



# Executive Summary

## Clean Mobility Options 2023

### Annual Report

The Clean Mobility Options (CMO) program is a California Air Resources Board (CARB) statewide public pilot program that empowers under-resourced communities across California to better understand and overcome mobility obstacles with funding for Community Transportation Needs Assessments and Mobility Project Voucher (MPVs) to fund clean, shared, zero-emission transportation projects. Window One of the CMO program provided vouchers of \$1M each to 20 MPV awardees across California.

Of those, seven projects launched or continued operations during the analysis window of this evaluation, the calendar year 2023. Due to data delivery agreements, several awardees that launched in Quarter 3 of 2023 are not included in this report. Still, they will be included in future evaluation versions, as will all future awardees.

This evaluation is intended to provide an overview of the program's successes in providing clean, equitable mobility to underserved communities across California and to highlight challenges and opportunities within the MPV CMO program for policymakers and future awardees to consider and incorporate. Given the wide variety of communities and project types, this evaluation is not intended to compare awardees or propose future decisions on funding but rather to provide context for each project, extrapolate trends, and establish a public

record of the program's progress. This report incorporates survey data (both from the broader community being served and project users post-trip), telematics data, and status reports from awardees. Data is segmented and aggregated according to state-approved 'indicator metrics (IMs)'.

The evaluation framework and metrics were developed by the Shared Use Mobility Center, in collaboration with CALSTART. The evaluation framework and metrics was developed by Lauren N. McCarthy, Data Analysis and Document Design, conducted by Nick Perloff-Giles, Visualization developed by Natalia Perez-Bobadilla, and Editorial Support by Miriam Pinski, Joey Juhasz-Lukomski and Christina Heartquist (Heartquist Strategies). Additional research assistance by Carlos Gonzalez.

CMO is funded by California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment—particularly in underserved communities, and California Energy Commission's Clean Transportation Program, which is investing more than \$1 billion to accelerate the deployment of zero-emission transportation infrastructure and support in-state manufacturing and workforce training and development.

# Program Level Themes

## Accessibility

A core mission of the CMO program is to improve accessibility to clean mobility for under-resourced communities in California. Here, accessibility means how easily – financially, logistically, and technologically – people can reach their destinations. Success means the program improved participants' mobility.

The results are significant: almost 20% of all CMO MPV participants surveyed reported that they would not have taken the trip if not for the service. An additional 34% of respondents reported that they would have relied on Transportation Network Companies (TNCs) like Uber, Lyft, or conventional taxi services. The primary result of the CMO program in its first year was improving accessibility to destinations for those with otherwise limited access to mobility services.

## Mobility Equity

Improving mobility equity is defined as increasing access to high-quality mobility options and enhancing economic opportunity in disadvantaged communities<sup>1</sup>, low-income communities, and low-income households. The CMO program specifically aims to improve access to cleaner forms of mobility that reduce the pollution, noise, and economic burdens imposed by conventional transportation systems. As such, success along these dimensions would mean program participants were largely (if not exclusively) members of under-resourced communities, and the projects awarded funding addressed their needs.

Expanding mobility options for people with the least ability to pay for private vehicle travel has also been a success

- more than 70% of CMO MPV project users surveyed did not have access to a private vehicle, and more than half qualified for a needs-based assistance program. While post-trip demographic data was not collected, baseline surveys suggest CMO MPV program users are predominantly lower-income, face higher pollution burdens, and experience greater linguistic isolation than California average populations.

## Environmental Themes

The CMO program incorporates several environmental considerations when evaluating greenhouse gas (GHG) emissions across different mobility projects. While the projects experienced variations in emissions during their first year of operations, the program's holistic approach considers multiple factors beyond immediate reduction metrics.

Bike share initiatives introduce nuanced environmental dynamics, while trips are essentially emission-free, the quantification methodology developed by the California Air Resources Board considers rebalancing – the process of redistributing bicycles between stations – as done by internal combustion engine vehicles. Microtransit projects emerged as a particularly promising mobility solution, providing thousands of trips for communities. Some of them, however, used plug-in hybrid vehicles, which rely partially on conventional fossil fuels. These projects potentially replace individual private vehicle trips, which would represent a net reduction in emissions; conclusive results on the emissions of programs will therefore be something identified in the future.

