3.9 Noise and Air Resources

3.9.1 Noise

Noise Characteristics

Noise can be defined as undesirable or "unwanted sound." Even though noise is somewhat subjective, it affects the full range of human activities and must be considered in local and regional planning. Most of the sounds heard in the environment are not composed of a single frequency, but are a band of frequencies, each with a different intensity or level. Levels of noise are measured in units called *decibels*. Since the human ear cannot perceive all pitches or frequencies equally well, noise measurements are adjusted or weighted to correspond to human hearing. This adjusted unit is known as the *A-weighted decibel*, or dBA. The A-weighted sound level (dBA) is useful for gauging and comparing the subjective loudness of sounds. Since dBA describes a noise level at just one instant while ambient noise levels are continually varying, other ways of describing noise levels, especially over extended periods, are needed. Three commonly used descriptors are the L_{10}, L_{eq}, and L_{dn}.

L_{10} represents the noise level exceeded ten percent of the time during the period of measurement. It is normally taken as the mean of the peak noise levels. The *equivalent noise level*, or L_{eq}, is defined as the level of continuous sound having the same amount of acoustical energy as a fluctuating sound over the same period. L_{eq} is used in the prediction of potential noise levels, by logarithmically adding the contributions from new noise sources to the existing levels, and in relating annoyances to increased noise levels. L_{eq} is being increasingly recognized as an adequate noise measure by national and international regulatory agencies. The day-night sound level, L_{dn}, is a noise rating developed by the EPA for specifications of community noise from all sources. The L_{dn} includes a weighting penalty of 10 dBA added to sound levels occurring between 10:00 P.M. and 7:00 A.M.

One decibel change in noise is the smallest change detectable by the human ear under suitable laboratory conditions. However, under normal conditions, a change in noise level of two or three decibels is required for the average person to notice a difference. Environmental noise is considered with regard to several factors, including *level* (which relates to perceived loudness of a noise), *character, duration, time of day* and *frequency of occurrence.*

Table 3.9-1
Perception of Changes in Noise Levels

Change (dBA)	**Average Ability to Perceive Changes in Noise Levels Human Perception of Change**
2-3	Barely perceptible
5	Readily Noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt Baranek and Neuman, Inc. Fundamentals and Abatement of Highway Traffic Noise, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.

Table 3.9-2 **Community Response to Increases in Noise Levels**		
	Estimated Community Response	
Change (dBA)	**Category**	**Description**
0	None	No observed reaction
5	Little	Sporadic complaints
10	Medium	Widespread complaints
15	Strong	Threats of community action
20	Very strong	Vigorous community action
SOURCE: International Standard Organization, Noise Assessment with Respect to Community Reactions, 150/TC 43. (New York: United Nations, November 1969.)		

HUD Standards

The United States Department of Housing and Urban Development (HUD) has adopted environmental standards, criteria, and guidelines for determining acceptability of federally-assisted projects and proposed mitigation measures to ensure that activities assisted by HUD will achieve the goal of attaining a suitable living environment. Although the proposed community is not subject to HUD guidelines, these guidelines do represent valid goals for any development. Table 3.9-3 summarizes HUD site acceptability standards based on external noise levels.

These standards reflect an EPA goal that exterior noise levels do not exceed an L_{dn} of 65 decibels. This goal is not a mandated standard and does not account for cost or feasibility.

Table 3.9-3 **HUD Site Acceptability Standards**	
	Outdoor Ldn (dBA)
Acceptable	Not exceeding 65
Normally Unacceptable	65 to 75
Unacceptable	Above 75
Source: Title 24, Code of Federal Regulations, Part 5l.103 (c), Exterior Standards.	

FHWA Guidelines

The Federal Highway Administration (FHWA) guidelines present recommended exterior design noise levels for various land uses exposed to noise generated by vehicular traffic from highways. The FHWA establishes an exterior design noise level of 67 dBA ($L_{eq)}$ for residential area; however noise levels approaching this level are also regulated. The definition of "approaching" is 1 dBA below the design noise level or 66 dBA. Therefore, noise levels of 66 dBA or higher are considered to exceed the design noise level for exterior residential areas. The FHWA recommends use of noise abatement measures for residential areas where the noise level exceeds 66 dBA for vehicular traffic.

Village of Monroe Noise Control Law

Section 145-3(6) of the Village Code prohibits “The erection, demolition, alteration, or repair of any building other than the hours of 7:00 AM and 9:00 PM weekdays and between 9:00 AM and 9 PM on Saturday and Sunday except in cases of urgent necessity in the interest of public safety ..."

