



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

ADVISORY COUNCIL REGULAR MEETING

WEDNESDAY
MARCH 9, 2005
10:00 A.M.

SEVENTH FLOOR
BOARD ROOM

AGENDA

CALL TO ORDER

Opening Comments
Roll Call

Brian Zamora, 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 five minutes each.*

CONSENT CALENDAR

1. Approval of Minutes of January 12, 2005

PRESENTATION

2. EPA Region IX Air Programs

Deborah Jordan, Air Division Director for US EPA Region IX, will provide an overview of the federal air programs.

AIR DISTRICT OVERVIEW

3. Report of the Executive Officer/APCO

Jack Broadbent

Mr. Broadbent will update on the Advisory Council on pending and planned District activities, policies and initiatives.

COMMITTEE REPORTS

- | | |
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| 4. Report of the Joint Air Quality Planning & Technical Committee Meeting of December 16, 2004 | Former Chairs Brazil and Bedsworth |
| 5. Report of the Technical Committee Meeting of February 7, 2005 | Chair Hayes |
| 6. Report of the Air Quality Planning Committee Meeting of February 9, 2005 | Chair Holtzclaw |
| 7. Report of the Public Health Committee Meeting of February 15, 2005 | Chair Torreano |
| 8. Report of Executive Committee Meeting of March 9, 2005 | Chair Zamora |

OTHER BUSINESS

- | | |
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| 9. Report of Advisory Council Chair | Brian Zamora |
| 10. Council Member Comments/Other Business | |

Council or staff members on their own initiative, or in response to questions posed by the public, may: ask a question for clarification, make a brief announcement or report on their own activities, provide a reference to staff about factual information, request staff to report back at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda.

11. Time and Place of Next Meeting

10:00 a.m., Wednesday, May 11, 2005, 939 Ellis Street, San Francisco, California 94109.

12. Adjournment

BZ:jc

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

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- 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.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET, SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

CLERK OF THE BOARDS OFFICE:
MONTHLY CALENDAR OF DISTRICT MEETINGS

MARCH 2005

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting (<i>Meets 1st & 3rd Wednesday of each Month</i>) - CANCELLED	Wednesday	2	9:45 a.m.	Board Room
Board of Directors Budget & Finance Committee (<i>Meets 4th Wednesday each Month</i>)	Wednesday	2	9:45 a.m.	4 th Floor Conf. Room
Advisory Council Air Quality Planning Committee Meeting - CANCELLED	Tuesday	8	9:30 a.m.	Room 716
Advisory Council Executive Committee	Wednesday	9	9:00 a.m.	Room 716
Advisory Council Regular Meeting	Wednesday	9	10:00 a.m.	Board Room
Board of Directors Mobile Source Committee (<i>Meets 2nd Thursday each Month</i>) - CANCELLED	Thursday	10	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Public Outreach Committee (<i>Meets 2nd Monday every other Month</i>) - RESCHEDULED TO 3/21/05	Monday	14	9:45 a.m.	4th Floor Conf. Room
Board of Directors Regular Meeting (<i>Meets 1st & 3rd Wednesday of each Month</i>)	Wednesday	16	9:45 a.m.	Board Room
Board of Directors Public Outreach Committee (<i>Meets 2nd Monday every other Month</i>)	Monday	21	9:30 a.m.	4th Floor Conf. Room
Board of Directors Budget & Finance Committee (<i>Meets 4th Wednesday each Month</i>)	Wednesday	23	9:45 a.m.	4th Floor Conf. Room
Joint Policy Committee	Friday	25	10:00 a.m. – Noon	MetroCenter Auditorium 101 8 th Street Oakland, CA 94607
Board of Directors Stationary Source Committee (<i>Meets 4th Monday every other Month</i>)	Monday	28	9:30 a.m.	Board Room
Board of Directors Executive Committee (<i>Meets 5th Wednesday of Months that have 5 Wednesdays</i>)	Wednesday	30	9:30 a.m.	4 th Floor Conf. Room

APRIL 2005

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	6	9:45 a.m.	Board Room
Advisory Council Joint Air Quality Planning & Technical Committees	Wednesday	13	9:30 a.m.	Board Room
Board of Directors Mobile Source Committee <i>(Meets 2nd Thursday each Month)</i>	Thursday	14	9:30 a.m.	4 th Floor Conf. Room
Joint Policy Committee	Friday	15	10:00 a.m. – Noon	MetroCenter Auditorium 101 8 th Street Oakland, CA 94607
Advisory Council Public Health Committee	Monday	18	1:30 p.m.	Room 716
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	20	9:45 a.m.	Board Room
Board of Directors Budget & Finance Committee <i>(Meets 4th Wednesday each Month)</i>	Wednesday	27	9:45 a.m.	4 th Floor Conf. Room

MAY 2005

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	4	9:45 a.m.	Board Room
Advisory Council Executive Committee	Wednesday	11	9:00 a.m.	Room 716
Advisory Council Regular Meeting	Wednesday	11	10:00 a.m.	Board Room
Board of Directors Mobile Source Committee <i>(Meets 2nd Thursday each Month)</i>	Thursday	12	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Public Outreach Committee <i>(Meets 2nd Monday every other Month)</i>	Monday	16	9:30 a.m.	4th Floor Conf. Room
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	18	9:45 a.m.	Board Room
Board of Directors Stationary Source Committee <i>(Meets 4th Monday every other Month)</i>	Monday	23	9:30 a.m.	Board Room
Board of Directors Budget & Finance Committee <i>(Meets 4th Wednesday each Month)</i>	Wednesday	25	9:45 a.m.	4 th Floor Conf. Room
Joint Policy Committee	Friday	27	10:00 a.m. – Noon	MetroCenter Auditorium 101 8 th Street Oakland, CA 94607

MR:hl
2/25/05 (1:45) p.m.
P/Library/Calendar/Moncal

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 ELLIS STREET - SAN FRANCISCO, CALIFORNIA 94109

Draft Minutes: Advisory Council Regular Meeting and Retreat– January 12, 2005

CALL TO ORDER

Opening Comments: Chairperson Zamora called the meeting to order at 10:00 a.m.

Roll Call: Present: Brian Zamora, Chair, Cassandra Adams, Sam Altshuler, P.E., Diane Bailey, Elinor Blake, Bob Bornstein, Ph.D., Jeffrey Bramlett, Harold M. Brazil, Irvin Dawid, Emily Drennen, Fred Glueck, William Hanna, Stan Hayes, John Holtzclaw, Ph.D., Kraig Kurucz, Ph.D., Norman Lapera, Kevin Shanahan, Jr., Victor Torreano, Linda Weiner.

Absent: Louise Bedsworth, Ph.D.

PUBLIC COMMENT PERIOD: There were no public comments.

CONSENT CALENDAR:

1. **Approval of Minutes of November 10, 2004.** Mr. Glueck requested that “If implemented” be inserted prior to “the program” on paragraph two on page six. Mr. Torreano moved approval of the minutes as corrected; seconded by Mr. Glueck; carried unanimously.

RETREAT FORMAT:

2. **Mission of the Advisory Council**

A. **Role of the Advisory Council.** Chairperson Zamora:

- reviewed California Health & Safety Code Section 40260, the District’s Administrative Code Division I - Operating Policies and Procedures, and “The Advisory Council and Public Agency Working Together” – a paper jointly authored in 1990 by District Deputy APCO Peter Hess and former Advisory Council member John Lagarias. He noted these provide a statutory and administrative base for the Council, along with a fine historical overview of the Council. Last year the Council adopted a process for tracking its recommendations, and this year the process will be made more routine and possibly part of each Regular meeting agenda packet.
- stated the Council Executive Committee will build infrastructure on the role of the Council, update the Council’s By-Laws, develop a fresh mission statement for the Council as well as a Code of Conduct for Advisory Council members which takes into account that the Council speaks as a single body in proffering advice to the staff and/or Board. The Deputy Clerk will research whether other air district have comparable codes for their Advisory Council.
- Chairperson Zamora welcomed new Advisory Council member Cassandra Adams who was recently appointed by the Board of Directors to the Architect category on the Council.

