GEORGE E. PATAKI
GOVERNOR

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK, 12233-1010

ERIN M. CROTTY
COMMISSIONER

Kenny
Callahan
Cancro
cc: Magda/Acton (w/enclosures)
Laposta
Bellow

FEB 13 2004

Honorable Jane M. Kenny
Regional Administrator
United States Environmental Protection Agency, Region 2
290 Broadway, 26th Floor
New York, New York 10007-1866

Dear Regional Administrator Kenny: Jane —

Pursuant to the United States Environmental Protection Agency (EPA) memorandum dated April 1, 2003 from Assistant Administrator Jeffrey R. Holmstead to EPA Regional Administrators entitled, "Designations for the Fine Particle National Ambient Air Quality Standards," I am submitting New York State's designation recommendations on behalf of Governor Pataki. This information is also provided on the enclosed computer disc in the format requested.

We commend EPA for moving forward with appropriate actions for implementing the Fine Particle National Ambient Air Quality Standards ($PM_{2.5}$ NAAQS) as a means to protect human health and the environment. Governor Pataki was one of the first governors to support the new $PM_{2.5}$ standards and New York will continue to take action to address this issue. Our efforts to reduce emissions from the Metropolitan Transportation Authority bus fleet in New York City and our recently enacted Commissioner's Policy on $PM_{2.5}$ are examples of our early efforts to control $PM_{2.5}$. While we are submitting our proposed designations, we must also express our concern that EPA has not issued guidance on how to conduct State Implementation Plan (SIP) planning in $PM_{2.5}$ nonattainment areas. In order for states to move forward with comprehensive and consistent efforts to address $PM_{2.5}$, EPA must provide the modeling and procedural tools necessary to effectively develop regulations and plans.

Review of statewide monitoring data shows only certain monitors in the New York Metropolitan Area (NYMA) in violation of the $PM_{2.5}$ NAAQS. All other monitors in the State show attainment. The Department has carefully reviewed all nine factors that EPA requests be considered in determining whether to recommend area boundaries larger or smaller than the Consolidated Metropolitan Statistical Area (CMSA), noting that EPA anticipates relying on the current metropolitan area definitions (published by the Office of Management and Budget (OMB) on June 30, 1999) in establishing presumptive nonattainment area boundaries. Upon completion of this technical review (enclosed), the Department has concluded that the most effective boundary for the New York portion of this nonattainment area is the five counties comprising New York City. This recommendation is consistent with Section 107(d) of the Clean Air Act, which specifies that nonattainment areas shall include "any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant."

New York State has 38 federal reference method (FRM) monitoring sites, with 14 located in New York City. Of these 14 sites, only four have annual averages that exceed the 15 $\mu g/m^3$ annual $PM_{2.5}$ NAAQS and are located in New York and Bronx counties. We have also consulted with both New Jersey and Connecticut and believe our proposed nonattainment recommendations are consistent with both states' approaches and fairly represent the nonattainment issues in the metropolitan area.

Should you have any questions regarding these recommendations, please do not hesitate to contact me at (518) 402-8540. Should your staff have questions, please have them contact David J. Shaw, Acting Director of the Department's Division of Air Resources at (518) 402-8452.

Sincerely,

Erin M. Crotty

Enclosures

cc: Honorable Michael Bloomberg
Honorable Bradley Campbell
Honorable Arthur Rocque

NEW YORK STATE

PROPOSED NONATTAINMENT AREAS:

Area Name	Design Value ($\mu g/m^3$)	Data Set	Monitor Location	AIRS Monitor ID Number
New York City Metropolitan Area *Bronx County* *Kings County* *New York County* *Queens County* *Richmond County*	17.5	2000-2002	P.S. 59, New York County	360610056

PROPOSED ATTAINMENT: Rest of State

Analysis in Support of New York State's Boundary Recommendation for the New York City Fine Particle ($PM_{2.5}$) Nonattainment Area

Summary

Air quality data collected from the years 2000–2002, shows only certain monitors in the New York Metropolitan area (specifically in Bronx and New York counties) to have recorded exceedances of the Fine Particle ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS). Section 107(d)(1)(A) of the Clean Air Act (CAA), requires that any area that does not meet, or that contributes to nearby areas not meeting, the ambient air quality standard be designated nonattainment. The U.S. Environmental Protection Agency (EPA) April 1, 2003 guidance document entitled, "Designations for Fine Particle National Ambient Air Quality Standards," would set the presumptive boundary for the New York State portion of the $PM_{2.5}$ nonattainment area containing these monitors, to be the same as the New York State portion of the New York-Northern New Jersey- Long Island Consolidated Metropolitan Statistical Area (NY CMSA) as identified in the June 30, 1999 Office of Management and Budget (OMB) memorandum.

In determining whether the OMB census boundaries are appropriate for a given nonattainment area, the EPA guidance identifies nine specific factors to assessed. New York State has completed such an assessment and, based on that assessment, is recommending the creation of the New York City (NYC) $PM_{2.5}$ nonattainment area, to include the counties of Bronx, Kings, New York, Queens, and Richmond. Although the monitored ambient air concentrations fall off substantially such that not all these counties monitor violations of the $PM_{2.5}$ NAAQS, in recognition that emission densities throughout the five NYC counties are significant, New York recommends including all the NYC counties.

Criteria for Assessment of Boundaries for Nonattainment Areas

EPA's April 1, 2003 guidance outlined the information that states are expected to consider when making their nonattainment boundary recommendations. These factors are based on section 107(d)(1)(A) of the CAA, where the definition of a nonattainment area includes any area that does not meet, or that contributes to nearby areas not meeting, the NAAQS. For an area as complex as the New York Metropolitan area, EPA's guidance recommends that the Consolidated Metropolitan Statistical (CMSA), as given in the June 30, 1999 OMB memorandum, serve as the presumptive boundary for the $PM_{2.5}$ nonattainment area. The presumptive use of the CMSA is based on evidence that violations of the $PM_{2.5}$ NAAQS generally include a significant urban-scale contribution as well as significant regional contributions. In those cases where it is thought that changes to the presumptive boundary are appropriate, EPA's guidance requires all states to address the following factors or criteria in making such a recommendation:

- Air Quality
- Meteorological Influences (Weather and Transport Patterns)
- Population Density and Degree of Urbanization including Commercial Development
- Traffic and Commuting Patterns
- Expected Growth
- Emissions
- Geography and Topography
- Jurisdictional Boundaries

• Level of Current Emission Controls (Emission Control Potential)

Of the above factors, New York State believes the monitored $PM_{2.5}$ air quality and associated meteorological conditions that create elevated $PM_{2.5}$ episodes and clean days are the most significant.

New York City $PM_{2.5}$ Nonattainment Area Boundary Determination

At the time of EPA's guidance, the presumptive nonattainment boundary, based on OMB's 1999 memorandum as requested, would comprise the entire New York-Northern New Jersey-Long Island Consolidated Metropolitan Statistical Area (NY-NJ-LI CMSA). The New York State portion of the NY-NJ-LI CMSA (NY CMSA) included all of New York City, Long Island, Westchester, Rockland, Putnam, Dutchess, and Orange Counties. In June 2003, the CMSA boundary was revised by the Census Bureau, resulting in the NY-NJ-CT-PA Combined Statistical Area (CSA), which now includes Ulster County (Kingston MSA) in the New York portion of the CSA. Although it is not part of the CMSA as defined in OMB's 1999 boundaries, Ulster County will be addressed in this assessment.

In developing the $PM_{2.5}$ nonattainment boundary recommendation, NYSDEC consulted with both New Jersey and Connecticut Air Agencies on their respective state boundary recommendation. Each state has unique $PM_{2.5}$ contribution, spatial placement, and meteorology. This assessment addresses the nine factors of EPA's guidance for the New York State portion of the presumptive nonattainment area.

As required, the States of Connecticut, New Jersey, and New York have coordinated the recommendations to most efficiently and expediently deliver viable State Implementation Plans (SIPs) for our shared presumptive nonattainment area. In doing so, the tri-state recommendations shape the shared boundary towards the emission sources during high $PM_{2.5}$ conditions, while ensuring that all counties exhibiting nonattainment based on data from appropriately sited Federal Reference Method monitors are included. Any New York counties proposed to be excluded from the presumptive boundary meet the $PM_{2.5}$ NAAQS, and are upwind of the proposed NYC nonattainment area during our cleanest measured days.

1) Air Quality

An area with a monitor that records a violation of the $PM_{2.5}$ NAAQS must be designated nonattainment. The NYSDEC monitoring network for $PM_{2.5}$ began operations in 1999 and based on three years of monitoring data from the 2000-2002 time period, show no exceedances of the daily $PM_{2.5}$ standard anywhere in the State.

For the annual standard, monitored compliance is demonstrated when a three-year average of annual arithmetic means or Design Value (DV) from any monitor site is less than 15.05 micrograms per cubic meter. Table 1 shows each monitor in the State with its annual average and DVs. The DVs that take into account partial data that were available in 2003 are also shown. The only monitors in New York State violating the annual $PM_{2.5}$ NAAQS are located in Bronx and New York counties (highlighted in red), in the

New York portion of the NY CMSA. All other monitors in the NY CSMA are in compliance with the $PM_{2.5}$ NAAQS as shown in Figure 1. Since the other three counties of New York City and surrounding suburban counties are recording DVs that are significantly below the NAAQS it is reasonable that attainment will be secured via local control measures yet to be adopted in conjunction with existing statewide measures, including the significant NOx and SOx controls to be implemented statewide in 2005.

In addition to measurement of $PM_{2.5}$ mass concentration, collection and analysis of chemical species of $PM_{2.5}$ and meteorological analysis can help in the evaluation of emission sources contribution to $PM_{2.5}$ mass concentrations. When evaluating emissions and their impact on ambient $PM_{2.5}$ concentrations, it is important to recognize that the location and type of emissions have a significant influence on their impacts.
The major chemical components of $PM_{2.5}$ are sulfate, nitrate, ammonium, organic carbon, elemental carbon, and crustal-related compounds (soil or dust). The proportions of these compounds vary by location and are influenced by local source contribution and regional transport attributed to meteorological conditions.

Figures 2 and 3 show the average contribution to $PM_{2.5}$ compounds for high and low PM days measured at the New York Botanical Garden (NYBG) monitoring site located in the Bronx. The Bronx site represents an urban location, which is typical of the proposed $PM_{2.5}$ boundary for New York City. Comparison of the sulfate fraction and mass shows that sulfate is much higher for the high $PM_{2.5}$ days. These figures also show the reverse for organic carbon. In general, sulfate and organic carbon are strong regional contributors to both rural and urban $PM_{2.5}$ concentrations monitored in New York State. Examination of meteorological back trajectories of weather patterns (discussed in criterion 2) on high $PM_{2.5}$ days reveals that the New York City airshed is not being significantly affected by emissions within the air mass passing through the suburban New York City counties in the NY CMSA. Therefore, New York City $PM_{2.5}$ high levels are not being influenced by transport from its surrounding counties in the NY CMSA. Additionally, Figure 4 shows a comparison of average concentration of carbon species from the NYBG urban site in the Bronx to the Pinnacle State Park rural site located in Western New York State. As would be expected, nitrate concentrations are higher at the urban location than at the rural location, indicating that the urban sources of nitrate precursors (ammonia and nitric acid) are presented at higher concentrations. Figures 2 and 3 for the NYBG high and low $PM_{2.5}$ days also show higher nitrate and ammonia percentages for the high days analyzed confirming local urban source impacts. In the next section the likely location of this intra-nonattainment area contribution will be discussed.

2) Meteorological Influence

In order to investigate the influence of weather patterns on observed $PM_{2.5}$ mass concentration in New York City, the HYSPLIT4 model was used to calculate and plot 24-hour back trajectories. The historical $PM_{2.5}$ mass concentration data from the P.S. 59 monitor site, which has recorded the highest annual concentration of $PM_{2.5}$, were sorted from highest to lowest. The dates corresponding with the 15 highest and 15 lowest concentrations (the dirtiest and cleanest days) were chosen for analysis. For each of these dates, the HYSPLIT4 model along with the Eta Data Assimilation System (EDAS) data sets were used to calculate the 24-hour back trajectory ending at an elevation of 500m over Manhattan at noon. Information on the HYSLIT4 model can be found at the National Oceanic Atmospheric Administration web site: www.arl.noaa.gov/ready/hysplit4.html.

Each back trajectory is represented on the maps as a string of 24 dots, with the final one over New York County (not shown). The relative speed of movement over the 24-hour period can be inferred from the spacing of the dots. In some cases, the dots are widely spaced early in the period, then much more closely spaced as one approaches New York City. This would indicate that the air mass was moving relatively quickly early in the 24-hour period, then slowed down as it neared New York City. This is significant because closely spaced dots (slow-moving air) near New York City are indicative of poor dispersion, which magnifies the local contribution to $PM_{2.5}$ mass relative to the regional transport contribution.

