



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BOARD OF DIRECTORS
ADVISORY COUNCIL

March 1, 2024

COUNCIL MEMBERS

Professor Ann Marie Grover Carlton, Ph.D., University of California Irvine
Dr. Stephanie M. Holm, MD, PhD, MPH, University of California San Francisco
Dr. Michael T. Kleinman, Ph.D., University of California Irvine
Dr. Philip T. Martien, Ph.D.
Professor Michael T. Schmeltz, DrPH, MS
Dr. Gina Solomon, M.D., M.P.H., University of California San Francisco
Garima Raheja, PhD candidate, Columbia University
Davina Hurt, Air District Board of Directors Liaison

**MEETING LOCATION(S) FOR IN-PERSON ATTENDANCE BY
COUNCIL MEMBERS AND MEMBERS OF THE PUBLIC**

**Bay Area Metro Center
1st Floor Board Room
375 Beale Street
San Francisco, CA 94105**

THE FOLLOWING STREAMING OPTIONS WILL ALSO BE PROVIDED

These streaming options are provided for convenience only. In the event that streaming connections malfunction for any reason, the Advisory Council reserves the right to conduct the meeting without remote webcast and/or Zoom access.

The public may observe this meeting through the webcast by clicking the link available on the air district's agenda webpage at www.baaqmd.gov/about-the-air-district/advisory-council/agendasreports.

Members of the public may participate remotely via Zoom at <https://bayareametro.zoom.us/j/84726087567>, or may join Zoom by phone by dialing (669) 900-6833 or (408) 638-0968. The Webinar ID for this meeting is: 847 2608 7567

Public Comment on Agenda Items: The public may comment on each item on the agenda as the item is taken up. Members of the public who wish to speak on a matter on the agenda will have two minutes each to address the Council on that agenda item, unless a different time limit is established by the Co-Chairs. No speaker who has already spoken on an item will be entitled to speak to that item again.

The Council welcomes comments, including criticism, about the policies, procedures, programs, or services of the District, or of the acts or omissions of the Council. Speakers shall not use threatening, profane, or abusive language which disrupts, disturbs, or otherwise impedes the orderly conduct of a Council meeting. The District is committed to maintaining a workplace free of unlawful harassment and is mindful that District staff regularly attend Board meetings. Discriminatory statements or conduct that would potentially violate the Fair Employment and Housing Act – i.e., statements or conduct that is hostile, intimidating, oppressive, or abusive – is *per se* disruptive to a meeting and will not be tolerated.

ADVISORY COUNCIL MEETING AGENDA

FRIDAY, MARCH 1, 2024

9:30 AM

1. Call to Order - Roll Call

The Council Chair shall call the meeting to order and the Clerk of the Boards shall take roll of the Council members.

CONSENT CALENDAR (Item 2)

2. Approval of the Draft Minutes of the Advisory Council Meeting of September 11, 2023

The Council will consider approving the draft minutes of the Advisory Council meeting of September 11, 2023.

INFORMATIONAL ITEM(S)

3. Advisory Council Introductions

Advisory Council members will have the opportunity to briefly introduce themselves to the membership.

4. Introduction of the Air District and Overview of the Advisory Council

The Advisory Council will receive information on the Air District's history and administrative processes and an overview of the Advisory Council.

5. Advisory Council Policy and Regulatory Toolkit

The Advisory Council will receive a presentation on the Air District's policy and regulatory tools and how they relate to addressing the cumulative impacts of air pollution.

6. Overview of the Ralph M. Brown Act

Staff will provide the Advisory Council with an overview of the Ralph M. Brown Act.

7. Selected References on Cumulative Impacts

Air District staff will share selected references on cumulative impacts with Council members for their review and use.

ACTION ITEM(S)

8. Election of Officers

The Council will elect officers to serve on the Advisory Council.

OTHER BUSINESS

9. Report of the Executive Officer/APCO

10. Public Comment on Non-Agenda Matters

Pursuant to Government Code Section 54954.3, members of the public who wish to speak on matters not on the agenda will be given an opportunity to address the Council. Members of the public will have two minutes each to address the Council, unless a different time limit is established by the Chair. The Council welcomes comments, including criticism, about the policies, procedures, programs, or services of the District, or of the acts or omissions of the Council. Speakers shall not use threatening, profane, or abusive language which disrupts, disturbs, or otherwise impedes the orderly conduct of a Council meeting. The District is committed to maintaining a workplace free of unlawful harassment and is mindful that District staff regularly attend Board meetings. Discriminatory statements or conduct that would potentially violate the Fair Employment and Housing Act – i.e., statements or conduct that is hostile, intimidating, oppressive, or abusive – is per se disruptive to a meeting and will not be tolerated.

11. Council Member Comments / Other Business

Council members may make a brief announcement, provide a reference to staff about factual information, or ask questions about subsequent meetings.

12. Time and Place of Next Meeting

At the Call of the Chair.

13. Adjournment

The Council meeting shall be adjourned by the Chair.

CONTACT:

MANAGER, EXECUTIVE OPERATIONS
375 BEALE STREET, SAN FRANCISCO, CA 94105
vjohnson@baaqmd.gov

(415) 749-4941
FAX: (415) 928-8560
BAAQMD homepage:
www.baaqmd.gov

- Any writing relating to an open session item on this Agenda that is distributed to all, or a majority of all, members of the body to which this Agenda relates shall be made available at the Air District's offices at 375 Beale Street, Suite 600, San Francisco, CA 94105, at the time such writing is made available to all, or a majority of all, members of that body.

Accessibility and Non-Discrimination Policy

The Bay Area Air Quality Management District (Air District) does not discriminate on the basis of race, national origin, ethnic group identification, ancestry, religion, age, sex, sexual orientation, gender identity, gender expression, color, genetic information, medical condition, or mental or physical disability, or any other attribute or belief protected by law.

It is the Air District's policy to provide fair and equal access to the benefits of a program or activity administered by Air District. The Air District will not tolerate discrimination against any person(s) seeking to participate in, or receive the benefits of, any program or activity offered or conducted by the Air District. Members of the public who believe they or others were unlawfully denied full and equal access to an Air District program or activity may file a discrimination complaint under this policy. This non-discrimination policy also applies to other people or entities affiliated with Air District, including contractors or grantees that the Air District utilizes to provide benefits and services to members of the public.

