

DRAFT FINAL 2022 AQMP
APPENDIX VII

CARB'S COMMITMENT FOR COACHELLA VALLEY

NOVEMBER 2022

Table of Contents

- **Proposed-CARB Commitment for the Coachella Valley**

<u>Overview of Commitment</u>	VII-1
<u>Coachella Valley</u>	VII-7

- **Proposed-CARB Measures**

<u>On-Road Heavy-Duty</u>	VII-9
<u>On-Road Light-Duty</u>	VII-9
<u>Off-Road Equipment</u>	VII-10
<u>Other</u>	VII-12
<u>Primarily-Federally and Internationally Regulated Sources</u>	
– CARB Measures	VII-14

CARB Commitment for the Coachella Valley

Overview of Commitment

State Implementation Plans (SIPs) contain enforceable commitments to achieve the level of emissions necessary to meet federal air quality standards, as defined by the attainment demonstration. The 2022 State SIP Strategy lists new SIP measures and quantifies potential emissions reduction SIP commitments for the Coachella Valley based on the measures identified and quantified to date. The 2022 State SIP Strategy and the accompanying measure schedule form the basis of the commitments for emission reductions by the attainment deadlines for each region that will be proposed for CARB Board consideration alongside the respective nonattainment area's SIP. The commitments will consist of two components:

1. A commitment to bring an item to the CARB Board for defined new measures or take other specified actions within CARB's authority; and
2. A commitment to achieve aggregate emission reductions by specific dates.

As part of each SIP needing emission reductions from the State, the total aggregate emission reductions and the obligation to make certain proposals to the CARB Board or take other actions within CARB's authority specified in the 2022 State SIP Strategy would become enforceable upon approval by U.S. EPA.

Commitment to Act on Measures

For each of the SIP measures shown in Tables VII-1 and VII-2, CARB staff proposes to commit to address each measure as described in this document. For each measure committed to, CARB staff would undertake the actions detailed for each measure. In the instance of measures that involve the development of a rule under CARB's regulatory authority, CARB would commit to bring a publicly noticed item before the CARB Board that is either a proposed rule, or is a recommendation that the CARB Board direct staff to not pursue a rule covering that subject matter at that time. This recommendation would be based on an explanation of why such a rule is unlikely to achieve the relevant emission reductions in the relevant timeframe, and would include a demonstration that the overall aggregate commitment will be achieved despite that rule not being pursued. This public process and CARB hearing would provide additional opportunity for public and stakeholder input, as well as ongoing technology review, and assessments of costs and environmental impacts.

The measures, as proposed by staff to the CARB Board or adopted by the CARB Board, may provide more or less than the initial emission reduction estimates. In addition, action by the CARB Board may include any action within its discretion.

Commitment to Achieve Emission Reductions

The following section describes the estimated emission reduction and potential commitment from the SIP measures identified and quantified to date for the Coachella Valley. The aggregate commitment of emissions reductions from State sources to be proposed for CARB Board consideration will be found in CARB's staff report for the Coachella Valley portion of the 2022 AQMP when it is brought to the CARB Board.

While the 2022 State SIP Strategy includes estimates of the emission reductions from each of the individual new measures, CARB's overall commitment is to achieve the total emission reductions necessary from State-

regulated sources to attain the federal air quality standards, reflecting the combined reductions from the existing control strategy and new measures. Therefore, if a particular measure does not get its expected emission reductions, the State's overall commitment to achieving the total aggregate emission reductions still exists. If actual emission decreases occur that exceed the projections reflected in the current emission inventory and the 2022 State SIP Strategy, CARB will submit an updated emissions inventory to U.S. EPA as part of a SIP revision. The SIP revision would outline the changes that have occurred and provide appropriate tracking to demonstrate that aggregate emission reductions sufficient for attainment are being achieved through enforceable emission reduction measures. CARB's emission reduction commitments may be achieved through a combination of actions including but not limited to the implementation of control measures; the expenditure of local, State or federal incentive funds; or through other enforceable measures.