The resulting data plots (Figure 5) clearly indicate that the New York counties that are part of the NY CMSA but outside of New York City are not significant contributors to high $PM_{2.5}$ in Manhattan. On only one of the 15 highest-PM days did the air mass flow through any New York counties outside of New York City on its way to New York City. On that date, the air mass was moving very slowly as it approached New York City, indicating that winds were very light. Under these conditions, dispersion is poor, and local emissions within New York City were likely responsible for a larger-than-usual portion of the total observed $PM_{2.5}$ mass. A look at the remaining 14 back-trajectories for high PM days suggests that the dirty days are due to a combination of long-distance transport from the Ohio Valley region, emissions in New Jersey and eastern Pennsylvania, and stagnation (which causes NYC emissions to build up over NYC). In contrast, the plots for the 15 cleanest days (Figure 6) show that, on 13 of the 15 cleanest days, the air masses did flow through some of the New York counties that are within the NY CMSA but not within New York City. The combination of these two analyses shows that Ulster, Westchester, Rockland, Putnam, Dutchess, Orange, Nassau, and Suffolk counties are not significant contributors to the observed high $PM_{2.5}$ mass concentrations that must contribute to nonattainment within Bronx and Manhattan.

3) Population Density and degree of Urbanization Including Commercial Development (Significant Differences From Surrounding Area)

To address the population density and degree of urbanization criterion various demographics and economic indicators were examined for New York City, Long Island, and the Mid-Hudson Valley counties comprising the NY CMSA with the addition of Ulster County (see the New York City $PM_{2.5}$ Nonattainment Area Boundary Determination discussion above). Since the nonattainment boundary is being proposed for only New York City, demographics and economic data relating to the five New York City boroughs are aggregated and compared to the rest of the presumptive NY CMSA counties as a whole. Population and housing units densities as a percent of the NY CMSA total are shown in Figures 7 and 8, respectively, and are based on 2000 census data. Figure 9 depicts the percentage density of employment establishments in the NY CMSA based on 1997 economic census data. Due to its concentrated population and relative land area size, the densities within New York City significantly dominate those of the rest of the NY CMSA area. The concentration of population, housing units and employment establishments in New York City proportionately reflects its extensive urbanization and commercial development when compared to the rest of the NY CMSA. Table 2 contains relevant census summary data.

4) Traffic and Commuting Pattern

Traffic and commuting patterns within the NY CMSA are complex and diverse, and reflect the differences in population and employment establishment densities between New York City and the surrounding counties as shown in the figures for criterion 3. To assess commuting patterns, the 2000 census data county-to-county worker destination files were examined. These files provide the worker destinations for people by county. Figure 10 shows the 2000 census aggregated commuting destinations by geographical areas within the NY CMSA. The other destination represents commuting outside of the NY CMSA. Figure 11 shows the percentage of these workers commuting to New York City with the preponderance of the work commute, approximately 87 percent, being performed by New York City residents.

To further illustrate commuting patterns, Figure 12 depicts the commuting destination of Mid-Hudson and Long Island combined commuters. Similar to Figure 10, the substantial majority of the commute destinations occur within each geographical area.
The census county journey to work and commuting pattern provide insight on traffic emission air quality impact. As would be expected given New York City's extensive transit infrastructure, the majority of the journey to work is done by public transportation as shown in Figure 13.

For the rest of the NY CMSA, the majority of the journey to work is done by driving alone as shown in Figure 14. However, it should be noted that the rest of the area contribution is approximately 13 percent of the commute into New York City as was shown in Figure 11, with the majority of the commuting destination occurring within specific geographical areas. In addition to census journey to work data, the New York Metropolitan Transportation Council (NYMTC) 1997/98 regional travel household interview survey provides a rich resource on travel behavior in the NY CMSA. The household interview survey provides regional insight on trip origin, destination, purpose and mode of travel. The survey agrees with the census commuting pattern that travel predominately occurs within county. In summary, these journey-to-work data indicate that most trips to work are within a NYC bounded nonattainment area and use public transit modes. NYMTC survey findings can be found at the NYMTC website: http://www.nymtc.org.

5) Expected Growth

The NYMTC's regional population, labor force, and employment 2000-2025 regional trend adjusted forecast were examined to determine expected growth within the NY CMSA. The regional forecast data are summarized in Table 3 (a, b, & c). Population forecast for the counties in the NY CMSA by geographical areas in five-year increments through 2025 are shown in Figure 15. The aggregated population projection annual growth for Long Island and Mid-Hudson counties over the 25-year period are 0.4 percent and 0.6 percent, respectively, and 0.2 percent for New York City. Figures 16 and 17 show the associated area workforce and employment projection trends. These trends are analogous to the Figure 15 population growth trend but with slightly higher growth trends for each area. The expected growth rates of the surrounding areas are higher than New York City; however, if these growth projections were considered on a density basis, the resulting densities would be similar to those shown in criterion 3 with New York City significantly out weighing the other areas. Table 3d shows forecasted daily vehicle miles traveled (DVMT) within the NY CMSA. The DVMT distribution correlates to the traffic and commuting patterns discussed in criterion 4.

6) **Emission Inventory**

Fine particulate consists of both primary and secondary particles. Primary particles are generally coarse particles that are usually directly emitted into the atmosphere from motor vehicles, power generation facilities, industrial facilities, residential wood and forest burning sources. Secondary particles are formed from precursor gases reacting in the atmosphere from the combination of various pollutants: oxides of sulfur (SO_x), oxides of nitrogen (NO_x), volatile organic compounds (VOCs), and ammonia (NH_3). These pollutants are emitted from many of the same emission sources as precursors of ozone. EPA's 1999 National Emission Inventory (NEI) final version 3 provides the most complete set of data for point, area, non-road, and on-road mobile sources for $PM_{2.5}$, VOC, NO_x, SO_x, and NH_3 emissions by counties in the NY CMSA. New York State has previously expressed various concerns to EPA about the NEI methodology and accuracy, and also disagreed with the 1999 NEI regarding the (population) distribution of the highway emissions data for this part of New York State in particular. While it may be appropriate for statewide mobile source emissions totals, the vehicle use in the New York City and the rest of the metro area does not correlate well with the resident population numbers. However, to address this particular criterion for boundary determination and for comparison purposes only, the total emissions of all four sources from the NEI are being presented in Figure 18, as emission densities by geographical areas, in the NY CMSA.

NYSDEC is currently assessing its stationary point and area sources $PM_{2.5}$ emission inventory preparation plans since the inventory will be a necessary component of its $PM_{2.5}$ State Implantation Plan, which must be submitted three years after designation. Preliminary estimates for both stationary and area sources $PM_{2.5}$ emission inventory will be available within the next month after the state boundary recommendation submittal. However, NYSDEC has developed preliminary 2002 ozone season (summer) daily mobile source emissions and annual major stationary point source emissions. Table 4a shows $PM_{2.5}$ on-road vehicle emission using Mobile6.2 and paved road dust emissions using EPA's AP42 paved road dust methodology. Table 4b shows non-road emissions for only the non-road equipment sources using the NONROAD model. For major stationary point source, Table 4c shows total particulate matter emissions along with VOC, NO_X, CO and SO_2 emissions. At this time, relative area source impacts might be assessed through review of the NEI numbers in Figure 18.

7) Geography / Topography (mountain ranges or other air basin boundaries)

Review of historical data trends, relevant meteorology and back trajectories indicate that the varying regional topography is not a dominant factor in $PM_{2.5}$ production or accumulation. The combination of the various topography, meteorological, and spatial emissions features interact in such a way that the clean areas do not significantly contribute to nonattainment beyond the New York City portion of the NY CMSA.

8) Jurisdictional Boundaries

The five counties, or boroughs, of New York City represent a distinct jurisdiction boundary compared to the other areas in the New York portion of the CMSA. New York City has historically forged ahead and partnered with New York State to develop emission control strategies to address excessive pollutant levels because of its high degree of urbanization and proactive policies. Additionally, its jurisdictional boundaries are further delineated within the New York Metropolitan Transportation Council, the Metropolitan Planning Organization for Rockland, Westchester, Nassau and Suffolk counties and New York City. The NYMTC serves as the central planning body for three Transportation Coordinated Councils (TCCs): New York City TCC, Nassau Suffolk TCC and Mid-Hudson TCC**.** These three TCCs are independent of each other, each developing Transportation Improvement Programs (TIPS) based on respective transportation needs.

9**) Level of Current Emission Controls (Emission Control Potential)**

The level of emission control in New York City has been very extensive since it is a 1-hour ozone nonattainment area. All counties in the presumptive $PM_{2.5}$ boundary, except Ulster county and a portion of Orange county, are part of the severe 1-hour ozone nonattainment area. The State Implementation Plan for ozone, "Phase II Alternative Attainment Demonstration," includes documentation of how the affected area will attain the 1-hour ozone standard by the year 2007, and also contains target calculations for the post-1999 Rate of Progress milestone years 2002, 2005 and 2007. The revision also contains a schedule for the adoption and implementation of the Phase III NOx emission reductions for large stationary sources agreed to through the Memorandum of Understanding (MOU) among the States of the Ozone Transport Commission (OTC). Table 5 shows a listing and description of New York State air pollution regulations already in place that will have primary and secondary $PM_{2.5}$ benefits in the NY CMSA.

In addition to ozone, New York City, Westchester and Nassau counties were previously designated as a nonattainment area for carbon monoxide (CO). To abate CO levels and bring the area into attainment, the State has submitted numerous CO SIP revisions containing localized and area-wide control measures starting from the early eighties to its Maintenance Plan submittal in 1999. To secure future maintenance, and as required by the CAA saving provisions, previously enacted CO measures used to serve attainment are still applicable and provide ancillary $PM_{2.5}$ benefits. Some of the local and area-wide measures in the CO SIP and subsequent revisions include: parking and commercial delivery restrictions, traffic flow and parking enforcement, excessive truck and bus idling limitation, and the taxi enhanced inspection and maintenance (I/M) program. The New York City taxi enhanced I/M program is similar to the enhanced requirement for automobiles in the ozone nonattainment area; however, because of taxis' high annual mileage accrual, they are required to undergo emissions inspection three times a year rather than the once per year for regular passenger vehicles.

In reviewing emission controls, it is important to discuss major initiatives currently underway in the greater New York City region to reduce emissions, especially those from mobile sources. For on-road vehicles, particulate emissions include emissions that are directly emitted (e.g., vehicle exhaust, tire, and brake wear), indirectly emitted (e.g., dirt or other materials from vehicles) and re-entrained surface road dust. The level of on-road particulate emissions depends on various factors such as vehicle type and condition, roadway type, and climate. NYSDEC has performed chemical mass balance analysis of Midtown Manhattan curbside monitoring samples showing the diesel tailpipe contribution to be a major component of particulate matter total loading. This most significant diesel contribution can be directly attributed to transit diesel buses that operate in the area.

In New York City, the Metropolitan Transportation Authority (MTA) owns the largest transit bus fleet in the nation with nearly 4,500 transit buses operated by New York City Transit (NYC Transit). Additionally, the New York City Department of Transportation (NYCDOT) owns over 1,100 buses, which are operated under franchise agreements with seven private operators around the City. To address air pollution from its fleet, the MTA has embarked on an ambitious clean bus program retiring older buses with replacements that are either alternative fueled and/or are retrofitted with particulate controls while operating on ultra low sulfur diesel (ULSD) fuel. The following is a synopsis of MTA and NYC Transit clean bus program as presented at the 2002 National Alternative Fuel and Environmental Summit in New York City:

MTA/NYC Transit currently operates a fleet of 4,489 buses. Of these, 221 are CNG buses, and 10 are hybrid electric. While not an alternative fuel, the remainder of the fleet (approximately 4,250) is operating on ULSD fuel, with conventional diesel having been phased out completely since September 2000. MTA/NYC Transit has installed diesel particulate filters (DPFs) on approximately 1,000 buses and has committed to install DPFs on the entire diesel fleet. MTA/NYC Transit has also committed to retire all pre-1993 two-stroke diesel engines from the bus fleet and in order to meet that commitment has already "repowered" more than 300 buses with new diesel engines equipped with exhaust gas recirculation and DPFs. MTA/NYC Transit currently has an additional 255 CNG buses and 325 hybrid electric buses on order, which are currently on schedule to be delivered. Beyond these buses on order, MTA/NYC Transit has committed to purchase an additional 50 hybrid electric buses and 170 CNG buses by 2005. The NYCDOT also operates a fleet of CNG buses, which are operated by the NYCDOT franchise bus fleets, including Queens Surface (147 CNG buses), Command Bus (111 buses) and Triboro Coach (96 buses). Jamaica Bus and Green Bus have not yet been converted. Fueling stations are currently located at Queens Surface and at Triboro Coach, with facilities for NY Bus, Jamaica Bus and Green Bus in the design planning stages. The NYCDOT has committed to purchasing only new CNG buses, and currently owns 354 CNG buses and plans to purchase approximately 350 additional CNG buses through 2005. The current CNG fleet represents approximately 28 percent of the total NYCDOT transit bus fleet.

