

**2017 Climate Change Scoping Plan Update
Status of Resolution 17-46 Directives**

	Directive	Due Date in Resolution	Status
	Cap-and-Trade Program		
1	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to amend the Cap-and-Trade Regulation to reflect the direction in AB 398 through a public process in conformance with the requirements of the Administrative Procedure Act and evaluate, within that process, any potential impacts from changes to design features, including assessments of the quantity of allowances available at auction, the price containment points, and the price ceiling to ensure a sufficient carbon price to incentivize GHG reductions by December 31, 2018.	12/31/2018	Complete. Amendments were approved by the Board on 12/13/18. More information on the 2018 regulatory amendments can be found at: https://ww2.arb.ca.gov/rulemaking/2018/california-cap-greenhouse-gas-emissions-and-market-based-compliance-mechanisms
	Low Carbon Fuel Standard		
2	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to evaluate and propose a Low Carbon Fuel Standard to reflect an increased carbon intensity reduction by 2030.	Not specified	Complete. Amendments were approved by the Board on 9/27/18. More information on the 2018 regulatory amendments can be found at: https://ww2.arb.ca.gov/rulemaking/2018/low-carbon-fuel-standard-and-alternative-diesel-fuels-regulation-2018
	Mobile Sources		
3	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to work with the metropolitan transportation organizations to develop proposed 2035 targets that in combination with statewide, regional, and local strategies enable the state to meet the Scoping Plan 2030 greenhouse gas reduction target.	Not specified	Complete. Updated targets were approved by the Board on 3/22/18. More information on the approved regional plan targets can be found at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets

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4	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to develop and explore an inclusive interagency policy development process to evaluate and identify implementation pathways for additional policies to reduce VMT, and promote sustainable communities.	9/1/2018 and every 4 years thereafter (SB 150, 2017)	<p>Initial milestone complete. Ongoing activities.</p> <ul style="list-style-type: none"> Established a new Sustainable Transportation and Communities Division at CARB to bring together key CARB programs at the nexus of sustainable transportation, communities, housing, land conservation and management, health and equity. Released guidance on 2017 Scoping Plan-identified VMT reductions and their relationship to State climate goals that is used by the Office of Planning & Research in its SB 743 implementation work to change transportation impact analysis under CEQA and provide cost savings to location-efficient infill housing projects. Released new SB 375 Program Evaluation Guidelines that implement the Board's direction to put greater focus on VMT reduction implementation strategies, supporting investments and equity policies. Evaluated select transportation and land use development projects and certified that they do not result in any net additional emissions of GHG, which makes them eligible for streamlining under CEQA and helps promote low-carbon communities. Initiated multiple clean mobility outreach and education activities including launching the One Stop Shop project, releasing the SB 350 Clean Transportation Access Outreach Roadmap, and technical assistance and capacity building to support CARB's Low Carbon Transportation projects, implementing SB 350 Barriers Report recommendations, and increasing awareness of clean transportation and mobility options for low-income and disadvantaged communities and households.

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			<ul style="list-style-type: none">• Initiated development of a new Clean Miles Standard regulatory program pursuant to SB 1014 (Skinner, 2018) focused on reducing GHG emissions from ride-hailing services, partly through increasing pooling and reducing driver-only miles. Staff presented information on the development of this regulation to the Board at the January 23, 2020 Board hearing.• Coordinated with the California Transportation Commission on the development of grant guidelines for the SB 1-funded Solutions for Congested Corridors Program to advance consideration of GHG and VMT reduction in projects that will be selected for funding in fiscal years 2021-22 and 2022-23.• Collaborated with the California Transportation Commission on two joint meetings in 2019. Meeting topics focused on innovative mobility, housing and transportation linkages, and sustainable transportation planning and project implementation.• Coordinated with the Strategic Growth Council, the Department of Housing and Community Development, and other partner agencies on development of quantification methodologies and program guidelines for the Affordable Housing and Sustainable Communities program that advance projects with GHG and VMT reduction and benefits to disadvantaged communities.• Coordinated with the Department of Housing and Community Development on development of program guidelines for the Transit Oriented Development funding program and Pro-housing Policy Framework to advance consideration of GHG and VMT reduction in projects selected for State funding.