**TABLE VII-1
MEASURES AND SCHEDULE**

<u>Measure</u>	<u>Agency</u>	<u>Action</u>	<u>Implementation Begins</u>
<u>On-Road Heavy-Duty</u>			
<u>Advanced Clean Fleets Regulation</u>	<u>CARB</u>	<u>2023</u>	<u>2024</u>
<u>Zero Emissions Trucks Measure</u>	<u>CARB</u>	<u>2028</u>	<u>2030</u>
<u>On-Road Light-Duty</u>			
<u>On-Road Motorcycle New Emissions Standards</u>	<u>CARB</u>	<u>2022</u>	<u>2025</u>
<u>Clean Miles Standard</u>	<u>CARB</u>	<u>2021</u>	<u>2023</u>
<u>Off-Road Equipment</u>			
<u>Tier 5 Off-Road Vehicles and Equipment</u>	<u>CARB</u>	<u>2025</u>	<u>2029</u>
<u>Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation</u>	<u>CARB</u>	<u>2022</u>	<u>2024</u>
<u>Transport Refrigeration Unit Regulation Part 2</u>	<u>CARB</u>	<u>2026</u>	<u>2028</u>
<u>Cargo Handling Equipment Amendments</u>	<u>CARB</u>	<u>2025</u>	<u>2026</u>
<u>Off-Road Zero Emission Targeted Manufacturer Rule</u>	<u>CARB</u>	<u>2027</u>	<u>2031</u>
<u>Clean Off-Road Fleet Recognition Program</u>	<u>CARB</u>	<u>2025</u>	<u>2027</u>
<u>Spark-Ignition Marine Engine Standards</u>	<u>CARB</u>	<u>2029</u>	<u>2031</u>
<u>Other</u>			
<u>Consumer Products Standards</u>	<u>CARB</u>	<u>2027</u>	<u>2028</u>
<u>Zero Emission Standard for Space and Water Heaters</u>	<u>CARB</u>	<u>2025</u>	<u>2030</u>
<u>Enhanced Regional Emission Analysis in State Implementation Plans¹</u>	<u>CARB</u>	<u>2025</u>	<u>2023</u>
<u>Pesticides: 1,3-Dichloropropene Health Risk Mitigation</u>	<u>DPR²</u>	<u>2022</u>	<u>2024</u>
<u>Primarily-Federally and Internationally Regulated Sources – CARB Measures</u>			
<u>In-Use Locomotive Regulation</u>	<u>CARB</u>	<u>2023</u>	<u>2024</u>
<u>Future Measures for Aviation Emissions reductions</u>	<u>CARB</u>	<u>2027</u>	<u>2029</u>

¹ Proposed CARB finalization.

² California Department of Pesticide Regulation (DPR).

**TABLE VII-2
MEASURES AND SCHEDULE**

Measures	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Advanced Clean Fleets			★														
Zero Emissions Trucks Measure								★									
On-Road Motorcycle New Emissions Standards		★															
Clean Miles Standard	★																
Tier 5 Off-Road Vehicles and Equipment					★												
Amendments to the In-Use Off-Road Diesel Fueled Fleets		★															
Transport Refrigeration Unit Regulation Part 2						★											
Cargo Handling Equipment Amendments					★												
Off-Road Zero Emission Targeted Manufacturer Rule							★										
Clean Off-Road Fleet Recognition Program					★												
Spark-Ignition Marine Engine Standards									★								
Consumer Products Standards							★										
Zero Emission Standard for Space and Water Heaters					★												
Enhanced Regional Emission Analysis in SIPs																	
Pesticides: 1,3-Dichloropropene Health Risk Mitigation		★															
In-Use Locomotive Regulation			★														
Future Measures for Aviation Emission Reductions							★										

*Yellow star represents the year for which action is proposed; dark blue represents the year implementation begins.

