BAY AREA AIR QUALITY MANAGEMENT DISTRICT

BOARD OF DIRECTORS
EXECUTIVE COMMITTEE MEETING

COMMITTEE MEMBERS

MARK ROSS – CHAIR
PAMELA TORLIATT - SECRETARY
SCOTT HAGGERTY
GAYLE B. UILKEMA

JERRY HILL – VICE CHAIRPERSON
CHRIS DALY
TIM SMITH
BRAD WAGENKNECHT

MONDAY **4TH FLOOR CONFERENCE ROOM**
NOVEMBER 19, 2007 **DISTRICT**
OFFICES
9:30 A.M.

AGENDA

1. **CALL TO ORDER – ROLL CALL**

2. **PUBLIC COMMENT PERIOD** *(Public Comment on Non-Agenda Items Pursuant to Government Code § 54954.3) Members of the public are afforded the opportunity to speak on any agenda item. All agendas for regular meetings are posted at District headquarters, 939 Ellis Street, San Francisco, CA, at least 72 hours in advance of a regular meeting. At the beginning of the regular meeting agenda, an opportunity is also provided for the public to speak on any subject within the Committee's subject matter jurisdiction. Speakers will be limited to three (3) minutes each.*

3. **APPROVAL OF MINUTES OF SEPTEMBER 13, 2007**

4. **QUARTERLY REPORT OF THE HEARING BOARD – JULY 2007 – SEPTEMBER 2007**
   T. Trumbull/4965
   terryT1001@aol.com

5. **REPORT OF THE ADVISORY COUNCIL: OCTOBER 1 – OCTOBER 10, 2007**
   F. Glueck/5127
   plarec@aol.com

6. **DISCUSSION ON THE FUTURE SIZE OF THE BOARD OF DIRECTORS**
   J. Broadbent/5052
   jbroadbent@baaqmd.gov

   The Committee will discuss the future size of the Board of Directors and staff will provide information on potential changes to the Board's composition for the Committee's consideration.

7. **DISCUSSION ON POSSIBLE JOINT LEGISLATIVE ACTION WITH THE METROPOLITAN TRANSPORTATION COMMISSION REGARDING A REGIONAL FEE ON GASOLINE** **J. Broadbent/5052**

   jbroadbent@baaqmd.gov

   The Committee will discuss possible joint legislative action with the Metropolitan Transportation Commission (MTC) regarding a regional fee on gasoline for the Committee's consideration.

8. **FINANCIAL ASSISTANCE PROGRAMS TO SMALL BUSINESSES**

H. Hilken/4642
hhilken@baaqmd.gov

The Committee will receive a briefing regarding Air District financial assistance programs to small businesses.

9. **STATUS REPORT ON CARL MOYER PROGRAM AUDITS** **J. McKay/4629**

jmckay@baaqmd.gov

The Committee will receive an update on the Carl Moyer Program Audits.

10. **JOINT POLICY COMMITTEE UPDATE** **J. Roggenkamp/4646**

jroggenkamp@baaqmd.gov

Ted Droettboom will provide an update on the activities of the Joint Policy Committee.

11. **COMMITTEE MEMBER COMMENTS/OTHER BUSINESS**

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

12. **TIME AND PLACE OF NEXT MEETING: AT THE CALL OF THE CHAIR**

13. **ADJOURNMENT**

CONTACT CLERK OF THE BOARDS - 939 ELLIS STREET **(415) 749-4965**
SAN FRANCISCO, CA 94109 **FAX: (415) 928-8560**
BAAQMD homepage:
www.baaqmd.gov

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

AGENDA: 3

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Chairperson Mark Ross and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 5, 2007

Re: Executive Committee Draft Minutes

RECOMMENDED ACTION:

Approve attached draft minutes of the Executive Committee meeting of September 13 2007.

DISCUSSION

Attached for your review and approval are the draft minutes of the September 13, 2007 Executive Committee meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

AGENDA: 3

Bay Area Air Quality Management District
939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
(415) 749-5000

DRAFT MINUTES

Summary of Board of Directors
Executive Committee Meeting
9: 30 a.m., Thursday, September 13, 2007

1. Call to Order - Roll Call: Chair Mark Ross called the meeting to order at 9:38 a.m.

Present: Mark Ross, Chair, Chris Daly, Scott Haggerty (9:40 a.m.), Jerry Hill, Patrick Kwok, Pamela Torliatt (9:50 a.m.), Gayle B. Uilkema (9:46 a.m.), Brad Wagenknecht.

Absent: Tim Smith.

Also Present: Tom Bates, Yoriko Kishimoto.

2. Public Comment Period: There were no public comments.

3. **Approval of Minutes of May 30, 2007**: Director Hill moved approval of the minutes; seconded by Director Wagenknecht; carried unanimously without objection.

Director Scott Haggerty arrived at 9:40 a.m.

4. Quarterly Report of the Hearing Board – April 2007 – June 2007: Hearing Board Chair Thomas Dailey, M.D. presented the *Hearing Board Quarterly Report – April 2007 – June 2007.* Dr. Dailey noted that Hearing Board alternate member Janet Weiss, M.D. attended the California Air Resources Board Advanced Hearing Board Workshop in Ventura.

Committee Action: None. This report provided for information only.

5. Report of the Advisory Council: April 2007 – August 2007: Advisory Council Secretary Harold Brazil presented the Report of the Advisory Council. Mr. Brazil provided a brief update on the work of each of the Advisory Council's standing committees. Mr. Brazil stated that the Advisory Council Executive Committee and the full Council have had discussions regarding the possible restructuring of the Council's standing committees.

Director Gayle B. Uilkema arrived at 9:46 a.m.

Committee Action: None. This report provided for information only.

6. Production System Update: *The Committee received a status report on progress made with regard to the Production System.*

Jeff McKay, Chief Financial Officer, presented the report and reviewed the timeline and cost presented in December 2006. Concentrating on the first half of the project, Mr. McKay stated that the District is ahead of schedule and the project is under cost at this point. A summary of the status of the Business Process Mapping and Business Process Improvement was presented to the Committee. Mr. McKay reviewed the RFP process and vendor evaluation.

Director Pamela Torliatt arrived at 9:50 a.m.

Committee Action: None. This report provided for information only.

7. Status Report on the Air District's 2007 Initiatives: *The Committee received a status report on the Air District's 2007 Initiatives.*

Jack Broadbent, Executive Officer/APCO, presented the report. The report included an overview of the Climate Protection Program, the Community Air Risk Evaluation Program, implementation of the Green Ports Initiative, and the Enhanced Wood Smoke Strategy proposed rule development.

There was general discussion on issues surrounding the implementation of AB 32. Director Torliatt requested a timeline regarding the rule development on the Green Ports Initiative.

Committee Action: None. This report provided for information only.

8. Facilities Update and Review: *Staff provided information and a status report on the Air District's existing facilities and the challenges associated with District growth.*

Mr. McKay presented the report and provided information on the challenges to District space utilization, the status of previously approved improvements, and a possible increase to the space the District leases in Richmond.

Committee Action: None. This report provided for information only.

9. Status Report on Joint Policy Committee: *The Committee received an update on activities of the Joint Policy Committee.*

Mr. Broadbent stated that the last meeting of the Joint Policy Committee was July 20, 2007 and that the Regional Agency Climate Protection Program was discussed. The next meeting is scheduled for September 21st and will be held at the Cathedral Hill Hotel in San Francisco.

10. Closed Session to Conduct Public Employee Performance Evaluations: *Pursuant to Government Code Section 54957 and 54954.5(e), a performance evaluation was conducted for the Executive Officer/APCO; and pursuant to Government Code Section 54957 and 54954(e), a performance evaluation was conducted for the District Counsel.*

The Committee convened to closed session at 11:02 a.m. and reconvened to open session at 11:50 a.m. Chair Ross reported that the Committee met in closed session to conduct performance

evaluations of the Executive Officer/APCO and District Counsel. The Committee will give its recommendation to the full Board after negotiations are conducted with the parties. The Committee authorized Chair Ross to conduct negotiations with the Executive Officer/APCO and the District Counsel.

11. Committee Member Comments/Other Business: Chair Ross stated that Director Garner submitted a letter to the Committee regarding funding for the People to People delegation to China. The matter will be placed on the agenda for discussion at the next Regular Board meeting.

12. Time and Place of Next Meeting: At the Call of the Chair.

13. Adjournment. The meeting was adjourned at 11:53 a.m.

Mary Romaidis
Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

TO: **Chairperson Mark Ross and Members of the Executive Committee**

FROM: **Chairperson Thomas M. Dailey, M.D., and Members of the Hearing Board**

DATE: **October 17, 2007**

RE: **Hearing Board Quarterly Report – JULY 2007 – SEPTEMBER 2007**

RECOMMENDED ACTION:

This report is provided for information only.

DISCUSSION:

COUNTY/CITY	PARTY/PROCEEDING	REGULATION(S)	STATUS	PERIOD OF VARIANCE	ESTIMATED EXCESS EMISSIONS
Contra Costa/Martinez	**PACIFIC ATLANTIC TERMINALS, LLC, MARTINEZ TERMINAL (Variance – Docket No. 3540) –** *Variance from regulation limiting emissions of organic compound emissions from storage tanks and from regulation requiring compliance with permit conditions*	**8-5-305, 321, 322 & 2-1-307**	**Hearing Rescheduled to October 25, 2007**	**= = =**	**(VOC)**
Contra Costa/Moraga	**AMERICAN GAS (Variance – Docket No. 3539) –** *Variance from regulation limiting emissions of organic compounds from gasoline dispensing facilities (APCO opposed)*	**8-7-302**	**Denied**	**= = =**	**(VOC)**
Contra Costa/Richmond	**CHEVRON PRODUCS COMPANY (Emergency Variance) – Docket No. 3541)** *Emergency Variance from regulation limiting emissions of organic compounds and methane from leaking equipment at petroleum refineries, chemical plants, bulk plants and bulk terminals.*	**8-18-304**	**Granted**	**9/27/07 to 10/12/07**	**9.95 lb/Total (VOC)**
Santa Clara/San Jose	**LOS ESTEROS CRITICAL ENERGY FACILITY (Interim Variance – Docket No. 3537)** *Interim Variance from regulation requiring compliance with permit conditions*	**2-1-307**	**Granted**	**7/20/07 to 9/13/07**	**95 lb/D (Ammonia)**
Santa Clara/San Jose	**LOS ESTEROS CRITICAL ENERGY FACILITY (Full Variance – Docket No. 3537)** *Full Variance from regulation requiring compliance with permit conditions (APCO not opposed.)*	**2-1-307**	**Withdrawn/Dismissed Applicant able to operate in compliance**	**= = =**	**= = =**
Santa Clara/Santa Clara	**APPLIED MATERIALS, INC. (Variance – Docket No. 3538)** *Variance from regulation limiting quantity of particulate matter in the atmosphere*	**6-300**	**Withdrawn/Dismissed No violation of standard**	**= = =**	**===**

COUNTY/CITY	PARTY/PROCEEDING	REGULATION(S)	STATUS	PERIOD OF VARIANCE	ESTIMATED EXCESS EMISSIONS
Solano/Benicia	**NuSTAR LOGISTICS OPERATION, L.P. (formerly Valero Logistics Operations, L.P.) (Appeal – Docket No. 3473)** *Appeal from the Terms and Conditions of Permit to Operate No. 7980)*	**Permit Appeal**	**Withdrawn/Dismissed Parties resolved issues**	= = =	= = =

NOTE: During the third quarter of 2007, the Hearing Board dealt with two Dockets on two hearing days. A total of $8,831.20 was collected as excess emission fees during this quarter.

