

**Appendix F:  
Update on the Audit of CARB's Greenhouse Gas Related  
Transportation Program**

This page intentionally left blank.

## Introduction

The California State Auditor (CSA) reviewed CARB's transportation programs designed to reduce greenhouse gas emissions in 2020 and early 2021 as directed by the Joint Legislative Audit Committee. CSA issued its findings in *Report 2020-114 California Air Resources Board: Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals* in February 2021.<sup>1</sup>

Many of the auditor's recommendations focused on areas where additional data collection and analysis would help CARB more strategically implement its greenhouse gas reduction programs. The recommendations acknowledge the emission reductions that California is realizing while underscoring the need for further analysis to refine how those reductions and related benefits are attributed to the various programs. These include recommendations to evaluate the interactions between regulations and incentives as well as evaluate the quantification methodologies and document the behavioral, socio economic, and jobs benefits of CARB's incentive programs, among others.

Having more data is beneficial when designing, implementing, and evaluating California's emission control strategies, and CARB is already addressing the auditor's recommendations. CARB is required to provide an update on its progress implementing the report recommendations after 60 days, six months, and one year. CARB has already submitted the first two of these status updates. The remainder of this appendix provides update on CARB's progress implementing each of the 15 recommendations contained in CSA's Report 2020-114 as of August 2021 when CARB submitted its six month update to CSA.

## Recommendation 1

To improve its ability to isolate each of its incentive programs' additional GHG reductions, by February 2022 CARB should establish a process to formally identify its incentive programs' overlap with other programs that share the same objectives. As part of that process, CARB should document how it will attempt to account for the overlap to allow the most accurate program measurement possible.

**CARB Status Update for Recommendation 1:** Meeting California's ambitious climate targets requires a mix of policy approaches, including mandates, incentives, consumer education, and infrastructure investment. The complementary nature of these policies has the benefit of inducing further GHG emission reductions, advancing environmental justice in California's underserved communities, and concurrently addressing multiple environmental and social goals. However, this complementary nature and the complexity of consumer behaviors make it very challenging to attribute emissions reductions to each individual program. Addressing this challenge requires additional data collection and

---

<sup>1</sup>*Report 2020-114 California Air Resources Board: Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals, February 2021:* <http://auditor.ca.gov/reports/2020-114/index.html>

analysis on the impacts of CARB's existing incentives on consumer behavior aside from those resulted from regulations and other programs.

CARB is developing a contract with university researchers to review California's portfolio policy approach related to transportation and its effectiveness. The contract is intended to inform development of long-term data collection methods and analysis tools that can assess the effectiveness of incentives in changing consumers' behaviors and disentangle the emission benefits of incentives and other programs. Results from this contract will be used to develop methods that quantify the benefits of CARB's light- and heavy-duty consumer-focused ZEV incentive programs. The contract will likely take approximately 2 years to complete, and CARB expects to receive interim results and report the researchers' findings to CSA starting in summer 2022.

## Recommendation 2

As part of its work to measure both incentive and regulatory programs' additional GHG reductions, by February 2022 CARB should begin collecting and analyzing the data it needs to assess the extent to which the requirements in its regulatory programs are being exceeded by manufacturers. To the extent applicable, that analysis should focus on the components of the requirements that overlap with CARB's incentive programs, such as the extent to which manufacturers comply with regulations for heavy-duty vehicles via low- and zero-emission vehicles.

**CARB Status Update for Recommendation 2:** To identify the extent to which manufacturers are over complying with CARB's light-duty ZEV Regulation, CARB staff will include additional data that original equipment manufacturers (OEMs) disclose to CARB for purposes of complying with the regulation starting with the 2020 reporting year. This additional data will be posted in CARB's *ZEV Credits Public Disclosure Document* (<https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/zev-program/zero-emission-vehicle-credit-balances>) which is typically released annually in the fall of each year. Additional disclosures for each reporting year will include, but are not limited to: the regulatory credit requirement by manufacturer, the number of eligible vehicle sales by make and model, and the associated credits generated by make and model for each manufacturer. This data will allow stakeholders to better understand how manufacturers are complying with the ZEV Regulation in terms of vehicles and regulatory credits relative to the regulation requirements for each reporting year.