Statewide Emissions Reductions

The measures in the 2022 State SIP Strategy will provide emission reduction benefits throughout the State. Some of these benefits will come from current programs while the remainder of the benefits will come from new measures. Although the existing control program will provide mobile source emission reductions necessary to meet the attainment needs of many areas of the State, the new measures in the 2022 State SIP Strategy will provide further reductions to enhance air quality progress and achieve the 70 ppb 8-hour ozone standard.

Emission Reductions from Current Programs

Table VII-3 provides the remaining mobile source emissions under CARB and district current programs for the State and the Coachella Valley. Ongoing implementation of current control programs is projected to reduce mobile source NOx emissions from today’s levels by 521 tons per day Statewide, and 9 tons per day in the Coachella Valley, in 2037. Achieving the benefits projected from the current control program will continue to require significant efforts for implementation and enforcement and thus represents an important element of the overall strategy.

**TABLE VII-3
MOBILE SOURCE EMISSIONS UNDER CARB AND DISTRICT CURRENT CONTROL PROGRAMS**

Mobile Sources	NOx (tpd)			VOC (tpd)		
	2018	2037	Change	2018	2037	Change
Statewide ³	1156.7	635.3	-45%	638.3	319.5	-50%
Coachella Valley ⁴	17.5	8.8	-50%	7.1	3.5	-51%

Although most of the 2016 State SIP Strategy measure commitments have been adopted, there is one (Zero Emission Forklift) that the CARB Board will be acting upon over the next year, and two that were recently adopted but are not yet accounted for in the baseline emissions inventory (Advanced Clean Cars II, Transport Refrigeration Unit Part 1). Table VII-4 below shows the timeline and anticipated emission reductions for these three measures.

³ Source: 2022 CEPAM v1.01; represents the current baseline emissions out to 100 nautical miles with adopted CARB and district measures.

⁴ Source: 2022 CEPAM v1.01; represents the current baseline emissions out to 100 nautical miles with adopted CARB and district measures.

**TABLE VII-4
2016 STATE SIP STRATEGY MEASURES STILL TO BE ADOPTED⁵**

Measure	Action	Implementation Begins	Statewide 2037 NOx (tpd)	Statewide 2037 VOC (tpd)	Coachella Valley 2037 NOx (tpd)	Coachella Valley 2037 VOC (tpd)
Advanced Clean Cars II	<u>2022</u>	<u>2026</u>	<u>13.5</u>	<u>10.8</u>	<u>0.2</u>	<u>0.2</u>
Transport Refrigeration Unit Part I	<u>2022</u>	<u>2023-2024</u>	<u>1.3</u>	<u>1.0</u>	<u><0.1</u>	<u><0.1</u>
Zero Emission Forklift	<u>2023</u>	<u>2026</u>	<u>1.7</u>	<u>0.3</u>	<u><0.1</u>	<u><0.1</u>
Total			<u>16.5</u>	<u>12.0</u>	<u>0.2</u>	<u>0.2</u>

Emission Reductions from New Measures

The new measures contained in the 2022 State SIP Strategy commitment reflect a combination of State actions, and petitions and advocacy for federal and/or international action.

Statewide emissions reductions from the new measures identified and quantified to date in the 2022 State SIP Strategy are estimated to be 205.6 tons per day of NOx and 40.9 tons per day of VOC in 2037.

⁵ Numbers may not add up due to rounding.

Coachella Valley

Air quality modeling indicates that NOx emissions reductions are needed in the South Coast Air Basin and within the Coachella Valley by 2037 in order to provide for attainment. A significant fraction of the needed reductions will come from the existing control program. In addition, as described above, a few measure commitments included in the 2016 State SIP Strategy have not yet been acted upon or were very recently adopted and are thus not yet in the baseline emissions inventory, as outlined in Table VII-4 above. Action will be taken on the remaining measures in the coming year.

Table VII-5 shows that collectively, emissions reductions from CARB's current control program, reductions from the remaining 2016 State SIP Strategy measures, and emissions reductions from the measures in the 2022 State SIP Strategy provide the emissions reductions needed from State sources to support attainment of the 70 ppb 8-hour ozone standard in the Coachella Valley. The proposed measures in Table VII-6 reflect CARB commitments for State actions and the expected emissions reductions for the Coachella Valley. That said, the SIP is still under development and the emissions reductions may change as the attainment demonstration is finalized. The aggregate commitment of emissions reductions from State sources in the Coachella Valley to be proposed for Board consideration will be found in CARB's staff report for the -2022 AQMP.