EXCESS EMISSION DETAILS

COMPANY NAME	DOCKET NO.	TOTAL EMISSIONS	TYPES OF EMISSIONS	PER UNIT COST	TOTAL AMT COLLECTED
LOS ESTEROS CRITICAL ENERGY FACILITY	3537	5320 lbs	Ammonia	$ 1.66/lb	$8,831.20
				TOTAL COLLECTED:	**$8,831.20**

Respectfully submitted,

Thomas M. Dailey, M.D.
Chair, Hearing Board

FORWARDED:_____
mr (10/17/07 hbexqurt3rd2007)

AGENDA: 5

BAY AREA AIR QUALITY MANAGEMENT DISTRTICT
Memorandum

To: Chairperson, Mark Ross and Members of the Board of Executive Committee

From: Fred Glueck, Chairperson Advisory Council

Date: November 7, 2007

Re: Report of the Advisory Council: October 1 - October 10, 2007

RECOMMENDATIONS:

Receive and file the attached minutes.

DISCUSSION:

Presented below are summaries of the key issues discussed at meetings of the Advisory Council's Standing Committees during the above reporting period.

A) Technical Committee Meeting of October 1, 2007: The Technical Committee received a presentation from Dr. Marc Fischer on Methane Trends in California.

B) Air Quality Planning Committee Meeting of October 10, 2007: The Air Quality Planning Committee received presentations on Congestion Pricing from David Burch, Principal Environmental Planner, Air District, Jean Hart, Executive Director, I-680/Sunol Smart Carpool Lane, and Elizabeth Bent, Senior Transportation Planner, San Francisco County Transportation Authority.

C) Public Health Committee Meeting of October 10, 2007: The Public Health Committee continued discussions on draft recommendations on Indoor Air Quality and Asthma.

The minutes of the above referenced meetings are attached.

Respectfully submitted,

Fred Glueck
Advisory Council Chairperson

Prepared by: Chioma Dimude
Reviewed by: Mary Ann Goodley

AGENDA: 5a

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

DRAFT MINUTES

Advisory Council Technical Committee
9:00 a.m., Monday, October 1, 2007

1. **Call to Order – Roll Call.** Chairperson Sam Altshuler, P.E., called the meeting to order at 9:17 a.m. Present: Sam Altshuler, P.E., Chairperson, Louise Bedsworth, Ph.D., Robert Bornstein, Ph.D., William Hanna, John Holtzclaw, Ph.D., (9:34 a.m.), Kraig Kurucz.

2. **Public Comment Period.** There were no public comments.

3. **Approval of Minutes of August 6, 2007.** The Committee provided minor revisions to the minutes. After discussion, Dr. Bornstein moved that the approval of the minutes be deferred until Dr. Mark Jacobson reviews that portion of the minutes containing his presentation; seconded by Mr. Kurucz; carried unanimously without objection.

4. **Presentation on Methane Trends in California:** *Dr. Marc Fischer of the University of California Berkeley gave a presentation to the Committee on Methane Trends in California.*

   Chairperson Altshuler introduced Dr. Marc Fischer. Dr. Fischer stated he is a scientist from the Lawrence Berkeley National Laboratory (LBNL) and has been trained in physics and is now working in energy, atmosphere, and environment problems. Dr. Fischer noted he mostly worked in atmospheric science and some amount of bio-geo chemistry (how land surface processes affect atmospheric constituents; in particular green house gases). The Committee members then introduced themselves.

   Dr. John Holtzclaw arrived at 9:34 a.m.

   Dr. Fischer provided background information and stated that the LBNL is doing a wide-range of research in climate and air quality. The climate related studies are broadening from what has been aerosol and green house gas (GHG) measurements and modeling to include climate modeling at both regional and now global scales. The emphasis in GHG's has focused on the terrestrial exchange from ecosystems to the atmosphere. Human emissions are important, therefore, the LBNL is also moving in that direction. The outline of the presentation is:
   - An overview of non-CO_2 GHGs,
   - A snapshot of California and Bay Area emissions,
   - Multiple methods for estimating emissions to verify emission reductions,
   - Initial atmospheric measurement network that is starting this month,
   - Conclusions, and
   - Directions for further work

   Continuing Dr. Fischer reviewed the slide entitled GHGs in Time and Space. The first figure is a map of the earth that shows locations at which the National Ocean and Atmospheric

Administration (NOAA) have been making measurements of GHGs for the past couple of decades. Most of the sites are not in terrestrial areas, but are often in the oceans. The measurements were taken as background monitoring. Interest is now focusing on what the emissions are in the terrestrial and human influence zones, therefore, there is a need for additional measurement points. The main point of the slide is that there is a record for how atmospheric concentrations of GHGs have changed and there are examples globally. Dr. Fischer stated that to understand how changes are occurring one cannot rely solely on models; measurements are essential.

The next plot shows how nitrous oxide (N_2O) has changed both in time (the horizontal axis) and with latitude, and the amount (the vertical axis). Over the period from 1990 to 2000 there has been a steady rise in N_2O and there is a strong latitudinal gradient. Dr. Fischer emphasized that N_2O has a very long lifetime in the atmosphere; the removal mechanisms for it are slow and it is hence fairly well mixed. The gradient from stronger in northern latitudes to weaker in the southern latitudes indicates a northern latitude source.

The second plot shows the same thing for methane. Again, there is a very strong latitudinal gradient where there is much more methane in the northern hemisphere than in the southern. There is a comparatively weaker growth in the last decade. Methane has a much shorter lifetime in the atmosphere and is removed by OH. Methane has a different set of sources from N_2O.

The three slides show what contemporary measurements look like. There is a network of global monitoring stations which are detecting the background methane, CO_2, and N2O. The next slide, Overview of non-CO_2 GHG, is a plot that shows the total non-CO_2, CO_2, and other forcings of the atmosphere on the globe. The graph shows the change in forcing from pre-industrial times to present. The graph indicates that from pre-industrial times, there have been very significant increases in GHG concentrations. The non-CO_2 gases, which are much stronger absorbers than CO_2 by mass, have increased enough that their combined affect for forcing is comparable to CO_2. Regarding the ozone on the chart, Dr. Fischer stated that it is an increase in tropospheric ozone from pre-industrial to current times and it is part of the IPCC assessment on climate forcing. This forcing may be a combination of tropospheric and stratospheric ozone. Dr. Fischer reviewed the potency of GHGs and stated that methane is about 20 times as potent as CO_2, N_2O is about 300 times as potent on a mass weighted basis, and high Global Warming Potential (GWP) gases that include CFCs, HFCs, and SF_6.

Dr. Fischer discussed the recent trends in global warming gases and where they may head in the future. The top panel of the slide shows the increase in the gases over the 1990 to 2010 period. The blue dots indicate measurements and the yellow and red lines indicate what future increases might look like for CO_2, methane, N_2O and GWPs. The middle set of plots on the slide are the same gases, but are noted as a per year increase in concentration. At the bottom is the sum and where things are potentially headed. The plot on the bottom right goes out to 2050. How people conduct themselves will have different affects on the forcing. Dr. Fischer stated that there have been very strong increases in both CO_2 and N_2O in the last 15 year period; the future for N_2O depends on agricultural practices; and on fuel combustion. CO_2 is predominately emitted by fossil fuel combustion and a small amount by other industrial processes.

The picture is different for methane. Methane was increasing from 1990 to 2000, but it started to level off after about the year 2000. This indicates that something different is going on with methane. It has not, in the very recent past, been increasing as quickly and there is active research going on to try to understand what is causing the global methane cycle to diverge from a steady growth. In response to a question from Chair Altshuler, Dr. Fischer stated that he felt that, in a statistical since, the trend is significant. In a long-term perspective of where things are going, it is too early to tell. Because methane has a complicated bio-geo chemistry -- there are many different sources -- it is difficult to say what is causing the trend. Methane is emitted largely by anaerobic decomposition processes. Many people believe that the decreased methane emissions come from thawing tundra which used to be under water. It is now drying and that may be causing this trend. Another thought is that it is possible that the sources of methane coming from human activities has slowed, but it is too soon to determine what the cause is.

Continuing, Dr. Fischer provided information on what can be done in terms of monitoring a GHG if measurements and models are used together. How can one infer the sources and sinks of methane? The plot, entitled Inferring Global CH_4 Sources from 2003 Variances in CH_4, shows the results from a global inversion of atmospheric methane. Using the NOAA flask network data, an inverse model has been run where prior estimates are taken of methane emissions that are combined with a global transport model. This indicates what the surface emission is that is most consistent with the observations. The plot shows a year, per month, of surface methane concentrations models using prior estimates of what methane emissions look like and adjusting that prior estimate to be most consistent with the observations. There is a consistent trend of higher methane in northern latitudes and lower methane in southern latitudes. The plot also shows little spots of high methane showing up at different places in the map. These are regions where the model finds there must have been more methane in order to be consistent with the observations. The peaks are generally in the northern latitude summers.

Dr. Fischer emphasized that by combining actual measurements of concentration, with models of transport and prior estimates of emissions, one can get a better feeling for where the emissions are occurring and how strong they are. There is now a problem with dealing with emissions on a national, state, regional, or county-level scale. The argument is to move down and scale from global to these smaller scales using the same kind of techniques, but with improved measurement and modeling methods.

Chair Altshuler observed that, from an energy perspective, the plot shows that West Virginia and the east coast might be the “hot spots” in the United States. These are areas in which coal is used. In California and the west coast the tendency is the use of natural gas. Chair Altshuler questioned if there a correlation. Dr. Fischer stated that this plot is not emissions, but surface level concentrations. Western North America uses a lot of natural gas, but there is a lot of ocean air diluting that source to the atmosphere from natural gas use. In this model, it is being diluted away; the model also may underestimate how much emission is occurring at the Western boundary. There is only one station at Trinidad Head, which is north of the Bay Area and is a “clean” environment to judge what the methane concentrations of the West Coast should look like.

Dr. Fischer stated that measurements of methane gas will be put up at Sutro Tower in San Francisco for a more localized measurement. Dr. Holtzclaw noted that the largest

concentration, and possibly source, tends to be in Russia, but there are no monitors in that area. Therefore, there is more speculation in that area as to the source of emissions. Dr. Fischer stated that this information is a combination of a model that is making an estimate of where the emissions are based on where they believe wetlands occur. The hot spot in northern-central Asia is, in fact, due to assumed methane emission from wetlands.

The next plot shows the total California GHG emission trends. This is total emissions converted into CO_2 equivalent units, million metric tons (MMT) of CO_2. Data was taken from the California Energy Commission's (CEC) GHG inventory that was compiled in 2006. The vertical scale has been truncated and it only shows from 300 up to about 550 MMTs. CO_2 is the largest forcing estimated from inventories for California and it is also the largest source of variation in the trend. CO_2 is where the need is to start controlling GHG emission. The non-CO_2 GHGs constitute about 10% of the total emission. Presently the CO_2 from California is much bigger than the annual increased forcing due to the other gases.

Dr. Fischer made the argument that while CO_2 must be controlled first, the non-CO_2 GHGs have benefits in terms of controls that are not just climate related. Methane is emitted in California by landfills and by agricultural sources, principally animal live stock. If the methane emitted from these sources could be captured, it could be used for energy, rather than just mitigating climate warming by burning the methane to CO_2, which is done currently.

