

April 23, 2019

The Honorable Rudy Salas, Chair  
Joint Legislative Audit Committee  
California State Assembly  
State Capitol, Room 4016  
Sacramento, California 95814

Dear Assemblymember Salas:

I appreciated the opportunity to provide testimony to you and the Committee members at the March 6, 2019 Joint Legislative Audit Committee regarding the California Air Resources Board's (CARB) transportation policies and programs related to greenhouse gas (GHG) emission reductions. At the hearing we agreed to prepare written responses to the five questions provided in advance of the hearing and to meet with you to discuss our responses. This letter and the attachments provide responses to those questions. We would be pleased to meet with you to discuss and have reached out to your office to schedule time to do so.

At the March 6 hearing you raised a number of additional questions that were transmitted to CARB the following week in writing. We are currently preparing responses to those additional twenty nine questions as well.

Our goal is to be as responsive as we can to the legislature, our stakeholders and the public to requests for information about our programs to reduce air pollution in California. As we discussed at the hearing, much of this information is available in public documents we have prepared and posted to our website. However, we concur that efficiently locating the information can be challenging and are committed to streamlining our website to afford easier access to information regarding our programs.

In preparing our responses to your questions (Attachment A to this letter) our goal is to provide the requested information clearly and concisely. However, it was also clear that there may be interest in more detail including the underlying documentation that has been developed through various public processes over years. Therefore, Attachment A to this letter responds to each of the five questions you posed. In addition to our responses we include Attachments B and C as described below that provide more detail.

**Attachment B** describes CARB's Transportation Programs that directly or indirectly achieve GHG emission reductions. For each program, there is a description of the program, a link to the program's website, and references to page numbers relevant to

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emissions reductions achieved by each program. The attachment is structured by light-duty vehicle regulation programs, light-duty vehicle incentive programs, heavy-duty regulation programs, heavy-duty incentive programs, fuels regulation programs, and land use and transportation programs. Attachment A supports questions 1, 1c, 2, and 4 (as included in your request for Executive Officer Corey to appear before the JLAC).

**Attachment C** describes reports that CARB produces to meet Legislative requirements, strategy plans to further emissions reductions, federal strategy plans to meet national attainment goals, incentive funding plans within CARB that contain information on various aspects of programs that reduce air pollution administered, and other reports. The document is structured by mandated reports followed by CARB's strategy plans. Each report includes a description of the report, a link to the relevant website, and specific document references for information on emissions reductions information. Attachment C supports questions 1a, 1b, 1c, 3, 3a, and 5 (as included in your request for Executive Officer Corey to appear before the JLAC).

We would be happy to provide hard copies of all the documents referenced as well.

As noted above, we are preparing written responses to each of the additional twenty-nine questions transmitted to us the week following the hearing. We anticipate completing our responses by early May. We look forward to meeting with you to discuss these responses soon.

Sincerely,



Richard W. Corey  
Executive Officer

Enclosure

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Cc: President pro Tempore Atkins  
Speaker Rendon  
Joint Legislative Audit Committee Members  
Joint Legislative Audit Committee

Attachment A:  
CARB Responses to Joint Legislative Audit Committee

The following responds to questions 1 through 5 in your February 26, 2019 letter on behalf of the JLAC.

**1) Identify all ARB policies and programs related to GHG emissions in the transportation sector**

**Attachment B** includes CARB's 32 programs related to GHG emissions in the transportation sector.

**a. To the extent practical, evaluate how the policies and programs positively or negatively interact with each other**

A number of CARB reports evaluate how programs interact with each other, as summarized below. Each document, including relevant page references, is described in more detail in **Attachment C**.

**1. Scoping Plan.** The Scoping Plan includes extensive analysis of how policies, including from the transportation sector, can meet State climate goals. The Plan is updated at least every 5 years and reflects new data, policies, and progress toward GHG reduction goals. The Scoping Plan describes the suite of statewide measures needed to achieve the GHG reduction targets called for in state law. The Scoping Plan also describes each of the measures as well as the anticipated emission reductions, co-benefits, and economic impacts the plan considering the interaction of the measures.

**2. CARB's 2000-2016 GHG Emissions Trends Report.** CARB annually its GHG emissions inventory with for the seven GHGs identified in AB 32. The 2018 edition of the GHG inventory includes the verified emissions of the seven GHGs identified in AB 32 for the years 2000 to 2016 and uses an inventory scope and framework consistent with international and national GHG inventory practices. This information is used to measure progress toward State climate goals, including demonstrating the State meeting the 2020 GHG goal ahead of schedule (i.e., California met GHG reduction target called for under AB 32 in 2016—four years of ahead of the statutory deadline of 2020).

**3. Mobile Source Strategy.** The 2016 Mobile Source Strategy demonstrates how the State can simultaneously meet air quality standards, achieve greenhouse gas emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption. The document includes an assessment of coordinated planning scenarios for the State's various mobile source strategies necessary to reduce emissions in the State needed to meeting our State Implementation Plan obligations and to achieve healthy air quality throughout the State.

**4. California Sustainable Freight Action Plan.** The California Sustainable Freight Action Plan is a strategic plan that lays out a path for the State to help realize a singular vision for California's freight transport system by coordinating investments, policies, regulations and programs. This plan includes specific

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coordinated actions that result in reductions in greenhouse gas emissions and harmful pollution from freight activities through the accelerated deployment of zero-emission operation technologies and efficiency measures. The Plan is intended to improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system.

**5. California Climate Investments Annual Report.** The California Climate Investments Annual Report describes the status of funded programs and lists the projects funded. It also provides estimates of the GHG reductions expected from project investments and provides key statistics on benefits to disadvantaged communities, demand for funding, and leveraging, fiscal data and program accomplishments. The report is submitted annually to the legislature and frequently discussed at various Legislative hearings.

**b. For a sample of these policies and programs, determine the extent to which they are effective and efficient**

There are several examples of CARB's approach to evaluating our policies and programs including the tracking and reporting of key metrics (e.g., annual reporting GHG emissions as described above). **Attachment C** provides more detail on the mechanisms to achieve the goals of each program.

- 1. Annual AB 32 Annual Resource and Fiscal Report.** The report is a Legislative mandated report to measure the effectiveness and efficiency of the AB 32 program, including Cap-and-Trade and the Low Carbon Fuel Standard. The report contains a summary of the progress made on achieving the goals of AB 32, including recent developments and upcoming milestones, through Cap-and-Trade, Low Carbon Fuel Standard, among others. It also contains resources reports that quantify CARB's AB 32 staffing and operation expenses, major revenue and board expenses for the AB 32 program for the prior fiscal year, and an update on Western Climate Initiative, Inc.
- 2. Joint CARB and California Energy Commission (CEC) Report on Progress on Hydrogen Fueling Network.** The report is a Legislative mandated report to measure the effectiveness and efficiency of the State's progress in the planning, design, development, and deployment of hydrogen refueling stations critical to supporting the adoption of fuel cell electric vehicles, which are zero-emission vehicles that reduce GHG emissions. The joint CEC and CARB documents the progress toward establishing a hydrogen-fueling network that provides the coverage and capacity to fuel vehicles requiring hydrogen fuel that are being placed into operation in the State.
- 3. Hydrogen Fueling Stations Report.** The report is a Legislative mandated report to measure the effectiveness and efficiency of the State's progress in the planning, design, development, and deployment of hydrogen refueling stations critical to supporting the adoption of fuel cell electric vehicles, which are zero-emission vehicles that reduce GHG emissions. The report provides evaluation and recommendations regarding hydrogen fueling

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stations to CEC to inform future funding programs. The report provides findings on the need for additional publicly available hydrogen fueling stations in terms of number of stations, geographic areas needing additional stations and minimum operating standards.

4. **Progress Report: California's Sustainable Communities and Climate Protection Act.** The report is a Legislative mandated report to measure the effectiveness and efficiency of meeting the SB 375 regional GHG targets. The report, which is required every 4 years, provides CARB's assessment of the progress made by each metropolitan planning organization toward meeting the regional SB 375 greenhouse gas emissions reduction targets, and to include data-supported metrics for strategies utilized to meet the targets. The report is also required to include a discussion of best practices and challenges faced by MPOs in meeting the targets, including the effect of state policies and funding.
  5. **California Climate Investments Annual Report.** The California Climate Investments Annual Report describes the status of funded programs and lists the projects funded from the Greenhouse Gas Reduction Fund. It also provides estimates of the GHG reductions expected from project investments and provides key statistics on benefits to disadvantaged communities, demand for funding, and leveraging, fiscal data and program accomplishments.
  6. **Advanced Clean Cars (ACC) Midterm Review.** The comprehensive report documents the effectiveness of the ACC program demonstrated that the regulation is achieving the anticipated results and should be maintained. The regulation is comprised of the Low-Emission Vehicle III (LEV III) regulations and zero emission vehicles (ZEV) regulation, which acts as the focused technology-forcing piece of the ACC. It is resulted in hundreds of thousands of ZEVs being purchased and used throughout the state. Due to this regulation in concert with complementary programs, California has about one-half of all of the ZEVs in the United States and is enjoying the economic benefits of its leadership on ZEVs (e.g., home to Tesla, major EV charging infrastructure projects through the State).
  7. **CARB's 2000-2016 GHG Emissions Trends Report.** The report is and its associated metrics are described in response to 1(a) above. As indicated above, the report documents that the State met its GHG reduction target called for under AB 32 four years ahead of schedule.
- c. **To the extent practical, determine how these policies and programs impact varying regions of the State including the San Joaquin Valley**

CARB programs impact varying regions of the State by reduced emissions of ozone and particulate precursors, toxic pollutants, and GHGs. Regulations are statewide and benefit all areas of the state. However, certain incentive programs target areas that are particularly challenged by poor air quality near ports, rail yards, distribution centers, and in the valley.

Attachment A:  
CARB Responses to Joint Legislative Audit Committee

**Attachment B** includes additional information on the following programs.

**1. Funding Agricultural Replacement Measures for Emission Reductions (FARMER).** FARMER Program provides funding through local air districts for agricultural harvesting equipment, heavy-duty trucks, agricultural pump engines, tractors, and other equipment used in agricultural operations. 80% of funding is allocated to the SJV for agricultural equipment incentives. This program alone has translated into over \$200 million dollars being targeted at reducing NOx and PM emissions in the valley in just the past two years.

**2. Community Air Protection Fund (AB 617).** The CAP Fund program provides incentive grants to reduce air pollution in the most disadvantaged and low-income communities statewide, with a focus on zero emission technology and community involvement at the neighborhood level. The program is implanted by the local air districts. As an example of the incentives under the program, 32% of the FY 17-18 funding was dedicated to SJV, per legislation. This translated into about \$80 million directed reducing community exposures to unhealthy air pollution in the valley.

**3. Clean Vehicle Rebate Project (CVRP).** CVRP promotes clean vehicle adoption by offering rebates for the purchase or lease of new, eligible light-duty vehicles, including electric, fuel-cell, and plug-in hybrid electric vehicles. The number and types of ZEVs receiving rebates are tracked with related statistics posted on the web. Over one half of the ZEVs in the United States are in California (i.e., about 570,000 ZEVs in California). Further, the number of models available to consumers continues to increase while the vehicle range now exceeds 200 miles for several models.

**4. Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP).** HVIP is intended to encourage and accelerate the deployment of zero-emission trucks and buses, vehicles using engines that meet the optional low NOx standards, and hybrid trucks and buses in California. HVIP provides vouchers statewide on a first-come, first-served basis that reduce the higher purchase price of advanced technologies. In addition, HVIP provides increased incentives for vehicles based in disadvantaged communities. The program has supported thousands of clean vehicles purchases throughout the state, but particularly near ports, rail yards, and distribution centers. The program documents and tracks several metrics related the recipients of the HVIP vouchers.

**Attachment C** includes CARB's reports that evaluate the impacts to regions within the State, including:

**1. Mobile Source Strategy.** Is an integrated planning approach to ensure that our transportation focused policies and programs provide complementary benefits that improve local and regional air quality and health to meet not only our statewide climate targets but also regional air quality commitments, we have and continue to apply. By 2030, this

Attachment A:  
CARB Responses to Joint Legislative Audit Committee

comprehensive Mobile Source Strategy is expected to provide an 80 percent reduction of smog forming emissions and a 45 percent reduction in diesel particulate matter emissions in the South Coast from today's levels. Statewide, the strategy will also result in a 45 percent reduction in greenhouse gas emissions and a 50 percent reduction in the consumption of petroleum-based fuels. Tables 4, 5, and 6 of the Mobile Source Strategy provide the expected emissions reductions statewide and regionally in the South Coast Air Basin and San Joaquin Valley.

