

Community Air Protection Program Framework

CONCEPT PAPER

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Community Air Protection Program Framework Concept Paper

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I. PREFACE

Assembly Bill 617 (AB 617)¹ provides a new community-focused action framework to improve air quality and reduce exposure to criteria air pollutants and toxic air contaminants in communities most impacted by air pollution. The bill recognizes that while California has seen tremendous improvement in air quality, some communities still suffer greater impacts than others. It is these communities that require special attention and accelerated action. AB 617 builds on the foundation of existing air quality legislation and programs, providing additional tools to target actions in communities that bear the greatest burdens.

This first-of-its-kind statewide effort established by AB 617 includes community air monitoring and local emissions reduction programs. In addition, the Legislature has appropriated immediate incentive funding to clean up mobile sources such as trucks and buses in impacted communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data that will help advance air pollution control efforts throughout the State. This new authority enhances and strengthens existing clean air programs, and improves our ability to achieve equity in the delivery of clean air benefits to all Californians.

To implement AB 617, the California Air Resources Board (CARB) has established the Community Air Protection Program (Program). The legislation sets out an ambitious implementation schedule, and CARB must set the overall direction of the Program by October 1, 2018. This includes identifying impacted communities, establishing the criteria for air monitoring and local emissions reduction programs, and developing statewide strategies for reducing emissions. The local air districts also have specific roles and responsibilities and successful implementation will require strong collaboration between CARB and the air districts, as well as with local communities.

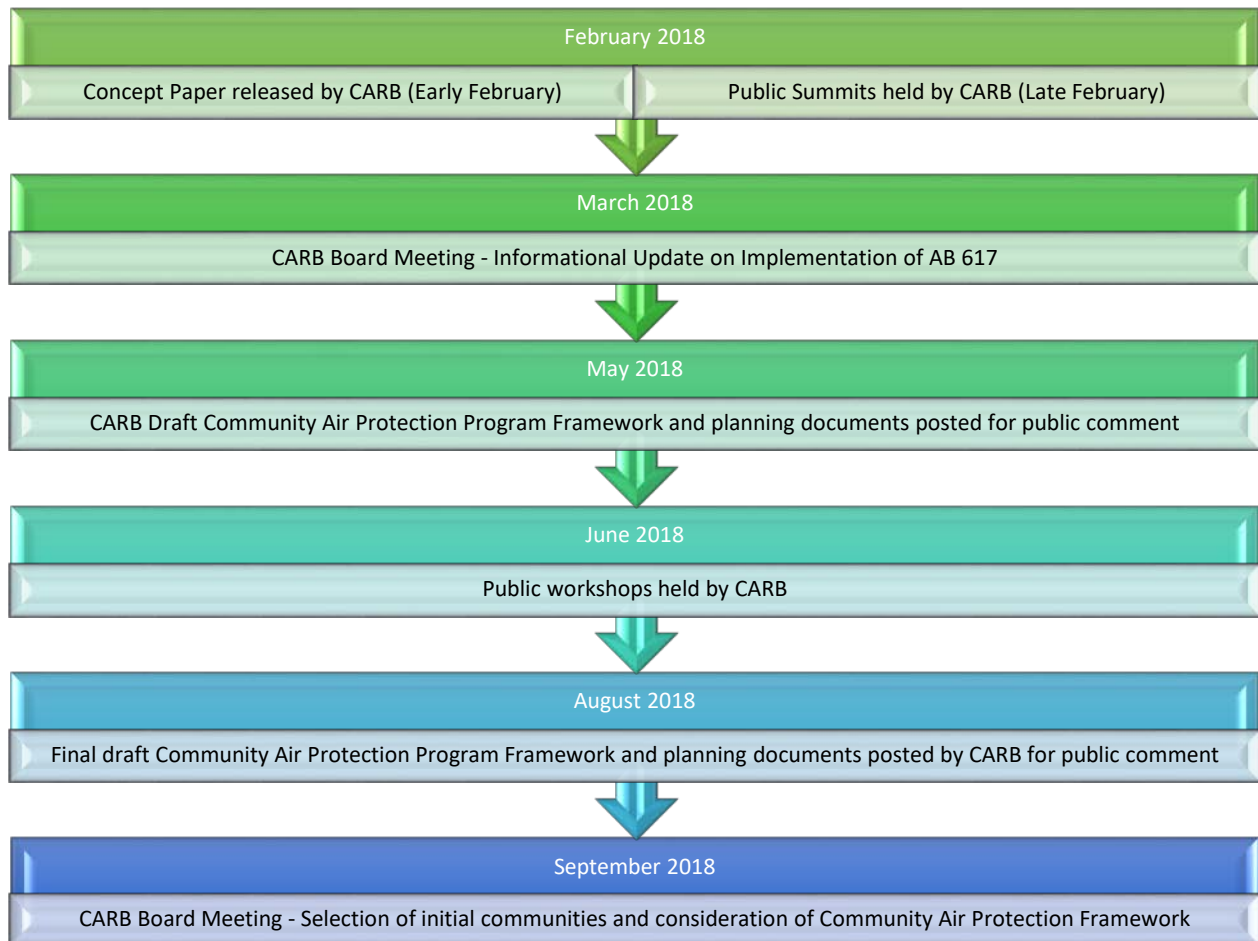
This Concept Paper provides staff's initial proposals for CARB's framework elements. Development of the Program framework is still in the early stages, and the Concept Paper is a mechanism to seek advice and feedback to guide our efforts going forward. Staff will discuss this Concept Paper at three full day public workshops to be held throughout California in late February. Comments received on the Concept Paper will support development of a draft version of the required planning documents to be released in May. For an expanded timeline of upcoming actions, see Figure 1.

¹ AB 617, Garcia, C., Chapter 136, Statutes of 2017.

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Figure 1. Upcoming Implementation Timeline



AB 617 provides an opportunity to continue to enhance our air quality planning efforts and better integrate community, regional, and State level programs to provide clean air for all Californians. Building the Program will take time as we learn from initial efforts, collect additional data, and continue to integrate a community-focused lens into our multiple planning efforts statewide. We expect the Program will begin with a smaller number of communities, with the scope of communities growing over time as we build capacity and knowledge. Selection of initial communities will consider a variety of air quality challenges, and solutions developed in the early phases of the Program will serve as models for additional communities with similar issues. We also plan to maintain a list of potential communities for air monitoring and/or emission reduction programs in subsequent years, and identify resources to benefit this broader set of communities in the interim. These interim resources may include incentive funding and community assistance grants, as well as tools to enhance community engagement. New statewide emission reduction measures and requirements to accelerate the retrofit of pollution controls on large industrial sources will also benefit communities statewide.

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II. PUBLIC HEALTH IMPERATIVE FOR AB 617

California's long-standing air quality programs have historically focused on monitoring and air quality planning at the regional level, reducing toxics risk from individual sources, as well as reducing greenhouse gas (GHG) emissions. These programs have resulted in significant air quality improvements. Ozone levels have dropped over 40 percent in the South Coast region since 1990 and diesel particulate matter, which accounts for over two thirds of the total known cancer risk in the State, has dropped nearly 70 percent over this same period. Additionally, California is on its way to exceeding its 2020 GHG emissions reduction target. However, many communities still experience cumulative impacts from exposure to multiple air pollutants. Communities near ports, railyards, warehouses, and freeways, for example, experience significantly higher air pollution than other areas due to emissions from mobile sources such as cars, trucks, and locomotives. Large industrial facilities and smaller sources located within neighborhoods like chrome platers, auto body shops, and metal recycling facilities also contribute to localized air toxics impacts.

AB 617 prioritizes new efforts to address cumulative impacts in these communities. These community-level efforts will enhance and work in conjunction with existing air quality and climate change legislation at the federal and State level. Existing authorities have been an important driver for regional air quality improvement, reductions in GHGs, advancement of technology-based solutions, and risk reduction efforts at industrial facilities. AB 617 builds on and complements these programs by taking an integrated approach to strategies to reduce the cumulative impacts of multiple sources of air pollution within a community. Together these activities provide a comprehensive structure to ensure all communities benefit from our air pollution programs. New advances in air monitoring technologies also allow us to build on our regional air quality networks to collect much more localized information on community-level air quality and contributing sources.

III. GUIDING PRINCIPLES

Our outreach to-date has informed the development of the proposals in this Concept Paper. This initial outreach process has included: a series of informational meetings; CARB's Board meeting in October 2017; and discussions with community residents, air districts, environmental justice organizations, industry, and other interested stakeholders. We have heard a number of common themes from this initial outreach:

- Provide a ground up, community-based approach for Program implementation. Community stakeholders have many ideas, expertise, and intimate familiarity with their neighborhoods. They want to be heard and directly involved in designing solutions for their community.

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- Increase air monitoring to provide community-specific information on air quality levels and establish criteria to be used when developing and implementing community air monitoring campaigns to ensure that data support sound decision-making and action.
- Focus on the immediate development of community emissions reduction programs in communities where the nature of the air pollution burden and contributing sources are well known.
- Provide assistance through incentive funding programs for small businesses that are part of the community to support their efforts to reduce emissions.
- Include city and county government participation in the implementation of AB 617, along with the development of improved land use tools and guidance to support community education and advocacy.

Based on this initial feedback, we have developed the following ten principles to guide overall Program development and the preliminary proposals outlined in this Concept Paper:

1. Implement community-focused actions to reduce emissions of criteria air pollutants and toxic air contaminants to improve public health in disadvantaged communities most impacted by air pollution.
2. Develop a strong collaborative relationship between local community groups, air districts, CARB, and other stakeholders.
3. Ensure community members are partners in the development and implementation of all aspects of the Program.
4. Ensure a robust and transparent public process, providing accountability and clear metrics for tracking progress and measuring the success of Program elements.
5. Provide a strong science-based foundation to support identification of communities with the greatest cumulative exposure burdens and development of effective strategies for reducing exposure.
6. Ensure scientifically sound evaluations of community air quality that will generate actionable community air monitoring data.
7. Enhance the accessibility and usability of data and tools to assess air quality impacts, and support the advancement of air monitoring methods.
8. Leverage resources amongst CARB, local air districts, and community organizations, and share lessons learned that can benefit communities statewide.

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9. Support investments to advance and accelerate the deployment of the cleanest mobile and stationary source technologies within impacted communities, including a focus on zero emission technologies where feasible.
10. Align the priorities and objectives of AB 617 with other CARB and air district clean air and climate programs to facilitate integrated planning, maximize opportunities for pollution reduction and financial support, and expedite action.