For 2004, Dr. Fischer showed what the non-CO_2 GHG emissions are for a number of different source categories. There are a number of different sources of both methane, a couple of sources for N_2O and the high GWP gases that are all together. All of the estimates are uncertain, it is not known for better than 30% how big any of these sources are. One thing that can be done to reduce the uncertainty is to try to use another method of measuring and inferring what the emission had to have been.

The plot entitled Bay Area GHG Balance was shown next. Dr. Fischer acknowledged that the information for the chart was assembled by the Air District. It shows that the estimated non-CO_2 GHG emissions for the Bay Area are approximately 10% of the total. This is similar to the estimates that the CEC has for the breakdown for the state. The message is that increased transportation fuel efficiency should be a first priority if GHG forcing emissions are to be controlled. CO_2 from transportation is the dominant source. A second message is that rural counties are likely to be different from the average picture. Rural counties will have less transportation and a greater portion of emissions from agricultural GHG emissions. The individual inventory-based emission estimates are likely uncertain at a 20-40% level. Alternatively, looking from the top down, using atmospheric measurements, there is another way of saying how much emission is coming from California.

There was a brief discussion on what changes might occur 20 years from now regarding the rise in GHG emissions and different scenarios on curtailing GHGs. Dr. Fischer stated that if the climate changes enough, there are potential "positive" feedbacks to climate. An example is the large stores of methane in methane ice shelves in very northern latitudes in marine boundary environments called methane clathrates. If it destabilizes and the methane boils off into the atmosphere it could cause a large and rapid "positive" increase in forcing.

Dr. Fischer discussed what is being done to try to estimate the non-CO_2 GHG emissions. The essential ingredients for an independent verification method for GHG emissions include:

- Start with a priori inventory estimates of GHG emissions of interest. Dr. Fischer emphasized that one needs to have the best number and an estimate of how certain that number is.
- A model for atmospheric transport and surface influence "footprints." If a measurement is made at a given point in space and time, how much measured at that point came from what region in the Bay Area.
- A way to combine the emissions and atmospheric influence functions -- what should the "signals" measured in the atmosphere look like.
- Quantitative GHG boundary conditions for what comes from outside of California. What is measured in California is not just coming from California.
- Continuous long-term measurements of the GHG of interest and other species that one can help associate specific sources with the measurements made.
- A statistical framework in order to evaluate whether emission inventories one started with are consistent with the measures; or if the emission inventories need to be revised to be more consistent with the measurements.

The next slide, entitled *A priori* CH_4 Emission Inventories, shows an average year in the year 2004 of methane emissions by county in California. The counties far from urban areas have low emissions and the counties either in, or surrounding, the urban regions have higher emissions. The sources of emissions included landfills, animal agriculture, natural gas distribution and use, wetlands, and crop agriculture.

Attributing a given source to an atmospheric measurement can be done by using isotopic signatures. Natural gas and gasoline have different C13 isotopes. Most carbon is carbon 12; there is a small fraction that is carbon 13. If the carbon 13 content is measured, it can be determined if the CO_2 is more likely gasoline than natural gas. Similarly, carbon 14 is an unstable isotope of radio carbon that is produced in small quantities in the upper atmosphere. Carbon 14 only has about a 5,700 year lifetime and fossil fuels, which are millions of years old, have lost all of their carbon 14. Work is being done to distinguish methane emissions based on these isotopes of methane.

Carbon monoxide and VOCs also help determine what an air mass might have had as a source. The radon content of atmospheric air samples has started to be used to estimate atmospheric mixing. The map on the slide shows an estimate of how much radon is emitted from soils to the atmosphere as a function of space in the Western United States. Radon has a short half life of 3.8 days, therefore if radon is measured in the atmosphere it had to have come from some soil surface in the recent past. Radon will be used as a tracer for how much the air is in contact with the surface. When soils are dry, radon diffuses out of the soil readily; when soils are wet, it is trapped.

Dr. Fischer discussed the measurement sites that are being set up in an effort to measure GHG on a fine spatial scale that can determine regional emissions. The project is being funded by the California Energy Commission and will look at non-CO_2 GHGs. One of the two sites chosen for the first part of the study is Sutro Tower in San Francisco. Measurement tubes will be installed on Sutro Tower and air will be collected in flasks at the bottom of the

Tower. The second site is the KCRA Tower in Walnut Grove, where the tubes have already been installed.

The type of instruments being used on the Towers was reviewed. There will be a flask sampling system and samples will be collected twice a day. NOAA will analyze the samples with very precise and accurate instruments to produce methane, CO_2, nitrous oxide, CO concentrations, SF_6, halo carbons, and, hopefully, $^{13}CO_2$, $^{13}CH_4$, and CDH. The samples will provide information on what the GHG concentrations are above an urban environment influenced by marine processes (at Sutro) and samples from the central valley (KCRA).

In addition, at the KCRA Tower, there will be a continuous methane and CO_2 analyzer that will make a measurement every three minutes. There will also be a CO_2/CO rack system and a radon monitor. In collaboration with the LLNL, flasks full of air will be collected which will be measured to determine the radiocarbon content of the CO_2 in that air.

Dr. Fischer next showed a plot that is a simulation of fossil fuel CO_2 in the surface layer atmosphere as a function of time for the month of July 2005. The simulation was done using an emission inventory constructed by the Environmental Protection Agency (EPA) for nitrogen oxide emission and scaled to CO_2 with a constant factor. The model is the NCAR-MM5 model run at 10 km. resolution. It shows that, with respect to computer modeling, that the emission inventories can be taken and propagated into the atmosphere and it can be determined what the concentrations of fossil fuel CO_2 should look like as a function of time. The same thing can be done for methane with all the sources mentioned and a picture can be generated on what concentrations should look like at different places from different sources. Work will be done to make a better representation for transport. Two main sources of CO_2 in California are the Los Angeles Basin and the San Francisco Bay Area.

A footprint model is used to attribute emissions from a given location to a measurement point later. The footprint model works by releasing imaginary particles at the place the measurement is made and running them backward in time following the air velocity and turbulence characteristics back to the location on the land surface that the sources are present. Dr. Fischer presented a slide showing the areas that are affecting a measurement at Sutro Tower at 230 meters for July 2004. The simulation is being done every three hours of the month of July using a particular implementation of a transport model called the BRAMS model. The goal is for highly resolved and very accurate meteorology for this purpose. If the meteorology is wrong, there will be an incorrect inference about where the emissions are coming from and how strong they are. Dr. Fischer noted that the plume changed with time and that sometimes the plume is just air coming off ocean, other times it is air that is in contact with California.

Continuing, Dr. Fischer presented a plot combining the emission inventories previously discussed and the footprint function. The purpose is to determine what the concentrations of methane at Sutro Tower will look like as a function of time for the month of July 2004 from the different sources (landfills, livestock, wetlands, natural gas, and radon). There are very low concentrations, with a spike every so often. The reason for this is that most of the time the air coming to Sutro Tower comes off the ocean and contains only background methane. The spikes are due to the footprint having some contact with a land surface where there are emissions from the sources as listed above. The KCRA plot was discussed and it shows a diurnal cycle each day. The KCRA Tower is surrounded by land surface influences and

constantly reads methane from relatively local and regional sources. If the predicted signals are taken and are compared with the signal of estimated radon, for the Sutro Tower, many of the sources have a tight correlation.

In summary, Dr. Fischer stated that California and Bay Area GHG emissions are dominated by CO_2, therefore reductions should start there. Non-CO_2 GHG (methane, N_2O, CH_4, and high GWP) emissions are significant (at the level of 10% of the total emissions currently) and uncertain and beneficial opportunities exist for reduction. Long-term measurements provide an independent and complementary method to verify reductions. The inventories should not be relied on solely, although they need to be done first, but there has to be a way to check them. The initial numerical modeling suggests that the GHG signals are clearly going to be measureable and may provide a strong handle on the emissions. It remains to be seen how much the uncertainties can be reduced. The inverse statistical model will provide a quantitative method to improve the inventories; in particular, assuming an accurate representation of the errors going into the inverse problem can be obtained, there should be an objective way of understanding the errors and the uncertainties in the final emissions. Multiple measurement of multiple tracers are required to more uniquely attribute measured concentrations to a given source estimates. Nested high resolution (approximately 1 kilometer) atmospheric transport models are essential for locations with complicated terrain.

Chair Altshuler recommended that the rate of change be noted in Dr. Fischer's summary (at the second bullet) and stated that while CO_2 is still the largest "piece of the pie," it is also rising. Dr. Bornstein provided additional suggestions, which have been incorporated into the minutes. Chair Altshuler suggested that the Summary page be divided into two pages where the first three bullets would be on the first page as a policy perspective and the last four bullets are more the science and how to get there.

Saffet Tanrikulu, Research & Modeling Manager, stated that CO and CO_2 are already included in the District's modeling exercise. Methane is not explicit so the District can look at CO and CO_2 concentrations through the simulation. Dr. Bornstein noted that the CO_2 estimates were for more traditional air quality and may not capture other sources as discussed at today's meeting. Dr. Tanrikulu stated that Dr. Bornstein's statement is true, partly because CO_2 is not a strong precursor for ozone and the focus has been on ozone and PM.

Dr. Fischer commented that the District's modeling could include CO_2 from fossil fuel combustion. It will be increasingly important and it is currently an area of active research to understand the uptake of CO_2 and the release of CO_2 from the terrestrial biosphere; that is plants growing and dead organic matter decaying.

Mr. Altshuler stated that there is some radon in natural gas and that the amounts differ depending on where the gas comes from. There is more radon in California gas and Dr. Fischer noted that if the gas travels, even for a couple of days, to get to California than some radon will be lost to natural decay.

Dr. Fischer stated that if a lot of fuels are shifted to a plant based source; radio carbon cannot be used as a unique tracer of that fuel combustion.

Dr. Fischer highlighted the further work to be done and stated that the first step would be the concentration measurements of GHGs at Sutro and Walnut Grove Towers, which information

will be available later in the year. Another item being worked on is an upgrade of the meteorological modeling in collaboration with other groups to include the nested grids. Developing and testing high resolution meteorological fields for tower sites using MM5 and Weather Research Forecast (WRF) model outputs. Further work also includes incorporating the additional tracer and species for source attribution analysis. Finally, to initiate inverse model-data-synthesis estimates of regional GHG emissions and uncertainties.

Chair Altshuler thanked Dr. Fischer for his presentation.

5. **Discussion and Summary of Issues Related to Global Warming:** *Committee members discussed issues related to energy and global warming.*

Chair Altshuler initiated the discussion and asked for suggestions on key points the Committee could discuss in the coming year. Chair Altshuler stated that Dr. Fischer talked about the bookmarks and the non-CO_2 gases. He noted that there has been a strong message regarding ethanol not being the "cure all" for climate change. At the September 21st Climate All Stars conference it was recommended that everyone stop burning coal.

Suggestions from the Committee included the following:

- Focusing on policy levers that the Air District may or may not have control over.
- Trying to narrow it down to what does it mean for what the District is doing and how does it relate to the Air District's air quality planning efforts.
- A summary of the technical information the Committee has heard is useful in terms of the state of the science, but it should be narrowed down to what is the Air District's day-to-day practice.

Henry Hilken, Director of Planning, Rules and Research Division, interjected that in terms of the Air District's Climate Protection Program, one of the key points is harmonizing everything the District is doing already – the traditional air quality programs with climate protection. Identifying areas where the District's air quality monitoring could incorporate some impacts of climate change. On the policy side, it would be what the District does about it and looking at co-benefits of mitigation strategies.

