

**California Air Resources Board  
DRAFT GUIDANCE DOCUMENT**

**Low-Income Barriers Study,  
Part B: Overcoming Barriers to  
Clean Transportation Access for  
Low-Income Residents**



April 12, 2017

## Acknowledgements

The California Air Resources Board (CARB) would like to thank the following groups for their coordination and invaluable assistance in developing this Guidance Document\*:

California Bicycle Coalition  
California Coalition for Clean Air  
California Department of Housing and Community Development  
California Department of Transportation  
California Energy Commission  
California State Transportation Agency  
California Strategic Growth Council  
California Transportation Commission  
Center for Sustainable Energy  
City of Los Angeles  
Communities for a Better Environment  
Community Housing Development Corporation  
Environmental Justice Advisory Committee  
Leadership Counsel for Justice and Accountability  
North Circle Indian Housing Authority  
North Richmond Municipal Advisory Committee  
Residents throughout California  
The Greenlining Institute  
The Shared-Use Mobility Center  
Tribal Representatives and Residents  
University of California Davis, Institute of Transportation Studies  
Valley Latino Environmental Advancement Project

CARB appreciates all of the support and engagement on this effort to date, and wants to encourage ongoing relationship building as we continue to work towards the goal of increasing clean transportation access for low-income residents.

\*Organizations are listed in alphabetical order

## Abstract

This document, mandated by the Clean Energy and Pollution Reduction Act of 2015, Senate Bill (SB) 350 (De León, Chapter 547, Statutes of 2015), explores the barriers to and opportunities for increasing access to zero-emission and near zero-emission transportation and mobility options for low-income residents, including those in disadvantaged communities. This document also includes recommendations that establish a pathway to overcoming these barriers. In addition, this document supplements the California Energy Commission's (CEC's) "*Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities*" that explores the barriers and opportunities to expand low-income residents' access to energy efficiency, weatherization, and renewable energy investments. CEC's report also examines the barriers and opportunities related to contracting with small businesses located in disadvantaged communities.

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# List of Acronyms and Abbreviations

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Assembly Bill (AB)  
California Affordable Housing Agency (CalAHA)  
California Air Resources Board (CARB)  
California Department of Industrial Relations (DIR)  
California Department of Motor Vehicles (DMV)  
California Department of Public Health (CDPH)  
California Energy Commission (CEC)  
California Environmental Protection Agency (CalEPA)  
California Governor's Office of Business and Economic Development (Go-Biz)  
California Governor's Office of Planning and Research (OPR)  
California Highway Patrol (CHP)  
California Office of Traffic Safety (OTS)  
California Public Utilities Commission (CPUC)  
California State Treasurer's Office (STO)  
California Strategic Growth Council (SGC)  
California Transportation Commission (CTC)  
Clean Vehicle Rebate Project (CVRP)  
Community-Based Organization (CBO)  
Council of Governments (COG)  
Employment Development Department (EDD)  
Enhanced Fleet Modernization Program (EFMP)  
Environmental Justice Advisory Committee (EJAC)  
Investor Owned Utility (IOU)  
Metropolitan Planning Organization (MPO)  
Publicly Owned Utility (POU)  
Senate Bill (SB)  
Zero-Emission Vehicle (ZEV)

# Glossary

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Provided below are definitions used in this Guidance Document to clarify terminology. To the extent feasible, CARB ensured definitions were consistent with statutes, CARB, or other relevant programs.

Active Transportation: For the purposes of this document, active transportation refers to the use of active modes of transportation such as biking and walking, pedestrian safety, and supporting infrastructure such sidewalks and dedicated bike facilities.

Clean Transportation and Mobility Options: For the purposes of this document, clean transportation and mobility options refers to zero-emission and near zero-emission light-duty cars, trucks, transit buses, and school buses and supporting charging and fueling infrastructure, active transportation and supporting safe pedestrian sidewalks and bike facilities, and clean mobility options such as ride share, car share, bike share, and vanpools.

Disadvantaged Community: A community identified by the California Environmental Protection Agency (CalEPA) pursuant to Section 39711 of the Public Resources Code. These communities may include, but are not limited to, areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation and areas with concentrations of people that are of low-income, high unemployment, low levels of home ownership, high rent burden, sensitive populations, or low levels of educational attainment.<sup>1</sup>

Infrastructure: For the purposes of this document, infrastructure refers to charging and fueling infrastructure (i.e., electric charging stations and hydrogen fueling stations) for near zero-emission light-duty and heavy-duty vehicles, as well as active transportation infrastructure, such as dedicated pedestrian sidewalks and bicycle facilities.

Low-Income Household: For the purposes of this document and as defined in Assembly Bill (AB) 1550 (Gomez, Chapter 369, Statutes of 2016), low-income households are households with incomes at or below 80 percent of the statewide median income or with household incomes at or below the threshold designated as low-income by the Department of Housing and Community Development's list of state income limits adopted pursuant to Section 50093 of the Health and Safety Code.

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<sup>1</sup> See the California Environmental Protection Agency's designation of disadvantaged communities: <http://www.calepa.ca.gov/EnvJustice/GHGInvest/Documents/SB535DesCom.pdf>

Low-Income Communities: For the purposes of this document and as defined in AB 1550 (Gomez, Chapter 369, Statutes of 2016), low-income communities are census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits adopted pursuant to Section 50093 of the Health and Safety Code.

Near Zero-Emission Vehicle: A vehicle that utilizes zero-emission technologies, enables technologies that provide a pathway to zero-emission operations, or incorporates other technologies that significantly reduce criteria pollutants, toxic air contaminants, and greenhouse gas emissions.

Zero-Emission Vehicle: A vehicle that produces zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas under any possible operational modes or conditions.

## EXECUTIVE SUMMARY

Transportation electrification is the cornerstone of California's future towards meeting both air quality and climate goals, along with ensuring economic prosperity and energy security needs. Towards this end, the Clean Energy and Pollution Reduction Act of 2015 (SB 350, De León, Chapter 547, Statutes of 2015) established as a State priority the reduction of greenhouse gas emissions through the promotion of various clean energy policies, including widespread transportation electrification, for the benefit of all Californians.

Transforming the State's transportation sector to support widespread electrification requires increasing access for all residents, including low-income and those living in disadvantaged communities, across a broad spectrum of clean mobility options. Some of these options include zero-emission electric and fuel cell passenger vehicles; a vital mass transit system primarily utilizing zero-emission technologies; land-use planning and infrastructure improvements to support safe biking and walking; zero-emission electric school buses; and other clean mobility options such as zero-emission ride sharing and car sharing services.

SB 350 directs CARB to examine the barriers low-income residents must overcome to increase access to zero-emission and near zero-emission transportation and develop recommendations on how to overcome these barriers. In addition to better understanding the barriers to accessing clean transportation, SB 350 requires the California Energy Commission (CEC) to develop an interrelated study that explores the barriers and opportunities to expand low-income residents' access to energy efficiency, weatherization, and renewable energy investments, and barriers and opportunities related to contracting with small businesses located in disadvantaged communities.

The results of these SB 350 efforts are two separate but related reports that identify recommendations which are intended to provide clear pathways to increasing access to clean energy and transportation investments for low-income residents, including those in disadvantaged communities. The CEC report is entitled: *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities*<sup>2</sup>, and this report is entitled: *Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents*.

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<sup>2</sup> See the CEC's SB 350 barriers report: [http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830\\_20161215T184655\\_SB\\_350\\_LowIncome\\_Barriers\\_Study\\_Part\\_A\\_Commission\\_Final\\_Report.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A_Commission_Final_Report.pdf)

To meet the requirements of this directive, CARB undertook a public process to study and better understand the barriers that low-income residents need to overcome in order to gain greater access to clean transportation and mobility options. CARB incorporated the feedback received from low-income residents and the results of additional review of a few communities throughout the State in this Guidance Document report.

The purpose of this Guidance Document is to identify the main barriers and provide a framework to address these barriers moving forward by providing initial recommendations. These recommendations include steps that the Legislature, communities, State and local planning, transportation, and air quality agencies can take to overcome specific barriers and begin to formulate innovative, meaningful solutions. Many of the recommendations build upon current actions State and local agencies are implementing to increase access to transportation electrification for all Californians, such as efforts to update the AB 32 Scoping Plan and implementation of SB 375 sustainable communities strategies. After identifying the barriers and recommendations, the next steps would include continuing to refine recommendations with State agencies and organizations to ensure implementation continued to provide substantial benefits for low-income residents including improving air quality in low-income and disadvantaged communities and increasing access to greater economic opportunities throughout California.

***Clean Transportation and Mobility Options Include:***

- Zero-emission and near zero-emission light-duty cars and trucks
- Zero-emission and near zero-emission transit and school buses
- Active transportation (biking and walking)
- Zero-emission and near zero-emission cars near public transit for public use, ride share, car share, vanpools, bike share, and mobility hubs, etc.
- Zero-emission and near zero-emission supporting infrastructure for vehicle charging and fueling and safe biking and walking, etc.

One fundamental constraint across all of the recommendations is identifying permanent, long-term funding sources for (1) zero-emission and near zero-emission vehicles and supporting infrastructure for vehicle charging and fueling and safe biking and walking, (2) assessments to understand how funding can be used to better address low-income, community-based transportation and mobility needs, (3) increasing awareness for low-income residents by expanding education and outreach on clean transportation and mobility options, and (4) maximizing economic opportunities and benefits for low-income residents from investments in clean transportation and mobility options. To ensure adequate long-term funding sources are available, State and local elected officials need to work to leverage existing and develop new, creative funding mechanisms. Current funding sources, such as the Greenhouse Gas Reduction Fund, have played an important role thus far in providing long-term funding opportunities for new or existing zero-emission and near zero-emission vehicle projects through 2020 (i.e., car sharing

and financing equity pilot projects). However, current funding sources are insufficient to meet the demand for expanding clean transportation programs for all residents, including those in low-income and disadvantaged communities. This heightens the importance of identifying other funding sources for this effort, especially those that are permanent and available in the long-term. Some examples of potential funding sources could include ‘feebates’ which would charge fees for the purchase of higher polluting vehicles and provide rebates for cleaner vehicle purchases, an increase in motor vehicle fees, or other funding mechanisms that would be considered through public processes.

In addition to identifying permanent funding sources, low-income residents identified increased awareness and expanded community-based assessments as being critical to best address the barriers to access clean transportation and mobility options for low-income and disadvantaged communities. Further work must be done in order to more fully understand the best mechanisms to overcome barriers to increasing transportation electrification across the State.

It is also critical to ensure that any investments made in clean transportation provide opportunities, such as for businesses that operate in low-income and disadvantaged communities, and avoid substantial burdens to the extent feasible. Low-income residents emphasized the importance of considering unintended consequences of targeted investments in clean transportation projects and programs, such as the potential for physical or economic displacement of people or businesses, or increased emissions in low-income and disadvantaged communities. Residents asked that agencies consider these factors upfront as part of the implementation process and throughout program development.

