



Economic Impact Analysis Virginia Department of Planning and Budget

9 VAC 5-20, 40 – State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution May 23, 2003

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 2.2-4007.G of the Administrative Process Act and Executive Order Number 21 (02). Section 2.2-4007.G requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation

The Air Pollution Control Board proposes to establish two new emissions control areas for volatile organic compounds and nitrogen oxides in order to meet the new eight-hour ozone standard. The proposed designations will allow a number of localities to take advantage of the early reduction program and avoid the potential nonattainment designations and allow some other localities that do not qualify for early reduction credits to implement the compliance strategies for the new ozone standard in a timely manner.

Estimated Economic Impact

The Air Pollution Control Board proposes to establish Northern Virginia Emissions Control Area (Counties of Caroline, Fauquier, Spotsylvania, and the City of Fredericksburg) and Western Virginia Emissions Control Area (Counties of Albemarle, Augusta, Botetourt, Frederick, Pittsylvania, Page, Madison, Roanoke, Rockingham and Cities of Roanoke, Salem, Winchester) for volatile organic compound and nitrogen oxide emissions in order to meet the new eight-hour ozone standard in these areas.

Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are the two precursors of ozone. VOC and NO_x chemically react in the presence of sunlight and create ground level ozone pollution. Thus, lower VOC and NO_x emissions improve air quality. To prevent ozone pollution, the Environmental Protection Agency (EPA) established the one-hour ozone standard in 1979. When the concentrations of ozone in the ambient air exceed the standard, an area is considered to be out of compliance, designated various nonattainment classifications (i.e. marginal, moderate, serious, severe, and extreme), and is required to reduce VOC and NO_x emissions. In 1997, EPA replaced the one-hour standard with a new more stringent eight-hour ozone standard. The new standard has been subject to litigation, which has been recently addressed by the U.S. Supreme Court. EPA prevailed on most issues with the exception of its implementation policy, which is currently being developed. Thus, eventually, the areas that do not meet the eight-hour standard will be designated as nonattainment and will be required to reduce their emissions. EPA is expected to finalize the requirements by the end of 2003 so that the states can begin to develop their implementation plans.

In July 2002, as required by the Clean Air Act, Virginia made recommendations to EPA concerning the geographic boundaries with respect to the eight-hour standard attainment and nonattainment areas. This recommendation included a number of areas that are already designated as emissions control area under the current regulations (9 VAC 5-20-206) for which no further regulatory action is required at this time for implementation of emissions reduction strategies. However, a number of other recommended areas are not currently designated as VOC and NO_x control areas and emission reduction strategies currently cannot be implemented. The proposed regulations will establish two new emission control areas for VOC and NO_x emissions so that emission reduction strategies can be implemented. The proposed list of new emission control areas are subject to change as negotiations with EPA currently continues. The Department of Environmental Quality (DEQ) anticipates that the final designations will be made and become effective in April 2004. The proposed list of new control areas is believed to be more inclusive than what the final designations will comprise. If this is the case, the board plans to drop some of the areas from the current proposed list in the final stage of these proposed regulations.

The main purpose of establishing new emissions control areas now rather than waiting the final determinations is to take advantage of a program known as “early reduction program.”

This program allows areas that may potentially become designated nonattainment under the eight-hour standard to implement early local emission control programs, reduce air quality violations, and avoid being designated as nonattainment before 2008. The areas participating in early reduction program have the flexibility to choose their own emissions reduction approach.

However, participating areas must have signed an early action compact with EPA on or before December 31, 2002. The areas that signed this compact are the City of Winchester/Frederick County and the Roanoke Metropolitan Statistical Area (cities of Roanoke, Salem and counties of Roanoke, Botetourt, and the town of Vinton). Thus, only these localities are eligible for deferral of a nonattainment designation and qualify for early reduction credits. None of the other localities will be eligible for early reduction credits. Any emissions reduced prior to nonattainment designation will not be counted toward the emissions budget that will be introduced following the designation.

The purpose of designating other localities as emissions control areas with these proposed changes is for timing and planning purposes. DEQ anticipates that the time these proposed regulations become effective will coincide with about the time nonattainment designations will be made. And, if these areas are designated as nonattainment, the regulatory authority will exist to start taking necessary measures without having to promulgate a new set of amendments. The emission reductions achieved after the nonattainment designation will be counted toward achieving the emissions budget. Thus, these localities will not qualify for early reduction credits, but the reduction strategies could be implemented in these areas earlier than it would be without the proposed changes.

The emissions reduction approaches the localities may undertake are not known at this time. However, there are three basic emissions reduction strategies: stationary control measures, mobile source control measures, and transportation source control measures. Stationary control measures target emission reductions from commercial/industrial facilities through emission limits, control technology requirements, preconstruction permit requirements for new industry and expansions, and source specific control requirements. The stationary control measures also comprise a variety of area source control measures that are directed at small businesses and consumer activities. Mobile source control measures target emission reductions from motor vehicles through motor vehicle emission standards, fuel volatility limits, reformulated gasoline,

emissions control system anti-tampering programs, and inspection and maintenance programs. Transportation control measures aim to reduce emissions from the use of motor vehicles through carpools, special bus lanes, rapid transit systems, commuter park and ride lots, bicycle lanes, signal system improvements, etc.

No matter which strategy the localities choose to implement, there will be possibly significant costs associated. These include emissions control, testing, monitoring, recordkeeping, and reporting costs. Existing and new industrial facilities, vehicle owners, citizens, the local governments, as well as the state are subject to these cost implications. These control measures have the potential to affect a wide spectrum of economic activities.¹ One particular concern is potentially discouraging industrial facilities from locating in the proposed emissions control areas which would probably hinder economic development where this occurs. This may have a negative effect on the growth of business activity. Additionally, it is likely that some sources will alter their production process to avoid being subject to regulations if the costs of compliance are high enough. However, very little is known about the specifics of potential economic effects at this time because the actual size and distribution of the potential costs on affected entities will eventually be determined by the choices made (i.e. selected source type, size, location, and case-by-case controls). The flexibility to implement emission reduction strategies from a menu of options, however, will allow the localities to minimize most potential adverse economic effects.

Additionally, major source emissions will be controlled through reasonably available control technology, which requires that the case-by-case determinations take into account the cost effectiveness of the control system. If there are any major sources, the use of this control technology will likely help them contain the costs within the “reasonable” costs of the other control technologies available.

In an effort to identify potentially affected sources, a review of current inventory is conducted. This review focuses on the Roanoke and Winchester areas, the two localities that

¹ The types of industries subject to these requirements include general process operations; synthesized pharmaceutical products manufacturing; rubber tire manufacturing; solvent metal cleaning operations using non-halogenated solvents; VOC storage and transfer operations; coating application systems for large appliances, magnet wires, automobiles, light duty trucks, cans, metal coils, papers, fabrics, vinyl, metal furniture, miscellaneous metal parts and products, flatwood paneling; flexographic, packaging rotogravure and publication rotogravure printing; petroleum liquid storage and transfer operations; asphalt paving operations.

will participate in the early reduction program. Although the current inventory contains very little source specific emissions data, it reveals approximately five potentially affected sources in the Roanoke area and nine sources in the Winchester area with a total of 561 and 1,447 tons of VOC emissions, respectively. There is no NOx inventory available for any of the proposed emissions control areas at this time and therefore the overall number of potentially affected emission sources is not known.

In addition to potential costs on affected emissions sources, the local governments will likely incur some administrative costs associated with planning and recordkeeping. Separately, DEQ will incur additional costs in terms of expenditures and personnel to perform additional inspections, to monitor air quality data and compliance, to keep records, and to administer the requirements in general. Based on the preliminary inventory data, DEQ expects these costs to be relatively small and does not plan to increase staffing for this purpose.

Just like the costs, the most significant benefits are expected to accrue to the localities. The local governments, industries, businesses, vehicle owners, and public have vested interest in the proposed Northern Virginia and Western Virginia emissions control area designations. Initiation of an early reduction program in these areas that qualify for early reduction credits prior to determining final air quality designations will allow the localities to take credit for the emissions already reduced. Thus, these areas will increase their chances of avoiding being classified as a nonattainment area and the consequences follow this designation. The major consequences of nonattainment designation include imposition of offsets on new major stationary sources and the need to make transportation and general conformity determinations requiring that development and implementation of federally funded highway plans and other funded projects must support the air quality goals.

The offset requirement is designed to control total emissions and improve air quality in nonattainment areas. Construction or reconstruction of new major stationary sources and modifications to existing major stationary sources in designated control areas are subject to offset requirements. The total tonnage of increased emissions of VOC and NOx from the new or modified sources must be offset elsewhere at least as much as the expected emissions increase.²

² Currently, there is some uncertainty as to what the final offset ratio EPA would require if an area is designated nonattainment for the new eight-hour-ozone standard. The Commonwealth recently proposed to adopt a one-to-one

This implies that offset requirement has significant cost implications for the major sources. Also, the Department of Transportation suggests that the transportation conformity requirements are quite expensive. Thus, the chance to avoid offsets and conformity requirements and the costs associated with them is probably the most significant benefit expected from the proposed changes. In other words, while the proposed changes will introduce possibly significant costs to emissions sources, these costs are probably much lower than the potential costs of complying with nonattainment area controls.

Also, the effects on air quality and environment could be significant. Reducing VOC and NOx emissions earlier rather than later would have a positive impact on health of citizens living in the proposed nonattainment areas. In addition to the effects on humans, lower ozone pollution would positively affect agricultural crops and forests, reduce structural damage, and improve visibility.

Another potential benefit of the proposed designations is the ability to develop an accurate inventory of emissions in the affected areas. Accurate emissions inventory data is expected to assist DEQ in developing more accurate long and short-term air quality planning throughout the Commonwealth. DEQ also expects to achieve some cost savings from avoiding nonattainment area new source reviews from fewer new industries locating in these areas.

In summary, the proposed changes will provide an option to localities that signed the early action compact to avoid nonattainment designation and more serious consequences and allow other localities to start implementing emission reduction controls immediately in the event of a nonattainment designation. Given the voluntary nature of participation in the early action compact, it can be reliably inferred that the proposed changes will provide net economic benefits for those localities. For the other localities, the proposed regulations will allow an option to act earlier rather than later in the event of a nonattainment designation. Localities are likely to take advantage of the option to act early and implement control strategies if it is in their best interest. In this sense, the proposed regulations will provide net economic benefits to them as well. Moreover, earlier rather than later reduction of ozone pollution could only produce net economic benefits to the environment and public.

offset ratio because of the provisions of the federal Clean Air Act, which does not include any other offset ratios for the eight-hour ozone standard.

Businesses and Entities Affected

The number of emission sources located in areas that are proposed to be designated as VOC and NOx emissions control areas is not known at this time.

Localities Particularly Affected

The localities in the proposed emissions control areas are: counties of Caroline, Fauquier, Spotsylvania, Albemarle, Augusta, Botetourt, Frederick, Pittsylvania, Page, Madison, Roanoke, Rockingham and the cities of Fredericksburg, Roanoke, Salem, and Winchester. If any, major emission sources located in these areas may particularly be affected. However, this list is subject to change prior to these regulations are finalized as the negotiations are currently continuing with EPA.

Projected Impact on Employment

The designation of the two emissions control areas now rather than later will allow the some of the sources to take advantage of early reduction credit program and avoid being subject to more stringent requirements in the future. Thus, relative to being designated as nonattainment area, the proposed changes would probably result in a labor demand that is higher than it would be otherwise by avoiding more dire cost consequences.

Effects on the Use and Value of Private Property

Similarly, by avoiding the more serious consequences of nonattainment classification, the proposed changes may in fact reduce the potential negative effect on profits and offset some of the losses from complying with nonattainment area emissions reduction controls, which could be interpreted as a positive impact on the value of industrial facilities or businesses subject to controls.