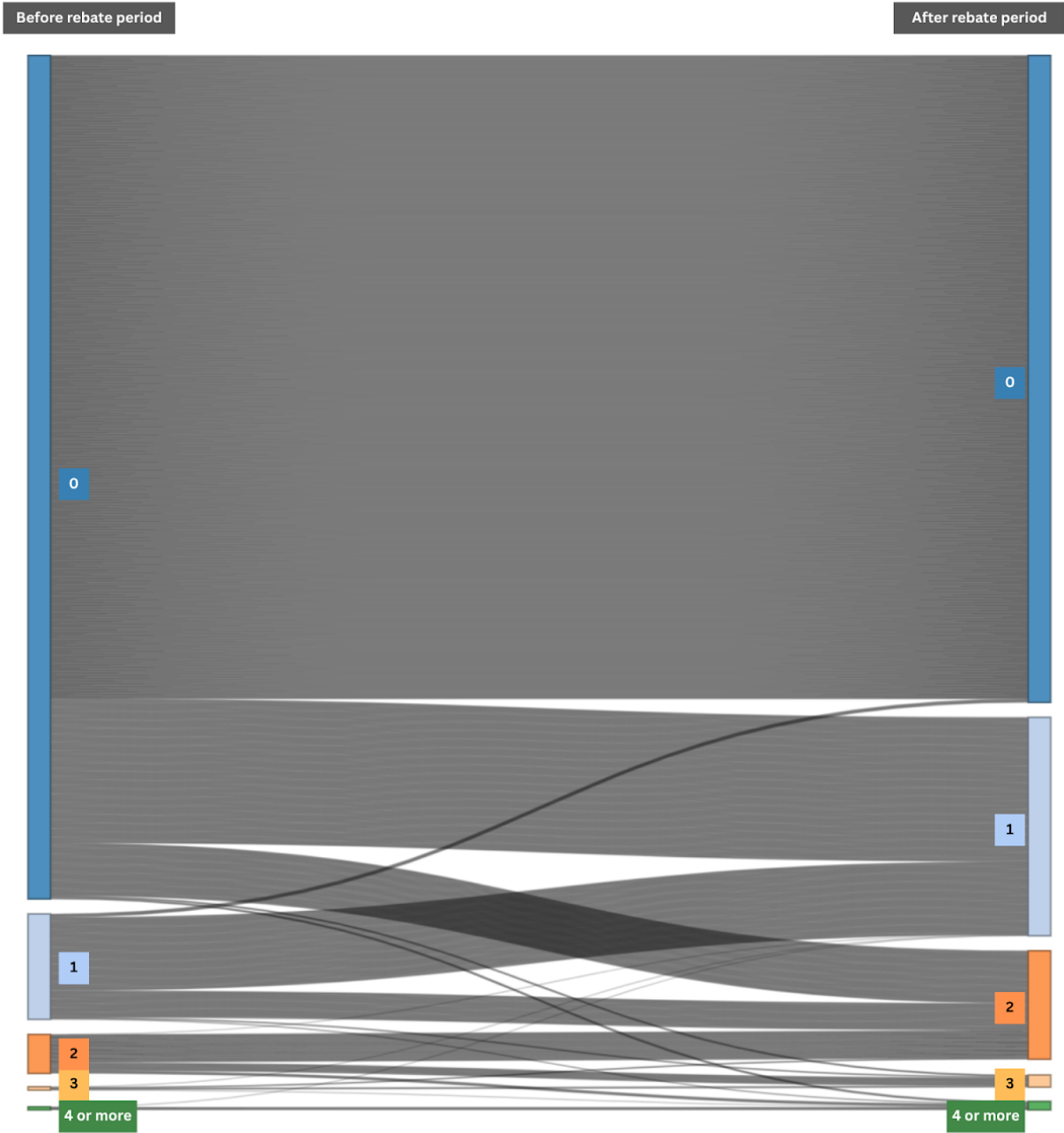
Most respondents did not acquire more traditional bicycles during the rebate period, though some reduced the number of traditional bicycles, usually by 1. Most respondents (1,030 individuals) had two bicycles in their household both before and after the rebate period. Figure 4-6 below shows the changes in traditional bicycles before and after the rebate period.



**Notes:** Omits 1,338 survey responses that did not respond either of the two questions.

**Figure 4-6 Number of traditional bikes before and after the rebate period**

Most survey respondents (1,979 individuals) did not have an electric bicycle in their household both before and after the rebate period. Of those who did report acquiring an electric bicycle, they generally only acquired one, roughly corresponding to the influence of the rebate. Figure 4-7 shows the changes in electric bicycles before and after the rebate period.



**Notes:** Omits 1,901 survey responses that did not respond to either of the two questions.

**Figure 4-7 Number of e-bikes before and after the rebate period**

Table 4-3 also shows the changes in electric bicycles before and after the rebate period by survey respondents identified as applicants and users. The effect of the rebate program among survey respondents identified as users is prominent. For most survey respondents identified as rebate users the rebate allowed them to purchase their first e-bike (237 out of 356 individuals). In addition, most who already owned one or two e-bikes before the rebate period only purchased one additional bike. Lastly,

in a few cases, the rebate led to the purchase of more than one e-bike (e.g., 50 individuals who owned zero e-bikes before the rebate period purchased two after it). Potentially due to buying one e-bike with the rebate and the other at full price.

**Table 4-3 Number of people with e-bikes before and after the rebate period, by number of bikes**

<u>Survey respondents identified as applicants</u>							
		After rebate period					
Before rebate period		0	1	2	3	4 or more	
		0	1,679	376	137	4	5
		1	9	191	70	3	2
		2	0	1	73	21	7
		3	0	1	3	4	1
		4 or more	0	1	0	0	7
<u>Survey respondents identified as users</u>							
		After rebate period					
Before rebate period		0	1	2	3	4 or more	
		0	3	237	50	1	0
		1	1	5	36	2	1
		2	0	0	5	13	2
		3	0	0	0	0	0
		4 or more	0	0	0	0	0

**Notes:** Omits 1,901 survey responses that did not respond either of the two questions.

Survey respondents were asked to provide their home and work zip codes. Of respondents that provided a home zip code, 49.76% were within the Twin Cities Seven County Metropolitan Area, whereas 31.23% were located in Greater Minnesota. The top three zip codes with the largest number of respondents were 55406<sup>18</sup> with 1.62% of respondents (59 respondents), 55901<sup>19</sup> with 1.57% of respondents (57 respondents), and 55110<sup>20</sup> with 1.43% of respondents (52 respondents). Figure 4-8 shows the number of survey respondents throughout the state (Panel A) and in the Metropolitan Area (Panel B).

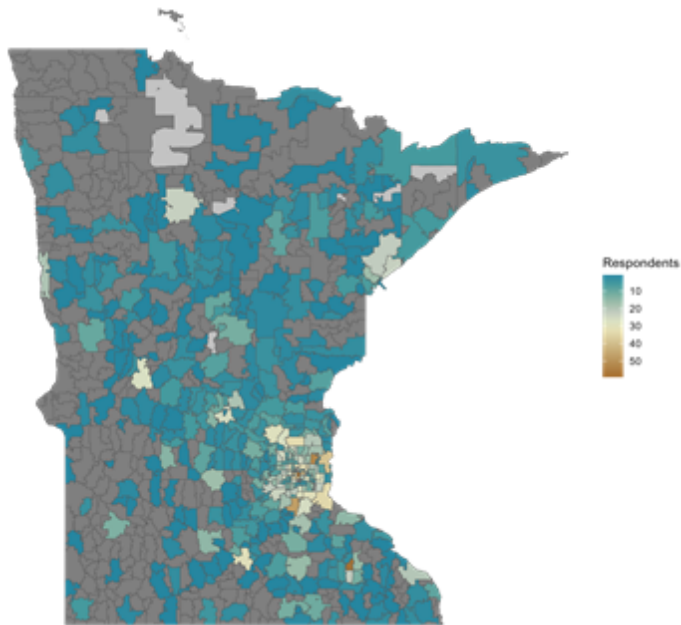
When survey respondents reported both a home and workplace zip code, the most frequent zip codes (by number reported) were the same for both home and workplace. If the home and workplace zip codes were not the same, they were located immediately adjacent. This trend continued across all groups.

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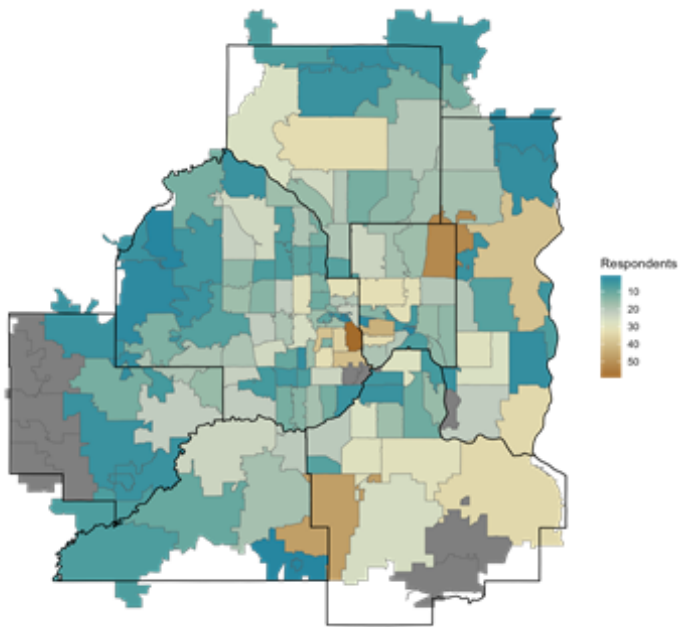
<sup>18</sup> Zip code 55406 includes the Minneapolis neighborhoods of Longfellow, Seward, Howe, Cooper, Standish (partial), Ericsson (partial), and Hiawatha (partial).

<sup>19</sup> Zip code 55901 includes the Rochester neighborhoods of Northwest Rochester, Golfview, Linconshire - Arbor Glen, John Adams, Elton Hills, John Marshall, Lowertown (partial), and Kutzky Park (partial).

<sup>20</sup> Zip code 55110 includes White Bear Lake, Dellwood, Bellaire, Gem Lake, and Birchwood Village.



