BOARD OF DIRECTORS
Advisory Council
October 5, 2026

Dr. Daniel Baldassare, Woodwell Climate Research Center
Melanie Colburn, MBA, LEED AP BD+C, City of Oakland
Dr. Stephanie M. Holm, M.D., Ph.D., M.P.H., University of California San Francisco
Dr. Philip T. Martien, Ph.D.
Professor Michael T. Schmeltz, DrPH, M.S., California State University, East Bay
Dr. Garima Raheja, Ph.D.
Lynda Hopkins, 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/86259952481 or may join Zoom by phone by dialing (669) 900-6833 or (408) 638-0968. The Webinar ID for this meeting is: 862 5995 2481

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 Chairs. No speaker who has already spoken on an item will be entitled to speak to that item again.

Written public comments can be emailed to comments@baaqmd.gov or through the Air District's website via the "Submit a Comment" feature for this meeting. Written public comments emailed by 10:00 a.m. on the business day prior to this meeting will be provided to the Council members in advance of the meeting. Written public comments emailed after that deadline will be provided to the Council members following the meeting's adjournment. Unless directed by the Chair, written public comments will not be read aloud during the meeting.

The Council welcomes comments, including criticism, about the policies, procedures, programs, or services of the Air 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 Air District is committed to maintaining a workplace free of unlawful harassment and is mindful that Air District staff regularly attend Council 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

MONDAY, OCTOBER 5, 2026
9:00 AM

Chairperson, Dr. Philip T. Martien

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)

The Consent Calendar consists of routine items that may be approved together as a group by one action of the Council. Any Council member or member of the public may request that an item be removed and considered separately.

2. Approval of the Draft Minutes of the Advisory Council Meeting of June 15, 2026

   The Advisory Council will consider approving the Draft Minutes of the Advisory Councl Meeting of June 15, 2026.

ACTION ITEM(S)

Action items are items in which a formal action by the Council is requested or recommended. The Council may take the action requested or recommended, may take a different action within the scope of the agendized item, or may take no action.

3. Renaming of the Advisory Council

   The Council will consider renaming the Advisory Council to better distinguish the Advisory Council from the Air District's Community Advisory Council. This item will be presented by Greg Nudd, Deputy Executive Officer of Policy.

4. Election of the Vice Chair

   The Council will consider electing a Vice Chair. The Council will discuss, nominate candidates, and vote on a Vice Chair to serve for the remainder of the 2026-2027 term. This item will be presented by Greg Nudd, Deputy Executive Officer of Policy.

DISCUSSION ITEM(S)

Discussion items are items in which no formal action by the Council is requested or recommended. These items are intended primarily to provide information and an opportunity for the Council to discuss the matter. The Council may nevertheless take any action within the scope of the agendized item.

5. California Air Resources Board Research on Cumulative Health Impacts of Air Pollution in California

   The Council will consider and discuss a presentation from staff at the California Air Resources Board (CARB). The presentation will focus on CARB's Research Program and on a specific research project focused on cumulative health impacts of air pollution in California. The research project aims to develop statewide health impact functions from multi-pollutant exposures and to conduct community-scale mixed-methods health assessments of exposures to toxic air pollutants. CARB expects this work to improve understandings of air pollution impacts and evaluations of benefits from pollution reduction programs, particularly in overburdened and disadvantaged communities. This item will be presented by Joshua Montefalcon, Air Pollution Specialist at CARB.

6. State Cumulative Impacts Permitting Policies

   The Council will discuss a follow up presentation on cumulative impacts policymaking developments over the past year. The presentation will be focused on policymaking in the context of state environmental permitting. It will begin with a brief overview of recent legislative efforts and cumulative impacts tool enhancements, before going into a deeper analysis of lessons that can be learned from rule-making and implementation. This item will be presented by Dr. Yukyan Lam, Research Director and Senior Scientist at The New School's Tishman Environment and Design Center.

7. Draft Recommendations on Cumulative Impacts

   The Council will discuss and further refine its recommendations for addressing cumulative impacts when permitting new or modified sources of air pollution. The Council will review a revised draft findings and recommendations document, confirm that feedback from the June 15, 2026, meeting is reflected, and suggest additional improvements. The Council is preparing these draft recommendations for the Board of Directors' consideration. This item will be presented by Dr. Philip T. Martien, Chair of the Advisory Council.

OTHER BUSINESS

8. Report of the Executive Officer/APCO

9. 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 Air 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 Air District is committed to maintaining a workplace free of unlawful harassment and is mindful that Air 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.

10. 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.

11. Time and Place of Next Meeting

Monday, November 9, 2026, at 9:00 a.m. The meeting will be held in-person at the Bay Area Metro Center and at satellite locations as may be specified on the meeting agenda using a remote teleconferencing link. Members of the Advisory Council and the public may attend at any of those in-person locations, and members of the public may also attend virtually via webcast.

12. Adjournment

The Council meeting shall be adjourned by the Chair.

CONTACT:
MANAGER, EXECUTIVE OPERATIONS **(415) 749-4941**
375 BEALE STREET, SAN FRANCISCO, CA 94105 **FAX: (415) 928-8560**
vjohnson@baaqmd.gov **Air District 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 less than 72 hours before the meeting 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 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, Kimberly Leefatt, Civil Rights Officer at 415-749-4610 or by email at non-discriminationcoordinator@baaqmd.gov.

BAY AREA AIR DISTRICT
375 BEALE STREET, SAN FRANCISCO, CA 94105
FOR QUESTIONS PLEASE CALL (415) 749-4941
EXECUTIVE OFFICE:
MONTHLY CALENDAR OF AIR DISTRICT MEETINGS

OCTOBER 2026

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Advisory Council	Monday	5	9:00 a.m.	1st Floor Board Room
Board of Directors Meeting	Wednesday	7	10:00 a.m.	1st Floor Board Room
Board of Directors Stationary Source Committee	Wednesday	14	10:00 a.m.	1st Floor, Yerba Buena Room
Board of Directors Community Equity, Health, and Justice Committee	Wednesday	14	1:00 p.m.	1st Floor, Yerba Buena Room
Board of Directors Policy, Grants and Technology Committee – CANCELLED	Wednesday	21	10:00 a.m.	1st Floor Board Room
Board of Directors Finance and Administration Committee	Wednesday	21	1:00 p.m.	1st Floor Board Room
Community Advisory Council Retreat	Thursday	29	10:00 a.m.	Sheraton Sonoma Wine Country Petaluma Great Blue Heron Room 745 Baywood Dr. Petaluma, CA 94954

9/30/2026 – 11:40 a.m. HL G/Board/Executive Office/Moncal

BAY AREA AIR DISTRICT
Memorandum

To: Chairperson Dr. Philip T. Martien and Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: October 5, 2026

Re: Approval of the Draft Minutes of the Advisory Council Meeting of June 15, 2026

RECOMMENDED ACTION

Approve the Draft Minutes of the Advisory Council Meeting of June 15, 2026.

BACKGROUND

None.

DISCUSSION

Attached for review and approval are the Draft Minutes of the Advisory Council Meeting of June 15, 2026.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Marcy Hiratzka
Reviewed by: Vanessa Johnson

ATTACHMENT(S):

1. Draft Minutes of the Advisory Council Meeting of June 15, 2026

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

Advisory Council Meeting
Monday, June 15, 2026

DRAFT MINUTES

CALL TO ORDER

1. **Opening Comments:** Chair Martien called the meeting to order at 9:00 a.m.

   Roll Call:

   Present: Chairperson Dr. Phil T. Martien; Vice Chairperson Professor Ann Marie Grover Carlton; and Members Dr. Daniel Baldassare, Melanie Colburn, Dr. Stephanie Holm, Dr. Garima Raheja, and Dr. Michael Schmeltz.

   Absent: Board Liaison Lynda Hopkins.

CONSENT CALENDAR

2. **APPROVAL OF THE DRAFT MINUTES OF THE ADVISORY COUNCIL MEETINGS OF MARCH 16, 2026**

Public Comments

No requests received.

Council Comments

None.

Council Action

Vice Chair Carlton made a motion, seconded by Dr. Schmeltz, to **approve** the Draft Minutes of the Advisory Council Meeting of March 16, 2026; and the motion **carried** by the following vote of the Council:

AYES: Baldassare, Carlton, Colburn, Holm, Martien, Schmeltz.
NOES: None.
ABSTAIN: None.
ABSENT: Hopkins and Raheja.

INFORMATIONAL ITEMS

3. CUMULATIVE IMPACTS ASSESSMENT AND REGULATORY DESIGN CONCEPTS

a) CalEnviroScreen: Methodology, Design Principles & Lessons Learned

Dr. Ruwan Thilakaratne from the Office of Environmental Health Hazard Assessment (OEHHA), gave the presentation *CalEnviroScreen: Methodology, Design Principles & Lessons Learned,* including: what we'll cover today; background and purpose; draft CalEnviroScreen 5.0 indicators; selecting the 23 indicators; normalization and aggregation; key trade-offs in cumulative impacts (CI) tool design; community engagement; geographic scale and data quality; lessons for tool builders; and questions and resources.

NOTED PRESENT: Dr. Raheja was noted present at 9:11 a.m.

Public Comments

Public comments were given by Miriam Aspajo, San Francisco resident; Roberto Carlos Torres, San Francisco Environment Department; Stone Selseth, San Francisco resident; Merha Mehzun, Brightline Defense; Malik Washington, Marie Harrison Community Foundation; female speaker, Tenderloin Housing Clinic; Peter R, San Francisco resident; Chalam Tubati, San Francisco resident; Eddie Ahn, Brightline Defense; and Arieann Harrison, Marie Harrison Community Foundation.

Council Discussion

Council members asked clarifying questions and provided comments after this presentation. Dr. Stephanie Holm commented that one of the indicators being edited in the draft version 5.0 of CalEnviroScreen is the children's lead indicator, and version 4 included a measure of lead burden associated with household paint. Dr. Thilakaratne responded that he had no further details about this at the moment, but confirmed that OEHHA was able to use the data from California's blood lead screening program as input to develop this indicator layer. Dr. Daniel Baldassare asked how well the census tract levels track the disadvantaged communities within the Bay Area, or if the tracts are too large versus a smaller unit. Dr. Alvaro Alvarado from OEHHA responded that it's one of the trade-offs around CalEnviroScreen—in places like the Bay Area, gentrification can create differences within the same tract, where some parts are improving while others remain disadvantaged, and this can be masked in tract-level analysis; using smaller units like census block groups could better capture these differences, but pollution data become less reliable at smaller scales.

Chair Martien appreciated the public comments and concluded the Council's discussion on this informational item, clarifying that in the deliberation about how to address cumulative impacts through the permitting process, the Council received the public comments about how CalEnviroScreen might be applied, and will continue this discussion in the future.

b) The Cumulative Impact of Social Stressors and Particulate Matter (PM) on Child Cognitive Ability: A Navigation Guide Systematic Review

Dr. Ruwan Thilakaratne gave the presentation *Cumulative Impact of Social Stressors and Particulate Matter on Child Cognitive Ability: A Navigation Guide Systematic Review,* including: disclaimer; background on CI; CI assessment (non-cancer); susceptibility is incompletely characterized; social non-chemical stressors; research question; methods; preliminary results; interpretation and next steps; acknowledgements; and references.

Public Comments

Public comments were given by Chalam Tubati, San Francisco resident.

Council Discussion

Council members asked clarifying questions and provided comments after this presentation. Dr. Stephanie Holm asked about the timeline for OEHHA to publish the presented work with finalized results; Dr. Thilakaratne responded that OEHHA expected to prepare at least a manuscript to be submitted to a journal by the end of this summer.

To address the public comment about CalEnviroScreen draft version 5.0 after this presentation, Chair Martien and Dr. Holm responded that the Council is developing recommendations on cumulative impacts for Air District's permitting beyond current practices; the purpose of the agenda item is to hear OEHHA's updates on CalEnviroScreen to inform potential adaptation in recommendations and is not a formal review of CalEnviroScreen; public comments and concerns about CalEnviroScreen were acknowledged and will be considered in drafting recommendations to the Air District.

c) Air District Regulatory Design Theory

Kelly Crawford, Air District Deputy Executive Officer of Engineering & Compliance, gave the staff presentation *Regulatory Design Theory,* including: purpose; what we know; air regulatory design foundations; connection to cumulative impacts; core principles: regulatory design & justice; reframing the core question; and decision-making as a design choice.

Public Comments

Public comments were given by Chalam Tubati, San Francisco resident.

Council Discussion

Council members asked clarifying questions and provided comments after this presentation. Dr. Schmeltz appreciated how the topic was framed by the staff, particularly around observable harm and exposure experiences, and expressed concerns about unobserved or uncaptured experiences. Dr. Schmeltz emphasized that relying solely on publicly available data may miss important aspects of what individuals are experiencing; examples include what

important variables or experiences are currently not being captured, what would be the ideal data or indicators to better understand these gaps, and how the Air District might identify and collect this missing information. Staff noted that there was no single perfect metric, and the framework presented encourages rethinking how existing data are interpreted. Staff also referenced the concept of invisible harm that requires deliberate methods to uncover, such as statistically significant and high-frequency inspections, as well as randomized inspection programs designed to detect hidden issues. Staff's response highlighted the importance of shifting from data quantity to data quality and outcomes.

Chair Martien commented on the need for clear connections between the framework and implementation in permitting processes to support the Council's work, including identifying specific considerations, ideas, or suggestions the Council should keep in mind when developing permitting-related recommendations. Staff referenced the four key harm characterizations in the presented framework (concentration of harm, concentration of experienced exposure, concentration of permitted exposure, and demonstrated lack of diligence and compliance) and highlighted the primary priority to better leverage existing data (e.g., compliance records, public health data, risk information) for illustrating different types of harm, identifying specific harms concentrated in particular areas, and developing greatest immediate benefits in high-impact areas.

Dr. Holm asked for clarification on how or if the discussed process to identify concentrations of harm currently connects to the Air District's permitting system. Staff responded that the discussion is currently at a high-level conceptual stage without detailed data examples. Staff intended to introduce and share the evolving framework, and the proposed approach may involve identifying areas where harm is clustered or concentrated and developing targeted permitting strategies to address those specific harms, with a goal to better understand how permitting decisions influence community outcomes.

Council Action

No action taken.

4. RECOMMENDATIONS TO ADDRESS CUMULATIVE IMPACTS

Chair Martien led the Council in discussion to refine its recommendations regarding cumulative impacts. The Council's recommendations focus on three areas: cumulative impacts in permitting, new and modified facilities, and community priorities. The Council is developing draft recommendations with the intention of providing the recommendations to the Board of Directors for consideration.