B. Expectations for the Advisory Council. Jack Broadbent, Executive Officer/APCO, stated that the governing Board values the Council’s role in providing input and advice, and the District staff perceives the Council as a body of experts that researches issues and provides input to staff. There are key issues related to ozone attainment, the new standards for particulate matter (PM), toxic air contaminants and the Community Air Risk Evaluation (CARE) program that will assess localized exposures and guide the allocation of Carl Moyer funds. Climate change and indoor air quality issues are also on the near horizon for Council analysis. Staff sees the Council as advising on broad issues and not the District’s day-to-day operations. With regard to the role of the Council, the relationship of individual Council members to staff and the Board, and a possible Code of Conduct for the Council, staff is available to work with the Council members in these areas.

C. Brown Act Refresher. Brian Bunger, District Counsel, stated that the Brown Act requires that the meetings of the Advisory Council, governing Board and Hearing Board be open to the public. In order to conduct business, agendas must be posted so that the public can view them; and decision making must occur in an open forum. Agenda packet materials and copies of presentations must be available at the meetings. Sign-in sheets may be provided to the public, but signing them is not mandatory. While the Council does not have the ability to meet in Closed Session, the governing Board does so that it may discuss litigation, personnel issues national security matters.

The Brown Act also prohibits conducting serial meetings in which members individually reach agreement in turn outside a formal meeting context. While a member of the public that is on the agenda as a guest speaker may participate fully in the discussion of the presentation, members of the public who address a specific agenda item are limited to filling out a speaker card and address the Council for a limited period of time. Thereafter their participation in discussion should be limited either to answering clarifying questions or providing brief comments.

The Brown Act also requires that agendas be posted a minimum of 72 hours prior to a meeting. The District posts agendas on the front door of the building, in the first and seventh floor lobbies, and on the Internet. Issues not on the agenda may not be discussed, except to provide direction to staff, agendize an item for a future meeting, or direct specific research. There are narrow exceptions for “emergency items” —such as a work stoppage, a crippling disaster, or other public health events—but these require a determination that an emergency exists. A majority of the Council must decide an emergency exists and two-thirds of the Council must vote to put it on the agenda. If two-thirds of the Council is not present, then the vote must be unanimous among those present. The emergency issue must also have come to the District’s attention after the agenda was posted.

The Council’s standing committees are subject to the Brown Act. Ad hoc committees formed for special purposes—such as the Applicant Selection Working Group—are exempted from it. Advisory Council members may share information by e-mail or regular mail so long as it is not part of a decision-making process or amounts to an exchange of issues on an agenda item.

3. Round Table Discussion with District’s Management on Key Issues Facing the District and Assignments Proposed by District Staff

Mr. Broadbent presented his January 11, 2005 memorandum entitled “Potential Candidate Assignments from the Executive Officer/APCO” which set forth five areas of study for the Advisory Council as recommended by District staff, as follows:

- A) **Indoor Air Pollution** - While the Air District does not have direct authority, 50% of indoor air pollution originates outdoors, and from an exposure perspective, people are indoors 80-90% of the time. The Executive Officer/APCO is requesting the Advisory Council to explore the possible roles for the District regarding indoor air pollution. – Suggested Committee lead: Public Health.
- B) **Climate Change and Green House Gases** – With the action last year by the California Air Resources Board, the issue of what the Air District can be doing in regard to Global Warming is appropriate for the Advisory Council to review. The Executive Officer/APCO is requesting that the Advisory Council review how the Air District could position itself, under existing authority, to address Greenhouse Gases and Global Warming Issues. - Suggested Committee leads: Technical and/or Air Quality Planning.
- C) **Continued Clean-Up of Existing Diesel Sources** – There is expanded funding for Carl Moyer and other grant programs, this coupled with diminishing emission returns from replacement of conventional technologies with alternative technologies because new conventional technologies (vehicles, engines, etc.) are becoming much cleaner and are changing the cost effectiveness of existing grant programs. The Executive Officer/APCO is requesting that the Advisory Council review the incentive based clean-up programs and recommend areas where the program could be expanded and/or focused on more cost effective options. – Suggested Committee leads, Technical and/or Air Quality Planning.
- D) **Hydrogen Highway Blueprint** – The State has will soon unveil the Hydrogen Highway Blueprint as a road map to the future. The Executive Officer/APCO requests that the Advisory Council explore the Hydrogen Highway Blue Print and advise how the District can partner with the State in the endeavor. – Suggested Committee lead: Air Quality Planning.
- E) **Community Air Risk Evaluation (CARE) Program** – The District has embarked upon a multi-year Community Air Risk Evaluation program. The Executive Officer/APCO requests that the Advisory Council track the progress of the program and provide input as appropriate. – Suggested Committee leads: Public Health and Technical.

Noting that District programs and future challenges have been reviewed by staff and were discussed at a Board retreat last year and at an All-Hands meeting with staff this year, Mr. Broadbent stated:

- a) The District will continue to closely monitor the state budget situation for future fiscal years.
- b) The continuing transition of the District's computer system from the older Databank program to newer systems is the major expenditure apart from personnel costs, and will focus on integrating the production processes in the Enforcement and Engineering Divisions.
- c) The Cost Recovery Study is underway will address the District's permit fee structure. The Governor signed key legislative initiatives last year that will fund the District's grant program well into the future and transmit \$20 million annually to the District for allocation to various emission reduction programs, most of which will deal with heavy-duty diesel. The larger air districts that do not meet attainment receive more funds than those air districts that do, thereby penalizing the latter. The District is working with other air districts and will introduce legislation to correct this disparate treatment in funding allocation.
- d) The District is creating an advisory committee for the CARE program that will have broad representation from diverse groups.

- e) The District has been asked to participate in a state initiative on the use of hydrogen as a fuel for mobile sources. Staff requests the Council's input on the kind and extent of participation in such an effort.
- f) Over 40 public meetings have been held on the 2005 Ozone Strategy, which contains 38 control measures. The document is under public comment and represents a blueprint for future rule-making. An important element concerns pollutant transport to downwind districts. The District is in the process of developing control measures for fine particulate matter.
- g) Last year the Council began its investigation into the field indoor air quality management, and this should be continued this year as part of a continuing policy dialogue at the District. The Council last year recommended the District hire an indoor air quality intern. What is the District's role in this field, and how can District programs be integrated with indoor air quality? What would a District indoor air quality program look like? Mr. Broadbent opined that counties are in a better position than the District to promulgate standards for indoor air quality. Nevertheless, the public does not perceive a distinction between air quality management outside or inside the home. There are growing concerns over Bay Area asthma rates and particularly in the Bayview Hunters Point area. This represents a challenge for the District.
- h) There are some areas of investigation underway at the District into further rule-making concerning refinery operations, including a flare control rule.
- i) There are continuing efforts at the state level to clean up diesel engines, especially in construction equipment and off-road applications. There is an ongoing debate in California to require operators of diesel equipment to buy or purchase the cleanest vehicle available. Fleet rules have been adopted in the South Coast AQMD. Can this be expanded to other air districts? Some concern has also been raised in the meetings of the Board Mobile Source Committee about how to further encourage, or require, school bus operators to clean up school bus fleets.
- j) Given the adoption of the Pavley bill establishing carbon dioxide (CO₂) emission standards, the District needs to play a role in the issue of climate change. Increasing global temperatures are also linked with ozone exceedances. As temperatures rise the potential increases to erode progress in reducing ozone excesses. Staff requests that the Council study and offer advice on how the District should move forward in this area.

