



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

## BOARD OF DIRECTORS REGULAR MEETING

December 4, 2013

A meeting of the Bay Area Air Quality Management District Board of Directors will be held at 9:45 a.m. in the 7<sup>th</sup> Floor Board Room at the Air District Headquarters, 939 Ellis Street, San Francisco, California.

### Questions About an Agenda Item

The name, telephone number and e-mail of the appropriate staff Person to contact for additional information or to resolve concerns is listed for each agenda item.

### Meeting Procedures

The public meeting of the Air District Board of Directors begins at 9:45 a.m. The Board of Directors generally will consider items in the order listed on the agenda. However, any item may be considered in any order.

After action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.

This meeting will be webcast. To see the webcast, please visit <http://www.baaqmd.gov/The-Air-District/Board-of-Directors/Agendas-and-Minutes.aspx> at the time of the meeting.

## Public Comment Procedures

Persons wishing to make public comment must fill out a Public Comment Card indicating their name and the number of the agenda item on which they wish to speak, or that they intend to address the Board on matters not on the Agenda for the meeting.

**Public Comment on Non-Agenda Matters, Pursuant to Government Code Section 54954.3** For the first round of public comment on non-agenda matters at the beginning of the agenda, ten persons selected by a drawing by the Clerk of the Boards from among the Public Comment Cards indicating they wish to speak on matters not on the agenda for the meeting will have three minutes each to address the Board on matters not on the agenda. For this first round of public comments on non-agenda matters, all Public Comment Cards must be submitted in person to the Clerk of the Boards at the location of the meeting and prior to commencement of the meeting. The remainder of the speakers wishing to address the Board on non-agenda matters will be heard at the end of the agenda, and each will be allowed three minutes to address the Board at that time.

Members of the Board may engage only in very brief dialogue regarding non-agenda matters, and may refer issues raised to District staff for handling. In addition, the Chairperson may refer issues raised to appropriate Board Committees to be placed on a future agenda for discussion.

**Public Comment on Agenda Items** After the initial public comment on non-agenda matters, the public may comment on each item on the agenda as the item is taken up. Public Comment Cards for items on the agenda must be submitted in person to the Clerk of the Boards at the location of the meeting and prior to the Board taking up the particular item. Where an item was moved from the Consent Calendar to an Action item, no speaker who has already spoken on that item will be entitled to speak to that item again.

Up to ten (10) speakers may speak for three minutes on each item on the Agenda. If there are more than ten persons interested in speaking on an item on the agenda, the Chairperson or other Board Member presiding at the meeting may limit the public comment for all speakers to fewer than three minutes per speaker, or make other rules to ensure that all speakers have an equal opportunity to be heard. Speakers are permitted to yield their time to one other speaker; however no one speaker shall have more than six minutes. The Chairperson or other Board Member presiding at the meeting may, with the consent of persons representing both sides of an issue, allocate a block of time (not to exceed six minutes) to each side to present their issue.

# BOARD OF DIRECTORS REGULAR MEETING AGENDA

WEDNESDAY  
DECEMBER 4, 2013  
9:45 A.M.

BOARD ROOM  
7TH FLOOR

## CALL TO ORDER

Opening Comments  
Roll Call  
Pledge of Allegiance

Chairperson, Ash Kalra  
Clerk of the Boards

## PUBLIC COMMENT ON NON-AGENDA MATTERS

### **Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3**

*For the first round of public comment on non-agenda matters at the beginning of the agenda, ten persons selected by a drawing by the Clerk of the Boards from among the Public Comment Cards indicating they wish to speak on matters not on the agenda for the meeting will have three minutes each to address the Board on matters not on the agenda. For this first round of public comments on non-agenda matters, all Public Comment Cards must be submitted in person to the Clerk of the Board at the location of the meeting and prior to commencement of the meeting.*

## PROCLAMATION(S)/AWARDS

*The Board of Directors will recognize employees who have completed milestones of twenty-five (25) and thirty (30) years of service with the Air District during this second half of the calendar year.*

## CONSENT CALENDAR (ITEMS 1 – 5)

Staff/Phone (415) 749-

1. Minutes of the Board of Directors Meeting of November 6, 2013

Clerk of the Boards/5073

2. Board Communications Received from November 6, 2013 through December 3, 2013

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*A copy of communications directed to the Board of Directors received by the Air District from November 6, 2013 through December 3, 2013, if any, will be at each Board Member's place.*

3. Notice of Violations Issued and Settlements in Excess of \$10,000 in October 2013

B. Bunger/4797

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*In accordance with Resolution No. 2012-08, the Board of Directors will receive a list of all Notices of Violation issued and all settlements for amounts in excess of \$10,000 during the month of October 2013.*

4. Authorize the Approval of a Purchase Order in Excess of \$70,000 Pursuant to Administrative Code Division II Fiscal Policies and Procedures, Section 4.3 Contract Limitations, for Purchase of Air Monitoring Equipment

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Board of Directors will consider authorizing the Executive Officer/APCO to issue a purchase order in the amount not to exceed \$96,367.50, to Agilaire LLC for purchase of air monitoring data acquisition equipment and communications systems.*

5. Proposed Regulatory Agenda for 2014

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*State law requires each Air District to publish a list of potential regulatory measures for the upcoming year. No regulatory measure can be brought before the Board that is not on the list, with specified exceptions. Consequently, the list contains all regulatory measures that may come before the Board of Directors in 2014.*

### **COMMITTEE REPORTS**

6. Report of the **Legislative Committee** Meeting of November 18, 2013  
CHAIR: T. Bates

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

7. Report of the **Personnel Committee** Meeting of December 2, 2013  
CHAIR: B. Wagenknecht

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

8. Report of the **Nominating Committee** Meeting of December 4, 2013  
CHAIR: A. Kalra

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Committee recommends Board of Directors' approval of the following item:*

- A) *A slate of Board Officers for the 2014 term of office.*

### **PRESENTATIONS**

9. Advisory Council Report

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*Recommendations of the Advisory Council from the February 13, 2013 meeting on Black Carbon: Concepts and Issues, the May 8, 2013 meeting on Black Carbon: Exposure, Mitigation and Trends in Emissions, and the September 11, 2013 meeting on Black Carbon: Health Effects of Exposure.*

10. Overview and Permit Status of Energy Projects in the Bay Area

J. Broadbent/5052

[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Board of Directors will receive an overview and status of energy projects being permitted in the Air District.*

## **CLOSED SESSION**

11. **EXISTING LITIGATION (Government Code Section 54956.9(a))**  
*Pursuant to Government Code Section 54956.9(a), a need exists to meet in closed session with legal counsel to consider the following case(s):*

A) **California Building Industry Association v. Bay Area AQMD**, Alameda County Superior Court, Case No. RG-10548693; California Court of Appeal, First Appellate District, Case No. A135335; California Supreme Court, Case No. S214378

12. **CONFERENCE WITH REAL PROPERTY NEGOTIATOR – (Government Code Section 54956.8)** *The Board of Directors will meet in closed session pursuant to Government Code Section 54956.8 to confer with real property negotiators to discuss the disposition and leaseback of real property as follows:*

Property:	939 Ellis Street, San Francisco, CA
Air District Negotiators:	Jack P. Broadbent, Executive Officer/APCO Jeffrey McKay, Deputy Air Pollution Control Officer Tom Christian, Cassidy Turley Ric Russell, Cassidy Turley
Negotiating Parties:	Heights Properties, LLP
Under Negotiation:	Price and Terms

## **PUBLIC COMMENT ON NON-AGENDA MATTERS**

### **Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3**

*Speakers who did not have the opportunity to address the Board in the first round of comments on non-agenda matters will be allowed three minutes each to address the Board on non-agenda matters.*

## **BOARD MEMBERS' COMMENTS**

*Any member of the Board, or its staff, on his or her own initiative or in response to questions posed by the public, may: ask a question for clarification, make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda. (Gov't Code § 54954.2)*

## **OTHER BUSINESS**

13. Report of the Executive Officer/APCO
14. Chairperson's Report
15. Time and Place of Next Meeting: *Wednesday, December 18, 2013, 939 Ellis Street, San Francisco, California 94109 at 9:45 a.m.*
16. Adjournment

**CONTACT THE CLERK OF THE BOARDS  
939 ELLIS STREET SF, CA 94109**

**(415) 749-5073  
FAX: (415) 928-8560  
BAAQMD homepage:  
[www.baaqmd.gov](http://www.baaqmd.gov)**

- To submit written comments on an agenda item in advance of the meeting.
- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.
- To request special accommodations for those persons with disabilities. Notification to the Executive Office should be given at least 3 working days prior to the date of the meeting so that arrangements can be made accordingly.

Any writing relating to an open session item on this Agenda that is distributed to all, or a majority of all, members of the body to which this Agenda relates shall be made available at the Air District's headquarters at 939 Ellis Street, San Francisco, CA 94109, at the time such writing is made available to all, or a majority of all, members of that body.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**  
**939 ELLIS STREET, SAN FRANCISCO, CALIFORNIA 94109**  
**FOR QUESTIONS PLEASE CALL (415) 749-5016 or (415) 749-4941**

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

**NOVEMBER 2013**

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month) -</i> <b>CANCELLED</b>	Wednesday	27	9:30 a.m.	4 <sup>th</sup> Floor Conf. Room
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month) -</i> <b>CANCELLED AND RESCHEDULED TO</b> <b>DECEMBER 5, 2013 AT 9:30 AM</b>	Thursday	28	9:30 a.m.	Board Room

**DECEMBER 2013**

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Personnel Committee</b> <i>(At the Call of the Chair)</i>	Monday	2	9:30 a.m.	4th Floor Conf. Room
<b>Board of Directors Nominating Committee</b> <i>- (At the Call of the Chair)</i>	Wednesday	4	9:30 a.m.	Room 716
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	4	9:45 a.m.	Board Room
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i>	Thursday	5	9:30 a.m.	Board Room
<b>Board of Directors Climate Protection Committee</b> <i>(Meets on the 3<sup>rd</sup> Thursday of every other month)</i>	Monday	9	9:30 a.m.	4th Floor Conf. Room  <u>And via videoconference at</u> Santa Rosa Junior College Doyle Library, Room 4243 1501 Mendocino Avenue Santa Rosa, CA
<b>Board of Directors Executive Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	Monday	16	9:30 a.m.	4 <sup>th</sup> Floor Conf. Room
<b>Board of Directors Stationary Source Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	Monday	16	10:30 a.m.	Board Room
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	18	9:45 a.m.	Board Room
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i>	Wednesday	25	9:30 a.m.	4 <sup>th</sup> Floor Conf. Room  <u>And via videoconference at</u> Santa Rosa Junior College Doyle Library, Room 4243 1501 Mendocino Avenue Santa Rosa, CA
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i> <b>- CANCELLED</b>	Thursday	26	9:30 a.m.	Board Room

## JANUARY 2014

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	1	9:45 a.m.	Board Room
<b>Advisory Council Regular Meeting</b> <i>(Meets on the 2<sup>nd</sup> Wednesday of each Month)</i>	Wednesday	8	9:00 a.m.	Board Room
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	15	9:45 a.m.	Board Room
<b>Board of Directors Climate Protection Committee</b> <i>(Meets 3<sup>rd</sup> Thursday of every other month)</i>	Thursday	16	9:30 a.m.	4th Floor Conf. Room
<b>Board of Directors Executive Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	Monday	20	9:30 a.m.	4 <sup>th</sup> Floor Conf. Room
<b>Board of Directors Stationary Source Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	Monday	20	10:30 a.m.	Board Room
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i>	Wednesday	22	9:30 a.m.	4 <sup>th</sup> Floor Conf. Room <b><u>And via videoconference at</u></b> <b>Santa Rosa Junior College</b> <b>Doyle Library, Room 4243</b> <b>1501 Mendocino Avenue</b> <b>Santa Rosa, CA</b>
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i>	Thursday	23	9:30 a.m.	Board Room

HL – 11/27/13 (10:50 a.m.)

P/Library/Forms/Calendar/Calendar/Moncal



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/Air Pollution Control Officer

Date: November 12, 2013

Re: Minutes of the Board of Directors Meeting of November 6, 2013

RECOMMENDED ACTION

Approve the attached draft minutes of the Board of Directors Meeting of November 6, 2013.

DISCUSSION

Attached for your review and approval are the draft minutes of the Board of Directors Meeting of November 6, 2013.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Sean Gallagher  
Reviewed by: Rex Sanders

Attachments

Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109  
(415) 749-5073

Board of Directors Regular Meeting  
Wednesday, November 6, 2013

## **DRAFT MINUTES**

**CALL TO ORDER:** Chairperson Ash Kalra called the meeting to order at 9:49 a.m.

### **OPENING COMMENTS:**

Chairperson Kalra welcomed Director Roger Kim to the Board and shared a brief biography of Mr. Kim's public service.

Director Susan Adams introduced Ellie Cochran, Council Member, County of Maui, as a guest of the Board at today's meeting.

### **ROLL CALL**

Present: Chairperson Ash Kalra; Vice-Chairperson Nate Miley; Secretary Carole Groom; and Directors Susan Adams, John Avalos, Teresa Barrett, Cindy Chavez, John Gioia, Scott Haggerty, David Hudson, Roger Kim (on behalf of Edwin Lee), Carol L. Klatt, Eric Mar, Jan Pepper, Mary Piepho, Mark Ross, Jim Spering, Brad Wagenknecht and Shirlee Zane.

Absent: Directors Tom Bates, Liz Kniss and Tim Sbranti.

**PLEDGE OF ALLEGIANCE:** Chairperson Kalra led the Pledge of Allegiance.

**PUBLIC COMMENT ON NON-AGENDA MATTERS:** None.

### **PROCLAMATION(S)/AWARD(S):**

Chairperson Kalra, on behalf of the Board of Directors, recognized Jim Smith, Air Quality Program Manager of Communications and Outreach, who is retiring after completing six years of dedicated service with the Air District.

NOTED PRESENT: Director Mar was noted present at 9:53 a.m.

Mr. Smith addressed the Board in appreciation. Director Ross also recognized Mr. Smith for his service. Jack Broadbent, Executive Officer/Air Pollution Control Officer (APCO), on behalf of staff, recognized Mr. Smith for his service.

### **CONSENT CALENDAR (ITEMS 1 – 5)**

1. **Minutes of the Board of Directors Regular Meeting of October 16, 2013;**
2. **Board Communications Received from October 16, 2013 through November 5, 2013;**
3. **Quarterly Report of Executive Office and Division Activities;**
4. **Air District Personnel on Out-of-State Business Travel; and**
5. **Approve Reclassifying One Air Quality Engineering Manager to Senior Advanced Projects Advisor and Y-Rating the Salary and Benefits.**

Public Comments: None.

Board Comments: None.

Board Action: Director Wagenknecht made a motion to approve Consent Calendar Items 1, 2, 3, 4 and 5; Director Adams seconded; and the motion carried unanimously.

### **COMMITTEE REPORTS AND RECOMMENDATIONS**

6. **Report of the Executive Committee (EC) Meeting of October 21, 2013**  
Chairperson Kalra

The EC met on Monday, September 21, 2013, and approved the minutes of August 5, 2013.

The EC received from Terry Trumbull, Esq., Chairperson of the Hearing Board, the Quarterly Report of the Hearing Board for July through September 2013, including summaries of the cases and fees collected.

The EC also received from Robert Bornstein, Ph.D., Chairperson of the Advisory Council, the Report of the Advisory Council: May through October 2013, including background on the constitution and mission of the Council and a summary of recent meetings.

The EC then received the staff presentation Bay Area Commuter Benefits Program (Program), which is being developed by the Air District and the Metropolitan Transportation Commission (MTC) in response to Senate Bill (SB) 1339 enacted in fall 2012. The Program would require employers with 50 or more full-time employees in the Bay Area to provide commuter benefits to their employees. The presentation described the purpose of the Program; the four commuter benefit options that employers could choose among; applicability of the Program; program implementation efforts and recent progress; employer outreach; local and existing program coordination; and next steps in the Program development process.

The next meeting of the EC is Monday, November 18, 2013, at 9:30 a.m.

Public Comments: None.

Board Comments: None.

Board Action:

Chairperson Kalra made a motion to approve the report of the EC; Director Piepho seconded; and the motion carried unanimously.

**7. Report of the Stationary Source Committee (SSC) Meeting of October 21, 2013**  
Committee Chairperson Gioia

The SSC met on Monday, October 21, 2013, and approved the minutes of September 16, 2013.

The SSC received the staff presentation Rule Effectiveness Study, including an overview of Air District compliance and enforcement programs, the rule effectiveness study objectives, and overviews of the rule effectiveness studies of Regulation 8, Rule 5: Tank Degassing, and Regulation 9, Rule 7: Boilers.

The SSC then received the staff presentation Update on Neptune Crematorium, including background and health risk assessment result.

The SSC then received the staff presentation Formaldehyde Emissions from Wood Coatings, including overview, 2009 Amendments to Wood Coatings Rule, an explanation of formaldehyde emissions, a summary of 2011 formaldehyde emissions and conclusions.

The next meeting of the SSC is Monday, November 18, 2013, at 10:30 a.m.

Public Comments: None.

Board Comments: None.

Board Action:

Director Gioia made a motion to approve the report of the SSC; Director Piepho seconded; and the motion carried unanimously.

NOTED PRESENT: Director Zane was noted present at 10:03 a.m.

**8. Report of the Climate Protection Committee (CPC) Meeting of October 23, 2013**  
Committee Chairperson Avalos

The CPC met on Wednesday, October 23, 2013, and approved the minutes of July 18, 2013.

The CPC received the staff presentation Assembly Bill 32 Scoping Plan 2013 Update, including background, accomplishments to date, an overview of the scoping plan update, highlights of the Bay Area workshop, state and regional collaboration and the plan update schedule.

The CPC then received the staff report Regional Climate Protection Strategy Resolution. The CPC discussed the draft resolution, provided comments and direction to staff, and recommends that the Board of Directors adopt the climate protection resolution, as amended and included as Attachment 1 to this item. The CPC also provided direction to staff on the draft 10-point work program, included as Attachment 2 to this item.

The next meeting of the CPC is Thursday, November 21, 2013, at 9:30 a.m.

Board Action:

Director Avalos made a motion to approve the report and recommendations of the CPC; and Director Adams seconded.

At the request of Chairperson Kalra, Mr. Broadbent provided background on the Air District climate protection program and the item before the Board today.

Public Comments:

Laura Galligan, 350 Bay Area, addressed the Board to thank the CPC and Air District staff and in support of the proposed resolution.

Floyd Earl Smith, 350 Bay Area, addressed the Board in support of the proposed resolution.

Linda Weiner, Sierra Club, addressed the Board in support of the proposed resolution, stronger resolution language yet and greater advocacy with local governments.

Amy Smith, Bay Area Regional Health Inequities Initiative, addressed the Board in support of the proposed resolution.

Patti Weisselberg, Families for Clean Air, addressed the Board in support of an expansion of the climate protection plan to include additional emissions, such as black carbon (BC).

Jed Holtzman addressed the Board in support of the proposed resolution.

Jess Dervin-Ackerman, Sierra Club, addressed the Board in support of the proposed resolution.

Janet Stromberg, 350 Bay Area, addressed the Board in support of the proposed resolution.

Board Comments:

Chairperson Kalra urged the Board to support the proposed resolution.

Director Avalos urged the Board to support the proposed resolution.

Director Zane noted the importance of engaging the issue in the face of recent extreme weather events and the unfortunate absence of melanoma as an identified related health concern and challenged her colleagues to establish regional climate protection authorities as done in Sonoma County.

Director Mar urged the climate movement to expand its field of targets in its effort to bring about change.

Director Haggerty asked staff to respond to a statement he heard elsewhere that suggested cleaner air may accelerate climate change and to provide financial projections about the cost of fulfilling the draft work program.