Auxiliary aids and services including, for example, qualified interpreters and/or listening devices, to individuals who are deaf or hard of hearing, and to other individuals as necessary to ensure effective communication or an equal opportunity to participate fully in the benefits, activities, programs and services will be provided by the Air District in a timely manner and in such a way as to protect the privacy and independence of the individual. Please contact the Non-Discrimination Coordinator identified below at least three days in advance of a meeting so that arrangements can be made accordingly.

If you believe discrimination has occurred with respect to an Air District program or activity, you may contact the Non-Discrimination Coordinator identified below or visit our website at www.baaqmd.gov/accessibility to learn how and where to file a complaint of discrimination.

Questions regarding this Policy should be directed to the Air District's Non-Discrimination Coordinator, Suma Peesapati, at (415) 749-4967 or by email at spesapati@baaqmd.gov.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 BEALE STREET, SAN FRANCISCO, CA 94105
FOR QUESTIONS PLEASE CALL (415) 749-4941**

**EXECUTIVE OFFICE:
MONTHLY CALENDAR OF AIR DISTRICT MEETINGS**

MARCH 2024

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Advisory Council	Friday	1	9:30 a.m.	1 st Floor Board Room
Board of Directors Meeting	Wednesday	6	10:00 a.m.	1 st Floor Board Room
Board of Directors Stationary Source Committee	Wednesday	13	10:00 a.m.	1 st Floor, Yerba Buena Room
Board of Directors Community Equity, Health and Justice Committee	Wednesday	13	1:00 p.m.	1 st Floor, Yerba Buena Room
Board of Directors Finance and Administration Committee	Wednesday	20	10:00 a.m.	1 st Floor Board Room
Board of Directors Policy, Grants and Technology Committee	Wednesday	20	1:00 p.m.	1 st Floor Board Room
Board of Directors Community Advisory Council	Thursday	21	6:00 p.m.	1 st Floor, Yerba Buena Room

APRIL 2024

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Meeting	Wednesday	3	10:00 a.m.	1 st Floor Board Room
Board of Directors Stationary Source Committee	Wednesday	10	10:00 a.m.	1 st Floor, Yerba Buena Room
Board of Directors Community Equity, Health and Justice Committee - CANCELLED	Wednesday	10	1:00 p.m.	1 st Floor, Yerba Buena Room
Board of Directors Finance and Administration Committee	Wednesday	17	10:00 a.m.	1 st Floor Board Room
Board of Directors Policy, Grants and Technology Committee	Wednesday	17	1:00 p.m.	1 st Floor Board Room
Board of Directors Community Equity, Health and Justice Committee	Monday	22	5:30 p.m.	City of San Pablo City Hall Council Chambers 1000 Gateway Ave. San Pablo, CA 94806

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: March 1, 2024

Re: Approval of the Draft Minutes of the Advisory Council Meeting of September 11, 2023

RECOMMENDED ACTION

Approve the attached draft minutes of the Advisory Council meeting of September 11, 2023.

BACKGROUND

None.

DISCUSSION

Attached for your review and approval are the draft minutes of the Advisory Council meeting of September 11, 2023.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Marcy Hiratzka
Reviewed by: Vanessa Johnson

ATTACHMENTS:

1. Draft Minutes of the Advisory Council Meeting of September 11, 2023

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
(415) 749-5073

Advisory Council Meeting
Monday, September 11, 2023

DRAFT 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) Co-Chairperson, Dr. Gina Solomon, called the meeting to order at 9:31 a.m. She asked the Council to observe a moment of silence to mark 22 years since the September 11, 2001 terrorist attacks on the World Trade Center in Lower Manhattan; in memory of the victims of the 6.8 magnitude earthquake near Marrakech, Morocco that occurred on September 8, 2023; and in memory of the victims of the wildfires in Hawaii that occurred in August 2023.

Roll Call:

Present: Co-Chairpersons Dr. Linda Rudolph and Dr. Gina Solomon; and Vice Chairperson Professor Michael Kleinman.

Absent: Member Garima Raheja; and Board Liaison David Haubert.

CONSENT CALENDAR (ITEMS 2 – 3)

2. **APPROVAL OF THE DRAFT MINUTES OF THE ADVISORY COUNCIL MEETING MINUTES OF JANUARY 30, 2023**
3. **APPROVAL OF THE DRAFT MINUTES OF THE ADVISORY COUNCIL MEETING MINUTES OF JUNE 12, 2023**

Public Comments

No requests received.

Council Comments

None.

Council Action

Vice Chair Kleinman made a motion, seconded by Co-Chair Rudolph, to **approve** the Draft Minutes of the Advisory Council Meeting Minutes of January 30, 2023; and the motion **carried** by the following vote of the Council:

AYES: Kleinman, Rudolph, Solomon.
NOES: None.
ABSTAIN: None.
ABSENT: Haubert, Raheja.

Vice Chair Kleinman made a motion, seconded by Co-Chair Rudolph, to **approve** the Draft Minutes of the Advisory Council Meeting Minutes of June 12, 2023; and the motion **carried** by the following vote of the Council:

AYES: Kleinman, Rudolph, Solomon.
NOES: None.
ABSTAIN: None.
ABSENT: Haubert, Raheja.

INFORMATIONAL ITEM

4. **FINE PARTICULATE LOCAL RISK METHODOLOGY UPDATE**

Dr. David Holstius, Senior Advanced Projects Advisor, gave the staff presentation *Fine Particulate Matter Local Risk Methodology Update*. Dr. Holstius explained that the main goal was to make it clearer that what are spoken of as “adjustments” are frequently adjustments relative to BenMAP, but not relative to HRAs, in respect to which they are actually alignments; and that this recalled what Vice-Chair Kleinman remarked on during the last meeting in June, when he invited staff to comment on what might be called “conservative” aspects of the methodology by some. Dr. Holstius continued that the goal is show how such aspects are not conservative at all, in the sense of being without precedent; rather, they are bringing things into alignment with what has been done for the past several decades. Dr. Holstius remarked that the methodology has three pillars in its current form: epidemiology, linearity, and exposure science. Dr. Holstius added that the second main part of the talk would be a response to a request from the Co-Chair at the previous meeting on June 12, in which staff were asked to take a look at effect sizes for health endpoints other than mortality or asthma.

