



May 7, 2018

Karen Magliano
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Submitted via email to Karen.magliano@arb.ca.gov and CommunityAir@arb.ca.gov.

Re: General Comments regarding Community Air Protection Program Concept Paper

Dear Ms. Magliano,

The Environmental Defense Fund (EDF) respectfully submits these comments regarding the Community Air Protection Program Concept Paper released in February 2018.

EDF supports the policy goals of AB 617, as they not only build off of other key air pollution regulations in the state, but intend to go further in directly addressing local air pollution and improving air quality in our state's most underserved and overburdened communities. We urge CARB and the local Air Districts to implement AB 617 in a manner in which actual emission reductions within selected communities is achieved, while building toward a statewide strategy for emission reductions. Prioritizing community concerns and engagement through every step of the design and implementation process is critical, and we stand in solidarity with our environmental justice colleagues and urge CARB and the Air Districts to prioritize the integration of their comments.

EDF offers the following comments from our own research and lessons learned regarding mobile and stationary monitoring. We hope this experience will help ensure robust community monitoring networks are designed in neighborhoods that lack valuable pollution data and that will lead to direct reductions in exposure to criteria air pollutants and toxic air contaminants. EDF would like to note that not all communities require additional monitoring, as many neighborhoods have been studied sufficiently. As CARB states, communities that have sufficient data about sources of pollution, exposures, and pollution types should move straight to capturing opportunities for emission reductions. However, as many communities do in fact lack actionable data, EDF offers the following insights:

Emerging monitoring technologies

EDF agrees with CARB that there is no one-size-fits-all air monitoring method that works for all communities and that different methods, or combinations of methods, will be needed to address specific pollution concerns and monitoring needs in different communities. The field of air pollution monitoring is also evolving rapidly, with new methods emerging that have the potential to aid community-level monitoring. We include a few examples of recent efforts led by EDF and partners here to highlight the potential of these new technologies:

- *High-Resolution Air Pollution Mapping with Google Street View Cars, Oakland, CA* (www.edf.org/airqualitymaps): This mobile monitoring study demonstrated a new measurement approach that revealed air pollution patterns at 4–5 orders of magnitude greater spatial precision than possible with current central-site ambient monitoring. From data collected over a one-year period, researchers generated highly resolved concentration maps for black carbon and nitrogen oxides at 30-meter scale that reveal stable, persistent pollution patterns and small-scale variability attributable to local sources within individual city blocks. For more detail about the study, the instruments and methodology used see article published in ES&T.¹ The maps can be used to identify local hotspots including smaller facilities not normally captured. They also show elevated pollution levels along certain truck prohibited streets, pointing to the need for greater enforcement and improved truck routes.
- *Emergency response deployments of mobile BTEX and VOC monitoring, Houston, TX*²: mobile VOC surveys were performed using AROMA-VOC trace vapor analyzer in the city of Houston in the week following Hurricane Harvey. This rapid mobile deployment identified multiple chemical plumes in fence line communities, as regulatory monitors were shut down. The mobile lab could analyze chemicals in real time, revealing levels of toxic chemicals several times higher than state health guidelines. The results triggered public health warnings to residents.

Along with mobile monitoring, the criteria for community air monitoring should include stationary monitoring types and technologies in order to help determine important pollution factors.

EDF agrees with CARB that where actionable data is lacking, air monitoring is an important method for identifying emissions sources, characterizing concentrations in communities, identifying areas with disproportionate air pollution impacts, providing real-time air quality information of a local level that can turn into real emission reductions, assessing progress, and ensuring enforcement and accountability.

Along with utilizing mobile monitoring technologies to provide important information on localized pollution trends that can be used as an initial screener in communities, stationary fence-line monitors are valuable for determining when and where leaks are occurring in industrial sources, at what rate emissions are leaving the source, and to help determine what chemicals are present in fugitive emissions.

¹ High-Resolution Air Pollution Mapping with Google Street View Cars: Exploiting Big Data. Apte et. al. Environmental Science & Technology 2017 51 (12), 6999-7008 DOI: 10.1021/acs.est.7b00891

²<http://blogs.edf.org/texascleanairmatters/2018/03/06/hurricane-harvey-wreaked-havoc-on-peoples-health-texas-should-be-better-prepared-next-time/>

While we share CARB's concern that low-cost air sensors can raise questions around data quality and data analysis needs, EDF recently published a [report](#)³, prepared by consultants Ramboll Environ, on the current state of low-cost air sensors. We found that lower cost sensors are rapidly evolving and improving over time, and can be an important tool for providing basic information that signals when and where there is a problem with a neighboring industrial source. Low cost air quality sensors are now widely available directly to consumers, even before sensor performance has been adequately characterized or certification protocols have been developed. They vary widely in quality, measurement reliability, and ease of use, and we recommend that each community steering committee evaluate and select the air sensor that best fits the needs for acquiring actionable data that will ultimately lead to reductions in a desired pollutant.

CARB should look at the information available by local air districts, community air monitoring efforts, academic pollution tracking initiatives, and other programs – along with CalEnviroScreen – to compile necessary existing data on pollution trends in communities of concern. This will ensure a reduction in duplicative efforts and will more efficiently identify where and how monitoring networks would be helpful.

Specific criteria for community air monitoring networks should be established and should include more than monitoring itself, but other components that affect air quality such as meteorological data, specific industrial activity or events that cause spikes in emissions at particular times, etc. It is important that CARB and the Air Districts take into account that the data only tells so much of the story, and that other factors as well as resident reports help more accurately depict a problem.