The proposed construction activity would conform with the noise regulations of the Village Code. Construction activity would be limited to Monday through Friday, between the hours of 7:00 AM and 8:00 PM, and Saturday 9:00 AM to 8:00 PM.

Noise Sensitive Receptors

Existing land uses were reviewed to identify potential noise-sensitive receptors in the project area. As described in Section 3.1 of this document, the site is generally surrounded by a combination of single-family residential and vacant land. The land to the north, east, and directly south, of the site are single family residential. Land parcels immediately to the west and southwest of the project site are vacant.

A parcel owned by the Village of Monroe containing the Village’s DOT facilities is located to the west of the site along Clark Street. The right of way for Consolidated Rail Corporation abuts the property to the north. The railroad has been abandoned in this area, and the raised right-of-way is part of the Orange County Trailway system. There is a strip of vacant land between the trail way and Spring Street. The Seamanville Cemetery lies north of Spring Street in proximity to the project site.

The project site is located between State Route 17M and County Route 5 with general business uses located along these corridors. These uses are not generally considered sensitive receptors with regard to noise.

The relationship between the areas of construction activity on the proposed Hidden Creek site and existing residential areas in the immediate project vicinity was reviewed. The nearest homes would be 100 feet from the closest proposed multifamily residential units, Buildings 8, 9, and 15. However, As can be seen in the proposed site plan Figure 2.3-1, most of the residences are at distances greater than 150 feet from construction activities.

The Village’s DOT facility located at the end of Clark Street, north of the proposed project is generally not considered sensitive.

The site’s active outdoor recreation area is located at least 300 feet from any neighboring residence and 500 feet from the Orange County Trailway.

Existing Noise Levels

Noise measurements were made at seven locations on the project site as shown on Figure 3.9-1 on May 14, 2003 between 9:30 a.m. and 2:30 p.m., which would coincide with peak construction periods on the site. Average background noise at the seven locations shown on Figure 3.9-1 were as follows:

1. *45.6 dBA*
2. *44.4 dBA*
3. *44.0 dBA*
4. *61.5 dBA*
5. *46.2 dBA*
6. *43.3 dBA*
7. *45.3 dBA*

Freeland Street traffic is the primary noise source in the area and noise drops off quickly toward the interior of the site.

Construction Noise Impacts

It is anticipated that construction equipment will primarily use Route 17M to Freeland Street and will utilize a stabilized construction entrance in the area of the proposed Hidden Creek Road to enter the project site.

Ambient daytime noise levels will increase in the immediate vicinity of the site during project construction. Construction activities and operation of construction equipment have been the subject of numerous noise studies completed for various projects in the region. The following table shows representative maximum sound levels for diesel powered equipment and other activities at a range of receptor distances.

Table 3.9-4
Construction Noise Levels (dBA)

	Maximum Sound Level			
Equipment/Activity	**50 feet**	**200 feet**	**500 feet**	**1000 feet**
Backhoe	82-84	70-72	62-64	56-58
Blasting	93-94	81-82	73-74	67-68
Concrete Pump	74-84	62-72	54-64	48-58
Generator	71-87	59-75	51-67	45-61
Hauler	83-86	71-74	63-66	57-60
Loader	86-90	74-78	66-70	60-64
Rock Drill	83-99	71-87	63-79	57-73
Trucks	81-87	69-75	61-67	55-61

Source: Tim Miller Associates, Inc.

To the average person, a noise level increase of 2 to 3 dBA is barely perceptible, an increase of 5 dBA is noticeable, and an increase or 20 dBA is perceived as a dramatic change. Annoyance frequently results from increases of 10 dBA or more, depending on the frequency and duration of the noise events.

The level of impacts of these noise sources depends on the type and number of pieces of construction equipment being operated, as well as the distance from the construction site. The Mansion Ridge site was surveyed during operation of an excavator and dump truck. Average noise level was 67.5 dBA with a peak noise level of 77.1 dBA at 50 feet. This is below Table 3.9-4 values.

The noisiest period of construction will occur during site clearing and grading activities when the site is prepared for internal roads, parking areas, utilities and building pads. Multiple pieces of equipment operating simultaneously in the same area will increase total noise exposure for short periods and local residents may experience periods during the work day where noise is elevated. Noise levels due to construction activities will vary widely, depending on the phase of construction activities. Noise levels at the site property line are projected to range between 65 dBA and 90 dBA, depending on the actual location of construction equipment at any given time.
As stated earlier, most of the residences are at distances greater than 150 feet from construction activities. At this distance, most construction activity noise would be attenuated to acceptable daytime noise levels outside of the residences. Inside residential areas, noise would be further attenuated by windows and walls.