Other sources of potential on-road diesel emissions include: the New York City Department of Sanitation (NYCDOS) fleet of 2,566 garbage trucks; heavy and medium size delivery fleets that populate the City streets; and, the New York City Board of Education fleet of over 5,000 contract school buses that serve its districts. To address health concerns associated with school bus emissions, the New York Power Authority

(NYPA) has recently proposed funding to retrofit with exhaust particulate controls, 1,000 school buses in New York City to be fueled with ULSD. Another school bus initiative currently underway is the New York State Energy Research and Development Authority (NYSERDA) Clean Air School Bus Program for the funding of emission-reducing technology on school buses. The NYPA has also funded a collaborative Truck Stop Electrification Project (TSE project) at the Hunts Point Market in the Bronx to reduce excessive diesel idling. The TSE project, administrated by the Northeast State Center for A Clean Air Future (NESCCAF) under its clean air communities program, provides docking stations for truck and refrigerated trailer electrification. The New York Thruway Authority and NYSDOT has proposed similar truck docking stations at several Thruway rest stops.

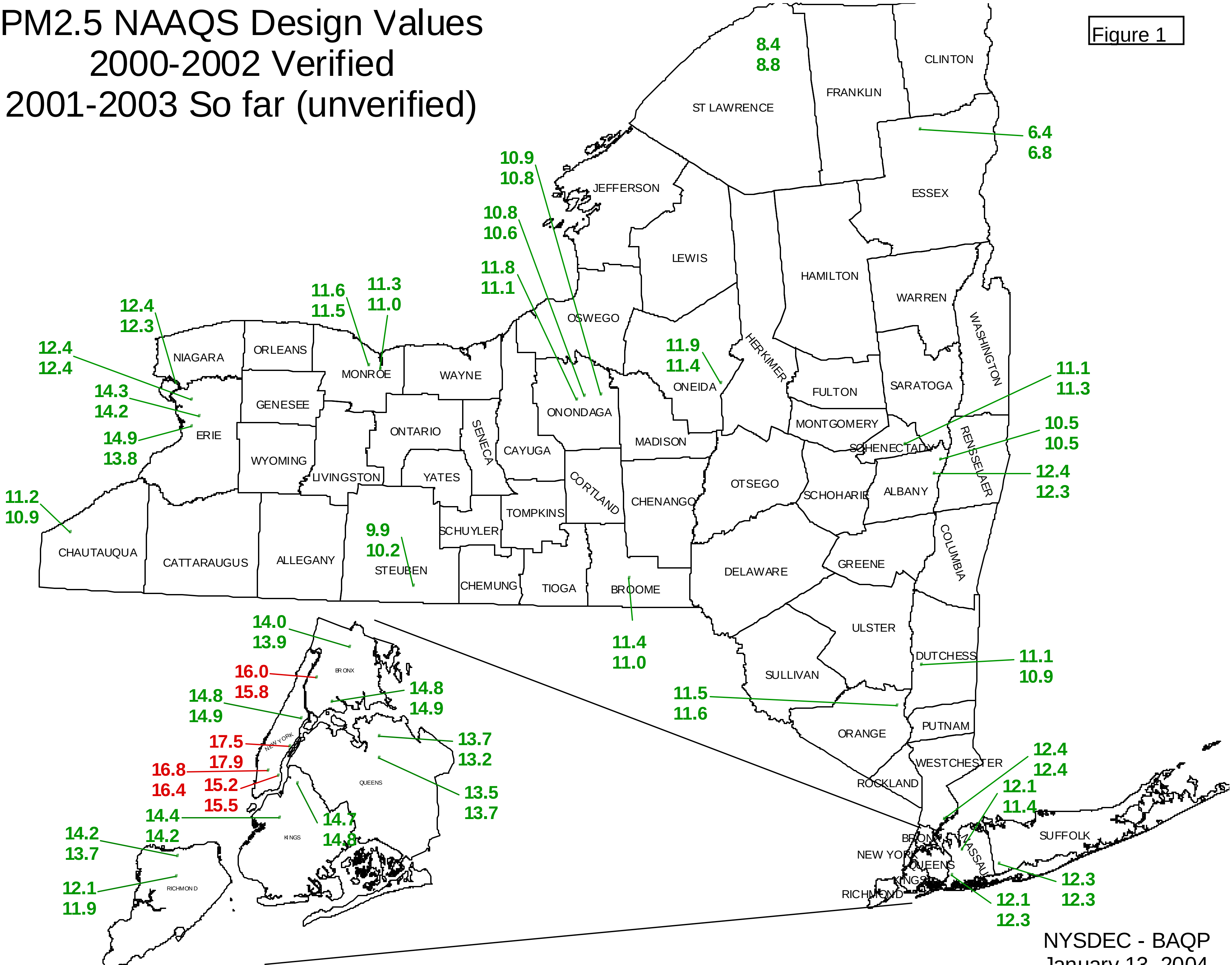
The non-road sector represents another significant potential source of $PM_{2.5}$ emissions, especially from construction activities and ferry boat operation. The September 11th tragedy has brought into focus air quality concerns with the rebuilding of lower Manhattan. State agencies involved in the rebuilding effort have all committed to the use of ULSD fuel and best available retrofit technology to reduce fine particulate matter and nitrogen oxides (NOx) emissions from construction machinery. Furthermore, New York City has recently enacted a local law requiring diesel-powered non-road vehicles that are owned by, or operated by city agencies to use ULSD fuel. City funded construction projects must also use cleaner-burning, ULSD fuel, and to be equipped with the best available technology to minimize diesel pollution. The increase in ferry rider ship and operation after the September 11th tragedy made it a prime source for emission controls. Initiatives currently underway to evaluate potential ferry emission controls include: NYSERDA funding proposal to identify, analyze, and demonstrate selected emissions reduction strategies for existing private ferry boats operating in the New York City Harbor; and New York/New Jersey Port Authority (NYNJPA) and NYCDOT Staten Island ferry boat demonstration project to retrofit with new NOx and PM exhaust emission reduction devices in conjunction with ULSD fuel.

With regard to stationary sources, on October 1, 2004, 6 NYCRR Part 237, Acid Deposition Reduction NOx Budget Trading Program, will become effective. This rule will reduce NOx emissions from fossil fuel fired electricity generators all year long to the 0.15 pounds per million BTU level now required by Part 204 during the ozone season. 6 NYCRR Part 238, “Acid Deposition Reduction SO2 Budget Trading Program” will, by January 1, 2005, require a reduction in SO2 emission to 25 percent below the levels allowed by Phase 2 of the federal acid rain program. By January 1, 2008, these sources must collectively reduce emissions by 50 percent below the Phase 2 federal acid rain baseline.

Finally, there are numerous federal programs to control particulates and associated precursors from numerous sources such as limiting SOx, NOx, and PM emissions from new and modified commercial/industrial boilers, Class III Marine Engines PM, NOx, and SOx emission limits, and the federal motor vehicle control program for lowered SOx, NOx, and PM from all new highway diesel engines, and new gasoline fueled vehicles. The EPA is currently considering similar emission limits for new Diesel Non Road (NR) engines as well. That NR rule is expected to be promulgated in April or May of 2004.

PM2.5 NAAQS Design Values
2000-2002 Verified
2001-2003 So far (unverified)

Figure 1



NYSDEC - BAQP
January 13, 2004

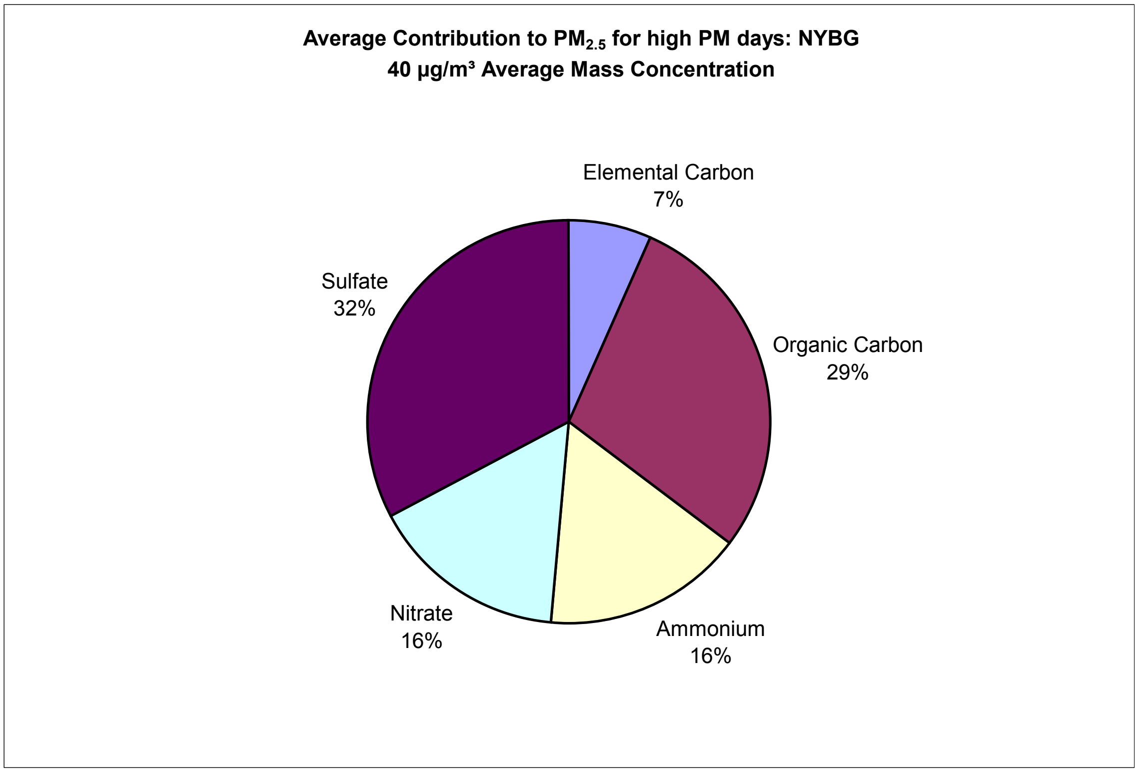


Figure 2:

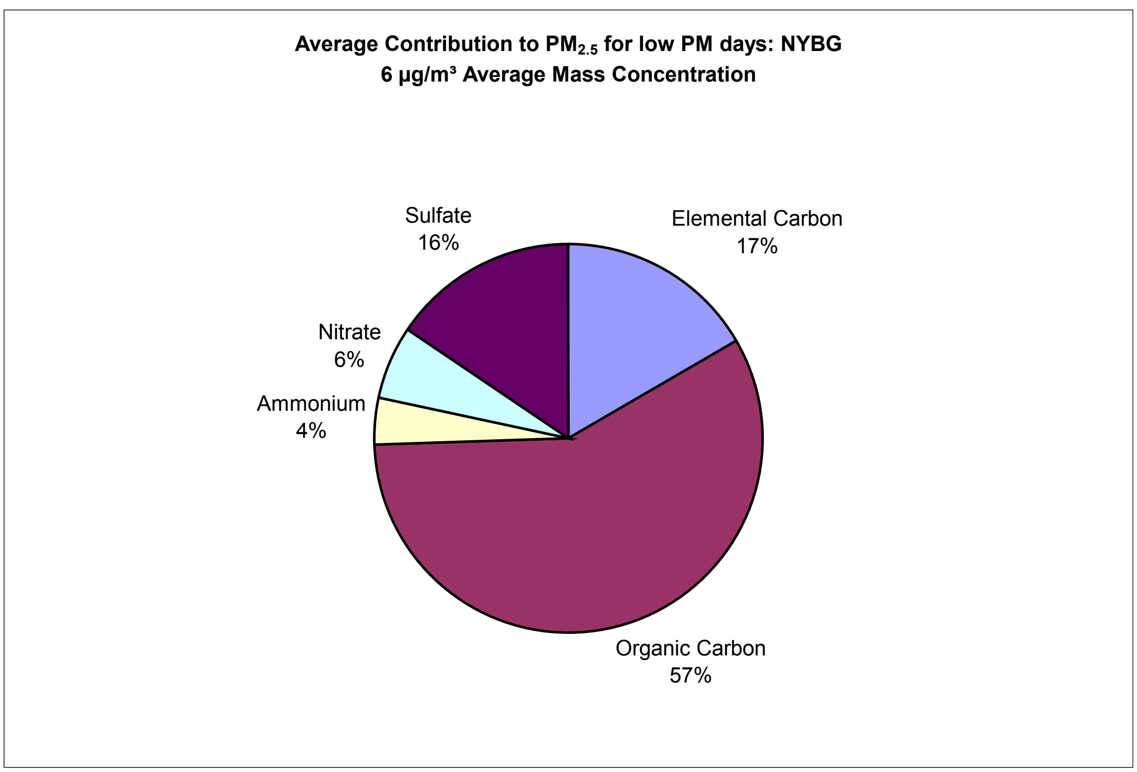


Figure 3:

