

STATE OF CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION



HEARING REPORT

**Prepared Pursuant to
Code of Federal Regulations Part 40, Section 51.102**

**Regarding Revision to the
State Implementation Plan for Air Quality**

Hearing Officer: Anne B. Hulick

Date of Hearing: August 21, 2008

On July 10, 2008, the Commissioner of the Connecticut Department of Environmental Protection (CTDEP) signed a notice of intent to revise the State Implementation Plan (SIP) for air quality required by the Clean Air Act Amendments of 1990 (CAA). The revision sets out CTDEP's plan for attaining the 1997 annual national ambient air quality standard (NAAQS) for fine particulate matter less than a nominal 2.5 micrometers in diameter (PM_{2.5}). Pursuant to such notice, a public hearing was held on August 21, 2008. The public comment period for the proposed SIP revision closed on August 22, 2008.

I. Overview

The Connecticut PM_{2.5} NAAQS Attainment Demonstration (PM_{2.5} Demonstration) describes how Connecticut has met the nonattainment plan provisions of the CAA for the 1997 annual PM_{2.5} NAAQS; addressed the interstate transport requirements of CAA section 110(a)(2)(D); and adopted all reasonably available control measures for PM_{2.5} and its precursors. The PM_{2.5} Demonstration concludes that attainment in the New York-New Jersey-Connecticut (NY-NJ-CT) nonattainment area will be achieved by the April 2010 attainment deadline.

II. Background and Summary

Two counties in Connecticut, Fairfield and New Haven, along with counties in downstate New York and northern New Jersey are included by the U.S. Environmental Protection Agency (EPA) in a single, multistate PM_{2.5} nonattainment area based on measured violations in the New York and New Jersey portions of this area. All Connecticut monitors measure compliance with the 1997 annual PM_{2.5} NAAQS, with monitored PM_{2.5} levels in Connecticut exhibiting a general downward trend from 2001 through 2007 as a result of control program implementation. Pursuant to the nonattainment designation, the PM_{2.5} Demonstration sets out CTDEP's plan for attaining the 1997 annual PM_{2.5} NAAQS.

The PM_{2.5} Demonstration documents Connecticut's progress implementing local and statewide measures to reduce particulate matter emissions and its precursors, as well as reductions from federal emission control programs, which have significantly reduced ambient PM_{2.5} levels in Connecticut both prior to and after the 2002 base year. Many of these measures continue to reduce emissions of direct PM_{2.5} and its precursors. The PM_{2.5} Demonstration also satisfies the requirements of CAA section 172(c)(1) documenting the implementation of all reasonably available control measures (RACM) as well as additional measures to reduce emissions in Connecticut.

The PM_{2.5} Demonstration air quality modeling analyses relied in part on the Clean Air Interstate Rule (CAIR) to achieve reductions in emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) from upwind sources to help the NY-NJ-CT nonattainment area achieve timely attainment. On July 11, 2008, the U.S. Court of Appeals for the District of Columbia Circuit vacated CAIR in its entirety. On September 24, 2008, EPA filed a petition for rehearing, on which a decision is pending. Although the eventual fate of the CAIR program is in question, the conclusions of the PM_{2.5} Demonstration will not change. Emissions in the NY-NJ-CT area are being reduced sufficiently to attain, provided that upwind states are required to satisfy CAA section 110(a)(2)(D) by reducing transported air pollution so as to no longer contribute significantly to nonattainment in downwind areas. Even without analyzing high electric demand day emissions, EPA's technical support documents for the CAIR program demonstrated that numerous upwind states have significant contributions in the NY-NJ-CT area. In approving this PM_{2.5} Demonstration, EPA will assure the public that Connecticut is sufficiently reducing PM_{2.5} and precursor emissions to satisfy the transport provisions of the CAA. CTDEP expects that EPA will in turn ensure that states upwind of the NY-NJ-CT nonattainment area are similarly accountable.

III. Summary of Comments

Two sets of comments were received, one from the Connecticut Council on Environmental Quality (CEQ) and one from the U.S. Environmental Protection Agency (EPA). All comments received are summarized below with CTDEP's responses. Commenters are identified fully in Exhibit 2.

CEQ Comment 1. Control measures restricting highway activities. The State of Connecticut Council on Environmental Quality (CEQ) provided one comment recommending that CTDEP establish restrictions on traffic-halting highway construction and maintenance work on high-pollution days as a way of reducing traffic congestion and associated increased air pollution. CEQ notes that some other areas in the country have implemented such restrictions on Ozone Action Days and suggests that a similar program in Connecticut could provide both PM_{2.5} and ozone benefits because high levels of PM_{2.5} in Connecticut are often coincident with high levels of ozone during the summer months.

Response. Over the last several years, CTDEP has been working with the Connecticut Department of Transportation (CTDOT) to identify and implement cost effective strategies to reduce emissions associated with CTDOT construction and operation activities. Implemented measures include the incorporation of diesel retrofit control technology and clean fuel requirements into contract specifications for the ongoing I-95 New Haven Harbor Q-Bridge construction project, the installation of diesel particulate filters on 31 Connecticut Transit buses in Stamford (with similar retrofits scheduled for completion in 2009 in Hartford and New Haven), and the completion of an electrified truck stop along I-95 in Stonington. CTDEP's indirect source regulation¹ was also amended in 2006 to allow CTDOT to comply through the use of diesel retrofit control technology and clean fuels on applicable road construction projects throughout the State.

