THREE-YEAR REPORT

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Contents

Overview

Launched in October 2020, the 511 Contra Costa (511CC) E-Bike Rebate Program (www.511cc.org/rebate) has issued 1,245 rebates to county residents. Sponsored by the Contra Costa Transportation Authority with funding from the local half-cent sales tax known as Measure J, the program has two main goals:

1) To incentivize county residents to purchase an e-bike for use as transportation for local trips, and
2) To create an unofficial team of "E-bike Ambassadors" who will promote the mode of e-biking in their communities.

The program was created to promote a transportation experience ***unlike traditional biking*** that appeals to a much larger segment of the population, namely auto drivers of all ages and fitness levels. The program exists to build public awareness about e-bikes and their potential for everyday use as a clean, convenient, and inexpensive mode of personal transportation.

Rebates are issued in two amounts: **$150 Standard** and **$300 Low-income**. Low-income refers to households that earn 400% or less of the Federal Poverty Level. In comparison to other e-bike rebate programs which provide larger rebates, 511CC's smaller amount enables the program to reach more participants per dollar spent.

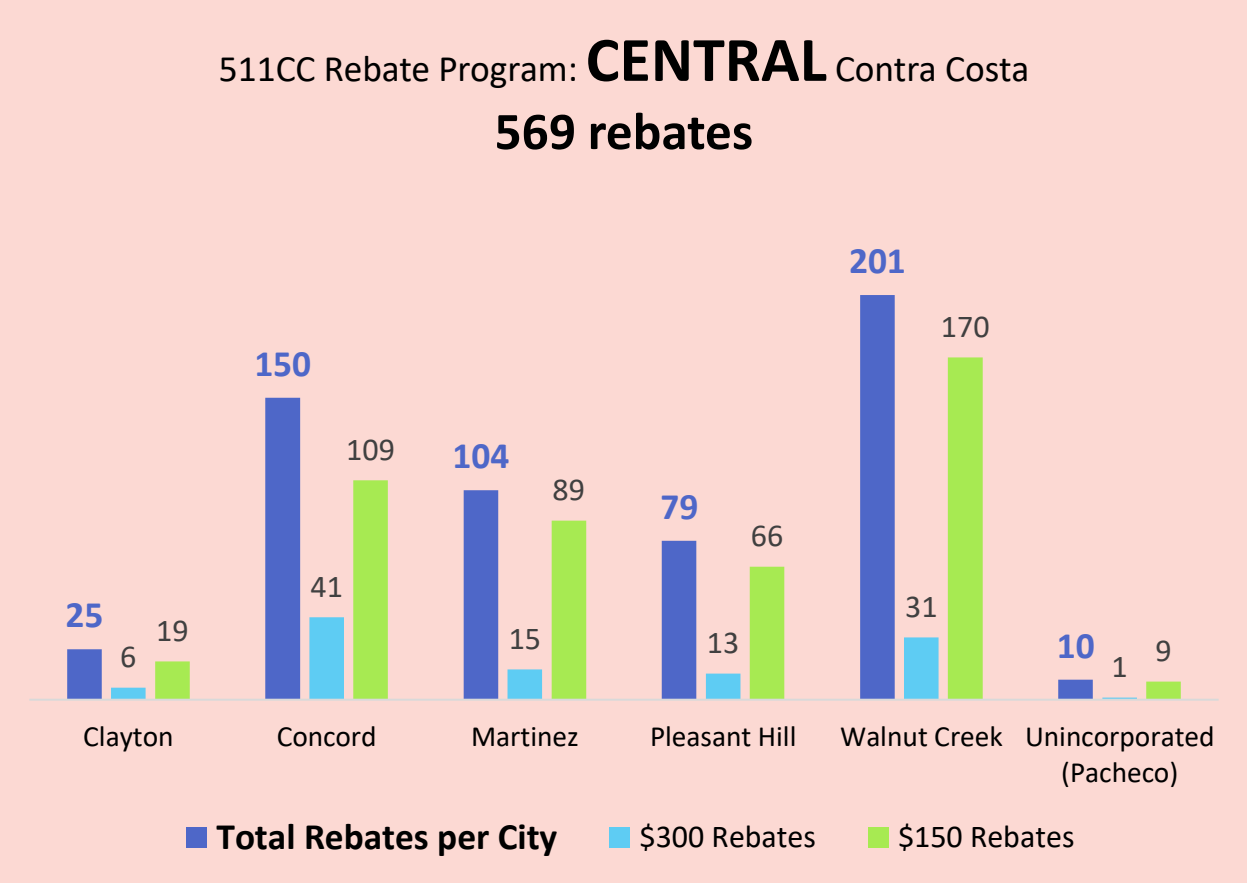
Background & Eligibility

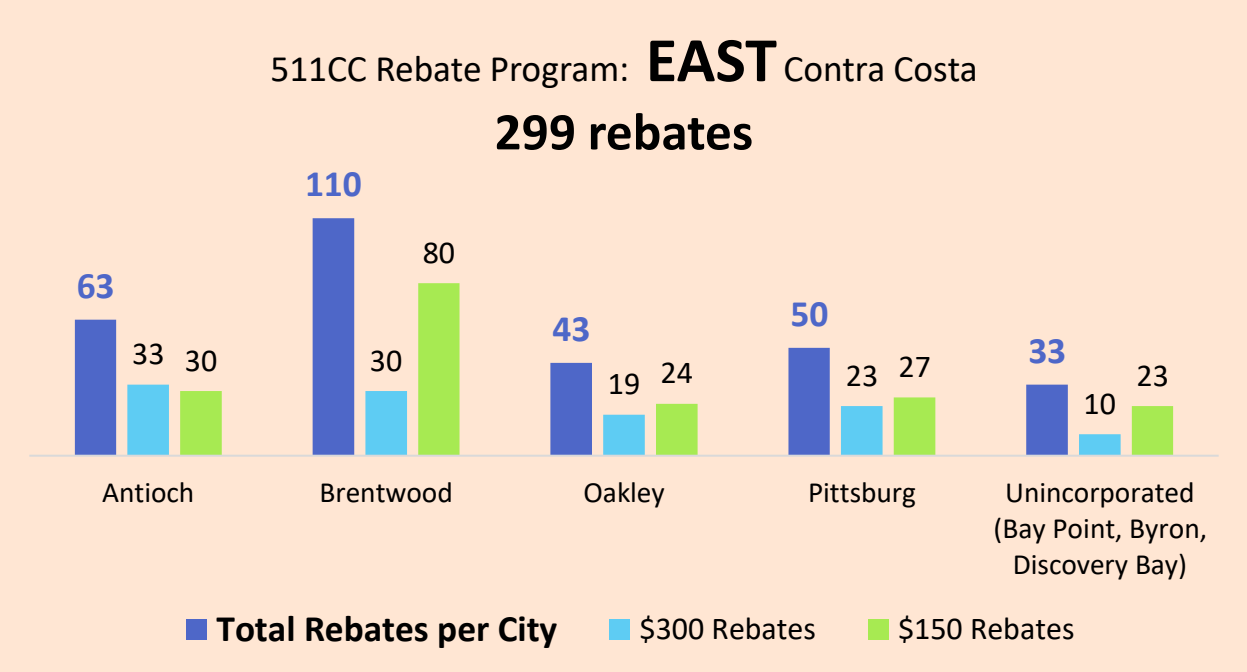
Since 2020, bikeshare programs have been sporadically available in a few Contra Costa cities. Due to the spread-out suburban nature of the county, local transit service does not meet the everyday needs of many residents, making vehicle transport the most common and convenient mode in the county for local trips.

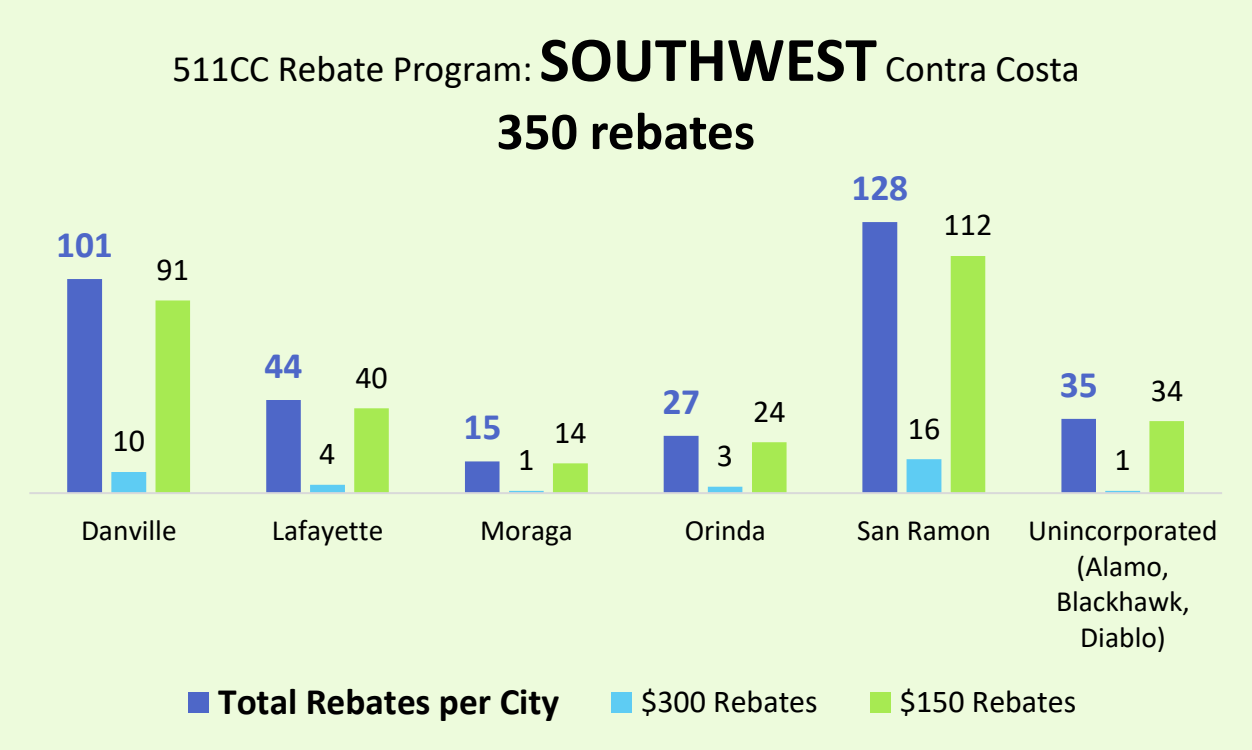
All Class 1, 2, and 3 e-bikes qualify for rebates, as do new e-bike conversion kits. E-bikes must be new and can be purchased from any retailer. The sales receipt must show the purchase date, the bike's make/model, its price, and sales tax paid. Applicants also provide verification of county residence, age (18+), a photo of the e-bike's serial number to prove possession, and, if applying for the Low-income rebate, proof of income eligibility. Program materials are available in English and Spanish.

