

US EPA ARCHIVE DOCUMENT

Technical Support Document for 2008 Ozone NAAQS Designations
EPA Region 2

**Attainment Status for Jamestown, New York
and
the Remainder of Upstate 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 upstate New York State that EPA is designating 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. Air Quality Designations in Upstate New York State

Area	New York State's Recommended Nonattainment Counties	EPA's Nonattainment Counties
Jamestown – Dunkirk - Fredonia, NY Micropolitan Statistical Area (Jamestown, NY nonattainment area)	Chautauqua*	Chautauqua*

*This county contains a portion of Seneca Nation of New York's Indian country that extends over three counties. The other two counties are not contributing to nonattainment in Chautauqua County. EPA is designating Seneca Nation of New York's Indian country as unclassifiable/attainment for the reasons listed later in this document.

Chautauqua County is the only county outside the New York City nonattainment area to record a violation of the 2008 ozone standard. EPA will designate the remaining counties in upstate New York that are not listed in the table above as “unclassifiable/attainment” for the 2008 ozone NAAQS.

See the attached list for the boundaries of the attainment areas in upstate New York.

See the New York City metro nonattainment area for discussion of the Poughkeepsie attainment area.

The analysis below provides the basis for the 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 (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Because NO_x 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).

Technical Analysis for Jamestown, NY

Figure 1

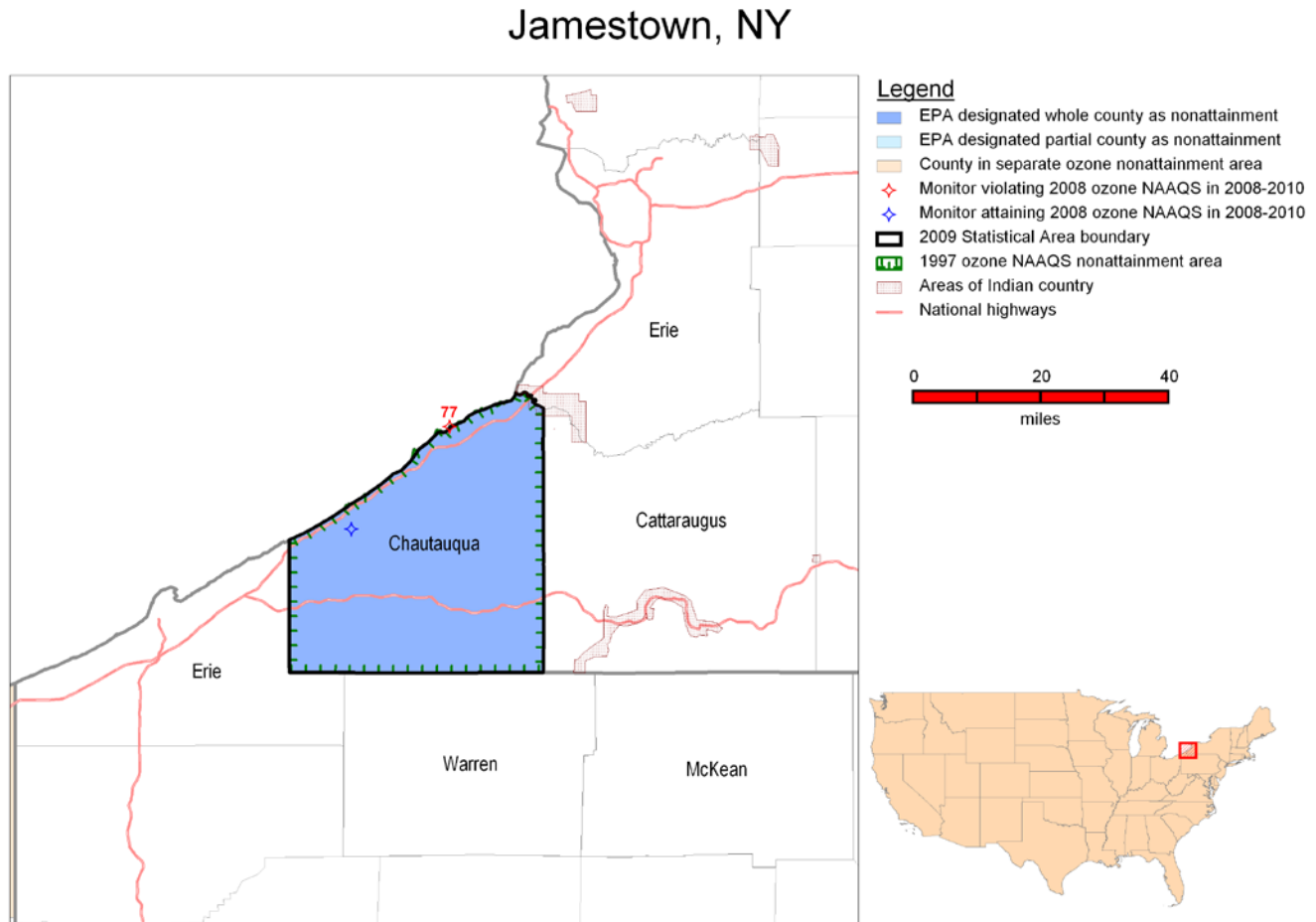


Figure 1 is a map of the Jamestown Nonattainment Area, which is Chautauqua County, which is the same as the Jamestown-Dunkirk-Fredonia Micropolitan Area. The map also provides the locations and design values of air quality monitors in the nonattainment area, county and other jurisdictional boundaries.

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 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.

Regarding Indian country in the Jamestown, NY nonattainment 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 New York did not submit a recommendation for the designation of their Indian country. Chautauqua County overlaps a portion of the Seneca Nation of New York’s Indian country commonly known as the Cattaraugus Reservation. Based on EPA’s technical analysis described in Attachment 1 for Seneca Nation of New York, Seneca Nation of New York’s Indian country is sparsely populated, is located in a rural area, and does not have any sources that area contributing to nonattainment in the Jamestown, NY nonattainment area. Therefore, EPA is designating Indian country of the Seneca Nation of New York as unclassifiable/attainment for the 2008 ozone NAAQS.

Factor Assessment: Should any surrounding counties in New York State be included in the Jamestown, 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, 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, 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 (attaining)