Dr. Holstius introduced a table featuring two different but complementary frameworks; while they yield different numbers, they are just two different ways of looking at health impacts, and both can be important regulatory tools. Dr. Holstius explained that the BenMAP framework is about averages and totals; it is about a large population, overlaid with a map of modeled PM2.5 concentrations, to which is applied a concentration-response function, to calculate an expected number of extra events or cases across that entire population, over the course of a year; and that this is appropriate for very large individual sources, or ubiquitous sources that are to be treated as a single source for the purpose of regulation. Dr. Holstius remarked that the PM2.5 local risk framework is like the Air District’s HRA (health risk assessment) framework for other pollutants, in that it is about worst-case potential risks from localized exposures, like individual facilities; instead of using maps of the whole Bay Area, the idea is instead to construct several local risk-assessment scenarios, where the starting point for each

scenario is still a modeled concentration increment at a so-called “receptor location,” which is attributed to an individual source; the method asks would happen if that additional impact were sustained for a long time, and with adverse timing, in terms of life stage. Dr. Holstius explained that these are three reasons why numbers come out higher using this methodology, compared to BenMAP: longer exposure duration, maximally exposed receptors, and timing. In addition to that, Dr. Holstius said, in version 2.0, the last three rows are the foundation, for what OEHHA presented in June as “F factors”; that the purpose of these composite factors is to account for situations with higher risk, all else being equal, apart from that duration and timing; and that this is wholly consistent with how situations to be evaluated in existing HRAs are defined, for other pollutants. Dr. Holstius concluded that only one component of these factors is really unique to the methodology for PM_{2.5} that has been developed here, and that is the part about sensitive groups, along dimensions such as race and socioeconomic status.

Dr. Holstius then presented an illustration of how the sensitive-groups part functions, and that it comes from the first pillar of the framework, namely, epidemiology; that one obtains the beta (β), or the effect size, from an epidemiological study or studies; that such studies will generally have looked at a diverse group of people, and report what is effectively an average overall effect size; and that if the endpoint only makes sense for a certain age range, such as pediatric asthma onset, then one expects the epi population to be restricted to those ages as well. In the BenMAP framework, Dr. Holstius stated, this overall β , for some endpoint, is applied to a corresponding subset of the Bay Area population, using the concentration increment from a very large or ubiquitous source; the idea is that the two populations should be similar in composition; if the epi study only looked at children, as in the case of asthma onset, then BenMAP will only be run for Bay Area children, but that population of children is still diverse in terms of race, socioeconomic status, comorbidities, and so on.

Under the proposed methodology, Dr. Holstius continued, the same effect size (β) is applied, but instead of calculating a rate or a number of events over one year, the goal is to ascertain the increase in probability of some event happening at all over a long time at risk; for example, the increase in the probability of developing asthma at any point before turning age 18, versus remaining asthma-free; further, the goal is to ascertain that in the case of sensitive children, rather than all children; children who are vulnerable in terms of factors that epi studies look at, different subgroups such as race/ethnicity, or socioeconomic status. Dr. Holstius stated that there are multiple studies that look at one or another dimension like race or socioeconomic status and report differences of two or even three times, compared to the average; for asthma, since there are as yet no correspondingly specific subgroup studies, version 2.0 takes a precautionary approach, which is also broadly informed by consideration of human variability generally, and concludes that a factor of three is appropriate there as well. Dr. Holstius concluded that epidemiology is the first of three pillars; it is from epidemiology that one obtains an understanding of these dimensions of sensitivity, or vulnerability, and the degree of variation that one might reasonably anticipate along these dimensions.

Dr. Holstius then explained that the second pillar of the proposed methodology is linearity, and that linearity can have some different meanings, so it is important to articulate exactly what version 2.0 means by “linearity”; that, first, it is only about what is happening under typical conditions, rather than during wildfire episodes, or with a zero background concentration; second, it means linearity in terms of small changes, and does not require that the full response function be linear from start to finish, only locally linear, since the methodology assesses tangents or slopes along that function, “deltas,” and within a certain range of background exposures; third, that the word “approximately” signifies that the core function is exponential, but the exponent is small, being the product of β , and the change in PM_{2.5}, and an F factor; and that in applications of this methodology, that product is still small enough that

departures from linearity are on the order of a few percent at most; whereas, if one were considering very large β s, or very large increases in PM_{2.5}, or adjustment factors on the order of 100s or 1000s, then nonlinearity could really be a concern; but that this is not the case; fourth, that the word “concentration” is featured, along with the words “exposure” and “intake,” and that for the two endpoints being considered, mortality and asthma, and for undifferentiated PM_{2.5}, version 2.0 takes this “linearity” to apply not only to the relationship between changes in concentration and changes in effect, but changes in exposure and effect as well, and also to changes in intake and effect.

Dr. Holstius then spoke about the third pillar of the methodology as being exposure science. Dr. Holstius presented a second illustration, in three parts; the first panel featured an illustration of the BenMAP framework, which was also explained to be an illustration of the epi study that formed the basis for the effect size (β), the populations being very similar: diverse, with a typical degree of protection from buildings and filtration, in which most of the population is spending most of its time enjoying the benefits of that protection. Dr. Holstius explained that the illustration featured a box representing “delta C” (ΔC), which is the annual average increment in the level of PM_{2.5} outdoors, and in addition a box inside the building (Δx), which also represents an annual average, but in this case an annual average exposure intensity, which is about what is happening in front of our faces, rather than what a sensor is measuring outside.

Dr. Holstius continued to a second panel, and explained that it had two key differences here, relative to the first panel: first, the population in the scenario was now just the sensitive group; second, there was a break in the building envelope, which was to symbolize that the group is, in that scenario, directly exposed to the PM_{2.5} from the modeled source. Dr. Holstius explained that the lack of shelter while exposed is something that the Council asked staff to incorporate into the methodology; it can mean that a building envelope is very leaky, or that the windows are open at a school, or children at a daycare are playing outside, or workers are laboring outside; in any case, the adjustment is the inverse of the typical role that shelter played in the epi study. Dr. Holstius remarked that in terms of whether this counts as an “adjustment” depends on one’s point of view or reference; lack of shelter is actually how things work in the Air District’s current HRAs for all other pollutants; it is implicit, but in those HRAs, the calculations work directly with what is a modeled outdoor concentration increment, and the receptor is directly exposed to that; so, while this is an adjustment compared to BenMAP, it is actually not an adjustment compared to that HRA approach, but rather an alignment.