**2) Review and evaluate any analysis performed by CARB when deciding whether to implement new policies and programs related to transportation emissions.**

**Attachment B** lists CARB regulations that reduce GHG emissions in the transportation sector.

- There are 15 CARB regulations with the primary goal of reducing GHGs. These are the "Pavley" Greenhouse Gas Vehicle Regulations, Low-Emission Vehicle III (LEV-III) Program Greenhouse Gas Vehicle Regulations, Zero-Emission Vehicle (ZEV) Program, Tire Inflation Regulation, Enhanced Fleet Modernization Program (EFMP)/Clean Cars 4 All, Zero-Emission Airport Shuttle Regulation, Phase 1 Medium-and Heavy-Duty Engine and Vehicle GHG Emission Standards, Phase 2 Medium-and Heavy-Duty Engine and Vehicle GHG Emission Standards, Truck and Bus Regulation, Drayage Truck Regulation, Tractor-Trailer Greenhouse Gas Regulation, Innovation Clean Transit, Ocean-Going Vessels at-Berth Regulation, Cap-and-Trade Regulation (Fuels), and the Low Carbon Fuel Standard (LCFS).
- Each CARB regulation undergoes a multi-year process that includes documented analyses on the impact on air quality, environmental justice, economic, and the environment. The documented analyses form the basis for CARB staff recommendation considered by the Board of publically noticed hearings.
- **Attachment B** contains relevant documents and page numbers for CARB GHG transportation programs. For example, when proposing the adoption, amendment, or repeal of a regulation, CARB develops an Initial State of Reasons, or Staff Report, which provides information on the rationale for each regulation, or update to a regulation, as well as a description of the analyses conducted during the regulatory development process. The attachment also includes website links for more information on the programs.

**3) Identify and evaluate any effort by CARB to measure or evaluate the effectiveness and efficiency of current transportation policies and programs.**

**Attachment C** includes CARB's reports related to measuring or evaluating the effectiveness and efficiency of CARB's current transportation programs.

- a. **Determine the extent to which the interaction of current policies and programs are considered**



Attachment A:  
CARB Responses to Joint Legislative Audit Committee

A number of CARB reports consider the interaction of current policies and programs on CARB's GHG transportation programs. Each report, including relevant page references, is described in more detail in **Attachment C**. A listing of these reports is provided below:

1. Progress Report: California's Sustainable Communities and Climate Protection Act (SB 150 Report)
2. Scoping Plan
3. Mobile Source Strategy
4. California Sustainable Freight Action Plan
5. State Implementation Plan
6. Three-year California Climate Investments Investment Plan
7. California Climate Investments Annual Report
8. California Climate Investments Funding Guidelines
9. California Climate Investments Quantification Methodologies
10. Funding Plan for Clean Transportation Incentives for LCT and AQIP
11. Carl Moyer Funding Guidelines
12. Farmer Funding Guidelines
13. VW Mitigation Trust
14. Proposition 1B: Goods Movement Funding Guidelines
15. Advanced Clean Cars Midterm Review.
16. CARB Annual Enforcement Report. To evaluate the effectiveness of transportation programs, CARB publishes an enforcement report, annually that describes enforcement efforts including the number of inspections and number of violations determined during inspections, by program. This provides an observed compliance rate by program. The latest enforcement report provides a summary of 2017 activities, including enforcement settlements.

**b. Make any recommendations that would be helpful to CARB in measuring impacts and benefits.**

Social metrics, such as health outcomes, help inform the types of analyses CARB conducts, and help convey the multi-faceted benefits of implementing California's transportation policies. For example:

- The health benefits associated with reductions in diesel particulate matter and NO<sub>x</sub> are quantified and assigned a monetary value by estimating the value of avoided harmful health effects on Californians and the economy.
- CARB quantifies the reductions in premature mortality, respiratory and cardiovascular related hospitalizations, and emergency room visits due to asthma.
- High levels of active transportation have also been linked to improved health and reduced premature mortality – a major direct co-benefit of California's transportation policies aimed at reducing GHG emissions.

CARB also evaluates the avoided social cost associated with reductions in GHG emissions:

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- The social cost of carbon and the social cost of methane are used to estimate the value today of avoided future damage from emissions of carbon and methane and include environmental and health impacts.
- Legislative mandates, including AB 197 and AB 398, require CARB to consider the social cost of reductions in GHG emissions.

The social cost of carbon and the social cost of methane are meant to be comprehensive estimates of the damages caused by carbon and methane globally; however, there are additional costs to society that are not included. Those include:

- Costs associated with changes in co-pollutants.
- Social cost of other GHGs.
- Costs that cannot be included due to modeling and data limitations including some ecosystem impacts.

In addition, our regulatory process and models attempt to capture the role of innovation over time and estimate how costs may change over time but with examples like zero emission vehicles, production and supply chain costs have fallen faster than predicted and battery capacity (which translates into zero-emission vehicle range) has grown quickly. But, historical experience has shown that we tend to overstate the cost of regulations and underestimate the impacts of innovation. Additional tools to strengthen our predictive power of the role of innovation would be of considerable value in developing key program.

More research is also needed to develop tools to better characterize the social cost of carbon as the full impacts of climate change and local air pollution. We need to support efforts to improve the social cost of carbon so it can be leveraged as a stronger policy tool to drive climate mitigation. Also, additional tools to better reflect the true costs of exposure to air pollution would also help to better evaluate control measures as the current tools understate the costs as all of the impacts associated with exposure to air pollution are not incorporated into the models.

**4) Highlight any policies and programs that are very efficient and effective in reducing GHG emissions. Identify any policies that are not.**

**Attachment B** includes CARB's 32 programs focused on GHG emission reductions from the transportation sector. **Attachment C** contains examples of CARB reports that underscore the effectiveness of the programs at GHG emissions. These reports include:

1. California Climate Investments Annual Report.
2. Advanced Clean Cars Midterm Review.
3. CARB Annual Enforcement Report.

CARB's Transportation Programs protect public health and the environment through GHG, criteria, and toxics reductions. Many of CARB's programs provide multiple reductions and co-benefits that reduce not just GHGs but also criteria pollutants and toxics in the transportation sector.

Attachment A:  
CARB Responses to Joint Legislative Audit Committee

- 5) **Identify any current challenges CARB is facing regarding existing policies and programs. Make any recommendations that would help CARB and the Legislature address these challenges.**

SB 150 (Allen, Chapter 646, Statutes of 2017) tasks CARB with preparing a report that assesses progress made toward meeting the regional SB 375 greenhouse gas emissions reduction targets, and to include data-supported metrics for strategies utilized to meet the targets. Refer to **Appendix B** to find the SB 150 Report. The report underscores that the state's vehicle miles traveled as well as consumption of petroleum based fuels is continuing to increase worsening air quality, increasing GHG emissions, and contributing to gridlock. The efforts by the Trump Administration to weaken the motor vehicle standards as well as challenge California's multi-decade authority to protect its citizens by setting clean vehicle standards must not stand. The Legislature has a key role to play in sending a clear message to the Trump Administration that we will fight their roll-backs as doing protects the health California's and saves consumers money at the pump.

Attachment B:  
CARB GHG Transportation Programs Table

The information provided in the table below is included as Attachment B to CARB’s response to the Joint Legislative Audit Committee. The table documents CARB transportation programs including a short description of the program including the source for key analyses, applicable web links, as well as the pollutants that the program focuses on reducing.

CARB GHG Transportation Programs				Emission Reductions
Light-Duty Vehicle: Regulations and Other Programs				
"Pavley" Greenhouse Gas Vehicle Regulations	2004	Regulation Information	<a href="https://www.arb.ca.gov/cc/ccms/ccms.htm">https://www.arb.ca.gov/cc/ccms/ccms.htm</a>	
		Summary	<p>The Pavley regulations established GHG standards for 2009 through 2016 model year light-duty vehicles and medium-duty passenger vehicles.</p> <p>These regulations added four GHGs CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs to the vehicular criteria and toxic air contaminant emissions that California was already regulating. The Pavley Regulations also established a declining fleet average standard for these gases for the 2009 through 2016 model years, with separate standards for the lighter and heavier portions of the passenger vehicle fleet. The Pavley regulations also provided alternative compliance methods, including credit generation from alternative-fuel vehicles, and averaging, banking, and trading of credits within and among manufacturers. Program primarily reduces GHGs.</p>	GHGs <input checked="" type="checkbox"/>  Criteria <input type="checkbox"/>  Toxics <input type="checkbox"/>
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB’s analyses and considerations as they relate to JLAC question 2 for the development of the Pavley Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report               <ul style="list-style-type: none"> <li>○ Human Health and Air Pollution—Page 20</li> <li>○ Environmental Impacts—Page 139</li> <li>○ Economic Impacts—Page 150</li> <li>○ Impacts on Minority Communities—Page 162</li> </ul> </li> </ul>	

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Light-Duty Vehicle: Regulations and Other Programs			Emission Reductions
Low-Emission Vehicle III (LEV III) Program Greenhouse Gas Vehicle Regulations	2018	Regulation Information	<a href="https://www.arb.ca.gov/msprog/levprog/leviii/leviii.htm">https://www.arb.ca.gov/msprog/levprog/leviii/leviii.htm</a>
		Summary	<p>The LEV III GHG regulations established GHG standards for 2017 and subsequent model year light-duty vehicles and medium-duty passenger vehicles.</p> <p>The LEV III GHG regulations include separate emission standards for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, providing credits toward the CO<sub>2</sub> standard if a manufacturer reduces HFCs from the vehicle's air conditioning system, and using a footprint-based approach for reducing emissions. The LEV III GHG regulations also provide credits for using verifiable GHG reduction technologies that are not fully accounted for with the established regulatory test cycle procedures. Program primarily reduces GHGs.</p>
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the LEV III Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Air Quality—Page 24</li> <li>○ Environmental Analysis—Page 24</li> <li>○ Environmental Justice—Page 31</li> <li>○ Economic Impact Assessment—Page 31</li> </ul> </li> <li>○ Appendix D: Standardized Regulatory Impact Assessment (SRIA)</li> <li>○ Appendix E: Comments from the California Department of Finance on the SRIA Equivalent Document</li> </ul>
			<p>GHGs <input checked="" type="checkbox"/></p> <p>Criteria <input type="checkbox"/></p> <p>Toxics <input type="checkbox"/></p>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Light-Duty Vehicle: Regulations and Other Programs			Emission Reductions
Zero-Emission Vehicle (ZEV) Program	2014	Regulation Information	<a href="https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program">https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program</a>
		Summary	<p>The ZEV Regulation sets vehicle credit requirements for clean vehicle technology based on manufacturers' California sales volumes. A manufacturer's credit requirement is expressed as a percentage of their annual total passenger car and light-duty truck sales in California.</p> <p>Manufacturers meet their credit requirement through the production of ZEVs (battery electric and fuel cell electric vehicles) for California drivers. Manufacturers may meet a portion of their requirement with transitional-ZEVs (TZEVs), otherwise known as plug-in hybrid electric vehicles (PHEVs). Within the basic regulatory structure, manufacturers are given compliance flexibility, including the ability to trade credits in order to meet a compliance shortfall. Program primarily reduces GHGs.</p>
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the ZEV Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Environmental Analysis—Page 13</li> <li>○ Air Quality Benefits—Page 17</li> <li>○ Environmental Justice—Page 18</li> <li>○ Economic Impact Assessment—Page 18</li> </ul> </li> </ul>
			GHGs <input checked="" type="checkbox"/> Criteria <input checked="" type="checkbox"/> Toxics <input type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				Emission Reductions
Light-Duty Vehicle: Regulations and Other Programs				
Tire Inflation Regulation	2010	Regulation Information	<a href="https://www.arb.ca.gov/cc/tire-pressure/tire-pressure.htm">https://www.arb.ca.gov/cc/tire-pressure/tire-pressure.htm</a>	
		Summary	The Tire Inflation Regulation reduces GHG emissions by requiring automotive services providers to perform a tire pressure service on all passenger cars, light-duty trucks, medium-duty vehicles and light heavy duty trucks while performing any vehicle maintenance or repair service. The regulation reduces emissions from 25 to 29 million vehicles operating in California. Program primarily reduces GHGs.	GHGs <input checked="" type="checkbox"/>
		Relevant Documents and Pages	The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the Tire Inflation Regulation: <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report                             <ul style="list-style-type: none"> <li>○ Environmental Justice—Page 2</li> <li>○ Estimates of Emission Benefits—Page 10</li> <li>○ Environmental Impacts—Page 20</li> <li>○ Effects on Air Quality—Page 22</li> <li>○ Health Assessment—Page 23</li> <li>○ Economic Impacts—Page 23</li> </ul> </li> </ul>	Criteria <input type="checkbox"/>  Toxics <input checked="" type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				Emission Reductions
Light-Duty Vehicles: Incentive Programs				
Clean Vehicle Rebate Project (CVRP)	2009	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf</a>	
		Summary	<p>The Clean Vehicle Rebate Project (CVRP) offers vehicle rebates on a first-come, first-served basis for light-duty ZEVs, including plug-in hybrid electric vehicles, zero emission motorcycles, and neighborhood electric vehicles.</p> <p>Rebate amounts are \$5,000 for a fuel cell electric vehicle; \$2,500 for a battery electric vehicle; \$1,500 for a plug in hybrid electric vehicle; and \$900 for a zero emission motorcycle. For low- to moderate income consumers with a household income at or below 300 percent of the federal poverty level, the rebate amounts are \$7,000 for a fuel cell electric vehicle; \$4,500 for a battery electric vehicle; and \$3,500 for a plug-in hybrid electric vehicle.</p> <p>Since the Clean Vehicle Rebate Project was launched in 2010, the Project has issued rebates for more than 150,000 vehicles, totaling over \$350 million. Program primarily reduces GHGs.</p>	<p>GHGs <input checked="" type="checkbox"/></p> <p>Criteria <input checked="" type="checkbox"/></p> <p>Toxics <input checked="" type="checkbox"/></p>
		Relevant Documents and Pages	<p>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</p> <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program—Pages 17-26</li> </ul>	



Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				Emission Reductions
Light-Duty Vehicles: Incentive Programs				
Enhanced Fleet Modernization Program (EFMP) and Clean Cars 4 All (Formerly EFMP Plus Up)	2018	Incentive Information	<a href="https://ww2.arb.ca.gov/rulemaking/2018/proposed-guidelines-clean-cars-4-all-and-enhanced-fleet-modernization-programs">https://ww2.arb.ca.gov/rulemaking/2018/proposed-guidelines-clean-cars-4-all-and-enhanced-fleet-modernization-programs</a>	
		Summary	The EFMP Retirement-only program provides \$1,500 to lower-income drivers to retire their older, higher polluting car. The EFMP Retire and Replace program goes one step further than the retirement-only program by providing up to \$4,500 to lower-income drivers who scrap an old car and buy a cleaner and more fuel-efficient replacement cars. Alternative transportation mobility options, such as transit passes, are also available in lieu of a replacement car purchase. Clean Cars 4 All offers up to \$9500 in incentives for the subset of participants living in or near a disadvantaged community census tract and who scrap their vehicle and choose either an alternative mobility option or an advanced technology replacement vehicle (e.g. hybrid, plug-in hybrid, and zero-emission vehicle). Program primarily reduces GHGs.	GHGs <input checked="" type="checkbox"/>
		Relevant Documents and Pages	<b>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations, as they relate to JLAC question 2, for the development of the EFMP/CC4A Regulation:</b> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Air Quality—Page 18</li> <li>○ Environmental Analysis—Page 19</li> <li>○ Environmental Justice—Page 20</li> <li>○ Economic Impacts Assessment—Page 21</li> </ul> </li> </ul> <b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b> <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program – Page 33-40.</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Light-Duty Vehicles: Incentive Programs			Emission Reductions
Car Sharing and Mobility Options Pilot Project	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf</a>	
	Summary	Provides funding for government entities or non-profit organizations to start or expand car share programs for residents of disadvantaged communities, using zero emission and near zero emission vehicles, vanpools, and other mobility options to increase access to clean transportation. Program primarily reduces GHGs.	GHGs <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b> <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program—Page 41-45.</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input type="checkbox"/>
Financing Assistance Pilot Project	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf</a>	
	Summary	The Financing Assistance for Lower-Income Consumers pilot project is a grant project that helps lower-income Californians overcome the barrier of obtaining vehicle financing by providing low interest loans and vehicle price buy-downs to consumers. This program provides a vehicle price buy down of up to \$5,000, a loan up to \$15,000 with an interest rate cap of 8%, and A maximum loan term of 5 years (60 months). Program primarily reduces GHGs.	GHGs <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b> <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program—Page 37-40.</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Light-Duty Vehicles: Incentive Programs			Emission Reductions
Agricultural Worker Vanpools	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf</a>	
	Summary	<p>The grant for the Agricultural Worker Vanpools Pilot Project expands access to clean transportation vanpools for agricultural workers, and achieves emission reduction benefits by providing incentives for advanced technology vehicles instead of conventional vehicles. This project meets a basic transportation need of agricultural workers, while also resulting in immediate emission reductions benefits within low-income and disadvantaged communities, and promotes increased acceptance and understanding of clean, advanced technology vehicles. Program primarily reduces GHGs.</p>	GHGs <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<p><b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b></p> <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program—Page 46-47.</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Light-Duty Vehicles: Incentive Programs			Emission Reductions
Rural School Bus Project	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf</a>	
	Summary	The objective of the Rural School Bus Pilot Project is a grant project designed to enhance the turnover of the California school bus fleets to lower-carbon transportation choices. The project provides funding for zero-emission and new conventionally-fueled school buses that use renewable fuels. The project prioritizes older school buses with higher mileage in small and medium sized air districts (as defined by CAPCOA). The project provides immediate GHG emission reductions and reduces schoolchildren’s exposure to cancer-causing and smog-forming pollution. Program primarily reduces GHGs.	GHGs <input type="checkbox"/>
	Relevant Documents and Pages	The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more: <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program—Page 48-49</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				Emission Reductions
Light-Duty Vehicles: Incentive Programs				
Clean Mobility in Schools	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf</a>		
	Summary	<p>The Clean Mobility in Schools Pilot Project is a multi-faceted mobility grant related to schools that will provide funding to reduce GHG emissions in kindergarten through twelfth grade (K-12) schools located in a disadvantaged community. This funding provides for the electrification of the transportation fleets, including vehicles, infrastructure, and education and awareness, and other efforts to encourage clean mobility in and around schools. Program primarily reduces GHGs.</p>		GHGs <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<p><b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b></p> <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program—Page 50-52</li> </ul>		Criteria <input type="checkbox"/>  Toxics <input checked="" type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Regulations and Other Programs				Emission Reductions
Zero-Emission Airport Shuttle Regulation	2019	Regulation Information	<a href="https://ww2.arb.ca.gov/rulemaking/2019/asb19">https://ww2.arb.ca.gov/rulemaking/2019/asb19</a>	GHGs <input checked="" type="checkbox"/>  Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>
		Summary	The proposed Zero-Emission Airport Shuttle regulation would mandate the use of ZEV technology in airport shuttles and transition these fleets to full ZEV adoption by 2035. Program primarily reduces GHGs.	
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB’s analyses and considerations as they relate to JLAC question 2 for the development of the Zero Emission Airport Shuttle Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report                             <ul style="list-style-type: none"> <li>○ Air Quality—Page IV-8</li> <li>○ Environmental Analysis—Page V-1</li> <li>○ Environmental Justice—Page V-1</li> <li>○ Economic Impact Assessment—Page VII-11</li> </ul> </li> <li>○ Appendix B: Draft Environmental Analysis</li> <li>○ Appendix C: Economic Analysis</li> </ul>	

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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Heavy-Duty Vehicles: Regulations and Other Programs			Emission Reductions
Optional Low-NOx Standards for Heavy-Duty Engines	Regulation Information	<a href="https://www.arb.ca.gov/msprog/onroad/optionnox/optionnox.htm">https://www.arb.ca.gov/msprog/onroad/optionnox/optionnox.htm</a>	
	Summary	This regulation establishes three distinct optional low-NOx emission standards for heavy-duty engines, ranging from 50-90 percent lower than the current NOx standard of 0.2 grams per brake horsepower-hour (g/bhp-hr). The three optional standards are 0.1 g/bhp-hr, 0.05 g/bhp-hr, and 0.02 g/bhp-hr. Manufacturers can elect to certify to any of the optional NOx standards, or instead certify to the existing mandatory 0.2 g/bhp-hr NOx standard. Program reduces GHGs as a co-benefit.	<u>GHGs</u> <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<p>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the <b>Optional Low-NOx Standards for Heavy-Duty Engines</b>:</p> <p><a href="http://www.arb.ca.gov/regact/2013/hdghg2013/hdghg2013.htm">http://www.arb.ca.gov/regact/2013/hdghg2013/hdghg2013.htm</a></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons</li> <li>○ Optional Low-NOx Emission Standards Regulation—Page 47</li> <li>○ Environmental Impacts Analysis—Page 56</li> <li>○ Economic Impact Assessment—Page 60</li> </ul>	<u>Criteria</u> <input checked="" type="checkbox"/>  <u>Toxics</u> <input checked="" type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Regulations and Other Programs				Emission Reductions
Phase 1 Medium- and Heavy-Duty Engine and Vehicle GHG Emission Standards	2013	Regulation Information	<a href="https://www.arb.ca.gov/msprog/onroad/phase1ghg/phase1ghg.htm">https://www.arb.ca.gov/msprog/onroad/phase1ghg/phase1ghg.htm</a>	
		Summary	<p>California's Phase 1 GHG regulation sets GHG standards for new medium- and heavy-duty engines/vehicles sold in California. GHG emissions include, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFC, and vehicle categories subject to the regulation include: vocational vehicles (Class 4-8), tractors (Class 7-8), pickups and vans (Class 2b-3), and buses. The GHG standards began with model year 2014 and increase in stringency through 2019. California's Phase 1 GHG regulation harmonized with the federal Phase 1 GHG standards adopted by U.S. EPA and National Highway Traffic Safety Administration (NHTSA) in 2011, allowing California to enforce the federal standards.</p> <p>The following regulations were included in this package: Greenhouse Gas Regulations for Medium- and Heavy-Duty Engines and Vehicles; Tractor-Trailer GHG Regulation; Optional Reduced Emission Standards for Heavy-Duty Engines; Diesel-Fueled Commercial Motor Vehicle Idling Rule; The Heavy-Duty Hybrid-Electric Vehicles Certification Procedures Regulation.</p>	<p>GHGs <input checked="" type="checkbox"/></p> <p>Criteria <input checked="" type="checkbox"/></p> <p>Toxics <input type="checkbox"/></p>



Attachment B:  
CARB GHG Transportation Programs Table

		<p style="text-align: center;">Relevant Documents and Pages</p>	<p><b>The staff report and relevant page numbers referenced below provide CARB’s analyses and considerations as they relate to JLAC question 2 for the development of the Phase 1 GHG Regulation and other specified regulations listed below:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Phase 1 GHG Standards Regulation <ul style="list-style-type: none"> <li>• Environmental Impact Analysis—Page 34</li> <li>• Economic Impact Assessment—Page 35</li> </ul> </li> <li>○ Tractor Trailer Regulation—Page 38 <ul style="list-style-type: none"> <li>• Environmental Impact Analysis—Page 43</li> <li>• Economic Impact Analysis—Page 46</li> </ul> </li> <li>○ Optional Low-NOx Emission Standards Regulation—Page 47 <ul style="list-style-type: none"> <li>• Environmental Impacts Analysis—Page 56</li> <li>• Economic Impact Assessment—Page 60</li> </ul> </li> <li>○ Anti-Idling Regulation—Page 73 <ul style="list-style-type: none"> <li>• Environmental Impacts Analysis—Page 77</li> <li>• Economic Impacts Assessment—Page 79</li> </ul> </li> <li>○ Heavy-Duty Hybrid-Electric Vehicles Certification Procedures Regulation <ul style="list-style-type: none"> <li>• Environmental Impacts Analysis – Page 84</li> <li>• Economic Impact Assessment—Page 85</li> </ul> </li> <li>○ Summary of Economic Impacts—Page 89</li> <li>○ Summary of Environmental Impacts—Page 90</li> <li>○ Summary of Environmental Justice Impacts—Page 91</li> </ul> </li> <li>○ Appendix III: Emissions Inventory Analysis and Results</li> </ul>	
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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Heavy-Duty Vehicles: Regulations and Other Programs			Emission Reductions
Phase 2 Medium- and Heavy-Duty Engine and Vehicle GHG Emission Standards	2018	Regulation Information	<a href="https://www.arb.ca.gov/msprog/onroad/caphase2ghg/caphase2ghg.htm">https://www.arb.ca.gov/msprog/onroad/caphase2ghg/caphase2ghg.htm</a>
		Summary	<p>Applicable starting with the 2018 model year for trailers and with the 2021 model year for engines and vehicles, the regulation will expand the scope and stringency of the State and federal GHG standards established in Phase 1, and includes first-time requirements for certain trailer types.</p> <p>The following regulations were included in this package: Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles; Tractor-Trailer GHG Regulation. Program primarily reduces GHGs.</p>
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the Phase 2 GHG Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Air Quality—Page IV-1</li> <li>○ Environmental Analysis—Page V-1</li> <li>○ Environmental Justice—Page VI-1</li> <li>○ Economic Impacts Analysis—Page VII-1</li> </ul> </li> <li>○ Appendix F: Emissions Inventory Analysis and Results</li> <li>○ Appendix H: Further Detail on Cost and Economic Analysis</li> </ul>
			<p>GHGs <input checked="" type="checkbox"/></p> <p>Criteria <input type="checkbox"/></p> <p>Toxics <input checked="" type="checkbox"/></p>

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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Regulations and Other Programs				Emission Reductions
Truck and Bus Regulation	2011	Regulation Information	<a href="https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm">https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm</a>	
		Summary	The Truck and Bus regulation requires emission control equipment retrofit for in-use trucks and buses and accelerates the turnover of old trucks and buses to the 2010 engine standards, thereby reducing emissions from nearly one million heavy-duty diesel trucks and buses operating in California. Program reduces GHGs as a co-benefit.	<u>GHGs</u> <input checked="" type="checkbox"/>
		Relevant Documents and Pages	<p>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the Truck and Bus Regulation and other specified regulations listed below:</p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Environmental Impacts—Page 45</li> <li>○ Environmental Justice—Page 53</li> <li>○ Economic Impacts Analysis—Page 55</li> </ul> </li> <li>○ Appendix I: Cost and Cost Methodology</li> <li>○ Appendix H: Emissions Analysis Methodology and Results</li> </ul>	<u>Criteria</u> <input checked="" type="checkbox"/> <u>Toxics</u> <input checked="" type="checkbox"/>

