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Technical Support Document for 2008 Ozone NAAQS Designations
EPA Region 2

New York
Area Designations for the
2008 Ozone National Ambient Air Quality Standards

The table below identifies the areas and associated counties or parts of counties in New York State that EPA intends to designate as nonattainment for the 2008 ozone national ambient air quality standards (2008 NAAQS). In accordance with section 107(d) of the Clean Air Act, EPA must designate an area (county part of a county) "nonattainment" if it is violating the 2008 ozone NAAQS or if it is contributing to a violation of the 2008 ozone NAAQS in a nearby area. The technical analyses supporting the boundaries for the individual nonattainment areas are provided below.

Table 1. Intended Nonattainment Areas in New York State

Area	New York State's Recommended Nonattainment Counties	EPA's Intended Nonattainment Counties
Jamestown – Dunkirk - Fredonia, NY	Chautauqua*	Chautauqua*
New York – Northern New Jersey – Long Island, NY, NJ, CT, PA Area** (NY portion)	Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester	Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

*This county contains a portion of the Seneca Nation of Indians Cattaraugus Indian Country that extends over three counties. The other two counties are not contributing to nonattainment in Chautauqua County. EPA proposes to designate the entire Cattaraugus Indian Country as attainment for the reasons listed later in this document.

** This nonattainment area is a multi-state nonattainment area.
This area also includes Indian Country, the Shinnecock Indian Nation, that is wholly contained in this nonattainment area and which EPA intends to include in the nonattainment area. However, EPA is not making a separate designation for the Shinnecock Indian Nation because is it wholly included in the nonattainment area and the Shinnecocks have not requested a separate designation.

EPA intends to designate the remaining counties in New York State that are not listed in the table above as "unclassifiable/attainment" for the 2008 ozone NAAQS.

The analysis below provides the basis for intended nonattainment area boundaries. It relies on our analysis of whether and which monitors are violating the 2008 ozone NAAQS, based on certified air quality monitoring data from 2008-2010 and an evaluation of whether nearby areas are contributing to such violations. EPA has evaluated contributions from nearby areas based on a weight of evidence analysis considering the factors identified below. EPA issued guidance on December 4, 2008 that identified these factors as ones EPA would consider in determining nonattainment area boundaries and recommended that states consider these factors in making their designations recommendations to EPA.[1]

[1] The December 4, 2008 guidance memorandum "Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards" refers to 9 factors. In this technical support document we have grouped the emissions-related factors together under the heading of "Emissions and Emissions-Related Data," which results in 5 categories of factors.

1. Air quality data (including the design value calculated for each FRM or FEM monitor in the area);
2. Emissions and emissions-related data (including location of sources and population, amount of emissions and emissions controls, and urban growth patterns);
3. Meteorology (weather/transport patterns);
4. Geography and topography (mountain ranges or other basin boundaries);
5. Jurisdictional boundaries (e.g., counties, air districts, existing nonattainment areas, Indian country, metropolitan planning organizations (MPOs))

Ground-level ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Because NOx and VOC emissions from a broad range of sources over a wide area typically contribute to violations of the ozone standards, EPA believes it is important to consider whether there are contributing emissions from a broad geographic area. Accordingly, EPA chose to examine the 5 factors with respect to the larger of the Combined Statistical Area (CSA) or Core Based Statistical Area (CBSA) associated with the violating monitor(s).[2] All data and information used by EPA in this evaluation are the latest available to EPA and/or provided to EPA by states or tribes.

In EPA's designations guidance for the 2008 ozone NAAQS EPA recommended examining CSA/CBSAs because certain factors used to establish CSAs and CBSAs are similar to the factors EPA is using in this technical analysis to determine if a nearby area is contributing to a violation of the 2008 ozone NAAQS. EPA used the same basic approach in the designation process for the 1997 ozone NAAQS. Where a violating monitor is not located in a CSA or CBSA, EPA's guidance recommended using the boundary of the county containing the violating monitor as the starting point for considering the nonattainment area's boundary.

[2] Lists of CBSAs and CSAs and their geographic components are provided at www.census.gov/population/www/metroareas/metrodef.html . The lists are periodically updated by the Office of Management and Budget. EPA used the most recent update, based on 2008 population estimates, issued on December 1, 2009 (OMB Bulletin No. 10-02).

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Technical Analysis for Jamestown-Dunkirk-Fredonia, NY

