



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

**ADVISORY COUNCIL
MEETING**

**WEDNESDAY
APRIL 10, 2013
9:00 A.M.**

**7TH FLOOR BOARD ROOM
939 ELLIS STREET
SAN FRANCISCO, CA 94109**

AGENDA

CALL TO ORDER

Opening Comments
Roll Call

Robert Bornstein, Ph.D., Chairperson
Clerk

PUBLIC COMMENT PERIOD

Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3. The public has the opportunity to speak on any agenda item. All agendas for Advisory Council meetings are posted at the District, 939 Ellis Street, San Francisco, at least 72 hours before a meeting. At the beginning of the meeting, an opportunity is also provided for the public to speak on any subject within the Council's purview. Speakers are limited to three minutes each.

CONSENT CALENDAR

1. Approval of Minutes of the January 9, 2013 and March 13, 2013 Advisory Council meetings.

DISCUSSION

2. Approval of draft report on the Advisory Council's February 9, 2013 meeting.

The Advisory Council will finalize the draft report on the February 9, 2013 meeting on Black Carbon: Introduction to Issues with Air District staff.

PRESENTATION: AIR DISTRICT ACTIVITIES

3. Update on Air District Activities

Staff will present an update of Air District programs and activities.

OTHER BUSINESS

4. Council Member Comments/Other Business

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

5. Report of the Executive Officer/APCO

6. Time and Place of Next Meeting

Wednesday, May 8, 2013 at 9:00 a.m. at 939 Ellis Street, San Francisco, CA 94109.

7. 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

- 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 Clerk's Office should be given in a timely manner, 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 District's offices 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. Such writing(s) may also be posted on the District's website (www.baaqmd.gov) at that time.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET, SAN FRANCISCO, CALIFORNIA 94109
FOR QUESTIONS PLEASE CALL (415) 749-4963**

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

APRIL 2013

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Advisory Council Regular Meeting <i>(Meets on the 2nd Wednesday of each Month)</i>	Wednesday	10	9:00 a.m.	Board Room
Board of Directors Executive Committee <i>(Meets on the 3rd Monday of each Month)</i> – CANCELLED AND RESCHEDULED TO MONDAY, APRIL 29, 2013	Monday	15	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Stationary Source Committee <i>(Meets on the 3rd Monday of each Month)</i> - CANCELLED	Monday	15	10:30 a.m.	4 th Floor Conf. Room
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	17	9:45 a.m.	Board Room
Board of Directors Personnel Committee <i>(At the Call of the Chair)</i>	Monday	22	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee <i>(Meets on the 4th Wednesday of each Month)</i>	Wednesday	24	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Mobile Source Committee <i>(Meets on the 4th Thursday of each Month)</i>	Thursday	25	9:30 a.m.	Board Room
Board of Directors Executive Committee <i>(Rescheduled from Monday April 15, 2013)</i>	Monday	29	9:30 a.m.	4 th Floor Conf. Room

MAY 2013

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	1	9:45 a.m.	Board Room
Advisory Council Regular Meeting <i>(Meets on the 2nd Wednesday of each Month)</i>	Wednesday	8	9:00 a.m.	Board Room
Special Board of Directors Meeting - Budget Hearing <i>(At the Call of the Chair)</i>	Wednesday	15	9:45 a.m.	Board Room
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	15	9:45 a.m.	Board Room

MAY 2013

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Executive Committee <i>(Meets on the 3rd Monday of each Month)</i>	Monday	20	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Stationary Source Committee <i>(Meets on the 3rd Monday of each Month)</i>	Monday	20	10:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee <i>(Meets on the 4th Wednesday of each Month)</i>	Wednesday	22	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Mobile Source Committee <i>(Meets on the 4th Thursday of each Month)</i>	Thursday	23	9:30 a.m.	Board Room

JUNE 2013

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	5	9:45 a.m.	Board Room
Board of Directors Legislative Committee <i>(At the Call of the Chair)</i>	Thursday	6	9:30 a.m.	4 th Floor Conf. Room
Advisory Council Regular Meeting <i>(Meets on the 2nd Wednesday of each Month)</i>	Wednesday	12	9:00 a.m.	Board Room
Board of Directors Executive Committee <i>(Meets on the 3rd Monday of each Month)</i>	Monday	17	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Stationary Source Committee <i>(Meets on the 3rd Monday of each Month)</i>	Monday	17	10:30 a.m.	4 th Floor Conf. Room
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	19	9:45 a.m.	Board Room
Board of Directors Budget & Finance Committee <i>(Meets on the 4th Wednesday of each Month)</i>	Wednesday	26	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Mobile Source Committee <i>(Meets on the 4th Thursday of each Month)</i>	Thursday	27	9:30 a.m.	Board Room

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Robert Bornstein, Ph.D. and
Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: March 28, 2013

Re: Advisory Council's Draft Meeting Minutes of January 9, 2013 and
March 13, 2013

RECOMMENDED ACTION:

Approve attached draft minutes of the Regular Advisory Council's meetings of January 9, 2013 and March 13, 2013.

DISCUSSION

Attached for your review and approval are the draft minutes of the January 9, 2013 and March 13, 2013 Advisory Council meetings.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Sean Gallagher
Reviewed by: Ana Sandoval

Attachment

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

DRAFT MINUTES

Advisory Council Retreat & Regular Meeting
Wednesday, January 9, 2013

CALL TO ORDER

Vice-Chairperson Sam Altshuler called the meeting to order at 9:02 a.m.

ROLL CALL

Present: Vice-Chairperson Sam Altshuler, P.E.; Secretary Liza Lutzker, M.P.H.; and Council Members Jennifer Bard, Benjamin Bolles, Harold Brazil, Jonathan Cherry, A.I.A., LEED A.P., Heather Forshey, Caryl Hart, J.D., Ph.D., Stan Hayes, John Holtzclaw, Ph.D., Kraig Kurucz, Gary Lucks, J.D., C.P.E.A., Kathryn Lyddan, J.D., Rick Marshall, P.E., P.L.S., Timothy O'Connor, J.D., Estes Al Phillips, Jessica Range, LEED A.P., and Murray Wood.

Absent: Chairperson Robert Bornstein, Ph.D., and Council Member Jeffrey Bramlett, M.S., C.S.P.

Also Present: None.

PUBLIC COMMENT: None.

NOTED PRESENT: Member O'Connor was noted present at 9:03 a.m.

OPENING COMMENTS

Vice-Chairperson Altshuler made introductory comments regarding the work of the Council in the coming year.

INTRODUCTION OF NEW ADVISORY COUNCIL MEMBERS

Vice-Chairperson Altshuler welcomed Member O'Connor (*Conservation Organization*). Member O'Connor made introductory remarks.

Vice-Chairperson Altshuler welcomed Member Forshey (*Public Health Agency*). Member Forshey made introductory remarks.

Members Forshey and O'Connor took the oath of office.

Member Lucks was noted present at 9:07 a.m.

The returning Members briefly introduced themselves.

Member Brazil was noted present at 9:10 a.m.

Member Lyddan was noted present at 9:20 a.m.

Jean Roggenkamp, Deputy Air Pollution Control Officer, commended the range of expertise available and the diversity of the Members present.

Vice-Chairperson Altshuler posed a question to the Council about rearranging the seating so that it is not based strictly on seniority for the sake of creating alternative dialogue options for members, briefed the Council on how the request-to-speak system functions, asked staff to create a summary table memorializing the Member introductions and reminded the Council that the public meeting is being recorded and documented.

Staff briefly introduced themselves at the request of Member Marshall.

CONSENT CALENDAR

1. Approval of the Minutes of the Advisory Council meeting of November 14, 2012

Council Comments: None.

Public Comments: None.

Council Action: Member Holtzclaw made a motion to approve the minutes of November 14, 2012; Member Hayes seconded; and the motion was unanimously approved without objection.

RECOGNITION

2. Recognition of Outgoing Advisory Council Members: Deemed complete at a prior meeting.

3. Recognition of Outgoing Advisory Council Chairperson

Vice-Chairperson Altshuler, on behalf of the Council, recognized outgoing Chairperson Hayes for his dedicated leadership and service to air quality in the Bay Area. Member Hayes addressed the Council.

RETREAT

4. Review and Discussion of 2012

Vice-Chairperson Altshuler made introductory comments regarding the year-long process of the Council and the presentation to the Board of Directors on December 5, 2012, including the importance of carefully documenting all findings and knowing the material to the extent necessary to respond to questions and criticism.

Member Hayes said that the Board of Directors seemed positive in its receipt of the Council's report, suggested the number of questions received seems a good measure of the quality of a presentation, and commended the participation of all in bringing the reports forward.

Member Bolles asked about the possibility for more advance notification of future meetings of the Board of Directors. Vice-Chairperson Altshuler said the date of the meeting was somewhat fluid but settled well in advance of the two-day notice received by Member Bolles. Member Hayes recalled that it was discussed at the Council meeting in November but the final date was not solidified until approximately one week before the presentation and agreed there is room for improvement.