Additional discussion items included:

- Possible discussion on how the state incentivizes energy or fuel use – this would give the Committee a few more levers to try to put into play if the Committee does not mind making recommendations that are not strictly the scope or charter of the Air District.
- Things that would incentivize different fuel choices, wind energy or efficiency moves that could be made at utilities or at the user end. This one done on the smog check program.
- The Committee could be broad in that respect.
- Some of the things that work just for the Bay Area are things that need to be done on a state-wide level and might not be able to be done in the Bay Area without legislative interaction.

- The last 3 to 4 speakers have provided a lot of technical information and a summary of their presentations would be useful.
- One of the findings to be able to make is the sources that the District has concentrated on in order to address ozone
- The appropriate sources for GHGs as far as the Bay Area is concerned.
- Agricultural emissions and emissions from combustion sources
- Looking at the sources of methane that the Air District might have some influence over; landfill is one, other methane from natural gas methane.
- Looking at an action that will cause an unintended consequence and looking at actions that have cumulative good consequences.
- Energy conservation solving a lot of pollution problems in addition to a lot of climate change issues.
- Black carbon.
- Focus on CO_2 as the gas that should have the most concern and continue supporting research to make sure that that is the most effective way.
- MTBE-type issues should be flagged. Ethanol is getting close to that; in particular the health effects.

Dr. Bornstein recommended that the Committee members prepare a list in advance and bring it to the next meeting. The final list could be divided into recommendations that would go to the other Committees.

6. **Committee Member Comments/Other Business.** Dr. Holtzclaw thanked Chair Altshuler for an interesting meeting and for keeping the Committee on track this year.

7. **Time and Place of Next Meeting**. 9:00 a.m., Monday, December 10, 2007, 939 Ellis Street, San Francisco, CA 94109.

8. **Adjournment.** 11:40 a.m.

Mary Romaidis
Clerk of the Boards

AGENDA: 5b

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

DRAFT MINUTES

Air Quality Planning Committee
9:30 a.m., Wednesday, October 10, 2007

1. **Call to Order:** Chairperson Ken Blonski called the meeting to order at 9:35 a.m.

   Roll Call: Ken Blonski, Chairperson, Harold Brazil, Irvin Dawid, Emily Drennen, William Hanna (9:55 a.m.), John Holtzclaw, Ph.D., Robert Huang, Ph.D.

   Absent: Kraig Kurucz, Ed Proctor.

2. **Public Comment Period.** Norman Rolfe, S.F. Tomorrow, 2233 Larkin St., #4, San Francisco, CA, 94109, wanted to draw everyone's attention to the S.F. Chronicle Newspaper Section B-9 with sad news of the obituary of Jean Cordum, activist and major campaigner in the S.F. Freeway Revolt. Ms. Cordum was one of the key figures of the freeway revolts over the past years, and one of the founders of San Francisco Tomorrow. Mr. Rolfe, urged everyone to read Ms. Cordum's obituary.

3. **Approval of Minutes of June 13, 2007:** Dr. Holtzclaw moved approval of the minutes; seconded by Chair Blonski. Chair Blonski called for approval and the draft minutes were approved unanimously.

4. **Bay Area Congestion Pricing Presentation by:** *Mr. David Burch provided introductions and involvement of Air District to date with the topic of congestion pricing.*

   Mr. Burch briefed the Committee on a couple of initiatives in the Bay Area regarding congesting pricing. In addition, Mr. Burch provided history and context for why the Air District is interested in pricing measures and the potential implications for air quality.

   Mr. Hanna arrived at 9:55 a.m.

   Mr. Burch stated, congestion pricing is one of several possible pricing measures that are sometimes referred to as market based measures. From the standpoint of air quality, market based measures are basically a type of transportation control measure that can help to reduce to emissions, by relying on market based pricing mechanisms to reduce driving and reduce emissions. Market based measures can include increased gas taxes or user fees that could involve roadway pricing; which congestion pricing is one of the options, which could include bridge tolls, high occupancy toll lanes, and it also involves parking fees or vehicle registration fees that are based upon the amount of vehicle emissions. So there is a wide range of things that fit under the rule brick of market based measures. There has been an impressive gain in improving air quality from the technology side, such as tailpipe emissions, cleaner fuels, etc. on a per vehicle, per mile basis. The Air District has made great progress for improving air quality. However, that progress has been eroded to a certain extent by the

continual growth in the size of vehicle fleet, and the amount that those are driven, which is called Vehicle Miles Traveled (VMT). VMT is projected to continually increase and that is going to continue to offset some of our progress. Many economists and planners argue that a big part of the reason for the rapid growth in VMT is that we do not price our roadway systems in a way that would encourage more efficient use.

At this point in time, it is neither economically nor environmentally feasible to expand the road system enough to satisfy unconstrained demand. So we need to figure out how to use the existing system more efficiently and pricing may be a key part of that solution. Market based measures and congestion pricing are of great interest, because they provide a means to tackle both our transportation and our air quality challenges. As market based measures have been advocated by economists and planners for at least 20 years now; and they have been included in all of the clean air plans that have been adopted in the bay area since the original plan in 1991. Back in early 1992, the Air District actually hosted a major conference on Market Based Measures. At least 15 years ago, there was already considerable interest in this area. In the current Clean Air Plan, the 2005 Ozone Strategy, PCM 18 calls for the Metropolitan Transportation Commission (MTC) and the Air District to pursue pricing measures including congestion pricing, higher bridge tolls, gas tax increases and parking fees.

The progress towards implementing market based measures in the real world has been uneven, especially here in the U.S. There have been concerns about technological feasibility in terms of how the tolls are collected; equity, the potential impacts on low income drivers and most importantly, political acceptability. Today, the technical issues have been largely resolved, equity can be addressed and public opinion may be gradually warming to pricing measures. There are a lot of real world examples of pricing schemes today. As you may be aware, there are zones or cordoned pricing schemes that have been implemented in Singapore, London and Stockholm, as they have been successful and have had impressive results. There have been High Occupancy Toll Lanes (HOT) where individual, private, single occupant drivers can buy into the carpool lane. This has been in Southern California since the 1990s in Houston and now they are coming online in places like Minneapolis as well.

There are two key ways that market based measures can help improve air quality. By increasing the price of vehicle ownership or vehicle operation costs, we can reduce demand and reduce driving, secondly, we can take the revenues that are generated from those mechanisms and use them to promote and fund alternative modes of transportation. In the case of congestion pricing, there is one more benefit; which is that if you have a congested facility, and low speeds, emissions tend to be higher in stop and go driving to the extent that we can relieve the congestion, and potentially reduce the emissions in those corridors. That said, it is not necessarily a foregone conclusion that congestion pricing would be good for air quality, a lot of it is going to depend on the particulars of how you go about implementing that.

A couple of cautionary notes is 1) new lanes added and we increase capacity, that certainly has a potential to generate and induce demand, new trips and even if you do not necessarily increase capacity by building a new lane; 2) if moved, some of the cars that are in the mixed flow lanes that may be congested into a HOV lane and you make the traffic flow better in those mixed flow lanes.

It is possible that there could be some induced demand if the trip becomes quicker, than someone taking the bus that may decide to switch over to driving. It is also important to point out that there is a speed curve related to emissions and emissions tend to be highest at slow speeds and tend to best at the range of 35-50 miles per hour. As speeds increase above 50 mph, the emissions are both criteria pollutants and CO_2 begin to increase again; as you want to avoid the slow speed, but do not want to encourage the real high speed.

Last precautionary note, is if HOV lanes and carpool lanes were to become more congested because of single occupant vehicles going into those lanes, that could erode the travel time advantage of carpools, vanpools and buses; and that is not something we want to happen. This is largely a management issue that could be addressed, but it is something that should be borne in mind. Bottom line is that we are closer than ever to seeing tangible congestion pricing projects here in the bay area. State legislation has authorized four corridors as HOT lane demonstrations here in the bay area, which are all scheduled to come online by the year 2015. This includes I-680 project the Sunol Grade, between Alameda and Santa Clara counties. Also, I-580 eastbound in the Tri-Valley area which includes Pleasanton and Livermore and down in Santa Clara county both highway 101 and highway 85 are also slated for HOT lane demonstration projects.

In addition to those corridor specific projects, MTC is currently working on a regional HOT lane network study, and are potentially looking at a very robust, comprehensive system, that would eventually convert all HOV lanes in the region into HOT lanes and expand network and serve as a mechanism for an enhanced regional express bus network. Another thing happening at the regional level right now is that MTC is updating the Regional Transportation Plan. Various performance targets in terms of trying to reduce congestion, emissions and VMT. They are evaluating different packages of capital projects as well as pricing measures and land use measures to see what would help to get them towards those targets, and the preliminary analysis show that the pricing measures would be the most effective of those options, in terms of trying to meet targets related to reducing emissions and congestion.

Mr. Burch noted that the Committee would hear from Jean Hart, regarding the project for the HOT lanes on I-680 and then from Elizabeth Bent, from the San Francisco County Transportation Authority, which she will talk about Doyle Drive.

Mr. Burch concluded his presentation, stating that Air District staff is participating on a technical review committee for these types of efforts with both MTC and San Francisco County Transportation Authority. The Air District will work to ensure that as we go forward, these types of projects and initiatives are implemented in a way that will provide the greatest benefit to air quality.

Discussion ensued among the Committee, with regard to HOV and HOT lane in the Bay Area.

Jean Hart, Executive Director, I-680/Sunol Smart Carpool Lane Joint Powers Authority, presented to the Committee, the I-680 HOT Lane Update.

Ms. Hart indicated that the Joint Powers Authority encompasses members of the Alameda County Congestion Management Agency, the Alameda County Transportation and Improvement Authority in Santa Clara County, and the Valley Transportation Authority. It has five members who are elected to the respective agency boards and then serve on the Joint Powers Authority.

Ms. Hart stated that she appreciated the opportunity to speak about the I-680 HOT Lane Project and that as a part of the presentation, will talk about the polling that was conducted by the Joint Powers Authority in response, and have conducted focus groups as well, as well as public opinion polls. Some of these polls were general and some by people who use the corridor.

Ms. Hart indicated that the I-680 project will go under construction next year and will be the first HOT lane project in the bay area. San Francisco is very aggressive in their approach, but it appears now in looking at the schedule, that the I-680 project will be first. It is a 14-mile stretch that includes both Alameda County and Santa Clara County and that is the reason that VTA is participating on the Joint Powers Authority. The 14 miles begins near the city of Pleasanton near route 84 on I-680, and terminates near highway 237 in the city of Milpitas, which is in Santa Clara County. Eleven miles are within Alameda County and three miles are in Santa Clara County.

The HOT lane will work first and foremost and will be free to carpoolers and other normal HOV users. Vehicles that have the ability to use hybrid vehicles in the HOV lane will also be able to use the HOT lane without a fee, just as carpoolers will be to use the lane without a fee. Solo drivers can choose to pay to use the carpool lane, as there will not be any toll booths, but will be able to use your Fas Trak transponder that is currently used on the bay area bridges.

Conceptionally, the tolls will increase when the traffic on the non-toll lane is more congested, so the price of the facility is tied in to the level of congestion not only on HOT lanes, but on the mixed flow lanes. No one else in the United States has tried this approach, and will truly provide the price of what the benefit is that the solo driver will be paying by using the HOV lane. There are currently two HOT lanes in Southern California and there is one on I-15 in San Diego, one on SR-91 that is in Orange County and there is a HOT lane that is operated in Minneapolis that is called the Min Pass. Those are current HOT lanes and the Joint Transportation Authority has information from them as well as polling. In general, the people who will be using it are parents who have children at day care centers, workers that have deadlines, contractors and anyone that needs to be somewhere at a specific time needs a reliable commute and carpoolers and transit vehicle users.