Chair Martien gave the presentation *Draft Recommendations to Address Cumulative Impacts,* including: draft document online; focus area for recommendations; recommendation goals; recommendations (place-based versus region-wide, assessment versus action, analytical versus precautionary); recommendations big picture; top-level recommendations; adopt place-based approaches; expand the scope of impact assessments; add protections, move to action; adopt precautionary approaches; and explore new models to reduce impacts.

Public Comments

Public comments were given by Roberto Carlos Torres, San Francisco Environment Department; and Chalam Tubati, San Francisco resident.

Council Discussion

Council members continued discussion on the draft recommendations to address cumulative impacts with several major themes, including the need for clear, consistent, and equitable methodologies, balancing data, community input, and practical implementation, and developing actionable and adaptable recommendations for permitting and policy decisions. Council members expressed specific concerns, raised questions, and engaged in group discussions on the following topics related to the recommendations.

- Needing standardized methodologies and baseline data aggregation to ensure alignment across jurisdictions or communities, with the goal to integrate multiple data sources in a way that enhances insights without adding unnecessary complexity.
- Noting the challenges in replacing place-based methods and tools toward a broader cumulative impact framework applied more universally, and the need for clear alternatives or transition strategies.
- Considering enhanced approaches that include the use of place-based tools (e.g., CalEnviroScreen) as a baseline with additional layered analyses or triggers, community self-identification with safeguards against misuse by more resourced communities, community-based participatory research to better integrate community input, and incorporation of additional indicators such as displacement, income changes, historical redlining, and other socioeconomic factors.
- Incorporating area-wide compliance history (not just facility-level) into permitting decisions to reflect broader community conditions and trust; and developing tiered compliance frameworks that could influence permitting outcomes, including stricter actions for repeated noncompliance.
- Recognizing the resource intensity and data requirements of implementing cumulative impact assessments and whether additional staffing or funding would be required.
- Stressing the importance of evaluating not only environmental harms but also potential negative impacts of regulations, such as limiting development or economic opportunities in disadvantaged communities; ensuring recommended approaches do not further disadvantage vulnerable communities.

Regarding the refinement of the recommendations, the Council had a general agreement to remove Appendix B given that it is outdated and not essential to the final document. Council members also discussed the need for adding an improvement component to track impacts and clarifying language around community benefit agreements with a focus on tracking successful examples. Staff clarified that community benefit agreements are typically arrangements between developers and communities, with mixed effectiveness. Staff expressed a preference to avoid relying on or emphasizing community benefit agreements and instead focus on more established regulatory approaches for delivering community benefits and mitigating impacts. Dr. Holm commented that an improvement in language of the recommendations is for the Air District to track the existing ways to interact with communities

and regulatory settings, and to continue improving in that area based on other examples, rather than specifically using the word “community benefit agreement.” Staff confirmed that this revised framing would be more appropriate.

Chair Martien noted that the current recommendations are very varied and may reflect multiple potential directions, including both a shift toward precautionary approaches and efforts to expand risk-based assessments, and it is important to balance current regulatory realities that are largely risk-based with the desire to evolve toward new approaches. Dr. Holm commented that organizing or grouping recommendations more clearly is helpful, but acknowledged the challenges of ensuing recommendations remain focused without omitting key components.

Staff expressed general support for the Council’s discussion, acknowledging the move toward more effective and outcome-focused approaches, while highlighting areas needing further clarification and refinement to ensure practical implementation. Staff requested further clarification on how the Council intends to incorporate compliance history into permitting decisions, including potential approaches to adjust permit conditions or deny permits for facilities with poor compliance histories. Staff raised questions about how background exposure is incorporated into risk thresholds, noting the importance of avoiding double counting when combining background and incremental risk and significant additional analysis and data work needed for determining background exposures. Staff also noted that several existing and upcoming initiatives align with the Council’s discussions, such as the expanded air toxics monitoring and studies, improvements in emission inventories and modeling, and increased use of community-based monitoring tools (e.g., low-cost sensors). Staff also emphasized the growing community involvement in identifying and prioritizing environmental issues, and suggested the Council to plan for proposing recommendations to the Air District’s Board of Directors in the first quarter of 2027.

Chair Martien and Dr. Holm specifically commented on the intent behind including compliance history in the recommendations, and generally agreed to integrate compliance history into a broader recommendation (e.g., combining Sections 6A and 6C) to better align it with provisions related to prohibiting certain permit types and conditioning approvals based on risk or emissions levels. Staff emphasized the need for clarity of intent in how compliance history would be incorporated into permitting, noting that while it can be relatively straightforward to use past behavior to strengthen permit conditions or enforcement tools, using it as a basis to deny permits introduces significant complexity. Challenges include defining what constitutes poor compliance, ensuring fair comparisons across facilities of different sizes and regulatory burdens, distinguishing between minor and serious violations, and accounting for delays in compliance data due to adjudication timelines.

Council members acknowledged the challenges and suggested developing a structured approach or metric that considers harm in a facility’s compliance history as a starting point. Staff agreed on the importance of attempting to create such a framework, noting the importance of understanding and explaining to the community of Air District’s measurement of success. Council members further commented on the possibility of creating a tiered system, where lower-level violations would trigger enhanced enforcement or better record keeping, while more serious violations could potentially lead to permit denial, emphasizing the importance of establishing a clear, transparent process to guide decision-making and build community trust.

Council Action

No action taken.

OTHER BUSINESS

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

Dr. Andrea Polidori, Deputy Executive Officer of Science, waived this item.

6. PUBLIC COMMENT ON NON-AGENDA MATTERS

No requests received.

7. COUNCIL MEMBER COMMENTS

None.

8. TIME AND PLACE OF NEXT MEETING

At the end of the meeting, the next meeting of the Advisory Council was to be held at the Call of the Chair. After the meeting adjourned, the next meeting of the Advisory Council was scheduled for Monday, October 5, 2026, at 9:00 a.m. The meeting will be held in-person at the Bay Area Metro Center. Members of the public may also attend virtually via webcast.

9. ADJOURNMENT

The meeting adjourned at 11:44 a.m.

Marcy Hiratzka
Clerk of the Boards
Executive Office

Dr. Song Bai
Director
Assessment, Inventory, and Modeling

BAY AREA AIR DISTRICT
Memorandum

To: Chairperson Dr. Philip T. Martien and Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: October 5, 2026

Re: Renaming of the Advisory Council

RECOMMENDED ACTION

Rename the Advisory Council.

BACKGROUND

The Air District has established a Community Advisory Council. The closeness of the names of the Community Advisory Council and the Advisory Council may cause confusion for members of the public to engage with the work of both the Community Advisory Council and the Advisory Council. Despite having a formal legal name of “Bay Area Air Quality Management Advisory Council” under Cal. Health and Safety Code Section 40260, there is no legal impediment to renaming this body as contemplated by today’s recommended action. The formal legal name will still be retained and will still be used in rare circumstances necessitating use of the formal, statutory, legal name, but for all other internal and external purposes the new name can be used.

DISCUSSION

The Council will consider alternative names for the Advisory Council. Names under consideration include Technical Advisory Council and Scientific Advisory Council.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: Sonam Shah-Paul
Reviewed by: Andrea Polidori, Brian Case

ATTACHMENT(S):

None

BAY AREA AIR DISTRICT
Memorandum

To: Chairperson Dr. Philip T. Martien and Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: October 5, 2026

Re: Election of the Vice Chair

RECOMMENDED ACTION

Elect the Vice Chair.

BACKGROUND

At its meeting on March 16, 2026, the Council elected a Chair and a Vice Chair to serve for the duration of the 2026-2027 term. The Vice Chair of the Council has since resigned from the Council and the seat of Vice Chair is vacant.

DISCUSSION

In accordance with Health & Safety Code section 40267, the Advisory Council will discuss, nominate candidates, and elect a Vice Chair.

Together with Air District staff, the Chair and Vice Chair help develop Advisory Council meeting agendas and materials. 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: Andrea Polidori, Brian Case

ATTACHMENT(S):

None

BAY AREA AIR DISTRICT
Memorandum

To: Chairperson Dr. Philip T. Martien and Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: October 5, 2026

Re: California Air Resources Board Research on Cumulative Health Impacts of Air Pollution in California

RECOMMENDED ACTION

None; the Council will discuss this item, but no action is requested at this time.

BACKGROUND

The California Air Resource Board's (CARB) Research Program supports the development of California's air quality and climate policies by identifying emerging vulnerabilities, improving understanding of health and environmental impacts, and evaluating the benefits of pollution mitigation efforts. While focused on California, CARB's research provides valuable insights for other regions confronting similar challenges. CARB's Five-Year Strategic Research Plan, informed in part by community input, identifies several priorities related to cumulative impacts, including advancing health impact assessment, quantifying the cumulative health impacts of multiple air pollution stressors, and exploring the improvement of approaches to assess cumulative burdens.

DISCUSSION

Consistent with the priorities identified in its Five-Year Strategic Research Plan, the Calfornia Air Resources Board (CARB) has developed a $1.2 million research solicitation focused on the cumulative health impacts of air pollution in California. The scope was informed by a review of the scientific literature and cumulative impacts frameworks, as well as outreach to technical and community experts to identify research gaps of practical relevance to California.

The resulting research project has two primary aims: to develop statewide health impact functions for multi-pollutant exposures and to conduct community-scale, mixed-methods health assessments of exposures to toxic air pollutants. CARB expects this work to improve understanding and estimation of the public health effects of simultaneous exposure to multiple air pollutants and to provide improved methods for evaluating the

health benefits of pollution-reduction programs, particularly in overburdened and disadvantaged communities.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: David Holstius
Reviewed by: Song Bai

ATTACHMENT(S):

1. CARB - Cumulative Impacts Presentation

CALIFORNIA
AIR RESOURCES BOARD

Cumulative Health Impacts from Air Pollution in California

Pradeep Prathibha, PhD, Manager, Health & Ecosystem Analysis Section

Joshua Montefalcon, MPH, Air Pollution Specialist

Bay Area Air District Advisory Council Meeting - October 5, 2026

CARB's Current Health Impact Analysis

Health analysis informs the benefits of CARB regulations, plans, and programs

17 health outcomes from exposure to $PM_{2.5}$

In use until 2023
Cardiopulmonary Mortality
Cardiovascular Hospital Admissions
Respiratory Hospital Admissions
Asthma Emergency Room Visits

Added in 2023
Cardiovascular Emergency Room Visits
Respiratory Emergency Room Visits
Acute Myocardial Infarction, Nonfatal
Asthma Onset
Asthma Symptoms / Exacerbation
Lung Cancer Incidence
Work Loss Days
Alzheimer's Disease
Parkinson's Disease

Added in 2026
Cardiac Arrest
Stroke
Allergic Rhinitis (Hay Fever)
Minor Restricted Activity Days

Goal: Develop Methods to Comprehensively Assess Health Benefits

Board Resolution 20-13: Health Evaluation of Air Quality and Climate Regulations and Programs

- New qualitative and quantitative approaches
- Assess health impacts in disadvantaged communities
- Quantify additional pollutants
- Update health endpoints from pollution exposure
- Assess and communicate GHG reduction benefits

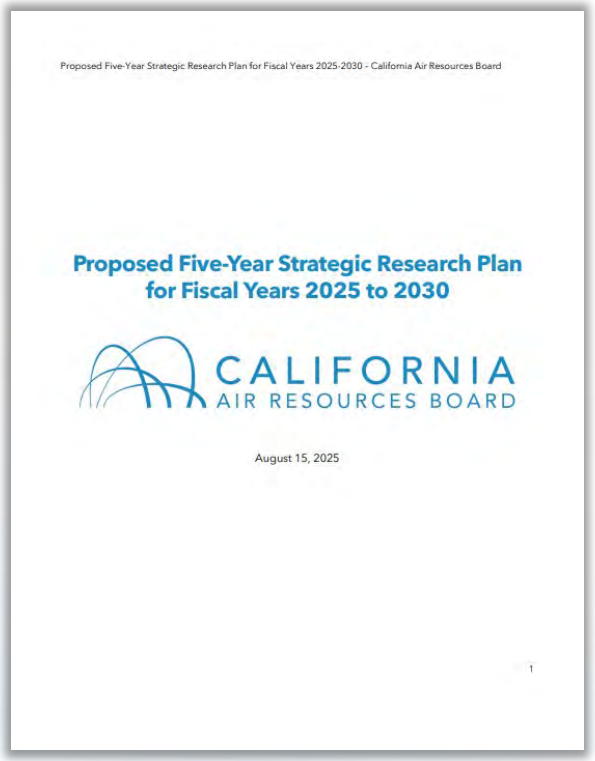
Board Resolution 20-33: A Commitment to Racial Equity and Social Justice

- Establish and enhance proactive measures to ensure racial equity in all CARB activities

GHG: green house gas

Future Research: Why Focus on Cumulative Impacts?