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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Regulations and Other Programs				Emission Reductions
Drayage Truck Regulation	2010	Regulation Information	<a href="https://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm#background">https://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm#background</a>	
		Summary	This regulation limits engines of specified model years of Drayage trucks that transport goods to and from ports and intermodal railyard from entering ports and railyards. All trucks servicing ports and railyards must be equipped with 2007 or newer model year engines. Program reduces GHGs as a co-benefit.	
		Relevant Documents and Pages	<p>The staff report and relevant page numbers referenced below provide CARB’s analyses and considerations as they relate to JLAC question 2 for the development of the Drayage Truck Regulation and other specified regulations listed below:</p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report               <ul style="list-style-type: none"> <li>○ Air Quality—Page 12</li> <li>○ Environmental Impacts—Page 15</li> <li>○ Economic Impacts—Page 16</li> <li>○ Environmental Justice—Page 22</li> </ul> </li> <li>○ Appendix B: Emissions Estimation Methodology for On-Road Diesel-Fueled Heavy-Duty Drayage Trucks at California Ports and Intermodal Rail Yards</li> </ul>	<p><u>GHGs</u> <input checked="" type="checkbox"/></p> <p><u>Criteria</u> <input checked="" type="checkbox"/></p> <p><u>Toxics</u> <input checked="" type="checkbox"/></p>

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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Regulations and Other Programs				Emission Reductions
Tractor-Trailer Greenhouse Gas (TTGHG) Regulation	2018	Regulation Information	<a href="https://www.arb.ca.gov/msprog/onroad/caphase2ghg/caphase2ghg.htm">https://www.arb.ca.gov/msprog/onroad/caphase2ghg/caphase2ghg.htm</a>	GHGs <input checked="" type="checkbox"/>  Criteria <input type="checkbox"/>  Toxics <input type="checkbox"/>
		Summary	<p>This regulation improves the efficiency of long-haul heavy-duty vehicles by requiring all 53-foot or longer box type trailers used for long distance goods movement, and the tractors used to pull these trailers, to have aerodynamic equipment (e.g., side skirts, front/rear fairing) and low rolling resistance tires when traveling in California. Required trailer aerodynamic equipment is expected to attain a minimum 4 to 5 percent fuel savings. Low rolling resistance tires must be rated to have a rolling resistance coefficient at or below the target values specified in U.S. EPA’s voluntary SmartWay Program, which was launched in 2004. Program primarily reduces GHGs.</p>	
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB’s analyses and considerations as they relate to JLAC question 2 for the development of the Tractor-Trailer GHG Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report                             <ul style="list-style-type: none"> <li>○ Tractor Trailer Regulation—Page 38                                     <ul style="list-style-type: none"> <li>● Environmental Impact Analysis—Page 43</li> <li>● Economic Impact Analysis—Page 46</li> </ul> </li> </ul> </li> <li>○ Appendix III: Emissions Inventory Analysis and Results</li> </ul>	

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CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Regulations and Other Programs				Emission Reductions
Innovative Clean Transit	2018	Regulation Information	<a href="https://www.arb.ca.gov/msprog/ict/ict.htm">https://www.arb.ca.gov/msprog/ict/ict.htm</a>	
		Summary	The Innovative Clean Transit regulation would require transit agencies to purchase increasing percentages of new zero-emission buses, with 100 percent of new buses purchased being zero-emission by 2029. The regulation also requires each transit agency to submit a zero-emission bus rollout plan by 2020 for large transit agencies and 2023 for small transit agencies. The regulation offers compliance flexibility for other ZEV mobility options, low-NOx engines, and renewable fuels. Program primarily reduces GHGs.	GHGs <input checked="" type="checkbox"/>
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB’s analyses and considerations as they relate to JLAC question 2 for the development of the Phase 2 GHG Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Air Quality—Page IV-1</li> <li>○ Environmental analysis—Page VI-1</li> <li>○ Environmental Justice – Page VII-1</li> <li>○ Economic Impacts Assessment—VIII-1</li> </ul> </li> <li>○ Appendix C: Draft Environmental Analysis</li> <li>○ Appendix L: Emissions Inventory Methods and Results for the Proposed Innovative Clean Transit Regulation</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>

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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				Emission Reductions
Heavy-Duty Vehicles: Incentive Programs				
Zero- and Near Zero-Emission Freight Facility (ZANZEFF) Project	Incentive information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_18_19_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_18_19_funding_plan.pdf</a>		
	Summary	<p>Projects will support a wide variety of zero- and near zero-emission heavy-duty vehicles and off-road equipment, fueling infrastructure, as well as other facility and efficiency improvements that reduce these emissions facility-wide. Freight facilities include warehouses, distribution centers, seaports, freight airports, intermodal rail yards, cold storage warehouses, rail yard, ports of entry, and other freight facilities. Program primarily reduces GHGs.</p>		GHGs <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<p><b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b></p> <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program--Page 72-74</li> </ul>		Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>

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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Incentive Programs				Emission Reductions
AB 617 Community Air Protection Funds	2018	Program Page	<a href="https://ww2.arb.ca.gov/index.php/our-work/programs/community-air-protection-program">https://ww2.arb.ca.gov/index.php/our-work/programs/community-air-protection-program</a>	
		Summary	<p>AB 617 directed the CARB to work with local air districts to establish the Community Air Protection Program. The Legislature has appropriated early action funds to reduce emissions from vehicles and heavy equipment under the Carl Moyer and Proposition 1B programs and also includes funds to reduce emissions from stationary sources. The Legislature also provided opportunities to fund community proposed projects. Program primarily reduces GHGs.</p>	GHGs <input checked="" type="checkbox"/>
		Relevant Documents	<p><b>The Guidelines Supplement and Appendix referenced below provide information relevant to JLAC question 2:</b></p> <ul style="list-style-type: none"> <li>○ The Community Air Protection Funds: Supplement to the Carl Moyer Program 2017 Guidelines</li> <li>○ Appendix A: Targeting Investments to AB 1550 Populations and Maximizing Benefits to Disadvantaged Communities and Households</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>



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CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Heavy-Duty Vehicles: Incentive Programs			Emission Reductions
Carl Moyer Program	Incentive Information	<a href="https://www.arb.ca.gov/msprog/moyer/moyer.htm">https://www.arb.ca.gov/msprog/moyer/moyer.htm</a>	
	Summary	The Carl Moyer program funds projects for trucks, construction equipment, farm and cargo handling equipment, marine vessels, locomotives, portable and stationary agricultural equipment, emergency vehicles, airport ground support equipment, and lawn and garden equipment. Alternative fueling infrastructure and light-duty vehicle retirement are also eligible projects. Air districts solicit, evaluate, select, fund, and monitor specific clean air projects in their areas. The grant funds go to fleet owners to achieve early or extra emissions reductions through replacement, repower, or retrofit of their vehicles and equipment, especially heavy-duty diesel equipment. Program reduces GHGs as a co-benefit.	<u>GHGs</u> <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<p>The program guidelines relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</p> <p><a href="https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_cmp_gl_volume_1.pdf">https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_cmp_gl_volume_1.pdf</a>  <a href="https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2018_cmp_gl_volume_2.pdf">https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2018_cmp_gl_volume_2.pdf</a></p>	<u>Criteria</u> <input checked="" type="checkbox"/>  <u>Toxics</u> <input checked="" type="checkbox"/>

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CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Incentive Programs				Emission Reductions
Goods Movement Emission Reduction Program (Proposition 1B)	Incentive Information	<a href="https://www.arb.ca.gov/bonds/gmbond/gmbond.htm">https://www.arb.ca.gov/bonds/gmbond/gmbond.htm</a>		<u>GHGs</u> <input checked="" type="checkbox"/>  <u>Criteria</u> <input checked="" type="checkbox"/>  <u>Toxics</u> <input checked="" type="checkbox"/>
	Summary	The Program provides funding to retrofit, purchase engines, or replace vehicles, and may include trucks, locomotives, harbor craft, transport refrigeration units, cargo handling equipment, and supporting infrastructure, as well as technologies to reduce ship emissions at berth. Program primarily GHGs as a co-benefit.		
	Relevant Documents and Pages	The program guidelines relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more: <a href="https://www.arb.ca.gov/bonds/gmbond/docs/prop_1b_goods_movement_2015_program_guidelines_for_implementation.pdf">https://www.arb.ca.gov/bonds/gmbond/docs/prop_1b_goods_movement_2015_program_guidelines_for_implementation.pdf</a>		
Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP)	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_18_19_funding_plan.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_18_19_funding_plan.pdf</a>		<u>GHGs</u> <input checked="" type="checkbox"/>  <u>Criteria</u> <input checked="" type="checkbox"/>  <u>Toxics</u> <input checked="" type="checkbox"/>
	Summary	HVIP provides a voucher to reduce the cost of hybrid and zero emission trucks and buses at the time of purchase. Additional incentives are provided for zero emission vehicles that provide benefits to disadvantaged communities. Program primarily reduces GHGs.		
	Relevant Documents and Pages	The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more: <ul style="list-style-type: none"> <li>○ Please see the 2018-2019 Funding Plan for Low Carbon Transportation Investments and the Air Quality Improvement Program--Page 61-71</li> </ul>		

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Heavy-Duty Vehicles: Incentive Programs			Emission Reductions
Advanced Technology Freight Demonstrations and Freight Facilities	Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_fy16-17_fundingplan_full.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_fy16-17_fundingplan_full.pdf</a>	
	Summary	<p>Advanced Technology Freight Demonstration Projects accelerate the market introduction of advanced technologies on the cusp of commercialization. Funding encourages industry to expeditiously invent, develop, test, and introduce cutting edge emissions reduction technologies faster than would occur without incentives. These public investments give confidence to companies and investors that a pathway exists for commercializing new technology that has successfully passed the research and development phase. Program primarily reduces GHGs.</p>	GHGs <input checked="" type="checkbox"/>
	Relevant Documents and Pages	<p>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</p> <ul style="list-style-type: none"> <li>○ Please see the Fiscal Year 2017-2018 Funding Plan for Low Carbon Transportation and Air Quality Improvement Fund Program—Page 47-52</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Heavy-Duty Vehicles: Incentive Programs				Emission Reductions
Zero Emission Off-Road Freight Vouchers		Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_17_18_funding_plan_final.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_17_18_funding_plan_final.pdf</a>	
		Summary	The Zero Emission Off-Road Freight Voucher program offers greater adoption of cleaner, commercially available off-road technologies by providing a streamlined way for fleets ready to purchase specific zero-emission equipment to receive funding. Program primarily reduces GHGs.	GHGs <input checked="" type="checkbox"/>
		Relevant Documents and Pages	<p>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</p> <ul style="list-style-type: none"> <li>○ Please see the Fiscal Year 2017-2018 Funding Plan for Low Carbon Transportation and Air Quality Improvement Fund Program—Page I-72-76</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				Emission Reductions
Heavy-Duty Vehicles: Incentive Programs				
Zero Emission Truck and Bus Pilot Projects		Incentive Information	<a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_fy16-17_fundingplan_full.pdf">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_fy16-17_fundingplan_full.pdf</a>	
		Summary	<p>This program is designed to complement the Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP) by supporting multiple vehicle deployments. These competitively awarded projects help to directly lower production costs by supporting efficiencies in supply chains and leveraging other funding sources.</p> <p>Pilot projects support concentrated clusters of advanced technology vehicles with an ecosystem of fueling or charging infrastructure, workforce training, and public outreach. Program primarily reduces GHGs.</p>	GHGs <input checked="" type="checkbox"/>  Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>
		Relevant Documents and Pages	<p><b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b></p> <ul style="list-style-type: none"> <li>○ Please see the Fiscal Year 2016-2017 Funding Plan for Low Carbon Transportation and Air Quality Improvement Fund Program—Pages 55-58</li> </ul>	