Vice-Chairperson Altshuler noted that the presentation to the Board of Directors is available online and urged Council members to review it.

Member Range said that although the report drafting and revising process can often be arduous, it is a process that results in a report that feels completely accurate and becomes the foundation for the presentation and urged continued participation by the Council in the discussion meetings.

Member Lutzker expressed her dismay at not being able to attend the Board of Directors meeting and to respond to the questioning and asked what some of the questions and comments were.

Vice-Chairperson Altshuler said there was a question about regional, as opposed to more global, challenges.

Member Hayes said there were clarifying questions about the meaning of the recommendations provided at the close of the presentation and attributed that to the challenge of condensing the vast amount of material before the Council over the course of the last two years and noted that the Board of Directors was complimentary of the Council and its work.

Member O'Connor said the Board raised two issues: first, the report identified a significant number of sources of ultrafine particulate matter (UFP) as being indoor and there were questions about the jurisdiction of the Air District in terms of regulating in this realm, whether other jurisdictions have taken on this issue, and the result; and second, the autism issue was not a matter of the Board criticizing the presentation of the Council but rather being cautious to clarify that the Air District is not claiming a causal link between UFP exposure and autism but that it is instead among a range of potential effects according to the Council.

Member Hayes said the jurisdiction issue is an important one, especially in light of the information that, for many people, their greatest exposures are while they are indoors, many people spend significant portions of their time in those environments and suggested that perhaps

provides a legitimate opportunity to look further into the regulatory role of not just minimizing emissions but also exposure.

Vice-Chairperson Altshuler noted that black carbon (BC) did come up in the Board of Directors meeting.

Eric Stevenson, Director of Technical Services, said the Board of Directors were highly complementary, found the presentation to be very informative and were listening carefully to the recommendations provided and said it was a very effective presentation.

Vice-Chairperson Altshuler commended the approach of having two or three members participate sequentially in the presentation, itself a compilation of the reports generated throughout the year, and expressed his chagrin about, and lack of control over, the sparsely populated Board of Directors meetings as a calendar year draws to an end.

Council Comments: None.

Public Comments: None.

Council Action: None; informational only.

5. Discussion of the 2013 Advisory Council Meetings

Mr. Stevenson delivered the staff report Discussion of the 2013 Advisory Council Meetings, including proposed meeting format, topics, dates and staff proposal for Council meeting topics. Mr. Stevenson added that Meeting 3, scheduled for September 11, 2013, may not be focused on BC, depending on Council progress prior.

Ms. Roggenkamp added that through a new process, the Chair of the Council will be invited to brief the Executive Committee of the Board of Directors at various times throughout the year.

Vice-Chairperson Altshuler noted the decreased attendance by the Council members for each of the second report drafting meetings, questioned the cause and posed some possible solutions such as increasing the pace of the meetings or the introduction of staff input and said that timeliness is key to the success of the collaborative effort and the creation of quality products.

Member Lutzker agreed with the idea of receiving staff input at each of the second report drafting meetings, shared her concern that some topics up for discussion by the Council which become subjects of immense effort on the part of the Council are running parallel to work already underway by staff and asked if staff input can be received prior to the drafting of the report so as to assist the Council in understanding the current state of affairs and to better tailor their reports to address that which remains to be done.

Member Bard echoed Member Lutzker's recommendation regarding staff input, however brief or informal in might be.

Ms. Roggenkamp said that is the plan for today in regard to BC, stated that staff does not want to direct the Council in its work or its findings, but instead to receive the advice of the Council and

to facilitate its delivery to the Board. Ms. Roggenkamp suggested it is instructive to staff to hear the Council's deliberation without influencing it, and that staff will assist the Council in not going in unproductive directions without unduly influencing the process.

Member Lutzker suggested the Council will not refrain from telling staff that it believes a different direction should be taken when shared. Ms. Roggenkamp said that was not her expectation but the concern is rather about shaping the discussion.

Vice-Chairperson Altshuler suggested the introductions by the Council members, as provided today, should be instructive to staff in determining the strengths of the Council and in what areas assistance might be most helpful.

Vice-Chairperson Altshuler urged staff and the Board of Directors to view the Council as an in-house consultant or expert that can be utilized without expense or bias and recalled his professional experience with this type of arrangement and the benefits that might be gained by the organization.

Member Range suggested grammatical edits to draft reports be addressed outside of public meetings. Brian Bunger, District Counsel, responded that some changes would be considered a decision and, in turn, a violation of the Brown Act so his advice is to err on the side of caution by continuing to address changes in a public meeting.

Member Lutzker asked if comments provided to staff would present the same problem. Mr. Bunger responded that it is not necessarily a violation but it can be difficult to see where best to draw the line so it is best to avoid the situation altogether.

Vice-Chairperson Altshuler asked if there have been any discussions that have crossed the line in the last year. Mr. Bunger responded in the negative.

Member Holtzclaw suggested starting each of the third meetings with a staff update regarding the issue followed by a more abbreviated report editing session.

Vice-Chairperson Altshuler said that draft reports that are well prepared by the work group seem to fare much better in the public meeting revision process.

Member Hayes said that an area for improvement seems to be the shortening of time spent on each topic, noted the diminishing attendance of Council members at report drafting meetings, asked how the Council can improve the process and, in turn, the interest and attendance levels, joined in Member Holtzclaw's suggestion that the report drafting portion of the third meeting be somehow abbreviated by the addition of other agenda items, and urged the Council to look to the substance of the reports for revision rather than grammatical details.

Member Bard said all the action occurs in the report writing, urged the members to stay attentive to the importance of forwarding initial suggestions, and suggested that an important part of the process is the involvement of others in the report drafting work groups and that their voices be heard in that process.

Member Marshall asked if remote participation is an option for the Council members in light of the discussion of shorter third meetings. Vice-Chairperson Altshuler said the Air District has previously indicated that cannot be accommodated at this time. Ms. Roggenkamp clarified that the proposal was not to shorten the meeting itself but rather the discussion about the report revisions.

Member Kurucz echoed Member Bard's suggestion that early input is valuable, said that when missing third meetings in the past it was not a function of lack of interest but confidence in his colleagues' ability to finish the revision process, agreed that more can be done to abbreviate the revision process, and recalled a past idea that someone would be delegated to do the final polish so as to avoid the issue altogether. Vice-Chairperson Altshuler said that Chairperson Bornstein has accepted that role. Member Lutzker clarified that the final review was only to be a final polish and not a matter of making significant grammatical changes.

Member Kurucz asked whether staff presentations at third meetings might create a problem in that the Council may discover a recommendation of the Council is already being addressed by staff. Mr. Stevenson said staff tries to inform the Council along the way while trying to avoid steering Council work and that Council reports to the Board of Directors Executive Committee are part of the effort to communicate better on this level, and pledged to work on keeping the Council better informed.

Vice-Chairperson Altshuler expressed his hope that the BC discussion does not result in the Council hearing about items three meetings from now that should have been shared today. Ms. Roggenkamp said that circumstances are not static at the Air District and staff will try to keep the Council up-to-date as events occur.

Vice-Chairperson Altshuler asked that meeting minutes be prepared on a more expedited basis as their availability would help in the report drafting process. Mr. Stevenson responded that the minutes are prepared as quickly as staff time allows.

Council Comments: None.

Public Comments: None.

Council Action: None; informational only.

4. Review and Discussion of 2012 (continued)

Mr. Stevenson delivered the staff report Review and Discussion of 2012, including meetings, presentations, reports and processes for 2012, and potential changes for 2013.

Council Comments:

Member Lucks asked about the Air District's jurisdiction in regards to indoor air quality and its potential as a future Council topic for discussion. Ms. Roggenkamp responded that this year's focus is BC but if the Council feels the topic is addressed after two presentation meetings, then the third presentation meeting can be regarding a different topic, and staff will discuss next year's topic with the Council. Mr. Bunger explained that the jurisdiction of the Air District is tied

to sources of, not the receipt of, air pollution and briefed some of the regulations in place by the California Air Resources Board (ARB). Member Lucks gave the example of paint regulation and said the Council may want to delve deeper in an effort to establish jurisdictional authority in the course of future meetings, should it decide it has an interest in this topic. Mr. Bunger said that industrial sources that are used in the home are regulated by the Air District so there are areas of cross over.

Vice-Chairperson Altshuler asked if it is appropriate for the Council to investigate topics that may be outside the jurisdiction of the Air District. Mr. Bunger responded in the affirmative and said that a recommendation from the Council may be to seek the authority through legislative channels. Vice-Chairperson Altshuler said some of the work may be outside of the realm of staff's focused expertise but perhaps the Council can provide support and guidance. Mr. Bunger said it is all constantly evolving and there is no reason not to pursue items of interest based on a perceived lack of current authority. Vice-Chairperson Altshuler noted the evolution of wood smoke as an example.