As indicated in CEQ's comment, several areas around the country have implemented programs to minimize traffic congestion due to road construction and/or maintenance

¹ Section 22a-174-100 of the Regulations of Connecticut State Agencies (RCSA).

activities on days forecasted to have high pollutant levels. CTDEP provided CEQ's suggestion to CTDOT and will discuss the potential benefits and feasibility of implementing similar restrictions in Connecticut as part of our ongoing planning efforts to reach compliance with the 2006 24-hour PM_{2.5} NAAQS and 2008 8-hour ozone NAAQS. CTDEP should not revise the PM_{2.5} Demonstration in response to this comment.

EPA Note on CAIR. Connecticut's proposed PM_{2.5} Demonstration relies on the Clean Air Interstate Rule (CAIR) to achieve reductions in SO₂ and NO_x from upwind sources to help the NY-NJ-CT area achieve timely attainment and also includes CAIR reductions in the photochemical modeling. On July 11, 2008, the U.S. Court of Appeals for the D.C. Circuit vacated CAIR and the associated federal implementation plan in its entirety. Although the mandate has not been entered, EPA reminds CTDEP to assess the impacts of the CAIR vacatur on the PM_{2.5} Demonstration.

Response. CTDEP is aware of the continuing uncertain future of the CAIR program and judges the impact on transported emissions from upwind states to be more significant than the impact on in-state emissions. CTDEP expects that, whether through regulatory, legislative or judicial action, a federal program will be implemented to provide emission reductions in the 2009-2010 timeframe comparable to those that were anticipated from the CAIR program. Should no CAIR or alternative program be implemented in 2009, actual NO_x emissions from Connecticut CAIR sources are unlikely to exceed the Connecticut CAIR ozone season budget for the following reasons:

- Connecticut's actual 2007 ozone season emissions were below the CAIR Phase I budget. In 2007, the actual ozone season NO_x emissions from Connecticut sources participating in the NO_x Budget Trading Program were 2053 tons, or 506 tons less than the 2559 tons allocated as Connecticut's NO_x ozone season budget under CAIR.
- The State's energy plan calls for the use of energy efficiency and conservation measures to stabilize or decrease electrical demand from anticipated levels, thereby stabilizing generation – and resulting emissions – from Connecticut's electric generating units.²
 - Public Act 07-242 requires a level of substantial and sustained investment to capture all cost effective energy efficiency measures.
 - Proceeds from the sale of allowances in Connecticut's greenhouse gas cap-and-trade program are anticipated to increase funding for energy efficiency measures in 2009 by 19%.
- Investment in new, clean electric generation in Connecticut will reduce or replace generation by older, higher emitting generation sources. In the 2009-2010 timeframe, new units constructed under the auspices of the Connecticut Department of Public Utility Control's (DPUC's) Review of Peaking Generation (Docket 08-01-01), the Energy Independence Act or a DPUC distributed generation grant program are anticipated to provide in combination about 1500 MW of electricity, thereby avoiding emissions that would have resulted if that demand was met by higher emitting baseline generators.

² Energy Conservation and Management Board Year 2007 Program and Operations. March 2008 at 14. Available at: <http://www.ctsavesenergy.org/files/ECMB%202007%20FINAL%2002.20.08.pdf>

As discussed in the response to EPA Comment 13, the upwind reductions anticipated from the CAIR program are more important to the area's air quality. Pursuant to the CAA, EPA is required to ensure that all upwind state SIPs comply with CAA section 110(a)(2)(D) regardless of the future effectiveness of CAIR.

CTDEP addresses the impacts of the CAIR vacatur more fully in response to EPA Comments 5, 9, 11, 13 and 14 below.

EPA Comment 1. Annual PM_{2.5} design values. In Table 3-2, Annual PM_{2.5} Design Values, some of the design values differ from EPA calculations for 2007. EPA calculated PM_{2.5} annual design values for the 2005-2007 period as follows:

New Haven Criscuolo Park: 12.3 ug/m³, Norwalk: 12.3ug/m³; Waterbury: 12.6 ug/m³

Response. CTDEP recalculated the design values in Table 3-2. The recalculated design values agree with those of EPA. CTDEP should revise Table 3.2 to include the recalculated design values in the final PM_{2.5} Demonstration.

EPA Comment 2. Pie chart color scheme. EPA recommends that the colors on the pie chart in Figure 3-8 be changed to be consistent with colors on pie charts in Figures 3-6 and 3-7.

Response. CTDEP agrees with EPA's recommended changes to the color scheme in Figure 3.8. CTDEP should revise Figure 3-8 as recommended in the final PM_{2.5} Demonstration.

EPA Comment 3. Control measures. EPA requests that the control measures used in attainment modeling be clearly identified in Section 4.

Response. Section 4 of the PM_{2.5} Demonstration describes federal and state control measures providing reductions in emissions of PM_{2.5} and/or its precursors. These control programs are summarized in Tables 4-1 and 4-3 of the PM_{2.5} Demonstration. Table 4-1 lists control measures implemented prior to the 2002 base year, while Table 4-3 lists control measures implemented (or planned for implementation) after 2002, but prior to the April 2010 required attainment date. The pre-2002 control measures listed in Table 4-1 are included in both the 2002 base year and 2009 attainment year photochemical dispersion modeling. All but five of the post-2002 control measures listed in Table 4-3 are included in the 2009 attainment year modeling. The five listed Connecticut measures not included in the modeling are:

- Outdoor Wood Burning Furnace Restrictions (Section 22a-174k of the Connecticut General Statutes);
- General Permit to Construct and/or Operate a New or Existing Distributed Generation Resource;
- New Source Review Permit Program Revisions (RCSA section 22a-174-3a);
- Improvements in the Control of Particulate Matter and Visible Emissions (RCSA section 22a-174-18); and
- California Low Emission Vehicle Program Phase 2 (RCSA section 22a-174-36b).