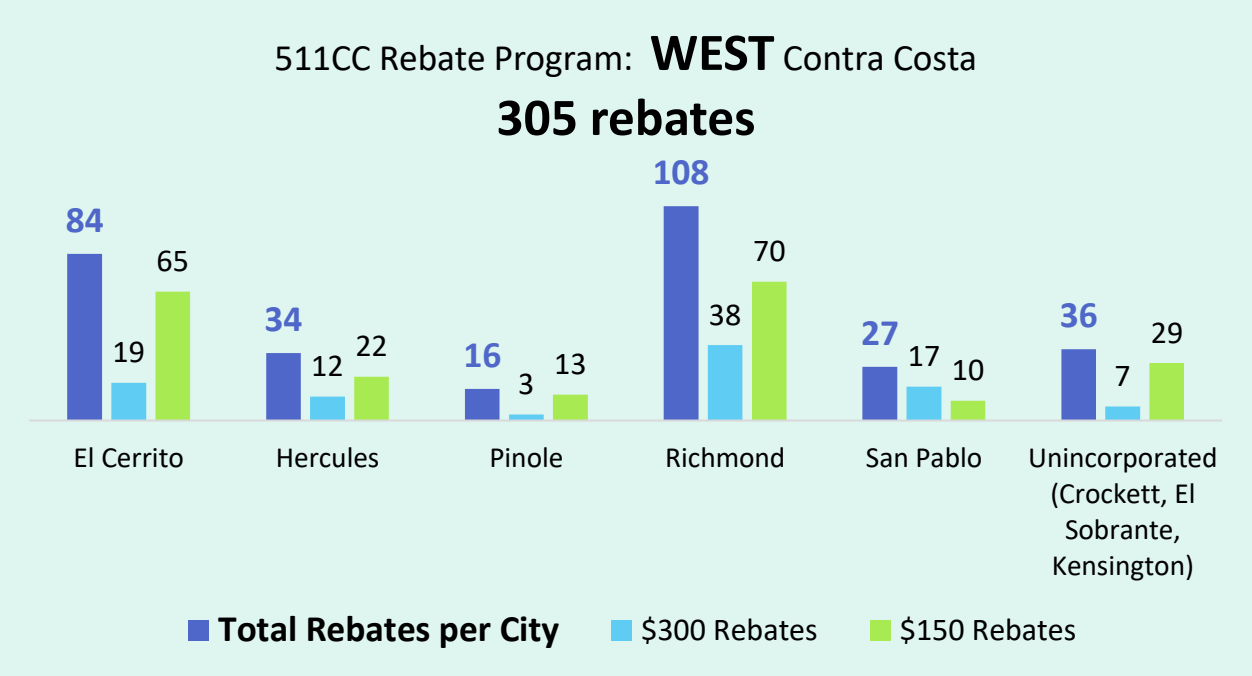
Rebate Distribution by City

Contra Costa County has 19 cities and numerous unincorporated communities. Below is a breakdown of rebates issued by city, within the county's four subregions:


511CC Rebate Program: CENTRAL Contra Costa
569 rebates
25
6
19
150
41
109
104
15
89
79
13
66
201
31
170
10
1
9
Clayton
Concord
Martinez
Pleasant Hill
Walnut Creek
Unincorporated (Pacheco)
Total Rebates per City
$300 Rebates
$150 Rebates

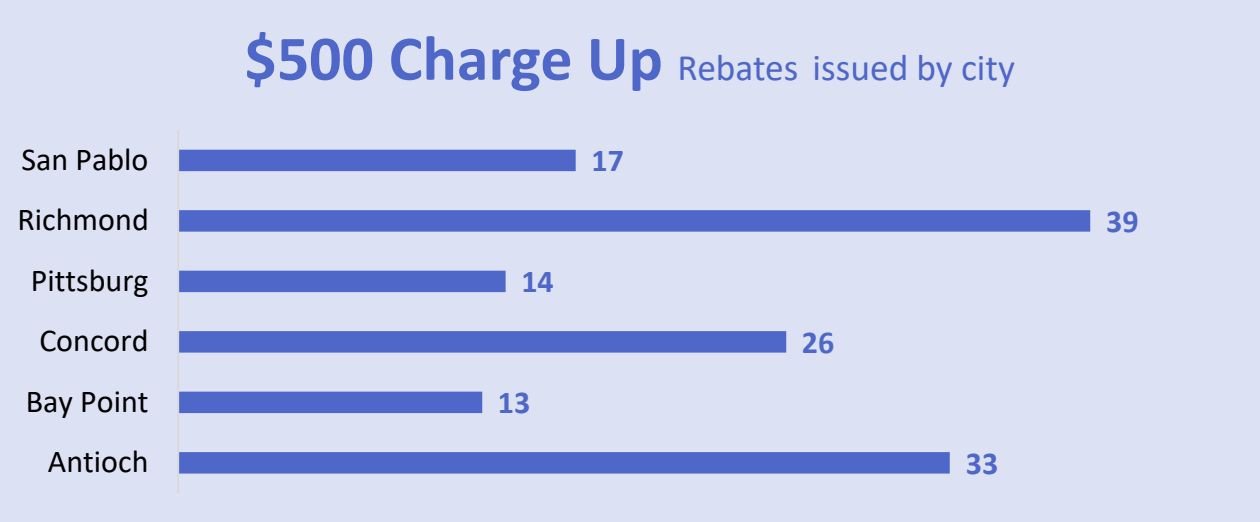

511CC Rebate Program: EAST Contra Costa
299 rebates
63
33
30
110
30
80
43
19
24
50
23
27
33
10
23
Antioch
Brentwood
Oakley
Pittsburg
Unincorporated (Bay Point, Byron, Discovery Bay)
Total Rebates per City
$300 Rebates
$150 Rebates


511CC Rebate Program: SOUTHWEST Contra Costa
350 rebates
101
10
91
44
4
40
15
1
14
27
3
24
128
16
112
35
1
34
Danville
Lafayette
Moraga
Orinda
San Ramon
Unincorporated (Alamo, Blackhawk, Diablo)
Total Rebates per City
$300 Rebates
$150 Rebates

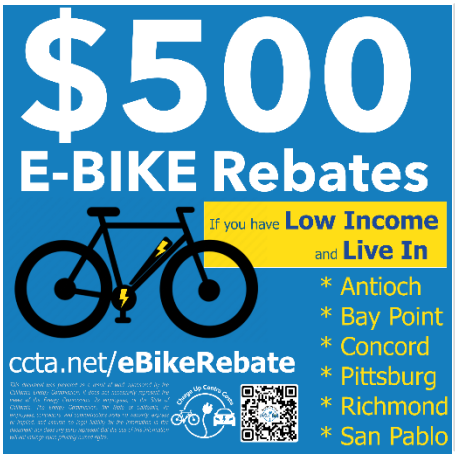

511CC Rebate Program: WEST Contra Costa
305 rebates
84
19
65
34
12
22
16
3
13
108
38
70
27
17
10
36
7
29
El Cerrito
Hercules
Pinole
Richmond
San Pablo
Unincorporated (Crockett, El Sobrante, Kensington)
Total Rebates per City
$300 Rebates
$150 Rebates

Charge Up Contra Costa

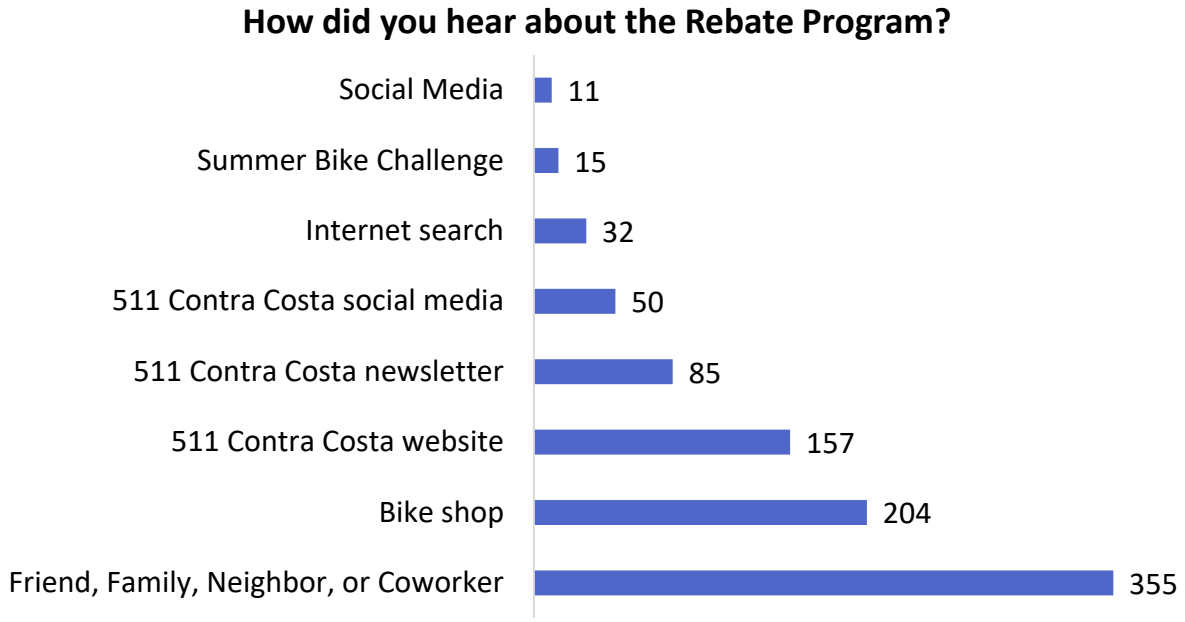
In February 2022, the Contra Costa Transportation Authority opened a second, more limited e-bike rebate program called Charge Up Contra Costa (www.ccta.net/ebikerebate), with funding from the California Energy Commission. Charge Up provides $500 rebates and is limited to people who have low household incomes **and** who live in the highest Equity Priority Communities of the county: Antioch, Bay Point, Concord's Monument Corridor, Pittsburg, Richmond, and San Pablo. Both the 511CC and the Charge Up rebate programs are managed by the same staff, so applicants are directed to the most beneficial rebate program for which they are eligible. Since 2022, 142 Charge Up rebates have been issued.



Promotions & Advertising



For simplicity in marketing, both rebate programs tend to be promoted together, with the dollar amount advertised as "$150-$500."



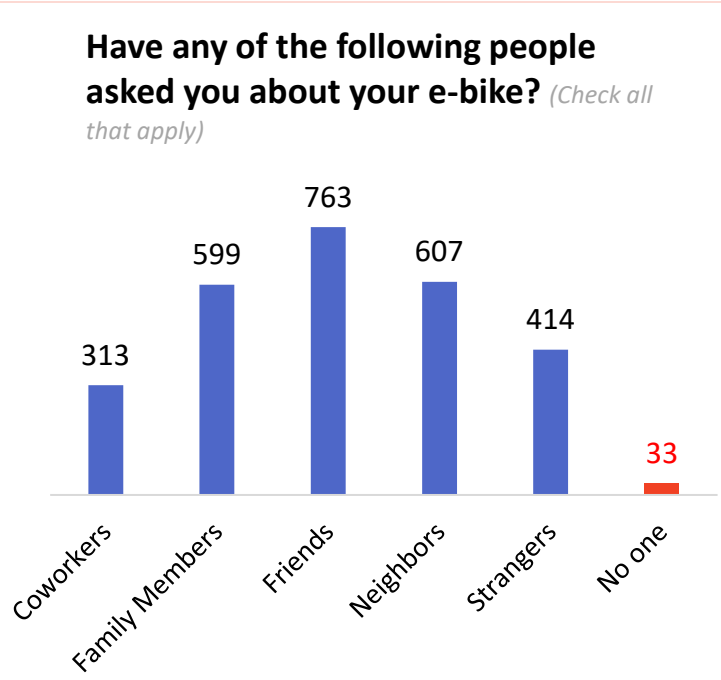
Special note: 511CC's October 2023 newsletter article about the e-bike rebate program generated an unusually high number of unique clicks in the week after distribution: 1,375 total clicks from 1,011 unique individuals. As many as 264 people clicked more than once.