Director Haggerty asked if areas of non-attainment that are not considered communities of concern, such as one that he represents, will be included in the work defined under the proposed work program, which question was answered by Mr. Broadbent.

Director Gioia commended the state climate goal, said the Air District should do its part to attain the same, noted the abundance of co-benefits that will result from taking action, and expressed his support for the proposed resolution.

Director Ross commended the work program concept, urged everyone to keep in mind the short-term health concerns that could get lost while focused on long-term health concerns, and suggested consideration of an approach whereby carbon auction proceeds are utilized to enhance the pursuit of program goals.

Director Adams clarified which draft resolution is before the Board today and asked for a friendly amendment to the motion to revise the proposed resolution, page 2, to include a reference to Health and Safety Code Section 39002. Director Adams asked for confirmation that the draft work program is not being voted upon today and whether it is considered a living document, and suggested BC should be included in the work program. Mr. Broadbent said staff intend to bring the work program back for approval before the end of the year, that it would be a living document integrated in various ways in other Air District planning efforts and staff would report back to the CPC with adjustments. Director Adams said it is crucial that there be clarity in the parameters of data collection and analysis moving forward and expressed her support for the proposed resolution.

Board Action (continued):

Director Avalos made a motion to approve the report and recommendations of the CPC with the amendment proposed by Director Adams; and Director Adams seconded.

Board Comments (continued):

Director Wagenknecht expressed his support for the proposed resolution.

Director Piepho asked for a friendly amendment to the motion to revise the proposed resolution to include a fourth bullet at page 3, that reads, "Continue to study and define economic impacts and/or benefits to residents and businesses within the Bay Area with implementation of the regional climate action strategy."

Director Avalos said he does not support the amendment suggested by Director Piepho and explained it does not seem critical to the resolution. Director Piepho said it is important with every Board action taken to note the consideration of economic value and impact when considering policy impact. Chairperson Kalra suggested the language instead be inserted in the recital portion. Director Piepho suggested it is more appropriately inserted in the resolution portion. Director Avalos said Air District staff lack the necessary expertise and the economic impact of non-action is unparalleled. Director Adams suggested the language instead be included in the work program. Director Piepho said she will acquiesce to the will of the Board but her concern is that it will be lost if left outside of the resolution and urged Director Zane to direct her challenge regarding the establishment of regional climate protection authorities to the California State Association of Counties (CSAC).

Director Pepper echoed Director Haggerty's desire to improve the health of all Bay Area residents and said she is honored to have the opportunity to support the proposed resolution.

Director Groom commended all that was said before her and the work program.

Director Spering asked if discussion of this issue has included the impact on the economic health of the Bay Area, stated the importance of prioritizing the search for ways to support economic strategies that enhance the goals of improved climate health and expressed his lack of support for any resolution that does not make some mention of supporting economic strategies that complement the climate goals, which concern was addressed by Mr. Broadbent who suggested including a provision in the work program as part of item #4.

Director Avalos expressed his support for Mr. Broadbent's suggestion.

Director Spering clarified that he is not focused on the economic impacts so much as the inclusion of a statement of support for those economic strategies that aide in the mission stated in the proposed resolution and, if included, that he will support the proposed resolution.

Director Kim expressed his gratitude for the opportunity to serve on the Board, for the warm welcome received and for the proposed resolution, and urged the staff to look at ways to shift the inventory and monitoring work that is so critical to the draft work program away from local jurisdictions that all too often lack the necessary resources and expertise.

Director Hudson said the issue of maximizing reductions while minimizing economic impact is clearly stated in state law, that greenhouse gases (GHG) are not the whole picture and there should be some inclusion of BC, the Air District should consider developing a per capita analysis of current and necessary GHG levels to meet state and local targets, and asked that the carbon sequestration program and reforestation protocol be included in SB 375 planning discussions.

Director Ross said any regulatory action by the Board has socio-economic impacts that should be considered.

Director Gioia said the proposed resolution will yield economic co-benefits by virtue of the health benefits and this should be memorialized in some way in the resolution.

Director Piepho restated her request to include a final bullet to the last portion of the proposed resolution that reads, "Continue to study and define economic impacts and/or benefits to residents and businesses within the Bay Area with implementation of the regional climate action strategy."

Chairperson Kalra said the staff suggestion is to include that provision in the work program.

Board Action (continued):

Director Avalos made a motion for the previous question with the resolution amendment as proposed by Director Adams; and Director Adams seconded.

Chairperson Kalra said economic impacts and strategies will be incorporated in the work program by staff. Director Zane asked if there is discussion on the motion for the previous question. Chairperson Kalra said there is not discussion. Director Zane said the suggested revision weakens the resolution.

Chairperson Kalra noted that no Board comments remain outstanding.

Director Avalos withdrew the motion for the previous question.

Director Haggerty and Mr. Broadbent discussed whether Air District staff will be conducting an economic analysis regardless of its inclusion in the proposed resolution.

Director Piepho asked if the specific language proposed as an amendment to the resolution will be included in the work program. Chairperson Kalra clarified that the draft work program is not being considered for approval today and amendments will be possible at a later date.

The motion to approve the report and recommendations of the CPC with the amendment proposed by Director Adams carried unanimously.

**9. Report of the Mobile Source Committee (MSC) Meeting of October 24, 2013**  
Committee Chairperson Haggerty

The MSC met on Thursday, October 24, 2013, and approved the minutes of September 26, 2013.

The MSC reviewed Projects with Proposed Grant Awards Over \$100,000 and recommends Board approval of six projects for the replacement of off-road diesel engines, including two tractors in Sonoma County and six loaders, three each in Napa and Sonoma Counties.

The MSC then received an informational update on the Regional Plug-In Electric Vehicle Readiness Plan, including its key readiness findings, strategies to accelerate electric vehicle adoption and next steps to finalize the plan.

The MSC also received an informational update on the Regional Bicycle Share Pilot Project, including descriptions of the program's web and mobile presence, social media utilization, current system use statistics and next steps for the pilot.

Finally, the MSC reviewed Transportation Fund for Clean Air Regional Fund Policies and Evaluation Criteria for Fiscal Year Ending 2014 and recommends Board approval of those policies and criteria included in Attachment A to the staff report.

The next meeting of the MSC is on Thursday, December 5, 2013, at 9:30 a.m.

Public Comments: None.

Board Comments: None.

Board Action:



Director Haggerty made a motion to approve the report and recommendations of the MSC; Director Wagenknecht seconded; and the motion carried unanimously.

**10. Report of the Public Outreach Committee (POC) Meeting of October 31, 2013**  
Committee Chairperson Ross

The POC met on Thursday, October 31, 2013, and approved the minutes of May 29, 2013.

The POC received the staff presentation 2013 Spare the Air Season, including campaign highlights, advertising, a review of website utilization by the public, a summary of media relations, employer outreach, community events, and social media reach and active followers, resource teams and next steps.

The POC then received the staff presentation 2013-14 Winter Spare the Air Campaign, including overview, advertising, outreach placement, media outreach, social media and alert notification. Emphasis will be made this season to get information about the program out to non-English speaking communities throughout the region.

The POC then received the staff presentation The Air District's Public Participation Plan, including key elements, public comment period, workshops and community meetings, key revisions to the plan and next steps.

The POC then received the staff presentation Spare the Air Youth Program's upcoming Youth for the Environment and Sustainability (YES) Conference, including overview, youth transportation to summit and summit content. Board members commented on how outreach was conducted for event and noted they would like to be more involved in outreach efforts in the future. MTC staff was present and discussed planning elements and enthusiasm for this first year program. After this chair report, staff will report on the YES Conference held on Saturday, November 2, 2013, at the Joseph P. Bort MetroCenter Auditorium in Oakland.

The next meeting of the POC is at the call of the Chair.

Board Comments:

Mr. Broadbent presented a video recording of the YES Conference.

Public Comments: None.

Board Action:

Director Ross made a motion to approve the report of the POC; Director Wagenknecht seconded; and the motion carried unanimously.

**PRESENTATION**

**11. Overview of the 2013/2014 Wood Smoke Reduction Program**

Mr. Broadbent introduced the topic and Eric Stevenson, Director of Technical Services, who gave the staff presentation Overview of the 2013-14 Winter Spare the Air Season, including reasons for wood smoke reduction; background on the wood smoke rule; complaint, violation and exceedance statistics; reductions attributable to the program; and summaries of program partnerships, outreach efforts, advertising and alert notifications.

Director Zane asked, regarding slide 4, PM<sub>2.5</sub> Exceedances / Complaints & Violations, about the reason for the discrepancy between the numbers of complaints and violations, which question was answered by Mr. Stevenson.

Mr. Stevenson concluded the presentation.

Board Comments:

Director Haggerty asked that the wood chipping pilot program be extended to the Livermore area.

Director Miley expressed his support for the program and asked about the available exemptions, which information was provided by Mr. Stevenson and Brian Bunker, District Counsel. Director Miley relayed a constituent concern about excessive propane and electricity bills for heating in place of wood, which comment was addressed by Wayne Kino, Director of Compliance and Enforcement, and Mr. Broadbent. Director Miley expressed his support for the program, stated his desire for enhanced public understanding of the program and asked staff to follow up with the constituent.

Director Zane said she would like to see better enforcement and asked if staff has considered hiring a campaign consultant for enhanced outreach.

Director Gioia asked if staff has found that individuals call with multiple complaints regarding a single offense, which question was answered by Mr. Broadbent. Director Gioia said the program is an effort at balancing the heavy- and light-handed approaches to compliance, recalled his past advocacy for the continued issuance of warning letters for first-time offenders and urged caution amongst his colleagues when they review the data because the bottom line is that the program is working to improve conditions.

Director Groom stated her belief that the Air District has received professional outreach support, that Lisa Fasano, Director of Communications and Outreach, has provided excellent leadership in this field both in her work at the District and during outreach to the County of San Mateo, and that she can attest to the receipt of repeated complaints of single violations.

Director Adams requested more staff work at the grassroots level to enhance public outreach efforts.

Director Ross echoed the comments of Director Groom, suggested the program's success is an example of effective outreach and noted the high numbers generated in generally wealthier communities is good reason to use caution in extrapolating conclusions from the data presented alone.

Public Comments:

Ms. Weisselberg addressed the Board to thank the Air District for its partnership on a project in Santa Rosa to increase monitoring; suggested there is little or no program enforcement and that a recent

public records request relative to program enforcement was denied in whole; and asked the Board to urge staff to release the requested documents. Director Gioia said the enforcement information is important as the explanation that complaints are often repeated makes sense but a public perception of inadequate enforcement should be avoided, urged everyone to keep in mind that staff cannot serve as the fireplace police, and warned against solutions that are from a Caucasian, middle-class focus.

Director Zane disagreed with the assessment that the program is working and requested that staff brief the Board on the enforcement component. Chairperson Kalra echoed Director Zane's request. Chairperson Kalra agreed with Mr. Broadbent's suggestion to brief the SSC and then the Board at the close of the Winter Spare the Air season.

Director Sperring said criticism of the program is unnecessary and commended staff for their approach, noting that if they had been heavy-handed with enforcement the program would have been discontinued due to public pressure, urged restraint in releasing any records that contain personal information, and said staff has done an outstanding job on this program.

Chairperson Kalra expressed his trust in District Counsel for handling public records requests and his support for the program and staff's management of it, commended staff outreach and urged his colleagues on the Board to accept ownership of their crucial role in outreach within each of their home jurisdictions.

Director Zane asked staff to email the Board with a menu of outreach options for enhanced outreach efforts.

Board Action: None; informational only.

### **PUBLIC COMMENT ON NON-AGENDA MATTERS:**

Tian Harter addressed the Board to commend the goal of reducing GHG emission to 80% below 1990 levels by 2050, shared his experiences as a grassroots activist and urged for the public to vote by taking the proper action in their daily lives.

### **BOARD MEMBERS' COMMENTS:**

Director Piepho congratulated Director Hudson on his re-election in the City of San Ramon, asked for the assistance of Damian Breen, Director of Strategic Incentives, on an automobile charging facility at Kaiser Hospital in Walnut Creek, and announced to CSAC San Jose conference attendees that the Delta County Coalition is having a reception on Tuesday, November 19, 2013, for a facilitated discussion on water and its importance to our state and region.

Director Sperring clarified his earlier comments to mean that he feels staff does and repeatedly has exhibited a sensitivity to economic considerations, a fact that he appreciates.

Director Ross congratulated Director Hudson on his re-election.

### **OTHER BUSINESS**

#### **12. Report of the Executive Officer/APCO:**

Mr. Broadbent presented a summary of the Ozone Season and introduced Air District Employee Association (EA) officers Paul Grazzini, President, and Christopher Coelho, Vice-President. Mr. Grazzini addressed the Board to introduce himself and to express his optimism about future work on the memorandum of understanding between the Air District and EA and the relocation to the new Air District headquarters at 375 Beale Street.

**13. Chairperson's Report:** Chairperson Kalra welcomed Director Chavez to the Board.

**14. Time and Place of Next Meeting:**

Wednesday, November 20, 2013, Bay Area Air Quality Management District Headquarters, 939 Ellis Street, San Francisco, California 94109 at 9:45 a.m.

**15. Adjournment:** The Board meeting adjourned at 12:14 p.m.

Sean Gallagher  
Clerk of the Boards

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 12, 2013

Re: Board Communications Received from November 6, 2013 through December 3, 2013

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

Copies of communications directed to the Board of Directors received by the Air District from November 6, 2013 through December 3, 2013, if any, will be at each Board Member's place at the December 3, 2013 Board meeting.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Maricela Martinez  
Reviewed by: Rex Sanders

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 21, 2013

Re: Notices of Violation Issued and Settlements in Excess of \$10,000 in October 2013

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

In accordance with Resolution No. 2012-08, attached to this Memorandum is a listing of all Notices of Violation issued, and all settlements for amounts in excess of \$10,000 during the month of October.

BUDGET CONSIDERATION/FINANCIAL IMPACT

The amounts of civil penalties collected are included in the Air District's general fund budget.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Brian C. Bunger

Attachments

**NOTICES OF VIOLATION ISSUED**

The following Notice(s) of Violation were issued in October 2013:

<b>Alameda</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Evergreen Oil, Inc	A1190	Newark	A53204A	10/7/13	8-5-307	8-5-307.1 RCA
Western Digital Corporation	A8391	Fremont	A53203A	10/1/13	2-1-307	RCA 06K81Condition 23227, section 10, 20 minutes

<b>Contra Costa</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Chevron Products Company	A0010	Richmond	A53177A	10/2/13	8-2-301	Dev #3506, >15 lbs/day of hydrocarbon emitted to atmosphere from LPG Loading Racks
Chevron Products Company	A0010	Richmond	A53178A	10/2/13	2-6-307	Dev #3457, Flaring due to C-180 column overpressure, 40 CFR 60 subpart J (60.104(a)(1)
Chevron Products Company	A0010	Richmond	A53178B	10/2/13	10	Dev #3457, Flaring due to C-180 column overpressure, 40 CFR 60 subpart J (60.104(a)(1)
Criterion Catalysts Company LP	A0227	Pittsburg	A52276A	10/2/13	2-6-307	temp excursion <1400 F; 1385.9 F; 1385.9 F
General Chemical West LLC	A0023	Richmond	A52963A	10/8/13	2-1-307	A4/A5 not used consistently
General Chemical West LLC	A0023	Richmond	A52963B	10/8/13	2-6-307	A4/A5 not used consistently
Golden Gate Petroleum	W1791	Martinez	A53108A	10/11/13	8-33-305	CT#204622, failure to meet year round decay rate.

Phillips 66 Company - San Francisco Refinery	A0016	Rodeo	A53234A	10/15/13	2-6-307	PM-10 Emissions >0.59 tons/12-month period
Phillips 66 Company - San Francisco Refinery	A0016	Rodeo	A53235A	10/15/13	8-5-320.3	Vacuum breakers open on floating-roof
Phillips 66 Company - San Francisco Refinery	A0016	Rodeo	A53236A	10/15/13	8-5-320.3	Vacuum breakers open on floating-roof
Plains Products Terminals LLC	A7034	Martinez	A53057A	10/10/13	8-5-328.1	Failure to calibrate per method 21
SFPP, L P	A4022	Concord	A53141A	10/10/13	8-5-328.1	Failure to calibrate per method 21
ST Shore Terminals LLC	A0581	Crockett	A53233A	10/8/13	8-5-328.1	Degas contractors failed to comply with EPA method 21 calibration
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53136A	10/8/13	8-5-306	Three prv/hatches not vapor tight
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53137A	10/8/13	8-5-306	2x PRV/hatched not vapor tight >500 ppm
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53138A	10/8/13	8-5-306	One prv/hatch not vapor tight
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53139A	10/8/13	8-5-306	One PRC/hatch not vapor tight
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53140A	10/8/13	8-5-503	8-5-503.2 heavy oil components missing from count
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53142A	10/15/13	8-5-306	not vapor tight
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53142B	10/15/13	2-6-307	failure to report deviation
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A53143A	10/22/13	8-10-401	v-66 opened to atmosphere



West Contra Costa County Landfill	A1840	Richmond	A52058A	10/22/13	2-1-307	Exceeded Temp Limit
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<b>San Mateo</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Gas Recovery Systems, Inc	B1668	Menlo Park	A51072A	10/29/13	8-34-301.1	Gas collection and emission control system not continuously operating

<b>Santa Clara</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Chevron Products Company	A0049	San Jose	A26686A	10/7/13	8-5-328.1	CGI not calibrated per EPA Method 21, <10,000 ppm determination insufficient
Lehigh Southwest Cement Company	A0017	Cupertino	A52613A	10/31/13	2-6-307	VE > Ringelmann 1 for 10 minutes
SFPP, LP	A4020	San Jose	A26685A	10/1/13	8-5-328.1	CGI not calibrated per EPA Method 21, <10,000 ppm determination insufficient

<b>Solano</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Bay Area Coffee Inc	B7062	Benicia	A52838A	10/4/13	2-1-307	Failed ST# NTV-1278 on A-7 Thermal Oxidizer

<b>District Wide</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
P. W. Stephens Environmental, Inc.	U9324	Loomis	A49140A	10/22/13	11-2-303.1	Failure to use water during removal

P. W. Stephens Environmental, Inc.	U9324	Loomis	A49140B	10/22/13	11-2-303.6	Failure to use water during removal
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**SETTLEMENTS FOR \$10,000 OR MORE REACHED**

There was 1 settlement(s) for \$10,000 or more completed in August 2013.

On August 21, 2013, the District reached a settlement with Sonoma Compost for \$14,000, regarding the allegations contained in the following 1 Notice of Violation:

NOV #	Issuance Date	Occurrence Date	Regulation	Comments from Enforcement
A52683A	5/16/2013	4/5/2012	2-1-307	Failed Source Test #NTV-1167, NOx greater than 110 ppm

There were 3 settlement(s) for \$10,000 or more completed in October 2013.