In response to Council member questions, Mr. Broadbent stated:

- Urban heat island mitigation strategies can play a part in the effort to reduce temperatures in urban settings, thereby helping to reduce the rate of ozone exceedances as well. Energy conservation will not only reduce global warming but also emissions of nitrogen oxide (NO_x).
- The list of proposed candidate assignments for the Council does not contain the 2005 Ozone Strategy as the Council offered advice on that last year. Staff will nevertheless provide updates as necessary as the document goes through public and environmental review.
- Regarding a schedule for topic review, comments on the CARE program and diesel clean-up are on-going, while climate change issues would be desirable in the first-half of the year.
- The EPA may replace the 1-hour ozone standard with an eight-hour standard. Staff will keep the Council informed as to the disposition of the former.
- The District is not a "first responder" in episodic release events, and does not perform plume modeling in real-time.

4. **Convene to Working Lunch for Meetings and Discussion Sessions of the Public Health Committee, Air Quality Planning Committee and Technical Committee.** The Council convened into Standing Committee format at 11:55 a.m.
5. **Reconvene to Full Council Format for Follow-up on Committee Discussion Sessions.** The full Advisory Council reconvened at 1:04 p.m. The Standing Committees reported out as follows.

Air Quality Planning Committee. Dr. Holtzclaw stated that climate change, diesel clean-up and the hydrogen highway blueprint would constitute the Committee’s work plan. The state is expected to issue a draft plan on the hydrogen highway blueprint this month. The Committee could schedule a guest speaker from the state to provide a presentation on it. The AQPC will coordinate with the Technical Committee on the other two candidate assignments. AQPC meetings will convene in the mornings of February 9, April 13, June 8, August 10, October 12 and December 12.

Technical Committee. Mr. Hayes stated that the CARE program will be the first priority, climate change the second, followed by diesel clean-up, the transition to the eight-hour ozone standard and the problem of inter-basin ozone transport. The Committee will also examine if there is a technical nexus between ozone concentrations and greenhouse gas emissions, both in stationary source emissions and fuel choices. The Committee will initially want to receive a staff presentation on the current status of the CARE program. It will also discuss climate change and where it can weigh in on the issue and identify practical and attainable goals by the first part of the year. Subsequently, the Committee will invite a guest speaker to talk about key aspects of greenhouse gas and climate change problems. Speakers may be invited from the California Climate Action Network—which is a voluntary registry for greenhouse gases—as well as Stanford University, which sponsors a major greenhouse gas climate change program. The Committee also believes that diesel clean-up and the CARE program are inter-related in several respects. The Committee’s first meeting will be held in early February.

Public Health Committee. Mr. Torreano stated the Committee will meet at 1:30 p.m. every third Monday of the even numbered months, except for February, as follows: February 15, April 18, June 20, August 15, October 17 and December 19. The Committee will address indoor air quality and assess the scope of the issue and different agency jurisdictions at the municipal, county, state and federal level. It may also sponsor a stakeholders’ forum for the discussion of indoor air quality issues. The Committee will review the dynamics of community outreach associated with indoor air quality, and will also address the CARE program and review any policies coming out of that program.

COMMENDATION/PROCLMATION:

6. **Recognition of Outgoing Chairperson Elinor Blake.** Chairperson Zamora stated that Ms. Blake set a robust agenda for the Council last year and accomplished everything on it. Toward the end of her term as Chair, she also asked the Council members to evaluate the accomplishments for the year.

OTHER BUSINESS:

7. **Council Member Comments/Other Business.** Mr. Dawid commended staff for including the Joint Policy Committee on the Monthly Calendar of District Meetings. Mr. Broadbent noted that the Governor has expressed interest in seeing former District Board member Sunne Wright McPeak participate on the Joint Policy Committee. Messrs. Shanahan and Zamora thanked the management and Clerk’s Office staff for their professionalism and support of the Council over the years.

8. Time and Place of Next Meeting. 10:00 a.m., Wednesday, March 9, 2005, 939 Ellis Street, San Francisco, CA 94109.

9. Adjournment. The meeting was adjourned at 1:30 p.m.

James N. Corazza
Deputy Clerk of the Boards

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

APPROVED MINUTES

Advisory Council Regular Meeting
Joint Meeting of the Technical and Air Quality Planning Committees
9:30 a.m., Thursday, December 16, 2004

1. **Call to Order – Roll Call.** Chairperson Brazil called the meeting to order at 9:40 a.m. Air Quality Planning Committee Members present: Harold Brazil, Joint Committee Chairperson; Irvin Dawid, Emily Drennen, Fred Glueck, John Holtzclaw, Ph.D., Kraig Kurucz, Kevin Shanahan. Technical Committee Members present: Joint Committee Chairperson, Louise Bedsworth, Ph.D., William Hanna, John Holtzclaw, Ph.D., Norman A. Lopera, Jr. Technical Committee Members absent: Sam Altshuler, P.E., Stan Hayes, Robert Bornstein, Ph.D.
2. **Public Comment Period.** There were no public comments.
3. **Approval of Minutes of October 12, 2004.** Dr. Bedsworth requested that “CO” be changed to “CO2” on line three of paragraph two on page two; “NOx emission in-use” to “in-use NOx emissions” in line one of paragraph two on page three; and “as is” to “as are” on line three of paragraph three on page two. Mr. Hanna requested that he be listed as “Present” instead of “Absent” on page one under “Call to Order/Roll Call.” Mr. Lopera requested changing “in of” to “of” on line two of paragraph four on page two. Mr. Dawid requested changing “easily” to “most easily” and “forms” to “sources” in line one of paragraph one on page two. Mr. Dawid moved approval of the minutes as amended; seconded by Dr. Holtzclaw, carried unanimously.
3. **Discussion of Vehicles and Fuels**

Dr. Bedsworth stated the Joint Committee indicated it would review the presentations given at the last meeting, entitled “The Role of Advanced Technology Vehicles in Improving Air Quality and Reducing Greenhouse Gases” by *John Boesel, President and Chief Executive Officer for WestStart-CALSTART*, and “Alternative Fuels Now... and in the future” by *Mike Jackson, Director, TIAX LLC*.

She distributed her memorandum entitled “Issues for Committee consideration with respect to vehicles and alternative fuels,” dated December 15, 2004, which summarized the key points raised by the presenters at the October meeting, as follows:

1. The feasibility of the district collecting and distributing funds for alternative fuel research and development projects, as is done in the South Coast;
2. The feasibility and implications of including greenhouse gas emissions (GHG) as an additional criteria in the evaluation of Carl Moyer projects;
3. Explore and recommend GHG emission reduction measures from mobile sources, beyond the light-duty vehicle sector;
4. Should we evaluate alternative fuels for use only by mobile sources or by mobile and stationary sources?

5. Potential incentives and programs to encourage the use of clean technology options that are available today, e.g. PZEVs, AT-PZEVs, CNG, etc.;
6. Relationship of district activities on alternative fuels and the evolution of and information gathered in the CARE program;
7. Role of district outreach and education programs in encouraging the use of alternative fuels;
8. The role of an integrated, multi-pollutant approach to evaluating incentive project funding (both for alternative fuels as well as new technologies).

She observed that one of the speakers recommended the Council advise the District to collect and distribute funds from vehicle registration fees for sponsoring alternative fuel research and development projects, and also to recommend the inclusion of greenhouse gases as a evaluation criterion for Carl Moyer projects. Another suggestion concerned developing ways to reduce greenhouse gases from stationary and other non-mobile sources.