Member Holtzclaw acknowledged staff's concern about their leading the Council and expressed his opinion that it does not happen despite the potential and the Council members will not back down on topics of interest and importance to them.

Vice-Chairperson Altshuler said the presentation topic for September is open, invited members to consider potential subjects for the same, and asked if the Council members all receive Air District news article summaries.

Member Lucks recommended a similar article summary service by ARB.

Public Comments: None.

Council Action: None; informational only.

PRESENTATION

6. Air District Activities around BC

Mr. Stevenson introduced Abby Young, Principal Environmental Planner of Planning, Rules & Research, who delivered the staff presentation Air Quality, Climate Protection & BC, including the climate protection and public health components, an overview of the Air District's Climate Protection Program, and summaries of various actions in response to, and additional opportunities regarding, BC.

Council Comments:

Member Holtzclaw asked about the chemistry and composition of BC. Ms. Young deferred to future presenters.

Member Holtzclaw asked about the impact of BC on clouds. Ms. Young responded that it varies, there are positive and negative forcings, staff believes the net effect to be an overall increase in reflectivity, and deferred to future presenters for additional details.

Member Lucks asked about the percentage contribution of BC to global warming. Ms. Young said she cannot provide a percentage but that most recent studies seem to conclude that BC is the second or third largest contributor, with carbon dioxide as the first.

Member O'Connor asked about measures at the state level and perceived opportunities for incentivizing global change through local measures, which questions Ms. Young deferred to future presenters.

Member Lutzker requested that future presenters address the direct health effects of BC, as opposed to the climate change impacts alone, and speak to the contribution of agricultural burning. Mr. Stevenson said agricultural burning and similar activities do occur in the Bay Area and staff can provide that information.

Member Hart restated Member O'Connor's question about state-level measures and asked about the removal of BC as opposed to merely limiting output. Ms. Young said that the short shelf life of BC lends to the conclusion that removal is not critical and the focus is on limiting emission as there will be an immediate impact. Mr. Stevenson said a speaker from ARB is in the works for the first meeting who should provide an answer to the question about state-level measures. Ms. Roggenkamp added that the Council is focusing on a topic that is emerging, the answers to these great questions may not yet be known and that part of the work will be to either find the answers or how best to find them.

Member Bard asked if the Air District has an emissions inventory for BC and that an emissions inventory for fine particulate matter, with a break down for the Bay Area and California and could it be provided to the Council prior to the next meeting. Ms. Young said the Air District tracks various types of carbon but, as time provides more opportunity to focus specifically on BC, staff will be in a better position to answer these types of questions.

Member Hayes noted a recent report on BC by the United States Environmental Protection Agency (EPA), suggested the internet address for the same be provided to the Council, and noted the unique character of the issue in terms of opportunities to affect global climate.

Member Kurucz asked about the environmental fate and impact of BC after it falls from the atmosphere, which question Ms. Young deferred to future presenters.

Member Phillips asked about the basis for the claims about BC impact on climate change and for a quantification of the supposed effect, which questions Ms. Young deferred to future presenters.

Member Range asked about the level of interest among local governments in adding BC to local climate action plans and whether there have been any exploratory efforts on how to do so. Ms. Young responded that she has not heard it come up yet but that local governments will surely welcome it.

Vice-Chairperson Altshuler said the delivery of an emissions inventory to the Council members is critical, suggested the Council begin to consider the impact of wildfires now and as they increase in number as a result of climate change, mentioned lube oil burners and barbeque grills

as sources of BC that have come up in the past, and suggested the Council try to keep in mind the possible unintentional consequences of any action taken or recommended.

Public Comments: None.

Council Action: None; informational only.

AIR DISTRICT OVERVIEW

7. Report of the Executive Officer/APCO

Ms. Roggenkamp presented the Report of the Executive Officer, including updates on the Winter Spare the Air Season, the new appointees to the Air District Board of Directors, the Air District budgeting process, the Air District office building move, the electric vehicle readiness plan, the website rebuild, a review of public comment procedures, proposed rules for consideration in 2013, particulate matter regulation and potential legislation.

Member Holtzclaw asked if fireworks have been identified as a major source of particulate matter. Ms. Roggenkamp responded that the South Coast Air Quality Management District regulates fireworks at Disneyland but that she is not aware of any other area that regulates fireworks. Mr. Stevenson responded that fireworks are an additional source of particulate matter but their contribution was not taken into account for the decision to call a Spare the Air Day on New Year's Day and their overall contribution varies from year to year. Vice-Chairperson Altshuler said he expects they will be regulated in the years to come.

Member Bard commended Air District efforts on wood smoke and asked about its effort to reduce vehicle miles traveled. Ms. Roggenkamp responded that the commuter benefits program will address that issue and it is staff's focus in that realm at this time.

Member O'Connor commended Air District efforts, in collaboration with the state, on enforcing existing law regarding emissions of vehicles and asked about Air District efforts regarding increased methane emissions that will result from the push for natural gas as an alternative transportation fuel. Brian Bateman, Health and Science Officer, responded that the Air District does have some requirements for those sources but the focus is not methane so much as other precursor organics to ozone formation and suggested it will be something that is addressed more over time. Member O'Connor suggested the topic for year-end discussion should time allow.

Member Bolles asked about the fate of stationary diesel engines after they are replaced and asked if there is a grant system administered by the Air District to address this. Ms. Roggenkamp responded that all of the Air District's grant dollars are for mobile sources that the Air District does not regulate. Member Bolles asked how grant money cannot exist for this purpose when the Air District is the permitting agency for these devices. Mr. Bunger clarified that the grant money cannot go to paying for their replacement. Member Bolles recommended some action be taken as the antiquated devices will soon be located in a ring immediately surrounding the Bay Area. Vice-Chairperson Altshuler agreed and suggested grant money for mitigating greenhouse gases should not be used only to move the sources outside of the Bay Area. Mr. Bunger clarified that the purpose of the grant programs is not to directly affect greenhouse gases, although they are indirectly affected, and said that the grant program requires the destruction of replaced engines.

Member Lucks suggested short presentations from staff detailing programs that are already in place at the Air District at each of the third meetings of the Council.

Vice-Chairperson Altshuler recommended that any presentations intended for the Air and Waste Management Association annual conference or similar event, be they by staff or Council members, be presented first at the Air District.

Member Lucks said his energy, climate change and air quality legislative summary is complete and will be published in the next two weeks and offered to present a summary of the same in March.

Member Hayes suggested the Air District issue letters of appreciation to the Council members' employers. Vice-Chairperson Altshuler asked for objections, if any, to which there was no response.

OTHER BUSINESS

8. Chairperson's Report

Vice-Chairperson Altshuler reported that Chairperson Bornstein will be in attendance at the February meeting.

9. Council Member Comments/Other Business:

Mr. Stevenson encouraged the Council to forward advance questions for future speakers to his attention.

Vice-Chairperson Altshuler suggested forwarding the newly created Council roster of qualifications to future confirmed speakers so they have a better sense of their audience.

Member Lutzker announced the Office of Environmental Health Hazard Assessment will be holding a Symposium on Cumulative Impacts and Children's Environmental Health in Sacramento on January 16th and 17th. Mr. Stevenson said the seating in Sacramento is all taken but participation by webcast is still possible.

Member Bard announced that the American Lung Association put out a healthy air agenda with ten key initiatives for the nation, one of which is the regulation of wood burning, and issued a letter to the EPA calling upon them to swiftly adopt rigorous health protective standards for residential wood burners.

10. Time and Place of Next Meeting: Wednesday, February 13, 2013, Bay Area Air Quality Management District Office, 939 Ellis Street, San Francisco, CA 94109 at 9:00 a.m.

11. Adjournment: The meeting adjourned at 11:49 a.m.

Sean Gallagher
Clerk of the Boards

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

DRAFT MINUTES

Advisory Council Regular Meeting
Wednesday, March 13, 2013

CALL TO ORDER

Chairperson Robert Bornstein called the meeting to order at 9:03 a.m.

ROLL CALL

Present: Chairperson Robert Bornstein, Ph.D., Vice-Chairperson Sam Altshuler, P.E.; Secretary Liza Lutzker, M.P.H.; and Members Jennifer Bard, Benjamin Bolles, Jeffrey Bramlett, M.S., C.S.P., Harold Brazil, Jonathan Cherry, A.I.A., LEED A.P., Heather Forshey, Caryl Hart, J.D., Ph.D., Stan Hayes, Kraig Kurucz, Gary Lucks, J.D., C.P.E.A., Kathryn Lyddan, J.D., Rick Marshall, P.E., P.L.S., Timothy O'Connor, J.D., Estes Al Phillips, Jessica Range, LEED A.P., and Murray Wood.

Absent: Members John Holtzclaw, Ph.D.

Also Present: None.