Emission reductions resulting from these non-modeled measures have not been quantified for the purposes of the PM_{2.5} Demonstration, but such directionally correct measures provide

additional weight of evidence that attainment of the 1997 annual PM_{2.5} NAAQS will occur by the April 2010 deadline. CTDEP need not revise the final PM_{2.5} Demonstration in response to EPA's request, as this response alone clearly identifies the control measures included in the attainment modeling performed in support of the PM_{2.5} Demonstration.

EPA Comment 4. Federal enforceability of RACM/RACT measures. EPA notes that some of the post-2002 control measures identified in Table 4-3 are not currently federally enforceable, either for lack of adoption or lack of submission to EPA as a SIP revision. EPA reminds CTDEP that all measures relied upon for emission reduction credit must be submitted to EPA as a SIP revision.

Response. CTDEP understands that all measures producing emissions reductions for which CTDEP seeks credit must be submitted to EPA for approval into the SIP. CTDEP identifies eight control measures in Table 4-3 that are not currently federally enforceable. Although CTDEP is not quantifying the emissions reductions achieved by these eight measures for the purposes of the PM_{2.5} Demonstration,³ they do produce directionally correct emissions reductions and are thus appropriately submitted into the SIP. A brief description of the SIP status of each of the eight measures follows.

One of the eight measures has not yet been finally adopted, namely restrictions on asphalt paving operations. CTDEP anticipates completing the adoption process and submitting that single measure to EPA by January 2009.

Two measures, RCSA sections 22a-174-36a and 22a-174-36b, will be submitted in a future SIP revision. RCSA section 22a-174-36a concerns heavy-duty diesel engines; the requirements of that section ensure the achievement of claimed emissions reductions from heavy-duty diesel engines of certain model years. RCSA section 22a-174-36b, concerning Connecticut's California Low Emission Vehicle II program, will be submitted with a description of the program enforcement and the estimated emissions reductions achieved.

With regard to RCSA section 22a-174-18 (Improvements in the Control of Particulate Matter and Visible Emissions), CTDEP notes that the current version of that regulation was submitted to EPA on December 1, 2004. While other portions of that December 2004 submission have been approved by EPA as shortfall measures towards attainment of the one-hour ozone NAAQS,⁴ EPA has not acted to approve the currently effective version of RCSA section 22a-174-18 into the SIP. CTDEP reminds EPA of that pending request for approval.

The following four non-federally enforceable control measures, with associated administrative documents related to their adoption in the State, should be submitted in conjunction with the final PM_{2.5} Demonstration:

- Outdoor wood burning furnace restrictions, Section 22a-174k of the Connecticut General Statutes;

³ The emissions reductions anticipated from the asphalt paving regulation and the adhesives and sealants regulation are quantified in Connecticut's 8-Hour Ozone Attainment Demonstration, which was submitted to EPA on February 1, 2008.

⁴ 71 FR 51761 (August 31, 2006).

- General Permit to Construct and/or Operate a New or Existing Distributed Generation Resource;
- Control of sulfur dioxide emissions from power plants and other large stationary sources, RCSA section 22a-174-19a (*submitted in part*); and
- VOC reductions from the manufacture and use of adhesives and sealants, RCSA section 22a-174-44.

EPA Comment 5. NOx budget trading program. Connecticut's NOx budget trading program, RCSA section 22a-174-22b, was scheduled to sunset and be replaced by CAIR. In light of the CAIR vacatur, CTDEP should take steps to ensure that the NOx budget program emission reductions continue.

Response. CTDEP acted in good faith by following EPA direction to adopt CAIR and sunset Connecticut's NOx Budget program regulation. Unfortunately, the uncertain future of the CAIR program has added significant complexity to strategic planning efforts of state air quality regulators, EPA and owners of large electric generators and industrial sources. Regardless of future regulatory, legislative or judicial actions to implement CAIR or an alternative program, EPA may be assured that CTDEP, in collaboration with other states in the region, is carefully considering a number of approaches to maintaining and improving upon current NOx emissions controls and will be ready to act when the short- term and long-term scenarios for addressing the CAIR vacatur and CAA section 110(a)(2)(D) obligations are determined. CTDEP understands that EPA is undergoing a similar evaluation of options, and CTDEP looks to EPA's leadership and efforts by the Ozone Transport Commission/Lake Michigan Air Directors Consortium collaborative in responding to actions in the near future by the D.C. District Court or the U.S. Congress. In particular, CTDEP expects EPA to ensure that every state meets its CAA section 110(a)(2)(D)(i) obligations for ozone and PM_{2.5}, regardless of the future disposition of CAIR or other development of any interstate trading program.

