

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

APPROVED MINUTES

Advisory Council Regular Meeting
10:00 a.m., Wednesday, March 10, 2004

CALL TO ORDER: 10:10 a.m.

Opening Comments: Chairperson Blake. There were none.

Roll Call: Present: Elinor Blake, Chairperson, Sam Altshuler, P.E., Diane Bailey, Louise Bedsworth, Ph.D., Robert Bornstein, Ph.D., Jeffrey Bramlett, Harold Brazil, Pamela Chang, Irvin Dawid, Emily Drennen, Fred Glueck, William Hanna, Stan Hayes, John Holtzclaw, Ph.D., Norman A. Lapera, Jr. Kevin Shanahan, Victor Torreano, Linda Weiner, Brian Zamora.

Absent: Kraig Kurucz.

CONSENT CALENDAR:

1. **Approval of Minutes of January 14, 2004:** Mr. Zamora moved approval of the minutes; seconded by Dr. Bedsworth; carried unanimously.

PUBLIC COMMENT PERIOD: There were no public comments.

COMMITTEE REPORTS:

2. **Report of the Air Quality Planning Committee Meeting of February 3, 2004.** Mr. Brazil stated that the Committee met on February 3 and received a staff presentation on the District's review of over 370 pollution reduction strategies for possible inclusion in the update to the Ozone Attainment Plan (OAP). The Committee will soon provide comments to the District staff on the update to the OAP and will meet jointly with the Air Quality Planning Committee on April 6 to review further progress in control measure review. The Committee also discussed employee trip reduction, the relationship of District cost-effectiveness criteria for the Transportation Fund for Clean Air (TFCA) to pedestrian and bike facility improvements, the need for stricter emission standards for heavy-duty diesel engines, and the underestimation of mobile source emissions by current emission models. Later in the year, the Committee will review the Smog Check II program in California.
3. **Report of the Public Health Committee Meeting of February 23, 2004.** Ms. Weiner stated that the Committee met on February 23 and received presentations on cumulative risk assessment and the precautionary principle. These were provided by Amy Cohen and Ken Kloc of the Golden Gate University School of Law Environmental Law & Justice Clinic (ELJC), and Cindy Tuck of the California Council on Environmental and Economic Balance (CCEEB).

In the context of the District's pending rule-making on Toxics New Source Review (TNSR), the ELJC advocates cumulative over incremental risk assessment and a lower level of acceptable risk as a precautionary measure. CCEEB expressed its opposition to the further intervention of government regulation and argued that the precautionary principle was not workable in practice.

Ms. Weiner added that the District's executive management recently met with the ELJC and members of several East Bay and San Francisco communities with multiple sources of pollution. The outcome was that the District will implement a pilot program in one Bay Area community to develop data on cumulative risk. The Committee will develop recommendations by July.

Mr. Altshuler inquired if cumulative risk is defined as multiple exposures to an individual from different sources of the same pollutant or an individual's exposure to multiple pollutants in a cumulative manner, or a combination thereof, which would require a multiple chemical exposure matrix. Ms. Weiner replied that cumulative risk primarily refers to multiple sources.

Mr. Hayes observed that cumulative risk assessment contains many complex technical aspects and might be referred to the Technical Committee for review. Chairperson Blake stated that while the full Council would discuss the Committee reports at each Regular meeting, the Committee Chairs could consider whether to address the topic in the other Standing Committees as time permits.

4. **Report of the Technical Committee Meeting of February 24, 2004.** Dr. Bedsworth stated that the Committee met on February 24 and received a staff presentation on control measure review for the OAP. The Committee will meet jointly with the Air Quality Planning Committee on April 6 on further control measure review. The Committee's focus for the first half of the year will be the update to the OAP and starting in June mobile source emission inventory issues will be reviewed. The Committee will formulate comments on the District's ozone strategy document by October.
5. **Report of the Executive Committee Meeting of March 10, 2004.** Chairperson Blake stated that the Committee met this morning and discussed the work plan for the Standing Committees. The Committee also discussed a proposal from the Deputy Clerk on tracking the recommendations made by the Council to the Board and staff. The Deputy Clerk was directed to contact the new Advisory Council members to schedule a tour of the District facility some time after April 7.
6. **Applicant Selection Working Group Meeting of February 23, 2004.** Mr. Hayes stated that the Working Group screened seven applications, interviewed five candidates, and is recommending one candidate to the Board Executive Committee for appointment to the Council. The Executive Committee will meet on March 29. If approved, the recommendation will be given to the Board for consideration on April 7. Messrs. Hayes and Holtzclaw stated that staff did an outstanding job of advertising for this category and an excellent group of candidates applied. Chairperson Blake thanked Ms. Chang for her service on the Council and wished her well in her future endeavors.