TABLE VII-5
COACHELLA VALLEY NOX EMISSION REDUCTIONS FROM CARB PROGRAMS

CARB Programs in Coachella Valley	2037 NOx Emission Reductions (tpd)⁶
Current Control Program⁷	9.7
Potential CARB Emissions Reductions Commitments	5.2
2016 State SIP Strategy Measures (Not yet in baseline inventory)	0.2
New Proposed Measures	5.0
Total Reductions	14.9

⁶ Numbers may not add up due to rounding.

⁷ Source: 2019 CEPAM v1.04; represents the current baseline emissions with adopted CARB and district measures

TABLE VII-6
COACHELLA VALLEY EXPECTED EMISSIONS REDUCTIONS FROM THE 2022 STATE SIP STRATEGY⁸

Measure	2037 NOx (tpd)	2037 VOC (tpd)
On-Road Heavy-Duty		
<u>Advanced Clean Fleets Regulation</u>	<u>0.7</u>	<u><0.1</u>
<u>Zero Emissions Trucks Measure</u>	<u>0.8</u>	<u><0.1</u>
Total On-Road Heavy-Duty Reductions	<u>1.5</u>	<u>0.2</u>
On-Road Light-Duty		
<u>On-Road Motorcycle New Emissions Standards</u>	<u><0.1</u>	<u>0.1</u>
<u>Clean Miles Standard</u>	<u><0.1</u>	<u><0.1</u>
Total On-Road Light-Duty Reductions	<u><0.1</u>	<u>0.1</u>
Off-Road Equipment		
<u>Tier 5 Off-Road Vehicles and Equipment</u>	<u>0.1</u>	<u>NYQ</u>
<u>Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation</u>	<u><0.1</u>	<u><0.1</u>
<u>Transport Refrigeration Unit Regulation Part 2</u>	<u>0.3</u>	<u><0.1</u>
<u>Cargo Handling Equipment Amendments</u>	<u><0.1</u>	<u><0.1</u>
<u>Off-Road Zero Emission Targeted Manufacturer Rule</u>	<u>NYQ</u>	<u>NYQ</u>
<u>Clean Off-Road Fleet Recognition Program</u>	<u>NYQ</u>	<u>NYQ</u>
<u>Spark-Ignition Marine Engine Standards</u>	<u><0.1</u>	<u><0.1</u>
Total Off-Road Equipment Reductions	<u>0.4</u>	<u>0.1</u>
Other		
<u>Consumer Products Standards</u>	<u>-</u>	<u>NYQ</u>
<u>Zero Emission Standard for Space and Water Heaters</u>	<u>NYQ</u>	<u>NYQ</u>
<u>Enhanced Regional Emission Analysis in State Implementation Plans</u>	<u>NYQ</u>	<u>NYQ</u>
<u>Pesticides: 1,3-Dichloropropene Health Risk Mitigation</u>	<u>-</u>	<u>NYQ</u>
Total Other Reductions	<u>NYQ</u>	<u>NYQ</u>
Primarily-Federally and Internationally Regulated Sources – CARB Measures		
<u>In-Use Locomotive Regulation</u>	<u>3.0</u>	<u>0.1</u>
<u>Future Measures for Aviation Emission Reductions</u>	<u>NYQ</u>	<u>NYQ</u>
Total Primarily-Federally and Internationally Regulated Sources – CARB Measures Reductions	<u>3.0</u>	<u>0.1</u>
Aggregate Emissions Reductions	<u>5.0</u>	<u>0.4</u>

⁸ Numbers may not add up due to rounding.