CARB's Research Program


Proposed Five-Year Strategic Research Plan for Fiscal Years 2025-2030 - California Air Resources Board

Proposed Five-Year Strategic Research Plan for Fiscal Years 2025 to 2030

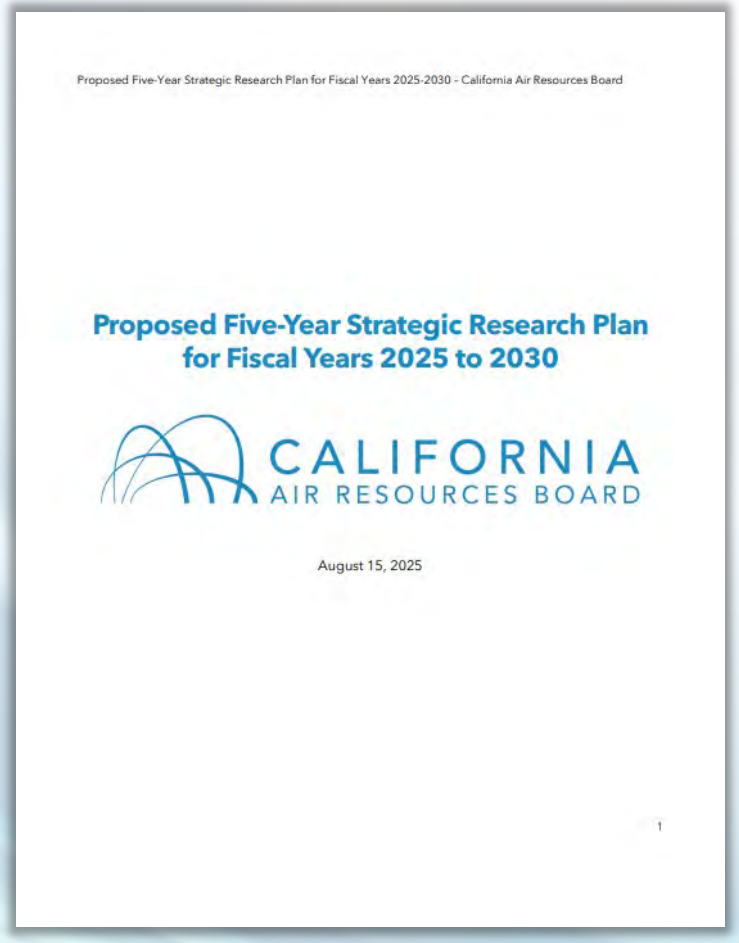
CALIFORNIA AIR RESOURCES BOARD

August 15, 2025

- Identify research gaps and program needs
- Public engagement (meeting surveys)
- Engage community-based organizations

CARB Research Project Priorities

Cumulative Impacts from Five-Year Strategic Plan



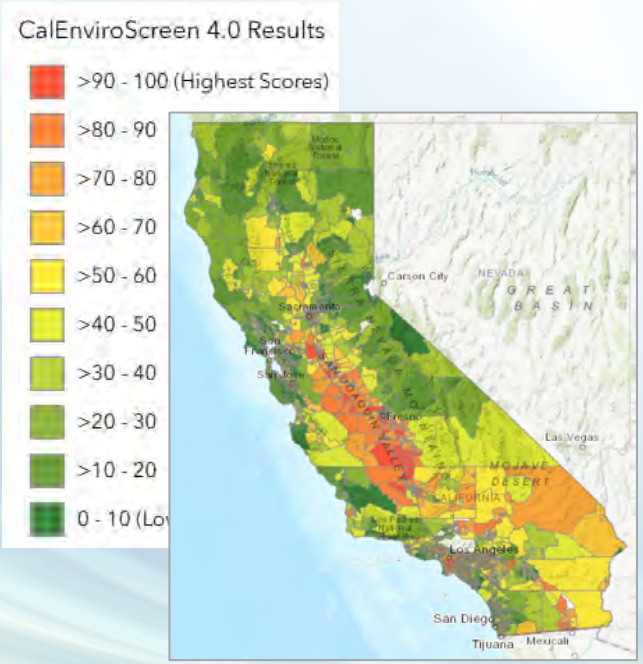
1. Evaluate local health impacts from multiple sources.
2. Identify climate change-related impacts that worsen burdens.
3. Identify communities & Tribal populations bearing greatest burdens.
4. Explore new assessment methods
5. Research to support equitable decision-making

ww2.arb.ca.gov/resources/documents/strategic-research-plans

Some Existing Tools Capturing Cumulative Impacts

Mapping tools

- CalEnviroScreen
- EPA's EJ Screen (removed)
- Climate & Economic Justice (removed)

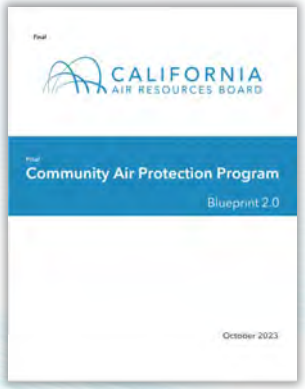


Frameworks

- NJ EJ Mapping, Assessment, and Protection Tool
- U.S. EPA
  - Interim Framework
  - Technical Guidance for Assessing EJ in Regulatory Analysis
- National Academies' State of Science and the Future

Community-based Approaches

- CARB (AB 617)
  - Community Air Protection Program
  - Community Air Grants and Community Incentives Program
- U.S. EPA's Environmental Justice Collaborative Problem Solving Program



Cumulative Impacts Roadmap: From Research Priority to Solicitation

Cumulative Impacts Identified as a Research Priority

Five-Year Strategic Research Plan

1-on-1 Outreach

Gather internal and external input from CARB staff, CBOs, researchers, agencies, air districts

Identify Key Research Concepts

Synthesize input to identify key research gaps and draft concepts

Public Workshop

Collect feedback and refine research concepts

Develop Solicitation

Two research pillars informed by community and technical feedback

CARB Outreach Process for Cumulative Impacts Research Priority

Identify institutions	Compiled list of over 60 universities & organizations in or working closely with overburdened communities in CA and in federal programs
Contact experts	Reached out to over 50 researchers, community leaders, toxicologists, epidemiologists, and other technical experts
One-on-one discussions	Discussed current methods, frameworks, and research gaps in health outcomes, social determinants, and exposures
Analysis	Synthesize suggestions to refine research concepts

Recurring themes

Integrate chemical ($PM_{2.5}$, ozone, air toxics) **and non-chemical stressors** (heat, drought, health care access, noise)

$PM_{2.5}$ + O_3, NO_x …

Multipollutant exposures and **pollutant mixtures** drive health impacts

Emission sources (ports, rail yards, refineries) and **land use** (agricultural burning, pesticides) play a major role in shaping cumulative burden

Community- or place-based research for distinct exposures and stressors

Timing of exposure affects risk and varies with different life stages

Produce research that is **practical and relevant** to policy and regulatory applications in California and beyond

Recurring themes

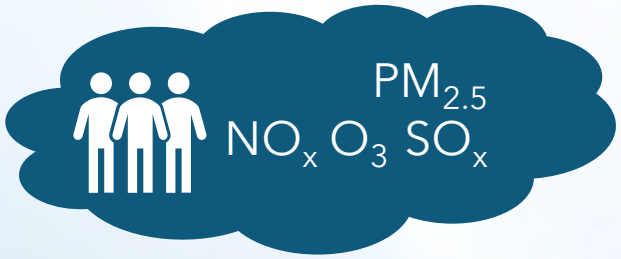
Key Research Gaps

- Move from single-pollutant analysis to **multiple pollutants** and other stressors
- Improve methods to collect and analyze **fine-scale community data**
  - Statewide averages do not necessarily reflect local cumulative burdens
- Consider **effect modification** of non-chemical stressors
- Investigate burden from **exposures over lifetime**

Proposed Research Concepts

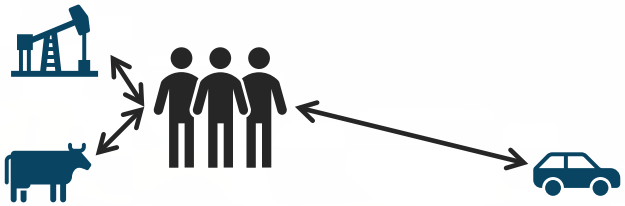
1. Multi-Pollutant Exposure

Health impacts from multiple or clustered pollutants



2. Exposure by Proximity

Health impacts based on community's proximity to different emission sources



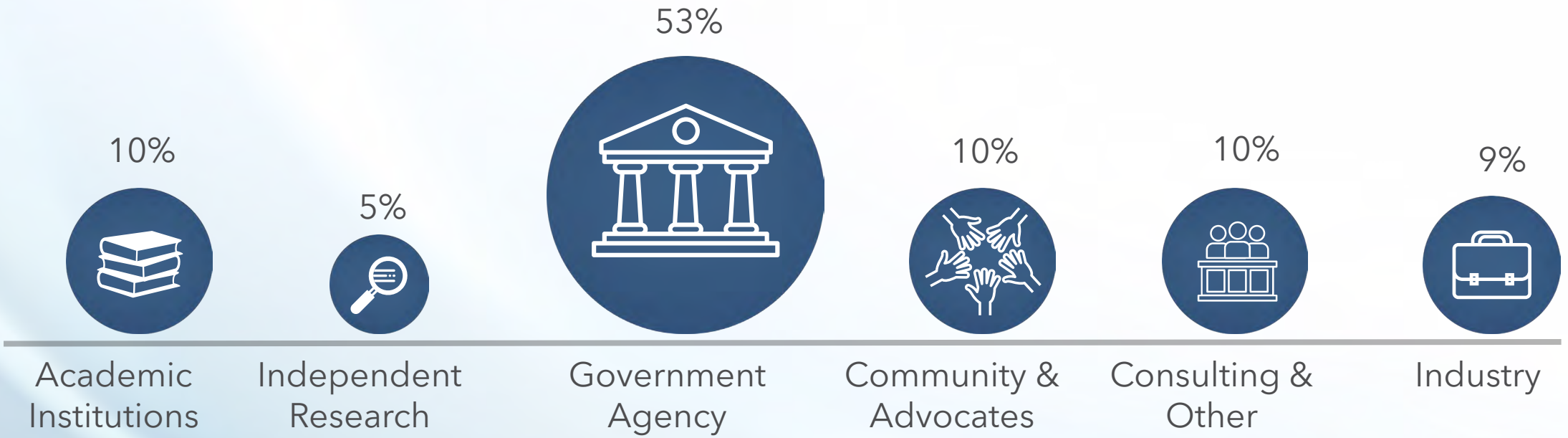
3. Effect modification

How environmental and socioeconomic stressors change health impacts from air pollution

4. Life-Course Assessment

Age-specific or lifetime risk of health outcomes from air pollution

Public Workshop



Cumulative Health Impacts from Air Pollution in California

In developing this solicitation, CARB aimed to:

- Build on recommendations from recent cumulative impacts reports
- Advance the science on cumulative health assessments
- Inform CARB's health impact assessments
- Investigate community health concerns

Two complementary research pillars

Pillar I:

Statewide Multipollutant Health Assessment

Develop statewide multipollutant health impact functions to inform CARB's health impact analysis

Pillar II:

Community-Scale Health Assessments

Conduct mixed methods assessments of air toxics and health outcomes in overburdened communities

36 months
Project Duration

$1.2 million
Total Budget

January – April 2027
Kickoff executed contract

CARB

Pillar I: Cumulative Health Impacts from Air Pollution in California

Objective:

Develop statewide multipollutant health impact functions for mortality, cardiovascular and respiratory emergency department visits and hospitalizations, and other endpoints.

Desired Outcomes:

1. Literature review to identify robust methods and tools for health analysis from exposure to multiple criteria pollutants.
2. Obtain health and population data, effect modifiers, and covariates, representative of CA population.
3. Develop health impact functions using existing multipollutant exposure data (Daily 1-km $PM_{2.5}$ [total and speciated], NO_2, O_3).

Deliverables and Use:

Statewide health impact functions from criteria air pollutant exposure ($PM_{2.5}$, NO_2, O_3 + others) and health outcomes stratified by population characteristics (e.g., race/ethnicity, income) and region to inform CARB's health impact assessment methodology.

Pillar II: Cumulative Health Impacts from Air Pollution in California

Objective:

Conduct 2-3 community-scale mixed methods health assessments from exposure to toxic air contaminants.

Desired Outcomes:

1. Form community-specific Community Advisory Groups to inform key decisions and community engagement efforts.
2. Select 2-3 communities with elevated burden from exposure to air toxics (e.g., AB 617 consistently nominated communities) with existing or ongoing air quality monitoring in consultation with CARB staff.
3. With CAG guidance, develop work plan for community-specific assessments covering target air pollutants, exposure data sources, health endpoints, health and population data sources, etc.
4. Conduct health assessments using suitable mixed methods approaches.
5. Disseminate research findings to community stakeholders.

Deliverables and Use:

Quantitative and/or qualitative assessments of community-scale toxic air pollutant exposures and health outcomes, as guided by the CAG(s), to inform CARB's health impact assessment methodology, monitoring efforts, incentive programs, and regulatory actions.

Pillar II: Community Selection Criteria

1. Communities must have existing air quality datasets that provide reliable exposures representative of the region in addition to those from district or other regulatory monitors. Existing datasets must be of high quality and validated using regulatory monitoring data or other best practices. The strength of the existing datasets will be a key factor in pre-proposal scoring.
2. Communities that have demonstrated concern about health impacts of multiple sources of air toxic air pollutants or that have expressed interest to engage in cumulative health impacts research.
3. Communities that are overburdened and face multiple health burdens based on CalEnviroScreen, CalHealthMap, Healthy Places Index, emission inventories, consistently nominated AB 617 communities list, or other screening tools. CARB intends for this solicitation to facilitate new and expanded analyses in communities where health effects of toxic air contaminants are understudied.

Next Steps

- CARB selection and finalization of full proposal
- Research Screening Committee proposal review
- Execute Research Contract
- Ongoing communication with relevant air districts

Date	Milestone
August 14	Pre-proposals due
Early 2027	RSC meeting
1st or 2nd Quarter 2027	Execute contract

BAY AREA AIR DISTRICT
Memorandum

To: Chairperson Dr. Philip T. Martien and Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: October 5, 2026

Re: State Cumulative Impacts Permitting Policies

RECOMMENDED ACTION

None; the Council will discuss this item, but no action is requested at this time.

BACKGROUND

In October 2025, the Air District's Advisory Council, together with members of the Air District's Community Advisory Council, discussed developing cumulative impacts permitting protections, including policy design, decision points, and lessons learned. At that meeting, guest speakers Dr. Yukyan Lam and Dr. Ana Isabel Baptista, both from The New School's Tishman Environment and Design Center, shared key findings from a first-of-its-kind policy review and database designed to support the integration of cumulative impacts into state environmental permitting frameworks. This item will provide an update, beginning with a brief overview of recent legislative efforts and cumulative impacts tool enhancements, before going into a deeper analysis of lessons that can be learned from rule-making and implementation.

DISCUSSION

Following up on Dr. Lam's presentation in October 2025, she will be presenting on cumulative impacts policymaking developments that have happened over the past year. In the years after the passage of New Jersey’s 2020 Environmental Justice Law, many states followed with examples of their own versions of a cumulative impacts permitting policy. There was a proliferation of state bills nationwide that sought to incorporate cumulative impacts considerations into state environmental permitting, often through a common framework that involved (i) identifying a certain subset of applicable communities, permits, and facilities, (ii) defining a scope of analysis, and (iii) specifying different decision outcomes based on the results of that analysis.

The presentation will provide an updated assessment of the state of play on these policy efforts. Several states have not seen the successful passage of proposed bills, and legislative activity appears to have stalled. In this regard, the (sometimes)

disconnect between tools and policies, which Dr. Lam and colleagues documented in their earlier work, continues to be observed. Rule-making, often spanning years, is happening in several other states where bills have been signed into law. Meanwhile, implementation in New Jersey is underway, with a number of permit renewals/modifications and one permit for a new facility undergoing review under the EJ Law in the past year.

The presentation will provide a brief overview of legislative efforts across states before going into more detailed analysis of lessons that can be learned from rule-making and implementation. Time allowing, the presentation will draw on examples from Minnesota, Illinois, New York and New Jersey. Overall, the policy trends across the country have prompted Dr. Lam and her colleagues to think deeper about the question: what makes a cumulative impacts policy truly a cumulative impacts policy?