The poll indicates that the general populous in Alameda County, Contra Costa County and San Joaquin County and polls were also conducted for people who are quarter users of the I-580 and I-680 corridor, so there has been feedback from the general population of the area as well as corridor users. Generally, commuters who use the current facilities support the concept about 2 to 1 and the statistics are 64% to 33%.

Most of the commuters say that they would use the HOT lane, but all have said that they will not use it every single day. There were some before and after polling about the concept of HOT lanes; how often would you use it, and the response was that people stated that they would use it all the time. Then when it was mentioned that there was going to be a charge for this based on the levels of congestion and then the response was that we would use it when we need to get some place in a hurry, at a fixed time. So then it dropped to about 30% to 40% who would use it regularly and that would be three days a week.

How we propose to operate the HOT lane is that it will operate 24-hours a day, 7-days a week. The HOV lanes would also operate that way, and is considered to be different than any of the current carpool lanes in the bay area, who have limited operation. The proposal is that both the HOV as well as HOT lanes operate 24/7. The toll for solo drivers ranges from a minimum of $1 and that would be for the total trip to its most congested around $7-$9 at peak of the peak.

There would no toll booths, as there are limited entry and exit points. The solo drivers would decide each trip based on both one their needs; as well as the current toll whether or not to use the facility. Also, there would be enhanced enforcement from the California Highway Patrol. The Joint Powers Authority has been working with San Diego to develop the technological approach to enforcement, but we are not far enough along yet, to employ that.

Ms. Hart had the Committee come down to view the illustration of the project. The facility plan is north/south and shows Pleasanton, Fremont and Milpitas. At present, there is a HOV lane on I-680 corridor, so that lane would be converted from a HOV to a HOT lane. The facility would start where the current HOV lane starts. Carpoolers would be able to enter this lane as well as SOV users. A sign would indicate that the HOT lane is ahead, and as well as display the cost of the HOT lane. There will be two exit points. The first one would be located at the Auto Mall which would indicate the price for example to Mission which is a major connector to I-880, so then you will see a price says to Mission Boulevard, showing the driver the cost. Drivers will be able to make a decision whether or not it is worth it to pay whatever that cost it. The driver would be able to decide if they are in the mixed flow lane, they would choose not to enter into the HOT lane. If they decide that they are willing to pay that price, they would enter into the HOT lane and then they would be required to stay in the HOT lane as well as HOV users until the exit after Auto Mall, Washington.

The cost is conducted electronically via the Fas Trak reader with an antenna, just like when going through the existing toll booths on the Bay Bridges and the antenna reads the transponder and the price that is one the dynamic pricing. At any point in time there could be three different prices depending on how you drive. The formula that will be used to determine the price is based on the congestion in the mixed flow lanes is perfectly rational and makes a lot of sense. Currently the facilities only monitor the congestion that is in the HOT lanes, so that you can guarantee a certain speed that is only based on the congestion there, not on the congestion in the mixed flow lanes; so this way you are only paying for what the benefit in the amount of time that you are saving, which is considered to be a true user's fee as well.

Mr. Brazil inquired about the pricing in San Diego. Ms. Hart's response's was that it is priced first with the HOT lane only. I-15 express is currently doing congestion pricing on the lane itself. Ms. Hart indicated that the price does go up and down, but based on the congestion in I-15.

Signage will alert the drivers that there will be a carpool and Fas Trak lane ahead. The text is currently being worked on, as the sign should be informative and not confusing. With additional signs showing the cost to exit at the various points.

The timeline of the project is estimated as follows:

- Utility relocation – 2007;
- Final design – 2008;
- Construction begins – 2008; and
- HOT Lane opens - 2010

The costs and revenues are estimated as follows:

- Construction Costs - $20.9M;
- Electronic Tool System Costs – $11.4M;
- Other Costs - $8.1M;
- Total Project Costs - $40.4M; and
- Projected Revenue - $5M/per year

Ms. Hart clarified that at this time, there is only a southbound HOV lane; and there is no northbound HOV lane. Funding from the southbound will help pay for the northbound and the northbound will be built as an HOV/HOT lane. This will provide funding to complete that system.

The benefits are that this is a new choice, to travel faster than they would otherwise. It will save time, one would be able to use it when need to, as you are not required to use it everyday. There are no changes in the HOV lane, except for the limited ingress and egress, so that is a change for the carpoolers. Some cities have shown that the limited access does improve safety and the revenue that is generated by the corridor would not be otherwise available without this type of a facility.

Ms. Hart concluded her presentation and asked if the Committee had any questions. Chairperson Blonski opened it to the Committee for questions.

Dr. Holtzclaw thanked Ms. Hart for the presentation, and noted that HOV lanes and HOT lanes can be quite beneficial. Dr. Holtzclaw questioned the third item that the revenue would be used for building I-680 Northbound HOV lanes; wanted to know if there would be any capacity increases as a part of that with the widening of lanes, etc. Ms. Hart's response was that there will be added capacity in that there is currently no HOV lane in the northbound direction. There is only at present, a southbound direction. So there would be the capacity of a carpool lane, plus a HOV/HOT lane combination; which will add capacity.

Dr. Huang asked if the $5M was gross revenue. Ms. Hart response was yes, this would be the estimated gross revenue. In addition, Dr. Huang asked about the annual operation and maintenance cost of the project. Ms. Hart indicated that it will be about $1.1 to $2.1 million per year; leaving the gross revenue to be about $3.8 to $4 million for either transit or for a HOV facility.

Mr. Hanna has about the congestion level in the HOV lane at present and how would that increase with the addition of solo drivers; which will augment what is already happening. Ms. Hart stated that currently it is not a high use carpool lane, that there are about 600 vehicles per hour in the lane, which is 600-700, which is not a high use. The way the formula is being developed to determine the cost of the trip, is to base it on about 1,300 so that what you are selling really is that capacity. Going from 600 to 1,300, if there are more carpoolers, then there will be more vehicles in the lane, less capacity that would be available the higher the price.

Mr. Brazil asked about the estimated air quality benefits at this time. Ms. Hart stated that an air quality analysis has not been conducted.

Mr. Dawid asked about the estimated revenue of about $1.1 to $2 million dollars that is anticipated to maintain the facility; of this amount how much of this will be used to maintain the added expense of having an HOT lane? Ms. Hart responded that it will include operating the facility, which will be the back office, contracting to use their account management. Other fees will be to pay for enforcement of the facility by the California Highway Patrol, and the utilities associated with the system. It includes some of the toll data centers. Ms. Hart stated that they are anticipating 1-2 staff members who will serve as customer service representatives, who will deal with just HOT lane issues only. The actual account service providers will be done by data.

Ms. Drennen had a question about the northbound construction and wanted to know if you have an estimate of $3.9 million per year and you are looking at northbound construction costs would it be roughly similar to the southbound construction costs or slightly higher? Ms. Hart responded to Ms. Drennen and explained that for the HOV lanes it is much higher, and that it would be paid for over a long period of time. State legislation that is pending signature of the Governor is to allow for indeterminate length of time you can operate as a HOT lane. Currently, there is a four year demo period that was approved; this would take off the sunset. If that was done, there would be an allowance for bonding to be able to move on the northbound facility to bond for the improvements and then use the revenues to pay for that, along with transit service.

Ms. Drennen asked if the express buses were the most useful use of the transit money if there is significant transit demand for that service itself, or could it go to augment enhance current transit service and asked who are the individuals dealing with the transit side of it. Ms. Hart stated that is one of the issues that will be tackled when the Joint Powers Authority does their first expenditure plan, which is estimated to be done by 2009, to determine where the revenues go and a part of that will be so what is the next call. Ms. Hart stated that it would probably be transit for some time and what does that look like? Will it be a combination of express and localized service, but feels that everyone would want enhanced service in the corridor, but at this point it is unknown.

Final question from Ms. Drennen regarding the air quality benefits and stated that she was surprised that the project has not gone through and wondered if it was in the EIR stage. Ms. Hart informed Ms. Drennen that there is environmental clearance, and there was an environmental document that done for the HOV lane and that just the add on for the HOT lane and that was done two years ago and was a Cat Ax, because it was considered to be categorical exclusion and exemption because it is primarily the ITS portion of managing it.

Chairperson Blonski again thanked the speaker and provided Ms. Hart with a token of the Committee's appreciation.

Dr. Holtzclaw asked one final question with regard to how much money would be generated that would be applied to transit service per year. Ms. Hart estimated that this is just a guess, as this is a policy decision by the Joint Powers Authority, that it would probably be at least 50% after the maintenance.

Dr. Holtzclaw also asked if there has been any consideration given to considering rather than constructing the HOT/HOV lanes Northbound; taking a lane and Ms. Hart responded that that has not been discussed at this time.

Ms. Elizabeth Bent, Senior Transportation Planner, San Francisco County Transportation Authority presented to the Committee the Mobility, Access and Pricing Study for downtown San Francisco; and the San Francisco Doyle Drive Value Pricing program.

Ms. Bent provided the Committee with an overview of the Transportation Authority, noting that it is a congestion management agency for San Francisco and in that role, monitors the congestion on the streets and roads, but also manage the half cents sales tax dedicated to transportation improvements in San Francisco; which is Prop. K.

Ms. Bent indicated that her discussions with the Committee would be spent on the mobility, access and pricing study, as well as the urban partnership program through the Department of Transportation, as well as the congestion problem. As some individuals are completely convinced that congestion is horrible in San Francisco and that some people think it is not as bad as New York and that we have a lot of time to address the issue.

Ms. Bent's presentation consisted of two maps showing congestion in San Francisco with transit routes operating below 8 mph and some operating at 3-4 mph. Auto routes operate below 10 mph, and freeway routes operate below 30 mph.

Travel in downtown San Francisco, there are about 1,000,000 daily trips and about 400,000 trips during the peak period in this same area. During the daily mode share, half of those trips are by car. Mode share during the peak period is better, but would like to figure out a way to make people's transit options a lot better, as well as improve the overall traffic flow on the streets.

When looking at the travel to downtown San Francisco, in particular the transit mode share, by region; what was found is that it is doing pretty well from the East Bay, but when looking at the South Bay and the Peninsula, we are only capturing about 23% of the transit trips. Ms. Bent stated that this is something that we are seeing not only because of the amount traffic congestion on the freeways and access into the city from the South, but it is also noticed that

the North Bay and the East Bay are already controlled by some sort of pricing system, because they are tolls on those bridges.

When looking at congestion in San Francisco, it is noted that half of an average regional trip is spent simply sitting traffic. This number could increase by 2030, which is considered the Horizon Year. Also, when looking at where the congestion delay is experienced the most, and where it is worst, it was noted that Downtown and SOMA experienced about ¼ of the regional delay.

Many wonder how does transit fair in terms of congestion and because so many of our streets are mixed use traffic, a lot of congested auto routes are also transit routes. It was noted that bus speeds are 9-35% slower than auto speeds and that transit reliability hovers around 70%, which many of those lines are operating below 8 mph. Ms. Bent stated that this is a decrease in funding for transit, and an increase in the standard for on time reliability.

Ms. Bent noted that when she spoke to folks at the Transit Effectiveness Project, that MTA is running, what was stated that their top concerns are better reliability, faster travel times and more peak service and feels that these are all things that a congestion pricing program could help to deliver.