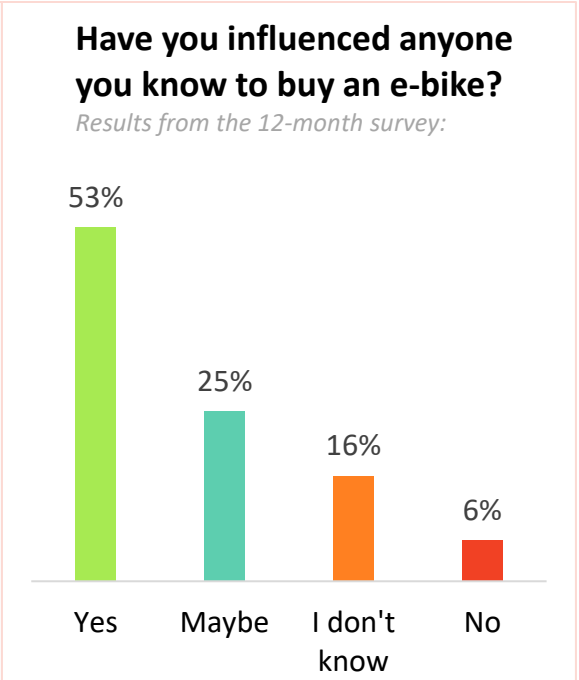
As indicated in their applications, 32% of participants said they heard about the program directly from 511 Contra Costa via the website, newsletter, social media, or from staff running 511 Contra Costa's popular Summer Bike Challenge program.

"Bike shop" is a large source of program advertising (22%), and several specific shops were named including Aventon (3), Rad Power Bikes (5), REI (1), and Trek (1).

The largest share of program promotion (37%) comes from word-of-mouth advertising between friends, family, neighbors, and coworkers. One of the original goals of this program was to create unofficial "E-Bike Ambassadors" throughout the county who would receive a rebate and then promote the mode to others.

Out of 942 responses to the follow up survey question, "Have any of the following people asked you about your e-bike? (Check all that apply)" the following responses were recorded:





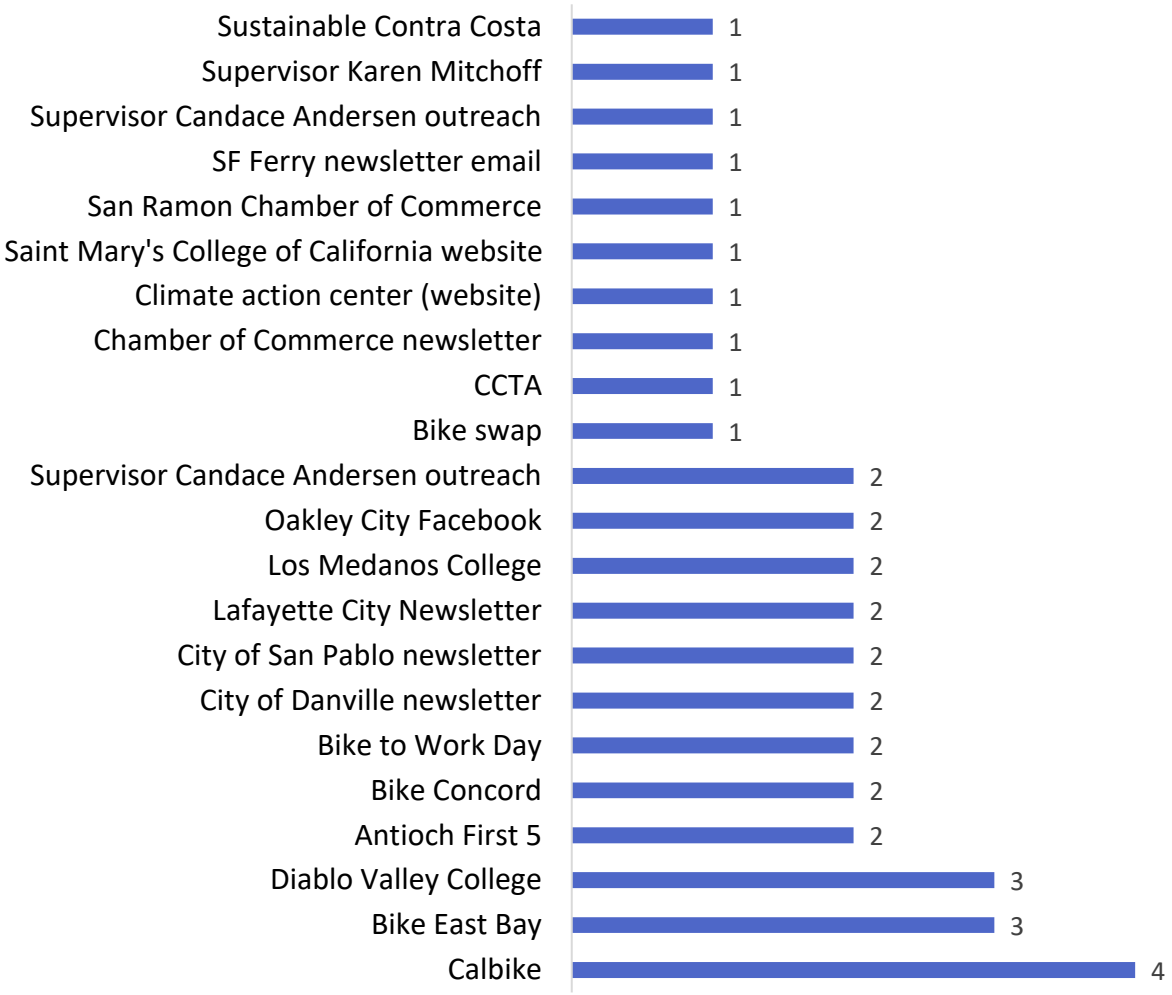
"Love my e-bike and also bought my wife one and talked our friends into getting them too."

There are at least 2 families who are now also considering purchasing an e-bike for school drop-offs/pick-ups.

Issuing cash rebates for an inherently fun and rewarding product has created an unofficial marketing team of hundreds of "E-bike Ambassadors" who provide free advertising and reach more people in their communities than 511CC can reach alone. Personal testimony and free test rides between friends, neighbors, and coworkers is more influential than institutional advertising.

By awarding rebates to more people in smaller dollar amounts, the program's influence is likely leading to greater mode adoption in Contra Costa County.

("Other" write-in responses) **How did you hear...?**



Follow Up Surveys: 80% Response Rate

Participants receive links via email to complete follow up surveys at two months and 12 months from their rebate approval date, administered on a rolling basis. Surveys assess riding habits, usage of other types of transportation, attitudes about e-biking, bike parking, and barriers to biking. Optional demographic data is also collected.

The two-month survey response rate[1] is consistently at or above 80%, and the 12-month survey response rate is 51%. Surveys are fairly long, taking about five minutes to complete, so the high response rates indicate participant engagement and enthusiasm about e-biking remain high. Customer satisfaction with 511 Contra Costa is another likely contributor to the higher-than-

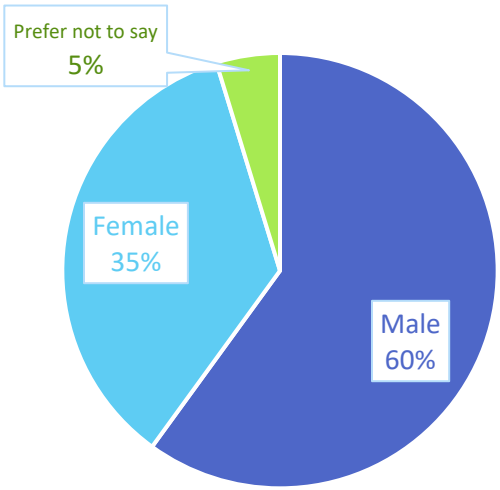
[1] The average response rate for online surveys is 10-30%, and a response rate of 50% or higher is generally considered an excellent result.

average response rate. All communication with participants is conducted through personal email rather than customer relationship management software or chatbot. Overlapping participation in other well-liked 511CC programs, such as the Summer Bike Challenge, Winter Walk Challenge, Drive Less, and Pass2Class also demonstrates brand affinity and customer loyalty.

Key Data

Demographics of Rebate Participants

Gender

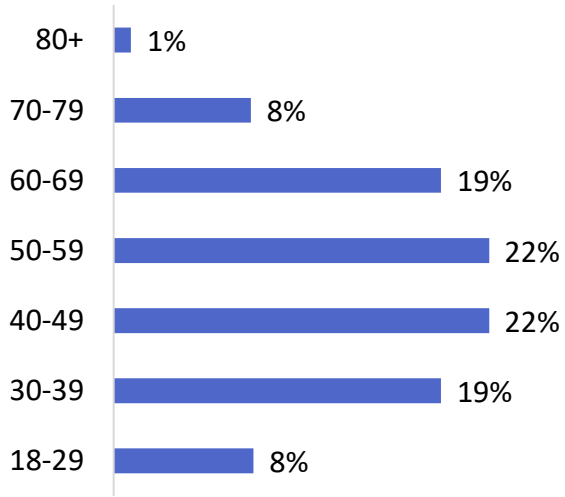


Car Ownership

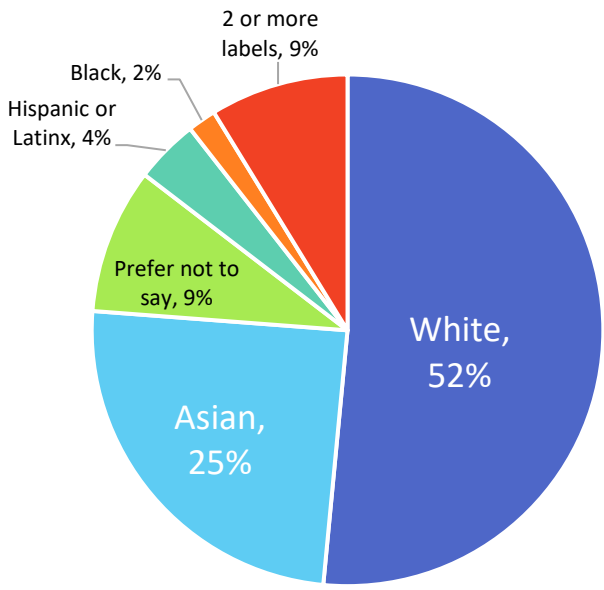
94% of rebate participants in the **511 Contra Costa** program own or have regular access to a motor vehicle.

79% of participants in the **Charge Up** program own or have regular access to a motor vehicle.