Figure 1

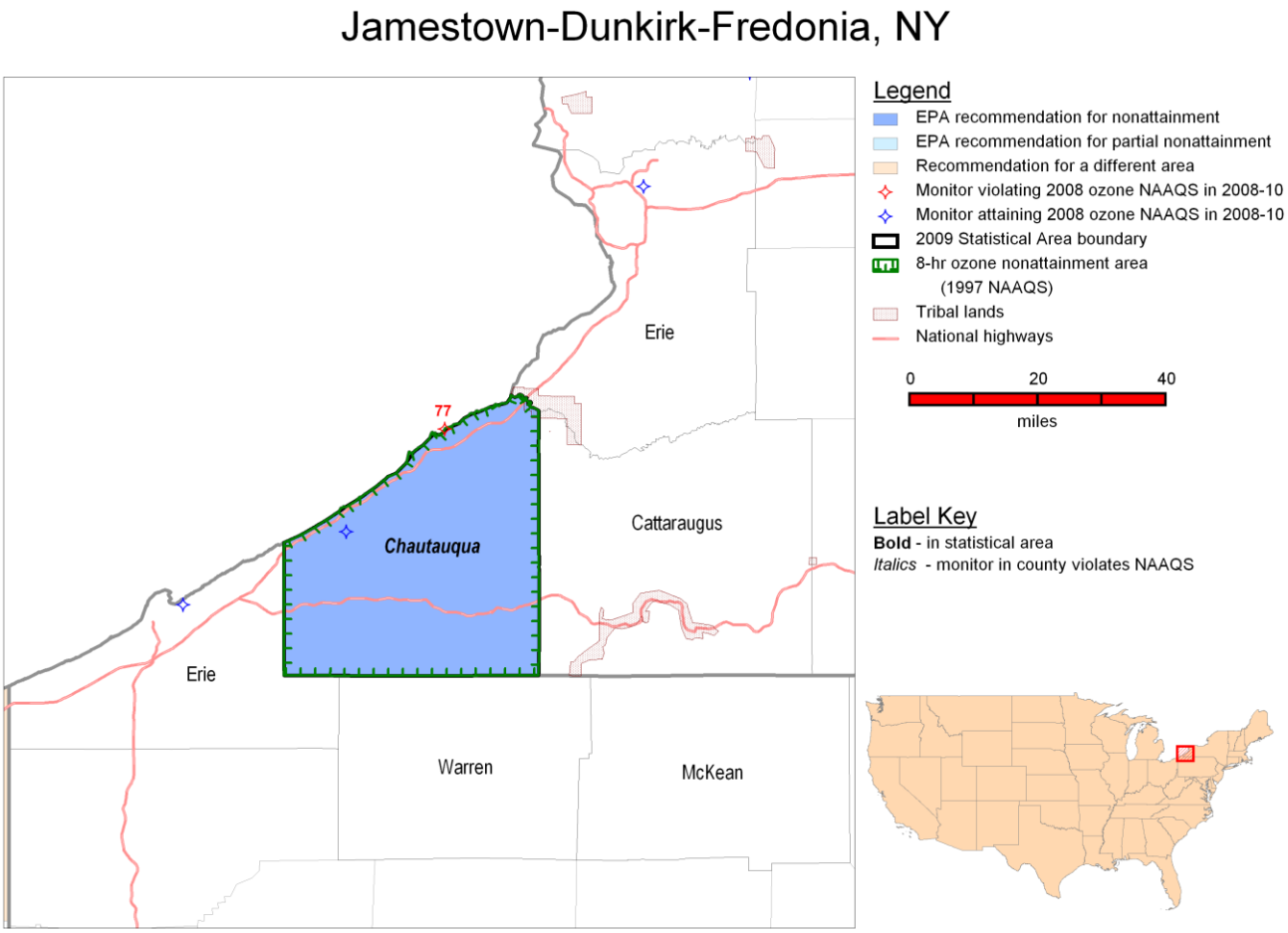

Figure 1 is a map of the Jamestown-Dunkirk-Fredonia nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county and other jurisdictional boundaries.

The metropolitan area boundary is the same as the county boundary, so Chautauqua County is the default nonattainment area. In addition, Chautauqua County is the existing 1997 ozone NAAQS nonattainment area. Other nearby counties in New York are downwind of Chautauqua County and no other monitors in upstate New York are violating the ozone standard. Thus, Chautauqua County is the default nonattainment area and EPA's analysis gives us no basis to include additional counties in New York State to the Jamestown-Dunkirk-Fredonia nonattainment area.

In October 2011, New York State recommended that Chautauqua County be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2008-2010.

This is the same as New York State's recommendation from 2009 for this area, updated with recent air quality data. These data are from Federal Reference Method (FRM) monitors sited and operated in accordance with 40 CFR Part 58, in a network designed to be representative of ozone concentrations across the State and approved by EPA for this purpose.

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Regarding the Tribal Lands in the Jamestown area

On October 26, 2011, New York State submitted a revised recommendation that Chautauqua County be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2008-2010. The Seneca Nation of Indians did not submit a recommendation for the designation of Cattaraugus Reservation. Chautauqua County overlaps a portion of the Seneca's lands, known as the Cattaraugus Reservation. Based on EPA's technical analysis described in the enclosed Tribal TSD, EPA believes that the emissions from the tribal lands are not contributing to nonattainment in the Jamestown-Dunkirk-Fredonia nonattainment area and we intend to designate the Cattaraugus Reservation as unclassifiable/attainment for the 2008 ozone NAAQS.

Factor Assessment: Should any surrounding counties in New York be included in the Jamestown – Dunkirk - Fredonia, NY Area?

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values (in ppm) for air quality monitors in counties in the Jamestown – Dunkirk - Fredonia, NY area based on data for the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS are met when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years is 0.075 ppm or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

The 2010 DVs for the ozone NAAQS for counties in the Jamestown – Dunkirk - Fredonia, NY and nearby surrounding area are shown in Table 2.

Table 2. Air Quality Data.

County	State Recommended Nonattainment?	2008-2010 Design Value (ppm)
Chautauqua	Yes	0.077
All other monitors in Upstate New York	No	0.075 or less

Chautauqua County is the only county in the Jamestown – Dunkirk – Fredonia, NY metropolitan area. Chautauqua County is the only county in upstate New York that records a violation of the 2008 ozone NAAQS.

Design values for New York State are attached.

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Factor 2: Emissions and Emissions-Related Data

EPA evaluated whether emissions of ozone precursors (NO_x and VOC) and other emissions-related data provide information on areas contributing to violating monitors.

Emissions Data

Not evaluated since emissions from neighboring counties do not contribute since they are generally downwind of Chautauqua County.

Population density and degree of urbanization

Not evaluated since this factor is not as important for counties outside the nonattaining metropolitan area, especially when they don't contribute to ozone violations since they are generally downwind of Chautauqua County.

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Traffic and commuting patterns

EPA evaluated the commuting patterns of residents in the area. A neighboring county with high VMT and/or a high number of commuters coming into the county with a violating monitor is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 3 shows traffic and commuting pattern data, including total 2005 VMT and 10-year VMT growth, number of commuters in each county who drive to another county within the area, the percent of total commuters in each county who commute to other counties within the area, and the total vehicle miles traveled (VMT) for each county.

A nearby county could contribute to ozone violations in a nearby county if they are responsible for heavy traffic from cars commuting into a violating county.

Table 3. Traffic and Commuting Patterns. – table to be added

County	State Recommended Nonattainment?	2008 VMT* (million miles)	Number Commuting to or within any violating counties**	Percent Commuting to or within any violating counties**
[County, State]	[Yes or No]	[#]	[#]	[%]
[County, State]	[Yes or No]	[#]	[#]	[%]
[Etc.]	[Yes or No]	[#]	[#]	[%]
	Areawide:	[#]		

* MOBILE model VMTs are those inputs into the NEI version 1.5.
** U.S. Census Bureau estimates for 2000 County-to-County Worker Flow http://www.census.gov/hhes/commuting/data/commuting.html.

[Draft conclusions based on data from previous designations – final will include analysis of updated data.]

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated any available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation. This analysis will use the 32-year average summer surface-level wind direction for Chautauqua County and nearby counties.

