

Metropolitan Washington Air Quality Committee

Suite 300, 777 North Capitol Street, N.E. . Washington, D.C. 20002-4239 . 202-962-3358 . Fax: 202-962-3203

TECHNICAL ADVISORY COMMITTEE

Date: July 8, 2005

Time: **Noon - 2pm**

Lunch will be served to members at noon.

Place: **COG Board Room, 3rd Floor**

MWCOG, 777 North Capitol St., NE, #300

Washington, D.C. 20002

Agenda

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- 12:00 1. Call to Order and Review of Meeting Summary (June 10, 2005)**
Chairman Tad Aburn, Maryland Department of the Environment
- 12:05 2. Emission Inventory: Update**
Ram Tangirala, DC DOH, will provide an update on the draft emission inventory for the 8-hour ozone SIP.
- 12:25 3. Control Strategy Development: Update**
Jeff King, COG/DEP, will provide an update on the draft control strategy the 8-hour ozone SIP.
- 12:50 4. PM2.5 Conformity: Action**
Jeff King, COG/DEP, will present a draft comment letter on the draft PM2.5 conformity scope of work for recommendation to MWAQC.
- 1:15 5. Urban Heat Island Mitigation Strategies: Report**
Eva Wong, U.S. EPA, Ivan Cheung, George Washington University, and David Hitchcock, Houston Advanced Research Center (HARC), will provide a report on approaches to reduce urban heat islands.
- 1:45 6. State and Local Air Agency Report**
- Subcommittee Structure
 - BRAC
- 2:00 7. Set Date for Next Meeting, Future Agenda Items, Adjourn:**
Next TAC Meeting: August 12, 2005

DRAFT

**MWAQC Technical Advisory Committee
Meeting Summary
June 10, 2005 10:00 am to noon.
COG Board Room**

Present:

Tad Aburn, Maryland Department of Environment
Rick Canizales, Prince William County Department of Public Works
Randy Carroll, Maryland Department of Environment
Maurice Keys, District of Columbia Department of Transportation
Doris McLeod, Virginia Department of Environmental Quality
Chris Meoli, Virginia Department of Environmental Quality
Jim Ponticello, Virginia Department of Environmental Quality
Mary Richmond, Montgomery County Department of Environmental Protection
Arnold Solomon, Mirant MidAtlantic
Kanti Srikanth, Virginia Department of Transportation
Ram Tangirala, District of Columbia Department of Health
Julie Thomas, National Park Service
Flint Webb, Fairfax County Federation of Citizens Association

Staff:

Jeff King, COG/DEP
Mike Clifford, COG/DTP
Ann-Drea Hensley, COG/DEP
Ron Kirby, COG/DTP
Sunil Kumar, COG/DEP
Nick Ramfos, COG/DTP
Joan Rohlfs, COG/DEP
Daivamani Sivasailam, COG/DTP

Presenters:

Ed Arts, EcoTrans Technologies

Observers:

Charley Baummer, Metropolitan Washington Airports Authority
Julie Crenshaw, Air Quality Public Advisory Committee
Greg Dierkers, Center for Clean Air Policy
Tom Hewson, EVA Inc.
Gary Koerber, U.S. Department of the Navy Regional Environmental Coordinator Region III
Walter Seedlock, Metropolitan Washington Airports Authority

1. Call to Order

Mr. Aburn called the meeting to order at 10:10 pm. The minutes of the May 20, 2005 meeting were approved.

3. SIP Planning: Update

Joan Rohlfis, COG/DEP, provided an update on SIP planning status. The preliminary emission inventory for 2009 is nearly complete for use as a starting point in estimating emission reduction goals. Using the draft data, potential shortfall scenarios will be developed for consideration by the control measures workgroup. These will include 3 scenarios: Total projected growth inventory less any reductions from existing measures that start in 2003 (scenario 1), minus three percent per year from 2003 to 2009 (scenario 2), less an additional 10 percent beyond ROP goals (scenario 3). EPA guidance is expected later in the summer. She provided an overview of the status of various sector emission inventory estimates. She said that two methods are being used for the Nonroad sector, one based on the old NEVES approach and one using the newer NONROAD Model. 2009 controlled inventories for area and mobile sources are nearly complete. After the next emission inventory meeting to discuss the preliminary emission inventory estimates, the control measures workgroup will meet to compare potential shortfalls with the reductions from possible new measures being considered on the priorities list. Ram Tangirala asked if the goal was to have the assessment complete by the next TAC meeting. Joan confirmed but clarified that we need both reduction targets as well as a control strategy. Another important piece is the attainment modeling being led by Virginia DEQ. Results are expected in December.