Dr. Holstius then introduced a third panel, illustrating a high intake situation. Returning again to Prof Kleinman’s invitation, Dr. Holstius stated that this is not a conservative aspect of this methodology in particular, and that it has been accounted for already in HRAs, for 30 years. Dr. Holstius explained that the illustration on the panel featured a worker receptor, but that the same consideration could apply to other receptors too, such as the school and daycare scenarios that have been defined, consistent with existing HRA definitions. Dr. Holstius recalled, from slide 7, that this is not about what is happening at the individual level; but that at the group level, one expects that more intake leads to more risk. Dr. Holstius remarked that these situations can happen if the exposures are not round-the-clock, in which case the activity level can be higher than the average, while exposed, and the exposed group can have a higher breathing rate, during the exposures; and that this is how worker scenarios are set up in current HRAs for other pollutants, using a linear framework; in these cases, the group-level breathing rate is about twice as high, compared to a round-the-clock average; the intake is then twice as high as it would otherwise be; and so is the risk. Dr. Holstius explained that version 2.0 cites the same breathing-rate data to support the same factor of 2, aiming to be consistent with way that HRAs for other pollutants define this kind of scenario, and that, like the exposure consideration, this is only an adjustment from

one point of view; while it is an adjustment compared to BenMAP, it is not an adjustment compared to the HRA approach, but rather, an alignment.

Dr. Holstius offered to correct a potential misperception, before concluding the first part of the talk: that much of the discussion has centered on adjustment factors, and so one could come away with the impression that they are the most important thing, or that a factor of 10 must mean the worker receptor has higher risk than the residential receptor. Dr. Holstius clarified that this is not so; that even with an overall factor of $F = 10$, and even with 100% schedule overlap between source and receptor, as depicted in the illustration, the worker risk is still much lower than the resident risk. Dr. Holstius explained that the main reason is that the baseline mortality rates are much lower for adults of working age, compared to seniors, and that he risks are relative to those baseline rates; also, that if there is less schedule overlap, such as for continuously emitting sources, which are not uncommon, then the risk will be lower still; therefore the F factors are a part of the story, but not the whole story.

Dr. Holstius concluded by remarking that the three-part, bottom-up approach presented to the Council is intended to be a viable approach that is both logically consistent with the foundations of BenMAP, and consistent with the way that scenarios are constructed for risk assessments of localized sources of pollution, including high-intake scenarios for worker exposures; that every methodology can be improved, and so in the future, other approaches to arriving at specific values for F factors, or components of F factors, or even the set of components that should be considered at all, might ultimately be preferred; and that allowing for that possibility of future improvements, this version 2.0 was what the Advisory Council was considering.

Dr. Holstius stated that next steps included: a vote by the Council on a letter of endorsement; a potential presentation to the Board of Directors on September 20; a presentation on October 24 at the California Air Pollution Control Officers Association (CAPCOA) Toxics Symposium; and the work to develop case studies to assist in communication and policymaking.

Clarifying Questions from the Council

Vice-Chair Kleinman requested clarification that the effect sizes (β) presented were for PM2.5 in general, rather than for source-specific PM2.5; Dr. Holstius affirmed that they were indeed for undifferentiated PM2.5. Dr. Kleinman wondered whether there would be value, in terms of public perception of risk, to add some population numbers, instead of percentages; each of the target populations being a different fraction of the population; and that the magnitudes might be helpful when considering regulatory applications, to show how important this can be. Dr. Holstius thanked the Vice-Chair and replied that staff would take this into consideration.

Co-Chair Rudolph remarked that Dr. Holstius had said—but that she wished to highlight and affirm that she had heard it correctly—that what has been done is to align this risk-assessment methodology for PM2.5 with the risk assessment methodology that staff use for other toxics. Dr. Holstius affirmed that this was correct, and indicated that the only thing that has been done that is novel is what he mentioned as such in the beginning, namely an adjustment for sensitive groups, along dimensions such as race/ethnicity or socioeconomic status. Dr. Rudolph inquired whether that was more consistent with what the Air District does for other toxics. Dr. Holstius clarified that the Air District takes an approach where in certain communities, the threshold for toxics will be set lower, and when calculating for example cancer risk, staff do use the same definition of exposure and intake as was presented, but do

not calculate a separate cancer risk representing people who are, for example, eligible for Medicaid, or African-American, or similar.

Co-chair Solomon inquired about the use of the term “adverse timing” in the presentation, and whether that was referring to exposures to children and to elders, indicating a desire for more clarity, insofar as “adverse timing” may not be the right terminology, given that these are sensitive populations who actually exist, and that there is not an explicit timing factor. Dr. Holstius clarified that, to make an analogy to the cancer-risk framework, that when the risk-assessment scenario is constructed there, the assumption or conditional is that exposure begins at the 3rd trimester and continues for 30 years, as opposed to, say, beginning at age 30 and continuing for 30 years to age 60; therefore, when selecting exposure windows for endpoints and receptors, for this methodology, staff attempted to be similarly conservative; that in some cases the definition of the endpoint restricts the possibility of other exposure windows, as with pediatric asthma onset, which is age 0–18; and that in terms of mortality, one could begin at age 50 and go to age 80, or at age 55 and go to age 85, and the baseline rates will be different, such that if the exposure window is shifted to later ages, the overall risk increment will be higher, although there is a limit, such that going all the way to age 100, there is effectively no difference any more, because survival rates approach zero; and that the aim was to be consistent with the same kind of health-protective principle, which was to pick an exposure window that was appropriate. Co-Chair Solomon agreed that this made sense, and that it appeared to be just a matter of terminology, which she found confusing at first, but that the concept makes sense.

Public Comments

Public comments were given by Christine Wolfe, California Council for Environmental and Economic Balance (CCEEB). Ms. Wolfe expressed appreciation for the years of work that staff and the Council and others put into the work; and that while it is appreciated that staff have attempted to model the methodology after a familiar framework, it is worth noting that the proposed methodology takes an unprecedented approach to regulating undifferentiated PM_{2.5}. As such, Ms. Wolfe remarked, CCEEB looked forward to deliberation and consideration of multiple factors, moving forward to application, including the desire to improve health outcomes for the most vulnerable and to minimize negative impacts on regional growth, resiliency, and construction of our energy and transportation future. In particular, Ms. Wolfe stated, if the Council were to vote to recommend the methodology to the Board, they would be voting for a methodology designed to determine worst-case scenarios for the most vulnerable population; and that where such an approach is appropriate, and how it could be applied to different contexts, will warrant thorough discussion with a broad set of stakeholders, as the process moves forward toward policy applications; to that end; CCEEB appreciated the proposal to conduct case studies to better understand how things will work in practice, both in terms of procedure and the framework. Lastly, Ms. Wolfe remarked that while CCEEB recognized the importance of being able to update the methodology to reflect the latest science, it will be important to ensure that there is a transparent and predictable process for doing so, and that it should give adequate lead time to entities who may need to modify their plans in response to such changes.