- 1) On October 16, 2013, the District reached a settlement with Valero Refining Company – California and Valero Benicia Asphalt for \$300,300, regarding the allegations contained in the following 33 Notices of Violation:

NOV #	Issuance Date	Occurrence Date	Regulation	Comments from Enforcement
A51437A	2/28/11	4/20/10	8-18-401	8-18-401.2 Components not inspected quarterly.
A51437B	2/28/11	4/20/10	8-18-402	8-18-402.1 Components not correctly identified.
A51438A	2/28/11	5/16/10	12-11-502.3.1	Failure to collect two flare samples.
A51439A	2/28/11	5/3/10	6-1-302	Opacity excess #05T60
A51440A	2/28/11	5/19/10	2-6-307	cogen CO excess #05T87
A51441A	2/28/11	7/16/10	12-11-502.3.1	Failure to collect flare gas sample
A51442A	2/28/11	7/20/10	8-18-401	8-18-401.2 Components not inspected quarterly.
A51442B	2/28/11	7/20/10	8-18-402	8-18-402.1 Components incorrectly identified.
A51443A	2/28/11	7/21/10	1-523.1	Failure to report inop monitor greater than 24hrs and over 15 consecutive days

A51443B	2/28/11	7/21/10	1-523.2	Failure to report inop monitor greater than 24hrs and over 15 consecutive days
A51444A	2/28/11	10/22/10	8-18-401	8-18-401.2 Components not inspected quarterly.
A51444B	2/28/11	10/22/10	8-18-402	8-18-402.1 Unidentified and unclassified components.
A51445A	2/28/11	1/14/11	12-11-502.3.1	Failure to collect flare gas sample w/in proper time period
A51446A	2/28/11	1/26/11	8-18-401	8-18-401.2 Components not inspected quarterly.
A51446B	2/28/11	1/26/11	8-18-402	8-18-402.1 Unidentified and unclassified components
A51447A	2/28/11	12/12/10	12-11-502.3.1	Failure to collect flare sample w/in proper time period
A51448A	2/28/11	12/24/10	12-11-502.3.1	Failure to collect flare samples w/in proper time period
A51449A	2/28/11	11/14/10	12-11-502.3.1	Failure to collect flare sample within proper time period.
A51758A	4/13/11	4/22/10	8-5-306	8-5-306.2 P/V value leaking > 500 ppm (SV-1705A)
A51759A	4/13/11	4/20/10	8-5-306	8-5-306.2 P/V values leaking > 500ppm (1-April/4-November)
A51827A	4/6/11	3/25/11	6-1-301	Excess visible emissions > Ring1 from main stack
A51833A	7/7/11	6/29/10	2-6-307	Failure to meet P/C #19177 part 19a-19d (05U80)
A51834A	7/7/11	6/29/10	2-6-307	Failure to meet P/C #19177 (05U79)
A51835A	7/7/11	8/15/10	6-1-302	Excess opacity > ring 1 (05V29)
A51836A	7/7/11	8/29/10	6-1-302	Excess opacity > ring 1 for 3 min (05V67)
A51837A	7/27/11	12/29/10	9-1-307	Excess SO2 per District Regulation (excess 05X91)
A51838A	7/27/11	12/18/10	2-6-307	Failure to meet P/C #19177 180(1) (excess 05X67)
A51841A	8/31/11	2/17/11	9-1-307	excess SO2 from main stack (05Y54)
A51842A	9/7/11	3/13/11	1-523.1	Late reporting of inoperative monitor (05Z01)
A51843A	9/28/11	2/22/11	2-6-307	Failure to meet permit condition (05Y77) 3hr NOx limit exceeded

A51869A	2/8/12	4/21/11	8-18-401	8-18-401.2 LDAR components misclassified or undocumented
A51869B	2/8/12	4/21/11	8-18-402.1	LDAR components misclassified or undocumented
A51871A	2/8/12	7/29/11	8-18-402.1	LDAR components not documented
A51872A	2/8/12	10/27/11	8-18-402.1	LDAR components not documented
A51873A	2/8/12	10/27/11	8-18-401	8-18-401.2 LDAR components misclassified, undocumented
A51873B	2/8/12	10/27/11	8-18-402	8-18-402.1 Untagged valves
A51873C	2/8/12	10/27/11	10	40CFR60.482-6; open-ended lines
A51875A	2/29/12	1/27/11	10	Deficiencies in refinery fugitive program found during internal audit
A51875B	2/29/12	1/27/11	8-18-401	8-18-401.2 Failed to inspect fugitive components
A51875C	2/29/12	1/27/11	8-18-402	8-18-402.1 Failed to identify fugitive components
A51876A	3/21/12	1/30/12	8-18-401	8-18-401.2 LDAR components misclassified, undocumented
A51876B	3/21/12	1/30/12	8-18-402	8-18-402.1 Untagged valves
A51876C	3/21/12	1/30/12	10	40CFR60.482-6; open-ended lines
A52327A	4/11/12	11/7/11	10	Exceeded the 3hr ave H2S limit at LPFG (06C15)
A52328A	4/11/12	11/6/11	2-6-307	Failure to meet P/C#19177pt19 for H2S 3hr ave (06C16)
A52330A	4/24/12	11/22/11	9-1-307	Excess SO2 at main stack (06C41)
A52331A	4/24/12	11/12/11	10	Excess H2S in LPFG (06C30)
A52332A	4/24/12	11/12/11	2-6-307	Excess H2S in fuel gas per P/C19177 19 (06C31)
A52335A	5/3/12	1/31/11	8/8/2000	8-8-314 Failure to report NSP inspections, perform FGS drain inspections, FGS S/U notification.
A52335B	5/3/12	1/31/11	10	Failure to report NSP inspections, perform FGS drain inspections, FGS S/U notification.

A52336A	5/3/12	9/27/11	2-6-307	Excess H2S concentrations in LP FG (06B67)
A52337A	5/21/12	11/13/11	1-523.1	Late reporting of in-operative flow monitor at WWT.
A52344A	6/6/12	4/26/12	8-18-401	8-18-401.2 LDAR components not inspected
A52344B	6/6/12	4/26/12	8-18-402.1	8-18-402.1 Untagged LDAR components
A52344C	6/6/12	4/26/12	10	40CFR60.482-6; open-ended lines

- 2) On October 25, 2013, the District reached a settlement with Novato Sanitary District for \$11,000, regarding the allegations contained in the following 3 Notices of Violation:

<b>NOV #</b>	<b>Issuance Date</b>	<b>Occurrence Date</b>	<b>Regulation</b>	<b>Comments from Enforcement</b>
A48658A	11/9/2011	9/30/2011	1-301	Confirmed 5 odor complaints to facility
A52677A	9/13/2012	7/29/2011	2-1-307	flare shutdown / operated below temp. req. P/C #24392
A52678A	9/13/2012	10/13/2011	2-1-307	flare shutdown / operated below temp. req. P/C #24392

- 3) On October 31, 2013, the District reached a settlement with Golden Gateway Center for \$45,000, regarding the allegations contained in the following 2 Notices of Violation:

<b>NOV #</b>	<b>Issuance Date</b>	<b>Occurrence Date</b>	<b>Regulation</b>	<b>Comments from Enforcement</b>
A51898	5/29/2012	5/29/2012	9-7-308	Failure to meet emission compliance schedule
A51899A	5/29/2012	5/29/2012	2-1-301	No A/C for 3 boilers > 10m BTU/HR
A51899B	5/29/2012	5/29/2012	2-1-302	No P/O for 3 boilers > 10m BTU/HR

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 22, 2013

Re: Authorize the Approval of a Purchase Order in Excess of \$70,000 for the Purchase of  
Air Quality Monitoring Equipment to Upgrade Air Monitoring Data Acquisition and  
Communications Systems

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**RECOMMENDATION**

Authorize the Executive Officer/APCO to issue a purchase order in the amount not to exceed \$96,367.50, to Agilaire LLC for purchase of air monitoring data acquisition equipment.

**BACKGROUND**

In October 2010, the Technical Services Division implemented a new Data Management System that enabled collection, quality assurance, hourly aggregation and storage of one-minute pollutant data to better meet data user's needs. As part of this effort, an in-house data acquisition system based on Windows PC platforms was developed and brought online. While there has been considerable cost savings realized from this approach, the operational limitations of the current unsupported Windows-based operating systems has resulted in increased maintenance costs and staff effort as well as system failures resulting in data loss. In order to address these issues, a more robust, manufacturer supported system is required to ensure uninterrupted data collection, reduce maintenance costs and allow more efficient use of staff resources.

**DISCUSSION**

Currently, there are several manufacturers of data acquisition systems capable of one-minute data collection from a multitude of environmental analytical instrumentation. A review and operational evaluation of available systems was conducted and resulted in the selection of the Agilaire system. Two units were purchased for the purpose of conducting a one-year pilot project to further assess the Agilaire product's suitability for current and future data acquisition needs. The pilot project allowed staff to verify the level of vendor support provided and staff expertise required for efficient system operation in addition to validating operational flexibility required for future development needs as network data demands increase. Staff has found that the Agilaire system meets current operational requirements with flexibility for future demands, with reduced downtime and more stable and accurate performance. Based on these criteria, staff found Agilaire data acquisition systems meet the operational needs of the Air District and will provide for more reliable and robust data collection than the current Windows-based systems.

Agilaire has provided a 15% discount as part of the quote for this equipment and has already provided training to senior level staff in two training sessions during the pilot project.

Purchase of the Agilaire data acquisition system will:

- result in less equipment downtime due to software and hardware problems,
- provide measurements with greater accuracy and stability,
- increase standardization, and
- avoid additional operational, maintenance and training costs.

Therefore, staff recommends purchasing the required air monitoring data acquisitions systems from Agilaire LLC because this equipment represents the best overall value to the Air District.

#### BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Funds for this capital equipment purchase were planned for and included in the Program 810 Fiscal Year End 2014 capital equipment budget.

Respectfully Submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Eric Stevenson  
Reviewed by: Jean Roggenkamp

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer / APCO

Date: November 22, 2013

Re: Proposed Regulatory Agenda for 2014

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

Each year, the Air District is required by Health and Safety Code section 40923 to publish a list of regulatory measures scheduled or tentatively scheduled for consideration during the next calendar year. If a measure is not on this list, it may not be brought before the Board of Directors unless it is necessary to:

1. Satisfy federal requirements,
2. Abate a substantial endangerment to public health or welfare,
3. Comply with state toxic air contaminant requirements,
4. Comply with an ARB requirement that the Air District adopt contingency measures due to inadequate progress towards attainment,
5. Preserve an existing rule's "original intent," or
6. Allow for alternative compliance under an existing rule.

The attached list includes all measures that may come before the Board in calendar year 2014. Some of the measures may fall within exceptions listed above but are nevertheless included for completeness. There is no expectation that all of the measures on the list will be enacted during the calendar year. Rules are listed in numerical order as they would appear in the Air District Rules and Regulations.

All new rules and rule amendments must be adopted at a public hearing conducted by the Board of Directors of the Air District. Public comment is accepted at these hearings. Public notice of hearings is provided as required by law. In addition, Air District staff conducts public workshops and provides opportunities for oral and written comments before scheduling a rule for public hearing for the Board's consideration. Information on workshops, hearings, and other rule development issues may be obtained from the Air District website at <http://www.baaqmd.gov/Divisions/Planning-and-Research/Rule-Development.aspx> or by calling the Planning, Rules and Research Division at (415) 749-4664.



BUDGET CONSIDERATION/FINANCIAL IMPACTS:

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer / APCO

Prepared by: Victor Douglas  
Approved by: Henry Hilken

Attachment

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
2014 REGULATORY MEASURES LIST

<b>Regulation, Rule</b>	<b>Title</b>	<b>Objectives<sup>1</sup></b>
Reg. 1	General Provisions and Definitions	Clarify and enhance District policies
Reg. 2, Rule 1	General Requirements (Permits)	EPA, CARB policy; State law, Clarifications
Reg. 2, Rule 2	New Source Review	EPA policy, incorporate PM2.5 and GHG, State law, clarifications
Reg. 2, Rule 4	Emissions Banking	Clarifications
Reg. 2, Rule 5	New Source Review for Toxic Air Contaminants	Clarifications, reduce emissions
Reg. 2, Rule 6	Major Facility Review (Title V)	EPA policy, clarifications
Reg. 2, Rule 9	Interchangeable Emission Reduction Credits	Clarifications
Reg. 3	Fees	Cost recovery
Reg. 4	Air Pollution Episode Plan	Reduce emissions
Reg. 5	Open Burning	Reduce emissions
Reg. 6, Rule 1	Particulate Matter, General Limitations	Reduce emissions
Reg. 6, Rule 2	Commercial Cooking Devices	Reduce emissions
Reg. 6, Rule 3	Wood Burning Devices	Clarifications, reduce emissions
Reg. 6, Rule 5	Fugitive Particulate Emissions	Reduce emissions
Reg. 7	Odorous Substances	Clarifications, reduce emissions
Reg. 8, All	General Provisions	Applicability, VOC definition
Reg. 8, Rule 2	Miscellaneous Operations	Clarifications
Reg. 8, Rule 3	Architectural Coatings	Clarifications, flexibility
Reg. 8, Rule 4	General Solvent and Surface Coating Operations	Clarifications, reduce emissions
Reg. 8, Rule 6	Organic Liquid Bulk Terminals and Bulk Plants	Clarifications
Reg. 8, Rule 7	Gasoline Dispensing Facilities	Reduce emissions
Reg. 8, Rule 9	Vacuum Producing Systems	Clarifications
Reg. 8, Rule 10	Process Vessel Depressurization	Clarifications
Reg. 8, Rule 11	Metal Container, Closure and Coil Coating	Clarifications
Reg. 8, Rule 12	Paper, Fabric and Film Coating	Clarifications
Reg. 8, Rule 13	Light and Medium Duty Motor Vehicle Assembly Plants	Clarifications
Reg. 8, Rule 14	Surface Preparation and Coating of Large Appliances and Metal Furniture	Clarifications
Reg. 8, Rule 16	Solvent Cleaning Operations	Clarifications, reduce emissions
Reg. 8, Rule 18	Equipment Leaks	Reduce emissions
Reg. 8, Rule 19	Surface Preparation and Coating of Miscellaneous Metal Parts and Products	Clarifications
Reg. 8, Rule 20	Graphic Arts Operations	Clarifications, reduce emissions, EPA policy
Reg. 8, Rule 21	Graphic Arts Printing and Coating Operations	Clarifications
Reg. 8, Rule 22	Valves and Flanges at Chemical Plants	Clarifications

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
2014 REGULATORY MEASURES LIST

<b>Regulation, Rule</b>	<b>Title</b>	<b>Objectives<sup>1</sup></b>
Reg. 8, Rule 28	Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants	Clarifications, flexibility
Reg. 8, Rule 29	Aerospace Assembly and Component Coating Operations	Clarifications
Reg. 8, Rule 30	Semiconductor Manufacturing Operations	Reduce emissions
Reg. 8, Rule 31	Surface Preparation and Coating of Plastic Parts and Products	Clarifications
Reg. 8, Rule 32	Wood Products Coatings	Clarifications, flexibility
Reg. 8, Rule 33	Gasoline Bulk Terminals and Gasoline Delivery Vehicles	Clarifications
Reg. 8, Rule 34	Solid Waste Disposal Sites	Reduce emissions
Reg. 8, Rule 35	Coating, Ink and Adhesive Manufacturing	Clarifications
Reg. 8, Rule 36	Resin Manufacturing	Clarifications
Reg. 8, Rule 37	Natural Gas and Crude Oil Production Facilities	Reduce emissions
Reg. 8, Rule 38	Flexible and Rigid Disc Manufacturing	Clarifications
Reg. 8, Rule 39	Gasoline Bulk Plants and Gasoline Delivery Vehicles	Clarifications
Reg. 8, Rule 40	Aeration of Contaminated Soil and Removal of Underground Storage Tanks	Clarifications
Reg. 8, Rule 41	Vegetable Oil Manufacturing Operations	Clarifications
Reg. 8, Rule 43	Surface Preparation and Coating of Marine Vessels	Clarifications
Reg. 8, Rule 44	Marine Vessel Loading Terminals	Clarifications
Reg. 8, Rule 45	Motor Vehicle and Mobile Equipment Coating Operations	Clarifications, flexibility
Reg. 8, Rule 49	Aerosol Paint Products	Clarifications, consistency with ARB standards
Reg. 8, Rule 50	Polyester Resin Operations	Clarifications
Reg. 8, Rule 51	Adhesive and Sealant Products	Clarifications, reduce emissions
Reg. 8, Rule 52	Polystyrene, Polypropylene and Polyethylene Foam Product Manufacturing Operations	Clarifications
Reg. 8, Rule 53	Vacuum Truck Operations	Clarifications
Reg. 8, Rule TBD	Composting Operations	Reduce emissions
Reg. 8, Rule TBD	Livestock Waste	Reduce emissions
Reg. 8, Rule TBD	Digital Printing	Reduce emissions
Reg. 8, Rule TBD	Natural Gas Transmission and Distribution	Reduce emissions
Reg. 8, Rule TBD	Cooling Towers	Reduce emissions
Reg. 8, Rule TBD	Wastewater from Coke Cutting	Reduce emissions
Reg. 8, Rule TBD	Wineries	Reduce emissions
Reg. 8, Rule TBD	Vanishing Oils and Rust Inhibitors	Reduce emissions
Reg. 8, Rule TBD	LPG, Propane, Butane, and other Pressurized Gases	Reduce emissions
Reg. 9, Rule 1	Sulfur Dioxide	Monitoring, recording requirements

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
2014 REGULATORY MEASURES LIST

<b>Regulation, Rule</b>	<b>Title</b>	<b>Objectives<sup>1</sup></b>
Reg. 9, Rule 2	Hydrogen Sulfide	Monitoring, recording requirements
Reg. 9, Rule 4	NOx from Fan Type Residential Central Furnaces	Reduce emissions
Reg. 9, Rule 6	NOx from Natural Gas-Fired Water Heaters	Clarifications
Reg. 9, Rule 7	NOx and CO from Boilers, Steam Generators and Process Heaters	Clarifications
Reg. 9, Rule 8	Stationary IC Engines	Clarifications
Reg. 9, Rule 12	NOx from Glass Melting Furnaces	Reduce emissions
Reg. 9, Rule 13	NOx, Particulate Matter and Toxic Air Contaminants from Cement Kilns	Clarifications, reduce emissions
Reg. 9, Rule 14	SOx from Petroleum Coke Calcining	Reduce emissions
Reg. 9, Rule TBD	NOx from Kilns, Ovens and Furnaces	Reduce emissions
Reg. 9, Rule TBD	NOx from Large Residential and Commercial Space Heating	Reduce emissions
Reg. 11	Hazardous Air Pollutants	Reference federal standards
Reg. 11, Rule 1	Lead	Clarifications, reference federal standards
Reg. 11, Rule 2	Asbestos Demolition, Renovation and Manufacturing	Clarifications
Reg. 11, Rule 14	Asbestos-Containing Serpentine	Clarifications
Reg. 11, Rule TBD	Air Toxics Hot Spots Mitigation	Reduce emissions
Reg. 12, Rule 15	Refinery Emissions Tracking	Monitor, reduce emissions
Reg. 14, Rule 1	Commuter Benefits Program	Reduce VMT, emissions
Reg. and Rule TBD	Indirect Source Mitigation	Reduce emissions
Reg. and Rule TBD	Episodic Controls	Reduce emissions
Reg. and Rule TBD	Sulfur Hexafluoride	Reduce emissions
Reg. and Rule TBD	Refrigeration Management	Reduce emissions
Reg. and Rule TBD	Magnet Source Rule	Reduce emissions
Reg. and Rule TBD	Emergency Stand-by Stationary IC Engines	Reduce emissions
Reg. and Rule TBD	Short-Lived Climate Pollutants	Climate Protection, reduce emissions
Reg. and Rule TBD	GHGs from Power Plants	Climate Protection, reduce emissions
Reg. and Rule TBD	Heat Mitigating Technologies Deployment	Climate Protection, reduce emissions
Reg. and Rule TBD	Energy Use in Residential, Commercial and Industrial Sectors	Climate Protection, reduce emissions
MOP, Volume I	Enforcement Procedures	Clarification, improve data submittals
MOP, Volume II	Engineering Permitting Procedures	Consistency with EPA requirements, clarifications
MOP, Volume III	Laboratory Methods	New and improved analytical procedures
MOP, Volume IV	Source Test Methods	New and improved analytical procedures
MOP, Volume V	Continuous Emission Monitoring	New and improved analytical procedures

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
2014 REGULATORY MEASURES LIST

<b>Regulation, Rule</b>	<b>Title</b>	<b>Objectives <sup>1</sup></b>
MOP, Volume VI	Ground Level Monitoring	Consistency with EPA requirements

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1 Objectives are listed for information only and are subject to change. Rule development efforts for a rule are not limited to listed objectives.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/Air Pollution Control Officer

Date: November 18, 2013

Re: Report of the Legislative Committee Meeting of November 18, 2013

RECOMMENDED ACTION

The Legislative Committee (Committee) received only an informational item and has no recommendations of approval by the Board of Directors.

