

APPENDIX G

AIR QUALITY AND NOISE STUDIES

Appendix G-1
Air Quality Assessment Report

Analysis & Computing, Inc.

January, 2015

Air Quality Assessment Report

Huntington Station Gateway Development Project

Huntington Station, Suffolk County, New York

Prepared for

TOWN OF HUNTINGTON

Huntington Station, New York, NY

And

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EXECUTIVE SUMMARY

This report summarizes the results of an air quality assessment for the proposed the Huntington Station Gateway Development Project, which is redevelopment planning initiative to implement both long-standing Town of Huntington (Town) planning actions and community efforts to revitalize the commercial corridor along New York State (NYS) Route 110/New York Avenue in Huntington Station in the Town of Huntington (Town), NY. The Proposed Project is intended to establish the mixed-use redevelopment envisioned by the Town Comprehensive Plan Update on three project parcels. The three parcels of land that comprise the Proposed Project total 7.29 acres in size, and are designated “Block 1”, “Block 4”, and “Block 7/Gateway Plaza”. Proposed roadway changes and vehicular traffic use restrictions are limited to an extension of an existing right-turn lane and signalization timing/phasing changes at New York Avenue and Railroad Street/Broadway to improve traffic flow.

Following the methodology described in NYS Department of Transportation’s (NYSDOT) Environmental Procedures Manual (EPM)/The Environmental Manual (TEM) – Air Quality Chapter, which complies with the requirements of the Clean Air Act (CAA) and its Amendments of 1990, 1977 and 1970 and the final rule on transportation conformity, the proposed Project will not cause any air quality violations, result in or increase the severity or frequency of existing National Ambient Air Quality Standards (NAAQS) or New York Ambient Air Quality Standards (NYAAQS) violations, or delay the timely attainment of any standard or required interim emissions reductions or other milestones in the New York Metropolitan Area. Furthermore, the project has not been linked with any special Mobile Source Air Toxics (MSAT) concerns based on United States Environmental Protection Agency (USEPA) guidelines. Therefore, the project will not have an air quality impact.