### **Public Process**

Through a public process, CARB directly engaged local community members, including low-income residents, across the State in roundtable and “world café” type discussions to understand the issues they face with transportation in their communities. (The communities CARB visited are described further in Chapter 1 and Appendix B). To complement existing efforts, research was reviewed and CARB consulted with the CEC and various other State agencies. Recognizing that not every region in California is alike and that barriers differ by region, CARB expanded these efforts by developing case studies for local communities enhanced by literature reviews, including in rural, urban, and tribal communities.

Residents throughout these communities expressed a great deal of interest in understanding the benefits of clean transportation such as expanding economic opportunities and improving air quality. New opportunities like electric vehicles and car sharing services were seen as promising options but potentially beyond the immediate transportation needs of the communities. Through these efforts, CARB has been able to better understand and explore community-identified challenges, identify various

policies needed to enable solutions for increasing access to clean transportation, and inform residents of the opportunities currently available for them to embrace the various clean transportation options in their communities.

## **Barriers to Clean Transportation and Mobility Options**

CARB recognizes that all California residents face similar barriers to accessing clean transportation and mobility options, but that the barriers low-income residents face are magnified. This is mainly due to their inability to afford advanced technology vehicles that have higher upfront costs as compared to conventional vehicles. Low-income residents also tend to live in established communities that lack necessary clean transportation infrastructure, such as safe biking and pedestrian facilities, and may be underserved by public transportation or other services such as demand and response ridesharing or dial-a-ride services, as described in Appendix B.

There is a lack of access and exposure to zero-emission cars, transit buses, and other clean mobility options, as well as educational opportunities, leading to reduced understanding of the benefits. These challenges are exacerbated by a lack of funding for transportation, especially clean transportation in low-income and disadvantaged communities, and the inability to pay for clean technologies. There are substantial funding needs in these communities for zero-emission and near zero-emission vehicles, supporting infrastructure, and active transportation.

Low-income residents across the communities that CARB visited emphasized that when transportation investments are being planned and made that concerns are not always being heard and needs are not addressed, such as the placement of vehicle charging and fueling infrastructure and need for increased, safe pedestrian and bike facilities. This is one example that demonstrates barriers that low-income residents face. To overcome these barriers, various strategies, including community-driven solutions, were identified that have either been used or could be expanded for increasing access to cleaner transportation.

### ***Current Transportation Programs and Funding Sources Include:***

- **Cap-and-Trade Program**
- **Active Transportation Program**
- **Alternative and Renewable Fuel and Vehicle Technology Program**
- **Air Quality Improvement Program**
- **Carl Moyer Program**
- **Local Air District Department of Motor Vehicle Fees**

## **Recommendations to Overcome Barriers**

Throughout this effort, it has become clear that there is not a singular statewide solution to addressing barriers and increasing clean transportation access for low-income residents. Based on discussions with residents in low-income communities, it is also clear that an overall lack of understanding of community-based needs on the part of

State agencies and other groups that implement transportation policies and planning activities is one of the biggest barriers and hurdles to overcome if access is to be increased for these residents, including in disadvantaged communities.

CARB, in consultation with the public and stakeholders, identified many recommendations that would help overcome the barriers identified above. This report focuses on four main recommendations that most directly address the barriers to clean transportation access. These recommendations provide the foundation for policy development and funding decisions along with ensuring progress is being made towards meeting the long-term goals of increasing access for low-income residents. Many of the recommendations build upon the successes of current State and local transportation programs that many agencies are currently implementing to increase clean transportation access, while also allowing flexibility to create new innovative strategies in low-income and disadvantaged communities.

A description of each of the recommendation categories is provided below. Recommendations are described in further detail in Chapter 4.

**Increase and Prioritize Funding for Clean Transportation and Mobility Options, Including Supporting Infrastructure for Low-Income Residents.** This recommendation includes identifying permanent funding sources for current and new programs that incentivize the purchase or lease of used and new zero-emission and near zero-emission vehicles, other clean mobility options, and supporting vehicle and active transportation infrastructure to 2030 and beyond. It also includes modifications to existing programs where necessary to prioritize and minimize barriers for low-income residents. Some examples include: establishing a long-term, permanent funding source for used and new light-duty zero-emission and near zero-emission vehicle ownership programs such as creative financing mechanisms, vehicle retirement and replacements, and charging installation.

**Expand Assessments of Low-Income Resident Transportation and Mobility Needs to Ensure Feedback is incorporated in Transportation Planning.** This recommendation includes focused and expanded community-based needs assessments that ensure resident feedback in low-income and disadvantaged communities is included in transportation planning and investments. Some examples include: updating or developing new zero-emission vehicle (ZEV) regional readiness plans when updating local transportation and land use plans. There should be a focus on low-income resident input when establishing priorities for funding programs that maximize clean transportation access.

**Increase Awareness for Low-Income Residents by Expanding Education and Outreach on Clean Transportation and Mobility Options.** This recommendation includes permanent funding to expand clean transportation and mobility option education and outreach efforts in low-income and disadvantaged communities to increase awareness. Some examples include: expanding educational curricula for

kindergarten through 12<sup>th</sup> grade students; increasing knowledge of ridesharing and demand response options such as Lyft which can utilize zero-emission and near zero-emission vehicles; bike sharing; and public transportation.

**Maximize Economic Opportunities and Benefits for Low-Income Residents from Investments in Clean Transportation and Mobility Options.** This recommendation ensures that access to economic opportunities is maximized for low-income residents and disadvantaged communities as a result of investments being made in clean transportation, including expanding local job and workforce development, and encouraging policy development that minimizes the potential for physical or economic displacement of low-income residents as a result of these investments. Additional examples include: expanding access to educational opportunities in zero-emission and near zero-emission vehicle production, maintenance, and infrastructure deployment; vocational training, pre apprenticeship, and apprenticeship programs for clean transportation; increasing access and advanced knowledge and skills to acquire good quality clean transportation jobs; and promoting affordable housing in transportation planning and investments.

## **Conclusions and Next Steps**

CARB acknowledges that there was limited time to fully explore all of the issues and suggestions raised by members of the communities visited this year. In addition, many other residents expressed interest in CARB conducting outreach and detailed evaluations in their communities. CARB believes it is important and necessary to continue this effort to support a more robust understanding of the barriers and solutions to increase clean transportation access.

CARB will continue working with the Governor's Office, the Legislature, CEC, and other relevant public agencies to see what actions can be taken in existing programs that address transportation barriers to further prioritize access to clean transportation and mobility options for low-income residents and those living in disadvantaged communities.

CEC's Low-Income Barriers Study: Part A suggests that developing a task force is an appropriate mechanism to facilitate coordination of all State agencies administering energy, water, housing, and low-emission transportation infrastructure programs.<sup>3</sup> CARB concurs and recommends including clean transportation and mobility options under the umbrella of responsibilities for this task force. CARB looks forward to working with CEC and other State agencies to clearly define the scope of this recommendation.

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<sup>3</sup> See page 5, Principal Recommendation 1., [http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830\\_20161215T184655\\_SB\\_350\\_LowIncome\\_Barriers\\_Study\\_Part\\_A\\_Commission\\_Final\\_Report.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A_Commission_Final_Report.pdf)

In order to refine initial recommendations and finalize this Guidance Document, CARB anticipates meeting with State agencies through the spring and early summer to determine priority items to address over the next two years, the resources needed, and potential funding sources. CARB will also be returning to communities included in the case studies to apprise residents' how their input has informed this Guidance Document; incorporating lessons learned from existing programs that increase access for low-income residents; and promoting ongoing stakeholder engagement to ensure progress is being made.

Increasing access to clean transportation for all Californians is crucial in order to achieve air quality and climate change goals. SB 350 lays out the goals and ideals that provide direction and a vision that fully incorporates access to all residents, including low-income and those in disadvantaged communities. Between CEC and CARB, many of the key barriers have been identified to help increase access to clean energy and transportation. Current actions to address barriers SB 350 and new strategies identified in these studies put the State in a position for future actions to overcome these barriers.

# CHAPTER 1: Introduction

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## Purpose

In 2015, Governor Edmund G. Brown Jr. and the Legislature found and declared that there is insufficient understanding of the barriers low-income residents face in accessing zero-emission and near zero-emission transportation and mobility options. As a result, Governor Brown signed into law the Clean Energy and Pollution Reduction Act of 2016 (SB 350, De León, Chapter 547, Statutes of 2015) that directs the California Air Resources Board (CARB) to conduct a study to better understand the barriers low-income residents must overcome to increase access to zero-emission and near zero-emission transportation and mobility options, including those in disadvantaged communities. SB 350 also requires CARB to develop recommendations to overcome these barriers.<sup>4</sup>

In addition, SB 350 requires the California Energy Commission (CEC) to explore the barriers and opportunities to expand low-income residents' access to energy efficiency, weatherization, and renewable energy investments, and examine the barriers and opportunities related to contracting with small businesses located in disadvantaged communities.

The results of these efforts are two separate, but related, reports that provide recommendations intended to have a transformative effect on access to clean energy and transportation investments for low-income residents, including in disadvantaged communities. These reports include the *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities*, developed by CEC, and the *Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents*, developed by CARB.

To meet the requirements of this directive, CARB undertook a public process to study and better understand the barriers that low-income residents need to overcome in order to increase access to clean transportation and mobility options. CARB framed the results of this study in this Guidance Document. The purpose of this Guidance Document is to highlight the main barriers and provide a framework moving forward to address these barriers by providing recommendations the Legislature, State and local planning, transportation, and air quality agencies, and communities can take that would result in increasing widespread access for low-income residents to zero-emission and

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<sup>4</sup> See SB 350 bill text: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201520160SB350](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350)

near zero-emission transportation and mobility options. These recommendations would allow for substantial benefits for Californians, including increasing access particularly for low-income residents to clean transportation and mobility options, improving air quality in low-income and disadvantaged communities, and providing greater economic opportunities.

Recommendations are framed around the fact that each community has unique needs. There are, however, specific barriers which are common amongst all of the communities CARB consulted with. These include a lack of financial resources and higher costs of advanced technology zero-emission and near zero-emission vehicles, education and awareness, and meeting the needs of low-income residents.

One fundamental constraint identified in the recommendations is finding permanent, long-term funding sources for (1) zero-emission and near zero-emission vehicles and supporting infrastructure for vehicle charging and fueling and safe biking and walking, (2) assessments to understand how funding can be used to better address low-income, community-based transportation and mobility needs, (3) increasing awareness for low-income residents by expanding education and outreach on clean transportation and mobility options, (4) maximizing economic opportunities and benefits for low-income residents from investments in clean transportation and mobility options. To ensure adequate long-term funding sources are available, State and local elected officials need to work to leverage existing and develop new, creative funding mechanisms.

