

ZAMURS AND ASSOCIATES, LLC

Transportation Air Quality Energy Climate Change Sustainability

Rapp Road Residential Development and Additional Lands

Draft Scope and SEQR Positive Declaration

Review Findings

Review of the SEQR Positive Declaration and the related Draft Scope indicates that an important issue has not been identified for study and evaluation, namely air quality. This project has the potential to negatively impact air quality in the project area and this issue must be thoroughly evaluated in the upcoming EIS process. Emissions from the additional traffic this project will generate, as well as emissions during the construction of the project, may negatively impact the health of nearby residents and visitors to the area by causing unhealthful levels of a number of air pollutants that are emitted by vehicles and construction equipment. The documents do consider the impact of additional traffic but fail to recognize the related issue of air quality. In essence, more traffic means more air pollution.

Exposure to roadside pollution is a well-known environmental concern. USEPA recognizes this, indicating “(W)ith more than 45 million people in the U.S. living within 300 feet of a major transportation facility or infrastructure, notably busy roads, there is concern about the potential health impacts from air pollutants emitted from cars, trucks and other vehicles. Research has demonstrated that exposure to pollutants emitted from motor vehicles can cause lung and heart problems and premature death” (<https://www.epa.gov/air-research/research-near-roadway-and-other-near-source-air-pollution>). Numerous studies have shown the link between roadside air pollution and adverse health effects (Air pollution and health risks due to vehicle traffic, Zhang and Batterman, 2014; Sustainable development of urban transport systems and human exposure to air pollution, Coleville et al., 2004; Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects, Health Effects Institute, 2010; etc., etc.).

USEPA has established National Ambient Air Quality Standards (NAAQS) for several pollutants to protect the public from adverse health effects of these pollutants. The standards are designed to protect sensitive populations (children, elderly, people with cardio-vascular and

pulmonary conditions) from unhealthful levels of air pollution. For other toxic pollutants, annual guideline concentrations (e.g., <https://www.dec.ny.gov/chemical/8568.html>) have been established to determine acceptable levels of these pollutants in the air. Toxic air pollutants have been linked to cancer, birth defects, immediate death, or other serious illnesses. Due to the emissions from increased traffic from this project and emissions from construction equipment that will be used for this project, the project sponsor should be required to do a comprehensive air quality study of the impacts of this project.

Specific findings and recommendations:

1) Air quality studies for this project must be performed to examine the effects and impacts of the completion of this project on air quality in the project area. The studies must determine expected concentrations at parking lots associated with the project and at roadways and intersections that will experience increased traffic as a result of this project. The studies should consider any locations accessible by the public. Parking lots are important because of the nature of vehicle operation and movement in the parking lots. Parking lots may show the highest concentrations for various air pollutants. Roadways and intersections that are impacted by increased traffic must also be considered. The locations listed on Page 8 of the Draft Scope is a good place to start and may need to be expanded, depending on the analysis results at these locations.

The parking lot and roadway locations should be assessed for the potential to violate NAAQS and to exceed guideline concentrations for pollutants not covered by the NAAQS. The following pollutants should be addressed:

- a) Particulate Matter – this includes both Particulate Matter 10 microns in diameter or less (PM₁₀) and Particulate Matter 2.5 microns in diameter or less (PM_{2.5}). The analysis should include the following components: brake and tire wear, entrained road dust, and vehicle exhaust emissions. PM₁₀ and PM_{2.5} concentration estimates should be determined at the parking lots and intersections near the project site to assure the public and residents that unhealthful levels of this pollutant will not result from this project.
- b) Nitrogen dioxide (NO₂) – In 2010, USEPA established a new 1-hour NAAQS for this pollutant. Some studies suggest that NO₂ pollution levels near freeways do not exceed the new standard. However, no studies have yet been done to document levels near congested intersections or parking lots. NO₂ concentration estimates should be determined at the parking lots and intersections near the project site to assure the public and residents that unhealthful levels of this pollutant will not result from this project.
- c) Carbon monoxide (CO) – This pollutant typically is highest at congested intersections and at parking lots. CO concentration estimates should be determined at the parking

lots and intersections near the project site to assure the public and residents that unhealthy levels of this pollutant will not result from this project.

- d) Air Toxics – When gasoline and diesel fuel is combusted, the resulting emissions include a wide variety of pollutants that are classified as toxic air pollutants. Although NAAQS for these pollutants have not been established, guideline concentrations have been established. Ambient levels of these pollutants above the guideline concentration levels have been associated with increased risk for cancer and other diseases. USEPA has identified 21 hazardous air pollutants associated with gasoline and diesel combustion and listed six of them (benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter) as having the greatest influence on health. Concentration estimates for, at least, these six toxic air pollutants should be determined at the parking lots and intersections near the project site to assure the public and residents that unhealthy levels of these pollutants will not result from this project.

For all these pollutants, appropriate background concentrations must be determined and added to the concentration estimates derived at the analysis locations to arrive at total concentrations. It is the total concentration to which the public and visitors to the project area are exposed and which must be compared to the appropriate NAAQS and concentration guidelines to determine if negative air quality impacts will arise due to the completion of this project.

2) Emissions during construction can be intensive and should also be evaluated for the above air pollutants. Depending on the equipment, engine type and fuel, and duration of operation, construction equipment can emit large quantities of air pollution and cause unhealthy levels of these pollutants in the air near the construction operations. Based on the proposed location of the project, construction will be in the vicinity of locations accessible to the public. In addition, any traffic diversions and detours during construction to nearby intersections or parking lots must be evaluated for the potential to exceed the appropriate NAAQS or concentration guidelines.

3) The project should be evaluated for its impact on greenhouse gas emissions and climate change. Climate change is a real threat to the quality of life, not only for the world and the nation, but also New York State and the local community. It is important that this project assess its carbon footprint and mitigate it as much as possible. The project should be evaluated for its greenhouse gas emission impact from direct emissions (materials used in the buildings, fuel sources, construction equipment and fuels) and indirect emissions (induced traffic and resulting congestion due to attracted trips to the project area, employee commuting, etc.). Guidance is available to evaluate these potential impacts

(https://www.dec.ny.gov/docs/administration_pdf/eisghgpolicy.pdf, although some more

current tools are available). Construction greenhouse gas emissions and emissions from vehicles attracted to the area by the projects could be substantial. It would be regrettable if the greenhouse gas emissions from this project offset emission reduction plans or projects designed to reduce greenhouse gas emissions and combat the cause of climate change that may be planned or ongoing.

The three components of an air quality study, as described above, should be done for the entire project, not individual segments of the project. Incremental air quality impacts from individual elements of the project may not seem as impactful, and therefore, perhaps more acceptable, by not triggering a violation of the NAAQS or guideline concentration levels. In addition, if all impacts in number and degree can be identified in the early stages of a project, mitigation options are more plentiful and will have a greater chance to succeed by bringing unhealthful air quality levels to within acceptable levels, as established by the NAAQS and concentration guidelines.