**Panel A. Respondents in Minnesota**



**Panel B. Respondents in the Twin Cities Seven-County Metropolitan Area**

**Notes:** Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. **Source:** (U.S. Census Bureau, 2024b, 2024a)

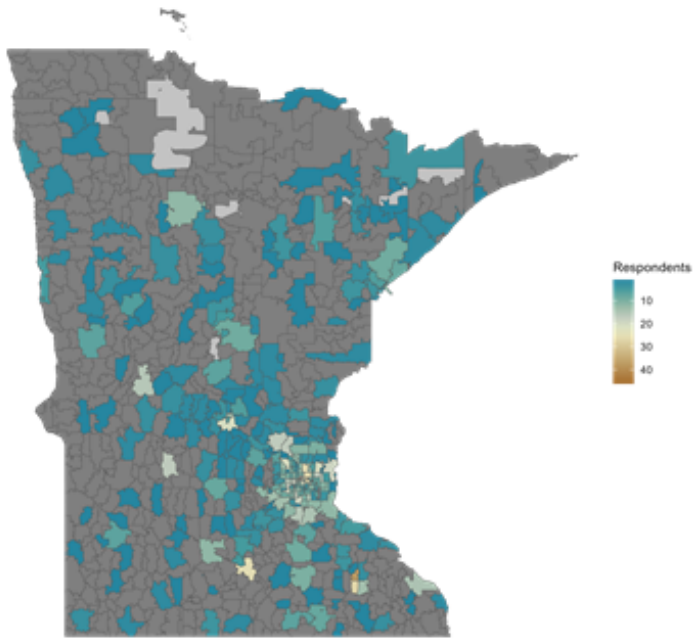
**Figure 4-8 Respondent home location by zip code**

Over half of respondents did not provide a workplace zip code. Of respondents that provided a workplace zip code, 30.76% were within the Twin Cities Seven County Metropolitan Area, whereas 16.93% were located in Greater Minnesota. The top three zip codes with the largest number of respondents were 55455 (the University of Minnesota) with 2.15 percent of respondents (46 respondents), 55901<sup>21</sup> with 1.73% of respondents (37 respondents), and 55101<sup>22</sup> with 1.63% of respondents (35 respondents). Figure 4-9 shows the number of survey respondents throughout the state (Panel A) and in the Metropolitan Area (Panel B).

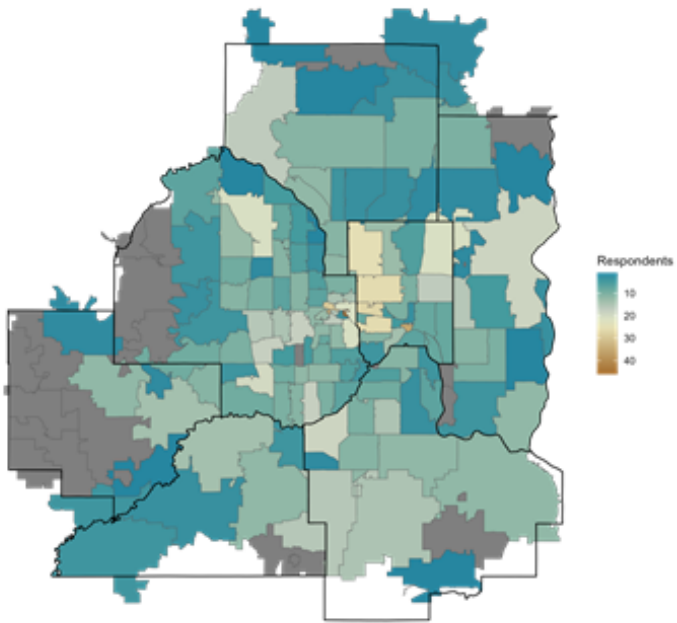
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<sup>21</sup> Zip code 55901 includes the Rochester neighborhoods of Northwest Rochester, Golfview, Linconshire - Arbor Glen, John Adams, Elton Hills, John Marshall, Lowertown (partial), and Kutzky Park (partial).

<sup>22</sup> Zip code 55101 includes part of downtown Saint Paul.



**Panel A. Respondents in Minnesota**



**Panel B. Respondents in the Twin Cities Seven-County Metropolitan Area**

**Notes:** Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. **Source:** (U.S. Census Bureau, 2024b, 2024a)

**Figure 4-9 Respondent work location by zip code**

#### 4.2.2 Survey respondents compared to rebate applicants as a whole

Survey respondents who applied to the rebate skewed lower income but older as compared to rebate applicants. About 46.22% of applicants to the rebate program reported that their annual income was under \$100K, whereas 56.73% of survey respondents who applied to the program reported the same amount. Table 4-4 highlights income levels of rebate applicants as reported by survey respondents and from rebate application data, by rebate group.

**Table 4-4 Income level of rebate applicants as reported by survey respondents and from rebate application data, by rebate group**

Income Level (thousands)	Applicants		Recipients		Users	
	Application	Survey	Application	Survey	Application	Survey
Less than \$24	1.68%	8.39%	1.18%	7.46%	1.1%	7.28%
\$25-\$49	13.14%	15.23%	13.56%	13.51%	14.4%	13.91%
\$50-\$74	15.94%	17.55%	19.22%	19.96%	19.3%	20.31%
\$75-\$99	15.46%	15.56%	15.21%	13.31%	15.4%	13.25%
\$100-\$149	12.33%	18.57%	10.07%	17.34%	10.2%	17.66%
\$150-\$199	18.35%	6.68%	17.84%	8.06%	16.1%	8.61%
\$200 or more	12.38%	7.04%	10.93%	9.27%	12.7%	9.49%
Not Reported	N.A.	10.97%	N.A.	11.09%	N.A.	9.49%

Source: (DOR, 2025).

Mature adults and seniors, or adults over 55 years of age, made up over half of survey respondents, or 59.82% of respondents. As a share of applicants to the rebate program, mature adults and seniors were 41% of all applicants, but 56.48% of survey respondents. Similarly, 52.76% of survey respondents who received and used the rebate were mature adults, while this same age group made up only 35.37% of users. Table 4-5 shows the distribution of age groups of rebate applicants as reported by survey respondents and from rebate application data, by rebate group.

**Table 4-5 Age groups of rebate applicants as reported by survey respondents and from rebate application data, by rebate group**

Age Group	Applicants		Recipients		Users	
	Application	Survey	Application	Survey	Application	Survey
Under 18	0.12%	0.05%	0.07%	0.00%	0.08%	0.00%
18-24	3.99%	0.92%	4.02%	2.42%	4.07%	2.43%
25-34	18.27%	8.72%	21.54%	9.88%	20.51%	9.27%
35-44	21.42%	14.95%	24.64%	17.74%	24.51%	17.88%
45-54	15.21%	13.39%	15.42%	12.90%	15.46%	13.25%
55-64	21.82%	25.84%	17.46%	22.98%	17.87%	24.06%
65-74	16.83%	27.50%	14.36%	24.80%	15.01%	25.61%
75+	2.35%	3.14%	2.50%	3.23%	2.49%	3.09%
Not reported	N.A.	5.48%	N.A.	6.05%	N.A.	4.42%

**Source: (DOR, 2025)**

Table 4-6 highlights the most frequent zip codes of rebate applicants as reported by survey respondents and from rebate application data, by rebate group. The most frequent home zip code reported in both the survey and in the application was 55406 across all rebate groups. 55901 was the second most common zip code reported in the survey but the third most common zip code in applications. In rebate applications, 55044 was the second most common zip code for both rebate applicants and recipients and the third most common among users, but was not within the top three most frequent from survey respondents.

**Table 4-6 Most frequent zip codes of rebate applicants as reported by survey respondents and from rebate application data, by rebate group**

Top Home Zip Codes	Applicants		Recipients		Users	
	Application	Survey	Application	Survey	Application	Survey
1	55406	55406	55406	55406	55406	55406
2	55044	55901	55044	55419	55417	55110
3	55901	55110	55417	55110	55044	55419

#### 4.2.3 Feedback on the rebate application process

Of the 4,496 survey respondents, 3,447 provided feedback on the rebate application process. Many survey respondents described the process as a negative experience, referring to it as “terrible”, “horrible”, “a joke”, “chaotic”, “a mess”, “a disaster”, and “a failure” among other negative references. Of those who elaborated, many referred to the technical issues experienced during the first opening of the application process and the poor design and execution of the platform used to apply for the e-bike rebate that could not handle the volume of applications. It is worth noting that some of those describing the process as a negative experience also mentioned that the second opening of the application process was much smoother.

Many survey respondents also referred to the application process as frustrating because of the technical issues experienced during the first opening of the application process, including the repeated and unsuccessful attempts to access the site and fill out some of the application information but having the system crash in the middle of it. Many commenting on the second opening of the application process mentioned being unclear whether they could refresh the window without it impacting their position in the application system. Some also referred to the large volume of applicants and the limited number of rebates available.

In addition to the technical issues, some respondents referred to the process as being time-consuming. For many, it took a lot of time to complete the application. Some also referred to the long time spent in the waiting room until they were admitted to complete the application.

Several survey respondents expressed that the e-bike rebate application was unfair for several reasons:

- Unfair to people in rural areas with low or poor internet access or speed, which delayed their application submission and thus reduced their options to receive the rebate.

- Unfair to low-income people as higher-income people had access to multiple devices they could use to submit their applications.
- Unfair to people with a disability that could not fill out the application in a timely manner to be considered, and for not being prioritized over able body individuals.
- As the application for the rebate was opened on a weekday, it was unfair to workers who were not able to take time off from their jobs to submit their applications.
- Allowing those who were able to get into the system and submit an application during the first opening of the application and receive a rebate was unfair to those who had to wait for the second opening.

Related to this, a few survey respondents mentioned that the application process was biased toward wealthy people and young people, with others noting that it was biased toward low-income people.

Several survey respondents provided recommendations to make the application process less unfair. A common suggestion was to move away from the first-come, first-served system. Instead, survey participants suggested having a lottery system in which all people can apply and then randomly select recipients from the pool of applicants. Another suggestion was to provide smaller rebate amounts so that more applicants could benefit from the program.

Several survey respondents also mentioned that the process was confusing or unclear. Many of the comments were related to the technical issues experienced in the first opening of the process and to the waiting list in the second opening. Elements that were not clear for survey respondents include whether they could refresh the website, the criteria for selection, and whether there was an income cutoff. Many noted that income questions should have been addressed earlier in the application to prevent ineligible applicants from completing the application unnecessarily. Similarly, there was confusion among some participants regarding the distinction between submitting an application and being awarded the rebate. Some respondents believed that submitting the application ensured they would receive the rebate.

There were several mentions of survey respondents expressing disappointment. Many of those who elaborated mentioned that they filled out the application but were not selected and did not receive information as to why they were denied.

Those reporting having a good experience with the application process mentioned that it was easy to navigate and straightforward, and found communications to be informative and easy to understand.