Ram Tangirala, Tad Aburn, and Brian Hug discussed Inventory Preparation Plans. Maryland agreed to share information with the District of Columbia. Flint Webb asked whether MWAQC TAC would address the Base Realignment and Closure (BRAC) issue. Mike Clifford said that the TPB and COG are preparing a draft scope for a work program that will involve coordination with the Metropolitan Planning and Development Commission (MDPC) to assess the potential transportation, land use, and transportation-related air quality impacts. A contractor has been hired to help develop and evaluate various alternative scenarios.

3. Control Strategy Development: Draft Prioritization Report

Jeff King, COG/DEP, said that work has begun on developing a framework and emission reduction inputs for a draft control prioritization report. Preliminary emission reduction estimates for each of the measures on the priority list will be used to assess the impact on potential shortfalls in the region's 2009 attainment goals based on the emission inventory estimates currently under development.

Tad Aburn requested that a copy of the most recent control measures lists be circulated prior to the next call. He said the workgroup has done a good job scoping out the measures, but now more information will be needed on actual emission reduction potential. The upwind controls issue is now being considered by the IAQC. Howard Simons recommended that a special group be formed to look at each measure individually to carefully develop the methods and analysis needed to accurately estimate reduction potentials for each measure. He said that it is critical to get the details right and it may take one year to 18 months to complete the task. Joan Rohlfis asked how this would be different than the control measures workgroup. Kanti Srikanth suggested that the control measures workgroup continue to handle the task, but that the group begin to transition from conference calls to face-to-face working sessions where the group can agree on inputs. Jeff King said that during a recent conference call with Chris Cripps at EPA, the air agencies learned that a RACM analysis for all measures on the master list may be required. He also said that suggestions from the public must be considered. Tad Aburn agreed and said that the master list is intended to include all possible options, but suggested that there are not a lot of large emission reduction measures left to pursue. That is one reason Maryland has been pushing for more regional controls. He wants to be able to say that the region has done everything it can do locally that makes common sense, and now is working to try to implement nontraditional concepts including bundling measures together.

Jim Ponticello asked if the next report to TAC will be informational or decision. Tad said that the IAQC requested the report but it can't be finalized until the EPA guidance is released, so it's informational at this time. He said that if you work backwards from the due dates (SIP in early 2007) the region is running out of time to get measures in place. Flint Webb recommended that the region focus initially on those that can be prioritized based on lowest cost and least disruption. Tad said that unfortunately there are some categories the region can't control due to federal preemption. Flint recommended that the region consider the proposed Los Angeles Federal Implementation Plan (FIP).

4. MOBILE6 Modeling: Update

Daivamani Sivasailam, COG/DTP, discussed the VIN decoder test results for use in MOBILE6 modeling using a sample of registration data from Maryland, Virginia, and the District. In response to a question from Joan Rohlf, he said that the new process could be quicker, with fewer errors, and would allow the modelers to place vehicles into the 28 categories, including better data on Heavy Duty Diesels. In response to a question from Julie Crenshaw, Siva said that the Item 10 code W means "international." He also said the decoder doesn't work for vehicles sold before 1980. In response to a question from Flint Webb, Siva said that the Washington, D.C. region does have a slightly newer fleet than the national average.

Ram Tangirala and Siva discussed various aspects of the test. Ram said that it is important to get better information on Heavy Duty vehicles. He said that information for light duty vehicles has not been a problem. He also said that the DC DMV has been testing their own VIN decoder, but this version has a different output and only places vehicles into one of 17 categories.