For CARB's heavy-duty GHG regulations, CARB staff has begun analyzing data to assess over compliance with Phase 1 GHG regulation for 2019 model year heavy-duty vehicles. Staff will continue to analyze data for 2020 model year heavy-duty vehicles. Findings including, but not limited to, the number of vehicles produced in California, and the number of certified manufacturers that generated conventional and advanced technology credits due to producing heavy-duty battery electric, fuel cell, and hybrid-electric vehicles would be provided once available. CARB will continue to do this annually in future years.

## Recommendation 3

To improve its ability to identify the effectiveness of each of its incentive programs in

reducing GHG emissions, by August 2021 CARB should develop a process to define, collect, and evaluate data on the behavioral changes that result from each of its incentive programs. Having done so, by February 2022 CARB should collect and analyze relevant survey information for all consumer-focused incentive programs, as well as information about the behavioral effects of programs that other entities offer, such as the federal tax credit.

**CARB Status Update for Recommendation 3:** CARB staff has developed a draft process to define, collect, and evaluate data related to behavioral changes associated with projects funded by Low Carbon Transportation, FARMER, and AB 617 Community Air Protection Incentive Programs, as required, by August 2021. Staff continues to work to identify the best approaches for measuring and evaluating data on behavioral changes that result from these programs and determine the best way to report such information.

For the consumer-based projects, staff is in the process of developing streamlined surveys that can be administered and managed by CARB. One survey is currently in development for the vehicle purchase incentive projects, including the Clean Vehicle Rebate Project, Financing Assistance Program, and Clean Cars 4 All, and another survey is being developed for CARB's suite of mobility projects. CARB is coordinating with internal and external researchers for feedback and guidance on these surveys and coordinating across projects to ensure data can be compared, where appropriate. Staff intends to have surveys developed and begin administration of them by fall 2021 and collect and begin analyzing relevant survey information by February 2022. Staff intends to use information from evaluations conducted to help inform development of projects beginning in Fiscal Year 2022-23.

## Recommendation 4

To better assist the State in achieving its GHG goals, CARB should use the information we describe above to refine its GHG emissions estimates for its incentive programs in its annual reports to the Legislature, the funding plans approved by its board, and any longer-term planning documents or reports.

**CARB Status Update for Recommendation 4:** CARB is committed to refining our emission estimate methodology as more data and information become available. As is noted in the recommendation, the data collected and analyzed through implementing the previous 3 recommendations will be used to refine the GHG emissions estimates for our incentive programs for this recommendation. There is not yet new information available upon which to update GHG emissions estimates from CARB's incentives programs.

## Recommendation 5

To promote transparency and inform stakeholders, beginning in December 2021, CARB should prepare an annual report for its board and the Legislature on its progress in isolating the GHG emissions reductions attributable to each of its regulatory and incentive programs. As a part of this report, CARB should identify any measurement challenges that persist and highlight any administrative barriers that prevent it from obtaining the information it needs to perform better analysis.

**CARB Status Update for Recommendation 5:** CARB is committed to maintaining a transparent process for informing stakeholders on progress made toward disentangling the emission benefits of regulatory and incentive programs. To report the progress, CARB plans to prepare a memo for the Board and submit a letter to the Joint Legislative Audit Committee in December 2021. Following the recommendation, the memo and letter will identify any measurement challenges that persist and highlight any administrative barriers.

## Recommendation 6

To strengthen the accuracy and integrity of its emissions reduction reporting, CARB should immediately begin retaining all supporting documentation it uses to perform calculations of GHG reductions for its cap-and-trade-funded incentive programs for a period of at least five years. In conjunction with this change, CARB should also document the justification for any instances in which the underlying data it uses to compile its annual reports vary from the information it publishes in those reports.

**CARB Status Update for Recommendation 6:** Policies and procedures that outline the steps taken to prepare and report GHG reductions for Low Carbon Transportation, FARMER, and CAP incentives have been expanded and updated to include the requirement that all supporting documentation, including any documentation necessary to perform GHG calculations, shall be maintained for at least five years. The procedures include a step-by-step guide for reporting emission reductions, as well as instructions for documentation of each step taken at the time of emission reduction reporting. Finally, the procedures address how to document variances between the underlying data used to compile the annual reports and the information published in those reports.

## Recommendation 7

To better ensure the accuracy of its program data, by August 2021, CARB should develop a formal schedule and procedures for reviewing the supporting documentation maintained by its program administrators. These procedures, which CARB should begin using with the 2022 annual report, should specify a minimum number of records to review in relation to the program's size, should specify how staff will collect and maintain evidence to support conclusions, and should be standardized across all of CARB's incentive programs.

