

Appendix K
Locally Implemented Emission Reduction Measures

Austin/Round Rock MSA Emissions Reduction Strategies

**Excerpt from
Clean Air Action Plan
Technical Report**

**Prepared by
The Capital Area Planning Council (CAPCO)
on behalf of
The Austin-Round Rock MSA Clean Air Coalition
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1.1 LOCALLY IMPLEMENTED EMISSION REDUCTION MEASURES

The Early Action Compact Task Force recommends further consideration of the following voluntary measures, with the understanding that they may or may not be quantifiable commitments despite their expected emission reductions. Some of the measures listed below are currently being implemented in some areas in the A/RR MSA and could be expanded for further reductions.

The following is a key to the regional actions EAC signatories have committed to regarding inclusion of the voluntary emission reduction measures.

O = O₃ Flex commitment

E = EAC commitment

E+ = increased EAC commitment from original O₃ Flex commitment

O, E = jurisdiction confirmed O₃ Flex commitment when selecting Table A measures

Emission Reduction Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County
Texas Emission Reduction Program (TERP)	E	E		E		E						
Texas Low Emission Diesel (TxLED) for Fleets	E	E		E								
Transportation Emission Reduction Measures (TERMs)	O, E+	O, E+	O, E+	O, E+	O, E+		E	E				
Access Management							E	E		E		
Alternative Commute Infrastructure Requirements	E						E	E				
Drive-Through Facilities on Ozone Action Days	E									E		
Expedited permitting for mixed use, transit oriented or in-fill development												
Airport Clean Air Plan, includes:	O											
• Use of electric or alternative fuels for airport GSE	O, E											
• ABIA Airside Incentives for GSE use reduction	O, E											
• Integrate alternative fuels into City's aviation fleet	O, E											
• Operate alternative fueled ABIA surface parking lot shuttle buses	O, E											
• Use existing ABIA alternative fuel infrastructure for off-site parking shuttle buses	O, E											

Emission Reduction Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County
Low VOC Striping Material	O, E	O	O	O		O	E	E		O, E		
Landfill Controls												
Open Burning Restrictions		E					E	E				
Tree Planting	O, E	O	O	O, E+	O	E	E	E		O, E		
Extend energy efficiency requirements beyond SB5 and SB7	E											
Shift the electric load profile	E											
Environmental dispatch of power plants	E											
Clean Fuel Incentives												
Low Emission Vehicles	O, E	O	O	O						O, E	O	O
Adopt-a-School-Bus Program										E		
Police Department Ticketing										E		
EPA Smart Way Transport Program												
Business Evaluation of Fleet Usage, Including Operations and Right Sizing	E	E		E								
Parking Incentives for Alt Fuel or SULEV vehicles												
Commuter Solutions Programs, may include	O, E									E		
• Compressed Work Week	O, E	O	O						O		O	
• Flexible Work Schedule	O, E	O	O									
• Carpool or Alternative Transportation Incentives	O, E											
• Transit Pass Subsidized by Employer	O, E											

Emission Reduction Measure	City of Austin	Travis County	City of Round Rock	Williamson County	City of San Marcos	Hays County	City of Bastrop	City of Elgin	Bastrop County	City of Lockhart	City of Luling	Caldwell County
Right Sizing	0	0	0	0	0	0	0	0	0	0	0	0
5-minute Limit on Diesel Idling	0	0	0	0	0	0	0	0	0	0	0	0
Cleaner Diesel	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Maintenance	0	0	0	0	0	0	0	0	0	0	0	0
Vapor Recovery on Pumps			0									0
Low VOC Asphalt		0	0	0							0	
Low-Emission Gas Cans	0		0	0		0	0	0		0	0	
Transit-Oriented Development	0											
Shaded Parking	0	0										
Landscaping voluntary start at noon on high ozone days (education program)										E		

1.1.1 Texas Emission Reduction Program (TERP)

CONTROL STRATEGY

Secure all available TERP incentives/grants for equipment and fuels in the five county area. Available incentives/grants cover the incremental cost of cleaner diesel on-road and off-road engines and equipment, cleaner fuel needed for the equipment and clean fuel infrastructure. This control strategy is covered in detail in section 4.2.13.