Ms. Bent indicated that when looking at the environment, that individuals are already aware that congestion has an impact on air quality. Private autos produce about 47% of emissions in San Francisco alone in 1990. This number will increase in the next couple of years, as San Francisco currently has a very aggressive greenhouse gas emissions reduction target, and at present is coordinating with S.F. Environment and the Air District on the Climate Action Plan, and how we can use congestion pricing to implement some of the programs. Questions were raised in the past with regard to why is MUNI not more efficient. Ms. Bent indicated that only 1% of greenhouse gas emissions in San Francisco are produced by the transit fleet.

In looking at the economy, it was calculated that the cost of lost time, to out of pocket costs from excess fuel and also to goods movement. In the region, this number is about $42B in 2005 and in San Francisco alone it is $2.3B. This number is anticipated to increase by 2030 to about $3.8B. The effort will be made on how to do better and to give people back that lost time and to helping people to not simply not through out costs in terms of fuel. As fuel prices rise, the numbers could also rise.

While looking at the quality of life in other cities it was noted that congestion pricing programs have been able to deliver significant changes to the quality of life. Road safety has increased, through a decrease in pedestrian injuries and also, there is an estimate of about 20% increase in bicycle trips in London for example. Ms. Bent noted that it is a part of their program, but like to see if this could be delivered in San Francisco.

Ms. Bent asked why should congestion pricing be considered for this particular tool in managing congestion. Ms. Bent stated that this is an economic tool that has been around for many years and has been used in many other industries as well. It is a way to manage and under price scarce resources, which is typically over used. The successful implementation in London as well as Stockholm and several other cities have shown that there is political acceptance of a program like this and public acceptance as well. Lastly, it shows that the

technology is there and had advanced to a place where it can actually support a system; rather than hinder a system like this.

Ms. Bent stated that congestion pricing is also contained in the countywide transportation plan, which is part of the Prop. K plan which is the expenditure plan for the countywide transportation plan, which was approved by the voters and also a part of the Climate Action Plan. When looking at the transportation action categories; discouraging driving is a category that congestion pricing falls within, but it is also a way to implement some of the other programs that are contained in that category, like increasing the use of public transit, increasing the availability of ridesharing and these are some of the things that we would like to look when we are speaking about reinvesting in the package of improvements for mobility.

Congestion pricing for San Francisco is a package, which involves a fee that is paid by the motorist on congested areas or on key congested routes, but the revenues are reinvested into improving the transportation options. When the program is being evaluated and the different alternatives that exist, they will be evaluated as a package. To try to understand not only the cost of administering the program, but the cost of delivering the other options that would help to support the choices that people will make. When talking about how those choices flesh out, we want to understand how many people might shift their travel to a different time of day, for example they might drive in at 7:00 a.m. instead of 8:30 a.m.

Lastly, public outreach and awareness are very key pieces of a program like this, to make sure that people understand both before their trip and during their trip, when they are entering a price area, and how they can make a better choice if they choose to do that. There are also multiple different ways of paying in Stockholm. For example, people can pay their fees at 7-Eleven and that is something that we want to understand that there are traditional ways of paying, but also can we reach out to the business community and other industries to understand how we can leverage their sectors as well.

Several case studies have been completed and are looking at different cities to understand what is the footprint for a program like this and how would it flesh out in San Francisco. In London, there is an all day flat fee charge that is levied between 7:00 a.m. – 6:00 p.m. and the charge does not vary. When looking at Stockholm, the charge does vary over the course of the day. It is highest in the peak of the peak and lowest at the end of the day, but then there is a much lower charge in mid day. What was found is that there are a range of benefits that reduce delays in traffic as you would expect increase speeds, but better transit reliability and higher transit ridership; decreasing greenhouse gas emissions and pedestrian injuries, as well as substantial net revenues that help to fund the program.

The most congested area in San Francisco will be geared towards zone based schemes, sort of figuring out if there is a program that can be designed that focuses on this area; but if there are other potential alternatives. Can the key routes be identified that might be charged or key gateways into the city that we may want to charge.

Some of the goals/benefits of congestion pricing include:

- Improving system performance and investment
- Improved travel times

- Reduced travel time variability
- Increased speeds
- Increased non-auto mode share

Enhancing environment and quality of life

- Improved air quality
- Improved road safety
- More leisure time, participation in civic life

Maintaining economic vitality

- Efficient goods movement (reliable deliveries)
- Improved trips to trade, retail, employment centers
- Decreased travel costs for individuals and businesses

Supporting growth

- Consistent with Transit First Policy
- Better land use decisions

A defined package will be presented to public at workshops throughout the study and also using the feedback to incorporate and refine those alternatives and also again, determine the cost and revenues of potential packages not of just one piece of the system. Many areas will be reviewed, as there are about seven different tasks in this study that is being focused on including public participation, the technology, as well as the financial and economic impacts and benefits.

Ms. Bent noted that at present, the agency is in the process of expanding the travel demand model, to understand how people within the region would react to a program as such. There is a San Francisco based model that is very robust, but because it would be a regional impact the agency would like to understand how folks in the nine county regions would react. Alternatives are also being designed that would be analyzed throughout the program and discussions with transit operators both locally and regionally have been held to understand what is the horizon of improvements that have within the timeframe that a system might be implemented over the horizon year 2030. How can we either speed up the improvements, devise more and what they look like and what are their particular constraints for delivering new transit services.

Recommendations on a potential program should be completed by Summer 2008.

The United States Department of Transportation (USDOT) announced that they would make about $1B available to up to five cities to invest in congestion management programs. However, the package includes the 4T's of congestion management which include:

- Tolling (congestion pricing);
- Transit and ferry investments;
- Technology; and
- Telecommuting

San Francisco was successful in competing for this program, one of only five cities in the nation. There is a possibility that San Francisco could receive up to $159M in grant funds to improve congestion in the bay area.

The key piece of this program is the value pricing program on Doyle Drive, which means tolling Doyle Drive. This has been contemplated for many years, to fill the funding gap for the replacement project on Doyle Drive.

Several agencies are collaborating on this project, as many different agencies contributed to the bay area's urban partnership proposal, which includes MTC, MTA, the Golden Gate Bridge District and Caltrans. Legislative authority is needed to access the grant funds.

The Doyle Drive replacement project will include a parkway design that would allow people to reconnect with the environment, Crissy Field, the Marina and the Presidio on both sides of Doyle. Also, it would be a much safer facility, with slightly wider lanes.

This is the highest priority safety project in the state and it the worst rated bridge in the state for seismic safety and it also have a sufficiency rating with the federal government of 2 out of 100; which is pretty bad.

This is an $810M project, $605M committed in state and local funds. The existing facility tolled to fill fund gap with an estimate of $165M.

Elements of the program are:

- Doyle Drive Value Pricing Program (1);
- Arterial management (2, 3);
- Smart Parking (4);
- Integrated mobility account; and
- Expansion of city telecommuting program

The travel patterns within Doyle Drive include:

Most trips destined for downtown
- 120,000 daily
- 58,000 inbound
- 16,500 inbound during AM peak

Most trips from North Bay
- 85% during AM peak hours
- 70% during off-peak hours

Tolling Design:
- Preliminary toll studies: $1-$2/day could shift 10%-12% of traffic to off-peak or transit;
- Updated toll study to be conducted pending CHAMP 4.0 model completion

The Mobility, Access and Pricing Study (MAPS) are a feasibility study. This is a chance to understand how pricing for mobility can be used in San Francisco on a broader scale and try to identify the particular areas that we might focus on and whether or not it is feasible. The Urban Partnership Program is a demonstration project, and the idea is to lead back to this idea of skepticism, whether or not government can deliver and to demonstrate the value of a program like this.

In addition, UPA demonstrating value it will:

- Close Doyle funding gap with self-help;
- Manage peak period demand;
- Showcase technology;
- Concept of re-investing revenue in the Doyle 101 corridor; and
- Build public trust in government to deliver
  - Transparent public process
  - Public participation

The monitoring and evaluation of Doyle program will help inform decision-making for potential area-pricing in San Francisco.

Ms. Bent concluded her presentation.

Mr. Dawid noted that the presentation was excellent. Mr. Dawid asked about the downtown mobility project, and mentioned cordoned pricing which is what New York City is doing, stating that anybody below 85th Street will get charged and even if you live within the zone you are charged half. There are several ways to design a zone based system, as you can charge people that are coming in and out or you can charge in/out and within. The question that everyone is trying to understand is how do folks traveling within travel today? Are most of these people already on transit and is there any benefit to charging them for driving? Also, in other cities they have been able use residence discounts so that is another thing that will be considered.

Ms. Bent also indicated that New York's program charges up to $8 a day and a flat fee. At present, the agency is looking at different ways that they can vary the fee to understand how people are traveling in the middle of the day, in particularly because they want to make sure that the downtown businesses are still active and that people are still coming downtown to shop.

Mr. Dawid also noted that he looked at MTC's website and encouraged the Committee to also view the site and see the San Francisco Bay Area Accelerate Projects funded by USDOT. Mr. Dawid stated that the biggest chunk of money out of that $159M is $58M that is going to the SF Go Arterial Traffic management. Mr. Dawid asked how much of that, since that is the biggest chunk and the Doyle Drive tolling is only getting $12M and $35M going toward the rebuilding. Out of the $58M how much in general is VRT as there are several VRT corridors within the city; how much of the $58M will benefit VRT generically within San Francisco?

Ms. Bent indicated that it is a pretty sizable amount, since some of the corridors that are destined to have these SF Go improvements are Geary and VanNess and because the 38 Line runs on Geary and runs into the downtown area. It will benefit, as the idea was to leverage the existing transit system in the transit corridors and because they are street based improvements, Golden Gate Transit Buses that are traveling on those corridors will also benefit.

Mr. Brazil asked about the definition of traffic. Ms. Bent responded it is calculated between the difference between the time your trip actually takes and the free flow travel time.

Dr. Huang had a broader question in general, asking Ms. Bent her thoughts or anticipation would be the obstacles that will either slow the project down or abort it; and what strategies have been considered. Ms. Bent indicated that the agency is conducting a significant amount of public outreach, as this is something that is not yet experienced in the bay area. Particularly when it comes to the concept of peak period pricing, when going to New York for example, you have peak period pricing on the trains as well as on the roads, when you look at the tolls and things like that. So that is something that people will need to understand what that means and educate people on how that works, and also collecting that feedback in trying to understand what the improvements need to be.

Ms. Bent noted that what was found in the feasibility study is that people are really wondering about the affordability and the business impacts and this has been seen in other cities, which was broadly neutral or an improvement. Many folks that are lower income do support programs like this. The business impacts vary on how the program is designed. For example in London, there was a broadly neutral impact on downtown businesses; but in Stockholm there was actually a 5% increase in retail revenues.

Also, Ms. Bent indicated that the technology is not an obstacle, because the technology is there, it is just a question of how it is designed.

Dr. Huang indicated that his understanding is that both London and Singapore were able to get the program through because of the very strong government pressure and wanted to know how much support do they have at this time? Ms. Bent indicated that their Board suggested that they apply for the feasibility study funding for that grant and the Board was very interested to see whether or not this is something that could work here, because it has worked so successfully in London and Stockholm and several other cities.

Dr. Holtzclaw thanked Ms. Bent and asked about the North Bay at 42% by transit and 23% from the South Bay and Peninsula. That we should be thinking very strongly about the South Bay and Peninsula and wanted to know their plans with using the revenues and tolling coming up from the South; recognizing that state and federal freeways are hard to put into a tolling system. Ms. Bent informed that Committee that they are not considering tolling the freeways themselves, as they do not have the authority to do so, as this program is designed to focus on the design of the city streets. This makes it more difficult, because the boarder to the south corridor is most poor and there are many other access points.