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			<ul style="list-style-type: none"> Funded and solicited research work, including: whitepapers on the benefits of VMT reduction, state transportation funding sources and their ability to fund particular transportation project types, as well as policies to mitigate displacement and identify displacement research gaps; a mapping tool to visualize transportation accessibility disparities; and metrics and evaluation methodologies for CARB's Low Carbon Transportation clean mobility and sustainable transportation equity projects.
5	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to collaborate with other State agencies in implementing the Mobile Source Strategy (Cleaner Technology and Fuels).	Ongoing	<p>Work ongoing. 2019 activities are highlighted below.</p> <ul style="list-style-type: none"> The 2016 Mobile Source Strategy combines technology-forcing fleet average standards for new vehicles, cleaner-burning fuels, durability requirements and inspection programs to ensure clean in-use performance, sales requirements for advanced technologies, pilot programs to demonstrate technologies, and incentive programs and other actions to accelerate technology deployment. The Board took several actions in 2019 related to improving <u>fuel efficiency and vehicle emissions</u>. <ul style="list-style-type: none"> Implemented a new aerodynamic device approval program to help verify and provide purchasers confidence in the efficacy of trailer aerodynamic devices such as trailer skirts and tails. Kicked off the nation's first-ever new trailer certification program to help ensure trailers are efficient and aerodynamic. For passenger cars, regulatory workshops began for developing the Clean Miles Standard, the first of its kind regulation on transportation network companies (such as Uber and Lyft) that will reduce emission from those vehicles. Also, work

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			<p>continued to develop future Low Emission Vehicle and Zero Emission Vehicle regulations beyond the 2025 model year.</p> <ul style="list-style-type: none">○ Implemented amendments to the Heavy-Duty Vehicle and Smoke Inspection programs that lower the opacity limit for heavy-duty vehicles.○ Mobile equipment in the agricultural sector will benefit from the Board approved funding guidelines for the FARMER Program. The \$65 million available for fiscal year (FY) 2019-20 will provide funding for harvesting equipment, heavy-duty trucks, tractors, and other equipment used in agricultural operations. From the start of the FARMER Program in March 2018 through September 31, 2019, incentive funding has been used to purchase approximately 1,550 zero-emission utility terrain vehicles, 130 heavy-duty on-road trucks and 900 tractors, as well as other off-road equipment.○ Implementation began for the recently-approved Innovative Clean Transit regulation. The program requires all public transit agencies to gradually transition to a 100 percent zero-emission bus fleet and encourages them to provide innovative first and last mile connectivity and improved mobility for riders. In preparation for implementation, staff hosted a series of workshops across the State to facilitate discussion and collaboration with regards to transitioning to zero-emission vehicles. In addition, staff conducted a zero-emission bus technology showcase and symposium in 2019 and will host another in 2020 to discuss the latest

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			<p>advances, best practices, and funding opportunities for transit buses in California.</p> <ul style="list-style-type: none">○ The proposed Advanced Clean Trucks regulation was presented to the Board in December 2019 and will be returning with modifications in 2020. As it stands, the proposed regulation is designed to increase penetration of zero-emission medium- and-heavy-duty trucks by establishing sales requirements for manufacturers. Staff is coordinating with the Energy Commission, Public Utilities Commission and the Governor's Office of Business and Economic Development.○ Held several workshops and numerous workgroup meetings and funded low NOx demonstration program at Southwest Research Institute to develop the new Heavy-Duty Omnibus Low NOx Regulation. This Regulation will cut allowable NOx emissions from heavy-duty truck engines by about 90 percent and improve many other elements of the heavy-duty engine compliance program as well, such as in-use testing and warranty. The Board will consider this Regulation in June 2020.○ Began developing heavy-duty vehicle inspection and maintenance (HD I/M) program, as directed by SB 210 (Leyva; Chapter 298, Statutes of 2019). Staff held two workshops and formed a workgroup for interested and knowledgeable stakeholders to discuss key technical and programmatic components of the HD I/M program. Board adoption is anticipated in 2021 with implementation starting in the 2022 timeframe.

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			<ul style="list-style-type: none"> As SB 210 directs, CARB is actively working with its state agency partners at DMV, Caltrans, CHP, CDFA, and BAR to develop effective compliance and enforcement strategies to ensure emissions control equipment on all heavy-duty vehicles operating in California is working properly and repaired in a timely manner. Ongoing coordination with Caltrans, CHP, and CDFA will enable the installation of a network of real-time on-road vehicle emissions monitoring devices to assist with enforcement, fraud detection, and program validation for the HD I/M program. A key element of the strategy is to <u>incentivize the transition to zero and near-zero GHG vehicle technologies</u>. In addition to the CARB-focused actions below, staff coordinates with other State agencies on complementary programs, such as Caltrans with the Low Carbon Transit Operations Program and Transit and Intercity Rail Capital Program, and the California Energy Commission with the Clean Transportation Program. For fiscal year 2019-20, the legislature allocated the following amounts from the Greenhouse Gas Reduction Fund for Low Carbon Transportation Investments: <ul style="list-style-type: none"> \$238 million for the Clean Vehicle Rebate Project (CVRP), with a stipulation that \$25 million be used to fund increased rebates for low-income consumers. CVRP promotes clean-vehicle adoption by offering rebates for the purchase or lease of new, eligible zero-emission vehicles,