PRESENTATION:

7. **The New York City Urban Atmospheric Observatory (UAO) and its Role in Emergency Planning: Lessons for the San Francisco Bay Area?** Chairperson Blake introduced Robert Bornstein, Ph.D., newly appointed to the Council in the "Colleges & Universities" category, a Professor of Meteorology at San Jose State University, Editor Emeritus of Atmospheric Environments Journal, a Fellow of the American Meteorological Association and three time Fulbright scholar.

Dr. Bornstein stated that the UAO project arose out of the tragic events of September 11, 2001 in New York City. The transport of toxic materials in an urban environment from the plumes filled with smoke and dust is a critical subject of study in air pollution meteorology. The UAO will be a permanent real-time facility that supports research in urban atmospheric science and also will provide a test bed for the development and validation of observational and modeling technologies for emergency response management and pollution releases due to earthquakes or accidents.

The real-time data that is essential to the issuance of evacuation instructions within 20-30 minutes will be forwarded to urban atmospheric models to which New York City emergency responders will have access. The Department of Homeland Security has provided significant funding for this system. Dr. Bornstein identified the many scientific, regulatory, government and private sector partners associated with this project and noted that he has been appointed its Chief Scientist.

The UAO will consider atmospheric activity (a) above rooftops over the city, (b) in neighborhoods, and (c) in between street canyons. Two tracer groups will provide additional data for both meso- and micro-scale models, which will in turn be used to develop simpler models that can be used in real-time. To evaluate heat islands and identify surface parameters the UAO will use a Geographical Information System (GIS) database with building permit data, as well as airborne radar measurements of building heights, and satellite data on land-use and vegetation. Additional thermal maps will show surface heat island characteristics based on data acquired from remote sensing.

Additional fixed and mobile mesonet sites will augment existing sites and provide boundary layer data for wind flows over rooftops. The data will be simulated by two models: one is a specialized urban version of Meteorological Model Version V (MM5) developed by former San Jose State University students and the other is the Regional Atmospheric Modeling System (RAMS). Dr. Bornstein showed slides of several monitoring sites in the City that will be used to obtain data for mapping wind and temperature fields. To determine upper boundary conditions, the models will incorporate radar data into the mesoscale models to assess rooftop flows and dispersion patterns and link them to smaller scale models that assess wind flow in the street canyons. Studies of the microscale will be longer-term and emphasize turbulence measurements in real-time. Staff from the Lawrence Berkeley Laboratory's indoor air quality program will assess the infusion of outdoor air into the indoor environment. The study of toxic releases in subway systems is also planned.

Safe, reliable and instantaneous communication is essential because cell phones did not work and telephone lines were down during the September 11 event. The UAO will set up a secure telecommunications network, with transmission linked to satellite via the Empire State and other buildings. Biochemical sensors will also be established at various points for providing emergency response information for police, fire and health department staff. Data must be provided based on wind flow patterns, chemical concentrations, proximate sources, urbanization modules, observations both surface and aloft, and all of this in real-time, to simple, efficient models which will process these data and predict wind direction and chemical concentrations. Smaller scale models have been developed that will provide for wind pattern analysis at the surface and along buildings.

Studies of flows of airborne materials through a building show eventual intrusion of toxic materials into a building. Flow patterns outside tall buildings can be complicated, and several different models will be used in the simulating patterns over and around buildings. For the first time, deep urban street canyons are being thoroughly analyzed. Using the most current technology, rapid response models will be developed to generate high-resolution data, reliable concentration and dosage estimates for guiding emergency response in event scenarios.

Noting that cities can significantly affect weather systems and prevent major fronts from passing over them, Dr. Bornstein displayed slides of converging weather fronts on the East Coast that resulted in confining pollutants to a narrow zone. In response to Mr. Dawid, he added that different aspects of the city affect temperature, wind, humidity and background synoptic conditions. During the summer, there are negative impacts on the poorer areas in the city. It is perhaps not an accident that climate and pollution are the worst in the poorer areas of a region.

