

# APPENDIX F. STATEWIDE STRATEGIES, TOOLS, AND RESOURCES

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## I. EMISSIONS REDUCTION STRATEGIES

Assembly Bill 617<sup>1</sup> requires new, community-focused actions that go beyond existing State and regional programs to reduce exposure to air pollution in communities affected by a high cumulative exposure. The actions identified in this appendix will reduce the air pollution burden in heavily impacted communities throughout the State, as well as provide emissions reductions to support communities selected for preparation of community emissions reduction programs. California Air Resources Board (CARB) staff and air districts will continue developing regulatory and incentive actions through separate public processes. Subsequent implementation will be conditional on the successful completion of applicable public processes, necessary financing approvals, technical feasibility analyses, economic competitiveness, safety, and environmental reviews.

### COMMERCIAL HARBOR CRAFT AMENDMENTS

*Overview:* This strategy will create more stringent engine requirements for freight and passenger vessels. The strategy will also consider prioritizing implementation in or near communities with high cumulative exposure burdens.

*Implementing Agency:* CARB

*Type of Action:* Regulatory

*Timing:*

Expected CARB Governing Board Meeting: 2020

Implementation: 2023+

*Proposed Actions:* This strategy will amend the existing Commercial Harbor Craft regulation to include more stringent in-use and new vessel requirements for both freight-related and passenger vessels. The amendments will take into consideration the feasibility of Tier 4 engine technology in Commercial Harbor Craft applications, the performance of advanced retrofit emission control devices, and the availability of zero and near-zero emission technologies for the sector.

### CARGO HANDLING EQUIPMENT AMENDMENT

*Overview:* This strategy will transition cargo handling equipment, often used at ports and intermodal rail yards to zero emission technology standards.

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<sup>1</sup> Assembly Bill 617, Garcia, C., Chapter 136, Statutes of 2017, modified the California Health and Safety Code, amending § 40920.6, § 42400, and § 42402, and adding § 39607.1, § 40920.8, § 42411, § 42705.5, and § 44391.2. See Appendix H for complete bill language.

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*Implementing Agency:* CARB

*Type of Action:* Regulatory

*Timing:*

Expected CARB Governing Board Meeting: 2022

Implementation: 2026

*Proposed Actions:* This strategy will amend the existing Cargo Handling Equipment regulation. This regulation applies to mobile equipment such as yard trucks, rubber-tired gantry cranes, container handlers, and forklifts that operate at ports or intermodal rail yards. The strategy will propose an implementation schedule for new equipment and infrastructure requirements, with a focus on the transition to zero emission operation, and may include provisions for efficiency improvements.

### **DRAYAGE TRUCKS AT SEAPORTS AND RAIL YARDS AMENDMENT**

*Overview:* This strategy will serve to lower emissions at seaports and railyards by transitioning drayage trucks to zero emission technology.

*Implementing Agency:* CARB

*Type of Action:* Regulatory

*Timing:*

Expected CARB Governing Board Meeting: 2022

Implementation: 2026-2028+

*Proposed Actions:* This strategy will amend the existing Drayage Truck Regulation, or adopt a new regulation, to direct a transition to zero emission operations, beginning 2026-2028. The new regulation will establish a schedule for phasing in the use of zero emission technology. Options to be considered include, but are not limited to, requirements for full zero emission technology (e.g., a battery or fuel-cell electric short haul truck) and zero emission mile capability (e.g., a natural gas-electric hybrid that could drive interstate but switch to zero emission electric mode while operating near impacted communities). CARB staff will also consider the opportunities to prioritize the earliest implementation in the communities with high cumulative exposure burdens.

## EVALUATION AND POTENTIAL DEVELOPMENT OF REGULATION TO REDUCE IDLING FOR ALL RAIL YARD SOURCES

*Overview:* The goal of this strategy is to reduce emissions from idling freight and passenger locomotives. Implementation of this strategy will target communities with high cumulative exposure burdens.

*Implementing Agency:* CARB

*Type of Action:* Regulatory

*Timing:*

Expected CARB Governing Board Meeting: 2020

Implementation: 2023+

*Proposed Actions:* This strategy will require operators to limit idling of all combustion-powered vehicles and mobile equipment operating at rail yards and other locations, as well as reducing emissions from stationary locomotive operations (e.g., maintenance, testing). The scope will include both freight and passenger rail activities, in and around intermodal, classification, and maintenance rail yards, at seaports, at warehouses, on sidings, at passenger rail stations, and at maintenance and service locations. Locomotives with zero emission capability could be exempt, if operators show that zero emission operation is maximized.

## EVALUATION AND POTENTIAL DEVELOPMENT OF REGULATION TO REDUCE EMISSIONS FROM LOCOMOTIVES NOT PREEMPTED UNDER THE CLEAN AIR ACT

*Overview:* The goal of this strategy is to reduce emissions from the older, dirtier locomotives currently operating in California. CARB staff estimates there are 200-300 of these units in the State.

*Implementing Agency:* CARB

*Type of Action:* Regulatory

*Timing:*

Expected CARB Governing Board Meeting: 2022

Implementation: 2025+

*Proposed Actions:* This strategy will require the retrofit, repower, remanufacture, or replacement of freight and passenger locomotives not preempted under the Clean Air

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Act, beginning in 2025. Locomotives in operation beyond their useful life are typically operated by Class 3 freight railroads, industrial facilities, and passenger railroads, as well as a smaller number run by Class I railroads that can readily transfer those units to other states. Although the activity levels on these locomotives are lower than interstate line-haul and passenger locomotives, locomotives past their useful lives are the oldest and highest emitting (per unit of work performed) in the State. Prioritizing the earliest implementation in communities with high cumulative exposure burdens will be considered as part of this strategy.

As an alternative, CARB could also consider a voluntary agreement with the major railroads to secure greater community health benefits by reducing emissions from interstate locomotives (the dominant source of emissions and community health risk at rail yards), if that agreement was developed in a transparent public process and included clear enforcement provisions.