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			<p>including electric, plug-in hybrid electric and fuel cell vehicles.</p> <ul style="list-style-type: none"> ○ \$182 million for clean trucks, buses and off-road freight equipment, including \$142 million for the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) and \$40 million for advanced technology demonstration and pilot projects in the heavy-duty sector. ○ \$65 million for Clean Transportation Equity Projects to continue efforts to increase access to clean transportation and mobility options benefitting low-income communities and households. These include funding for existing projects such as Clean Cars 4 All, which provides incentives for lower-income drivers to scrap and replace older, high-polluting cars with zero- or near-zero-emission cars, and school bus replacements. Two new projects to increase outreach and support communities in their planning efforts also will receive funding. <ul style="list-style-type: none"> • Actions related to regional planning and expansion of <u>mobility options</u> to reduce vehicle miles traveled are being promoted via SB 375 updated regional GHG targets. <ul style="list-style-type: none"> ○ SB 375 targets and related VMT reduction activities are covered in depth under Directives 3 and 4 in this document. <p>More information on the above items can be found at:</p> <ul style="list-style-type: none"> • Mobile Source Strategy: https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.htm

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			<ul style="list-style-type: none"> • Aerodynamic device approval program: https://ww2.arb.ca.gov/our-work/programs/tractor-trailer-greenhouse-gas-interim-aero-device-approval-program • Trailer certification program: https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/phase-2-ghg • Amendments to the LEV III: https://www.arb.ca.gov/msprog/levprog/leviii/leviii.htm • Clean Mile Standard program: https://ww2.arb.ca.gov/our-work/programs/clean-miles-standard • Heavy-Duty Diesel Vehicle Enforcement: https://www.arb.ca.gov/enf/hdvp/hdvp.htm • FARMER Program: https://ww2.arb.ca.gov/our-work/programs/farmer-program • Clean Vehicle Rebate Project: https://ww3.arb.ca.gov/msprog/lct/cvrp.htm • Enhanced Fleet Modernization: https://arb.ca.gov/msprog/aqip/efmp/efmp.htm • Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project: https://www.californiahvip.org/ • Clean Vehicle Assistance Program: https://cleanvehiclegrants.org/?utm_medium=email&utm_source=govdelivery • Car Sharing and Mobility Options programs: https://www.arb.ca.gov/msprog/lct/carsharing.htm • Innovative Clean Transit program: https://ww2.arb.ca.gov/our-work/programs/innovative-clean-transit • Heavy-Duty Vehicle Inspection and Maintenance Program: https://ww2.arb.ca.gov/our-

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			work/programs/heavy-duty-inspection-and-maintenance-program
6	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to collaborate with other State agencies in implementing the California Sustainable Freight Action Plan.	Ongoing	<p>Work ongoing. 2019 activities are highlighted below.</p> <p>NOTE: Some of this is covered under the Mobile Source Strategy (above) re: incentives.</p> <p>CARB staff continues to work with agency partners and stakeholders to implement a broad program that includes regulations, incentives, and policies designed to support the transformation to a more sustainable freight system and reduce community impacts from freight operations. 2019 sustainable freight activities are highlighted below.</p> <ul style="list-style-type: none"> • CARB funding programs accelerated the transition from older freight equipment and vehicles to cleaner options. Funding to support these activities was provided by the Volkswagen settlement, Proposition 1B, Low Carbon Transportation/Air Quality Improvement, and Carl Moyer funding programs. • CARB staff continued the development of a new freight regulation reporting system to support freight regulatory work for off-road freight equipment and the facilities that the equipment serves. • CARB staff held public workshops to discuss draft regulatory concepts for the new Transport Refrigeration Unit Regulation, and released several documents for public comment. • CARB staff continued to implement the verification procedure for various emission control technologies, including bringing new diesel particulate filters (DPF) to market, and approving final in-use compliance testing for DPF manufacturers for stationary engines.