Activity to construct the site's active outdoor recreation area is located at least 300 feet from any neighboring residence and 500 feet from the Orange County Trailway.

The Orange County Trailway is located along the northern border of the site. The Trailway in this area is relatively unimproved, but has the potential to provide a valuable recreational resource to this area. Apart from construction of the pedestrian access the nearest area of significant construction on the project site would be more than 150 feet from the Orange County Trailway. Most construction activities would be much further away from the Trailway.

Construction noise will be a temporary activity. Employee activities would be subject to U.S. Department of Labor Occupational Safety and & Health Administration (OSHA) regulations regarding Safety and Health regulations for Construction (Standard 1926.52). This standard requires reducing sound levels based on permissible noise exposure. The lowest sound level standard with a limited duration is 90 dBA at eight hours per day. The site construction noise levels will be maintained below these standards at the property line.

Noise at the Mansion Ridge site with an excavator and dump truck were measured at various distances. At 100 feet, the minimum distance construction should be from the property line of the project site, average sound levels were 64.3 dBA. This is below the HUD and FHWA standard of acceptability for more permanent vehicular traffic.

Construction Traffic

Construction traffic consists primarily of construction vehicles arriving at the beginning of the construction period and daily trips of construction workers. Earth moving equipment such as bulldozers, excavators, graders, trenchers, tractors, and back hoes would be transported to the site by tractor trailers. Dump trucks would be driven to the site for internal use during site development and the removal of excess earth material. Earth moving equipment is generally kept on the site for the duration of the earth moving activities. All construction vehicles would access the site from Freeland Street primarily via Route 17M. Construction vehicles and employees would park on-site at all times. It is not known which roads the equipment would use upon arrival to or departure from the site. These details will be determined prior to any construction activity and with consultation from the Village of Monroe Planning Board, Highway Department and Police Department. The Applicant will coordinate with the Police Department to ensure that all appropriate measures are provided to ensure the safe passage of construction vehicles into and out of the site, such as the use of traffic flagging crews, additional police and temporary construction road signs.

Construction workers typically arrive and depart the site prior to standard peak hours of traffic as would the initial construction vehicles. The peak hours of construction activity would be 7:30 AM to 3:30 PM with daily construction activity generally complete by approximately 6:00 PM.

Mitigation Measures

Construction activities will be limited as outlined in the Village's Noise Control Code. All construction vehicles and equipment will be well maintained and operated in an efficient manner. Mufflers and related equipment will be maintained to effectively reduce noise from on-site vehicles and equipment. Employees at the noise source will be protected using further administrative measures, engineering controls, or personal protective equipment consistent with OSHA regulations. Administrative measures will be used to further limit the duration of exposure at the property line to below permissible noise exposures based on OSHA Standard 1926.52.

3.9.2 Air Quality

Existing Air Quality

With the enactment and later revisions to the Federal Clean Air Act (1990), each state was required to develop a State Implementation Plan (SIP) in order to provide a regulatory framework in which to implement requirements of the Act. The New York SIP adopted ambient air quality standards (AAQS) from a list of seven criteria pollutants established by the US Environmental Protection Agency (USEPA). These pollutants were selected by the USEPA based on a list of pollutants of primary concern nationwide. Attainment of the AAQS is required under the Act, and each State has a designated time period in which to bring nonconforming areas into compliance. The AAQS establish levels to protect the health (primary standard) and welfare (secondary standard) of the general public with an adequate margin of safety.

New York State is divided into nine Air Quality Control Regions (AQCR) based on geographic location. The New York State Department of Environmental Conservation (NYSDEC) has a network of ambient air monitoring stations located throughout the State in each of the AQCR's in order to evaluate the attainment status of each region with respect to the SIP. The Village of Monroe is located in the central portion of Orange County, which lies within the southern portion of the "Hudson Valley" AQCR (Region 3), just north of the "Metropolitan" AQCR. The federal criteria pollutants currently monitored within the Hudson Valley and Metropolitan AQCR include: sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, total suspended particulates, inhalable particulates and lead, in addition to several non-criteria pollutants.