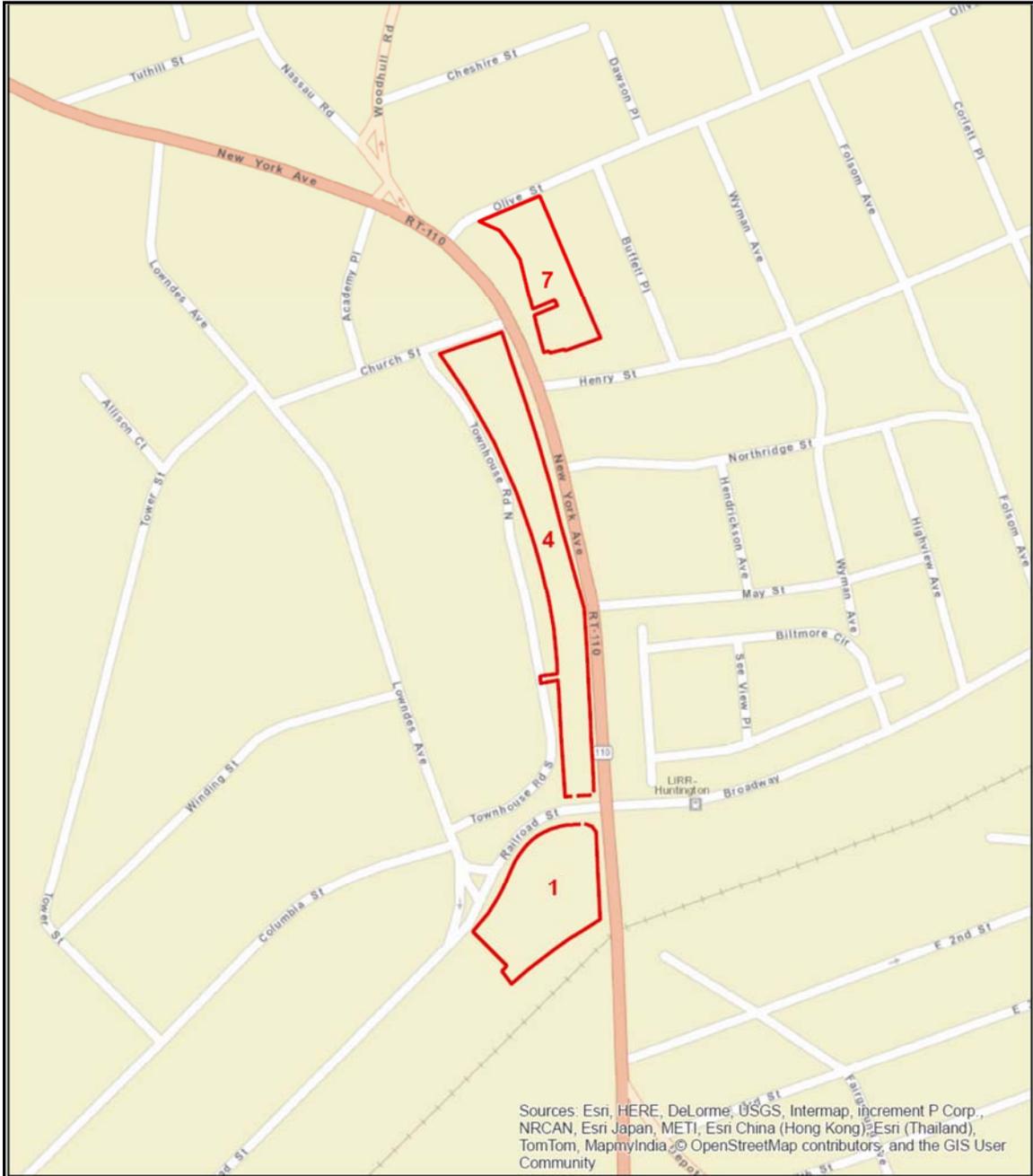
1.0 INTRODUCTION

This air quality assessment is conducted in support of a Voluntary Draft Environmental Impact Statement (VDEIS); its purpose is to analyze the potential environmental impacts of the “Proposed Project,” the Huntington Station Gateway Development Project, which is a redevelopment planning initiative to implement both long-standing Town of Huntington (Town) planning actions and community efforts to revitalize a portion of the commercial corridor along NYS Route 110/New York Avenue in Huntington Station (see Figure 1-1). The Proposed Action is intended to establish the mixed-use redevelopment envisioned by the Town Comprehensive Plan Update on three project parcels. The three parcels of land that comprise the Proposed Project total 7.29 acres in size, and are designated “Block 1”, “Block 4”, and “Block 7/Gateway Plaza”.

The potential air emission sources consist of the onsite stationary heating and boiler equipment and site-generated traffic (mobile sources). However, choice of boiler equipment is dependent on the individual property owners in project area; the equipment and their operations must conform to federal and state environmental regulations, and are furthermore subject to review by the Town for compliance with all applicable regulations prior to installation and operation. Consequently, it would be premature and unwarranted to address these emission sources in this assessment.

This assessment evaluates air emissions related to increased mobile sources for the ‘Build’ or ‘Design Year’. Construction is expected to be completed in the year 2019 which is considered the Design Year.

Figure 1-1 Project Map



1.1 PROJECT DESCRIPTION

The Proposed Project is a redevelopment planning initiative to implement both long-standing Town planning actions and community efforts to revitalize a portion of the commercial corridor along NYS Route 110/New York Avenue in Huntington to restore a more vibrant mixed use

character consistent with the goals of the Town Comprehensive Plan Update. The Proposed Project is intended to establish the mixed-use redevelopment envisioned by the Town Comprehensive Plan Update on three project parcels. The Proposed Project seeks to redevelop three (3) specific parcels of land in a form that conforms to the Town and community vision as outlined in the Town Comprehensive Plan Update. The three (3) parcels of land are designated “Block 1”, “Block 4”, and “Block 7”, and total 7.36 acres in size.

Block 1 is located at the southwestern corner of the intersection of NYS Route 110/New York Avenue and Railroad Street, on the northern side of the Long Island Rail Road (LIRR) right-of-way. It is comprised of two (2) tax lots and part of a third; Block 1 is partially owned by the Town of Huntington and partially owned by New York State. This parcel is currently occupied by a paved surface parking lot for the use of LIRR passengers. The proposed project would redevelop this parcel with a four (4)-story, 140-room hotel (83,296 square feet [SF] total floor space) on the eastern half of the Block, and a 100,880 SF medical office building (100,000 SF of medical office with 880 SF of supporting retail) on the Block’s western half. This development will also include 569 parking spaces.

Block 4 is a narrow strip of land along the west side of NYS Route 110/New York Avenue, from Railroad Street northward to Church Street. It is comprised of two (2) tax lots, one (1) of which consists of the remainder of the NYS-owned tax lot of Block 1. This property is used for LIRR passenger parking (353 spaces). The proposed project would redevelop this property with a total of 49 artist residences, and an additional 2,300 SF of affiliated artist production space. Parking at the rear of the building (for residents) and 20 on-street stalls provide for a total of 307 spaces.