OPENING COMMENTS

Chairperson Bornstein, on behalf of the Council, recognized Member Hayes for his dedicated leadership and service to air quality in the Bay Area as last year's Chairperson and presented him with a token of appreciation. Member Hayes addressed the Council.

PUBLIC COMMENT PERIOD: None.

CONSENT CALENDAR

1. Approval of the Minutes of the Advisory Council meeting of February 13, 2013

Council Comments:

Chairperson Bornstein said to amend page 2, second paragraph from the bottom, to read "Beart."

Chairperson Bornstein said to amend page 3, second full paragraph, to read “BRIC” and to make the same change throughout.

Member Lutzker said to amend page 3, sixth full paragraph, to read “~~around~~less than 0.1 ~~to 2.5~~ microns.”

Chairperson Bornstein said to amend page 3, last full paragraph, to add “by adsorption” at the end of the last sentence.

Chairperson Bornstein said to amend page 3, partial paragraph at the end, to read “detail ~~it~~ was delivered.”

Chairperson Bornstein said to amend page 4, partial paragraph at the beginning, to read “briefing.”

Member Range said to amend page 4, sixth full paragraph, to read “individual trucks in the Caldecott Tunnel during the study accounted for.”

Chairperson Bornstein said to amend page 5, second full paragraph, to read “health effects different than from.”

Chairperson Bornstein said to amend page 5, second to last paragraph, to read “10 years [sic] and only.”

Member Lutzker said to amend page 5, second to last paragraph, to read “through deposits, in particular on snow and ice packs.”

Member Lutzker said to amend page 6, third paragraph, to read “target for Air District BC reductions in light of the emissions attributed to ~~the charbroiling of eight hamburger patties~~the jurisdictional authority of the Air District, and significant progress made in diesel.”

Member Bard said to amend page 6, fourth paragraph, to read “but ~~that is it~~ very roughly 25% ~~for~~ in California.”

Member Range said to amend page 7, first paragraph, to delete “Mr. Croes said he believed CARB just got the waivers for new vehicle standards and he is not aware of any delays in retrofit requirements rules.”

Chairperson Bornstein said to amend page 7, last paragraph, to read “Ms. Rizk recommended ~~taking a pollutant seopewide assessment~~ like that.”

Chairperson Bornstein said to amend page 8, first paragraph, to read “to be ~~lesser~~smaller or even possibly warming, to which.”

Member Lutzker said to amend page 8, second paragraph, to read “Bond and ~~Romanoff~~Ramanathan papers will.”

Member Bard said to amend page 8, sixth paragraph, to read “improving some of the ~~crosswalks~~intersections between tail pipe.”

Member Forshey said to amend page 8, seventh paragraph, to read “Ms. Risz~~k~~ said the.”

Chairperson Bornstein said to amend page 8, seventh paragraph, to read “or framework is necessary to handle.”

Chairperson Bornstein said to amend page 8, eighth paragraph, to read “disproportionate contributors and thus he views this as an important.”

NOTED PRESENT: Members Lucks and Wood were noted presented at 9:33 a.m.

Member Lutzker said to amend page 8, last paragraph, to read “look at all short-lived ~~area~~ pollutants.”

Chairperson Bornstein said to amend page 9, first paragraph, to read “mitigation of diesel ~~a~~is still relevant.”

Public Comments: None.

Council Action: Member Marshall made a motion to approve the minutes of February 13, 2013, as amended; Member Hayes seconded; and the motion was unanimously approved without objection.

DISCUSSION

2. Discussion of draft report on the Advisory Council’s meeting on February 13, 2013

Chairperson Bornstein made introductory comments regarding the merging of “Emerging Issues” and “Recommendations” in the draft report and the composition of the report drafting work group. Members Lutzker, Hayes and Range expressed their concern with merging the sections.

Member Kurucz made introductory comments regarding the report drafting process by the work group, noted that in its prior form, the report had almost identical lists for each of the two sections and the newly merged version is an improvement, and asked Chairperson Bornstein to address some of the questions he posed during the work group drafting process regarding Bart Croes’ “Key Points” numbers 1 and 2. Chairperson Bornstein clarified that his intention was only to point out the need for answers to the questions, whether those answers come from the Council, staff or the presenters. Member Kurucz suggested the figures not to be central to the substance of this report and asked Eric Stevenson, Director of Technical Services, to talk to Mr. Croes about whether the information is available and, if so, if it can be provided.

Chairperson Bornstein invited input from the Members on the sections within the report as follows:

“PRESENTATIONS DELIVERED”

Member Hayes said, regarding the top of the page 1, to delete “Version 3,” and regarding page 1, first full paragraph, to delete “s” from “Protections,” and add “US” to “(EPA).”

Member Altshuler said, regarding page 1, first full paragraph, to add “climate impacts” before “BC.”

“KEY POINTS BY Sarah Rizk, United States Environmental Protection Agency (EPA)”

Member Range suggested, regarding page 2, numbers 4 and 5, adding some examples. Member Altshuler suggested deleting the items instead. Member Lutzker said Ms. Rizk provided some metrics and had said they would determine the outcome, all in an effort to make an important point that should not be deleted altogether.

Chairperson Bornstein said, regarding page 2, number 5, the Council must either define “metric” or provide examples and asked the Council its preference. Member Hayes argued against the deletion of numbers 4 and 5 so they may serve to assist the District in its work developing and implementing its own metrics, an approach that may involve determining the net climate forcing, and how that figure fits in the bigger picture of how the District evaluates all of the pollutant controls in place. Member Hayes added that this would serve to put all of these considerations on one proverbial page, similar to what is done with carbon dioxide (CO₂) equivalents, and would be a real contribution to the field.

Member Philips suggested the use of metrics in establishing an inventory of climate change contributors.

Member Bard said the Council could simplify the statements by amending page 2, number 5, first sentence, to read “mitigation strategies that account for both climate and health impacts ~~for controlling BC~~ is important.”

Member Altshuler agreed with the suggestion of Member Hayes.

Member O’Connor said metrics were included in the report not only because of the presentation before the Council but because of the extensive discussion on that subject in the EPA report to Congress. Member O’Connor added that the words “evaluate and track” were chosen specifically to get to metrics in terms of impacts on the system, as well as in terms of how regulatory measures are traced for efficacy.

Chairperson Bornstein said they would not be deleted, examples should be included, the existing language should be developed a bit and invited Member Hayes to suggest something. Member Hayes said the first sentence is a reflection of Ms. Rizk’s words and is hesitant to change it so long as the Council understands the meaning and suggested that many of the items being discussed belong in the Recommendations portions of the report.

Chairperson Bornstein suggested “quantitative metrics” or “weighted” or “scaled.” Member Hayes said it is fine as it reads and the matter should be addressed in Recommendations.

Chairperson Bornstein asked for examples to include. Member Bramlett suggested the use of Ms. Rizk’s examples. Member Hayes echoed the suggestion of Member Bramlett. Chairperson

Bornstein asked if the examples mentioned by Member O'Connor are from Ms. Rizk. Member O'Connor mentioned a slide from the presentation that highlighted the interplay between health and climate. Chairperson Bornstein said to pull out an example from her presentation that the Council feels is illustrative. Member Lutzker suggested "global warming potential."

Member Lutzker suggested "global warming potential" and "global temperature potential." Chairperson Bornstein said no and to include examples, one for health and one for climate change. Member Lutzker said she did not believe that Ms. Rizk was speaking to health specifically and mentioned the concept of pulse versus sustained metrics.

Chairperson Bornstein said, regarding page 2, number 5, to insert "(e.g., global warming potential)" after "Establishment of metrics..." Member Hayes said Ms. Rizk used the term "net forcing." Chairperson Bornstein said, regarding page 2, number 5, to instead insert "(e.g., global warming net forcing)" after "Establishment of metrics..."

Member O'Connor said Ms. Rizk was mostly referring to climate equivalency metrics and when the Council asked her about considerations for choosing a metric she spoke about health impacts as well so it seems the metric goes to both but she was very specific as to climate equivalency as the basis for a metric. Chairperson Bornstein said to leave it as previously directed but that metrics in the health area should be addressed in the Recommendations portion.

Member Range noted Ms. Rizk's presentation, slide 27, Considerations for choosing & applying a metric, and suggested her point and what needs to be included is something about how the identification of goals defines the metrics. Chairperson Bornstein asked if the report should include all that Member Range said. Member Range said no but that an example from each consideration might be a good approach. Member Bornstein asked for suggested language.

Member Lutzker said Ms. Rizk offered a range of climate specific metrics and had said that choosing which of those metrics you want to use will depend on what your goals are but, regardless, they all are climate specific metrics. Chairperson Bornstein asked if "establishment" should be changed. Member Lutzker suggested "Choice" or "Selection" and include "time horizon" as Ms. Rizk said that was also important.

Mr. Stevenson said this is typical EPA strategy and summarized the strategy as advocating for the setting of goals with appropriate metrics to ensure that those goals are met through a measurable strategy and suggested that is what the work group is working to capture here.

