

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JUL 14 2003

Mr. Eddie E. Brawley
MPO Study Director
West Memphis Metropolitan
Planning Organization
796 West Broadway
West Memphis, AR 72301

Dear Mr. Brawley:

I am pleased to communicate that we received your letter dated June 13, 2003, forwarding the list of potential control measures for Crittenden County, Arkansas. Your submittal satisfies the first important milestone under the 8-hour Ozone Early Action Compact program. The list of potential control measures were received on time and meet the milestone requirement specified in the *Compact* guidance issued by Assistant Administrator Holmstead on November 14, 2002.

The U.S. Environmental Protection Agency recognizes that the 8-hour Ozone Early Action Compact program is ongoing and that the West Memphis Metropolitan Planning Organization, in partnership with the Arkansas Department of Environmental Quality and other local communities, continues to make good progress. We appreciate your commitment to the *Compact* program and to achieving cleaner air sooner. My staff and I are always available to assist you as we work together towards that goal.

Should you have any questions, please feel free to call me or Dr. Michael Morton, of my staff, at (214) 665-8329.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Thomas Diggs".

Thomas Diggs
Chief
Air Planning Section (6PD-L)

cc: Keith Michaels, ADEQ

June 6, 2003

Barry R. Stephens, P.E.
Technical Secretary
Tennessee Air Pollution Control Board
9th Floor, L & C Annex
401 Church Street
Nashville, TN 37243-1531

SUBJECT: Memphis Metropolitan Statistical Area
Early Action Compact
June 16th List of Control Measures Under Consideration

Dear Mr. Stephens:

In accordance with the Early Action Compact entered into by Memphis and Shelby County in December, 2002, the attached list is hereby submitted. The West Memphis, Arkansas Metropolitan Planning Organization has submitted a list of recommended strategy options for possible implementation in Crittenden County, Arkansas. DeSoto County, Mississippi will also submit a list. It is our understanding that you will present the lists to the Tennessee Air Pollution Control Board at its June 11th meeting and forward them to U.S. EPA Region IV by the June 16th milestone deadline in the Early Action Compact.

We will continue to participate in the stakeholder process to develop an area wide plan. I certify that I have the necessary authority to submit this list.

Sincerely,

AC Wharton
Mayor

Dr. Willie W. Herenton
Mayor

Cc: Yvonne Madlock, Director, Memphis & Shelby County Health Department
John Fowlkes, CAO, Shelby County
Keith L. McGee, Interim CAO, City of Memphis
Diane Arnst, Pollution Control, Memphis & Shelby County Health Department
Carter Gray, MPO
Kay Prince, U.S. EPA Region IV

MEMPHIS & SHELBY COUNTY COMPONENT OF
LIST OF CONTROL MEASURES BEING CONSIDERED
FOR EARLY ACTION COMPACT FOR
MEMPHIS METROPOLITAN STATISTICAL AREA

SEPARATE LISTS TO BE SUBMITTED BY
DESOTO COUNTY, MISSISSIPPI; CRITTENDEN COUNTY, ARKANSAS;
FAYETTE COUNTY and TIPTON COUNTY, TENNESSEE
June 16, 2003

FUEL STRATEGIES

1. Will work with Premcor Refining Group, Inc. and other suppliers and with the MSA counties outside of Shelby County to determine if Low Reid Vapor Pressure (7.8 psi) gasoline supply can be expanded to Crittenden, DeSoto, Tipton and Fayette Counties during ozone season [already required within Shelby County]
Status: Meeting with Premcor Refining Group, Inc. scheduled June 9th; Lion Oil spokesman (Arkansas) stated 5/14 that it could not supply this fuel in this timeframe
2. Stage I Vapor Recovery expanded beyond Shelby County at fueling stations [already required within Shelby County]
Status: Would require ordinances; may require statutory changes; would require infrastructure changes; probably could be implemented by 2005. Cost approximately \$400 per tank
3. Low Sulfur Gasoline to Memphis MSA by May 1, 2005
Status: Meeting with Premcor Refining Group, Inc. scheduled June 9th to discuss
4. Stage II Vapor Recovery at fueling stations
Status: Cost approximately \$1,200/TON of VOCs reduced. Also reduces hazardous air pollutant emissions from fuels. May be viewed as duplicative of onboard canisters on newer model cars
5. Cetane Additive at diesel terminal distribution point
Status: Cost approximately \$4,00/TON of NOx reduced; determination of credit to local area issue; infrastructure needed for fuel mixing; pilot program summer 2004 in East Tennessee
6. BioDiesel (plant oil added at diesel terminal distribution point)
Status: Adds NOx but reduces VOCs; determination of credit to local area issue; infrastructure needed for fuel mixing; may add \$ 0.30 to \$2.00 per gallon to consumer
7. Federal Reformulated Gas Opt-In
Status: Governor must apply under Clean Air Act Section 211(k)(6) for classified nonattainment area; unclear if available to deferred Early Action Compact areas; may be more effective for carbon monoxide reduction strategy than for ozone reduction; Premcor Refining Group, Inc. spokesman stated 5/14 that this would be the toughest fuel to supply locally
8. BioDiesel and fuelborne catalyst (plant oil and catalyst added at diesel terminal distribution point)
Status: Determination of credit to local area issue; infrastructure needed for fuel mixing
9. Diesel Fuel Emulsions (water based fuel additive at diesel terminal distribution point)