Howard Simons asked when a decision would be made to use the VIN decoder software. Mike Clifford said that the test using only a 2 percent sample was successful and that it will be used after July. He said the cost is around \$10,000 once every three years. Howard asked if the new software will provide better results. Jim Ponticello said that the old methods used national defaults to allocate eight categories to the 28 categories in MOBILE6. The new VIN decoder would allow the region to place vehicles directly into one of the 28 categories. Jim Sydnor asked Mike Clifford to check with Virginia DEQ on the results of tests being conducted on a VIN decoder from Sierra Research before a final decision. Jim Ponticello said that the Sierra Research version does not decode Heavy Duty Diesels.

Mike Clifford reported on the VMT seasonal adjustment analysis conducted by COG. He said that based on the data analyzed, the ratio of average annual weekday travel to average annual daily travel is 1.05. The ratio of average annual weekday travel to average ozone season weekday travel is also 1.05. He said that since Virginia and the District report average annual weekday travel, only Maryland will get both adjustments. These new estimates will now be incorporated into the post processor. Ram Tangirala asked that the data for the Washington, D.C. region be compared to other metropolitan areas to see how the adjustment factors compare. Mike said he used Baltimore data as a comparison. Howard Simons asked what the seasonal modeling requirements will be for PM2.5. Mike Clifford responded under the next item.

5. PM2.5 Conformity: Update

Mike Clifford, COG/DTP, provided a copy of the draft scope of work and schedule for handling PM2.5 conformity. He said that the region must receive federal approval of the determination by next April or face a lapse. Because there is on-going work for handling 8-hour ozone and carbon monoxide conformity, TPB proposes to handle the PM2.5 work as a supplemental. He said there are no existing budgets for fine particulates. EPA gives two options in this case, build no greater than 2002, or build no greater than no build for all analysis years. TPB likes the option of build no greater than 2002, especially since 2002 will be needed for the SIP. He said the EPA has not released guidance on seasonal adjustments. He said there have been delays in finalizing the Cooperative Forecast Round 7, so the

schedule for PM2.5 may be more reflective of the final schedules for ozone and CO. The draft work scope and schedule will be considered by the TPB next week for possible release for public comment. In response to a question from Diane Franks, Mike said that EPA released PM2.5 precursor guidance on May 6. More guidance is expected. Howard Simons said that he was told the pending guidance will include information on issues such as seasonal variations, brake wear, etc. Tad Aburn said that the conformity subcommittee should meet to discuss a possible comment letter.

6. Railroad Emission Reduction Technology: Report

Ed Arts, EcoTrans Technologies, reported on strategies to reduce emissions from locomotives. He said that emissions from locomotives occur while working and while idling. He explained that locomotive idle for many reasons, including to keep engines warm, to service electrical load, and to keep batteries charged. Locomotives don't use antifreeze because of potential engine damage and loss of horsepower. He provided a comparison of idling time between different locomotive types, showing that switchers have the highest idling percentage. EcoTrans manufactures a technology called an auxiliary power unit (APU) that can be used to reduce idling. The unit is a small diesel engine with a generator to provide heat and power for the train so that the main engine can be shut down. Compared to a 4000 horsepower locomotive engine, the APU is only 48 horsepower and consumes only 0.16-0.5 gallons of fuel per hour compared to 4-5 gallons per hour for main engine idling. Emission rates vary by model types, so results may vary.

Ed Arts said that the upfront costs to install are about \$21,000-\$25,000 for capital plus 40 hours of labor. In response to a question from Walter Seedlock, Ed said that there are approximately 28,000 locomotives operating in the United States and Canada. In response to a question from Howard Simons on federal requirements for maintaining brake pressure, Ed said that the real problem with brake pressure is lack of maintenance leading to too many leaks in the lines. He said that it costs about \$1000 for an air compressor to service the brake lines that is compatible with the APU. He said it is too labor intensive generally to apply the hand brakes. In response to a question from Ram Tangirala, Ed said that CSX has installed 1,600 units and Norfolk Southern has installed 300-400. Ed said that the units are easy to maintain and are relatively inexpensive. Maintenance costs are about \$300-\$500 per year. The lifetime of an APU is estimated to be 15 years. The first prototype installed is now 7 years old and is still being used. In response to a question from Tad Aburn about whether there is a seasonal component, Ed said that locomotives generally idle more in winter than in summer to protect the engine against freezing. Jim Ponticello asked if the key incentive for the current installations has been fuel savings for federal rulemaking. Ed said that most have been installed for fuel savings, although CSX has installed APUs to help the company meet Tier 0 standards. Tad Aburn asked Ed to send the TAC data on fuel savings.