<sup>1</sup> <https://greenlining.org/publications/mobility-equity-framework-how-to-make-transportation-work-for-people/>

# Program Metrics Defined

The program evaluation for the Clean Mobility Options Pilot Program captures universal indicators to assess each case.

Beyond broad project-level and mode-level analysis, program evaluation also involves assessing each MPV awardee individually based on universal indicators. Individual evaluations of MPV projects are available in the complete evaluation document.



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## Goal 1: Improve Access to Clean Mobility Options

Objective 1 - Improve safety (personal, crime, perception)

Objective 2 - Improve the reliability of the service

Objective 3 - Improve convenience of service relative to user locations

Objective 4 - Improve affordability of service for users

Objective 5 - Improve connectivity to essential services

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## Goal 2: Advance Mobility Equity

Objective 1 - Increase opportunities for community participation in decision-making

Objective 2 - Improve utilization rates (by income, race, disability, gender, etc.)

Objective 3 - Support local hiring directly for projects

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## Goal 3: Improve Local Air Quality and Climate Resilience

Objective 1 - Increase zero-emission vehicle and fueling station awareness and use

Objective 2 - Reduce internal combustion engine (ICE) vehicle miles traveled

Objective 3 - Reduce greenhouse gas (GHG) emissions

# Project Level Charts

Analysis window for data Jan 1, 2023-Dec 31, 2023



*The CMO grant is unique in that way. It gives us the ability to put equity at the heart of what we do.*

**Anne Thomas, Executive Director of Shasta Living Streets**

**359,516**



**Vehicle Miles Traveled (VMT)**

**104**



**Bikes and Vehicles**

**2023  
Program  
Facts  
At-a-Glance**

**6,686**



**Total Users / Members**

**100**



**Jobs Created**

**Number of Trips**



**110,470**

All program vehicles are zero or low emission and all miles traveled and trips are electric/zero-emission