Speaker Bio: Dr. Yukyan Lam is Research Director and Senior Scientist at The New School's Tishman Environment and Design Center, where she helps develop and manage the Center's portfolio of research, policy and technical assistance. Her work supports environmental justice organizations and coalitions in their advocacy at the local, state and federal levels. Prior to joining the Tishman Center, she was the Director of Community Science at the Natural Resources Defense Council. Yukyan’s experience also includes research and lawyering on human rights, health, and environmental challenges in Latin America and Bangladesh. Her expertise draws on public health, spatial analysis, community-based science, and qualitative research methods. Yukyan holds a BS in physics from the Massachusetts Institute of Technology, a JD from Harvard Law School, and a PhD from the Johns Hopkins Bloomberg School of Public Health. She has also served since 2023 on the Health Effects Institute's Advisory Council on Community Health and Environmental Research Initiatives (CHERI).

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: David Holstius
Reviewed by: Song Bai

ATTACHMENT(S):

1. BAAQMD CI Presentation x Tishman

AGENDA: 6

State Cumulative Impacts Permitting Policies: Recent Developments 2025-2026

Presentation to the Bay Area Air District Advisory Council
San Francisco, October 5, 2026

Yukyan Lam, Research Director and Senior Scientist

THE NEW SCHOOL

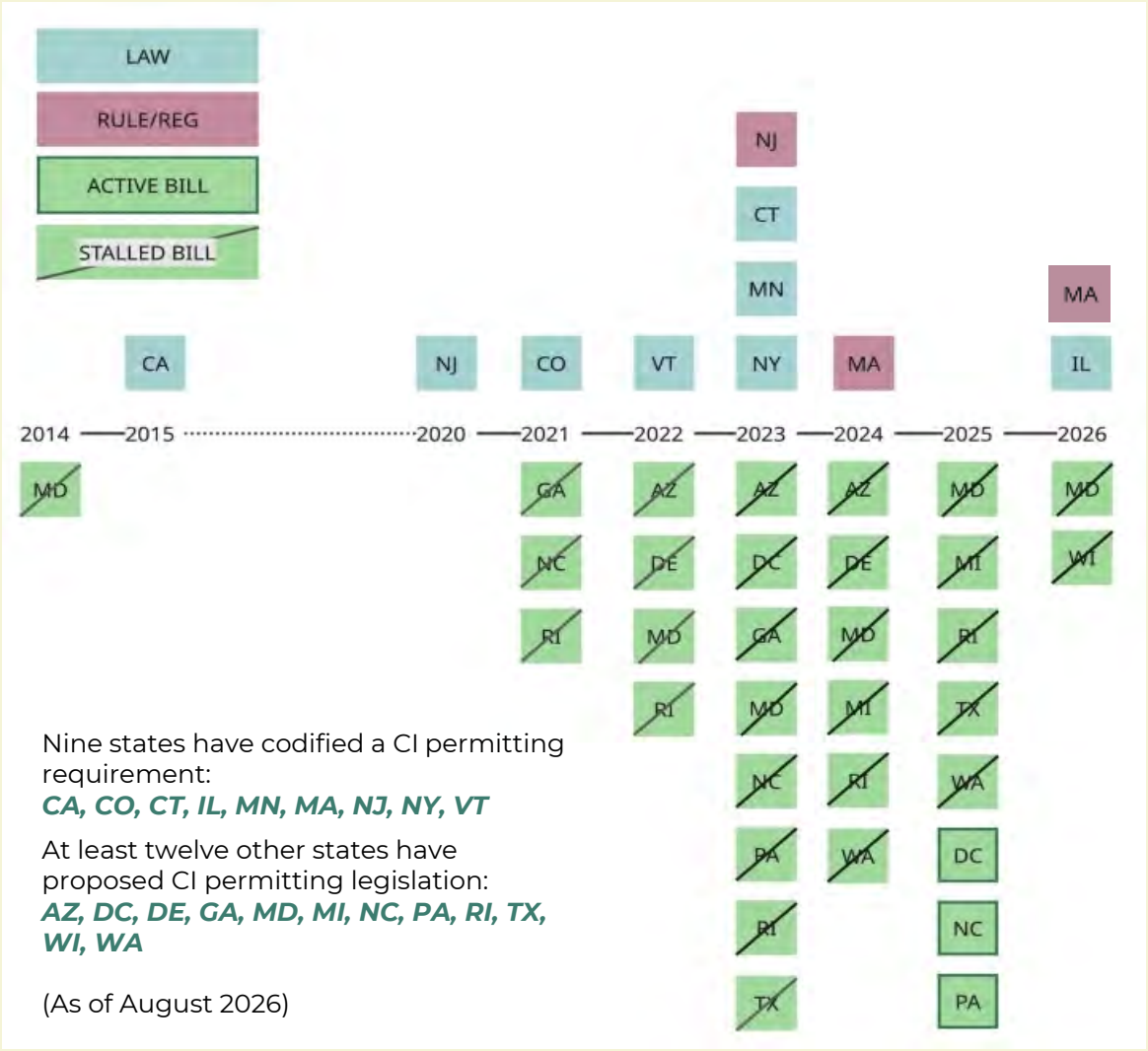
Tishman Environment and Design Center

Tishman Research Team

Yukyan Lam

Madeleine Killough

Anna Yulsman

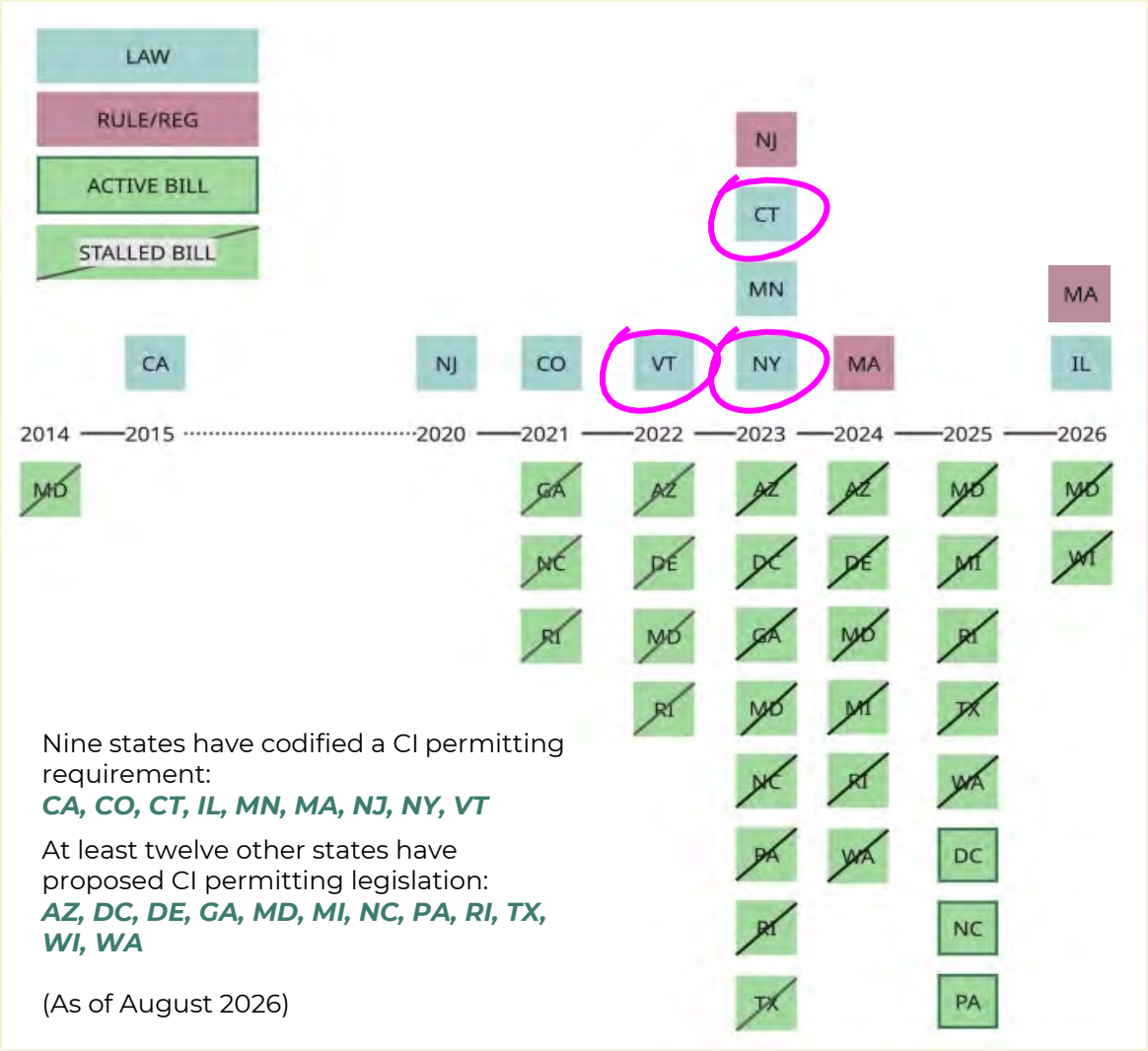


Nine states have codified a CI permitting requirement:
CA, CO, CT, IL, MN, MA, NJ, NY, VT

At least twelve other states have proposed CI permitting legislation:
AZ, DC, DE, GA, MD, MI, NC, PA, RI, TX, WI, WA

(As of August 2026)

Timeline of Proposed and Passed State Policies



Timeline of Proposed and Passed State Policies

FOR IMMEDIATE RELEASE
April 16, 2025

CONTACT:
Mayor's Press Office
312.744.3334
press@cityofchicago.org

Department of Environment
kathleen.o'shea@cityofchicago.org

MAYOR BRANDON JOHNSON INTRODUCES THE HAZEL JOHNSON CUMULATIVE IMPACTS ORDINANCE

The ordinance aims to address the disproportionate pollution burden experienced by some Chicago communities

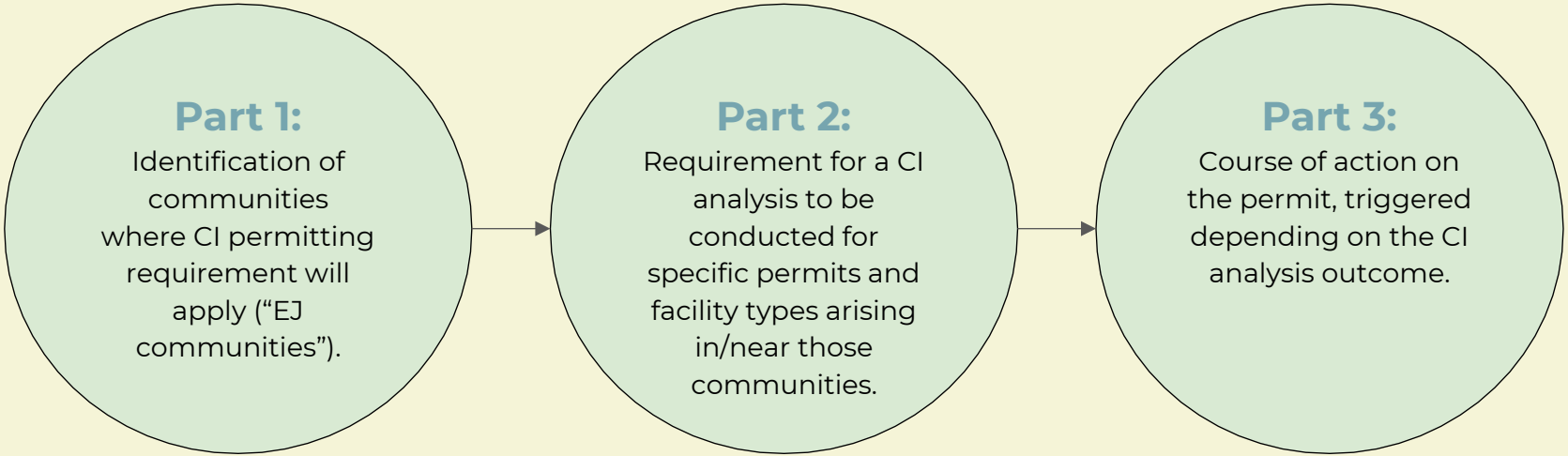
CHICAGO – Today, Mayor Brandon Johnson, alongside Alders Ramirez, La Spata, Sigcho-Lopez, Rodriguez-Sanchez, and Hadden, introduced the Hazel Johnson Cumulative Impacts Ordinance, a bold step towards protecting vulnerable communities from disproportionate pollution burdens. By applying a more thorough zoning review process for heavy and intensive land uses that have the greatest potential for pollution exposure, the ordinance aims to prevent additional stressors from compounding in already-burdened communities.

"Chicago is the birthplace of the environmental justice movement, so it is only right that we take the lead nationally on protecting our most vulnerable communities from the harm of pollution," said **Mayor Brandon Johnson**. "Chicago has a long history as an industrial hub, but that industry has at times come at a cost to working-class Chicagoans. Economic development cannot be a tradeoff where we sacrifice the health of Black and brown communities. We need to build thoughtfully and that means ensuring that our zoning policies help protect all Chicagoans from excessive pollution."

Named in honor of the late Hazel Johnson, who is widely regarded as the "Mother of Environmental Justice" for her work as an organizer against environmental racism, the ordinance would help protect communities of color, which are statistically more likely to be exposed to pollution, especially from manufacturing.

Photo credit: Max Herman/Borderless Magazine

Common Three-Part Structure of CI Permitting Policies



Baptista, A., Lam, Y., Yulsman, A., Killough, M., Bez, C., "A Resource Database of Cumulative Impacts Permitting Policies: Emerging Opportunities to Protect Environmental Justice Communities from Additional Burden," *Environmental Justice* (2025)

Policy Elements: Decision on Permit - A Retrospective

Strength of mandate on permit decision	**"Shall" deny:** **DC, GA, IL, MN, NJ, NY, and WA** **"May" deny:** **AZ, CO, CT, DE, MA, MD, PA, RI, and WI**
New facilities vs. expansions & renewals	NJ: New facilities mandatorily denied. Expansions & renewals apply conditions.
Trigger for decision: How much is too much?	NJ: Any additional contribution to adverse cumulative stressors is too much. MN: *Substantial* adverse impact NY: *Significant increase* for modifications and renewals; *de minimis* for new

Loopholes?: CBAs & public interest exceptions	Public interest exception: **NJ, MI, GA, WA** CBA clauses: **MN, CT**

Policy Elements: Decision on Permit - A Current Look

Strength of mandate on permit decision

"Shall" deny:
DC, GA, IL, MN, NJ, NY, and WA

"May" deny:
AZ, CO, CT, DE, MA, MD, PA, RI, and WI

Loopholes?: CBAs & public interest exceptions

Public interest exception:
NJ, MI, GA, WA

CBA clauses:
MN, CT

New facilities vs. expansions & renewals

NJ: New facilities mandatorily denied.
Expansions & renewals apply conditions.

Trigger for decision: How much is too much?

NJ: Any additional contribution to adverse cumulative stressors is too much.