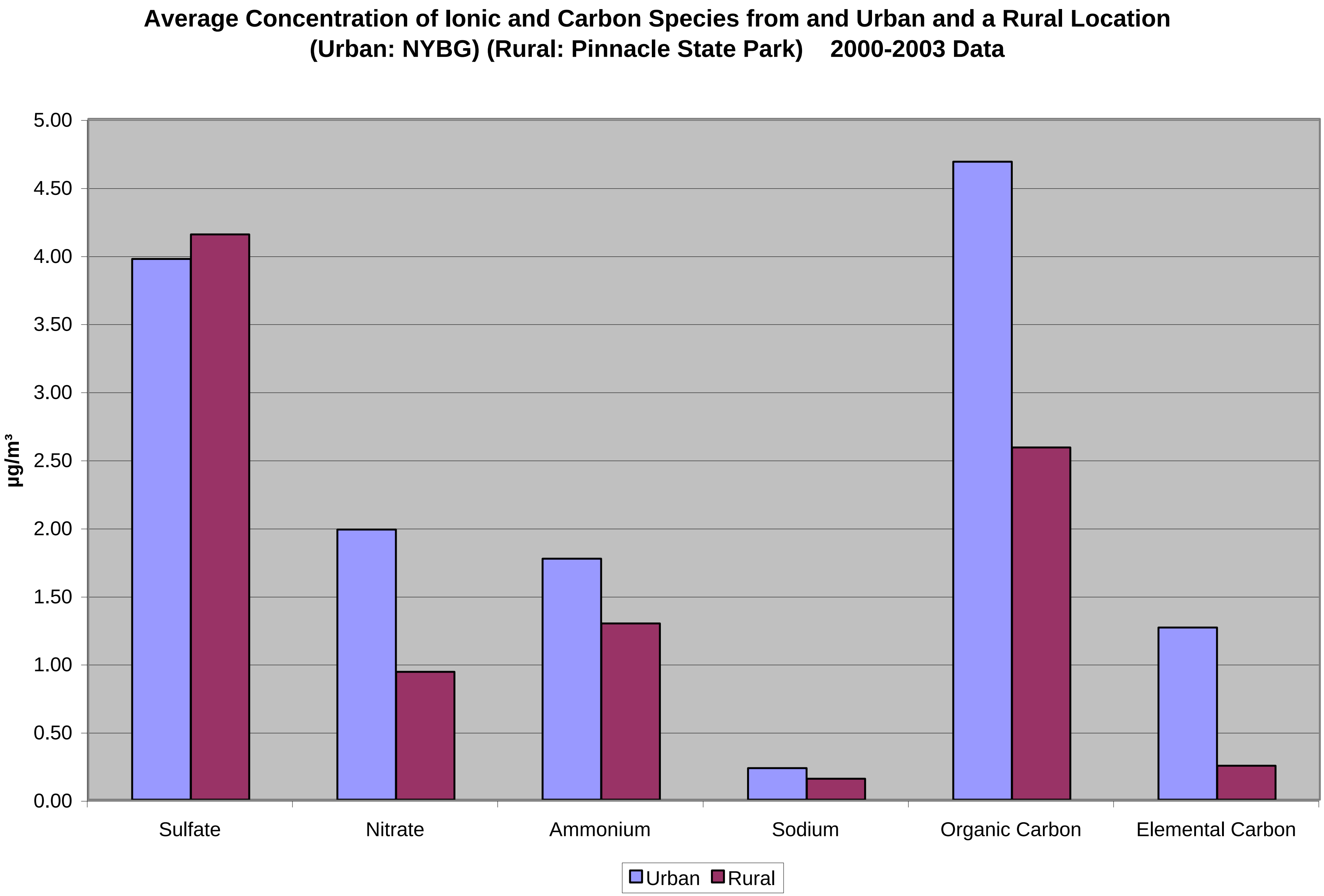
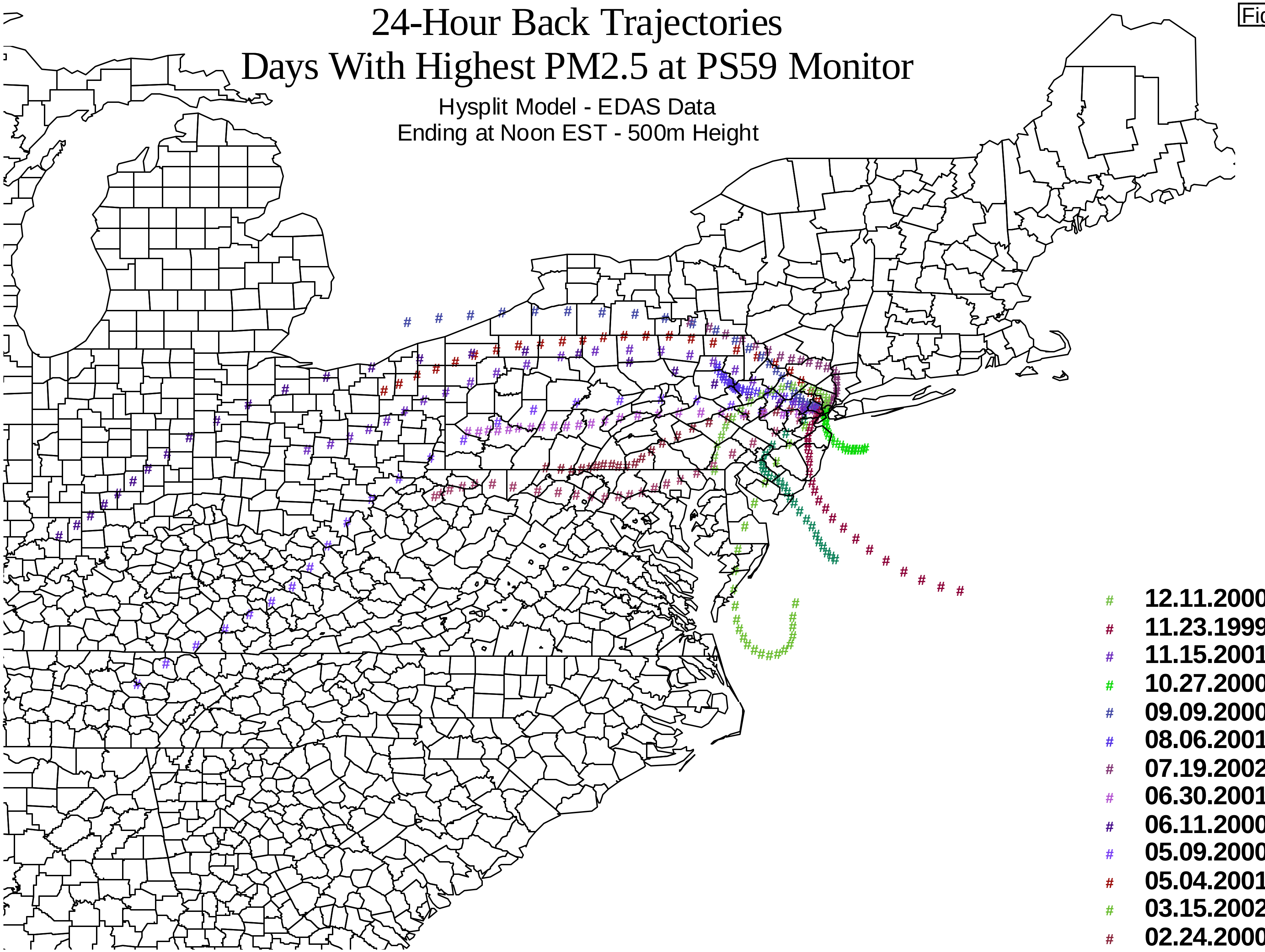

Average Concentration of Ionic and Carbon Species from and Urban and a Rural Location
(Urban: NYBG) (Rural: Pinnacle State Park) 2000-2003 Data
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
µg/m³
Sulfate
Nitrate
Ammonium
Sodium
Organic Carbon
Elemental Carbon
Urban
Rural