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.



2010 NY O3 DV.pdf

Design values for New York State are attached.

Factor 2: Emissions and Emissions-Related Data

Since the counties near Chautauqua County are outside the Jamestown metro area, and the nearby counties in New York are downwind of the County, EPA has not evaluated whether emissions of ozone precursors (NO_x and VOC) from nearby counties in New York are large enough to affect ozone concentrations on Chautauqua County.

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 metro 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, 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, 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, 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.

Chautauqua County, which is the Jamestown – Dunkirk - Fredonia, NY Micropolitan Statistical 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.

A portion of the Seneca Nation of New York’s Indian country, called the Cattaraugus Reservation, is partially within the boundary of Chautauqua County. These lands are on the northeastern part, or prevailing downwind side, of Chautauqua County. The rest of the contiguous Tribal lands are within the boundaries of two other counties. The factor analysis for the Seneca Nation of New York is attached.

Conclusion

Based on the assessment of factors described above, EPA concludes 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 in the Jamestown, 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 contribute 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, NY ozone nonattainment area.

After considering these recommendations and based on EPA's technical analysis, EPA will designate as “nonattainment” for the 2008 ozone NAAQS, Chautauqua County, the single county in the Jamestown–Dunkirk – Fredonia, NY metropolitan area, as the Jamestown, NY nonattainment area, as listed in Table 1, above.

A portion of the Seneca Nation of New York’s Indian country, called the Cattaraugus Reservation, is partially within the boundary of Chautauqua County. Our technical analysis indicates that these tribal lands are not impacting the nonattainment area. In the interest of not splitting Indian country and because we believe the portion of the Seneca Nation’s lands located in the adjoining counties are not contributing to violations within the county, we will designate the Seneca Nation of New York’s Indian country as unclassifiable/attainment with regard to 2008 ozone standards. 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.

Attachment 1 Designation of the Seneca Nation of New York's Indian country

Note: The technical analysis is not intended to be used for jurisdictional issues. This analysis was performed to determine if the portion of Seneca Nation of New York's Indian country associated with the Cattaraugus Reservation should be included in the Jamestown, NY nonattainment area.

