10.0 CONCLUSION

The health effects associated with fine particulate matter ($PM_{2.5}$) are significant, due in part to its small size, which allows it to reach deep in the recesses of the lungs, as well as its ability to be a "carrier" for other toxic air contaminants. New Jersey and the other states that share New Jersey's 1997 $PM_{2.5}$ multi-state nonattainment areas are faced with the challenge of meeting the 1997 annual $PM_{2.5}$ standard. Although New Jersey and the other states that share the 1997 $PM_{2.5}$ multi-state nonattainment areas have always met the 1997 daily $PM_{2.5}$ health-based standard of 65 $\mu g/m^3$, and these levels have continued to improve since 2001, New Jersey and the other states also face the challenge of meeting the new 2006 daily $PM_{2.5}$ standard of 35 $\mu g/m^3$. Given the gravity of the health concerns associated with fine particulate matter, New Jersey approached the requirements to meet the 1997 $PM_{2.5}$ national ambient air quality standards (NAAQS) not as a finite goal, but instead as the first step in a comprehensive plan to address $PM_{2.5}$ emissions, as well as the precursor emissions that can form $PM_{2.5}$, which can include sulfur dioxide (SO_2), oxides of nitrogen (NO_x), volatile organic compounds (VOCs),[1] and ammonia. The actions taken in this proposed state implementation plan (SIP) revision, therefore, will not only ensure that New Jersey and its shared nonattainment areas will come into compliance with the 1997 annual health-based $PM_{2.5}$ NAAQS by their attainment date of 2010, but will also help the State meet a number of other particulate matter (PM)-related goals with deadlines beyond the attainment of the 1997 annual $PM_{2.5}$ NAAQS by 2010. The following other PM-related actions, that are anticipated in the near future or are already in place, comprise the rest of the State's overall plan for reducing PM-related emissions:

- Reducing Greenhouse Gas emissions in an effort to help New Jersey meet its obligations under the State's Global Warming Response Act;
- Continuing to reduce $PM_{2.5}$ emissions in an effort to meet the new 2006 daily $PM_{2.5}$ standard of 35 $\mu g/m^3$ and State's internal annual goal of 12 $\mu g/m^3$;
- Supporting the State's efforts to meet the commitments in its 8-hour ozone attainment demonstration SIP, submitted to the United States Environmental Protection Agency (USEPA) in October 2007;
- Continuing the State's on-going efforts to reduce air toxic emissions throughout New Jersey;
- The submittal of a Regional Haze SIP to establish reasonable progress goals to address visibility in the State's Class I area; and,
- Supporting the State's overarching Environmental Justice initiatives.

To meet the requirements of 42 U.S.C. § 7502(c)(1) (Section 172(c)(1) of the Clean Air Act) for the 1997 annual $PM_{2.5}$ NAAQS, New Jersey conducted two separate analyses designed to determine what additional actions the State could take to reduce $PM_{2.5}$ and $PM_{2.5}$ precursor emissions; a Reasonably Available Control Technology (RACT) analysis of emission control technologies for major stationary sources and a Reasonably Available Control Measures (RACM) analysis of emission control technologies from all other

[1] According to the USEPA, high molecular weight organic compounds (typically 25 carbon atoms or more) are emitted directly as primary organic particles and exist primarily in the condensed phase at ambient temperatures. Accordingly, high molecular weight organic compounds are considered a primary $PM_{2.5}$ emission for the purposes of the $PM_{2.5}$ implementation program (72 Fed. Reg. 20592 (April 25, 2007)).

sources (mobile and area sources). New Jersey's proposed RACM analysis identified several "reasonable" measures. However, the implementation of those measures would not advance the nonattainment areas' attainment date by one year, to April 5, 2009 (which would require demonstration of attainment by the end of 2008). The State and the federal government are acting to implement several of the measures identified as part of this analysis already to ensure the protection of public health and, for New Jersey, to move the State further toward meeting its other PM-related goals. New Jersey's proposed RACT analysis demonstrates that reductions of direct $PM_{2.5}$ emissions and its precursors, SO_2 and NO_x, from several major stationary source categories, including petroleum refineries, fugitive dust sources, municipal waste combustors, #6 fuel oil-fired boilers, and stationary diesel engines, are reasonable. New Jersey also intends to implement a long-term regional strategy to reduce the sulfur content of fuel oil consistent with the Mid-Atlantic/Northeast Visibility Union (MANE-VU) statement.[2] In addition to these internal NJDEP analyses, the State hosted its own, and participated in several regional, stakeholder processes designed to select viable control measures. These efforts identified the remainder of the control measures relied upon in either the attainment demonstration or the contingency plans. New Jersey's "Reducing Air Pollution Together" Outreach Initiative and the State's participation in regional efforts are discussed in detail in Chapter 4.