In discussion of how vehicle surcharge fees might support alternative fuel research projects, Michael Murphy, Advanced Projects Advisor, observed that the District funds from the \$4.00 fee currently imposed by the District can be used to support projects that advance innovative technology, within the context of the adopted cost-effectiveness criteria, on a case-by-case basis. On December 21, the District's Board will vote on whether to increase this surcharge fee by \$2.00. Recently adopted state legislation gave local air districts authority to pursue additional vehicle projects, and funding may be allocated to diesel re-powering, alternative fuels, and devices that concern engine idling. There is some coordination between the Bay Area and South Coast air districts on vehicle projects, which helps to avoid duplication in research and development projects. There is also some overlap among vendors for certain projects, and the Bay Area often pursues projects in this region that may not be ideally pursued in the South Coast. The Bay Area is presently limited to funding public agencies for specific projects, and while planning and research is excluded, the District's Board can authorize demonstration projects. However, the District would need additional legislative authorization to sponsor the kind of technology advancement projects that the South Coast AQMD supports from a separate fund of vehicle registration fees.

When the District has funded projects that contain aspects of research and development, these emphasize engine technology, in concert with the Executive Order issued by the California Air Resources Board (CARB) that allows a demonstration project for an uncertified engine that holds promise to meet engine emission requirements. Typically, the manufacturers will come to a fleet user and a granting agency and petition for endorsement of a project that will include field-testing.

Mr. Lapera opined that the Joint Committee should first ascertain if enough being done in the field of research and development. Mr. Shanahan noted that considerable alternative fuels research is being conducted by CARB, the South Coast AQMD and elsewhere, driven by the Clean Air Act attainment goals. The expertise developed to date is well suited to address future opportunities in research and development. Market and commercial considerations, as well as the advent of increasingly stringent vehicle emission standards, provide opportunities for researching, developing and deploying new, and in some cases, alternative, technologies. Mr. Lapera noted that the successful commercialization of hybrid vehicles to the point at which there is a waiting list among consumers for them is indicative of the need to improve the connection between research and development, on the one hand, and market availability, on the other.

Mr. Shanahan replied that, given the vast difference between the Moyer program a few years ago and today, the question is whether or not the available funds are being spent most effectively in light of technological, public health and transit mode categories, and given the additional fact that the Moyer program now addresses particulate matter (PM) emissions. The issue may be more of “fine tuning” the funding allocations by the District. Ms. Drennen observed that it is difficult to do so without knowing the budget.

In discussion of distributing the topics identified in Dr. Bedworth’s memorandum between the two Committees, the Joint Committee reached consensus that the AQPC should focus primarily on the funding aspects and the Technical Committee on research and development, and inventory issues:

No. 1 – Funding issues are appropriate to the AQPC and the research aspects on alternative fuels from the perspective of the Bay Area is appropriate to the Technical Committee.

Nos. 2 & 8 – These are interrelated. The inclusion of greenhouses gases as an evaluation criterion for the Carl Moyer program is topical in light of discussion at the recent Board of Directors Retreat regarding this district taking on the issue of global warming. One issue concerns how the inclusion of this criterion might affect current Moyer projects and the impact on cost-effectiveness analysis, and another concerns the extent to which alternative fuels involve various trade-offs in emissions. The Technical Committee could examine the pros and cons and then present the results to the AQPC for policy analysis. This item needs to be early on the Committees’ agendas next year.

No. 3 – Since the district does not have control over mobile sources, this is largely philosophical.

No. 4 – Air districts, such as the San Joaquin Valley APCD, that have had some experience with alternative fuels should be consulted. The extent to which alternative fuels can be utilized by stationary sources is also very relevant and fits very precisely with the District’s statutory mission. European experience should be brought into the picture as well, particularly as regards bio-diesel, its negative impacts on NOx emissions and the role of fuel additives in mitigating them. The Technical Committee should take the lead in evaluating biodiesel.

The Joint Committee agreed that the utility of alternative fuels should be assessed both for mobile and stationary sources. The first task is to review the emission inventory for stationary sources, current fuel sources and the viability of bringing alternative fuels to that market. Renewable sources of energy must also be included in the assessment. Biodiesel ranks highly as a renewable energy source but has negative impacts as regards NOx emissions. Mr. Murphy clarified that for stationary sources, alternative fuels are evaluated through “Best Available Control Technology” (BACT) and primarily in terms of meeting engine emission requirements.

The Joint Committee agreed it must also complete its review of the list of all the alternative fuels it earlier identified for review and provide the pros and cons. The Center of Energy Efficiency and Renewable Technology (CEERT) in Sacramento is a good source of information.

Mr. Shanahan noted that the degree to which biodiesel can be merged with engine aftertreatment is deserving of technical analysis and a review of where such efforts are being conducted elsewhere. Whether it is preferable to have ultra low sulfur diesel now or await the development of Fischer Tropes diesel, is important to consider, as are the pros and cons of each approach. Mr. Glueck opined that the efficacy of the fuel must be considered along with the totality of effort it takes to produce it. The extent to which a fuel lessens dependence on foreign oil is also important.

Mr. Shanahan suggested the AQPC look into the matter of emission reduction credits for stationary sources, and to assess whether it makes sense to allow a corporation that owns a stationary source to retrofit vehicles and receive credits that allow the source to continue to pollute at a certain level. Mr. Brazil noted that in the transportation community there are also reciprocal considerations of how to get credits from the non-transportation sector. Mr. Hanna suggested that credit ought to be given to a manufacturer that gets half of its workforce to take public transit to and from work.

Nos. 5 & 7 – The Joint Committee agreed that these were linked and should be taken up by the AQPC. The addition of the District’s Community Relations Manager is important in this respect.

No. 6 – This topic contains technical issues that lead to public health considerations. This may be a longer-term issue in the Joint Committees’ review of alternative fuels.

5. **Committee Member Comments/Other Business.** Mr. Dawid requested that the meetings of the Joint Policy Committee be listed on the Monthly Calendar of District Meetings that is issued by the Air District’s Office of the Clerk of the Boards.
6. **Time and Place of Next Meeting.** To be determined at the Advisory Council Regular Meeting and Retreat scheduled for January 12, 2005.
7. **Adjournment.** 11:45 a.m.

James N. Corazza

James N. Corazza
Deputy Clerk of the Boards

:jc

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

DRAFT MINUTES

Advisory Council Technical Committee Meeting
9:30 a.m., Monday, February 7, 2005

- 1. Call to Order – Roll Call.** Chairperson Hayes called the meeting to order at 9:40 a.m. Present: Stan Hayes, Chairperson, Sam Altshuler, P.E., Diane Bailey, John Holtzclaw, Ph.D., Norman A. Lopera, Jr. Technical Committee Members Absent: Bob Bornstein, Ph.D., Louise Bedsworth, Ph.D.,
- 2. Public Comment Period.** There were no public comments.
- 3. Approval of Minutes of Joint Air Quality Planning and Technical Committee Meeting of December 16, 2004.** Mr. Lopera moved approval of the minutes; seconded by Dr. Holtzclaw; carried with Mr. Altshuler abstaining.
- 4. Discussion of the District’s Community Air Risk Evaluation (CARE) Program.** Janet Stromberg, CARE Program Manager, stated that the CARE program goals include evaluation of health risk from toxic air contaminants, public outreach and the planning and implementation of risk reduction strategies. Program objectives include public outreach, development of emission inventory and emission density maps, technical and analytical quality assurance, a detailed pilot cumulative risk assessment from stationary sources in a neighborhood, the identification of risk reduction opportunities and the implementation of a risk reduction plan. Public outreach and input will be sought from the District’s Advisory Council, the CARE Advisory Committee, and the public at community meetings and workshops on regulatory proposals. The District’s website will be revised with information derived from the CARE program, and regulatory proposals will very likely follow, with the District possibly seeking regulatory authority where necessary.