Data Exchange Standard

We agree that having a data exchange standards is critically important. EDF, through the Air Sensor Workgroup (www.edf.org/health/air-sensor-workgroup), has been working with experts in the field of air pollution measurement to come up with data standards for sharing data from low- and medium-cost air monitors and sensors and we will be happy to share with CARB.

We have already published [date and timestamp guidelines](#)⁴ detailing how timestamps should be captured by & stored on the sensors with typically low processing capacity, transfer of data from sensor to the backend system and storage in the backend system.

We will define a standardized set of data elements necessary to perform valuable air quality data analyses. This will also include standardized domain of values for some of the data elements like units of measurement. We may develop an ontology that is relevant for the air quality sensor domain.

In addition, we are defining standardized protocols and data structures in the data storage layer. This will facilitate data interchange across systems. Additionally, the Rules Engine we are building will function as a data quality evaluation component. The final AQ Data Store will be able to support report creation and analytics applications in a structured, uniform way. We welcome opportunity to collaborate with CARB and open to sharing our evolving standards and lessons learned in support of AB617 efforts.

³ <https://www.edf.org/sites/default/files/Ramboll-report.pdf>

⁴ <https://www.edf.org/health/data-standards-date-and-timestamp-guidelines>

Strategies to Reduce Emissions and Exposure

We agree with the initial strategies identified in the concept paper. However, these are high-level and we urge CARB to provide a list of specific strategies or measures to reduce emissions and exposure in the next/final draft for public review and comment prior to the Board's approval in October.

We also want to underscore the importance that there be a short-, medium-, and long-term vision for these efforts, to achieve these important public health improvements while also being mindful to ensuring that economic opportunities remain in these communities.

The concept note acknowledges that the program needs to go beyond existing efforts in terms of current regulations and programs at state and local levels. We offer a few initial ideas for additionality measures:

- One way to go beyond current regulations and programs (e.g., incentives) is for CARB to invest in finding more ways to encourage clean technology development and foster pathways for implementation. This goes beyond just providing funding for R&D or pilots, but includes having a much greater awareness for how business processes work. For example, CARB can craft regulations and policy that favor existing businesses or ones that allow new, smaller businesses to participate. Often, the newcomers bring disruptive technology that could be cleaner and provide greater benefits for communities. However, we want to make clear that any incentive funding should not come from funds dedicated to AB617 implementation.
- CARB could consider crafting incentives such that there is a sustainable pool that provides enough time for the regulated community to plan ahead and take advantage of incentives (likely declining – where early adopters get the bigger incentives and late adopters receive smaller incentives). Another related approach is to create a pool of funding from noncompliant or pollution contributors and provide funding from the pool for clean technologies. The cap-and-trade program does this already by moving money from stationary sources to fund clean transportation projects, but it can also be done in smaller scales. An example of this is an incentive structure put in place by Port Metro Vancouver for its tenants, whereby a tenant that has a Tier 0 piece of cargo-handling equipment pay a fee that is used to seed a fund that can be used by any tenant to offset the cost of replacing equipment.

Additional comments:

- While communities that are well organized and aware of pollution impacts in their neighborhoods should be given priority in the 617 process, we also urge CARB to not neglect communities who are historically underserved and overburdened by industrial and mobile sources of pollution, yet are not well organized, and therefore may not have been an active participant in the process. Identifying other communities that cannot be selected in the first year, and providing tools to better engage these residents for potential future community selection in the interim would help better ensure that all communities throughout the state are given an opportunity to participate.
- We agree with CARB that CalEnviroScreen is a fundamental tool for identifying communities with the greatest environmental and socio-economic burdens. Additionally, identifying major sources of local air pollution by industries that tend to be in close proximity to people is a useful way of tackling pollution by source. For example, oil and gas production, storing and processing has a major impact

on communities, and it would be advisable for CARB to identify areas with heavy oil and gas production in close proximity to people in order to ensure that communities surrounded by that specific point source of pollution are considered in the selection process.

- We agree that it is critical to set Emissions Reduction Targets for community emissions reduction programs and appreciate CARB's acknowledgement that targets must meet health-based air quality goals. We ask CARB to provide details on the approach(es) it is considering in setting these targets and the health-based goals. As have been expressed by many communities, this program needs to go beyond emissions reduction and lead to actual exposure reductions and improved health outcomes for communities.
- We urge CARB to provide more clarity around funding for the implementation of AB 617 beyond the first year. For greatest efficacy, AB 617 must be a multi-year effort and CARB should pursue consistent funding to the extent possible. It should also be clear that funding is to address emissions from both mobile and stationary sources, and utilized in a manner consistent with community input and priorities.
- We encourage CARB to consider land use measures to help improve local air quality including increasing public transit, active transportation, and urban greening. Specifically, we urge CARB to provide detailed recommendations for how Air Districts will collaborate with City and County departments, specifically zoning agencies that will be vital for ensuring that revisions of land use and zoning codes are properly considered as part of a community pollution reduction plan. Updating zoning codes, which in many areas in the state have not been revised for decades, might be necessary to protect residents affected by industries located in close proximity to them. We encourage CARB to consider other land use measures to create healthier, more sustainable communities that encourage the use of public and active transportation, and urban greening.

Thank you for the opportunity to comment and for your consideration of these comments. We look forward to continued opportunities to provide feedback and to see the rollout of a comprehensive and effective community air monitoring and reduction program that improves local air quality in the communities that need it most.

Sincerely,

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