MN: *Substantial* adverse impact

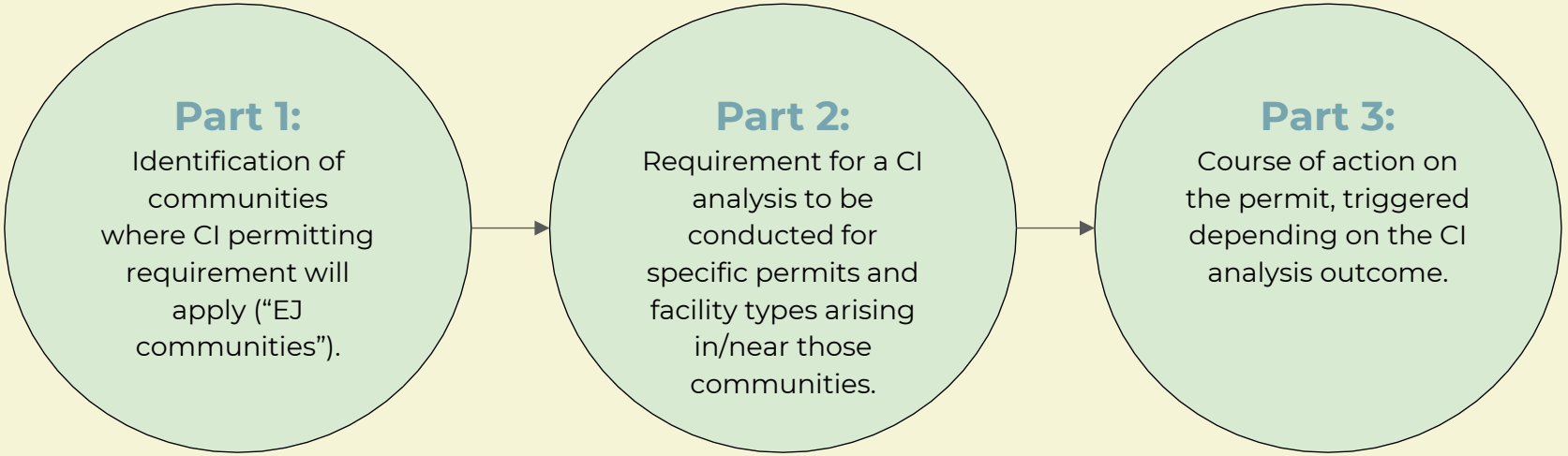
NY: *Significant increase* for modifications and renewals; *de minimis* for new

Illinois - new law "permit enhancements"

New Jersey - implementation progress

MN - proposed rule definition of "substantial adverse impact" and CBA treatment

Common Three-Part Structure of CI Permitting Policies



MN law - geographic constraint

MA rule - custom radii

MN law - discretionary CIA requested by public: *"a petition requesting that a cumulative analysis be conducted is* ***signed by at least 100 individuals*** *who reside or own property in the environmental justice area impacted by the facility and is supported by* ***material evidence*** *that demonstrates a potential adverse cumulative impact…"*

MA rule - 'clean' energy + 'dirty' energy

IL law - compliance focus

MA rule - all indicators "elevated" by default for fossil fuel infrastructure

Thank you!

lamy@newschool.edu

SCAN ME

tishmancenter.org/
cumulativeimpacts

BAY AREA AIR DISTRICT
Memorandum

To: Chairperson Dr. Philip T. Martien and Members of the Advisory Council

From: Philip M. Fine
Executive Officer/APCO

Date: October 5, 2026

Re: Draft Recommendations on Cumulative Impacts

RECOMMENDED ACTION

None; the Council will discuss this item, but no action is requested at this time.

BACKGROUND

The Advisory Council has been developing recommendations on ways to identify, assess, and reduce cumulative impacts associated with permitting new and modified sources of air pollution. The recommendations build on the Council's multi-year review of cumulative impacts science, regulatory approaches, Air District programs and policies, and input from community members and other stakeholders. The Council intends to provide its recommendations to the Air District Board of Directors for consideration.

The Council has also sought input from the Community Advisory Council (CAC) as this work has developed. During development of the Advisory Council's draft work plan, volunteers from the CAC participated through an ad hoc group that engaged with the draft work plan. Since the Advisory Council's last meeting, Chair Martien has also presented the draft recommendations to the CAC, where additional CAC members expressed interest in participating in further review and discussion.

At its June 15, 2026 meeting, the Council reviewed and discussed an initial draft of the recommendations. The discussion addressed, among other topics, place-based approaches for identifying overburdened communities, methods for assessing cumulative impacts, compliance history, community engagement, precautionary approaches, and opportunities to make the recommendations more actionable and adaptable.

DISCUSSION

The Council will review a revised draft of the *Recommendations for Addressing Cumulative Impacts in Permitting New and Modified Sources of Air Pollution*. The revised draft is intended to reflect discussion and feedback from the June 15, 2026 meeting, as well as subsequent review and refinement. Changes include revisions to the organization and framing of the recommendations and updates to several individual recommendations.

Chair Martien will summarize the revisions and update the Council on recent engagement with the Community Advisory Council. The Council will consider whether the revised organization and language appropriately reflect its prior discussion, identify areas needing additional refinement, and discuss how continued collaboration with interested CAC members could inform further development of the draft recommendations. The Council will also discuss potential next steps in developing the recommendations for eventual consideration by the Board of Directors.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Philip M. Fine
Executive Officer/APCO

Prepared by: David Holstius
Reviewed by: Song Bai

ATTACHMENT(S):

1. 2026-10-05 AC Draft Recommendations Clean
2. 2026-10-05 AC Draft Recommendations Presentation

Recommendations for Addressing Cumulative Impacts in Permitting New and Modified Sources of Air Pollution

Bay Area Air District Advisory Council

DRAFT – October 2026

Introduction

Purpose

This document provides the Bay Area Air District and the public with recommendations from the Air District's Advisory Council on ways to recognize and more fully address cumulative impacts in policies and regulations related to permitting new and modified sources of air pollution. Specifically, this document offers recommendations on methods to identify, assess, and reduce cumulative impacts, where such methods account for impacts of both chemical and non-chemical stressors on health, well-being, and quality of life.

Recognizing that cumulative impacts of air pollution are most profound for frontline environmental justice communities, in developing these recommendations the Advisory Council sought guidance and review from the Community Advisory Council, an advisory body to the Air District that represents the Bay Area's frontline communities.

This document will be presented to the Air District's Board of Directors for them to consider adopting. It may also serve as a resource for Air District staff considering alternatives for reducing cumulative impacts in permitting and other agency practices and programs.

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Key Findings and Recommendations

Following an extensive multi-year review process, the Advisory Council has drafted a set of core findings confirming that the cumulative health burden of environmental, climate, and non-chemical stressors can be significantly greater than the sum of individual effects, which often overwhelmingly disadvantages frontline communities.

The Council concludes that the current environmental science is robust enough to justify immediate, science-based policy changes. These findings emphasize that effective methods to account for and reduce cumulative impacts can be simplified to target specific permitting actions. The Council also stresses that the subsequent courses of action must be co-developed in deep partnership with the community members who experience these lived disparities.

Authors and Contributors

The primary authors of this document are Bay Area Air District's Advisory Council—the Chair of the Bay Area Air District Board of Directors serves as an ex-officio member, and seven members with expertise in air pollution science, climate change, or the health impacts of air pollution. Council members developed the document over a three-year period, following a public process that included extensive discussion among Council members during Advisory Council meetings and significant contributions from subject matter experts, who presented their findings at these meetings. The document benefits from input and expertise shared by Air District staff, as well as guidance and comments from the Community Advisory Council.

Contents

This **Introduction** section is followed by five additional sections. A **Background** section briefly summarizes key information about cumulative impacts, how current Air District programs currently consider them, and how the Air District's strategic planning addresses them. A **Methods** section presents principles, roles, and general processes that guided the Advisory Council's work. A **Findings and Recommendations** section first lists key findings of the Advisory Council related to cumulative impacts. Second, it offers recommendations on methods for identifying and accounting for cumulative impacts. Third, it presents ways to reduce cumulative impacts in permitting new and modified sources of air pollution. A **Summary** section recaps earlier sections, summarizes Advisory Council meeting materials and deliberations related to the development of the recommendations, and offers initial thoughts on how these recommendations might be extended to policies and programs in addition to permitting. Finally, an **Appendix** contains supplemental and supporting information.

Background

Cumulative Impacts Overview

Definitions and challenges. Cumulative impacts can be understood as describing the total picture of environmental stressors that shape people's health and quality of life. Instead of looking at one chemical pollutant at a time, a cumulative impacts perspective emphasizes the totality of exposures that people face: toxic air contaminants, water quality degradation, noise, heat, etc., as well as social factors like poverty or inadequate housing. It also emphasizes that, as research has shown, these factors can interact in ways that amplify harm. For example, psychosocial stress can make people more vulnerable to pollution, while poor housing quality can worsen exposures indoors. Yet U.S. environmental regulation has largely been constructed around one-by-one considerations of pollutants, sources, exposures, and standards. Lack of tools or data are cited as reasons why more decisive action on cumulative impacts is not possible. Related challenges include how to show sufficient proof of harm, how to agree on priorities, and how responsibility is distributed among various authorities.

DRAFT

History, progress, and present efforts. The idea of cumulative impacts has grown out of decades of scientific inquiry and community experience, closely linked with the environmental justice movement. Today, states across the U.S. are developing environmental justice screening tools and cumulative impact laws to identify and reduce disproportionate burdens. In the Appendix, noted are specific legal precedents from New Jersey, Minnesota, Massachusetts and New York Regulators increasingly recognize that consideration of cumulative impacts does not need to be prohibitively complex or purely quantitative. Many of the emerging approaches are place-based, meaning that maps are drawn of areas, or places, where cumulative impacts are greatest. Laws and regulations are being developed for targeted interventions, tighter standards, or other health-protective actions within these mapped places.

Existing Air District Programs

The Air District currently considers certain aspects of cumulative impacts through existing programs and policies, including the use of CalEnviroScreen, a state tool that ranks and maps census tracts in Californian based on types of pollutant exposures and a collection of socioeconomic factors. The federal Clean Air Act and state law set overarching requirements,

but the Air District has discretion: it can tighten certain standards or adopt region-specific rules, so long as these are grounded in evidence and can withstand legal and economic scrutiny

Measurement and Modeling of Ambient Air. The Air District's monitoring network is designed to measure the combined mixture of pollution from many sources. The network's primary goals are to track exposure across the region. Combining measurement with modeling provides some information about what sources might bear responsibility for levels and distributions of pollution in ambient air across the region. Community-focused monitoring efforts, as in AB 617 communities, add additional layers of information. Evidence and information gained from measurements and modeling support regional-scale efforts which aim to protect public health with an adequate margin of safety. Interventions aimed at meeting and maintaining standards differ by source type, with the most notable split being between state and federal jurisdiction (over mobile sources) and Air Districts (over stationary sources).

Regulation of Stationary Sources, Including Permitting. While the impacts of all sources are cumulative, permitting programs for stationary sources generally consider them one at a time. When an application for a new or modified source is submitted to the Air District, staff rely on standardized protocols to identify a set of pollutants and estimate emission rates, given the nature and size of the source. This scope generally applies to normal operations, not including emergencies.

Under the Bay Area Air District's Rule 2-5, a permit to create or modify a source expected to emit toxic air contaminants (TACs) requires a health risk assessment (HRA), unless the estimated TAC emissions are below pollutant-specific trigger levels codified in Rule 2-5. The Air District has discretion over some aspects of HRA processes, such as threshold levels. Other aspects are mandated by external requirements. In the middle are aspects determined by guidance that the Air District has elected to adopt. For example, whether an assessment is source-specific or facility-wide, the Air District relies on additive risk frameworks and key parameters specified in guidance from California's Office of Environmental Health Hazard Assessment (OEHHA) for calculating cancer and non-cancer risk. In considering where to calculate these and what benchmarks to use, the Air District's process focuses on maximum values across nearby receptor locations (rather than, e.g., local averages) and applies stricter cancer-risk thresholds and enhanced public notification in areas identified using CalEnviroScreen.

With limited exceptions, contributions from other equipment at the same facility, or other facilities, are outside the scope of these HRAs. An important exception to the source-by-source approach is the Air District's Rule 11-18, which targets existing TAC emissions from a high-impact facility in its entirety, including TACs that might not have been part of scoping processes when sources there were initially permitted. Such facilities are frequently located in overburdened communities.

For pollutants that are not classified as TACs, such as ozone or fine particulate matter ($PM_{2.5}$), the permitting process follows a different approach, relying mainly on regional attainment planning and offset requirements. Under this approach, requirements are framed in terms of expected emissions. Control of emissions is still emphasized: "Best Available Control

DRAFT

Technology" (BACT) refers to the most stringent emission limit or commercially available technology that has been successfully applied to similar sources, considering both cost and practicality. The Air District has some latitude in determining what "best available" entails, as well as how uniform that standard might be across the region. After controls are applied, significant increases in anticipated rates of emissions of these pollutants, or their precursors, must be balanced by reductions somewhere else in the Bay Area. This is known as offsetting, and its lack of locality has often drawn objections from communities who point out that regional trade-offs do little to relieve their own situations.

Incentive Programs. Incentive programs also consider cumulative impacts, mainly by using place-based designations to prioritize and guide funding for initiatives like cleaner heavy-duty vehicle fleets or improving local infrastructure in disadvantaged/overburdened communities.

Guidance for Cities and Counties. Under the California Environmental Quality Act (CEQA), the Air District publishes non-binding guidance that cities and counties rely on when reviewing projects. This guidance includes thresholds of significance. Project-level analyses consider the impacts of new emissions in the context of impacts from all other sources in the area, and a project's impact can be considered significant if it would cause the combined total to exceed a health-based standard or threshold. This means that a modest increase in emissions may be deemed significant where pollution levels are already high.

Alignment with Ongoing Air District Activities

This subsection identifies portions of the Air District's *2024-2029 Strategic Plan* and the Community Advisory Council's 2024 *Call to Action* that are most relevant to the Advisory Council's recommendations on cumulative impacts.

Air District's 2024-2029 Strategic Plan

The *2024-2029 Strategic Plan* includes[1]

> ***Cumulative Health Impacts**: [The Air District] will develop [its] understanding of the cumulative effects of air pollution and other stressors and use this information to focus regulatory efforts in areas experiencing the most serious air pollution and related cumulative impacts.*
>
> ***Change Approach to Air Quality**: [The Air District] will change [its] approach to reducing air pollution so that [it] achieve[s] more meaningful improvements to air quality in communities, with a focus on those overburdened by air pollution.*

Community Advisory Council's A Call to Action, Charting a New Course Toward Environmental Justice at the Bay Area Air Quality Management District, 2024

The Community Council's *A Call to Action* includes nine environmental justice priorities including:

> ***Implement Environmental Justice Best Practices and Innovation:** The Air District must create and implement a strategy for incorporating environmental justice best practices and innovation into its day-to-day operations and core functions–including data collection and*

[1] In the Strategic Plan, these are Strategies 2.11 and 1.1, respectively.

