Bay Area Air Quality Management District
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Advisory Council Meeting
Monday, July 29, 2024

APPROVED MINUTES

Note: Audio recordings of the meeting are available on the website of the Bay Area Air Quality Management District at
www.baaqmd.gov/bodagendas

CALL TO ORDER

1. **Opening Comments:** Advisory Council (Council) Chairperson Solomon called the meeting to order at 9:02 a.m.

   Roll Call:

   Present: Chairperson Dr. Gina Solomon; Vice Chairperson Dr. Phil Martien; and Members Dr. Stephanie Holm, Professor Michael Kleinman, Garima Raheja, Dr. Michael Schmeltz, and Board Liaison Davina Hurt.

   Absent: Member Professor Ann Marie Grover Carlton.

CONSENT CALENDAR

2. **APPROVAL OF THE DRAFT MINUTES OF THE ADVISORY COUNCIL MEETING MINUTES OF MARCH 1, 2024**

Public Comments

No requests received.

Council Comments

Vice Chair Martien requested that the language in Item 3 (Advisory Council Introductions) be changed from “Dr. David Holstius, Senior Advanced Projects Advisor in Planning and Climate Protection” to “Dr. David Holstius, Senior Advanced Projects Advisor in Assessment, Inventory, and Modeling.”

Council Action

Professor Kleinman made a motion, seconded by Vice Chair Martien, to **approve** the Draft Minutes of the Advisory Council Meeting Minutes of March 1, 2024 as amended; and the motion **carried** by the following vote of the Council:

AYES:	Holm, Hurt, Kleinman, Martien, Raheja, Schmeltz, Solomon.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Carlton.

INFORMATIONAL ITEMS

3. REVIEW AND DISCUSSION OF CUMULATIVE IMPACTS SELECTED REFERENCES

A breadth of research on cumulative impacts of air pollution was made available to Advisory Council members and Air District staff to guide its work. At the March 1, 2024 meeting of the Advisory Council, Council members reviewed a list of selected references on cumulative impacts developed by Air District staff. At the July 29, 2024 meeting the Council discussed the selected references they each reviewed since the March 1, 2024 meeting, and shared their analyses.

Public Comments

No requests received.

Council Comments

Council Chair Dr. Gina Solomon invited members to discuss the Selected References. Councilmember Garima Raheja noted that "cumulative impacts" includes things that are not air pollution, suggesting a need to consider jurisdiction. Councilmember Prof. Michael Kleinman pointed out a key challenge of holistic environmental regulation: separating the influence of various factors in assessments of effectiveness can be very difficult. Councilmember Dr. Stephanie Holm emphasized the importance of cumulative impacts to her patients and their families. Councilmember Dr. Michael Schmeltz highlighted the need to define "cumulative impacts", and to clarify what the Council's work would accomplish for the agency and the public. Vice-Chair Dr. Phil Martien observed that many of the readings are overlapping, and suggested that clarifying the decisions or frameworks that are at stake could facilitate simplification. He also stressed the importance of meaningfully involving affected stakeholders at all stages, including development: "nothing that affects us without us."

Regarding the issue of quantification, Chair Solomon drew a distinction between cumulative impacts and risks, in that "impacts" can be quantitative or qualitative, and asked where on that spectrum the Council should aim. Chair Solomon also highlighted Sprinkle et al.'s (2021) question on why cumulative impacts remain under-addressed despite longstanding awareness, suggesting that the breadth of the topic could impede efforts, and that focus would be helpful.

To account for both qualitative and quantitative data, Dr. Schmeltz suggested considering a mixed methods approach, inclusive of community input.

Councilmember Raheja proposed using CalEnviroScreen (CES) as a starting point, given that the tool is familiar and benefits from strong existing support.

Vice-Chair Martien remarked that the effects-based/stressor-based framework(s) described in Sexton et al (2012) was noteworthy, and pointed out the value of combining effects-based and stressor-based frameworks, emphasizing the validation of community perspectives.

Dr. Holm agreed on the utility of CalEnviroScreen but suggested the Air District should also explore explicitly addressing air pollutant mixtures, which CalEnviroScreen does not do.

The Chair of the Air District's Board of Directors, Davina Hurt, asked how one might settle a tension between "value-neutral" scientific evidence versus "inclusivity, history, and values," knowing that models are incomplete, yet that some may argue that environmental justice (EJ) may be displacing a scientific perspective.

Chair Solomon expressed a desire to hear more about the many ways in which the Air District is applying CalEnviroScreen, and suggested that additional applications of this existing tool could be one chunk of work taken up by the Advisory Council.

Chair Solomon also expressed interest in multi-pollutant exposures as a second chunk of potential work, and mentioned that this is being addressed at the Federal level with the BenMAP-CE tool, including a case study in Atlanta, which might be adaptable to the Bay Area, and perhaps extended to include pollutants beyond criteria air pollutants.