BACKGROUND

The Committee met on Monday, November 18, 2013. The Committee received the report Review of the 2013 Legislative Year.

Attached is the staff report that was presented to the Committee.

Chairperson Tom Bates will give an oral report of the meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACTS

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Sean Gallagher  
Approved by: Rex Sanders

Attachments

AGENDA: 4

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**  
Memorandum

To: Chairperson Tom Bates and Members  
of the Legislative Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 12, 2013

Re: Review of the 2013 Legislative Year

RECOMMENDED ACTION:

None; receive and file.

BACKGROUND

The California Legislature concluded the first year of the 2013-14 Legislative Session in the early morning hours of September 13, 2013. The Governor concluded his work on October 13, 2013, by signing roughly 90% of the measures the Legislature sent him (and vetoing the remaining 10%). Ignoring constitutional amendments and resolutions, there were 2,264 bills introduced this year. Of those roughly 805 were chaptered into law.

DISCUSSION

The Air District had two primary legislative goals for 2013: to reauthorize air quality funding programs that expire in the next few years (especially the Carl Moyer and AB 923 programs), and to pass legislation responding to the Chevron Richmond refinery fire of August 2012. The District also had a number of air quality bills on which we took positions. Furthermore, the District hoped to avoid any cuts or financial harm through the state budget. This memorandum summarizes how the Air District fared on these issues.

Most significantly, legislation that the District strongly supported to reauthorize air quality funding was passed. We collaborated with a large coalition of diverse organizations on two identical bills, AB 8 and SB 11. AB 8 was co-authored by Assemblymember Henry Perea (D-Fresno) and Assemblymember Nancy Skinner (D-Berkeley). This is the measure that ultimately passed both houses of the Legislature and was signed into law. (SB 11 was co-authored by Senator Fran Pavley (D-Agoura Hills) and Senator Anthony Cannella (R-Ceres), and moved in parallel with AB 8 until the end of session.) AB 8 extends to 2023 a series of fees that are currently in place (tire fees, vehicle registrations, and vessel registrations) and used to support the Carl Moyer program, the AB 118 program, and the AB 923 program. The Moyer and 923 programs are administered by local air districts and focus on cutting diesel emissions. The AB

118 program is administered primarily by the Air Resources Board (ARB) and the California Energy Commission (CEC), and has three components. The Alternative and Renewable Fuel and Vehicle Technology program is focused on advanced transportation technology and cutting primarily greenhouse gas emissions. The Air Quality Improvement Program is a competitive grant funding program, and the Enhanced Fleet Modernization Program funds voluntary retirement of high-emission vehicles. Collectively, reauthorizing these programs will in total provide over \$2 billion for air quality programs.

AB 8 required a 2/3rds vote of both the Assembly and the Senate, and the bill was opposed most notably by the Howard Jarvis Taxpayers Association, the Sierra Club, and the New Car Dealers Association. The Sierra Club opposition was a result of the bill removing a requirement in ARB's Clean Fuel Outlet regulation that refineries provide funding for initial refueling stations for fuel cell vehicles. While this bill had the support of a wide variety of organizations (including environmental organizations, air districts, ARB and the CEC, refineries, agricultural groups, and a host of businesses and business organizations, the 2/3rds requirement meant that its ultimate passage was very hotly contested throughout the entire year.

The Air District co-sponsored SB 691 (authored by Senator Loni Hancock; D-Berkeley) with Breathe California. This bill was a response to the Chevron refinery fire of August 6, 2012. Essentially, it raises penalty ceilings for one-day egregious violations that severely disrupt communities and expose residents to toxic air contaminants. Under current law, the maximum penalty for such violations is typically only \$1,000, and even if negligence can be proved, only \$25,000. As one assembly member noted during debate on the bill, the strict liability penalty ceiling has not been changed since 1974, and is far too low to be an adequate deterrent for such severe incidents. The bill was supported by multiple environmental and environmental justice organizations, and had some labor support. Our co-sponsor was Breathe California.

SB 691 was declared to be a "job killer" by the California Chamber of Commerce, a designation they used on 37 bills this year. These are the bills most fiercely opposed by the Chamber, and only three of these survived until the last week of session. Only one 'job-killer' (a minimum wage measure) passed the Legislature this year. The Chamber was joined in their opposition to SB 691 by a very large collection of business interests. Opponents included the Western States Petroleum Association (WSPA), the California Council for Economic and Environmental Balance, the California Manufacturers and Technology Association, roughly a dozen agricultural groups, the California Association of Sanitation Agencies, the California Municipal Utilities Association, the Independent Energy Producers, and many others.

The bill made it out of the Senate, and to the Assembly floor. After fierce lobbying the last week of session, the bill was placed on the inactive file on the second to last day of session. While a number of groups had removed their opposition over the course of the year, and even during the final week, the Chamber and WSPA went to great lengths to present their perspective on the bill to moderate members of the Assembly. SB 691 is now a two-year bill, which essentially means it could be voted on at any point in 2014.



Of the additional bills with Air District adopted positions, none of the measures the Air District opposed made it through the legislative process. However, with the exception of the AB 8 reauthorization and a less important bill dealing with charging electric vehicles (SB 454-Corbett), the other three bills we supported did not become law. A number of outside observers have commented on how few significant environmental measures were able to be passed by the Legislature this year. Generally, moderate Democrats in both houses, and especially the Assembly, were able to block most environmental legislation that had business opposition. The few major pieces of environmental legislation that did pass the Legislature (for example, Senator Pavley’s bill on hydraulic fracturing, or ‘fracking’) were significantly amended to address business or industry concerns prior to their passage.

One major bill with important air quality implications that surfaced in the final two weeks of session was authored by Speaker Perez. This bill, AB 1330, would have tried to double penalties for violations of all environmental media (including stationary source air violations) that occur in environmental justice areas. Half of the penalties would go to a new Green Zone Trust Fund, which would fund projects and grants in these communities. Enforcement would be prioritized in environmental justice areas. Staff had major concerns with the bill as drafted, and had the opportunity to discuss those issues with the author’s staff. This bill had even more business opposition than SB 691, but the author remains interested in trying to move some bill in this subject area next year.

Senator DeSaulnier remains interested in regional governance issues. His staff have indicated that they may have some revised language for SB 792 to share with interested parties prior to the Legislature reconvening in January.

Finally, the District avoided any cuts or financial harm in the State’s budget process this year.

OUTCOME OF BILLS WITH AIR DISTRICT POSITIONS

BILL AND AUTHOR	SUBJECT	POSITION	OUTCOME
AB 8 Perea	Reauthorizes Moyer/923, AB 118 incentive funding programs, and makes changes to Clean Fuels Outlet regulation	Support	Chapered
AB 794 Gorell	Would exempt from CEQA composting projects and landfill green energy projects	Oppose	Failed passage
AB 818 Blumenfield	Allows city attorneys to enforce stationary source air pollution regulations	Oppose	Failed passage
AB 866 Linder	Significantly increases state agency requirements prior to enacting regulations	Oppose	Failed passage
AB 953 Ammiano	Changes CEQA law to effectively overturn <i>Ballona Wetlands</i> decision	Support	Failed passage
AB 1077	Establishes parity in vehicle license fees and sales tax paid	Support	Failed passage

Muratsuchi	for alternative fuel vehicles and their gasoline counterparts		
AB 1193 Ting	States legislative intent to allow local governments the same flexibility in designing bike lanes as they have when designing local streets and roads	Support in concept	Failed passage
SB 11 Pavley	Identical to AB 8 (reauthorizes Moyer/923 and more)	Support	AB 8 Chaptered
SB 454 Corbett	Electric Vehicle Charging Stations Open Access Act	Support in concept	Chaptered
SB 605 Lara	Requires cap-and-trade revenues to be spent only in CA	Oppose unless amended	Failed passage
SB 621 Gaines	Extends compliance dates in In-Use Heavy Duty Diesel Regulation by five years	Oppose	Failed passage
SB 736 Wright	Limits air district fee authority for power plant modifications that increase thermal efficiency	Oppose	Failed passage
SB 760 Wright	Limits authority of air districts with emission reduction credit programs over powerplants; subsequently modified entirely	Oppose	Failed passage
SB 792 DeSaulnier	Assigns new tasks to the Joint Policy Committee with respect to ABAG, BAAQMD, BATA, MTC, and BCDC	Watch	Failed passage
SB 793 Lara	Exempts marine vessels from ARB shorepower requirements in certain circumstances	Watch	Failed passage

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Tom Addison  
Reviewed by: Jean Roggenkamp

Attachment

AGENDA 4 – ATTACHMENT

# BAAQMD BILL DISCUSSION LIST

June 2013

BILL NO.	AUTHOR	SUBJECT	Status	POSITION (Positions in italics are staff recommendations)
AB 8	Perea and Skinner	Reauthorizes Moyer/923, AB 118 incentive funding programs, and makes changes to Clean Fuels Outlet regulation	Chaptered	Support [MTC Support]
AB 14	Lowenthal	Requires a state freight plan	Chaptered	[MTC Support]
AB 26	Bonilla	Addresses cap-and-trade revenue expenditure, including at refineries and requires certain work to be done to certain labor standards	Senate Labor and Industrial Relations	
AB 37	Perea	Requires CEQA lead agency to prepare a record of proceedings [amended into completely unrelated bill]	Senate Labor and Industrial Relations	
AB 147	V.M.Perez	Salton Sea dust mitigation plan involving local air districts and ARB	Senate Natural Resources	
AB 153	Bonilla	Requires ARB to adopt new process for GHG offset protocols	Asm. Approps.	
AB 220	Ting	Eliminates sales tax for low emission vehicles	Asm. Rev. & Tax	
AB 245	Grove	Repeals Western Climate Initiative's statutory exemption from open meeting requirements	Asm. Gov. Org.	
AB 266	Blumenfield	Extends electric and CNG (white sticker) HOV access until 2019	Chaptered	[MTC Oppose unless amended]
AB 278	Gatto	Makes changes to calculations used in Low Carbon Fuel Standard	Senate Floor	
AB 284	Quirk	Establishes Road to 2050 Board, for recommendations on cutting GHGs to 80% of 1990 levels by 2050	Asm. Approps.	
AB 304	Williams	Requires Director of Pesticide Regulation to make public data on pesticides that are toxic air contaminants	Chaptered	
AB 337	Allen	Intent bill emphasizing economic importance of ports to California	Asm. Jobs	
AB 380	Dickinson	Requires online posting of CEQA documents	Sen. Env. Quality	

AB 416	Gordon	Creates Local Emission Reduction Program to use general fund appropriations for grants to local governments	Asm. Approps.	
AB 453	Mullin	Makes LAFCOs eligible for sustainable communities grants from Strategic Growth Council	Senate Approps.	
AB 466	Quirk-Silva	Continues regional distribution of CMAQ funds per previous formula	Chaptered	[MTC Support]
AB 515	Dickinson	Establishes CEQA compliance courts to quickly resolve CEQA cases	Asm. Judiciary	
AB 572	Atkins	Requires documentation of energy efficiency in buildings beyond code to allow generation of credits	Asm. Natural Res.	
AB 574	Lowenthal	Sustainable Communities Infrastructure Program funded by cap-and-trade	Asm. Approps.	[MTC Support]
AB 628	Gorell	Allows state funding of port energy management plan to promote economic development while reducing air emissions	Chaptered	
AB 794	Gorell	Would exempt from CEQA composting projects and landfill green energy projects	Asm. Natural Res.	Oppose
AB 818	Blumenfield	Allows city attorneys to enforce stationary source air pollution regulations	Asm. Judiciary	Oppose
AB 866	Linder	Significantly increases state agency requirements prior to enacting regulations	Asm. Accountability and Admin. Review	Oppose
AB 887	Allen	Spot bill on economic analysis of regulations	Asm. Rules	
AB 898	Ting	States legislative intent to increase electric vehicle charging infrastructure	Asm. Rules	
AB 953	Ammiano	Changes CEQA law to effectively overturn the <i>Ballona Wetlands</i> decision	Asm. Floor	Support
AB 1002	Bloom	Imposes new \$6 annual vehicle registration fee surcharge for Sustainable Communities Strategy Account	Asm. Local Govt.	
AB 1051	Bocanegra	Sustainable Communities for All; uses cap-and-trade funds to cut GHG emissions from lower-income, especially by increasing transit funding	Asm. Approps.	
AB 1056	Jones	Requires quarterly reports on AB 32 allowance auctions	Asm. Natural Res.	
AB 1077	Muratsuchi	Establishes parity in vehicle license fees and sales tax paid for alternative fuel vehicles and their gasoline counterparts	Asm. Approps.	Support
AB 1081	Medina	Adds ports to state 5-year infrastructure plan	Senate Approps.	
AB 1092	Levine	Requires CA Building Standards Commission to adopt standards for EV charging in multi-family and nonresidential building	Chaptered	
AB 1102	Allen	Prohibits SCAQMD from banning beach fires	Asm. Natural Res.	

AB 1193	Ting	States legislative intent to allow local governments the same flexibility in designing bike lanes as they have when designing local streets and roads	Asm. Local Govt.	Support in concept
AB 1194	Ammiano	Provides \$46M for Safe Routes to Schools	Senate Trans. & Housing	
AB 1219	Morrell	Spot bill on economic impact of regulations	Asm. Rules	
AB 1228	V.M. Perez	Allows larger fuel cell power generators into net energy metering program	Asm. Utilities	
AB 1257	Bocanegra	Effort to maximize natural gas use for GHG reasons, including as transportation fuel	Chaptered	
AB 1290	Perez	Adds new members to California Transportation Commission, including ARB as a non-voting member	Vetoed	
AB 1330	Perez	Gut-and-amend to double environmental penalties and direct 50% of penalty revenue to Green Zone Trust Fund	Sen. Env. Quality	
AB 1375	Chau	Requires ARB to use cap-and-trade funds to establish Clean Technology Investment Fund	Asm. Approps.	
SB 4	Pavley	Establishes regulatory scheme for fracking	Chaptered	
SB 11	Pavley	Reauthorizes Moyer/923, AB 118 incentive funding programs, and makes changes to Clean Fuels Outlet regulation	Assembly Trans.	Support [MTC Support]
SB 34	Calderon	Regulates CO2 oil recovery projects that demonstrate carbon sequestration	Senate Approps.	
SB 43	Wolk	Establishes a shared renewable energy self-generation program	Chaptered	
SB 123	Corbett	Establishes new environmental and land use superior courts	Sen. Approps.	
SB 221	Pavley	Reduces taxes on alternative fuel vehicle at time of purchase or lease		
SB 286	Yee	Extends HOV lane use by clean vehicles for 3 additional years, through 1/1/2018	Chaptered	
SB 359	Corbett	Gut-and-amend to loan \$40 million from a Smog Check fund to clean vehicle incentives in different programs	Chaptered	
SB 389	Wright	Prohibits SCAQMD from charging a fee to transfer emissions offsets from internal bank, effectively overturning a SCAQMD regulation	Sen. Env. Quality	
SB 454	Corbett	Electric Vehicle Charging Stations Open Access Act	Chaptered	Support in concept
SB 459	Pavley	Requires ARB to revise scrappage program requirements and guidelines	Chaptered	
SB 497	Walters	Prohibits GHG fees on California public or private universities/colleges	Sen. Env. Quality	

SB 525	Galgiani	Imposes CEQA exemption for Altamont Commuter Express upgrades	Sen. Env. Quality	
SB 600	Lieu	Requires changes to alternative fuel conversion certification program at ARB	Assembly Trans.	
SB 605	Lara	Requires cap-and-trade revenues to be spent only in California	Assembly Approps.	Oppose unless amended
SB 617	Evans	Makes a variety of changes to CEQA	Sen. Approps.	
SB 621	Gaines	Extends compliance dates in In-Use Heavy Duty Diesel Fueled Vehicle regulation by five years	Sen. Trans.& Housing	Oppose
SB 633	Pavley	Changes treatment of new information after CEQA EIR is deemed complete	Assembly Approps.	
SB 691	Hancock	Increases air penalty ceilings for one-day community-disrupting violations	Assembly Floor	Sponsor
SB 731	Steinberg	Multiple changes to CEQA, including treatment of Sustainable Communities Strategy	Assembly Local Govt.	
SB 736	Wright	Limits air district fee authority for power plant modifications that increase thermal efficiency	Sen. Env. Quality	Oppose
SB 754	Evans	Multiple changes to CEQA designed to modernize certain sections	Sen. Approps.	
SB 760	Wright	Limits authority of air districts with emission reduction credit programs over powerplants (modified to remove air district concerns, and then modified into a bill about the renewable portfolio standard)	Assembly Utilities	Oppose
SB 787	Berryhill	Enacts Sustainable Environmental Protection Act, by reducing reach of CEQA	Sen. Env. Quality	
SB 792	DeSaulnier	Assigns new tasks to the Joint Policy Committee with respect to ABAG, BAAQMD, BATA, BCDC, and MTC	Sen. Approps.	Watch
SB 793	Lara	Exempts marine vessels from ARB shorepower regulatory requirements in certain circumstances	Sen. Approps.	Watch
SB 798	DeLeon	Establishes Green Infrastructure Bank Account, which can be funded through cap-and-trade funds	Sen. Gov. & Finance	
SB 804	Lara	Expands definition of biomass conversion to include non-combustion thermal and other technologies	Vetoed	

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/Air Pollution Control Officer

Date: November 18, 2013

Re: Report of the Personnel Committee Meeting of December 2, 2013

PROPOSED RECOMMENDED ACTION

The Personnel Committee (Committee) will conduct interviews and consider recommending approval by the Board of Directors of incumbent reappointments and candidates for appointment to the Air District's Advisory Council.

BACKGROUND

The Committee will meet on Monday, December 2, 2013, and receive the report Conduct Interviews and Consider Recommending Board of Directors' Approval of incumbent reappointment candidates to the Air District's Advisory Council.

Attached is the staff report presented in the Committee packet.

Chairperson Brad Wagenknecht will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACTS:

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Sean Gallagher  
Reviewed by: Rex Sanders

Attachment

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Brad Wagenknecht and Members  
of the Personnel Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 20, 2013

Re: Conduct Interviews and Consider Recommending Board of Directors Approval of  
Incumbent Reappointments and Candidates for Appointment to the Air District's  
Advisory Council

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RECOMMENDED ACTION

Conduct interviews and consider recommending Board of Directors approval of incumbent reappointments and candidates for appointment to the Air District's Advisory Council.

BACKGROUND

Pursuant to Section 40261 of the California Health and Safety Code the Air District is required to maintain an Advisory Council consisting of 20 members. Further, section 40262 requires that the member categories consist of at least three representatives of public health agencies; at least four representatives of private organizations active in conservation or protection of the environment within the bay district; at least one representative of colleges or universities in the state; and at least one representative of each of the following groups within the bay district: regional park district, park and recreation commissions or equivalent agencies of any city, public mass transportation system, agriculture, industry, community planning, transportation, registered professional engineers, general contractors, architects, and organized labor. To the extent that suitable persons cannot be found for each of the specified categories, council members may be appointed from the general public. Advisory Council members serve a term of two years.

DISCUSSION

The terms of office for nine members in the following categories will expire on December 31, 2013: Regional Park District (1), Parks & Recreation (1), Mass Public Transportation (1), Architect (1), Industry (1), Organized Labor (1), Community Planning (1), Conservation Organization (1), and Public Health Agency (1). Seven incumbent members reapplied for their respective categories. These incumbents have demonstrated excellent attendance and participation at the Advisory Council meetings. As such, Air District staff recommends the Personnel Committee to recommend their reappointment.