Figure 4

Figure 5

24-Hour Back Trajectories
Days With Highest PM2.5 at PS59 Monitor

Hysplit Model - EDAS Data
Ending at Noon EST - 500m Height

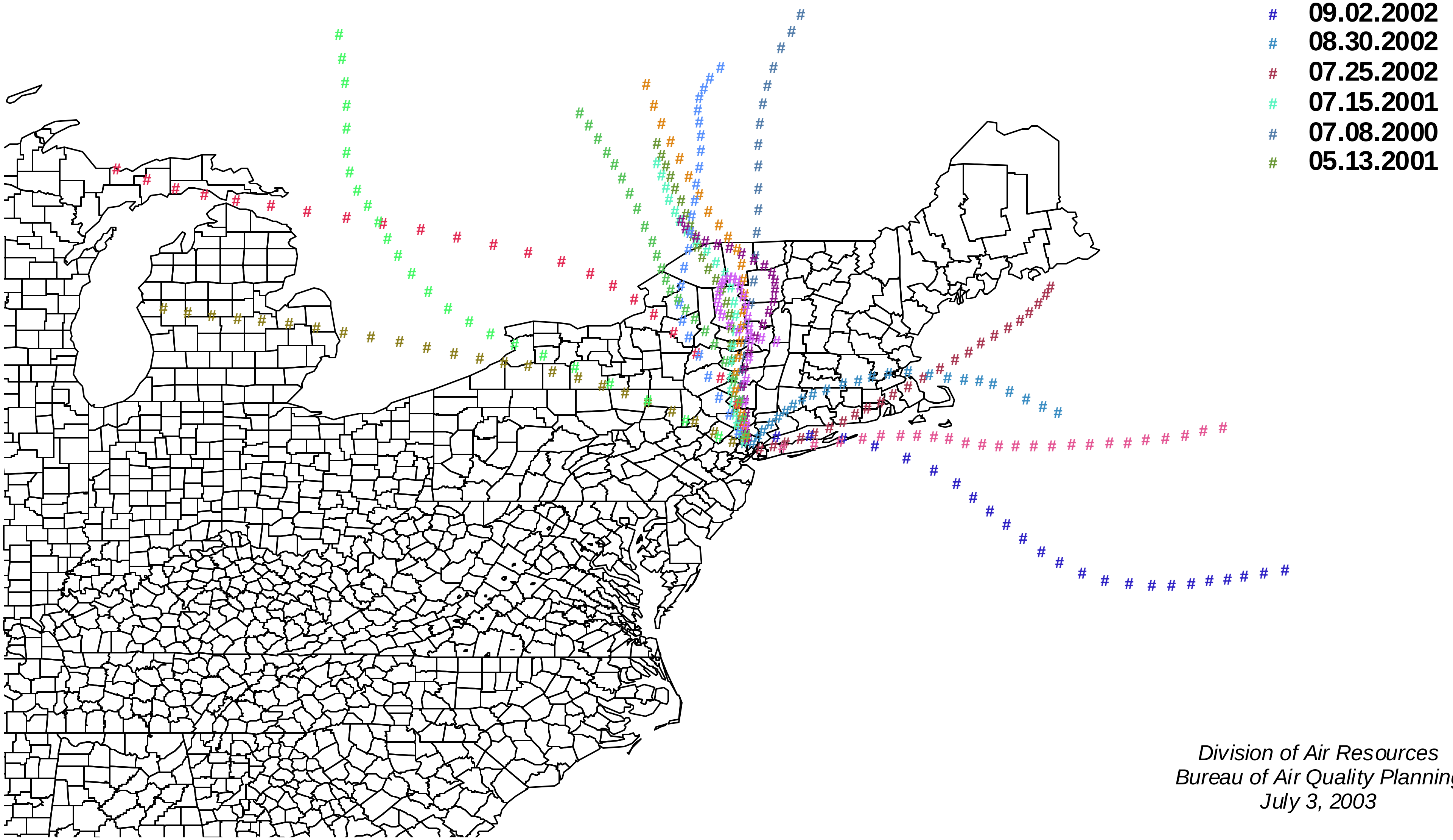


Division of Air Resources
Bureau of Air Quality Planning
July 3, 2003

24-Hour Back Trajectories
Days With Lowest PM2.5 at PS59 Monitor

Hysplit Model - EDAS Data
Ending at Noon EST - 500m Height

Figure 6



Division of Air Resources
Bureau of Air Quality Planning
July 3, 2003

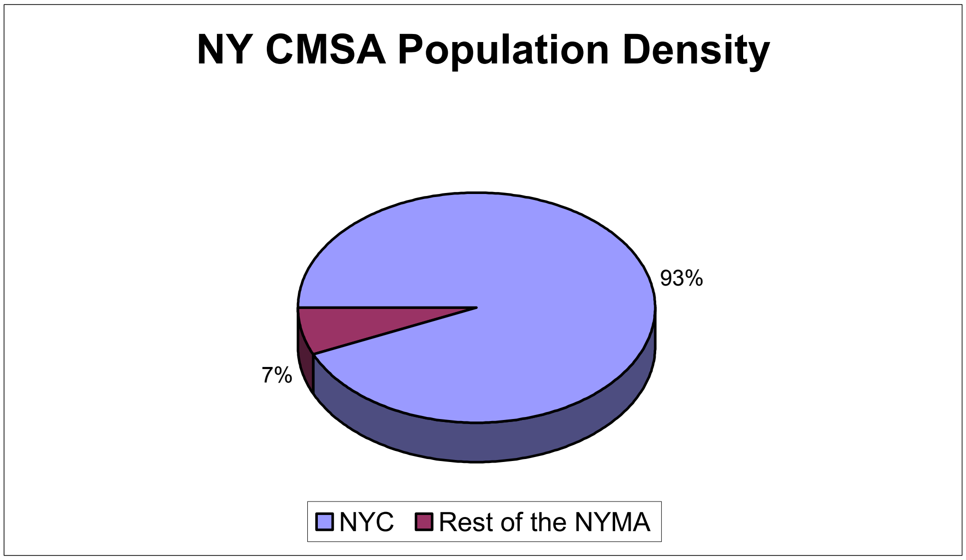


Figure 7

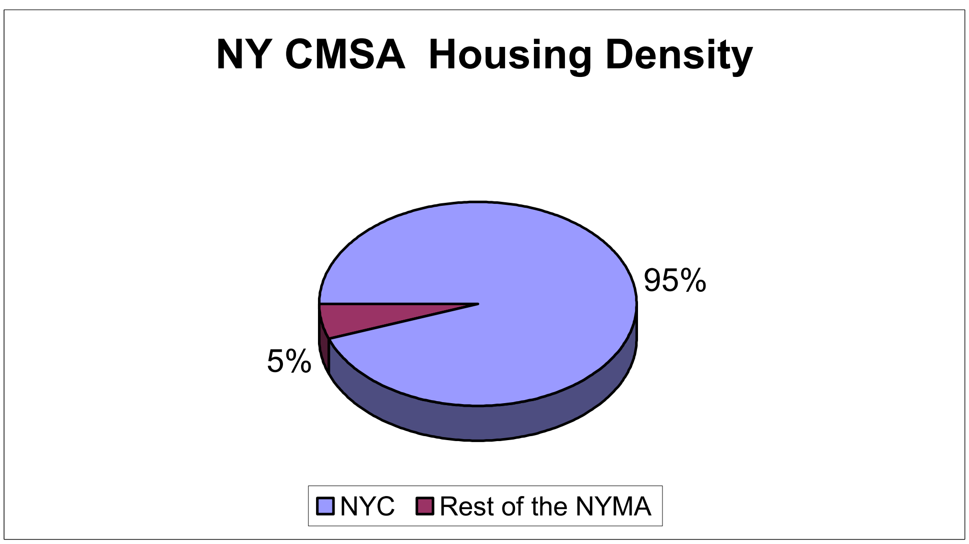
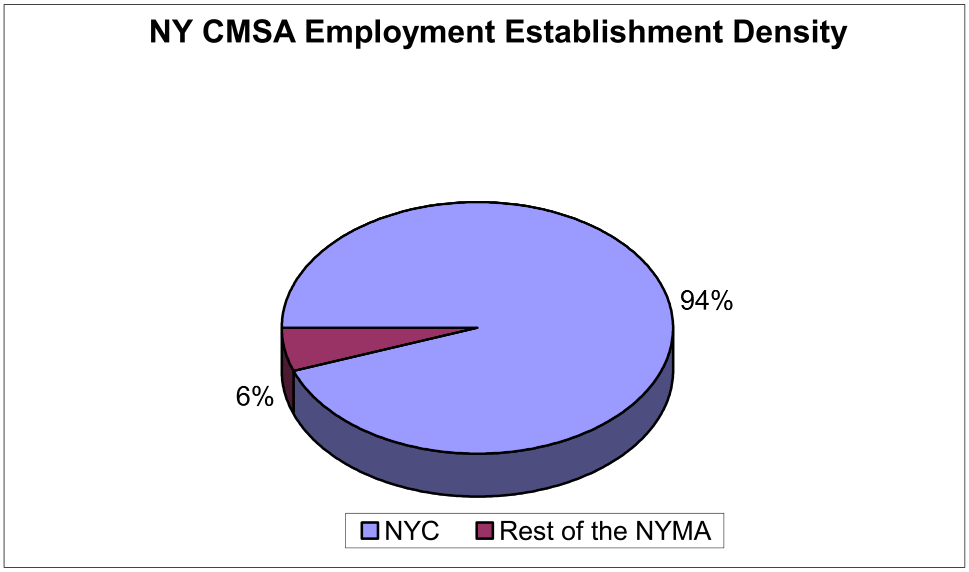


Figure 8



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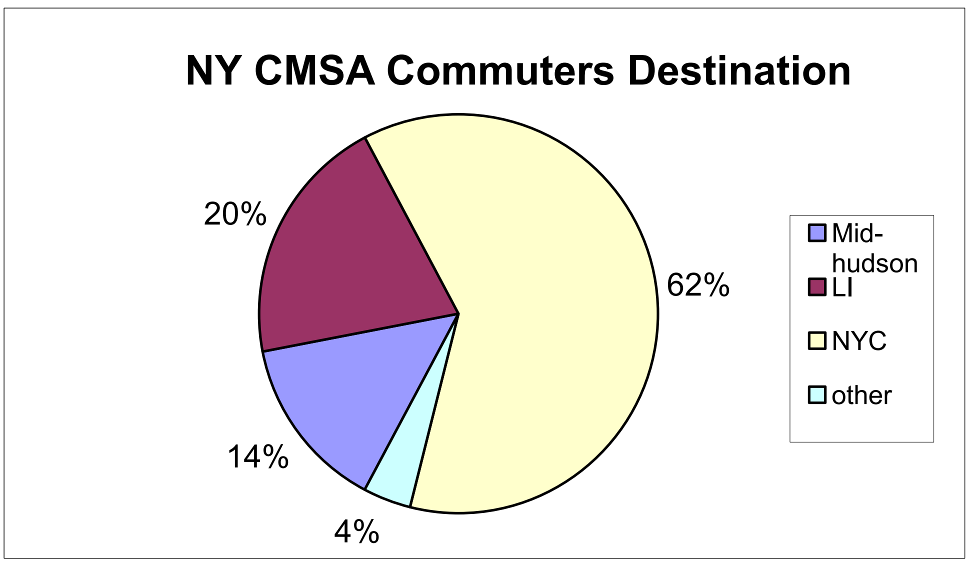