A third direction, Chair Solomon suggested, was to find and evaluate cumulative risk in some large epidemiological studies, where the stressors have included some kind of interaction term; and then prioritize them for application to the Bay Area, including community perspectives on prioritization. The HeartSCORE cohort was offered as a promising example, as it simultaneously examines the joint effects of exposure to particulate matter, social risk, and socioeconomic status on cardiovascular outcomes and mortality in a cohort with a sizeable African-American contingent. Applications of studies looking at the joint effect of heat and air pollution, Chair Solomon suggested, may also be worth exploring.

Dr. Schmeltz, reflecting on the question from Board Chair Hurt, indicated that CBPR (community-based participatory research) and convergence research are examples of methodologies that are known to work by integrating different disciplines into a cumulative impacts analysis, including not just physical scientists, but social scientists as well.

Dr. Schmeltz and Dr. Holm raised the topic of indoor exposures, with Dr. Holm pointing out that schools are a shared indoor space with a unique vulnerable population, in that every member of society is at some point a child, and that schools may be easier to get information about than homes. Prof. Kleinman noted the complexity of indoor air pollution, and that it often correlates with outdoor pollution. Dr. Holm clarified that indoor exposures are influenced by outdoor sources, modulated by ventilation and filtration, and emphasized the episodic nature of indoor pollution profiles. Prof. Kleinman agreed and added that nearby outdoor sources can have an especially large impact.

Councilmember Raheja noted that, while "a lot of scientific data is stored in computer files, a lot of the historical data we're hoping to consider is stored in stories" and the knowledges of members of the

community; therefore it would be important to use methods such as interviews, and finding ways to incorporate those perspectives in decision-making. Councilmember Raheja questioned whether indoor exposures would meaningfully influence the output or influence of tools like CalEnviroScreen. Chair Solomon agreed on the importance of indoor exposures but cautioned against premature integration in such tools without addressing important gaps.

Vice-Chair Martien again emphasized the need to focus on specific policy actions that could be influenced by Council deliberations. Vice-Chair Martien also mentioned that the Air District is familiar with using BenMAP, as well as more localized dispersion-modeling tools, in novel ways, to model a host of pollutants within a community.

Executive Officer Dr. Phil Fine stressed the desire of the Air District to be able to assess the health benefits of the regulatory actions that it takes to reduce emissions and exposure; that these cannot be fully accounted for without assessing cumulative impacts; and that it is important to come up with a list of possible decision points for the Council, in order to focus. Dr. Fine also called attention to non-regulatory actions and the importance of assessing disparities in exposures and impacts. He described CalEnviroScreen as a tool with limitations and suggested exploring its database for information that might be used in specific contexts. Regarding mixed methods, Dr. Fine remarked that it is relatively easy for a policy-making body to make decisions based on community feedback and knowledge, but that more of a scientific basis would be helpful to better defend some of those decisions. Knowing that high uncertainty and difficulty in quantifying something does not mean it's not scientific, the history of environmental regulation shows that quantifiability is important.

Dr. Fine proposed a joint meeting with the Community Advisory Council, and stated that staff would bring back a clearer picture of decision points and what staff are already doing along these lines; and from that some frameworks could be developed, perhaps different frameworks for different decision points.

Council Action

No action taken.

4. COMPARISON OF STATE CUMULATIVE IMPACTS ASSESSMENT PROGRAMS

The Council received a staff presentation on a comparison of cumulative impacts assessment programs established in four states and one city. The presentation included a comparison of program elements for legislative action, applicability, indicators for overburdened communities, and public notice and participation requirements. Dr. Judith Cutino, Health Officer, gave the staff presentation *Comparison of State Cumulative Impacts Assessment Programs*, including: outcome; requested action; outline; program elements for comparison; California Environmental Protection Agency (CalEPA); CalEnviroScreen 4.0 – 21 indicators; New Jersey Department of Environmental Protection (NJDEP); NJDEP applicability, EJ MAP tool, and steps of EJ rule; New York State Department of Environmental Conservation (NYSDEC); NYSDEC policy, indicators 1 and 1, and disproportionate burden analysis and mitigation; Massachusetts Department of Environmental Protection (Mass. DEP); Mass. DEP defines EJ population, indicators, and permitting steps; City of Chicago – cumulative impact assessment; Chicago EJ Index (28 indicators); City of Chicago health impact assessment (HIA) basis to deny permit; Minnesota Pollution Control Agency (MPCA); MPCA EJ maps and Community Benefit Agreement (CBA).

Public Comments

No requests received.

Council Comments

Following the presentation by staff (Dr. Judy Cutino), Chair Solomon expressed a desire to see more of a comparison of CalEnviroScreen's indicators with those used by other tools.