### CHROME PLATING CONTROL MEASURE AMENDMENTS

*Overview:* This strategy will amend the current regulation on chrome plating to further reduce toxic air contaminants at chrome plating facilities. In December 2006, CARB approved the proposed amendments to the Hexavalent Chromium Airborne Toxic Control Measure for Chrome Plating and Chromic Acid Anodizing Operations (Chrome Plating ATCM). The Chrome Plating ATCM requires the use of control technologies and operational practices that reduce hexavalent chromium emissions to their lowest levels. Facilities are subject to hexavalent chromium emission limits based on throughput and distance to sensitive receptors. Certain facilities are required to install add-on air pollution control devices and other facilities can meet the emissions limit through the use of chemical fume suppressants

*Implementing Agency:* CARB

*Type of Action:* Regulatory

*Timing:*

Expected CARB Governing Board Meeting: TBD

Implementation: TBD

*Proposed Actions:* CARB staff will amend the existing chrome plating regulation to incorporate provisions to align with the federal chrome plating regulation and consider additional measures to further reduce emissions from chrome plating operations. The amendments will include the prohibition of perfluorooctane sulfonate containing fume suppressants (as required by federal regulation), changes to the surface tension requirements, and other actions to reduce uncontrolled emissions. CARB staff will also

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evaluate less toxic alternatives to hexavalent chromium and options to phase out perfluorinated chemicals used in fume suppressants.

### COMPOSITE WOOD PRODUCTS CONTROL MEASURE AMENDMENTS

*Overview:* This strategy will amend the CARB Composite Wood Products Airborne Toxic Control Measure (ATCM), approved in 2007. The Composite Wood Products ATCM established formaldehyde emission standards for three types of composite wood products (hardwood plywood, particleboard, and medium density fiberboard) and requires that all consumer goods that contain such materials (e.g., flooring, cabinets, furniture) destined for sale in California must comply with the Composite Wood Products ATCM.

*Implementing Agency:* CARB

*Type of Action:* Regulatory

*Timing:*

Expected CARB Governing Board Meeting: TBD

Implementation: TBD

*Proposed Actions:* CARB staff will amend the existing Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products, to obtain additional formaldehyde emission reductions, clarify requirements and applicability, improve enforceability, and align with the U.S. Environmental Protection Agency formaldehyde regulation, where appropriate. (Note: CARB cannot enforce the U.S. Environmental Protection Agency formaldehyde in composite wood regulation, because it was adopted under the Toxic Substances Control Act).

### CATALYTIC CONVERTER THEFT REDUCTION

*Overview:* This strategy consists of a regulation and/or compliance assistance to deter thefts of vehicle catalytic converters in communities selected for the Community Air Protection Program. This strategy will make it easier for the recycler to identify stolen catalytic converters.

*Implementing Agency:* CARB

*Type of Action:* Regulatory and/or Compliance Assistance

*Timing:*

Expected CARB Governing Board Meeting: TBD

Implementation: 2020

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*Proposed Actions:* This strategy will include a regulation and/or compliance assistance to reduce theft of vehicle catalytic converters in communities selected through the community identification and selection process. A regulation will require manufacturers to stamp catalytic converters with a vehicle identification number. Compliance assistance would offer free vehicle identification number stamping on converters in communities selected through the community assessment process. This strategy will make it easier for the recycler to identify stolen catalytic converters.

### HEAVY-DUTY ON-ROAD AND OFF-ROAD ENGINE IN-USE TESTING

*Overview:* This strategy will involve real world screening of heavy-duty trucks and off-road engines operating in selected communities to target heavy-duty in-use compliance testing.

*Implementing Agency:* CARB

*Type of Action:* Enforcement and In-Use Testing

*Timing:*

Begin Development: 2019

Implementation: 2019+

*Proposed Actions:* This strategy will involve real world screening of heavy-duty trucks and off-road engines operating in selected communities to target heavy-duty in-use compliance testing. Engines that are found to be emitting above expected levels will be brought into CARB's in-use compliance program. Engines found to be in noncompliance will be recalled and emission mitigation projects could include, deployment of zero emission technology in selected environmental justice communities.

### COMMERCIAL COOKING SUGGESTED CONTROL MEASURE

*Overview:* This strategy consists of a two-phase process to evaluate California's current emission reduction requirements for commercial cooking operations that prepare food for human consumption, and if necessary, make improvements to achieve additional reductions in particulate matter 10 microns or less in diameter (PM10), particulate matter 2.5 microns or less in diameter (PM2.5) and volatile organic compound emissions that contribute to ozone formation.

*Implementing Agency:* CARB

*Type of Action:* Suggested Control Measure



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### *Timing:*

Begin Development: 2020

Implementation: TBD

*Proposed Actions:* In the first phase, CARB will conduct a technical assessment to evaluate the stringency of existing air district commercial cooking rules and assess the commercial availability, effectiveness, and cost of more advanced emission control devices or methods, to determine the potential for additional particulate matter (PM10 and PM2.5) and volatile organic compound emission reductions. In the second phase, CARB will use the results of the technical assessment to develop a path forward for additional emission reductions from commercial cooking operations that could include adoption of a Suggested Control Measure, or a combination of up-front incentives to install advanced emission controls with a recommended regulatory backstop. A Suggested Control Measure is a model rule that can be adopted by the air districts that need to reduce particulate matter (PM10 and PM2.5) or volatile organic compound emissions to improve air quality. Co-pollutant reductions in black carbon, a short-lived climate pollutant, could also occur as a co-benefit.

### **INCENTIVE FUNDING TO SUPPORT IMMEDIATE EMISSIONS REDUCTIONS**

*Overview:* Acknowledging the need for funding to support successful implementation of the Community Air Protection Program, the Legislature appropriated funding in the fiscal year 2017-2018 State budget for both CARB and the air districts, to support the initial implementation of the Program. The Legislature also recognized the importance of immediately reducing emissions in highly burdened communities, and appropriated a total of \$250 million of Cap-and-Trade auction proceeds in the fiscal year 2017-2018 State budget, to fund emissions reduction projects that provide benefits to communities with high cumulative exposure burdens. Beyond this initial appropriation, ongoing resources will be critical for the success of the Program.