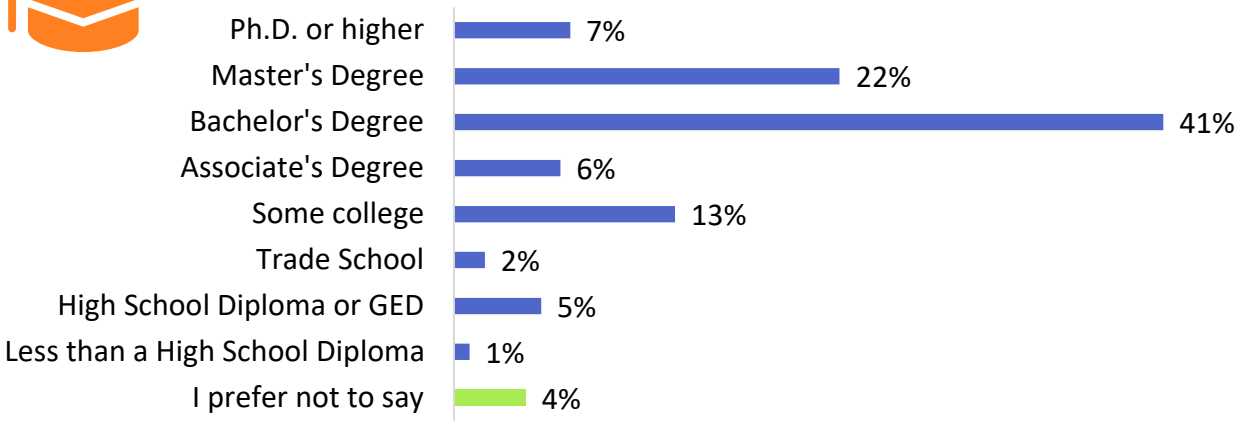
Age



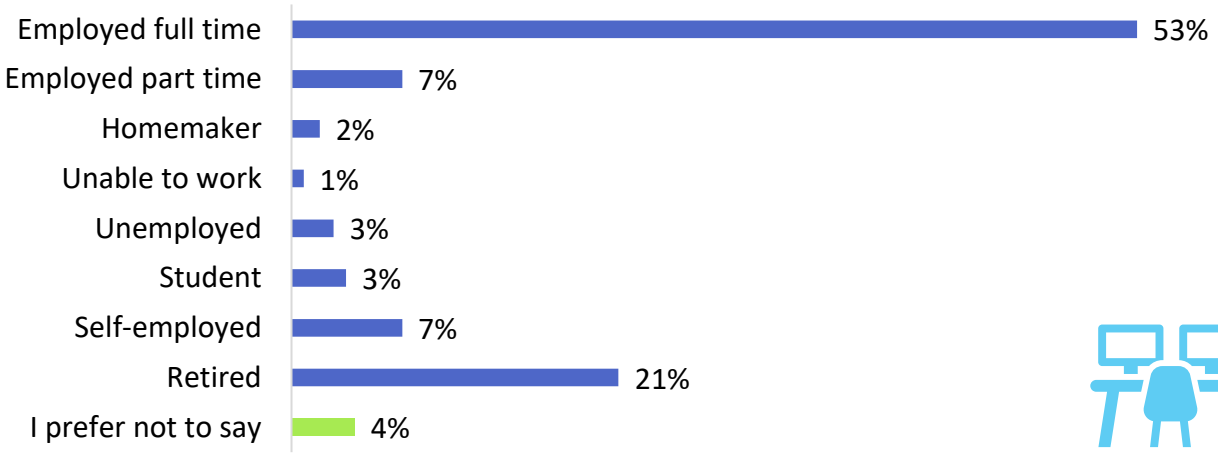
Race



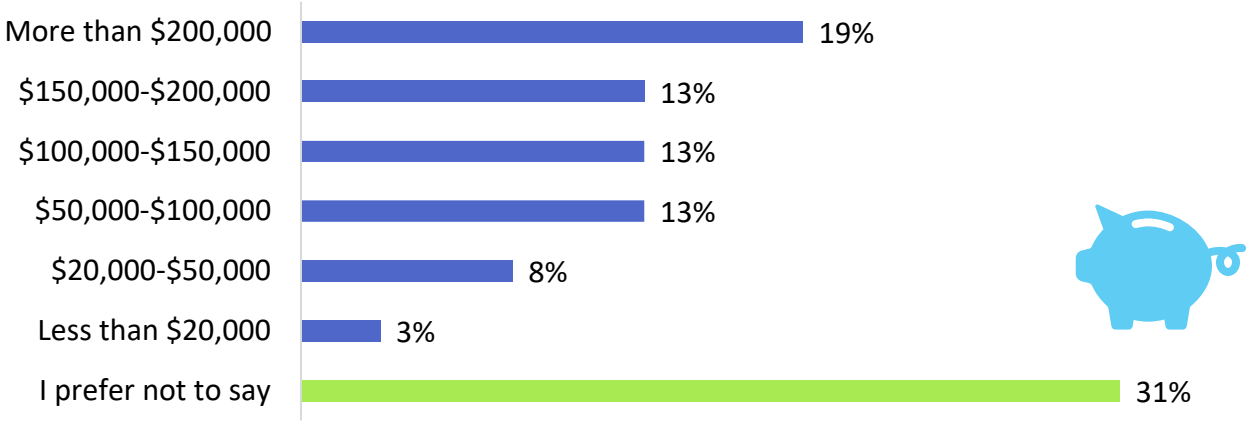
Education



Current employment status



Household Income



Cost of E-bikes

$1,620: **Average base price** for all e-bikes in both programs, combined

$1,400: **Median base price** for all e-bikes in both programs, combined

$1,843: **Average base price** for an e-bike in the **511CC $150 Standard** program

$1,320: **Average base price** for an e-bike in the **511CC $300 Low-income** program

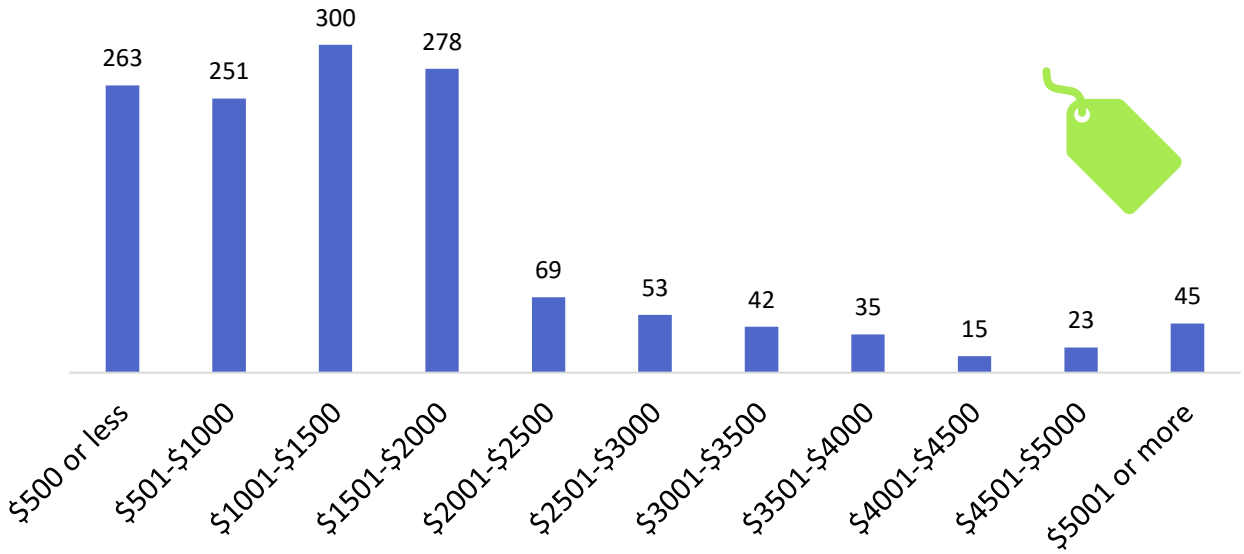
$1,129: **Average base price** for an e-bike in the **$500 Charge Up** program (low income only)

19% of e-bikes cost $500 or less. The Jetson Bolt Pro, which sold at Costco in the $330-$400 range, was a very popular purchase during the first two years of the 511 Contra Costa Rebate Program.

Usage data indicates that frequency of trips is nearly identical between all bike cost groups, indicating that cost minimums are not necessary to influence trip reduction outcomes. Less expensive e-bikes appear to be sufficient for trips ten miles or less, which is the average length of most automobile trips.

Base Price of E-bike

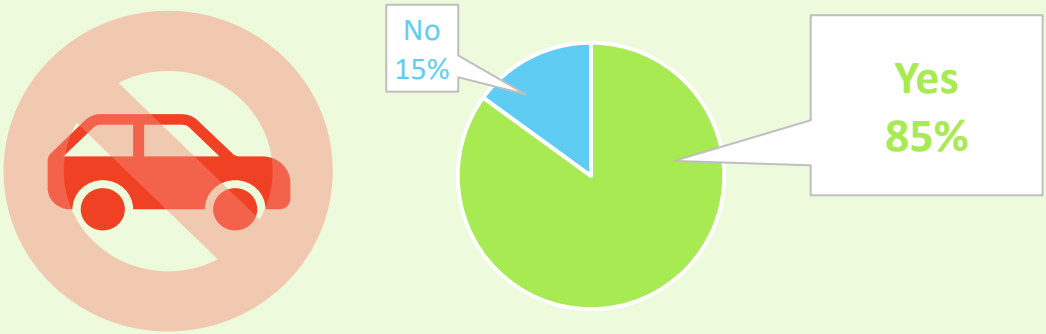
Includes data from both 511CC and Charge Up



Potential for E-Bikes to Replace Vehicle Trips

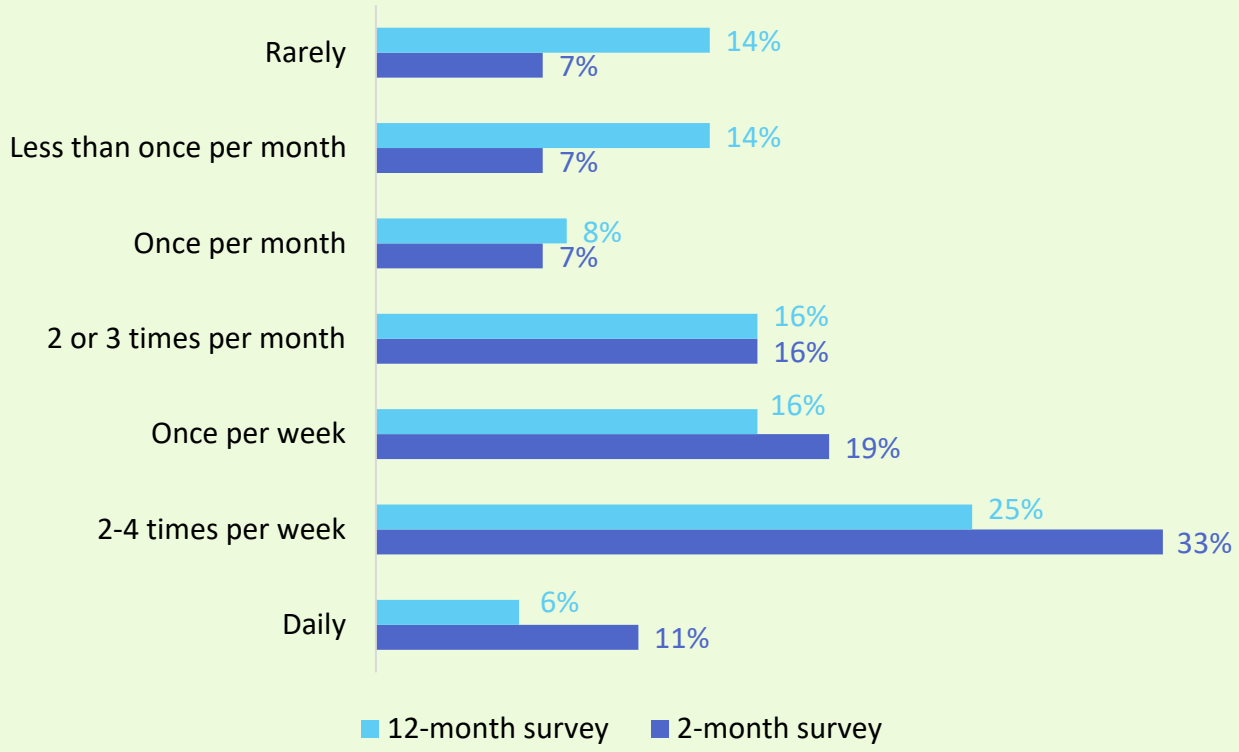
In Contra Costa County[2] the default mode is driving. However, survey data shows that e-bikes are frequently replacing vehicle trips.