Summer COUNTY	STATE	NNE	ENE	ESE	SSE	**SSW**	WSW	WNW	NNW
Chautauqua	NY	0.08	0.06	0.05	0.11	**0.23**	0.21	0.15	0.10
Cattaraugus	NY	0.08	0.05	0.06	0.12	0.20	**0.24**	0.15	0.10
Erie	NY	0.08	0.07	0.06	0.09	0.24	**0.29**	0.10	0.07

The prevailing winds during the ozone season have a strong southwesterly component, indicating that Chautauqua County is affected by transported ozone from upwind cities and sources to its south and west. The nearby counties, Cattaraugus and Erie, that are not part of the Jamestown-Dunkirk-Fredonia area are north and east of Chautauqua County, so they do not affect air quality in the Jamestown-Dunkirk-Fredonia nonattainment area.

New York State's March 12, 2009 letter notes that the Dunkirk monitor, with the highest design value in Chautauqua County was sited specifically to measure ozone being transported into New York State. The design value at this site is tied for second highest in New York State, with only sites in the New York City area being higher.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The Jamestown – Dunkirk - Fredonia, NY area does not have any geographical or topographical barriers significantly limiting air pollution transport within the county. Therefore, this factor did not play a significant role in this evaluation.

Factor 5: Jurisdictional boundaries

Once the general areas to be included in the nonattainment area were determined, EPA considered existing jurisdictional boundaries for the purposes of providing a clearly defined legal boundary and carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment areas for ozone or other urban-scale pollutants, counties, air districts, townships, metropolitan planning organizations, state lines, Reservations, urban growth boundary, etc. Where existing jurisdictional boundaries are not adequate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

The Jamestown – Dunkirk - Fredonia, NY area has previously established nonattainment boundaries associated with the 1997 8-hour ozone NAAQS. The state(s) have recommended the same boundary for the 2008 ozone NAAQS and is the same as the metropolitan area boundary.

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The Jamestown – Dunkirk - Fredonia, NY area also includes portions of Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries.

The Seneca Nation of Indians areas of Indian Country, called the Cattaraugus Reservation, are partially within the boundary of Chautauqua County. These lands are on the northeast, or prevailing downwind side, of Chautauqua County. The rest of the contiguous Tribal lands are within the boundaries of two other counties, both of which we intend to designate as unclassifiable/attainment for the 2008 ozone standard. In the interest of not splitting the areas of Indian country and because we believe the tribal lands located in the adjoining counties are not contributing to violations within the county, we intend to designate the Seneca Nation's Cattaraugus Reservation as unclassifiable/attainment with regard to 0.075 ppm ozone standard. EPA Region 2 staff have discussed this with the environmental representatives of the Tribe and they have no objections to the designation of unclassifiable/attainment.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the Jamestown – Dunkirk – Fredonia metropolitan area is violating the ozone NAAQS and should be designated as nonattainment of the standard. Chautauqua County was the only county included in the Jamestown– Dunkirk – Fredonia, NY nonattainment area for the 1997 ozone NAAQS and is the only county in the present-day Jamestown– Dunkirk – Fredonia, NY metropolitan area. One of the two air quality monitors in Chautauqua County measured violations of the 2008 ozone NAAQS based on the 2010 DVs.

No other nearby counties contributes to the ozone violations observed in Chautauqua County. Erie County and Cattaraugus Counties adjoin Chautauqua County. Erie County has a monitor that is attaining the ozone standard, and being downwind of Chautauqua County does not contribute to the violations observed there. Cattaraugus County does not have its own ozone monitor, but since it is in the prevailing downwind direction from Chautauqua County, and other monitors representative of Cattaraugus County, as well as the rest of upstate New York, are attaining the ozone standard, Cattaraugus County is not included in the Jamestown – Dunkirk - Fredonia, NY ozone nonattainment area.

After considering these recommendations and based on EPA's preliminary technical analysis, EPA intends to designate Chautauqua County, as listed in Table 1, above, as "nonattainment" for the 2008 ozone NAAQS.

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Technical Analysis for the New York – Northern New Jersey – Long Island, NY, NJ, CT, PA Area (NY portion)