The District’s work will commence with developing an emission inventory. Subsequent emission density maps will focus on area and point sources, on-road motor vehicles, criteria pollutants and toxic air contaminants. The emission inventory work on area sources is largely complete. Geographical Information System (GIS) maps will house all the emission inventory data, and the software has been purchased and installed on several District workstations for this purpose.

Staff is analyzing particulate matters (PM) on filters with the aim of distinguishing old from new carbon. Analytical equipment for the laboratory has been purchased for this purpose. At the end of January a draft report was completed. Emission models will observe individual profiles of emission species and correlate them with sources, to ensure reliability of emission density maps.

The District will use data from emission density maps, modeling analysis and census data on the demographic characteristics of neighborhoods to choose a neighborhood in which to conduct a detailed cumulative risk analysis. District records will also be audited for accuracy. The area selected for analysis will be analyzed for terrain features and population profiles. Risk reduction opportunities will then be identified and a risk reduction plan developed for implementation.

Letters of invitation have been sent to prospective members to form a CARE Advisory Committee. Prospective members are being sought from academic backgrounds, community organizations and advocacy groups, regulated industries, and medical and public health backgrounds. This Advisory Committee will first meet on February 17, 2005 and thereafter on a bi-monthly basis.

In reply to questions, Ms. Stromberg stated that the pilot neighborhood to be studied on a cumulative risk basis will be chosen based on identification of where the toxic impacts are the highest. Overview maps of the entire Bay Area will be combined with data from mobile point and area sources in order to identify the high impact areas. Staff will also assess the population groups who are suffering the greatest impacts. If successful, the program may lead to the study of other neighborhoods. Jack Colbourn, District Policy Advisor, indicated that as the project matures staff will return to the Technical Committee for advice on selecting the neighborhood to be studied. He suggested that a joint meeting be held with the CARE Advisory Committee at a future point.

Chairperson Hayes noted that as estimates are that as much as 70% of air toxics risk derives from diesel engine emissions, the emission inventory for diesel is particularly noteworthy. Monitoring is therefore especially important and the means by which measurements of elemental carbon are used to derive diesel particulate levels are critical to assess. The Technical Committee can provide its advice on this methodology. Ms. Stromberg noted that preliminary results show considerable new carbon in the portion of elemental carbon on the PM filters, which is somewhat surprising. The key findings in the preliminary draft report include:

- a. most anthropogenic PM₁₀ or PM_{2.5} derives from wood and fossil fuels. New carbon is not derived from fossil fuels.
- b. geological dust is a small contributor to PM₁₀ and negligible to PM_{2.5}
- c. tire and brake wear contributes little to PM concentrations
- d. peak PM concentrations occur in winter
- e. ammonium nitrate is a contributor to PM
- f. carbonaceous PM accounts for half of PM₁₀ and PM_{2.5}; ammonium sulfate is a major contributor to annual PM but small to peak PM.

Henry Hilken, Environmental Planning Manager, stated that in parallel with the work on the CARE program, the District is involved in PM planning as a response to legislation passed last year. Regulatory proposals will be brought to the District's Board of Directors this summer.

5. Discussion of District's Role in Climate Change Issues.

Joe Steinberger, Principal Environmental Planner, stated that last year the District entered into a contract with Sonoma County. It is comprised of two phases. The first concerns conducting an inventory of greenhouse gas (GHG) emissions inventory. The second focuses on programs that concern criteria pollutants and how these interface with GHG emissions. This project should be completed by the year's end.

The District is involved in an energy grant to the Bayview Hunters Point area for energy efficiency measures to reduce local GHG emissions. The project will employ residents to engage in energy efficiency projects regarding replacement of lights and thermostats.

The District has also incorporated GGH issues into ozone strategy, through several measures. One promotes energy conservation through adoption by local governments of model ordinances. Transportation Control Measures (TCMs) that reduce vehicle trips and encourage use of alternative modes of transportation also reduce GGH emissions. Also, the District has put together a website addressing global climate change and GGH emissions, which addresses the history of climate change and identifies measures the District has implemented. Working with the International Council for Local Environmental Initiatives (ICLEI), the District is discussing development of a GHG emissions inventory for the Bay Area, and the entry of data into the "Clean Air and Climate Protection Software" that ICLEI has developed. This will supplant local government agencies having to conduct their own emission inventories, although they can still identify their own mitigation measures. The California Climate Registry will sponsor a conference on GHGs later this year, in which the District will participate. Santa Clara County has requested that the District partner with it in developing a climate change resolution. The District has also reviewed Marin County's general plan for climate change measures. Mr. Colbourn noted that the District will roll out a GHG emission program this June in anticipation of the District's celebration of its 50th Anniversary. The District will also participate in World Environment Day in the City this June.

Mr. Steinberger stated that the District has developed a draft list of 24 areas in which to reduce GHGs. These include development of a GHG emissions inventory, further development of the District's website to include GHG issues, adoption of a District resolution on GHGs, consideration of GHGs in eligibility criteria for mobile source programs, further investigation of the link between criteria pollutant and GHG emission reductions, and cooperation with regional agency partners to address climate change. The Committee requested to receive the staff list and offer comments on priorities and implementation. Mr. Colbourn suggested the Committee add to it and provide technical advice. Mr. Hilken added that staff is also looking for ways to outreach to cities and counties through smart growth programs, modification of air quality elements in general plans and of local plan guidance on energy efficiency, and adoption of model ordinances for energy conservation. Staff is looking to see what incentive opportunities are also available through grants and funding programs sponsored by the Metropolitan Transportation Commission (MTC). Ms. Bailey suggested that staff consider adding GHGs to the District's permit program, and also focus on such renewable fuels efforts as San Francisco's bio-diesel program which may collect restaurant grease.

On the matter of legal authority, Mr. Steinberger noted that the California Air Resources Board adopted a mobile source emission regulation for GHGs, which was successfully challenged in court based on EPA's determination that CO₂ is not an air pollutant. However, there may be some level of authority available to the District under the California Clean Air Act (CCAA). Chairperson Hayes noted that New Jersey has declared CO₂ a pollutant and is attempting to regulate under that finding, although controversy has ensued. Mr. Altshuler stated that the opportunity to include GHG emission reduction credit for the mobile source programs is timely and should be pursued. Emissions of lubrication oil in engines, as well as the sequestration of carbon, ought also to be considered.

Messrs. Colbourn and Hilken stated that staff is working on next fiscal year's budget and may request additional staff for working on GGH emissions issues. In the interim, the Committee can review the list of GHG measures and offer advice on priority, implementation and technical aspects.

Mr. Lapera apprised the Committee on the status of the program to remove 1,500 acres of eucalyptus trees in the East Bay Regional Park District, and how this will reduce biogenic emissions of isoprene, which is the major ozone precursor emitted by eucalyptus trees. Eucalyptus trees are not indigenous to the area, and the park environment will be returned to its native Oak Bay Laurel woodlands. Biogenic emissions of isoprene will be reduced along with fire hazard. This provides a unique opportunity for cooperation between the Air District, the park district and environmental groups. The extent to which this fuels management program has the potential to reduce emissions of GHGs requires further assessment. Ms. Bailey observed that isoprene is less an air pollution problem than wildfires. Mr. Hilken noted that staff supports municipal tree planting projects to reduce urban islands, and sends letters to cities and counties encouraging them to plant trees after review of the tree emission profiles.

The Committee requested staff to transmit the list of 24 GHG emission reduction measures for Committee review and prioritization. It agreed that it is important to track the extent to which these may dovetail with the District's CARE program and efforts to meet both the ozone and PM standards. If there is a need for funding separate programs to reduce CO₂ emissions, that is also important to review. Dr. Holtzclaw urged coordination with the Air Quality Planning Committee where possible, including the possibility of holding a joint meeting. Chairperson Hayes stated that some information gathering would be useful at the outset to assess what the GHG emissions inventory looks like in the Bay Area, and to get a sense of the primary sources of such emissions.