Member Bramlett suggested, regarding page 2, number 5, the addition of "Based on stated goals," at the beginning and to include the two examples. Chairperson Bornstein agreed, said to also change "Establishment" to "selection" and asked if the Council has a suggested example that goes to health impacts. Member Hayes suggested inserting "health benefits."

Member Range said Ms. Rizk mentioned "value of damages" and suggested that can also be related to health. Member Lutzker suggested "cost effectiveness." Chairperson Bornstein asked if a reference to health impacts should be included and then said to insert "cost effectiveness" after "forcing" in parenthesis. Member Lutzker said to add "and time horizon" after the parenthesis.

Member Kurucz asked if “goals” should be expanded upon, such as “short-lived climate forcers.” Member Lutzker suggested “Based on stated health and climate goals.” Chairperson Bornstein recalled an earlier suggestion by Member Bard to put that phrase elsewhere in the report and asked the preferred location. Member Bard said including it at the beginning makes it unclear. Member Kurucz said that was why he suggested the expansion of “goals.” Member Lutzker suggested “Based on long-term and short-term health and climate goals.” Member Kurucz said that still left it a bit unclear as there is little in the way of reference points.

Member Altshuler asked how much the Council wants to focus on the health-impact aspect. Member Bard suggested health-impact was the key point of Ms. Rizk’s presentation. Member Altshuler said the Council has spent two years discussing ultrafine particulate matter (UFP) as it relates to health and the Air District has put out a fine particulate matter (PM_{2.5}) report that addresses health. Member Bard restated that this was Ms. Rizk’s key point and is the appropriate focus in preparing Key Points. Member Altshuler said the two key metrics, in terms of the climate issue, appear to be the global warming potential, which does not include the longevity of the pollutant in the air, and the half-life of the pollutant in the air and noted the realization from the presentation was that BC has a 14-day life in the atmosphere which needs to be balanced against CO₂ with a more than 100-year life. Chairperson Bornstein echoed the comments of Member Kurucz, said to insert “short-term and long-term climate and health” before “goals” and asked what needs to be done to the remainder of number 5.

Member Lutzker said to delete the second sentence. Chairperson Bornstein asked about retaining “to explore the implications of remaining uncertainties.” Member Hayes said it should stay and Chairperson Bornstein agreed. Member Bard said Ms. Rizk’s point was that metrics should also account for uncertainties and Members Hayes and Kurucz agreed. Member Kurucz suggested inserting the phrase after “track mitigation strategies” and deleting the language currently in between the two phrases. Member Bard suggested that results in a long and complicated sentence. Chairperson Bornstein asked if “for controlling BC is important” needs to be retained. Member Kurucz said no. Chairperson Bornstein asked for language. Member Kurucz repeated his suggestion. Chairperson Bornstein said to insert “and” before “to explore.” Member Lutzker suggested it is no longer a sentence. Member Kurucz said “Selection” should be replaced with “Select.” Member Lutzker asked if it should read “Select BC” and Member Kurucz said no because the metric is unknown at this time and the emphasis is that they need to be in line with the stated goal. Chairperson Bornstein asked if “is important” needs to remain regardless. Member Hayes said it is implicit.

Chairperson Bornstein conducted a time check, suggested that the process needs to move along, and said, regarding page 2, number 6, to delete the extra space at the beginning of the line.

Member Kurucz said, regarding page 2, number 5, that the first word needs to be “Based.” Chairperson Bornstein restated Member Kurucz’s suggestion and spelled the same and restated his suggestion regarding page 2, number 6, to delete the extra space at the beginning of the line.

Member O’Connor suggested, based on the likelihood of report proofing before the next phase, minor grammar issues such as commas and extra spaces would be best addressed outside of the public meeting so the Council may get to the substance of the report.

Member Range suggested, regarding page 2, number 6, end of the first sentence, inserting “such as [unintelligible due to multiple speakers at once].” Chairperson Bornstein said regarding, page 2, number 6, end of the first sentence, to insert “, e.g.,” and asked Member Range how many examples should be provided. Member Range said just one, “CARB’s diesel risk reduction plan.” Member Bornstein said not to insert “such as.” Member Altshuler suggested inserting “mainly as a result of” before the new phrase. Member Lutzker noted this information was relative to the nation and state. Member Bornstein said to remove “such as” and that “CARBs” needs to have in apostrophe inserted. Member Altshuler said “CARB’s” should be excluded because of federal and state efforts in that regard. Chairperson Bornstein repeated Member Altshuler’s suggestion and said to insert a period and comma after “e.g.”. Member Hayes said it will be captured later. Chairperson Bornstein said to insert “diesel PM reduction plan.”

Member Lucks said, regarding page 2, numbers 5 through 7, to insert “measures” after “mitigation” in all three instances.

Member Cherry suggested, regarding page 2, number 2, to replace “avoid” with “delay.” Member Kurucz alternately suggested deleting “avoid or.” Chairperson Bornstein directed staff to not make any changes to the report before there is consensus and agreed with Member Kurucz.

Member Lutzker suggested moving the last sentence in number 2 into number 4, as the second to last sentence, because number 2 is about BC as a climate forcing pollutant and does not actually talk about the short life in the atmosphere as number 4 does. Chairperson Bornstein directed staff to not make any changes to the report before there is consensus. Member Kurucz agreed with Member Lutzker. Chairperson Bornstein expressed his doubt and suggested that “short term” does not belong in number 2 but the rest of the phrase can remain because ice cap elimination and sea level rise is not short term and BC does not affect sea level rises. Member Lutzker disagreed and said Ms. Rizk stated that BC could be the tipping point to making the ice caps melt and that by reducing BC immediately could have a profound affect. Chairperson Bornstein said it depends on the definition of short-term. Member Bard said it is facilitating ice melt. Member Kurucz said it is not in the 14-day range but is much less than the 10 to 40 years for CO₂. Member Lutzker said regardless of the details there was no prior mention of the fact that BC is a more short-term form climate forcer. Member Kurucz said the work group felt this short-term opportunity was the key point that Ms. Rizk brought before the Air District so its placement in the report was advanced to highlight its importance. Member Lutzker suggested deleting “thus” as an alternative. Chairperson Bornstein said “thus” was his addition.

Member Bard suggested moving the discussion to “Emerging Issues” as that is where the bulk of the discussion properly belongs. Chairperson Bornstein said to delete “thus.”

Member Altshuler asked, regarding page 2, number 2, if Ms. Rizk was really talking about brown carbon (BrC) and asked if the topic should at least be included somewhere. Chairperson Bornstein asked if the entire item relates to BrC and Member Altshuler clarified that he is referring to the portion about organic carbon (OC) and that maybe both should be mentioned so as to get BrC into the discussion, particularly in light of its reflective characteristic and asked if Member O’Connor was the point of origin of the article delivered to Council members through staff. Member O’Connor said yes but clarified that he was not the author.

Chairperson Bornstein asked whether OC should be replaced by BrC or if both should be included. Mr. Stevenson noted that OC is considered to be BrC by definition. Chairperson Bornstein said the Council should be clear and suggested including both. Mr. Stevenson and Member O'Connor clarified the definitions of each. Member Hayes suggested using BrC. Chairperson Bornstein said to insert “, a component of BrC” after “(OC).”

“KEY POINTS BY Bart Croes, California Air Resources Board (CARB)”

Chairperson Bornstein said to pass Key Points by Mr. Croes, to be revisited later, time permitting.

“EMERGING ISSUES AND RECOMMENDATIONS”

Chairperson Bornstein asked for comments on the introductory sentence and asked the Council how they prefer to proceed with the conversation.

Member Lutzker said the report lacks specificity about who should be taking action and what that action might be. Member Range suggested inserting “Recommendation: [Substance]; [Party name]” for each item listed. Member Marshall asked if the Council would be making recommendations to anyone other than the Air District. Member Hayes responded no. Member Lutzker said there are a variety of actions that should be taken. Member Marshall suggested the opening sentence might address that concern. Member Lutzker said no and, by way of example, that some recommendations to the Air District are to follow research and others are to conduct the research and suggested the Council be more specific about the action recommended. Member Kurucz said, regarding page 3, number 5, that it implies the Air District would work with another agency. Member Lutzker suggested the Council focus its recommendations on what the Air District role should be in each of these situations.

Member Altshuler suggested adding “BrC” to page 3, number 1, at the end. Chairperson Bornstein said to hold specific comments for the time being while the Council focuses on the overview and said to add “BrC and BrC emissions.” Member Altshuler questioned the use of “near-term” and suggested long-term is what is being dealt with. Chairperson Bornstein said to hold specific comments for the time being while the Council focuses on overview comments.