## Methods

In order to better understand the barriers low-income residents and disadvantaged communities face to access clean transportation and mobility options, CARB undertook a process to directly engage with community-based organizations and residents to hear what issues they face. CARB also embarked on an effort to better understand what transportation issues there are throughout various low-income communities in California, which included:

- Hosting public roundtable meetings, engaging in community-based meetings, engaging in Environmental Justice Advisory Committee (EJAC) local community meetings, and holding numerous individual meetings with community-based organizations, environmental groups, various State and local agencies, and stakeholders;

### *Clean Transportation and Mobility Options Include:*

- Zero-emission and near zero-emission light-duty cars and trucks
- Zero-emission and near zero-emission transit and school buses
- Active transportation (biking and walking)
- Zero-emission and near zero-emission cars near public transit for public use, ride share, car share, bike share, vanpools, mobility hubs, etc.
- Zero-emission and near zero-emission supporting infrastructure for vehicle charging and fueling and safe biking and walking, etc.

- Developing case studies of four low-income communities, including in rural, urban and tribal regions, through meetings hosted by community-based organizations and communicated directly with low-income residents;
- Conducting a literature review of transportation issues for the low-income communities mentioned above, plus additional communities, including those located in rural and tribal areas;
- Reviewing various research projects, along with current efforts, to understand the barriers and programs for increasing access to clean transportation; and
- Consulting with the CEC and other relevant public agencies.

## **Public Engagement**

Since the beginning of 2016, CARB conducted an extensive outreach and public engagement effort to help identify the main barriers, opportunities and recommendations to increase clean transportation access for low-income residents.

### Public Process Kick-Off

CARB met with Charge Ahead California campaign steering committee members, many of whom are also part of the SB 535 Coalition, to determine the main groups and organizations that supported the SB 350 language being added in statute in order to kick-off the public process and guide our outreach efforts.

### Public Roundtable Meetings with Stakeholders

CARB conducted interactive public roundtable meetings to discuss barriers, opportunities, and recommendations to increase clean transportation access and mobility options for low-income residents and those in disadvantaged communities. These meetings provided an opportunity to speak with the stakeholders engaged in the SB 350 effort and other related ARB programs and receive their input.

### Community-Based Meetings with Low-Income Residents

CARB participated in a series of meetings across the State that were held and facilitated by community-based organizations, which allowed staff to engage directly with low-income residents. These meetings provided an opportunity for community members to speak about their experiences with transportation access as a whole, and barriers to accessing clean transportation and mobility options within their communities. In addition, community members were asked to fill out surveys to help CARB better understand modes of transportation most frequently used and local transportation issues. This also provided an opportunity for staff to share information regarding incentive programs available in their communities to promote the use of clean vehicles.

*Environmental Justice Advisory Committee (EJAC) Local Community Meetings with Stakeholders and Low-Income Residents*

CARB attended seven EJAC community meetings across the State. The purpose of these meetings was to provide community members information on the State's climate plan and allow for input on various topics including transportation issues. At these meetings, CARB engaged in discussions and asked community members to fill out surveys to better understand modes of transportation most frequently used and local transportation issues to better understand needs and barriers to access.

*Individual Meetings with Community-Based Organizations, Environmental Groups, State and Local Agencies, and Stakeholders*

CARB engaged with at least one hundred State and local agencies and organizations as part of this effort. CARB organized one-on-one conference calls and meetings with various community-based organizations, environmental groups, State and local agencies and stakeholder groups to discuss the SB 350 project scope including barriers, opportunities, and recommendations. These meetings provided an opportunity to promote an open process for providing updates on the project and receiving valuable input. CARB plans to continue this collaboration through 2017 and beyond. Additional information on these meetings is provided in Appendix A.

**Community-Based Case Studies**

From the beginning of this process, stakeholders, including community-based organizations, requested that CARB meet directly with low-income residents in order to better understand the barriers that inhibit them from accessing clean transportation and mobility options. CARB developed four community-based case studies based on feedback from these meetings. One goal was to include a review of different geographic locations throughout the State that have unique demographic and transportation characteristics, including urban, rural, and tribal communities. Case studies provided information that framed the recommendations and were developed by: attending community-based meetings and interacting with low-income residents; conducting surveys with questions related to travel behavior and gaps in current transportation access; conducting a literature review of each community and their transportation issues; and identifying barriers and recommendations for increasing access to clean transportation and mobility options.

The low-income communities chosen as case studies were recommended by community-based organizations and represent ongoing activities by State and local agencies to increase access to cleaner transportation and mobility options. The selected case study communities included:

- Huntington Park
- Huron
- North Richmond

- Redwood Valley

CARB recognizes that many other low-income communities throughout the State could have been included in these case studies. The dialogue CARB had with low-income residents in these communities has been invaluable and allowed for engagement, participation, and empowerment of the communities. As a result, one of CARB's recommendations is to assess community-based mobility needs to better understand barriers and guide clean transportation planning and decision-making in low-income communities. Additional information is provided in Appendix B.

### **Literature Review Development**

CARB reviewed existing literature surrounding clean transportation and mobility option accessibility for some communities across the State. The purpose of conducting a literature review was to supplement and validate the input and feedback received through the public process and case studies. This review provided insight into the most common barriers to transportation, including clean transportation access for low-income residents, such as the high costs of zero-emission and near zero-emission light-duty and heavy-duty vehicles and technologies, minimal knowledge and awareness of rebate and incentive programs and clean transportation options, and the need for increased education and outreach, including in rural, tribal, and urban areas. The selected Literature Review communities included:

- Lemon Hill
- Merced
- McFarland
- Oroville
- Tipton and Woodville

Additional information on the Literature Review is provided in Appendix B.

### **Consultation with CEC and Other Public Agencies**

CARB continues to coordinate closely with CEC on this effort and in the implementation of the recommendations in the *Low-Income Barriers Study: Part A* report. The purpose of this coordination is to share lessons learned from the public process and input from low-income residents, including for barriers and opportunities to increase access to transportation and energy efficiency programs. CARB attended CEC public meetings and participated in its public process, including reviewing CEC's draft barriers report, recommendations, and associated public comments. This provided an opportunity to closely coordinate development of the barriers studies. These meetings were critical to obtaining a better understanding of existing clean transportation and mobility option activities, areas where there is a need for continued coordination, and where there can be a greater focus on low-income residents and disadvantaged communities.

In addition to CEC, there were many other agencies at the State and local level, as well as other organizations, providing consultation for this effort, including the California Transportation Commission, California Department of Transportation, California State Transportation Agency, and the California Public Utilities Commission. CARB also consulted with various local transportation planning agencies and organizations, local air districts, universities, environmental organizations and many other stakeholder groups. Additional information on public engagement is provided in Appendix A.

## **Recommendations**

Through this effort, it has become clear that there is not a silver bullet or singular solution to addressing barriers and increasing clean transportation access for low-income residents since each community has unique needs. There are, however, specific barriers which are common amongst all of the communities CARB visited as part of this effort, including the need for permanent, long-term funding, increased education, outreach, and awareness, and affordability of clean technology, or other alternative options. CARB, in consultation with the public and stakeholders, has identified many potential recommendations that would help overcome the barriers identified in this report. However, because of the magnitude of potential solutions, CARB prioritized these recommendations and focused on the actions that can make the most significant differences in low-income and disadvantaged communities.

CARB identified four principal recommendations to overcome the barriers previously identified. These recommendations are discussed in more detail in Chapter 4.

## **Companion Study on Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Residents and Small Business Contracting Opportunities in Disadvantaged Communities**

As previously mentioned, this Guidance Document is one of two reports that identify barriers low-income residents face in accessing clean energy and transportation. The report developed by CEC provides recommendations to overcome:

- Barriers for low-income customers to energy efficiency and weatherization investments, including those in disadvantaged communities, as well as recommendations on how to increase access to energy efficiency and weatherization investments to low-income customers;
- Barriers to and opportunities for solar photovoltaic energy generation, as well as barriers to and opportunities for access to other renewable energy by low-income customers; and
- Barriers to contracting opportunities for local small businesses in disadvantaged communities.

This is addressed by CEC's *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Consumers and Small Business Contracting Opportunities in Disadvantaged Communities*.<sup>5</sup>

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<sup>5</sup> See CEC's SB 350 Barriers Report: [http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830\\_20161215T184655\\_SB\\_350\\_LowIncome\\_Barriers\\_Study\\_Part\\_A\\_Commission\\_Final\\_Report.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A_Commission_Final_Report.pdf)



# CHAPTER 2: Barriers and Opportunities to Accessing Clean Transportation and Mobility Options

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This chapter provides a detailed description of the barriers and opportunities to increase access to clean transportation and mobility options identified through conversations with low-income residents, case studies, literature reviews, and with feedback from stakeholders.

CARB recognizes that all California residents, including those who are low-income, face many similar barriers to accessing clean transportation and mobility options. Barriers are magnified for low-income residents since they have limited financial resources and access to transportation is primarily a means of economic and social opportunity. The ability to meet basic needs, such as accessing grocery stores and health care, as well as the ability to access economic and social opportunities such as education, employment, and other activities, is vital to promoting equity and bridging the gap for low-income residents in transportation access.

In order to better understand the main barriers impacting low-income residents' ability to access clean transportation, staff followed the methodology described in Chapter 1. Through these efforts, CARB has been able to identify the main community-driven challenges and solutions to accessing clean transportation. Barriers include: affordability of zero-emission and near-zero emission technologies and supporting charging and fueling infrastructure; the need for permanent, long-term funding sources; awareness of clean vehicles and supporting infrastructure including incentive programs; and the dynamic nature of transportation and mobility option needs of low-income residents.

## **Affordability**

Affordability of advanced technology vehicles is one of the biggest barriers to accessing clean transportation. A substantial portion of a household's budget is constrained by daily transportation costs. For example, transportation costs in case study communities ranged from seventeen percent in North Richmond to thirty six percent in Redwood Valley of the household budget.<sup>6</sup> Therefore, costs associated with various

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<sup>6</sup> U.S. Department of Transportation, Federal Highways Administration. "Livability Initiative." *Transportation and Housing Costs*. 20 Oct. 2015. Web. 26 January 2017. <[https://www.fhwa.dot.gov/livability/fact\\_sheets/transandhousing.cfm](https://www.fhwa.dot.gov/livability/fact_sheets/transandhousing.cfm)>.

transportation types, including vehicles and other alternatives such as public transportation, influence low-income residents' decisions on mode choices. This includes the costs for purchasing zero-emission and near zero-emission vehicles. Low-income residents expressed that the current higher upfront costs of advanced technology vehicles as compared to the conventional vehicles make it uneconomical to make the upfront investments.

Although the costs of advanced technology vehicles are gradually decreasing over time as advancements in battery technologies are made, current prices are still not low enough to promote widespread ownership amongst low-income consumers. Currently, incentive programs and other financing mechanisms are available to make the higher upfront costs of zero-emission and near zero-emission vehicles more affordable for low-income consumers. There needs to be dedicated long-term funding to allow for these programs to expand.