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analysis; measurement and monitoring; permitting; environmental analysis; inspections; enforcement; and legal actions including litigation, mitigation, planning, rulemaking, and incentives funding.

Methods

Principles

The Advisory Council adopted the following principles to guide the development of its recommendations:

- Follow a collaborative development process. Specifically, align with the Air District's *2024–2029 Strategic Plan,* the Community Advisory Council's 2024 *Call to Action* and seek community perspectives to help drive the process.
- Favor protective actions over delay, even when faced with uncertainty. Prioritize work that can lead to tangible benefits for communities in a feasible time frame.
- Be transparent about how work is done and how decisions are reached.
- Identify resource needs, including staffing, budget, and monitoring equipment, for work product options.
- Favor simple methods over more complex ones. Simple methods are more easily understood, adopted, defended, and maintained than complex ones.
- Adopt "best practices," as described in the Community Advisory Council's *2024 Call to Action.*

Focus Area

At the October 30, 2024, Advisory Council meeting, the Council decided to focus on permitting. Meaningful consideration of cumulative impacts in permitting was highlighted as a top priority for community groups. Permitting was identified by the Community Advisory Council as one of seven areas where Environmental Justice best practices should be implemented. Strategy 4.3 of The Community Advisory Council's *Call to Action* demands that air quality permits be "clear, consistent and enforceable so that air pollution affecting communities is minimized".

The framework developed for considering cumulative impacts in permitting may also apply to other focus areas. Such applications may be discussed by the Advisory Council, during this term or a future one. A list of all focus areas considered by the Advisory Council is included in Appendix A.

Roles and Process

Following the October 30, 2024, Advisory Council meeting, an ad hoc committee was formed to develop a work plan to help guide the development of initial recommendations and to set a schedule for developing this document.

The Advisory Council has met with members of the Community Advisory Council to discuss this work and seek direction:

- A member of the Advisory Council attended and presented at the Community Advisory Council's retreat on May 16-17, 2025, discussing the Advisory Council plans for this term

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and seeking Community Advisory Council members who might be willing to engage with the Advisory Council to develop draft ideas. An agenda for that meeting is here. The presentation, agenda item 4.C., is available here (presentation with Q&A times: 2:26:00 - 3:12:18).

- The Advisory Council ad hoc committee met with two Community Advisory Council members who expressed interest at the retreat to discuss this work and solicit preliminary guidance.
- The Advisory Council scheduled time in Meeting 2 for discussions between the full Advisory Council and two Community Advisory Council members.

Following the March 16, 2026, Advisory Council meeting, the work plan ad hoc was disbanded, and a second ad hoc committee was formed to refine the recommendations and complete this document.

Draft products have been presented at public Advisory Council meetings, and the full Advisory Council has revised drafts and made decisions from options presented. A final draft set of recommendations will be presented to the Air District's Board of Directors for changes and/or finalization and adoption.

Goals and Deliverables

The following products or output from the Advisory Council are discussed in this document:

- A list of Advisory Council findings for Air District staff and others to reference
- Recommendations for methods that will:
  - minimize added burden to areas already suffering cumulative impacts,
  - reduce differential exposure to air pollution,
  - consider non-chemical stressors, and
  - reflect community concerns and understanding.
- A summary of the minutes of the Advisory Council meetings on the topics of cumulative impacts.

The authors intended that this document should be understandable by a broad audience, including members of the Advisory Council, Air District staff, the Community Advisory Council, and members of the public. This document was prepared with the intent that the Air District's Board of Directors may consider approving it.

Findings and Recommendations

This section presents findings and recommendations on identifying, assessing, and reducing cumulative impacts.

Findings

On July 19, 2024, the Advisory Council developed the findings listed in this section. These findings were considered interim at the time they were developed but they have since been reviewed, discussed, and finalized by Advisory Council members.

These findings recognize the health burden of cumulative impacts and are founded on science strong enough to support policy changes to reduce those impacts. The findings further

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recognize that, while there are multiple contributors to cumulative impacts, steps toward addressing them need not be complex.

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.

Recommendations

Building on Existing Measures

As described in the Background section, the Air District has already taken some steps to address cumulative impacts in its permitting process (Figure 1). Under Air District Rule 2-5, applicants seeking a permit for a new or modified source of toxic air pollution must meet requirements that are different inside communities identified as overburdened relative to requirements outside. Both inside and outside, health risk is assessed using standard methods. However, inside overburdened communities, tighter cancer risk limits apply, resulting in greater protections. The approach implemented in the Air District's Rule 2-5 is like that adopted in other states to address cumulative impacts in permitting (See Appendix B). Because this approach identifies some areas as overburdened and imposes different requirements in those places, it is known as a *place-based approach*.

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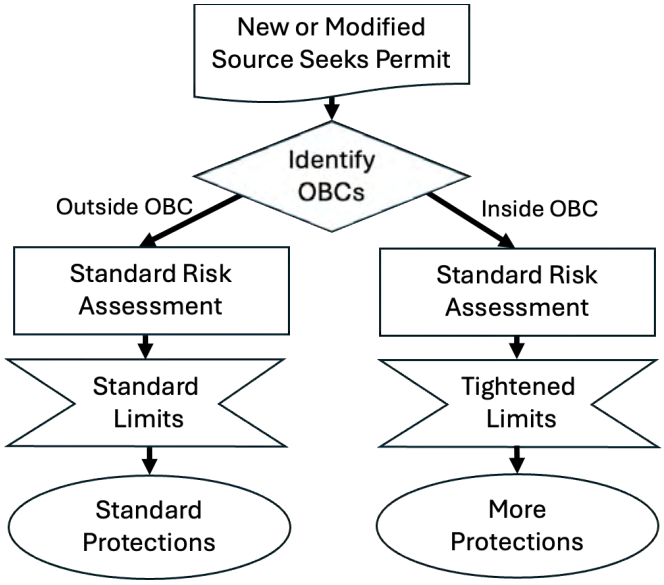

Figure 1. *Air District Rule 2-5 already provides additional protections for new or modified sources that would add toxic air contaminant emissions in overburdened communities (OBCs). The rule first identifies OBCs. Within those communities, the permitting process applies standard health risk assessments and tighter cancer-risk limits to provide greater protection than would apply outside OBCs.*

The Advisory Council supports the use of such place-based approaches to identify communities for more health-protective actions in the permitting process. However, a place-based approach alone is insufficient to address cumulative impacts in the Bay Area without additional measures such as those recommended below. Many of the Advisory Council's recommendations could fit within a place-based approach and could be applied, for example, to expand and supplement Rule 2-5. However, some of the recommendations are broader in scope and can also be applied regionally.

Recommendations presented this section include 1) broad, top-level recommendations aiming to change the trajectory for how the Air District considers the permitting process as a whole; 2) recommendations to change what impacts count, including additional methods to identify overburden, expanded methods for assessing impacts, and supporting studies to help develop such methods; 3) recommendations to change what steps are taken to reduce impacts, including tightening risk limits, tightening and adopting emission thresholds, and adopting precautionary approaches; and 4) recommendations on new and developing approaches to track. For this latter set, the Advisory Council does not recommend implementing them currently but, rather, to monitor their development to see if useful methods emerge.

Some recommendations discussed in this report may be combined; that is, adopting one option does not exclude another. Appendix C highlights several examples of jurisdictions that have adopted or are in the process of adopting regulations that address cumulative impacts in permitting, including the Air District.

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1. Top-Level Recommendations

a. **Adopt Precautionary Approaches**. While some of the recommendations in later sections extend quantitative evaluations, continuing current practices of health risk assessment, the Advisory Council supports precautionary approaches that move directly to action without quantification of harm, especially where harm might be reasonably assumed in overburdened communities. While quantitative estimates of harm may be necessary in permitting applications, especially in the near term, the Council supports moving toward precautionary approaches where possible.

b. **Shift Agency Focus Toward Harm Reduction**. The Air District is developing new approaches to the protecting frontline communities, which includes a "layered" approach" to enforcement, that focuses Compliance and Enforcement resources on communities near polluting facilities to promote harm reduction. The Advisory Council recommends exploring what a similar shift in focus would entail when applied to the permitting process.

c. **Increase Engagement with Community Members**. The Air District should continue to engage with its community partners to understand their perspectives and lived experiences, especially in overburdened communities, and explore opportunities to expand engagement when developing and applying assessment methods. Specifically, the Air District should consider expanding engagement creation and distribution to reach more members of disadvantaged communities, such as considering new forms of media or developing additional public outreach in non-English language mediums. The Air District should consider requiring enhanced public engagement in permitting some sources, such as data centers.

d. **Commit to Continuous Improvement**. The Air District should commit to continuous improvements to the permitting process. The Advisory Council recognizes that implementing these recommendations will require new and innovative work. Some approaches may need to be tested, evaluated, and refined over time.

2. Change What Counts—Improve How Overburdened Communities Are Identified

a. **Continue Using Place-Based Approaches.** The Advisory Council supports the use of place-based approaches to identify communities for more health-protective actions in the permitting process. Place-based approaches recognize the persistent spatial patterns of disparate impacts evident in the Bay Area as in the rest of the U.S. These approaches designate areas for targeted interventions, tighter standards, or other health-protective actions and de-emphasize complex, causative models aimed at quantifying disparate harm. However, a place-based approach alone is insufficient to address cumulative impacts in the Bay Area without additional measures recommended in this document.

b. **Continue Using CalEnviroScreen but Explore Supplementing Maps Using the Healthy Places Index.** The Advisory Council supports using CalEnviroScreen, at least initially, to identify overburdened communities for place-based approaches. However, staff should also evaluate using the Healthy Places Index, another statewide tool, as a potential way to supplement the communities identified using CalEnviroScreen.

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c. **Consider Supplementing with Local Maps of Overburden.** The Air District should also consider using locally generated maps of overburdened communities, such as those generated by cities and counties for SB 1000, to supplement to the statewide tools. As an option, the Air District, in partnership with community groups, should explore a process for communities to self-identify as needing targeted interventions. To this end, a clear and transparent methodology must be developed to allow communities to self-identify, such as minimum local resident participation. A potential concern is the weaponization of this process by well-resourced communities who might seek to use it to preserve current inequities in siting new emissions sources.

3. Change What Counts—Expand Impact Assessments

Recommendations in this section support continued use of causative models while expanding their scope to account for additional factors that add to cumulative impacts. They could be applied regionwide, helping to extend protective measures to areas missed by maps of overburdened communities.

a. **Account for Population Burden**. Current risk assessments only account for the highest modeled individual risk. The Advisory Council recommends use measures of population burden to characterize impacts of toxic air contaminants, in addition to measures of peak exposure.

b. **Account for Background Levels of Pollution**. For assessments that compare source contributions of a pollutant to a reference concentration, the Air District should account for the existing background levels of the pollutant. That is, additional emissions from new or modified source should be considered additive with respect to background levels, to account for the cumulative impacts of existing air pollution.

c. **Calculate Hazard Indices Using Multiple Target Organ Systems.** Current assessments for non-cancer hazards only account for the most sensitive organ system. The Air District should work with academic partners and the California Office of Environmental Health Hazard Assessment (OEHHA) to develop a Working Group to implement methods for calculating hazard indices using multiple target organ systems rather than only the most sensitive organ system target for each chemical. This will capture more of the cumulative impacts of multiple chemicals in non-cancer risk assessments.

d. **Account for Non-Chemical Stressors**. The Air District should work with academic partners, OEHHA, and the California Air Resources Board (CARB) to develop methods to quantify the contributions of non-chemical stressors when estimating the impacts of cancerous and non-cancerous air pollutant.

e. **Account for Impacts from Local Sources of $PM_{2.5}$**. The Air District should develop and apply methods to account for local, near-source impacts of fine particulate matter ($PM_{2.5}$), especially in overburdened communities. Possible methods for regulating near-source impacts of $PM_{2.5}$ have been discussed during prior terms of the Advisory Council. Such methods include a risk-based approach, a hazard index approach, or a no net increase approach.

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4. Change What Counts—Conduct Supporting Studies

a. **Develop a Compliance History Metric**. The Air District should work with community groups to create a tiered metric for assessing facility compliance with Air District rules. The metric need not be quantitative, but it should rank facilities based on compliance history and give greater weight to violations that result in harm. This metric could inform permitting decisions, as described in recommendation 7a below. The Air District should consider defining clear criteria for a "poor" compliance history, such as several high-priority violations or unresolved notices within a rolling 12-month period.

b. **Use Monitoring and Modeling to Estimate Toxic Air Contaminant Emissions and Concentrations in the Bay Area**. Using both monitoring and modeling, the Air District should estimate ambient TAC emissions and concentrations throughout the region, with an initial focus on AB 617 communities, followed by areas designated by the Air District as overburdened communities, but with the goal of estimating air concentrations throughout the Bay Area. Going forward, these estimates should be regularly updated. This work could be useful in identifying overburdened communities but also for estimating background concentrations of some toxic air contaminants.

5. Change What Happens – Tighten Limits in Overburdened Communities

Regulators increasingly recognize that the actions to reduce cumulative impacts need not be complex nor are detailed quantitative assessments necessary before actions can be taken. While some of the recommendations in this section rely on standard health risk assessment approaches, some seek to simplify the steps toward action. In general, the Advisory Council supports adjusting thresholds, limits, and trigger levels to reduce cumulative impacts.

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a. **Tighten Limits for Cancer Risk.** The Air District should tighten limits for cancer risk in overburdened communities when conducting health risk assessments for new permitting new and modified sources. This measure is currently implemented in Air District Rule 2-5: New Source Review of Toxic Air Contaminants.

b. **Tighten Limits for Acute and Chronic Non-Cancer Health Hazard.** The Air District should also tighten limits for acute and chronic non-cancer health risk when conducting health hazard assessments for permitting new and modified sources. Specifically, this recommendation calls for tighter requirements for project risk as expressed by hazard indices, especially in overburdened communities.

c. **Adopt Tighter Limits for $PM_{2.5}$.** In combination with recommendation 3e above, the Air District should set limits for the near-source impacts of fine particulate matter ($PM_{2.5}$) from new and modified sources, especially in overburdened communities. Possible methods for regulating near-source impacts of $PM_{2.5}$ have been discussed during prior terms of the Advisory Council.