Member Lucks complemented Member O'Connor on the draft report and said, regarding page 3, numbers 3 and 5, they both seem to be speaking to reduction strategies and suggested merging them under a similarly titled heading with subparts for “biomass burning” and “diesel engines strategies.” Chairperson Bornstein said that will be addressed when the dialogue gets to number 3. Member Lucks said the same is true of pages 3 and 4, numbers 4 and 7, and label them as “inventory” or “inventory, modeling and planning” with “brown carbon” as a subpart. Chairperson Bornstein said any reduction in the numbers is a positive change.

Member Hayes suggested extracting Recommendations from the newly merged section so that Emerging Issues stands out for readers as important items deserving attention and suggested approaching today's conversation similarly so that each section becomes easier to grapple with despite the arguments to be had for a merged section. Members Bard and Bolles agreed. Member Cherry argued for keeping them merged as it helps readers to tie the two sections together and suggested reformatting to address these concerns, if necessary. Member Bolles said the

Recommendations were historically tied to Key Points and Emerging Issues was in some ways a different creature. Chairperson Bornstein suggested moving through the report in its current form and then revisit the question of formatting.

Mr. Stevenson suggested two versions be prepared for comparison purposes.

Member Bolles asked how Member O'Connor decided to merge the two. Member O'Connor said the report was generated using a template from a past report, so the two sections were initially separate, but prior reports seemed to lack clarity in making the connection from one section to the next so an effort was made to improve it by clearly defining topics via sub-headings within a merged section. Member O'Connor recalled a conversation that suggested the Council could generate an enormous list if everything was included but that it is the Council's role to process the information so as to present a more reasonable set of Recommendations given various constraints and noted the draft report expanded in size during the process of adding and expanding upon providing an individual Recommendation for every Emerging Issue and became broader than it was intended as a result. Member O'Connor added that not every Emerging Issue may result in a Recommendation. Chairperson Bornstein said some Recommendations can be eliminated and that he went out of his way to make sure there was a Recommendation for every Emerging Issue but that is not necessary.

Member Bard suggested an introductory paragraph that frames the two sections and said much of page 3, numbers 1 and 2, could be moved into that paragraph, added that it is the Council's role to put emphasis on where the Recommendations are directed, and asked, as an example, if the Council thinks climate change or health impacts should be primary. Chairperson Bornstein said the introductory paragraph is a good idea and the Council will revisit it.

Member Kurucz clarified that one of the work group's draft reports looked very much like where the conversation seems to be taking the report in terms of pairing down the number and length of Recommendations, leaving them fairly clear and focused, and said that although he likes the new format, all of the Recommendations now seem to have the same weight. Chairperson Bornstein suggested inserting adjectives to clarify the priority of each of the Recommendations.

Member Hayes suggested each member assume the phrase "there is a need for" at the beginning of each Recommendation when crafting the language. Chairperson Bornstein said there are many different wordings that can be used. Member Hayes said his suggestion is not for a change of wording but a mindset and it is another argument for separating the sections once more. Chairperson Bornstein said the Council will evaluate each item, rephrase each "It is thus recommended" so as to include a prioritizing adjective or remove the phrase altogether, and then evaluate the two versions staff generates to see where preferences lie in terms of the merged section. Member Lutzker echoed Member Range's earlier suggestion about reformatting the Recommendation to be immediately below each corresponding Emerging Issue.

Chairperson Bornstein asked for suggestions regarding the introductory paragraph. Member Lutzker asked Member Bard to explain the concept behind the paragraph and if there is general agreement, suggested she forward proposed language to the work group. Member Bard suggested an earlier draft of the report may have one to use. Member Kurucz said there was no introductory paragraph in earlier drafts. Member Bard withdrew her recommendation so as to focus on the substance and requested a renewed Council focus on the same. Member Kurucz asked if the

Council can simply decide if they want a paragraph, regardless of its content. Chairperson Bornstein said Member Bard writing and submitting the paragraph to the work group is a good idea and suggested the intent of the paragraph was to establish the big picture.

Chairperson Bornstein invited comments on individual items, asked for attention to the priority of each Recommendation because he crafted the language so that they all have equal weight, and asked all to consider who is going to take the action.

Chairperson Bornstein asked whether Climate Change or Public Health should be first, explained his reasoning for listing Climate Change first, and clarified that he neither added nor removed language, but merely changed the wording slightly and added Recommendations for those where none was provided.

Member Kurucz said, regarding page 3, number 1, that Member Altshuler suggested the inclusion of BrC and asked where and how it would be most appropriate. Member Altshuler suggested the integration of numbers 1 and 4. Member Lutzker disagreed and suggested it detracts from the topic of BC and that BrC should be included without moving the focus away from BC, climate change and health by trying to address discoveries regarding co-emitted species. Member Altshuler said that co-emitted species are mentioned in the first paragraph to serve as an introduction. Member Lutzker said there a lot of other co-emitted species and suggested a couple examples of how to insert clarifying language. Chairperson Bornstein asked for comments. Member Lutzker suggested keeping BrC separate.

Member Range said that instead of prioritizing climate change and public health, the integration of the impacts of climate change and public health in terms of BC was either one of, or perhaps the, valuable take away item for the Council and that integration needs to be acknowledged and then the report can move on to the Recommendations. Chairperson Bornstein asked the work group to integrate numbers 1 and 2 and asked for the associated Recommendation, if any. Member Range said the existing recommendations should not be dropped but instead moved elsewhere. Member Lutzker said Recommendation number 1 is vague and many of the other Recommendations are directed towards more specific actions regarding the same common goal. Chairperson Bornstein directed the work group to merge numbers 1 and 2 and to develop a Recommendation, if appropriate.

Member Altshuler asked for clarification about the new information received by the Council on the health effects of BC. Chairperson Bornstein said the Council knew that aerosols affect health but the focus was not on BC aerosols. Member Lutzker said the focus was not on what was known about the impacts in each realm but rather the dual-consequence of BC impacts. Member Altshuler did not deny that but suggested it has been discussed via other subject matters, such as diesel particulate matter (PM) controls and discussions of UFP. Member Lutzker clarified that the proposal is not to address all of the health issues but instead, in developing a reduction strategy, that rather than focusing on PM and the health consequences or greenhouse gases and the climate change impacts, that a focus on BC brings both together and that synthesis is the first Emerging Issue that Member Range is suggesting. Member O'Connor said it was intended as an introductory, umbrella statement and that they can definitely be combined. Chairperson Bornstein suggested the combination become the introductory paragraph. Member Bolles agreed with Member Altshuler.

Chairperson Bornstein suggested language can be added to clarify what has been dealt with in the past. Member O'Connor suggested, regarding page 3, number 2, deleting "new." Member Kurucz clarified the intent was not to make claims about new information or to re-emphasize issues but to tie BC in with the greater PM discussion. Member Altshuler said the important thing is that they are not conflicting and the motivation on BC should not be health because efforts are already on track in that area. Member Bramlett said more work is necessary. Chairperson Bornstein asked if it should be merged as number 1 or into the introductory paragraph. Member Lutzker said as number 1 if the Council wants it to be read.

Chairperson Bornstein said to move number 4 to number 3 so that biomass burning and diesel engines are back-to-back, if not later combined, and asked for comments on BrC.

Member Kurucz said BrC is a real and traditional Emerging Issue and the Recommendation needs to be simply learning more. Chairperson Bornstein said insert "new" somewhere to clarify that it is new information for the Council. Member Altshuler agreed and suggested adding language addressing the uncertainties of the impacts on clouds by BrC. Member Bolles said there was also mention of yellow carbon and asked if it should be included in the report.

Member Hart said, regarding page 3, the proposed consolidated number 1, that all language conveying the certainty of impacts regarding climate change should be tightened. Chairperson Bornstein agreed that the health impacts are known and should be stressed and the climate impacts remain unclear and the language should be adjusted accordingly.

Chairperson Bornstein directed the work group to insert "new" and asked if yellow carbon needed to be addressed. Mr. Stevenson said yellow carbon is condensation of sulfur containing compounds and elemental carbon and was only mentioned once or twice in passing.

Member Altshuler asked if there are sources of sulfur in the Bay Area. Mr. Stevenson said there are not but it is relevant on a global scale as coal firing results in sulfur emissions. Chairperson Bornstein said it is very relevant to certain regions and asked if it should be included and where. Member Kurucz said it is not a local issue subject to Air District authority. Member Altshuler said it could be addressed so as to dismiss it. Chairperson Bornstein said to exclude it.

Member Lutzker said, regarding page 3, new number 3 BrC, to expand the Recommendation to include language suggesting the need for a better understanding of BrC emissions, sources and impacts. Member Kurucz said earlier comments suggested focusing on impacts only because this will be subject to further study. Chairperson Bornstein said to insert "impacts and" before "emissions" on the last line. Member Lutzker said the warming effects should also be known, not just the health effects, and its role in climate change. Member Lutzker suggested the work group can insert the language. Chairperson Bornstein asked if the work group had adequate direction. Member O'Connor agreed but said it raises a question because the point of separating out BrC was to make the case that BrC remains up for discussion and it was not a Recommendation of the work group that the Air District pursue mitigation measures specifically aimed at BrC. Member O'Connor added that he would not want a separate section to be used as justification for premature mitigation efforts. Member Lutzker agreed but said the Recommendation can be to learn more. Member O'Connor agreed. Member Bard suggested inserting a new Emerging Issue of "There is a need to understand the different sources, health and net climate forcing impacts of BrC." Member O'Connor agreed.