Figure10

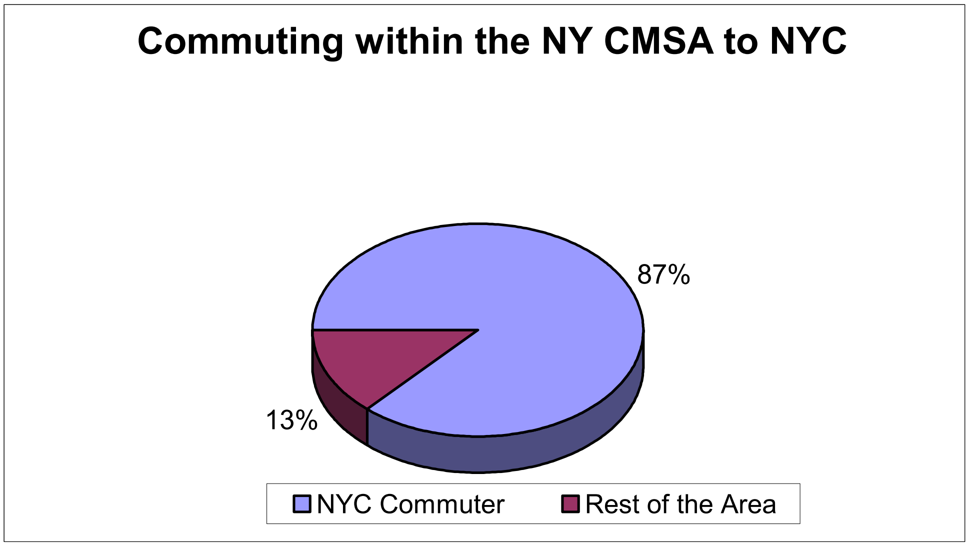


Figure 11

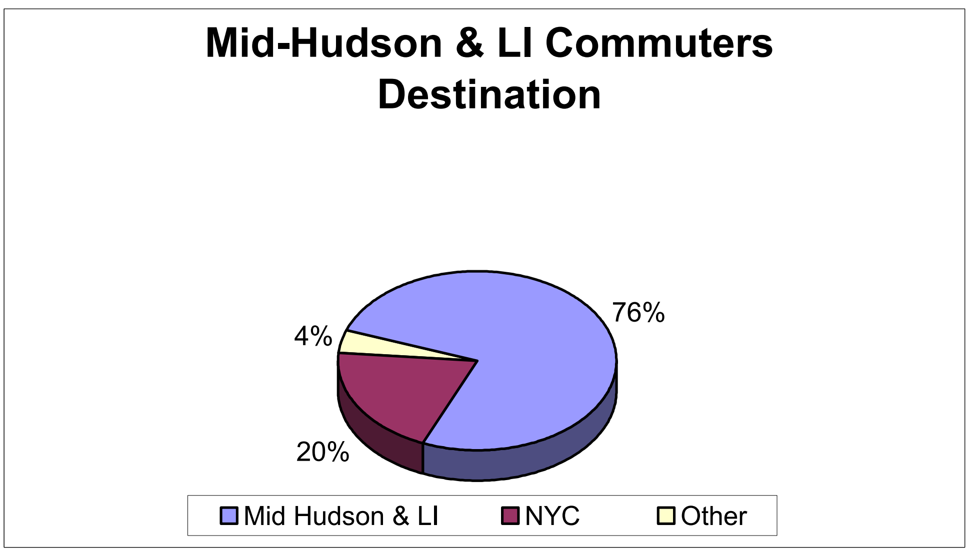


Figure 12

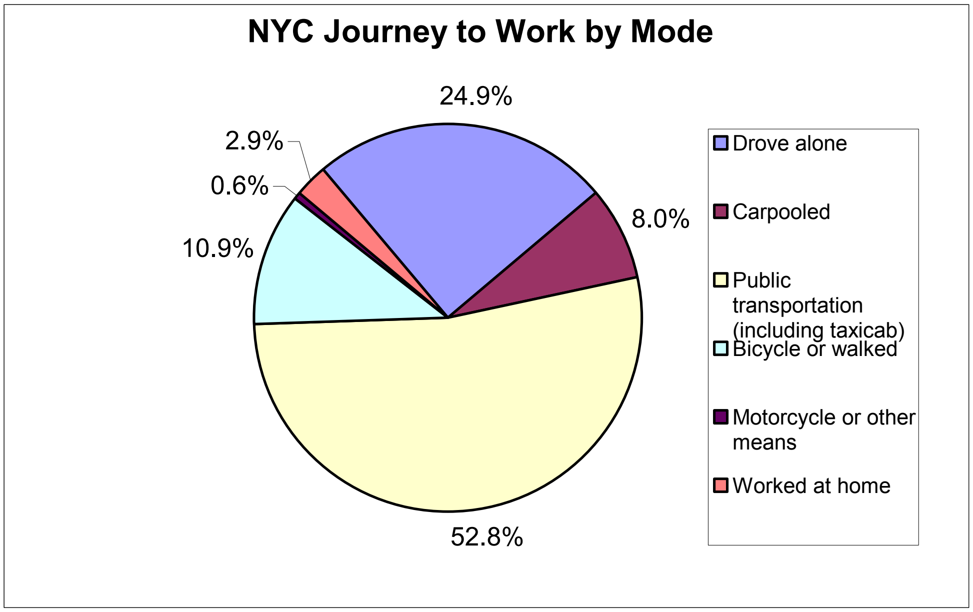


Figure 13

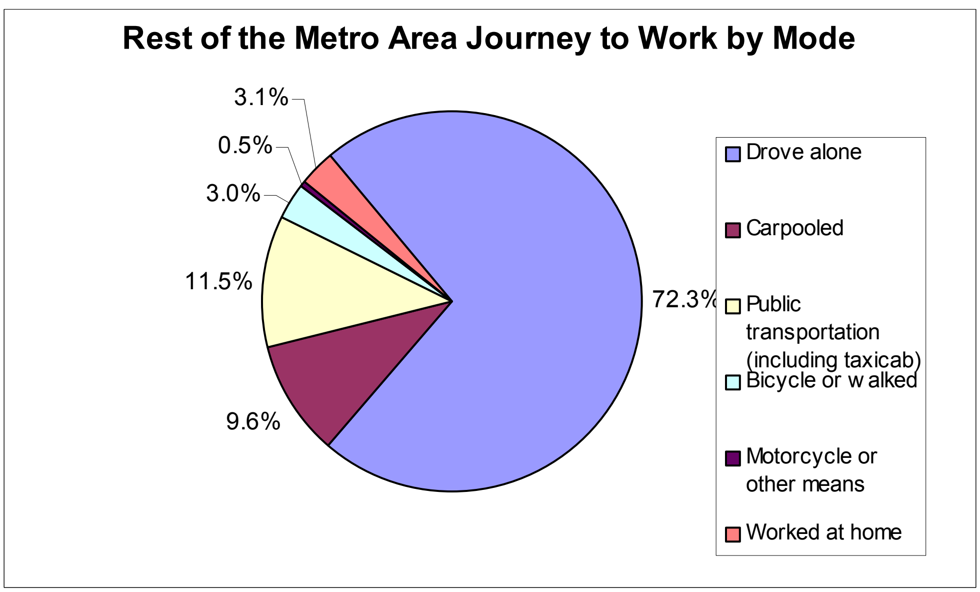


Figure 14

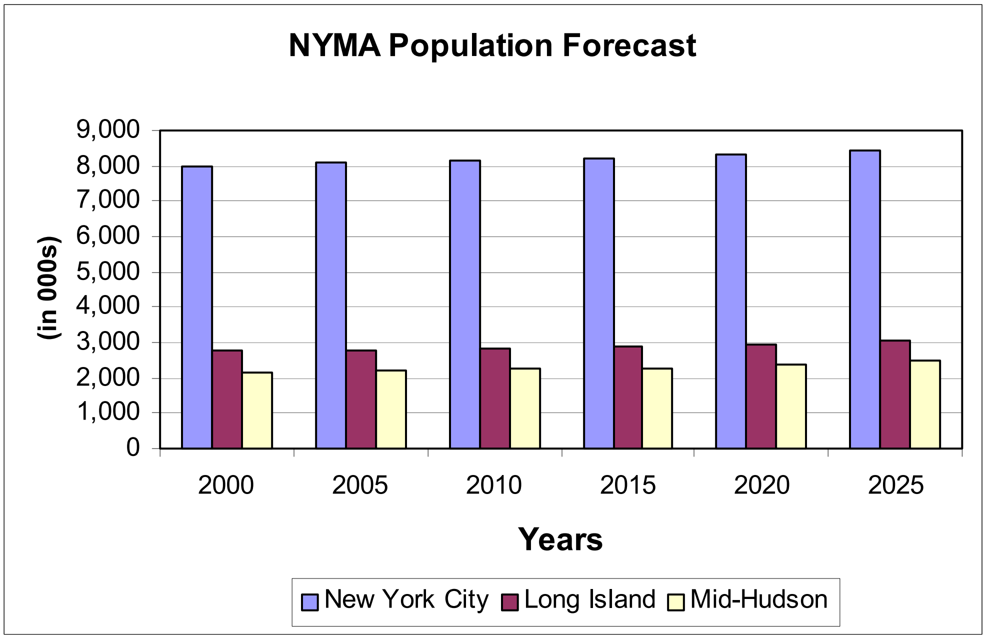


Figure 15

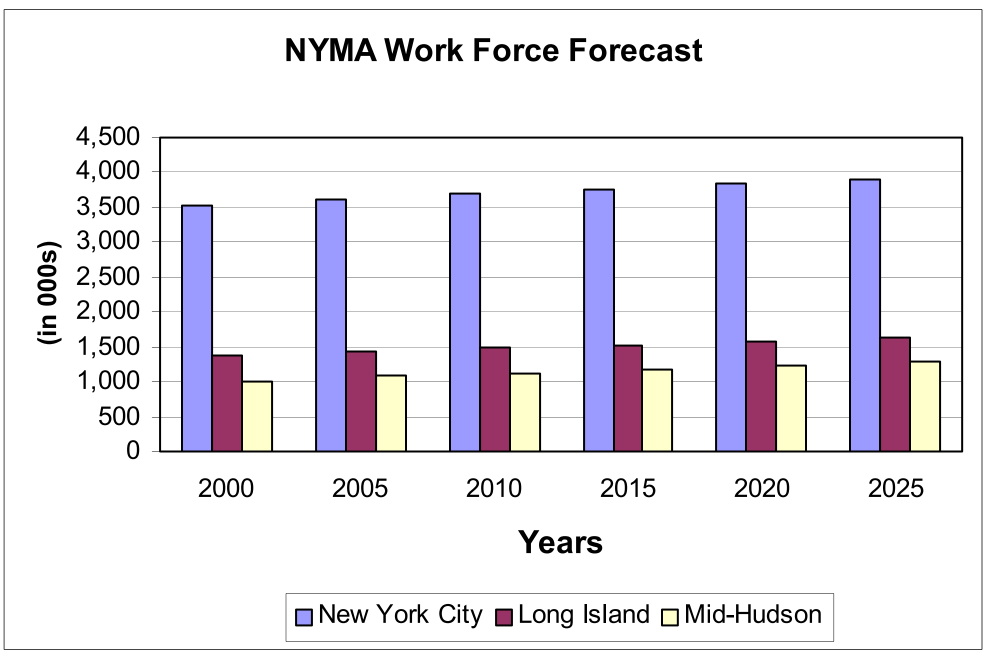
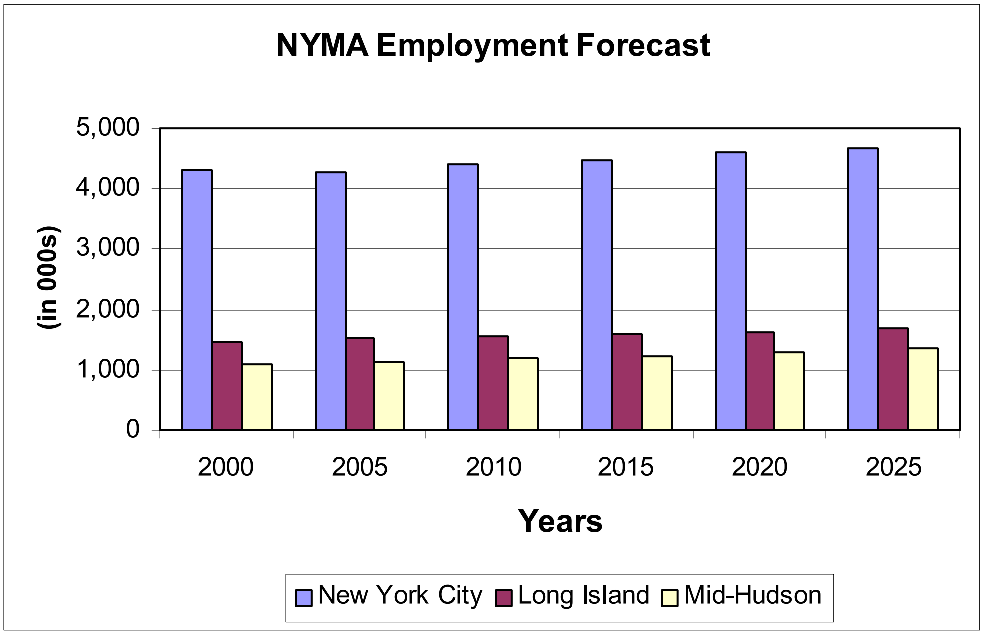


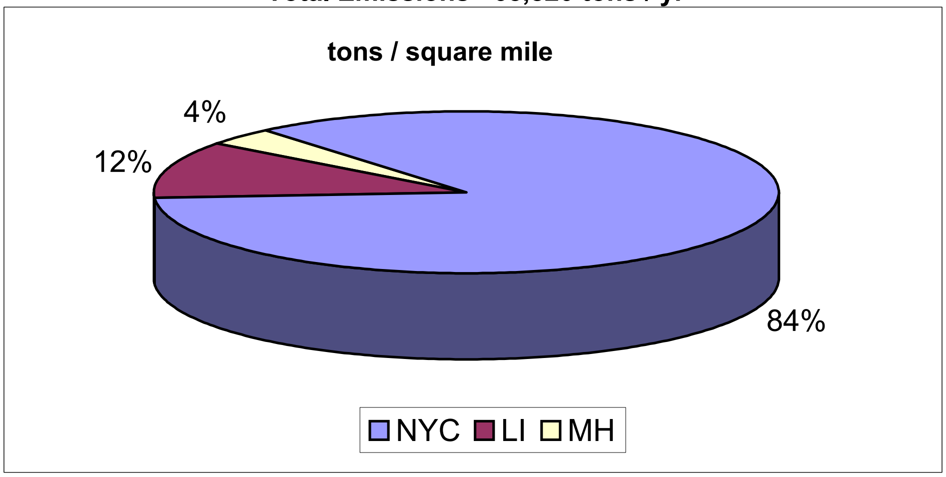
Figure 16



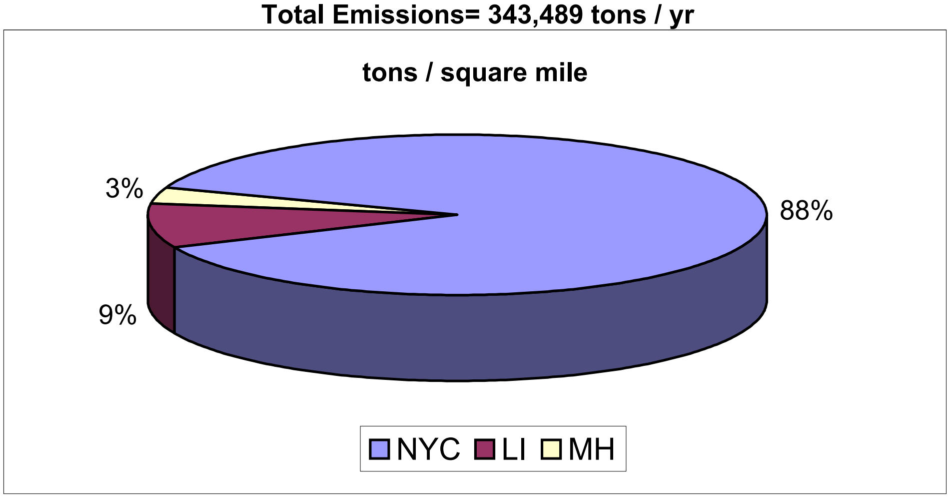
NYMA Employment Forecast
5,000
4,000
3,000
2,000
1,000
0
(in 000s)
2000
2005
2010
2015
2020
2025
Years
New York City
Long Island
Mid-Hudson