1.1.2 Texas Low Emission Diesel (TxLED) for Fleets

CONTROL STRATEGY

Purchase and use Texas Low Emission Diesel in on-road and non-road vehicles and equipment.

1.1.3 Transportation Emission Reduction Measures (TERMs)

CONTROL STRATEGY

Implement transportation projects and programs that reduce emissions. Projects and programs include improved transit options and level of service, intersection improvements, grade separations, signal synchronizations and/or improvements, peak and/or off-peak traffic flow improvements, park and ride facilities, bike/ped facilities, high occupancy vehicle lanes, rail, demand management, intelligent transportation systems etc. Many TERMS are already planned and funded. CAMPO has issued a call for projects that may provide funding for additional TERMS.

1.1.4 Access Management

CONTROL STRATEGY

Adopt access management regulations or guidelines for new or re-development. TxDOT has proposed guidance available. Access management includes managing roadway access by limiting the number and location of allowable curb cuts and driveways, consolidating access to multiple business through one main driveway, side road etc. Access management reduces congestion, vehicle delay and associated emissions.

1.1.5 Alternative Commute Infrastructure Requirements

CONTROL STRATEGY

Require all new non-residential developments of 25,000 sq. ft or more and developments that increase their square footage 25% or more and have/expect 100+ employees on the site to include bicycle commuting facilities (parking/racks and showers) and preferential carpool/vanpool parking spaces.

1.1.6 Drive-Through Facilities on Ozone Action Days

CONTROL STRATEGY

Require or encourage businesses with drive-through facilities to post signs on Ozone Action Days asking customers to park and come inside instead of using the drive-through facilities. Encourage the public to comply.

1.1.7 Expedited permitting for mixed use, transit oriented or in-fill development.

CONTROL STRATEGY

Provide an expedited permitting process and/or other incentives for mixed use, transit oriented or in-fill development. Developments would have to meet certain performance criteria in order to qualify for expedited permitting.

1.1.8 Use of electric or alternative fuels for airport GSE

CONTROL STRATEGY

This category includes new and in-use ground support equipment (GSE) used in airport operations. GSE perform a variety of functions, including: starting aircraft, aircraft maintenance, aircraft fueling, transporting cargo to and from aircraft, loading cargo, transporting passengers to and from aircraft, baggage handling, lavatory service, and food service. The Air Transportation industry has informed Central Texas that they will oppose any requirements on their industry.

1.1.9 ABIA Airside incentives for GSE use reduction

CONTROL STRATEGY

ABIA has begun and will complete the addition of building supplied power and preconditioned air for all aircraft parked at the gate. This will eliminate the need to run on-board auxiliary power units (APUs), and air-conditioning (ACUs) and ground power units (GPUs) by the air carriers if they will participate. It is not clear if we can mandate their use, or if it will need to be on a voluntary basis. Implementation might require creating incentives or use restrictions. Estimated 0.16 tpd NO_x reduction.

1.1.10 Integrate alternative fuels into City's aviation fleet

CONTROL STRATEGY

Begin replacement of Aviation Fleet equipment with propane fuel starting FY2003. Purchase of 10 propane pro-turf mowers, and 4 propane non-road truck-alls. Planned purchases at this time. Future replacement is subject to budget provisions.

1.1.11 Operate alternative fueled surface parking lot shuttle buses

CONTROL STRATEGY

ABIA currently operates 29 propane buses for passenger service between the terminal and the parking lots. Averages 25,000 gallons of propane per month. Estimated 60% NO_x reduction. Take credit for current operations.

1.1.12 Use existing ABIA alternative fuel infrastructure for off-site parking shuttle buses

CONTROL STRATEGY

Propane fueling infrastructure is available at ABIA that could be used to refuel off-site parking shuttle buses. Encourage or mandate these services to shift to propane by 2005. Estimated 60% NO_x reduction.

1.1.13 Low VOC Striping Material

CONTROL STRATEGY

Require use of reformulated striping material products (i.e., water-based paints or thermoplastic) to achieve VOC reductions. Traffic marking activities refer to the striping of center lines, edges, and directional markings on roads and parking lots. VOC emissions from traffic marking vary depending on the marking material used, and the frequency of application. Generally, there are six different types of traffic marking

materials (EIIP, 1997a): 1) solvent-based paint; 2) water-based paint; 3) thermoplastics; 4) field-reacted systems; 5) preformed tapes; and 6) permanent markers. Solvent-based paints typically are the least expensive among the material types, but produces the highest VOC emissions. Alternative techniques may have none or negligible VOC emissions, but the materials and equipment are typically more expensive. However, cheaper techniques may also require multiple applications in comparison to more costly techniques. Traffic markings using conventional paints (solvent- and water-based) will need to be applied annually, while the use of thermoplastics can last between 5 and 9 years (Utah DOT, 2003).

