I. AIR QUALITY

EXISTING CONDITIONS

The Clean Air Act Amendments of 1990 (CAAA), enacted on November 15, 1990, authorized the Environmental Protection Agency (EPA) to designate areas as nonattainment for air quality and classify them according to severity of nonattainment. A nonattainment area is an area that does not meet the National Ambient Air Quality Standards (NAAQS) for a given pollutant, or contributes to the air quality in a nearby area that does not meet these standards. National Ambient Air Quality Standards are health-based standards, established by the EPA for air contaminants, which specify permissible levels of a given pollutant in air.

Nonattainment areas are classified, in increasing severity, as marginal, moderate, serious, severe, or extreme nonattainment. These classifications are based on the number of exceedances per year and average pollutant values obtained from monitoring data in various regions. Albany County, where the Study Area is located, has been designated as marginal nonattainment (0.121 ppm to 0.138 ppm concentrations) for ozone and attainment for carbon monoxide.

The NYSDEC Bureau of Air Quality Surveillance monitors a number of pollutants through a Statewide network which includes both State operated and private (utilities) stations. Monitored pollutants include: sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone, total suspended particulates, inhalable particulates, and lead.

The closest monitoring station to the Study Area that measures carbon monoxide is in Schenectady. The Schenectady station and the Loudonville station monitor ozone concentrations. *The New York State Air Quality Report, Ambient Air Monitoring System* (NYSDEC 1991-1994) indicates that the 1991 through 1994 carbon monoxide and ozone concentrations in Schenectady were in compliance with the ambient air quality standards. The ozone standard at the Loudonville station was in compliance in 1991, 1992, and 1993; however, it was exceeded once in 1994. Additional ozone data provided by NYSDEC indicates that the ozone standards at both monitoring stations were not exceeded in June, July, and August of 1995 when the temperatures and ozone emissions are usually the highest.

The 1993 NYS Air Quality Report indicates that the implementation of more stringent volatile organic compound (VOC) emission controls, including the use of less volatile gasoline since 1990, may have contributed toward the reduction of ambient ozone concentrations. However, as shown with the ozone exceedance in 1994 at the Loudonville station, the impact of varying meteorological conditions on ozone make a definite conclusion on VOC emission controls difficult.

Other pollutants monitored at the Schenectady and Loudonville stations include sulfur dioxide, nitric oxide, inhalable particulates, and total suspended particulates. All of these pollutants were in compliance with the ambient air quality standards between 1991 and 1994.

IMPACTS AND MITIGATION MEASURES

Based on discussions with the NYSDEC, an initial screening process was developed to determine what intersections, if any, would require a detailed air quality analysis. This

screening process is based on procedures outlined in the *Guideline for Modeling Carbon Monoxide from Roadway Intersections* (EPA 1992). This screening process examines the increase in traffic volume at intersections as well as intersection levels of service with the following two steps:

Step 1: Removal from further air quality analysis any intersection with a less than ten percent increase in traffic between the 2015 no-build and build conditions.

Step 2: Removal of any intersection remaining after Step 1 operating at a level of service C or better for the 2015 build condition.

The following ten intersections located within the study area were included in the two step screening process:

1. Consaul Road at Lisha Kill Road
2. Albany Street at Cordell Road
3. Albany Street at Morris Road
4. Albany Street at Lisha Kill Road
5. Kings Road at Morris Road
6. Morris Road at Curry Road
7. Central Avenue at Lisha Kill Road
8. Kings Road at Cordell Road
9. Albany Street at New Karner Road
10. Albany Street at Old Karner Road

Based on Step 1 of the above screening procedures, the intersections of Central Avenue at Lisha Kill Road (7) and Albany Street at Old Karner Road (10) were removed from further analysis since the increase in traffic between the no-build and build conditions is expected to be 8 percent and 7 percent, respectively. Step 2 of the screening process was based on the planning analysis conducted for the above listed intersections. The planning analysis, outlined in Section III.H. of this report, is based on procedures outlined in the *Highway Capacity Manual* (Transportation Research Board 1994). These procedures give analysis results indicating if an intersection is operating over capacity, at capacity, near capacity or under capacity.

According to the analysis any intersection with results indicating an operation 'under capacity' correlates to a level of service C or better. The intersections of Morris Road at Curry Road (6) and Kings Road at Cordell Road (8) are expected to operate at a level of service C or better in the 2015 build conditions without any mitigation. The remaining 6 intersections (1-5 and 9) are expected to operate at a level of service C or better with the mitigation measures, outlined in Section II.H., in place.

The screening analysis indicates that based on the traffic forecasts and analysis all ten intersections in the study area do not require a detailed air quality analysis and should not create air quality problems. However, it is important to note that several of the intersections were screened out based on analysis results with mitigation measures in place. These measures are being recommended as part of the GEIS to alleviate traffic congestion due to the expected growth in the area and are assumed to be in place by the 2015 build condition.