IV. PROGRAM ELEMENTS

The Program includes a suite of core elements designed to work together to achieve additional emissions reductions and cleaner air in disadvantaged communities. This new community-focused framework includes enhanced emissions and air monitoring data to provide a strong science-based foundation for driving action, defined strategies to reduce emissions, implementation and enforcement of community emissions reduction programs, more systematic statewide emissions reporting, and greater accessibility of data to provide transparency and accountability. CARB and local air districts each have specific roles and responsibilities and are committed to working closely together to implement the program.

At the State level, CARB's specific responsibilities include:

- Identifying communities with the highest cumulative exposure burdens and annually selecting priority communities for deployment of community air monitoring campaigns and/or community emissions reduction programs.
- Developing a statewide strategy, including measures to reduce emissions and exposure, methods for identifying contributing sources, and criteria to serve as the benchmark that air districts must meet when developing and implementing community emissions reduction programs.
- Preparing a statewide air monitoring plan to provide criteria and guidance for developing community air monitoring campaigns.
- Establishing and maintaining an emissions control technology clearinghouse.
- Establishing a statewide uniform system of annual emissions reporting for certain categories of sources.

CARB must complete the first three elements by October 1, 2018. While there are no specific deadlines for the technology clearinghouse and emissions reporting system, these are important supporting efforts and therefore we are moving forward expeditiously to implement these additional Program elements. Air districts are responsible for working with communities in planning and conducting air monitoring campaigns, developing and implementing community emissions reduction programs, and implementing local regulatory efforts. CARB will also review the air district's

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community emissions reduction programs and annual progress reports, and oversee ongoing Program implementation. The Legislature has appropriated funding for initial development efforts underway; funding for continued implementation of AB 617 will also be critical to ensure program success.

This Concept Paper outlines the proposed process for identifying impacted communities, statewide strategies to reduce emissions of criteria air pollutants and toxic air contaminants, as well as proposed criteria for development and implementation of community emissions reduction programs and community air monitoring campaigns. These elements are designed to meet AB 617's requirements to develop a statewide strategy and statewide air monitoring plan for CARB Board consideration by October 1, 2018. We are collectively referring to these requirements as the Community Air Protection Program Framework (Framework).

As discussed earlier, the goal of this Concept Paper is to facilitate ongoing discussion and seek additional public input to help inform development of a draft Framework document later this spring. In the sections that follow, we have noted individual Program approaches where specific public discussion and recommendations would be especially valuable. We will conduct additional workshops, community meetings, and discussions with individual organizations and stakeholders. As one component of this outreach we have convened a multi-stakeholder consultation group. Members of the consultation group include individuals representing environmental justice organizations, air districts, industry, academia, public health organizations, and local government. The consultation group will provide an additional opportunity for discussion of various aspects of Program development.

AB 617 also requires CARB to update elements of the Framework periodically. Staff will review air district annual progress reports and conduct additional analyses to track progress in implementing community emissions reduction programs and community air monitoring campaigns. During this evaluation, we will consider the following: status of metrics for tracking progress; discussions with participating communities to gauge Program success; and lessons learned and best practices, including identification of potential strategies for statewide consideration. These efforts will guide Framework updates and can support identification of additional methodologies, criteria, and CARB Board direction that will be essential for ensuring successful Program implementation.

V. IDENTIFICATION AND SELECTION OF COMMUNITIES

While California's control programs have resulted in substantial air quality progress, many residents still suffer from the cumulative effects of exposure to multiple air pollutants. The first step in implementing the Program is identification of these communities which will be the focus of additional efforts to deploy community air monitoring campaigns and/or develop community emissions reduction programs to

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reduce emissions and exposure. AB 617 requires that CARB select an initial list of priority communities for first year action by October 1, 2018, with review and identification of additional communities annually.

We are proposing a strong science-based foundation to help assess and identify disadvantaged communities that experience the highest cumulative exposure. This will include bringing in the knowledge and expertise of air districts, communities, academia, and non-profit organizations. Assessment and identification of the most heavily burdened communities will be based on a compilation of data sources and factors characterizing cumulative exposure to criteria air pollutants and toxic air contaminants within disadvantaged communities. These include:

- Information about concentrations of criteria air pollutants and toxic air contaminants from measurements, air quality modeling, or other information quantifying exposure burden.
- Sensitive receptors (e.g., schools, day care centers, hospitals), exposed population, and proximity to mobile, area-wide, and stationary emissions sources of concern, including freeways.
- Density of contributing emissions sources and magnitude of emissions within the community.
- Public health indicators² that are representative of the incidence and/or exacerbations of disease.
- Cancer risk estimates based on air quality modeling.
- Socio-economic factors such as poverty levels, unemployment rates, and linguistic isolation.

At the statewide level, the California Communities Environmental Health Screening Tool (CalEnviroScreen)³ is an important initial screening tool to identify communities that are considered highly burdened. Many air districts also work closely with their local communities and have valuable expertise on additional data sources such as local community air monitoring and modeling studies, key emissions sources, enforcement issues, and community health impacts to supplement data in CalEnviroScreen.

To ensure we are drawing on existing resources and knowledge in establishing a list of priority communities, we are proposing that air districts provide recommendations on

² In addition to air pollution, structural determinants of health such as neighborhood poverty, racial/ethnic segregation, violence, access to food, access to health care, lack of green space; exposure to other environmental hazards such as noise, poor water quality and pesticides; behavioral factors such as smoking and other substance abuse; unhealthy diet; as well as possible genetic factors all influence an individual's health.

³ The California Office of Environmental Health Hazard Assessment. California Communities Environmental Health Screening Tool. <https://oehha.ca.gov/calenviroscreen>.

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communities for deployment of community air monitoring campaigns and/or development of community emissions reduction programs. As the air districts are tasked with establishing the air monitoring campaigns, as well developing and implementing the community emissions reduction programs, it is important that they be highly engaged in the process for community selection because of their expertise and experience. As part of this process, air districts should evaluate additional sources of data and local knowledge that may be available in refining and prioritizing their lists of recommended communities for the purposes of AB 617. This may include evaluating the air quality related layers in CalEnviroScreen to further refine analyses to identify communities that are disproportionately impacted by air pollution.

Air districts will also need to conduct outreach with communities under consideration to help inform their recommendations. Community members have first-hand knowledge of local air quality impacts, emissions, and local air quality concerns. This direct community experience is critical for understanding community needs and in developing recommendations for priority communities. In addition to air district recommendations, community-based organizations and community members may also directly recommend their community and be included in the CARB and air district evaluation and selection process.

Technical criteria, requirements for public process, and timelines for the air district and community self-recommendations are available in the *Process and Criteria for 2018 Community Selections* at: <https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program-ab617>.

Staff will draw upon the air district's and community recommendations, in addition to information developed through a CARB statewide assessment, in developing a consolidated list of priority communities to ensure a systematic review across the State. This will serve as the basis for staff's recommendations to the CARB Board for selection of communities for development of community emissions reduction programs and/or deployment of community air monitoring campaigns in the first year of the Program.

We expect that the first year of implementation will include the selection of a smaller number of communities in the best understood and most heavily impacted regions of the State, while providing regional diversity in the nature of the air quality challenges. Communities with well-characterized source contributions, known monitoring needs, and established community-based capacity will foster early success in developing community partnerships, effective air monitoring, and exposure reduction strategies. Actions to reduce exposure in these initial communities can serve as models for communities with similar challenges and help build the capacity of the Program over time.

We anticipate that the number of recommended priority communities in 2018 will greatly exceed the number that can be addressed during the early years of the Program. A

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system for categorizing communities that cannot be addressed in the first year, but are priorities for future action, will be proposed as necessary. Thus, CARB staff plans to maintain a multi-year list of potential communities for overall Program inclusion. In subsequent years as new data becomes available, CARB staff will continue to update and enhance the assessment and list of communities through updated emissions data, community air monitoring information, air quality modeling, as well as additional recommendations received from communities and air districts. To support these ongoing improvements, we are also contracting with a consortium of researchers to identify potential new data sources and methods for assessing cumulative exposure that can be used to enhance the assessment and selection process in future years. This multi-year list will provide the basis for annual updates to CARB's Board and recommendations for additional communities for community emissions reduction programs and/or air monitoring in subsequent years.

CARB staff is seeking specific recommendations on factors and data sources that should be considered in identifying priority communities for the deployment of air monitoring and/or community emissions reduction programs.

VI. STRATEGIES TO REDUCE EMISSIONS AND EXPOSURE

Identifying strategies for reducing criteria air pollutants and air toxics at the community level is critical for establishing a strong statewide framework for action. Existing air quality planning efforts such as the California State Implementation Plan Strategy,⁴ Mobile Source Strategy,⁵ California Sustainable Freight Action Plan,⁶ Short-Lived Climate Pollutant Reduction Strategy,⁷ and Climate Change Scoping Plan,⁸ will be the foundation for further reducing emissions and exposure within communities across the State. Air districts also have ongoing planning efforts that will further reduce emissions within their respective air basins.⁹

The community emissions reduction programs required under AB 617 will identify additional community-level emissions and exposure reduction strategies beyond existing efforts. When overlaid with targeted local actions, AB 617 provides a comprehensive and coordinated approach by leveraging existing authorities and control mechanisms with innovative new strategies tailored to individual community needs.

⁴ The California State Implementation Plan Strategy is available at: www.arb.ca.gov/planning/sip/sip.htm.

⁵ The Mobile Source Strategy is available at: www.arb.ca.gov/planning/sip/2016sip/2016mobsr.htm.

⁶ The California Sustainable Freight Action Plan is available at: casustainablefreight.org.

⁷ The Short-Lived Climate Pollutant Reduction Strategy is available at: www.arb.ca.gov/cc/shortlived/shortlived.htm.

⁸ The Climate Change Scoping Plan is available at: www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

⁹ Examples of existing community-based programs include the South Coast Air Quality Management District's Clean Communities Plan, and Bay Area Air Quality Management District's Community Air Risk Evaluation Program.