1.1.14 Landfill Controls

CONTROL STRATEGY Adopt control strategy for municipal solid waste landfills based upon the EPA's New Source Performance Standard (NSPS) and Guidelines. A municipal solid waste landfill is a disposal facility in a contiguous geographical space where household waste is placed and periodically covered with inert material. Landfill gases are produced from the aerobic and anaerobic decomposition and chemical reactions of the refuse in the landfill. Landfill gases consist primarily of methane and carbon dioxide, with volatile organic compounds making up less than one percent of the total emissions. Although the percentage for VOC emissions seems small, the total volume of gases is large.

1.1.15 Open Burning Restrictions

CONTROL STRATEGY Amend and/or adopt regulations to ban the open burning of such items as trees, shrubs, and brush from land clearing, trimmings from landscaping, and household or business trash, during the peak ozone season. It reduces VOCs and NO_x.

1.1.16 Tree Planting

CONTROL STRATEGY

Implement landscaping ordinances to require additional urban tree planting. Reforestation improves air quality and energy efficiency.

1.1.17 Extend energy efficiency requirements beyond SB5 and SB7.

CONTROL STRATEGY

Require additional energy efficiency measures beyond SB5 and SB7, such as building design, revisions to codes and standards, and energy management programs for large commercial facilities. Additional energy efficiency measures could provide significant reductions in energy demand and demand-related emissions.

1.1.18 Shift the electric load profile

CONTROL STRATEGY

Require commercial facilities to develop overnight the reservoir of cold water needed to meet air conditioning needs the following day. Total energy consumption and emissions are not reduced, but the emissions are not generated during the day, reducing the potential for ozone formation.

1.1.19 Environmental dispatch of power plants

CONTROL STRATEGY

To meet peak demands, this strategy would involve "ramping up" power generation facilities that are either cleaner than normally used or located away from high NO_x-producing areas (e.g., plants in Bastrop and Marble Falls rather than the Decker or Holly Street plants in downtown Austin).

1.1.20 Clean Fuel Incentives

CONTROL STRATEGY

Encourage and/or provide incentives to implement fuels that are cleaner than conventional gasoline and diesel, including alternative fuels, lower sulfur gasoline and low sulfur diesel.

1.1.21 Low Emission Vehicles

CONTROL STRATEGY

Encourage and/or provide incentives for the purchase and use of Tier 2 Bin 3 or cleaner vehicles for fleets and private use.

1.1.22 Adopt-a-School-Bus Program

CONTROL STRATEGY

Encourage local school districts to participate in this CLEAN AIR Force sponsored program to replace or retrofit old diesel school buses with new, cleaner buses. Replacements and retrofits are implemented using 50% corporate sponsorship funds and 50% school district funds. EPA provides seed money to the CLEAN AIR Force for a fundraiser and program administration.

1.1.23 Police Department Ticketing

CONTROL STRATEGY

Implement aggressive police enforcement by local agencies of speed limits 55 mph or more and smoking vehicle restrictions. If the smoking vehicle is fixed within 60 days, the ticket could be waived.

1.1.24 EPA Smart Way Transport Program

CONTROL STRATEGY

EPA sponsored voluntary partnership with freight carriers and shippers to reduce fuel consumption and emissions through strategies such as idle reduction, improved aerodynamics, improved logistics management, automatic tire inflation systems, wide-base tires, driver training, low-viscosity lubricants, reduced highway speed and lightweight vehicle components. Participating carriers and shippers will meet voluntary performance goals and track progress. EPA will provide a calculation and tracking software tool and technical support. Several carriers and shippers have already signed up.

1.1.25 Business Evaluation of Fleet Usage, Including Operations and Right Sizing

CONTROL STRATEGY

Evaluate and improve the efficiency of fleet usage, including using alternative or clean fueled vehicles, using the cleanest vehicle appropriate for the job, consolidating and coordinating trips, etc.