Member Lucks restated his suggestion that numbers 3 and 5 be combined. Member Bard said they seem to have different issues. Member Lucks said the proposal does not compromise those issues and the suggestion only goes to the organization of the stand alone paragraphs. Member Bard said that the Recommendations for each are very different and suggested they should not be grouped. Member Kurucz agreed and said that if the Air District finds it is pursuing both, there are very different paths to address each. Member Bard said there is a need to understand more about BrC. Member Lutzker suggested inserting “Reduction Strategies for” before each of the two headings. Chairperson Bornstein said separate is better and asked in which order they should be listed. Member Kurucz said the questions are whether Air District action can be taken on each and what they might be and suggested that biomass burning is a very young issue that may not have a strong Recommendation. Member Altshuler said the Recommendation for BrC may be addressing the need to know more, asked where fireplaces fall on the BC and BrC scale, and suggested the “lube oil from gasoline engines” issue should be included with Diesel Engines. Chairperson Bornstein directed the work group to make the changes discussed. Member Altshuler said an assessment of BC or BrC emissions from fireplaces should be recommended.

Member Range suggested said BC was reported as only contributing 11% to climate change and maybe it should be moved further down the list and include some information on the contribution and sources specific to the Bay Area before trying to grapple with reduction strategies. Chairperson Bornstein asked what number the comment is relative to. Member Cherry said the inventory is number 7. Member Range said research is inventory, modeling and planning and suggested advancing numbers 6 through 8 closer to the top of the list.

Chairperson Bornstein asked for any additional comments on numbers 1 through 5. Member Lutzker asked that Biomass Burning include reference to biomass power cogeneration facilities in Placer County. Chairperson Bornstein said that numbers 3 and 5 were linked together by putting “Reduction strategies for” before “Biomass Burning” and “Diesel Engines” and by their newly adjacent placement.

Member Range said, regarding numbers 6 through 8, that the research aspect needs to be emphasized up front, followed by what is involved in the research, such as inventory, modeling and planning, and then include the need for identifying metrics as set forth in number 9. Chairperson Bornstein asked in what order they should be listed and said Research should be number 6. Member Range said Research should be the new number 4, after number 3 BrC, followed by a new section 5 consisting of the current numbers 6 and 7 because monitoring is part of the research, and asked for suggestions on where Control Strategy Metrics belongs. Chairperson Bornstein said metrics are part of planning so combine them or reorganize them into two related groups. Member Range suggested Inventory, Modeling and Monitoring and then Planning and Metrics. Chairperson Bornstein said monitoring generally comes first. The Council asked for staff’s input. Mr. Stevenson said usually monitoring goes with inventory and modeling follows a separate path and the monitoring is used to later validate the modeling. Member Lutzker said planning should be removed as it seems like a separate effort. Chairperson Bornstein said they are all tied together.

Member Altshuler asked, regarding page 4, number 6, whether the Air District PM_{2.5} Report has the data in there in regard to PM speciation and asked how much more PM needs to be monitored. Mr. Stevenson said that is a more difficult question than one would think, the Air

District has done speciation for some time and could break out elemental carbon versus OC but there are new monitoring methods that look specifically at BC. Member Lutzker asked if there are for BrC also. Mr. Stevenson said yes, to some extent and apologized for being so vague. Member Altshuler said BC has been monitored for years even if it was not as quantitative as now. Mr. Stevenson agreed and said that is where the gray areas lie, in that there are a lot of studies but not a lot of differentiation which is now possible.

Chairperson Bornstein said research is not necessary as a separate Recommendation and should be deleted. Member Kurucz disagreed based on the desire to highlight those items, not to drop them altogether based on the supposition that they are implied. Chairperson Bornstein said he may have shortened number 8 and conceded it should remain and asked if the Research Recommendation should be more focused. Member Lutzker said it should be left broad as the new number 4.

Member Hayes said he is struggling with the new format of merged Emerging Issues and Recommendations and the mixing of priorities for each; said numbers 6, 7, 9 and 10 include recommendations specifically to the Air District; mentioned that he often organizes his thoughts by considering the various types of work the Air District does so as to match Recommendations with them and asked a series of questions about how to organize the report and frame the Council's thoughts; and suggested the content be separated, reorganized and revised for more specificity of action. Chairperson Bornstein asked what the Council should take away from Member Hayes' statement. Member Hayes said to mentally separate items at every opportunity. Chairperson Bornstein directed the working group to take that up and asked how to organize numbers 6 through 9, both within the report and within each of the paragraphs. Member Hayes said to separate them for the sake of considering the state of work and action to be taken. Chairperson Bornstein said Monitoring is separate and asked about inventory, modeling and planning. Member Hayes suggested the work group address that kind of organization. Chairperson Bornstein took comments on the separation of those three items.

Member Kurucz said inventory, modeling and planning can be combined because of what is being Recommended and asked for staff input. Chairperson Bornstein asked staff what would be most useful in terms of the items in numbers 6 and 7. Mr. Stevenson said staff's struggle is similar to the Council's as there is a great deal of cross-over in what is being discussed and what staff needs is recommendations such as, if monitoring should continue how do you want to direct the monitoring of BC to specifics, such as where to monitor, whether modeling should be done, the specifics of modeling in terms of what aspects should be included. Henry Hilken, Director of Planning, Rules & Research Division, said work on inventory, monitoring and modeling are the measurement work that provides the scientific and technical foundation for policy decisions and recommendations or, in other words, planning, that is brought to the Board of Directors but as to how the report is structured, it does not matter.

Chairperson Bornstein said to keep Research as the title with Monitoring, Inventory and Modeling as subsets and then Planning as a separate item. Member Lutzker suggested adding another point under Research regarding that done by others which the Council feels the District should be tracking. Chairperson Bornstein suggested "Tracking" or something similar that the work group comes up with.

Member Kurucz said it seems that a Recommendation to track other's research is really recommending what is already being done as they brought these very speakers before the Council and asked staff for guidance. Mr. Stevenson suggested "continue to follow." Chairperson Bornstein said "continue."

Member Lutzker said, regarding page 2, number 1, the percentages provided by Mr. Croes were for a 100-year time frame and continue to be referenced by the Council but the figure may be completely different if viewed on a 10-year scale and suggested the Council clarify the time frame in number 1 and in its deliberations because BC may be more significant in the short-term than the number implies. Chairperson Bornstein asked if "long-term climate change" should be inserted. Member Lutzker suggested inserting at the end "(using a global warming potential metric with a 100-year time frame)" but the larger point is that 11% may be larger or smaller. Chairperson Bornstein directed the work group to craft the appropriate language.

Member Lutzker said, regarding page 4, number 10, that the item is more than educational outreach, such as incentive programs or ensuring regulatory compliance, both of which do not fall under the current title. Chairperson Bornstein asked for more appropriate language. Member Lutzker said they can be split out or the Recommendation renamed. Chairperson Bornstein directed the work group to craft the appropriate language.

Member Bard said Emerging Issues should include something about "the specific health risks of wildfires due to increased warming, the impact of wildfires on climate change and equator focusing study" and "wildfire prevention and PM_{2.5} emission reductions techniques need to be evaluated." Chairperson Bornstein directed the Council to forward any suggestions for additional language to the work group and directed them to craft the appropriate language. Member Kurucz asked to hear the suggested language for the sake of the work group putting the comments in context. Chairperson Bornstein said time is running out and a new report emphasis is being suggested. Member Bard suggested it be a future discussion topic but the issue of wildfire prevention and hazard reduction strategies needs to be brought into better focus. Chairperson Bornstein said it is an Emerging Issue but not within the realm of the Air District's work. Jean Roggenkamp, Deputy Air Pollution Control Officer, said it is within the Air District's realm of work. Chairperson Bornstein encouraged Member Bard to send the language, an explanation of the context, and the specific location for its insertion to the work group. Member Bard suggested a discussion about natural gas shale deposits leakage from gas extraction and BC related to that process. Member Bolles said it was discussed but the work group did not know if it fit in this report. Member Kurucz asked if it is a local issue. Member Bard was unsure if there is anything closer than Monterey. Mr. Stevenson said the closest operation is currently in Monterey.

Member Altshuler said the Council has suggested in the past that the Air District interact with the Bureau of Automotive Repair regarding more discussions about identifying lube oil burners and getting them off the road through a strengthening of the inspection maintenance program in the name of BC and there has been no discussion of a cumulative impacts analysis. Chairperson Bornstein said the phrase could be under the Planning Recommendation.