*Implementing Agency:* CARB

*Type of Action:* Incentive Funding

*Timing:* 2018

*Proposed Actions:* To deliver on the goals of the Program, \$250 million in the fiscal year 2017-2018 State budget has been designated for incentive projects to support early action to reduce emissions through the deployment of cleaner mobile source technologies in impacted communities. As directed by the Legislature, these funds are being administered through the Carl Moyer Memorial Air Quality Standards Attainment Program, except that at its discretion, an air district may allocate up to 40 percent of the funds it receives to incentivize clean trucks. These incentives are to be distributed in

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accordance with the funding amounts and truck evaluation requirements in the *Proposition 1B Goods Movement Emission Reduction Program Guidelines for Implementation*.<sup>2</sup>

The funding allocated to specific air districts include:

- 43 percent to South Coast Air Quality Management District.
- 32 percent to San Joaquin Valley Air Pollution District.
- 20 percent to Bay Area Air Quality Management District.
- 5 percent to CARB for distribution to other air districts.

The CARB Governing Board also approved a *Community Air Protection Program Funds Supplement to the Carl Moyer Memorial Air Quality Standards Attainment Program 2017 Guidelines*<sup>3</sup> in April 2018 to facilitate funding the types of projects that are most beneficial to communities. This includes: increased grant amounts for replacing older vehicles and equipment; broader project eligibility; and an added focus on projects that address community-level air pollution (e.g., school buses, delivery trucks, improved infrastructure for electric vehicles).

CARB staff is also working with air districts to ensure funds target the types of projects that will reduce emissions and exposure in communities with high cumulative exposure burdens, per the requirements of Assembly Bill (AB) 617.<sup>4</sup> Air districts must also work directly with communities in identifying the types of investments that best support community needs, with at least 70 percent of the funds invested in projects to benefit disadvantaged communities.<sup>5</sup> Air districts are conducting public outreach to local residents and community groups to inform investment decisions, and select projects in communities with high cumulative exposure burdens. The funds also focus on vehicles and/or equipment that spend a substantial amount of time in those communities, with a priority on zero emission technologies. Air districts are posting information on their webpages regarding their proposed approaches and public engagement process for funding projects.

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<sup>2</sup> California Air Resources Board, *Proposition 1B Goods Movement Emission Reduction Program Guidelines for Implementation*, June 2015, available at: [www.arb.ca.gov/bonds/gmbond/gmbond.htm](http://www.arb.ca.gov/bonds/gmbond/gmbond.htm).

<sup>3</sup> California Air Resources Board, *Community Air Protection Program Funds Supplement to the Carl Moyer Memorial Air Quality Standards Attainment Program 2017 Guidelines*, April 27, 2018, available at: [www.arb.ca.gov/msprog/moyer/moyer.htm](http://www.arb.ca.gov/msprog/moyer/moyer.htm).

<sup>4</sup> Assembly Bill 617, Garcia, C., Chapter 136, Statutes of 2017, modified the California Health and Safety Code, amending § 40920.6, § 42400, and § 42402, and adding § 39607.1, § 40920.8, § 42411, § 42705.5, and § 44391.2. See Appendix H for complete bill language. Requirements for the Greenhouse Gas Reduction Fund, the source of the appropriations, also apply. More information is available at: [www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm](http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm).

<sup>5</sup> Additional information on investment requirements are provided in the California Air Resources Board, *Board Resolution 18-15*, April 27, 2018, available at: <https://ww2.arb.ca.gov/board-resolutions>.

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The fiscal year 2018-2019 State budget includes an additional \$245 million of Cap-and-Trade auction proceeds for continued support of incentive programs to reduce emissions within impacted communities. These funds are to be allocated to projects consistent with priorities identified by the affected community in a transparent, meaningful, public process.<sup>6</sup> Similar to the fiscal year 2017-2018 funding, this funding focuses on purchasing cleaner vehicles and equipment, prioritizing zero emission equipment, and the ability to purchase infrastructure to support zero emission vehicles, with a priority for medium-duty and heavy-duty vehicles. This funding can also be used to reduce emissions from stationary sources, including zero emission technologies, along with programs that are consistent with actions identified in a community emissions reduction program. Distribution of this funding will include a separate public process.<sup>7</sup>

In addition to this new incentive funding, CARB will work with the air districts to leverage other incentive programs such as the Low Carbon Transportation Investments, Volkswagen Environmental Mitigation Trust, and air district funding programs as community emissions reductions programs are developed and implemented. This will also include increasing outreach activities to community members and small business owners in the community to help deliver funding to those who need it the most.

## II. SUPPORTING TOOLS AND RESOURCES

### DEVELOP AND MAINTAIN THE ONLINE RESOURCE CENTER

*Overview:* The online Resource Center is designed to complement requirements for community air monitoring and community emissions reduction programs.<sup>8</sup> CARB consulted with air districts and the Office of Environmental Health Hazard Assessment, and compiled a list of existing documents, tools, and information in an effort to support effective implementation of the Community Air Protection Program and made them readily available in an online Resource Center. Establishing this online Resource Center allows the Community Air Protection Program to evolve by adding new features and materials as they become available over time, outside of the statutorily required CARB Governing Board-approved Program revisions.

*Implementing Agency:* CARB

*Type of Action:* Informational

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<sup>6</sup> Senate Bill 856, Budget Act of 2018, Chapter 30. Statutes of 2018.

<sup>7</sup> Additional information on this public process is available at: <https://www.arb.ca.gov/msprog/cap/capfunds.htm>.

<sup>8</sup> More information on the basic structure and the types of documents, tools, and information that is available in the online Resource Center is available at: <https://ww2.arb.ca.gov/our-work/programs/Community-Air-Protection-Program>.