Figure 17

NYMA 1999 NEI PM2.5 Emission Density
Total Emissions= 65,820 tons / yr



NYMA 1999 NEI NOx Emission Density
Total Emissions= 343,489 tons / yr



NYMA 1999 NEI VOC Emission Density
Total Emissions= 415,557 tons / yr

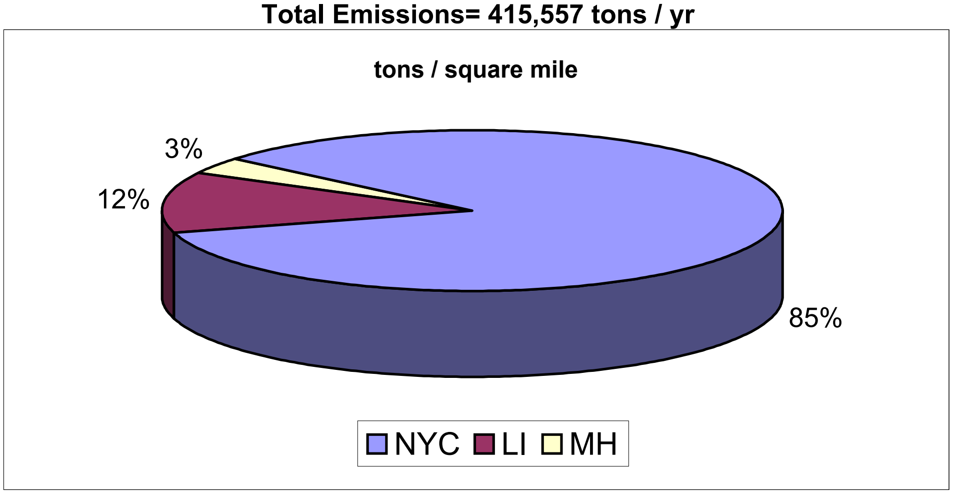
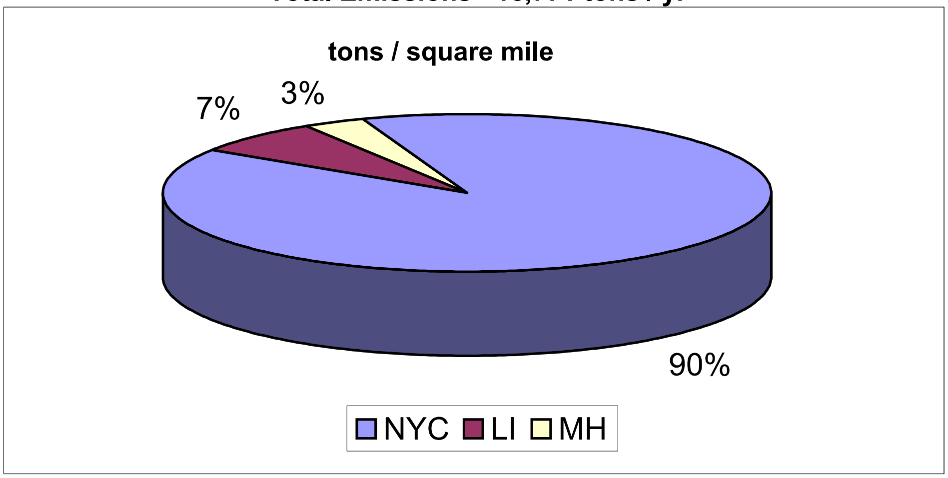
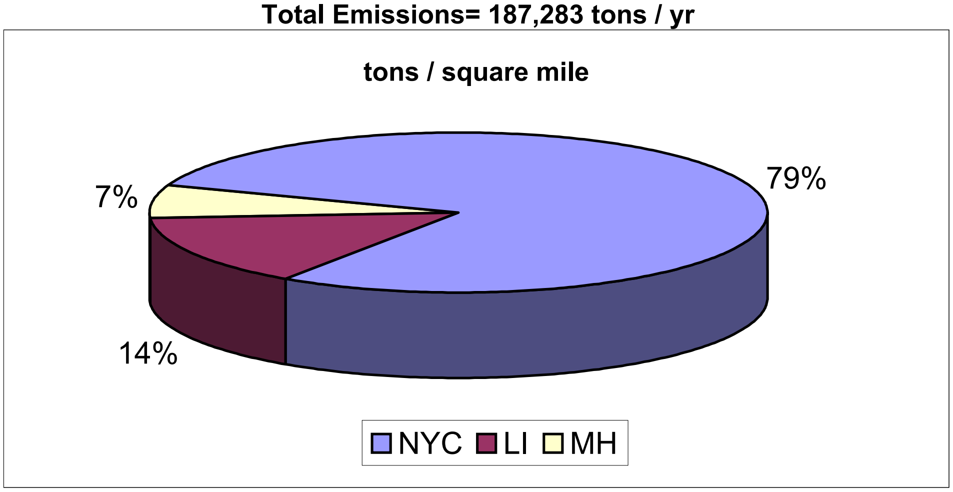


Figure 18 a

NYMA 1999 NEI NH3 Emission Density
Total Emissions= 16,771 tons / yr



NYMA 1999 NEI SO2 Emission Density
Total Emissions= 187,283 tons / yr



NYMA 1999 NEI CO Emission Density
Total Emissions= 2,491,050 tons / yr

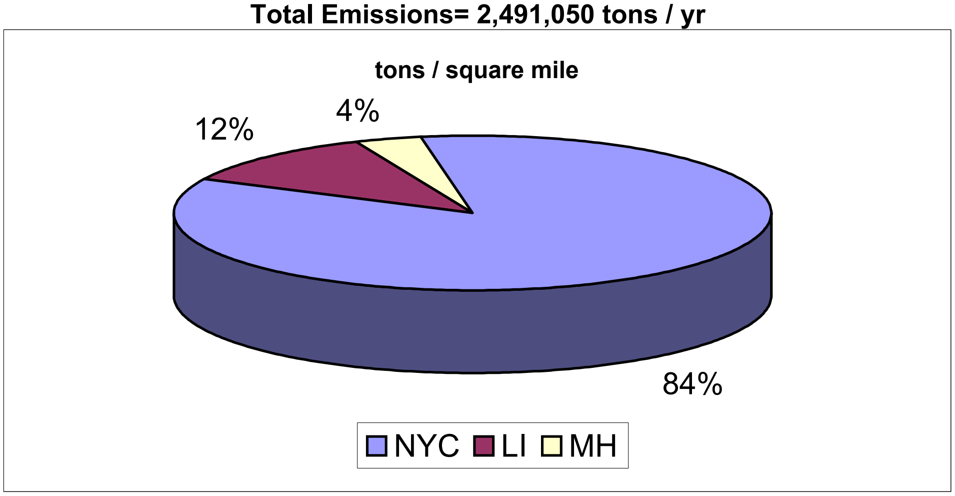


Figure 18b

Table 1: PM $_{2.5}$ Design Values

	Annual Averages			(Jan-Sep)	2000-2002	Partial 2001-2003
Site	**2000**	**2001**	**2002**	**2003**	**Des Val**	**Des Val**
Hempstead	12.22	12.86	11.35	12.70	12.1	12.3
Briarcliffe College (Bethpage)	12.27	12.51	11.25	10.90	12.0	11.6
East Hills School (Roslyn)	12.67	12.26	11.27	10.70	12.1	11.4
Babylon MAM	12.60	13.02	11.42	12.40	12.3	12.3
J.H.S.45 (Manhattan)	15.47	15.20	14.13	15.00	14.9	14.8
P.S.59 (Manhattan)	18.44	18.07	15.87	19.60	17.5	17.8
P.S.59 (Duplicate)	18.37	17.97	16.21	19.60	17.5	17.9
P.S.19 (Manhattan)	n/a	14.80	15.64	16.20	15.2	15.5
Morrisania II (Bronx)	16.61	15.94	15.34	16.00	16.0	15.8
NY Botanical Garden (Bronx)	14.32	14.37	13.45	13.80	14.0	13.9
I.S.52 (Bronx)	15.19	15.05	14.27	15.30	14.8	14.9
I.S.52 (Duplicate)	15.32	14.62	14.46	15.20	14.8	14.8
P.S.321 (Brooklyn)	14.81	15.09	13.26	14.20	14.4	14.2
J.H.S. 126 (Brooklyn)	n/a	15.27	14.03	15.20	14.7	14.8
P.S. 214 (Queens)	13.80	14.06	13.12	12.40	13.7	13.2
Queens College	n/a	14.27	12.75	14.20	13.5	13.7
Susan Wagner (Staten Isl)	12.39	13.08	10.93	11.60	12.1	11.9
Port Richmond PO (S.I.)	14.27	14.50	13.83	12.70	14.2	13.7
Canal St. P.O.	17.52	17.57	15.42	16.30	16.8	16.4
Poughkeepsie H.S.	11.28	11.17	10.74	10.70	11.1	10.9
Newburgh F.D.	11.88	11.58	11.03	12.10	11.5	11.6
Mamaroneck (Larchmont)	12.63	12.94	11.76	12.50	12.4	12.4
Albany (County DOH)	12.26	12.47	n/a	12.10	12.4	12.3
Loudonville	10.20	10.53	10.89	10.10	10.5	10.5
Schenectady	10.76	10.83	11.71	11.50	11.1	11.3
Whiteface Base	5.54	6.88	6.76	6.70	6.4	6.8
Utica	11.76	11.69	12.16	10.50	11.9	11.5
Potsdam Airport	7.29	8.44	9.34	8.60	8.4	8.8
Binghamton	11.59	11.10	11.51	10.30	11.4	11.0
Syracuse (DEC)	12.22	11.47	11.59	10.10	11.8	11.1
Syracuse (Elmwood Elem.)	10.47	11.03	10.99	9.90	10.8	10.6
East Syracuse	10.86	10.66	10.90	10.60	10.8	10.7
East Syracuse (Duplicate)	10.51	11.01	11.17	10.10	10.9	10.8
Pinnacle State Park	9.13	10.23	10.20	10.30	9.9	10.2
Rochester Downtown	11.76	11.66	11.24	11.40	11.6	11.4
Rochester Downtown (Duplicate)	11.00	11.81	10.88	11.80	11.2	11.5
Rochester East H.S.	11.82	11.80	10.26	11.00	11.3	11.0
Westfield CAM	11.39	11.06	11.24	10.50	11.2	10.9
Buffalo CAM	14.78	14.60	13.47	14.50	14.3	14.2
Lackawanna	16.12	15.21	13.25	12.90	14.9	13.8
Amherst CAM	12.54	12.77	11.90	12.50	12.4	12.4
Niagara Falls CAM	13.00	12.48	11.71	12.70	12.4	12.3

Table 2: Census Summary Data

County	Population	Housing units	Area in square miles; Land area	Number of Employment Establishments*
New York	1,537,195	798,144	23	76,553
Kings	2,465,326	930,866	71	27,356
Bronx	1,332,650	490,659	42	10,862
Queens	2,229,379	817,250	109	24,944
Richmond	443,728	163,993	58	4,815
Nassau	1,334,544	458,151	287	33,950
Suffolk	1,419,369	522,323	912	28,726
Westchester	923,459	349,445	433	20,544
Rockland	286,753	94,973	174	5,686
Putnam	95,745	35,030	231	1,519
Orange	341,367	122,754	816	5,797
Dutchess	280,150	106,103	802	4,853
Ulster	177,749	77,656	1,126	2,890
NYC	8,008,278	3,200,912	303	144,530
LI	2,753,913	980,474	1,199	62,676
Mid-Hudson	2,105,223	785,961	3,583	41,289

* NAICS industry- 1997 Economic Census

Table3a: FORECAST OF POPULATION IN THE NEW YORK METRO REGION (in 000)

COUNTY	*2000*	*2002*	*2005*	*2010*	*2015*	*2020*	*2025*
Bronx	1,333	1,342	1,349	1,361	1,373	1,385	1,397
Kings	2,465	2,464	2,473	2,487	2,501	2,515	2,529
New York	1,537	1,544	1,563	1,590	1,605	1,627	1,658
Queens	2,229	2,224	2,233	2,243	2,268	2,299	2,337
Richmond	444	451	454	465	478	500	525
New York City	**8,008**	**8,025**	**8,071**	**8,146**	**8,225**	**8,326**	**8,446**
Nassau	1,335	1,333	1,336	1,337	1,342	1,362	1,390
Suffolk	1,419	1,454	1,464	1,515	1,561	1,607	1,662
Long Island	**2,754**	**2,788**	**2,800**	**2,852**	**2,903**	**2,969**	**3,052**
Dutchess	280	288	291	299	308	324	343
Orange	341	355	349	358	374	400	430
Putnam	96	98	98	100	103	107	113
Rockland	287	290	290	294	302	314	328
Ulster	178	178	179	181	189	204	220
Westchester	923	933	925	927	928	939	957
Mid- Hudson	**2,105.2**	**2,141.9**	**2,132.8**	**2,159.2**	**2,204.3**	**2,287.9**	**2,390.7**

Table3b:FORECAST OF EMPLOYED LABOR FORCE IN THE NEW YORK METRO (in 000)

COUNTY	*2000*	*2002*	*2005*	*2010*	*2015*	*2020*	*2025*
Bronx	482.9	475.7	486.6	489.2	491.8	507.3	515.2
Kings	982.6	964.5	1,013.7	1028.9	1,044.3	1,070.4	1,083.7
New York	785.4	772.7	790.0	830.0	849.9	885.4	898.4
Queens	1,057.9	1,036.6	1,086.1	1113.6	1,117.6	1,131.4	1,145.8
Richmond	205.4	203.9	221.0	233.0	248.4	253.7	265.0
New York City	**3,514.2**	**3,453.4**	**3,597.4**	**3,694.7**	**3,752.0**	**3,848.2**	**3,908.1**
Nassau	677.2	686.3	703.0	710.0	709.8	714.7	737.6
Suffolk	707.0	724.8	740.6	770.5	807.5	852.1	889.7
Long Island	**1,384.2**	**1,411.1**	**1,443.6**	**1,480.5**	**1,517.3**	**1,566.8**	**1,627.3**
Dutchess	118.0	123.9	126.0	128.0	133.0	142.9	151.4
Orange	152.9	158.6	169.0	185.1	193.5	212.1	228.0
Putnam	53.3	56.9	57.1	59.6	62.1	66.0	69.0
Rockland	142.4	149.2	157.1	164.2	170.4	180.3	187.7
Ulster	80.4	82.3	85.5	93.0	95.9	104.6	112.9
Westchester	439.6	448.0	457.3	464.7	479.4	499.6	506.9
Mid-Hudson	**986.6**	**1,018.9**	**1,052.0**	**1,094.6**	**1,134.3**	**1,205.5**	**1,255.9**

Table 3c: FORECAST OF TOTAL EMPLOYMENT IN THE NEW YORK METRO REGION (in 000)