EPA Comment 6. Control measures for outdoor wood burning furnaces and small biomass boilers. EPA notes that Connecticut's adoption of EPA's woodstove certification program as a control measure is effective; however the outdoor wood burning furnace (OWBF) restrictions are less stringent than the 2007 NESCAUM OWBF rule. EPA recommends that Connecticut commit to adopting a rule consistent with the NESCAUM model rule. EPA also identifies increased use of small commercial and institutional woody biomass boilers and recommends that Connecticut consider control measures to reduce particulate matter emissions from these units as well.

Response. CTDEP recognizes the public health concerns caused by exposure to smoke from wood burning devices, particularly now as fuel prices rise and more people turn to wood as a primary fuel source. In 2005, the Connecticut General Assembly took initial steps to address some of the public health and environmental concerns caused by outdoor wood burning furnaces (OWBFs) through the adoption of minimum siting and operational restrictions.⁵ While actively enforcing the statute, CTDEP continues to gather and evaluate information concerning OWBF emissions and to learn from the success of surrounding states with more stringent regulatory programs for OWBFs.

⁵ Section 22a-174k of the Connecticut General Statutes.

Adoption of performance standards for new OWBFs would be most effectively pursued by EPA since the sales market includes the entire northern United States.

Like EPA, CTDEP anticipates an increased interest in the use of small commercial and institutional biomass boilers (boilers with energy output less than 10 mmBtu/hr). CTDEP is collaborating with other states in the region to gather information necessary to develop appropriate emissions standards for these small biomass boilers. For example, the National Association of Clean Air Agencies is investigating the impact of wood moisture content on emissions from such small boilers. CTDEP will continue to monitor these activities and evaluate future strategies for attainment planning.

No revision to the PM_{2.5} Demonstration is necessary in response to this comment.

EPA Comment 7. Base year emissions inventory. EPA previously commented on CTDEP's 2002 base year emissions inventory and notes that CTDEP made updates to the inventory to take advantage of improved guidance for the on-road and off-road mobile sectors and several area source categories.

Response. CTDEP notes EPA's concurrence with the updates to the mobile and area source portions of the 2002 base year emissions inventory. No revision to the PM_{2.5} Demonstration is necessary in response to this comment.

EPA Comment 8. Transportation conformity process and motor vehicle emission budgets. The proposed PM_{2.5} Demonstration identifies the calendar year of 2009 direct PM_{2.5} and NO_x motor vehicle emission budgets (MVEBs) for the Connecticut portion of the NY-NJ-CT PM_{2.5} nonattainment area. EPA previously deemed the MVEBs adequate and approved the MVEBs into the SIP.

Response. CTDEP notes the approval of the PM_{2.5} budgets in footnote 6 of Section 7 of the proposed PM_{2.5} Demonstration.

EPA Comment 9. Impact of CAIR vacatur. EPA notes that the SIP modeling assumes implementation of CAIR, indicating that Connecticut will need to reassess how the attainment demonstration is impacted if the CAIR court vacatur stands.

Response. In preparation for compliance with Phase 1 of the CAIR program, many owners of CAIR sources in the South and Midwest installed emission control equipment. If operated, this control equipment will reduce annual power plant NO_x and SO₂ emissions in states upwind of Connecticut. CAIR will not create additional emission reductions from Connecticut's CAIR sources because all highly cost effective controls were installed prior to CAIR's promulgation. The PM_{2.5} Demonstration includes 2009 projection year modeling incorporating the required reductions from affected states in the CAIR region. As explained previously in this document in response to a similar note by EPA, the impact of CAIR emissions reductions from Connecticut sources on the ambient level of PM_{2.5} is negligible, based on a comparison of actual 2007 ozone season NO_x emissions from CAIR sources to the level of the Connecticut CAIR NO_x ozone season budget. The CAIR NO_x and SO₂ emissions reductions anticipated from sources outside of Connecticut are more important to the NY-NJ-CT area's attainment and maintenance of the 1997 annual PM_{2.5} NAAQS.

Considerable judicial and legislative attention is now on the CAIR program, leaving open the possibility that CAIR or an alternative program will be in effect in 2009. In this spirit of optimism, CTDEP is relying on EPA and our sister states to implement state specific performance standards or a regional program to fulfill their emission reductions obligations in the 2009-2010 timeframe at least to a level comparable to that anticipated to result from the CAIR program.

However, in the event that no CAIR or alternative program is implemented, CTDEP expects EPA to work with each state to limit emissions from sources in the state to a CAIR-equivalent level or lower as needed to satisfy Section 110(a)(2)(D) of the CAA and to prepare for compliance with the 2006 PM_{2.5} and 2008 ozone NAAQS.

Furthermore, EPA should not approve a SIP submitted by any state that does not satisfy CAA section 110(a)(2)(D) requirements. EPA's CAIR modeling analysis, which was not impugned in the Court's vacatur ruling, clearly demonstrates that emissions from numerous states have significant PM_{2.5} impacts in the NY-NJ-CT annual PM_{2.5} NAAQS nonattainment area. Those states are therefore obligated under CAA section 110(a)(2)(D) to take action to prohibit such emissions.

CTDEP does not need to reassess the conclusions of the PM_{2.5} Demonstration regardless of the fate of CAIR, and the PM_{2.5} Demonstration should not be revised in response to EPA's note. EPA, however, should reassess each state's satisfaction of CAA section 110(a)(2)(D) for PM_{2.5} should the CAIR vacatur stand.

EPA Comment 10. New York City PlaNYC. EPA requests more information on New York City's PlaNYC (described in Section 8.6.4 of the PM_{2.5} Demonstration), particularly regarding commitments, implementation schedules and levels of emission reductions expected by 2010.