#### **4.2.4 Rebate use**

Most survey respondents who filled out the survey noted that they did not receive the rebate. Of the 4,496 respondents, 9.87% stated that they received the rebate in the first phase, and 2.78% in the second phase. Only a few respondents stated that they did not use the rebate when awarded - 0.38% and 0.53% in the first and second phases, respectively. Table 4-7 provides an overview of the percentage of respondents in each rebate phase.

**Table 4-7 Summary of survey respondents that received, used, and did not use the rebate, by rebate phase**

	<b>First phase (July-September)</b>	<b>Second phase (October-December)</b>
Received rebate	9.87%	2.78%
Used rebate	9.31%	2.24%
Did not use rebate	0.38%	0.53%
Did not receive or know	87.35%	

#### 4.2.4.1 Experiences of those claiming and using the rebate

Of the 496 survey respondents who reported receiving the e-bike rebate, 370 provided comments regarding their experience claiming and using it. About 80% of them mentioned the process was easy to follow and found the list of eligible retailers very helpful. Many also noted that the e-bike sellers handled the paperwork, and some suggested the process might have been more challenging for the sellers themselves, who appeared confused and overwhelmed by the paperwork process.

*“It seemed like there were a lot of steps the retailer had to go through, almost to the point where I wondered why they agreed to participate.” - Survey Participant*

Few survey participants also noted the learning curve for e-bike sellers. Those survey participants self-identifying as among the first in claiming the rebate noticed challenges noted store staff not knowing the process and having issues contacting voucher authorizers.

*“The merchant was confused about what he needed to do and concerned about if they would get paid.” - Survey Participant*

*“Worked fine...although the retailer was not clear on protocols. Retailer reached out for add'l information weeks after purchase.” - Survey Participant*

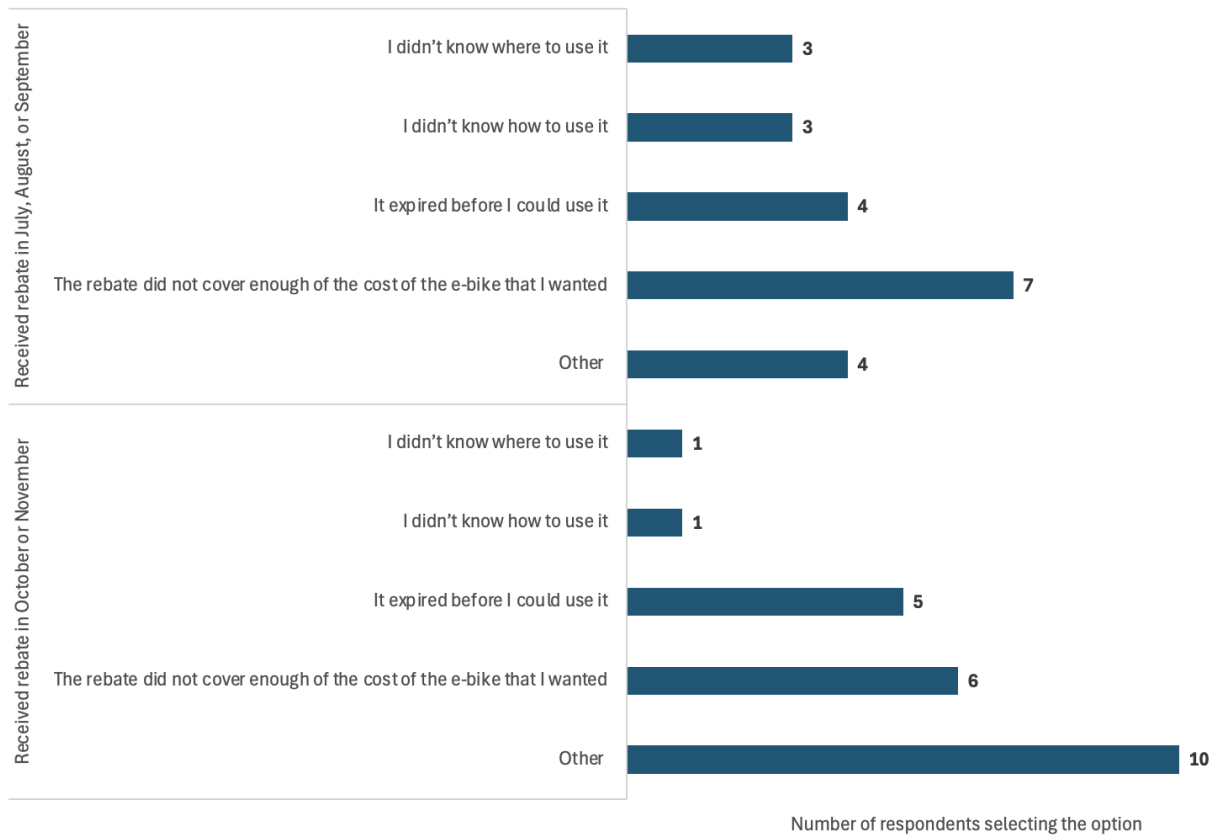
Other survey participants just highlighted the familiarity of vendors with the rebate program as part of the ease of the process.

About 11.6% of those who provided comments reported having a challenging experience while claiming and using the rebate. Many described the process as time-consuming, citing multiple trips to e-bike shops, repeated phone calls between vendors and the state, and long wait times to confirm the rebate and apply it to the purchase. Many also noted e-bike store staff misunderstood or did not know which bikes would qualify for the rebate and the items it covered. Some also mentioned that it was challenging to use the rebate due to high prices, narrow choices, and low availability (this last one particularly mentioned by those who received the rebate in the second phase).

Most of the remaining 9% of survey participants who responded provided other comments not related to their experience claiming and using the rebate.

#### 4.2.4.2 Challenges faced by those who did not use the e-bike rebate

A total of 26 survey respondents reported receiving the rebate but not using it and provided reasons for this decision (see Figure 4-10). The most mentioned reasons across both phases were that the rebate did not cover enough of the e-bike’s cost and that it expired before they were able to use it.



**Figure 4-10 Reasons for not using the rebate by phase**

Other reasons cited by survey respondents who received the rebate in the first phase included wanting a bike from a retailer that was not on the eligible list, encountering higher-than-expected prices, and not being able to afford the balance of the transaction.

*“The bike that I wanted had to be sold at [manufacturer's suggested retail price] MSRP according to the dealer, this turned what I thought would be a \$600 transaction into a \$1400 transaction, this was not financially feasible for me and I let my rebate expire.”* - Survey respondent

Other reasons cited by survey respondents who received the rebate in the second phase included limited availability of e-bikes, the weather at the time not favorable to test drive, encountering higher prices, not wanting or being able to pay the balance of the transaction, and not being able to use the rebate retroactively.

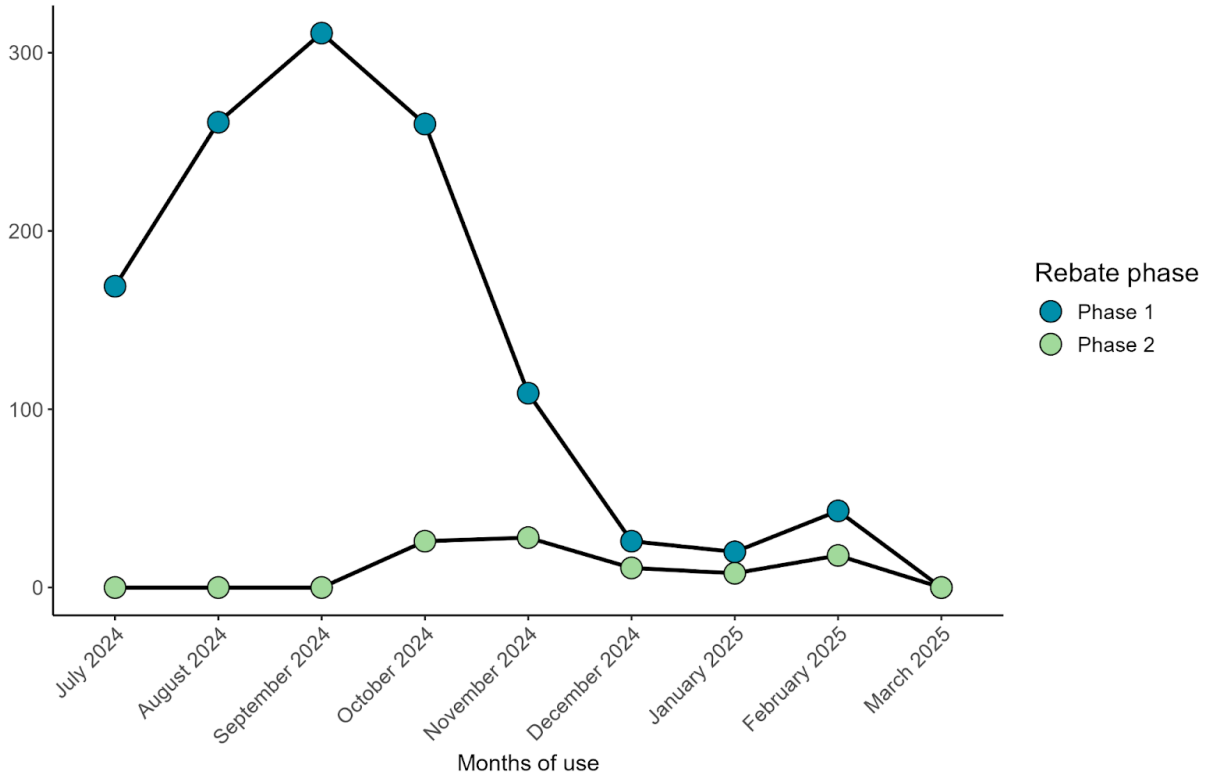
*“the participating shops were over priced compared to other places you could buy an ebike.”* - Survey respondent

*“I got an email stating I didn't receive the rebate so I bought an e-bike on my work. A month later I got an email stating I DID get the rebate but couldn't use it on my past purchase.”* - Survey respondent

*“It was no longer within my budget to purchase the ebike at that time. Had I received the rebate during the initial wave I would have purchased one.”* - Survey respondent