Chair Solomon also noted the potential of Health Impact Assessments (HIAs), which had not yet been discussed, remarking that it was very interesting to see that Chicago was triggering an HIA for certain types of projects; HIAs do consider cumulative impacts, and include both quantitative and qualitative information.

Dr. Holm highlighted Chicago's inclusion of compliance history, which is often a point of frustration with communities. Chair Solomon agreed and wondered to what extent the Air District has the obligation or ability to consider compliance history. Dr. Meredith Bauer, the Deputy Executive Officer of Engineering and Compliance, responded that staff are thinking more about establishing compliance history broadly throughout Air District operations. Greg Nudd, the Deputy Executive Officer of Science and Policy, offered that from a rule perspective, there is some flexibility, although it is necessary to define what a "good" or "bad" compliance history is. Chair Solomon remarked that compliance history has been raised as a concern by communities for a long time, but also, scientifically speaking, a small number of sources tend to account for a disproportionate amount of exposure, and compliance history might be a good way to get at those. Dr. Bauer emphasized that there is also a psychological toll of living near historically non-compliant sources, and asked whether that stress might be a relevant factor. Chair Solomon agreed, and indicated that one could also expect attributable exposures to be systematically under-estimated for such a source, given an expectation of under-reporting and/or exceedances. Dr. Fine mentioned that compliance history is indirectly considered in current practice, during the issuing of permits, insofar as conditions in permits for expanded operations or significant operational changes are crafted with an intent to ensure compliance going forward; and that there may be opportunities to make that case-by-case practice more systematic.

Dr. Martien inquired whether Dr. Cutino had encountered any quantification of impacts or risks from non-chemical stressors in her review; she had not, other than in the mechanisms used to produce scores for scoring tools. Dr. Martien asked whether risk assessments conducted in Massachusetts had influenced such scoring in any way; they had not, each being factored only into the analysis of the relevant project application. Councilmember Raheja inquired whether monitoring was ever incorporated into such a score; Dr. Cutino had not seen evidence of that either.

Dr. Schmeltz inquired about community participation in community CBAs, impact assessments, and permitting decisions at the Air District. Dr. Fine acknowledged this as a potential area for consideration. Currently, there are no CBA provisions in permitting rules, but the Air District works to ensure relevant public participation and awareness (e.g. through public noticing). Dr. Fine noted that the Air District's Board of Directors recently passed a policy to return some penalties to communities without requiring facility involvement. Federally, agencies like the Department of Energy now mandate CBAs for some programs under initiatives like the Inflation Reduction Act. Dr. Holm suggested considering the burdens on overburdened communities when increasing the scope of opportunities for community involvement.

Councilmember Raheja expressed appreciation for Dr. Cutino's presentation, and inquired about other states' incorporation of cumulative impacts in non-regulatory work. Dr. Fine responded that the primary example of this at the Federal level is the Justice40 initiative.

Council Action

No action taken.

ACTION ITEM

5. **DELIBERATION ON THE KEY FINDINGS IN EXISTING RESEARCH ON CUMULATIVE IMPACTS**

Greg Nudd, Deputy Executive Officer of Science and Policy, gave the staff presentation *Deliberation on the Key Findings in Existing Research on Cumulative Impacts*, including: action requested by the Council; proposed key findings; and establishing key findings.

The original proposed key findings were:

1. *Communities experiencing racism and poverty are more sensitive to the health impacts of air pollution.*
2. *There are likely synergistic impacts from multiple pollutant exposures.*
3. *The science is still in development and these impacts may not be fully quantifiable at this time, but some additional quantitative or semi-quantitative estimates would be helpful in policy development.*
4. *Even without full quantification, the science on these issues is strong enough to justify policy changes.*

Public Comments

No requests received.

Council Comments

Vice-Chair Martien noted the importance of synergism, suggested "vulnerable" as a term of art, drew attention to the inclusion of community members as key stakeholders, and emphasized that the end goal should be kept in mind, specific methods being more suitable for specific policy problems. Dr. Holm reflected that the first and second items in the proposed statement had some overlap. Dr. Schmeltz advocated for including community experience in assessments. Board Chair Hurt linked climate vulnerability with health impacts, and suggested clearer language to promote community understanding. Councilmember Raheja proposed inclusion of historic as well as current impacts, and the inclusion specifically of the phrase "environmental justice". Chair Solomon proposed revising findings to highlight community vulnerability and list relevant factors, acknowledging the limitations in quantifying interrelationships.

Chair Solomon supported the goal of plain language communication for target audiences. Dr. Holm asked whether the goal was to produce a "plain language" version instead of, or in addition to, the current statement. Chair Solomon inquired whether the statement was to be an interim version. Mr.