## **Securing Permanent, Long-Term Funding Sources**

As mentioned above, there is not enough funding available from existing funding sources to meet the demand for low-income residents' participation in clean transportation programs. Overcoming this barrier requires identifying and securing permanent funding sources to help reduce the higher costs of zero-emission and near zero-emission vehicles and supporting infrastructure, vehicle ownership, and public transportation. In addition, funding charging and fueling and safe biking and walking, assessments to understand how funding can be used to better address low-income, community-based transportation and mobility needs, increasing awareness for low-income residents by expanding education and outreach on clean transportation and mobility options, and maximizing economic opportunities and benefits for low-income residents from investments in clean transportation and mobility options (see Chapter 4).

One potential solution to overcome this barrier is for State and local agencies to determine the long-term need for funding and continue to work with State and local elected officials to leverage existing and develop new, creative funding mechanisms. This is a critical part of the next steps for the SB 350 process.

## **Awareness**

Another factor that low-income residents described as a barrier from accessing clean transportation and mobility options was a lack of awareness of possible options such as the availability of advanced technology vehicles. Residents in the communities of Huntington Park and Huron expressed that they were not fully aware of advanced technologies which caused fear and anxiety for purchasing clean vehicles. Overcoming this barrier would include expanding opportunities for exposure to the technologies and sufficient information to understand them along with available grant programs. CARB also found in meeting with low-income residents that awareness and exposure to clean public transit buses, and other mobility options, as well as educational opportunities, is

somewhat limited in low-income and disadvantaged communities, and could be one of the primary factors in use and adoption of these options.

Though much progress has been made to increase education and outreach efforts on clean transportation in low-income communities, CARB has concluded that there are additional opportunities that must be explored to further expand awareness. There is also a need to have more directed outreach to low-income consumers on existing incentive programs including current incentive programs such as vehicle retire and replace and options for electric vehicle charging.

### Education

Education is both a critical barrier and potential solution for addressing some of the fundamental clean transportation accessibility needs of low-income residents. Providing educational curricula for kindergarten through 12<sup>th</sup> grade students (including vehicles and biking and walking benefits and safety), better access to educational opportunities in vehicle production, maintenance, and infrastructure deployment, as well as vocational training, pre apprenticeship, and apprenticeship programs are all opportunities to educate residents on clean transportation and mobility options. Residents expressed interest in gaining further knowledge of clean transportation and associated programs that could benefit low-income residents, and reduce costs of clean vehicle ownership in particular (see Appendix A and B).

### Outreach

Reaching out to low-income and disadvantaged communities in a manner that is culturally sensitive to the community's characteristics, meaningful, and effective is a critical barrier to clean transportation access. Residents and stakeholders expressed that current strategies government agencies and others have implemented to interact with low-income communities could be more effective and engaging (see Appendix A and B). For example, residents expressed that when outreach does occur, it is often not targeted enough to specific low-income resident needs, is not wide reaching to very many residents, or is not relatable to their communities (i.e., outreach isn't being conducted in the languages used in many of these communities).

One potential solution to overcome this barrier is to broaden multi-lingual outreach and communication strategies. Residents want to ensure information is disseminated in a relatable format they can understand. In addition, residents would benefit from repeat outreach and visits to ensure a more consistent presence in the community, to build trust, and ensure community-based organizations have the tools and resources they need to pass along information to their residents.

These efforts must include providing outreach to rural, tribal, and urban communities. In addition, developing regional one-stop shops that provides low-income residents with access to multiple clean energy, transportation, and housing project information could

be an important part of the solution, and is in alignment with a recommendation in CEC's Low-Income Barrier Study, Part A.

## **Understanding the Transportation Needs of Low-Income Residents and Communities**

Throughout the public process in developing these barriers, low-income residents in all of the communities expressed the need to have a better understanding of local, community-based transportation needs. These residents want their voices to be heard which they do not feel occurs within the current transportation planning processes. To increase access for low-income residents, there needs to be a better understanding of the modes of transportation currently used and why; and what it will take to transition communities to utilize clean transportation and mobility options. This can be done by updating and expanding existing planning requirements by ensuring resident feedback is taken into consideration.

CARB gained some insight into the types of issues that need to be addressed when assessing transportation needs. Some of these issues include reliability, convenience, safety, demographics, and geography of communities.

### Reliability

For accessing employment, school, and other time-sensitive economic and social activities, low-income residents need reliable transportation. This barrier indicates that there is a lack of access to public transportation, issues with frequency and punctuality of public transportation, which are both seen as critical to low-income residents, and access to alternative modes of transportation such as ride sharing within their communities.

### Convenience

Low-income residents expressed concerns that transportation is often not convenient to use, limiting access to options, including cleaner alternatives. Convenience of clean transportation and mobility options includes physical proximity; time required to utilize these options (including travel and wait times); missed or forgone opportunities as a result of utilizing alternative transportation modes, such as public transportation; inability to travel at the desired times; and absence of good information, such as educational materials.

As an example, in Fresno some affordable housing units are not close enough to allow convenient access to public transportation. In addition, there is limited access to safe biking and walking facilities between housing and public transit. In other cases, fixed transit is simply not available, as seen in the literature review community of McFarland (see Appendix B).

Input received in San Diego, Oakland, Huron and Redwood Valley community-based meetings included recommendations for subsidized commuter shuttles, vanpools or carpools to work locations (e.g., hotels, industrial facilities, or agricultural locations), as an alternative to fixed-route transit. This could also be a solution for off-hours shift workers. Many low income residents stressed that they would prefer to use clean transportation methods over a conventional gasoline vehicle if these modes are more readily available.

### Safety

Safety is a critical barrier to address when looking at increasing access to clean transportation and mobility options, particularly for biking, walking, and the use of public transportation. This barrier includes ensuring physical safety and perceptions of safety, as well as the need for programs and education to inform low-income residents on pedestrian and biking laws.

Physical safety was one of the primary reasons low-income residents opted to drive their vehicles versus taking an alternative mode available. For example, a lack of pedestrian and designated bike facilities and unsafe road crossings deters children, adolescents, adults, persons with disabilities, and elderly, from biking and walking. There is also a fear of crime, injury and personal safety, as seen in the literature review community of Lemon Hill (see Appendix B).

Pedestrian and biking safety education is an important solution when promoting active transportation and a clean alternative to driving, particularly for the low-income communities that are transit dependent, such as those identified in the San Joaquin Valley communities in Appendix B. For example, in low-income communities such as south Merced, pedestrian and bicycle collisions near schools were documented among the highest in the city, which poses a huge barrier to biking and walking in this community.<sup>7</sup> Increasing the use of active transportation modes, such as biking and walking, can be made by providing more dedicated pedestrian and bike facilities along with safe road crossings.

### Demographics

There are many demographical considerations that impact a low-income residents' ability to access to clean transportation and mobility options. This barrier includes age of the population, whether the community is rural or urban, educational attainment, and what mode choices are made.

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<sup>7</sup> City of Merced, 2013

Youth-targeted transportation is a significant barrier to accessibility across many case study and literature review communities. For example, several San Joaquin Valley communities have a disproportionately high percentage of youth under 18 years of age compared to the rest of the State, and a younger median age of residents (e.g. south Merced, McFarland, Tipton, Woodville), whereas Redwood Valley has a high proportion of elderly.

Age can also be a factor in adoption of clean transportation since younger people are more likely to use public transportation and bike or walk, whereas elderly are more likely to take advanced of Dial-a-Ride services or drive their personal vehicle. Clean transportation investments in low-income communities must incorporate practical and safe options for local and regional mobility to increase access.

Rural communities have very specific clean transportation needs that might not be met through battery-electric vehicles due to the distances community members live from other destinations, as seen in the Redwood Valley case study where residents have to travel far distances to go to medical appointments. Low-income residents expressed range anxiety as a result of these long travel distances. In addition, these rural areas do not have charging and fueling infrastructure available in close proximity to their homes and places of employment, to allow for convenient access, whereas destinations in urban communities are usually closer in proximity and do not require longer-range vehicles. With the introduction of new advanced technology vehicles with higher ranges increases along with the installation of charging infrastructure, this becomes less of a barrier. Until the higher costs of these longer range vehicles decreases, adoption of electric vehicles in urban areas may stay minimal.

#### Planning, Infrastructure, and Investments

Transportation planning, infrastructure, and investments, including for clean transportation, do not always promote equitable access, or consider the impact of access on economic opportunities for low-income residents. Opportunities for overcoming these issues includes considering low-income residents in transportation planning, the planning and placement of charging and fueling infrastructure, and increasing and expanding investments that provide direct benefits to low-income residents and disadvantaged communities.

Although progress to support clean transportation and mobility options is being made throughout the State, there are specific, unique needs for updating existing transportation systems in low-income and disadvantaged communities to better accommodate zero-emission and near zero-emission transportation and infrastructure. For example, there are barriers in many communities across the State to having livable, walkable communities that are centered on accessing clean transportation such as mobility hubs that include transit, bike sharing, or ride sharing options.

The biggest potential solution is to prioritize transportation planning assessment efforts that recognize low-income and disadvantaged communities' needs and include their feedback in transportation planning policies when making investments in clean transportation. In addition, there is a continued need to coordination between State and local planning agencies and the public to ensure flexibility is allowed due the many different community-based needs throughout the State. If community-based mobility needs assessments in low-income communities take into account residents' needs, then planning and investments in infrastructure will result in increasing the accessibility to clean transportation options for low-income residents.

Consideration for the clean transportation modes and options low-income residents can best utilize should be based on the demographics and specific needs for each community. CARB acknowledges that there are current efforts being made by local agencies in identifying transportation barriers as part of developing or updating Regional Transportation Plans, but there are community requests to focus on better understanding unmet clean transportation needs at the local level and conducting or expanding community-based needs assessments.



## CHAPTER 3: Current Actions to Understand and Address Barriers

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This chapter provides a description of the current actions that are occurring across California that either directly or indirectly help to address barriers for low-income residents to access clean transportation and mobility options.

Programs and activities are currently underway across the State that are intended to increase understanding and address barriers to clean transportation access, some of which target low-income residents. For example, the California Transportation Commission's Active Transportation Program increases access to biking, walking, and supporting infrastructure for low-income residents. In addition, California Climate Investments funded by Cap and Trade auction proceeds identifies potential funding opportunities for clean transportation projects that benefit low-income residents, including the Clean Vehicle Rebate Project (CVRP), pilot projects such as Enhanced Fleet Modernization Program (EFMP) Plus-up Pilot Project, Car Sharing and Mobility Options, and Financing Assistance for Lower-Income Consumers. For example, CVRP promotes clean vehicle adoption by offering monetary rebates for the purchase or lease of new, eligible zero-emission vehicles and also provides increased incentives for low-income consumers.

CARB also has regulations (Advanced Clean Cars), plans (Assembly Bill 32 Scoping Plan, Mobile Source Strategy, California Sustainable Freight Action Plan, Short-Lived Climate Pollutant Reduction Strategy, and ZEV Action Plan), and efforts (Innovative Clean Transit) that address what is needed to achieve emissions reduction goals and overcome barriers to clean transportation access. These current actions are vital in meeting the State's climate goals. Low-income residents and disadvantaged communities must be seen as an important part of the solution. For example, to meet the goal of approximately eight percent of new car sales being zero-emission vehicles by 2025, more needs to be done to increase funding, awareness, and access to clean transportation, especially for low-income residents.