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			<ul style="list-style-type: none">• In November and December 2019, CARB and South Coast Air Quality Management District staff held public workshops to discuss concepts to reduce emissions from locomotives and railyards. These were the first in a series of meetings on this topic that CARB will host throughout the state in coordination with local air districts.• CARB staff held public workshops to discuss draft regulatory concepts for the At Berth Regulation, and released several documents for public comment.• CARB staff have continued development of amendments to the Commercial Harbor Craft Regulation to achieve further emissions reductions and health benefits to communities surrounding ports and marinas, many of which have high pollution burden.• The Board heard the staff proposal for the Proposed Regulation for the Control Measure for Ocean-Going Vessels At Berth. The Proposed Regulation is designed to achieve further emissions reductions from vessels at berth to reduce adverse health impacts to communities, many of which have high pollution burden, surrounding ports and terminals throughout California.• In December 2019, CARB staff released a Concept Paper for the Freight Handbook that shares CARB staff's preliminary thoughts for the Freight Handbook that will serve as an informational resource for community advocates, local decision makers, and freight facility developers, owners, and operators to address air pollution impacts through "practices" which may apply to the siting, design, construction, and operation of freight facilities.

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			More information on activities to implement the Sustainable Freight Action Plan can be found at: https://ww2.arb.ca.gov/our-work/topics/freight-goods-movement
	Short-Lived Climate Pollutants		
7	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to collaborate with other State agencies to implement the Short-Lived Climate Pollutant Strategy, consistent with Resolution 17-9, beginning no later than January 1, 2018.	Ongoing	<p>In progress. 2019 activities are highlighted below.</p> <p><u>Methane from Dairy and Livestock Operations</u></p> <ul style="list-style-type: none"> CARB staff began work on the dairy and livestock methane reduction analysis required by SB 1383 to be completed by July 1, 2020. The analysis will review the methane reduction progress made by the industry and the progress made in reducing identified technical and market barriers. CARB staff worked with CDFA, CEC, and CPUC to implement Dairy and Livestock Working Group recommendations where feasible. CDFA's Dairy Digester Research and Development Program has awarded funding to 104 dairy digesters projects and one dairy digester demonstration project since 2015. CDFA's Alternative Manure Management Program (AMMP) has awarded funding to 106 projects and one AMMP demonstration project since 2015. CARB staff worked with CPUC, CDFA and CEC in developing data collection efforts for the six selected dairy biomethane pipeline injection pilot projects. <p>More information can be found at:</p> <ul style="list-style-type: none"> Dairy and Livestock Working Group: https://www.arb.ca.gov/cc/dairy/dairy.htm Recommendations to Dairy and Livestock GHG Reduction Working Group:

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			<p>https://arb.ca.gov/cc/dairy/dairy_subgroup_recommendations_to_wg_11-26-18.pdf</p> <ul style="list-style-type: none"> • CDFA Dairy Digester Research and Development Program Information: https://www.cdfa.ca.gov/oefi/ddrdp/ • CDFA Alternative Manure Management Program Information: https://www.cdfa.ca.gov/oefi/AMMP/ • CPUC Dairy Biomethane Pilot Projects: http://www.cpuc.ca.gov/General.aspx?id=6442455827#Dairy_Biomethane_Pilot_Projects <p><u>Methane from Municipal Waste</u></p> <ul style="list-style-type: none"> • As directed by SB 1383, CARB staff continued to assist CalRecycle in the development of their Short-Lived Climate Pollutants (SLCP) Organic Waste Reductions Regulation and rulemaking process. CalRecycle kicked off its formal rulemaking process on January 18, 2019. • CARB staff, in collaboration with CalRecycle and CAPCOA, began addressing challenges and barriers to permitting composting facilities within California through the formation of a working group to address the issues identified in the <i>Composting in California: Addressing Air Quality Permitting and Regulatory Issues for Expanding Infrastructure</i> discussion paper (web link below). <p>More information can be found at:</p> <ul style="list-style-type: none"> • SLCP Organics Waste Reductions Regulation: https://www.calrecycle.ca.gov/Laws/Rulemaking/SLCP/ • <i>Composting in California: Addressing Air Quality Permitting and Regulatory Issues for Expanding Infrastructure</i> Discussion Paper : https://www2.calrecycle.ca.gov/PublicNotices/Documents/9215

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			<p><u>Black Carbon</u></p> <ul style="list-style-type: none"> • State and local efforts continue to improve air quality, resulting in reduced PM from anthropogenic sources, especially from diesel engines. The result is black carbon emissions are about 90% lower than they were in the 1960s. • The SLCP Strategy emphasizes the importance of incentive programs to replace wood burning stoves. <ul style="list-style-type: none"> ○ The implementation phase of the FY 2016-17 appropriation of \$5 million for the Woodsmoke Reduction Program began in June of 2018. Twenty-four air districts, located primarily in rural and mountain regions of northern and central California, received awards ranging from \$50,000 to \$425,000. The amount of funding reflects individual district needs and ability to implement the Woodsmoke Reduction Program. Between June 2018 and December 2019, districts implemented over \$4.3 million in incentives to over 1,400 households for replacing old, uncertified wood burning devices with cleaner burning and more energy efficient home heating alternatives. Over 80 percent of funds implemented through December 2019 benefited Priority Populations, as defined in the California Climate Investments Program. By December 2019, thirteen of the twenty-four participating districts allocated all of their 2016-17 funds. ○ CARB is in the process of awarding \$3 million of the FY 2018-19 appropriation to twenty-five air districts. By January 17, 2019 twelve grant agreements had been executed and the remaining