Nudd clarified that the staff's intent was for it to represent interim findings, to set the stage for further work; and that staff preferred to focus on plain language, so that the statement could be relayed to target audiences such as the Board of Directors and the Community Advisory Council.

Vice-Chair Martien offered an additional statement to reflect an intention to include community stakeholders. Dr. Holm offered a simplification of the language regarding synergism, which Prof. Kleinman later amended. Dr. Fine suggested including non-chemical stressors, which Chair Solomon and Dr. Holm incorporated.

Councilmember Raheja recommended emphasizing "marginalized communities" specifically. Chair Solomon, Dr. Schmeltz, Dr. Fine, and Dr. Holm suggested revisions to language regarding quantifiability, the sufficiency of existing science, and the inclusion of community perspectives and qualitative as well as quantitative data and methods. Prof. Kleinman offered that cumulative impacts and policy changes should take into account the effects of multiple pollutants in all communities. Councilmember Raheja responded that it was important to specifically consider marginalized communities, considering that they have historically been left out of these discussions.
Vice-Chair Martien proposed an item on simplifying methods for specific policies.

Dr. Holm referenced the Healthy Places Index (HPI) as a tool that includes resilience factors, not just vulnerabilities. Chair Solomon acknowledged its utility, but expressed reservations; would the Council say that a park near a facility should discount emissions from the facility? Dr. Holm responded that the District might improve resilience factors through non-permitting actions, such as funding. Dr. Schmeltz offered that the current language around "qualitative and quantitative" might be inclusive enough. Dr. Martien suggested amending the second items to include both positive and negative factors. Chair Hurt supported emphasizing positive factors, noting community sensitivity to the term "vulnerable." The Council amended its statement to express that some communities remained more vulnerable despite the influence of positive factors.

Council Action

The Council deliberated, amended, and found agreement upon proposed key findings found in the literature related to Cumulative Impacts.

Dr. Holm made a motion, seconded by Professor Kleinman, to **adopt** the following amended proposed key findings found in the literature related to Cumulative Impacts:

Proposed Key Interim Findings:

1. *Despite resilience and adaptation, some communities are more vulnerable to the health impacts of air pollution than others.*
2. *Community health vulnerability is related to multiple stressors, including racism, poverty, historic environmental injustice, environmental exposures, housing insecurity, effects of climate change, and other factors.*
3. *Effects of exposure to multiple stressors can be greater than the sum of the individual effects.*
4. *The science on these issues is strong enough to justify science-based policy changes.*
5. *Additional quantitative, and qualitative data and methods, as well as community perspectives, are needed, even as we move forward with policy development, based on the current science.*

6. *Methods for considering cumulative impacts and related policy changes should be developed in partnership with community members, notably those from marginalized populations.*
7. *Methods for accounting for cumulative impacts can be simplified when targeted to specific policy actions.*

The motion **carried** by the following vote of the Council:

AYES:	Holm, Hurt, Kleinman, Martien, Raheja, Schmeltz, Solomon.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Carlton.

OTHER BUSINESS

6. **REPORT OF THE EXECUTIVE OFFICER/AIR POLLUTION CONTROL OFFICER (APCO)**

Dr. Philip M. Fine, Executive Officer/APCO thanked the Council for its deliberation during Item 5. He then asked the Council items that it would like to see agendized at future meetings.

Public Comments

No requests received.

Council Comments

The Council expressed interest in the following topics (for potential future Council presentations):

- comparison of indicators among different state assessment programs that identify California communities that are disproportionately burdened by multiple sources of pollution
- comparison of CalEnviroScreen's indicators and Bay Area socio-economic indicators
- how CalEnviroScreen is currently being used to measure cumulative impacts
- Benefits Mapping and Analysis Program Community Edition (BenMAP CE) by US EPA
- additional publications or videos of scientific meetings on cumulative impacts
- the utilization of HIAs and CBAs
- the Air District's working definition of 'cumulative impact assessment' and approaches to developing one
- how compliance history is accumulated and used in policy and rulemaking

Council Action

No action taken.

7. **PUBLIC COMMENT ON NON-AGENDA MATTERS**

No requests received.

8. **COUNCIL MEMBER COMMENTS**

None.

9. **TIME AND PLACE OF NEXT MEETING**

Thursday, September 19, 2024, at 9:30 a.m. at 375 Beale Street, San Francisco, CA 94105. The meeting will be in-person for the Advisory Council members and members of the public will be able to either join in-person or via webcast.

10. **ADJOURNMENT**

The meeting adjourned at 11:20 a.m.

/S/ Marcy Hiratzka
Marcy Hiratzka
Clerk of the Boards
Executive Office

&

/S/ Dr. David Holstius
Dr. David Holstius
Sr. Advanced Projects Advisor
Assessment, Inventory, and Modeling