CARB identified and reviewed existing laws, current projects being implemented to address transportation challenges, and research projects to help better understand barriers and opportunities to increase clean transportation access for low-income residents and develop recommendations. Guidance Document recommendations are intended to complement the proactive transportation planning State, regional and local agencies are already doing and follow best practices. Examples of current best practices include: 1) using local transportation sales tax measures for funding bicycle and pedestrian facilities, complete streets, public transit upgrades/ expanded services, and subsidizing transit passes; 2) county-sponsored ride-matching websites, subsidized

vanpooling, and incentivized ridesharing; 3) multi-ride transit passes and reduced fares for transit-dependent riders; and 4) regional and local entities submitting competitive projects for Low Carbon Transportation grant funding, (related to clean technology, sustainable communities, and capital improvements to public transportation).

## **Existing Laws to Expand Clean Transportation and Mobility Options for Low-Income Residents**

The following is a summary of laws that direct projects and funding towards clean transportation and mobility options for low-income consumers and in disadvantaged communities. These legislative actions created and support a variety of transformative programs that move the State towards transportation electrification, including projects that specifically address the needs of low-income residents.

### Assembly Bill 1475 (Soto, Chapter 663, Statutes of 1999)

In 1999, the State Legislature passed and Governor Brown signed Assembly Bill 1475. This bill requires the Department of Transportation, in consultation with the Department of the California Highway Patrol, to establish and administer a “Safe Routes to School” construction program pursuant to authority granted under specified federal law and to use federal transportation funds for construction of bicycle and pedestrian safety and traffic calming projects.

### Assembly Bill 32 (Nunez and Pavley, Chapter 488, Statutes of 2006)

AB 32 requires California to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under a “business as usual” scenario. Pursuant to AB 32, CARB must adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. The full implementation of AB 32 will help mitigate risks associated with climate change, while improving energy efficiency, expanding the use of cleaner transportation, renewable energy resources, and reducing waste. By requiring in law a sharp reduction of GHG emissions, California set the stage for its transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to addressing climate change, and does so in a way that aims to improve the environment and natural resources while maintaining a robust economy. In addition, AB 32 also requires CARB to develop a Scoping Plan. The Scoping Plan lays out California’s strategy for meeting GHG reduction goals and must be updated every five years.

### Senate Bill 375 (Steinberg, Chapter 728, Statutes of 2008)

SB 375, also known as the Sustainable Communities and Climate Protection Act, supports the State's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities. Under SB 375, CARB sets regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established these targets for 2020 and 2035 for

each region covered by one of the State's metropolitan planning organizations (MPO). CARB will periodically review and update the targets, as needed.

Positive changes are already occurring as part of the regional transportation and sustainable communities planning processes across the State including increased public dialogue about equitable distribution of public benefits, increased outreach and public participation, more engagement and coordination between MPOs and local jurisdictions around land use policy, increased funding allocated to public transit and active transportation, and advances in transportation modeling and more sophisticated scenario testing.

#### Assembly Bill 1358 (Leno, Chapter 657, Statutes of 2008)

In 2008, the State Legislature passed and Governor Brown signed the Complete Streets Act. Deputy Directive 64-R2 first signed in October 2008, and renewed in October of 2014, directs Caltrans to implement complete streets. This bill supports the shift of transportation mode share from single passenger cars to public transit, bicycling, and walking must be a significant part of short- and long-term planning goals if the state is to achieve the reduction in the number of vehicle miles traveled and in greenhouse gas emissions required by current law. Walking and bicycling provide the additional benefits of improving public health and reducing treatment costs for conditions associated with reduced physical activity including obesity, heart disease, lung disease, and diabetes.

The California Blueprint for Bicycling and Walking, prepared pursuant to the Supplemental Report of the Budget Act of 2001 states that to achieve this goal, bicycling and walking must be considered in land use and community planning, and in all phases of transportation planning and project design. In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce vehicle miles traveled and to shift from short trips in the automobile to biking, walking, and use of public.

#### Active Transportation Program, Senate Bill 99 (Chapter 359, Statutes of 2013)

In 2013, the State Legislature passed and Governor Brown signed Senate Bill 99. This bill created the Active Transportation Program in the Department of Transportation, to be funded in the annual Budget Act from specified federal and state transportation funds, including 100 percent of the available federal Transportation Alternatives Program funds and federal Recreational Trails Program funds, except as specified, \$21,000,000 of federal Highway Safety Improvement Program funds or other federal funds, a specified amount of fuel tax revenues from the Highway Users Tax Account and the State Highway Account, and from other available funds.

The bill provides funds to be allocated to eligible projects by the California Transportation Commission, with 40 percent of available funds to be made available for programming by metropolitan planning organizations in urbanized areas with a population greater than 200,000, 10 percent for small urban and rural regions, and 50 percent on a statewide basis, with all awards to be made competitively, as specified. The bill requires the commission to develop guidelines and procedures, including project selection criteria, for the program in consultation with various agencies and interested parties. The bill also requires the commission to initially adopt a 2-year program of projects for the program, with subsequent 4-year programs thereafter, and that the Commission, no later than 45 days prior to adopting the initial set of final guidelines for the Active Transportation Program, submit the draft guidelines to the Joint Legislative Budget Committee.

#### Assembly Bill 101 (Chapter 354, Statutes of 2013)

In 2013, the State Legislature passed and Governor Brown signed the Budget Act of 2013, noting funds appropriated to the California Transportation Commission's Active Transportation Program. The program promotes mobility goals, as well as improves safety, achieves efficiencies, accelerates and streamlines project delivery, and improves project outcomes by consolidating the program funded by this item and several other transportation programs that currently include funding for active transportation.

#### California Charge Ahead Initiative, Senate Bill 1275 (De León, Chapter 530, Statutes of 2014)

In 2014, the State Legislature passed and Governor Brown signed the California Charge Ahead Initiative, a bill supporting consumer incentives and rebates to enable one million ZEVs in California by January 1, 2023. The law requires that CARB adopt programs that specifically benefit low-income residents and disadvantaged communities.

#### California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program, Senate Bill 1204 (Lara, Chapter 524, Statutes of 2014)

In conjunction with SB 1275, this bill established the California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program to fund purchase incentives for commercially available heavy-duty zero-emission and near zero-emission vehicles and technologies. Projects that are currently being funded include zero-emission transit and school buses through CARB's Low Carbon Transportation Investments.

#### Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016)

In 2016, the Legislature passed and Governor Brown signed SB 32 and AB 197 (Garcia, Chapter 250, Statutes of 2016). SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 Executive Order B-30-15. SB 32 builds on AB 32 and keeps CARB on the path toward

achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million carbon dioxide equivalent and reduce the likelihood of catastrophic impacts from climate change.

Assembly Bill 197 (Garcia, Chapter 250, Statutes of 2016)

The companion bill to SB 32, AB 197, provides additional direction to CARB on adoption of strategies to reduce greenhouse gas emissions. Additional direction in AB 197 was posted in December 2016 and meant to provide easier public access to air emissions data CARB collects. It requires annual posting of greenhouse gas, criteria, and toxic air contaminant data throughout the State, organized by local and sub-county level for stationary sources and by at least a county level for mobile sources. In addition, when adopting rules and regulations to achieve emissions reductions to protect the State's most affected and disadvantaged communities, CARB shall consider the social costs of greenhouse gas emissions, and prioritize emission reduction rules and regulations that result in direct emission reductions at large stationary sources of greenhouse gas emissions and direct emission reductions from mobile sources, and emission reduction rules and regulations that result in direct emission reductions from sources other than those listed above. CARB is also directed to identify for each emissions reduction measure, including each alternative compliance mechanism, a market-based compliance mechanism, and potential monetary and nonmonetary incentives for the range of projected greenhouse gas emissions reductions and range of projected air pollution reductions that result from the measure, and the cost-effectiveness, including avoided social costs, of the measure.

Assembly Bill 1550 (Gomez, Chapter 369, Statutes of 2016)

Existing law requires the Department of Finance, in consultation with CARB and any other relevant state agency, with developing a 3-year investment plan for the auction proceeds deposited in the Greenhouse Gas Reduction Fund. This bill requires the investment plan to allocate: "a minimum of 25 percent of the available moneys in the fund to projects located within, and benefiting individuals living in, disadvantaged communities, an additional minimum of 5 percent to projects that benefit low-income households or to projects located within, and benefiting individuals living in, low-income communities located anywhere in the state, and an additional minimum of 5 percent either to projects that benefit low-income households that are outside of, but within a  $\frac{1}{2}$  mile of, disadvantaged communities, or to projects located within the boundaries of, and benefiting individuals living in, low-income communities that are outside of, but within a  $\frac{1}{2}$  mile of, disadvantaged communities." Some project types funded may include clean transportation and mobility options including clean vehicles and infrastructure with a prioritization towards low-income households and disadvantaged communities.

### Assembly Bill 2722 (Burke, Chapter 371, Statutes of 2016)

This bill creates the Transformative Climate Communities Program, to be administered by the Strategic Growth Council (SGC). The bill requires SGC to award competitive grants to specified eligible entities for the development and implementation of neighborhood-level transformative climate community plans that include greenhouse gas emissions reduction projects that provide local economic, environmental, and health benefits to disadvantaged communities, as defined. The bill would require SGC to develop guidelines and selection criteria for the implementation of the program and the California Environmental Protection Agency to provide assistance in performing outreach to disadvantaged communities and assessing the environmental justice benefits of project awards.

## **Current Projects for Increasing Access for Low-Income Consumers to Clean Transportation and Mobility Options**

The State of California currently provides funding to a number of projects that increase access and viability of clean transportation and mobility options, including for low-income residents. Some examples previously mentioned include CVRP, EFMP, and EFMP Plus-up, which are described further below. As these projects are being implemented, there will be many lessons learned on the best mechanisms to increase access for low-income consumers. Agencies will continue to learn from and evolve their programs to best meet the accessibility needs of low-income residents, and reduce barriers to increase clean transportation access.

Some examples of what CARB has done to increase participation from low-income residents in CARB's programs include a focus on financing mechanisms for new and used vehicles, such as vehicle buy downs or point-of-sale incentives, and increasing the funding amount for clean vehicle rebate programs. Some of the benefits and lessons from these programmatic adjustments have not fully been realized, as they are still new, but will be monitored over time to determine what further changes are needed to maximize benefits for low-income residents. Funding for these projects comes from a number of sources including the Greenhouse Gas Reduction Fund, motor vehicle fees, and other local funding sources. Below is a brief summary of some of these projects.

