Chapter 9: Construction

9.1 DESCRIPTION OF CONSTRUCTION ACTIVITY

The proposed action is expected to comprise the following major construction phases:

- Project initiation and staging;
- Removal of asbestos, oil tanks and other potential hazardous materials;
- Demolition of structures; and
- Final landscaping (lawn cover) and cleanup.

During all phases of construction, transport and disposal of hazardous materials and demolition debris would be conducted in accordance with all applicable Federal, State and County regulations and standards (see also Chapter 8, "Hazardous Materials"). In addition, the contractor documents would limit trucks to accepted truck routes and would direct all construction heavy equipment vehicles to Rockaway Avenue, to Herricks Road, and then to the Long Island Expressway. At the peak of demolition, it is estimated that the project would generate approximately 24 truck trips per day, in each direction. In addition, a stabilized construction entrance would be prepared in accordance with accepted sediment and erosion control practices. This would minimize the tracking of dust and dirt onto local roads as well as control runoff and erosion. In addition, all exposed soil surfaces would be seeded, sodded or landscaped as soon as possible following the completion of demolition.

These measures would be incorporated as part of the plans and specifications of the construction contract and enforced by the Village Director of Public Works or his/her designated representative. The duration of the project is expected to be approximately one year. It is expected that any adverse construction-related impacts resulting from the project would be temporary and minor in nature.

9.2 AIR QUALITY

Although it is temporary, construction work can sometimes have a noticeable effect on air quality in surrounding communities, depending on the duration and intensity of the construction program and its proximity to sensitive land uses. Work activities for the proposed demolition would consist of structural demolition and landscape improvements after demolition is complete. Fugitive dust created by these activities and engine emissions associated with on-site equipment are the main concern with regards to air quality. Therefore, an assessment of the potential adverse effects from these air emission sources is made below, along with a description of the methods that may be employed to avoid any impacts on air quality.

Work activities at the site would generate fugitive dust (i.e., particulate matter). These activities would include breaking up building facades and interior spaces; loading and drop operations that transfer materials (e.g., debris, soil and fill) to or from dump trucks; grading of earthen materials and on-site travel across paved or unpaved surfaces that cause particulate matter to become airborne.

Work activities would also include heavy equipment operating onsite. In general, most construction equipment engines are diesel-powered, and produce nitrogen oxides (NO_x) and particulate matter (PM). Diesel engines emit much lower levels of carbon monoxide (CO) than gasoline engines. Sulfur oxides (SO_x) emitted by diesel engines would likely be negligible since ultra-low-sulfur diesel (ULSD) fuel is now readily available and can be used in almost any diesel engine.

The air emission sources described above would generate and release some level of air pollution to the atmosphere. The quantity of air pollutants emitted during the scheduled work period (approximately one year) would also vary over time because equipment types and activities associated with each distinct work task would be different. However, it is not expected that the work activities would increase concentrations of any emitted pollutant by amounts that would be considered significant in ambient air. This is because the intensity of work activities and the number of vehicles traveling onsite would be relatively low for all tasks. Buffer zones between the site structures and nearby sensitive land uses are also relatively wide. In addition, the short duration of the work program makes it even less likely for air quality impacts to occur. Therefore, no significant adverse impacts to air quality are anticipated.

Despite the minimal effects to air quality, the project could avoid potential impacts by following certain control measures, listed below.

Fugitive Dusts:

- Watering: Trucks and exposed soil and work surfaces could be watered as needed;
- Truck Covers: Dust covers for dump trucks would be required;
- Stabilization: Stabilized truck entrances and exits would be constructed;
- Cleaning: Truck exit areas could include stations for washing off the wheels; and
- Planning: A fugitive dust control plan that would include perimeter air monitoring and misting protocols that would be implemented.

Equipment Engines:

- Clean Fuel: Ultra-low-sulfur diesel (ULSD) fuel could be required for diesel engines throughout the work program;
- Idle Time Restrictions: Idle times could be restricted to three minutes for all vehicles that are not using the engine to operate a loading, unloading, or processing device;
- Utilization of New Equipment: The construction specifications could encourage the use of late model equipment. Newer equipment with lower engine-out emissions would significantly reduce effects on air quality from diesel engines; and
- Planning: Large equipment could be located as far as possible from residential neighborhoods and public spaces, to the extent practicable.

9.3 NOISE

Impacts on community noise levels during demolition can result from noise from construction equipment operation, and from construction vehicles and delivery vehicles traveling to and from the site. Noise and vibration levels at a given location are dependent on the type and quantity of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating), the distance from the demolition site, and any shielding effects (from structures such as buildings, walls, or barriers). Noise emission

levels of some typical construction equipment are shown in **Table 9-1**. Noise levels caused by demolition activities would vary widely, depending on the phase of demolition and the location of the demolition activities relative to noise sensitive receptor locations. Like most construction projects, demolition of the Saint Paul's School would result in increased noise levels for a limited time period.

Table 9-1
Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from source
Air compressor	81
Backhoe	80
Bulldozer	85
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Generator	81
Grader	85
Impact Wrench	85
Jackhammer	88
Loader	85
Paver	89
Pile Driver (Impact)	101
Pile Driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Rail Saw	90
Rock Drill	98
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	88
Sources: Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, May 2006.	

Construction noise is regulated by the U.S. Environmental Protection Agency's noise emission standards. These federal requirements mandate that specific construction equipment and motor vehicles meet specified noise emission standards.

Noise generated by construction equipment would decrease with distance. In general, the outdoor drop-off rate for moving noise sources is a decrease of 4.5 dBA for every doubling of distance between the noise source and the receiver. For stationary sources, the outdoor drop-off rate is a decrease of 6 dBA for every doubling of distance between the noise source and the receiver. In general, noise caused by demolition activities would vary widely in volume, duration

and location, depending on the task being undertaken and the piece of equipment used. Noise caused by delivery trucks, employees traveling to and from the site, and other construction vehicles would not be severe in volume or duration, and would be limited to the major access roadways leading to the project site.

A wide variety of measures could be used to further minimize demolition noise and reduce potential noise impacts. During each phase of demolition, measures could be implemented to reduce noise to the lowest practicable limits and to within the limits required by applicable codes and regulations. These include:

- Requiring that all contractors and subcontractors properly maintain their equipment and have the appropriate manufacturer's noise reduction devices, including, but not limited to, a quality muffler that is free of rust, holes, and exhaust leaks installed; and
- Path control measures including the placement of equipment, implementation of barriers between equipment and noise sensitive receptors and placing noisy equipment, such as generators, cranes, trailers, concrete pumps, concrete trucks, and dump trucks away from and shielded from noise sensitive receptor locations.

The structural demolition would occur during phase 4 of the demolition. Demolition activities during this phase would likely include the use of bulldozers, dump trucks, and loaders among other equipment. This phase would result in the most substantial noise emissions of the entire demolition process. Activities associated with this demolition phase would likely result in perceptible noise-level increases at the immediately adjacent noise-sensitive receptor locations. While the noise due to demolition activities may be intrusive, high noise levels would only occur for limited periods of time and during daytime work hours, and consequently would not be considered a significant impact. ✷