Since buying your e-bike, have you ever *used it for a trip that you previously would have taken by car?*

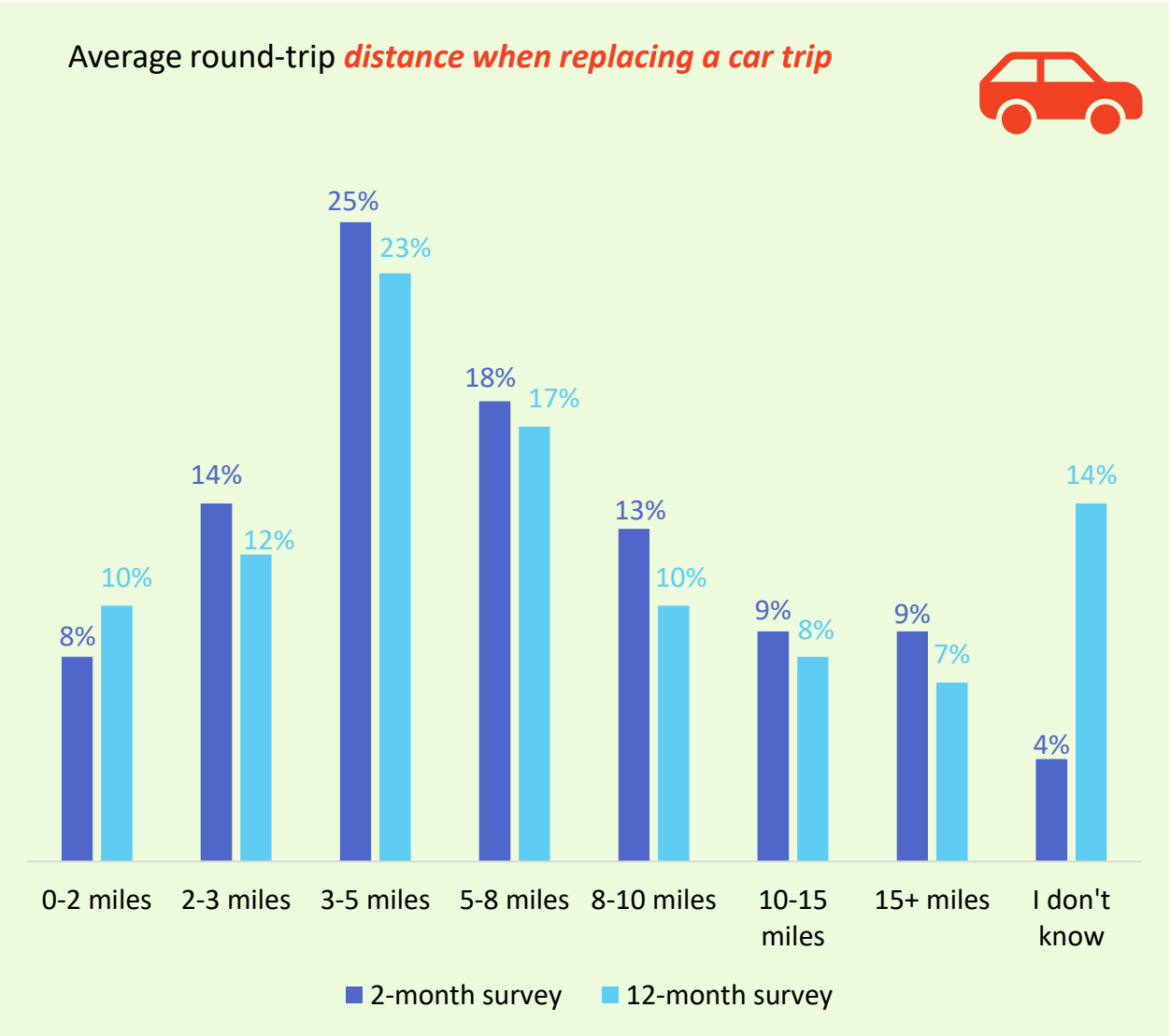


One year after receiving a rebate, 47% of participants are using their e-bikes to replace vehicle trips once or more per week:

How *frequently* do you ride your e-bike *in place of a car?*

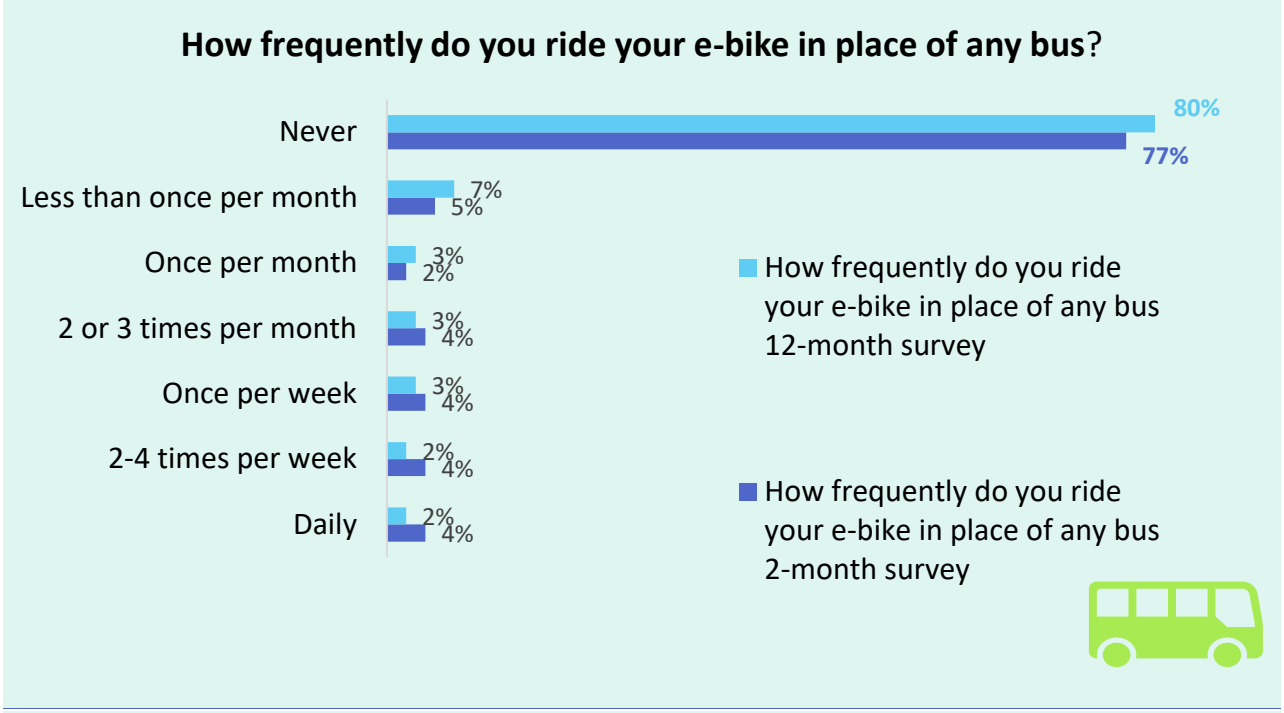


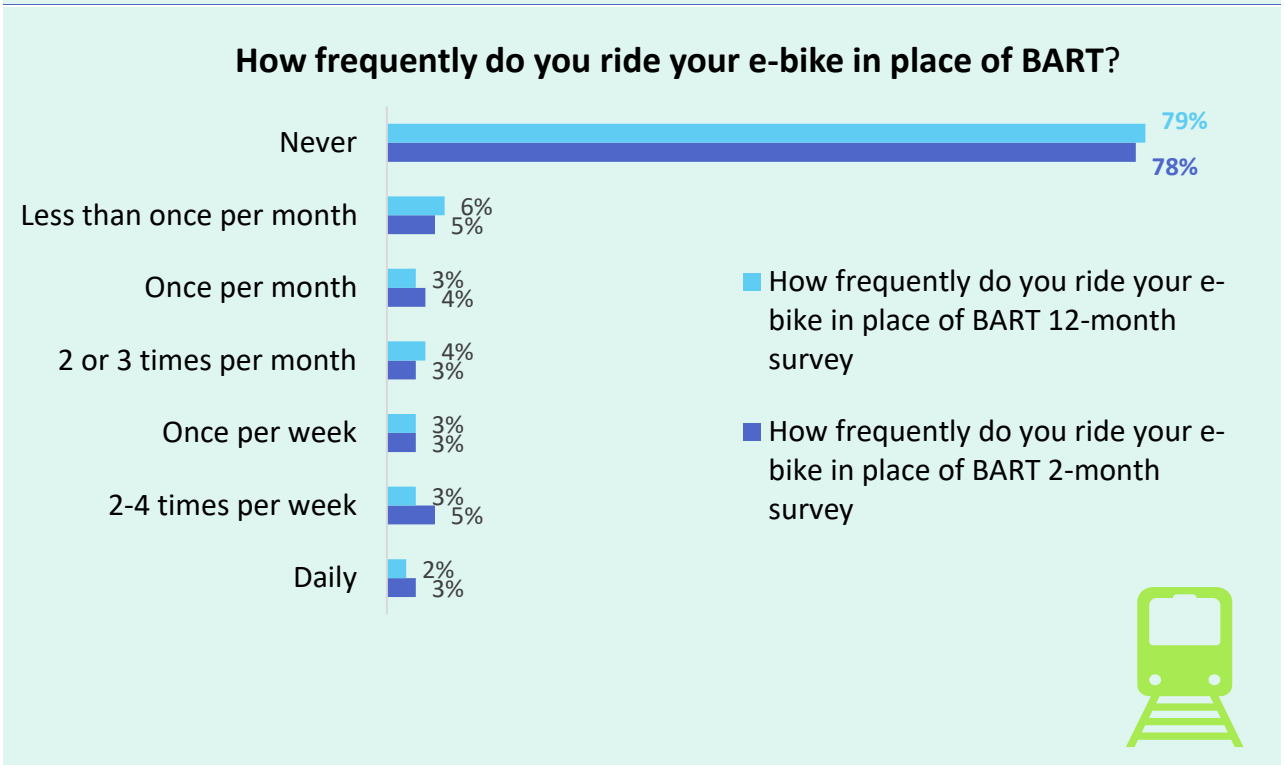
[2] https://datausa.io/profile/geo/contra-costa-county-ca#economy



E-Bikes vs. Transit

E-bike ownership does not appear to have significant impact on current transit usage. In contrast to vehicle trip replacement, 80% of rebate participants report **"never"** using their e-bikes to replace transit trips (bus or BART). Only 7% use their e-bikes to replace bus and 8% use their e-bikes to replace BART trips once or more per week.