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			<p>thirteen will be executed by April 1, 2020. Districts are beginning the implementation phase of the FY 2018-19 as soon as their grant is executed. To further reduce black carbon emissions from wood stoves, the list of eligible replacement options was modified. Pellet stoves and heat pumps were added to the list while replacement wood burning devices were limited to those with PM2.5 emissions not exceeding 2.0 grams per hour. Starting on May 15, 2020, the requirement for wood burning devices will be tightened even further by allowing only devices certified by the U.S. EPA as Step 2 compliant.</p> <ul style="list-style-type: none"> • Staff is working on strategies from the AB 617 Statewide Blueprint to be adopted in the 2020 to 2022 timeframe: <ul style="list-style-type: none"> ○ Diesel engine-related measures include amendments to the existing regulations for commercial harbor craft, cargo handling, and drayage trucks at seaports and rail yards; and evaluating idling reduction for rail yard sources and emission reductions for locomotives not preempted under the Clean Air Act. ○ A commercial cooking Suggested Control Measure – a statewide model rule – will be evaluated to reduce PM emissions. CARB mentioned this work in a presentation at California Energy Commission’s AB 3232 workshop in December. As described in the Statewide Blueprint, a phase 1 assessment of available technology options, costs, and barriers is starting in early 2020 to kick-off the measure development process.

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			<ul style="list-style-type: none">• In response to the increased frequency and severity of catastrophic wildfires in the state, the Legislature directed CALFIRE and CARB to significantly increase the pace and scale of prescribed burning on state and federal lands. CARB is working closely with CALFIRE and the air districts on several critical assignments: 1) providing equipment, training and resources to monitor air quality near large prescribed burns, 2) improving data collection and analysis to better inform the approval process for prescribed burning while minimizing public health impacts, and 3) delivering public education and awareness on the benefits of prescribed fire, for reducing catastrophic wildfire and creating sustainable, carbon-balanced forests.• As an immediate near-term action resulting from the January 2019 Bioresources Economy Summit in Berkeley, LCFS staff coordinated with relevant CARB divisions, industry stakeholders, and environmental organizations to explore a forest biomass LCFS pathway as a means of reducing petroleum fuel use and to help with wildfire mitigation efforts. Efforts to date include assessment of data availability, areas of modeling uncertainty, and review of existing frameworks to characterize forestry residues resulting from various management activities. Next steps include a comparative analysis of the impacts and benefits of various types of biomass residues (e.g., those resulting from fuels reduction or forest health activities as compared to commercial logging slash and by-products from the wood products industry) and likely near-term transportation fuel uses. <p>More information can be found at:</p>

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			<ul style="list-style-type: none"> • Woodsmoke Reduction Program: https://www.arb.ca.gov/planning/sip/woodsmoke/reduction_program.htm • Statewide Blueprint: https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-protection-blueprint • California Bioresources Economy Summit: https://ww2.arb.ca.gov/index.php/our-work/programs/california-bioresources-economy-summit <p><u>HFCs</u></p> <ul style="list-style-type: none"> • CARB has been acting to reduce high-GWP climate pollutants since 2009 when it adopted a regulation creating the Refrigerant Management Program to reduce GHGs from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant use, sale, and disposal. • Global action to phasedown HFCs resulted in the Kigali Amendment to the Montreal Protocol. However, the U.S. has not ratified the agreement. In California, CARB staff analysis has determined that a more rapid reduction in HFC use is required in addition to the Kigali Amendment in order to reach the 40% emission reduction target for HFCs by 2030. • In 2018, the Board adopted a regulation, followed by a legislation (SB1013) prohibiting high-GWP HFCs in a wide range of end uses to backstop U.S. EPA rules vacated at the national level. • CARB has proposed additional high-GWP HFC prohibitions including lower GWP limits in new stationary refrigeration and stationary air-conditioning equipment.