CARB Measures

On-Road Heavy-Duty

Advanced Clean Fleets Regulation

This measure accelerates zero emission vehicle adoption in the medium- and heavy-duty sectors by setting zero emission requirements for fleets and 100 percent zero emission vehicle sales requirement in California for manufacturers of Class 2b through 8 vehicles. The Advanced Clean Fleets Regulation will focus on strategies to ensure that the cleanest vehicles are deployed by government, business, and other entities in California to meet their transportation needs. The requirements would be phased-in on varying schedules for different fleets including public, drayage trucks, and high priority private and federal fleets. Public fleets would be required to phase-in purchase requirement starting at 50 percent of new purchases in 2024 and 100 percent starting in 2027. All drayage trucks operating at seaports and intermodal railyards would be required to be zero emission by 2035. Drayage trucks will also have new registration and reporting requirements, starting in 2023. High priority private and federal fleets would be required to phase-in zero emission vehicles as a percentage of the total fleet. The fleet requirements are based on zero emission suitability and are phased-in by vehicle body type. The Advanced Clean Fleets Regulation would also include a requirement that 100 percent of Class 2b and above vehicle manufacturer sales in California are zero emissions starting in 2040.

Zero Emission Trucks Measure

This measure would increase the number of zero emission vehicles and require cleaner engines to achieve emissions reductions from fleets that are not affected by the proposed Advanced Clean Fleets measure. This would include potential zero emissions zone concepts around warehouses and sensitive communities if CARB is given new authority to enact indirect source rules in combination with strategies to upgrade older trucks to newer and cleaner engines. This would be a transitional strategy to achieve zero emissions medium- and heavy-duty vehicles everywhere feasible by 2045.

On-Road Light-Duty

On-Road Motorcycles New Emissions Standards

This measure would reduce emissions from new, on-road motorcycles by adopting more stringent exhaust and evaporative emissions standards along with limited onboard diagnostics requirements and zero emissions sales thresholds with an associated credit program to help accelerate the development of zero emissions motorcycles. The new exhaust emissions standards include substantial harmonization with the more stringent European motorcycle emissions standards already in place. The new evaporative emissions standards are based on more aggressive CARB off-highway recreational vehicle emissions standards that exist today. This measure also proposes significant zero emission motorcycle sales thresholds beginning in 2028 and increasing gradually through 2035.

Clean Miles Standard

The Clean Miles Standard was adopted by CARB on May 20, 2021. The primary goals of this measure are to reduce GHG emissions from ride-hailing services offered by transportation network companies (TNCs) and promote electrification of the fleet by setting an electric vehicle mile target, while achieving criteria pollutant co-benefits. TNCs would be required to achieve zero grams CO₂ emissions per passenger mile traveled and 90 percent electric VMT by 2030.

Off-Road Equipment

Tier 5 Off-Road Vehicles and Equipment

This measure would reduce NOx and particulate matter (PM) emissions from new off-road compression-ignition (CI) engines by adopting more stringent exhaust standards for all power categories, including those that do not currently utilize exhaust aftertreatment such as diesel particulate filters and selective catalytic reduction. This measure would be more stringent than required by current U.S. EPA and European Stage V nonroad regulations and would require the use of best available control technologies.

For this measure, CARB staff would develop and propose standards for new off-road CI engines including the following: aftertreatment-based PM standards for engines less than 19 kilowatt (kW) (25 horsepower [hp]), aftertreatment-based NOx standards for engines greater than or equal to 19 kW (25 hp) and less than 56 kW (75 hp), and more stringent PM and NOx standards for engines greater than or equal to 56 kW (75 hp). Other possible elements include enhancing in-use compliance, proposing more representative useful life periods, and developing a low load test cycle. It is expected that this comprehensive offroad Tier 5 regulation would rely heavily on technologies manufacturers are developing to meet the recently approved low NOx standards and enhanced in-use requirements for on-road heavy-duty engines.

Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation

This measure would further reduce emissions from the in-use off-road diesel equipment sector by adopting more stringent requirements to the In-Use Off-Road Diesel-Fueled Fleets Regulation. These amendments would create additional requirements to the currently regulated fleets by targeting the oldest and dirtiest equipment that is allowed to operate indefinitely under the current regulation's structure.

