

Air Quality Assessment

Nevele Resort, Casino, & Spa Development Project

Town of Wawarsing, New York

CME Project #112-068

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CHAPTER I INTRODUCTION

As part of the New York State Environmental Quality Review Act (SEQRA) requirements, an air quality assessment was conducted for the proposed *Nevele Resort, Casino and Spa Development (Nevele Resort)* in the Town of Wawarsing, New York. The air quality assessment conducted conforms to the procedures followed by the New York State Department of Environmental Conservation (NYSDEC). Currently, the NYSDEC follows the procedures outlined in the New York State Department of Transportation (NYSDOT) The Environmental Manual (TEM). The TEM references the latest version of Chapter 1.1, Air Quality (last updated January 2001 with Section 8, Air Quality Models updated December 2012), of the Environmental Procedures Manual (EPM) as the latest guidance for air quality. The procedures in the EPM and TEM address the Clean Air Act Amendments of 1990 and guidance from the Environmental Protection Agency (EPA).

CHAPTER II

EXISTING CONDITIONS

New York State collects air quality data for numerous pollutants at monitoring stations in each county through a program operated by the Bureau of Air Quality Surveillance. The EPA prescribes what pollutants are required to be monitored at different locations based on the characteristics of each region. Therefore, monitoring stations are disbursed throughout New York State with each station monitoring certain pollutants. In addition to the continuous and manual monitors in each county, ambient air quality data from private networks (utilities) is also an integral part of the state database for pollutants. The data from each monitoring station is recorded and summarized in the *New York State Air Quality Report, Air Monitoring System*. The latest data tables available are for the year 2012.

The project is located in Ulster County, NYSDEC Region 3, with the transportation study area extending into Sullivan County, also NYSDEC Region 3, which are both classified as attainment areas for carbon monoxide and ozone. The closest monitoring station to the project site that monitors ozone is Valley Central, located to the south in Montgomery, Orange County. The closest monitoring station to the project site that monitors carbon monoxide is located north of the study area in Loudonville, Albany County. Based on the results of the NYSDEC report, the Valley Central and Loudonville stations were in compliance with the current New York State and Federal Ambient Air Quality Standards for each monitored pollutant in 2012.

Two types of inhalable particulates are monitored; those with aerodynamic diameters of 10 microns or less (PM_{10}) and those with aerodynamic diameters of 2.5 microns or less ($PM_{2.5}$). The closest monitoring station in NYSDEC Region 3 that monitors $PM_{2.5}$ is southeast of the site in Newburgh, Orange County. The data shows that this station was in compliance with the average 98th percentile and average annual means for the latest three year period. The only stations in New York state that monitor PM_{10} are located in New York City, Rochester, and Buffalo. The geographical distance and the character of the study area are very different than these areas therefore the PM_{10} pollutant information from the New York City, Rochester, and Buffalo stations are not applicable to the *Nevele Resort* study area.

CHAPTER III MICROSCALE AIR QUALITY

A. General Requirements

A microscale air quality analysis is performed to determine carbon monoxide concentrations at various worst case receptors adjacent to the roadways in a project area. Based on the procedures outlined in the EPM and TEM, worst case receptors are typically chosen at signalized intersections where a level of service D, E, or F exists for the build conditions. Unsignalized intersections do not typically warrant a detailed air quality analysis since the major-street high volume approaches at these intersections operate as free flow conditions.

Any intersection requiring a detailed air quality analysis based on the level of service criteria undergoes additional screenings based on an analysis of the site conditions with respect to the reduction in source-receptor distances, traffic volume increases, vehicle emission increases, and speed reduction. The screening process is used to pinpoint locations where vehicle emissions will be the highest and will contribute to the background air quality. Any detailed air quality analysis is conducted using Motor Vehicle Emissions Simulator, version 2010b (MOVES2010b), which is a computer based air quality dispersion model which is capable of analyzing intersection and free flow receptors.

B. Intersection Screening Analysis

Based on a review of the intersections analyzed in the Traffic Impact Study prepared for this project, the eleven intersections listed below were assessed for air quality:

- US Route 209/NY Route 44/55
- US Route 209/NY Route 55
- US Route 209/Maple Avenue
- US Route 209/Canal Street
- US Route 209/Center Street (NY Route 52)
- US Route 209/Warren Street (NY Route 52)
- US Route 209/Nevele Road
- US Route 209/Sullivan Street (County Road 171/172)
- US Route 209/NY Route 17 Westbound Ramp

- US Route 209/NY Route 17 Eastbound Ramp
- Nevele Road/Arrowhead Road

The information presented in the Traffic Impact Study prepared for this project indicates that four of the eleven intersections in the project area will operate as unsignalized intersections (US Route 209 with NY Route 55, Warren Street, NY Route 17 Westbound Ramp and Nevele Road/Arrowhead Road) under future 2017 Build with Improvements conditions and therefore do not require a detailed air quality assessment. The remaining seven signalized intersections screen out from requiring a detailed air quality analysis based on the future overall level of service A, B or C under Build with Improvements conditions as shown in Table 3.1 below.