### Clean Vehicle Rebate Project (CVRP)

The State of California provides monetary rebates for the purchase or lease of ZEVs, which is intended to bridge the affordability gap for consumers statewide. Beginning in March 2016, the rebate was increased by \$1,500 for lower-income consumers in an effort to broaden the adoption of ZEVs to more economically challenged populations. In September 2016, the Legislature and Governor Brown signed Senate Bill 859, requiring an additional rebate of \$500 for low-income consumers and prioritized the rebate payments for low-income consumers.

### Enhanced Fleet Modernization (EFMP) and EFMP Plus-up Pilot Project

The EFMP, authorized by AB 118 (Nunez, Chapter 750, Statutes of 2007), consists of two component programs: Retirement-only and Retire and Replace. The Retirement-only component complements the State's existing vehicle retirement program, or Consumer Assistance Program, and was developed by CARB in consultation with the California Bureau of Automotive Repair. The program is available statewide and provides \$1,500 for low-income consumers to scrap older vehicles that meet certain eligibility guidelines.

The Retire and Replace component of EFMP (including the EFMP Plus-up Pilot Project) focuses on promoting advanced technology vehicle replacements (both new and used) to low-income consumers who retire and replace their older vehicles by providing additional financial assistance for the purchase of cleaner vehicles. This program is currently available to low-income consumers residing in the South Coast Air Quality Management District and San Joaquin Valley Air Pollution Control District. Expansion of the EFMP Plus-up pilot project is expected to occur over the next couple of years to low-income residents in the Bay Area, Sacramento, and San Diego regions.

Since 2014, over \$98 million for EFMP scrap-only implemented by the California Bureau of Automotive Repair (statewide) and \$85 million for scrap and replace (EFMP Retire and Replace and EFMP Plus-up). \$25 million has been encumbered by South Coast and San Joaquin Valley districts and of that \$20 million has been disbursed. \$60 million is budgeted for Fiscal Year 16-17.

Over 1,400 cars have been scraped and replaced in both South Coast and San Joaquin Valley through the EFMP and EFMP Plus-up programs. About 15 percent of vehicle vouchers received for these replacements were used to purchase battery electric vehicles, 25 percent were used to purchase plug-in hybrid electric vehicles, and 42 percent were used to purchase hybrid vehicles through September 2016.

### Car Sharing and Mobility Options Pilot Projects

This pilot project is designed to help individuals in disadvantaged communities benefit from the use of zero-emission and near zero-emission vehicles without the responsibility of car ownership costs, and to offer alternate modes of clean transportation that encourage the shared use of clean transit, vanpools and other mobility options.

Currently, there are two pilot projects that are being developed for launch in early 2017. The City of Los Angeles is starting a new car share service for low-income residents in six neighborhoods in disadvantaged communities currently underserved by car sharing. Also, the Sacramento Metropolitan Air Quality Management District is developing a new car share service for low-income residents at three disadvantaged community multi-unit subsidized housing projects.

In addition, a solicitation will be released in early 2017 for \$8 million seeking new car sharing and mobility option projects to help serve residents in disadvantaged communities. All of these pilot projects will provide clean transportation options for low-income residents and help identify unforeseen barriers and provide information on potential solutions that can be incorporated in future years for possible expansion opportunities.

#### Financing Assistance for Lower-Income Consumers

Vehicle financing can be a significant barrier to vehicle ownership for many lower-income consumers, especially for the purchase or lease of zero-emission and near zero-emission vehicles, which have a higher upfront cost. The goals of this pilot project are to help improve access to affordable financing mechanisms for the purchase or lease of these vehicles. Financing includes vehicle buy-down grants or point-of-sale incentives, low cost consumer loans, and loan-loss reserves to allow lenders more flexibility to offer assistance to low-income consumers.

Currently, there is a local pilot project benefiting lower-income residents in and near disadvantaged communities in the Bay Area. The pilot project is in its infancy but there are already lessons being learned that have helped guide the recommendations in this guidance document.

In addition, a solicitation will be released in early 2017 for \$6 million seeking both statewide and local financing projects. This pilot project will allow for expansion to help low-income residents purchase clean vehicles statewide.

#### Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)

HVIP provides vouchers to help California fleets purchase advanced technology trucks and buses. The State's investment in HVIP plays a crucial role in accelerating early market penetration of clean technologies with the goal of transforming the California fleet, including transit and school buses.

#### Zero-Emission Bus Pilot Commercial Deployment Project

CARB designed zero-emission truck and bus pilot commercial deployment projects to support larger-scale deployments of zero-emission heavy-duty vehicles, thereby accelerating their introduction and market penetration. The projects selected for funding through a competitive process will include new battery electric transit and school buses with supporting charging infrastructure, and new fuel cell electric transit buses with supporting hydrogen fueling infrastructure.

#### Rural School Bus Pilot Project

The Rural School Bus Pilot Project will provide funding for zero-emission and near zero-emission school buses increasing zero-emission miles and prioritizing applicants in small air districts first, then medium air districts, and then large air districts. This pilot project will also provide funding for new conventional-fueled school buses that use

renewable fuels. In addition, this project will provide immediate greenhouse gas emission reductions and reduce school children's exposure to both cancer-causing and smog-forming pollution. This project is critical to understanding access to zero-emission and near zero-emission school bus transportation in low-income and disadvantaged communities. A solicitation for this project will be released in early 2017 for \$10 million.

#### Innovative Clean Transit Efforts

Adopted in 2000, the existing rule, the Fleet Rule for Transit Agencies, requires reductions in both criteria pollutant emissions and exposure to air contaminants from urban buses and transit fleet vehicles. The transit fleet rule also established a demonstration and purchase requirement of zero-emission technologies for large transit agencies.

Development of a modern, multi-modal, clean transit system is critical to meeting the state's criteria, toxics, and climate emissions and petroleum reduction goals. In addition, increasing access to public transit is especially important for residents living in low-income and disadvantaged communities who may have limited mobility choices. Upcoming efforts will consider a variety of mechanisms to support access to innovative transit and mobility options that together will achieve emission reductions and other benefits in disadvantaged communities, maintain or expand service, while deploying advanced, clean technologies.

#### Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) for Electric Vehicle Charger Incentive Projects

CEC's ARFVTP was created as a result of AB 118 (Nunez, Chapter 750, Statutes of 2007), which authorizes CEC to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the State's climate change policies. The program has an annual budget of up to \$100 million. Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) re-authorized the Alternative and Renewable Fuel and Vehicle Technology Program through January 1, 2024.

In November, 2016, under the ARFVTP, the CEC released a solicitation seeking a block grant recipient to design and implement up to \$200 million in grant funds that will enable a streamlined process for quicker and focused deployment of electric vehicle charging projects throughout California.

ARFVTP also includes funds for regional readiness plans for zero-emission vehicles, with a focus on electric and fuel cell vehicles. One of the main goals is to increase community diversity, including increasing outreach and participation by disadvantaged communities. In October 2016, CEC announced the availability of up to \$1.9 million in grant funds to support new and existing planning efforts for zero-emission vehicles.

### Low Carbon Fuel Standard (LCFS) Electric Vehicle Credit Program

The investor-owned utilities' LCFS electric vehicle (EV) rebate programs will begin in early 2017 under the frameworks authorized by the PUC. For on-road transportation fuel supplied through electric vehicle charging in a single or multi-family residence, the electrical distribution utility is eligible to generate credits in its service territory. To receive such credits, the Electrical Distribution Utility must meet certain criterion (e.g. use all credit proceeds to benefit current or future EV customers; educate the public on the benefits of EV transportation, including environmental benefits and costs of EV charging, or total cost of ownership, as compared to gasoline). The design of these IOU rebate programs for light-duty EVs do not yet differentiate by income or offer increased incentives due to location within a disadvantaged community. However, outside of the IOU rebate programs, low carbon credits are separately given to local transit agencies for the use of electric buses, light rail, and other low carbon-fueled transit options. Therefore, the LCFS credit value helps promote opportunities for low carbon transportation across a variety of modes, fuels and income brackets.

### Transformative Climate Communities Program

The Transformative Climate Communities Program was established by AB 2722 (Burke, Chapter 371, Statutes of 2016), which will use cap-and-trade funds to accelerate greenhouse gas reduction and advance local climate action in disadvantaged communities. The program is being administered by the SGC and provides an opportunity to demonstrate how community engagement coupled with strategic investments in transportation, housing, energy, natural resources, and waste can reduce greenhouse gas emissions and other pollution, while also addressing growing equity issues and enhancing economic opportunity and community resilience. CARB has met with the SGC on this program, and is looking for areas where there could be overlap for low-carbon transportation and other efforts, especially as it relates to outreach and technical assistance.

### Los Angeles County Shared Mobility Action Plan

This plan was released by the Shared-Use Mobility Center in September 2016, and is the country's first Shared Mobility Action Plan. Strategies outlined in this plan are anticipated to help to advance public policies, pilots, and partnerships for shared mobility and clean transportation throughout Los Angeles County. This plan also touches on increased access across mobility options. Coordination with the Shared-Use Mobility Center and their partners (Los Angeles Metro, Los Angeles Department of Transportation, and Foothill Transit), on plan development and policy implementation is critical for advancing clean transportation access for low-income residents.

### Transportation Electrification Guidance Ruling

The PUC published the "Guidance Ruling" on SB 350 Applications for Transportation Electrification, which will assist the utilities' development of programs to increase the use of electric power in the State's transportation system. It recommends that these

programs complement private investments and local, state, and national policies toward the goal of widespread transportation electrification. Originally ordered by the Clean Energy and Pollution Reduction Act of 2015, transportation electrification will provide infrastructure and other programs to encourage the use of grid power for vehicles, vessels, boats, trains, and other mobile pollutant sources.

This guidance builds upon PUC's prior programs in pursuit of the ZEV Executive Order and subsequent Action Plans and Vehicle-Grid Integration Roadmap. To achieve effective transportation transformation, the ruling emphasizes the need for the utilities to coordinate their applications with existing transportation and renewable energy planning efforts at the other State and regional agencies. It also proposes a procedure for "Priority Review" for expeditious actions toward transportation electrification.

Although these current programs are making positive steps moving California towards transportation electrification and increasing access for low-income residents, there is a greater need to identify additional, long-term funding to continue building upon the momentum that has been generated to date. Continued coordination between this effort and these programs is critical to better understanding barriers and opportunities for increasing access for low-income residents to clean technology vehicles across the State.

## **Research Projects to Help Identify Barriers and Opportunities to Increasing Access for Low-Income Consumers to Clean Transportation and Mobility Options**

There are numerous research projects that look at various aspects of understanding the barriers to clean transportation and mobility options. Some of these research projects are providing important insight now and can provide further direction on how best to improve programs to overcome barriers and increase access to clean transportation for low-income residents. Below is a summary of the research projects CARB reviewed as part of developing this Guidance Document.

### Transit-Oriented Development and Displacement

CARB is working with the University of California, Berkeley to conduct a research project entitled "Developing a new methodology for analyzing potential displacement". This research is focused on examining the relationship between transit-oriented development, displacement, and travel behavior in California.