# Greenhouse Gas Emissions for Bike Share and Microtransit Projects - MT CO2

Comparing CMO Vehicle Emissions with Conventional ICE Emissions

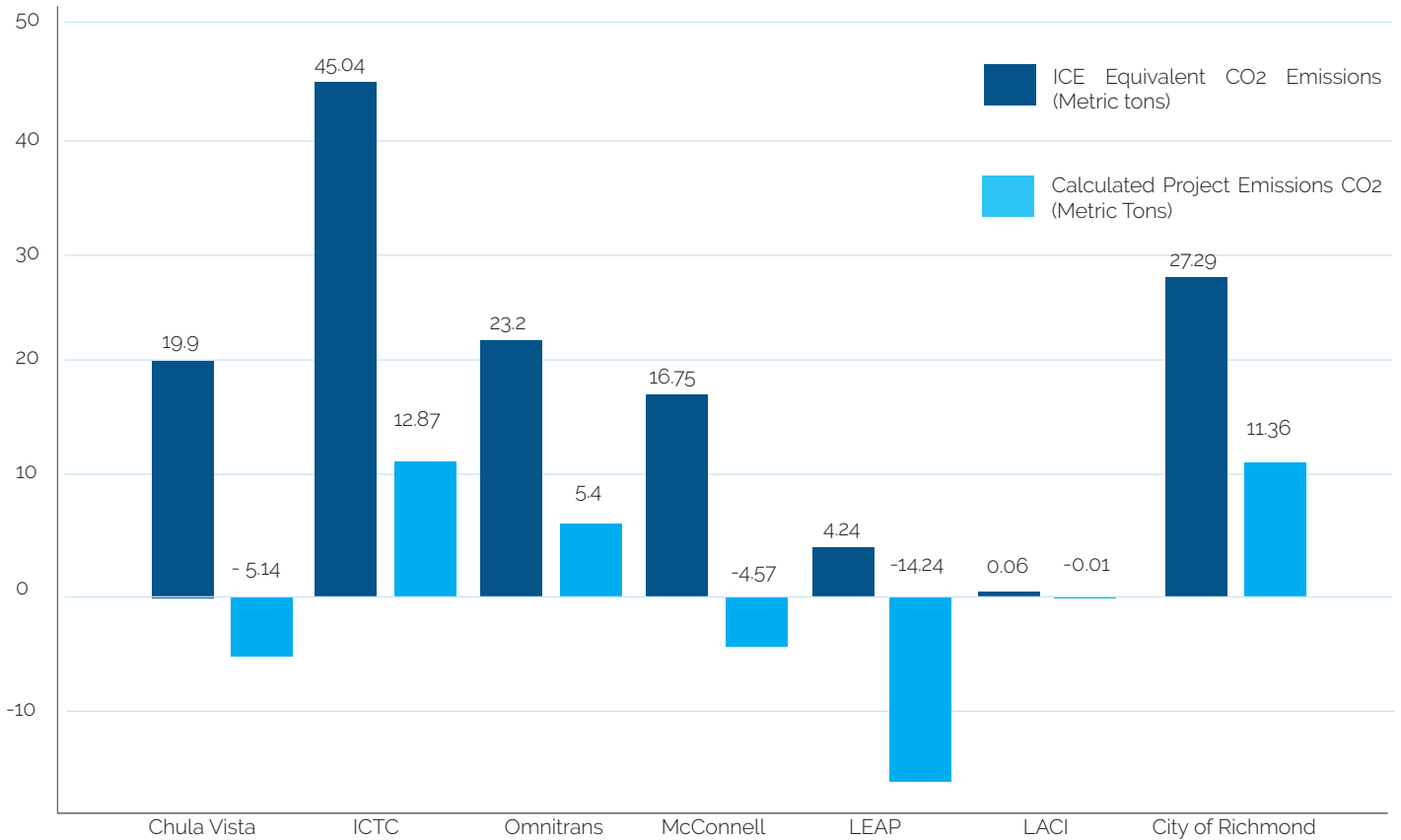


Figure 1. Source: Shared-Use Mobility Center

## Most Common Destinations - Microtransit

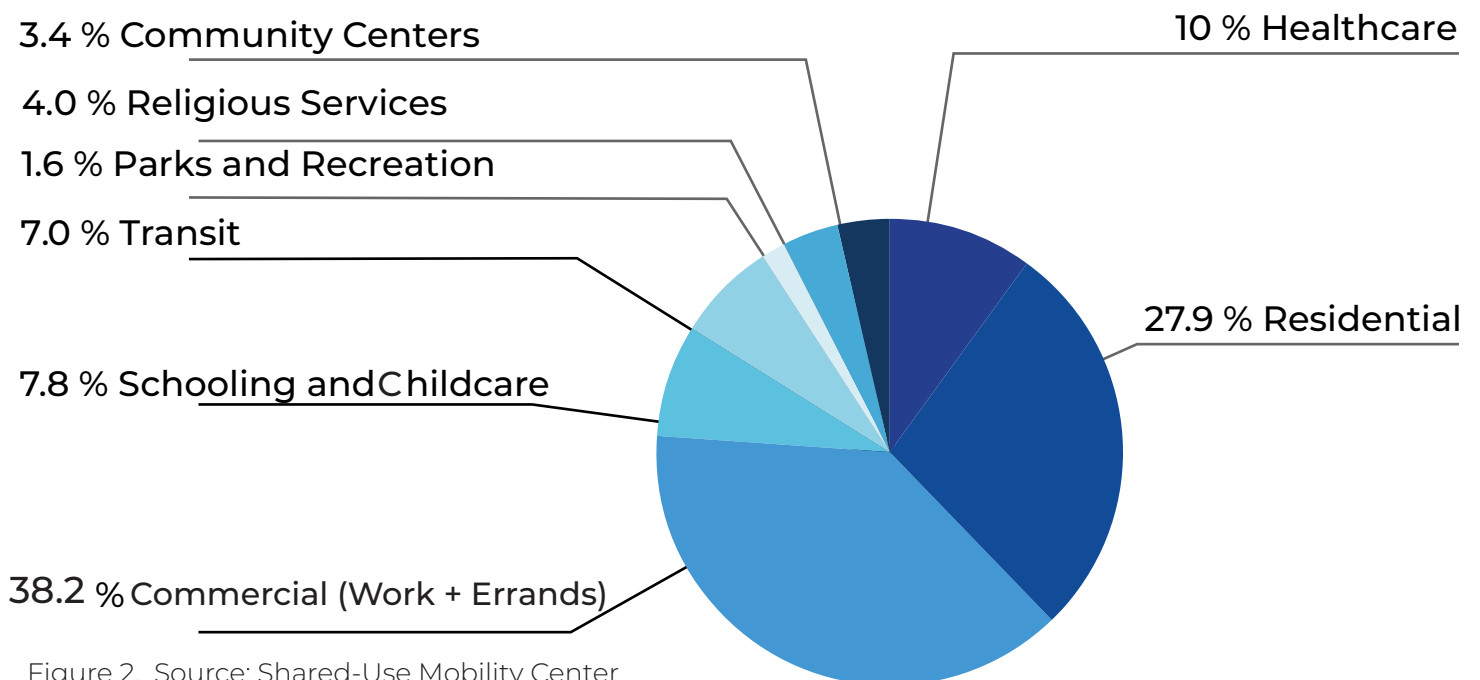


Figure 2. Source: Shared-Use Mobility Center

## CMO Microtransit and Bike Share Projects Compared to Diesel Buses Emissions MT CO2

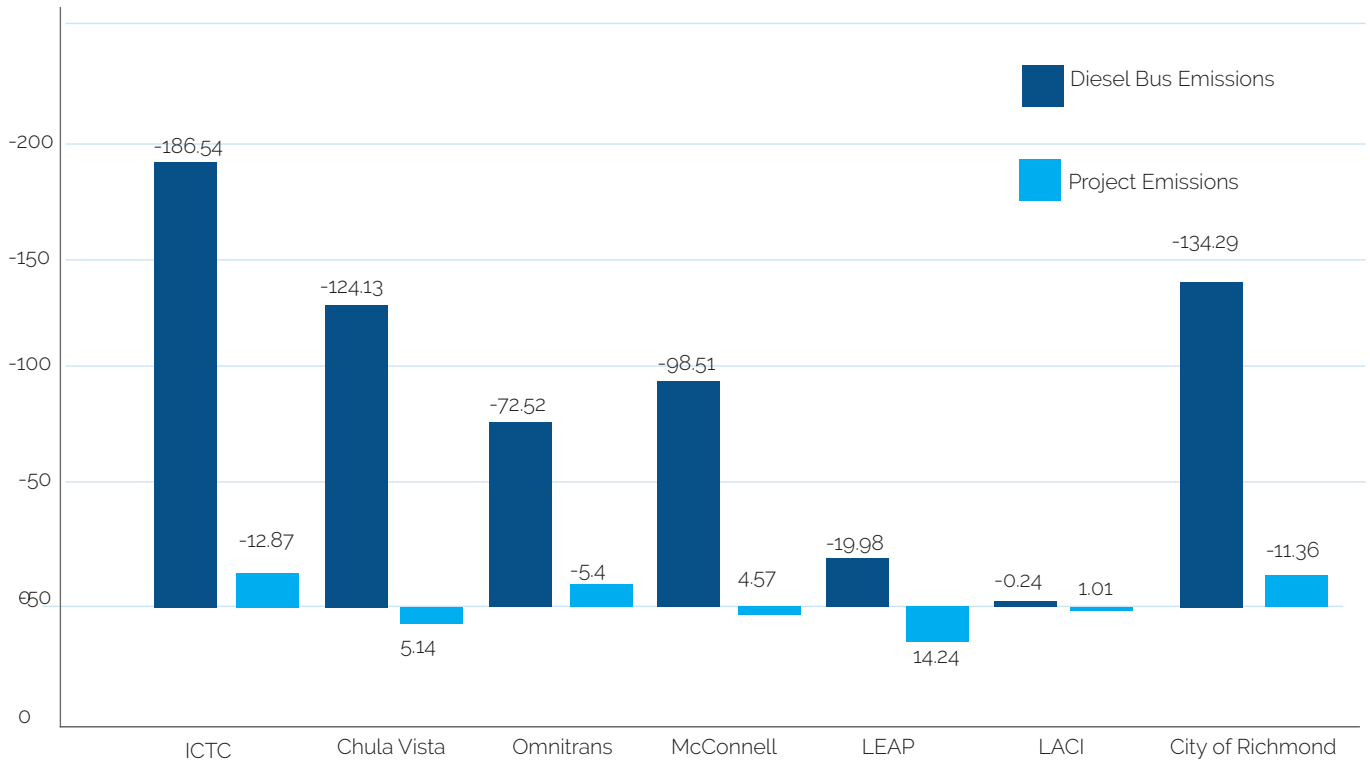


Figure 3. Source: Shared-Use Mobility Center

The figures above illustrate the GHG emissions across all launched projects, comparing them with the equivalent Vehicle Miles Traveled by a gas-powered car and by a diesel-powered bus (note that Figure 3 assumes the addition of vehicles to service demand, not simply the extension of existing route frequency).