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### *Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* CARB will consult with air districts and the Office of Environmental Health Hazard Assessment to maintain an online Resource Center, serving as a centralized repository of strategies for use by community members, air districts, and the public. CARB will compile a list of existing documents, tools, and information to support effective implementation of the Community Air Protection Program. The online Resource Center will continuously be updated as new documents, materials and data become available. Below you will find a summary of what will be included:

- *Community identification and selection toolbox* – This toolbox will contain access to: (1) datasets to support community identification and (2) source attribution tools for air district and stakeholder use.
- *Community air monitoring toolbox* – The community air monitoring toolbox, found in the online Resource Center, will ensure that communities and air districts have easy access to: (1) air quality data and visualization tools; (2) air monitoring technology evaluations and best practices; (3) links to existing air monitoring projects; and (4) the community air monitoring data portal.

Evaluation protocols and field and laboratory test reports regarding the performance of air sensors for accuracy, precision, and durability will be available. In addition, CARB will post technical resources such as best management practices, guidance, and sensor evaluation reports. The community air monitoring data portal will link to CARB’s Emissions Inventory, the Pollution Mapping Tool, and CARB guidance for air districts on community inventories.

- *Emissions inventory toolbox* – This resource will contain: (1) CARB’s Emissions Inventory; (2) the Pollution Mapping Tool; and (3) CARB guidance for air districts on community inventories.<sup>9</sup>
- *Emissions reduction strategies* – This resource will contain: (1) a Technology Clearinghouse outlining current rules, regulations, and associated emissions control technologies;<sup>10</sup> (2) incentive funding information; (3) links to transportation, land use, and mitigation best practices; and (4) a compilation of existing strategies to reduce exposure impacts from pesticides and fertilizers.

Cross-references to established major CARB programs will be accessed from here as well. This section will also provide a preliminary menu of options that community members and air districts can use while developing community emissions reduction programs.

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<sup>9</sup> More information on the development of community inventories is available in Appendix C of this document.

<sup>10</sup> More information on the Technical Clearinghouse is available in the “Expand and Maintain the Technology Clearinghouse” section of this appendix.

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- *Outreach and training* – This section of the online Resource Center will house best practices information and tools for effective community engagement, public participation, and enforcement.

### EXPAND AND MAINTAIN THE TECHNOLOGY CLEARINGHOUSE

*Overview:* AB 617 requires CARB to establish and maintain a statewide clearinghouse of criteria air pollutant and toxic air contaminant emissions performance levels for stationary sources,<sup>11</sup> such as refineries and power plants. This information is currently available at the air district level, and the statewide clearinghouse will consolidate and expand this information.

*Implementing Agency:* CARB

*Type of Action:* Informational

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* In addition to housing emission control requirements for stationary sources, the new Technology Clearinghouse will include information on the best rules and measures governing emission limits for mobile and area-wide sources.<sup>12</sup> The Technology Clearinghouse will also contain forward-looking information on next generation technologies to support continued advancements, and to highlight opportunities to retrofit or replace emissions units with ultra-low or zero emissions technologies. The Technology Clearinghouse will provide increased transparency and access to community-level information by linking to CARB’s Emissions Inventory and Pollution Mapping Tool. Once completed, the Technology Clearinghouse will be a consistent resource for use in selecting the best approaches for controlling emissions within community emissions reduction programs.

### BACKGROUND

Under State law, regional air districts have the authority to issue permits that limit emissions from stationary sources. Permit programs limit emissions from facilities by setting a threshold of allowable emissions that a facility must not exceed in order to continue to operate. Prior to issuing a permit, air districts confirm that the facility and all emitting equipment are in compliance with applicable rules and regulations. Permitting requirements vary by location based on the facility and equipment type, federal, State,

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<sup>11</sup> California Health and Safety Code § 40920.8(a).

<sup>12</sup> Area-wide sources are sources that the inventory bases the emission on aggregated sources like gas stations or fireplaces, as well as sources that emit emissions over a large area like wind-blown dust, consumer products, or tractor tilling emissions.

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and local rules that apply to the specific equipment being permitted, the allowable amount of emissions, consideration of State and local air toxics programs, and each air district's national and State ambient air quality standards attainment<sup>13</sup> designation status.

Local rules that limit emissions from stationary and area-wide sources are often referred to as prohibitory rules. In nonattainment areas, these prohibitory rules require more stringent control of stationary sources, or best available retrofit control technology (BARCT). BARCT determinations are adopted periodically by air districts to reduce emissions from all stationary sources of a particular source type as identified in the district's attainment plan. These requirements are set considering feasibility, cost-effectiveness,<sup>14</sup> and the nature and severity of the air quality challenge.

New facilities or facilities modifying equipment that emit air pollutants over specific air district emissions thresholds, are required to install best available control technology (BACT), that are often more stringent than emissions limits and technology requirements contained in district prohibitory rules. Air districts determine these BACT standards, for each class and category of source based on the cleanest technology available that does not substantially alter the purpose or basic design of the source (i.e., redefine the source). At the time a permit application is submitted, AB 617 requires air districts to use CARB's Technology Clearinghouse when updating their BACT determinations for stationary sources.<sup>15</sup>

New or modified sources that emit toxic air contaminants above specific thresholds must also install best available control technology for toxics (T-BACT) in addition to BACT requirements. At a minimum, T-BACT must include the most stringent emissions control for a source type or category, including limits established in Airborne Toxic Control Measures (ATCM) developed by CARB.

### APPROACH AND SCHEDULE

CARB staff plan to develop the Technology Clearinghouse in two phases. In Phase Ia, CARB has developed an Interim Technology Clearinghouse to meet AB 617's requirement for a statewide clearinghouse that identifies existing BACT, BARCT, and T-BACT for stationary sources.

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<sup>13</sup> An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment. Attainment of an air quality standard means the air quality of a region is as clean as or cleaner than the national and State ambient air quality standards.

<sup>14</sup> Feasibility and cost-effectiveness describe the ability to apply an emissions control and an associated emissions limit based on technical feasibility while considering the overall cost to achieve the emissions limit. Cost-effectiveness thresholds are established by each air district on a pollutant-by-pollutant basis, on a dollars-per-ton of emissions reduced.

<sup>15</sup> California Health and Safety Code § 40920.8(b).



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During Phase Ib, staff will expand the Interim Technology Clearinghouse to include information on mobile and area-wide source rules and ATCMs. The Interim Technology Clearinghouse will provide the public with a tool that can be used to identify, assess, or compare the best controls or measures for deployment in communities across the State.