The amendments would include an operational backstop to the current In-Use Off-Road Diesel-Fueled Fleets Regulation for most Tier 0, 1, and 2 engines between 2024 and 2032. This will allow a 12-year phase out of these oldest engines. Along with the operational backstop, adding vehicle provisions in the current regulation will be extended to phase in a limitation on the adding of Tier 3 and Tier 4i vehicles to fleets. The amendments also include proposed new requirements for most fleets to use renewable diesel, proposed requirements for prime contractors and public works awarding bodies to increase the enforceability of the regulation, and optional flexibility provisions for fleet adoption of zero emission vehicles. Additional modifications could include clarification to implementation and sunset provisions that would have allowed small fleets to continue to operate vehicles that could not be retrofitted with a verified diesel emission control strategy indefinitely.

Transport Refrigeration Unit Regulation Part 2 (Non-Truck TRUs)

This measure is the second part of a two-part rulemaking to transition diesel-powered transport refrigeration units (TRUs) to zero emission technologies. This measure would require zero emission equipment for non-truck TRUs (trailer TRUs, domestic shipping container TRUs, railcar TRUs, TRU generator sets, and direct-drive refrigeration units).

Cargo Handling Equipment Amendments

This measure would start transitioning Cargo Handling Equipment (CHE) to full zero emission in 2026, with over 90 percent penetration of zero emission equipment by 2036. Based on the current state of zero emission CHE technological developments, the transition to zero emission would most likely be achieved largely through the electrification of CHE. This assumption about aggressive electrification is supported by the fact that currently some electric RTG cranes, electric forklifts, and electric yard tractors are already commercially available. Other technologies are in early production or demonstration phases.

Off-Road Zero Emission Targeted Manufacturer Rule

The Off-Road Zero Emission Targeted Manufacturer Rule would accelerate the development and production of zero emission off-road equipment and powertrains. Existing zero emission regulations and regulations currently under development target a variety of sectors (e.g., forklifts, cargo handling equipment, off road fleets, Small Off-Road Engines (SORE), etc.). However, as technology advancements occur, more sectors including wheel loaders, excavators, and bulldozers could be accelerated. Fully addressing control of emissions from new farm and construction equipment under 175 horsepower that are preempted, will require partnership on needed Federal zero emission standards for off-road equipment.

This measure would require manufacturers of off-road equipment and/or engines to produce for sale zero emission equipment and/or powertrains as a percentage of their annual statewide sales volume. Sales/production mandate levels would be developed based on the projected feasibility of zero emission technology to enter and grow in the various off-road equipment types currently operating in California. This measure is expected to increase the availability of zero emission options in the off-road sector and support other potential measures that promote and/or require the purchase and use of such options. A targeted manufacturer regulation will need to take into account parameters such as the number of equipment and engine manufacturers producing off-road equipment for sale in California, along with sales volumes, to ensure that such an effort is cost effective and technologically feasible.

Clean Off-Road Fleet Recognition Program

This measure would create a non-monetary incentive to encourage off-road fleets to go above and beyond existing regulatory fleet rule compliance and adopt advanced technology equipment with a strong emphasis on zero emission technology. The Clean Off-Road Fleet Recognition Program would provide a standardized methodology for contracting entities, policymakers, state and local government, and other interested parties to establish contracting criteria or require participation in the program to achieve their individual policy goals.

The Clean Off-Road Fleet Recognition Program framework would encourage entities with fleets to incorporate advanced technology and zero emission vehicles into their fleets, prior to or above and beyond regulatory mandates based on fleet size. The program would provide standardized criteria or a rating system for participation at various levels to reflect the penetration of advanced technology and zero emission vehicles into a fleet. Levels could be scaled over time as zero emission equipment becomes more readily available. CARB anticipates the next several years of technology advancements and demonstrations to drive the stringency of the rating system. Participation in the program would be voluntary for entities with fleets, however, designed in a manner that provides them motivation to go beyond business as usual. The program would offer value for entities with fleets to participate by potentially providing them increased access to jobs/contracts, public awareness, and marketing opportunities.