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			<p>Multiple stakeholder and technical working group meetings were conducted throughout 2019. This item will go to the Board in July 2020.</p> <ul style="list-style-type: none"> • CARB was awarded one million dollars from the Greenhouse Gas Reduction Fund in 2019-20 budget, to develop a new Fluorinated Gas emissions reduction incentive program, established by SB1013. • Throughout 2019 and ongoing, CARB staff is working closely with other agencies including CEC, CDFA, CPUC, and utilities to ensure integration of low-GWP cooling technologies in their respective grant and energy efficiency incentive programs. • In addition, as the building sector looks at options to reduce fossil natural gas consumption via electrification strategies, CARB staff has been working with CEC and CPUC to ensure electric appliances use low-GWP refrigerants so the GHG emission reduction trajectory is maintained across all affected sectors. <p>More information on CARB's Refrigerant Management Program can be found at: https://ww2.arb.ca.gov/our-work/programs/refrigerant-management-program</p> <p>More information on the HFC Reduction Measures Workshops and Meetings can be found at: https://ww2.arb.ca.gov/our-work/programs/hfc-reduction-measures/meetings-workshops</p>

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	Renewable Energy		
8	BE IT FURTHER RESOLVED that the Board hereby determines that the Final Plan should inform the preliminary 2030 GHG planning target range for the electricity sector, which, in coordination with the California Public Utilities Commission and the California Energy Commission, will be evaluated and revised, as appropriate, as part of the Board's process to establish GHG planning targets for the electricity sector and each load-serving entity for use in Integrated Resource Plans pursuant to SB 350.	Not specified	<p>Complete.</p> <p>Targets were approved by the Board on 7/26/18.</p> <p>More information on SB 350 GHG planning targets for Integrated Resource Planning can be found at: https://www.arb.ca.gov/cc/sb350/sb350.htm</p>
	Energy Efficiency		
9	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to collaborate with CEC and CPUC to evaluate and pursue strategies to increase electrification in the building sector where demonstrated to reduce GHGs and to align CARB's programs to support broader electrification across sectors where demonstrated to reduce GHGs.	Ongoing	<p>Work ongoing. 2019 and recent activities are highlighted below.</p> <ul style="list-style-type: none"> CEC kicked off an interagency working group in October 2018 to discuss fuel substitution in buildings as part of the SB 350 doubling of electricity/natural gas end uses. CARB and CPUC staff participate. Building electrification and AB 3232 (Friedman, Chapter 373, Statutes of 2018) is part of the discussion. <ul style="list-style-type: none"> AB 3232 sets a target to reduce building GHG emissions 40% below 1990 levels by 2030. Efforts to decarbonize buildings will focus on electrification of space and water heating, ensuring use of refrigerants with low GWP, in conjunction with intelligently shifting energy consumption to match renewable energy supply. Reducing building-related GHG emissions will facilitate more robust consideration of fuel

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			<p>substitution in addition to traditional approaches to reducing energy demand.</p> <ul style="list-style-type: none"> Beginning in July 2019, CARB staff also participates in AB 3232 interagency team meetings with CEC and CPUC to develop the overall scope and baseline recommendation for the Building Decarbonization Assessment. In December 2019, CARB staff participated in a CEC workshop to discuss and gather input on the scope of the Building Decarbonization Assessment required by AB 3232. <p>More information on the above activities can be found at:</p> <ul style="list-style-type: none"> CEC 2018 IEPR workshop on Achieving Zero Emission Buildings: https://www.energy.ca.gov/2018_energy policy/documents/#06142018 CEC SB 350 Doubling Energy Efficiency Savings by 2030 report: https://www.energy.ca.gov/sb350/doubling_efficiency_savings/ AB 3232 (Friedman, 2018): https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB3232 CEC 2019 AB 3232 workshop on Building Decarbonization Assessment: https://www.energy.ca.gov/event/workshop/2019-12/commissioner-workshop-building-decarbonization-assessment

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	Natural & Working Lands		
10	BE IT FURTHER RESOLVED that the Board directs the Executive Officer to work with the California Natural Resources Agency (CNRA), California Department of Food and Agriculture (CDFA), and California Environmental Protection Agency (CalEPA) and other agencies to reevaluate the 2030 quantitative goal identified for the natural and working lands sector in the 2017 Climate Change Scoping Plan by no later than September 30, 2018 and determine if the goal should be adjusted in light of ongoing analyses to estimate the GHG mitigation potential of this sector. This reevaluation must be conducted with a public process and include the identification of actions to meet a revised goal. In setting a revised goal for this sector, the Board directs the Executive Officer to consider the relative contribution to GHG emissions and carbon sequestration of each land type, the available options for land management to reduce GHG emissions and increase carbon sequestration, and the relative cost and effectiveness of the available land management options. The Executive Officer will report to the Board on its reconsideration of the goal and any adjustments made to it as part of the annual update on the implementation of the Scoping Plan.	9/30/1/8	<p>Work ongoing. 2019 activity highlights:</p> <ul style="list-style-type: none"> In January 2019, CNRA, CDFA, SGC, CalEPA and CARB released the Draft California 2030 Natural and Working Lands Climate Change Implementation Plan. <ul style="list-style-type: none"> For meeting the state's climate goals (including Carbon Neutrality), the Draft Plan calls for a significant increase in state-supported actions including at least a fivefold increase in the rate of soil conservation practices, doubling the rate of forest management or restoration efforts, at least tripling the rate of reforestation and at least doubling the rate of wetland and seagrass restoration. In May 2019, CARB, hosted a public meeting on lands and carbon neutrality. A panel of academic experts and practitioners discussed how policy, practices, and innovative financing mechanisms can help California's lands contribute toward carbon neutrality by mid-century while supporting healthy and resilient ecosystems. Several breakout discussion groups lead by panel members and CARB staff provided meeting attendees an active opportunity to engage and provide input. <p>More information on the development of the Draft NWL Implementation Plan can be found at: https://arb.ca.gov/cc/natandworkinglands/natandworkinglands.htm</p>
11	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018.	12/30/18 (per SB 859, 2016)	<p>Work complete based on the available data and tools.</p> <p>Additional work is in progress to further refine the inventory as new datasets and tools continue to emerge over time.</p>