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This multi-layered suite of strategies to reduce pollution from mobile, area-wide, and stationary sources at the local level includes:

- Regulatory actions along with focused enforcement and timelines to ensure effective implementation of both new and existing regulations within specific communities.
- Coordinated incentive funding to provide investments in cleaner technologies, along with needed infrastructure and other complementary elements to support complete and sustainable technology solutions.
- Approaches to alter or mitigate the impacts of activities that are often concentrated within the most burdened communities such as requirements for alternate trucks routes, facility entrances, storage and container staging facilities, or green zones.
- Tools and resources to support education and advocacy with local government agencies on land use planning and local planning updates.

As part of the statewide strategy, CARB must develop a list of existing and available measures that community emissions reduction programs must draw on. In addition to the types of measures identified in AB 617 - best available control technology (BACT), best available retrofit control technology (BARCT), and best available control technology for toxic air contaminants (T-BACT) - a broad suite of actions for mobile, area-wide, and stationary sources will be necessary to develop effective community emissions reduction programs for individual communities. Additional information on the criteria for developing and implementing community emissions reduction programs is provided in Section VII.

While each community will require a different combination of strategies based upon the nature of each air quality challenge, the strategies outlined below provides a minimum starting point for an assessment of appropriate actions. As part of our work, we anticipate describing combinations of strategies that can serve as models to address different types of community-level air quality challenges which the air districts should consider when developing community emissions reduction programs. These will draw from the following range of approaches:

- Air district rules that reflect the most stringent emissions limits, applicability, and best practices and associated cost-effectiveness.
- Air district BACT and T-BACT determinations for new sources that reflect the most stringent limits.
- New air district rules and emissions limits to meet AB 617 requirements for the expedited installation of BARCT.

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- CARB-mandated mobile source technology and fuel measures that will advance zero and near-zero emissions technologies.
- CARB airborne toxic control measures (ATCMs) and suggested control measures for mobile, area-wide, and stationary sources.
- CARB and air district incentive funding for mobile, area-wide, and stationary sources to accelerate deployment of the cleanest technologies and associated infrastructure, with a focus on zero-emissions technologies wherever feasible.
- Facility-based approaches for reducing emissions.
- CARB and air district mechanisms for targeted enforcement activities.
- Enforceable agreements.
- Transportation-related strategies to reduce community-level emissions impacts such as, alternative truck routes, preferential access for the cleanest technologies, and geo-fencing.
- Strategies to create more sustainable communities including reducing vehicle miles travelled, encouraging active transportation, and urban greening.
- Resources to support education and community advocacy on land use planning and California Environmental Quality Act (CEQA) review.
- Mitigation strategies such as air filtration, buffers, and vegetation barriers.

Close partnership and coordination with local governments, land use commissions, transportation agencies, and other relevant parties will also be critical to developing a comprehensive emission reduction approach and addressing local land use decision-making.

Beyond CARB actions already included in current planning efforts, we are also working to identify additional CARB strategies that can be implemented over the next several years. These may include updates to existing ATCMs, as well as the need for new ATCMs based on the current state of technology and the latest information on health risks established by the California Office of Environmental Health Hazard Assessment. As part of ongoing statewide planning efforts, we will also identify the potential for additional mobile source control strategies that may result from continued technology assessments. We will coordinate the development of strategies across CARB's planning efforts to support integrated planning and leverage opportunities to expedite action. These additional strategies will be developed through further public processes, retaining the discretion to add to, change, or commit to any of the strategies and implementation steps. Subsequent implementation will be conditional on successful completion of applicable public processes, feasibility, cost-effectiveness, and environmental reviews.

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CARB staff is seeking specific recommendations on emissions reduction and mitigation strategies, such as regulations, incentives or enforcement strategies, that should be included as part of the statewide strategy.

VII. CRITERIA FOR COMMUNITY EMISSIONS REDUCTION PROGRAMS

The community emissions reduction programs required by AB 617 are designed to map out new strategies to reduce emissions and exposure, and are therefore the key drivers for reducing the elevated air pollution burdens experienced by residents of impacted communities. CARB's criteria are intended to define clear benchmarks for community emissions reduction program content and process. This will ensure a consistent standard of quality and rigor across community emissions reduction programs, while recognizing that the specific solutions and strategies will be unique to each community.

Once CARB has identified the first round of priority communities, air districts must develop and adopt community emissions reduction programs by October 1, 2019, followed by submission to CARB for approval. Setting targets based on health-protective air quality goals, and establishing timelines will be central to the success of these plans, along with clear metrics for tracking progress to provide accountability and transparency and ensure community emissions reduction programs are on the right path.

Community emissions reduction programs must also be developed through a robust public process involving all stakeholders and they must include meaningful engagement and partnerships with community members. These community partnerships will be essential for providing the strong community engagement envisioned by AB 617 while also fostering connections to other agencies invested in improving the health and welfare of the community, such as county health offices, local and regional planning agencies, and other community-based organizations. Finally, successful plans must include a public process for ongoing review and updates involving air districts and CARB.

This section outlines the overarching goals for all community emissions reduction programs, discusses the proposed criteria and requirements for specific community emissions reduction program development and implementation, including community partnerships and technical assessment, and outlines staff's proposed actions in reviewing and evaluating community emissions reduction programs.

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VII.A. Health-Based Air Quality Goals

Cumulative health impacts are driven by multiple air pollutants and other structural determinants of health within a community, and our understanding of the interactions between pollutants, as well as between pollutants and other determinants, and the potential for synergistic health impacts is still an emerging field of research. Reductions in air pollution have been strongly linked to improved public health, but generally in studies with large populations and involving multiple cities. However, tracking health outcome at the community level poses many challenges.

To ensure that the community emissions reduction programs produce effective, meaningful, and measureable air quality improvements, we are proposing that the community emissions reduction programs focus on achieving individual criteria air pollutant and/or air toxics air quality goals. This approach serves as the foundation to provide greater equity in the level of health protection across California's communities. We will continue to review ongoing health research and provide recommendations on how to refine these health-based goals as part of future Program updates.

Criteria Pollutants

Meeting State and federal standards for fine particulate matter (PM_{2.5}) and ozone is the current focus of California's criteria air pollutant programs. While significant work remains to meet ozone standards in many areas of the State, ozone is a regional air pollutant that is driven by regional rather than localized source contributions. In addition, CARB staff's analysis has shown ozone levels in environmental justice communities are similar to their neighboring communities, reflecting the regional nature of ozone impacts.¹⁰ In contrast, many environmental justice communities still experience higher PM_{2.5} exposure, which generally reflects both local and regional source contributions. Exposure to PM_{2.5} is also the dominant cause of criteria air pollutant health impacts. We are therefore proposing that community emissions reduction programs focus on strategies for addressing these disproportionate impacts and ensuring more healthful levels of PM_{2.5} are achieved within identified communities.

Toxic Air Contaminants

Exposure to toxic air contaminants can increase the risk of both acute and chronic health effects and cancer. While California's long-term fuel and technology transformation efforts and rules to reduce air toxics will significantly reduce health risk associated with poor air quality throughout the State, many communities currently experience disproportionate exposures to toxic air contaminants. Although some levels of exposure to toxic air contaminants may be safe with regard to acute and chronic

¹⁰ Presentation at CARB's Board Hearing. Air Quality Progress in California Communities. June 23, 2016. www.arb.ca.gov/board/books/2016/062316/16-6-2pres.pdf.

health effects, any level of exposure can increase cancer risk. Community emissions reduction programs must consider both acute/chronic and cancer health risks by developing strategies to reduce the disproportionate exposure experienced by identified communities and improving health protection for all communities, focusing on the specific toxic air contaminants that drive health risk within the identified community.

Reductions in air pollution have been strongly linked to improved public health, but generally in studies with large populations and involving multiple cities. However, tracking health outcome at the community level poses many challenges. In addition to air pollution, structural determinants of health such as neighborhood poverty, racial/ethnic segregation, violence, access to food, access to health care, lack of green space; exposure to other environmental hazards such as noise, poor water quality and pesticides; behavioral factors such as smoking and other substance abuse; unhealthy diet; as well as possible genetic factors all influence an individual's health. This complexity make it difficult to attribute changes in health indicators such as incidence or exacerbations of asthma or heart disease to individual factors such as exposure to air pollution. In addition, the timeframe to see measureable changes in health outcomes can often be long, and there are inherent limitations in the resolution, availability, and validity of available sources of health information at the community level. Funding for improved community-level health data for both the State and county health departments and additional research for the development of long-term health studies will be needed to improve on current methods. AB 617 provides an opportunity to underscore the need for improved data to support tracking of air pollution related health indicators and metrics that can support the inclusion of additional health-related goals over time to assess the impact of community emissions reduction programs to reduce local emissions.

VII.B. Community Emissions Reduction Program Elements

AB 617 requires that community emissions reduction programs be “consistent with the state strategy” and establishes a baseline programmatic structure that requires community emissions reduction programs to include emissions reduction targets and strategies, an implementation schedule, and enforcement activities. CARB staff is proposing a set of minimum benchmarks for these statutorily-required sections, as well as additional implementation components including public and community engagement and identification of metrics to track progress. We are also proposing criteria for required annual progress reports. CARB is committed to supporting the air districts on all aspects of community emissions reduction program development, adoption, and implementation.

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VII.C. Community Engagement

To ensure meaningful, community-driven involvement, air districts must initiate community partnerships and undertake a robust public process in developing and implementing the community emissions reduction programs.

Community Partnerships

Air districts should work with selected communities to form a community steering committee made up of local residents, businesses, government, schools, and other stakeholders, along with academic researchers as appropriate. This community steering committee will focus on items including: understanding community issues; determining approaches for additional community outreach, developing the community emissions reduction programs, including incentive funding investments; identifying technical assistance needs; and tracking progress.

CARB staff is seeking specific recommendations on the structure, makeup, and roles and responsibilities of the community steering committee.

Public Process

As air districts conduct broader outreach on community emissions reduction program development and implementation, the public process should include:

- Conducting regional workshops over the course of the first year of community emissions reduction program development and subsequent implementation years.
- Conducting community-level informational meetings held in the evenings or weekends, in easily accessible locations.
- Providing materials in appropriate languages and having interpretation services available at workshops and meetings.
- Designating a contact person at the air district to address general questions regarding community emissions reduction programs and AB 617 implementation.
- Establishing a dedicated website for each community selected for community emissions reduction program preparation.
- Conducting air district public hearings on community emissions reduction program adoption and subsequent annual progress reports.

Please submit any written comments to:

https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=capp-conceptpaper-ws&comm_period=1.

