STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

September 14, 2009

VIA E-MAIL

Docket No. EPA-HQ-OAR-2006-0922
U.S. Environmental Protection Agency
Mail Code 6102T
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Sir or Madam:

The Michigan Department of Environmental Quality (MDEQ), on behalf of the State of Michigan, submits the following comments concerning the U.S. Environmental Protection Agency's (EPA's) proposed rulemaking, "Primary National Ambient Air Quality Standard for Nitrogen Dioxide" as published in the *Federal Register* (74 FR 34404-34466) on July 15, 2009. The MDEQ's comments fall into three general categories:

1. The need for a 1-hour National Ambient Air Quality Standard (NAAQS) for nitrogen dioxide (NO_2);
2. The inappropriateness of conducting air monitoring near roadways; and
3. The appropriate regulatory use of any ambient air quality monitoring data collected as part of a near-roadway study.

1. The need for a 1-hour NAAQS for NO_2.

The MDEQ agrees with the EPA that the existing annual standard (53 parts per billion [ppb]) is not sufficiently protective of human health in regard to short-term peak NO_2 concentrations. We agree with the EPA that available key studies support a protection level between 80-100 ppb and recognize that the highest short-term NO_2 concentrations may occur near roadways. However, we question the appropriateness of establishing regulatory monitoring stations near roadways for purposes of NAAQS attainment designations for counties or Metropolitan Statistical Areas (MSAs). We favor the EPA's alternative approach of a community-wide 1-hour NO_2 standard that would not require monitoring near major roads. We note that the EPA has requested comment on a range of 50-75 ppb for a 1-hour NAAQS based on community-wide levels. We recommend that the EPA seriously consider establishing the 1-hour NAAQS within that range of 50-75 ppb (three-year average of the 99th percentile), applied to area-wide concentrations rather than near-roadway levels. That approach would help ensure an adequate level of protection, including a margin of safety, for all reasonable scenarios, including transient exposures near roadways where short-term concentrations may be reasonably presumed to be the highest.

Regarding the 1-hour NAAQS and the EPA proposal to retain the current annual standard level of 53 ppb, we want the EPA to be aware of the results of a recent Detroit-area study. The annual average NO_2 concentrations during 1990-2001, with a mean of 21.3 ppb and a maximum of 23.5 ppb (and a maximum 24-hour level of 76.7 ppb), were found to be associated with a statistically significant reduction in birth size (small for gestational age).

The study accounted for many potential confounders including adjustment for long-term trends in pollutant levels (Wahl, R., et al. 2006. Ambient Air Pollution and Adverse Birth Outcomes: A Linked Analysis. CDC Cooperative Agreement Number U50/ATU572305-03 and in press: Hultin, M., et al. 2009. The influence of air pollutant de-trending on analysis of air pollutant exposure and adverse birth outcomes. JAWMA). This study supplements other research linking adverse birth outcomes to elevated exposures to criteria pollutants.

As part of any effort to adopt a 1-hour NAAQS, the EPA should investigate how lowering the NO_2 NAAQS might impact ambient ozone levels.

2. The inappropriateness of conducting air monitoring near roadways.

We are unconvinced the EPA has demonstrated that monitoring for NO_2 within 50 meters of roadways is appropriate on a national scale at this time. The MDEQ is concerned that, because more nitric oxide is emitted from vehicles than NO_2, monitoring near roadways will not be a useful tool for determining residential NO_2 exposures.

By conducting near-roadway monitoring in different environments, including street canyons and elevated roadways, data analysis on a national level will be complicated.

Near-roadway locations close to major highways can also present safety concerns for staff assigned maintenance, auditing, and repair on the monitors. Gaining access and supplying electrical power in road rights-of-way can also be problematic.

Also, sufficient rationale for the collection of meteorological data at three heights has not been provided. The MDEQ has concerns about using limited funding to collect data of questionable value.

The MDEQ could, however, agree in principle with a two-tier NO_2 air monitoring network if it consisted of standard ambient air monitoring stations and very limited near-roadway sites. Rather than expend resources to monitor near roadways throughout the country, the MDEQ recommends that the EPA follow the National Air Toxic Trend monitoring model where pilot sites were first deployed to refine monitoring methodologies and logistics. As such, the EPA should further study results from near-roadway studies in Las Vegas, Detroit, and elsewhere before requiring near-roadway monitoring on a national basis. By delaying deployment of the near-roadway network until the completion of these studies and analysis of the data, the knowledge gained on the variability of near-roadway concentrations in these pilot cities can optimize the total number of sites required in a national network, thereby reducing redundancies and costs.

The EPA should focus their efforts on reestablishing the urban scale NO_2 monitoring that the past EPA administration determined could be sacrificed in order to fund other networks. Previous monitoring had focused on measuring area-wide concentrations, not "hot spot" maximum concentrations. This monitoring practice and philosophy should be reinstituted to avoid errors when trying to identify points of maximum impact and setting up air monitoring stations at those exact locations.

Regardless, any new monitoring requirements for NO_2 must be accompanied by a commensurate level of funding.

3. The appropriate regulatory use of any ambient air quality monitoring data collected as part of a near-roadway study.

   The MDEQ has programmatic concerns regarding how NO_2 data collected as part of a near-roadway monitoring effort will be used. A localized "hot spot" NO_2 roadway concentration could drive the Air Quality Index (AQI) for a large metropolitan area and inadvertently thwart the efforts of our partners to develop programs to address region-wide air pollution health concerns. The AQI was designed to reflect regional, not source-specific, impacted values. No specific protective "action" has been identified for the proposed 1-hour NAAQS level, nor has a method to forecast elevated NO_2 concentrations. For this reason, it is premature to presume that establishment of a forecast or a real-time AQI for roadway NO_2 is feasible at the present time.

   If the EPA intends to use near-roadway monitoring to determine exposure to road workers or vehicle passengers, the MDEQ contends that such issues are not ambient air issues and, as such, are better addressed under the purview of other federal agencies.

   The use of near-roadway data for attainment designations is problematic. Designating an entire county or MSA as nonattainment simply because elevated NO_2 levels were recorded along a single traffic link would not be a productive use of planning resources. Special considerations also should be given as to what would comprise an exceptional event in the case of elevated roadway NO_2 levels. Developing air pollution abatement plans for congestion due to accidents and construction would be extremely difficult. In fact, the MDEQ would argue that the provisions of the *Intermodal Surface Transportation Efficiency Act* and the subsequent *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* already provide regulatory mechanisms for addressing such transportation-related air quality problems.

Finally, any implementation plan guidance developed by the EPA must recognize that states may be hamstrung in adopting effective air pollution control measures for NO_2 exceedances caused by roadway emissions. Many of the controls (e.g., tailpipe emission standards) that are available must be adopted at the federal level.

Thank you for giving us the opportunity to provide these comments. If you have questions regarding our comments, please contact Mr. Craig Fitzner, Air Quality Division, at 517-373-7044, or you may contact me.

Sincerely,

Steven E. Chester
Director
517-373-7917

cc: Mr. Jim Sygo, Deputy Director, MDEQ
Mr. G. Vinson Hellwig, MDEQ
Mr. Craig Fitzner, MDEQ