Response. As indicated in Section 8.6.4 of the PM_{2.5} Demonstration, more details on PlaNYC, including progress achieved towards implementing its goals, are provided in PM_{2.5} Demonstration Appendices 8H and 8I. The PlaNYC 2008 progress report summarizes initial implementation of 17 program initiatives that have already been launched (see page 8I-17 of Appendix 8I), some of which include:

- Approval in December 2007 of regulations requiring all new yellow taxis to meet fuel efficiency standards that will essentially double the gas mileage of the taxi fleet and significantly reduce vehicle emission levels. Standards include city mileage ratings of 25 miles per gallon (mpg) and 30 mpg for all new yellow cabs put into service as of October 2008 and October 2009, respectively, along with vehicle retirement age requirements that ensure virtual replacement of the affected fleet by 2012. About half of the fleet turnover will occur by 2010.⁶
- Approval in April 2008 of regulations requiring new "black car" vehicles (i.e., large for-hire sedans that typically service corporate clients) to meet city mileage ratings of 25 mpg as of January 2009 and 30 mpg as of January 2010, with virtually complete

⁶ This component of PlaNYC may not be implemented. A New York federal court issued a preliminary injunction against the yellow taxi component of PlaNYC on October 31, 2008. The City is considering appellate options.

fleet turnover required by 2013. These actions will essentially double the gas mileage achieved by the current fleet. In addition, hybrid technology will greatly reduce curbside idling emissions that typically occur when “black cars” line-up at curbside in front of office buildings.

- Completion of retrofits for three Staten Island Ferries and initiation of fleet fueling with ultra-low sulfur diesel and B5 biodiesel. The remaining six ferries are due to be retrofitted by the end of 2009, resulting in a fleet wide reduction in NOx and direct PM_{2.5} emissions of about 40% and 80%, respectively. A preliminary retrofit agreement with the New York Waterway ferry company serves as the first step towards also reducing emissions from private ferry operations.
- Installation of diesel oxidation catalysts and crankcase filters on over 3,000 large school buses, and initiation of an effort to secure funding for installation of diesel particulate filters on other buses and accelerated retirement of older buses.
- Expansion of the use of B5 and B20 biodiesel blends in the various City vehicle truck fleets, with implementation scheduled to be completed by the end of 2009.
- Agreement with Shell Hydrogen & General Motors to locate two pilot hydrogen fueling stations, scheduled to be operational by the end of 2009.

Other initiatives currently being pursued include legislative action to waive the City’s 4% sales tax for qualifying hybrid vehicles, financial incentives to accelerate emission reductions from private truck fleets, increased public education and enforcement of anti-idling requirements, and promotion of the use of cleaner burning heating fuels in City, school and other boilers.

Section 8.6.4 of the PM_{2.5} Demonstration notes that PlaNYC emission reduction strategies are not included in the attainment modeling and are not considered to be SIP commitments. Nevertheless, PlaNYC emission reductions provide additional weight of evidence that attainment of the 1997 annual PM_{2.5} NAAQS will be achieved by the 2010 deadline and help to ensure continued maintenance in subsequent years as more elements of the plan are implemented.

EPA Comment 11. CAIR impacts on contingency plan. EPA notes that CTDEP used an appropriate method to calculate the emission reductions required for the contingency plan. EPA points out that the CAIR vacatur may require recalculation of the contingency measure reduction targets and projected emissions.

Response. CTDEP should not make any change to the PM_{2.5} Demonstration in response to EPA’s note, as the contingency measure reduction targets do not require recalculation in response to the CAIR vacatur. As described in the response to EPA Comment 9, at the time of this submittal the final outcome of the CAIR litigation or potential Congressional actions to mandate CAIR-equivalent reductions are pending. CTDEP continues to assume that some type of regional program or performance standards will be implemented to provide emission reductions in the 2009-2010 timeframe to a CAIR-equivalent level or lower as needed to satisfy Section 110(a)(2)(D) of the CAA and to prepare for compliance with the 2006 PM_{2.5} and 2008 ozone NAAQS.

Regardless of the outcome of CAIR, Connecticut’s contingency plan should not be significantly affected. As described below in CTDEP’s response to EPA Comment 12,

Connecticut's revised contingency plan relies on emission reductions secured from on-road mobile source control programs, not the CAIR program. The regional photochemical modeling and weight of evidence analyses conducted in support of the attainment demonstration (see Section 8 of the PM_{2.5} Demonstration) established the level of emissions that equates to attainment of the annual PM_{2.5} NAAQS in 2009. If a regional CAIR-equivalent program is not implemented in the 2009-2010 timeframe, then the PM_{2.5} Demonstration may need to be revisited, not the contingency plan.

It is important to note that all Connecticut monitors are in compliance with the annual PM_{2.5} NAAQS. In addition, EPA has concluded, based on modeling for the CAIR program, that SO₂ and NO_x emissions from sources located within Connecticut do not significantly impact annual PM_{2.5} nonattainment areas in any other state, including New York and New Jersey. Connecticut's revised contingency plan will ensure that emissions from Connecticut vehicles traveling beyond Connecticut's borders will continue to decline in the post-2009 period, further reducing any local impacts that might occur near violating PM_{2.5} monitors in New York or New Jersey.