Status: Reduces horsepower and fuel economy so industry resistance is expected to be high; determination of credit to local area issue; infrastructure needed for fuel mixing; may add \$0.35 to \$3.00 per gallon

NOTE: Mandatory local fuel strategies require an EPA Fuel Waiver under Clean Air Act Section 211(c)(4)(B). EPA can grant waiver only “if no other measures that would bring about timely attainment exit, or if other measures exist and are technically possible to implement but are unreasonable or impracticable.” Time to obtain Fuel Waiver is lengthy. Voluntary local fuel strategies do not need waiver, but only 7% of target reductions could be voluntary for the Early Action Compact.

STATIONARY SOURCE STRATEGIES

1. Fogging at 4 large and 16 small Combustion Turbines at TVA Allen Steam Plant. Reduces NOx emissions by about 10% when Combustion Turbines are in use, ambient temperature is over 70 degrees Fahrenheit, and humidity is 80% or less
Status: Fogging devices have been installed beginning 1998 and ending 2002 on all 20 Combustion Turbines and are now in use when Combustion Turbines are in use, per ***TVA Allen Steam Plant*** spokesmen 5/30. TVA to provide data to quantify NOx emissions reductions for credit and for attainment modeling purposes. TVA to provide cost per ton of emissions reduction figures.
2. Wet injection at Combustion Turbines at TVA Allen Steam Plant to reduce NOx by about 40% to about 60 ppm
Status: Memphis & Shelby County Health Department obtaining permission of Arkansas-Tennessee-Mississippi Ozone Study Operations Committee for contractor SAI, Inc. to release data to Larry Gautney of TVA to model emissions impacts before ***TVA Allen Steam Plant*** commits to this strategy. Modeling results expected about July 15th if data is provided to TVA first week of June. TVA to provide cost per ton of emissions reduction figures.
3. Operate Selective Catalytic Reduction equipment for three EGUs covered by NOx SIP call on specified days in April and October each year IF Pollution Control Section forecasts an ozone exceedance for the next day OR if Pollution Control Section observes at 8 AM that overnight ozone levels remained high. Forecaster to advise Technical Manager and PAS-Executive, who telephone TVA [Ozone Action Plan approach]
Status: Spokesmen for ***TVA Allen Steam Plant*** agreed 5/30 to model this strategy before it commits to this strategy. SCR can be in operation within 2 or 3 hours after notification to TVA; cost per day is about \$10,000; TVA to provide cost per ton of emissions reduction figures. Health Department reviewed historical data to determine typical date of 4th highest 8-hour ozone value each ozone season and provided to TVA on 6/2.
4. Will work with the MSA counties outside of Shelby County on early implementation of NOx Reasonably Available Control Technology (RACT) in MSA
Status: Ordinance revisions needed for this longterm strategy for new/replacement sources of NOx; effective for Early Action Compact 2007 deadline if a retrofit requirement and effective for maintenance through 2012.
5. DriveMax programmable computer installed on diesel engines for tub grinders at mulching operations to reduce NOx

Status: Need to inventory mulching operations to determine number of engines and quantify possible reductions

6. Electric or propane-fueled forklifts

Status: **Memphis Light, Gas & Water** has seven (7) electric forklifts and sixteen (16) diesel forklifts. Need to inventory MSA to determine number, useful life, and to quantify possible NOx reductions

7. Compressor station diesel engines at natural gas pipelines SIC Code 4922 or 4923

Status: **Texas Gas Transmission, LLC on 6/2/03 orally committed to Memphis & Shelby County Health Department to complete a programming change on computers that operate eight (8) reciprocating compressors to operate at 90% of rated load no later than start of ozone season 2004 at its Covington facility in Tipton County TN to reduce average annual ozone season NOx reductions by 149 TONS and to achieve similar further NOx reductions of 83 TPY elsewhere in the MSA, which would achieve NOx emissions reductions of approximately 235 TONS Per Year (1.09 TONS Per DAY) from April 1st through October 31st.** Darrell Morgan of Texas Gas Transmission, LLC submitted written calculations to the Health Department. The Health Department will work with the Tennessee Department of Environment and Conservation on any related permitting issues.