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				Emission Reductions
Heavy-Duty Vehicles: Incentive Programs				
Funding Agricultural Replacement Measures for Emission Reductions (FARMER)	Incentive Information		<a href="https://ww2.arb.ca.gov/sites/default/files/2018-07/farmerguidelines-final.pdf">https://ww2.arb.ca.gov/sites/default/files/2018-07/farmerguidelines-final.pdf</a>	
	Summary		Emissions from off-road mobile agricultural equipment are among a number of significant sources of air pollution in the San Joaquin Valley. ARB competitively selects a grantee to administer a trade-up pilot project designed as a two-step transaction. Owners of high emitting equipment that are not well served by existing incentive programs that only provide funding for new equipment purchases, have the opportunity to receive a used piece of cleaner equipment at little to no cost. This project pays for a portion of the newer cleaner equipment and repairs the equipment being traded down, with the highest emitting piece of equipment being scrapped. Program primarily reduces GHGs.	GHGs <input checked="" type="checkbox"/>
	Relevant Documents and Pages		<p><b>The Funding Plan and pages referenced below relate to JLAC questions 1 and 4, and provide information relevant to program performance, updates (as applicable), emissions reduction information, and more:</b></p> <ul style="list-style-type: none"> <li>○ Program Guidelines</li> <li>○ Emission Reduction Quantification Methodology—Page A-1</li> <li>○ Maximizing Benefits to AB 1550 Communities and Low-Income Households—Page B-1</li> </ul>	Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Ports and Vessels: Regulations and Other Programs			Emission Reductions
Ocean-Going Vessels At-Berth Regulation	2007	Regulation Information	<a href="https://www.arb.ca.gov/ports/shorepower/shorepower.htm">https://www.arb.ca.gov/ports/shorepower/shorepower.htm</a>
		Summary	The Ocean-going Vessel At-Berth Regulation requires fleets to reduce their auxiliary engine power usage or equivalent emissions when at berth at regulated California ports. Regulated fleets are container vessels, reefer vessels with 25 or more visits at a single regulated California port, and passenger vessels with five or more visits at a single regulated California port. Program reduces GHGs as a co-benefit.
		Relevant Documents and Pages	<p><b>The staff report and relevant page numbers referenced below provide CARB’s analyses and considerations as they relate to JLAC question 2 for the development of the Ocean-Going Vessels At-Berth Regulation:</b></p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report <ul style="list-style-type: none"> <li>○ Health Risk—Page 8</li> <li>○ Emissions Reductions—Page 14</li> <li>○ Environmental Impact—Page 19</li> <li>○ Economic Impacts Assessment—20</li> <li>○ Environmental Justice – Page 28</li> </ul> </li> <li>○ Appendix B: Emissions Inventory Methodology</li> <li>○ Appendix E: Information Used in Cost Effectiveness Analysis and Example Calculation</li> </ul>
			<u>GHGs</u> <input checked="" type="checkbox"/>  <u>Criteria</u> <input checked="" type="checkbox"/>  <u>Toxics</u> <input checked="" type="checkbox"/>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Fuels: Regulations and Other Programs				Emission Reductions
Cap-and-Trade Regulation (Fuels)	2018	Regulation Information	<a href="https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm">https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm</a>	
		Summary	<p>The Cap-and-Trade Program (Program) establishes a declining cap on emissions from facilities accounting for about 80 percent of the State’s GHG emissions and currently covers about 450 facilities, of which more than 50 are fuel suppliers.</p> <p>The Program has two types of compliance instruments: allowances and offset credits. Allowances are issued annually by the State in an amount equal to the annual emissions cap in the Regulation. Offset credits are issued by the State for verified, real, additional, permanent, enforceable, and quantifiable voluntary GHG reductions in uncovered sectors. Each allowance and offset credit is equal to one metric ton of carbon dioxide equivalent.</p> <p>Covered entities must acquire allowances, or a limited number of offset credits, equal to their annually reported and verified GHG emissions that are covered by the Regulation. Covered entities may avoid the cost of purchasing allowances or offsets by investing in emissions reductions technology to lower their carbon liability in the program. As such, entities have compliance flexibility and can identify the best compliance strategy for their business needs. This also results in realizing the lowest cost emission reduction activities throughout the economy first. Reduced reliance on fuel relate to co-benefits in reducing criteria and toxics. Program primarily reduces GHGs.</p>	



Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs				
Fuels: Regulations and Other Programs				Emission Reductions
		Relevant Documents and Pages	<p>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the Cap and Trade Regulation:</p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report               <ul style="list-style-type: none"> <li>○ Air Quality—Page 172</li> <li>○ Environmental Analysis—Page 174</li> <li>○ Environmental Justice—Page 176</li> <li>○ Economic Impacts Assessment—Page 179</li> </ul> </li> <li>○ Appendix B: Final Environmental Analysis</li> <li>○ Appendix C: Updated Standardized Regulatory Impact Assessment</li> </ul>	
Low Carbon Fuel Standard (LCFS)	2018	Regulation Information	<a href="http://www.arb.ca.gov/fuels/lcfs/lcfs.htm">http://www.arb.ca.gov/fuels/lcfs/lcfs.htm</a>	GHGs <input checked="" type="checkbox"/>  Criteria <input checked="" type="checkbox"/>  Toxics <input checked="" type="checkbox"/>
		Summary	<p>The LCFS sets annual carbon intensity (CI) standards, which reduce over time, for gasoline, diesel, jet fuel, and the fuels that replace them such as ethanol, renewable diesel, biodiesel, renewable natural gas, electricity, and hydrogen.</p> <p>CI is expressed in grams of carbon dioxide equivalent per megajoule of energy provided by that fuel. CI takes into account the GHG emissions associated with all of the steps of producing, transporting, and consuming a fuel – also known as a complete life cycle of that fuel.</p> <p>The LCFS transforms and diversifies the fuel pool in California to reduce petroleum dependency and achieves air quality benefits.</p> <p>High carbon fuel producers, such as oil companies, must meet the fuel standard either through producing or buying</p>	

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Fuels: Regulations and Other Programs			Emission Reductions
			the lower-CI fuels, innovating to lower their own fuel's CI, or buying tradeable credits generated by low carbon fuel providers. Program primarily reduces GHGs.
		Relevant Documents and Pages	<p>The staff report and relevant page numbers referenced below provide CARB's analyses and considerations as they relate to JLAC question 2 for the development of the Low Carbon Fuel Standard Regulation:</p> <ul style="list-style-type: none"> <li>○ Initial Statement of Reasons/Staff Report March 6, 2018) <ul style="list-style-type: none"> <li>○ Air Quality—Page V-1</li> <li>○ Environmental Analysis—Page VI-1</li> <li>○ Environmental Justice—Page VII-1</li> <li>○ Economic Impact Analysis—Page VIII-1</li> </ul> </li> <li>○ Appendix D: Final Environmental Analysis</li> <li>○ Appendix E: Revised Standardized Regulatory Impact Assessment</li> <li>○ Appendix F: Methodologies for Estimating Potential GHG and Criteria Pollutant Emissions Changes Due to the Proposed LCFS Amendments</li> </ul> <p>These documents can be found on the LCFS Rulemaking web page: <a href="https://ww2.arb.ca.gov/rulemaking/2018/low-carbon-fuel-standard-and-alternative-diesel-fuels-regulation-2018">https://ww2.arb.ca.gov/rulemaking/2018/low-carbon-fuel-standard-and-alternative-diesel-fuels-regulation-2018</a>.</p>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Land Use and Transportation Planning			Emission Reductions
Sustainable Community Strategies (SCS)	Program Information	<a href="https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf">https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf</a>	
	Summary	<p>SB 375 supports the State’s climate goals by reducing GHG emissions from passenger vehicles through development of more sustainable communities that reduce vehicle miles traveled (VMT) in the region. SB 375 builds upon successful regional blueprint planning processes by establishing GHG reduction targets for each MPO in the State, and requiring MPOs to develop a Sustainable Communities Strategy as part of their federally required Regional Transportation Plan (RTP) that demonstrates how the region could achieve the GHG reduction targets. SCSs are developed through a collaborative process with local governments and other stakeholders in a manner that integrates land use and transportation planning.</p> <p>ARB is responsible for establishing the GHG targets through a public process with input from the MPOs and stakeholders. The targets set by ARB for 2020 and 2035 are expressed as a percent reduction in per capita GHG emissions for the passenger vehicle fleet from a base year of 2005. ARB is required to review and update the targets every eight years.</p> <p>Each MPO must include as part of its SCS a quantitative determination of the GHG reductions arising from the policies and strategies in its SCS. MPOs must demonstrate to ARB through a technical methodology that the SCSs, if implemented, could achieve the targets. ARB reviews each</p>	
			<p>GHGs <input checked="" type="checkbox"/></p> <p>Criteria <input checked="" type="checkbox"/></p> <p>Toxics <input type="checkbox"/></p>

Attachment B:  
CARB GHG Transportation Programs Table

CARB GHG Transportation Programs			
Land Use and Transportation Planning			Emission Reductions
			SCS and accepts or rejects the MPO's determination that the SCS would meet its targets. MPOs that cannot demonstrate achievement of targets through an SCS are allowed to prepare an Alternative Planning Strategy that identifies the obstacles that would need to be removed to enable the region to meet its targets. Program primarily reduces GHGs.
		Relevant Documents and Pages	<p>The report and appendices listed below relate to JLAC question 1 and 4 and provide a description of Sustainable Community Strategies target developments:</p> <ul style="list-style-type: none"> <li>○ Final Staff Report</li> <li>○ Appendix F- Final Environmental Analysis</li> </ul>

## Attachment C: CARB Reports Tables

The information provided in the table below is included as Attachment C to CARB's response to the Joint Legislative Audit Committee. This document contains the CARB Reports Tables, which describe reports that CARB produces to meet Legislative requirements, strategy plans to further emissions reductions, federal strategy plans to meet national attainment goals, incentive funding plans that contain information on various aspects of programs that reduce air pollution administered within CARB, and other reports that CARB produces. The tables provide the report's name, summary, pages of interest, website link, and the relevant JLAC questions as numbered below.

JLAC questions this document addresses:

1. Identify all the ARB policies and programs related to greenhouse gas emissions in the transportation sector.
  - 1a. To the extent practical, evaluate how the policies and programs positively or negatively interact with each other.
  - 1b. for a sample of these policies and programs, determine the extent to which they are effective and efficient.
  - 1c. To the extent practical, determine how these policies and programs impact and benefit the varying regions of the State, including the San Joaquin Valley.
3. Identify and evaluate any effort by CARB to measure or evaluate the effectiveness and efficiency of current transportation policies and programs.
  - 3a. Determine the extent to which the interaction of current policies and programs are considered.
4. Highlight any policies and programs that are very efficient and effective in reducing greenhouse gas emissions. Identify any policies that are not.
5. Identify any current challenges CARB is facing regarding existing policies and programs. Make any recommendations that would help CARB and the Legislature address these challenges.

Attachment C:  
CARB Reports Tables

Mandated Reports

The Legislature requires CARB to prepare a series of reports to document the effectiveness in achieving the State’s criteria and greenhouse gas (GHG) emission reduction goals. Below are pertinent mandated reports produced by CARB to disclose the progress of CARB’s climate change and transportation programs.

In the table below, prepared reports are listed with a summary of the report, specific areas identified that contain emissions reductions or information on how the program meets air quality and climate change goals, the frequency of the report, the associated legislation, and the report’s website. CARB maintains a mandated reports website at <https://ww2.arb.ca.gov/legislatively-mandated-reports>.

Included below is also a table of upcoming mandated reports.

Mandated Report	Summary, Key Report Pages, Website	Relevant JLAC Questions
<p>AB 32 Annual Report</p> <p>(Related legislative direction and legislation:</p> <p>Supplemental Report of the 2012-13 Budget Package and</p> <p>SB 1018, Budget and Fiscal Review, Ch. 39, Stats. of 2012)</p> <p>Updated annually.</p>	<p><b>Summary:</b></p> <p>Per the Supplemental Report of the 2012-13 Budget Package, the report contains a summary of the progress made on achieving the goals of AB 32, including recent developments and upcoming milestones, through Cap-and-Trade, Low Carbon Fuel Standard, among others. It also contains resource reports that quantify the Board's AB 32 staffing and operations expenses and the retrospective fiscal report intended to quantify the major revenue and board expenses for AB 32 program for the prior fiscal year. Per SB 1018, the report contains an update on Western Climate Initiative, Inc.</p> <p>Section 1, pages 3-54, provides program updates. The report provides GHG emission reduction summary on page 52 and 54.</p> <p><b>Report Website Link:</b>  <a href="https://www.arb.ca.gov/cc/jlbcreports/jan2017-jlbcreport.pdf">https://www.arb.ca.gov/cc/jlbcreports/jan2017-jlbcreport.pdf</a></p>	<p>1b, 3</p>

Attachment C:  
CARB Reports Tables

Mandated Report	Summary, Key Report Pages, Website	Relevant JLAC Questions
<p>Joint CARB and California Energy Commission (CEC) Report on Progress on Hydrogen Fueling Network</p> <p>(AB 8, Perea, Ch. 401, Stats. of 2013)</p> <p>Updated annually.</p>	<p><b>Summary:</b> The report requires CEC and CARB to jointly review and report on progress toward establishing a hydrogen-fueling network that provides the coverage and capacity to fuel vehicles requiring hydrogen fuel that are being placed into operation in the State.</p> <p>Chapter 8, pages 52-54, of the 2018 report provides conclusions on the annual progress of the program and provides projections for the program. The report provides GHG and criteria pollutants emission reduction information on pages 3, 22-25, and 53.</p> <p><b>Report Website Link:</b> <a href="https://www.energy.ca.gov/transportation/report_ab8.html">https://www.energy.ca.gov/transportation/report_ab8.html</a></p>	<p>1b, 3</p>
<p>Hydrogen Fueling Stations</p> <p>(AB 8, Perea, Ch. 401, Stats. of 2013)</p> <p>Updated annually.</p>	<p><b>Summary:</b> The report provides evaluation and recommendations regarding hydrogen fueling stations to CEC to inform future funding programs. The report provides findings on the need for additional publicly available hydrogen fueling stations in terms of number of stations, geographic areas needing additional stations and minimum operating standards.</p> <p>The report provides current and projected number of fuel cell stations and vehicles on pages viii-xiv. Pages 60-61 contain report conclusions and recommendations. The report does not summarize associated GHG or criteria emissions reductions.</p> <p><b>Report Website Link:</b> <a href="https://www.arb.ca.gov/msprog/zevprog/ab8/ab8_report_2018_print.pdf">https://www.arb.ca.gov/msprog/zevprog/ab8/ab8_report_2018_print.pdf</a></p>	<p>1b, 3</p>