Figure 2

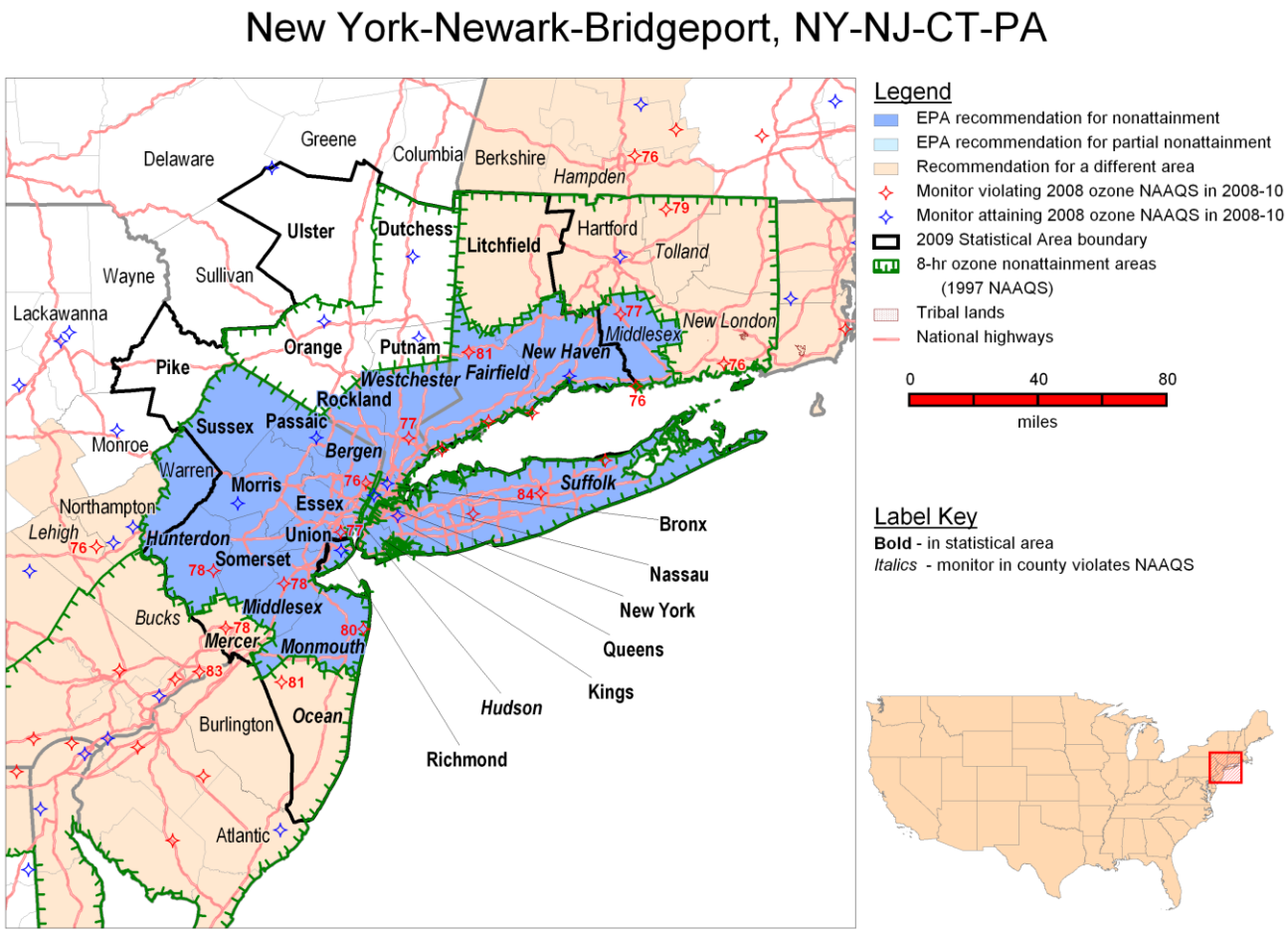

Figure 2 is a map of the New York – Northern New Jersey – Long Island, NY, NJ, CT, PA potential nonattainment area. The map provides other relevant information including the locations and design values of air quality monitors, county and other jurisdictional boundaries, as well as CSA/CBSA boundary, existing nonattainment or maintenance boundary for 1997 ozone NAAQS, major transportation arteries.

On March 12, 2009, New York State recommended that the entire counties of Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2006-2008. New York State provided an update to the original recommendation on October 26, 2011 based on air quality data from 2008-2010. This area includes the same counties designated as nonattainment for the 1997 ozone standard. These data are from Federal Reference Method (FRM) monitors sited and operated in accordance with 40 CFR Part 58.

The counties of Putnam, Dutchess, Orange were the Poughkeepsie nonattainment area, separate from the New York City nonattainment area for the 1997 ozone NAAQS. However, the counties of Putnam, Dutchess, Orange and Ulster are part of New York City's present CSA. New York State requested that these four counties continue to not be included in the New York-Northern New Jersey-Long Island

nonattainment area because the reasons for the previous separation from the New York area, developed and evaluated for the 1997 ozone standard, still apply.

After considering these recommendations and based on EPA's technical analysis described below, EPA intends to designate the counties in New York State's requests as "nonattainment" for the 2008 ozone NAAQS as part of the New York – Northern New Jersey – Long Island, NY, NJ, CT nonattainment area, as described in Table 1 at the beginning of this document.

In addition, the Shinnecock Indian Nation, is wholly located within the intended New York – Northern New Jersey – Long Island, NY, NJ, CT nonattainment area. EPA does not intend to issue a separate designation for the Shinnecock Nation.

The important issue in the factor analysis is whether any counties outside the area proposed by New York State should be included in the New York City nonattainment area. One specific issue, reviewed in the factor analysis is whether the Poughkeepsie area is sufficiently different from the New York City area that is should be separate from the New York City nonattainment area.

Factor Assessment

Factor 1: Air Quality Data

For this factor, we considered 8-hour ozone design values (in ppm) for air quality monitors in counties in the portion of the New York – Northern New Jersey – Long Island, NY, NJ, CT, PA CSA within New York State based on data for the 2008-2010 period (i.e., the 2010 design value, or DV), which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2008 ozone NAAQS is met when the annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years is 0.075 ppm or less. A DV is only valid if minimum data completeness criteria are met. See 40 CFR part 50 Appendix P. Where several monitors are located in a county (or a designated nonattainment area or maintenance area), the DV for the county or area is determined by the monitor with the highest level.

The 2010 DVs for the ozone NAAQS for New York State's counties in the intended New York – Northern New Jersey – Long Island, NY, NJ, CT and nearby surrounding area are shown the attached PDF with data from EPA's Air Quality System database.

2010 NY O3 DV.pdf

No counties in New York State outside the present boundaries of the New York – Northern New Jersey – Long Island, NY, NJ, CT nonattainment area (same counties as the intended EPA area) are violating the 2008 ozone NAAQS. Many of the counties in the intended New York – Northern New Jersey – Long Island, NY, NJ, CT nonattainment area are violating the 2008 ozone NAAQS, therefore they are included in the nonattainment area. Some counties don't have monitors but can be included in the intended nonattainment area if they contribute to violating monitors or are near a county with a violating monitor. Often monitors in nearby counties are representative of the air quality in counties without a monitor (based on EPA's periodic review of New York's monitoring network). Some counties in the intended nonattainment area are attaining the standard, but are within the New York – Northern New Jersey – Long Island, NY, NJ, CT CSA and affect the air quality at the violating monitors in the

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intended nonattainment area. (See later factors.) Some of these monitors are attaining only due to local scavenging of ozone by emissions that contribute to violations in the New York – Northern New Jersey – Long Island, NY, NJ, CT intended nonattainment area.

Factor 2: Emissions and Emissions-Related Data

EPA evaluated emissions of ozone precursors (NO_x and VOC) and other emissions-related data that provide information on areas contributing to violating monitors, based on data from the following sources:

Emissions Data

EPA evaluated county-level emission data for NO_x and VOC derived from the 2008 National Emissions Inventory (NEI), version 1.5. This is the most recently available NEI. (See http://www.epa.gov/ttn/chief/net/2008inventory.html) Significant emissions levels in a nearby area indicate the potential for the area to contribute to observed violations. We will also consider any additional information we receive on changes to emissions levels that are not reflected in recent inventories. These changes include emissions reductions due to permanent and enforceable emissions controls that will be in place before final designations are issued and emissions increases due to new sources.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions that may contribute to ozone formation. Rapid population or VMT growth (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 5 shows the population, population density, and population growth information for each county in the area.

Sources: U.S. Census Bureau population estimates for 2010 as of August 4, 2011 (http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_PL_GCTPL2.STO5&prodType=table).

