New National Ambient Air Quality Standard for Nitrogen Dioxide (NO_2)

MWAQC

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New Primary NO_2 Standards

- Final rule: January 22, 2010
- Annual standard: 53 ppb (Existing standard retained)
- Hourly standard: 100 ppb (New, 3-year avg of the 98th percentile of the annual distribution of daily maximum 1-hour avg concentrations)
- Revisions consistent with recommendations of the majority of the Clean Air Scientific Advisory Committee (CASAC) panel.

Why an additional hourly standard?

- Scientific studies link short-term NO2 exposure (30 minutes to 24 hours) with adverse respiratory effects:
  - Increased asthma symptoms, worsened control of asthma, increase in respiratory illnesses and symptoms
- Studies show a connection between short-term exposure and increased visits to emergency rooms for respiratory illnesses, particularly in at-risk populations (children, the elderly, asthmatics)
- Hourly standard will protect at-risk populations

New NO_2 Monitoring Requirements - 1

- **3 Types of Monitoring:**
  - **Near Road** – To measure peak, short-term concentrations, primarily near major roads in urban areas.

    - 2 monitors required in areas with either:
    - Population greater than or equal to 2.5 million people, or
    - One or more road segments with an annual average daily traffic count greater than or equal to 250,000 vehicles
    - Washington region needs 2 such monitors.

New NO_2 Monitoring Requirements - 2

- **Community-Wide** – To measure highest concentrations of NO2 that occur over wider community areas.

  - Minimum 1 monitor required in areas with population greater than or equal to 1 million people.
    - Washington region currently has 11 such monitors and does not any additional monitors for this category.

- **Susceptible and Vulnerable Communities** – To measure concentrations impacting susceptible and vulnerable groups.
  - EPA will work with states to identify any monitors for this category.

- **All new monitors in place by January 1, 2013.**

Near and On Roadway NO_2 Exposures

- NO2 concentrations on or near major roads are appreciably higher than those measured at monitors in the current network
  - In-vehicle concentrations can be 2-3 times higher than measured at nearby community-wide monitors
  - Near-roadway concentrations have been measured to be approximately 30 to 100% higher than those measured away from major roads
- Individuals spending time on or near major roads experience short-term NO2 exposures much higher than measured by the current network. This is a concern for at-risk populations.

NO_2 Standard & Washington Region Design Values (2006-08)

- Hourly NO2 Standard: 100 ppb
Jurisdiction	-	**Design Value (ppb)**
Washington, DC	-	60
Arlington, VA	-	52
Fairfax, VA	-	51
Loudoun, VA	-	43
Prince William, VA	-	34
  - Maryland monitor in Beltsville did not have sufficient data for DV calculation.

Notes:

1. Data are shown for monitors that met the following criteria: 75% of the day has valid hourly values, 75% of the days in a quarter are valid, and all 4 quarters for each of the three years are valid.

2. EPA will not designate areas as non-attainment on these data, but likely on 2008 - 2010 data which we expect to show improved air quality.

Implementation Schedule

Milestone	Date
State Designation Recommendation	January 2011
EPA Designations	January 2012: EPA designates all/most areas as "unclassifiable" (because near road monitors not in place)
New NO2 Monitoring Network	January 1, 2013
Next NO2 Review	January 2015
NAA Redesignation	January 2016-17(depending on date that sites become operational)
Attainment Date	January 2021/2022 (5 years after date of nonattainment designations)