VII.D. Technical Assessment

Community emissions reduction programs must include a technical assessment of the relevant pollutants, the key health risk drivers, and contributing sources to provide a strong science-based foundation for establishing emissions reduction targets. Each community selected for community emissions reduction program preparation will have its own unique conditions with different topography, emissions levels, and source categories. Work conducted as part of the community identification and selection process can help support the technical assessment that should include:

- Using the best available air monitoring, emissions inventory, or other data to assess the baseline exposure burden and identify the key air pollutants and sources that contribute most significantly to health risk in the community. This should include assessing both local and regional contributions.
- Developing a community-level emissions inventory to inform the development of the community emissions reduction program emissions reduction target(s) and track implementation progress.
- Establishing a baseline of emissions and exposure burden to inform the types of emission reduction strategies and magnitude of existing burdens by evaluating compliance with existing rules and assessing the benefits of new or amended regulations.
- Soliciting input from community residents and local governments regarding emissions sources and sensitive receptor locations.

Assessment of Contributing Sources

AB 617 also requires CARB to identify methodologies for assessing and identifying the contributing sources or categories of sources, including mobile, area-wide and stationary sources, and estimate their relative contribution to elevated exposure to air pollution in impacted communities. To meet this requirement, we plan to identify a suite of methodologies that have different levels of refinement and sophistication as well as different input data requirements. Community emissions reduction programs should describe the selection and use of one or more of these tools based on the nature and complexity of the cumulative air pollution burden in the community, available data, and appropriateness/capability of the tool to apportion emission source contributions to the problem in the particular community. Potential methods include:

- Evaluating emissions inventory pollutant ratios to identify key source categories.¹¹

¹¹ Calculating and comparing ratios of source-specific emissions or comparable activity data inside and external to a community to perform basic or high-level source apportionment of individual species.

- Applying back-trajectory¹² or pollution rose analyses¹³ to track the origin of emission sources.
- Deploying a variety of monitoring methodologies such as instrumented trailers/mobile monitors, fence-line air monitoring systems, and portable sensors to confirm emissions source strength and track its origin.
- Conducting air quality modeling simulations.¹⁴
- Applying source apportionment models.¹⁵

We will work with air districts, some of which have extensive experience on traditional, advanced, and portable sensor methods, on the application of these methodologies and provide technical support and leveraging of resources, as appropriate. The technical assessment will inform the development of the community emissions reduction program emissions reduction target(s), strategies, and enforcement provisions and enable the air districts to track progress throughout implementation.

Emissions Reduction Targets

Community emissions reduction programs must include specific quantitative emissions reduction targets to meet health-based air quality goals within specified timeframes. The nature of the cumulative exposure burden and the key air pollutants of concern identified in the technical assessment will define the applicable suite of air quality goals and associated emission reduction targets for each community emissions reduction program.

Specific Reduction Strategies

After conducting the technical analysis and identifying quantitative emissions reduction targets, community emissions reduction programs must then identify specific strategies to meet both interim milestones as well as the overall target(s) for reducing emissions within each community. The scope of strategies included in each community emissions

¹² Back trajectory analysis tracks the past path of small particles as they traverse through time and space to identify the point of origin. This technique is widely used in establishing source receptor relationship of air pollutants. [https://doi.org/10.1016/S1352-2310\(97\)00457-3](https://doi.org/10.1016/S1352-2310(97)00457-3).

¹³ Pollution rose analysis is used to depict, for each wind direction, the associated air quality either as a mean concentration or as a frequency of the time that pollution levels exceed some designated threshold value of interest. These diagrams are widely used to infer the distribution and strength of emission sources around a monitoring station.

<http://www.tandfonline.com/doi/pdf/10.1080/00046973.1969.9676573>.

¹⁴ By reducing or removing emission source inputs for particular sources within the air quality model, then re-running the model simulation with these sources removed, the simulated concentration change in the community can be used to estimate of the burden associated with the removed source(s).

¹⁵ Such as Positive Matrix Factorization and Chemical Mass Balance source apportionment models which use measurements of chemical species in the emissions inventory and ambient air samples to identify contributing sources.

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reduction program will depend on the types of sources contributing to elevated pollution levels and the nature of the emissions reduction targets, along with cost-effectiveness, authority, and feasibility, but must include new actions to reduce community exposure.

In most communities, mobile, area-wide, and stationary sources all contribute to the elevated exposure burden and drive the need for further emissions reductions. Community emissions reduction programs must therefore include strategies that take into account the relative contributions of the sources of emissions, considering the full suite of sources contributing to elevated health risk, in accordance with air district and CARB's respective authorities. In identifying strategies, air districts should:

- Evaluate compliance with existing strategies and any necessary enforcement or other corrective action needed.
- Assess future benefits of current regulations and air quality planning efforts
- Select appropriate strategies from the list of existing and available measures discussed in Section VI, along with any additional air district identified strategies, including the expedited schedule for BARCT implementation.
- Review selected risk reduction audits and emissions reduction plans required by statute,¹⁶ and update them as necessary to support the emissions reduction targets. The specific facilities requiring review should be based on the technical assessment discussed above and on community input.
- Solicit input from community residents and other stakeholders regarding priority mitigation strategies.

The list of strategies must include the emissions reductions expected from each strategy, implementation roles and responsibilities, and an implementation schedule. Staff will work with air districts during development of community emissions reduction programs to identify appropriate CARB actions to complement air district strategies.

Community emissions reduction programs should also consider strategies that fall under the jurisdiction of cities, counties, planning commissions, transportation agencies, or other local agencies that are important to reducing emissions and exposure. The community emissions reduction program should identify opportunities to collaborate with these agencies to develop a comprehensive emission and exposure reduction strategy. These agencies will also be important participants on the community steering committees.

Implementation Schedule

The implementation schedule should describe specific dates for consideration by the air district's board or a specific timeframe for coordinating with the appropriate

¹⁶ California Health and Safety Code §44391.

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implementing agency for each strategy to ensure expeditious progress towards emissions reduction targets. This should include strategies that can be implemented immediately (within the first year) and within the 3-year, 5-year, and 10-year milestone timeframes. We also encourage implementation in parallel with development of a community emissions reduction program any feasible measures that may have already been identified to achieve emissions reductions as quickly as possible.

Metrics to Track Progress

We plan to establish a minimum set of metrics to be included in the community emissions reduction programs and subsequent annual progress reports. These metrics will assess and track emissions reductions, Program implementation, and additional co-benefits of community emissions reduction program implementation. No single metric alone can capture progress on its own, but taken together this suite of metrics will provide valuable insight at the community level. Potential metrics being considered include:

- *Annual Metrics on Community Emissions Reduction Program Elements:*
 - Emissions of applicable criteria air pollutants and toxic air contaminants identified as the significant contributors to the elevated exposure burden in the community-level assessment.
 - Rules and regulations adopted or other strategies implemented.
 - Dollars invested and projects implemented in and/or benefitting the community.
 - Number of public meetings held in subject communities and number of people in attendance.
 - Enforcement activities, including number of inspections and notices of violations related to air quality impacts.
- *Multi-year Metrics on Reducing Exposure:*
 - Measured or modeled concentrations of applicable criteria air pollutants and toxic air contaminants over time.
 - Modeled cancer and non-cancer health risk.
- *Additional Metrics on Complementary Goals or Co-benefits:*
 - Local economic impacts (i.e., job losses or gains, job training).
 - Technology advancement including deployment of zero emissions technology.
 - Public health indicators.
 - Other community benefits (i.e., education, training, capacity building).

CARB staff is seeking specific recommendations for the types of metrics that should be included in the community emissions reduction programs and potential data sources that could be used.

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Enforcement Plan

A strong and effective enforcement program will be an important element of each community emissions reduction program to ensure existing and future regulatory programs are successfully reducing emissions and improving public health. While AB 617 does not alter the traditional enforcement authority for CARB or the air districts, it does provide for an increase in civil penalties, with an enhanced penalty schedule. It also provides an opportunity to develop improved approaches to enforcement in each community and enhance communication with and participation by the local community in the enforcement process. The air districts and CARB will work together to develop and implement enforcement programs in each community.

The enforcement provisions of the community emissions reduction programs should be informed by a baseline understanding of current enforcement efforts at each source in the community, as well as the concerns of local community members. The enforcement program should be tailored to address specific community issues and ensure implementation and enforcement of specific strategies as they are developed. Enforcement efforts may involve the use of advanced enforcement techniques such as pollution measurement or surveillance to address complex enforcement issues. Community-specific enforcement programs may support enhanced community participation through training for enhanced compliance reporting and through new tools, such as smartphone-based applications for community reporting, to help inform enforcement staff in real-time to accelerate enforcement response.

VII.E. CARB Review of Community Emissions Reduction Programs

CARB staff will review the community emissions reduction programs and develop recommendations for CARB Board consideration based on staff's evaluation of proposed criteria. The proposed criteria include: conformance with the required minimum criteria included in the Framework; appropriateness and adequacy of strategies and implementation timelines; and adequacy of the public process and effectiveness of community partnerships. We are also considering developing a community emissions reduction program evaluation rubric to include in the Framework to clearly communicate what makes a community emissions reduction program approvable. CARB staff will work closely with air districts throughout the community emissions reduction program development process to provide appropriate technical resources and ensure expedited review and consideration of each community emissions reduction program.

CARB staff is seeking specific recommendations on the criteria and process for CARB review of community emissions reduction programs.

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VII.F. Annual Reporting for Community Emissions Reduction Programs

AB 617 requires air districts to develop annual progress reports on the status of implementation of their community emissions reduction programs. To help meet this requirement air districts should include the following elements in their annual community emissions reduction program progress reports:

- A status update on all strategies included in the community emissions reduction program.
- Qualitative assessment of programmatic progress including lessons learned and best practices, emphasizing potential transferability to other communities with similar sources and air quality challenges.
- Updates on the metrics for tracking progress identified in the community emissions reduction program, including emissions reductions.
- Planned programmatic changes based on progress to-date.

These annual progress reports will inform air district implementation and CARB Board direction on continued enhancements or modifications to the overall Framework.

VII.G. California Environmental Quality Act Analysis

CARB and the air districts are required to comply with CEQA insofar as activities required by AB 617 are projects subject to CEQA. CARB and air district staff will work together to better define a process for complying with CEQA requirements in conjunction with meeting the statutory requirements of AB 617 as applicable.