COUNTY	*2000*	*2002*	*2005*	*2010*	*2015*	*2020*	*2025*
Bronx	252.5	248.7	253.8	266.1	275.8	289.0	300.1
Kings	543.4	538.1	550.5	561.0	568.2	583.5	591.3
New York	2,798.5	2,723.4	2,776.5	2,850.9	2,894.0	2,956.5	2,995.3
Queens	590.0	579.1	589.6	607.5	621.3	643.7	658.1
Richmond	108.4	107.1	110.3	116.0	119.4	124.2	126.9
New York City	**4,292.7**	**4,196.5**	**4,280.7**	**4,401.5**	**4,478.6**	**4,596.9**	**4,671.7**
Nassau	749.5	755.4	761.4	781.0	803.4	835.6	866.1
Suffolk	722.9	730.0	751.4	768.5	779.8	798.5	828.2
Long Island	**1,472.4**	**1,485.4**	**1,512.8**	**1,549.5**	**1,583.3**	**1,634.2**	**1,694.3**
Dutchess	139.4	142.7	151.9	159.6	164.5	175.5	184.5
Orange	149.0	152.0	160.1	168.3	175.9	185.6	194.7
Putnam	33.0	34.9	36.7	39.9	43.4	48.2	51.8
Rockland	134.1	136.3	139.4	147.0	153.3	162.4	166.8
Ulster	80.9	81.7	85.3	89.2	94.0	102.4	110.6
Westchester	511.1	516.3	516.2	539.6	550.1	576.9	589.2
Mid-Hudson	**1,047.5**	**1,063.8**	**1,089.6**	**1,143.6**	**1,181.3**	**1,251.0**	**1,297.6**

Table3d: TOTAL DAILY VMT FORECAST (in 000)

COUNTY	2002	2005	2007	2010	2015	2020
Bronx	13,138	13,741	14,144	14,733	15,701	16,659
Kings	13,659	14,091	14,379	14,797	15,478	16,149
New York	12,132	12,463	12,683	12,997	13,502	13,995
Queens	21,723	22,468	22,965	23,693	24,889	26,072
Richmond	5,551	5,832	6,019	6,300	6,766	7,231
New York City	66,203	68,595	70,190	72,520	76,335	80,106
Nassau	33,027	34,432	35,369	36,735	38,970	41,176
Suffolk	56,631	60,017	62,274	65,672	71,337	77,012
Long Island	89,659	94,449	97,643	102,408	110,306	118,188
Dutchess	8,869	9,399	9,752	10,282	11,165	12,048
Orange	13,183	13,971	14,497	15,285	16,599	17,913
Putnam	13,183	13,971	14,497	15,285	16,599	17,913
Rockland	7,527	8,197	8,643	9,327	10,485	11,653
Ulster	6,467	6,779	6,987	7,299	7,819	8,339
Westchester	25,158	27,426	28,938	31,260	35,189	39,157
Mid-Hudson	74,388	79,743	83,313	88,739	97,856	107,023

Table 4a: On-Road 2002 Emissions

Tons / Day (Ozone Season)

COUNTY	VOC	CO	NO_x	SO2	$PM_{2.5}$	Road Dust
BRONX	19.58	225.51	22.86	0.63	2.5	0.60
DUTCHESS	12.55	157.58	15.51	0.44	1.66	0.42
KINGS	20.11	224.72	23.71	0.67	2.62	0.31
NASSAU	48.1	522.88	58.61	1.67	6.25	1.47
NEW YORK	24.48	228.4	24.1	0.59	2.33	0.31
ORANGE	18.6	238.96	26.13	0.7	2.57	0.64
PUTNAM	13.64	156.07	15.56	0.42	1.59	0.61
QUEENS	30.13	353.76	36.16	1.04	4.13	0.49
RICHMOND	7.43	90.54	9.16	0.27	1.06	0.12
ROCKLAND	9.53	120.72	13.47	0.39	1.46	0.24
SUFFOLK	74.71	858.2	92.76	2.78	10.54	3.08
ULSTER	10.87	148.62	13.81	0.63	1.57	0.33
WESTCHESTER	31.54	401.19	45.97	1.33	4.91	0.94
TOTAL	321.27	3,727.18	397.82	11.57	43.2	9.56

Table 4.b: Non-Road Equipment Emissions (Tons/ Day) Ozone Season					
COUNTY	**VOC**	**CO**	**NO_X**	**SO_X**	**$PM_{2.5}$**
BRONX	4.98	73.05	10	1.49	0.9
DUTCHESS	6.92	79.33	6.35	0.88	0.62
KINGS	12.34	202.79	18.88	2.57	1.62
NASSAU	29.52	426.47	19.2	2.31	2.01
NEW YORK	23.24	420.72	57.08	7.77	4.58
ORANGE	6.36	84.24	6.35	0.87	0.63
PUTNAM	2.75	31.62	1.73	0.25	0.2
QUEENS	17.18	243.9	35.67	5.3	3.16
RICHMOND	5.98	78.12	5.93	0.88	0.62
ROCKLAND	6.51	87.86	4.67	0.59	0.47
SUFFOLK	83.32	704.59	32.7	3.77	5.06
ULSTER	5.69	48.76	4.05	0.57	0.42
WESTCHESTER	25.03	364.04	21.13	2.81	2.11
TOTAL	229.84	2,845.49	223.71	30.05	22.4

Table 4c: 2002 Major Stationary Point Source Emissions

COUNTY	VOC (Tons / year)	CO (Tons / year)	NO_X (Tons / year)	SO_X (Tons / year)	TOTAL PM (Tons / year)
BRONX	59	210	620	465	49
DUTCHESS	60	378	212	231	13
KINGS	440	999	3,953	1,199	283
NASSAU	820	1,134	4,487	739	223
NEW YORK	228	1,495	5,167	2,575	381
ORANGE	1,069	726	6,336	19,250	254
PUTNAM	5	15	58	0	1
QUEENS	628	3,134	10,180	4,018	765
RICHMOND	251	541	1,278	29	119
ROCKLAND	269	720	5,996	9,371	347
SUFFOLK	771	2,249	12,616	33,079	691
ULSTER	301	18	357	721	87
WESTCHESTER	37	238	1,324	209	71
TOTAL	4,937	11,857	52,585	71,886	3,285

Table5

6 NYCRR Part	Prevention and Control of air Contamination and Air Pollution New York State Regulation
200	General Provisions: provides general term definitions; requires owners of sources to restrict emissions; allows the Department of Environmetnal Conservation the authority to enforce New Source Performance Standards (NSPS), Prevention of Significant Deterioration (PSD), and National Emissions Standard for Hazardous Air Pollutants (NESHAPS); and lists all incorporated by reference materials.
201	Part 201, Permits and Registrations: requires owners and/or operators of air contamination surces to obtain a permit or registration certificate from the Department of Environmental Conservation for operation of such sources.
202	Part 202, Emissions Verification: requires air contamination sources to conduct emission tests when requested by the Commissioner of the Department of Environmental Conservation and requires annual emission statements from major sources for emission tracking and fee assessment.
203	Indirect Sources of Air Contamination: requires a Permit to Construct for indirect sources of air contamination only in the County of New York south of 60th Street.
204	NOx Budget Trading Program: establishes the New York State component of the Nitrogen Oxides (NOx) Budget Trading Program; effective 2/25/00; Bureau of Stationary
205	Architectural Surface Coatings: defines architectural coatings; and states the prohibitions and requirements of air emissions from coatings in the New York Metropolitan Area (NYMA).
207	Control Measures for Air Pollution Episode: defines an action plan for air pollution episode.
208	Landfill Gas Collection and Control Systems for Certain Municipal Solid Waste Landfills: defines the standards for air emissions, operational standards, compliance provisions, monitoring of operations, and reporting requirements for certain municipal solid waste landfills.
209	Primary Aluminum Reduction Plants: requires opacity and fluoride emission controls at primary aluminum plants.
210	Emissions and Labeling Requirements for Personal Watercraft Engines: establishes an emissions reduction program for personal watercraft engines.
211	General Prohibitions: prohibits any air emission which is injurious to human, plant or animal life or property, or which unreasonably interferes with the comfortable enjoyment of life or property. Also limits visible emissions and volatile organic compounds in asphalt.
212	General Process Emission Sources: requires controls for process source emissions and Reasonably Available Control Technologies (RACT) for volatile organic compounds (VOC) and nitrogen oxides (NOx) processes not otherwise regulated.
213	Contaminant Emissions from Ferrous Jobbing Foundries: sets particulate emission limits for specific foundries.
214	By-product Coke Oven Batteries: sets mass and visible emission requirements, particulate emission limits, and compliance testing methods.
215	Open Fires: establishes open burning restrictions.

Table5 (cont.)

216	Iron and/or Steel Processes: sets mass and visible emission requirements, maintenance of Continuous Emission Monitors (CEM), record keeping, testing procedures and control equipment.
217	Motor Vehicle Emissions: establishes a statewide inspection and maintenance program for motor vehicles; lists idling prohibitions and exemptions for heavy duty vehicles; describes inspection and maintenance program audits; defines the heavy duty inspection and maintenance program.
218	Emission Standards for Motor Vehicles and Motor Vehicle Engines: sets emission limits for newer motor vehicles.
219	Incinerators: establishes permit requirements and emission limits for incineration facilities found throughout the State.
220	Portland Cement Plants: sets particulate emission limits and control methods for fugitive emissions.
221	Asbestos-Containing Surface Coating Material: prohibits spraying of asbestos or asbestos-containing materials.
223	Petroleum Refineries: limits emissions of carbon monoxide (CO), particulates, and sulfur compounds; defines applicability of new source performance standards to new refineries and volatile organic compounds (VOC) control compliance schedules.
224	Sulfuric and Nitric Acid Plants: requires continuous emission monitoring (CEMs) in stacks for new or modified plants and for existing facilities with specified production capacity; defines emission limits for nitrogen oxides (NOx) and sulfur dioxide (SO2).
225	Fuel Composition and Use: Subpart 225-1 regulates the sulfur content of fossil fuels; Subpart 225-2 sets requirements for composition of waste fuels; sets limits on the volatility of gasoline sold or supplied throughout NYS;
226	Solvent Metal Cleaning Processes: establishes equipment specifications and control technologies; effective 5/7/03; Bureau of Stationary Sources (518) 402-8403.
227	Stationary Combustion Installations: Subpart 227-1 sets particulate emission limits for existing boilers, regulates opacity, requires stack monitoring; Subpart 227-2 sets Nitrogen Oxides Reasonably Available Control Technologies (NOx RACT) emission limits for combustion sources; Subpart 227-3 establishes allowance cap and trading program (NOx Emission Budget and Allowance Program) for large stationary sources, boilers greater than 250 million Btu/hour, and electric generating units greater than 15 megawatts; effective 3/5/99; for Subparts 227-1 and 227-2.
228	Surface Coating Processes: sets compliance coating and emission control standards for surface coating operations.
229	Petroleum and Volatile Organic Liquid Storage and Transfer: requires Volatile Organic Compounds Reasonably Available Control Technologies (VOC RACT) for specified loading terminals and storage vessels; requires submission of a compliance schedule along with specific dates for compliance.
230	Gasoline Dispensing Sites and Transport Vehicles: requires Stage I and Stage II controls of vapor emissions for gasoline stations.
231	New Source Review in Nonattainment Areas and Ozone Transport Regions: requires permit review of new major facilities and/or major modifications of existing facilities in nonattainment areas; defines use of lowest achievable emission rate technologies and emission offsets.

Table5 (cont.)

232	Perchloroethylene Dry Cleaning Facilities: applies to all existing and new dry cleaning facilities. For shops which use Perchloroethylene (PCE or PERC) dry cleaning solvent, this rule establishes equipment performance and operation standards, record-keeping, staff training and certification requirements, and establishes dry cleaning equipment certification and periodic facility compliance inspection programs. For dry cleaning facilities using solvents other than PERC, this rule requires that these facilities be regulated/controlled under Part 212, General Process Emission Sources (NYS Air Toxics Control rule).
233	Pharmaceutical and Cosmetic Manufacturing Processes: requires affected facilities to use Reasonably Available Control Technologies for volatile organic compound emissions and submit a compliance schedule.
234	Graphic Arts: requires specific printing processes to implement Reasonably Available Control Technologies for volatile organic compound emissions.
235	Consumer Products: establishes prohibitions and requirements for consumer products containing volatile organic compounds.
236	Synthetic Organic Chemical Manufacturing Facility Component Leaks: requires repair and leak detection plans, inspection and testing schedules, record keeping and reporting at affected facilities.
237	Acid Deposition Reduction NOx Budget Trading Program: establishes emission budgets and trading programs by creating and allocating allowances that are limited authorizations to emit a specific amount of nitrogen oxides in a control period.
238	Acid Deposition Reduction SO2 Budget Trading Program: establishes emission budgets and trading programs by creating and allocating allowances that are limited authorizations to emit a specific amount of sulfur dioxide in a control period.
239	Portable Fuel Container Spillage Control: establishes performance standards for fuel containers and spill-proof spouts to reduce volatile organic compounds when refueling, transporting and storing fuel in portable containers.
240	Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws: sets forth policy, criteria, and procedures for demonstrating and assuring conformity of revisions to the State Implementation Plan (SIP) by establishing criteria and procedures for assessing the conformity of transportation plans, programs, and projects which are developed, funded, or approved by the United States Department of Transportation (USDOT), and by metropolitan planning organizations (MPOs) or other recipients of funds under Title 23 United States Code or the Federal Transit Laws to an applicable SIP.