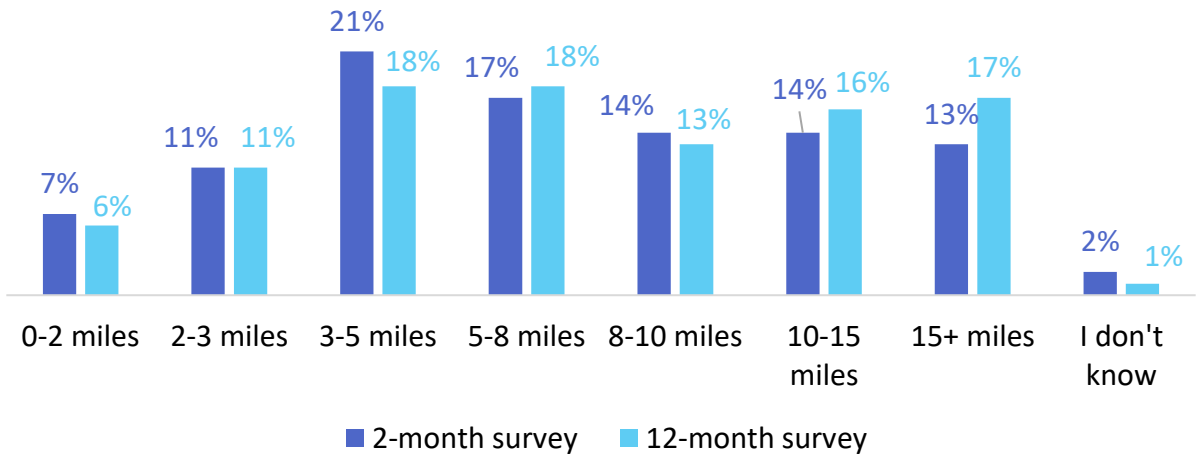




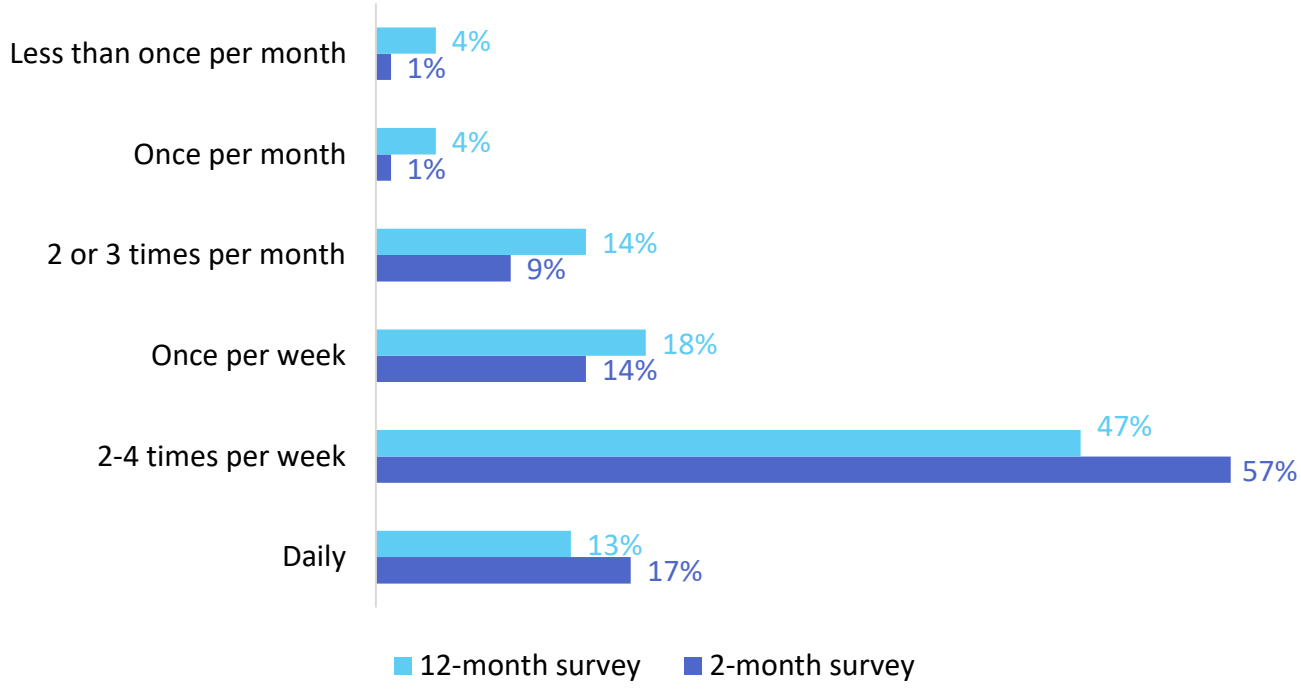
An e-bike offers people many of the benefits of driving: **speed, ease of use, personal transport, and direct access to desired destinations -** without the physical limitations of using a traditional bike. This makes e-biking a realistic mode-switch option for those who cannot or will not use transit or a traditional bike. E-bikes are a promising development in the TDM playbook, and in suburban regions like Contra Costa County, where shared micromobility is not readily available, incentivizing personal e-bike ownership makes sense.

Ride Frequency & Trip Length

Average *round trip* distance of all e-bike rides



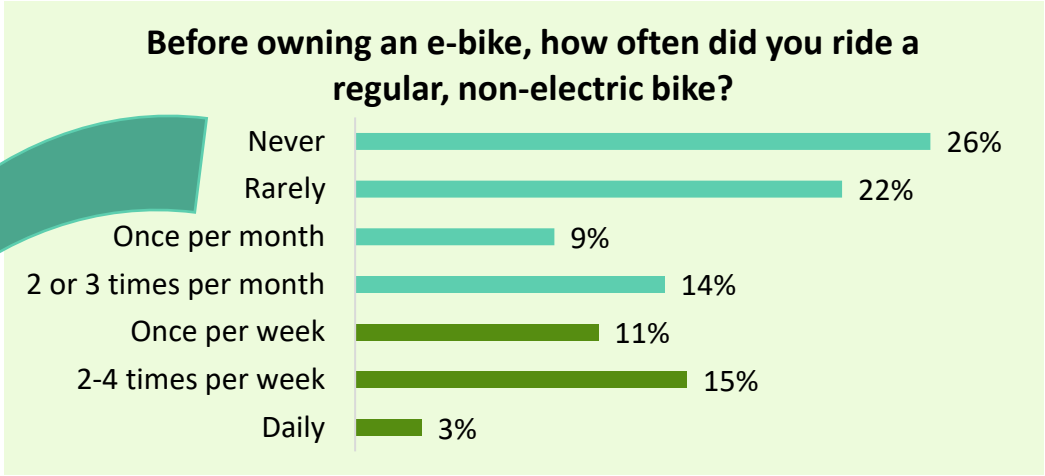
Assuming pleasant weather and healthy air quality, about how often do you typically ride your e-bike?



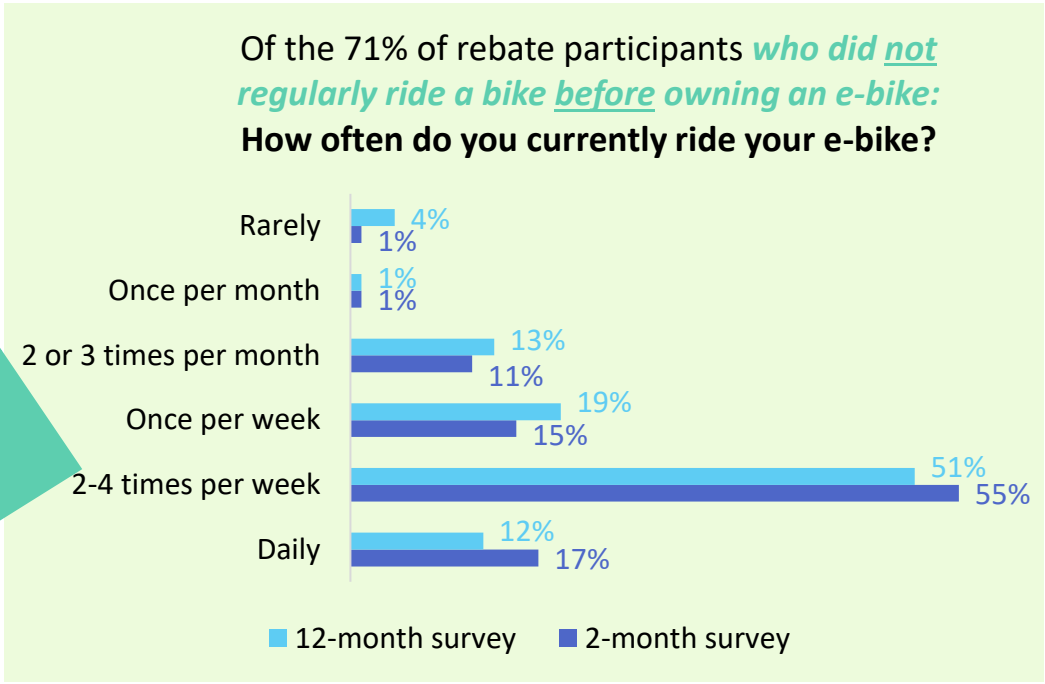
One year after receiving a rebate, 78% of participants are still biking at least once per week, with the majority biking even more frequently.

E-Biking by Non-Bikers

Prior to owning an e-bike, 71% of participants rarely rode a traditional, non-electric bike:

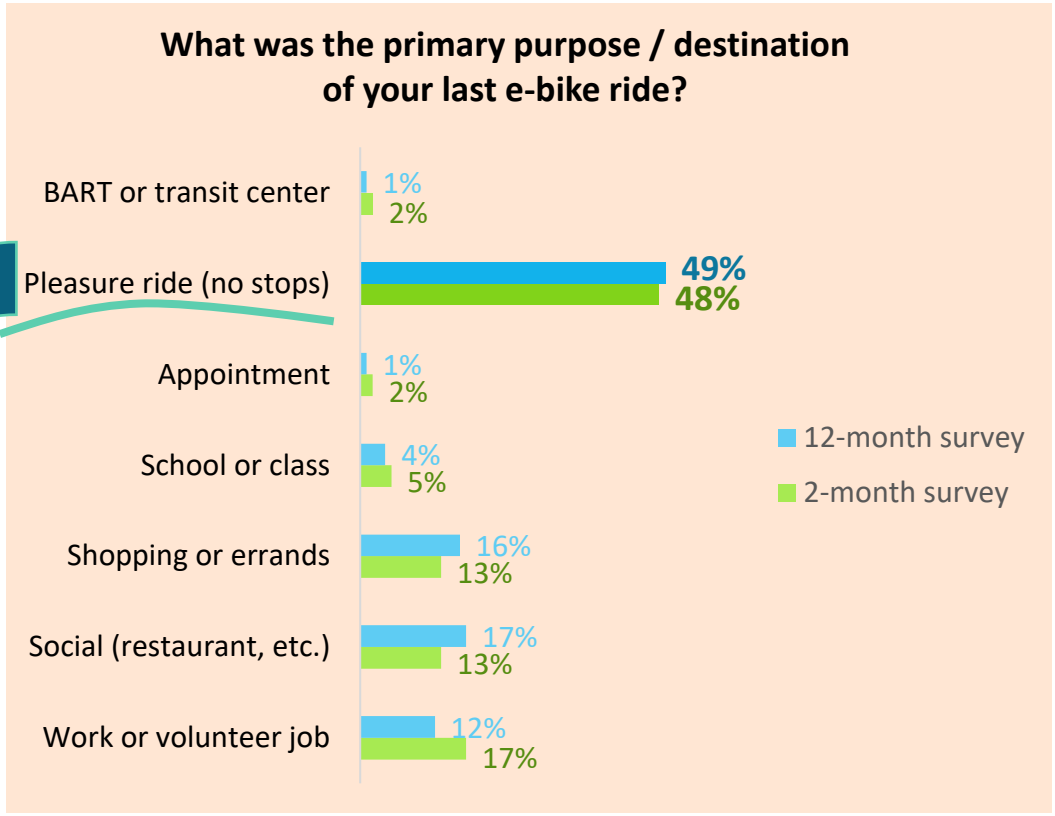


Those previous "non-bikers" are now riding ebikes on a regular basis:

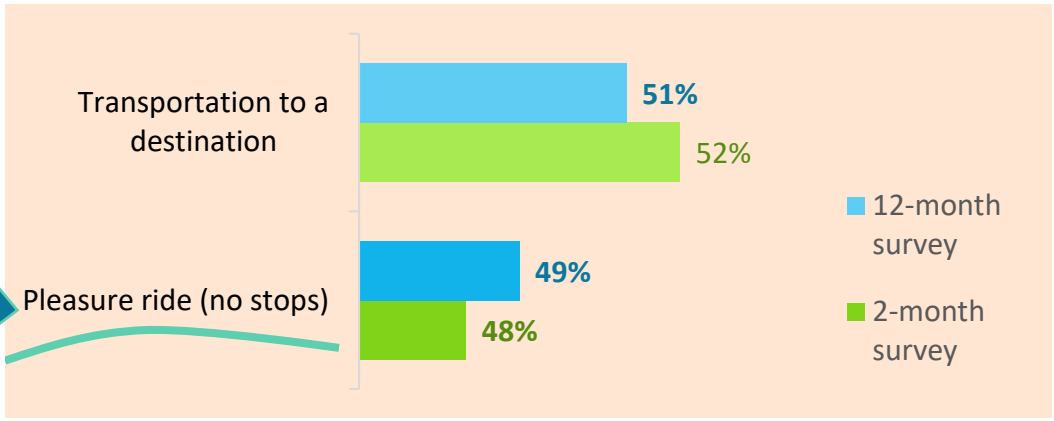


"Would Not be riding at all without this bike."