In response to Mr. Glueck, Dr. Bornstein noted that street canyon turbulence models account for vehicular but not population movement. The sensors for biological radiation are funded separately in this program. The Office of Emergency Planning is now located under the Manhattan Bridge in a room with numerous computers connected with emergency responders. An additional goal will be to provide air emissions data to emergency responders in a useful and understandable format.

Mr. Shanahan inquired if the UAO can evaluate emissions in a street canyon from off-road diesel construction equipment, in order to assess whether emission controls lead to a measurable reduction of emissions. Dr. Bornstein stated the UAO is available for air quality analysis as well as emergency response. It found that due to a leaky transformer at Con Edison, significant amounts of SF-6 were in the atmosphere that could be used as a tracer. The UAO might use construction dust as a tracer. He offered to put Mr. Shanahan in contact with certain UAO staff on this issue.

Mr. Hayes inquired how this research might be applied to the Bay Area. Dr. Bornstein replied that the Bay Area has potential problem areas regarding earthquakes, the concentration of refineries in the Carquinez Strait, and bridge protection. Improvement in plume modeling tools for research and emergency response for toxic releases are needed to assess pollutant dispersion in complex topography. The best models should be used if there is a toxic release in a street canyon in San Francisco or San Jose. The District's air monitoring network is quite good and there is some linkage between the stations, but the data are not in real-time or linked to a central data management facility.

Peter Hess, Deputy APCO, noted that the complexity that Dr. Bornstein has demonstrated in these various models applies to the issue of cumulative risk assessment of toxics in a region, with regard to assessing many variables in inputs, data and boundary conditions. This may provide the basis for referring cumulative risk analysis for air toxics to the Technical Committee as well. He added that the stalling of a wind flow over a particular area might adversely affect it in terms of pollution concentrations. Convergent wind patterns may cause localized pollution build-up at San Martin and Livermore. Chairperson Blake noted that Contra Costa County has conducted a project with USEPA near the ConocoPhillips Refinery to develop air dispersion models.

Dr. Holtzclaw inquired if urban heat islands can also vent pollution from a city. Dr. Bornstein replied that this is possible depending upon the meteorological conditions. Project Heat in Texas is studying how the city of Houston affects thunderstorm frequency and will study this very topic.

OTHER BUSINESS:

- 8. Report of the Executive Officer/APCO:** Jack Broadbent stated that the District's OAP will serve as a Maintenance Plan for the federal one-hour standard and as a Triennial Update for the state standard. It contains measures to reduce volatile organic compounds (VOCs) and nitrogen oxide (NOx) that allow progress to be made toward attainment of the federal eight-hour ozone standard, for which the District is designated as non-attainment.

Mr. Hess stated the photochemical modeling for the OAP began a year and a half ago, and the Modeling Advisory Committee (MAC) was created to provide review in progress. The MAC includes Council members Holtzclaw, Brazil, Altshuler, and Bornstein, as well as representatives of other air districts in the state, industry, environmental groups and state and federal air pollution regulators. Five ozone episodes will be simulated for impacts within and downwind from the District. It appears that the model is currently under-predicting emissions, and therefore the model's inputs are being reviewed. According to a number of air districts, the state's Emission Factor Model (EMFAC) is under-predicting mobile source emissions. District staff has requested the Council to review the accuracy of the EMFAC model for heavy-duty diesel trucks and light-duty vehicles in particular for the relationship of estimates to atmospheric measurements.

Mr. Broadbent added that:

- the Board of Directors recently conducted two community tours. In Bayview-Hunters Point the Board received comments from the community expressing concerns about the impacts of emissions from stationary and mobile sources in the community. In West and East Oakland, the Board heard concerns relative to the cumulative impact of a variety of sources in that area, the demolition of Red Star Yeast and other sources near an elementary school.
- staff will bring its TNSR rule before the Board later this year, and is currently planning an assessment of the Bay Area to characterize localized exposures in different communities. As the plan develops, staff will be seeking the Advisory Council's input and review. Important programmatic paradigms for staff's work include the South Coast air district's MATES Study.
- this year staff will complete the five further study measures from the 2001 OAP.
- the District's budget for fiscal year 2004-05 is being developed. No major staffing changes are expected. The state budget process is being monitored since a good portion of the District's budget derives from property tax revenues. The Budget will be presented to the Board, referred to Committee in April and May, and presented back to the Board for adoption in June.