As part of this proposed SIP revision, New Jersey is proposing, in accordance with the New Jersey Administrative Procedures Act (N.J.S.A. 52:14B-1 et seq.) and the New Jersey Air Pollution Control Act, (N.J.S.A. 26:2C-1 et seq.), all the beyond all the way (BOTW) measures included in the 2009 attainment photochemical modeling. In addition, New Jersey is proposing, pursuant to the New Jersey Administrative Procedures Act (N.J.S.A. 52:14B-1 et seq.) and the New Jersey Air Pollution Control Act (N.J.S.A. 26:2C-1 et seq.), a number of other control measures that were not included in the 2009 BOTW modeling, but will result in emission reductions by 2009, as well as future measures that will result in emission reductions post-2010. These additional measures, in addition to providing additional evidence for this proposed attainment demonstration, will also provide:

1. additional public health protection in view of health effects below the NAAQS, consistent with the NJDEP's internal goal of meeting an annual $PM_{2.5}$ level of 12 $\mu g/m^3$;
2. progress toward the new 2006 24-hour $PM_{2.5}$ NAAQS;
3. additional reductions, which would be relied upon should the State not attain by 2010;
4. additional benefits toward meeting the State's other PM-related air quality goals outlined in Chapter 1 (e.g., Greenhouse Gas Initiative, Air Toxics, etc.); and,
5. the regulated community with certainty and time to identify the necessary funding to install control equipment, modify their products or usage patterns, and/or take other actions to implement pollution prevention strategies.

2 MANE-VU. Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) Concerning a Course of Action within MANE-VU toward Assuring Reasonable Progress. Adopted June 20, 2007.

Table 10.1 summarizes the State's status on its regulatory commitments for this proposed SIP revision.

Table 10.1: State Control Measure Commitments

Control Measures	Status	Notes
BOTW Measures Included in Regional Attainment Modeling *		
Consumer Products 2009 Amendments	Proposed 11/05/07; hearing held 12/10/07 with close of comments on 1/4/08	VOC reduction measure; primarily for 8-hour ozone attainment
Portable Fuel Containers 2009 Amendments	Proposed 11/05/07; hearing held 12/10/07 with close of comments on 1/4/08	VOC reduction measure; primarily for 8-hour ozone attainment
Adhesives and Sealants	Proposed 11/05/07; hearing held 12/10/07 with close of comments on 1/4/08	VOC reduction measure; primarily for 8-hour ozone attainment
Asphalt Paving	Proposal expected August 2008; compliance date 4/16/09 or 4/16/10	VOC reduction measure; primarily for 8-hour ozone attainment
Industrial/Commercial/Institutional (ICI) Boiler Rule Changes (for certain categories)3	Proposal expected August 2008; compliance dates 5/1/09-12	NO_x reduction measure; for 8-hour ozone attainment
Additional measures to provide contingency for attainment and to support attainment **		
Refinery Rules	Proposal expected August 2008	VOC, NO_x, and SO_2 reductions; NO_x and SO_2 reduction PM contingency measures
Case by Case NO_x Emission Limit Determinations (FSELs/AELs)	Proposal expected August 2008	NO_x reduction measure
High Electric Demand Day (HEDD) Program	Proposal expected August 2008; compliance dates 5/1/09-15	NO_x reduction measure
Diesel Idling Rule Changes	Promulgated 8/6/07; operative 9/8/2007	$PM_{2.5}$ and NO_x reductions; PM contingency measure
Smoke Rule Changes	Proposal expected August 2008	$PM_{2.5}$ and NO_x reductions; PM contingency measure
Municipal Waste	Proposal expected August 2008;	NO_x reductions; PM