EPA Comment 12. Contingency plan analysis. Connecticut should justify the use of a 1:1 substitution ratio for PM_{2.5} and precursor pollutants to satisfy the contingency requirement. EPA suggests accounting for the relative proportion of the components comprising the total measured PM_{2.5} mass, considering the degree to which each PM_{2.5} component may contribute to nonattainment.

Response. The purpose of a contingency plan is to ensure that continued progress toward attainment occurs during the period when affected states would be required to revise their air quality plans in the event that EPA makes a finding that an area failed to comply with an air quality standard by the required attainment date. To accomplish this goal, EPA's PM_{2.5} Implementation Rule indicates that contingency plans should provide emission reductions equivalent to one year's worth of the reductions required for attainment. EPA specifies a procedure that uses total PM_{2.5} and precursor emissions in the base year and required attainment year to calculate the required contingency plan emission reduction. Although this procedure may be an appropriate method for ensuring continued progress in most cases, CTDEP has concluded that strict application of EPA's procedure is not appropriate for Connecticut's situation. The rationale for this conclusion is summarized below. An alternate procedure is also described that makes more sense for Connecticut's situation and will therefore replace the method used for the previously proposed contingency plan. CTDEP's rationale is as follows:

- All Connecticut PM_{2.5} monitors remain in compliance with the annual PM_{2.5} NAAQS.
- All violating monitors in the NY-NJ-CT nonattainment area are located in New York City and nearby New Jersey urban areas. The violating areas in New York and New Jersey are located upwind of Connecticut during periods when high PM_{2.5} levels most frequently occur. This observation is corroborated by EPA's CAIR modeling analysis,⁷ which concluded that SO₂ and NO_x emissions from sources located *within* Connecticut's borders do not significantly impact violating PM_{2.5} monitors in New York and New Jersey.
- Based on the above, it follows that a contingency plan that provides additional

⁷ See Section VII of EPA's "Technical Support Document for the Final Clean Air Interstate Rule: Air Quality Modeling; March 2005; See: <http://www.epa.gov/cair/pdfs/finaltech02.pdf>.

emission reductions from sources *within* Connecticut's borders will not result in significantly improved air quality at any monitors in New York or New Jersey that might remain in non-compliance of the annual PM_{2.5} NAAQS after the required 2010 attainment date.

- A primary reason EPA decided to include portions of Connecticut in the multi-state NY-NJ-CT nonattainment area was due to a concern that Connecticut motor vehicles traveling into New York City might have a direct local contribution to violating monitors.⁸ Presuming that assertion to be true, it follows that Connecticut's contingency plan should be structured to focus on Connecticut's on-road motor vehicle fleet to ensure that emissions from that source sector continue to decline in the 2009 to 2012 timeframe, the period when EPA will determine if air quality plans must be updated due to a failure to reach timely attainment.

Based on the discussion above, Connecticut's revised contingency plan is comprised of the federal control measures required for new gasoline and diesel powered automobiles and trucks. These control programs, which are described in Section 4.3.1 and Table 4-3 of the PM_{2.5} Demonstration, will continue to provide significant emission reductions in the post-2009 period.

Projected emissions for Connecticut's on-road motor vehicle fleet are summarized in Table 9-1. Projected emissions are shown for primary PM_{2.5} and NO_x for the years 2002, 2009 and 2012. The required contingency plan reduction targets are also listed, calculated as the average yearly reduction in on-road motor vehicle emissions projected to occur between the base year and attainment year inventories (i.e., 1/7th of the reduction between 2002 and 2009 emission levels). Actual emission reductions expected from the contingency plan are listed in the last column of Table 9-1, representing the emission reductions expected from the on-road motor vehicle fleet between 2009 and 2011, determined assuming linear decreases in emissions between 2009 and 2012. Note that sulfate impacts from Connecticut vehicles traveling near New York City monitors are considered to be insignificant due to Federal fuel sulfur limits that were implemented during the 2002 to 2009 planning period, resulting in sulfur reductions of 90% for gasoline and 97% for diesel fuel from previous levels.

Table 9-1. Analysis of Emissions from Connecticut's Motor Vehicle Fleet

| Pollutant³ | 2002 Emissions (tons) | 2009 Emissions (tons) | 2012 Emissions (tons) | Contingency Reduction Targets¹ (tons) | Contingency Plan Reductions² (tons) |
|------------------------------|------------------------------|------------------------------|------------------------------|---|---|
| Primary PM _{2.5} | 1,042 | 723 | 620 | 46 | 69 |
| NO _x | 68,816 | 39,468 | 28,010 | 4193 | 7639 |

¹ Contingency reduction targets represent the average yearly emission reduction expected between the base year and attainment year inventories (i.e., 1/7th of the reduction between 2002 and 2009).

⁸ Letter from EPA Administrator Stephen L. Johnson to CTDEP Commissioner Gina McCarthy; December 5, 2005; available at: http://www.ct.gov/dep/lib/dep/air/particulate_matter/pm25planning/epapm25reconsiderdesignationresponseletter.PDF.

² The contingency plan reductions represent the level of emission reductions expected between 2009 and 2011 from the on-road motor vehicle fleet, assuming emissions decline linearly between 2009 and 2012.

³ Sulfate impacts from Connecticut vehicles traveling near New York City monitors are considered to be insignificant due to Federal fuel sulfur limits that were implemented during the 2002 to 2009 planning period, resulting in sulfur reductions of 90% for gasoline and 97% for diesel fuel from previous levels.

As shown in Table 9-1, emission reductions provided by Connecticut's contingency plan (i.e., 69 tons of primary PM_{2.5} and 7639 tons of NO_x) exceed the required emission reduction targets (i.e., 46 tons of primary PM_{2.5} and 4193 tons of NO_x), thereby satisfying contingency plan requirements. As a result, CTDEP concludes that any localized impacts caused by emissions from Connecticut vehicles at any remaining violating monitors in New York or New Jersey will continue to decline in the post-2009 period.

CTDEP should update the PM_{2.5} Demonstration at Section 9.0 to include the revised contingency measure plan described above.

EPA Comment 13. Transport SIP. EPA approved a SIP revision (the transport SIP) submitted by CTDEP addressing the CAA section 110(a)(2)(D)(i) requirements for the 1997 8-hour ozone and PM_{2.5} NAAQS.⁹ The transport SIP relies on CAIR. Therefore, the impacts of the CAIR vacatur on the transport SIP must also be considered.

Response. As discussed earlier, Connecticut is a CAIR state for ozone only.¹⁰ For fine particles, EPA's CAIR modeling determined that the Connecticut PM_{2.5} impacts are below the 0.2 µg/m³ average annual threshold that EPA established to determine significant PM_{2.5} impact on another state in the projection year 2010.¹¹ Since emissions from Connecticut do not contribute significantly to downwind nonattainment of the annual PM_{2.5} standard, Connecticut's satisfaction of CAA section 110(a)(2)(D)(i) stands despite the CAIR vacatur. The CAIR vacatur does call into question whether states upwind of Connecticut satisfy the requirements of CAA section 110(a)(2)(D)(i) for PM_{2.5}, as those states were included in CAIR based on EPA's determination that the states had a significant contribution to downwind PM_{2.5} nonattainment. CTDEP expects EPA to disapprove such upwind states' SIPs unless CAA section 110(a)(2)(D)(i) obligations are satisfied.

CTDEP should not revise the PM_{2.5} Demonstration with respect to this comment as CTDEP anticipates that EPA will continue to recognize Connecticut as having satisfied its CAA section 110(a)(2)(D)(i) obligations for annual PM_{2.5}.

EPA Comment 14. Infrastructure requirements. EPA notes its belief that CTDEP satisfies the PM_{2.5} infrastructure SIP requirements, except for PM_{2.5} new source review (NSR) requirements, which are scheduled for submission to EPA by May 2011, and accommodations for the impact of the CAIR vacatur on transport. EPA is not clear if this is CTDEP's position on satisfying the infrastructure requirements, and EPA asks CTDEP to identify what elements are necessary to meet the infrastructure requirements.

⁹ 73 FR 25516.

¹⁰ 70 FR 25162.

¹¹ 72 FR 6240.

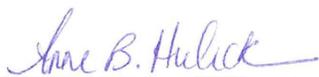
Response. CTDEP submitted a PM_{2.5} NAAQS infrastructure adequacy determination to EPA on September 4, 2008. That determination states that Connecticut's SIP will fully satisfy the infrastructure requirements of CAA section 110(a)(1) and (2) for the PM_{2.5} NAAQS with the submission of the final attainment demonstration and the May 2011 NSR and PSD PM_{2.5} SIP revision. EPA approved the September 4, 2008 submission as complete on October 22, 2008.¹² For reasons set out previously in response to other comment, the PM_{2.5} Demonstration need not be revised to take into account the uncertain future of the CAIR program. CTDEP should, however, revise Section 10 of the PM_{2.5} Demonstration to incorporate the September 4, 2008 infrastructure SIP submission by reference.

EPA Comment 15. Monitoring plan. Section 11.3 includes a reference and link to Connecticut's 2007 monitoring plan. Connecticut should update this section to reference the state's 2008 air monitoring network plan.

Response. In the final PM_{2.5} Demonstration, CTDEP should revise Section 11.3 to refer to the draft 2008 air monitoring network plan.

IV. Conclusion

I recommend the final text of the PM_{2.5} Demonstration, revised from the proposal as recommended in the responses to comment herein, be submitted to EPA as a SIP revision. CTDEP should also submit a control measure appendix, as described in the response to EPA Comment 4, in order that EPA may approve the submitted control measures into the SIP. In satisfaction of 40 CFR 51 Appendix V, the following information is included as Exhibits 1 through 4 to this report: individuals submitting comment, the notice of public hearing, individuals attending the public hearing and a certification of the public hearing.



Anne B. Hulick
Hearing Officer



Date

¹²

EXHIBIT 1

Individuals Submitting Comment

1. Karl Wagener
Executive Director
State of Connecticut, Council on Environmental Quality
79 Elm Street
Hartford, CT 06106

2. David B. Conroy, Chief
Air Programs Branch
United States Environmental Protection Agency
Region 1
1 Congress Street, Suite 1100
Boston, MA 02114-2023

EXHIBIT 2

Notice of Public Hearing

NOTICE OF INTENT TO REVISE THE
STATE IMPLEMENTATION PLAN FOR AIR QUALITY

The Commissioner of Environmental Protection hereby gives notice of a public hearing concerning a revision to the State Implementation Plan (SIP) for air quality, specifically to incorporate the Connecticut PM_{2.5} NAAQS Attainment Demonstration (PM_{2.5} Demonstration). The PM_{2.5} Demonstration describes how Connecticut has met the nonattainment plan provisions of the Clean Air Act (CAA) for the 1997 annual national ambient air quality standard (NAAQS) for fine particulate matter less than a nominal 2.5 micrometers in diameter (PM_{2.5}). The PM_{2.5} Demonstration also satisfies the infrastructure provisions of CAA Section 110(a)(1) and (2) for PM_{2.5}; addresses the interstate transport requirements of CAA Section 110(a)(2)(D); and explains how Connecticut has adopted all reasonably available control measures for PM_{2.5} and its precursors. This revision will be submitted to the U.S. Environmental Protection Agency (EPA) for review and approval.