Council Comments

Co-Chair Rudolph commented that what she heard was that as the baseline changes, the overall risk changes, and wished to highlight how important that is, in terms of the increasing proportion of PM exposure that we understand is likely to come from wildfire smoke; that it would be reasonable to expect that the baseline prevalence of things like asthma will increase as annual levels of PM exposure

for that vulnerable population increase; therefore, integrating that into the methodology is very important; further, that understanding that we are facing an increasing cumulative risk, from PM exposure, speaks to the importance of a methodology that does account for worst-case scenarios for the most vulnerable populations, because we are facing a situation in which the worst case is evolving with increasing wildfire smoke. Dr. Rudolph stated that she shared Co-Chair Solomon's perspective that the material is complicated, and a hope that staff will be able to find ways to provide at least somewhat simplified explanations, so that the larger public can really understand what has been done, even including a simplification of the figures presented; and that the effort has involved a great deal of work and is making a contribution to figuring out how to address these complicated issues.

Vice-Chair Kleinman commented that the concept of background levels being subject to exceptional events like wildfires—which are now going to be not very exceptional, but pervasive, most likely—require a better strategy for integrating this variation in regional exposure, and put that in the context of the exposure of vulnerable populations where local sources are also causing incremental changes, which, as Dr. Rudolph said, is a very complex issue, but something that merits attention, and better ways to predict incursions from wildfires and also consider it as a separate source category, in some ways.

Co-Chair Solomon commented that this raises the dual issue of baseline or background concentrations of PM_{2.5}, combined with the issue discussed in the presentation and in the report on baseline rates of the outcomes, cardiovascular disease or pediatric asthma; and that both of those are important, although it may be possible to become confused about which baseline is being talked about. In regard to the health effect, Dr. Solomon remarked, if one looks at cardiovascular disease or pediatric asthma, one will see big differences in the baseline among different populations; as such, her understanding is that for those baselines, staff are using a population average, rather than the baseline for, say, pediatric asthma onset in African-American children in the Bay Area, which would be higher, as a baseline; given that the baseline is important for the outcome, that in fact that might systematically underestimate the true impact, and requested clarification from staff. Dr. Holstius responded that the methodology does use age-specific baseline rates, such that when calculations are set up, every year has its own baseline rate; but that those are general to the Bay Area population otherwise, looking to data from the Centers for Disease Control and Prevention (CDC); that the baseline rates will be higher, for example, in African-American communities, or even by county; that it is difficult to say how specific to be, geographically, and that using regional rates keeps things stable over time, as the regulated community was speaking to earlier; and that the other consideration is that sometimes one can run into things like the Hispanic Paradox, or the healthy worker effect, and that it could actually result in lower numbers for some groups, where we have reason to believe otherwise; therefore, for version 2.0, and since version 1.1, the methodology has used regional baseline rates.

Co-Chair Solomon expressed appreciation for the clarification, and that it makes sense, the way that this is handled in the methodology, since what was done was to address susceptible subpopulations in the F factor instead of in the baseline, because of some of these problems, such as the shifting baseline problem and the paradoxical baseline issues with, for example, the healthy worker effect; and that this is wise, and overall more consistent, and likely more fair. Dr. Solomon suggested that it might be interesting to discuss how some of that is being moved into the adjustment factor, instead of having different baselines that might account for each susceptible population in each geographic area; one could derive an empirical number, and it might be interesting to see what that might look like for, say, African-American children in Oakland, for asthma. Dr. Solomon then expressed her appreciation for the amount of work that staff invested in looking into all of the other endpoints between June and

September, necessitating the review of many studies and many calculations, by OEHHA staff and Dr. Holstius and the Air District’s team; and that it provides a lot of useful information; further, it builds confidence that things are heading in the right direction with the numbers and outcomes that were selected; and that if the time were invested to calculate all kinds of different endpoints, that it would seem that the results would not likely change substantially, which is very important to know, so that we are confident that we are not missing a very sensitive endpoint; and that we are on a more solid scientific foundation, with the information that was presented about other endpoints.

In regard to the other endpoints, Vice-Chair Kleinman expressed appreciation that the approach taken covers the critical organs—the lung, the heart, the brain, and reproductive systems—which are all important targets. Dr. Kleinman commented that there may be, as Dr. Solomon mentioned, many other health endpoints and outcomes, but what was presented could capture a major fraction of the impact on human health; and that putting this together is moving the field of public health and the field of air pollution science forward together.

In regard to the linearity issue, Co-Chair Solomon commented that there was mention of concentration, exposure, and intake, and a presumption of linearity across each of those [on slide 7]; that she believed this made a lot of sense, and that it is important to clarify and make this explicit; that the Council has discussed dose-response relationships a good deal; that the issue was something that the Council has been grappling with for quite some time, and that some may not be accustomed to thinking about linear dose-response functions for non-carcinogens; but for PM2.5, the evidence is frankly overwhelming, and it no longer makes scientific sense to try to imagine a threshold for this pollutant, because within the range of exposures within the population, there is no evidence for that; while there might be some pristine place in theory, when one is thinking practically about exposure levels and the range of vulnerabilities across the actual population, a linear presumption makes sense. Dr. Solomon stated that she wished to acknowledge that this is a change, as the public commenter [Ms. Wolfe] pointed out, and so it is going to take some time for some to recognize that this is the direction that the science says we need to go; and that doing the hard work that staff have done to take that process stepwise and incorporate it into the day-to-day functions of the Air District is commendable.

Co-Chair Solomon added a final comment, which was to underscore something remarked by Dr. Rudolph: that the document is very thorough, and very scientifically dense, and uses terminology that many people will have difficulty with; therefore, it will need a glossary, and insofar as it is feasible to simplify the language for the final version, that will be helpful for some audiences; and that there will need to be a summary created to explain the methodology; and recognized that staff are sure to have considered these needs already.

Council Action

None; receive and file.