Noting the variety of particulate matter (PM) emissions from vehicles, Mr. Dawid requested staff identify off-road diesel emissions in its presentation to the Technical Committee on mobile sources. Mr. Hess replied that staff would discuss vehicle classes in terms of ozone production. Dr. Bedsworth noted that at the January Retreat the Committee discussed programs for vehicle scrappage and the retrofitting of high-emitting vehicles, and will consider this within a socially-conscious framework. Gary Kendall, Technical Division Director, noted that two-cycle diesel engines are high-emitting, and motorcycles, in particular, are difficult to retrofit with a catalytic converter. The technology of vehicle emission controls has been greatly advanced. Fuel economy and mileage must also be considered in addition to emission estimates from the tailpipe.

Mr. Broadbent added that the Lieber bill (AB 2863) proposes to remove the 30-year rolling exemption from the Smog Check Program. Through the Board Legislative Committee the District has supported this legislation. If the bill is adopted, an estimated seven tons per day of VOCs and NOx would be reduced statewide. Owners of classic cars are an animated advocacy group and contend that classic cars are not driven very far or often. Mr. Hess noted that the Advisory Council originally recommended legislation revoking the 30-year rolling exemption to the Board. This was the result of the work of the Air Quality Planning Committee, which worked diligently on this issue last year. Staff presented that recommendation to the Board Executive Committee, which, in turn, referred it to the Legislative Committee.

Ms. Drennen inquired how this legislation might impact lower income groups. Mr. Hess replied that the Council's consideration of this legislation included this particular issue and can be reviewed in the minutes from last year's meetings. Mr. Altshuler inquired as to advocacy for clean air vehicles and provision for green vehicle parking. Mr. Broadbent replied that AB 2628 would allow hybrid vehicles to have access to diamond lanes. However, some experts feel this could adversely impact carpool lanes given that 50,000 hybrid vehicles have been sold in the state.

9. Report of Advisory Council Chair: Chairperson Blake stated:

- the Council's 2004 work plan was presented to the Board in February of this year.
- the recommendation of the Applicant Selection Working Group for appointment to the Council's Architect category will be presented to the Board Executive Committee on March 29.
- the District is sponsoring the attendance of several Advisory Council members at the 97th Annual Air & Waste Management Association to be held in Indianapolis, Indiana this June.

10. Council Member Comments/Other Business: Ms. Weiner referred to a "Clean Air Champions Award" nominations form for an individual, agency or organization or business that has made a significant contribution to reducing air pollution, and encouraged Council members to submit their nomination.

Dr. Holtzclaw noted that he had e-mailed the Council members regarding legislation that proposes information on potentially hazardous chemicals at facilities be withheld from the public under the aegis of homeland security. The Department of Health Services is accepting comments on this proposed legislation until May 20. Ms. Weiner opined that it creates a dangerous precedent to cut off the public's voice in environmental security as the public has the greatest health risk from hazardous chemicals. Mr. Lopera replied that this legislation relates to the accessibility of such information through the Freedom of Information Act and aims to prevent a potential terrorist from gaining access to such information. It does not exempt a government agency from having to report such information, and all local police and fire departments can obtain it. This is a first attempt to address the issue of accessibility to hazardous chemical data and the proposal will likely evolve.

Dr. Bornstein observed that the UAO has not taken a close look at this proposal but he could report back to the Council on it. He also requested that this matter be referred to the Technical Committee. Mr. Broadbent stated that although this issue is not before the Board, staff would review it further and report back to the Advisory Council. Mr. Hayes requested that the Council consider the topic of environmental security as a matter for future review. Chairperson Blake stated that this request could be discussed at the next meeting of the Council's Executive Committee.

11. Time and Place of Next Meeting. 10:00 a.m., Wednesday, May 12, 2004, 939 Ellis Street, San Francisco, CA 94109.

12. Adjournment. The meeting was adjourned at 12:01 p.m.

James N. Corazza
Deputy Clerk of the Boards