### Travel Demand and Co-Benefit Impacts of Affordable Travel-Oriented Development

CARB is working with the University of California, Berkeley to conduct a research project entitled "Assessing the Travel Demand and Co-Benefit Impacts of Affordable Transit-Oriented Developments." This research is focused on evaluating the impact that preserving and building affordable housing in transit-oriented areas has on travel

demand and vehicle miles traveled, and to assess the economic, health, and well-being impacts on the associated residents.

#### Vehicle Retirement and Replacement Incentives

CARB is working with the University of California, Los Angeles to conduct a research project entitled “Designing Vehicle Retirement and Replacement Incentives for Low-Income Households.” This research is focused on vehicle retirement and replacement motivations and patterns of low- and moderate-income households, and will assess the effectiveness and cost-effectiveness of different policies and financial incentive program structures for optimizing adoption of advanced technology vehicles or other travel options (such as transit or car sharing or ride sharing), particularly among low and moderate income households.

#### Plug-in Electric Vehicles in the Secondary Market

CARB is working with University of California, Davis to conduct a research project entitled “The dynamics of plug-in electric vehicles in the secondary market and their implications for vehicle demand, durability, and emissions.” This research is focused on the dynamics of the secondary market for plug-in electric vehicles in California to improve estimates of the emission benefits of plug-in electric vehicles and projections of the overall emissions from the light-duty fleet.

#### Sustainable Community Strategies Related to Ridesourcing, Ridesharing, and Autonomous Vehicles

CARB is working with the University of California, Berkeley to conduct a research project entitled “Vehicle Miles Traveled, Household Vehicle Ownership, Greenhouse Gas, and Policy Implications of Ridesourcing, Ridesharing, and Connected and Autonomous Vehicles; Developing and Quantifying Successful Sustainable Communities Strategies.” This research is focused on helping Metropolitan Planning Organizations and local agencies develop successful Sustainable Communities Strategies (per SB 375) related to ridesourcing, ridesharing, and connected and autonomous vehicles; and to quantify the vehicle miles traveled, household vehicle ownership, and greenhouse gas emissions implications of those policies.

#### Affordable Housing Survey

The University of California, Davis Institute of Transportation Studies, in coordination with Self-Help Enterprises, the Fresno Housing Authority, and CARB, is conducting a survey of affordable housing residents in the San Joaquin Valley. This survey is intended to support a better understanding of the number and type of vehicles residents have, typical travel patterns (origin and destinations, modes, size of vehicles required for different types of trips), unmet travel needs, barriers to using and willingness to use car sharing or ridesharing services (e.g., smartphone ownership, debit/credit card ownership), willingness-to-serve as a driver for shared-ride services (paid or unpaid), and overall awareness of clean zero-emission and near zero-emission vehicle rebates and programs.

### Future Mobility Research Program

In partnership with the Sacramento Area Council of Governments, the Southern California Council of Governments, and San Diego's regional planning agency, the San Diego Association of Governments, the Metropolitan Transportation Commission is reviewing key policy issues in which transportation/mobility option companies and trends may present, assessing the potential impacts of their activities, and identifying appropriate roles for the State's largest Metropolitan Planning Organizations.

Additional information on current research projects is provided in Appendix C.



# CHAPTER 4: Recommendations and Actions for Overcoming Barriers to Clean Transportation and Mobility Options

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One of the main requirements of SB 350 is for CARB to provide recommendations for overcoming barriers low-income residents face to accessing clean transportation and mobility options. These recommendations acknowledge that there are many efforts already underway to increase clean transportation access across the State, but also are intended to ensure that existing programs evolve over time to reflect lessons learned, reduce barriers for participation, and be more inclusive of low-income residents and disadvantaged communities.

As previously mentioned, it has become clear that there is not a singular solution to addressing all barriers for increasing access for low-income residents since communities are unique with potentially varying challenges and solutions. Where feasible, CARB has worked to capture the commonalities between these communities, such as the need for permanent, long-term funding, as means of prioritizing potential solutions.

CARB, in consultation with the public and stakeholders, has identified many recommendations that would help overcome the barriers identified in Chapter 2. These recommendations are supported by observations in the case studies described in Appendix B. However, because of the magnitude of potential solutions, CARB prioritized these recommendations according to those that can make the most significant difference in low-income and disadvantaged communities.

Each recommendation falls into one of four general recommendation categories listed in the table below. Within each recommendation category, there is a description of the barriers they are intended to address.

CARB recognizes that to overcome the barriers it will take coordination and resources from all levels of government as well as the local communities. As such, recommendations describe lead and supporting roles for State and local government agencies, community-based organizations, and other organizations. Where a lead is identified, the lead role would be to coordinate with supporting agencies and organizations listed and identify the existing programs or new measures necessary to meet the goals of the recommendations. Together, the lead and supporting agencies and organizations should develop a plan that identifies where legislative action is required, resource needs, timeline for implementation, and metrics for evaluating success. Recommendations where lead agencies need to be assigned are identified with to be determined (TBD).

The following is a description of the four recommendation categories followed by a table that provides a pathway to overcome barriers to access clean transportation and mobility options for low-income residents, including a proposal on lead and supporting organizations to support these efforts.

- 1. Increase and Prioritize Funding for Clean Transportation and Mobility Options, Including Supporting Infrastructure for Low-Income Residents.** This recommendation includes identifying permanent funding for current and new programs that incentivize the purchase or lease of used and new zero-emission and near zero-emission vehicles to offset the high upfront costs, clean mobility options, and supporting vehicle and active transportation infrastructure to 2030 and beyond. It also includes modifications to existing programs, where necessary, to prioritize benefits for low-income residents.
- 2. Expand Assessments of Low-Income Resident Transportation and Mobility Needs to Ensure Feedback is incorporated in Transportation Planning.** This recommendation includes focused and expanded community-based needs assessments that ensure resident feedback in low-income and disadvantaged communities is included in transportation planning and investments. Some examples include updating or developing new ZEV regional readiness plans for local transportation and land use focused on low-income and ensuring a focus on low-income communities when establishing priorities for funding programs that maximize clean transportation access, etc.
- 3. Increase Awareness for Low-Income Residents by Expanding Education and Outreach on Clean Transportation and Mobility Options.** This recommendation includes permanent funding to expand clean transportation and mobility option education and outreach efforts and opportunities in low-income and disadvantaged communities to increase awareness. Some examples include expanding educational curricula for kindergarten through 12<sup>th</sup> grade students, increasing knowledge of ridesharing and demand response options such as Uber and Lyft which can utilize zero-emission and near zero-emission vehicles, bike sharing, service delivery, public transportation, etc.
- 4. Maximize Economic Opportunities and Benefits for Low-Income Residents from Investments in Clean Transportation and Mobility Options.** This recommendation ensures that access to economic opportunities is maximized for low-income residents and disadvantaged communities as a result of investments being made on clean transportation, including expanding local job and workforce development, and encouraging policy development that minimizes the potential for physical or economic displacement of low-income residents as a result of clean transportation investments. Additional examples include: expanding access to educational opportunities in zero-emission and near zero-emission vehicle production, maintenance, and infrastructure deployment; vocational training, pre-apprenticeship, and apprenticeship programs for clean transportation; increasing

access and advanced knowledge and skills to acquire good quality clean transportation jobs; and promoting affordable housing in transportation planning and investments.

## 1. Increase and Prioritize Funding for Clean Transportation and Mobility Options, Including Supporting Infrastructure for Low-Income Residents.

Barrier Categories Addressed:

*Accessibility and Convenience; Reliability and Affordability; Community-Based Needs; Infrastructure, Planning, and Investment.*

	Lead	Supporting
<b>Identify Permanent Funding for New and Used Zero-Emission and Near Zero-Emission Light-Duty Vehicles and Charging and Fueling Infrastructure</b>		
a. Continue developing, expanding, and implementing used and new light-duty vehicles ownership programs, including creative financing mechanisms, such as point-of-sale incentives and low-cost loans, available to low-income consumers, and make modifications as necessary to improve access for low-income residents.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• CBOs</li> <li>• STO</li> </ul>
b. Continue funding and expanding used and new light-duty vehicle retire and replace EFMP and EFMP Plus-up projects.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• BAR</li> </ul>
c. Continue supporting and incentivizing charging infrastructure installation, including in existing multi-unit dwellings, for low-income residents. Track deployment of utility infrastructure investments in low-income and disadvantaged communities, with an emphasis on multi-unit dwellings, to identify impacts and potential to enable the market in these areas. This aligns with CEC’s recommendations in the Low-Income Barriers Study, Part A.	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CEC</li> <li>• CPUC</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• Caltrans</li> <li>• GO-Biz</li> <li>• IOUs</li> <li>• POUs</li> </ul>
d. Continue supporting charging infrastructure installation in public right of way locations in low-income and disadvantaged communities	<ul style="list-style-type: none"> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CEC</li> <li>• Cities and</li> </ul>

across the State (e.g. rest stops, Park and Rides, etc.).		counties
e. Monitor and assess the Low Carbon Fuel Standard Electric Vehicle Rebate program as it matures to determine potential adjustments to rebates for low-income residents and disadvantaged communities.	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CPUC</li> </ul>	<ul style="list-style-type: none"> <li>• IOUs</li> <li>• POUs</li> </ul>
<b>Low-Cost Clean, Renewable Electricity for Electric and Fuel Cell Vehicle Owners</b>		
f. Continue developing electricity rates that minimize the cost of clean, renewable power to low-income residents who purchase or lease zero-emission vehicles.	<ul style="list-style-type: none"> <li>• CPUC</li> <li>• IOUs</li> <li>• POUs</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> </ul>
<b>Zero-Emission and Near Zero-Emission Heavy-Duty Vehicles and Supporting Infrastructure</b>		
g. Continue funding programs that pay or reduce the cost of zero-emission and near zero-emission vehicles used in public transportation and school bus fleets.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• CalSTA</li> <li>• Caltrans</li> <li>• School bus owners</li> </ul>
h. Secure binding commitments from the State's public transportation agencies to purchase and transition to zero-emission and near zero-emission buses.	<ul style="list-style-type: none"> <li>• CARB</li> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• Transit agencies</li> </ul>
i. Secure binding commitments from school bus fleet owners to purchase and transition to zero-emission and near zero-emission school buses and install supporting charging and fueling infrastructure in vehicle yards and maintenance facilities.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• School bus owners</li> </ul>
j. Continue funding programs that incentivize charging and fueling infrastructure for public transportation and school bus fleets.	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CEC</li> <li>• CPUC</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• Caltrans</li> <li>• CTC</li> <li>• School bus owners</li> <li>• Transit agencies</li> </ul>
<b>Increase Accessibility to Public Transportation and Mobility Options</b>		
k. Continue funding programs that create or	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> </ul>

expand transformative clean transportation car sharing, ride sharing, bike sharing, vanpooling, micro-transit, and other mobility options.		<ul style="list-style-type: none"> <li>• Caltrans</li> <li>• CEC</li> <li>• CBOs</li> <li>• SGC</li> <li>• Transit agencies</li> </ul>
l. Continue to pay for programs that direct funding toward increased availability of discounted or free transportation passes for public transportation, car sharing, bike sharing, micro-transit, and other transformative clean transportation and mobility options.	<ul style="list-style-type: none"> <li>• CARB</li> <li>• Transit agencies</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• COGs</li> </ul>
m. Continue to identify and implement policies that increase the frequency, reliability, and safety of clean public transportation options.	<ul style="list-style-type: none"> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• Transit agencies</li> </ul>
n. Identify and direct funding toward increasing the availability of diverse fare payment options for low-income residents. Allow for cash loading options for payment cards.	<ul style="list-style-type: none"> <li>• TBD</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> <li>• Air districts</li> <li>• Transit agencies</li> </ul>
<b>Biking, Walking, and Supporting Infrastructure to Expand Clean Mobility Options</b>		
o. Continue to expand the implementation of pedestrian and bicycle infrastructure improvements, including for separated bikeways or cycle tracks (Class IV bikeways) and mobility hubs.	<ul style="list-style-type: none"> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> <li>• Cities and counties</li> <li>• CTC</li> <li>• SGC</li> </ul>
p. Develop District-level plans to identify bicycle and pedestrian needs and priority projects on or parallel to the state highway system, with a focus on closing gaps and building complete, comfortable regional networks.	<ul style="list-style-type: none"> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> </ul>