ACTION ITEM

5. VOTE TO SUBMIT LETTER OF SUPPORT TO AIR DISTRICT BOARD OF DIRECTORS

Co-Chair Solomon introduced the letter of support, that she had drafted with the assistance of staff and with Co-Chair Rudolph, and was sent out with the packet the week prior. Dr. Solomon suggested that the Council consider submitting the letter to the Chair and members of the Air District’s Board of Directors. The purpose of the letter, Dr. Solomon explained, was to summarize the lengthy process that the Council has been through, for the past four to five years, beginning with the decision to convene workshops and a symposium on the health effects of particulate matter, to solicit presentations from experts, and assemble a report, under the previous Council, of which all those present were also members. Dr. Solomon commented that in that *Particulate Matter Reduction Strategy* report, there were key findings, summarized in the letter: that low-income communities of color are disproportionately impacted by PM2.5, where “impacted” is a concept combining both the reality of higher exposures, and the higher vulnerability to effects, as discussed; that there is no evidence of a threshold in such communities to PM2.5, and so the Council recommended looking at the issue of near-source exposures of PM2.5 in such communities, and developing a new approach, which is exactly what staff have done in the intervening years, with multiple drafts, multiple reviews from California Air Resources Board (CARB), the Office of Environmental Health Hazard Assessment (OEHHA), US EPA staff, this Council, extensive public comment, and presentations at the January meeting from multiple stakeholders commenting on an earlier draft. This process, Dr. Solomon remarked, has made a substantial difference to the final product, which reflects the changes. Dr. Solomon stated that this methodology has been fully reviewed, and fully vetted, such that it is scientifically sound and necessary to protect public health, and can be communicated to the Board, so that they are aware of this document, and the many layers of review, and the finding that this is something that is scientifically solid, for further action.

Dr. Philip Fine commented that the Council’s signing of the letter and endorsement of the methodology is greatly appreciated; and that he wished to ensure that a degree of flexibility was maintained, as indicated in the report, and discussed today, given that there can be different approaches to the F factor calculation; and that he wished to ensure that the Council understood that as the Air District moves forward that it will be helpful to have flexibility to continue conversations, being that the Air District believes that having OEHHA’s full endorsement of the methodology is critical to success. There may be other ways, Dr. Fine continued, to get at where we are going; and the Air District wishes to get started on the policy side, doing some case studies, and looking at standard-setting; some of that work will feed back into the questions, such as the level of conservatism that the Board wishes to have as a policy, who and how we are looking to protect, in terms of communities; that staff can report back to the Council how that discussion is going, or if there are any small changes to the methodology.

Co-Chairs Rudolph and Solomon noted the points raised by Dr. Fine. Co-Chair Solomon responded that it is understood that multiple aspects of the report, including the calculation of F factors, and the intake fraction, are recognized as subject to change; but that the approach itself fundamentally is sound, and the issues that are incorporated into the draft are sound; some minor editing is also likely for the sake of transparency for other audiences; and that the Council recognizes that there are a number of details that still remain to be discussed and finalized with the Board. Dr. Solomon stated that the intent of the letter is to make it clear that many scientific issues have been considered and addressed.

Public Comments

No requests received.

Council Comments

Co-Chair Rudolph remarked that, as Dr. Solomon said, the methodology has undergone a great deal of editing and discussion by the Council and with others; that the Council appreciates the work that has gone into it, and the care that has been taken to involve OEHHA and other agency review; and that she was very comfortable with the basic methodology that has been developed; therefore, she supported sending a letter to formalize the comfort level that the Advisory Council has with the methodology that has been developed.

Vice-Chair Kleinman expressed a desire to clarify whether staff were comfortable with the level of flexibility provided, given the phrasing of the letter, or whether the Council ought to make additions or edits. Dr. Fine responded that staff were comfortable with the letter as is, especially given the discussion that was just had, but that staff could again report back if there were a change that went astray of the endorsement being given today.

Council Action

Co-Chair Rudolph made a motion, seconded by Vice Chair Kleinman, to **submit** a letter of support to the Board of Directors for the research and methodology in the white paper, *Modeling Health Risks from Local Sources of Fine Particulate Matter PM_{2.5}, version 2.0 (August 2023)*; and the motion **carried** by the following vote of the Council:

AYES: Kleinman, Rudolph, Solomon.
NOES: None.
ABSTAIN: None.
ABSENT: Haubert, Raheja.

OTHER BUSINESS

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

Dr. Philip M. Fine, Executive Officer/APCO, announced that as of July 7, 2023, the Council’s seats are vacant, and recruitment for these vacancies will be open to the public until September 22, 2023.

Dr. Fine also announced that the Air District offered the following positions to the following candidates: Dr. Meredith Bauer as Deputy Executive Officer of Engineering & Compliance; Hyacinth “Hy” Hinojosa as Deputy Executive Officer of Finance & Administration; and Viet Tran as Deputy Executive Officer of Public Affairs. The associated press release can be found [here](#).

7. PUBLIC COMMENT ON NON-AGENDA MATTERS

No requests received.

8. **COUNCIL MEMBER COMMENTS**

Co-Chair Rudolph announced that this would be her final meeting as a Council member.

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

At the end of the meeting, the next Advisory Council meeting was to be held at the Call of the Chair. After the meeting adjourned, the next meeting was scheduled for Monday, March 1, 2024, at 9:30 a.m., at 375 Beale Street, San Francisco, California, 94105. The meeting will be in-person for members of the public will be able to either join in person or via webcast.

10. **ADJOURNMENT**

The meeting adjourned at 10:36 a.m.

Marcy Hiratzka
Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: March 1, 2024

Re: Advisory Council Introductions

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

The Advisory Council has recently welcomed several new members to the Council.

DISCUSSION

Advisory Council members are invited to briefly introduce themselves to the membership.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Sonam Shah-Paul

Reviewed by: Greg Nudd

ATTACHMENTS:

None

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: March 1, 2024

Re: Introduction of the Air District and Overview of the Advisory Council

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

The California Legislature created the Air District in 1955 as the first regional air pollution control agency in the country. The Air District is tasked with regulating stationary sources of air pollution in the nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties. It is governed by a 24-member Board of Directors composed of locally elected officials from each of the nine Bay Area counties. The Air District is assisted by an Advisory Council that provides input to the Board and the Executive Officer on air quality matters.

Pursuant to Section 40262 of the California Health & Safety Code, the Air District is required to maintain an Advisory Council consisting of seven appointed members "skilled and experienced in the fields of air pollution, climate change, or the health impacts of air pollution. Members shall be selected to include a diversity of perspectives, expertise and backgrounds." The Council advises and consults with the Air District Board and the Air Pollution Control Officer on implementation of the Air District's regulatory authority.

DISCUSSION

Staff will provide an introduction of the Air District, including the Air District's mission and vision, administrative structure, and the role of the Advisory Council in Air District work.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Sonam Shah-Paul
Reviewed by: Greg Nudd

ATTACHMENTS:

None

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: March 1, 2024

Re: Advisory Council Policy and Regulatory Toolkit

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

The Air District is researching and reviewing methods to better consider cumulative health impacts in its work. The Air District has a suite of policy and regulatory tools available to address the impacts of air pollution; this presentation will explore these tools and describe how they currently address cumulative impacts and some possible improvements.