A project is defined in CEQA to mean in part an “activity which may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the physical change in the environment” and is undertaken by a public agency.¹⁷ For every project that is not exempt, CEQA requires the appropriate level of environmental review be conducted before that project may be approved. With regard to activities required by AB 617, this review will generally be conducted during an air district’s community emissions reduction program development process, but additional review may sometimes be needed during CARB’s review process.

CEQA includes both procedural and substantive requirements. For non-exempt projects, at a minimum, an initial review of the project and its environmental effects must be done. For example, such review would include evaluating the potential for air quality

¹⁷ Public Resources Code §21065.

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impacts from criteria air pollutant, toxic air contaminant, and odor emissions; and potential GHG impacts. Depending on the potential effects, a further and more substantial review may be required in the form of an environmental impact report or equivalent document, or a negative declaration or mitigated negative declaration or equivalent document. A project may not be approved as submitted if feasible alternatives or mitigation measures are able to substantially lessen the significant environmental effects of the project. In its approval of a community emissions reduction program, the air districts will need to determine the appropriate CEQA analysis required and consult with CARB. CARB, in its consideration of the air district's community emissions reduction programs, will rely on the CEQA analysis completed by the air districts. In certain situations (i.e., where CARB has to add to the air district's community emissions reduction program to make it approvable), CARB may have to conduct additional CEQA analysis under its certified regulatory program. Close and early coordination between CARB staff and the air districts will be very important.

VIII. CRITERIA FOR COMMUNITY AIR MONITORING

Community-level air monitoring can play an important role in supporting effective action by providing data to characterize air quality impacts, help identify contributing sources when combined with information such as meteorology and emissions data, and support actions to reduce emissions. Air monitoring is also one method to track progress. Under AB 617, CARB must prepare an air monitoring plan by October 1, 2018 that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks.

In addition to these core requirements, a number of other activities are essential to support the continued evolution of community air monitoring and successful implementation of AB 617. CARB staff will develop criteria and best practices for conducting community air monitoring; evaluate and advance air monitoring technologies; support air districts and communities; and make air monitoring data broadly accessible, transparent, and relevant. These resources will be included in an online community air monitoring resource center to advance air monitoring technology and methods, foster collaborative relationships for community air monitoring campaigns, and democratize data collection, display, and interpretation. New monitoring deployed as part of AB 617 will augment current monitoring being conducted by CARB and local air districts to provide enhanced community-level coverage. These efforts will also complement other special studies such as oil and gas, pesticides, and fence-line refinery monitoring.

The following sections outline the proposed process and criteria for developing and implementing community air monitoring plans and making data accessible. We envision a variety of approaches will be utilized for community air monitoring campaigns under AB 617 led by both government agencies and community-based organizations, and we

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are developing guidance for these efforts that builds on successful models of current community air monitoring. The proposed criteria are essential to support science-based evaluations of community air quality and ensure air monitoring campaigns generate usable and reliable air quality data that can support actions associated with the air monitoring objectives for each community.

VIII.A. Community Air Monitoring Objectives and Methods

Community air monitoring campaigns can support a variety of objectives. These objectives will vary depending upon the needs of each community, but can include:

- Identifying emissions sources and detecting the importance of individual sources.
- Characterizing concentrations in communities with approaches that are complementary to the regulatory air monitoring network.
- Identifying and characterizing areas in communities experiencing disproportionate air pollution impacts.
- Providing real-time air quality information at the community level.
- Assessing progress in reducing levels of criteria pollutants and air toxics.
- Supporting enforcement activities.

Organizations designing and implementing community air monitoring campaigns should select methods that provide sufficient quality, quantity, specificity, and sensitivity to meet their specific air monitoring objectives. These can include:

Federal Reference and Federal Equivalent Methods: These air monitoring methods specify equipment and procedures to monitor criteria air pollutants that meet regulatory requirements as prescribed in the Code of Federal Regulations. Data from these methods are used for determining attainment or non-attainment¹⁸ of national and State ambient air quality standards, supporting public information services, forecasting expected high pollution events, and supporting the development of emissions reduction programs. For methods that provide measurements in the field, preliminary data can be available in near real-time. Data must complete a review and validation process by the agency collecting the data before they are final for regulatory purposes. Because this type of monitoring often requires significant infrastructure and resources, these methods have limitations for widespread deployment as part of community air monitoring campaigns.

Air Toxics Methods: Most air monitoring methods for toxics involve collecting air samples in the field and returning them to the laboratory for subsequent analysis. Data

¹⁸ Non-attainment areas are those areas where the air quality is dirtier than a national and State ambient air quality standard.

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from these methods may take weeks or in some cases months after sampling to become available as these sophisticated methods often require labor-intensive analytical procedures. There are some methods that can analyze hourly samples in the field, but the instruments are expensive and require significant siting and data infrastructure, as well additional time for data analysis. Air toxic monitoring data are used to identify sources contributing to air toxic pollution and trends in the concentration of air toxics over time. Data can be used to support regulatory and enforcement actions when collected in a scientifically defensible manner.

Remote Sensing: Remote sensing instrumentation measures reflected or emitted radiation to collect information about air pollutant concentrations and meteorological conditions. Remote sensing instruments can be deployed on ground-based (mobile and stationary platforms), airborne (i.e., aircraft, balloons), and spaceborne (i.e., satellites, spacecraft) platforms. Fence-line remote sensing applications can be designed to monitor source emissions from facilities and roadway deployments can be designed to measure emissions from vehicles. When deployed on aircraft or satellites, remote sensing systems can survey large spatial areas. These air or space-borne remote sensing systems can identify the general location of air pollution hotspots but finer spatial measurements are needed to identify the exact location or source, or more specific measurements to identify the pollutants.

Mobile Monitoring: Mobile platforms collect environmental data while in motion, for example in a car or van. They utilize instrumentation that can quickly measure air pollutant concentrations and provide instantaneous snapshots of air pollutant concentrations at a specific location and time. Mobile platforms can deploy a variety of instrumentation ranging from sensors, research-grade instrumentation, and remote sensing devices. Mobile platforms have the ability to measure real-time air pollutant concentrations at fine spatial gradients and can be used to identify persistent elevated pollutant concentrations and indicate potential contributing sources. Mobile measurements may not be appropriate for situations in which the pollutant concentrations change significantly over time or emissions are expected to be intermittent.

Fence-line Monitoring: Fence-line monitoring is a monitoring strategy in which air quality is measured at the perimeter of a known emissions source. Under AB 617, air districts may require fence-line monitoring at stationary sources that emit air pollutants in identified communities. Depending on the air pollutant that is expected to be emitted, fence-line monitoring can utilize a wide variety of measurement tools such as air sensors, passive samplers, remote sensing systems, and real-time instrumentation. This type of monitoring may be used to help determine where and when leaks are occurring, at what rate emissions are leaving the source, and to help determine what chemicals are present in fugitive emissions.

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Air Sensors: Air quality sensors measure air pollutants on a real-time or near real-time basis and are generally low in cost, highly portable, and can require less power and siting infrastructure than other air monitoring methods. Currently, no low-cost (i.e., \$2,000 or less) sensors meet federal reference or federal equivalent method requirements and many have not been robustly evaluated to determine the accuracy of their measurements; however, sensor technology is rapidly developing and their performance is expected to improve over time. Sensors have the potential to provide hyper-local air quality data as part of coordinated, well-designed community-led air monitoring campaigns. The resulting data may be of sufficient quality to help understand spatial variability, identify areas with relatively higher pollutant concentrations for further investigation with more robust techniques, complement existing air monitoring networks, and evaluate personal exposure to air pollution.

VIII.B. Community Air Monitoring Plan Elements

We are proposing 13 elements of community air monitoring plans to guide the process of planning air monitoring campaigns capable of producing the type, quality, and quantity of data needed to meet community air monitoring goals. We have designed the proposed elements based on practices used successfully in past and current community air monitoring campaigns. The elements are intended to establish practices that are flexible enough to apply to a wide variety of air monitoring methods, yet robust enough to ensure that the data collected by each individual community air monitoring campaigns are appropriate to support sound decision-making. The duration of a given campaign will depend on the community-specific monitoring objective and will be defined as a part of the planning process.

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Table 1. Proposed Elements for Community Air Monitoring Plans

#	Element	Activities
1	Engage community members	Establish a community participation structure to ensure community members are partners in the development of air monitoring plans.
2	Develop community-specific problem statements	Assess existing monitoring and identify the problem(s) that the community air monitoring campaigns will address.
3	Define air monitoring objectives	Describe the goal(s) of the air monitoring campaigns; state how air monitoring data will be used to inform the problem; frame objective(s) with resulting action in mind.
4	Define data quality objectives	Define data quality indicators (i.e., precision, accuracy, completeness, representativeness, comparability, measurement range) to ensure data will meet defined standards of quality at stated level of confidence appropriate to satisfy air monitoring objective(s).
5	Establish roles and responsibilities	Assign specific tasks or duties that involved parties are expected to complete as a function of their role in the air monitoring campaigns and identify available resources.
6	Select equipment and monitoring methods	Select among available air monitoring techniques to perform data collection appropriate to meet the level of action required by the air monitoring objective(s).
7	Determine monitoring locations and sampling frequencies	Outline information on selecting air monitoring sites, types of samples required, sampling periods, sampling procedures, and identifying potential constraints.
8	Develop quality control procedures	Describe calibration, audit frequency and criteria, and corrective action steps to take if problems are identified.
9	Provide work plan for conducting field measurements	Develop timeline for air monitoring; define process for coordinating with community members; document sample handling procedure to be utilized while air monitoring is being conducted.
10	Manage and validate data	Discuss the path data take from collection to analysis to storage and use; define review process for how data are judged to be valid or invalid and measures taken to account for errors.
11	Specify process for evaluating effectiveness	Describe the process for determining whether the data meet the intended air monitoring objective(s); establish criteria to define completion of the air monitoring campaigns.
12	Analyze and interpret data	Establish how data will be analyzed and utilized to evaluate relationships, correlations, trends, etc.
13	Communicate results	Describe final reporting format, frequency, and content included when providing results to the public; follow established data exchange standards when reporting to CARB.

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https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=capp-conceptpaper-ws&comm_period=1.

CARB staff is seeking specific recommendations on the proposed elements of community air monitoring plans.