Notable across this data is that relative to a mobility program using conventional or diesel vehicles, the Clean Mobility Options program has successfully provided 'clean' mobility to target groups. While some projects are net emitters at present, it's likely that net emissions will decrease, particularly in microtransit projects, as full charging capacity comes online and trips are pooled.

Using telematics data provided, alongside the Google Maps Places API, Figure 2 analyzes destinations for point-to-point

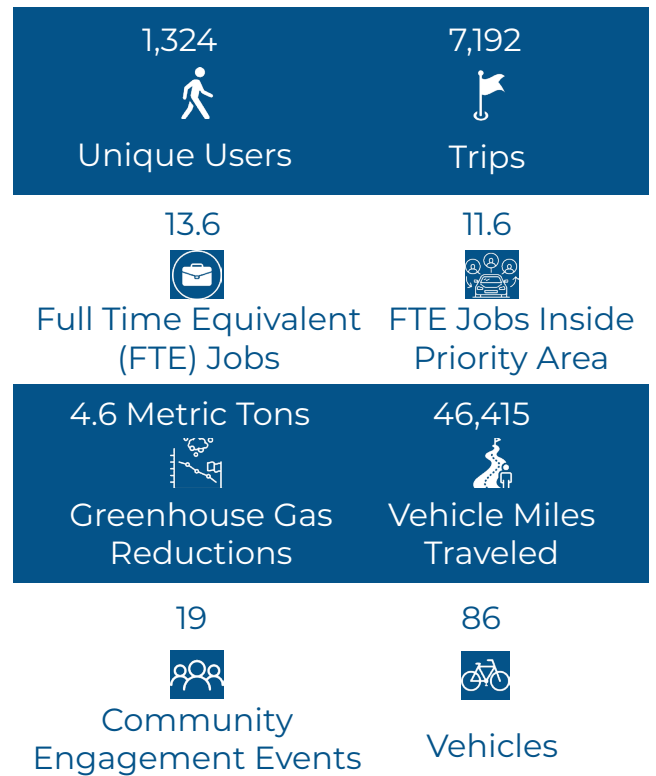
services like microtransit by type; destinations were categorized based on the nearest landmark or land use type. The analysis reveals a significant share of trips to commercial destinations; because of the anonymous nature of the data, trip purpose is unclear, and inferences about intent (whether a trip to a commercial destination was for an errand or a commute) are not possible.

The name of the closest business or organization within 25 feet was then pulled - if no business address existed within 25 feet, the location was assumed to be residential (this was then cross-referenced with land use overlays).

## Bike Share

Of the five bike share projects awarded funding by CMO, two launched or continued operations in 2023: McConnell/Shasta Living Streets, and LACI (Los Angeles Cleantech Incubator). Bike share projects that launched in 2023 followed a docked system, rather than a dockless or ‘lending library’ approach. Locations were selected based on popularity both as recreational and commercial destinations.