The seven incumbents are:

Ana Alvarez (Regional Park District)  
Jeffrey Bramlett (Parks & Recreation)  
Harold Brazil (Mass Public Transportation)  
Jonathan Cherry (Architect)  
Kraig Kurucz (Industry)  
Estes Al Phillips (Organized Labor)  
Jessica Range (Community Planning)

Staff initiated a recruitment effort to fill the remaining two vacancies in the Public Health and Conservation Organization categories in which the incumbents did not seek reappointment. The vacancy announcement was posted on the Air District website and outreach to the following sites:

- Bay Area Newspapers including: Contra Costa Times, Oakland Tribune, Marin Independent Journal, Napa Valley Register, Press Democrat (Santa Rosa), San Francisco Chronicle, San Jose Mercury, San Mateo Times, and Times Herald (Vallejo)
- National Association of County and City Health Officials
- California Air Pollution Control Officers Association (CAPCOA)
- Air & Waste Management Association (AWMA)
- Governmentjobs.com
- Ecojobs.com
- Planetizen.com
- Craigslist.org
- Bay Area Cities & Counties mailing lists

After extensive recruitment and outreach efforts, staff received a total of five applications for the vacancy in the Public Health Agency and Conservation Organization categories. The Human Resources Office and the Executive Office have assessed the candidates' experience and education relative to the position for which the candidates applied and have selected candidates with the most relevant qualifications to interview with the Personnel Committee.

The Personnel Committee will interview candidates for the Public Health Agency category. Staff will continue to recruit and outreach for the Conservation Organization category.

Interviews of the candidates will occur during the Personnel Committee meeting. The length of each interview will be approximately fifteen minutes. The application materials of the candidates will be provided to you for your review.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Judy Yu  
Reviewed by: Jack M. Colbourn

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 26, 2013

Re: Report of the Nominating Committee Meeting of December 4, 2013

RECOMMENDED ACTION

The Committee may recommend Board of Directors' approval of Board Officers for:

- Chairperson;
- Vice Chairperson; and
- Secretary.

BACKGROUND

The Nominating Committee will meet on Wednesday, December 4, 2013. The Committee will consider the 2014 Board Officers for the 2014 Term of Office.

Attached is the staff report presented in the Nominating Committee packet.

Chairperson Kalra will give an oral report of the meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Maricela Martinez  
Reviewed by: Rex Sanders

Attachment

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Nominating Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 25, 2013

Re: Consideration and Nomination of Board Officers for the 2014 Term of Office

RECOMMENDED ACTION:

Consider recommending Board of Directors' approval of Board Officers for:

- Chairperson
- Vice Chairperson
- Secretary

DISCUSSION

Air District Counsel, Brian Bunger has provided a memorandum addressed to Chairperson Kalra that is attached for discussion. The memorandum includes pertinent provisions from the Air District's Administrative Code and the Board of Directors' Operating Policies and Procedures. The memorandum also discusses the role of the Nominating Committee.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Vanessa Johnson  
Reviewed by: Rex Sanders

Attachment(s)

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**OFFICE OF DISTRICT COUNSEL**

**MEMORANDUM**

**DATE:** November 25, 2013

**TO:** Ash Kalra, Chairperson  
and Members of the Nominating Committee of the Board of Directors

**FROM:** Brian C. Bunger  
District Counsel

**SUBJECT:** Criteria for Recommendation of Officers of the Board of Directors

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The function of the Nominating Committee is “to recommend to the Board the officers for each calendar year.” Bay Area Air Quality Management District Administrative Code (“Admin. Code”), Division I, Section 6.8. In order to assist with this function, this Memorandum discusses the criteria to be applied by the Nominating Committee in making its recommendations for officers to the Board.

The Administrative Code contains certain criteria that the Nominating Committee must follow in making its recommendation for officers of the Board.

First, “the Committee shall not be bound by a recommendation of a previous Nominating Committee.” Admin. Code, Div. I, § 6.8.

Second, “[t]he Committee need not follow a strict rule of rotation between supervisor and city members but may take into account their proportionate membership on the Board of Directors.” Admin Code, Div. I, § 6.8.

Third, Section 6.8 further requires that “the Committee shall take into account the provisions of Section I-2.7.” Admin. Code, Div. I, § 6.8.

Section 2.7 of Division I of the Administrative Code sets forth a policy of the Board to rotate the positions of the Chairperson, Vice Chairperson and Board Secretary among the members of the Board “in a manner to assure participation in the affairs of the District from a wide representation of the membership.” Admin. Code, Div. I § 2.7. In this regard, Section 2.7 provides that “[I]n making its recommendations, the Nominating Committee shall take into account such factors as representation by those members appointed by Boards of Supervisors, those members appointed by City selection committees, those members from large counties, and those from small counties.” Admin. Code, Div. I § 2.7.

Thus, the Board has expressed a policy of rotating officer positions in order to ensure broad participation by all Board members in the affairs of the District. However, the Nominating Committee is not required to follow a strict rule of rotation between supervisor and city members. Nor is the Committee to be bound by the actions of any prior Nominating Committee. Finally, the Nominating Committee must take into account such factors as representation of supervisor and city members on the Board and the representation of members from large and small counties.

For your convenience, attached are copies of the pertinent sections of the District's Administrative Code.

**ADMINISTRATIVE CODE – SELECTED PROVISIONS****SECTION 2 BOARD OF DIRECTORS, OFFICERS - DUTIES****2.1 OFFICERS OF THE BOARD. (Revised 1/21/04)**

The presiding officer of the Board is the Chairperson of the Board of Directors. The Chairperson, Vice Chairperson and Secretary shall, no later than the first meeting in December of each year, be elected by the Board of Directors and assume office January 1, (effective January 1, 2005). The Chairperson shall preserve order and decorum at regular and special meetings of the Board. The Chairperson shall state each question, shall announce the decision, shall decide all questions of order subject to an appeal to the Board. The Chairperson shall vote on all questions, last in order of the roll, and shall sign all ordinances and resolutions adopted by the District Board while the Chairperson presides. (see Section II-4.3)

In the event that the Chairperson is unable, for whatever reason, to fulfill his or her one-year term of office, the Vice-Chairperson shall succeed the Chairperson and the Secretary shall succeed the Vice-Chairperson. Section 2.3 below shall determine the filling of the Secretary vacancy. In any event, no Board Officer shall serve more than three (3) years in any one Board office (Chairperson, Vice-Chairperson, or Secretary).

**2.2 CHAIRPERSON. (Revised 1/14/09)**

The Chairperson shall take the chair at the hour appointed for the meeting and call the District Board to order. In the absence of the Chairperson, the Vice-Chairperson shall call the Board to order and serve as temporary Chairperson. Upon arrival of the Chairperson, the Vice-Chairperson shall relinquish the chair upon the conclusion of the business then pending before the Board. In the absence, or self-determined inability to act, of the Chairperson, or the Vice-Chairperson when the Chairperson is absent, the Board Secretary shall call the Board to order and serve as temporary Chairperson. Upon arrival of the Chairperson or Vice-Chairperson, the Secretary shall relinquish the Chair upon the conclusion of the business then pending before the Board. In the absence, or self-determined inability to act, of the Chairperson, Vice Chairperson or Secretary, members of the Board of Directors shall, by an order on the Minutes, select one of their members to act as temporary Chairperson. Upon the arrival or resumption of ability to act, the Chairperson or Vice-Chairperson shall resume the Chair, upon the conclusion of the business then pending before the Board. It shall be the duty of the Chairperson to attend all meetings of the Bay Area Air Quality Management District Advisory Council.

**2.3 VICE CHAIRPERSON.**

If, for any reason, the Chairperson ceases to be a member of the Board, the Vice-Chairperson shall automatically assume the office of Chairperson and the Board Secretary shall automatically assume the office of Vice-Chairperson. If, for any reason, the Vice-Chairperson ceases to be a member of the Board, the Board Secretary shall automatically assume the office of Vice-Chairperson. In either eventuality, the Board Nominating Committee shall, upon the request of the Chairperson, make a recommendation at the Board meeting following such request to fill the office of Board Secretary. An election will then immediately be held for that purpose.

**2.4 BOARD SECRETARY.**

The Board Secretary shall be official custodian of the Seal of the District and of the official records of the District and shall perform such secretarial duties as may require execution by the Board of Directors. The Board Secretary may delegate any of these duties to the APCO, or to the Clerk of the Boards.

**2.5 MEETING ROLL CALL.**

Before proceeding with the business of the Board, the Clerk of the Boards shall call the roll of the members, and the names of those present shall be entered in the Minutes. The names of members who arrive after the initial roll call shall be noted in the Minutes at that stage of the Minutes.

**2.6 QUORUM.**

A majority of the members of the Board constitutes a quorum for the transaction of business, and may act for the Board.

**2.7 OFFICER ROTATION.**

It is intended that the positions of Chairperson, Vice Chairperson, and Board Secretary be rotated among the members in a manner to assure participation in the affairs of the District from a wide representation of the membership. In making its recommendations, the Nominating Committee shall take into account such factors as representation by those members appointed by Boards of Supervisors, those members appointed by City selection committees, those members from large counties, and those from small counties.

**SECTION 6 BOARD OF DIRECTORS, COMMITTEES**

**6.8 NOMINATING COMMITTEE. (Revised 10/4/95)**

The Nominating Committee will consist of the Chairperson of the Board, the past Chairperson of the Board and three (3) appointees of the Chairperson of the Board, or in the event the past Chairperson of the Board is no longer serving on the Board, four (4) appointees of the Chairperson of the Board. The Nominating Committee shall be appointed no later than the second Board Meeting in November of each year and shall serve until the appointment of a new Committee. It is the function of the Nominating Committee to recommend to the Board the officers for each calendar year. In making its recommendation, the Committee shall not be bound by a recommendation of a previous Nominating Committee. The Committee need not follow a strict rule of rotation between supervisor and city members but may take into account their proportionate membership on the Board of Directors. Additionally, the Committee shall take into account the provisions of Section I-2.7.



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer / APCO

Date: November 21, 2013

Re: Recommendations of the Advisory Council from the February 13, 2013 meeting on Black Carbon: Concepts and Issues, the May 8, 2013 meeting on Black Carbon: Exposure, Mitigation and Trends in Emissions, and the September 11, 2013 meeting on Black Carbon: Health Effects of Exposure

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RECOMMENDED ACTION

None; receive and file.

**FEBRUARY 13, 2013 ADVISORY COUNCIL MEETING**SUMMARY

The following presentations were made at the February 13, 2013 Advisory Council meeting on Black Carbon: Concepts and Issues:

1. ***Black Carbon: Concepts and Issues from a National Perspective*** by Sarah Rizk. Ms. Rizk is an Environmental Scientist, serving as a Clean Energy and Climate Change Office, with the US Environmental Protection Agency (US EPA), Region 9. Ms. Rizk works with a broad range of partners on reducing greenhouse gases (GHGs) through voluntary action. Her research focuses on the intersection between climate and health benefits. Her recent work quantifies the monetary health impacts of fossil fuel energy and analyzes policy pathways for reducing black carbon from diesel vehicles, drawing from existing regulatory policies. Sarah holds a B.S. and a M.S. in Earth Systems from Stanford University.
2. ***Black Carbon: Concepts and Issues from a Statewide Perspective*** by Bart Croes. Mr. Croes is currently the Division Chief for the Research Division of the California Air Resources Board (CARB). He is responsible for California's ambient air quality standards; climate change science and mitigation of high global warming potential gases; and health, exposure, and indoor air quality. He was the Public Sector Co-Chair for the NARSTO Executive Assembly, and a former member of the National Research Council (NRC) Committee on Research Pollution in Urban China and the US, a joint collaboration between the National Academy of Engineering, NRC, Chinese Academy of Engineering, and Chinese Academy of Sciences. He has been peer reviewer for the NRC,

US EPA, and numerous journals, and has received the Editors' Citation for Excellence in Refereeing from the Journal of Geophysical Research. Bart has published peer-reviewed articles on air quality simulation modeling, emission inventory evaluation, reactivity-based VOC controls, acid deposition, the weekend ozone effect for ozone and PM, PM data analysis and trends, diesel particle traps, and climate change impacts on California. He holds a B.S. in Chemical Engineering from the California Institute of Technology, a M.S. in Chemical Engineering from the University of California at Santa Barbara, and is a registered Professional Chemical Engineer in the State of California.

## REPORT

The Advisory Council met on March 13, 2013 and April 10, 2013 to discuss the presentations and materials received at the February 13, 2013 meeting on Black Carbon: Concepts and Issues, and prepared a report for the Air District Board of Directors. This report, including recommendations, was finalized at the April 10, 2013 meeting and will be presented for consideration at the Board of Directors December 4, 2013 meeting.

## **MAY 8, 2013 ADVISORY COUNCIL MEETING**

### SUMMARY

The following presentations were made at the May 8, 2013 Advisory Council meeting on Black Carbon: Exposure, Mitigation and Trends in Emissions:

1. ***Black Carbon – Exposure and Mitigation*** by Veerabhadran Ramanathan Ph.D. Dr. Ramanathan is a Distinguished Professor at the Scripps Institution of Oceanography at the University of California, San Diego. In the 1970's, Dr. Ramanathan discovered the greenhouse effect of chlorofluorocarbons (CFCs) and numerous other manmade trace gases, and he forecasted in 1980, along with R. Madden, that global warming would be detectable by 2000. Dr. Ramanathan, along with Paul Crutzen, led an international team that first discovered widespread Atmospheric Brown Clouds (ABCs). He showed that ABCs led to large scale dimming, decreased monsoon rainfall and rice harvest in India, and played a dominant role in melting Himalayan glaciers. His team developed unmanned aerial vehicles with miniaturized instruments to measure black carbon (BC) in soot over Asia and to track pollution from Beijing during the Olympics. Dr. Ramanathan has estimated that reduction of BC can reduce global warming significantly, and he is following this up with Project Surya, which will reduce soot emissions from bio-fuel cooking in rural India for purposes of climate mitigation. Dr. Ramanathan chaired a National Academy report that calls for a major restructuring of the Climate Change Science Program, and it was received favorably by the Obama administration. His numerous awards include the 2009 Tyler Prize, Volvo Prize, Zayed prize, Rossby Medal, and Buys-Ballot Medal for pioneering studies in climate and environment. He has been elected to the American Philosophical Society, US National Academy of Sciences, Pontifical Academy by Pope John Paul II, and Royal Swedish Academy of Sciences.

2. ***Black Carbon in the San Francisco Bay Area: Trends in Ambient Concentrations and Emissions*** by Robert Harley Ph.D. Dr. Harley is a Professor in the Department of Civil and Environmental Engineering at the University of California, Berkeley, where he has been on the faculty since 1993. Prof. Harley holds a bachelor's degree in Engineering Science (Chemical Engineering option) from the University of Toronto, and both an M.S. and Ph.D. in Environmental Engineering Science from the California Institute of Technology (Caltech). Prof. Harley's research focuses on air quality and sustainable transportation; he is an author of over 75 papers published in peer-reviewed scientific journals. He now serves as an associate editor of *Atmospheric Chemistry and Physics*. Prof. Harley received the National Science Foundation's young investigator (CAREER) award in 1996, as well as a visiting scientist fellowship (1999-2000) at the University of Colorado / NOAA Aeronomy Lab in Boulder. He served for three years as Vice Chair of the Civil and Environmental Engineering Department at Berkeley (2001-04), chairing committees responsible for undergraduate curriculum and graduate student admissions. He also served as Environmental Engineering faculty group leader (2007-10). During the first half of 2011, he was a visiting scientist at the Max Planck Institute for Chemistry in Mainz, Germany. Prof. Harley is also appointed as a Faculty Scientist/Researcher in the Environmental Energy Technologies Division of Lawrence Berkeley National Laboratory, a U.S. Department of Energy science lab located adjacent to campus.

## REPORT

The Advisory Council met on June 12, 2013 and July 10, 2013 to discuss the presentations and materials received at the May 8, 2013 Advisory Council meeting on Black Carbon: Exposure, Mitigation and Trends in Emissions, and prepared a report for the Air District Board of Directors. This report, including recommendations, was finalized at the July 10, 2013 meeting and will be presented for consideration at the Board of Directors December 4, 2013 meeting.

## **SEPTEMBER 11, 2013 ADVISORY COUNCIL MEETING**

### SUMMARY

The following presentations were made at the September 11, 2013 Advisory Council meeting on Black Carbon: Health Effects of Exposure:

1. ***Health Impacts Associated with Climate Change*** by Dr. Linda Rudolph, MD, MPH. Dr. Rudolph is co-director of the Climate Change and Public Health Project at the Public Health Institute in Oakland, CA. She is also principal investigator on a Public Health Institute project to advance integration of health into all policies in local jurisdictions around California. She holds an MD from the University of California at San Francisco and a Master of Public Health from the University of California at Berkeley. Previously, Dr. Rudolph served as the Deputy Director of the California Department of Public Health in the Center for Chronic Disease Prevention and Health Promotion and as the Health Officer and Public Health Director for the City of Berkeley.

2. *Black Carbon- Health Effects of Exposure* by Professor Michael Kleinman. Dr. Kleinman is Professor of Occupational and Environmental Medicine in the Department of Medicine at the University of California at Irvine. He is also Co-Director of the Air Pollution Health Effects Laboratory in the Department. He holds a Master in Chemistry from the Polytechnic Institute of Brooklyn and a Ph.D. in Environmental Health Sciences from New York University. He has published more than 100 articles in peer-reviewed journals dealing with environmental contaminants and their effects on cardiopulmonary and immunological systems, and has directed more than 50 controlled exposure studies of human volunteers and laboratory animals to ozone, particulate matter (PM), and other pollutants.

## REPORT

The Advisory Council met on October 9, 2013 and November 13, 2013 to discuss the presentations and materials received at the September 11, 2013 Advisory Council meeting on Black Carbon: Health Effects of Exposure, and prepared a report for the Air District Board of Directors. This report, including recommendations, was finalized at the November 13, 2013 meeting and will be presented for consideration at the Board of Directors December 4, 2013 meeting.

## BUDGET CONSIDERATIONS/FINANCIAL IMPACTS:

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Attachment A: Final Report on February 13, 2013 Advisory Council Meeting  
Attachment B: Final Report on May 8, 2013 Advisory Council Meeting  
Attachment C: Final Report on September 11, 2013 Advisory Council Meeting

Prepared by: Eric Stevenson  
Reviewed by: Jean Roggenkamp



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

Executive Summary of the 2013 Efforts of the  
Bay Area Air Quality Management District's  
Advisory Council  
Presented to the  
Board of Directors  
December 4, 2013

The focus of Advisory Council efforts during 2013 was Black Carbon (BC) aerosols and their adverse impacts on global climate and local health. BC is an important climate warming pollutant, with a short atmospheric life, i.e., it is a short-lived climate pollutant (SLCP). Its primary sources are diesel and wood smoke, and it also results in many adverse health effects. Comprehensive climate protection thus requires reductions in BC emissions, in addition to CO<sub>2</sub> and other greenhouse gases (GHGs). Climate protection strategies should maximize health co-benefits and require careful consideration of unintended adverse health- and climate-consequences.

The Advisory Council recommends that the Air District's Regional Climate Protection Strategy for the Bay Area include SLCPs, including BC. The Air District should develop strategies for climate protection that evaluate the potential for both adverse unintended consequences and beneficial health co-benefits. The Strategy should incorporate relevant health metrics, identify vulnerable populations, and include adaptation measures. The Advisory Council recommends that the Air District designate a Climate Protection point-person on staff to lead these efforts. The AC should provide expertise during development of the Strategy.

