

Region 3 Plan Summary Virginia Early Action Compact (EAC) Plan - Roanoke Area

Title: Attainment Demonstration for the Roanoke Metropolitan Statistical Area (MSA) Early Action Compact Area

Federal Register Dates: May 17, 2005, 70 FR 28252 (Proposed rule); August 17, 2005, 70 FR 48283 (Final rule).

EPA Effective date: September 16, 2005

State Submittal Date: December 21, 2004 and February 15, 2005.

Affected Areas: Botetourt and Roanoke Counties, Roanoke and Salem Cities, and the Town of Vinton.

Summary of the Plan: On December 21, 2004, the Commonwealth of Virginia submitted a revision to its SIP. This revision consists of an Early Action Plan (EAP) for the Roanoke MSA Ozone EAC Area. On February 15, 2005, the Commonwealth supplemented its December 21, 2004 submittal by providing a copy of the record of hearing and summary of testimony during its rule adoption process.

The Roanoke MSA EAC Area is located within the Blue Ridge Mountains area of Virginia and has typical topographic characteristics of such a mountain and valley area. The major urbanized center area is located in a valley and made up of the Cities of Roanoke and Salem, along with the Town of Vinton, where the ozone monitor for the area is located. The more suburban and rural Roanoke County with Botetourt surrounds this core urban area to the North. The major commercial transportation corridor of Interstate 81 runs through the entire MSA from north to south, which is just to the west of the urban core. A significant portion of Northwestern Botetourt County is rural and part of the Jefferson National Forest.

Virginia developed an attainment demonstration supported by an ozone photochemical modeling study for the Roanoke MSA EAC Area. The attainment demonstration identifies a set of measures that will result in emission reductions and provides analyses that predict that the measures result in ambient air quality concentrations that meet the 8-hour ozone standard in the Roanoke MSA EAC Area. The modeling results predict the maximum 2007 8-hour ozone design value for this area to be 80.1 ppb, which is less than what is needed (≤ 84 ppb) to show modeled attainment of the 8-hour ozone NAAQS.

Control Measures/Regulations Included As Part of the Plan: The Roanoke MSA EAP provided a list of all the control measures for the Roanoke Area. They are grouped into two main categories: State and local control measures and Federal control measures. Virginia has submitted a suite of voluntary emission reduction measures that will provide emission reductions in the Roanoke Area. Many of the measures were not included in the attainment demonstration

for the Area, however, they provide significant additional air quality benefits to the Area. In addition to the local strategies, several state and federal actions have or will produce substantial ozone precursor emissions reductions both inside and outside of the local EAC area. These reductions are aimed at reducing local emissions and transport of pollution into the area. These strategies, when combined with the local strategies, are expected to lower area ozone concentrations to the level at or below the ozone standard. Virginia also submitted contingency measures which could be implemented in response to a shortfall in anticipated reductions. All of the measures provided in the EAP are summarized in Table 1.

Table 1. Summary of Control Measures for the Roanoke MSA EAC Area

Control Measure Category	Control Measure Description	Emission Reductions (tons per day)		Measure Included in Attainment Demonstration
		VOC	NOx	
Local County/ City Initiatives	Reduction of locomotive idling	NA	0.153	No
	Limitation of idling for school bus fleets	NA	0.003	No
	Diesel Retrofits - School Buses	0.003	0.009	No
	Purchase and Use of Bio-diesel Compatible Solid Waste Trucks-City of Roanoke	NA	0.001	No
	Purchase of Ethanol Compatible Vehicles-City of Roanoke	NQ	NQ	No
	Purchase of Bio-diesel Trucks-City of Roanoke	NQ	NQ	No
	Purchase of Hybrid Vehicles-City of Roanoke	<0.001	<0.001	No
	Purchase of Clean Fuel Vehicles-Roanoke County	<0.001	<0.001	No
	Effective Environmental Driving Education Program	NQ	NQ	No
	Gasoline Powered Lawnmower Buyback Program	0.017	0.001	No
	Replacement of 100 Gas Golf Carts with Electric Carts	Combined VOC and NOx Benefit of <0.001		No
	Open Burning	0.564	0.238	No
	Ozone Action Days Program-Suite of Measures	0.940	0.610	Yes
State Measures	State Cutback Asphalt Restriction	0.005	NA	Yes
	Stage I Vapor Recovery	1.756	NA	Yes

	VOC and NO _x RACT	1.098	0.790	Yes
Federal Measures (Area, Mobile, and Non-road)	Architectural & Industrial Paints	0.372	NA	Yes
	Consumer Products	0.178	NA	Yes
	Metal Cleaning Solvents	0.163	NA	Yes
	Motor Vehicle Refinishing Paint	0.158	NA	Yes
	Small Gasoline Engine Standards	1.681	0.059	Yes
	Non-road Diesel Engine Standards	0.158	0.969	Yes
	Locomotive Emission Standards	NA	1.112	Yes
	Large Gasoline Engine Standards	0.146	0.546	Yes
	Recreational Engine Standards	0.015	0.000	Yes
	On-road Motor Vehicle Standards	7.260	11.600	Yes
Contingency Measures	OTC AIM	0.474	NA	No
	OTC Consumer Products	0.230	NA	No
	OTC Metal Cleaning Solvents	0.970	NA	No
	OTC Motor Vehicle Refinishing	0.120	NA	No
	OTC Portable Gas Containers	0.010	NA	No

Note: NA - not applicable; NQ - not quantified;

Maintenance for Growth: The EAP also contains components to ensure maintenance of the 8-hour ozone standard through 2012, five years beyond the 2007 attainment date. The Roanoke MSA EAC Area has developed an emissions inventory for the year 2012, as well as a continuing planning process to address this essential part of the plan. Due to the emission control measures identified in the EAP, the emissions inventory predicted an overall reduction in emissions through 2012. From 1999 to 2007, emissions of VOCs are estimated to decline by 27.6 percent and emissions of NO_x are estimated to be reduced by 28.2 percent. By 2012, emissions are predicted to be 8.2 percent less than those modeled in 2007 for VOCs, and 25.5 percent less than those modeled in 2007 for NO_x. Using air quality models to anticipate the impact of growth, as well as the Federal, state-assisted, and locally-implemented measures to reduce emissions, the Commonwealth of Virginia has projected the Area will be in attainment of the 8-hour ozone standard in 2007, and will remain in attainment through 2012.

To fulfill the continuing planning process that will ensure that the Roanoke MSA EAC Area will maintain the 8-hour ozone standard through 2012, the Roanoke MSA EAP establishes a commitment and mechanism to work with local stakeholders to identify and require additional measures to further reduce ozone precursor emissions. In addition, the EAC signatories and implementing agencies will review all EAC activities and report on these results in their semi-annual reports, beginning in June 2006. The semi-annual reports will track and document, at a

minimum, control strategy implementation and results, monitoring data, and future plans. Furthermore, as part of the SIP submittal, the Roanoke MSA commits to submit periodic updates to VADEQ and EPA on the implementation status and results of the local control program with sufficient details to make program sufficiency determinations.

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