On May 23, 2003, EPA received a notice of intent to sue from the Georgia Sierra Club for EPA's failure to promulgate the NOx SIP Phase II rule, according to Kay Prince, EPA Region IV. This rule would achieve 82% to 90% reduction in NOx from natural gas transmission pipeline compressor engines in the twenty-two (22) NOx SIP Call states, which include Tennessee but not Mississippi. First year in which emissions reductions would occur is unknown. Tennessee Department of Environment and Conservation is reviewing its emission inventory for this source category and may consider a statewide control strategy in the interim if tens of thousands of NOx emissions are attributable from this source category as anticipated.

VOLUNTARY MEASURES

1. Ozone Alert Program: Drive 55

Status: Need to work on publicity and tie in ozone forecasts and with Intelligent Transportation System

2. Gas cap for vehicles giveaway

Status: Need to approach Autozone to flesh out this idea. Could tie in with I/M inspection stations or Clean Air Month event at start of ozone season

FLEET STRATEGIES

1. Fleet ULEV or SULEV Program (Buses, taxi, private, utility, airport ground)

Status: **Federal Express** announced 5/23 phase-in of a hybrid diesel/electric E700 truck (medium delivery truck size) into its fleet of 30,00 nationwide. First phase is 20 trucks in 4 cities; Memphis is being considered. Truck manufacturer Eaton states E700 trucks are 45% more fuel-efficient and emit 75% less smog-forming gases and

90% fewer particulates. Cost is 10% to 20% more than conventional diesel, offset by lower fuel costs. Trucks are replaced every 10-12 years. Congressional tax credits are pending. Regenerative braking and a particulate trap are the controls. Timing for conversion of entire Memphis fleet will not coincide with 2007 deadline, but is an effective longterm strategy for 2012 maintenance. *Memphis Light Gas & Water* (MLGW) has one (1) hybrid electric car, 900 light-duty diesel onroad vehicles, 370 heavy duty diesel vehicles, and 684 offroad diesel vehicles. MLGW has begun to purchase cleaner half-ton trucks with a specified number to be purchased per year, VMT/year/truck]

VEHICLE INSPECTION AND MAINTENANCE (I/M) STRATEGIES

1. Basic I/M, measuring hydrocarbons and carbon monoxide from tailpipe exhaust only; plus gas cap check of evaporative emission control system
Status: Need to examine cost of adding gas cap check at existing stations; need to estimate cost/ton of reduced emissions; significant resistance expected to expanding throughout MSA; funding problems expected
2. I/M tailpipe test and ASM/IM240 while vehicle is driven on a treadmill-like device (a dynamometer) over a driving cycle with many different speeds resembling typical city driving; measures hydrocarbon, carbon monoxide and nitrogen oxides emissions from entire exhaust stream; also measures fuel economy and generates diagnostic information targeting repairs needed
Status: Need to examine cost of adding ASM/IM240 at existing stations; need to estimate cost/ton of reduced emissions; significant resistance expected to expanding throughout MSA; funding problems expected
3. ASM/IM240 test plus gas cap check with 5% waiver rate
Status: Need to examine cost of adding ASM/IM240 at existing stations; need to estimate cost/ton of reduced emissions; significant resistance expected to expanding throughout MSA; funding problems expected
4. Onboard Diagnostics II: test of 1996 and newer model year vehicle OBD computer systems for proper functioning in addition to tailpipe test for these model years.
Status: Statutory ordinance changes may be required to authorize use of "hand scanner" equipment inside automobile or inside engine hood of privately owned automobiles. Cost to add "hand scanners to the three existing I/M stations [10 lanes, 2 mobile units, and 5 spare units] estimated at \$60,000 plus subsequent software upgrades.
5. Remote Sensing outside City of Memphis limits
Status: Need to determine cost and number of devices required to have an effective program; quantification of emissions reductions issue; privacy issue