#### 4.2.4.3 Usage of the e-bike bought with a rebate

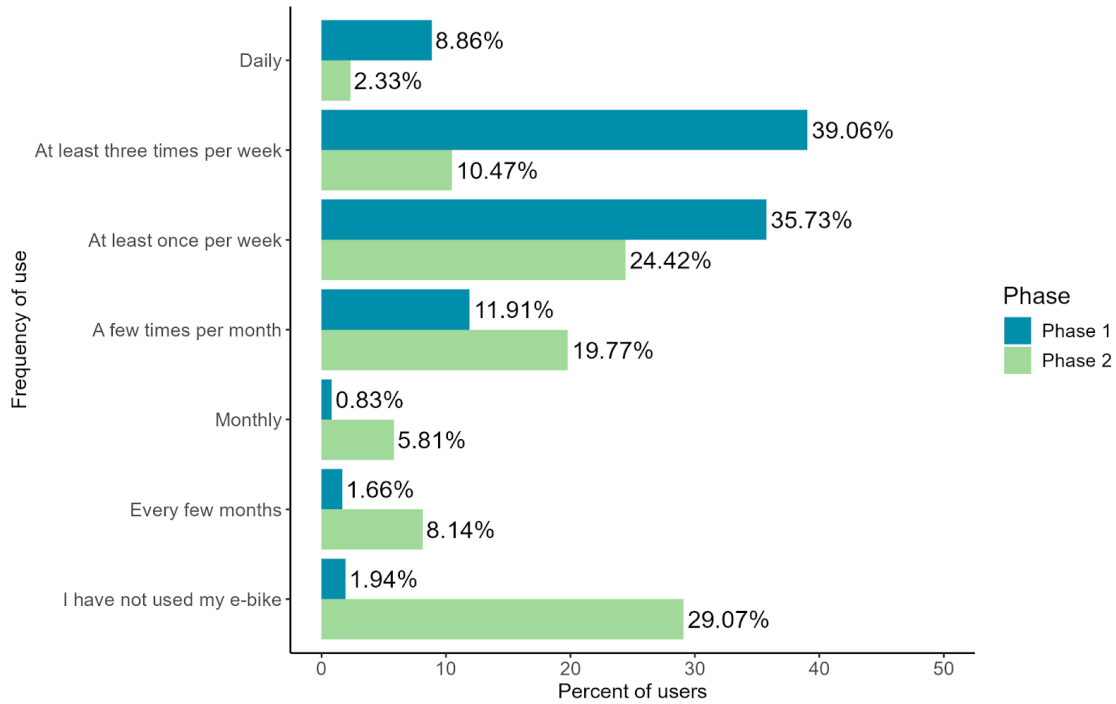
Survey respondents who received and used the e-bike rebate were asked when and how often they have used their rebate since purchasing. Figure 4-11 highlights e-bike usage by phase and by month. Most e-bike usage occurred at the tail end of summer and early fall. E-bike usage dropped in November, likely because of colder weather.



**Figure 4-11 Usage of e-bikes bought with the rebate by phase and by month**

Patterns in Figure 4-11 reflect the rollout of the rebate program. While the first round of rebate recipients purchased their bike between summer and fall (July and September) and may have been able to use it before fall and winter, the second round of rebate recipients purchased their bikes in the fall and winter (October through December), when the weather may have been more volatile affecting the usage of e-bikes. In addition, the survey was distributed in spring 2025, asking for the e-bike usage from July 2024 through March of 2025, which limits the analysis of the actual e-bike usage. As a result, e-bike usage captured in this study may not be representative of the year-long actual e-bike usage, especially for second round rebate users.

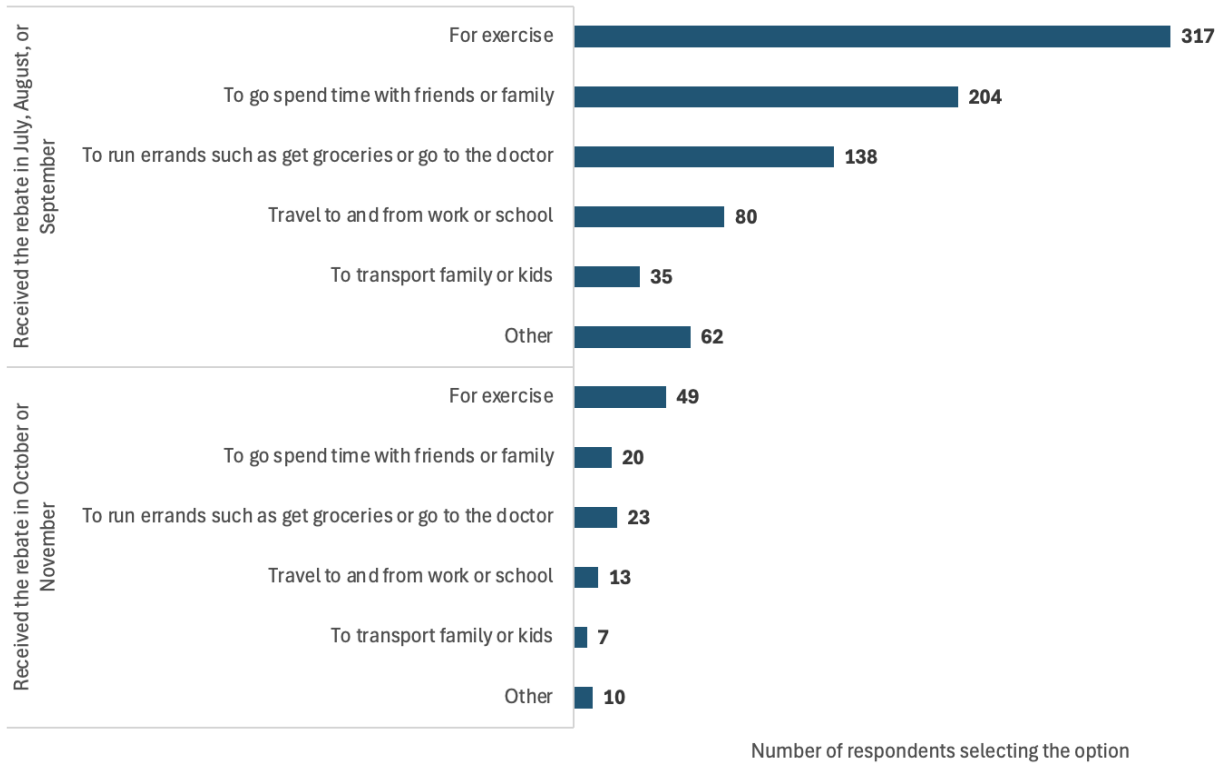
Survey participants identified as Phase 1 rebate users, those who used the rebate between July and September, reported using their e-bike more often than survey participants identified as Phase 2 users, who used the rebate between October and December. Most survey participants identified as Phase 1 users reported using their e-bike at least three times per week (39.1%), followed by those mentioning using it at least once per week (35.7%). Of survey participants identified as Phase 2 users, majority reported that they have not used their e-bike yet. This is followed by at least once per week (24.4%) and a few times per month (19.8%). Figure 4-12 shows the frequency of use for Phase 1 and Phase 2 recipients.



**Note:** The number of observations for Phase 1 is 361 and for Phase 2 is 86.

**Figure 4-12 Frequency of use of e-bikes purchased with the rebate by phase**

Of those who reported receiving the rebate, 411 provided information about the usage of their e-bike. Figure 4-13 shows a distribution of responses provided by survey participants by phase. Most survey respondents have used their e-bikes for exercise, to spend time with friends and family, and run errands. The responses are comparable across phases.

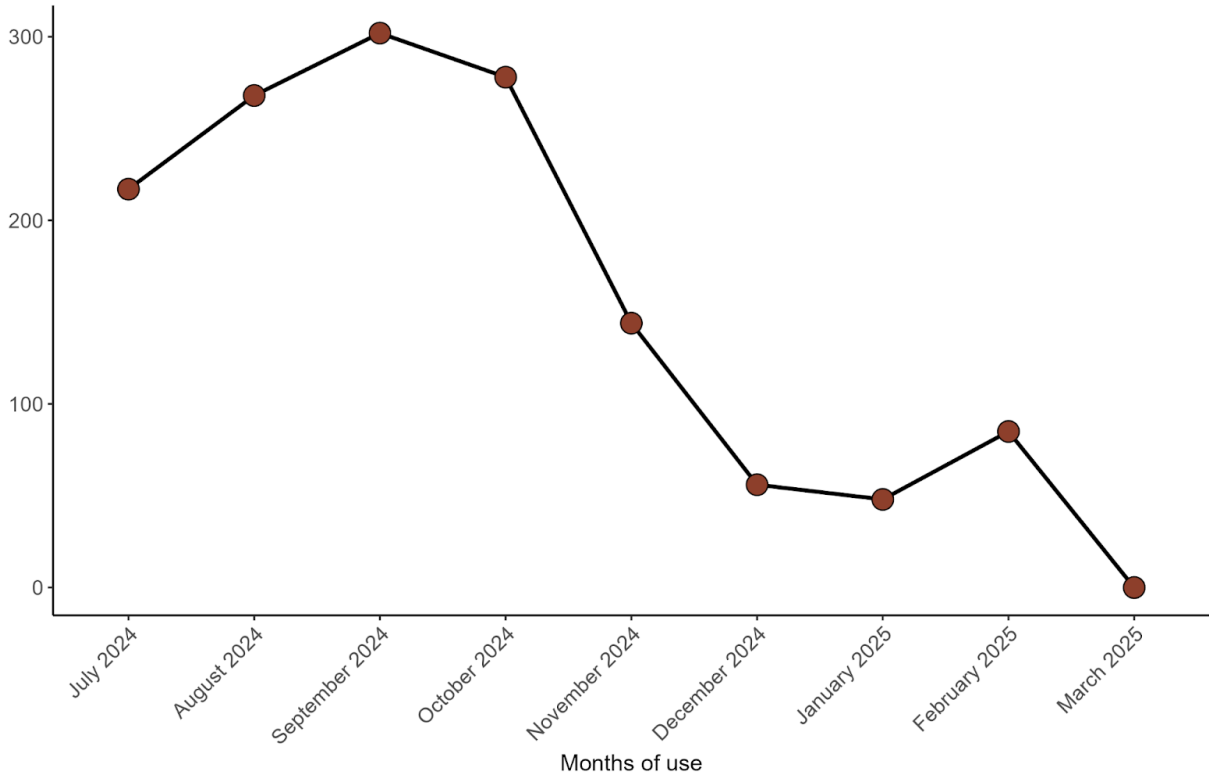


**Figure 4-13 Uses of e-bike bought with the rebate by phase**

Those respondents selecting other options mentioned using their e-bikes for recreational uses such as going to the golf course, beach, and parks, or hunting; for health-related reasons such as cardiac rehab or meditation; for enjoying outdoors and nature; and for pleasure and fun.