Chairperson Blonski thanked Ms. Bent and commented that the presentation was excellent and also presented her with a gift on behalf of the Air District.

Speakers: The following individuals spoke on this agenda item:

Gerald Cauther 900 Paramount Road Oakland, CA 94610	Normal Rolfe S.F. Tomorrow 2233 Larkin St., #4 San Francisco, CA 94109

Ms. Drennen noted that in response to the speakers that she has drafted a resolution and perhaps passing the resolution today about these issues and wanted to check with Chairperson Blonski and the Committee as a whole.

Chairperson Blonski asked for any opinions by the Committee and some members suggested that they not make any decision at this time, but would like to hear the resolution.
Action: To calendar a discussion of a resolution in reference to agenda item 4.

Mr. Dawid noted that Ms. Drennen is right on target and that the Committee has seen three excellent presentations today and would like the idea of getting the resolution in the minutes. Chairperson Blonski suggested that Ms. Drennen read the resolution. Ms. Drennen began reading the following:

WHEREAS, high-occupancy toll lanes (HOT lanes) offer carpool priority to solo drivers willing and able to pay a toll; and

WHEREAS, HOT lanes are a new and unproven transportation mechanism that could impact air quality through induced traffic demand and increased emissions from increased travel speed, and

WHEREAS, HOT lane projects have the potential to greatly influence several social equity issues such as: an income-segregated resource, reduce travel times for current users of HOV lanes; and

WHEREAS, HOT lanes are often touted for their potential to fund new transit service, but there are currently no agreed-upon targets for funding transit operations.

THEREFORE BE IT RESOLVED that the BAAQMD Advisory Council urges the Air District to develop policy guidelines for HOT lane projects including: air quality impacts; social equity concerns; and setting a minimum percentage of revenue to be dedicated to transit from HOT lanes.

Chairperson Blonski asked if there was any discussion and Mr. Hanna commented that this was just a proposition for something that the Committee may want to consider next time.

Chairperson Blonski requested that this resolution be part of the discussion on, the agenda for the upcoming meeting; which the Committee agreed. Dr. Holtzclaw suggested that he would like to see as a part of this, the potential of any capacity expansions to increase traffic and impact air quality.

5. **Committee Member Comments/Other Business.** Chairperson Blonski thanked Mr. Dawid for putting this meeting together and contacting the speakers and felt he did an excellent job. Mr. Dawid thanked Mr. Burch.

   Chairperson Blonski's final comment was that he was pleased with the meeting.

6. **Time and Place of Next Meeting**. 9:30 a.m., Wednesday, December 10, 2007 – 939 Ellis Street, San Francisco, CA 94109.

7. **Adjournment.** 11:57 a.m.

Vanessa Johnson
Executive Secretary

AGENDA: 5c

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

DRAFT MINUTES

Advisory Council Public Health Committee
1:30 p.m., Wednesday, October 10, 2007

1. **Call to Order – Roll Call.** Chairperson Bramlett called the meeting to order at 1:38 p.m. **Present:** Chairperson Jeffery Bramlett, Janice Kim, Ph.D., Steven Kmucha, MD., Ms. Linda Weiner, Mr. Brian Zamora, and Ms. Licavoli-Farnkkoph, MPH. **Absent:** Ms. Cassandra Adams.

2. **Public Comment Period:** There was none.

3. **Approval of Minutes of June 13, 2007:** The minute was approved and carried unanimously.

4. **Continued Discussion on Indoor Air Quality (IAQ) and Asthma:** Chairperson Bramlett initiated the discussion on Indoor Air Quality and Asthma stating that this is a first draft and an opportunity to make changes. Mr. Bramlett reminded those present that the recommendation that he read out at the full Advisory Council meeting are shown in the draft. Mr. Bramlett explicitly stated that there might be a final draft by December, however it would rather be worthwhile to take time to do the complete product of the recommendation that the committee is happy with than a document pushed through to meet the December deadline.

   Mr. Zamora suggested that Members send their text changes of the recommendation electronically to Mr. Bramlett, but Mr. Bramlett reiterated that those changes can be discussed if Mr. Zamora has them handy in order to maintain good information communication at a better pace.

   Ms. Weiner stated that there is more current information from the American Lung Association on levels of criteria air pollutants than 1997 and will send those to Mr. Bramlett.

   Mr. Bramlett clarified to the Committee that the purpose of the draft document is to precipitate clarity where need be. Mr. Bramlett reiterated that his understanding from the ongoing discussion is that the subject be changed to ‘Strategy for Asthma as it Relates to Indoor Air Quality,’ Mr. Zamora added that for the implication, the Committee will extract the relationship between outdoor and indoor air quality and the resulting concerns. The Committee unanimously agreed on the revision of the subject matter.

Dr. Kim inquired if the Committee will present the draft to the full Council. Mr. Bramlett responded that he had already reported to the full Council on the scope of the recommendations so the Council is informed and if there are any new recommendations, he will include it in his chairperson's report during the meeting.

Dr. Kim inquired of previous presenters like Peggy Jenkins and their presentations. Mr. Bramlett responded that Peggy Jenkins had presented to the Committee, minutes of those meeting and three presentations in particular will be sought and at Mr. Bramlett's request; be forwarded with attachment to the Committee members. It was agreed that staff will see the draft recommendation sometime in late January 2008.

Ms. Weiner will search for a list of Asthma Coalition within the Air District's jurisdiction to be added to the draft as well. Mr. Zamora will also identify with the County Public Health Organization best contacts to be available as the resource draft are compiled.

Mr. Bramlett notified the Committee that Dr. Tony Iton was scheduled to speak at the meeting today but was canceled. Mr. Bramlett also notified the Committee that Dr. Moro from San Mateo County advised that Asthma Coalition will be the best to contact with the County Health Officers. Mr. Bramlett informed the Committee that there was a request to facilitate communication between the Air District and the County Health Officers and by tangent, Mr. Jack Broadbent, Air Pollution Control Officer (APCO) spoke at the County Health Officers' annual retreat of Friday, October 5, 2007. Mr. Bramlett also threw the question open on how to contact the Asthma Coalition concerning the information the Committee needs or whether the direction so far is satisfactory.

Ms Weiner suggested that it will be worthwhile to list the information on the website and Mr. Bramlett agreed that it will be left for staff to list the information on the website. Mr. Bramlett reiterated that input from members will get to him by October 24, 2007 and he will put them together and subsequently send back to members.

5. **Presentation on Health Effects of Traffic Exposure:** Dr. Janice Kim of Office of Environmental Health Hazard Assessment (OEHHA) presented on various health studies that are emerging because of living near busy roads. Dr. Kim stated that there have not been adequate regulations in place to address the protection of the public against air pollutants especially those living near sources. Dr Kim gave an overview of the presentation as:

    - Traffic related pollution and some of the mechanisms to toxicity.
    - East Bay Children's Respiratory Health Study – an example
    - Other Studies on Health Effects of Living Near Busy Roads
    - On-road exposures
    - Information for policy makers

For background information, Dr. Kim stated that there are health impact related to the respiratory system, cardiovascular, cancer, birth outcomes; however most of these studies are based on large populations where their exposures are estimated by regional air monitors. Traffic-related emissions are major sources of urban air pollution, which contains many air pollutants. These pollutants are respiratory irritants, carcinogens and can enhance our immune response. Dr. Kim explained that the pollutants are extremely small, about 0.01micrometer compared to cells. There are a lot of studies that show that these pollutants can enhance allergic response, which can have multiple effects especially on the cilia and respiratory epithelia. There has been increased probability of epithelia lining and a cascade of a process where one gets enhancement of immune response through multiple mechanisms; this is summarized by the article Brook et al., Circulation. 2004; 109(21):265571. Also NO2, ozone, diesel exhaust particulate (DEP) have been shown to enhance immune response on sensitize individuals; DEP can also induce an IgE response to new antigen.

Dr. Kim also stated that ultrafine particles are very small and impact the lower respiratory tract and cause local pulmonary inflammation due to inflammatory products that are released locally, it gets into the blood circulation and can lead to stress responses in the nervous system causing increase in heart rate, blood pressure thereby affecting the cardiovascular system.

Dr. Kim also noted that traffic related pollution contains so many pollutants and have higher concentrations near downwind of busy roads as illustrated by Zhu et al. JAWMA, 2002. These pollutants include particles, carbon monoxide, black carbon, NO2; these pollutants are usually rapid drop of 100m to 300m downwind. It is noteworthy that most of our regional monitors are not situated near major sources thus not capturing hot spots.

Dr. Kim also highlighted the recent work that OEHHA is doing and other epidemiological studies stating that they are looking at home exposures by using Geographic Information System (GIS) techniques to estimate the proximity of residential areas to traffic exposures as it relates to risks of asthma symptoms.

Dr. Kim summarized that after taking into account all the variables, there are increased risk of about 20% of the population exposed to traffic that have higher risk of asthma symptoms of one to five times.

Mr. Zamora inquired if the make-up of the community was taken into account. Dr. Kim responded that demographics of race/ethnicity, as well as socio-economic status were taken into consideration but they did not really make a difference.

Dr. Kim also spoke on On-road exposure to traffic pollution citing Dr. Scott Fruin of UCLA's presentation. Dr. Fruin reviewed some of the existing studies that documented high exposures to vehicle exhaust on busy roads showing that particulate matter effect are about 5 to 15 times higher. Dr. Kim stated that an average

Californian spend 90 minutes per day in a vehicle and Air Resource Board estimated that 6% of daily driving can give up to half of our exposures.

Dr. Kim also cited Peters et al. study in Germany of about 700 subjects that had their first acute Myocardial Infarction (MI); the study stated that exposure to traffic within 1 to 2 hours prior to symptoms more than doubled the risk of MI. The study also considered whether taking public transportation and being in traffic lowers stress level.

Also, Dr. Kim commented on the study of exposure to ultrafine particles and DNA damage in Copenhagen; she stated that 15 healthy individuals were monitored for six days cycling in traffic and one 90 minutes indoor cycling. In the process, blood samples were taken to monitor ultrafine particle exposures, the result showed lower ultrafine particles on day of indoor cycling and higher ultrafine exposures correlated with higher evidence oxidative DNA base damage in blood cells.

Dr. Kim stated that in general, children of low income and of color are much more likely to live in high traffic density areas. Studying California schools and how close they are to busy roads, the result showed that schools located near busy roads have disproportionate number of children economically disadvantaged and nonwhite, thus it is a clearly environmental justice issue. Dr. Kim also stated that there has been legislation passed to limit school locating near busy roads; she also cited Los Angeles school district as struggle with finding school sites. ARB noted that citing of schools is based on local land use decisions and put together a guidance that recommends sensitive populations like nursing homes, schools, residential areas to be cited nothing less than 150m away from busy roads.

Dr. Kim noted that there are still some unresolved issues that this body of literature is proving and the first being that we are still grappling with issues that living near busy roads and higher exposure put one at a very high risk yet; it is still very difficult to quantify. It is not certain what constitutes busy roads but some ulterior roads can have up to 30,000 vehicles a day and have lots of pollutant from stop and go traffic. The second issue is what the important set of pollutants is in terms of source control and are there some other effective strategies to reduce exposures? Finally, do urban re-development, Smart Growth projects consider health impacts of building near busy roads?