Although there is no available ambient air quality monitoring data within the Village of Monroe, regional state monitoring data is available to characterize the project site. Data from the NYSDEC 2001 Annual New York State Air Quality Report Ambient Air Monitoring System, which is the latest year of published data, 2001, is compiled in Table 3.9-5 from the closest ambient air monitoring stations located in the Hudson Valley and Metropolitan AQCRs. Table 3.9-5 lists ambient air quality concentrations according to associated State Ambient Air Quality Standards (AAQS) which are the same as the Federal Standards. These data provide information on existing air quality levels. Use of the regional data to represent the project site provides a reasonable evaluation of local air quality, since the NYSDEC monitors are located to characterize regional ambient air quality.

Table 3.9-5
Regional Air Quality Data Summary

Monitoring Location	Pollutant	Period	Concentration	Air Quality Standard
Valley Central	Ozone (O3)	Annual	0.030 ppm	------
		1-Hour (5)	0.090 ppm	0.08 ppm
Ninham Mt.	Sulfur Dioxide (SO2)	Annual	0.0023 ppm	0.03 ppm
		24-Hour	0.0105 ppm (1)	0.14 ppm
		3-Hour	0.0267 ppm (1)	0.50 ppm
Belleayre Mt.	Sulfur Dioxide (SO2)	Annual	0.0017 ppm	0.03 ppm
		24-Hour	0.0103 ppm (1)	0.14 ppm
		3-Hour	0.0196 ppm (1)	0.50 ppm
(2)	Nitrogen Oxides (NOx)	Annual	--------	0.03 ppm
		1-Hour	--------	------
Wallkill	Total Suspended Particulates	Annual	33 ug/m^3	50 ug/m^3
	(sampling terminated in 1998)	24-Hour	98 ug/m^3 (1)	250 ug/m^3 (3)
Belleayre Mt.	Inhalable Particulates (PM10)	Annual	12 ug/m^3	----- -----
		24-Hour	41 ug/m^3 (1)	150 ug/m^3
Poughkeepsie	Inhalable Particulates (PM<2.5 microns)	Annual (4)	11.8 ug/m^3	15 ug/m^3
		98th percentile (4)	34.6 ug/m^3	65 ug/m^3
(2)	Carbon Monoxide (CO)	Annual	--------	------
		8-Hour	--------	9 ppm
		1-Hour	--------	35 ppm
Wallkill (02)	Lead (Pb)	Annual	0.04 ug/m^3	------
		Quarterly	0.09 ug/m^3	1.5 ug/m^3
Wallkill (09)	Lead (Pb)	Annual	0.08 ug/m^3	
		Quarterly	0.15 ug/m^3	1.5 umg/m^3
Scotchtown	Lead (Pb)	Annual	0.03 ug/m^3	
		Quarterly	0.03 ug/m^3	1.5 umg/m^3

Notes:
1) The listed concentration is the 2nd highest recorded value, since the air quality standard allows one exceedance of the standard on a calendar year basis.
(2) All monitoring stations are located within the Boroughs of New York City, which would not be representative of the project study area.
3) The primary standard is listed in the table, the secondary TSP standard is 260 mg/m^3.
4) Average of three years of data.
5) 4th highest daily maximum 8-hour average during last three years.
(XX) site number

The Hudson Valley AQCR meets the AAQS for all criteria pollutants except ozone and the trend in the air quality has shown no significant change, but has been approximately the same over the last few years.

The existing air quality in the vicinity of the project site is acceptable for the proposed development and poses no known threat to the health or welfare of the general public. In the event of elevated ozone levels, the State has an air pollution episode monitoring plan to issue health warnings to the public to caution those prone to health problems to remain indoors and to refrain from strenuous activities. It should be noted that high ozone levels are found throughout the northeastern United States and non-attainment of the standard is more of a regional than a local problem and cannot be resolved without coordinated regional air pollution control programs. The proposed project adheres to all applicable New York State Department of Transportation (NYSDOT) regional transportation control programs, and thus is in conformance with the SIP that addresses ongoing programs to bring the area into compliance with the ozone AAQS.

Orange County is currently designated as being in moderate non-attainment of Ozone (O_3) and Carbon monoxide (CO). The Town of Monroe, including the Village, is also under a severe nonattainment of Ozone.

Potential Impacts

Air quality impacts associated with the proposed project were assessed to determine whether the development would have an adverse impact on the surrounding general population. Air quality impacts from construction were assessed along with a determination of impacts from project induced traffic along the primary access routes to and from the project site.