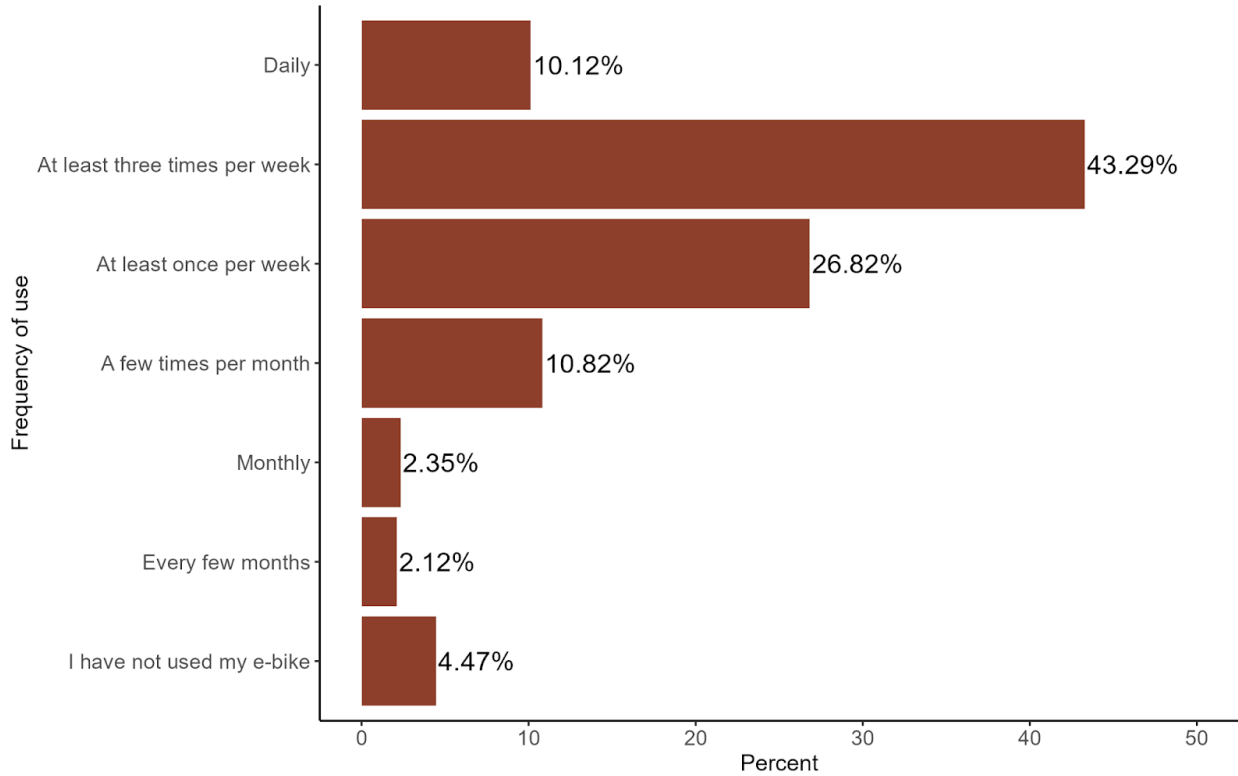
#### 4.2.4.4 Usage of e-bikes purchased without a rebate

Survey respondents who reported buying an e-bike without using a rebate used their e-bikes more during the end of the summer and early fall. E-bike usage dropped off in November, likely as a result of colder weather. These are similar to the patterns found in survey respondents identified as Phase 1 users. Figure 4-14 highlights e-bike usage by month.



**Figure 4-14 Usage of e-bikes bought without a rebate by month**

Survey participants who reported buying an e-bike without using the rebate also reported the frequency of use (see Figure 4-15). Most of them reported using their e-bikes at least three times per week (43.3%) followed by using it at least once per week (26.8%). These patterns are similar to survey participants identified as Phase 1 users.



**Note:** The number of observations is 425.

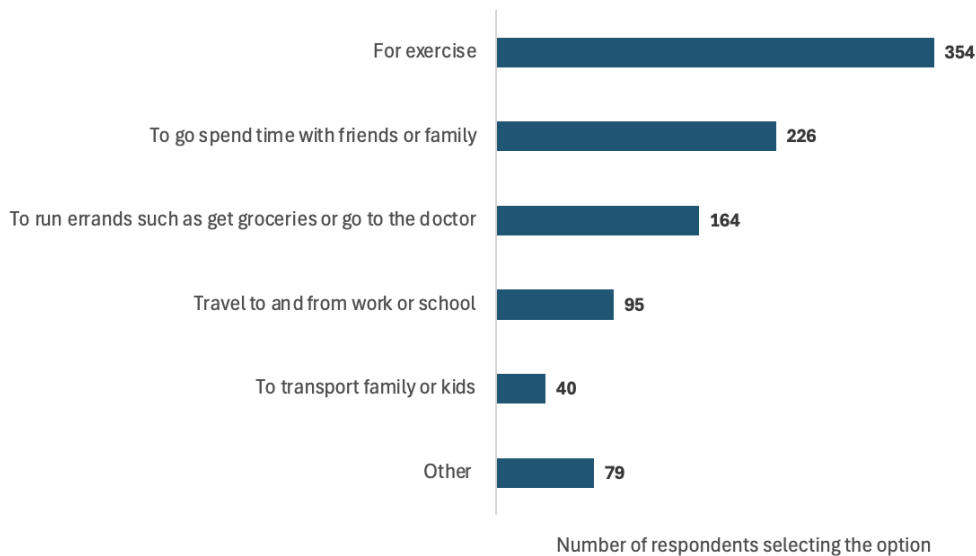
**Figure 4-15 Frequency of use of e-bikes purchased without the rebate**

Survey respondents were asked whether they purchased an e-bike without using a rebate, and 85.36% of respondents answered. Of those respondents that answered the question, regardless of whether they received the e-bike rebate or not, most (88.7%) did not purchase an e-bike without a rebate. Some respondents who received the rebate purchased a second e-bike at full price.

*“We used it to buy our bikes in Duluth from a store there. My wife couldn't get in the website to apply for the rebate so we paid full price for the second bike.” - Survey respondent*

Of those who did not receive the rebate, some (377 people, or 11.23%) noted that they purchased an e-bike without using the rebate.

Of those who reported having purchased an e-bike without using a rebate, 404 provided information about how they have used it. Figure 4-16 shows a distribution of responses provided by survey participants. Similar to those who bought the e-bike using the rebate, most survey respondents in this group have used their e-bikes for exercise, to spend time with friends and family, and run errands.



**Figure 4-16 Uses of e-bike bought without the rebate**

Those respondents selecting other options mentioned using their e-bikes for recreational uses such as going fishing (including ice fishing); for health-related reasons such as a therapy for hip; for exploring parts of the city or bike trails in the area; visiting local businesses; employment such as doing deliveries (DoorDash); contributing to significant causes such as doing the American Heart 100 miles; and for pleasure and fun.

#### 4.2.4.5 E-bike and program interest

There is still interest in the rebate program and for e-bikes in general. Most respondents who did not report that they received a rebate stated that they would still be interested in purchasing an e-bike (69.94%). The rebate program is still in demand - 77.90% of respondents who did not receive a rebate in 2024 stated that they are interested in applying in 2025.

The advertisement of the rebate program brought e-bikes to the forefront of some respondents' minds, resulting in the purchase of a bike without the rebate.

*“Before the e-bike rebate program, I had not considered getting an e-bike. It was the rebate program that made me research and look into getting an e-bike. ... Also, because of the awareness that the rebate program aroused in me, I did end up buying a lower-cost e-bike.” - Survey respondent*

## CHAPTER 5: CONCLUSION

### 5.1 SUMMARY OF RESULTS

An analysis of application data from the Minnesota Department of Revenue suggests a high level of interest in the e-bike rebate program across Minnesota. Applicants to the rebate were from various income levels and ages. There were income gaps between e-bike rebate applicants dependent on the applicant's filing status as compared to the state of Minnesota. Applicants filing jointly had a median adjusted gross income (AGI) that was 43.5% higher than the median household income in Minnesota, while applicants filing under all other tax statuses had a median AGI that was 46.4% lower than the median household income in Minnesota. Applicants married, filing jointly had a slightly higher AGI while all other filing statuses had a slightly lower AGI. Both rebate users who filed married, filing jointly and all other filers had slightly lower AGIs than applicants.

Among those filing jointly, applicants were slightly older than recipients and users. Among those filing under all other tax statuses, recipients were slightly older than applicants and users. Regardless of the taxing filing status, users were relatively younger than applicants (by three years, on average). However, the difference was not statistically significant. From application data, most rebate applicants, recipients, and users lived in the Twin Cities metro and Rochester.

An analysis of survey results suggests a higher representation from a subset of applicants to e-bike rebates. While the survey provided valuable insights, we acknowledge that the sample may not be representative of the applicants to the rebate program as income levels and age differ between the two groups. In terms of income, 58.39% of survey respondents' AGI was between \$25K-\$150K. In terms of age, survey respondents-skewed older than the application data regardless of application status — over half of respondents were mature adults to seniors, aged 55 and older. In addition, there was a higher representation of individuals working office jobs and those who may be retired or no longer working.

In addition, of survey respondents who provided their race or ethnicity, an overwhelming number of survey respondents identify as white and not Hispanic or Latino. Most survey respondents reported a household size of two people, with the next most common household size of one person. Survey respondents most frequently reported two vehicles in the household followed closely behind by one-vehicle households. Through emails and other written feedback, some respondents noted reducing the number of vehicles in their household due to the purchase of an e-bike through the rebate program.

When survey respondents provided their home zip code, among applicants, recipients, and users, most lived in Rochester or the Twin Cities metro, including various neighborhoods in Minneapolis and zip codes that include parts of Lakeville and White Bear Lake. On a per capita basis, the largest number of applications across applicants, recipients, and users was primarily found outside the Twin Cities metro and Rochester.

Many survey respondents held a negative opinion of the rebate process mainly due to the technical challenges experienced during the rollout and the time required to wait in the waiting room and fill out the application. Some also expressed concerns about it being unfair to those in rural areas, those not working desk jobs, those without multiple devices, and those who were not able to get into the rebate program during the first rollout. Many survey respondents held positive opinions of the process to claim the rebate as it was easy to follow and e-bike sellers handled most of the paperwork. A few survey respondents identified as rebate recipients, did not use the rebate citing reasons such as the rebate not covering enough of the e-bike's cost and the rebate certificate expiring before they were able to use it.

Most survey respondents did not change the number of traditional bikes in their household, with a small number adding or removing a bike. Of survey respondents who reported purchasing at least one e-bike, most purchased only one, with a number of respondents purchasing two. This shift in the number of e-bikes is likely due primarily to rebate recipients purchasing an e-bike with the rebate and/or household members of a rebate recipient also purchasing an e-bike at full price at the same time. Some respondents who did not receive a rebate purchased an e-bike at full price, with some purchasing a lower-priced bike than the one they wanted due to cost constraints.