Figure 2 is a map of the Cattaraugus Indian County in relation the area EPA is designating as the Jamestown, NY nonattainment area. The nonattainment area is the whole of Chautauqua County, NY. A small portion of the Seneca Nation of New York's Indian country 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 Indian country. Areas on the map colored blue indicate the Jamestown, NY nonattainment area. The gray area in the northeastern part of Chautauqua County indicates the location of the Seneca Nation of New York's Cattaraugus 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 New York did not submit any recommendations for the designation of their Indian country. Based on EPA's technical analysis described below, EPA will designate the Seneca Nation of New York's 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 Seneca Nation of New York's Cattaraugus Reservation. An air monitor located downwind in Erie County is attaining the ozone standard, so it does not indicate that the Indian country is adversely impacting air quality.

Factor 2: Emissions and Emissions-Related Data

Emissions

There are no permitted facilities on the Seneca Nation of New York's Cattaraugus Reservation. There are no known sources located on the Cattaraugus Reservation that may have emissions impacts. Therefore, there are no sources contributing to violations in the Jamestown, NY nonattainment area.

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.

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 Indian country that overlaps with Chautauqua County is 38. Discussions with the Seneca Nation of Indians Environment 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 Seneca Nation of New York's Cattaraugus 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 Seneca Nation of New York's Cattaraugus 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 Seneca Nation of New York's 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.

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, 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 Seneca Nation of New York's Cattaraugus Reservation. EPA recognizes the Tribal boundaries and will not split Indian country into separately designated areas. EPA has decided on an unclassifiable/attainment designation for the Seneca Nation of New York since EPA's analysis shows that the Seneca Nation of New York's Indian country does not contribute to violating air quality monitors.

Conclusion

Based on the assessment of factors described above, EPA has concluded that the Seneca Nation of New York's Cattaraugus Reservation, located adjacent to the Jamestown, NY nonattainment area, does not contribute to air quality violations at air monitors in the nonattainment area because these Tribal lands do not contain sources that contribute to the nonattainment in the area, have a small population, and are located downwind of violating monitors. EPA is therefore designating Seneca Nation of New York's Indian country as unclassifiable/attainment for the 2008 ozone standards