For the New York – Northern New Jersey – Long Island, NY, NJ, CT metropolitan area, EPA has assembled these data into a chart that shows why the Poughkeepsie area, as well other nearby counties, should not be part of the New York City nonattainment area. Also, counties in the core of the CSA have higher emissions and contribute to violations in and downwind of the CSA.

First of all, the Poughkeepsie area, comprising Dutchess, Putnam and Orange Counties, is part of the New York – Northern New Jersey – Long Island, NY, NJ, CT, PA CSA, as is Ulster County. However, these four counties have each recorded air quality data in attainment of the 2007 ozone standard, based on data from 2008 – 2010.

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Table 5, included after the Conclusion, below, lists the counties in and around the New York – Northern New Jersey – Long Island, NY, NJ, CT, PA CSA, rank ordered for several factors that EPA uses to determine the appropriateness of contributing to the nonattainment of the ozone standard in the intended nonattainment area.

As seen in this table, Dutchess, Putnam, Orange and Ulster Counties are more commonly ranked with counties outside the NYC CSA than with the counties in the core of the CSA. This is particularly obvious when factors such as emissions, population and vehicle miles traveled are compared using density of these factors per square miles. For example, Rockland County is a small county within, but on the edge of, the intended NYC nonattainment area. However, when its emissions, population and vehicle miles density ***per square mile*** of territory are compared with other counties', it is clear that Rockland is more densely settled and has more emissions and traffic per square mile than the Poughkeepsie-area counties adjoining it and is more like the nearby counties in the New York City nonattainment area.

While Dutchess and Orange Counties are increasing in population faster than many other counties in the New York – Northern New Jersey – Long Island, NY, NJ, CT, PA CSA, this factor is overwhelmed by the other factors that show these areas are not contributing to nonattainment in the New York – Northern New Jersey – Long Island, NY, NJ, CT intended nonattainment area. Overall, these factors show that Dutchess, Putnam, Orange and Ulster Counties are not like the adjoining core counties of the New York City area.

Traffic and commuting patterns

EPA evaluated the commuting patterns of residents in the area, as well as the total Vehicle Miles Traveled (VMT) for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT and/or a high number of commuters is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area. Table 4 shows traffic and commuting pattern data, including total 2005 VMT and 10-year VMT growth, number of commuters in each county who drive to another county within the area, the percent of total commuters in each county who commute to other counties within the area, and the total vehicle miles traveled (VMT) for each county.

Table 4. Traffic and Commuting Patterns.

County	State Recommended Nonattainment?	2008 VMT* (million miles)	Number Commuting to or within any violating counties**	Percent Commuting to or within any violating counties**
[County, State]	[Yes or No]	[#]	[#]	[%]
[County, State]	[Yes or No]	[#]	[#]	[%]
[Etc.]	[Yes or No]	[#]	[#]	[%]
	Areawide:	[#]		

* MOBILE model VMTs are those inputs into the NEI version 1.5.
** U.S. Census Bureau estimates for 2000 County-to-County Worker Flow http://www.census.gov/hhes/commuting/data/commuting.html.

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[Draft conclusions based on data from previous designations. Final will include updated information.] Dutchess, Orange and Putnam Counties of the Poughkeepsie area and Ulster County of the CSA and more distant counties on the edge of the NYC CSA have a large number of commuters transiting into the core of the NYC CSA. However, the number of commuters is less than counties intended to be part of the NYC nonattainment area, and previous nonattainment areas, e.g., carbon monoxide and particulate matter, which are strongly affected by mobile sources, have not included these outlying counties in the past NYC nonattainment areas.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated any available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation. This report uses the 32-year average summer surface-level wind direction for the design value county and for the counties in the Poughkeepsie area.

The prevailing winds during the ozone season have a strong southwesterly component, indicating that the counties in and north of the Poughkeepsie area do not, almost all cases, affect the air quality at the peak monitors in Connecticut, Westchester County and on Long Island. The location of the Poughkeepsie area counties outside the line of high ozone concentrations along the northeast corridor of major cities is additional evidence that the Poughkeepsie area counties are not part of the ozone problem in the New York City nonattainment area.

Summer COUNTY	STATE	NNE	ENE	ESE	SSE	**SSW**	WSW	WNW	NNW
Dutchess	NY	0.12	0.06	0.07	0.10	**0.24**	0.18	0.12	0.11
Putnam	NY	0.10	0.10	0.07	0.08	**0.22**	0.19	0.13	0.11
Ulster	NY	0.11	0.06	0.04	0.19	**0.21**	0.09	0.19	0.10
Orange	NY	0.11	0.11	0.06	0.09	**0.23**	0.16	0.14	0.11

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

While the New York – Northern New Jersey – Long Island, NY, NJ, CT, area does have much variation in topography, land use and many water bodies separating its constituent parts, there are no geographical or topographical barriers significantly limiting air pollution transport within its air shed. Therefore, this factor did not play a significant role in this evaluation.

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Factor 5: Jurisdictional boundaries

Once the general areas to be included in the nonattainment area were determined, EPA considered existing jurisdictional boundaries for the purposes of providing a clearly defined legal boundary and carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment areas for ozone or other urban-scale pollutants, counties, air districts, townships, metropolitan planning organizations, state lines, Reservations, urban growth boundary, etc. Where existing jurisdictional boundaries are not adequate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

Dutchess, Putnam and Orange Counties are not part of the same transportation planning organization as much of the New York City area. Dutchess, Putnam and Ulster Counties are part of the Poughkeepise-Newburgh Transportation Management Area. Dutchess, Putnam and Orange Counties are the Poughkeepsie 1997 ozone nonattainment area and Ulster County was not part of the Poughkeepsie area. This also supports keeping the Poughkeepsie area and Ulster County as separate from the New York City area, even if they are part of the New York City-based CSA.

The New York – Northern New Jersey – Long Island, NY, NJ, CT area also includes the Shinnecock Nation Indian country. As defined at 18 U.S.C. 1151, "Indian country" refers to: "(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same." EPA recognizes the sovereignty of tribal governments, and has attempted to take the desires of the tribes into account in establishing appropriate nonattainment area boundaries. In this case, the Shinnecock Nation lands are inside of the New York – Northern New Jersey – Long Island, NY, NJ, CT intended nonattainment area and will be included in the nonattainment area.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the no counties in New York State meet the requirements for being added to the existing New York – Northern New Jersey – Long Island, NY, NJ, CT nonattainment area. The intended nonattainment area includes all counties with violating monitors and the counties with the highest emissions densities in the New York – Northern New Jersey – Long Island CSA.