Vehicle Generated Impacts

The primary pollutants associated with vehicular exhaust emissions are nitrogen dioxide (NO_2), hydrocarbons (HC) and carbon monoxide (CO). Since short term exposure to elevated CO concentrations can have acute health impacts, state and federal Ambient Air Quality Standards (AAQS) have been developed for ambient CO concentrations requisite to protect the health and welfare of the general public with an adequate margin of safety. There are no short term health standards (currently enforced) for NO_2 and HC, since the primary concern with these pollutants is their role in the photochemical reactions that lead to the formation of secondary pollutants known as ozone (O_3) and "smog" which are known lung and eye irritants. Since O_3 and smog formation is a slow process which occurs outside the primary impact area of the project, these pollutants are only reviewed on a regional (mesoscale) and not a local (microscale) basis.

Impacts on the regional air quality related to O_3 formation from NO_2 and HC emissions are periodically reviewed by the Newburgh-Orange County Transportation Council (NOCTC) in a regional Transportation Improvement Program (TIP). The TIP is prepared to demonstrate compliance with the State Implementation Plan (SIP), which is a federally approved plan that outlines future state programs to improve the air quality within its boundaries in order to achieve the federal and state AAQS in non-attainment regions of the state.

As part of the TIP, the NOCTC computes vehicular emissions from existing and proposed projects over the 5-year analysis period to document conformity with the SIP and the EPA's Transportation Conformity Rule. The Statewide TIP which includes the regional TIPs was determined in conformance with SIP by the US DOT Federal Highway Administration and Federal Transit Administration in coordination with the EPA.

There are no known major stationary sources of air pollution emissions in the vicinity of the project site.

Potential air pollution receptors in the vicinity of the project site include single family residences residential developments, and commercial buildings. No other sensitive receptors such as nursing homes or health care facilities were noted in the vicinity of the project site that might be cause to automatically require an air quality analysis.

Carbon monoxide

Carbon monoxide is the primary pollutant studied for impacts of vehicle emissions. Vehicle emissions are related to many factors of vehicle operation and the number of vehicles.

A traffic impact study was prepared to evaluate the impact of the proposed project along the primary access routes to and from the Site. The following intersections were analyzed in the Traffic Impact Study:

- Route 17M/Freeland Street/Still Road - signalized
- Route 17 M/Entrance to K-Mart Shopping Center - signalized
- Freeland Street/Spring Street (CR 105) - Currently undergoing signalization
- Freeland Street/Half Hollow Turn - unsignalized
- Freeland Street/Forshee Street - unsignalized
- CR 105/Larkin Road - signalized
- CR 105/Route 208 - signalized

The intersections to be reviewed for potential analysis were reduced based on screening procedures described in the NYS DOT Environmental Procedures Manual. The New York State Department of Transportation (NYSDOT) has published suggested guidelines on performing air quality analyses for site generated traffic associated with proposed significant projects (Environment Procedures Manual). This guidance document provides criteria for which an air quality analysis may be required for new project developments. The screening procedures were established to identify those locations that need not even be evaluated for air quality as the likelihood of a problem being indicated is negligible.

The level of service screen removes from consideration those intersections whose level of service is A, B, or C. Poor air quality at intersections is generally due to high delays and vehicles queuing up at the intersection. All of the unsignalized intersections will be level of service C or better under the build condition except Spring Street/Freeland Road which is mitigated with a traffic signal to level of service C.

The intersection of Route 17M/Shopping Center/Vista Lane was not further considered as it has an overall level of service B. The side street level of service is lower than C only to provide a better level of service (B) to the much higher through volumes on Route 17M.

The remaining three signalized intersections below will have lane groups with a future projected Level of Service D or F during the periods of highest site projected traffic, with mitigation (see Table 3.8-3 in Section 3.8 Transportation).

- Freeland Street/Still Road/Route 17M
- Route 208/Main Street
- County Road 105/Larkin Drive

The Capture Criteria Screening is the second screen. A summary of these criteria is provided below reflecting the projected level of service F and no State Implementation Program (SIP) intersection is within a half a mile. In fact there are no SIP intersections in Orange County:

- 10 percent or greater reduction in the source-receptor distance
- 10 percent or greater increase in traffic volume for
- 10 percent or greater increase in vehicle emissions due to speed changes, operating conditions, vehicle mix changes etc. less
- any increase in the number of queued lanes.
- 20 percent or greater reduction in speed when the build estimate average speed is at 30 miles per hour or less

1) The intersection improvements being proposed are signal timing modifications with no changes in the road width. There are no road widening or geometric improvements and thus, the location of the emission source (vehicles) will remain the same as existing conditions. Furthermore, people are also not being brought closer to the traffic.