DISCUSSION

The Air District's policy tools can be divided into three overarching categories: regulatory, planning and non-regulatory. Regulatory tools focus on stationary sources that impact air quality and the Air District's authority to develop rules for new and existing sources, authority to issue permits, and authority to ensure compliance for new and existing rules. The Air District also maintains a robust planning staff that support and develop regional and local planning efforts, often in coordination with other agencies and the community, to improve air quality. Examples of these planning efforts include State Implementation Plans under the Clean Air Act and Community Emissions Reduction Plan under AB 617. The Air District's non-regulatory authorities include providing technical guidance to local governments on land use permitting or providing incentives to replace polluting equipment.

Air District staff will review the policy tools available to the Air District and provide examples of how the Air District has utilized these tools to improve air quality in the Bay Area. In addition, Air District staff will also discuss how potential changes to the application of these tools could positively impact air quality.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Sonam Shah-Paul

Reviewed by: Greg Nudd

ATTACHMENTS:

None

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: March 1, 2024

Re: Overview of the Ralph M. Brown Act

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Staff will provide an overview on the Ralph M. Brown Act and the governance of public meetings.

DISCUSSION

The Advisory Council of the Air District is subject to the requirements of the Ralph M. Brown Act. Staff will review the Ralph M. Brown Act and the legal requirements for open meetings and public access, including applicable procedural requirements.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Sonam Shah-Paul
Reviewed by: Alexander Crockett

ATTACHMENTS:

None

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: March 1, 2024

Re: Selected References on Cumulative Impacts

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Together with the Advisory Council, the Air District would like to determine policies to better address the cumulative impacts of air pollution. A breadth of research is available to Advisory Council members and Air District staff to guide its work.

DISCUSSION

Air District staff have gathered selected references related to cumulative impacts to further inform the Advisory Council's deliberations. The selected references include articles on frameworks, methods and tools to address cumulative impacts, as well as region-specific studies, and work of other agencies. The Air District will continue to add to these selected references as additional studies become available to ensure the Advisory Council is aware of existing research that can support its work.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Sonam Shah-Paul
Reviewed by: Greg Nudd

ATTACHMENTS:

1. Advisory Council Cumulative Impacts Selected References

Selected References on Cumulative Impacts

This document is a living document; Air District staff will continue to update as needed. This short list of selected references is intended to provide concise, broad information on the subject. It may also serve as a starting point for a more formal or extensive review.

Last Updated: 2024-02-23

Conceptual Frameworks, Theory, Methods, Approaches, Tools

- Payne-Sturges, D. C., Sangaramoorthy, T., & Mittmann, H. (2021). Framing Environmental Health Decision-Making: The Struggle over Cumulative Impacts Policy. *International Journal of Environmental Research and Public Health*, 18(8), 3947.
- Payne-Sturges, D. C., Scammell, M. K., Levy, J. I., Cory-Slechta, D. A., Symanski, E., Carr Shmool, J. L., ... & Clougherty, J. E. (2018). Methods for evaluating the combined effects of chemical and nonchemical exposures for cumulative environmental health risk assessment. *International Journal of Environmental Research and Public Health*, 15(12), 2797.
- Gee, G. C., & Payne-Sturges, D. C. (2004). Environmental health disparities: a framework integrating psychosocial and environmental concepts. *Environmental health perspectives*, 112(17), 1645-1653.
- Sexton, K. (2012). Cumulative risk assessment: an overview of methodological approaches for evaluating combined health effects from exposure to multiple environmental stressors. *International journal of environmental research and public health*, 9(2), 370-390.
- Geronimus 2023. Weathering: The Extraordinary Stress of Ordinary Life on the Body in an Unjust Society.
 - Note: A shorter NPR interview is also available
- US EPA 2021. Health Impact Assessment.
 - See EPA 2021a, 09/15/2021 below.
- Tulve, N. S., Geller, A. M., Hagerthey, S., Julius, S. H., Lavoie, E. T., Mazur, S. L., ... & Frey, H. C. (2024). Challenges and opportunities for research supporting cumulative impact assessments at the United States environmental protection agency's office of research and development. *The Lancet Regional Health–Americas*, 30.

Studies Focused on the Bay Area, California, and/or Air Pollution

- CBE 2008. Cumulative Impacts in East Oakland: Findings from a Community-Based Mapping Study.
- Houston, D., Wu, J., Ong, P., & Winer, A. (2004). Structural disparities of urban traffic in Southern California: implications for vehicle-related air pollution exposure in minority and high-poverty neighborhoods. *Journal of Urban Affairs*, 26(5), 565-592.

Air District Advisory Council
Selected References on Cumulative Impacts

- Lane, H. M., Morello-Frosch, R., Marshall, J. D., & Apte, J. S. (2022). Historical redlining is associated with present-day air pollution disparities in US cities. *Environmental science & technology letters*, 9(4), 345-350.
- McHale CM, Osborne G, Morello-Frosch R, Salmon AG, Sandy MS, Solomon G, Zhang L, Smith MT, Zeise L. Assessing health risks from multiple environmental stressors: Moving from G×E to I×E. *Mutat Res Rev Mutat Res*. 2018 Jan-Mar;775:11-20. doi: 10.1016/j.mrrev.2017.11.003. Epub 2017 Nov 24. PMID: 29555026; PMCID: PMC5863617.

Items Specifically Addressed to Policymakers or Government Staff

- Sprinkle, R. H., & Payne-Sturges, D. C. (2021). Mixture toxicity, cumulative risk, and environmental justice in United States federal policy, 1980–2016: Why, with much known, was little done? *Environmental Health*, 20(1), 104.
- Zrzavy, A., Blondell, M., Kobayashi, W., Redden, B., & Mohai, P. (2022). Addressing cumulative impacts: lessons from environmental justice screening tool development and resistance. *Env't L. Rep.*, 52, 10111.
- Morello-Frosch, R., Zuk, M., Jerrett, M., Shamasunder, B., & Kyle, A. D. (2011). Understanding the cumulative impacts of inequalities in environmental health: implications for policy. *Health affairs*, 30(5), 879-887.
- Solomon, G. M., Morello-Frosch, R., Zeise, L., & Faust, J. B. (2016). Cumulative environmental impacts: science and policy to protect communities. *Annual review of public health*, 37, 83-96.
- US EPA. 2022. Cumulative Impacts: Recommendations for ORD Research. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-22/014a, 2022.