Four counties, Dutchess, Putnam and Orange in the Poughkeepsie Area, and Ulster County, are included in the New York- Northern New Jersey- Long Island CSA, but these areas' emissions and vehicle usage are not like the other counties in the CSA that are in New York's proposed nonattainment area. These four counties are generally not upwind of the proposed New York City nonattainment area. The downwind peak monitors are northeast and east of the center of the intended nonattainment area: on

Long Island, in Westchester County and in Connecticut. And the four counties are north of the peak ozone areas. Thus, these four counties outside the intended New York – Northern New Jersey – Long Island, NY, NJ, CT nonattainment area have much less influence on ozone in the intended nonattainment area than counties in the intended nonattainment area.

EPA's preliminary analysis is that air quality data and analysis of the factors in this report support New York's request that the boundaries from the 1997 ozone NAAQS are appropriate for the nonattainment boundaries of the New York – Northern New Jersey – Long Island eight-hour ozone nonattainment area.

Table_5

Rank	Nox Emissions	VOC Emissions	Population	VMT	Rank	Nox Density	VOC Density	Pop Density	VMT Density	Rank	% VMT Growth	Pop Growth	Percent Pop Grov
1	Suffolk	Suffolk	Kings	Suffolk	1	New York	New York	New York	New York	1	Wayne	Suffolk	Pike
2	Hudson	Queens	Queens	Nassau	2	Hudson	Kings	Kings	Bronx	2	Pike	Ocean	Monroe
3	Queens	Kings	New York	Hartford	3	Kings	Bronx	Bronx	Kings	3	New Haven	Middlesex	Ocean
4	New York	New York	Suffolk	Westchester	4	Queens	Queens	Queens	Queens	4	Hartford	Bronx	Lehigh
5	Kings	Nassau	Bronx	Bergen	5	Bronx	Hudson	Hudson	Hudson	5	Lackawanna	New York	Northampton
6	Fairfield	Westchester	Nassau	Fairfield	6	Union	Richmond	Richmond	Union	6	Fairfield	Kings	Wayne
7	Nassau	Bronx	Westchester	Middlesex	7	Essex	Union	Essex	Essex	7	Monroe	New Haven	**Orange**
8	Essex	Fairfield	Fairfield	New Haven	8	Richmond	Nassau	Union	Nassau	8	Lehigh	Lehigh	Atlantic
9	Middlesex	Bergen	Bergen	Queens	9	Bergen	Essex	Nassau	Bergen	9	Bucks	Hartford	Middlesex
10	New Haven	Middlesex	Hartford	Monmouth	10	Nassau	Bergen	Bergen	Richmond	10	Hampden	Fairfield	Somerset
11	Hartford	Bucks	New Haven	Morris	11	Middlesex	Middlesex	Middlesex	Middlesex	11	Berkshire	Northampton	Rockland
12	Union	Hartford	Middlesex	Bucks	12	Northampton	Westchester	Passaic	Westchester	12	Hudson	Monroe	Burlington
13	Bergen	New Haven	Essex	Essex	13	Mercer	Suffolk	Westchester	Suffolk	13	Union	**Orange**	**Dutchess**
14	Westchester	Ocean	Hudson	Burlington	14	Westchester	Passaic	Mercer	Passaic	14	Essex	Bucks	New London
15	Bucks	Monmouth	Monmouth	Kings	15	Fairfield	Rockland	Rockland	Mercer	15	Bergen	Hudson	Middlesex
16	Northampton	Essex	Bucks	Bronx	16	Suffolk	Mercer	Fairfield	Monmouth	16	Middlesex	Somerset	Warren
17	Monmouth	Morris	Ocean	**Orange**	17	Passaic	Lehigh	Suffolk	Rockland	17	Passaic	Rockland	Suffolk
18	**Orange**	Union	Union	Union	18	New Haven	Fairfield	New Haven	Fairfield	18	Mercer	Burlington	New Haven
19	Morris	**Orange**	Passaic	New York	19	Rockland	Bucks	Monmouth	New Haven	19	Monmouth	Westchester	Richmond
20	Bronx	Burlington	Morris	Ocean	20	Lehigh	Monmouth	Hartford	Morris	20	Morris	Richmond	Hunterdon
21	Lehigh	Hampden	Richmond	Hampden	21	Monmouth	Morris	Somerset	**Putnam**	21	Somerset	Atlantic	Bronx
22	Burlington	Lehigh	Hampden	Mercer	22	Bucks	New Haven	Morris	Hartford	22	Burlington	Morris	Hartford
23	Ocean	Hudson	Burlington	Somerset	23	Hartford	Somerset	Bucks	Somerset	23	Northampton	Bergen	Fairfield
24	Mercer	Atlantic	**Orange**	New London	24	Morris	Hartford	Lehigh	Lehigh	24	Ocean	**Dutchess**	Bucks
25	Hampden	Richmond	Mercer	Lehigh	25	Somerset	Ocean	Northampton	Bucks	25	Atlantic	Mercer	Hudson
26	Richmond	**Dutchess**	Lehigh	Passaic	26	Hampden	Northampton	Ocean	Hampden	26	Hunterdon	New London	Morris
27	New London	Passaic	Somerset	Atlantic	27	Lackawanna	**Putnam**	Hampden	Burlington	27	Warren	Union	Mercer
28	Somerset	New London	Rockland	**Dutchess**	28	**Putnam**	Hampden	Burlington	Northampton	28	Sussex	Monmouth	Litchfield
29	Passaic	Somerset	Northampton	**Putnam**	29	**Orange**	Atlantic	Lackawanna	Ocean	29	Washington	Pike	**Putnam**
30	Lackawanna	Northampton	**Dutchess**	Rockland	30	Burlington	**Orange**	Atlantic	**Orange**	30	New York	Passaic	Sullivan
31	Rockland	Rockland	Atlantic	Hudson	31	Ocean	Burlington	**Orange**	Atlantic	31	Bronx	Middlesex	New York
32	Atlantic	Mercer	New London	Ulster	32	Warren	Lackawanna	Middlesex	Hunterdon	32	Kings	Litchfield	Westchester
33	**Dutchess**	Monroe	Lackawanna	Northampton	33	New London	Middlesex	**Putnam**	Lackawanna	33	Queens	Hampden	Union
34	Monroe	Lackawanna	Litchfield	Lackawanna	34	Middlesex	New London	New London	Warren	34	Nassau	Hunterdon	Sussex
35	Ulster	Ulster	Ulster	Berkshire	35	Hunterdon	Monroe	Washington	New London	35	Richmond	Warren	Ulster
36	Berkshire	Wayne	Monroe	Hunterdon	36	Atlantic	Washington	**Dutchess**	Middlesex	36	Westchester	Wayne	Kings
37	Hunterdon	Berkshire	Middlesex	Richmond	37	Monroe	**Dutchess**	Warren	**Dutchess**	37	Suffolk	Sussex	Bergen
38	Middlesex	Litchfield	Sussex	Monroe	38	Washington	Warren	Hunterdon	Washington	38	Rockland	Ulster	Monmouth
39	Warren	**Putnam**	Berkshire	Warren	39	**Dutchess**	Hunterdon	Sussex	Monroe	39	**Putnam**	**Putnam**	Passaic
40	Greene	Middlesex	Hunterdon	Middlesex	40	Sussex	Sussex	Monroe	Sussex	40	**Orange**	Nassau	Hampden
41	**Putnam**	Sussex	Washington	Sussex	41	Greene	Wayne	Litchfield	Berkshire	41	New London	Sullivan	Washington
42	Litchfield	Sullivan	Warren	Litchfield	42	Pike	Pike	Ulster	Ulster	42	**Dutchess**	Washington	Greene
43	Sussex	Hunterdon	**Putnam**	Washington	43	Berkshire	Berkshire	Berkshire	Litchfield	43	Ulster	Lackawanna	Lackawanna
44	Pike	Pike	Sullivan	Columbia	44	Ulster	Litchfield	Pike	Pike	44	Columbia	Greene	Nassau
45	Washington	Washington	Columbia	Greene	45	Litchfield	Ulster	Columbia	Columbia	45	Greene	Queens	Queens
46	Wayne	Warren	Pike	Sullivan	46	Columbia	Columbia	Sullivan	Greene	46	Sullivan	Columbia	Columbia
47	Columbia	Columbia	Wayne	Pike	47	Wayne	Sullivan	Greene	Wayne	47	Delaware	Delaware	Delaware
48	Sullivan	Delaware	Greene	Wayne	48	Sullivan	Greene	Wayne	Sullivan	48	Litchfield	Berkshire	Essex
49	Delaware	Greene	Delaware	Delaware	49	Delaware	Delaware	Delaware	Delaware	49	Middlesex	Essex	Berkshire