## **5.2 2025 REBATE PROGRAM**

As identified in this report, there were some challenges with the design and rollout of the 2024 rebate program that are currently being addressed in the 2025-2026 session of the Minnesota State Legislature. As of May 2025, modifications to the rebate program are included in the Transportation Budget & Policy Omnibus bill (HF2438) but have not yet been passed. While modifications to the program exist, these would not change the total dollar amount allocated to the program (\$2,000,000) ([HF 2438 Article 3. Sec. 70-72. 94th Minnesota State Legislature. May 1, 2025.](#)).

Proposed changes that address some of the concerns raised by survey participants include the following. First, modifying the dollar amount of the rebate from \$1,500 to \$750. This proposed change would allow a higher number of rebate applicants to receive the rebate. However, this would also reduce the rebate's coverage of the cost of an e-bike. Second, another change would modify the amount of rebate to 75% of eligible expenses instead of a sliding scale between 50% and 75%. This proposed change increases the percentage of expenses covered by the rebate for all recipients regardless of their income. However, the total dollar amount of rebate would be lower.

Third, a random lottery would be established to select rebate recipients if the total number of rebate applications exceeds the available allocation of certificates. This is in place of the first-come, first-served application process used in the 2024 rebate program. This proposed change addresses concerns related to the fairness of the process for people in rural areas, those not working desk jobs, and those without multiple devices.

A fourth change would list an adjusted gross income cap of \$78,000 for a married individual filing jointly or \$41,000 for all other filers. This proposed change would remove the requirement that 40% of rebates go to married taxpayers filing jointly with an income under \$78,000 or any other filer with an adjusted

gross income under \$41,000. In addition, this change addresses concerns brought up by survey respondents related to rebates not being targeted to low-income individuals, who have higher transportation needs, and helps clarify the application process.

Other proposed changes include adding “is a person with a disability” and the applicable definition to the list of eligible individuals, modifying resident requirements, and specifying income tax return requirements. Some of these changes help clarify the application process and allow for better targeting of specific populations.

Conference committee negotiations were underway without a final passed bill when the session ended. Program modifications are subject to change as a result of these negotiations.

### **5.3 FUTURE RESEARCH**

Future research should focus on capturing year-round travel behavior, the effect of 2025 rebate program changes, analyzing other metropolitan areas throughout Minnesota, and studying opportunities to improve e-bike commuting support and infrastructure. Future research may also seek to understand e-bike users holistically throughout the state, regardless of whether they received a rebate.

E-bike rebate users may have shifts in travel behavior due to using the bike in lieu of a personal vehicle. However, current data available do not allow us to assess this effect, as a number of second phase respondents noted that they had not even used their bike yet. To understand the full impact of the rebate on travel behavior, a travel behavior study should be conducted. Specifically, this study should include late spring, summer, and early fall, when biking is generally easier for all ages and abilities. This study should be statewide to understand differences in e-bike travel in both the Twin Cities Seven County Metropolitan area and Greater Minnesota. Winter biking can be costly, as it often requires special gear, and may feel inaccessible to those who are less familiar or comfortable with cycling in cold conditions. In addition, winter maintenance of roadways and bike infrastructure varies widely across the state, even within cities from one neighborhood to another.

Future research may also analyze 2025 rebate recipients to understand how changes in the application process and selection as well as the dollar amount of rebate may have affected participation and use of the rebate. As the cohort of 2025 rebate recipients may have different income profiles due to proposed adjusted gross income caps, there is an opportunity to understand how travel behavior may be different across these income groups compared to the 2024 cohort.

This study includes a statewide analysis that generally compared the rebate cohort, segmented by the Twin Cities Seven County Metropolitan region and Greater Minnesota. Future research may review this rebate data to look at the other metropolitan areas in Minnesota including, but not limited to, Moorhead, Rochester, Saint Cloud, and Duluth.

Shifting trips from personal vehicles to e-bikes has the opportunity to reduce VMT. Survey findings suggest that rebate users are not overwhelmingly using their e-bikes for trips to work or school, some of the main contributors of VMT. Future research should focus on understanding the limitations that e-bike users face when commuting to schools and workplaces to understand the systemic gaps in support and infrastructure and therefore better support e-bike usage.

Lastly, traditional bikes and e-bikes can be methods to reduce VMT but e-bikes are still a newer technology for transportation. Future research can begin to understand who has e-bikes throughout the state. This can include where e-bikes are located, how many e-bikes a household may have, what similarities and differences e-bike owners may have across income, household size, number of vehicles, and other demographic and social characteristics, and what barriers may there still be to e-bike adoption throughout the state.

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## **APPENDIX A – E-BIKE REBATE EMAIL LIST SUBSCRIBERS**

**Table A-1 Table of E-Bike rebate email list subscribers**

<i>Emails and subscribers of list "Subscribers of Electric Bike (e-Bike) Rebate Certificate Applicants or Electric Bike (e-Bike) Retailers"</i>		
<b>Email date</b>	<b>Title</b>	<b>Number of subscribers</b>
5/22/24 11:28 AM	Watch our step-by-step video on how to apply for a Minnesota e-Bike Rebate Certificate	15,651
5/29/24 2:06 PM	The Minnesota e-bike rebate application opens June 5, 2024	16,607
6/4/24 1:00 PM	Here's your e-bike rebate application checklist for tomorrow	17,554
Note: no copies of "technical difficulties" emails that were sent between 6/4/24 and 7/1/24 and no copy of new date announcement email on 6/25/24		
7/1/24 10:34 AM	Reminder: Minnesota e-bike rebate application reopens tomorrow!	47,888
7/2/24 10:30 AM	TODAY: Minnesota e-Bike Rebate application reopens today at 11 a.m. (Central Time)	49,480
7/2/24 11:19 AM	Minnesota e-Bike Rebate application is now closed	49,979

## **APPENDIX B – OVERVIEW OF 2024 E-BIKE REBATE APPLICANT INFORMATION**

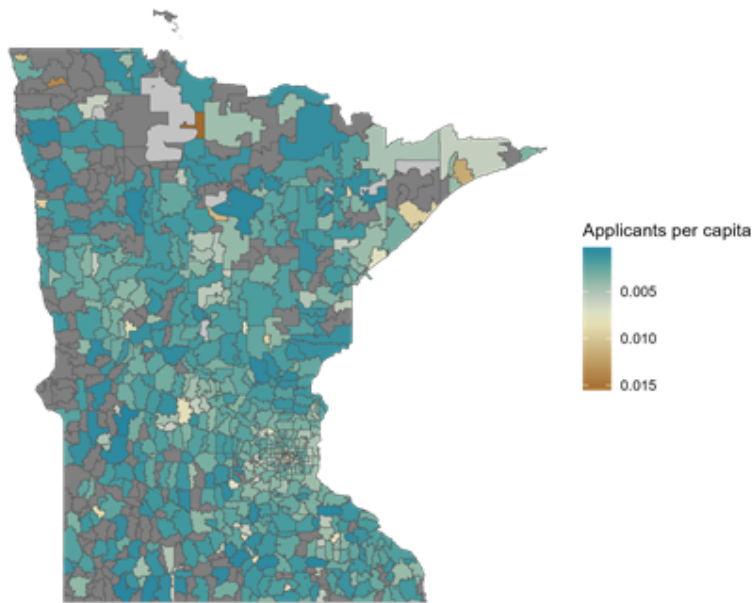
**Table B.1 Summary statistics for applicants, recipients, users, and denied applicants**

	All applicants			Recipients				Users		Denied Applicants			
	Total	Percent	All applicants	Phase 1	Phase 1 Percent	Phase 2	Phase 2 Percent	All recipients	All recipients percent	Total	Percent	Total	Percent
<b>2023 Reported Annual Gross Income</b>													
Median			\$ 81,535.00	\$ 67,858.50		\$ 104,157.00						\$ 82,066.00	
Average			\$ 110,369.69	\$ 104,101.91		\$ 136,778.77						\$ 110,225.70	
<b>Income bands</b>													
Negative	246	1.68%		17	1%	1	0%	18	1.18%	15	1.1%	228	2%
\$0-24,999	1,919	13.14%		187	16%	19	5%	206	13.56%	191	14.4%	1,713	13%
\$25,000-\$49,999	2,328	15.94%		257	22%	35	10%	292	19.22%	256	19.3%	2,036	16%
\$50,000-\$74,999	2,258	15.46%		164	14%	67	19%	231	15.21%	204	15.4%	2,027	15%
\$75,000-\$99,999	1,801	12.33%		110	9%	43	12%	153	10.07%	135	10.2%	1,648	13%
\$100,000-\$149,999	2,680	18.35%		181	15%	90	26%	271	17.84%	214	16.1%	2,409	18%
\$150,000-\$199,999	1,562	10.70%		117	10%	49	14%	166	10.93%	144	10.9%	1,396	11%
\$200,000-\$249,999	768	5.26%		62	5%	16	5%	78	5.13%	73	5.5%	690	5%
\$250,000-\$299,999	375	2.57%		35	3%	12	3%	47	3.09%	43	3.2%	328	3%
\$300,000-\$399,999	356	2.44%		18	2%	10	3%	28	1.84%	27	2.0%	328	3%
\$400,000+	308	2.11%		22	2%	7	2%	29	1.91%	25	1.9%	279	2%
<b>Total</b>	<b>14,601</b>	<b>100.00%</b>		<b>1,170</b>	<b>100%</b>	<b>349</b>	<b>100%</b>	<b>1,519</b>	<b>100.00%</b>	<b>1,327</b>	<b>100.0%</b>	<b>13,082</b>	<b>100%</b>
<b>Percent</b>	<b>100%</b>			<b>8%</b>		<b>2%</b>						<b>90%</b>	
<b>Age</b>													
Median			49.0	44.0		46.0						49.0	
Average			48.8	46.8		47.1						49.0	
<b>Age Bands</b>													
15-18	17	0.12%		1	0%	0	0%	1	0.07%	1	0.08%	16	0%
19-24	582	3.99%		51	4%	10	3%	61	4.02%	54	4.07%	521	4%
25-34	2,667	18.27%		251	21%	76	22%	327	21.54%	272	20.51%	2,340	18%
35-44	3,127	21.42%		291	25%	83	24%	374	24.64%	325	24.51%	2,753	21%
45-54	2,221	15.21%		177	15%	57	16%	234	15.42%	205	15.46%	1,987	15%
55-64	3,185	21.82%		201	17%	64	18%	265	17.46%	237	17.87%	2,920	22%
65-74	2,457	16.83%		164	14%	54	16%	218	14.36%	199	15.01%	2,239	17%
75-84	304	2.08%		27	2%	3	1%	30	1.98%	26	1.96%	274	2%
85-94	37	0.25%		7	1%	0	0%	7	0.46%	7	0.53%	30	0%
95-104	2	0.01%		0	0%	1	0%	1	0.07%	0	0.00%	1	0%
<b>Total</b>	<b>14,599</b>	<b>100.00%</b>		<b>1,170</b>	<b>100%</b>	<b>348</b>	<b>100%</b>	<b>1,518</b>	<b>100.00%</b>	<b>1,326</b>	<b>100.0%</b>	<b>13,081</b>	<b>100%</b>
<b>Percent</b>	<b>100%</b>			<b>8%</b>		<b>2%</b>						<b>90%</b>	
<b>Age categories</b>													
Young-middle age adults (25-44)	6,393	43.79%		594	51%	169	49%			652	49%	5,630	43%
Older adults (45-64)	5,406	37.03%		378	32%	121	35%			442	33%	4,907	38%
Seniors (65+)	2,800	19.18%		198	17%	58	17%			232	17%	2,544	19%
<b>Tax filing status</b>													
Head of Household	625	4.28%		65	6%	13	4%	78	5.13%	64	4.8%	547	4%
Married, Filing Jointly	8,614	59.00%		663	57%	209	60%	872	57.41%	770	58.0%	7,742	59%
Married, Filing Separately	240	1.64%		13	1%	3	1%	16	1.05%	14	1.1%	224	2%
Single	5,121	35.08%		429	37%	124	36%	553	36.41%	479	36.1%	4,568	35%
<b>Total</b>	<b>14,600</b>	<b>100.00%</b>		<b>1,170</b>	<b>100%</b>	<b>349</b>	<b>100%</b>	<b>1,519</b>	<b>100.00%</b>	<b>1327</b>	<b>100.0%</b>	<b>13,081</b>	<b>100%</b>
<b>Percent</b>	<b>100%</b>			<b>8%</b>		<b>2%</b>						<b>90%</b>	