Attachment C:  
CARB Reports Tables

Mandated Report	Summary, Key Report Pages, Website	Relevant JLAC Questions
<p>CARB's Fine Particulate Matter Monitoring Program</p> <p>(AB 2701, Runner, Ch. 644, Stats. of 2004)</p> <p>Updated annually.</p>	<p><b>Summary:</b> The report provides status and results of the fine particulate air pollution monitoring program.</p> <p>The report provides attainment areas and nonattainment areas for PM 2.5 federal standards on pages 6-8.</p> <p><b>Report Website Link:</b> <a href="https://ww2.arb.ca.gov/sites/default/files/2019-02/pm25-monitoring-2019.pdf">https://ww2.arb.ca.gov/sites/default/files/2019-02/pm25-monitoring-2019.pdf</a></p>	3
<p>Biennial Report to the Legislature on the AB 118 Air Quality Improvement Program, Fiscal Years 2016-17 and 2017-18</p> <p>(AB 118, Núñez, Ch. 750, Stats. of 2007)</p> <p>Updated biennially.</p>	<p><b>Summary:</b> The report provides an evaluation of the implementation of the Air Quality Improvement Program.</p> <p>The report provides a program summary on page 7 and criteria pollutant emission reduction information on pages 1-2, 4, 10, and 14.</p> <p><b>Report Website Link:</b> <a href="https://ww2.arb.ca.gov/sites/default/files/2019-02/biennial-report-to-legislature-2018-ab118.pdf">https://ww2.arb.ca.gov/sites/default/files/2019-02/biennial-report-to-legislature-2018-ab118.pdf</a></p>	3
<p>Progress Report: California's Sustainable Communities and Climate Protection Act</p> <p>(SB 150, Allen, Ch. 646, Stats. of 2017)</p> <p>Updated every 4 years.</p>	<p><b>Summary:</b> The report, which is required every 4 years, provides CARB's assessment of the progress made by each metropolitan planning organization toward meeting the regional SB 375 greenhouse gas emissions reduction targets, and to include data-supported metrics for strategies utilized to meet the targets. The report is also required to include a discussion of best practices and challenges faced by MPOs in meeting the targets, including the effect of state policies and funding.</p> <p>The report provides Statewide carbon dioxide and vehicle miles traveled per capita trend with respect to anticipated</p>	1b, 3, 3a, 5



Attachment C:  
CARB Reports Tables

Mandated Report	Summary, Key Report Pages, Website	Relevant JLAC Questions
	<p>performance of current SB 375 sustainable community strategies on pages 4-6 and 21-24. The report provides the challenges in meeting SB 375 targets and opportunities to overcome challenges on pages 6-15 and 24-89.</p> <p><b>Report Website Link:</b>  <a href="https://ww2.arb.ca.gov/resources/documents/tracking-progress">https://ww2.arb.ca.gov/resources/documents/tracking-progress</a></p>	
<p>Annual Report on Implementing the Proposition 1B: Goods Movement Emission Reduction Program</p> <p>(SB 88, Budget, Ch. 181, Stats. of 2007)</p> <p>Updated annually.</p>	<p><b>Summary:</b>            The report summarizes activities related to the administration of the Goods Movement Emission Reduction Program.</p> <p>The report provides project results on page 4. The report provides a summary of criteria pollutant emission reductions on pages 1 and 5, and provides individual project information on pages 6-23.</p> <p><b>Report Website Link:</b>  <a href="https://www.arb.ca.gov/research/apr/reports/prop1bgoods-movement-legreportjan2018.pdf?_ga=2.126788685.1700837985.1551117256-1286562350.1539031746">https://www.arb.ca.gov/research/apr/reports/prop1bgoods-movement-legreportjan2018.pdf?_ga=2.126788685.1700837985.1551117256-1286562350.1539031746</a></p>	3

Attachment C:  
CARB Reports Tables

Upcoming Mandated Reports	Summary	Relevant JLAC Questions
<p>Impact of the Clean Vehicle Rebates Program (CVRP) on California's Zero Emission Vehicle (ZEV) Market</p> <p>(AB 615, Cooper, Ch. 631, Stats. of 2017)</p> <p>One-time report.</p>	<p>CARB must work with, and contract with, either the University of California or the California State University to prepare a report on the impact of the Clean Vehicle Rebate Project on California's zero emission vehicle market.</p>	<p>N/A</p>
<p>Increasing the Use of Light-, Medium-, and Heavy-Duty ZEVs</p> <p>(SB 498, Skinner, Ch. 628, Stats. of 2017)</p> <p>One-time report by July 1, 2019.</p>	<p>CARB must prepare a report with policy recommendations for increasing the use of light-, medium-, and heavy-duty zero emission vehicles in California. The report must contain specified elements.</p>	<p>N/A</p>
<p>Volkswagen (VW) Consent Decree: Appendix C Investment Plan and Appendix D Environmental Mitigation Trust</p> <p>(SB 92, Senate Budget and Fiscal Review, Ch. 26, Stats of 2017)</p> <p>Will be updated annually.</p>	<p>CARB must annually report on the progress of the implementation of the investment plan of Appendix C of the VW Consent Decree. CARB, as lead agency, must also annually report on the proposed and actual expenditures of the monies received pursuant to Appendix D of the VW Consent Decree. The VW Consent Decrees can be found at: <a href="https://ww2.arb.ca.gov/resources/documents/vw-settlement-consent-decrees">https://ww2.arb.ca.gov/resources/documents/vw-settlement-consent-decrees</a></p>	<p>N/A</p>
<p>Joint Agency Review of the Zero Carbon Resources Policy</p> <p>(SB 100, De León, Ch. 312, Stats. of 2018)</p> <p>Will be updated every four years after completion of first report, which is January 1, 2021.</p>	<p>CARB, Public Utilities Commission, and Energy Commission, in consultation with all California balancing authorities, must issue a joint report providing a review of the Zero Carbon Resources Policy, as specified.</p>	<p>N/A</p>

Attachment C:  
CARB Reports Tables

Upcoming Mandated Reports	Summary	Relevant JLAC Questions
<p>Zero Emission Assurance Project (ZAP)</p> <p>(AB 193, Cervantes, Ch. 363, Stats. of 2018)</p> <p>One-time report by January 1, 2024.</p>	<p>CARB must report on the number of rebates issued pursuant to ZAP, cost to administer ZAP, a quantitative analysis of the ZAP's emissions benefits, and a quantitative analysis of the impacts of ZAP on low-income consumer buyer decisions in the zero- and near-zero emission vehicle markets.</p>	<p>N/A</p>
<p>ZEV Rebates</p> <p>(Supplemental Report of the 2018-19 Budget Act)</p> <p>Will be updated annually.</p>	<p>CARB must update the Clean Vehicle Rebate Project forecast annually until January 1, 2030 and include as part of its forecast the total state rebate investment necessary to facilitate reaching the goal of placing in service at least 5 million zero-emission vehicles by January 1, 2030.</p> <p><a href="https://cleanvehiclerebate.org/eng">https://cleanvehiclerebate.org/eng</a></p>	<p>N/A</p>
<p>AB 398 Reports</p> <p>(AB 398, Garcia, E., Ch. 135, Stats. of 2017)</p> <p>Progress toward meeting GHG targets due December 31, 2025. Other reports are triggered by Scoping Plan or Cap-and-Trade activities.</p>	<p>AB 398 requires CARB to prepare various reports regarding updates to the Scoping Plan, its implementation, progress toward meeting the 2020 and 2030 greenhouse gas emissions reduction targets and the leakage risk posed by the Cap-and-Trade Regulation, and the implementation of the Cap-and-Trade market-based compliance mechanism.</p>	<p>N/A</p>

Attachment C:  
CARB Reports Tables

CARB Strategy Plans

The plans provide policy strategies administered by CARB to reduce air pollution and meet State climate goals. In the table below, prepared strategy plans are listed with a summary, specific areas identified that contain emissions reductions or information on how the program meets air quality and climate change goals, the frequency of the strategy plan, the associated legislation, and the website link.

CARB Strategy Plan	Summary, Key Report Pages, Website	Relevant JLAC Questions
<p>Scoping Plan (Related legislation: AB 32, Núñez and Pavely, Ch. 488, Stats. of 2006;  SB 32, Pavley, Ch. 249, Stats. of 2016; and  AB 197, Garcia, E., Ch. 250, Stats. of 2016)  Updated every 5 years.</p>	<p><b>Summary:</b> Per AB 32, CARB must update the AB 32 Scoping Plan for achieving the maximum technologically feasible and cost-effective reductions of GHG emissions at least every 5 years. SB 32 requires CARB to ensure that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit no later than December 31, 2030. AB 197 requires for each potential reduction measure evaluated in any Scoping Plan update: (1) the range of projected GHG emissions reductions that result from the measure, (2) the range of projected air pollution reductions that result from the measure, and (3) the cost-effectiveness, including avoided social costs, of the measure. AB 197 requires CARB in developing this Scoping Plan to prioritize emissions reductions rules and regulations that result in direct emissions reductions at large stationary sources of GHG emissions sources and direct emissions reductions from mobile sources.</p> <p>The 2017 Scoping Plan Update contains State GHG reduction targets on pages 9-12 and the State Strategy to meet the 2030 target on pages 18-34. The Update also contains criteria and toxic pollutant estimated emissions reductions for evaluated measures on pages 37-39.</p> <p>Chapter 2, beginning on page 22 describes the State strategy for meeting the 2030 GHG target along with a short description of the four alternative scenarios, which were evaluated but ultimately rejected when compared against</p>	<p>1a, 3, 3a</p>

Attachment C:  
CARB Reports Tables

CARB Strategy Plan	Summary, Key Report Pages, Website	Relevant JLAC Questions
	<p>statutory and policy criteria and priorities that the State's comprehensive climate action must deliver.</p> <p>Appendix E provides insight into the range of potential emissions outcomes that may occur, and demonstrates that the Scoping Plan, with the Cap-and-Trade Program, is extremely effective in the face of uncertainty, assuring that the required emissions reductions are achieved.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm">https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm</a></p>	
<p>Short Lived Climate Pollutant (SLCP) Reduction Strategy</p> <p>(SB 1383, Lara, Ch. 395, Stats. of 2016, and SB 605, Lara, Ch. 523, Stats. of 2014)</p> <p>One-time report.</p>	<p><b>Summary:</b>            The SLCP Reduction Strategy lays out a range of options to accelerate SLCP emission reductions in California, including regulations, incentives, and other market-supporting activities. SB 605 directed CARB to develop a comprehensive SLCP strategy, in coordination with other state agencies and local air districts, to reduce emissions of SLCPs. SB 1383 directed the Board to approve and begin implementing the plan by January 1, 2018, and set statewide 2030 emission reduction targets for methane, hydrofluorocarbons, and anthropogenic black carbon. SB 1383 also included a number of directives for addressing dairy and livestock sector methane emissions and landfill methane emissions via diversion of organic material from the waste stream.</p> <p>The Strategy contains California SLCP emissions and emission reduction target levels on pages 6 and 24, and contains a summary of proposed new SLCP measures and estimated emission reductions on page 12.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/cc/shortlived/shortlived.htm">https://www.arb.ca.gov/cc/shortlived/shortlived.htm</a></p>	3
<p>Community Air Protection Blueprint</p>	<p><b>Summary:</b></p>	3

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CARB Strategy Plan	Summary, Key Report Pages, Website	Relevant JLAC Questions
<p>(AB 617, Garcia, C., Ch. 136, Stats. of 2017)</p> <p>Updated every 5 years.</p>	<p>The Blueprint contains the statewide strategy, which must be updated at least every 5 years, to reduce emissions of criteria and toxic pollutants, criteria and process for identifying and selecting impacted communities, statewide air monitoring plan for the deployment of community air monitoring, criteria for the development and implementation of community emissions reduction programs.</p> <p>Appendix D identifies the broad suite of actions CARB and air districts are undertaking now to reduce criteria and toxic pollutants in disproportionately impacted communities throughout the State, which includes new regulatory measures with a focus on zero emission technologies where feasible. Appendix F identifies emission reduction strategies, many of which address transportation sources.</p> <p><b>Website Link:</b>  <a href="https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-protection-blueprint">https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-protection-blueprint</a></p>	
<p>California Sustainable Freight Action Plan</p> <p>(EO B-32-15)</p> <p>One-time report.</p>	<p><b>Summary:</b>  The Plan is intended to improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California’s freight system.</p> <p>Appendix B contains targets for the aforementioned goals. Appendix C contains recommended State agency actions to support the transition to sustainable freight.</p> <p><b>Website Link:</b>  <a href="http://dot.ca.gov/hq/tpp/offices/ogm/cs_freight_action_plan/main.html">http://dot.ca.gov/hq/tpp/offices/ogm/cs_freight_action_plan/main.html</a></p>	<p>1a, 3, 3a</p>

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### Federal Strategy Plans

Federal clean air laws require nonattainment areas to develop State Implementation Plans (SIPs), which are comprehensive plans that describe how an area will attain national ambient air quality standards. The federal Clean Air Act Section 110 and 172 provides general SIP requirements for all criteria pollutants, Section 182 pertains to ozone SIPs, and Section 189 pertains to particulate matter SIPs. The California SIP documents below can be found at the general SIP webpage:

<https://www.arb.ca.gov/planning/sip/sip.htm>.

The table below provides the SIP document, a summary, pages of interest, the specific website link, and the relevant JLAC questions. For the local air district attainment plans, reference is to the CARB Staff Report for the associated attainment plan.