Spark-Ignition Marine Engine Standards

For this measure, CARB will develop and propose catalyst-based standards for outboard and personal watercraft engines less than or equal to 40 kW in power that will gradually reduce emission standards to approximately 70 percent below current levels. For outboard and personal watercraft engines under 40 kW, more stringent exhaust standards will be developed and proposed based on the incorporation of electronic fuel injection that will gradually reduce emission standards 40 percent below current levels. This measure would require a 5.0 g/kW-hr HC+NO_x standard for outboard engines and personal watercraft engines at or above 40 kW in power and a 10.0 g/kW-hr HC+NO_x standard for engines less than 40 kW.

In addition to requiring more stringent exhaust standards, CARB is considering actions consistent with Executive Order N-79-20 that would require a percentage of outboard and personal watercraft vessels to be propelled by zero emission technologies for certain applications. Outboard engines less than 19 kW, which are typically not operated aggressively or for extended periods, could potentially be phased-out and gradually replaced with zero emission technologies. Some personal watercraft applications could also potentially be replaced with zero emission technologies.

Other

Consumer Products Standards

This measure will further reduce VOC and equivalent VOC emissions from consumer products to expedite attainment of national ambient air quality standards for ozone. As with previous rulemakings, emission reductions will be achieved by setting regulatory standards applicable to the content of consumer products. To meet emission reduction targets for the measure, CARB staff will evaluate categories with relatively high contributions to ozone formation, whether currently regulated or unregulated. Staff will consider the merits of proposing VOC content standards as well as reactivity limits. Staff developing proposed amendments to the Consumer Products Regulation will also consider investigating concepts for expanding manufacturer compliance options, market-based approaches, and reviewing existing exemptions. Staff will work with stakeholders to explore mechanisms that would encourage the development, distribution, and sale of cleaner, very low, or zero-emitting products. In undertaking these efforts staff will prioritize strategies that achieve the maximum feasible reductions in ozone forming, toxic air contaminant, and GHG emissions. This measure complements a parallel measure in CARB's Climate

Change Scoping Plan Update, to be considered by the CARB Board in 2022, to phase down use of HFC-152a and other GHGs in consumer products.

Zero Emission Standard for Space and Water Heaters

For this measure, CARB would develop and propose zero GHG emission standards for space and water heaters sold in California; CARB could also work with air districts to further tighten district rules to drive zero emission technologies. This measure would not mandate retrofits in existing buildings, but some buildings would require retrofits to be able to use the new technology that this measure would require. Beginning in 2030, 100 percent of sales of new space and water heaters (for either new construction or replacement of burned-out equipment in existing buildings) would need to meet zero emission standards. It is expected that this regulation would rely heavily on heat pump technologies currently being sold to electrify new and existing homes.

Enhanced Regional Emissions Analysis in SIPs

The primary goal of this measure is to reduce criteria pollutant and GHG emissions that come from on-road mobile sources through reductions in VMT. In addition, lowering VMT will help alleviate traffic congestion, improve public health, reduce consumption of fossil fuels, and reduce infrastructure costs. CARB is exploring three options to reduce VOC and NOx emissions through reductions in VMT. First, CARB will consider whether and how to change the process for developing Motor Vehicle Emissions Budget (MVEB) by evaluating the existing MVEB development process to meet NAAQS. In addition, CARB will assess and improve the Reasonably Available Control Measures (RACM) analysis in the SIP by providing a comprehensive list of Transportation Control Measures (TCMs) and emission quantification methodology. Finally, CARB will consider updating the guidelines for the California Motor Vehicle Registration Fee (MV Fees) Program and the Congestion Mitigation and Air Quality Improvement (CMAQ) Program to fund a broader range of transportation and air quality projects that advance new approaches and technologies in reducing air pollution.