The Committee agreed to request a speaker from the Climate Action Network to address the Committee on the matter of Bay Area GHG emissions. Related issues concern the linkage with criteria pollutants, the reduction of combustion which generates the most CO₂, along with energy efficiency issues. Mr. Lapera suggested there is a need to schedule the remaining meeting agendas in accordance with the staff's schedule and the Committee's goal of developing by the end of this year a recommendation for staff consideration. At the next Advisory Council Regular meeting in March, there will be an opportunity to further review the Committee's schedule on this topic.

In addition to the information gathered from the presentation on GHG emissions and the discussion of the District's 24 GHG emission reduction topics, the Committee requested that District staff make a presentation at its next meeting on diesel emissions within the context of the District's CARE program. The Committee agreed that its work on the topic of cleaning up diesel engines should be limited to the context of the CARE plan. The primary areas of focus should be source apportionment and monitoring methods for diesel which distinguish new from old carbon and use the former as a tracer for diesel emissions.

6. **Committee Member Comments/Other Business.** Dr. Holtzclaw stated that he will discuss rapid transit issues at a forthcoming SPUR meeting to be held at 322 Sutter Street.
7. **Time and Place of Next Meeting.** 9:30 a.m., Wednesday, April 13, 2005 -- Joint Meeting with the Air Quality Planning Committee -- 939 Ellis Street, San Francisco, CA 94109.
8. **Adjournment.** 11:45 a.m.

James N. Corazza
Deputy Clerk of the Boards

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Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

DRAFT MINUTES

Air Quality Planning Committee Meeting
9:30 a.m., Wednesday, February 9, 2005

1. **Call to Order – Roll Call.** 9:40 a.m. Present: John Holtzclaw, Ph.D., Chairperson; Irvin Dawid, Emily Drennen, Fred Glueck. Absent: Kraig Kurucz, Kevin Shanahan.
2. **Public Comment Period.** There were no public comments.
3. **Approval of Minutes of joint Air Quality Planning & Technical Committee Meeting of December 16, 2004.** Mr. Dawid stated that “Joint Policy Committee” instead of “Regional Agency Coordinating Committee” should be listed under “Committee Member Comments on the last page. Mr. Glueck moved approval of the minutes as corrected; seconded by Chairperson Holtzclaw; carried unanimously.
4. **The Current Status of Hydrogen Production and Fuel Cell Technologies and Recent California and U.S. Government Initiatives.** Dr. Tim Lipman, U.C. Berkeley, stated that fuel cell technology has progressed over the last decade, but there remain some obstacles in terms of hydrogen production and distribution. He opined that at this time what may be needed is a broad, clean energy strategy of which the hydrogen fuel cell technology is an increasing part. Also, given the state’s legislative concern over greenhouse gas (GHG) emissions with the Pavley bill, it is important to assess the fuel economy of fuel cell vehicles (FCVs) and hybrids of various types.

Dr. Lipman reviewed the various fuel cell types, noting that the ion exchange membrane cell is intended for vehicle use, entails low temperature transfer and uses platinum as the catalyst material. Phosphoric acid cells have to date proven to be the most useful for stationary source applications, with such other technologies as molten carbonate and solid oxide becoming increasingly feasible for stationary application. At high temperature nickel can be used as the catalyst and is cheaper.

Displaying a diagram of how a fuel cell works, Dr. Lipman explained that hydrogen enters the cell and makes contact with the catalyst, splits into two protons and electrons, and as the protons go through the membrane, the electrons travel around the external circuit to meet oxygen and the protons to form water, generating electricity. Fuel cells can be stacked, and these assemblies can produce a high voltage system of many cells. The power density of fuel cells has increased dramatically in the last decade: in 1994 a cell generated 200 watts per liter and recently General Motors generated 2 kilowatts per liter from a fuel cell.

Displaying a series of photographs of early and mid-1990s Daimler Prototype FCVs, Dr. Lipman identified where the fuel cells were installed. He noted that considerable efficiencies have been obtained in the vehicle design of the Daimler/Chrysler Nacar 4 FCV, which represents the “next generation” of FCVs. The Air District will receive two of these vehicles in the near future. While the vehicle is production ready, there are cost issues, and concerns over the unavailability of hydrogen fueling stations in the state at this point.

FCVs presently cost \$3,000 - \$4,000 per kilowatt, compared with \$40-\$50 per kilowatt for gasoline fueled vehicles. However, FCVs are not mass produced at this time. Under some mass production scenarios, the cost of an FCV would be \$200 per kilowatt. This is strictly in terms of the capital cost of the fuel cell system. When durability is factored in, it should be noted that platinum is fairly fragile and susceptible to being poisoned by sulfur or physically damaged from vibration and wear and tear. Fuel cells tend to last upwards of a couple of thousand hours, but in order to be competitive with gasoline engines performance of up to 4,000 hours would be needed.

With regard to hydrogen production infrastructure, centralized strategies such as coal, nuclear and biomass entail low production costs but high transportation costs. It may be possible to sequester the CO₂ emissions although this technology is not fully proven. Distributed hydrogen production, using natural gas or electricity as a source and electrolysis for production entail higher production costs but much less distribution and transportation costs. Oil refineries with hydrocrackers generate a considerable amount of hydrogen, which could support mobile refueling station options.

Dr. Lipman displayed a map of the USA showing the potential for hydrogen production from various types of power, including renewable energy, biomass, solar and wind. He also described options for hydrogen production and distribution within the context of on-site production at larger centralized plants and subsequent distribution. He displayed the latest models for mobile hydrogen refueling technology, with a trailer fueled at a central hydrogen facility and towed to a fueling area. This is reasonably economical if the trailer operates within 100 miles of a hydrogen facility. The Governor has spoken of developing an infrastructure of a hydrogen station every 20 miles.

Cost and emission estimates vary with different means of hydrogen production and whether they are near- or long-term. He noted that in general where there are lower production costs there are higher transportation costs. With regard to renewable energy in wind and solar power, costs are high, but over the future these are projected to decrease. The National Academy of Scientists commissioned a study of centralized, medium production scale and distributed options, taking into account production, distribution and dispensing costs, CO₂ sequestration and a carbon tax. Centralized production was the least expensive, with medium production scale ranking next costly, and the distributed option in some ways being comparable with the centralized approach.

FCVs do not emit GHGs, but some hydrogen production processes do. Therefore, the entire fuel cycle is at issue. Using natural gas to generate hydrogen, a 20-40% reduction in GHGs can be achieved. Using an electrolyzer increases GHG emissions due to the use of coal. With GHGs it is not important where emissions occur, but with regard to air pollutants it is important to know the location of where the emissions occur, particularly if there are hot spots within a region. The type of hydrogen production will determine the type of pollutants emitted upstream in the fuel cycle, and the District requires clear advice on the implications of a given production technology.

Dr. Lipman displayed a map of the location of 15 hydrogen stations in California, noting that there are six more planned for construction. He also displayed a diagram of a distributed hydrogen system using natural gas for hydrogen production and identifying the process for transfer to a reformer, compression, storage and dispensing to a vehicle. In reply to questions he noted that home refueling using natural gas supplied to a residence is under consideration, and that some advocate simply using compressed natural gas for natural gas vehicles in such cases. There are also economies of scale to be considered, because the installation of reformers in homes, in order to be economical, would have to be mass produced in order to drive the cost down.

The challenge that faces the hydrogen fuel cell technology today is akin to the “chicken or the egg” syndrome. Energy stations could combine reformer and production technology in a stationary place to produce power, and an offshoot would be the production of hydrogen to refuel vehicles. However, the infrastructure overall (production, delivery, trucks, gas trucks, pipelines) will not be developed unless there are vehicles purchased, and people won’t purchase vehicles unless there is infrastructure to support them. Small energy production stations are a possible solution, and could support business and agency fleets to begin with, and expand into key corridors. Such facilities could be made available to the public and the process could begin in that manner. To date, there have been only a few minor accidents associated with the hydrogen production technology.