Phase II of the Technology Clearinghouse will enhance functionality and allow users to get a sense of technologies that go beyond present-day BACT, BARCT, and T-BACT limits but may show promise in the future or due to high, present-day cost might be candidates for incentive programs. For example, identifying next generation technologies such as fuel cells, solar, and battery backup systems in the Technology Clearinghouse, will allow users to identify prospective long-term technology solutions. The market barriers<sup>16</sup> for each next generation technology will also be provided to help identify opportunities for incentive programs, and provide the public with increased transparency on technology gaps and barriers associated with deployment of advanced technologies. This information will be available in deliberately designed, clearly-labeled separate modules of the Technology Clearinghouse. Such forward-looking features will allow users to compare the most stringent technologies achieved in practice for each equipment or vehicle type today, with “technologically feasible,” or next generation technologies.<sup>17</sup> Once completed, Phase II will promote the identification of technology gaps and facilitate technological advancement.

Phase II will also expand on the transparency provided by the Interim Technology Clearinghouse developed under Phase I. In June 2018, staff began working with a contractor to expand the Technology Clearinghouse functionality and features to suit the needs of all user groups. One of the contract requirements is to link the Technology Clearinghouse to CARB’s Emissions Inventory and Pollution Mapping Tool. This enhancement will allow community members to determine the emissions at facilities nearby and the associated controls installed. As this tool is developed, there will be stakeholder involvement opportunities to ensure the end product is user-friendly, clear, and useful.

### DEVELOP AND MAINTAIN AN ANNUAL EMISSIONS REPORTING SYSTEM

*Overview:* Emissions inventory data are the foundation of multiple elements of the Community Air Protection Program. A robust system for the collection and retrieval of emissions inventory data provides a sound technical basis for understanding emissions source contributions, assessing the impacts of emissions control and process changes,

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<sup>16</sup> Market barriers include, but are not limited to, high present-day costs, technical uncertainty, or alterations that redefine the source.

<sup>17</sup> Emissions controls are referred to as “technologically feasible” when they are believed to be capable of reducing emissions, but are not yet commercially available or proven to be cost effective for a certain class and category of emissions source.

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improving transparency and accessibility of emissions data to communities, and tracking the implementation of community emissions reduction programs. New statutory requirements<sup>18</sup> will complement efforts already underway as part of Assembly Bill 197<sup>19</sup> and will include: annual reporting of criteria air pollutant and toxic air contaminant emissions for specified stationary sources, development of a statewide uniform emissions reporting system (e.g., methods, reporting), and the option to require that sources provide quality assurance for the accuracy of annual emissions reports.

*Implementing Agency:* CARB

*Type of Action:* Regulation

*Timing:*

Begin development: 2018

Implementation: 2018+

*Proposed Actions:* CARB staff are proposing a phased approach for the implementation of the Program's emissions reporting requirements. The first phase will help inform the community identification process and the development of community emissions reduction programs in the near-term, while the second phase will develop a comprehensive emissions reporting system over the longer-term. Currently, the frequency with which air districts report criteria air pollutant and toxic air contaminant emissions data to CARB from facilities within their boundaries varies across the air districts. Many large air districts collect criteria air pollutant and toxic air contaminant emissions data annually, while smaller air districts may only report emissions once every three or four years, depending on the size of a facility. Additionally, air districts may apply different criteria for prioritizing and categorizing facilities based on emissions, and they may apply different methods for the selection and quantification of specific criteria air pollutants and toxic air contaminants. Implementing the program's reporting requirements will improve the consistency, accuracy, and transparency of the emissions data. CARB staff are collaborating with air district personnel to determine which facilities must report annual emissions data under the new statutory applicability criteria,<sup>20</sup> what specific substances must be reported, what methods will be used to quantify the emissions of the those substances, and a reporting structure to facilitate annual emissions reporting.

The first phase of implementation will include the development of a regulation establishing the criteria to determine which facilities would report emissions data under the Program. The regulation will also establish an annual reporting requirement for

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<sup>18</sup> California Health and Safety Code § 39607.1.

<sup>19</sup> Assembly Bill 197, Garcia, E, Chapter 250, Statutes of 2016, amended California Health and Safety Code § 39510 and § 39607 and added § 38506, § 38531, § 38562.5, and § 38562.7.

<sup>20</sup> California Health and Safety Code § 39607.1.



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emissions of criteria air pollutants, criteria air pollutant precursors, and toxic air contaminants from those facilities.

To determine which facilities are subject to annual reporting requirements, CARB will work with air districts to apply the statutory applicability criteria. Sources subject to reporting include facilities required to report greenhouse gas emissions,<sup>21</sup> facilities authorized by a permit issued by an air district to emit 250 or more tons per year of any nonattainment pollutant or its precursors, and any facility that receives an elevated prioritization score.<sup>22</sup> A facility that meets any of the three criteria would have to participate in the reporting program. In addition, CARB staff are proposing that all permitted sources report annual emissions data if they are located within the boundary of a community selected by the CARB Governing Board for a community emissions reduction program or community air monitoring, or both.<sup>23</sup>

For the longer-term, or second phase of the effort, CARB will continue to work with the air districts to collaboratively develop a more consistent and transparent approach for quantifying emissions. The second phase will include development and deployment of an improved database for reporting, storing, and retrieving emissions data, and will integrate criteria air pollutant and toxic air contaminant emissions data, with CARB's greenhouse gas inventory data and the CARB mapping tool.

CARB staff are already working with the air districts to develop the details of the statewide emissions reporting system that will increase accessibility, be user friendly, and support air district and community needs. The statewide database will provide more timely data and ensure consistency with the frequency of reporting of greenhouse gases. CARB staff are working with air districts to develop the process for completing these tasks and anticipate establishing additional workgroups with communities, air districts, affected industry, and other stakeholders to implement the emissions reporting requirements. The new integrated database system for criteria air pollutant, toxic air contaminant, and greenhouse gas emissions will support multi-pollutant planning efforts.