Chairperson Bornstein directed the Council to forward ideas to the work group. Member Kurucz said the review time will be necessary at the next Council meeting if no discussion is had today. Chairperson Bornstein agreed.

Member Kurucz asked for more information regarding Air District involvement in wildfire prevention. Ms. Roggenkamp said there is a lot of interest in this topic in terms of climate change and the Air District is involved for health reasons, such as open burning and smoke management plans, and agreed that having speakers on the topic is a good idea.

“GLOSSARY”

None.

Council Comments: None.

Public Comments: None.

Mr. Stevenson said staff will forward a redline version of the report to the work group that reflects some, if not all, of the changes contemplated at today’s meeting.

OTHER BUSINESS

3. Council Member Comments/Other Business:

Member Altshuler said the emails issuing from Council members through staff are good but cautioned against any discussion via email. Chairperson Bornstein mentioned an earlier suggestion to staff of instead establishing an electronic bulletin board. Mr. Stevenson reported hearing of preferences for each and asked for a final tally. Member O’Connor preferred them sent. Chairperson Bornstein suggested they be posted on a bulletin board followed by email notification. Mr. Stevenson said they will continue to be sent until the bulletin board is set up.

4. Report of the Executive Officer/Air Pollution Control Officer

Ms. Roggenkamp presented the Report of the Executive Officer, including updates on the Winter Spare the Air Season, the Air District office building move, staff preparations for presenting at the annual Air and Waste Management Association (AWMA) conference, and an overview of proposed state legislation with Air District impacts.

Member Lucks said that his presentation after today’s meeting will touch on some of the legislation mentioned by Ms. Roggenkamp.

Member Bard asked for the specific number of complaints and citations regarding the Spare the Air campaign. Ms. Roggenkamp said this season there were 2,316 complaints and 179 violation notices. Chairperson Bornstein asked for information regarding the nature of the incidences. Ms. Roggenkamp said wood smoke. Member Bard asked if the violation notices are fines. Brian Bunger, District Counsel, said first-time violators have the option of an online course or paying a penalty of \$100, and as of yesterday, more than 65 had taken and passed the course and four had sent \$100. Member O’Connor asked if there is a fee for the course and Ms. Roggenkamp answered no.

Member Altshuler asked if the Air District has a position on Senator DeSaulnier’s bill and Ms. Roggenkamp said staff is not recommending a position but the Board of Directors Legislative

Committee meets tomorrow. Member Altshuler said as we discuss cumulative impacts it is natural to get air and water issues working together. Ms. Roggenkamp said the regional water agency is not part of the bill.

Chairperson Bornstein asked for staff comments on the AWMA conference. Mr. Stevenson said it will be in Chicago on June 25 through 28, Executive Office staff will reach out to the membership regarding their interest, and that only four members may attend through the Air District. Chairperson Bornstein asked for a list of papers that will be presented by staff. Mr. Stevenson said the four attendees will be briefed. Chairperson Bornstein said to provide the list to the entire Council.

Mr. Stevenson announced that John Englander, author of “High Tide on Main Street: Rising Sea Level and the Coming Coastal Crisis,” will be a guest speaker at the Air District on Monday, March 15th at 3:15pm and invited the Council to attend.

Chairperson Bornstein announced there would not be a staff presentation at the next Council meeting and asked how best to proceed with the creation of two draft reports for comparison purposes. Mr. Stevenson suggested the working group revise the existing report with the edits from today’s meeting and provide it to staff who will create the second version. Member Kurucz suggested a vote on preferences now to avoid the additional work. A consensus of the members present agreed that the new format was preferable.

Member Bramlett urged the Council to allow the work group to do the work assigned to it. Member O’Connor suggested that members with a desire to contribute more centrally to the draft report consider joining the work group.

Chairperson Bornstein asked about the status of arrangements for future presenters. Mr. Stevenson responded that staff has confirmed Dr. Ramanathan and are working on a number of potential speakers that focus on different areas such as health and mitigation, monitoring and modeling, and more. Chairperson Bornstein suggested that BC will be finished after the next report cycle and asked the members to keep the selection of a topic for the third cycle in mind.

Member Kurucz asked what Dr. Ramanathan’s topic would be. Mr. Stevenson responded that he can cover a wide range of topics and has been asked about his preference for the time allowed. Member Kurucz said the broad scope is already established and suggested a deep look at some narrowly focused topics. Chairperson Bornstein suggested Dr. Ramanathan’s focus be on modeling and the second speaker focus on impacts and mitigation. Member Lutzker asked at Dr. Ramanathan speak to BrC and that his BC focus be more local or, at least, not global.

Mr. Stevenson announced that immediately after the Council meeting today, Member Lucks will present his legislative summary of energy, climate change and air quality related matters.

- 5. Time and Place of Next Meeting:** Wednesday, April 10, 2013, Bay Area Air Quality Management District Office, 939 Ellis Street, San Francisco, CA 94109 at 9:00 a.m.
- 6. Adjournment:** The meeting adjourned at 12:09 p.m.

Sean Gallagher
Clerk of the Boards

DRAFT 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, 2012 Advisory Council meeting on Black Carbon:

Black Carbon: Concepts and Issues from a National Perspective

Presenter: Sarah Rizk, an 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 (BC) 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, 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 the public health, environment, and climate.

2. BC is a climate-forcing pollutant, which heats the atmosphere as the most strongly light-absorbing component of PM_{2.5}. BC also reduces ice- and snow pack- albedo. Another component of PM_{2.5} is organic carbon (OC), a component of Brown Carbon (BrC), which causes cooling because it reflects solar energy. Despite remaining uncertainties on the magnitude of the total 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 rises and from tipping point events (e.g., ice cap elimination).
3. BC causes significant health impacts worldwide, consistent with those associated with PM_{2.5}, e.g., respiratory and cardiovascular effects as well as premature death. Emissions and ambient concentrations of directly emitted PM_{2.5} 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 term 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, in the US they contribute 4% of total BC emissions, and can be reduced by a switch to natural gas.
7. To maximize climate benefits from PM health mitigation measures, ambient concentrations of BC and its co-emitted species 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 through actions, e.g., 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 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 0.5 to 70 million barrels per year. By 2020, California is expected to have reduced diesel PM

emissions by 85% below its 2000 levels. Additional emissions reductions by 2020 are planned by 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 Brown Carbon (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 species. 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_{2.5} exposure. BAAQMD staff included many of the above concepts in their November 2012 report: Understanding Particulate Matter.

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

Research

1. **Research:** Ongoing research continues to increase understanding of BC and BrC climate change and public health impacts. 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, uncertainties concerning its health and climate impacts need further study.

Recommendation: The Air District should continue its review the research on health and climate impacts from both BC and BrC, and it should develop Bay Area source emission-inventories and mitigation measures for each.

Source-Specific Reduction Strategies

2. **Biomass Burning:** Biomass combustion contributes 35% of US BC emissions, and their resulting health impacts are well documented. Ongoing Air District PM_{2.5} emission-reduction programs (e.g., for hazard reduction, smoke management, chipping, and composting) should be continued.

Recommendation: The Air District should develop new (regulatory and incentive) programs for safer and more efficient biomass combustion in areas such as improved open burning, equipment upgrades, and seasonally-varied residential 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. For the mitigation of near-term climate change, BC mitigation strategies (e.g., diesel retrofits) are more cost-effective than CO₂-only reduction measures.

Recommendation: The Air District and CARB should accelerate adoption of newer engines in the Bay Area through revision of grant criteria and incentives.

Information Development

4. **Inventory:** Development of a BC emissions inventory supports 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-pollutant emissions rates and relative contributions by sector.

Recommendation: The Air District should develop an inventory of BC emissions and concentrations.

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

Recommendation: Evaluate the relevance of the morphology and fate of modeled atmospheric BC and determine if existing models thus need be updated.

6. **Monitoring:** Limited ambient BC monitoring is carried out for public-health and regulatory reasons, but additional observations are needed to provide more detailed information on BC and BrC 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.

Regional and Ongoing Reduction-Strategies

7. **Planning:** BC is an important short-term climate forcer, whose emissions are controlled, resulting in continually reduced annual emissions. Other agencies, i.e., CARB, BAR, and MTC, also are involved in such successful local control strategies.

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

8. **Control-Strategy Metrics:** Metrics should align with BC control-strategies and goals to both accurately reflect progress toward the goal and to measure 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, e.g., public education of emission impacts and of benefits of diesel-engine regulations.

Recommendation: The Air District should interact with BAR with respect to lube oil burning vehicles and diesel inspection and maintenance programs.

Future Discussion

10. **Future speaker suggestion (Wild fire prevention):** The Council would like to hear from a speaker regarding options for controlled burns for wild-fire fuel reduction.

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 and 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 fuels) 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 effects (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: PM₁₀, PM_{2.5}, and ultra fine.

PM_{2.5}: Particles with diameters ≤ 2.5 micrometers.

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

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