There are some major government initiatives under way regarding hydrogen, with the US Department of Energy’s FreedomCar program beginning in 2003. In April of last year, the allocation of \$350 million was announced regarding a hydrogen storage program, learning demonstrations, fuel cell research and hydrogen education. California Governor Schwarzenegger has issued an Executive Order designating 21 Interstate Highways as the California Hydrogen Highway network, with projected infrastructure development by 2010 with production of hydrogen from renewable energy sources. The blueprint for this plan is due to be issued very shortly. It will identify a rapid transition to a hydrogen economy in the state, institute negotiations with automobile manufacturers to ensure the availability of cars on the market, the development of safety standards, emergency response procedures, incentives for vehicle purchase and advocacy of renewable energy sources for producing hydrogen. The website is www.hydrogenhighway.ca.gov.

In summary, Dr. Lipman stated that while FCVs are coming on strong there are still technical and economic challenges. Hydrogen production can be approached from a variety of ways with varying environmental impacts and economic implications. There is considerable governmental activity at the state and federal level, but budgets across the board are tight. Overall, a broad clean energy strategy is appropriate at the present time, with clean sources of electrical power and other clean fuels that provide a basis for transition to hydrogen power. Public expectations as to the availability and implementation of FCV technology must be responsibly managed.

In response to questions from Committee members, Dr. Lipman replied:

- From an air quality perspective, clean fuel vehicles can be distinguished from clean vehicles in that the latter can be achieved running on conventional fuels. In such instances, durability over time becomes a key factor in comparing the two approaches to vehicular motive power.
- Platinum fuel cells could be poisoned over time in an urban area where there is enough CO₂ in the air and potentially in the fuel stream to poison the membrane.
- Durability issues in comparison with electric battery powered vehicles require further operational experience in order to provide a good baseline of data. If battery powered vehicles had batteries that lasted the life of the vehicle they would be economically attractive.
- Platinum is recyclable as a fuel cell component. The cost has reduced dramatically in the last decade.
- The target date of 2010 for the hydrogen highway is rather early; it appears more realistic to see this as a stepping stone of sorts.
- There are opportunities for an international partnership on the hydrogen fuel cell technology, particularly given that many automobile companies are global in scope.

- The use of natural gas as a hydrogen production source does not entail a shortage as estimates are that there are one million cubic feet of natural gas on the planet for every person.
- Distributed power generation through use of a power plant in a building would eliminate the need for a back-up diesel generator and provide for production of hydrogen as well

Michael Murphy, Advanced Projects Advisor, stated that with regard to incentives in the hydrogen highway blueprint, it is noteworthy that air districts have been major underwriters of clean fuels projects. The blueprinters will look at the District as a major funding source. Perhaps the Council could opine on where to place incentive funds under mobile source programs to a hydrogen fuel cell program, particularly in the overall context of the District's support of other clean vehicle and clean fuels programs.

The Committee thanked Dr. Lipman for his presentation. Chairperson Holtzclaw indicated that the next Committee meeting will be held jointly with the Technical Committee to discuss the CARE program and GHG emission issues. After further discussion, the Committee agreed to hold an interim meeting in March to receive a presentation on the state's hydrogen highway blueprint.

- 5. Committee Member Comments/Other Business.** Ms. Drennen apprised the Committee that tomorrow the Board of Directors Mobile Source Committee will discuss revising the criteria governing the Transportation Fund for Clean Air and adopting criteria for the extra two dollars that will be allocated for the Carl Moyer Program. Mr. Dawid stated that in December of 1995 the late Air Pollution Control Officer of the district, Milton Feldstein, wrote an outstanding letter to the Marin Independent Journal entitled "Smog Tax is the Answer". It concerns providing incentives for and implementing programs regarding the use of clean fuel and vehicle technologies.
- 6. Time and Place of Next Meeting.** 9:30 a.m., Tuesday, March 8, 2005, 939 Ellis Street, San Francisco, California 94109.
- 7. Adjournment.** 11:45 a.m.

James N. Corazza
Deputy Clerk of the Boards

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939 Ellis Street
San Francisco, California 94109

DRAFT MINUTES

Advisory Council Public Health Committee Meeting
1:30 p.m., Tuesday, February 15, 2005

1. **Call to Order – Roll Call.** Chairperson Torreano called the meeting to order at 1:33 p.m. Present: Victor Torreano, Chair, Cassandra Adams, Elinor Blake, Jeffrey Bramlett. Absent: Linda Weiner.
2. **Public Comment Period.** There were no public comments.
3. **Approval of Minutes of October 25, 2005.** Mr. Bramlett moved approval of the minutes; seconded by Chairperson Torreano; carried unanimously.
4. **Indoor Air Quality: An EPA Perspective.** Barbara Spark, Indoor Air Program Coordinator, U.S. EPA Region IX, stated she would address EPA's programmatic on indoor air quality (IAQ) its perspective on regulatory jurisdiction, collaboration with agencies on the state and local level, and its development of incentive programs. Also, EPA suggestions as to what role the District might play in IAQ management will be addressed. While EPA neither regulates IAQ nor comments on the IAQ regulatory work of other agencies, it does collaborate with other agencies and non-governmental organizations in emphasizing voluntary changes to behavior related to IAQ.

The State Department of Health Services has estimated that people spend 90% of their time indoors, where the air exchange is less effective than outdoors. The Total Exposure Method Assessment Study which occurred in the mid-1990's estimated that indoor concentrations can be two to five times higher than outdoor concentrations. Faculty at U.C. Berkeley estimate that a molecule released indoors is 1,000 times more likely to enter the lungs than one released outdoors.

Sources of air pollution include outside air (smog, traffic, pollen), construction and cleaning (adhesives, solvents, paints, insulation, ceiling tile), furnishings (carpets, upholstery, pressed-wood), office equipment (copiers, computer screens), combustions (stoves, tobacco, fireplaces), ventilation systems (dirty filters, moldy coils), and occupants (personal care products, pet dander, dry cleaned clothes). Indoor air toxics can also be found in concentrations two to five times higher than outdoor concentrations, and at times at even higher concentrations.

The US EPA Indoor Environments Division (IED) works to improve indoor air quality and its authority comes from Title IV of the Superfund Amendments and Reauthorization Act (SARA) of 1986, the indoor radon abatement Act of 1988, the Safe Drinking Water Act Amendments and various Assistance Agreements issued under Section 103 of the Clean Air Act. Under SARA, the EPA is not allowed to regulate and may only conduct research, development and related reporting, disseminate information and coordinate activities specified in the statute. EPA's program strategy is to take existing knowledge and turn it into practical guidance. This program has grown in the past decade and emphasizes guidance, training and public information and working with public and private sector partners to educate, train and promote exposure/risk reduction practices.

There are many variables in the study of IAQ, including study of the sources of pollutants, pollutant types, solutions, health effects, exposures, populations and other complicating factors. The health risks from IAQ include eye and respiratory irritation, allergies, asthma, chronic sinusitis, increased rates of infectious diseases such as influenza and colds, neurological impairment such as headaches, memory, motor function, and increased cancer risks. Symptoms from indoor air pollution range from perception of bothersome odors, temporary mild discomfort, severe illness and permanent injury. Typical phrases describing indoor air pollution include “Building-Related Illness,” “Sick Building Syndrome” and “Multiple Chemical Sensitivity.”