1,3-Dichloropropene Health Risk Mitigation

Pesticides are regulated under both federal and state law. DPR is the agency responsible for regulating the sale and use of pesticides in California. DPR can generally reduce exposures to pesticides through the development and implementation of necessary restrictions on pesticide sales and use and by encouraging integrated pest management. Considered a volatile organic compound (VOC), 1,3-Dichloropropene (1,3-D) is a fumigant used to control nematodes, insects, and disease organisms in soil.

DPR is developing a regulation to address both cancer and acute risk to non-occupational bystanders from the use of 1,3-D. The regulation will be developed in consultation with the County Agricultural Commissioners (CACs), the local air districts, CARB, the Office of Environmental Health Hazard Assessment (OEHHA), and the California Department of Food and Agriculture (CDFA). Once implemented, DPR's regulation would require applicators to use totally impermeable film (TIF) tarpaulins or other mitigation measures that provide a comparable degree of protection from exposure.

Primarily-Federally and Internationally Regulated Sources – CARB Measures

In addition to reducing emissions from the above sources, it is critical to achieve emissions reductions from sources that are primarily regulated at the federal and international level. It is imperative that the federal government and other relevant regulatory entities act decisively to reduce emissions from these primarily-federally and internationally regulated sources of air pollution. CARB and the air districts in California have taken actions to not only petition federal agencies for action, but also to directly reduce emissions using programmatic mechanisms within our respective authorities. CARB continues to explore additional actions, many of which may require a waiver or authorization under the Clean Air Act, as described below.

In-Use Locomotive Regulation

This measure would use mechanisms available under CARB’s regulatory authority to accelerate the adoption of advanced, cleaner technologies, and include zero emission technologies, for locomotive operations. The In-Use Locomotive Regulation would apply to all locomotives operating in the State of California with engines that have a total rated power of greater than 1,006 horsepower, excluding locomotive engines used in training of mechanics, equipment designed to operate both on roads and rails, and military locomotives. The measure reduces emissions by increasing use of cleaner diesel locomotives and zero emission locomotives through a spending account, in-use operational requirements, and by an idling limit. By July 1, 2024, a spending account would be established for each locomotive operator. Funds in the account would only be used toward Tier 4 or cleaner locomotives until 2030, and at any time toward zero emission locomotives, zero emission pilot or demonstration projects, or zero emission infrastructure.

For the in-use operational requirements, beginning January 1, 2030, only locomotives built after January 1, 2007 may operate in California. Each year after January 1, 2030, only locomotives less than 23 years old may operate in California. Additionally, under the in-use operational requirements, starting January 1, 2030, all switch, industrial, and passenger locomotives operating in California with an original engine build date 2030 or newer will be required to be zero emission. Starting January 1, 2035, all freight line haul locomotives operating in California with an original engine build date 2035 or newer must be zero emission. Locomotives equipped with automatic engine stop/start systems are to idle no more than 30 minutes unless an exemption applies. Also, locomotive operators would report locomotive engine emissions levels and activity on an annual basis.

Future Measures for Aviation Emissions Reductions

Future measures for aviation would reduce emissions from airport and aircraft related activities. The identified emission sources for the aviation sector are main aircraft engines, auxiliary power units (APU), and airport ground transportation. Emission reductions can be achieved by pursuing incentive and regulatory measures.

CARB would evaluate federal, state, and local authority in setting operational efficiency practices to achieve emission reductions. Operational practices include landing, takeoff, taxi, and running the APU, and contribute to on-ground and near-ground emissions. Near ground emissions are emissions between

ground level up to 3,000 feet. Operational practices such as de-rated take-off and reduced power taxiing have the potential to achieve emission reductions.

CARB would similarly work with U.S. EPA, Air Districts, airports, and industry stakeholders in a collaborative effort to develop regulations, voluntary measures, and incentive programs. CARB would evaluate the incentive amounts that would be required to encourage aircrafts to voluntarily use cleaner engines and fuels. Incentives to encourage the use of cleaner engines and fuels for aircraft in California would involve identification of funding sources and implementation mechanisms such as development of new programs.