Survey data shows that people are using their e-bikes for far more than just recreation and exercise. Respondents indicate they are e-biking as a means of transportation to various daily destinations including shopping, errands, appointments, restaurants, visiting friends - as well as getting to work, volunteer jobs, school, classes, and BART. By contrast, according to StreetsBlog USA[3], more than half of Americans who own ***traditional bikes*** ride them exclusively for recreation.

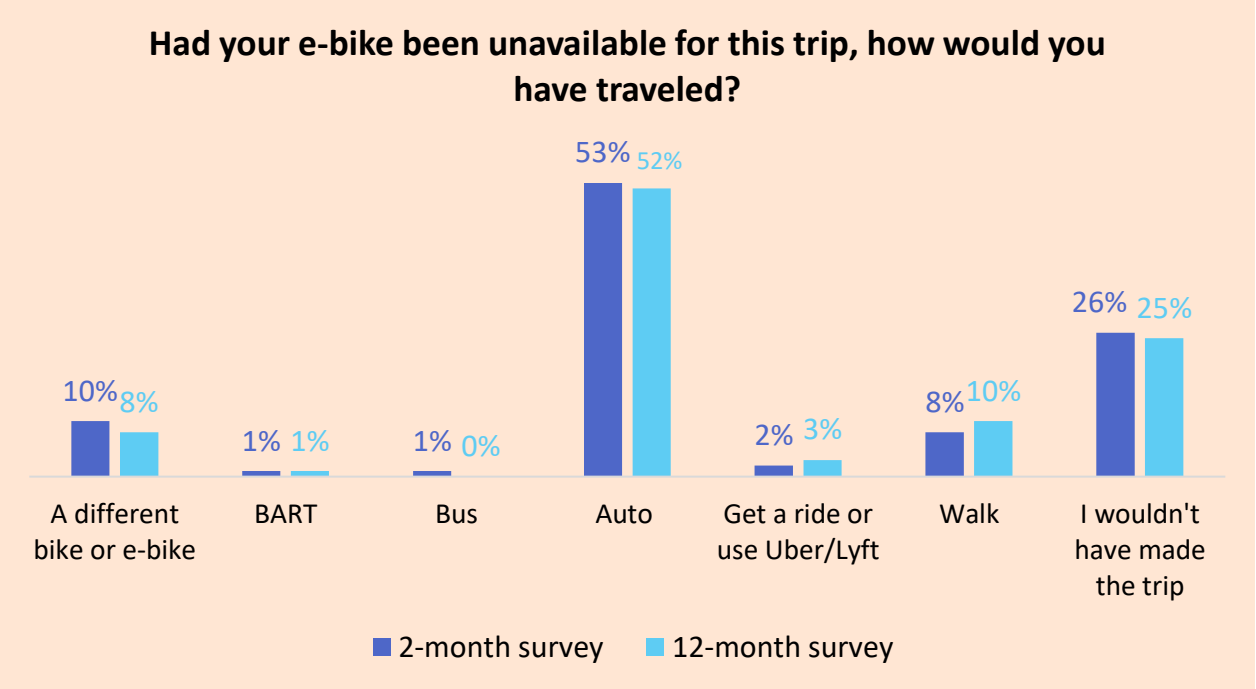


More than half of all e-bike rides serve as transportation to various destinations:



[3] usa.streetsblog.org/2015/03/04/survey-100-million-americans-bike-each-year-but-few-make-it-a-habit/

When asked **if their ebike had not been available,** most survey respondents indicated they would have traveled to the destination by auto instead:



Data shows the average round trip length for purposeful, destination bound e-bike trips (i.e., to work, school, appointments, BART, etc.; and *excluding* data about "exercise only" trips) is 9 miles.

Even if the initial purpose of e-biking for some people is solely for exercise or pleasure, **the potential to reduce long-term VMT should not be discounted.** A person in the habit of biking will be more likely to try bike commuting than someone who does not regularly use a bike at all.

"I'm hopeful the e-bike will allow me to fulfill my goal of commuting to BART by bicycle and not car."

"Two of us share the ebike, and we have ended up using it more than we thought we would. We're even contemplating a non-cargo ebike because when one person commutes with the bike, the other person has to take the car for chores and shopping."

While the Bay Area Air Management District (BAAQMD) has historically been focused on reducing traditional commute-hour vehicle trips, the pandemic-induced remote and flexible work trends should force practitioners to consider midday and non-work commute trips as prime targets for VMT and GHG reduction goals. Any incentive that gets people to regularly use an alternative clean mode is worth support and funding.

E-Biking for Climate Change

To meet SB 32's goal of reducing greenhouse gas emissions by 40% below 1990 levels by 2030, consumers need more "easy" transportation choices as well as more incentives to make changes.

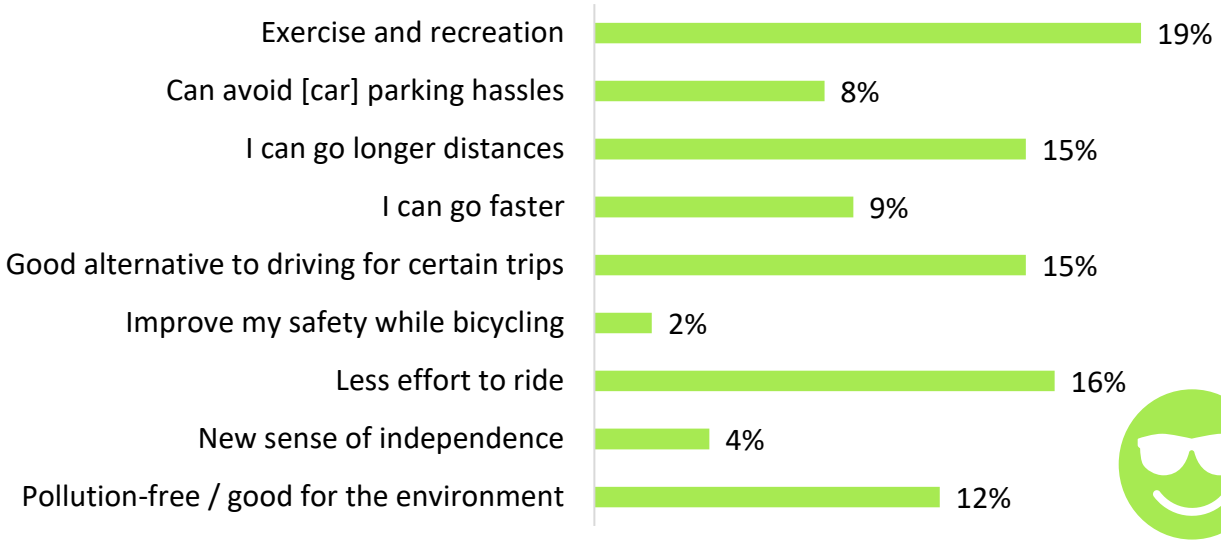
Personal mobility and car ownership have long defined American culture, and many suburban motorists seem unwilling to shift individual car trips to other modes since they may not perceive a direct, immediate personal benefit from doing so.

Promoting e-bikes may be an easier mode shift "ask" for some, because it provides **additional personal benefits**, beyond climate change reduction and air quality improvements which studies have shown are not factors that inspire most people to drive less.

"Owning and riding an e-bike is fun, and it's a great motivator for enjoying the outdoors and getting exercise in a fun way without involving the car. Also, the fact that Contra Costa gives a rebate to people who purchase an e-bike makes me proud of living in this progressive-minded county."

What are the top benefits of owning an e-bike? (Select up to 3)

Results from 12-month survey:



The combined factors of personal mobility, accompanied by feelings of happiness, empowerment, and independence while riding - with the *additional* non-transportation utility value of e-bikes for recreation and exercise - appear to provide enough weight to tip the scale in favor of lasting mode change. Plus, while the switch from internal combustion to electric vehicles is inevitably on the horizon for most drivers, the comparatively low cost of e-bikes makes transitioning to electric more affordable, in the near term.

The California Air Resources Board recognizes the benefits of an e-bike rebate program and is currently working on a statewide program. E-Bike incentives could also help the Bay Area meet climate change and air quality goals.

The societal benefits to public health and mental wellbeing are not being explored in this report, but providing increased access to e-bikes through rebate programs will contribute to Plan Bay Area 2050's goals[4] of making the Bay Area "affordable, connected, diverse, healthy, and vibrant for all."

"Life changing innovation. And thank you for making it more affordable for me during a difficult year. It's had a positive impact on me physically as well as mentally during Covid."

"Thank you. I would need to call my daughter before this program."
-Disabled Participant

"As a low-income person, I most likely wouldn't have made the purchase w/o the rebate."

Barriers

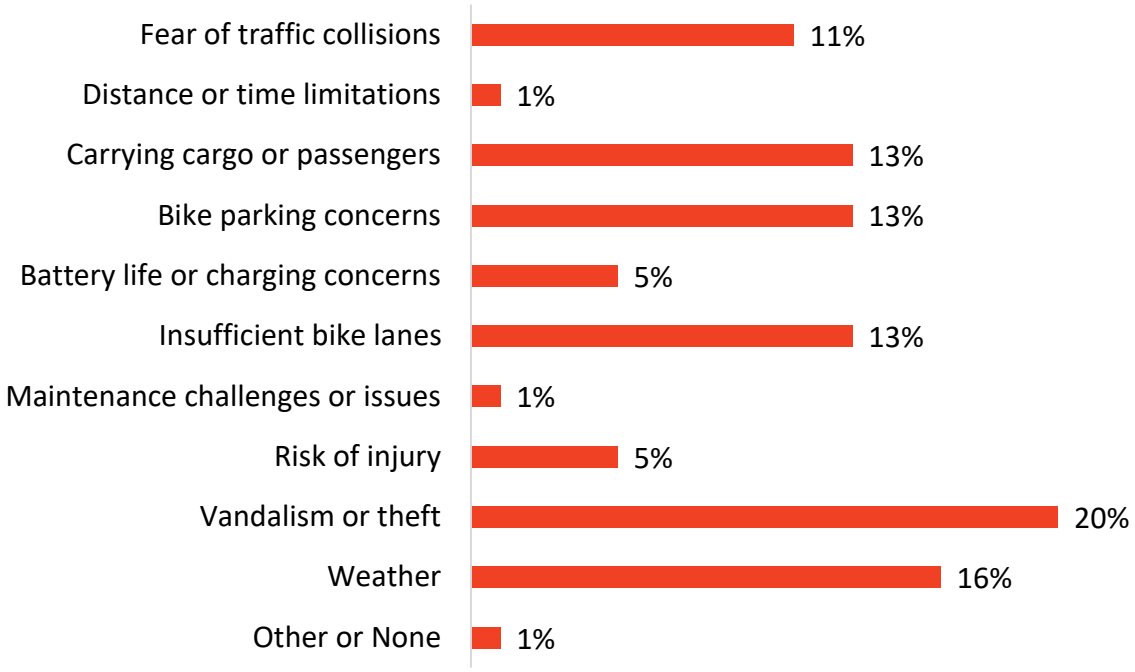
Survey data shows that fear of vandalism or theft and bike parking concerns are major issues that keep people from using their e-bikes more frequently. Participants indicated they would like to ride to retail centers, grocery stores, downtown areas, BART, medical offices, and worksites, but are very uncomfortable locking their e-bikes in standard bike racks.