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			<ul style="list-style-type: none"> CARB's first edition of the Natural and Working Lands Inventory (NWL Inventory) that covers all land types in the state was released on 1/3/19. A new contract to refine forest soil carbon estimates using California-specific field data and a biogeochemical model was approved in 2019. Staff in CARB, CAL FIRE, and the U.S. Forest Service initiated collaboration to refine forest carbon estimation. <p>More information on the NWL Inventory can be found at: https://www.arb.ca.gov/cc/inventory/sectors/forest/forest.htm</p>
12	BE IT FURTHER RESOLVED that the Board directs the Executive Officer to work with the CNRA, CDFA, CalEPA and other agencies to complete the Natural and Working Lands (NWL) Climate Change Implementation Plan no later than November 30, 2018.	11/30/18	<p>Complete.</p> <p>Draft Final Plan released on 1/3/19, along with the release of CARB's Natural and Working Lands Inventory (NWL Inventory).</p> <p>The Draft Final Plan can be found at: https://www.arb.ca.gov/cc/natandworkinglands/draft-nwl-ip-1.7.19.pdf</p>
	Public Health		
13	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to continue to collaborate with OEHHA as they develop updated reports on the benefits and impacts of the greenhouse gas-emissions limits adopted by CARB within disadvantaged communities.	Update due every 3 years	<p>Initial milestone complete. OEHHA is lead on regular updates.</p> <ul style="list-style-type: none"> Last report released Feb 2017, <i>Tracking and Evaluation of Benefits and Impacts of Greenhouse Gas Limits in Disadvantaged Communities: Initial Report</i> by OEHHA, https://oehha.ca.gov/media/downloads/environmental-justice/report/oehhaab32report020217.pdf The report was prepared in response to a directive issued by Governor Brown for an analysis of the state's response to climate change under AB 32 – specifically

	Directive	Due Date in Resolution	Status
			<p>calling on OEHHA to prepare a report analyzing the benefits and impacts of the GHG emissions limits adopted by CARB within DACs.</p> <ul style="list-style-type: none"> • OEHHA staff is currently working on the next report. <p>More information on OEHHA's analysis of the benefits and impacts of GHG limits on disadvantaged communities can be found at: https://oehha.ca.gov/environmental-justice/report/ab32-benefits</p>
14	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to work with CDPH, OEHHA, and other state agencies to establish a timeline and an action plan to better integrate health analysis broadly into the design and implementation of the State's climate change programs with the goal of maximizing health benefits.	Not specified	<p>Work ongoing.</p> <p>CARB staff is developing a plan for health analysis of our Climate Change programs. Highlights of work to date and anticipated schedule:</p> <ul style="list-style-type: none"> • Coordinated with OEHHA and CDPH to develop the initial concepts in Spring 2018 • Held a public workshop jointly with OEHHA and CDPH for input in July 2018 • In the process of inviting academics and other experts to participate as advisors (includes experts in health and EJ) • Working with CDPH and OEHHA on initial draft framework for advisory committee to review • Advisory group meetings in Spring/Summer 2020 • Second public workshop in Fall 2020 • Integration of comments and refinement of framework in 2021 • Dr. Balmes is advising CARB staff throughout the process

	Directive	Due Date in Resolution	Status
			More information on the Framework for Incorporating Health Analysis into the Climate Change Scoping Plan can be found at: https://ww2.arb.ca.gov/resources/documents/july-workshop-health-analysis-climate-change