**CARB Status Update for Recommendation 7:** Policies and Procedures for the Low Carbon Transportation, FARMER, and CAP Incentive Programs have been developed to include procedures on how staff will conduct and maintain evidence of program oversight by the program administrator/grantee; which staff refer to as desk reviews. These policies and procedures have been recently updated to include more clearly defined formal review schedules and minimum numbers of records to be reviewed for each program.

Though each incentive program is unique in appropriation amount, administration process, maximum incentive level per project, etc., the procedures for conducting reviews are standardized across all programs where feasible. Additionally, reviews for all applicable funding programs will be combined when a review is conducted on administrators of multiple CARB incentive programs.

CARB will begin using these updated policies and procedures prior to the 2022 annual report.

## Recommendation 8

To ensure that the State is positioned to assess the status of its Sustainable Communities Program, by April 2021 CARB should report to the Legislature whether it will have a usable source for measuring regional GHG emissions in time for the 2022 report. If CARB believes it may not, it should identify any administrative or bureaucratic barriers it faces in accessing data it needs for the estimates and request relevant action by the Legislature to make those data available.

**CARB Status Update for Recommendation 8:** Since completing the 2018 Progress Report on California’s Sustainable Communities and Climate Protection Act, CARB initiated efforts to better measure and track SB 375 progress at a regional level. One of these efforts is tracking additional region-specific metrics in each metropolitan planning organization’s (MPO) sustainable community strategy (SCS) starting with third-round SCSs. While these metrics are not direct measures of GHG emissions or VMT, they provide additional context on progress toward expected plan outcomes to meet GHG targets set by CARB.

Additionally, CARB is exploring using retail fuel sales data from the California Energy Commission in conjunction with statewide fuel sales data from the California Department of Tax and Fee Administration to estimate regional VMT and GHG emissions. Early analysis indicates that this could be a useful approach for MPOs whose VMT is relatively contained within the region. Results from this approach will not provide a complete picture for all regions, but it will be an improvement to CARB’s previous analysis. This is the approach CARB will use for the 2022 Progress Report.

For future reports, CARB is exploring the viability of using big data. Big data could provide a complete accounting of VMT and where it is occurring, and an insight on travel behavior and trends through the consolidation of location data from millions of mobile devices. CARB anticipates needing new staff and contract resources to acquire and analyze big data for this purpose.

CARB notified Assemblymember Rudy Salas, Chair of the Joint Legislative Audit Committee, of this work on April 20, 2021.

## Recommendation 9

To ensure that it communicates clearly to the Legislature about the extent to which programs benefit low-income households as the Legislature intended, by March 2022 CARB should begin reporting its spending in low-income communities at the household level wherever possible in its annual report to the Legislature.

**CARB Status Update for Recommendation 9:** As noted in CARB’s 60-day response, there are three projects where financial incentives are paid directly to individual households: the Clean Vehicle Rebate Project, Clean Cars 4 All, and financing assistance.

These are the projects for which CARB has determined it is possible to report low-income spending at the household level. CARB already collects household income information from participants in each of these projects, and CARB now reports low income benefits at the household level into the California Climate Investments Reporting and Tracking System (CCIRTS) for all three projects.

To address CSA's recommendation, CARB is starting to report the spending that benefits low-income households (along with low-income communities and disadvantaged communities) for each of these projects in the FY 2021-22 Funding Plan and will continue to report these data in each annual Funding Plan thereafter. CARB will also report low-income benefits at the household level in the future for any new projects where financial incentives are provided directly to California households.

## Recommendation 10

To better define incentive programs' impacts beyond GHG emissions reductions, by August 2021 CARB should review its incentive programs to ensure that it has clearly designated which programs focus primarily on socioeconomic benefits. As a result of this process, by February 2022 it should ensure that it includes the benefits expected for each program in its funding plan or other public documents, such as its annual report and individual grant agreements.

**CARB Status Update for Recommendation 10:** CARB staff has reviewed its incentive programs and identified six clean transportation equity projects that focus primarily on socioeconomic benefits. These projects are: Clean Cars 4 All, Financing Assistance for Lower-Income Consumers, Clean Mobility Options, Clean Mobility in Schools, Sustainable Transportation Equity Project, and the Agricultural Workers Vanpool Project (currently inactive). Staff has identified project benefits, corresponding metrics and evaluation methods for each of these projects in the FY 2021-22 Funding Plan. Staff will complete an initial analysis of these benefits throughout the remainder of 2021 and include results in future Funding Plans.