"Fear of traffic collisions" and "insufficient bike lanes" are also major barriers to more frequent e-biking.

[4] planbayarea.org/about/plan-bay-area-2050-vision

What (top 3) barriers prevent you from using your e-bike for more of your daily trips?

Results from 12-month survey:

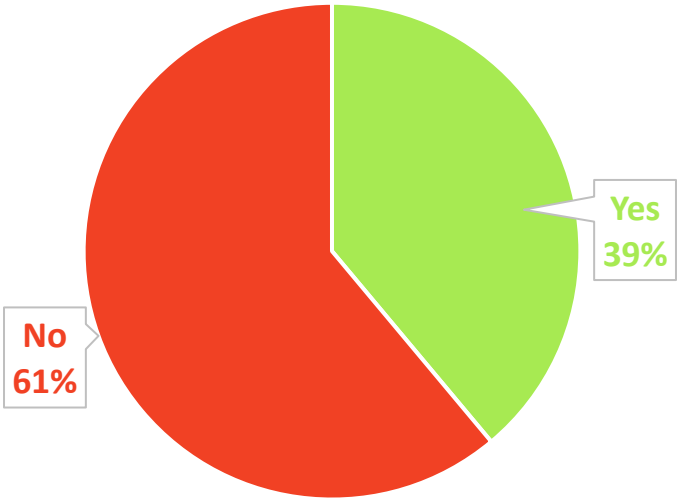


Survey questions about different types of bike parking facilities show that people feel more confident using e-lockers or racks with built-in locking mechanisms, such as the Bikeep[5] stands piloted at certain BART stations. Photos of example bike parking options, as described in the survey questions, were included with the following survey questions:

[5] bikeep.com/smart-commercial-bike-rack/

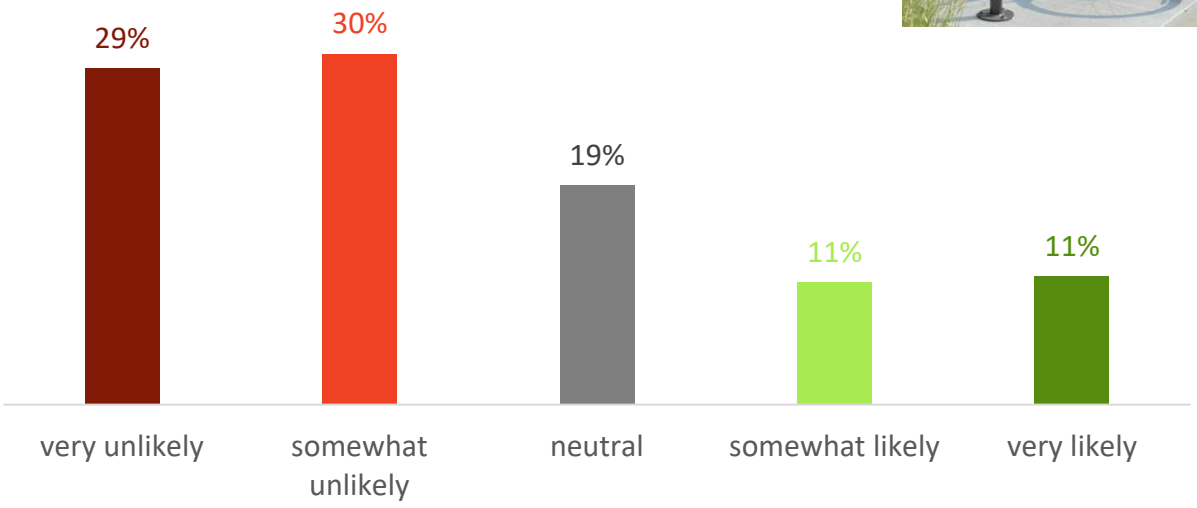
Have you ever locked your e-bike to a ***standard bike rack*** (or pole, etc.) and left it there, out of your sight, for an hour or more?

Results from 12-month survey:



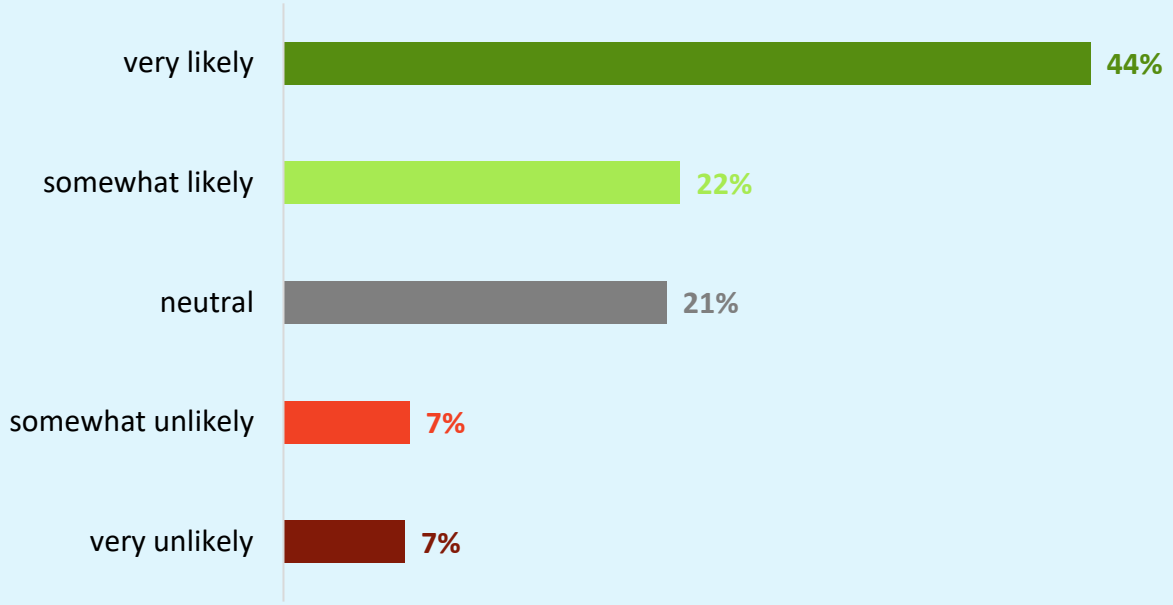
How likely are you to leave your e-bike at a ***standard bike rack***, using your own bike lock, and leaving it out of your sight for an hour or more?

Results from 12-month survey:



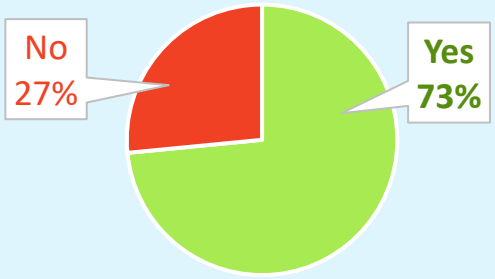
How likely would you be to park your e-bike in a ***"high security" bike stand that features a built-in, locking steel arm bar***, and leave it out of your sight for an hour or more? It locks and opens with a smart phone app or Clipper card.

Results from 12-month



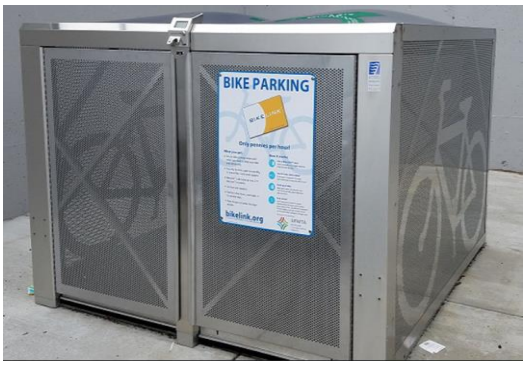
Would you ride your e-bike more often to run errands, get to work or appointments, etc. if those destinations had ***"high security" bike stands***, as described above?

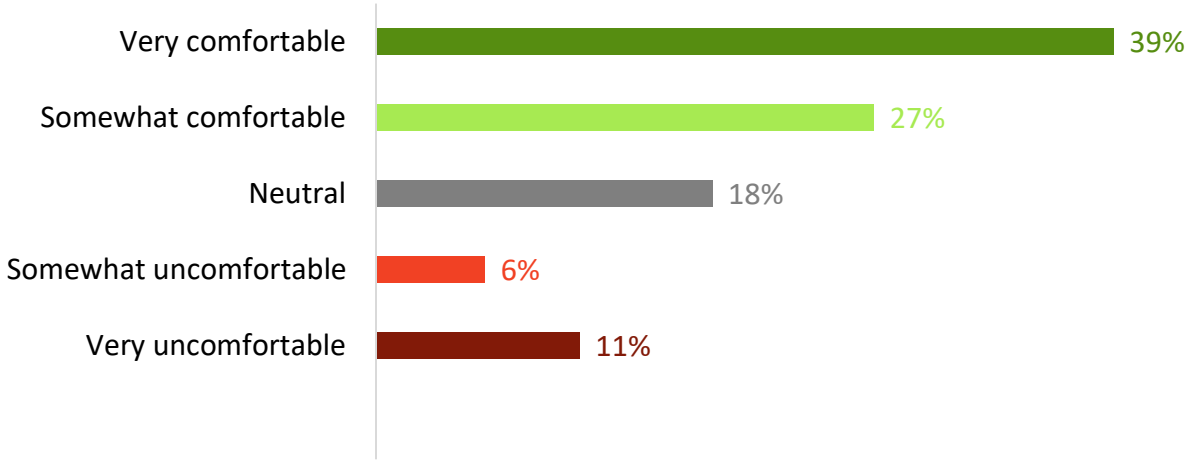
Results from 12-month survey:



In your community, how comfortable do you feel about parking your e-bike inside an ***electronic bike locker?***

Results from 12-month survey:





"The rebate made the E-bike price seem reasonable. Let's get some bike lockers at Home Depot so I can ride to work a couple of days a week."

"Would love to ride to the store etc., if I could be sure my bike would be there when I returned."

"Most shopping centers have very little bike parking."

"I'd like to bike to the grocery store, but the bike lanes on that route are unprotected, and cars go 45+mph along the narrow/busy streets, so I choose to drive instead."

Complete street improvements and the prioritization of building separated and protected bikeways will contribute to e-bike (and traditional bike) adoption and more frequent usage.

Participant Comments

Is there anything else you'd like us to know about your e-bike experience?

In response to the open-ended question above, 566 responses were recorded. Participants overwhelmingly expressed gratitude for the rebate program, great affection for their e-bikes, and provided many testimonials about the positive “life-changing” effects of owning an e-bike. Participants also indicated strong desires for safer bikeways and improved biking infrastructure on roadways. They repeatedly expressed the need for secure bike parking facilities and wished they could ride to more places if they felt safe leaving their e-bikes.

All responses, taken verbatim, can be viewed at **this link**.