## FINAL REPORT ON THE FEBRUARY 13, 2013 ADVISORY COUNCIL MEETING ON THE CONCEPTS AND ISSUES SURROUNDING BLACK CARBON POLLUTION

### PRESENTATIONS DELIVERED

The following presentations were made at the February 13, 2013 Advisory Council meeting on Black Carbon:

#### **Black Carbon: Concepts and Issues from a National Perspective**

**Presenter: Sarah Rizk**, Environmental Scientist, Clean Energy and Climate Change Office, US Environmental Protection Agency (US EPA), Region 9, who works with a broad range of partners on reducing greenhouse gases (GHGs) through voluntary action. Her research focuses on the intersection between climate and health benefits. Her recent work quantifies the monetary health impacts of fossil fuel energy and analyzes policy pathways for reducing black carbon from diesel vehicles, drawing from existing regulatory policies. Sarah holds a B.S. and a M.S. in Earth Systems from Stanford University.

#### **Black Carbon: Concepts and Issues from a Statewide Perspective**

**Presenter: Bart Croes**, Division Chief, Research Division, California Air Resources Board (CARB), with responsibility for California's ambient air quality standards; climate change science and mitigation of high global warming potential gases; and health, exposure, and indoor air quality. He was the Public Sector Co-Chair for the NARSTO Executive Assembly, and a former member of the National Research Council (NRC) Committee on Research Pollution in Urban China and the US, a joint collaboration between the National Academy of Engineering, NRC, Chinese Academy of Engineering, and Chinese Academy of Sciences. He has been peer reviewer for the NRC, US EPA, and numerous journals, and has received the Editors' Citation for Excellence in Refereeing from the Journal of Geophysical Research. Bart has published peer-reviewed articles on air quality simulation modeling, emission inventory evaluation, reactivity-based VOC controls, acid deposition, the weekend ozone effect for ozone and PM, PM data analysis and trends, diesel particle traps, and climate change impacts on California. He holds a B.S. in Chemical Engineering from the California Institute of Technology, a M.S. in Chemical Engineering from the University of California at Santa Barbara, and is a registered Professional Chemical Engineer in the State of California.

### KEY POINTS BY

#### **Sarah Rizk, US EPA**

1. Black Carbon (BC, see glossary for a list of definitions and acronyms) has been studied extensively by the US EPA. A seminal report was presented to the US Congress on BC in March 2012. This report outlines the state of the science on BC and explicitly states that despite remaining uncertainties about the climate impact of BC that require further research, currently available scientific and technical information provides a strong foundation for making mitigation decisions to achieve lasting benefits for public health, environment, and climate change impacts.

2. BC is a climate-forcing pollutant, which heats the atmosphere as the most strongly light-absorbing component of PM<sub>2.5</sub>, which also reduces ice- and snow pack- albedo. Another component of PM<sub>2.5</sub> is organic carbon (OC), of which Brown Carbon (BrC) is a component; BrC is the most strongly absorbing component of OC. Despite remaining uncertainties on the magnitude of the net climate impact of BC and its co-pollutants, currently available information shows that BC is a net warming agent. Short term climate benefits from a reduction of atmospheric BC may include mitigated impacts from sea level rise and from tipping point events (e.g., ice cap elimination).
3. BC causes significant health impacts worldwide, consistent with those associated with PM<sub>2.5</sub>, e.g., respiratory and cardiovascular effects, as well as premature death. Emissions and ambient concentrations of directly emitted PM<sub>2.5</sub> are often highest in urban areas, and global BC mitigation measures could thus potentially lead to hundreds of thousands of avoided premature deaths annually.
4. Controls on BC emissions offer an opportunity to quickly reduce its impact on global climate change, as BC particulates settle out of the atmosphere in less than 14 days, rather than over decades (as with major GHGs).
5. Based on short- and long-term climate and health goals, select metrics (e.g., global warming net forcing, cost effectiveness) and time horizons are needed to evaluate and track mitigation strategies and to explore implications from remaining uncertainties.
6. US and California agencies have made progress on reducing BC emissions through a variety of mechanisms, e.g., diesel PM reduction plans. Areas for continued US mitigation include, open biomass burning, mobile sources, and residential heating and cooking. While globally heating and cooking are significant sources, they contribute only 4% of total US BC emissions.
7. To maximize climate benefits from PM health mitigation measures, ambient concentrations of BC and its co-emitted pollutants should be considered in PM attainment strategies.

### **Bart Croes, CARB**

1. BC is an adverse contributor to both global climate change and public health. California has made significant progress towards reduced BC emissions, e.g., thru diesel engine controls, advanced clean-car regulations, and burning restrictions. Due to these actions, BC only contributes 11% of California climate change impacts on a 100-year global warming potential basis, as opposed to 23% globally; short term impacts in California could be higher.
2. Diesel engines are the primary BC source in California. A 2010 Caldecott Tunnel study indicated that the dirtiest 10% of trucks in the study produced half of all measured BC emissions. Over the last 40 years a factor of three reductions in BC emissions has resulted from changes in diesel combustion, while concurrent diesel usage has increased from

about 10 to 70 million barrels per year. By 2020, California is expected to have reduced diesel PM emissions by 85% below its 2000 levels. Additional emission reductions by 2020 are planned through a combination of new vehicle emissions standards, fuel rules, and fleet rules.

3. Agricultural and residential burning controls also have resulted in reduced emissions of both BC and BrC, a class of particulates that includes both elemental and organic carbon compounds that absorb both ultraviolet and visible solar radiation.

## EMERGING ISSUES AND RECOMMENDATIONS

Increasing information shows that BC emissions have significant roles in global climate change and public health impacts. Not all BC emissions sources have the same effect, however, due to variations in magnitude, location, and types of co-emitted pollutants. While some BC emissions produce climate atmospheric cooling and others produce warming, on balance the accepted scientific view is that BC emissions have a net warming effect, although exact magnitudes remain uncertain. BC emissions also have significant adverse public health impacts, consistent with those associated with PM<sub>2.5</sub> exposure. BAAQMD staff included many of the above concepts in their November 2012 report: Understanding Particulate Matter.

Brown carbon (BrC), a common co-emitted pollutant with BC, was identified as a potentially important climate forcer, but it is not fully understood if it has a warming or cooling impact. The Advisory Council will further address BrC in a future report.

The Advisory Council has thus identified the following emerging issues and recommendations, which could lead the Air District to increased activities in the following action areas:

### Research

1. **Research:** Ongoing research continues to increase understanding of BC and BrC impacts on climate change and public health. Public policy choices should utilize this new information in the evaluation of benefits from individual mitigation options. Although residential, agricultural, and open burning are known major sources of BrC, refinement concerning its health and climate impacts need further study.

**Recommendation:** The Air District should continue to review the research on health and climate impacts from both BC and BrC, as well as the research on mitigation strategies.

### Source-Specific Reduction Strategies

2. **Biomass Burning:** Biomass combustion contributes 35% of US BC emissions, and resulting health impacts are well documented.

**Recommendation:** In addition to ongoing Air District PM<sub>2.5</sub> emission-reduction programs (e.g., for wild fire hazard reduction, residential wood burning, smoke



management, chipping, and composting), the Air District should also develop new (regulatory and incentive) programs for safer and more efficient biomass combustion in areas such as improved open burning, equipment upgrades, and wood combustion rules.

3. **Diesel Engines:** Transport contributes 52% of US BC emissions, and diesel accounts for 93% of that amount. Diesel engines are also the primary source of regional BC emissions, even though this sector has had great reductions. Mobile source rules, technology improvements, and declining equipment costs will result in continued turnover of the on- and off-road diesel fleets and in decreasing ambient BC concentrations, but more can be done to accelerate these trends. BC mitigation strategies (e.g., diesel retrofits) offer cost-effective mitigation of near-term climate effects.

**Recommendation:** The Air District and CARB should accelerate adoption of cleaner engines in the Bay Area through revision of grant criteria and incentives, especially for off road diesel engines.

### **Information Development**

4. **Inventory:** Development of a BC emissions inventory would support multiple air quality and climate change goals and contributes to understanding the magnitude and complexity of these inter-related problems, e.g., by understanding co-emitted pollutant emissions rates and relative contributions by sector.

**Recommendation:** The Air District should develop an inventory of BC and (where relevant and possible) co-emitted pollutants.

5. **Modeling:** Modeling of BC emissions and ambient-concentrations, as well as of the morphology and fate of BC, OC, and co-emitted pollutants, will help evaluate their health and climate impacts.

**Recommendation:** Evaluate the capabilities of existing models and identify needed improvements.

6. **Monitoring:** Limited ambient BC monitoring is carried out for public-health and regulatory reasons, but additional measurements are needed to provide more detailed information on BC concentrations and to update and verify emission inventories. This may require new stations and perhaps new equipment.

**Recommendation:** The Air District should develop an enhanced BC monitoring plan to determine spatial and temporal concentration variations.

### **Regional and Ongoing Reduction-Strategies**

7. **Inter-agency cooperation:** BC is an important short-term climate forcer, whose emissions if controlled would result in reduced atmospheric concentrations. Other agencies, e.g., CARB, BAR, and MTC, also are involved in such successful local reduction strategies.

**Recommendation:** The Air District should consult with local, regional, and state agencies to ensure synergy with its PM and multi-pollutant planning processes.

8. **Control-Strategy Metrics:** Metrics should align with jurisdictional health and/or climate goals. Selected goals will influence metrics for evaluating BC control strategies. Metrics should accurately reflect progress toward those goals and be capable of measuring the overall effectiveness of mitigating both climate-change and public-health impacts.

**Recommendation:** The Air District should incorporate BC, co-emitted pollutants, climate change, and health cost-benefit data into future planning processes and regulations.

9. **Compliance:** Compliance with existing regulations to reduce BC emissions can be achieved through educational outreach, incentives, and regulatory efforts, each an important component of a successful air quality and climate protection program.

**Recommendation:** The Air District should continue to measure the success of, and to improve as necessary, existing incentives, educational efforts, grant programs, and compliance strategies to reduce BC emissions from all sources. This could include public education of emission impacts, benefits from diesel-engine regulations, and advocating for increased enforcement of state and federal diesel engine regulations.

**Recommendation:** The Air District should interact with BAR with respect to lube oil burning vehicles

**GLOSSARY:** Many definitions are condensed from the March 2012 US EPA Report to Congress on Black Carbon

**BAR:** Bureau of Automotive Repair.

**Biomass:** Organic materials, such as wood and agricultural wastes, which can be burned to produce energy or converted into a gas for use as a fuel.

**Black Carbon (BC):** Solid form of mostly pure carbon, produced by incomplete combustion; the most effective form of PM (by mass) at absorbing all wavelengths of solar radiation.

**Brown Carbon (BrC):** Class of particulate OC that absorb ultraviolet and visible solar radiation. Can be directly emitted during incomplete combustion, or it can form as atmospheric pollutants age.

**Climate Change:** Significant change in climate (e.g., temperature, precipitation) lasting for extended periods (i.e., decades or longer). May result from natural factors (e.g., changes in solar intensity), natural processes (e.g., changes in ocean circulation); and/or human activities that change atmospheric composition (e.g., fossil fuel consumption) and/or land surfaces (e.g., deforestation, urbanization).

**Co-Emitted Pollutants** Gases and particles emitted with BC, e.g., OC, sulfates, nitrates, sulfur dioxide, nitrogen oxides.

**Greenhouse Gas (GHG):** Gas that absorbs infrared atmospheric radiation, e.g., water vapor, carbon dioxide, methane, and nitrous oxide.

**Hazardous Air Pollutant (HAP):** Pollutants known or suspected to cause cancer or other serious health issues (e.g., reproductive effects or birth defects).

**Open Biomass Burning:** Burning of vegetative material, e.g., agricultural burning, prescribed burning, and wildfires.

**Organic Carbon (OC):** Compounds containing carbon (bound with other elements, e.g., hydrogen and oxygen). May be a product of incomplete combustion or formed through the oxidation of atmospheric VOCs.

**Particulate Matter (PM):** Complex mixture of small particles and liquid droplets suspended in atmosphere in various size ranges, i.e., PM<sub>10</sub>, PM<sub>2.5</sub>, and ultrafine.

**PM<sub>2.5</sub>:** Particles with diameters  $\leq 2.5$  micrometers.

**Volatile Organic Compounds (VOCs):** Organic carbon in vapor phase.

**Wildfire:** Unplanned ignition from lightning, volcanoes, human actions, or escaped prescribed fires.

## REPORT ON THE MAY 8, 2013 ADVISORY COUNCIL MEETING ON THE BLACK CARBON: MEASUREMENT AND MODELING, AND BLACK CARBON: EXPOSURE AND MITIGATION

### Key Points

#### **Black Carbon – Exposure and Mitigation**

**Presenter:** Veerabhadran Ramanathan, Distinguished Professor, Scripps Institution of Oceanography, University of California, San Diego. In the 1970s Dr. Ramanathan discovered the greenhouse effect of chlorofluorocarbons (CFCs) and numerous other manmade trace gases, and he forecasted in 1980, along with R. Madden, that global warming would be detectable by 2000. Dr. Ramanathan, along with Paul Crutzen, led an international team that first discovered widespread Atmospheric Brown Clouds (ABCs). He showed that ABCs led to large scale dimming, decreased monsoon rainfall and rice harvest in India, and played a dominant role in melting Himalayan glaciers. His team developed unmanned aerial vehicles with miniaturized instruments to measure black carbon (BC) in soot over Asia and to track pollution from Beijing during the Olympics. Dr. Ramanathan has estimated that reduction of BC can reduce global warming significantly, and he is following this up with Project Surya, which will reduce soot emissions from bio-fuel cooking in rural India for purposes of climate mitigation. Dr. Ramanathan chaired a National Academy report that calls for a major restructuring of the Climate Change Science Program, and it was received favorably by the Obama administration. His numerous awards include the 2009 Tyler Prize, Volvo Prize, Zayed prize, Rossby Medal, and Buys-Ballot Medal for pioneering studies in climate and environment. He has been elected to the American Philosophical Society, US National Academy of Sciences, Pontifical Academy by Pope John Paul II, and Royal Swedish Academy of Sciences.

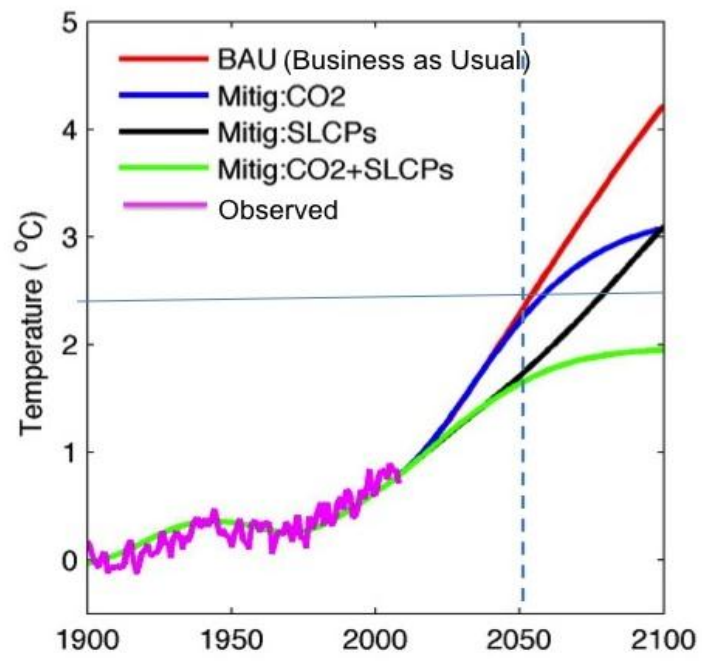
1. Black carbon (BC; all acronyms are defined in Glossary), along with methane, ozone, and some hydrofluorocarbons (HFCs), are termed short-lived climate pollutants (SLCPs) and are positive (i.e., warming) climate forcers,<sup>1</sup> with BC second only to CO<sub>2</sub> as a climate warming forcer. The Global Warming Potential (GWP; see Glossary) per ton of BC is estimated to be 2,500-4,000 times that of CO<sub>2</sub> (not accounting for the warming effects of BC through the reduction of snow and ice pack albedo after its deposition). Due to the short period of time that BC remains in the atmosphere (days to months), the range of BC's GWP values (2,500-4,000) depends upon the time frame examined (100 vs. 20 years, respectively).
2. Effective approaches to mitigate global climate change must include a two-part strategy that reduces both SLCPs and long-lived pollutants (such as CO<sub>2</sub>). As shown in Figure 1 (below), while mitigating CO<sub>2</sub> or SLCPs alone will produce measurable decreases in global temperatures, when compared to proceeding with business as usual, mitigating both simultaneously could avoid approximately half the warming expected by 2050. Of

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<sup>1</sup> Positive (i.e., warming) climate forcers (see Glossary) cause more solar energy to be retained by the planet, thus producing a warming effect. Negative (i.e., cooling) forcers have the opposite effect, i.e., they act as "mirrors" to scatter solar energy, thus producing a cooling effect.

the total warming avoided by 2050 through the mitigation of SLCPs and CO<sub>2</sub> in concert, 90% is attributable to SLCP mitigation. While effects from the mitigation of long-lived pollutants like CO<sub>2</sub> might not be felt until well into the future, reduction of SLCPs can result in mitigation of some near-term climatic impacts, e.g., immediate SLCP control could reduce expected 2050 increases in sea level by an estimated 30%.

Figure 1: Observed and simulated global mean surface temperature under different mitigation strategies



Source: Hu A, Xu Y, Tebaldi C, Washington WM, Ramanathan V. Mitigation of short-lived climate pollutants slows sea-level rise. *Nature Climate Change*, advance online publication, 14 Apr 2013.

3. Exposure to BC results in significant health impacts. A recent WHO study estimated that ambient particulate matter (PM), of which BC is a major component, accounts for approximately 3.1 million deaths annually worldwide. Additionally, it is estimated that indoor air pollution from solid-fuel combustion, during which BC is produced, accounts for 3.5 million deaths annually worldwide. Local reductions in BC emissions thus can result in immediate improvements in local health.
4. California actions since the 1980s to reduce PM, especially from diesel sources, have resulted in an approximately 50% reduction in BC concentrations, and this reduction has occurred in spite of increased diesel fuel consumption. At the same time, only a negligible reduction has been achieved for many co-emitted pollutants that act as cooling climate forcers. These results justify diesel emission reduction programs as a continued component of climate change mitigation.

5. BC emissions are increased from vehicles in congestion situations, due to idling, stopping, and restarting.
6. BC emissions are a significant problem in Asia, Africa, and other developing regions with weak diesel regulations and with high use of traditional solid-fuel cookstoves. California has been successful in reducing its BC emissions, primarily through regulations mandating adoption of improved diesel technologies in recent decades. California can thus assist developing countries in reducing their BC emissions by sharing expertise on policy implementation and on technical innovations (e.g., diesel control technologies and development of cleaner, low-emitting cookstoves).
7. BC can be measured in real time using cellphones augmented with relatively inexpensive thermal-optic technologies. These technologies could be deployed to community members to provide better estimates of local BC concentrations.
8. Brown carbon (BrC), a subcomponent of organic carbon (OC), defined by its optical absorption properties, is commonly co-emitted with BC during biomass burning. It appears to have a warming effect on climate, with a GWP of 20-25% of that of BC.
9. Some components of biomass burning (e.g., ash and nitrate precursors) are cooling climate forcers, while others (BC and BrC) are warming climate forcers. It is now thought that the net effect of biomass burning on climate is either zero or slightly warming.

### **Black Carbon in the San Francisco Bay Area: Trends in Ambient Concentrations and Emissions**

**Presenter:** Robert Harley, Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, where he has been on the faculty since 1993. Prof. Harley holds a bachelor's degree in Engineering Science (Chemical Engineering option) from the University of Toronto, and both an M.S. and Ph.D. in Environmental Engineering Science from the California Institute of Technology (Caltech). Prof. Harley's research focuses on air quality and sustainable transportation; he is an author of over 75 papers published in peer-reviewed scientific journals. He now serves as an associate editor of *Atmospheric Chemistry and Physics*. Prof. Harley received the National Science Foundation's young investigator (CAREER) award in 1996, as well as a visiting scientist fellowship (1999-2000) at the University of Colorado / NOAA Aeronomy Lab in Boulder. He served for three years as Vice Chair of the Civil and Environmental Engineering Department at Berkeley (2001-04), chairing committees responsible for undergraduate curriculum and graduate student admissions. He also served as Environmental Engineering faculty group leader (2007-10). During the first half of 2011, he was a visiting scientist at the Max Planck Institute for Chemistry in Mainz, Germany. Prof. Harley is also appointed as a Faculty Scientist/Researcher in the Environmental Energy Technologies Division of Lawrence Berkeley National Laboratory, a U.S. Department of Energy science lab located adjacent to campus.