ENERGY EFFICIENCY STRATEGIES

1. Memphis Light, Gas & Water Energy Audits of residential buildings "Energy Doctor Program"
Status: MLGW is gathering data concerning the number of residences per year audited and resulting emissions reductions per house
2. Memphis Light, Gas & Water Energy Audits of commercial buildings

Status: MLGW is gathering information about start date of this new program and expected emissions reductions

3. Adopt International Energy Conservation Code and energy efficiency chapter of International Residential Code into Local Building Codes

Status: Longterm strategy to maintain to 2012; ordinance revisions necessary; need to obtain copy of it and solicit public comments; dovetails with Smart Growth

TRAVEL BEHAVIOR STRATEGIES

1. Lower Speed Limit from 70 to 55 mph for Heavy Duty (18-Wheel) Trucks during Ozone Season and increase enforcement

Status: Representatives of Tennessee Department of Environment and Conservation began meeting in May with Tennessee Department of Transportation officials to discuss Early Action Compact strategies; safety benefits; TDOT increased speed limit in 2003 to 65 mph for all traffic on I-240; possible resistance from trucking industry; unclear if TDOT can accomplish or if State legislature must act; may need additional funding for additional enforcement

2. Intelligent Transportation System (electronic signs on roadway provide real time information to drivers that reduces congestion

Status: Already funded for completion by 2006; determination of emission reduction credit issue

3. Use TDOT "enhancements" grants to link greenways/bikeways/bike racks/pedestrian walkways

Status: Dovetails with Smart Growth; MPO ranking during grant cycle; current 3-year Transportation Improvement Plan timeframe; quantification of emissions reduction issue

MOTOR VEHICLE STRATEGIES

1. NOx flash (recalibrate diesel engine fleets to lowest NOx emission rate)

Status: Need to quantify for Memphis Federal Express fleet where this was completed to claim credit; approximately \$1,000 cost/ton reduced

2. Diesel Retrofit of On-Road vehicles with catalytic converters after low sulfur diesel fuel is available

Status: Low sulfur diesel fuel availability federal deadline is 1/1/06; retrofit is eligible for federal Congestion Mitigation and Air Quality (CMAQ) Improvement funds and for federal Toyota Settlement funds; cost estimated at \$4,000 to \$12,000/Ton of NOx reduced

3. Diesel Retrofit of Off-Road vehicles with catalytic converters after low sulfur diesel fuel is available

Status: Low sulfur diesel fuel availability federal deadline is 1/1/06; retrofit is eligible for federal Congestion Mitigation and Air Quality (CMAQ) Improvement funds and for federal Toyota Settlement funds; cost estimated at \$4,000 to \$12,000/Ton of NOx reduced

4. Local government contract preference for bidders with retrofitted diesel engines

Status: Need to pursue after 1/1/06 availability of low sulfur diesel fuel; emission reduction quantification issue

5. Install DriverMax programmable computers on buses

Status: Already installed on MATA Paratransit buses; need to quantify for NO_x reduction credit; consider for larger buses during MATA budget cycle; may be eligible for CMAQ funding

6. Liquified Natural Gas for Railroad Switch Engines

Status: Need to inventory to determine number, useful life, and to quantify possible NO_x reductions

7. Truck idling emissions reduction through truckstop electrification

Status: Pilot at one truckstop in West Memphis, AR by private sector; strategy may also be useful for fleets garaged in Memphis MSA; CMAQ project underway in Knoxville (Supplier: Idleair, Inc.) to install at 100 parking spaces for \$1 million; operating expense subsidy to truck driver for per night charge up to 3 years is also eligible for CMAQ funding; estimated \$1,660 /Ton of NO_x reduced

EMPLOYER-BASED STRATEGIES

1. Pay taxable cash compensation in lieu of non-taxable parking benefit of up to \$175/month pursuant to Section 132 of IRS Code, Section 1072 of Taxpayer Relief Act of 1997

Status: Need to track by employer; quantification of emission reductions issue

2. Provide employee Transit Passes of up to \$65/month Tax Free De Minimis Fringe Benefit pursuant to Section 132 of IRS Code

Status: Need to track by employer; quantification of emission reductions issue

3. Provide a Commuter Highway Vehicle for employees pursuant to Section 132 of IRS Code

Status: Need to track by employer; quantification of emission reductions issue

4. Flexible work hours and telecommuting

Status: Need to track by employer; quantification of emission reductions issue