1.1.26 Parking Incentives for Alt Fuel or Low Emission vehicles

CONTROL STRATEGY

Provide parking incentives for Tier2 Bin 3 or cleaner vehicles. These clean vehicles could be allowed to park for free at parking meters, have designated parking spaces. This would encourage the use of these cleaner vehicles.

1.1.27 Commute Solutions Programs

CONTROL STRATEGY

Encourage and provide tools to implement Commute VMT reduction programs (e.g. Teleworking, compressed work week, carpooling/vanpooling, bus fares, subsidized transit pass, flextime, carpool or alternative transportation incentives etc.). The Commute

Solutions program provides information and tools to implement these programs. Could be used to support a commute emission reduction regulation.

1.1.28 Direct Deposit

CONTROL STRATEGY

Offer employees direct deposit potentially saving at least one vehicle errand per pay period.

1.1.29 e-Government and/or Available Locations

CONTROL STRATEGY

Provide web-based services, both for information and transactions, and/or multiple locations for payments, etc., Reduces VMT and associated emissions.

1.1.30 Voluntary use of APUs for locomotives operating in Central Texas

CONTROL STRATEGY

Controls for locomotives are pre-empted by Federal law, but voluntary controls might have some success, since using Auxiliary Power Units (APUs) also decreases fuel costs to the railroad companies. CSX has been considering the use of APUs to reduce fuel use.

1.1.31 Fueling of Vehicles in Evening

CONTROL STRATEGY

Promote fueling vehicles after peak hot periods of the day have passed during ozone season.

This does not reduce NOx emissions but moves the high emissions time frame to later hours.

1.1.32 Urban Heat Island/Cool Cities Program

CONTROL STRATEGY

Develop and implement Urban Heat Island (UHI) mitigation strategies. Since ozone forms at higher temperatures, the purpose of this strategy is to keep the city as cool as possible, through vegetation, cool roofing and light colored pavement.

1.1.33 Resource Conservation

CONTROL STRATEGY

Expand and quantify ongoing resource conservation programs (materials recycling, water and energy conservation, etc.).

1.1.34 Increase investments by Central Texas electric utility providers in energy demand management programs

CONTROL STRATEGY

This measure would involve the development of energy demand management programs in areas outside the Austin Energy service area. Austin Energy offers financial incentives to commercial and residential customers for installation of energy efficient appliances and technologies and they report a good correlation between their demand programs and reduced emissions at their power plants. This measure would encourage other utility providers in the region to develop similar programs.

1.1.35 Alter production processes and fuel choices

CONTROL STRATEGY

This strategy involves exploring opportunities to improve efficiency, to make changes in certain combustion processes, and/or to alter fuel choices where cost-effective. Some

point sources in the area (e.g., Austin White Lime) are using natural gas for cost reasons. Given their production processes, using natural gas results in higher NOx emissions than using coal. Representatives have expressed interest in examining their production process and/or revisiting their fuel choices, particularly during the ozone season. Other point sources such as LeHigh Cement are also looking at rescheduling and fuel changes to reduce NOx.

1.1.36 Contract provisions addressing construction related emissions on high ozone days

CONTROL STRATEGY

Public contracts may include provisions to limit construction activities and equipment operation on high ozone days. A specified number of these high ozone days would be built into the contract. While controversial, it is one of the only ways to target non-road construction emissions.

1.1.37 Ensure emission reduction in SEPs, BEPS and similar agreements

CONTROL STRATEGY

Ensure that the primary impact of all air quality related SEPs, BEPs or similar agreements applicable to the EAC area, is to reduce emissions and improve air quality. EPA and/or TCEQ would consult, to the extent possible, with the local EAC signatories when developing any air quality related environmental mitigation agreement, such as a SEP, BEP or other similar agreement.

1.1.38 Ozone Action Day Education Program

CONTROL STRATEGY

Implement a public ozone education program, including ozone action days and recommended actions.

1.1.39 Ozone Action Day Notification Program

CONTROL STRATEGY

Entities will notify employees of ozone action days the day before and encourage employees to reduce emissions.

1.1.40 Ozone Action Day Response Program

CONTROL STRATEGY

Implement a program of specific emission reduction measures taken on ozone action days.