Work of Other Agencies in the United States

Chicago Department of Public Health

- Chicago's Cumulative Impact Assessment
https://www.chicago.gov/city/en/depts/cdph/supp_info/Environment/cumulative-impact-assessment.html

Department of Energy

- National Environmental Policy Act. Cumulative Effects.
https://ceq.doe.gov/publications/cumulative_effects.html

Minnesota Pollution Control Agency

- Minnesota Pollution Control Agency. (2018). Cumulative impact analysis. Minnesota Pollution Control Agency.
[Cumulative impacts | Minnesota Pollution Control Agency \(state.mn.us\)](https://www.mn.gov/Minnesota-Pollution-Control-Agency/cumulative-impacts)
[Cumulative Impacts Rule—Request for Comments \(state.mn.us\)](https://www.mn.gov/Minnesota-Pollution-Control-Agency/cumulative-impacts-rule)

Air District Advisory Council
Selected References on Cumulative Impacts

[Cumulative Impacts Rule—Comments Received in Response to Request for Comments \(state.mn.us\)](#)

Massachusetts Department of Environmental Protection

- Massachusetts Department of Environmental Protection. (2021). Cumulative Impact Analysis in Air Quality Permitting.
[Cumulative Impact Analysis in Air Quality Permitting | Mass.gov](#)
DRAFT Guidance for Conducting Cumulative Impact Analysis For Air Quality Comprehensive Plan Applications [download \(mass.gov\)](#)

New Jersey Department of Environmental Protection

- New Jersey Department of Environmental Protection Environmental Justice
[Department of Environmental Protection | Environmental Justice](#)

New York State

- Senate Bill S8830 (passed in Jan 2023): <https://www.nceleenviro.org/articles/new-york-legislature-passes-cumulative-impacts-bill/>

Office of Environmental Health Hazard Assessment

- Office of Environmental Health Hazard Assessment. (2010). *Cumulative Impacts: Building a Scientific Foundation*. Retrieved from <https://oehha.ca.gov/media/downloads/calenviroscreen/report/cireport123110.pdf>

The White House

- White House Environmental Justice Advisory Council 2014
[White House Environmental Justice Advisory Council | US EPA](#)
- National Environmental Justice Advisory Council 2004
[National Environmental Justice Advisory Council Recommendations | US EPA](#)

United States Environmental Protection Agency

- EPA. (1999). *Consideration Of Cumulative Impacts In EPA Review of NEPA Documents* (EPA 315-R-99-002). Retrieved from epa.gov/sites/default/files/2014-08/documents/cumulative.pdf
- EPA. (2011). *Plan EJ 2014: Legal Tools*. Retrieved from epa.gov/sites/default/files/2015-02/documents/ej-legal-tools.pdf
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- EPA. (2016). *Environmental Justice Research Roadmap*. Retrieved from epa.gov/sites/default/files/2017-01/documents/researchroadmap_environmentaljustice_508_compliant.pdf
- EPA. (2017). Using a Total Environment Framework (Built, Natural, Social Environments) to Assess Lifelong Health Effects of Chemical Exposures. *Grantee*

Air District Advisory Council
Selected References on Cumulative Impacts

Research Project Retrieved from

cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/recipient.display/rfa_id/630/records_per_page/ALL

- EPA. (2019a). *Guidelines for Human Exposure Assessment* (EPA/100/B-19/001). Retrieved from epa.gov/sites/default/files/2020-01/documents/guidelines_for_human_exposure_assessment_final2019.pdf
- EPA. (2019b). *Integrated Science Assessment (ISA) for Particulate Matter* (EPA/600/R-19/188). Retrieved from epa.gov/isa/integrated-science-assessment-isa-particulate-matter
- EPA. (2020). Center for Early Lifestage Vulnerabilities to Environmental Stressors. *Grantee Research Project* Retrieved from cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/recipient.display/rfa_id/669/records_per_page/ALL
- EPA. (2021a, 09/15/2021). Health Impact Assessments. Retrieved from epa.gov/healthresearch/health-impact-assessments
- EPA. (2021b). *U.S. Environmental Protection Agency Board of Scientific Counselors Executive Committee: Virtual Meeting Summary*. Retrieved from epa.gov/system/files/documents/2021-10/bosc_ec_summary_10-06-2021-amg_lbj.pdf
- EPA. (2022a). *EPA Legal Tools to Advance Environmental Justice*. Retrieved from epa.gov/system/files/documents/2022-05/EJ%20Legal%20Tools%20May%202022%20FINAL.pdf
- EPA. (2022b). *FY 2022-2026 EPA Strategic Plan*. Retrieved from epa.gov/system/files/documents/2022-03/fy-2022-2026-epa-strategic-plan.pdf
- EPA. (2022c). *Supplement to the 2019 Integrated Science Assessment for Particulate Matter (Final Report, 2022)* (EPA/635/R-22/028). Retrieved from cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=354490
- EPA. (2022d). *Using Participatory Science at EPA: Vision and Principles*. Retrieved from <https://www.epa.gov/system/files/documents/2022-06/EPA%20Vision%20for%20Participatory%20Science%206.23.22.pdf>
- EPA. (2022e). *Cumulative Impacts: Recommendations for ORD Research*. Retrieved from cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=357832&Lab=ORD&simplesearch=0&showcriteria=2&sortby=pubDate&searchall=357832&timstype=&datebeginpublishedpresented=05/17/2021

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: March 1, 2024

Re: Election of Officers

RECOMMENDED ACTION

The Advisory Council will discuss, recommend/nominate, and select a Chair, and Vice Chair.

BACKGROUND

The Advisory Council has welcomed several new members to the Council and therefore will consider members for leadership positions.

DISCUSSION

The Advisory Council will discuss, recommend/nominate, and select a Chair, and Vice Chair.

Historically, the Chair of the Advisory Council has helped determine the cadence of Advisory Council meetings, including if a subcommittee of the Advisory Council needs to meet. Together with Air District staff, the Chair and Vice Chair help develop Advisory Council meeting agendas and materials. During Advisory Council meetings, the Chair will facilitate the meeting. This includes facilitating comments from fellow Advisory Council members and public comment on agenda items. In addition, the officers often provide reports to the Board of Directors on the work of the Advisory Council.

The Vice-Chair of the Advisory Council has provided support to the Chair in their work and will act as Chair should the Chair be absent from a meeting. Going forward, the roles of the Chair and Vice-Chair can be expanded to better suit the needs of the Advisory Council and the Air District.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Sonam Shah-Paul
Reviewed by: Greg Nudd

ATTACHMENTS:

None