Tad Aburn said that the region is looking for voluntary reductions, especially through public/private partnerships, so who would the regional governments look to as a partner with authority to implement an emission reduction program. Tom Hewson said that the American Association of Railroads (AAR) represents all Class I railroads. They have led efforts on the Green Transportation Initiative focusing on CO₂ and CSX has also tried to work cooperatively, most recently with Maryland in the Baltimore region.

Charley Baummer asked whether the APUs can also provide for air conditioning for commuter trains. Ed said that the APUs are installed on some public transit locomotives, but are not on most commuter trains. The air conditioning system is operated from a head end power unit which has a large engine to accommodate the load. Tom Hewson said that VRE has installed APUs on its locomotives. Flint Webb asked if the OTC has considered this technology. Tad Aburn said that locomotives are being considered as part of the OTC Corridor Strategy.

7. Commuter Connections Program: Report

Nick Ramfos, COG/DTP, provided a report on the status of the Commuter Connections program in the region. He provided information on the history, benefits, and geographic region of the program. He said

that the Washington, DC region is ranked 4th in the nation in terms of total numbers of workers using carpools, but is second highest in terms of the percent of worker who use carpools. He provided more detailed information on three components of the program including Employer Outreach, the Guaranteed Ride Home program, and the Commuter Operations Center. Where certain jurisdictions showed significantly higher participation rates (Maryland's Employer Outreach and Virginia's Guaranteed Ride Home), he said that was because those jurisdictions had similar programs in place before joining Commuter Connections. Nick also reviewed the performance measures used to evaluate the program, including participation, utilization, satisfaction, travel impacts, air quality impacts, and cost effectiveness. He said the program reduces vehicle trips by 111,413 annually. VMT is reduced by nearly 2 million miles annually. 2.3 tons NOX and 1.2 tons VOC are reduced annually at a cost of \$6,000 and 12,000 per ton, respectively.

In response to a question from Ram Tangirala, Nick said that the participation rates for employer outreach in D.C. may appear lower because the program only focuses on private companies, not the federal government. In response to another question from Ram, Nick said that the cost per ton reduced figures do not include consideration of potential co-benefits which would serve to lower the figures reported. Flint Webb asked if the program was being credited for its air quality benefits. Nick said that the credits are in the Transportation Improvement Plan.

Tad Aburn asked if the Commuter Connections program could have some utility as a voluntary way to reduce VMT and mobile emissions on the top 5-10 worst air quality days in the region. He said that EPA's Assistant Administrator Jeffrey Holmstead has indicated that additional mobile source reductions may be needed to meet the 8-hour ozone standard. Tad also asked if with the increase in telecommuting benefits of the program would increase. Siva said that the program is a year round program not focused on code red days. He also said that while VMT may reduce with increased telecommuting, the overall reduction benefit is going down due to the cleaner fleet.

8. State and Local Air Agency Report

Tad Aburn reported that the OTC adopted a resolution intended to lead to the adoption of CAIR plus in the 13-state OTC region. This means that the OTC region is moving ahead with a plan to require additional controls from power plants, beyond what will be required by EPA's Clean Air Interstate Rule. The OTC states will also work with states from outside the region. The mechanism may involve the retirement of pollution allowances within the CAIR framework. He said that Virginia will now be the Vice Chair of the OTC. He also said that the Midwest states attended the OTC meeting and supported the CAIR plus approach as well. The local governments, the District of Columbia, and Virginia had nothing to report.

9. Set Date for Next Meeting, Future Agenda Items, Adjourn: July 8, 2005

The TAC will meet next on July 8, 2005 from noon to 2 pm. The meeting time is being rescheduled due to the rescheduling of the TPB Technical Committee meeting for July 8 from 9 am to noon. There being no further business, the meeting was adjourned at 12:15 p.m.