3 Some categories have 2009 compliance dates; remainder have 2012 compliance dates.

Control Measures	Status	Notes
Combustor Rule Changes	compliance dates 5/1/09 or 5/1/10	contingency measure
Nonattainment New Source Review (NNSR) (New Jersey Subchapters 8, 18, and 22)	$PM_{2.5}$ NSR being done based on USEPA's 2008 implementation rule: a) Prior to 7/15/08: Apply interim procedures b) Post 7/15/08 and prior to NJ rule: Apply USEPA's Appendix S (40 C.F.R. pt. 51) c) NJ Rule Revision expected: 2008: Develop rule strategies 2009: Propose rule revision 2010: Adopt rule revision	Proposal after the USEPA adopts the remaining components of the implementation rule for $PM_{2.5}$ NSR.***
Asphalt Production Plants Rule	Proposal expected August 2008; compliance dates 5/1/09-12	NO_x reductions; PM contingency measure
Glass Manufacturing	Proposal expected August 2008	NO_x reductions but most benefits will occur post-2010
Certain Categories of ICI Boilers - additional credit	Proposal expected August 2008	NO_x reduction measure; PM contingency measure
NO_x RACT Rule 2006 (includes distributed generation and certain boilers)	Adopted September 8, 2005	NO_x reduction measure; PM contingency measure
Onroad Motor Vehicle Control Programs (Fleet turnover 2010)	New car standards (both Federal and State) are already adopted to provide for these benefits	Direct $PM_{2.5}$ and NO_x reductions; PM contingency measure
Nonroad Motor Vehicle Control Programs (Fleet turnover 2010)	New car standards (both Federal and State) are already adopted to provide for these benefits	Direct $PM_{2.5}$, SO_2, and NO_x reductions; PM contingency measure
Federal Clean Air Interstate Rule (CAIR) Program – Phase I 2010 SO_2 Cap	Adopted March 10, 2005 (published in the Federal Register on May 12, 2005)	SO_2 reductions; PM contingency measure
Additional $PM_{2.5}$ Stationary Source Measures		
Fugitive Dust at Stationary Sources	Proposal expected in 2009	Direct $PM_{2.5}$ reductions
#6 Fuel Oil-Fired Boilers	Proposal expected in 2009	Direct $PM_{2.5}$ and SO_2 reductions
Stationary Diesel Engines	Proposal expected in 2009	VOC, NO_x, SO_2, and direct $PM_{2.5}$ reductions

Control Measures	Status	Notes
Low sulfur distillate and residual fuel strategies	Proposal expected 2008	SO_2 reduction measure with direct $PM_{2.5}$ cobenefits

* "Beyond On the Way (BOTW)" control measures (state, regional, or federal) that have been or will be proposed by New Jersey and will include those measures that were identified as part of the effort to reach attainment by April 5, 2010.
** These measures were not included in the regional attainment modeling for 2009.
*** The $PM_{2.5}$ rule allows up to three years for states to revise their regulations and SIP. New Jersey expects the three year clock to be triggered once the USEPA adopts the remaining components of its $PM_{2.5}$ NSR implementation rules.

The USEPA has also committed to implement additional emission control measures not listed in Table 10.1. Specifically, the USEPA proposed new, small offroad engine standards and more stringent exhaust emission standards for locomotives and marine diesel engines.[4] Both of these efforts will provide additional emission reductions for 2009 and beyond. While New Jersey's $PM_{2.5}$ attainment demonstration does not rely on further emission reductions from these measures, the implementation of these measures will help support New Jersey's demonstration of attainment and will benefit air quality. New Jersey expects the USEPA to promulgate these measures in a timely fashion so that emission reductions can be achieved by 2009 and beyond.

The implementation of all of these measures will serve not only to help ensure that New Jersey's associated nonattainment areas meet their mandatory attainment date, but will ensure that New Jersey is not negatively impacting any other area's ability to meet the NAAQS through transported emissions of $PM_{2.5}$ and its precursors (see Chapter 8). The State's attainment demonstration is not only based on New Jersey's actions, but on the actions of all the other states in the region. Other states' failure to address their contribution to the New Jersey associated multi-state nonattainment areas' air quality problems could result in New Jersey's associated multi-state nonattainment areas' inability to meet their attainment goal. Therefore, New Jersey requests that the USEPA evaluate the impact of transported emissions as it reviews the SIPs, particularly those from the upwind states. In addition to meeting the interstate transport requirements in Section 110 of the Clean Air Act, the proposed SIP revision updates the State's progress in meeting the 1997 $PM_{2.5}$ Infrastructure SIP requirements (see Chapter 8).

New Jersey has included, as part of this proposed SIP revision (see Chapter 7), proposed onroad vehicle emission budgets to ensure that the plans and programs implemented by the Metropolitan Planning Organizations conform with the requirements of the SIP.

In conclusion, this proposed SIP revision provides a comprehensive plan that:

- highlights the successes of the past, demonstrates attainment of the 1997 annual $PM_{2.5}$ standard, and directs the State beyond that standard toward its other PM-related goals;
- identifies all the control measures that will be proposed in order for New Jersey, and its associated multi-state nonattainment areas, to attain the 1997

[4] Both measures are discussed in Chapter 4.

annual $PM_{2.5}$ NAAQS by the April 5, 2010 attainment date and address transport in and out of the State;
- identifies reasonably available control technology measures for $PM_{2.5}$;
- outlines the State's authority to meet Section 110 (of the Clean Air Act) requirements for the 1997 $PM_{2.5}$ NAAQS;
- provides a safety net of contingency measures in the event that the State fails to attain the 1997 annual $PM_{2.5}$ NAAQS on time; and
- sets transportation conformity budgets that allow for growth without negatively impacting the attainment of the 1997 annual $PM_{2.5}$ NAAQS in the multi-state nonattainment areas.