<b>Biking and Walking Safety</b>		
q. Continue to support new active transportation projects and policies that promote safety and increased pedestrian and bike facilities. Expand funding for current projects including the California Transportation Commission's Active Transportation Program, Complete Streets, and Safe Routes to School.	<ul style="list-style-type: none"> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CTC</li> <li>• CHP</li> <li>• DMV</li> <li>• MPOs</li> <li>• OTS</li> <li>• SGC</li> </ul>
r. Continue to fund the Pedestrian Safety Improvement Monitoring Program to identify and address pedestrian related high collision concentration locations, with the long-term goal of substantially reducing pedestrian fatalities and injuries on the California State Highway System. Develop and implement a Bicycle Safety Improvement Monitoring Program.	<ul style="list-style-type: none"> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> </ul>
s. Continue the development of a systemic safety analysis program to address infrastructure that poses a higher risk to pedestrians and bicycles.	<ul style="list-style-type: none"> <li>• Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> </ul>
<b>Local Taxes for Clean Transportation and Infrastructure</b>		
t. When local city and county sales taxes address local transportation and land-use planning needs are adopted, ensure there is a specific allotment of funding dedicated to clean transportation projects prioritized towards low-income and disadvantaged communities.	<ul style="list-style-type: none"> <li>• OPR</li> <li>• Cities and counties</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> </ul>

## 2. Expand Assessments of Low-Income Resident Transportation and Mobility Needs to Ensure Feedback is Incorporated in Transportation Planning.

Barrier Categories Addressed:

*Accessibility and Convenience; Reliability and Affordability; Community-Based Needs; Education and Outreach; Planning, Infrastructure, and Investment*

	Lead	Supporting
a. Continue to conduct or expand community-based needs assessments to better understand local barriers and opportunities for increasing access to clean transportation, especially in low-income and disadvantaged communities.	<ul style="list-style-type: none"> <li>• Transit agencies</li> <li>• COGs</li> <li>• MPOs</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CBOs</li> <li>• CEC</li> <li>• CTC</li> </ul>
b. Require cities and counties across the State to update or develop new zero-emission vehicle readiness plans, and that these plans address widespread transportation electrification in order to ensure low-income households and disadvantaged communities have access to ZEV infrastructure and facilities.	<ul style="list-style-type: none"> <li>• OPR</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CEC</li> <li>• Cities and counties</li> <li>• CTC</li> <li>• MPOs</li> <li>• SGC</li> </ul>
c. Promote a more localized review of unmet clean transportation and mobility option needs of low-income residents as part of Regional Transportation Plan development and other local, State, and regional planning and direct funding to gaps identified.	<ul style="list-style-type: none"> <li>• CTC</li> </ul>	<ul style="list-style-type: none"> <li>• CARB</li> <li>• Caltrans</li> <li>• CEC</li> <li>• CDPH</li> <li>• MPOs</li> </ul>

### 3. Increase Awareness for Low-Income Residents by Expanding Education and Outreach on Clean Transportation and Mobility Options.

Barrier Categories Addressed:

*Community-Based Needs; Education and Outreach; Infrastructure, Planning, and Investment*

	Lead	Supporting
<b>Strategic Outreach Planning, Material Development, and Education</b>		
a. Develop and implement a clean transportation outreach plan targeting low-income residents in rural, urban, tribal, and disadvantaged communities. Ensure outreach efforts include other State and local transportation, energy and air quality programs.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• Caltrans</li> <li>• CBOs</li> <li>• CEC</li> <li>• CTC</li> <li>• Caltrans</li> <li>• SGC</li> </ul>
b. Design or modify clean transportation outreach and education materials, including online resources, which are specific to community needs and are relevant, accessible, practical, and available in the spoken languages of those communities.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• CBOs</li> <li>• CEC</li> <li>• CPUC</li> <li>• DMV</li> <li>• IOUs</li> <li>• POUs</li> </ul>
c. Continue to develop and expand education curriculum on clean transportation, including biking, walking, driver safety, and technologies for elementary, high school, and college students.	<ul style="list-style-type: none"> <li>• CalEPA</li> <li>• CARB</li> <li>• TBD</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• Caltrans</li> <li>• CTC</li> <li>• OTS</li> <li>• School districts</li> </ul>
<b>Community Engagement</b>		
d. Broadly engage community-based organizations and affordable housing groups and provide them with resources to share clean transportation outreach and educational materials with low-income residents.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• CalAHA</li> <li>• CBOs</li> <li>• CEC</li> <li>• City and county housing authorities</li> <li>• Colleges and universities</li> <li>• SGC</li> </ul>

<b>Agency Program Coordination</b>		
e. Streamline and simplify the clean transportation grant and incentive application process for State and local funds in a way that promotes inter-agency coordination and enables more low-income residents to apply and benefit from programs. Provide coordinated technical assistance across agencies and local programs.	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CEC</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• Caltrans</li> <li>• CBOs</li> <li>• CPUC</li> <li>• CTC</li> <li>• SGC</li> </ul>
f. Develop a one-stop shop that provides low-income residents access to multiple clean energy, transportation, housing projects. This aligns with CEC’s recommendations in the Low-Income Barriers Study, Part A.	<ul style="list-style-type: none"> <li>• CARB</li> <li>• CEC</li> </ul>	<ul style="list-style-type: none"> <li>• Air districts</li> <li>• Caltrans</li> <li>• CBOs</li> <li>• CPUC</li> <li>• CTC</li> <li>• SGC</li> </ul>
<b>Establish Community Trust in Used and New Vehicle Buying Experience</b>		
g. Develop a statewide network of car dealerships that low-income residents can rely on for the purchase or lease of clean used and new vehicles. The car dealerships could become “dealer champions” if they complete clean vehicle training and meet and maintain the statewide network best practices and ethical standards to be established.	<ul style="list-style-type: none"> <li>• CARB</li> </ul>	<ul style="list-style-type: none"> <li>• Auto dealers</li> <li>• IADAC</li> <li>• CBOs</li> </ul>

## 4. Maximize Economic Opportunities and Benefits for Low-Income Residents from Investments in Clean Transportation and Mobility Options.

Barrier Categories Addressed:

*Reliability and Affordability; Community-Based Needs; Education and Outreach; Planning, Infrastructure, and Investment*

	Lead	Supporting
<b>Localized Benefits</b>		
a. Prioritize incentive projects that demonstrate local economic benefits for low-income residents such as job creation, training opportunities, and workforce development.	<ul style="list-style-type: none"> <li>CARB</li> </ul>	<ul style="list-style-type: none"> <li>State and local agencies</li> </ul>
b. Expand access to vocational training, pre-apprenticeship, and apprenticeship programs to support clean transportation jobs and workforce development in low-income and disadvantaged communities.	<ul style="list-style-type: none"> <li>TBD</li> </ul>	<ul style="list-style-type: none"> <li>CARB</li> <li>CEC</li> <li>Community colleges</li> <li>DIR</li> <li>EDD</li> <li>Labor unions</li> </ul>
c. Expand opportunities and create connections for good quality clean transportation jobs in low-income and disadvantaged communities.	<ul style="list-style-type: none"> <li>TBD</li> </ul>	<ul style="list-style-type: none"> <li>CEC</li> <li>Community colleges</li> </ul>
<b>Strategic Planning and Investment</b>		
d. Promote affordable housing in transportation planning and investments with connectivity to multiple clean options in support of SB 375. Work with the Legislature to ensure planning and investments consider housing and transportation needs of low-income residents.	<ul style="list-style-type: none"> <li>TBD</li> </ul>	<ul style="list-style-type: none"> <li>CARB</li> <li>CEC</li> <li>Colleges and universities</li> <li>CTC</li> <li>Local agencies</li> <li>SGC</li> </ul>
e. Design clean transportation and infrastructure projects to avoid substantial burdens, such as physical or economic displacement of residents or businesses in low-income and disadvantaged communities or increased exposure to toxics or other health risks.	<ul style="list-style-type: none"> <li>CARB</li> <li>Caltrans</li> </ul>	<ul style="list-style-type: none"> <li>CARB</li> <li>CalEPA</li> <li>MPOs</li> <li>State and local agencies</li> </ul>

## CHAPTER 5: Conclusion and Next Steps

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There are currently many positive efforts underway to move California towards a clean energy and transportation future, including in many low-income and disadvantaged communities. As this report highlights, additional permanent funding and awareness will be needed to ensure that access to clean transportation and mobility options is available to residents across the State, including low-income residents. Additional steps are necessary in order to ensure progress continues in many of these programs.

CARB and stakeholders acknowledged throughout the public process that there was limited time to completely explore all of the barriers and opportunities raised by residents of the communities visited. CARB believes it is important and necessary to continue this effort to support a more robust understanding of the solutions to increase access to clean transportation for all low-income and disadvantaged communities.

CARB supports CEC's Low-Income Barriers Study recommendation to develop a task force and sees this as an appropriate mechanism to facilitate coordination of all State and supporting agencies and communities for implementation of the recommendations provided in both barriers reports. In addition, further planning and analysis is necessary in order to determine resource needs; permanent, long-term funding; timelines for implementation; and identification of metrics to measure success towards increasing access to clean transportation and mobility options.

CARB will continue working with the Governor's Office, the Legislature, CEC, other relevant local, regional, and metropolitan planning and transportation agencies, air districts, environmental organizations, environmental justice, equity, and advocacy groups to help expand, or modify as necessary, current successful programs or create new programs that address transportation barriers to further prioritize access for low-income residents to clean transportation and mobility options. Ongoing stakeholder engagement is critical to the continued understanding of barriers and opportunities to increase access to clean transportation and mobility options and to ensure all Californians benefit from the transformation to clean energy and transportation.