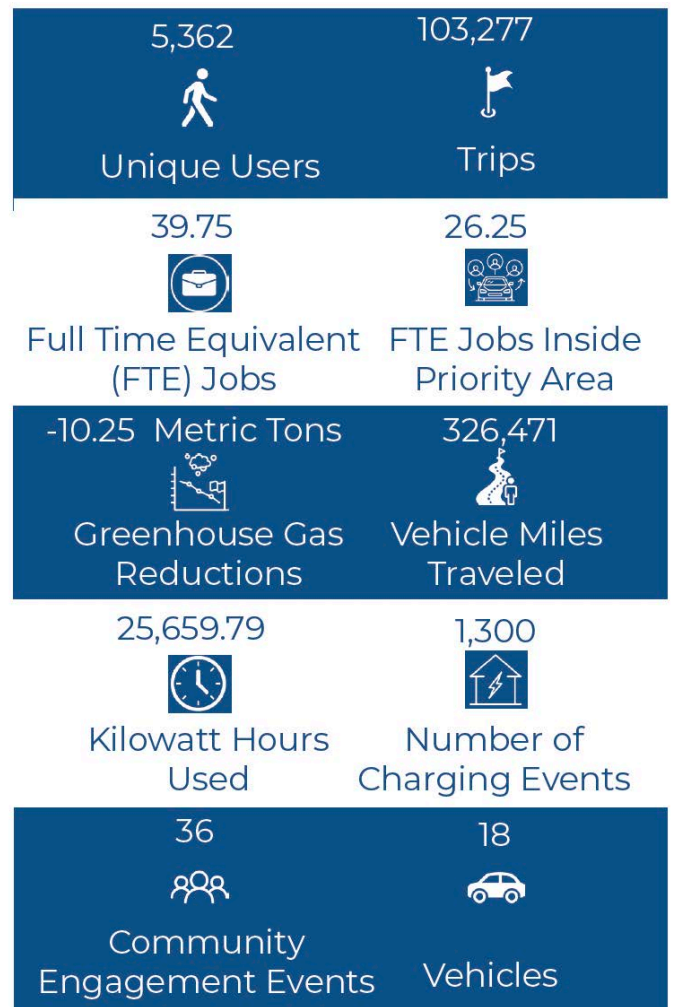
Bike share projects faced significant hurdles in liability compliance during the evaluation period - this is likely a consequence of both higher-than-expected premiums and the birth of the insurance market for bike share. Further study is needed to confirm this assessment and to determine how liability costs can be reduced.



## Microtransit

Of the eight microtransit projects awarded funding by CMO, six launched or continued operations in 2023: ICTC, Omnitrans, City of Chula Vista, City of National City, City of Richmond, LEAP, making it the most common mode funded by the program. Microtransit offers point-to-point service, much like ridehail, booked via an app or by phone. Users can pay either via the app or in cash - most services charged either less than two dollars a ride or nothing.

For microtransit services hybrid vehicles were allowed on a special case-by-case basis for Wheelchair Accessible Vehicles (WAVs) due to unavailability in the market for a high-range electric or plug-in shuttle, which impacted their emissions ratings. It is recommended, that future vehicles in the program should be fully electric to minimize potential future emissions.



# Conclusions

## Program Impact

### Trips

In its first year, the California Clean Mobility Options program provided over 110,000 trips to more than 6,000 users across the State.

### Accessibility

Most of these trips occurred in areas with little or no existing transit coverage, and were taken in either hybrid or electric vehicles, or conventional and electric bicycles.

### Population

Findings from both pre-trip and post-trip surveys indicate the majority of the users are in priority populations.

## Program Challenges

### Trips

Some projects faced difficulties in finding riders in the first year of operations - this is reflective of the broader challenges of rider education and program development; some clean mobility modes, like bikeshare, rely on user knowledge and familiarity, which is developed over time.

### Emissions

While the program's progress towards emissions reductions has been mixed thus far, the projects coming online, including electric carshares, more electric microtransit, and bikeshares, will likely improve the emissions results of the program.

### Next Steps

The challenges faced by program awardees in the first year of operations have been considered into technical assistance documents and guides, in both individual sessions and in seminars and convenings like the Clean Mobility Equity Alliance. These resources will likely improve emissions reduction outcomes for program participants, while maintaining the high degree of mobility equity and access the program provides.

## Program Impact

This evaluation highlights the program's impact on numerical metrics and emissions. However, it is equally important to recognize the program's influence on the quality of life for Californians by providing clean transportation options they otherwise wouldn't have access to, paving the way toward a more equitable society.