VIII.C. Community Engagement

Air districts should work with selected communities to form a community steering committee made up of local residents, business, government, schools, and other stakeholders, along with academic researchers as appropriate. This community steering committee will focus on items including: understanding community issues; developing community air monitoring plans, and determining data display and interpretation needs.

CARB staff is seeking specific recommendations on the structure, makeup, and roles and responsibilities of the community steering committee.

VIII.D. Data Communication and Accessibility

Improving communication and information sharing with communities is a vital component of AB 617. While we expect that many air districts and community groups may develop and maintain local data display systems, air districts are also required to report data from community air monitoring campaigns to a statewide data portal administered by CARB. Staff proposes as a fundamental principle that community air monitoring data must be publicly stored and accessible, and not stored or accessed solely on proprietary systems. To increase transparency and help make results more meaningful for the public, we propose to leverage existing data systems and websites and create new systems as needed to collect, store, and analyze community-level air quality data.

Develop Data Visualization Tools

CARB staff will promote data transparency and data availability and will develop visualization tools (e.g., interactive maps) to meet these end-user needs. Different users have different data interpretation and visualization needs and we will consider this in the development process to build a system that meets a variety of needs. Input from community members, air districts, and other interested parties will be essential in determining these user-interface and visualization features and ensuring that CARB's statewide data portal complements existing local efforts to display data. We expect to develop the statewide data portal by July 2019.

CARB staff is seeking specific recommendations on the various uses that the statewide data portal should support.

Please submit any written comments to:

https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=capp-conceptpaper-ws&comm_period=1.

Establish or Recommend Data Exchange Standards

Many technologies available on the market do not have established data format or data transfer protocols. These standards are important for ensuring that community air monitoring data can be easily and openly shared and analyzed, while also providing the end-user with information on how the data were gathered. Staff proposes to work with stakeholders experienced in data management, instrument communication, and data standards to establish consistent data exchange standards for community air monitoring campaigns. These standards will ensure that community air monitoring data are compatible with the statewide data portal which will be publicly available via CARB's website. We expect to establish or recommend data exchange standards by April 2019.

VIII.E. Annual Reporting for Community Air Monitoring Campaigns

AB 617 requires CARB to hold an annual public hearing on the status of implementing community air monitoring in California, make recommendations for improvements, and identify a list of additional communities for community air monitoring campaigns. To help facilitate this effort, staff proposes air districts provide updates throughout the development and implementation of community air monitoring campaigns. At a minimum, air districts would update CARB staff with completed community air monitoring plans before the air monitoring campaign begins, and periodic progress reports (at least annually) and a final report, including lessons learned, when the campaign concludes.

IX. ADDITIONAL IMPLEMENTATION ELEMENTS

A number of additional elements are designed to complement requirements for community monitoring and emission reduction efforts to support effective implementation of AB 617. Robust public outreach and collaboration with local community groups, air districts, CARB, and other stakeholders will help develop partnerships to ensure actions are community-focused. These efforts, in addition to other implementation steps, are already underway. These include funding to support community assistance grants and early emission reductions, developing best practices documents and other community resources, as well as enhanced emissions reporting and development of a clearinghouse for advanced control technologies. CARB staff expects to deliver many of these elements by October 1, 2018, with additional actions implemented over the next five years.

IX.A. Further Public Engagement

Community partnerships and an ongoing comprehensive and collaborative public process is essential to ensure meaningful, community involvement in the development

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and implementation of the Program. CARB staff and the air districts hosted a series of four informational meetings throughout the State in fall 2017. The meetings provided an opportunity for the public to learn about the requirements of AB 617 and engage in discussion related to the development and implementation of the Program. This was the first of many outreach efforts by both CARB staff and the air districts and we will continue to reach out to all stakeholders and look for opportunities to learn, discuss, and build upon existing successes. Community meetings, workshops, and other outreach will continue to take place through summer 2018 allowing for further discussion regarding the draft Framework. Additional opportunities will be available through complementary public engagement efforts conducted by air districts as part of their process for recommending communities, and during development and implementation of community emissions reduction programs and community air monitoring campaigns.

As one component of this outreach CARB staff has convened a multi-stakeholder consultation group. Members of the consultation group include individuals representing environmental justice organizations, air districts, industry, academia, public health organizations, and local government.¹⁹ The consultation group will provide an additional forum to discuss a variety of issues, including the development of the air monitoring plan and statewide strategy, and the identification of communities with the highest cumulative exposure burdens. The consultation group held its initial meeting on January 30, 2018, and will meet throughout the implementation of AB 617.

IX.B. Community Funding

Acknowledging the need for funding to support successful implementation of AB 617, the Legislature appropriated funding in fiscal year 2017-18 for both CARB and the air districts for initial implementation of the Program. The Legislature also recognized the importance to immediately reduce emissions in highly burdened communities and therefore appropriated a total of \$255 million of Cap-and-Trade auction proceeds in fiscal year 2017-18 to fund emission reduction projects that provide benefits to communities with the highest air pollution burdens. Beyond this initial appropriation, ongoing resources will be critical for the success of the Program. The Governor's Proposed Fiscal Year 2018-19 Budget proposes \$250 million in continued funding from the Greenhouse Gas Reduction Fund for both mobile and stationary source projects. This funding can be used to support incentive programs for. The Governor's proposed budget also include \$5 million for continue funding of community assistance grants.

¹⁹ A list of consultation group members is available at: <https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program-ab617/community-air-protection-program-consultation-group>.

Incentive Funding to Support Immediate Emissions Reductions

As an initial down payment to deliver on the goals of AB 617, of the \$255 million provided in the Governor's Fiscal Year 2017-18 Budget, \$250 million 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 (Carl Moyer Program), except that at its discretion, an air district may allocate up to 40 percent of the funds it receives to incentivize clean trucks in accordance with CARB's Proposition 1B Goods Movement Emission Reduction Program Guidelines.²⁰ The funding allocated to specific air districts include:

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

CARB staff is working with the air districts to ensure the funds are targeted at reducing emissions and exposure in the most burdened communities, per AB 617.²¹ We have established a set of funding principles for air districts to reflect in their selection of projects, ensuring funding supports the goals of AB 617 and provides benefits in disadvantaged and low-income communities. These principles specify that air districts conduct public outreach to local residents and community groups to inform investment decisions, and select projects in communities that are known to be heavily burdened (e.g., disadvantaged and/or low-income communities). The funds should also focus on vehicles and/or equipment that spend a substantial amount of time in those communities. Air districts are posting information on their websites regarding their proposed approaches and public engagement process for funding projects.

CARB staff is also initiating a public process on proposed modifications to the Carl Moyer Program Guidelines²² that would further facilitate the ability to fund the types of projects that would be most beneficial at the community level, such as zero emissions technologies. This will provide a further opportunity for public input.

²⁰ The Proposition 1B Goods Movement Emission Reduction Program Guidelines are available at: www.arb.ca.gov/bonds/gmbond/gmbond.htm.

²¹ 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.

²² The Carl Moyer Memorial Air Quality Standards Attainment Program Guidelines are available at: www.arb.ca.gov/msprog/moyer/moyer.htm.

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Community Assistance Grants

An additional \$5 million has been appropriated for community assistance grants to facilitate participation in the AB 617 process.²³ As an initial step toward building the capacity of California communities to participate in the implementation of AB 617, CARB has created the Community Assistance and Innovative Resource (AIR) Grants Program. This program allows maximum flexibility for community-based organizations to participate in the AB 617 process and to build their own capacities to become active partners with government to identify, evaluate, and ultimately reduce exposure to harmful air emissions in their neighborhoods. Eligible entities include: community-based non-profit groups; recognized tribal entities; and faith-based organizations, with proposed projects exclusively for the purposes of AB 617 community participation. A solicitation for grants will be released in early 2018 and will be open through March. Awardees will be announced by summer 2018.

Examples of what AIR grants may be used to fund include, but are not limited to:

- Community engagement and outreach related to AB 617.
- Community training on AB 617 concepts.
- Travel and logistical support for hosting or attending meetings related to AB 617 (i.e., room rental, meeting facilitation, transportation).
- Bus tours and “ground-truthing” exercises in communities to identify potential emissions sources.
- Hiring consultants or technical experts.
- Support for community-operated air monitoring.
- Data collection and analysis, including community-based participatory research projects.

IX.C. Statewide System of Annual Emissions Reporting

Emissions inventory data are the foundation of multiple elements of the Program and provides a robust technical basis for understanding emissions source contributions, assessing the impacts of emissions control and process changes, providing greater transparency and accessibility of emissions data for community members, and tracking the implementation of community emissions reduction programs. New requirements under AB 617 will work hand-in-hand with efforts underway as part of AB 197²⁴ and include: annual reporting of criteria air pollutant and toxic air contaminant emissions for

²³ 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.

²⁴ AB 197, Garcia, E, Chapter 250, Statutes of 2016.

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specified large facilities, CARB's development of statewide uniform emissions reporting system, and the option for CARB to require sources certify or verify the accuracy of annual emissions reports.

Staff is proposing a phased implementation approach of these reporting requirements to inform the community identification process and community emissions reduction programs in the near-term, as well as develop a comprehensive new emissions framework longer-term. The frequency of reporting criteria air pollutant and air toxics emissions data varies between air districts. Many large air districts collect criteria and air toxic emissions data annually, while smaller districts may only report emissions once every three or four years, depending on the size of a facility.

CARB staff is already working through the details of developing a statewide framework that can increase accessibility, be user friendly, and support air district and community needs. Staff will continue working with air districts and other stakeholders to develop the first phase of meeting AB 617 reporting requirements, which will include a regulation to establish requirements for annual reporting for criteria air pollutants and toxic air contaminants under a statewide reporting framework. This will provide more timely data and ensure consistency with the frequency of reporting of greenhouse gases. The second phase will include development of a set of uniform reporting methodologies to ensure emissions are comparable and reported consistently across the State. We are working with air districts to develop the process for completing these tasks and anticipate establishing additional workgroups with air districts, communities, affected industry, and other stakeholders to implement the emissions reporting requirements. This second phase will also include development of a new integrated database system for criteria air pollutant, air toxic, and GHG emissions to support multi-pollutant planning efforts.