<b>Federal Strategy Plan</b>	<b>Summary, Key Report Pages, Website</b>	<b>Relevant JLAC Questions</b>
Statewide Strategy	<p><b>Summary:</b> The revised State SIP Strategy describes CARB's commitment to achieve the mobile source and consumer products reductions needed to meet federal air quality standards for ozone and PM 2.5 over the next 15 years. The State SIP Strategy incorporates the most recent air quality modeling and inventory data developed as part of the SIP process, as well as refinements to specific measures in response to stakeholder feedback and continued technology assessments. The State SIP Strategy includes the San Joaquin Valley Supplement.</p> <p>Page 20, the Nonattainment Areas and Emission Reduction Needs section in the State SIP Strategy identifies the need for reductions in ozone in the South Coast region and the need for reductions in PM 2.5 in the San Joaquin Valley.</p> <p>Page 26, the Proposed SIP Commitment section in the State SIP Strategy identifies the proposed SIP measures and the expected emissions reductions for each measure.</p> <p>Page 35, of the Supplemental State Commitment from the Proposed State Measures for the Valley section in the San Joaquin Valley Supplement to the 2016 State SIP Strategy identifies the proposed commitment to achieve the aggregate emission reductions and the State measures for the San Joaquin Valley.</p> <p><b>Website Link:</b> <a href="https://www.arb.ca.gov/planning/sip/2016sip/2016sip.htm#Valley_State_Strategy">https://www.arb.ca.gov/planning/sip/2016sip/2016sip.htm#Valley_State_Strategy</a></p>	3, 3a
2018 SIP Update	<p><b>Summary:</b> The 2018 SIP Update addresses SIP requirements of the federal CAA for certain nonattainment areas with the State. This update is necessary to respond to recent court</p>	3, 3a

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Federal Strategy Plan	Summary, Key Report Pages, Website	Relevant JLAC Questions
	<p>decisions that determined that the U.S. Environmental Protection Agency’s (U.S. EPA) published guidance documents on implementation of federal ambient air quality standards were not consistent with CAA. CARB must update portions of the submitted SIP revisions for certain nonattainment areas related to reasonable further progress and contingency measures as CARB had followed U.S.EPA-published guidance.</p> <p>Page 4 identifies the elements – emission inventory, reasonable further progress demonstration, transportation conformity budgets, and contingency measures – included in the 2018 SIP Update.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/planning/sip/2018sipupdate/2018sipupdate.htm">https://www.arb.ca.gov/planning/sip/2018sipupdate/2018sipupdate.htm</a></p>	
<p>Infra-structure SIP</p>	<p><b>Summary:</b>            The federal CAA requires each state to adopt and submit to the U.S. EPA, a plan that provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS). This plan, generally referred to as an Infrastructure SIP, describes the infrastructure (authorities, resources, and programs) California has in place to implement, maintain, and enforce the NAAQS. The Infrastructure SIP revision is administrative in nature and does not contain any proposals for emission control measures. The latest Infrastructure SIP is a revision due to the 0.70 parts per million federal 8-hour ozone standard.</p> <p>Page 9 discusses the adequacy of the State’s ozone monitoring network.            Page 36 discusses CARB’s air quality modeling/data to predict the impact of emissions on air quality.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/planning/sip/infrasip/infrasip.htm">https://www.arb.ca.gov/planning/sip/infrasip/infrasip.htm</a></p>	<p>3, 3a</p>
<p>Mobile Source Strategy</p>	<p><b>Summary:</b>            The Mobile Source Strategy is an integrated strategy that relies on the blueprint of current programs for successful strategies, technology assessments evaluate the performance, cost and market readiness new technologies and fuels, scenario analysis provides framework for coordinated air quality and climate assessment. The Mobile Source Strategy demonstrates how the State can simultaneously meet air quality standards, achieve</p>	<p>1a, 1c, 3, 3a</p>



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	<p>greenhouse gas emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption</p> <p>Pages of 30-49 document the assessment of coordinated planning scenarios to evaluate the strategies necessary to determine the policies to reduce emissions in the State. Pages 54, 56 and 57, have the expected statewide and regional specific emission reductions.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/planning/sip/2016sip/2016mobsr.htm">https://www.arb.ca.gov/planning/sip/2016sip/2016mobsr.htm</a></p>	
<p>District 8-hour Ozone Attainment Plan - CARB Staff Report</p>	<ul style="list-style-type: none"> <li>• Eastern Kern County <ul style="list-style-type: none"> <li>○ Page 7, the Demonstrating Attainment section illustrates emissions modeled in the attainment demonstration for Eastern Kern County for the federal 8-hour ozone standard.</li> <li>○ Page 9, the Control Strategy section references CARB control programs and District measures that provide the emission reductions included in the attainment demonstration.</li> <li>○ Website Link:  <a href="https://www.arb.ca.gov/planning/sip/planarea/easternkern/docs/2017ek_o3_carbstaffreport.pdf">https://www.arb.ca.gov/planning/sip/planarea/easternkern/docs/2017ek_o3_carbstaffreport.pdf</a></li> </ul> </li> <li>• Imperial County <ul style="list-style-type: none"> <li>○ Page 6, the Demonstrating Attainment section illustrates attainment demonstration modeling for Imperial County for the the federal 8-hour ozone standard.</li> <li>○ Page 8, the Control Strategy section references CARB control programs and District measures that provide the emission reductions included in the attainment demonstration.</li> <li>○ Website Link:  <a href="https://www.arb.ca.gov/planning/sip/planarea/imperial/2017O3staff_report.pdf">https://www.arb.ca.gov/planning/sip/planarea/imperial/2017O3staff_report.pdf</a></li> </ul> </li> <li>• Sacramento Metro Region <ul style="list-style-type: none"> <li>○ Page 7, the Demonstrating Attainment section illustrates attainment demonstration modeling for Sacramento Metro Region for the the federal 8-hour ozone standard.</li> <li>○ Page 8, the Control Strategy section references CARB control programs and District measures,</li> </ul> </li> </ul>	<p>3, 3a</p>

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	<p>including additional measures the District has committed to, that provide the emission reductions included in the attainment demonstration.</p> <ul style="list-style-type: none"> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/sacsip/2017_sraprpf_staffreport.pdf">https://www.arb.ca.gov/planning/sip/planarea/sacsip/2017_sraprpf_staffreport.pdf</a></li> <li>● San Diego County <ul style="list-style-type: none"> <li>○ Page 5, the Demonstrating Attainment section illustrates attainment demonstration modeling for San Diego County for the the federal 8-hour ozone standard.</li> <li>○ Page 6, the Control Strategy section references CARB control programs and District measures, including additional measures the District has committed to, that provide the emission reductions included in the attainment demonstration.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/sansip/2016ozone.pdf">https://www.arb.ca.gov/planning/sip/planarea/sansip/2016ozone.pdf</a></li> </ul> </li> <li>● San Joaquin Valley <ul style="list-style-type: none"> <li>○ Page 7, the Demonstrating Attainment section illustrates attainment demonstration modeling for San Joaquin Valley for the the federal 8-hour ozone standard.</li> <li>○ Page 10, the Control Strategy section references CARB control programs and District measures that provide the emission reductions included in the attainment demonstration. This section also includes additional measures CARB and the District has committed to.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/sjv8hrozone.htm">https://www.arb.ca.gov/planning/sip/planarea/sjv8hrozone.htm</a></li> </ul> </li> <li>● South Coast <ul style="list-style-type: none"> <li>○ Page 8, the Attainment Demonstration section illustrates attainment demonstration modeling for South Coast for the the federal 8-hour ozone standard.</li> <li>○ Page 11, the Control Strategy section references CARB control programs and District measures that provide the emission reductions included in the attainment demonstration.</li> </ul> </li> </ul>	

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	<ul style="list-style-type: none"> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/scabsip/scabsip.htm#2016AQMP">https://www.arb.ca.gov/planning/sip/planarea/scabsip/scabsip.htm#2016AQMP</a></li> <li>● Ventura County               <ul style="list-style-type: none"> <li>○ Page 4, the Attainment Demonstration section illustrates attainment demonstration modeling for Ventura County for the the federal 8-hour ozone standard.</li> <li>○ Page 6, the Control Strategy section references CARB control programs and District measures, including additional measures the the District has committed to such as for architectural coatings and furnaces, that provide the emission reductions included in the attainment demonstration.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/venturasip/2016venplan.pdf">https://www.arb.ca.gov/planning/sip/planarea/venturasip/2016venplan.pdf</a></li> </ul> </li> <li>● Western Mojave Desert (South East Desert)               <ul style="list-style-type: none"> <li>○ Page 5, the Demonstrating Attainment section illustrates attainment demonstration modeling for Western Mojave Desert for the the federal 8-hour ozone standard.</li> <li>○ Page 6, the Control Strategy section references CARB control programs and District measures that provide the emission reductions included in the attainment demonstration.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/wmdaqmp/2016sip_staffreport.pdf">https://www.arb.ca.gov/planning/sip/planarea/wmdaqmp/2016sip_staffreport.pdf</a></li> </ul> </li> <li>● Western Nevada County               <ul style="list-style-type: none"> <li>○ Page 5, the Demonstrating Attainment section illustrates attainment demonstration modeling for Western Nevada County for the the federal 8-hour ozone standard.</li> <li>○ Page 7, the Control Strategy section references CARB control programs and District measures that provide the emission reductions included in the attainment demonstration.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/wnc/carb_staff_report.pdf">https://www.arb.ca.gov/planning/sip/planarea/wnc/carb_staff_report.pdf</a></li> </ul> </li> </ul>	
District 1-hour Ozone	<ul style="list-style-type: none"> <li>● South Coast               <ul style="list-style-type: none"> <li>○ Page 11, under the Attainment Control Strategy section are examples of proposed strategies for</li> </ul> </li> </ul>	3, 3a

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Federal Strategy Plan	Summary, Key Report Pages, Website	Relevant JLAC Questions
Attainment Plan – CARB Staff Report	<p>the South Coast Air Basin to attain the ozone standards. The strategies build on existing controls on mobile, stationary, and area sources and also includes commitments from CARB and the District to strengthen or add new measures.</p> <ul style="list-style-type: none"> <li>○ Page 14, Table 7 provide examples of 15 complementary measures for mobile sources to help implement the reductions identified in the State SIP Strategy.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/scabsip/scabsip.htm">https://www.arb.ca.gov/planning/sip/planarea/scabsip/scabsip.htm</a></li> </ul>	
District PM 10 Attainment Plan – CARB Staff Report	<ul style="list-style-type: none"> <li>● Imperial County <ul style="list-style-type: none"> <li>○ Page 5, under the Maintenance and Plan section includes 1) an attainment inventory; 2) a maintenance demonstration; 3) commitment to continue monitoring into the future; 4) verification of continued attainment; and 5) contingency to ensure the District provides offsets to any unexpected increases in emissions to make sure maintenance of the NAAQS is maintained. The sections discuss how the District has addressed all of the requirements of the Act in order for U.S. EPA to approve the Plan.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/imperial/imperialsip.htm">https://www.arb.ca.gov/planning/sip/planarea/imperial/imperialsip.htm</a></li> </ul> </li> </ul>	3, 3a
District PM 2.5 Attainment Plan - CARB Staff Report	<ul style="list-style-type: none"> <li>● Butte County <ul style="list-style-type: none"> <li>○ Page 5, under the Maintenance and Plan section is an accounting of post-2006 control measures responsible for significant improvements in PM2.5 air quality in Butte County, including the above-mentioned restrictions on open burning and residential fuel combustion.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/buttesip.htm">https://www.arb.ca.gov/planning/sip/planarea/buttesip.htm</a></li> </ul> </li> <li>● Imperial County <ul style="list-style-type: none"> <li>○ Page 6, under the Emission Inventory section illustrates emission trends in the Imperial County Air Basin.</li> <li>○ Page 7, under the New District Rules section are examples of proposed strategies for the</li> </ul> </li> </ul>	3, 3a

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	<p>Imperial County to attain the PM2.5 standards. The strategies build on existing controls on mobile, stationary, and area sources and also includes commitments from CARB and the District to strengthen or add new measures.</p> <ul style="list-style-type: none"> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/imperial/imperialsip.htm">https://www.arb.ca.gov/planning/sip/planarea/imperial/imperialsip.htm</a></li> <li>● Northern Sierra <ul style="list-style-type: none"> <li>○ Page 6, under the Attainment Demonstration section are examples of proposed strategies for the San Joaquin Valley to attain the PM2.5 standards. The strategies build on existing controls on mobile, stationary, and area sources and also includes commitments from CARB and the District to strengthen or add new measures.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/nsierra/nsierra.htm">https://www.arb.ca.gov/planning/sip/planarea/nsierra/nsierra.htm</a></li> </ul> </li> <li>● San Joaquin Valley <ul style="list-style-type: none"> <li>○ Page 11, Figure 3 illustrates annual emission trends in the San Joaquin Valley Air Basin from 2000 through 2017 for PM2.5 and the two key precursors, NOx and SOx.</li> <li>○ Page 14, under the Control Strategy section are examples of proposed strategies for the San Joaquin Valley to attain the PM2.5 standards. The strategies build on existing controls on mobile, stationary, and area sources and also includes commitments from CARB and the District to strengthen or add new measures.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/sanjqnvllsyp.htm">https://www.arb.ca.gov/planning/sip/planarea/sanjqnvllsyp.htm</a></li> </ul> </li> <li>● South Coast <ul style="list-style-type: none"> <li>○ Page 6, Figure 3 illustrates annual emission trends in the South Coast Air Basin from 2001 through 2015 for PM2.5.</li> <li>○ Page 11, under the Attainment Control Strategy section are examples of proposed strategies for the South Coast Air Basin to attain the PM2.5 standards. The strategies build on existing controls on mobile, stationary, and area sources</li> </ul> </li> </ul>	

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	<p>and also includes commitments from CARB and the District to strengthen or add new measures.</p> <ul style="list-style-type: none"> <li>○ Page 14, Table 7 provide examples of 15 complementary measures for mobile sources to help implement the reductions identified in the State SIP Strategy.</li> <li>○ Website Link: <a href="https://www.arb.ca.gov/planning/sip/planarea/scabsip/scabsip.htm">https://www.arb.ca.gov/planning/sip/planarea/scabsip/scabsip.htm</a></li> </ul>	

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### Incentives

The California Air Resources Board (CARB) Incentive Programs produce reports, investment plans, and funding guidelines that contain information on various aspects of all programs that reduce air pollution administered within CARB. In the table below, prepared incentives documents are listed with a summary, pages or sections of interest, the frequency of the incentive document, and the website link.