6. Change What Happens – Tighten Thresholds in Overburdened Communities

a. **Adopt Lower Emissions Thresholds for Best Available Control Technology (BACT)**. Inside overburdened communities, the Air District should adopt lower emissions thresholds for requiring BACT for new or modified sources of criteria pollutants.

b. **Use Emissions Limits as Triggers for Requiring Best Available Control Technology for Toxics (TBACT)**. Currently, the Air District applies risk-based thresholds for requiring TBACT. In overburdened communities, the Air District should use instead use emissions limits as triggers for requiring TBACT for new or modified sources. Emission limits should be set to low levels as determined by pre-modeling with conservative assumptions.

c. **Tighten Screening Criteria for Environmental Review**. The Air District should set lower emission thresholds and tighten other screening criteria to trigger an environmental review, such as required by CEQA, for projects inside overburdened communities. Such reviews may result in project modifications to reduce emissions of and exposures to air pollution.

d. **Set Lower Trigger Levels for Public Notification**. The Air District should set lower trigger levels for public notification for projects inside overburdened communities for some source types. The Air District should additionally commit to delivering public notifications into the primary non-English languages that are most common in the notified overburdened communities.

7. Change What Happens – Adopt Precautionary Approaches

As mentioned above, the Advisory Council supports precautionary approaches that move more directly to action. Recommendations below introduce precautionary measures.

a. **Consider Compliance History**. Using the compliance history metric in recommendation 4a, the Air District should consider a company's compliance history in issuing permits. For companies with troublesome compliance histories, such as repeated violations that result in harm, tighten project requirements for new and modified sources, especially in overburdened communities. For companies with "poor" compliance histories resulting in repeated harm to public health, permits should be denied.

b. **Set Emissions Caps**. The Air District should establish facility-emission caps for toxic air contaminants and for $PM_{2.5}$ for some source categories. This could entail calculating an emissions budget for facilities in overburdened communities. No new or modified source could contribute emissions that would result in a net increase in emissions for the facility. In other words, require no net increase in emissions.

c. **Prohibit Select Permit Types**. The Air District should consider prohibiting select categories of permits for some new and modified source types in overburdened communities. This moves away from assessment and analysis and moves directly to action. The Air District could consider developing a clear tiered framework – i.e., Tier 1: Immediate Prohibition for high-emitting source categories, Tier 2: Conditional review for mid-tier modifications, etc.

8. Track New and Emerging Approaches

While the Advisory Council does not recommend implementing the approaches listed below at this time, their development warrants tracking to see if useful examples emerge in the future.

a. **Track Methods for Redirecting Resources to Mitigate Impacts.** The Air District should track emerging regulatory practices or methods for redirecting resources to mitigate or redress impacts from permitted processes and facilities. Some jurisdictions, including

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Minnesota, have embraced community benefit agreements (CBAs) among their measures to address cumulative impacts in permitting. Although the Advisory Council is not aware of any models of CBAs to recommend currently, it recommends tracking Minnesota's rulemaking on CBAs. More generally, the Air District should track approaches that supply funding or other resources to redress harm to overburdened communities.

b. **Track Next-Generation Risk Assessment and New Approach Methods**. With the rapid rise in untested chemicals entering the environment, environmental regulators face a growing number of contaminants of emerging concern. For many airborne chemicals and mixtures, regulators lack the information needed for standard risk assessments. Though in early stages, next-generation risk assessment (NGRA) is a developing framework intended to help address this shortcoming in the standard risk assessment approach. NGRA involves the regulatory application of detailed exposure modeling and new approach methodologies (NAMs). The term "NAMs" includes new experimental and computational approaches to more rapidly inform chemical risk assessments. NAMs include laboratory-based methods, such as cells in a dish, to study toxicity outside the human body which can require less time and resources to screen chemicals for toxicity. While the Advisory Council favors precautionary approaches, as discussed above, the Air District should track progress in these areas.

Summary

This section recaps earlier sections, summarizes Advisory Council meeting materials and deliberations related to the development of the recommendations, and offers initial thoughts on how these recommendations might be extended to policies and programs in addition to permitting.

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Appendix

The Appendix contains supporting information. It includes the following:

- Appendix A: Focus Areas Considered
- Appendix B: Existing Examples of Considering Cumulative Impact in Permitting
- Appendix C: Selected References on Cumulative Impacts

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A. Focus Areas Considered

Each item in this list could be an area of focus for the Advisory Council. For each, work products may include suggested methods to identify cumulative impacts, to assess the extent and character of the impacts, and to facilitate policies or actions to reduce the impacts.

- Permits (New and Modified Facilities)
  - Provide additional justification and documentation for the current regulatory approach (Air District Rule 2-5) of stricter risk limits in overburdened communities.
  - Make recommendations for streamlining the current health risk assessment methodology while addressing cumulative impacts. New methods may be less quantitative and/or may mix quantitative and qualitative methods.
  - Recommend ways to include the local, near-source impacts of $PM_{2.5}$, in addition to those from toxic air contaminants. This would incorporate prior work developed under the Advisory Council.

- Stationary Source Regulations (Existing Facilities)
  - Recommend ways to consider cumulative impacts when setting emission standards.
  - Recommend ways to simplify and streamline the current approach of implementing Air District Rule 11-18.
  - Recommend ways to include the local, near-source impacts of $PM_{2.5}$, in addition to those from toxic air contaminants. This would incorporate prior work developed under the Advisory Council.

- Air Quality Planning
  - Make recommendations for a community focused approach to air quality planning.

- California Environmental Quality Act (CEQA)
  - Make recommendations for more thorough consideration of cumulative impacts, balancing infill development with protecting community health.

- Compliance / Enforcement
  - Make recommendations for a community-focused approach to enforcement activities and the distribution of penalty funds.
  - Recommend ways to leverage compliance / enforcement data: for example, to inform other activities such as emissions characterization.

- Incentives
  - Recommend ways to expand, standardize, and/or streamline consideration of cumulative impacts across incentive programs.

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B. Existing Examples of Addressing Cumulative Impacts in Permitting

This appendix section highlights several noteworthy examples of jurisdictions—in New Jersey, Massachusetts, Minnesota, New York, and the Bay Area Air District—that have adopted, or are in the process of adopting, regulations to address cumulative impacts in permitting. All the highlighted examples related to permitting adopt place-based approaches. For additional information, consult the extensive catalog of related state regulations and activities produced by the Tishman Environmental and Design Center at The New School in New York.

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State of New Jersey and the New Jersey Department of Environmental Protection

New Jersey's Environmental Justice Law was the first of its kind and has been recognized as one of the nation's most empowering examples of environmental justice legislation. Other states have modeled similar laws after that of New Jersey.

Instrument/ status	S 32 (Enacted 2020) and N.J.A.C. 7:1C (Adopted 2023)
Scope	Permit applicants of major pollution sources in overburdened communities are subject to additional requirements: · Prepare an environmental justice impact statement that assesses the potential environmental and public health stressors associated with a new or modified source, or with an existing major source, as applicable · Transmit the environmental justice to the department and to the municipality in which the overburdened community is located for publication. · Conduct a public hearing in the overburdened community, publishing the hearing in at least two newspapers, including one local non-English language newspaper. "…the department shall…deny a permit for a new facility upon finding that approval of the permit would, together with other environmental or public health stressors affecting the overburdened community, cause or contribute to adverse cumulative environmental or public health stressors in the overburdened community that are higher than those borne by other communities within the State…except that where the department determines that a new facility will serve a compelling public interest in the community where it is to be located…" "…the department may grant a permit that imposes conditions on the construction and operation of the facility to protect public health."
Pollutant types	The EJ impact statement requires a health risk assessment for hazardous air pollutants. More review is needed to understand to what extent other pollutants, such as $PM_{2.5}$, are also considered.
Applicable facilities	Eight facility types are included: (1) Major source of air pollution; (2) Resource recovery facility or incinerator; (3) Sludge processing facility, combustor, or incinerator; 4() Larger sewage treatment plants; (5) Transfer station or other solid waste facility; (6) Scrap metal facilities; (7) Landfills; and (8) Some medical waste incinerators.
Overburdened communities	A census block group, as determined in accordance with the most recent US Census, in which: (1) at least 35 percent of the households qualify as low-income households; (2) at least 40 percent of the residents identify as minority or as members of a State recognized tribal community; or (3) at least 40 percent of the households have limited English proficiency.

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Massachusetts Department of Environmental Protection (MassDEP)

MassDEP's regulation requires projects in or near environmental justice populations to conduct a cumulative impact analysis. MassDEP can deny a permit to such projects if the cumulative risk analysis reveals cancer and non-cancer risks exceeding specified thresholds.

Instrument/ status	310 CMR 7.02: Cumulative Impact Final Analysis Amendments (Adopted 2024)

Scope	For plan approval the Department must consider a cumulative impact analysis, if applicable. The Department may impose any reasonable conditions in a plan approval to reduce, minimize, or mitigate cumulative impacts. ● A cumulative impact analysis shall be required for a comprehensive plan application for a proposed new facility or emission unit that is (1) in an EJ population; (2) a non-major source within 1 mile of an EJ population; or (3) a major source within 5 miles of an EJ population. ● A cumulative impact analysis shall be required for a comprehensive plan application for an existing facility or emission unit if the proposal is to increase facility-wide potential emissions of criteria pollutants, hazardous air pollutants, or air toxics, excluding CO2e, individually or in the aggregate, by an amount equal to or greater than 1 ton per year, and the existing facility or emission unit is located (1) in an EJ population or (2) a non-major source within 1 mile of an EJ population; or (3) a major source within 5 miles of an EJ population. ● A 60-day public comment period is required if a cumulative impact analysis is required.

Pollutant types	Requires air dispersion modeling of criteria air pollutant and air toxic emissions to support the application. However, more review is needed to understand the criteria for determining impacts since no calculation of cumulative impacts is provided in the rule. The only thresholds for MassDEP to deny a plan application are if the cancer risk limit is greater than or equal to 10 per million or if a hazard index is greater than 1.

Applicable facilities	A plan approval is needed for any construction, substantial reconstruction, alteration or subsequent operation of a facility or emission unit that crosses a certain capacity threshold or potential to emit threshold. This includes sources with potential annual process (i.e., non-combustion) emissions ≥ 10 tons per year; combustion units that meet certain fuel input thresholds (e.g., ≥ 40 mmBTU/hour natural gas boiler); and non-emergency engines. A facility is a major source if it has potential annual emissions of: ● 50 tons of nitrogen oxides or volatile organic compounds, ● 100 tons of any other criteria pollutant (i.e., sulfur dioxide, particulate matter, carbon monoxide, lead), ● 25 tons of combined hazardous air pollutants (HAPs), ● 10 tons of any individual HAP.

EJ population	A neighborhood that meets one or more of the following criteria: (1) the annual median household income at or below 65% of the statewide annual median household income; (2) minorities comprise 40% or more of the population; (3) 25% or more of households lack English language proficiency; (4) minorities comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income; or if a neighborhood does not meet these criteria, the secretary may designate that a geographic portion of the neighborhood as an EJ population upon the petition of at least 10 residents of the geographic portion of that neighborhood but with limits on the income, education, pollution levels, natural resources of the area. "Neighborhood" means "a census block group as defined by the US Census Bureau, excluding people who live in college dormitories and people who are under formally authorized, supervised care or custody, including federal, state or county prisons.

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Minnesota Pollution Control Agency (MPCA)

The MPCA is developing new law to address Minnesotans' disproportionate exposure to pollutants. The law defines environmental justice areas and requires the MPCA to conduct a rulemaking process to address the cumulative impacts of pollution in its permitting processes.

Instrument/ status	MPCA rule development underway, pursuant to state law H.F. 2310, with a deadline set for 2026

Scope	Applies to permits for facilities that are: (1) located in or within one mile of a census tract that is part of an environmental justice (EJ) area; and (2) located: (i) in the Twin Cities seven-counties metro; or (ii) in a city of the first class (more than 100,000 residents. Additionally, if the permit application is in Indian Country, MPCA must consult with the Tribal government. A cumulative impacts analysis **is required** if: (1) facility is above benchmarks set in rule; or (2) MPCA determines that issuing the permit may substantially impact the environment or health of the residents of an environmental justice area. A cumulative impacts analysis **may be required** if: (1) the facility is below all the benchmarks established for conducting a cumulative impacts analysis and the commissioner determines that a cumulative impacts analysis is necessary and supported by material evidence; or (2) by petition by residents or property owners in the environmental justice area impacted by the facility and is supported by material evidence that demonstrates a potential adverse cumulative impact. Future rulemaking will include establishing benchmarks for determining the need for a cumulative impacts analysis and the methodology for that analysis. The rulemaking will also define substantial adverse impact. It will also establish content for **community benefits agreements**.

Pollutant types	The contents of the cumulative impacts analysis are still under development but could include evaluations of both criteria pollutants and toxic compounds.

Applicable facilities	Applies to major (Title V) and state air permit applications, includes new facilities, facility expansions, and reissuing a permit for an existing facility.

EJ areas	Census tracts in Minnesota: (1) in which, based on the most recent decennial US Census: (i) 40% or more of the population is nonwhite; (ii) 35% or more of the households have an income at or below 200% of the federal poverty level; or (iii) 40% or more of the population over the age of five has limited English proficiency; or (2) located within Indian Country.

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New York

New York's Environmental Justice Siting Law, or Cumulative Impacts Law, requires the consideration of impacts and existing burdens in disadvantaged communities in some environmental decision-making. New York' Department of Environmental Conservation (DEC) was tasked with implementing the EJSL and developing guidelines and criteria for evaluating projects under this law.

Instrument/ status	Senate Bill 1317 (Enacted 2023), DEP 24-1 (Adopted 2024)

Scope	A project will be considered "likely to affect" a disadvantaged community if within one-half mile of each other or are otherwise in "close proximity" based on spatial data or air dispersion impact modeling. Project applicants must analyze whether DEC's approval of the permit would disproportionately burden a disadvantaged community. The analysis will be subject to enhanced public participation opportunities and must: (1) identify the direct and indirect greenhouse and co-pollutant emissions from the project that are likely to affect a disadvantaged community, (2) identify available and relevant baseline data on existing burdens in the community, (3) evaluate qualitatively and, if possible, quantitatively whether, and to what extent, the project's emissions would result in any air quality or air-related health effects on the community or increase an existing air quality or air-related health community burden, and (4) for any such increase, submit proposals for project design considerations that are "real, quantifiable, permanent, verifiable, and enforceable" to "reduce or eliminate disproportionate burdens." The policy provides certain examples of potential project design measures, including financial and operational mitigation options, and stipulates that design measures may be required for a project beyond what is already required by law or regulation.

Pollutant types	Evaluates impacts of increases in greenhouse gases or co-pollutants.