CARB staff are in the process of conducting public workshops across the State to discuss the proposed first phase of the emissions reporting regulation for criteria air pollutants and toxic air contaminants. It is anticipated that the CARB Governing Board will consider this new regulation in the late 2018/early 2019 timeframe.<sup>24</sup>

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<sup>21</sup> California Health and Safety Code § 38530.

<sup>22</sup> Pursuant to California Health and Safety Code § 44360.

<sup>23</sup> The data received, among other things, from the new annual emissions reporting system will be used to inform: the statewide assessment completed by CARB staff during the annual community selection process, source attribution developed as part of a community emissions reduction program, and to help track progress of community emissions reduction programs.

<sup>24</sup> CARB will post more information on the proposed emissions reporting regulation for criteria air pollutants and toxic air contaminants as the regulation is developed.

## **TOXIC HOT SPOTS: INDUSTRYWIDE GUIDANCE ON HEALTH RISK ASSESSMENTS FOR GASOLINE DISPENSING FACILITIES**

*Overview:* In 1997, a joint working group of the California Air Pollution Control Officers Association (CAPCOA) and CARB developed the Gasoline Service Station Industrywide Risk Assessment Guidelines. These guidelines help air districts and industrywide sources implement the Assembly Bill 2588<sup>25</sup> Air Toxics “Hot Spots” program risk assessment requirements. Air districts may use this document for permitting new and existing gasoline service stations. Statewide, for thousands of gasoline stations, this document provided a cost-effective and consistent methodology for calculating gasoline station emissions inventories and risk assessments.

*Implementing Agency:* CARB

*Type of Action:* Guidance Document

*Timing:*

Begin Development: 2018

Implementation: 2019

*Proposed Actions:* In 2015, the CARB/CAPCOA Risk Management Guidance Document identified these guidelines for update. CARB and CAPCOA are updating the original document to address changes since 1997. Changes include new risk assessment methodology from the Office of Environmental Health Hazard Assessment, dispersion models, speciation profiles for fuel, and emission factors addressing improved control technology. CARB staff anticipate completion of the updated Gasoline Service Station Industrywide Risk Assessment Guidelines in late 2018.

## **COMPILE AND DEVELOP BEST PRACTICES GUIDANCE ON OUTREACH, LAND USE, AND TRANSPORTATION**

*Overview:* Proper outreach, land use and transportation planning can significantly affect community-level emissions and exposure, and underscores the need for approaches to better engage with and influence local land use planning efforts. Many governmental agencies, environmental justice organizations and advocacy groups have knowledge of local land use issues and experience of developing tool kits.<sup>26</sup> CARB staff will work closely with these groups and other agencies as new State tool kits are developed.

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<sup>25</sup> Assembly Bill 2588, Air Toxics “Hot Spots” Information and Assessment Act, Connelly, Statutes of 1987, California Health and Safety Code § 44300.

<sup>26</sup> For example: California Environmental Justice Alliance, *SB 1000 Toolkit: Planning for Healthy Communities*, available at: <http://caleja.org/2017/09/sb-1000-toolkit-release/>.

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These will support all communities and air districts as community emissions reduction programs are developed.

*Implementing Agency:* CARB

*Type of Action:* Informational

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* By October 1, 2018, staff will compile a list of existing documents, tools, and information on legal authorities, for outreach, land use, and transportation best practices and strategies and make them readily available in an online resource center. This will provide a preliminary menu of options that air districts can use while developing community emissions reduction programs.

The development of these resources will evolve over time. After October 2018, CARB staff expect to expand the existing resources and preliminary list of best practices and strategies to provide updated and more detailed materials, which will support implementation of the suggested strategies and practices. This can include updating existing handbooks and guidance, developing new best practices documents and model ordinances, creating the tools necessary to support implementation of best practices, and ultimately incorporating best practices and strategies into the Technology Clearinghouse.

### **DEVELOP AND MAINTAIN COMMUNITY AIR MONITORING ONLINE RESOURCES**

*Overview:* This strategy consists of an online database with publicly available community air monitoring information.

*Implementing Agency:* CARB

*Type of Action:* Informational

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* This strategy will consist of an online database that provides community air monitoring information such as current monitoring technologies, air monitoring systems, sensor evaluations, and information on advanced air monitoring

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technologies. Furthermore, this strategy commits CARB staff to performing air sensor evaluations, conducting joint large-scale air quality surveys and monitoring as resources allow, helping advance existing technologies, and bringing new technologies to the market. For example, CARB staff will conduct laboratory and field-based air sensor evaluations alongside partner programs at the South Coast Air Quality Management District (which operates the Air Quality Sensor Performance Evaluation Center program<sup>27</sup>), the U.S. Environmental Protection Agency, and others who have experience conducting sensor evaluations. Information from these evaluations will be provided to assist communities and others in selecting methods they can trust to produce the type and quality of data required to meet their needs. Best practices gleaned from existing air monitoring systems will be compiled and documented to inform future air monitoring activities. This strategy also commits CARB to supporting community science and providing air sensors to air districts.

### DEVELOP AND MAINTAIN COMMUNITY AIR MONITORING DATA PORTAL

*Overview:* This strategy consists of an online database with publicly available data generated from community air monitoring systems.

*Implementing Agency:* CARB

*Type of Action:* Informational

*Timing:*

Begin Development: 2018

Implementation: 2019+

*Proposed Actions:* This strategy will consist of an online database that lets the public access data from community air monitoring systems throughout California. Through previous engagement with communities, CARB has identified four key objectives for the data portal that staff are trying to address:

- *Data availability* – New and expanded efforts by air districts and communities to conduct community air monitoring will generate new air quality monitoring data for more locations throughout the State. CARB will make these data readily available to the public through an online data portal that is easily accessible to a multitude of users. To accomplish data availability goals, CARB will design a product that is compatible on both personal computers and mobile devices, and has multi-lingual capabilities.

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<sup>27</sup> More information on the South Coast Air Quality Management District, Air Quality Sensor Performance Evaluation Center (AQ-SPEC) program is available at: <http://www.aqmd.gov/aq-spec>.