Enclosures

Technical Analysis for Cattaraugus Reservation-Seneca Nation of Indians

Note: The technical analysis is not intended to be used for jurisdictional issues. This analysis was performed to determine if the Cattaraugus Reservation should be included in the Jamestown-Dunkirk-Fredonia, NY Micropolitan Statistical Area (Jamestown) nonattainment area.

Figure 1 is a map of the Cattaraugus Reservation in relation the area EPA intends to designate as the Jamestown-Dunkirk-Fredonia, NY nonattainment area. The intended nonattainment area is Chautauqua County, NY. A small portion of the Reservation overlaps with the northern border of Chautauqua County. The map shows the location of air quality monitors and their associated design values upwind and downwind of the Reservation. Areas on the map colored blue indicate the Jamestown nonattainment area. The gray area indicates the location of the Reservation.

On October 26, 2011, New York State submitted a revised recommendation that Chautauqua County be designated as nonattainment for the 2008 ozone NAAQS based on air quality data from 2008-2010. The Seneca Nation of Indians did not submit any recommendations for the designation of Cattaraugus Reservation. The boundaries of Chautauqua County and the Reservation overlap. Based on EPA's technical analysis described below, EPA intends to designate the Cattaraugus Reservation in its entirety as unclassifiable/attainment for the 2008 ozone NAAQS.

Factor Assessment

Factor 1: Air Quality Data

There are no air monitors on the Reservation. An air monitor located downwind in Erie County is attaining the ozone standard, so it does not indicate that the Reservation is adversely impacting air quality.

Factor 2: Emissions and Emissions-Related Data

Emissions

There are no permitted facilities on the Reservation. There are no known sources located on the Reservation, such as Tribally-owned casinos, that may have emissions impacts.

Population density and degree of urbanization

EPA evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. These include ozone-creating emissions from on-road and off-road vehicles and engines, consumer products, residential fuel combustion, and consumer services. Areas of dense population or commercial development are an indicator of area source and mobile source NO_x and VOC emissions that may contribute to ozone formation. Rapid population or VMT growth (see below) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area.

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The 2010 Demographic Profile data as collected by the U.S Census Bureau (U.S. Census Bureau population estimates for 2010 as of November 25, 2011, http://www.census.gov/popfinder; NY - Cattaraugus Reservation data) indicates that the total population of the Reservation that overlaps with Chautauqua County is 38. Discussions with the Seneca Nation of Indians Environment Division also confirm that the area is sparsely populated. The small population is unlikely to have an impact on the Jamestown nonattainment area. Table 6 shows the census data used for this evaluation.

Traffic and commuting patterns

EPA evaluated the commuting patterns of residents in the area, as well as the total Vehicle Miles Traveled (VMT) for each county. In combination with the population/population density data and the location of main transportation arteries (see above), this information helps identify the probable location of non-point source emissions. A county with high VMT and/or a high number of commuters is generally an integral part of an urban area and indicates the presence of motor vehicle emissions that may contribute to ozone formation. Rapid population or VMT growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that the associated area source and mobile source emissions may be appropriate to include in the nonattainment area.

The New York State Department of Transportation does not have traffic counts for roads on the Reservation that overlaps with Chautauqua County. No major roadways are located in the overlapping area. The census reported population for this area is also very low (see **Population density and degree of urbanization**) and the small population has little traffic impact on the Jamestown nonattainment area.

Factor 3: Meteorology (weather/transport patterns)

EPA evaluated any available meteorological data to help determine how meteorological conditions, such as weather, transport patterns and stagnation conditions, would affect the fate and transport of precursor emissions contributing to ozone formation.

The Reservation is downwind of the Jamestown nonattainment area. Emissions transport to the nonattainment area is likely to be low or nonexistent. This factor did not play a significant role in this evaluation.

Factor 4: Geography/topography (mountain ranges or other air basin boundaries)

The geography/topography analysis evaluates the physical features of the land that might affect the airshed and, therefore, the distribution of ozone over the area.