Applicable permits	Applies to certain permit applications designated as "major" project types including: (1) Applications for Air Title V permits and for certain types of Air State Facility permits, including projects that are subject to New Source Review, that involve emission sources subject to the National Emission Standards for Hazardous Air Pollutants, that require emission reduction credits, or that require the use of a federal enforceable emission cap, among others. This category may include not only industrial manufacturing facilities, but also expansion projects for existing facilities, such as hospitals and universities. (2) Permit applications for solid waste and industrial hazardous waste management, such as landfills, transfer stations, municipal solid waste processing facilities, composting facilities, and other material recovery facilities. (3) Permit applications for liquified natural gas and petroleum gas projects. (4) Permit applications for water withdrawal and use of over 20 million gallons of water for cooling purposes. In addition, the policy applies to any project requiring any permit from DEC involving the construction of energy production, generation, transmission, or storage facilities, and any project requiring any permit from DEC with sources and activities that may result in greenhouse emissions or co-pollutants, directly or indirectly, including those from mobile emissions from vehicular traffic.

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Disadvantaged communities	Identified based on 25 indicators of population characteristics and health vulnerabilities, including indicators of income, race and ethnicity, health outcomes and sensitivities, housing and communications. https://climate.ny.gov/resources/disadvantaged-communities-criteria/

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Bay Area Air District – Permitting

Amendments to Bay Area Air District Regulation 2-5 (New Source Review of Toxic Air Contaminants) include stricter cancer risk limits in overburdened communities.

Instrument/ status	Air District Regulation 2-5, (amended December 2021, effective July 2022)

Scope	Under adopted Regulation 2-5, permit applications for projects located within an overburdened community (as defined in Regulation 2-1), are subject to additional requirements for toxic air contaminants: · Additional fees (Regulation 3). · More stringent cancer risk limitations (Regulation 2-5). Sources inside an overburdened community cannot exceed an estimated cancer risk of 6 per million, whereas outside of overburdened communities the risk threshold is 10 per million. · Public notification requirements (Regulation 2-1).

Pollutant types	Toxic air contaminants only.

Applicable Facilities	All new and modified sources of toxic air contaminants subject to limited exemptions, for example for emissions below specified trigger levels and for emergency standby engines.

Overburdened communities	An area located (1) within or (2) within 1,000 feet of a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0, as having an overall CalEnviroScreen score at or above the 70th percentile. The Air District has developed an interactive mapping tool to allow users to determine if a project location is within an overburdened community: https://www.baaqmd.gov/en/about-air-quality/interactive-data-maps

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Bay Area Air District – Existing Facilities

Though not a permitting regulation, the Air District's Regulation 11-18 (Reduction of Risk from Air Toxic Emissions at Existing Facilities) is included among these examples because of its potential relevance for reducing impacts in overburdened communities from permitted sources. Regulation 11-18 is intended to identify existing facilities whose emissions of toxic air contaminants pose an elevated risk and require emission reductions from them. However, it has faced implementation challenges, including extreme delays in completing facility risk assessments and risk reduction plans. To address these challenges, the Air District is developing amendments to Regulation 11-18 in two phases: (1) a current phase to improve transparency and efficiency and (2) a future phase to evaluate and potentially increase stringency.

Instrument/ status	Air District Regulation 11-18 (adopted 2017 with amendments in development)

Scope	Requires any existing facility with calculated health risk indicators above a defined risk action levels to reduce their impacts. The risk action levels are defined as a cancer risk of 10 per million, an acute hazard index of 1.0, or a chronic hazard index of 1.0. Affected facilities must either: (1) Reduce facility-wide health risks below all risk action levels; or (2) If the facility-wide health risk cannot be reduced below the RAL, install Best Available Retrofit Control Technology for Toxics (TBARCT) on all significant sources, defined as specific air toxics sources within the facility that exceed a cancer risk of 1 per million or an acute or chronic hazard index of 0.2.

Pollutant types	Toxic air contaminants only.

Applicable Facilities	With some narrow exceptions, Regulation 11-18 applies to all facilities whose emissions of toxic air contaminants may result in an elevated risk to nearby receptors. This includes a broad range of commercial, industrial, and municipal facilities, including refineries, chemical plants, wastewater treatment facilities, foundries, forges, landfill operations, hospitals, crematoria, power plants, colleges and universities, military installations, and airline operations.

Overburdened communities	Draft amendments to Regulation 11-18 seek to clarify that the Air District may prioritize health risk assessments for facilities located in overburdened communities, as defined in Regulation 2-1, and in communities selected for California Assembly Bill 617 Community Risk Reduction Plans.

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C. 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: 2025-07-07. New entries (since the last meeting of the Advisory Council) are formatted in **blue** and marked with "**+**".

The living document can be found here: https://www.baaqmd.gov/en/about-the-air-district/advisory-council/reports

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from https://www.epa.gov/cumulative-impacts/interim-framework advancing-consideration-cumulative-impacts

- See also the current (2024–2025) docket, with public comments: https://www.regulations.gov/docket/EPA-HQ-OLEM-2024-0360/document

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Change Log

Draft 1 (June 2026) to Draft 2 (October 2026) Changes
September 14, 2026

1. Updated the document date from June 2026 to October 2026.
2. Removed Appendix B; renumbered Appendices C and D as Appendices B and D.
3. Added background information to the beginning of the Recommendations section: "Building on Existing Measures."
4. Reorganized the recommendations to reflect their purpose, based on Community Advisory Council (CAC) Co-Chair suggestions for presenting the recommendations to the September 17, 2026, CAC meeting.
5. Moved old Recommendation 7 to the top-level recommendations It now appears as **Shift Agency Focus Toward Harm Reduction** (Recommendation 1b). This recommendation was reworded to reflect ideas in staff's presentation to the Council on June 15, 2026: *Regulatory Design Theory*.
6. Added a top-level recommendation, based on Council discussion: **Commit to Continuous Improvement** (Recommendation 1d).
7. Revised the discussion of place-based approaches and identifying overburdened communities (now Recommendations 2a-2c), based on public comments and Council discussion of supplements to CalEnviroScreen, including the statewide Healthy Places Index tool and locally generated city or county maps.
8. Included a recommendation to develop a tiered metric for classifying compliance history, based on Council discussion: **Develop a Compliance History Metric** (Recommendation 4a).
9. Added more detail on how to consider a company's compliance history in issuing permits: **Consider Compliance History** (Recommendation 7a).
10. Revised the wording of the recommendation related to tracking community benefit agreements, based on staff recommendations and Council discussion: **Track Methods for Redirecting Resources to Mitigate Impacts** (Recommendation 8a).
11. Added a recommendation discussed in the work plan but not included in the recommendations: T**rack Next-Generation Risk Assessment (NGRA) and New Approach Methods (NAMs)** (Recommendation 8b).
12. Still needed: Summary section.
13. Added a Change Log to the end of the document. Changes made between drafts are added to the change log.

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2nd DRAFT Recommendations to Address Cumulative Impacts

Bay Area Air District Advisory Council

October 5, 2026
Advisory Council Meeting
Phil Martien, PhD, Chair

Overview

- Revisions in the 2nd Draft
- Recommendations, as Revised
- Questions and Discussion

Revisions in the 2nd Draft

1. Updated the document date from June 2026 to October 2026.
2. Removed Appendix B, based on Council discussion; renumbered Appendices C and D as Appendices B and D.
3. Added background information to the beginning of the Recommendations section: “Building on Existing Measures.”
4. Reorganized the recommendations to reflect their purpose, based on Community Advisory Council (CAC) Co-Chair suggestions for presenting to the CAC.

Revisions in the 2nd Draft (2)

5. Moved old Recommendation 7 to the top-level recommendations. It now appears as **Shift Agency Focus Toward Harm Reduction (**Recommendation 1b). This recommendation was reworded to reflect ideas in staff's June 15, 2026, presentation to the Council: *Regulatory Design Theory*.

6. Added a top-level recommendation, based on Council discussion: **Commit to Continuous Improvement** (Recommendation 1d).

7. Revised the discussion of place-based approaches and identifying overburdened communities (now Recommendations 2a-2c), based on public comments and Council discussion of supplements to CalEnviroScreen, including the statewide Healthy Places Index tool and locally generated city or county maps.

Revisions in the 2nd Draft (3)

8. Included a recommendation to develop a tiered metric for classifying compliance history, based on Council discussion: **Develop a Compliance History Metric** (Recommendation 4a).

9. Added more detail on how to consider a company's compliance history in issuing permits: **Consider Compliance History** (Recommendation 7a).

10. Revised the wording of the recommendation related to tracking community benefit agreements, based on staff recommendations and Council discussion: **Track Methods for Redirecting Resources to Mitigate Impacts** (Recommendation 8a).

Revisions in the 2nd Draft (4)

11. Added a recommendation discussed in the work plan but not included in the recommendations: **Track Next-Generation Risk Assessment (NGRA) and New Approach Methods (NAMs)** (Recommendation 8b).

12. Still needed: Summary section.

13. Added a Change Log to the end of the document. Changes made between drafts are added to the change log.

1. Top-Level Recommendations

a. Adopt Precautionary Approaches

b. Shift Agency Focus Toward Harm Reduction

c. Increase Engagement with Community Members

d. Commit to Continuous Improvement

2. Change What Counts – Improve How Overburdened Communities Are Identified

a. Continue Using Place-Based Approaches

b. Continue Using CalEnviroScreen but Explore Supplementing Maps Using the Healthy Places Index

c. Consider Supplementing with Local Maps of Overburden

3. Change What Counts – Expand Impact Assessments

a. Account for Population Burden

b. Account for Background Levels of Pollution

c. Calculate Hazard Indices Using Multiple Target Organ Systems

d. Account for Non-Chemical Stressors

e. Account for Impacts from Local Sources of $PM_{2.5}$

4. Change What Counts – Conduct Supporting Studies

a. Develop a Compliance History Metric

b. Use Monitoring and Modeling to Estimate Toxic Air Contaminant Emissions and Concentrations in the Bay Area

5. Change What Happens – Tighten Limits in Overburdened Communities

a. Tighten Limits for Cancer Risk

b. Tighten Limits for Acute and Chronic Non-Cancer Health Hazard

c. Adopt Tighter Limits for $PM_{2.5}$.

6. Change What Happens – Tighten Thresholds in Overburdened Communities

a. Adopt Lower Emissions Thresholds for Best Available Control Technology (BACT)

b. Use Emissions Limits as Triggers for Requiring Best Available Control Technology for Toxics (TBACT)

c. Tighten Screening Criteria for Environmental Review

d. Set Lower Trigger Levels for Public Notification

7. Change What Happens – Adopt Precautionary Approaches

a. Consider Compliance History

b. Set Emissions Caps

c. Prohibit Select Permit Types

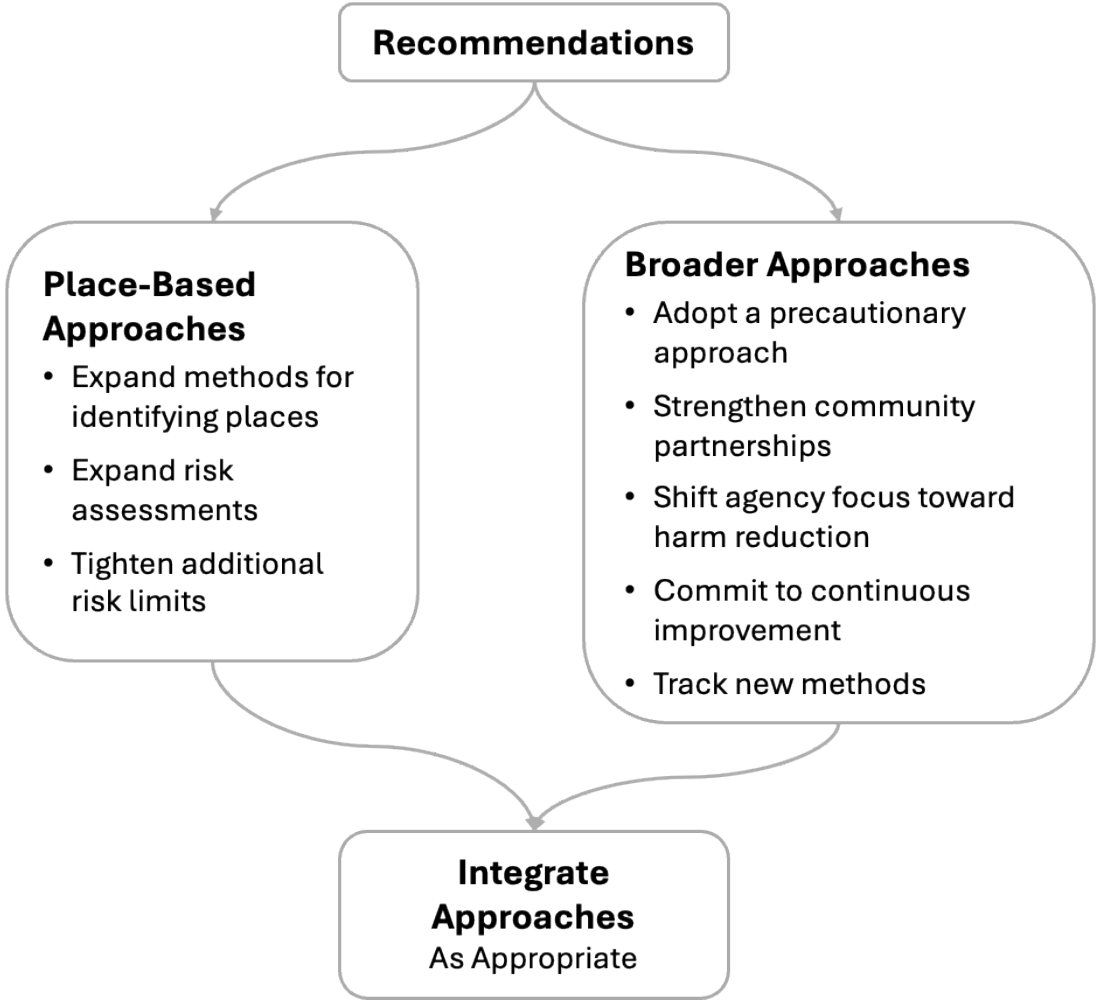
8. Track New and Emerging Approaches

a. Track Methods for Redirecting Resources to Mitigate Impacts

b. Track Next-Generation Risk Assessment and New Approach Methods

Questions, Discussion

- Could a figure help frame our recommendations?



Questions, Discussion (2)

- Are the revised ordering and rewording helpful changes?
- Additional recommendations?
  - More focus on precautionary approaches?
  - Additional hazard-based triggers for action?
  - More examples of precautionary approaches?
- Productive presentations for future Council meetings?

Draft Next Steps

- Discuss 2nd draft recommendations (today)
- External review, ad hoc meetings with others
- Discuss 3rd draft recommendations (via ad hoc and Advisory Council meeting, Nov 9, 2026)
- Complete 4th draft recommendations for Board of Directors (Jan 2027)
- Complete 5th draft (via ad hoc and Advisory Council meeting, early 2027)
- Complete final recommendations document (mid 2027)