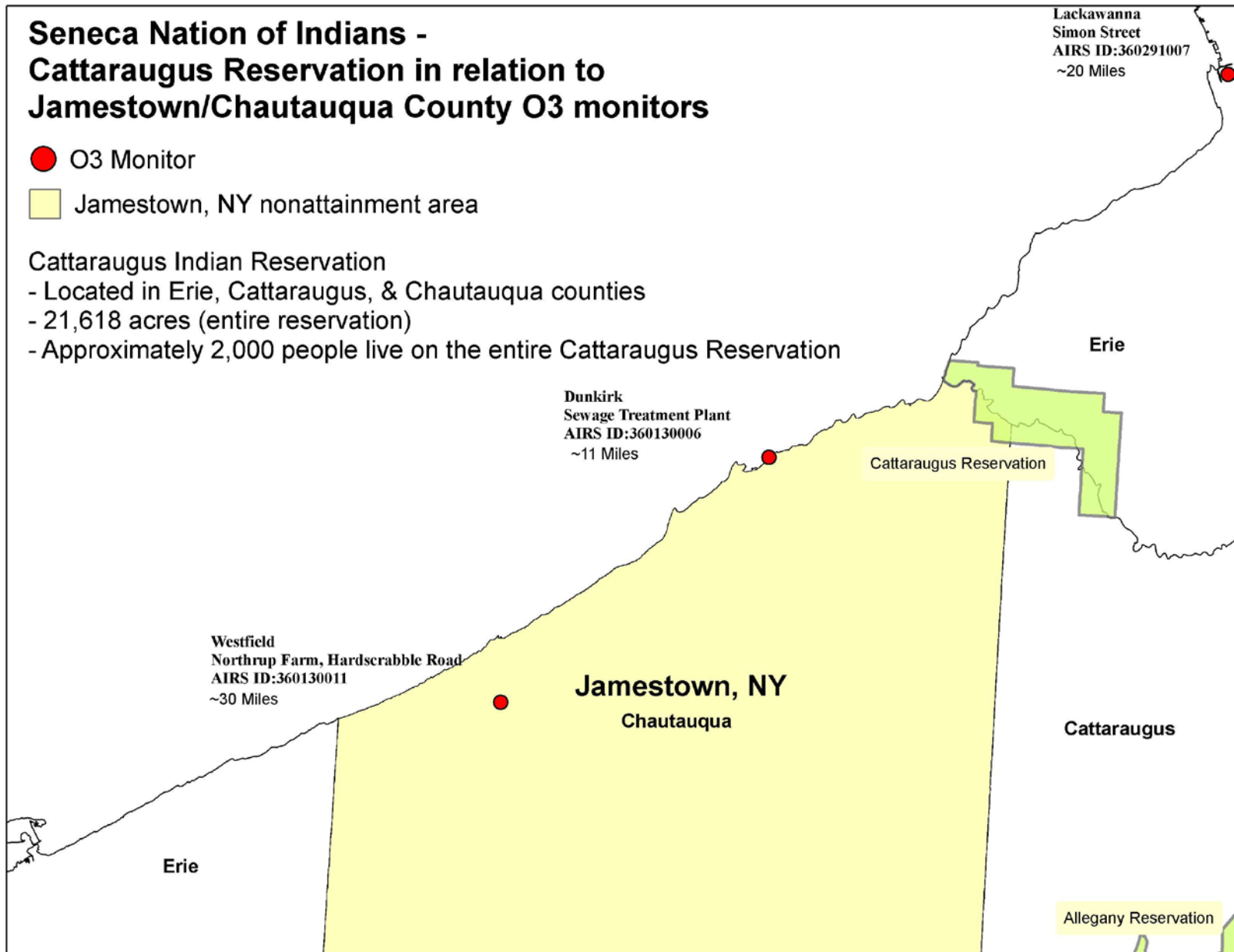


Figure 2, Map showing Seneca Nation of New York's Indian country in relation to the Jamestown, NY nonattainment area.

2010 Demographic Profile

NY - Cattaraugus Reservation

Population		Population by Sex/Age	
Total Population	38	Male	21
Housing Status (in total housing units unless noted)		Female	17
Total	17	Under 18	13
Occupied	15	18 & over	25
Owner-occupied (occupied housing units)	12	20 - 24	2
Population in owner-occupied (number of individuals)	26	25 - 34	5
Renter-occupied (occupied housing units)	3	35 - 49	8
Population in renter-occupied (number of individuals)	12	50 - 64	6
Households with individuals under 18 (households)	6	65 & over	3
Vacant	2	Population by Ethnicity	
Vacant: for rent	0	Hispanic or Latino	5
Vacant: for sale	0	Non Hispanic or Latino	33
Vacant: for seasonal/recreational/occasional use	1	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 Seneca Nation of New York’s Cattaraugus Reservation.

Attachment 2

State of New York

Listing of Areas Requested by the State to be Designated as Attainment

New York State requested the Counties, listed below, as specifically to be included in the following attainment areas for the 2008 eight hour ozone standard.

With two exceptions, the area boundaries are the same as the larger of the Metropolitan Statistical Area or the Micropolitan Statistical Area. The Poughkeepsie attainment area follows the boundaries of the ozone nonattainment area for the 1997 eight-hour ozone standard. A discussion of EPA's decision to support New York's request that the Poughkeepsie area should be separate from the New York City metro nonattainment area and should be attainment, are discussed in the TSD for the New York City metro nonattainment area. The Whiteface Mountain area follows the boundary of the one-hour ozone nonattainment area.

Poughkeepsie

Dutchess, Orange and Putnam Counties

Kingston

Ulster County

Albany-Schenectady-Troy

Albany, Rensselaer, Saratoga, Schenectady and Schoharie Counties

Rochester

Livingston, Monroe, Ontario, Orleans, and Wayne Counties

Buffalo-Niagara Falls

Erie and Niagara Counties

Whiteface Mountain

Essex County (area contiguous to Whiteface Mt. above 4,500 feet)

Jefferson County

Jefferson County

Syracuse

Madison, Onondaga and Oswego Counties

Rest of State