The Cattaraugus Reservation does not have any geographical or topographical barriers significantly limiting air pollution transport within its air shed. Therefore, this factor did not play a significant role in this evaluation.

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Factor 5: Jurisdictional boundaries

Once the general areas to be included in the nonattainment area were determined, EPA considered existing jurisdictional boundaries for the purposes of providing a clearly defined legal boundary and carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include existing/prior nonattainment areas for ozone or other urban-scale pollutants, counties, air districts, townships, metropolitan planning organizations, state lines, Reservations, urban growth boundary, etc. Where existing jurisdictional boundaries are not adequate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates were considered.

EPA recognizes the sovereignty of tribal governments and tribal lands in defining appropriate nonattainment area boundaries. The Jamestown nonattainment area (Chautauqua County) intersects with the Reservation. EPA recognizes the Tribal boundaries and will not split the Reservation into separately designated areas. EPA has decided on an unclassifiable/attainment designation since a majority of the Reservation is an attaining area and does not contribute to violating air quality monitors.

Conclusion

Based on the assessment of factors described above, EPA has preliminarily concluded that the Seneca Nation of Indian's Cattaraugus Reservation does not contribute to the Jamestown nonattainment area and will be classified as unclassifiable/attainment. The Reservation has a small population, no known sources, and is located downwind of violating monitors. EPA does not believe that the Reservation impacts the air quality of the Jamestown nonattainment area.

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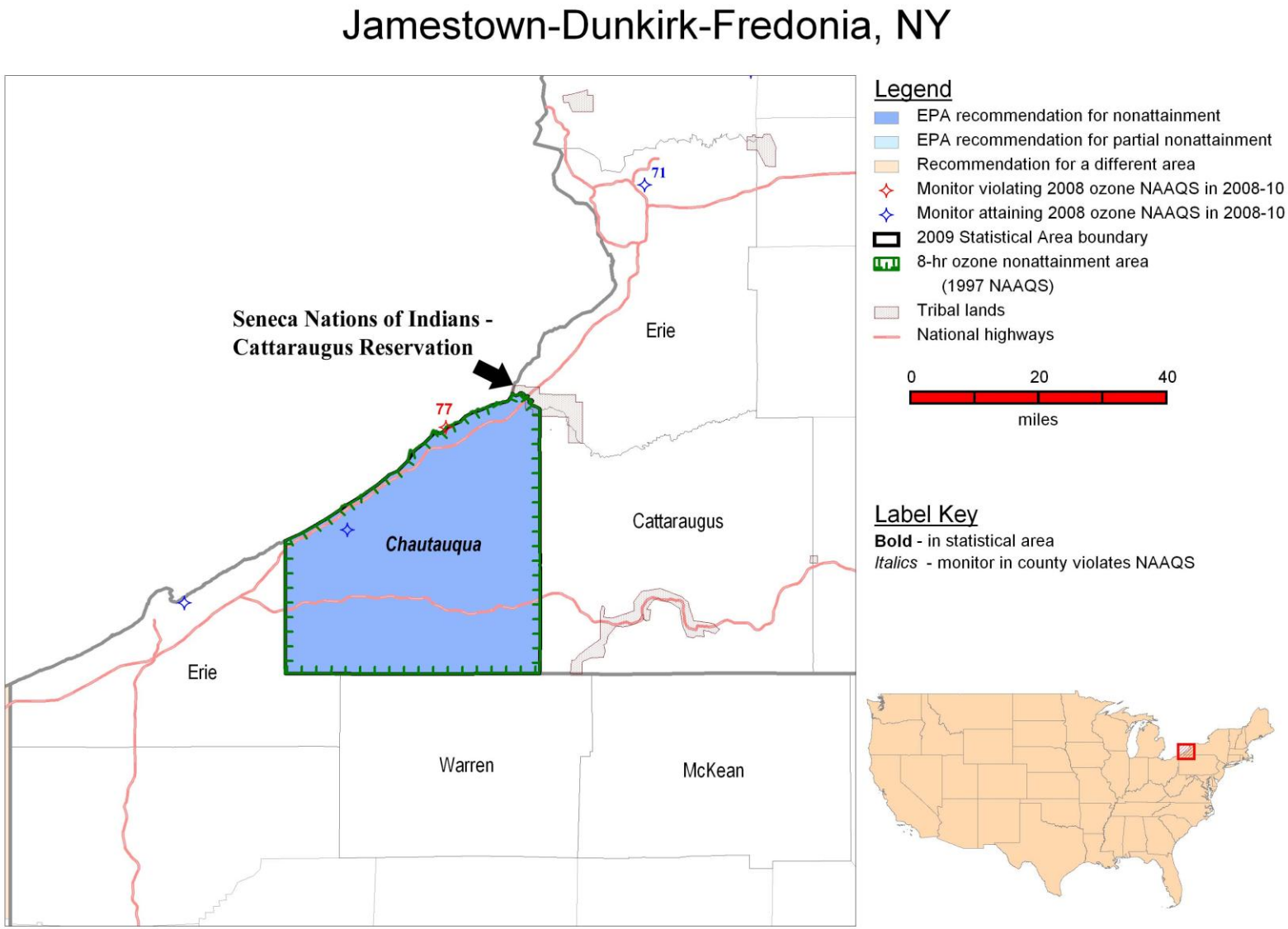

Figure 1 Map showing Cattaraugus Reservation in relation to the proposed Jamestown nonattainment area (Chautauqua County).

2010 Demographic Profile

NY - Cattaraugus Reservation

Population	
Total Population	38

Housing Status
(in total housing units unless noted)

Total	17
Occupied	15
Owner-occupied (occupied housing units)	12
Population in owner-occupied (number of individuals)	26
Renter-occupied (occupied housing units)	3
Population in renter-occupied (number of individuals)	12
Households with individuals under 18 (households)	6
Vacant	2
Vacant: for rent	0
Vacant: for sale	0
Vacant: for seasonal/recreational/occasional use	1

Population by Sex/Age	
Male	21
Female	17
Under 18	13
18 & over	25
20 - 24	2
25 - 34	5
35 - 49	8
50 - 64	6
65 & over	3

Population by Ethnicity	
Hispanic or Latino	5
Non Hispanic or Latino	33

Population by Race	
White	9
African American	0
Asian	0
American Indian and Alaska Native	26
Native Hawaiian and Pacific Islander	0
Other	0
Identified by two or more	3

Table 6: Census information for the Cattaraugus Reservation.

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