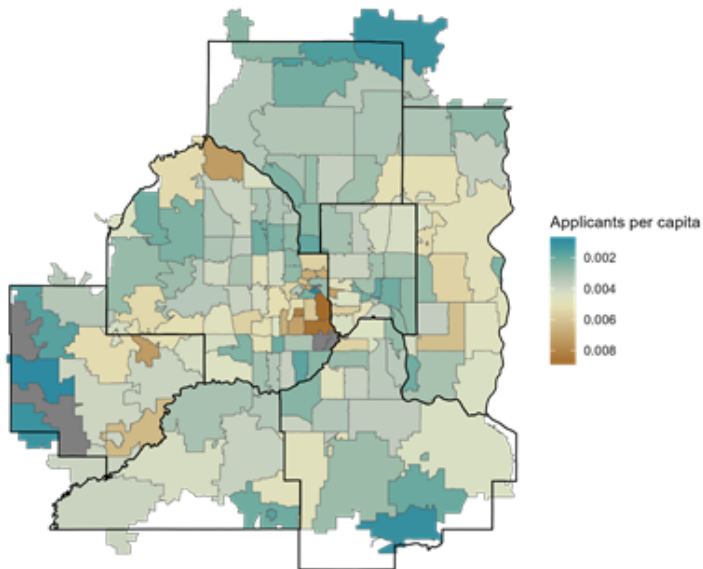
Zip codes	All applicants				Recipients				Users			
	Code	Number	Percent	Per capita	Code	Number	Percent	Per capita	Code	Number	Percent	Per capita
<b>Top 3 Zip Codes by number</b>												
1)	55406	257	1.8%	0.00800	55406	35	2.3%	0.00109	55406	33	2.49%	0.00103
2)	55044	204	1.4%	0.00432	55044	22	1.4%	0.00047	55417	21	1.58%	0.00084
3)	55901	189	1.3%	0.00364	55417	22	1.4%	0.00088	55044	20	1.51%	0.00042
<b>Top 3 Zip Codes by per capita</b>												
1)	56685	2	0.01%	0.01709	56685	1	0.07%	0.00855	56685	1	0.08%	0.00855
2)	55415	31	0.21%	0.01190	56089	1	0.07%	0.00645	56089	1	0.08%	0.00645
3)	56731	1	0.01%	0.01075	55615	1	0.07%	0.00391	55615	1	0.08%	0.00391

**APPENDIX C – APPLICANTS, RECIPIENTS, AND USERS OF THE E-BIKE REBATE PER CAPITA**

Zip codes with a greater number of people are more likely to have a greater number of applications submitted for the e-bike rebate. To compare evenly across zip codes without population weighing the results, we present results on a per capita basis. Given that the e-bike rebate was only open to those aged 15 and older, the total number of people aged 15 and older is used as our population baseline for each given zip code. Researchers used population data from the 2020 American Community Survey (ACS) published by the U.S. Census Bureau at the Zip Code Tabulation Area level (U.S. Census Bureau, 2020). The per capita information for applicants is presented in Figure C-1, recipients in Figure C-2, and users in Figure C-3.



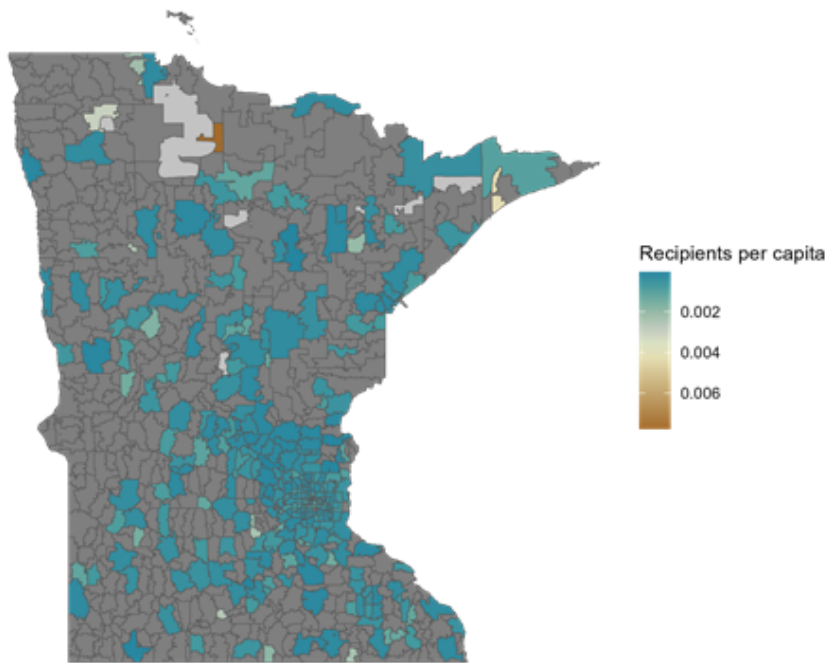
**Panel A. Applicants in Minnesota**



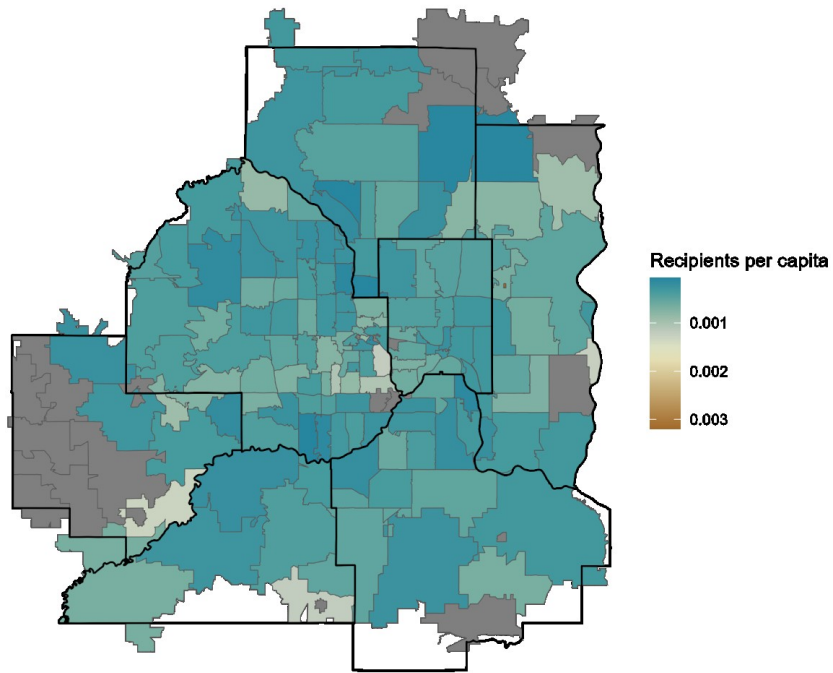
**Panel B. Applicants the Twin Cities Seven-County Metropolitan Area**

**Notes:** Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. **Source:** (DOR, 2025; U.S. Census Bureau, 2020, 2024b, 2024a)

**Figure C-1 Applicant per capital by zip code**



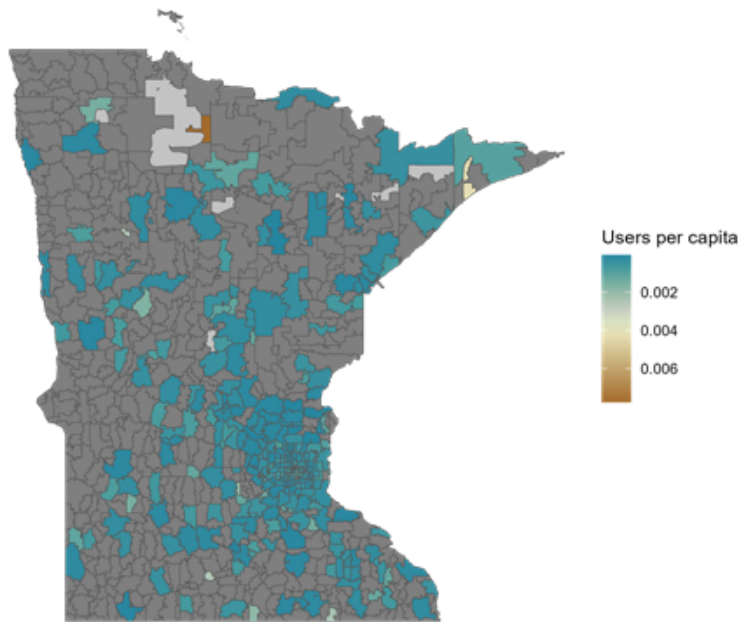
**Panel A. Recipients in Minnesota**



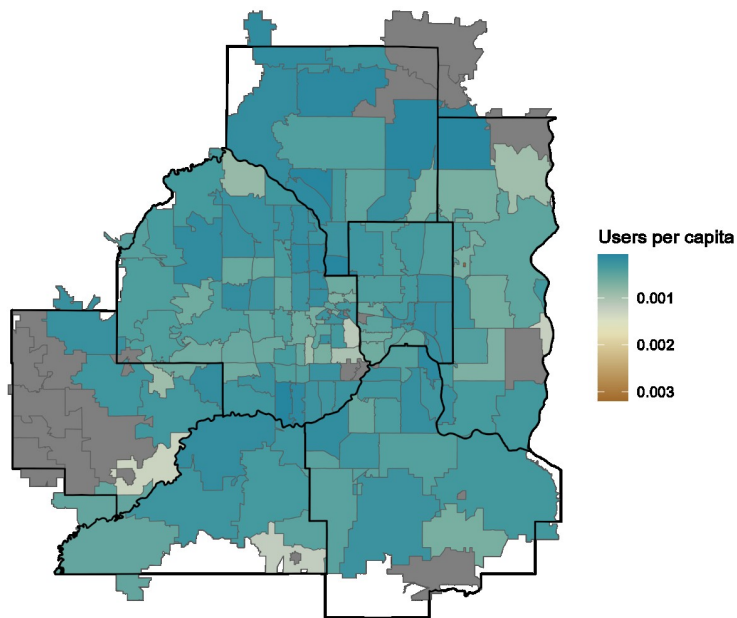
**Panel B. Recipients the Twin Cities Seven-County Metropolitan Area**