1.1.41 Alternative Fuel Vehicles

CONTROL STRATEGY

A/SM MSA participants to the O3 Flex Agreement are committed to encouraging the expanded use of alternative fuels and alternative fuel vehicles among the owners and/or operators of fleets of 15 vehicles or more. To qualify as an alternative fuel vehicle, the vehicle must operate 75% of the time on one of the federal Energy Policy Act fuels. Approved alternative fuels are compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas (LPG), electricity, methanol, ethanol, and biodiesel (at a minimum 20% mix). Alternative fuels reduce NOx and VOCs at varying levels and are an appropriate strategy for reducing or even eliminating emissions. Credits are available under the federal Energy Policy Act (EPAct) for use of alternative fuels. Bastrop Independent School District has chosen to use biodiesel at a 20% mix with an additive to reduce NOx as their future fuel of choice. The school district runs a fleet of 92 buses.

1.1.42 Right Sizing

CONTROL STRATEGY

In addition to alternative fuels and alternative fuel vehicles, signatories and participants have incorporated selection of the right size vehicle for a given use into their fleet operation policies.

1.1.43 5-minute Limit on Diesel Idling

CONTROL STRATEGY

Participating entities will direct vehicle operators under their employ, or on their property or worksite, to limit vehicle or equipment engine idling to no more than five consecutive minutes. Exemptions may be made for emergency or law enforcement vehicles on active duty, vehicles or equipment that must operate the engine to perform job duties (such as providing power for a mechanical operation or heating and air conditioning for multiple passenger vehicles), and vehicles or equipment that are being operated for maintenance or diagnostic purposes.

1.1.44 Cleaner Diesel

CONTROL STRATEGY

Capital Metro, the cities of Austin, Bastrop and Elgin, Travis County and the Austin Independent School District have agreed to purchase a diesel product that is believed to reduce particulate matter and increase overall efficiency. Use of this fuel increases engine performance, with corresponding air quality benefits through fuel efficiency. While reductions of NOx emissions from this product are not quantifiable at this time, the commitment to this fuel represents a good-faith effort on the part of these entities to purchase the best currently available diesel fuels.

1.1.45 Vehicle Maintenance

CONTROL STRATEGY

In addition to alternative fuels and alternative fuel vehicles, signatories and participants have incorporated regular maintenance in a manner that will minimize emissions, into their fleet operation policies.

1.1.46 Vapor Recovery on Pumps

CONTROL STRATEGY

In addition to alternative fuels and alternative fuel vehicles, signatories and participants have incorporated upgrading private pumps with vapor recovery systems, into their fleet operation policies.

1.1.47 Low VOC Asphalt

CONTROL STRATEGY

VOC emissions reductions can be achieved by using medium-cure and/or rapid-set asphaltic concrete materials and water-based or thermoplastic striping. Examples of the medium and rapid-cure asphalt are HFRS-2P (rapid-set) and SSI (medium-cure).

Participating entities that are responsible for building and/or maintaining roadways in the region will commit to use these types of materials whenever feasible. Exceptions may be granted for emergency repairs.

1.1.48 Low Emission Gas Cans

CONTROL STRATEGY

Gasoline-powered lawn and garden equipment are a significant source of VOCs in the region. A particularly effective control measure is the use of nonpermeable, spill-proof gasoline containers. An estimated 0.2 tons per day of VOC reductions could result from 100% use in the commercial sector. Several of the A/SM MSA signatories have selected this measure to include in their commitments.

1.1.49 Transit-Oriented Development

CONTROL STRATEGY

Local governments implement development criteria either requiring or providing incentives for sprawl reduction such as vertical zoning, mixed use zoning, enhanced mobility choices, reducing distances between home sites, work sites, and service sites. These types of development criteria will reduce the impacts of new development on air quality.

1.1.50 Shaded Parking

CONTROL STRATEGY

In addition to alternative fuels and alternative fuel vehicles, signatories and participants have incorporated shaded parking for fleet vehicles, to the extent possible, into their fleet operation policies.

1.1.51 Landscaping voluntary start at noon on high ozone days (education program)

CONTROL STRATEGY

Outreach to local stakeholders will include education and encourage voluntary implementation of delaying landscape work until noon on high ozone days.