Ms. Weiner asked what the Air District is doing in terms of land use policies and hot spots. Mr. Henry Hilken, Director of the Planning Division of the Air District responded that the Air District has been promoting smart growth for many years to reduce reliance on automobile and sometimes the policies would resolve in residential areas being near sources of high levels of air contaminants. Mr. Hilken noted that the Air District is concerned with questions of how much traffic is high traffic, which air pollutants should cause worries, how much of a buffer zone should be considered and are there other mitigation strategies beyond a buffer zone that might be helpful. Mr. Hilken also confirmed that these issues are being addressed by CARE program which will eventually provide needed data to cities and counties. He also stated that

monitors are located not to reflect hot spots noted that there is grant underway from EPA that will supplement Air District resources to do some intensive monitoring starting in West Oakland.

6. **Committee Member Comments/Other Business:** Chairperson Bramlett announced that Regulation Rule 6, wood burning devises workshop is coming up; from November 7 and 26 2007, interested members should meet with him for the notice.

7. **Time and place of next meeting:** 1:30 p.m., Wednesday, December 12, 2007, 939 Ellis Street, San Francisco, CA 94109.

8. **Adjournment:** The meeting adjourned at 2:50 p.m.

Chioma Dimude
Acting Executive Secretary

BAY AREA AIR QUALITY MANGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: October 30, 2007

Re: Size of Governing Board

RECOMMENDED ACTION:

Decide if current statutory language concerning the Board of Directors is satisfactory, or if changes are needed.

BACKGROUND

Per the direction of the officers of the Board of Directors, staff have agendized a discussion of the future size of the Board. Also per direction, staff have developed for the Executive Committee's consideration a number of potential changes to the Board's composition.

From 1955, when the District was initially formed, through the early 1970's, when the District grew to include the counties in whole or part of Napa, Solano, and Sonoma, the Board of Directors consisted of 12 local elected officials. Each county had two representatives on the Board, with one representative from the Board of Supervisors and one from local cities. The Board increased to 18 members when the number of counties changed from six to nine.

In 1976, the Board sponsored legislation that changed its composition. Under this new law, the population of a county determined how many seats it had on the Board. This 1976 law is still what governs the Board's composition today. Counties with a population up to 300,000 have one seat, while counties with population up to 750,000 get a second seat. A population up to one million yields three seats, while a population over a million yields four seats.

This 1976 law decreased the size of the Board from 18 to 15. From 15 in 1977, the Board has grown to 22 today. Within a year, this number will grow to 23, and to 24 shortly thereafter. The Board will continue to increase in size as the region's population grows to a theoretical maximum of 36 members.

At its current membership of 22, this Board has by far more Directors than any other air district in the State. Other Board sizes range from 5 members (for single-county Boards) to a high of 15 members in the San Joaquin Valley. (Their Board currently has 11 members, but will increase to 15 as a result of legislation pushed by environmental organizations this year.) The Bay Area Board is also unique in that it is the only air district to have a Board with a size that increases with population. All other districts have Boards of a fixed, and significantly smaller, size.

DISCUSSION

Per the direction of the Board officers, staff are bringing the issue of the Board's size to the Committee for your discussion. Also per direction, we have laid out some hypothetical scenarios to inform your discussion. These are summarized in the table below. In discussing these options, the Board may wish to consider what effect if any increasing its size may have on its effectiveness and ability to achieve its vision. The conventional wisdom on the size of governing boards is that too small a board results in too few ideas and too insular a vision. Small boards may lack diverse opinions and perspectives. The conventional wisdom also has it that too large a board size can also be limiting. Too large a board can in theory reduce the effectiveness of the different voices on the board, be procedurally and administratively cumbersome, and have multiple or competing priorities. Staff believe that finding the right balance between too big and too small can best and should only be decided by the Board itself.

	Maintain Status Quo, Plan A	Cap at 22, Plan B	Not More than 3 per County, Plan C	Not More than 3 per County, Plan D	Not More than 2 per County, Plan E	Not More than 2 per County, Plan F	One per County, Plan G
Total Board Size:	22	22	16	16	13	12	9
Estimate of Board Size 10 Years from Now:	Greater than 24; perhaps 26	22	Likely still 16	17 or 18	Likely 14	12 or 13	9
Alameda County 1/07 pop: 1.53M	4 members	4	3	3	2	2	1
Contra Costa County 1/07 pop: 1.04M	4 members	4	2	2	2	2	1
Marin County 1/07 pop: 256K	1 member	1	1	1	1	1	1
Napa County 1/07 pop: 136K	1 member	1	1	1	1	1	1
San Francisco 1/07 pop: 808K	3 members	3	2	2	2	1	1
San Mateo County 1/07 pop: 733K	2 members	2	2	2	1	1	1
Santa Clara County 1/07 pop: 1.81M	4 members	4	3	3	2	2	1
Solano County 1/07 pop: 292K	1 member	1	1	1	1	1	1
Sonoma County 1/07 pop: 425K	2 members	2	1	1	1	1	1

The easiest option is to make no changes to the Board's structure, but to continue with the status quo. As stated above, under this scenario the Board will quickly increase to 24 members, and will continue to grow into the future. One minor consequence of this growth is that the dais in the Board room is currently at capacity with 22 members. Growth beyond 22 will require an alternative arrangement for Board meetings, such as potentially renting a larger venue not at 939 Ellis Street to accommodate the larger Board, or a major physical change to the current Board room.

A second option, Plan B in the above table, would be to cap the Board's size at its current 22, and retain the current county membership distribution.

The next options would all reduce the size of the Board, but retain a population-weighted representation. Two options would reduce the maximum representation from a county from four members to three, and another two options would reduce this number to two. Under all of these scenarios, there is a common question of how the Board would transition from its current size to a smaller size. Staff would suggest that one way to address the transition would be for each current Board member to complete their term of service on the Board. This would have the effect that the smaller size of the Board would be reached over a period of up to four years.

Plan C would say that a county population less than 500,000 would generate one representative on the Board. A population between 500,000 and 1,500,000 would generate two representatives, and more than 1,500,000 would generate three representatives. This would produce a Board with 16 members, and that size should be fairly stable for many years.

Plan D would also have a maximum county representation of three, but with different cutpoints. Counties with a population of less than 700,000 would have one representative, with a second representative added for those counties up to 1,400,000. If the county's population is more than 1,400,000, there would be three Board members. This also yields a Board with 16 members, although this would increase to 17 quickly, and possibly to 18 within a decade.

Plans E and F would have either one or two representatives from a given county, depending on population. Plan E would use 750,000 as the cutpoint, and Plan F would use 1,000,000 as the cutpoint. These cutpoints would give total initial Board sizes of 13 and 12, respectively. Plan E would grow to 14 relatively quickly, and Plan F would be more stable.

The last option (Plan G) for consideration would be for each county to have one representative. Another non-population-weighted alternative would be a return to the pre-1976 Board, where each county had two members. Both options raise the issue for the Board to consider of whether a population-based plan is helpful to the Board in working towards its goals for the region.

If the Committee and ultimately the Board choose to pursue a statutory change to your composition, staff will work to accomplish the Board's directive. Staff believe that if there is consensus among current Board members on a change to your composition, that it would be possible to pass legislation to accomplish that change.

BUDGET CONSIDERATION/FINANCIAL IMPACT

Generally, a smaller Board would have a modest benefit to the District's budget. But staff note that

even at 22 members, total costs associated with the Board are roughly $317,000. This is a relatively small percentage of the District's total budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Tom Addison

BAY AREA AIR QUALITY MANGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 5, 2007

Re: Regional Gas Fee

RECOMMENDED ACTION:

Consider possible joint legislative action with the Metropolitan Transportation Commission.

BACKGROUND

On November 9th, the Legislative Committee of the Commission will consider the idea of a regional fee on gasoline as part of their 2009 legislative program. Commission staff are suggesting that the proceeds from such a fee could be used to reduce the region's contribution to climate change, and maintain local streets and roads. District staff have had discussions with Commission staff about this idea, and are bringing this item to the Executive Committee for your guidance and direction.

DISCUSSION

The Commission has had statutory authority since 1997 to seek voter approval of a regional gas tax of up to 10 cents per gallon. Recent Bay Area polling indicates majority support for a regional fee on gasoline of ten cents per gallon (and even higher) if the funds were used to address climate change. While taxes require a two-thirds supermajority vote of the public, fees require a simple majority. While much has been written about the differences between a fee and a tax under the California Constitution, in essence fees must have a clear nexus between the payer's activities and the alleged adverse effects addressed by the fee. The fee cannot be levied for unrelated purposes, and the fee amount must bear a reasonable relationship to the burden created by the actions of the fee-payers. The Commission will discuss whether to pursue legislation allowing a vote of the people on a regional fee on gasoline in the Bay Area.

The polling results will be available prior the November 19th meeting of the Executive Committee, and staff will have these results for your consideration, as well as any action by the Commission.

The Board has consistently expressed leadership in working to address climate change. The consumption of gasoline in motor vehicles in the Bay Area is the largest source of greenhouse gases. There are multiple programs that could cost-effectively cut climate-changing emissions from vehicles if funds were available. Staff are seeking direction from the Committee on

whether to partner with the Commission in working on legislation to cut greenhouse gases through a fee on gasoline.

BUDGET CONSIDERATION/FINANCIAL IMPACT

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Tom Addison

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Ross and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 13, 2007

Re: Financial Assistance Programs for Small Businesses

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

During discussions of proposed Regulation 6, Rule 2: Commercial Cooking Operations, several Board members have asked about economic impacts of District rules on small businesses.

DISCUSSION

Staff will brief the Committee on impacts of District rulemaking activity on small businesses, including:

- Examples of District rules affecting small businesses and the associated costs;
- District economic analysis during rule development;
- Financial assistance programs for small businesses.

BUDGET CONSIDERATIONS/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Dan Belik
Reviewed by: Henry Hilken

BAY AREA AIR QUALITY MANGEMENT DISTRICT
Memorandum

To: Chairperson Ross and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 15, 2007

Re: Status of Carl Moyer Program Audits

RECOMMENDED ACTION:

None.

BACKGROUND

Staff has executed a series of actions to improve the District implementation of the Carl Moyer Program. These actions followed a state-wide audit of the program. Accomplishments include remediation of past project files, implementation of new controls, reallocation of matching funds, acceleration of Moyer processes, and review of outreach.

The audit was initiated in March of 2006 when Senator Dean Florez requested that the Bureau of State Audits (BSA) conduct a performance audit on management of programs that administer State Carl Moyer Program funding. The request was directed towards programs implemented by the Air Resources Board (ARB) and four Air Districts: the South Coast Air Quality Management District, the San Joaquin Air Pollution Control District, the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District. The request indicated three areas of focus: the efficiency and equity of the application process, the effectiveness of project selection and funding distribution in emission reduction and public health protection, and the availability and quality of public information and public outreach to ensure participation.

Following the request from Senator Florez, the ARB announced that it would also perform project audits of the Carl Moyer Program at the four Air Districts (the first audit in the nine year history of the program). The ARB also requested that the Department of Finance (DOF) conduct the financial portion of the ARB audit. The BSA and ARB audits occurred simultaneously.

DISCUSSION

Staff will present the actions taken in response to the audits. Staff will also present the resulting response of the auditing agencies to those actions.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

This update is provided for information only and has no budget impact.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 13, 2007

Re: Joint Policy Committee Update

RECOMMENDED ACTION:

Receive and file.

DISCUSSION

At the November 19, 2007, meeting of the Executive Committee, Ted Droettboom will provide an update on the activities of the Joint Policy Committee.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO