

already required under promulgated regulation and approved SIPs, ozone nonattainment will likely persist into the future. With reductions from programs already in place, the number of counties violating the ozone 8-hour standard is expected to decrease in 2020 to 30 counties where 43 million people are projected to live. Thereafter, exposure to unhealthy levels of ozone is expected to begin to increase again. In 2030 the number of counties violating the ozone 8-hour NAAQS is projected to increase to 32 counties where 47 million people are projected to live. In addition, in 2030, 82 counties where 44 million people are projected to live will be within 10 percent of violating the ozone 8-hour NAAQS.

EPA is still developing the implementation process for bringing the nation's air into attainment with the ozone 8-hour NAAQS. EPA's current plans call for designating ozone 8-hour nonattainment areas in April 2004. EPA is planning to propose that States submit SIPs that address how areas will attain the 8-hour ozone standard within three years after nonattainment designation regardless of their classification. EPA is also planning to propose that certain SIP components, such as those related to reasonably available control technology (RACT) and reasonable further progress (RFP) be submitted within 2 years after designation. We therefore anticipate that States will submit their attainment demonstration SIPs by April 2007. Section 172(a)(2) of the Clean Air Act requires that SIP revisions for areas that may be covered only under subpart 1 of part D, title I of the Act demonstrate that the nonattainment areas will attain the ozone 8-hour standard as expeditiously as practicable but no later than five years from the date that the area was designated nonattainment. However, based on the severity of the air quality problem and the availability and feasibility of control measures, the Administrator may extend the attainment date "for a period of no greater than 10 years from the date of designation as nonattainment." Based on these provisions, we expect that most or all areas covered under subpart 1 will attain the ozone standard in the 2007 to 2014 time frame. For areas covered under subpart 2, the maximum attainment dates provided under the Act range from 3 to 20 years after designation, depending on an area's classification. Thus, we anticipate that areas covered by subpart 2 will attain in the 2007 to 2014 time period.

Since the emission reductions expected from this proposal would begin during the same time period, the

projected reductions in nonroad emissions would be extremely important to States in their effort to meet the new NAAQS. It is our expectation that States will be relying on such nonroad reductions in order to help them attain and maintain the 8-hour NAAQS. Furthermore, since the nonroad emission reductions will continue to grow in the years beyond 2014, they will also be important for maintenance of the NAAQS for areas with attainment dates of 2014 and earlier.

Using air quality modeling of the impacts of emission reductions, we have made estimates of the change in future ozone levels that would result from the proposed rule.⁷³ That modeling shows that this rule would produce nationwide air quality improvements in ozone levels. On a population-weighted basis, the average change in future year design values would be a decrease of 1.6 ppb in 2020, and 2.6 ppb in 2030. Within areas predicted to violate the NAAQS in the projected base case, the average decrease would be somewhat higher: 1.9 ppb in 2020 and 3.0 ppb in 2030.⁷⁴

The model predictions of whether specific counties will violate the NAAQS or not is uncertain, especially for counties with design values falling very close to the standard. This makes us more confident in our prediction of average air quality changes than in our prediction of the exact numbers of counties projected as exceeding the NAAQS. Furthermore, actions by States to meet their SIP obligations will change the number of counties violating the NAAQS in the time frame we are modeling for this rule. If State actions resulted in an increase in the number of areas that are very close to, but still above, the NAAQS, then this rule might bring many of those counties down sufficiently to eliminate remaining violations. In addition, if State actions brought several counties we project to be very close to the standard in the future down sufficiently to eliminate violations, then the air quality improvements from this proposal might serve more to assist these areas in maintaining the standards than in

⁷³ These results are ozone changes projected for the preliminary control option used for our modeling, as discussed in the Draft RIA in section 3.6. The proposal differs from the modeled control case based on updated information; however, we believe that the net results would approximate future emissions, although we anticipate the ozone changes might be slightly different.

⁷⁴ This is in spite of the fact that NO_x reductions can at certain times in some areas cause ozone levels to increase. Such "disbenefits" are predicted in our modeling, but these results make clear that the overall effect of the proposed rule is positive. See the draft RIA for more information.

changing their status. Bearing this in mind, our modeling indicates that, out of 32 counties predicted to violate the NAAQS, the proposal would reduce the number of violating counties by 2 in 2020 and by 4 in 2030, without consideration of new State or Federal programs.

C. Other Environmental Effects

The following section presents information on five categories of public welfare and environmental impacts related to nonroad heavy-duty vehicle emissions: visibility impairment, acid deposition, eutrophication of water bodies, plant damage from ozone, and water pollution resulting from deposition of toxic air pollutants with resulting effects on fish and wildlife.

1. Visibility

a. Visibility is Impaired by Fine PM and Precursor Emissions From Nonroad Engines Subject to this Proposed Rule

Visibility can be defined as the degree to which the atmosphere is transparent to visible light.⁷⁵ Fine particles with significant light-extinction efficiencies include organic matter, sulfates, nitrates, elemental carbon (soot), and soil. Size and chemical composition of particles strongly affects their ability to scatter or absorb light. Sulfates contribute to visibility impairment especially on the haziest days across the U.S., accounting in the rural Eastern U.S. for more than 60 percent of annual average light extinction on the best days and up to 86 percent of average light extinction on the haziest days. Nitrates and elemental carbon each typically contribute 1 to 6 percent of average light extinction on haziest days in rural Eastern U.S. locations.⁷⁶

Visibility is important because it directly affects people's enjoyment of daily activities in all parts of the country. Individuals value good visibility for the well-being it provides them directly, both in where they live and work, and in places where they enjoy recreational opportunities.

⁷⁵ National Research Council, 1993. Protecting Visibility in National Parks and Wilderness Areas. National Academy of Sciences Committee on Haze in National Parks and Wilderness Areas. National Academy Press, Washington, DC. This document is available on the Internet at <http://www.nap.edu/books/0309048443/html/>. See also U.S. EPA Air Quality Criteria Document for Particulate Matter (1996) (available on the Internet at <http://cfpub.epa.gov/ncea/cfm/partmatt.cfm>) and Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information. These documents can be found in Docket A-99-06, Documents No. II-A-23 and IV-A-130-32.

⁷⁶ U.S. EPA Trends Report 2001. This document is available on the Internet at <http://www.epa.gov/airtrends/>.