1. Results from a recent Denver-based speciated PM<sub>2.5</sub> study indicate that the BC fraction of traffic-related PM<sub>2.5</sub> is highly correlated with adverse cardiovascular and respiratory hospital admissions. It is still unclear, however, whether BC is directly toxic, or whether BC particles carry toxic chemicals on their surface.
2. Coefficient of Haze (COH) is an excellent surrogate for BC concentrations. Long-term COH measurements in the Bay Area were available until 2003, when their samplers were discontinued due to lack of available parts. These measurements showed that Bay Area BC concentrations steadily decreased over the decades.
3. Real-time BC monitoring in the Bay Area can be accurately accomplished by use of relatively low cost real-time light absorption methods. Within the Air District monitoring network, BC is explicitly observed by fine-particulate speciation at four sites and by real-time absorption at three others.
4. In the Bay Area, BC accounts for approximately 10% of winter PM<sub>2.5</sub> emissions, almost exclusively from mobile sources and wood smoke. Combining the Air District's winter PM<sub>2.5</sub> emissions inventory with source apportionment results from Dr. Lynn Hildemann shows that heavy-duty trucks and off-road mobile sources together account for 73% of emissions, while another 21% are from wood smoke.<sup>2</sup> Some local concentrations may result from emissions originating from areas outside the Bay Area.
5. Bay Area studies of BC show:
  - a. BC concentrations (like PM<sub>2.5</sub> in general) are highest in the winter due to stable meteorological conditions (i.e., poor mixing) and increased seasonal residential wood-burning.
  - b. BC emission rates per gallon for diesel-fueled vehicles are currently 50 times greater per vehicle on average than those of gasoline-fueled vehicles.
  - c. As the diesel fleet gets cleaner, the majority of Bay Area BC traffic emissions will come from an increasingly small number of vehicles. This remaining group of uncontrolled vehicles thus represents an important target for reducing overall BC concentrations.
  - d. Emission controls on port drayage have decreased localized peak BC concentrations in West Oakland, but area-wide annual average BC concentrations have not decreased. This is likely due to the local dominance of other sources, such as adjacent railroads and traffic on nearby highways.
6. BrC emissions from lubricating-oil burning are higher in diesel (as compared to gasoline) vehicles, as diesel engines consume more lubricating oil (except in the case of gasoline gross polluters).

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<sup>2</sup> Recent analysis by Air District staff attributes Bay Area BC emissions as follows: 50% from diesel engines, 15% from other fossil fuel combustion, 25% from residential wood-burning, and 10% from other wood smoke sources. These data can be viewed on page 51 of the 2012 report: *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area*.  
[baaqmd.gov/~media/Files/Planning%20and%20Research/Plans/PM%20Planning/ParticulatesMatter\\_No\\_v%207.ashx](http://baaqmd.gov/~media/Files/Planning%20and%20Research/Plans/PM%20Planning/ParticulatesMatter_No_v%207.ashx)

7. Major decreases in BC are expected to continue as California regulations pertaining to heavy-duty diesel engines take effect. Additional California regulatory efforts that will control BC emissions from goods movement, light-duty vehicles, and wood-burning are also underway.

### Emerging Issues

Many issues raised by the speakers are well covered in pages 47-58 of *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area* (cited in footnote #2 above).

1. Efforts aimed at BC reduction are essential components in the mitigation of the adverse effects of climate change and thus must be implemented in concert with efforts to reduce CO<sub>2</sub> and other climate warming forcers.
2. While climate change is generally considered on a global level, widespread local control of BC emissions can result in significant immediate local health benefits and in important near-term climate benefits at the global and local levels (e.g., in California, through increased surface snow-pack albedo and consequent lower risk of reduced water supply).
3. BrC appears to be a contributor to climate change, but further quantification of its influence is necessary.
4. Co-emitted species produced during biomass burning in California (such as nitrate precursors and ash) are cooling climate forcers and must be considered when developing BC and BrC mitigation strategies.
5. The underlying mechanisms behind, and the relative magnitude of, the direct health effects of BC and BrC, as well as of the toxic chemicals carried on their surfaces, are not fully understood. Further research in these areas will help refine and clarify priorities for emission reduction targets.
6. A detrimental positive feedback loop (see Glossary) exists, in which BC- and BrC-induced climate change results in increased drought, leading to increased wildfire risk, and in turn to greater BC and BrC emissions.
7. California and Air District regulations to limit diesel emissions and PM have been successful in reducing BC concentrations, but more reduction is needed. Targets for local and regional BC emission reduction in the Bay Area include:
  - a. Diesel sources, e.g., rail, ship, airport ground equipment, back-up generators, and gross polluting mobile sources
  - b. Traffic management, including congestion mitigation and traffic calming



- c. Residential (indoor and outdoor) wood-burning devices, recreational burning (e.g., campfires or bonfires), agricultural burning, and open biomass burning, including forest management.
  - d. Residential and commercial cooking, especially char broiling and barbecuing
8. BC is not currently part of the cap-and-trade system and it is not clear if it will be, but if it were, using the 2,500-4,000 GWP range of BC and a currently accepted California carbon market value of \$10-15 per ton of CO<sub>2</sub> equivalent, BC could potentially be worth \$25,000-60,000 per ton. The relative costs of reducing CO<sub>2</sub> and BC emissions will influence the feasibility of future reductions.
  9. Burning of vehicle engine lubricating oil is linked to BrC emissions.
  10. Wintertime BC and BrC emissions are of greatest concern for California climate due to more stable winter meteorological conditions and to the presence of the Sierra snow and ice, onto which BC is deposited, leading to accelerated melting.
  11. Continued measurements of Bay Area BC and BrC can help verify the success of regulatory and incentive programs. Empirical evidence of successful mitigation efforts can support similar models for BC and BrC reduction programs that can provide health and climate benefits to communities worldwide.

## Recommendations

The Advisory Council thus recommends that the Air District:

1. Improve Bay Area BC and BrC monitoring networks to better understand sources contributing to PM<sub>2.5</sub> health effects and to track the impacts of emissions control progress over the next decade. Increased monitoring is needed, both in locations with existing long-term measurements (for trend analysis) and in areas where more information is needed. To that end:
  - a. Continue and expand Bay Area BC monitoring, concentrating on locations where historical COH measurements were once collected. Consider redeployment of COH monitors, if possible.
  - b. Track progress on the development of BrC monitoring technologies.
  - c. Further investigate BC in high peak concentration areas, such as in much-studied West Oakland, and expand ambient monitoring and source apportionment studies.
  - d. Explore supplementation of the BC monitoring network through widespread deployment of low-cost monitoring technologies. These monitors could be useful during air pollution episodes, such as the recent Richmond refinery fire.
  - e. Continue to refine and develop BC, BrC, and OC emissions inventories.
  - f. Research the magnitude of the inter-basin transport of BC and BrC, e.g., to and from the Central Valley.

2. Continue and accelerate Air District efforts to target emission control of BC and BrC within the Bay Area. Additional control measures to consider or enhance include:
  - a. Incentives and regulatory mechanisms that target:
    - Diesel sources, including gross polluting vehicles, off-road mobile equipment, rail, ship, airport ground equipment, and back-up generators
    - Residential indoor and outdoor burning [including fireplaces, wood stoves, chimineas (see Glossary), and fire pits], recreational burning (e.g., bonfires and campfires), agricultural burning, and open biomass burning and forest management
    - Residential and commercial cooking, including char broilers, barbecues, and wood-burning pizza ovens
  - b. Emphasis on seasonal regulations and incentives that reduce winter BC and BrC emissions. For example, increasing the effectiveness of the Winter Spare the Air program.
  - c. Continued incentive funding for programs to scrap vehicles with high-emitting diesel and gasoline engines.
  - d. Working with the business community and others to develop more sustainable transport of freight and goods.
  - e. Assisting planning agencies to implement strategies that minimize traffic and optimize flow on Bay Area roads.
  - f. Supporting federal, state, and local policies and programs that reduce emissions, especially as they relate to ongoing CARB diesel reduction regulations.
3. Assess the relative health and climate effects of a range of contaminants (especially, CO<sub>2</sub>, PM<sub>2.5</sub>, BC, BrC, OC, nitrate precursors, ash, and methane) from a variety of source categories (e.g., fossil and renewable fuels burned in various engines, in heating and cooking appliances, and during wildfires). When developing climate and/or health improvement strategies, examine how the mitigation of one contaminant may have an unintended adverse consequence on the climate and/or health impacts of another contaminant.
4. Assess current and potential buyback-type programs (for old cars, old diesels, and wood burning devices) and consider modifying buyback formulas to incorporate information on BC's climate forcing potential. For example, use of the per-ton BC carbon credit value of \$25,000-60,000 (as described above), vehicle buyback and fireplace removal/retrofit programs could be amended to reflect the value of reduced BC (and other climate forcing co-emitted pollutants, as applicable) emissions. Such programs could be subsidized by money collected from the purchase of carbon credits.
5. Educate the public about: a) the roles BC and BrC play as SLCPs and b) the fact that technologies and tools to reduce BC and BrC emissions are presently available.
6. Given the rapid growth in research on numerous climate pollutants and on appropriate mitigation strategies, consider enhancing or expanding Air District staffing to designate a climate change point-person.

## **Glossary**

ABAG: Association of Bay Area Governments in the San Francisco Bay Area

Albedo: Fraction of solar energy (shortwave radiation) reflected from the earth back into space by atmospheric aerosols and land surfaces. Measure of reflectivity of earth's atmosphere and surface. Pure ice, especially with snow atop it, has a high albedo. Ice or snow contaminated with BC has a reduced albedo, is less reflective, and therefore absorbs more solar energy.

Ash: Inert, non-combustible chemical compounds (generally similar to earth crustal elements) present in fuel or wood that can be co-emitted with other combustion emissions (e.g., CO<sub>2</sub>, water vapor, BC, NO<sub>x</sub>, etc.). Refined fuels (diesel, gasoline, and jet fuel) produce low ash amounts. Ash can scatter solar radiation in multiple directions, including back into space, thereby having a cooling effect on the climate. In the atmosphere, ash contributes to ambient PM<sub>2.5</sub> and PM<sub>10</sub> concentrations.

BC: Black Carbon. Solid form of mostly pure carbon, produced by incomplete combustion of diesel and other fuels. Most effective form of PM (by mass) for absorbing all wavelengths of solar radiation.

Biomass: Organic materials, such as wood and agricultural wastes, which can be burned to produce energy or converted into a gas for use as fuel.

BrC: Brown Carbon. Component of OC related to the burning of biomass and of lubricating oil in vehicle engines. BrC absorbs ultraviolet and visible solar radiation, though not as efficiently as BC.

CARB: California Air Resources Board

Chiminea: Freestanding, front-loading, wood-burning fireplace or oven with a bulbous body, used in decorative backyard settings.

Climate forcers (negative and positive): Pollutants causing cooling or heating of the atmosphere, respectively.

CO<sub>2</sub>: Carbon dioxide. Climate-warming product of combustion of organic materials (fuels and biomass).

COH: Coefficient of Haze. Measure of ambient air particulates highly correlated with BC measurements. Manufacture of COH analyzers has been discontinued.

Co-Emitted Pollutants: Gases and particles emitted concurrently with BC emissions (e.g., OC, sulfur dioxide, and nitrate and sulfate precursors).

GWP: Global Warming Potential. A measure of a chemical's relative contribution (per ton) to global warming in comparison to CO<sub>2</sub>. A GWP is calculated over a specific time interval, commonly 20, 100, or 500 years.

HFC: Hydrofluorocarbon. Fluorocarbons used as refrigerants and in other industrial processes.

Mirrors: Used to describe air pollutants (e.g. nitrates, sulfates, and ash) that scatter solar radiation in many directions, including back into space, and thus have a cooling effect on climate.

MTC: Metropolitan Transportation Commission in the San Francisco Bay Area.

OC: Organic carbon. Compounds containing carbon (bound with hydrogen and other elements, e.g., oxygen). May be a product of incomplete combustion or formed through the oxidation of atmospheric Volatile Organic Compounds (VOCs).

PM: Particulate matter. A complex mixture of small particles and liquid droplets suspended in the atmosphere in various size ranges (i.e., PM<sub>10</sub>, PM<sub>2.5</sub>, ultrafine).

PM2.5: Ambient particulate matter less than 2.5 microns in diameter.

Positive Feedback Loop: Series of events that reinforce the original action. In context of this report, for example, BC and BrC emissions lead to increased global warming, which results in increased frequency of forest fires, which in turn emit BC and BrC, thus perpetuating and enhancing the BC and BrC cycles.

SLCP: Short-lived climate pollutants (e.g., BC, BrC, methane, ozone, and some HFCs) that have relatively short lifetimes (i.e., half lives of days to months) in the atmosphere compared to CO<sub>2</sub> and nitrous oxide (N<sub>2</sub>O), which stay in the atmosphere for decades.

WHO: World Health Organization. United Nations health authority responsible for providing information, health-based standards, and guidelines on a broad spectrum of health issues, including the effects of air pollutants.

DRAFT REPORT ON THE SEPTEMBER 11, 2013 ADVISORY COUNCIL MEETING ON  
BLACK CARBON: HEALTH EFFECTS OF EXPOSURE

SUMMARY

The following presentations were made at the September 11, 2013 Advisory Council meeting on Black Carbon and Climate Change- Health Impacts:

1. Health Impacts Associated with Climate Change by Dr. Linda Rudolph, MD, MPH. Dr. Rudolph is co-director of the Climate Change and Public Health Project at the Public Health Institute in Oakland, CA. She is also principal investigator on a Public Health Institute project to advance integration of health into all policies in local jurisdictions around California. She holds an MD from the University of California at San Francisco and a Master of Public Health from the University of California at Berkeley. Previously, Dr. Rudolph served as the Deputy Director of the California Department of Public Health in the Center for Chronic Disease Prevention and Health Promotion and as the Health Officer and Public Health Director for the City of Berkeley.
2. Black Carbon- Health Effects of Exposure by Professor Michael Kleinman. Dr. Kleinman is Professor of Occupational and Environmental Medicine in the Department of Medicine at the University of California at Irvine. He is also Co-Director of the Air Pollution Health Effects Laboratory in the Department. He holds a Master in Chemistry from the Polytechnic Institute of Brooklyn and a Ph.D. in Environmental Health Sciences from New York University. He has published more than 100 articles in peer-reviewed journals dealing with environmental contaminants and their effects on cardiopulmonary and immunological systems, and has directed more than 50 controlled exposure studies of human volunteers and laboratory animals to ozone, particulate matter (PM), and other pollutants.

This is Prof. Kleinman's second presentation to the Advisory Council in two years. On October 12, 2011 he discussed his research on neurological and cardiopulmonary effects of inhaled particles on humans and laboratory animals. In that presentation, Prof. Kleinman demonstrated that semi-volatile components of PM<sub>2.5</sub> and ultrafine particles (UFP) can promote airway allergies and accelerate development of cardiovascular disease, and that they can increase production of inflammatory mediators, damaging brain cells. The September 11th presentation provided an update on Prof. Kleinman's research, including the unique effects of nanoparticles.

KEY POINTS

**Dr. Linda Rudolph**

1. Climate change is the greatest public health challenge of the 21<sup>st</sup> century. Climate change will continue to result in direct and indirect health impacts, including: heat-related illness and death, asthma and other respiratory disease, cardiovascular disease, vector-borne disease, water- and food-borne disease, increased allergies from increased pollen counts, other infectious disease (e.g., valley fever), mental health disorder, malnutrition, and food insecurity (see Glossary).

2. The Intergovernmental Panel on Climate Change (IPCC) in their *Managing the Risks of Extreme Events and Disasters to Advance Climate Change*,<sup>1</sup> predict that extremes in weather events will increase in frequency and intensity under projected climate change scenarios. Severe climate events have already been shown to result in significant negative health effects. Examples include:
  - a. During the 2006 heat wave in California, 650 excess deaths occurred, and an even greater number of excess emergency room visits and hospitalizations resulted. A large number of excess deaths occurred in areas typically cooler and lacking air conditioning; about 45% of those who died lived alone.<sup>2</sup>
  - b. Acute health care costs from just six major climate events (i.e., from heat waves, wildfires, ozone pollution, hurricanes, flooding, and infectious disease) in the U.S. between 2000 and 2009 totaled \$14 billion and led to 1,699 premature deaths.<sup>3</sup>
3. Climate change threatens our survival by disrupting systems upon which humans depend, such as water, food, and shelter, and thus peace and social stability. Faster and more aggressive action is needed to avert the worst effects of climate change and to avoid catastrophic impacts on future generations.
4. Climate change will impact vulnerable populations to the greatest extent. Those already most at risk for adverse health problems (e.g., poor, young, old, and disenfranchised) may not be as resilient at responding to climate events (e.g., due to lack of air conditioning or transportation).
5. The effects of climate change may overwhelm ongoing air quality improvement efforts. For instance, warmer temperatures throughout inland California are expected to result in up to 30 more days per year of unhealthy ground-level ozone concentrations. This is known as a “climate penalty.”
6. According to Dr. Dan Cayan, Director of the Climate Research Division at the Scripps Institution of Oceanography, annual average temperatures in the Bay Area are expected to increase 3.5-11<sup>0</sup>F by 2050, depending on the specific location within the Bay Area,

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<sup>1</sup> IPCC, 2012. *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp. Also available online at: [http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml#SREX](http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#SREX). Accessed October 15, 2013.

<sup>2</sup> Hoshiko S, English P, Smith D, Trent R. A simple method for estimating excess mortality due to heat waves, as applied to the 2006 California heat wave. *Int J Public Health*. 2010 Apr; 55(2):133-7. doi: 10.1007/s00038-009-0060-8. Epub 2009 Aug 13. PMID: 19680599.

<sup>3</sup> Knowlton K, Rotkin-Ellman M, Geballe L, Max W, Solomon GM. Six climate change-related events in the United States accounted for about \$14 billion in lost lives and health costs. Health and Environment Program, Natural Resources Defense Council, New York City, NY, USA. *Health Aff (Millwood)*. 2011 Nov; 30(11):2167-76. doi: 10.1377/hlthaff.2011.0229.

with inland areas most affected. The Bay Area may be particularly vulnerable because the population is not well-adjusted to high temperatures and its existing infrastructure is not well suited for adaptation (e.g., buildings are designed for coastal mild climates and lack air conditioning systems).

7. A public health climate strategy requires dramatic reductions in greenhouse gas (GHG) emissions, preparation, and building climate resilient communities. Strategies should include greater energy efficiency standards (for buildings and vehicles), greater use of pervious surfaces, cool roofs, urban greening, and development of plans to protect vulnerable populations from extreme heat and other severe weather events.
8. Many climate-focused efforts have health co-benefits, and many health-focused efforts also have climate co-benefits:
  - a. GHG reduction measures as outlined in California's Assembly Bill 32 Scoping Plan are expected to result in measurable health co-benefits, including reduction of PM and oxides of nitrogen (NO<sub>x</sub>) emissions. A recent study estimates these reductions by 2030 as 1 and 15%, respectively, when compared to business as usual.
  - b. Changing transportation modes to active transportation (i.e., cycling, walking, and transit), not only reduces GHG emissions and other air pollutants, but also provides other health benefits. Maizlish et al., 2011,<sup>4</sup> using ITHIM (an active transportation computer model), predicted that if active transportation in the Bay Area were to increase from the current average of less than 5 minutes a day to 22 minutes (from a 2 to 15% mode share), not only would there be a 14% reduction in GHG emissions, but dramatic health benefits could be expected due to the increase in exercise and physical activity (benefits equal in magnitude to those achieved by California's Tobacco Control Program, which has averted one million excess deaths since implementation 25 years ago). The modeled Bay Area benefits of increased active transportation include a(n):
    - 14% reduction in heart disease, stroke, and diabetes
    - 6-7% reduction in depression and dementia
    - 5% reduction in breast and colon cancers
    - additional 9.5 months of life expectancy per person
    - annual health cost savings of \$1.4 to \$22 billion.