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- *Timeliness of data* – This can be achieved through the development of a real-time data portal. Staff intend to display data as soon as they are available so that they can be used to guide personal decisions about activities. Not all instruments have the ability to collect and disseminate data in real-time, like filters or canister-based measurements, for example. In the cases that data are not available in real-time, CARB will still post the data online as soon as they become available.
- *Flexibility* – This program requires a flexible data portal. While this program is just starting out, it will continue to expand and rapidly evolve over the next few years. Many communities will begin monitoring and displaying data, and each of these communities are unique – in size, shape, monitoring objective(s), emission sources, pollutants, and air quality in general. Furthermore, new sensor technologies will continue to emerge in the future. To accommodate the wide variety of needs from communities as well as changing technologies, the system CARB designs needs to be highly versatile.
- *Data transparency* – This can be obtained by sharing raw data that are identified as such, with the communities, as well as by fully disclosing any data processing procedures. Staff want to ensure that the data being displayed have value and context, so some data processing may occur. For example, to ensure appropriate usage and meaningful interpretation of data, CARB intends to perform quality assurance on the incoming data, as needed and these methods will be publicly accessible. Staff may aggregate data to a lower time resolution, such as hourly- or daily-averaged data to be able to compare to nearby regulatory monitors and/or air quality standards. In such cases, staff will make both raw and processed data available online, as well as any type of data processing procedures used.

The data portal will be a comprehensive data repository and web tool that allows for meaningful and easy interpretation of data, so that the user can determine what the data mean at a glance. This will include data in a variety of ways through features that are tailored to communities' unique needs. With the diverse nature of communities and their specific air quality issues, the portal needs to accommodate many different audiences and end users. At its core, the data portal has four key components:

- *Data storage* – Since every community is unique with its own air quality issues, the type of equipment used and the data collected will be particular to each individual community. The data portal will be able to import, retain, and display all applicable data that covers a wide range of parameters, time resolutions, monitoring platforms, and metadata.
  - *Parameters* – Parameters measured within each community will depend on the defined monitoring objective(s). CARB will design the database and web portal to accept and display discrete lab-analyzed data, like filter and canister samples, in addition to real-time data. This data may include criteria pollutants (e.g., PM<sub>2.5</sub>), toxic air contaminants (e.g., hexavalent chromium),

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black carbon, and other pollutants as well as meteorological data (e.g., temperature, wind speed, direction).

- *Time resolutions* – Different instruments collect and transmit measurements at varying time resolutions, ranging from every minute to one measurement per day. For example, some low-cost PM<sub>2.5</sub> sensors collect a measurement every minute, while other regulatory-grade equipment measures an hourly or even 24-hour average PM<sub>2.5</sub> concentration. Consequently, the data portal will be designed to receive and show data in varying and meaningful time resolutions.
- *Platforms* – Traditionally, air monitoring has been done with regulatory-grade monitors that are typically stationary; that is, in a fixed location. However, technological advancement has greatly expanded the methods and platforms by which we monitor air quality. The data portal will be designed to accept data from a variety of platforms, including fence-line monitoring, remote sensing, or others, as applicable.
- *Metadata* – Due to the flexible and dynamic nature of the data portal, an essential element to the success of the portal will be the storage and sharing of metadata, or related information about the data. Metadata may include, but is not limited to, information about the instrument type, collection methods, location of monitors, sample duration, and firmware version. Additionally, for toxic air contaminants or other pollutants that require analysis in a lab, metadata might include sampling schedule, and monitoring issues if a sample was missed or invalid. Providing such information to the public will help inform about appropriate usage and interpretation of data, while also ensuring data transparency. For that reason, CARB plans to design the data portal so that this information is easy to access and understand.
- *Data accessibility* – The data portal will make data easily accessible in varying formats (e.g., tables, graphs, other plots) online. Additionally, to allow for easy data sharing, the data portal will have an online query tool or other interface with download capabilities. Accessible data will promote transparency, help support more research activities, and aid in further analysis of the community air monitoring data.
- *Data visualization* – CARB anticipates that the data portal will be highly visual in nature, so CARB plans to display air quality and related data (e.g., meteorological or metadata) on maps, time series, and other relevant plots that will provide the data with context so they can be quickly interpreted by all users. These dynamic plots can be used to help in identifying emissions sources, showing the frequency of violations, characterizing pollutant behaviors, and providing real-time air quality information (when available) to help guide personal decisions about activities on a daily basis. More information about the data visualization tools and techniques is available through the community air monitoring toolbox.



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- *Data resources* – While CARB is responsible for publishing the data online, the data are ultimately a product of air monitoring by air districts and communities. Therefore, CARB intends to include links within the portal to original data sources (e.g., community and air district webpages or portals). CARB also plans to provide other resources that will help provide additional context to the data. This may include, but is not limited to, information on health effects of various pollutants, instrument evaluations and performance, current research and data quality and limitations.

Due to the varying scope and nature of air quality data, CARB will take a phased approach when it comes to the development and implementation of the data portal. Initially, features available through the data portal may be constrained by the types of instruments used and pollutants measured in the first year; however, it is anticipated that the portal will continue to grow incrementally over time. As the program continues to develop and more communities begin air monitoring, staff will make adjustments to the data portal so that it continues to improve over time. As previously mentioned, CARB wants to leverage existing resources, so there will be more engagement with external organizations, including communities, air districts, and others, to determine essential user interface and visualization features, address challenges, utilize existing knowledge and learnings, and ensure that the data portal complements existing local efforts to display meaningful data.

### PROVIDE COMMUNITY ENFORCEMENT PROGRAM

*Overview:* This strategy will develop a new community enforcement program that will be offered to communities across the State.

*Implementing Agency:* CARB

*Type of Action:* Training

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* CARB will develop and implement a new program that will be offered to communities across the State. Information will cover topics like the fundamentals of enforcement, how the enforcement process works, instructions on filing a thorough complaint, and what to expect from the enforcement process after filing a complaint. Through this program, community members will be able to better support CARB or air district enforcement processes.

## PROVIDE ENFORCEMENT STAFF CROSS-TRAINING FOR MULTI-MEDIA VIOLATIONS

*Overview:* This strategy will increase multi-media violation awareness.