## Recommendation 11

To better demonstrate the socioeconomic benefits that its incentive programs achieve, by February 2022 CARB should do the following:

- Identify clear and measurable metrics it will use to assess each of the socioeconomic benefits it intends its programs to achieve.
- Develop a process to collect data, or use existing data, to measure and report on each metric.
- In its funding plans and annual reports, CARB should report to the Legislature and its board on the metrics.

**CARB Status Update for Recommendation 11:** CARB staff has identified clear and measurable metrics for each of the projects mentioned in Recommendation 10 in the FY 2021-22 Funding Plan. The FY 2021-22 Funding Plan also includes the process developed for each project to collect additional data or use existing data to measure and



report on each metric that has been identified. In future Funding Plans, staff will report on the analysis of these metrics for each of the projects.

### Recommendation 12

To provide transparency to the Legislature and other stakeholders, beginning in 2022, using the metrics and data described above, CARB should make funding and design recommendations in its funding plans and annual reports based on which programs are effective in producing socioeconomic benefits and at what cost.

**CARB Status Update for Recommendation 12:** CARB staff has begun data analysis for some of the projects where existing data are available, and will make funding and design recommendations based on this analysis starting in the FY 2022-23 Funding Plan, including providing information on which programs are effective in producing socioeconomic benefits and at what cost. For projects in the early stages of implementation where data are not yet available, staff will include in the FY 2022-23 Funding Plan the process by which metrics and data will be collected, measured, and reported.

### Recommendation 13

To ensure that the State has reliable information about the extent to which cap-and-trade funded programs create and support jobs, by August 2021 CARB should begin collecting data on the jobs produced by each of its incentive programs. Where needed, CARB should pursue amendments to its agreements with its program administrators to make reporting this information mandatory. CARB should include an analysis of these jobs data in its annual reports to the Legislature beginning in 2022.

**CARB Status Update for Recommendation 13:** CARB has already identified where jobs data has not yet been reported for its programs, has amended ongoing grant agreements to incorporate this task where feasible, and is now in the process of coordinating the collection and reporting of this data. CARB staff will commence reporting jobs data from these projects by utilizing CCIRTS, as it has already been doing for the FARMER and Community Air Protection Incentive Programs. CARB is still evaluating the appropriate mechanism for reporting this information annually.

### Recommendation 14

To ensure that its incentive programs promote effective and equitable job training, by August 2021 CARB should develop a process to assess which programs should include a job training element. For those programs it identifies, by February 2022 CARB should direct its staff or its external program administrators to collect and report on the quality of job trainings and outcomes experienced by participants, including who received training, the credentials participants received as a result, any actual or expected wages they received as a result of participating in the training or for developing the relevant expertise, and the number of participants from disadvantaged communities or low-income communities and households.

**CARB Status Update for Recommendation 14:** CARB used a public process which included a series of public workshops and work group meetings where stakeholders had the opportunity to provide input on proposed projects to develop the FY 2021-22 Funding Plan as it does in developing each annual Funding Plan. Projects that include a workforce or jobs training element will now and henceforth be identified during the public process and clearly denoted in the annual Funding Plan. The Plan highlights high level details on the types of data CARB will collect during the projects. Details of the data collected will be determined through a public process while building out the competitive solicitation, developing the implementation manual, or updating existing implementation manuals. Specific data requirements will be included in grant agreements upon execution.

## Recommendation 15

To ensure that it can account for the total costs of its transportation programs, beginning with fiscal year 2021-22 CARB should develop and implement processes to track the administrative costs it incurs to operate each of its transportation programs. After doing so, it should begin including those costs as part of the cost-effectiveness measurements in its annual reports to the Legislature.

**CARB Status Update for Recommendation 15:** CARB's Administrative Services Division (ASD) requested Service Location and Labor Code information from each of CARB's Divisions with transportation programs and established 100+ new codes for their transportation programs for use beginning with FY 2021-22. Going forward, all new contracts, purchase orders, labor on timesheets, etc. will be recorded at the program-level of detail ensuring CARB accounts for the total costs of its transportation programs. The codes were established in FI\$Cal and the Tempo timekeeping program used by CARB on July 30, 2021 and were ready for staff to use beginning with their July 2021 timesheets. ASD will run monthly reports to send to Divisions with transportation programs so they can see program costs and that staff are charging time appropriately. Additional Service Locations and Labor Codes can be developed if necessary.