It is important to note, however, that ITHIM also predicts a 19% increase in avoidable bicycle and pedestrian injuries due to increased potential for conflicts with vehicles. Therefore, in promoting active transportation it is important to identify measures that also address bicycle and pedestrian safety.

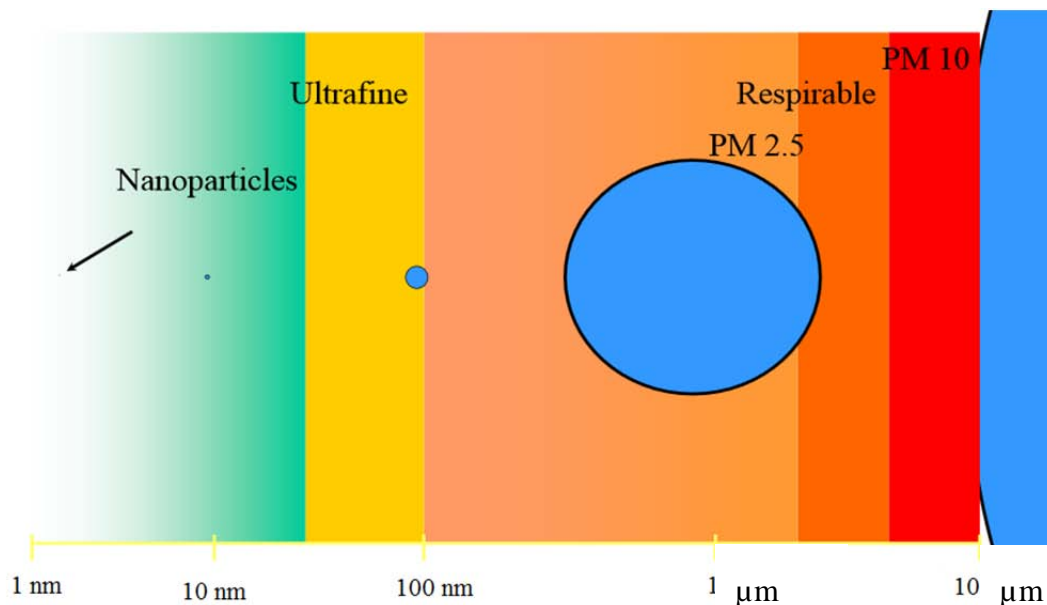
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<sup>4</sup> Maizlish N, Woodcock J, Co S, Ostro B, Fanai A, Fairley D. Health Cobenefits and Transportation-Related Reductions in Greenhouse Gas Emissions in the San Francisco Bay Area. *Am J Public Health*. 2013 Apr;103(4): 703-9. doi: 10.2105/AJPH.2012.300939. PMID: 23409903. Technical Report available online at: [http://www.cdph.ca.gov/programs/CCDPHP/Documents/ITHIM\\_Technical\\_Report11-21-11.pdf](http://www.cdph.ca.gov/programs/CCDPHP/Documents/ITHIM_Technical_Report11-21-11.pdf). Accessed October 15, 2013.

**Prof. Michael Kleinman**

1. Brown Carbon (BrC) and Black Carbon (BC) aerosols are present in the nanoparticle size range. Figure 1 illustrates the size of nanoparticles compared to larger particles. The 10 micron ( $\mu\text{m}$ ) particle shown in the blue area on the right of Figure 1 is approximately one-sixth the diameter of a human hair.

**Figure 1. Particle Size scale.**



*Source: Professor Michael Kleinman*

2. Combustion processes result in formation of nanoparticles. Studies of roadways in Southern California show that the majority of particles measured were  $< 1$  micron in diameter, and that those closest to the source were even smaller and ranged between 70 and 80 nanometer (nm).
3. More recently, nanoparticles manufactured for use in electronics, grinding during finishing processes, and research, including medical research can have a similar structure to diesel exhaust particles and can be inflammatory in the human body.
4. The surface area per unit mass of nanoparticles is greater than that of larger particles. This allows for a greater number of potentially toxic particles to attach to nanoparticle surfaces, and be subsequently inhaled.
5. Due to the small size of nanoparticles, they can be deposited deep in the lung, can penetrate across cell membranes, and can be transported via the bloodstream to distal organs, potentially resulting in a wide range of adverse health effects. These health effects can include impacts on cardiovascular and pulmonary function, as well as cellular and DNA damage. While some toxic materials present on BrC and BC aerosol particles are fairly insoluble, evidence exists that some nanoparticles and/or partially soluble particle components may be transported to other organs, affecting the lungs, liver, brain, and heart.



6. Both BrC and BC contain organic carbon. Prof. Kleinman conducted a study on mice that evaluated health effects from the organic components of BrC and BC. He exposed mice over an eight week period to particles containing organic components and to particles stripped of semi-volatile organics, including highly toxic organic compounds, such as Polycyclic Aromatic Hydrocarbons (PAHs). The following results were observed:
  - a. Mice exposed to particles without semi-volatile organic components showed increased cholesterol, as well as arterial wall thickening.
  - b. Mice exposed to particles with semi-volatile organic components also showed increased cholesterol and arterial wall thickening, but further showed increased arterial plaque, and decreased heart rate variability (an adverse health effect).
7. Prof. Kleinman 's studies concluded:
  - a. While adverse health effects from nanoparticles stripped of organics still remain important, it appears that the semi-volatile fraction of particulates may be the key contributor in leading to inflammation and development of atherosclerosis and heart disease
  - b. Thermal-emission control technologies that remove semi-volatile organics not only reduce PM pollution, but may also reduce the toxicity of residual particles (e.g., by removing PAHs, oxygenated hydrocarbons, and free radicals)
  - c. Exposure to laboratory-concentrated ambient particles (CAPs) increases inflammatory responses in the brain and is associated with damage to dopamine producing brain cells (same as in degenerative nerve diseases, such as Parkinson's).<sup>5</sup>

## EMERGING ISSUES

1. Global climate change is happening faster than expected and at the upper end of IPCC scenario projections. Aggressive measures are needed to address climate change.
2. The recent Yosemite Rim Fire may provide an opportunity to further examine health impacts from large wildfires, anticipated to increase with climate change.
3. Air quality has and will continue to improve, but these improvements may be partially offset by effects from climate change (a climate penalty). In the Bay Area, the potential

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<sup>5</sup> This information appeared in Dr. Kleinman's presentation materials, but was not orally presented to the Advisory Council.

for this climate penalty may be mitigated by summer daytime coastal cooling, an expected reverse-reaction result of climate change.<sup>6</sup>

4. Preparation for public health implications from climate change requires:
  - a. Identification of vulnerable populations and development of policies to protect them, such as strengthening social support networks
  - b. Designing communities that:
    - i. enhance walking, cycling, and public transit
    - ii. improve energy efficiency
    - iii. adapt to, and recover from, impacts from heat, drought, floods, and sea level rise.
5. Public Health climate strategies should take full advantage of both climate and health strategies that provide co-benefits. Metrics can assess relative health benefits of climate policies. Some strategies may reduce both GHGs and other pollutants, but may present potential conflicts and may need further policy development, including:
  - a. Spare the Air Day alerts that recommend that the public bicycle and walk on days when air quality is poor, potentially expose sensitive groups to higher levels of air pollution.
  - b. Building high density development in high traffic areas may result in greater pedestrian and cycling injuries and may increase risks from higher levels of air pollutants.
6. Removal of highly toxic organics, including PAHs, from particles before inhalation can have substantial health benefits by reducing build-up of arterial plaque and its resulting adverse effects on the cardiovascular system. Processes for removing organic toxins are similar to engine afterburner technologies, which not only reduce pollution, but may also reduce the toxicity of residual particles.
7. Nanoparticles use in products (i.e., engineered nanomaterial) and manufacturing has increased with little safety research and regulation. The unique properties of some engineered nanotubes (see glossary), which may have a similar structure as diesel particles, pose special challenges, ranging from the effects of occupational exposures to the final disposition of discarded products. The National Institute of Occupational Safety and Health (NIOSH) is recommending concentration levels to the Occupational Safety and Health Administration (OSHA) to address workplace safety issues resulting from the use of carbon nanotubes. Such regulations present challenges, because the current proposal regulates nanotubes and nanofibers at one  $1 \mu\text{g}/\text{m}^3$ , the quantification limit in air samples.

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<sup>6</sup> Lebassi, B., J. Gonzalez, D. Fabris, E. Maurer, N. Miller, C. Milesi, P. Switzer, and R. Bornstein, 2009: Observed 1970-2005 cooling of summer daytime temperatures in coastal California. *Journal of Climate*. 22, 3558-73.

## RECOMMENDATIONS

The following recommendations are based on the presentations given at the September 11, 2013 meeting of the Advisory Council, as well as from Advisory Council input:

1. The Air District should continue, and consider additional, climate protection strategies to reduce GHG and short-lived climate pollutant (SLCP) emissions and to provide guidance to protect vulnerable populations and promote building of resilient communities. The Air District should consider the following strategies:
  - a. Compile and supplement specific research<sup>7</sup> and analyses to understand the effects of spatial and temporal variations of climate change (including potential beneficial air quality effects from summer daytime coastal cooling), air pollution, and health impacts in the Bay Area and for vulnerable populations.
  - b. Develop an outreach program that includes education of the public to understand climate change impacts on local health and air quality.
  - c. Develop a regional GHG emission reduction plan to demonstrate reasonable progress toward meeting targets in California's Executive Order S-3-05 to reduce GHG emissions by 80% below 1990 levels by 2050. This plan should also include SLCPs and strategies to address them.
  - d. Develop health metrics to evaluate relative co-benefits from climate and air quality strategies.
  - e. Identify climate protection and adaptation strategies, and work with applicable agencies and municipalities to incorporate applicable policies as part of land use planning.

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<sup>7</sup> There are at least two existing reports that have explored the vulnerability of the Bay Area to climate events. These reports are referenced below:

1. Jerrett, Michael, Jason G. Su, Colleen E. Reid, Bill Jesdale, Alberto M. Ortega Hinojosa, Seth B. Shonkoff, Edmund Seto, Rachel Morello-Frosch (University of California, Berkeley). 2012. Mapping Climate Change Exposures, Vulnerabilities, and Adaptation to Public Health Risks in the San Francisco Bay and Fresno Regions. California Energy Commission. Publication number: CEC-500-2012-041. Available online at: <http://www.energy.ca.gov/2012publications/CEC-500-2012-041/CEC-500-2012-041.pdf>. Accessed October 16, 2013.
2. Cooley, H., E. Moore, M. Heberger, and L. Allen (Pacific Institute). 2012. Social Vulnerability to Climate Change in California. California Energy Commission. Publication Number: CEC-500-2012-013. Available online at: [http://www.pacinst.org/wp-content/uploads/2013/02/full\\_report31.pdf](http://www.pacinst.org/wp-content/uploads/2013/02/full_report31.pdf). Accessed October 16, 2013.

2. The Air District should support all necessary strategies that promote active transportation, including:
  - a. Increased funding for transit operations and alternative (to solo driving) transportation choices (e.g., transit, vanpools, carpools, car sharing, bicycle sharing), including use of funds from cap and trade, toll increases, high occupancy toll lane revenues, and tax measures.
  - b. Increased funding and promotion of improved roadway designs for safer walking- and cycling-infrastructure (i.e., complete streets; see Glossary) to maximize health co-benefits from reduced air pollution and increased physical activity (see the National Association of City Transportation Official's Urban Bikeway Design Guide at: <http://nacto.org/cities-for-cycling/design-guide/>).
  - c. Expanded funding for bicycle infrastructure, with a focus on secure bicycle parking near transit, workplaces, and schools. Incentive funding for bicycle purchases and/or subsidized bicycle sharing, especially for low income populations.
  - d. Ensuring that the 2016 Regional Transportation Plan maximizes health benefits from active transportation.
3. The Air District should evaluate both the relative climate and health benefits and risks from infill development (e.g., exposure to air pollutants, pedestrian/cycling injuries) and identify appropriate policies to address them.
4. The Air District should continue to work with other agencies to address indoor air quality in both new development and existing buildings, particularly near air pollution sources. While tighter building envelopes improve energy efficiency and reduce infiltration of external pollutants, those generated indoors become increasingly important and require adequate filtration and ventilation.
5. The Air District should further investigate the relative health risks and benefits from recommending walking and cycling on high air pollution days, particularly with respect to sensitive populations (e.g., asthmatics). Sparse the Air recommendations may require reformulation, with a goal of promoting active transportation, while providing appropriately protective recommendations for such sensitive populations.
6. The Air District should monitor and support research on processes that reduce emissions of the semi-volatile organic fraction of UFPs generated in a wide range of combustion engines.
7. The Air District should continue to monitor and support research and regulations related to nanoparticles use in industrial and consumer products, e.g., toxicological testing, biomonitoring, and product labeling.

In addition throughout 2010, the Advisory Council investigated strategies for aggressively reducing GHG emissions to meet California's 2050 GHG target of an 80% reduction in emissions below 1990 levels. Specifically, the recommendations from its October 2010 meeting should be reviewed by the Air District for inclusion, as appropriate, to its plans to meet its long-term GHG reduction goals (see Attachment A for those recommendations).

DRAFT

## ACRONYMS

BC: black carbon

BrC: brown carbon

CAP: concentrated ambient particles

EPA: (United States) Environmental Protection Agency

GHG: greenhouse gases

HEPA: high efficiency particulate air

IPCC: Intergovernmental Panel on Climate Change

ITHIM: Integrated Transport and Health Impact Model. For more information see:

[http://www.cdph.ca.gov/programs/CCDPP/Documents/ITHIM\\_Technical\\_Report11-21-11.pdf](http://www.cdph.ca.gov/programs/CCDPP/Documents/ITHIM_Technical_Report11-21-11.pdf)

Micrometer ( $\mu\text{m}$ ): one millionth of a meter or 1,000 nm

Nanometer (nm): one billionth of a meter

NIOSH: National Institute of Occupational Safety and Health

NO<sub>x</sub>: oxides of nitrogen

OSHA: Occupational Safety and Health Administration

PAH: polycyclic aromatic hydrocarbon

PM: particulate matter

SLCP: Short-lived climate pollutant

UFP: ultrafine particles

## GLOSSARY

**Complete Streets:** Transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel, and to provide access for users of all ages and abilities, regardless of their mode of transportation. Focus should be on separating pedestrians and cyclists from motor traffic and slowing traffic to safe speeds. Complete Streets is intended to allow for safe travel by those walking, bicycling, driving automobiles, riding public transportation, or delivering goods.

**Food Insecurity:** Limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

**Nanoparticles:** Particle having one or more dimensions of the order of 100 nanometers or less.

**Nanotubes:** A hollow cylindrical carbon structure used in nanotechnology

## Attachment A

### Recommendations from the Advisory Council Report from the October 13, 2010 Meeting Strategies and Technologies for the Transportation Sector

The Air District should:

1. Work with MTC and ABAG to condition transportation and development investments and grants upon implementation of parking reform. The Air District should also include parking reform policies in development of an indirect source rule.
2. Work with MTC to analyze induced demand impacts from MTC's HOT Lane network expansion (study being done by MTC consultant Parsons Brinkerhoff). Modeling does not currently, but should, include a range of impacts of induced demand or increased housing at suburban fringe. The Air District should specify that net revenues from HOT lanes be used for expanded non-highway transit and transit choices, rather than expansion of the highway system.
3. Work with MTC to consider adoption of a quantification tool that evaluates a broad range of public health impacts and benefits from transportation and land use policies and decisions. The Air District should also encourage MTC to conduct a performance-based analysis of transportation projects to ensure investments are cost effective.
4. Through the Air District's role in the Joint Policy Committee, encourage MTC to evaluate all transportation projects, including projects in previous Regional Transportation Plans (RTP), for impacts on VMT and potential to induce growth. The air district should encourage MTC to only include SCS/ RTP projects that do not increase personal VMT and do not induce sprawl. Additionally, the air district should implement the relevant Transportation Control Measures and Leadership Platform\* in the 2010 Clean Air Plan to address those issues.
5. Develop a social marketing campaign to increase walking, cycling, and transit, based on latest research of proven strategies that affect behavior change, including comparison-with-neighbor policies.
6. Seek state legislation requiring CMAs to expand their mission statement from primarily "congestion management" to include a major emphasis on reducing-GHG and to enable a focus on: health; increasing mode share of walking, cycling, and transit; and on reducing VMT, rather than managing congestion.
7. Develop a toolkit for planners, local agencies, and CMAs for land use and transportation policies that have the greatest public health, air quality, and GHG reduction benefits.

8. Require use of cool paving materials, such as high albedo materials, for future outdoor surfaces, such as parking lots, median barriers, and roadway improvements to reduce urban heat island effects and to save energy.
9. Use MTC's SB 375 implementation planning funds for local community planning processes.
10. Build upon SB 535 (Yee) to support development of a strong statewide ZEV mandate and incentives to help the state reach aggressive GHG reduction goals.
11. Continue to work with other agencies in regional efforts to fund and accelerate EV charging infrastructure and streamline residential charging station installation and permitting, including incentives to promote solar EV charging installations. In addition, work with cities, counties, and utility districts to assist property owners in funding charging stations through Property Assessed Clean Energy (PACE) bonds, pursuant to SB 1340 (Kehoe).
12. Promote expansion of congestion toll pricing to all other regional bridges. Revenues raised should be used to improve public transit service in those corridors.
13. Develop and promote policies and programs, including securing necessary legislative authority, to achieve significant reductions in employer-related vehicle miles traveled, including mandating employer transportation demand management plans, such as have been adopted by Oakland (GreenTRIP) and San Francisco. Additionally, the air district should implement the relevant Transportation Control Measures and Leadership Platform\* in the 2010 Clean Air Plan to support these policies.
14. Support establishment of a VMT fee or gasoline tax in the Bay Area to achieve GHG, criteria pollutant, and air toxics reductions goals, and implement the relevant Transportation Control Measures and Leadership Platform in the 2010 Clean Air Plan to support this recommendation.

\* Leadership Platform: Some of the most potentially beneficial measures in the Bay Area 2010 Clean Air Plan (CAP) to improve air quality will require action by other agencies, such as CARB or US EPA, or adoption of new legislation. The CAP also thus includes a Leadership Platform, summarized in its Volume I, Table 4-7, which identifies policies and actions by other entities to complement the CAP control strategy.



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Ash Kalra and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: November 20, 2013

Re: Overview and Permit Status of Energy Projects in the Bay Area

RECOMMENDED ACTION

None; receive and file.

SUMMARY

Staff will provide an overview and the Air District permit status of four notable energy projects in the Bay Area.

DISCUSSION

There are four notable energy projects that are under consideration in the Bay Area. Staff will provide an overview and the Air District permit status of each project. The four projects are as follows:

- A crude oil-by-rail project proposed by the Valero Refinery in Benicia
- A crude oil terminal to receive and ship crude oil by train, ship, barge or pipeline proposed by WesPac Energy Group
- A propane/butane recovery project proposed by Phillips 66 Co.
- A hydrogen and sulfur recovery project proposed by Chevron Corp.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Jim Karas  
Reviewed by: Jeff McKay