**Notes:** Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. **Source:** (DOR, 2025; U.S. Census Bureau, 2020, 2024b, 2024a)

**Figure C-2 Recipient per capital by zip code**



**Panel A. Users in Minnesota**



**Panel B. Users the Twin Cities Seven-County Metropolitan Area**

*Notes:* Zip codes colored in grey include those with NA and zero values. Zip codes in light grey include Tribal nations. *Source:* (DOR, 2025; U.S. Census Bureau, 2020, 2024b, 2024a)

**Figure C-3 User per capital by zip code**

## **APPENDIX D – QUESTIONNAIRE OF THE E-BIKE REBATE SURVEY**

Thank you for your participation in the Electric-Assisted Bicycle Rebate (e-Bike Rebate) program for 2024. Researchers at the Humphrey School of Public Affairs at the University of Minnesota are collaborating with the Minnesota Department of Transportation (MnDOT), and the Minnesota Department of Revenue in a study to learn more about the e-bike rebate and applicants' interest in e-biking to support potential future programs and transportation planning. The Minnesota Department of Revenue is distributing this survey and received your contact information from your 2024 e-Bike Rebate application. The survey would take about 15 minutes for you to complete. This survey will cover your feedback on the application process, information about how you used the rebate, demographic information, and the opportunity to be notified on future research. Any information requested is voluntary, please provide the level of detail that you feel comfortable with. The information you provide is anonymous and will not impact your participation in future rebate cycles. There is no compensation for completing this survey. Contact information: Should you have any questions or concerns about the survey, please reach out to Kaitlyn Denten, Researcher at the University of Minnesota, at [kdenten@umn.edu](mailto:kdenten@umn.edu); or Kristina Heggedal, Future Mobility Planner at MnDOT, at [Kristina.Heggedal@state.mn.us](mailto:Kristina.Heggedal@state.mn.us).

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### **Rebate information**

Q1 Please describe your experience with the rebate application process.

---

Q2 Did you receive any follow-up stating that you were eligible to receive the rebate or if additional information was required to confirm your eligibility?

- Yes (1)
  - No (2)
  - I don't remember (3)
- 

*Display this question:*

*If Did you receive any follow-up stating that you were eligible to receive the rebate or if addition... = Yes*

Q3 Please describe your experience with the follow-up email you received.

---

Q5 Did you receive the rebate?

- Yes, I received the rebate in July, August, or September (1)
  - Yes, I received the rebate in October or November (2)
  - I did not receive the rebate (3)
  - I do not know if I received the rebate (4)
- 

*Display this question:*

*If Did you receive the rebate? = Yes, I received the rebate in July, August, or September  
Or Did you receive the rebate? = Yes, I received the rebate in October or November*

Q4 Please describe your experience claiming and using the rebate.

---

*Display this question:*

*If Did you receive the rebate? = Yes, I received the rebate in July, August, or September  
Or Did you receive the rebate? = Yes, I received the rebate in October or November*

Q6 Did you use the rebate to purchase an e-bike?

- Yes (8)
- No (9)

---

*Display this question:*

*If Did you use the rebate to purchase an e-bike? = Yes*

Q7 Please select the months you have used your e-bike since purchasing

- July 2024 (1)
- August 2024 (2)
- September 2024 (3)
- October 2024 (4)
- November 2024 (5)
- December 2024 (6)
- January 2025 (7)
- February 2025 (8)
- March 2025 (9)

---

*Display this question:*

*If Did you use the rebate to purchase an e-bike? = Yes*

Q8 On average over the months specified in the previous question, how often did you use your e-bike?

- Daily (1)
- At least three times per week (2)
- At least once per week (3)
- A few times per month (4)
- Monthly (5)
- Every few months (6)
- I have not used my e-bike (7)

---

*Display this question:*

*If On average over the months specified in the previous question, how often did you use your e-bike? = Daily*  
*Or On average over the months specified in the previous question, how often did you use your e-bike? = At least three times per week*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = At least once per week*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = A few times per month*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = Monthly*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = Every few months*

Q9 How have you used your e-bike? Please select all that apply:

- Travel to and from work or school (1)
- To run errands such as get groceries or go to the doctor (2)
- For exercise (3)
- To go spend time with friends or family (4)
- To transport family or kids (5)
- Other (please describe below) (6) \_\_\_\_\_

---

*Display this question:*

*If Did you use the rebate to purchase an e-bike? = No*

Q10 Why didn't you use the rebate? (please choose all that apply)

- I forgot about the rebate (1)
- It expired before I could use it (2)
- I didn't know where to use it (3)
- I didn't know how to use it (4)
- The rebate did not cover enough of the cost of the e-bike that I wanted (5)
- Other (please describe below) (6) \_\_\_\_\_

---

*Display this question:*

*If Did you receive the rebate? = I did not receive the rebate*

Q11 Do you have any comments on not receiving the rebate? Your comments are important to help us improve the process of any future rebate programs.

---

*Display this question:*

*If Did you receive the rebate? = I do not know if I received the rebate*

Q12 Do you have any comments about being unaware whether you received the rebate? Your comments are important to help us improve the process of any future rebate programs.

---

Q13 During the rebate period of July-December 2024, did you purchase an e-bike without using a rebate?

Yes (1)

No (2)

---

*Display this question:*

*If During the rebate period of July-December 2024, did you purchase an e-bike without using a rebate? = Yes*

Q14 Please select the months you have used your e-bike since purchasing

July 2024 (1)

August 2024 (2)

September 2024 (3)

October 2024 (4)

November 2024 (5)

December 2024 (6)

January 2025 (7)

February 2025 (8)

March 2025 (9)

---

*Display this question:*

*If During the rebate period of July-December 2024, did you purchase an e-bike without using a rebate? = Yes*

Q15 On average over the months specified in the previous question, how often did you use your e-bike?

- Daily (1)
- At least three times per week (2)
- At least once per week (3)
- A few times per month (4)
- Monthly (5)
- Every few months (6)
- I have not used my e-bike (7)

---

*Display this question:*

*If On average over the months specified in the previous question, how often did you use your e-bike? = Daily*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = At least three times per week*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = At least once per week*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = A few times per month*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = Monthly*

*Or On average over the months specified in the previous question, how often did you use your e-bike? = Every few months*

Q16 How have you used your e-bike? Please select all that apply:

- Travel to and from work or school (1)
- To run errands such as get groceries or go to the doctor (2)
- For exercise (3)
- To go spend time with friends or family (4)
- To transport family or kids (5)
- Other (please describe below) (6)

---

*Display this question:*

*If Did you receive the rebate? = I did not receive the rebate*

*Or Did you receive the rebate? = I do not know if I received the rebate*

Q17 Even though you did not receive a rebate in 2024, are you still interested in purchasing an e-bike?

- Yes (1)
- Maybe (2)
- No (3)

---

*Display this question:*

*If Even though you did not receive a rebate in 2024, are you still interested in purchasing an e-bike? = Yes*

*Or Even though you did not receive a rebate in 2024, are you still interested in purchasing an e-bike? = Maybe*

Q18 Are you planning to apply for the rebate in 2025 to help you purchase an e-bike?

Yes (1)

Maybe (2)

No (3)

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**Demographic information**

Q19 How many personal cars and light-duty trucks do you have in your household?

0 (1)

1 (2)

2 (3)

3 or more (4)

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Q20 How many bicycles did you have in your household before and after the rebate period (June-December 2024)? A traditional bicycle is defined as a bicycle that uses pedaling to propel forward, whereas an electric bicycle is a bicycle that uses a motor to propel forward.

	Before June 2024 (1)	After December 2024 (2)
Traditional bicycles (1)		
Electric bicycles (2)		

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Q21 How many people are in your household?

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Q22 Please select your age:

Under 18 (1)

18 - 24 (2)

25 - 34 (3)

35 - 44 (4)

45 - 54 (5)

55 - 64 (6)

65 - 74 (7)

75 or older (8)



Q23 What is your race?

- White (1)
  - Black or African American (2)
  - American Indian or Alaska Native (3)
  - Asian (4)
  - Native Hawaiian or Pacific Islander (5)
  - Some other race (please specify) (6) \_\_\_\_\_
- 

Q24 Are you of Hispanic, Latino, or Spanish origin?

- Yes (1)
  - No (2)
-

Q25 Please specify your annual household income:

- \$0-\$24,999 (1)
  - \$25,000-\$49,999 (2)
  - \$50,000-\$74,999 (3)
  - \$75,000-\$99,999 (4)
  - \$100,000-\$149,999 (5)
  - \$150,000-\$199,999 (6)
  - \$200,000+ (7)
- 

Q26 What is your current home ZIP code?

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Q29 Are you retired, work in the home, or otherwise do not have a workplace zip code? If yes, please skip the next question about your workplace ZIP code as you see fit.

- Yes (1)
  - No (2)
-

Q27 What is your current workplace ZIP code?

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Thank you for your responses. The Minnesota Department of Transportation (MnDOT) is exploring a follow-up survey for interested participants to analyze the use of e-bikes by rebate recipients. If you are interested in learning more and potentially participating in this future study, please provide your contact information through this link: <https://forms.gle/S3B4jGMiXs9titfC>