	Directive	Due Date in Resolution	Status
	Additional GHG Reductions		
15	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to continue to evaluate and explore opportunities to achieve significant cuts in greenhouse gas emissions from all sources, including supply-side opportunities to reduce production of energy sources, that contribute to climate change, air pollution, and other environmental and health hazards. The Executive Officer will update the Board by December 31, 2018 and annually thereafter, and pursue measures that are cost-effective and technologically feasible.	Update Board annually on progress	<p>Complete.</p> <ul style="list-style-type: none"> Pursuant to the California Budget Act of 2019 (AB 74), CalEPA began work on two studies examining strategies to significantly reduce vehicle emissions and to decrease the demand and supply of fossil fuels, in the context of reaching statewide carbon neutrality by mid-century. On 1/23/19, as part of the carbon neutrality discussion, CARB kicked off a process that includes workshops over the next 18 months on how to further decarbonize each sector. CARB held workshops/webinars focusing on the following topics in 2019: <ul style="list-style-type: none"> Carbon neutrality in the California context Natural and working lands Role of the Industrial Sector Economy-wide scenarios for deep decarbonization Social cost of carbon and affordability Role of carbon capture, sequestration and options for utilization Second workshop on approaches for the industrial sector <p>More information can be found here:</p> <ul style="list-style-type: none"> CalEPA carbon neutrality studies: https://calepa.ca.gov/climate/carbon-neutrality-studies/ CARB carbon neutrality workshop series: https://ww3.arb.ca.gov/cc/scopingplan/meetings/meetings.htm

	Directive	Due Date in Resolution	Status
	Emissions Data		
16	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to continue to work with stakeholders to develop and make available additional air emissions data reports in the emissions inventory mapping tool to allow for the evaluation of air emissions trends by sector by census tracts and to make the first reports available by September, 2018, and annually thereafter.	September 2018	<p>Complete.</p> <ul style="list-style-type: none"> To address AB 197, CARB released a publicly available Pollution Mapping Tool in 2017 that allows users to search for individual facility data by name, industrial sector, year, type of facility and pollutant type. In 2018, CARB updated the Mapping Tool to include GHG, criteria, and toxic pollutant emission data for every facility subject to mandatory reporting of GHG emissions. The Mapping Tool is available online at https://www.arb.ca.gov/ei/tools/pollution_map/pollution_map.htm On 12/13/18, the Board adopted the Regulation for the Reporting of Criteria Air Pollutants and Toxic Air Contaminants that establish a uniform statewide system of annual reporting of criteria pollutants and toxic air contaminants. This data will be reflected in the online tool. <p>More information on the criteria and toxics emissions reporting regulation can be found at: https://ww2.arb.ca.gov/our-work/programs/criteria-and-toxics-reporting</p>
17	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to identify and post on the Board's website the GHG, criteria pollutants, air toxics, and programmatic metrics for transportation programs.	Not specified	<p>Work ongoing.</p> <ul style="list-style-type: none"> CARB staff is working toward incorporating transportation emissions data into the Pollution Mapping Tool. With respect to transportation-related metrics, the SB 150 report released in November 2018 includes data-

	Directive	Due Date in Resolution	Status
			<p>supported metrics for strategies utilized to meet the SB 375 targets.</p> <p>More information on the above topics can be found at:</p> <ul style="list-style-type: none"> • Pollution Mapping Tool: https://www.arb.ca.gov/ei/tools/pollution_map/ • SB 150 report: https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf
	Incentives		
18	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to identify opportunities to expand funding and financing mechanisms to support GHG reductions across all sectors.	Ongoing	<p>Work ongoing under the California Climate Investments Program to use the Cap-and-Trade auction proceeds to support a wide range of programs and projects that reduce GHGs and deliver other economic, environmental, and public health benefits.</p> <p>More information on the California Climate Investments Program can be found at: https://ww2.arb.ca.gov/our-work/programs/california-climate-investments</p> <p>The 2018 and 2019 Annual Reports to the Legislature on the status of funded programs and projects funded can be found at: http://www.caclimateinvestments.ca.gov/annual-report/</p>
	Enforcement		
19	BE IT FURTHER RESOLVED that the Board hereby directs the Executive Officer to design and integrate robust enforcement mechanisms as individual Scoping Plan measures are drafted into regulations and plans.	Ongoing	<p>Work ongoing. CARB staff strives to include strong enforcement provisions in all of its regulations. CARB's Enforcement Division and Legal Offices are consulted during the regulatory development process.</p>

	Directive	Due Date in Resolution	Status
			<p>More information on CARB's Enforcement programs can be found at: https://ww2.arb.ca.gov/our-work/topics/enforcement</p> <p>CARB's Annual Enforcement Reports can be found at: https://www.arb.ca.gov/enf/reports/reports.htm</p>