Incentives	Summary, Key Report Pages, Website	Relevant JLAC Questions
<p>Three-year California Climate Investments (CCI) Investment Plan</p> <p>(AB 1532, Pérez, Ch. 807, Stats. of 2012, and</p> <p>AB 398, Garcia, E., Ch. 135, Stats. of 2017 )</p> <p>Updated every 3 years.</p>	<p><b>Summary:</b></p> <p>The Investment Plan identifies priority investments that will help California achieve its greenhouse gas (GHG) emission reduction goals while realizing additional health, economic, and environmental benefits. Investment recommendations identified in the Investment Plan do not guarantee funding but rather provide guidance to the Legislature on potential funding opportunities. In addition to requiring the Investment Plan, AB 1532 identified seven legislative funding priorities for CCI. AB 398 identified seven additional CCI funding priorities.</p> <p>Page 39 provides information on project outcomes and metrics required for near-term and long-term GHG emission reduction goals and targets.</p> <p><b>Website Link:</b></p> <p><a href="https://ww2.arb.ca.gov/resources/documents/cci-investment-plan">https://ww2.arb.ca.gov/resources/documents/cci-investment-plan</a></p>	<p>3, 3a</p>
<p>California Climate Investments Annual Report, with Legislative District Factsheets</p> <p>(AB 1532, Pérez, Ch. 807, Stats. of 2012)</p> <p>Updated Annually</p>	<p><b>Summary:</b></p> <p>The California Climate Investments Annual Report describes the status of funded programs and lists the projects funded. It also provides estimates of the GHG reductions expected from project investments and provides key statistics on benefits to disadvantaged communities, demand for funding, and leveraging, fiscal data and program accomplishments.</p>	<p>1a, 1b, 3, 3a, 4</p>

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	<p>Table ES-2 Summary of California Climate Investments and Outcomes provides key statistics on GHG emissions reductions from projects funded through the California Climate Investments.</p> <p><b>Website Link:</b> <a href="http://www.caclimateinvestments.ca.gov/annual-report/">http://www.caclimateinvestments.ca.gov/annual-report/</a></p>	
<p>California Climate Investments Funding Guidelines</p>	<p><b>Summary:</b> The California Climate Investments Funding Guidelines provide guidance for administering State agencies to design and implement programs in a way that facilitates GHG emission reductions, meets statutory requirements, maximizes benefits to disadvantaged communities, targets investments to disadvantaged communities, low-income communities, and low-income households to help ensure statutory investment minimums are met or exceeded, provides accountability and transparency, and supports consistency across programs.</p> <p>Page 29 explains the requirement to use the GHG quantification methodology to quantify estimated GHG emission reductions. The section also provides and include links to methodology documents or estimation tools.</p> <p><b>Website Link:</b> <a href="https://ww2.arb.ca.gov/resources/documents/ci-funding-guidelines-administering-agencies">https://ww2.arb.ca.gov/resources/documents/ci-funding-guidelines-administering-agencies</a></p>	<p>3, 3a</p>
<p>California Climate Investments Quantification Methodologies</p>	<p><b>Summary:</b> All California Climate Investments programs must facilitate GHG emission reductions. Administering agencies are responsible for demonstrating how expenditures facilitate GHG emission reductions.</p> <ul style="list-style-type: none"> <li>• Agricultural Worker Vanpool Incentives</li> </ul>	<p>3, 3a</p>



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	<ul style="list-style-type: none"> <li>• Car Sharing and Mobility Options Pilot</li> <li>• CVRP</li> <li>• Community Air Protection Funds</li> <li>• Funding Agricultural Replacement Measures for Emission Reductions (FARMER)</li> <li>• Heavy-Duty Incentives</li> <li>• Light-Duty Financing Assistance</li> <li>• Off-Road Advanced Technology Demonstration</li> <li>• On-Road Advanced Technology Demonstration</li> <li>• Public Fleets in Disadvantaged Communities</li> <li>• Vehicle Retirement and Replacement Plus-Up</li> </ul> <p>Section B of each Quantification Methodology document provides information to document the process used by CARB to estimate GHG emission reductions and air pollutant emission co-benefits from each program.</p> <p><b>Website Link:</b>  <a href="https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials">https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials</a></p>	
<p>Funding Plan for Clean Transportation Incentives for Low Carbon Transportation (LCT) Investments and the Air Quality Improvement Plan (AQIP)</p> <p>Updated annually.</p>	<p><b>Summary:</b> LCT Investments achieve GHG emission reductions. AQIP targets criteria pollutant and toxic emission reductions</p> <p>Appendix A estimates the emission reductions of the project categories presented in LCT and AQIP programs and provides the project scoring criteria, as well as the benefit-cost score analysis.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf?_ga=2.35611367.736421863.1551116630-1790206129.1501696974">https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1819_funding_plan.pdf?_ga=2.35611367.736421863.1551116630-1790206129.1501696974</a></p>	<p>3, 3a</p>

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<p>Carl Moyer Funding Guidelines</p>	<p><b>Summary:</b> The Moyer Program provides incentive grants to fund the incremental cost of cleaner-than-required engines, equipment, and other sources. The core principle of the program is to achieve cost-effective emission reductions that are permanent, surplus, quantifiable, enforceable and creditable to SIP.</p> <p>Appendix C contains the cost-effectiveness calculation methodology to measure the dollars provided to a project for each ton of covered emissions reduced.</p> <p><b>Website Link:</b> <a href="https://www.arb.ca.gov/msprog/moyer/moyer.htm">https://www.arb.ca.gov/msprog/moyer/moyer.htm</a></p>	<p>3, 3a</p>
<p>FARMER Funding Guidelines</p>	<p><b>Summary:</b> Emissions from agricultural equipment are a significant source of air pollution, especially in the San Joaquin Valley, and reducing these emissions is crucial in order to meet federal ozone and particulate matter air quality standards and protect public health. The FARMER Program reduces emissions by providing incentives to replace old, high-emitting vehicles and equipment with the cleanest available.</p> <p>Appendix A estimates the emission reductions of the project categories presented in FARMER Program Guidelines and provides the project scoring criteria, as well as the benefit-cost score analysis.</p> <p><b>Website Link:</b> <a href="https://ww2.arb.ca.gov/index.php/resources/documents/farmer-program-guidelines">https://ww2.arb.ca.gov/index.php/resources/documents/farmer-program-guidelines</a></p>	<p>3, 3a</p>
<p>Community Air Protection Funds Supplement to the Carl Moyer Program 2017 Guidelines</p>	<p><b>Summary:</b> AB 134 (Budget Committee, Chapter 14, Statutes of 2017) appropriated \$250 million from the Greenhouse Gas</p>	<p>3</p>

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	<p>Reduction Fund to reduce mobile source emissions (criteria pollutants, toxic air contaminants, and GHGs) in communities most impacted by air pollution, as part of the Community Air Protection Program. These funds will be used by air districts to implement projects under the Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program) and optionally under the Proposition 1B Goods Movement Emission Reduction Program (Proposition 1B Program). Spending the funds through these programs will facilitate immediate emissions reductions in disadvantaged and low-income communities subject to poor air quality. Community Air Protection Funds Supplement has the express and limited purpose of expediting projects allocated through AB 134, projects that are supported by and deliver reductions to pollution-burdened communities. It does not change requirements applying to projects funded under the Moyer or Proposition 1B Programs, but supplements those requirements as they apply to eligible projects.</p> <p>Table on page 9 provides the guideline modifications to the Carl Moyer Program.</p> <p>Page 14 provides the priorities of AB 617 that air districts should adopt as part of their ranking process.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/msprog/cap/docs/cmp_final_cap_supplement.pdf">https://www.arb.ca.gov/msprog/cap/docs/cmp_final_cap_supplement.pdf</a></p>	
<p>VW Mitigation Trust</p>	<p><b>Summary:</b>  The VW Environmental Mitigation Trust establishes \$423 million to be used on projects to primarily replace older and dirtier heavy-duty vehicles and equipment with cleaner technology. The funds will fully mitigate the excess nitrogen oxide emissions from the 2.0- and 3.0-liter cars sold in California.</p>	<p>3, 3a</p>

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	<p>Appendix A contains the quantification methodologies to demonstrate that the mitigation actions, in aggregate, are reasonably expected to fully mitigate the oxides of nitrogen (NOx) impact from the subject VW vehicles.</p> <p><b>Website Link:</b>  <a href="https://ww2.arb.ca.gov/our-work/programs/volkswagen-environmental-mitigation-trust-california">https://ww2.arb.ca.gov/our-work/programs/volkswagen-environmental-mitigation-trust-california</a></p>	
<p>Proposition 1B: Goods Movement Funding Guidelines</p>	<p><b>Summary:</b>            In November 2006, California voters approved the Proposition 1B: Goods Movement Emission Reduction Program, which, among other things, authorized \$1 billion dollars to reduce emissions from goods movement in California’s trade corridors. The Program provides funding to retrofit, purchase engines, or replace vehicles, and may include trucks, locomotives, harbor craft, transport refrigeration units, cargo handling equipment, and supporting infrastructure, as well as technologies to reduce ship emissions at berth.</p> <p>Page 1, Overview section identifies the key pollutants targeted for emission reductions and the competitive process for funds, which is based on the projected emission reductions and reductions per State dollar invested to ensure the most beneficial projects are funded.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/bonds/gmbond/docs/prop_1b_goods_movement_2015_program_guidelines_for_implementation.pdf">https://www.arb.ca.gov/bonds/gmbond/docs/prop_1b_goods_movement_2015_program_guidelines_for_implementation.pdf</a></p>	<p>3, 3a</p>

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Other Reports

These reports are not required by legislation. In the table below, prepared reports are listed with a summary of the report, specific areas of interest, the frequency of the report, and the report's website.

Report	Summary, Key Report Pages, Website	Relevant JLAC questions
<p>Advanced Clean Cars (ACC) Midterm Review</p> <p>(Title 13 CCR §1961.3)</p>	<p><b>Summary:</b></p> <p>In 2012, the CARB adopted the ACC program, a comprehensive set of standards for new vehicles in California through model year 2025. The components of the ACC program are the Low-Emission Vehicle III (LEV III) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles for model years 2015 through 2025 and ZEV regulation, which acts as the focused technology-forcing piece of the ACC program by requiring manufacturers to produce increasing numbers of pure ZEVs (that is battery electric and fuel cell electric vehicles) and plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.</p> <p>When adopting these standards, the Board directed staff to conduct reviews specific to the California standards: the ZEV regulation, the 1 milligram per mile (mg/mi) particulate matter emission standard, and a general review of the format of the GHG standards, and to return with staff's review no later than December 2016. This document reflects the staff assessment in response to the Board.</p> <p>Pages ES3-ES9 contain the report's findings and recommendations.</p> <p><b>Website Link:</b>  <a href="https://www.arb.ca.gov/msprog/acc/mtr/acc_mtr_finalreport_full.pdf?_ga=2.94285277.1700837985.1551117256-1286562350.1539031746">https://www.arb.ca.gov/msprog/acc/mtr/acc_mtr_finalreport_full.pdf?_ga=2.94285277.1700837985.1551117256-1286562350.1539031746</a></p>	<p>1b, 3, 3a, 4</p>

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Report	Summary, Key Report Pages, Website	Relevant JLAC questions
<p>CARB Annual Enforcement Report</p> <p>Updated Annually.</p>	<p><b>Summary:</b> CARB publishes an enforcement report, annually in June, which describes enforcement efforts including the number of inspections and number of violations determined during inspections, by program. This provides an observed compliance rate by program. The latest enforcement report provides a summary of 2017 activities, including enforcement settlements.</p> <p>Pages 12-28 provide information on enforcement at freight facilities and diesel, clean fuels, and vehicle enforcement.</p> <p><b>Website Link:</b> <a href="https://www.arb.ca.gov/enf/reports/2017_enf_annual_report.pdf">https://www.arb.ca.gov/enf/reports/2017_enf_annual_report.pdf</a></p>	<p>3, 3a, 4</p>
<p>CARB's 2000-2016 GHG Emissions Trends Report</p> <p>Updated Annually.</p>	<p><b>Summary:</b> 2018 edition of the GHG inventory includes the emissions of the seven GHGs identified in AB 32 for the years 2000 to 2016 and uses an inventory scope and framework consistent with international and national GHG inventory practices.</p> <p>Page 4 in the Transportation Section provides an overview of GHG emissions from the Transportation Sector.</p> <p><b>Website Link:</b> <a href="https://www.arb.ca.gov/cc/inventory/data/data.htm">https://www.arb.ca.gov/cc/inventory/data/data.htm</a></p>	<p>1a, 1b, 3</p>