The PM_{2.5} Demonstration has two major components: (1) a description of the national, regional and local control measures that have been or will be implemented to reduce emissions in future years; and (2) air quality modeling and other analyses of air quality and meteorological data to assess the likelihood of reaching attainment by the mandated 2010 attainment deadline. The analyses described herein lead the Connecticut Department of Environmental Protection (CTDEP) to conclude that attainment in the New York-New Jersey-Connecticut nonattainment area will be achieved by the April 2010 attainment date. The emission control strategies described within this SIP not only serve the purpose of demonstrating attainment for the 1997 annual PM_{2.5} NAAQS but also position Connecticut to achieve goals for greenhouse gases, daily PM_{2.5} levels, ozone precursors, air toxics, improved visibility and support for environmental justice initiatives.

All interested persons are invited to comment on the PM_{2.5} Demonstration described above. Comments should be directed to the attention of Michele Totten of the Department of Environmental Protection, Bureau of Air Management, 79 Elm Street, Hartford, Connecticut, 06106-5127. Comments may be submitted at the public hearing described below, by facsimile to (860) 424-4063 or by electronic mail to michele.totten@ct.gov. All comments must be received by 4:30 P.M. on August 22, 2008, 2008.

The Department of Environmental Protection will hold a public hearing at the date and time indicated below. Any person appearing at the hearing is requested to submit a written copy of his or her statement. However, oral comments will also be made a part of the hearing record and are welcome.

PUBLIC HEARING
August 21, 2008 at 10:00 AM
Department of Environmental Protection, 5th Floor, Ensign Conference Room
79 Elm Street, Hartford, CT

Copies of the PM_{2.5} Demonstration are available for public inspection during normal business hours from 8:30 A.M. - 4:30 P.M. at the Bureau of Air Management, Fifth floor, 79 Elm Street, Hartford, Connecticut. Additional copies of the PM_{2.5} Demonstration and related documents are available for review at the Government Information Service Desk (Balcony Level) at the Connecticut State Library and the Bridgeport Public Library. A copy is also available at CTDEP's website at the following location: http://www.ct.gov/dep/cwp/view.asp?a=2684&q=331196&depNav_GID=1619. For further information, contact Michele Totten of the Bureau of Air Management at (860) 424-3026.

The Department of Environmental Protection supports the goals of the Americans with Disabilities Act of 1990. Any individual who needs auxiliary aids for effective communication during this public hearing or in submitting comments should contact the Department's Affirmative Action Officer at (860) 424-3035 (TDD (860) 424-3333) at least one week before the public hearing.

The authority to adopt this SIP revision is granted by §§ 22a-6 and 22a-174 of the Connecticut General Statutes (C.G.S.). This notice is required pursuant to C.G.S. §22a-6 and 40 Code of Federal Regulations §51.102.

7/10/08
Date

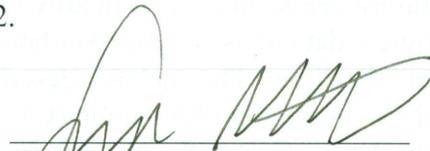

Gina McCarthy
Commissioner

EXHIBIT 3

Individuals Attending the Public Hearing

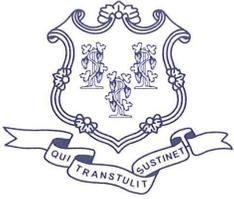
No individuals attended the Public Hearing Concerning a Revision to the State Implementation Plan for Air Quality, specifically to incorporate the Connecticut PM2.5 NAAQS Attainment Demonstration.

August 21, 2008
Date

Anne B. Hulick
Anne B. Hulick
Hearing Officer

EXHIBIT 4

Certification of Public Hearing



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



HEARING CERTIFICATION

This certifies in accordance with the provisions of Title 40 Code of Federal Regulations Part 51.102 that the actions listed below were taken regarding a revision to the State Implementation Plan for air quality, specifically to incorporate Connecticut's fine particulate matter or "PM 2.5" National Ambient Air Quality Standard Attainment Demonstration.

- 1) The public hearing was held on August 21, 2008 as announced in the notice of hearing (copy attached);
- 2) In accordance with the notice, materials were available for review in each Air Quality Control Region (AQCR) in Connecticut;
- 3) Copies of the notice were mailed to the directors of the air pollution control agencies in New York, New Jersey, Rhode Island and Massachusetts along with a copy to the Director of the Air Management Division of Region I of the U.S. Environmental Protection Agency; and
- 4) The notice of hearing was published in newspapers as follows:

| <u>Newspaper</u> | <u>AQCR</u> | <u>Date</u> |
|-------------------------------|-------------|---------------|
| Connecticut Post (Bridgeport) | 43 | July 17, 2008 |
| Hartford Courant | 42 | July 17, 2008 |

August 21, 2008
Date

Anne B. Hulick
Anne B. Hulick
Bureau of Air Management