IX.D. Technology Clearinghouse

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, 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. In addition to housing these 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 sources²⁵ as well as forward-looking information on the next generation of ultra-low or zero emissions technologies to support continued emissions control technology advancement. It will be a useful tool to identify the best control technologies, rules, and measures for use in

²⁵ 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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controlling emissions and will foster continued technology advancement by highlighting next generation technologies. The Technology Clearinghouse will also 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 been delegated the authority to issue permits to stationary sources, allowing them to operate within emission limitations. 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. Permit limits are usually updated every time a facility installs new equipment or modifies their existing equipment. Permitting requirements vary by location based on the facility and equipment type, 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 attainment²⁶ designation status.

New facilities or facilities modifying equipment that emit air pollutants over specific air district emissions thresholds, are subject to stringent emissions control requirements. Air districts determine the best-achievable emissions limit for each equipment type over these emissions thresholds based on the cleanest technology available at that time (this is called best available control technology, or BACT). Other BACT "determinations" for a specific equipment type must be considered by air district staff during the permitting of a new or modified facility. Under AB 617, air districts are now required to use CARB's Technology Clearinghouse when updating their BACT determinations for stationary sources.

Existing stationary sources in non-attainment areas are subject to best available retrofit control technology (BARCT) requirements. BARCT rules are adopted periodically by air districts to reduce emissions from existing sources of a particular source type. These requirements are set considering feasibility, cost-effectiveness,²⁷ and the nature and severity of the air quality challenge.

²⁶ 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.

²⁷ 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.

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Under AB 617, air districts in non-attainment areas are required to adopt an expedited schedule and implement the most current BARCT limits on industrial sources that are subject to the AB 32²⁸ Cap-and-Trade program. Air district BARCT schedules must be adopted by January 1, 2019 and implemented by December 31, 2023, and must give the highest priority to permitted units that have not modified emissions-related permit conditions for the greatest period of time. The expedited schedule does not apply to emission units that have implemented BARCT since 2007 due to a permit revision or new permit issuance.

Approach and Schedule

Staff plans to develop the Technology Clearinghouse in two phases. In Phase Ia, we will develop an Interim Technology Clearinghouse to meet the bill requirement for a statewide clearinghouse that identifies BACT, BARCT, and the best available control technology for toxic air contaminants (T-BACT) for stationary sources. This includes updating the existing BACT Clearinghouse to include BARCT and T-BACT, and populating the database.

After updating the existing system, staff will expand the Interim Technology Clearinghouse to include information on mobile and area-wide source rules and Airborne Toxic Control Measures (ATCM) (Phase Ib). 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. The steps required to complete the Interim Technology Clearinghouse will be prioritized based on statutory requirements and support needed for community emissions reduction programs. The following sub-set of Phase I tasks are expected to be completed by September 2018:

- Air district submission of BACT and T-BACT determinations not currently in the existing BACT Clearinghouse.
- Air district determinations of BARCT rules based on the facilities located in the district, as well as each air district's cost-effectiveness threshold.
- Modifications to CARB's current BACT Clearinghouse to enhance input and search function capabilities.
- Examples of the most stringent control technologies, measures, and rules for mobile, area-wide, and stationary sources.

Phase II of the Technology Clearinghouse will enhance functionality and allow users to compare the most stringent technologies achieved in practice for each equipment or vehicle type with technologically feasible or next generation technologies. Emissions

²⁸ AB 32, Nunez, Chapter 488, Statutes of 2006.

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controls are referred to as “technologically feasible” when they are placed on other similar sources, but have not yet been transferred or identified as cost-effective. Next generation technologies are alternatives to conventional equipment. Identifying zero and near-zero technologies such as fuel cells, solar, and battery backup systems in the Technology Clearinghouse, will allow users to identify prospective long-term technology solutions. 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. Beginning in June 2018, staff will begin working with a contractor to expand the Technology Clearinghouse functionality and features. Part of this contract will be linking the Technology Clearinghouse data 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 in place. Ultimately, when Phase II is completed in 2020, users will be able to compare the level of controls deployed across similar facilities and specific equipment statewide.

IX.E. Resources for Best Practices on Outreach, Land Use, and Transportation Strategies

During our initial outreach efforts, we have heard consistent concerns from community members about the need for approaches to better engage with and influence local land use planning efforts. To address this need, we propose developing best practices documents and tools for local outreach, land use, and transportation strategies. Many environmental justice organizations and advocacy groups have knowledge of local land use issues and experience of developing tool kits.²⁹ CARB staff will work closely with these groups and other agencies as new State tool kits are developed. These will support all communities and air districts as community emissions reduction programs are developed.

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, we 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

²⁹ One example is California Environmental Justice Alliance’s “SB 1000 Toolkit: Planning for Healthy Communities,” available at: <http://caleja.org/2017/09/sb-1000-toolkit-release/>.

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.

IX.F. Resources for Community Air Monitoring

Air monitoring is currently a joint responsibility between CARB and local air districts, and under AB 617 we will continue this coordination to leverage combined resources, promote consistency across community air monitoring campaigns, enhance partnerships with community-led efforts, and incorporate new air monitoring methods. Information and resources for community air monitoring will be available on an online resource center to ensure that air districts and communities have easy access to air quality data and visualization tools, air monitoring technology evaluations and best practices, and links to existing air monitoring campaigns and associated resources. The resource center will support the development of community science to help democratize the process of data collection. We expect to establish the community air monitoring resource center with materials by October 1, 2018 and expand the resource center by adding new features and materials as they become available over time.

Review Air Monitoring Technology and Existing Networks

The air monitoring technology review will cover techniques including traditional and standard methods, air toxics methods, remote sensing systems, mobile air monitoring platforms, fence-line air monitoring systems, and air sensors. It will identify appropriate applications for each air monitoring technology taking into consideration factors such as air pollutants measured, data quality, data reporting timeframe, cost of equipment and supporting resources, and practical implementation factors such as logistical and staffing needs to ensure sustainability. CARB staff will also review existing community air monitoring networks throughout the State, and how they can serve as successful models for new programs under AB 617. We will complete an initial review of air monitoring technologies and existing networks by October 1, 2018, augmenting this review with new information posted to the resource center on a periodic basis.

Evaluate Air Sensors

CARB staff will conduct laboratory and field-based sensor evaluation programs to determine applicability and best practices. This will be a collaborative effort with the South Coast Air Quality Management District (which operates the AQ-SPEC program), the U.S. Environmental Protection Agency, and others who have experience conducting sensor evaluations. Staff will work to build from and complement field and laboratory air sensor testing already being conducted by AQ-SPEC to evaluate sensor performance. We will procure and operate an air pollution test chamber, develop standard testing protocols, procure technologies to be evaluated, conduct testing, analyze data, and

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report laboratory findings. We will also select field trial locations to assess real-world sensor performance, including providing sensors to interested air districts to deploy at regulatory air monitoring sites and evaluate performance against their own air monitoring equipment. Evaluation protocols and field and laboratory test reports regarding the performance of air sensors for accuracy, precision, durability, and other factors will be made publicly available on the community air monitoring resource center. As sensor performance improves and they are demonstrated to be effective for various types of air monitoring, we will incorporate best practices for use in community air monitoring plans. We expect to begin air sensor evaluations in 2018 with chamber evaluations beginning in fall 2019.

Leverage Advanced Air Monitoring Technology

Advanced air monitoring technologies include remote sensing systems and advanced chemical methods that have the ability to survey large spatial regions, quantify difficult-to-measure air pollutants, or report air pollutant concentrations more frequently than traditional methods. This specialized instrumentation is extremely useful in specific applications; however, these tools can be cost prohibitive or used too infrequently to justify procurement by an individual air district. CARB staff collaborates with researchers and air districts to conduct large-scale air quality surveys and specialized air quality studies using advanced air monitoring tools. For example: methane monitoring using aircraft-based remote sensing; mobile air monitoring of volatile organic compounds from oil and gas facilities; or mobile air monitoring of particulates with real-time particle characterization (size and composition).

We plan to continue these programs and will seek to expand them as resources allow by providing additional tools, such as specialized equipment and survey data, to support community air monitoring campaigns.

Improve Existing Technologies and Help Bring New Technologies to Market

Continued evolution of air monitoring technologies is needed to overcome limitations of current air monitoring instrumentation and sensors. We will collaborate with researchers by sponsoring technical meetings and technology challenges to spur development of new techniques that provide improved data quality and monitor for air pollutants of concern for which sensors are not yet available. CARB is sponsoring the Air Sensors International Conference with the University of California, Davis in September 2018 to bring together stakeholders from academia, government, communities, and commercial interests to promote and advance air pollution sensors, improve the data quality from these sensors, expand the air pollutants measured, and foster community involvement in monitoring air quality. We are also currently sponsoring research to advance real-time metals measurements, with results expected by 2021.

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Support Community Science

CARB staff is committed to providing technical support and consultation to communities to ensure that community air monitoring campaigns produce meaningful results. We will make technical resources such as best management practices, guidance, and sensor evaluation reports will be made available through the community air monitoring resource center. CARB encourages public participation in the process of environmental protection by making its community air monitoring expertise and resources available to community scientists.

CARB staff is seeking specific recommendations for the types of information and resources that are needed to support community science.

Provide Air Sensors to Air Districts

To increase the air districts' access to emerging sensor technologies, expand the number of air districts with first-hand air sensor experience, and enable air districts to explore air sensor applications within communities, CARB staff will procure and establish an inventory of air sensors for interested air districts. This will support air districts who want to evaluate the potential applications of air sensors when conducting local community air monitoring campaigns. CARB staff will work in close coordination with the South Coast Air Quality Management District and other air districts experienced with air sensors to share expertise across districts. To implement this program we will establish a solicitation process for interested air districts, distribute sensors to participants, develop written instructions for sensor operation, and train air district staff.