EPA priority programs concern indoor radon, childhood exposure to environmental tobacco smoke, indoor asthma triggers, and indoor air quality in schools. In its IAQ programs, EPA collaborates with other agencies, such as the State Department of Health Services (DHS) and the California Air Resources Board (CARB). EPA has developed “Healthy Buildings, Healthy People: A Vision for the 21st Century” with an extensive network of stakeholders for cross-agency input. The EPA also participates on the Interagency Committee on Indoor Air Quality (CIAQ) with several co-chairs from the Consumer Product Safety Commission, Department of Energy, National Institute for Occupational Safety and Health, and the Occupational Safety and Health Administration. Members include representatives from the Departments of Agriculture, Defense, Commerce, Justice, State, Transportation, Interior and Housing & Urban Development.

EPA Region IX implements its core IAQ programs at the regional level through working with leading governmental, health and educational organizations, as well as with individual schools and people. EPA’s “Orientation to IAQ” program started in 1992 provides IAQ training for public officials. In 1995, EPA began providing training on mold in indoor environments at conferences that were attended by many public health and government officials. EPA’s “Tools for Schools” is another core program with many partners and involves considerable hands-on experience and the continuing development of new IAQ management tools. EPA also participates and consults on programs and policy on occupational health, with which the California Asthma Strategy is also involved. It also works with the California Endowment on Asthma/Environments Panel, the California Interagency Working Group, and provides grants to asthma study groups.

California regulation and authority provides for air exposure standards in several areas. Ambient air quality standards derive from CARB, while workplace standards and regulations are issued by the California Occupational Safety & Health Administration (Cal-OSHA). EPA Region IX partners for IAQ programs in schools with a variety of state agencies, the American Lung Association, and school district and administrator associations.

EPA research on IAQ is conducted through “Program needs for Indoor Environments Research” (PNIER) which covers such topics as pollutants, sources and health effects, human performance, IAQ measure and indices, building design and operation, homeland security and product technology and verification. EPA’s Building Assessment, Survey and Evaluation Study (BASE) has evaluated about 100 buildings in its in order to characterize indoor environments.

The Building Air Quality Alliance provided incentives in the form of recognizing buildings with good IAQ practices. However, support for this program for a variety of reasons was withdrawn. The Indoor Air Quality Education and Assessment Guidance (I-BEAM) provides education for commercial facilities on IAQ, and is intended for building managers. It provides them with tools to assess the air quality within the building and ways to make necessary corrections.

The EPA also assists building managers on mold remediation in schools and commercial buildings and has published guidance on this matter. The guidance document was published on the Internet before issued in hard copy: within two weeks there were 50,000 hits, and in two months 153,000.

The Asthma Strategic Overview includes a national awareness campaign and continues to promote World Asthma Day. The Overview also includes an in-home education program that manages existing grants and a health-care/managed-care program that works with key organizations to integrate environmental controls into clinical practice and standards of care. A School/Daycare program emphasizes education and supports established programs, and its results are tracked.

The EPA collaborated with the Institute of Medicine (IOM) in its report “Clearing the Air: Asthma and Indoor Exposures.” EPA’s “Tools for Schools Kit” identifies ways to improve IAQ at little or no cost through flexibly applied, voluntary means that are based on common sense and require little training. The program urges that everyone in the school community understand that indoor air is important to health, and have a basic understanding of the causes of indoor air pollution.

EPA’s Tools for Schools IAQ team members include teachers, administrative staff, health officers, facilities operators, school boards and students and parents. Program implementation begins with establishing an IAQ team and assigning an IAQ coordinator, conduct a walk through of the school, develop an IAQ checklist, and create an IAQ management identifying major priorities and repairs. The Tools for Schools program is needed now more than ever, despite the budget constraints at the state. Schools are poorly staffed for maintenance, custodial, repairs and teachers and staffs.

Additional resources include an IAQ Information Clearinghouse hotline at 1-800-438-4318 as well as the EPA’s own website at www.epa.gov/iaq.

With regard to the role of District in IAQ, collaborative and complementary opportunities exist in:

- collaborating with /helping fund activities of regional asthma organizations working on asthma and IAQ—such as the Regional Asthma Management and Prevention Initiative.
- providing grants to organizations providing effective in-home asthma trigger education.
- supporting school districts implementing IAQ management plans or IAQ Tools for Schools, and partnering with US EPA on these and other local projects.
- further collaborative and complementary opportunities are to be found in the fields of research, education and outreach on the indoor impacts from candles, incense, scented cleaning products, wood smoke; indoor interactions between ozone and volatile organic compounds from scented cleaning products, education and outreach on indoor ozone generators and air cleaners.

The Council’s recent recommendation to the Board of Directors Executive Committee that an IAQ workshop be held in the Bay Area is a step in the right direction. This would provide follow-up to CARB’s May 2001 Symposium “Indoor Air Quality: Risk Reduction in the 21st Century.” The Council’s other recent recommendation that the District hire a graduate student to investigate the ambient/indoor air quality nexus would greatly benefit from receiving student selection input from Dr. Waldman of the State Department of Health Services, Peggy Jenkins of CARB, and U.C. Berkeley faculty members William Nazaroff , Ira Tager and Katherine Hammond.

In reply to Council member questions, Ms. Spark replied as follows:

- District contribution to indoor air pollution research in selected areas, such as scented indoor and personal care products and their potential interrelationship with asthma, would be useful. The question concerns exposures at low levels and what impacts these may have on health. A key component in this work includes education. However, manufacturers are not required to publish what is on their products, and it is unclear to what extent such information would be meaningful to people who read the labels. There are also some trade-secret elements involved with scented products that prevent their ingredients from being revealed on a product label.
- EPA is currently working on a source ranking database for indoor sources.
- The agenda of an IAQ workshop should be crafted in such a way as to steer the discussion into identifying the status quo and what role the District can play. It should not be allowed to become a forum merely for special interest groups. Suggestions as to the District's IAQ role would likely emerge from a well-directed discussion.

Mr. Colbourn noted that the District has asked the Council to preliminarily investigate IAQ, even though this field is not within the District's regulatory purview. Asthma experts are members of an advisory committee to a program that will assess neighborhoods with the greatest exposure to toxic air contaminants. The District does not presently intend to make IAQ a regulatory program.

Chairperson Torreano called for public comment, and Dr. Jed Waldman, State Department of Health Services, stated a workshop can help focus on the large yet simple ideas and insights as to what is unambiguously the case in terms of IAQ at this time. Many resources are applied to ambient air and yet people spend 90% of their time indoors. Citizens should be educated to improve and maintain residential good air quality. Purported indoor "air purifiers" release ozone into the home. Some residents are not careful on the storage of various chemicals. There is a link for the District here, in terms of exposure to harmful indoor air contaminants. It should be noted that the District is the most influential Bay Area agency when it comes to air quality issues.

Ms. Blake expressed interest in hearing from CARB on the matter of the indoor air purifiers that emit ozone, especially since CARB strongly advocates reduction in ambient ozone concentrations. She inquired if there are similar substances that have the similar indoor/outdoor dynamic that might be dealt with. She suggested that the Council consider whether the District could play a greater educational role in dynamics such as this in referencing substances in the home or office, building materials and ventilations. Mr. Colbourn replied that at the District's public meetings, offering a brochure on IAQ might be useful. Ms. Blake stated IAQ must not be overemphasized to the point that personal responsibility exceeds the need for the District to fulfill its regulatory charges.

- 5. Committee Member Comments/Other Business.** Chairperson Torreano noted that the State Building Trades Council will hold a conference on smoke in the workplace on March 1 in Martinez. Mr. Colbourn distributed a District brochure on wood smoke, air quality and asthma.
- 6. Time and Place of Next Meeting.** 1:30 p.m., Monday, April 18, 2005, 939 Ellis Street, San Francisco, CA 94109.
- 7. Adjournment.** 3:00 p.m.

James N. Corazza
Deputy Clerk of the Boards