2) Traffic volume increases from site traffic are generally less than five percent except the Freeland Street approach to Route 17M in the AM peak hour is slightly less than ten percent.

3) Over the period between 2001 and 2003 changes in vehicles on the road (fleet vehicle) may reduce emissions more than emission increases from the project site traffic. The project site traffic will also be mostly passengers vehicles contributing less per vehicle than the existing vehicle mix. Freeland Street currently has truck traffic consisting of 13% of vehicles in the southbound direction and 18% in the northbound direction. The site will generate little truck traffic.

4) There are no additional lanes being proposed at the subject intersections. Signal timing changes have been made to reduce the largest queues at Route 105 intersections as described above.

5) These are signalized intersections and as such vehicle speeds are unlikely to be sufficiently altered. This criteria is generally applicable to non-intersections locations.

Comparing the three signalized intersections against the above criteria to determine the requirement to conduct an air quality analysis for the proposed project indicated no further need to prescreen the intersections, as none of the above criteria were triggered.

Construction Impacts

Air quality impacts from construction will vary based on the proximity of the activities to the adjacent properties and the type and amount of construction equipment used for each project phase. However, to address potential air quality impacts from construction related activities during all project phases, mitigative measures are proposed for each type of construction activity to minimize the overall impact on the air quality. If these mitigative measures are properly applied, adverse air quality impacts should be minimized. Therefore, a quantitative analysis of construction related air quality impacts was not performed.

Potential short-term adverse air quality impacts from the proposed project include fugitive dust and particulate matter from the project site, emissions from construction equipment and vehicles, and construction-related noise. These potential impacts are described in the following paragraphs.

Construction activities on the project site will have a potential impact on the local air quality through generation of fugitive or airborne dust. Fugitive dust is generated during ground clearing and excavation activities as earth moving equipment modifies the land form to its final elevation. Throughout the construction period, passage of delivery trucks and other vehicles over temporary dirt roads and other exposed soil surfaces also generates fugitive dust.

Products of fuel combustion are also generated by construction equipment; however, these emissions are generally insignificant in comparison to vehicular emissions from adjacent roadways if the equipment is properly maintained and the engines tuned.

When conditions are favorable for dust generation, dust control can be provided through appropriate measures to reduce off-site impacts as well as improve on-site working conditions. Standard fugitive dust mitigation measures are outlined in Section 3.2.3.

Short-term Fugitive Dust Emissions

The construction of the proposed project will involve land clearing and grading activities that may result in the release of fugitive dust and particulate matter from the project site. The anticipated duration of the construction period is 24 to 36 months. Construction activity will be limited to Monday through Friday, between the hours of 7:00 AM and 8:00 PM, and Saturday 9:00 AM to 8:00 PM. During this period, dust and particulate matter from the project site may be released into the air and carried off-site by wind. On-site mitigation measures are proposed as part of the project during construction to limit the dispersal of particular matter. No significant impacts to neighboring residences are expected to result from the construction-related dust emissions.

Mitigation Measures

Vehicle Generated Impacts

Signal timing changes and a signal improvement have been proposed as outlined in the Transportation section.

General Construction Impacts

The applicant has limited construction times and will maintain equipment in proper operating condition. In addition dust control measures will be provided as discussed below.

Dust Control Measures During Construction Activities

Methods to control dust include minimizing the area of the site that is subject to disturbance at any one time, use of mulch or other temporary covers on exposed soil areas, limiting the movement of trucks and construction equipment over exposed soil surfaces, and covering haul trucks to prevent dust emissions while in transit to the disposal site. All debris should be thoroughly wet down before loading and while dumping into trucks and other containers. During dry weather conditions spraying water on unpaved areas subject to heavy construction vehicle traffic will help control dust. Paved areas should also be kept clear of loose dirt that can be re-entrained into the air during vehicle passage. The use of stone tracking pads at access points to the site or washing of vehicle tires will greatly reduce the tracking of soil onto adjacent roadways. When freezing temperatures preclude the use of water to prevent the spread of dust, alternative measures should be evaluated. Haul load in vehicles should always be covered.

With minimal site maintenance and careful attention to demolition activities, impacts from fugitive dust can be maintained below the state or federal AAQS at off-site properties. Although exhaust emissions from construction equipment is not as significant as fugitive dust generation, particulates from diesel exhaust emission should also be controlled through proper tuning of the engine and maintenance of the air pollution controls. This will minimize additional contribution to site generated particulate emissions during construction.