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X. MAPPING FRAMEWORK TERMS WITH AB 617 LANGUAGE

Table 2. Mapping Framework Terms with AB 617 Language

Concept Paper Terminology	AB 617 Statute Terminology	California Health and Safety Code Section
Statewide system of annual emissions reporting	"...board... shall establish a uniform statewide system of annual reporting of emissions of criteria pollutants and toxic air contaminants for a stationary source."	§39607.1 (b)(1)
Technology clearinghouse	"...board shall establish and maintain a statewide clearinghouse that identifies the best available control technology and best available retrofit control technology for criteria air pollutants, and related technologies for the control of toxic air contaminants...."	§40920.8 (a)
Resources for community air monitoring	"...board shall prepare... a monitoring plan regarding the availability and effectiveness of toxic air contaminant and criteria air pollutant advanced sensing monitoring technologies and existing community air monitoring systems, as well as the need for and benefits of establishing additional community air monitoring systems...."	§42705.5 (b)
Community air monitoring campaigns	"...any district containing a location selected ...shall deploy a community air monitoring system in the selected location or locations...."	§42705.5 (c)
Community Selection (for community air monitoring campaigns)	"...board shall select, concurrent with the monitoring plan... and based on an assessment of the locations of sensitive receptors and disadvantaged communities, the highest priority locations around the state to deploy community air monitoring systems, which shall be communities with high exposure burdens for toxic air contaminants and criteria air pollutants."	§42705.5 (c)

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Table 2. Mapping Framework Terms with AB 617 Language (continued)

Concept Paper Terminology	AB 617 Statute Terminology	California Health and Safety Code Section
Statewide strategy	“...board shall prepare... a statewide strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden. The state board shall update the strategy at least once every five years...”	§44391.2 (b)
Assessment of communities	“An assessment and identification of communities with high cumulative exposure burdens for toxic air contaminants and criteria air pollutants.”	§44391.2 (b)(1)
Assessment of contributing sources	“A methodology for assessing and identifying the contributing sources or categories of sources ...and an estimate of their relative contribution to elevated exposure to air pollution in impacted communities...”	§44391.2 (b)(2)
Community selection (for community emissions reduction programs)	“... board shall select, concurrent with the strategy, locations around the state for preparation of community emissions reduction programs. The state board shall select additional locations annually thereafter, as appropriate.”	§44391.2 (c)(1)
Community emissions reduction programs	“...the districts... shall adopt...a community emissions reduction program to achieve emissions reductions for the location selected...”	§44391.2 (c)(2)

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XI. GLOSSARY OF TERMS

The California Air Resources Board website provides a glossary of terms commonly used throughout our website and documents. Please refer to the CARB Glossary for additional terms not included in the list below.

Acute exposure – One or a series of short-term exposures generally lasting less than 24 hours. (1)

Acute health effect – A health effect that occurs over a relatively short period of time (e.g., minutes or hours). The term is used to describe brief exposures and effects which appear promptly after exposure. (1)

Air quality standard – The prescribed level of a pollutant in the outside air that should not be exceeded during a specific time period to protect public health. Established by both federal and state governments. (1)

Air sensor – Device that measures air pollutants on a real-time or near real-time basis that is generally portable, low in cost, and can require less power than other air monitoring methods. (2)

Air toxics – A generic term referring to a harmful chemical or group of chemicals in the air. Substances that are especially harmful to health, such as those considered under U.S. EPA's hazardous air pollutant program or California's AB 1807 and/or AB 2588 air toxics programs, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic. (1)

Airborne Toxic Control Measure (ATCM) – A control measure adopted by CARB (Health and Safety Code Section 39666 et seq.), that reduces emissions of toxic air contaminants. (1)

Area-wide sources – Sources of pollution where the emissions are spread over a wide area, such as consumer products, fireplaces, road dust and farming operations. Area-wide sources do not include mobile sources or stationary sources. (1)

Attainment area – A geographical area identified to have air quality as good as, or better than, the national and/or California ambient air quality standards (NAAQS/CAAQS). An area may be an attainment area for one pollutant and a nonattainment area for others. (1)

Best available control technology (BACT) – The most up-to-date methods, systems, techniques and production processes available to achieve the greatest feasible emission reductions for given regulated air pollutants and processes. (1)

Best available control technology for toxic air contaminants (T-BACT) – The most effective emission limitation or control technique which has been achieved in practice or found by the CARB Executive Officer or Air Pollution Control Officer of the local districts to be technologically feasible. (1)

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Best available retrofit control technology (BARCT) – An air emission limitation that applies to existing sources and is based on the maximum degree of reduction achievable, taking into account environmental, energy and economic impacts by each class or category of source. (1)

CalEnviroScreen 3.0 – Developed by the California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment, CalEnviroScreen 3.0 is a screening tool that is used to help identify communities disproportionately burdened by multiple sources of pollution and with population characteristics that make them more sensitive to pollution. (3)

Chemical Mass Balance Model (CMB) – A source apportionment model, for example the Environmental Protection Agency - CMB Version 8.2 uses source profiles and speciated ambient data to quantify source contributions. Contributions are quantified from chemically distinct source-types rather than from individual emitters. Sources with similar chemical and physical properties cannot be distinguished from each other by CMB. (4)

Community science or citizen science – Public participation in the process of scientific research. This can include identifying study objectives, collecting and analyzing data, and developing technologies and applications. (5)

Chronic exposure – Long-term exposure, usually lasting one year to a lifetime. (1)

Chronic health effect – A health effect that occurs over a relatively long period of time (e.g., months or years). (1)

Community Air Protection Program Framework (Framework) – A set of elements designed to meet AB 617's requirements to develop a statewide strategy and statewide air monitoring plan for CARB Board consideration. These elements include the proposed process for identifying impacted communities, statewide strategies to reduce emissions of criteria air pollutants and toxic air contaminants, as well as proposed criteria for development and implementation of community emissions reduction programs and community air monitoring campaigns.

Criteria air pollutant – An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10 and PM2.5. (1)

Cumulative impacts – The exposures, public health or environmental effects from the combined emissions and discharges, in a geographic area, including environmental pollution from all sources, whether single or multi-media, routinely, accidentally, or otherwise released. Impacts will take into account sensitive populations and socio-economic factors, where applicable and to the extent data are available. (6) The cumulative impacts AB 617 addresses are those related to emissions of criteria air pollutants and toxic air contaminants.

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Diesel particulate matter (DPM) – The solid material in diesel exhaust. DPM is typically composed of carbon particles (“soot”, also called black carbon, or BC) and numerous organic compounds, including over 40 known cancer-causing organic substances. More than 90 percent of DPM is less than 1 µm in diameter, and thus is a subset of particulate matter less than 2.5 microns in diameter (PM2.5). (see Particulate matter and PM 2.5) (7)

Disadvantaged communities – ...These communities shall be identified based on geographic, socioeconomic, public health, and environmental hazard criteria, and may include, but are not limited to, either of the following: (1) Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation. (2) Areas with concentrations of people that are of low-income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment. (8)

Emissions inventory – An estimate of the amount of pollutants emitted into the atmosphere from major mobile, stationary, area-wide, and natural source categories over a specific period of time such as a day or a year. (1)

Federal Reference Methods (FRM) and Federal Equivalent Methods (FEM) – Air monitoring methods that specify equipment and procedures to monitor criteria air pollutants that meet regulatory requirements as prescribed in the Code of Federal Regulations. Data from these methods are generally used for determining attainment or non-attainment of national and State ambient air quality standards. (9)

Fence-line monitoring system – Air monitoring equipment that measures and records air pollutant concentrations at or adjacent to a stationary source that may be useful for detecting or estimating emissions of pollutants from the source, including the quantity of fugitive emissions, and in supporting enforcement efforts. (10)

Greenhouse gas (GHG) – Atmospheric gases such as carbon dioxide, methane, chlorofluorocarbons, nitrous oxide, ozone and water vapor that slow the passage of re-radiated heat through the Earth's atmosphere. (1)

Mobile monitoring – A measurement platform equipped with instrumentation that can quickly measure air pollutant concentrations while in motion.

Mobile source – Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes. (1)

Nonattainment area – A geographic area identified by the United States Environmental Protection Agency and/or CARB as not meeting either National Ambient Air Quality Standards or California Ambient Air Quality Standards for a given pollutant. (1)

Ozone – A product of the photochemical process involving the sun's energy and ozone precursors, such as hydrocarbons and oxides of nitrogen. Ozone exists in the upper atmosphere ozone layer (stratospheric ozone) as well as at the Earth's surface in the

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troposphere (ozone). Ozone in the troposphere causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog. (1)

Particulate matter (PM) – Any material, except pure water, that exists in the solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products. (1)

PM_{2.5} – Particulate matter 2.5 microns or less in aerodynamic diameter. This fraction of particulate matter penetrates most deeply into the lungs. (1)

Positive Matrix Factorization – A source apportionment model, an example is the Environmental Protection Agency's Positive Matrix Factorization (PMF) Model reduces the large number of variables in complex analytical data sets to combinations of species called source types and source contributions. The source types are identified by comparing them to measured profiles. Source contributions are used to determine how much each source contributed to a sample. (4)

Remote sensing – The use of instrumentation that may be deployed on ground-based, airborne, or spaceborne platforms that measures reflected or emitted radiation to collect information about air pollutant concentrations and meteorological conditions.

Resource Center – An online repository that will house tools for air districts, community members, and other stakeholders to use when implementing AB 617.

Sensitive receptors – Includes hospitals, schools and day care centers, and such other locations as the district or state board may determine. (11)

Stationary Source – Non-mobile sources such as power plants, refineries and manufacturing facilities which emit air pollutants. (1)

Toxic air contaminants (TACs) – An air pollutant, identified in regulation by CARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. Health effects to TACs may occur at extremely low levels and it is typically difficult to identify levels of exposure which do not produce adverse health effects. (1)

References

1. Glossary, California Air Resources Board. [Online] <https://ww2.arb.ca.gov/about/glossary>.
2. Environmental Protection Agency, Air Sensor Toolbox for Citizen Scientists, Researchers and Developers Web Page. [Online] <https://www.epa.gov/air-sensor-toolbox>.
3. Office of Environmental Health Hazard Assessment. *CalEnviroScreen 3.0 Report*. 2017.
4. Environmental Protection Agency, Air Pollution Receptor Modeling Web Page. [Online] <https://www.epa.gov/scram/air-pollutant-receptor-modeling>.

Please submit any written comments to:

https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=capp-conceptpaper-ws&comm_period=1.

5. Environmental Protection Agency, Citizen Science for Environmental Protection. [Online] <https://www.epa.gov/citizen-science>.
6. California Environmental Protection Agency Interagency Working Group on Environmental Justice. 2005.
7. Health Effects of Diesel. *California Air Resources Board*. [Online] <https://www.arb.ca.gov/research/diesel/diesel-health.htm>.
8. California Health and Safety Code §39711 (a).
9. Title 40 of the Code of Federal Regulations, Part 53.
10. California Health and Safety Code §42705.5 (a)(3).
11. California Health and Safety Code §42705.5 (a)(5).

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