Table 3.1 – Signalized Level of Service Summary

| Intersection | 2017 Build and Build with Improvements | |
|----------------------------|--|-------------------------|
| | Weekday PM Peak Hour | Weekend PM Peak Hour |
| US Rt 209/NY Rt 44/55 | A (9.3) | B (11.0) |
| US Rt 209/Maple Ave | C (24.1) | A (9.3) |
| US Rt 209/Canal St | B (15.9) | B (12.2) |
| US Rt 209/Center St | B (14.9) | B (14.9) |
| US Rt 209/Nevele Rd | B (11.0) | B (10.6) |
| US Rt 209/Sullivan St | C (24.5) | B (18.2) |
| US Rt 209/NY Rt 17 WB Ramp | B (13.2) | B (16.5) |

Based on the above site screening analysis, a detailed air quality analysis is not necessary since this project will not increase traffic volumes, reduce source-receptor distances or change other existing conditions to such a degree as to jeopardize attainment of the National and New York State Ambient Air Quality Standards.

CHAPTER IV

MESOSCALE AIR QUALITY

A. General Requirements

A mesoscale air quality analysis is conceptually similar to the microscale air quality analysis; however, it covers a larger geographic area, typically larger than the immediate project area. In addition to carbon monoxide, a mesoscale air quality analysis monitors for volatile organic compounds (VOC) and nitrogen oxides (NO_x). In general, a mesoscale air quality analysis is required for projects involving the following:

1. HOV lanes vs general use lanes
2. New or significant modification to interchanges on access-controlled facilities
3. Large-scale signal coordination projects
4. In attainment areas, projects having alternatives (including the no-build) with significantly different (10%) VMT
5. Widening to provide additional travel lanes more than a mile in length.

The criteria for a mesoscale air analysis found in Chapter 1.1 of the EPM are not met with the development of this recreational land use project; therefore, a mesoscale analysis is not required.

CHAPTER V

PARTICULATE MATTER ANALYSIS

A. General Requirements

Particulate Matter (PM) is a mixture of substances that include elements such as carbon and metals; compounds such as nitrates, organic and ammonium compounds, and sulfates; and complex mixtures such as diesel exhaust and soil. Some of these particles are emitted directly into the atmosphere. Others, referred to as secondary particles, result from gases that are transformed into particles through physical and chemical processes in the atmosphere. There are two types of inhalable particulates; those with aerodynamic diameters of 10 microns or less (PM_{10}) and those with aerodynamic diameters of 2.5 microns or less ($PM_{2.5}$).

Many scientific studies have linked breathing PM to a series of significant health problems including aggravated asthma, increase in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, and premature death. As a result, NYSDOT requires that transportation project level air quality impact analyses consider both PM_{10} and $PM_{2.5}$.

B. Particulate Matter Microscale Analysis

As of December 2012 the NYSDOT states that PM analysis should be based upon EPA guidance. The EPA has published both quantitative and qualitative procedures for PM analysis.

Information published by the EPA in the *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* states that analyses are only needed for projects that are of “air quality concern”. These types of projects include a significant increase in diesel truck traffic. Projects that are not of air quality concern do not create a significant increase in diesel truck traffic. The proposed *Nevele Resort* is not expected to significantly increase the percentage of diesel trucks in the study area. Therefore, no PM impact analysis is required.

C. Particulate Matter Mesoscale Analysis

As discussed in Chapter 3 projects requiring a mesoscale analysis are those that could have a significant impact on emissions on a regional basis. The proposed project does not meet any of the criteria in Chapter 1.1 of the EPM for a mesoscale analysis; therefore, no particulate matter mesoscale analysis is required.

CHAPTER VI

CONSTRUCTION IMPACTS

The air quality within the project area may experience short-term impacts due to the construction of the project. During construction, airborne particulates will increase as dust is raised by construction vehicles in motion. This increase is expected to be sporadic and short-term in nature and will be most noticeable in the area immediately adjacent to the construction. The impacts should be minimized by the use of dust inhibitors, such as calcium chloride and other dust-control provisions found in the NYSDOT Standard Specifications for construction.

CHAPTER VII CONCLUSIONS

Based on the 2012 NYSDEC air quality monitoring report, the stations closest to the proposed *Nevele Resort* project are in compliance with the current New York State and Federal Ambient Air Quality Standards for each monitored pollutant. In addition, the microscale screening process shows that detailed air quality analysis is not needed for the subject project.

Review of the standards and guidance published for mesoscale and particulate matter air quality analysis shows that the proposed project does not meet the criteria for detailed mesoscale and particulate matter analysis.

Based on the air quality assessment completed, this project will not increase traffic volumes, reduce source-receptor distances or change other existing conditions to such a degree as to jeopardize attainment of the National and New York State Ambient Air Quality Standards.

The air quality within the project area may experience short-term impacts due to the construction of the project. This increase is expected to be sporadic and short-term in nature and will be minimized by the use of dust inhibitors detailed in the NYSDOT Standard Specifications for construction.