*Implementing Agency:* CARB

*Type of Action:* Training

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* The strategy will provide training to CARB enforcement staff, allowing CARB to multiply its clean-up efforts in selected communities, since enforcement staff will be able to identify violations of other environmental media and notify the appropriate regulatory agency of the potential violations.

## CONDUCT PERIODIC SUPPLEMENTAL ENVIRONMENTAL PROJECTS OUTREACH

*Overview:* Supplemental Environmental Projects allows penalties collected from settlements to be used for projects that provide air quality benefits within communities throughout the State.

*Implementing Agency:* CARB

*Type of Action:* Outreach

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* This strategy commits CARB to conducting outreach to impacted communities so CARB staff can identify where funds from Supplemental Environmental Projects can best be applied, and working to match Supplemental Environmental Projects with available settlements that have a common nexus. CARB staff will conduct periodic meetings throughout the State. CARB staff will utilize the ideas received from community members to determine what needs can be met through Supplemental Environmental Projects, and work to put those projects in place.



## ASSESS CURRENT AIR MONITORING TECHNOLOGIES AND PROVIDE INFORMATION

*Overview:* This strategy will evaluate current technology for air monitoring and provide information on those technologies as well as an assessment of their feasibility for community air monitoring.

*Implementing Agency:* CARB

*Type of Action:* Assessment

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* CARB staff will identify appropriate applications for each air monitoring technology with consideration of the types of air pollutants measured, data quality, data reporting timeframe, equipment and supporting resource cost, and other factors such as logistical and staffing needs. CARB staff will complete the initial review of existing monitoring technologies by October 1, 2018. This information will be made available in the online Resource Center.

## ASSESS CURRENT AIR MONITORING SYSTEMS AND PROVIDE INFORMATION

*Overview:* This strategy will evaluate current systems for air monitoring and provide information on those systems as well as an assessment of their feasibility for community air monitoring.

*Implementing Agency:* CARB

*Type of Action:* Assessment

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* CARB staff will review existing community air monitoring systems throughout the State to determine what elements can help serve as models for successful air monitoring systems. CARB staff will complete the initial review of existing systems by October 1, 2018. This information will be made available in the online Resource Center.

## FUNDING FOR COMMUNITY ASSISTANCE GRANTS

*Overview:* The Community Air Grants Program is designed to meet CARB's statutory obligations, and legislative intent, by providing support for community-based organizations to participate in the Community Air Protection Program. The Community Air Grants Program seeks to support communities and foster strong collaborative relationships between communities, air districts, CARB, and other stakeholders.

*Implementing Agency:* CARB

*Type of Action:* Incentive Funding

*Timing:*

Begin Development: 2018

Implementation: 2018+

*Proposed Actions:* As an initial commitment to support community organizations, the Legislature provided \$5 million in the fiscal year 2017-2018 State budget for community assistance grants. In response, CARB created the Community Air Grants Program. The grants are designed to help local organizations engage closely in the AB 617 process and build capacity to become active partners in identifying, evaluating, and ultimately reducing exposure to harmful air emissions.<sup>28</sup> CARB received 65 applications, requesting \$18.9 million in funding. Applications were received from communities around the State and included innovative proposals for engaging communities in AB 617's local air quality improvement process. To respond to this high demand, CARB is awarding 28 projects totaling \$10 million in funding. This amount includes the \$5 million appropriated in the fiscal year 2017-2018 State budget and an additional \$5 million appropriated in fiscal year 2018-2019 State budget. The projects are located in disadvantaged or low-income communities, and demonstrate partnership building or other forms of collaborative efforts. The grants project-portfolio demonstrates geographic distribution from across the State, including rural and urban locations, and several tribes.

Projects, programs, and activities funded through the grant program reflect the unique needs of individual communities. These include projects that focus on community-driven air monitoring, dissemination of information on local emission sources, as well as the development of actions to reduce community exposure to pollution, and to track progress. However, the grant recipients also include a broader group of organizations that will enable multiple groups to build overall capacity and community leadership for future community emissions reduction programs in order to

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<sup>28</sup> California Air Resources Board, *2017-2018 Grant Guidelines, California Assembly Bill 617: Community Air Grants Program*, February 26, 2018, available at: <https://ww2.arb.ca.gov/our-work/programs/Community-Air-Protection-Program>.

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achieve the goal of AB 617, which is to broadly address the disproportionate air pollution burdens that persist across the State.

### EXPLORE COMMUNITY HEALTH INDICATORS

*Overview:* Health data currently available can be used to describe the overall health of a community. Residents can use this information when working with various agencies to ensure that health-related issues inform policy decisions affecting their community. For example, asthma-related emergency department visits and hospitalizations are available at the ZIP code level. Cumulative health impact tools, like the publicly available CalEnviroScreen 3.0<sup>29</sup> and the California Healthy Places Index,<sup>30</sup> display asthma and heart attack-related emergency department visits at the census tract level. These types of data can help define the baseline cumulative health burden of California communities, which will aid in community identification and tracking health over time.

*Implementing Agency:* CARB

*Type of Action:* Informational

*Timing:* 2018+

*Proposed Actions:* Many of the California Health and Human Services Agency's departments, the Office of Environmental Health Hazard Assessment, and local health departments, collect and analyze health data. CARB will continue to work closely with these health agencies as they continue to lead efforts to collect and analyze statewide health data.

CARB staff will provide links to publicly available community health data, as well as links to past, current, and proposed community health projects. Staff will also provide information on local community health efforts. These resources will be centrally located in an easy to navigate, searchable section of the Community Air Protection Program's online Resource Center. These resources will help communities assess their current health burden. They will also provide examples and results of community-oriented research on the health impacts of air pollution that have been performed across the State, helping residents when advocating for their community.

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<sup>29</sup> Office of Environmental Health Hazard Assessment, CalEnviroScreen, June 30, 2017, available at: <https://oehha.ca.gov/calenviroscreen>. [Accessed April 5, 2018].

<sup>30</sup> California Healthy Places Index, 2018, available at: <http://healthyplacesindex.org/>. [Accessed April 5, 2018].