Block 7 is comprised of ten (10) tax lots, of which nine (9) are privately owned, and one (1) lot (the northernmost, now-vacant) which is owned by the Town of Huntington. This site will be redeveloped with four (4) distinct uses in one (1) three (3)-story structure: 8,516 SF of retail space, 6,000 SF of combined specialty restaurant, fast/casual restaurant and pub/tavern space, 2,000 SF of office space on the first floor, and 68 apartments (34 studio and 34 one (1)-bedroom units) on the second and third floors. Primary parking for the site, accessed via NYS Route 110/New York Avenue provides 67 ground floor spaces in the structure, 8 surface space and 24

on-street parking spaces for patrons, employees and a portion of resident's use. The upper level of the structured parking at the rear of the site, with direct access from Olive Street, will offer 44 spaces for resident use only. The existing auto parts store on Block 7S would remain, but the existing seven-space parking area is proposed to be reconfigured to provide a total of 24 spaces (17 which are proposed to be shared). An existing barber shop building and the Yankee Peddler/Shops at Suite Pieces building would remain, to be left undisturbed.

The proposed development project does not involve any significant changes to the existing roadway geometry or any vehicle restrictions. The only change to the existing roadway geometry is the lengthening of the right-turn lane at the Broadway eastbound approach to New York Avenue to reduce congestion and improve traffic flow at that intersection. The only other proposed change to the existing traffic/roadway is timing/phasing signalization changes at the intersection of New York Avenue and Railroad Street/Broadway to reduce congestion and improve traffic flow.

1.2 NATIONAL AND STATE OF NEW YORK AMBIENT AIR QUALITY STANDARDS

As required by the CAA Amendment of 1990 (104 Stat. 2468, P.L. 101-549) and the CAA Amendments of 1977 and 1970, the USEPA established NAAQS for six major air pollutants: carbon monoxide, nitrogen oxides, ozone, particulate matters (PM₁₀ and PM_{2.5}), sulfur oxides and lead. The State of New York has also established NYAAQS similar to the NAAQS, as shown in Table 1.2-1 for ease of reference.¹ Both include primary and secondary standards for concentrations of these pollutants. The primary standards are established to protect public health. The secondary standards are established to protect the national welfare by accounting for the effects of air pollution on soil, water, materials, vegetation, visibility and other aspects of general welfare.

¹ New York State Department of Environmental Conservation. "New York Ambient Air Quality Report for 2013." Retrieved from <http://www.dec.ny.gov/chemical/8536.html>.

Table 1.2-1. National and State of New York Ambient Air Quality Standards

Pollutant	Avg. Period	Federal Air Quality Standards				New York State Standards ¹	
		Primary Standard		Secondary Standard		Level	Statistic
		Level ³	Statistic ²	Level	Statistic		
Carbon Monoxide	8-hour	9 ppm	Maximum	None		9 ppm	Maximum
	1-hour	35 ppm	Maximum			35 ppm	Maximum
Lead ⁴	Quarterly average	1.5 µg/m ³ , effective until 12/31/12	Maximum	Same as Primary		None	
	Rolling 3 month average (2008 standard)	0.15 µg/m ³ , effective 1/1/13	Maximum	Same as Primary		None	
Nitrogen Dioxide	Annual	0.053 ppm	Arithmetic Mean	Same as Primary		0.05 ppm	Arithmetic Mean
	1-hour	0.100 ppm ⁵	3 year avg	0.053 ppm	Arithmetic Mean	None	
Total Suspended Particulates (TSP) ⁶	12 consecutive months	None		None		75 µg/m ³	Geometric Mean
	24-hours	260 µg/m ³	Maximum	150 µg/m ³	Maximum	250 µg/m ³	Maximum
Particulate Matter (PM ₁₀) ⁷	24-hour	150 µg/m ³	Maximum	Same as Primary		None	
Particulate Matter (PM _{2.5})	Annual	12 µg/m ³	Arithmetic Mean	Same as Primary		None	
	24-hour	35 µg/m ³ ⁸	3 year avg	Same as Primary			
Ozone ⁹	8-hour (2008 std)	0.075 ppm	3 year avg	Same as Primary		None	
	8-hour (1997 std)	0.08 ppm	3 year avg	Same as Primary		0.08 ppm	Maximum
	1-hour	0.12 ppm	Not Applicable in NYS ¹⁰	Same as Primary		0.12 ppm	Maximum
Sulfur Dioxide	Annual	0.03 ppm	Arithmetic Mean	None		0.03 ppm	Arithmetic Mean
	24-hour	0.14 ppm	Maximum			0.14 ppm	Maximum
	3-hour	None		0.5 ppm	Maximum	0.50 ppm	Maximum
	1-hour	75 ppb	3 year avg ¹¹	None		None	
Hydrocarbons (non-methane)	3-hour (6-9 am)	None		None		0.24 ppm	Maximum

Footnotes

Number	Description
1	New York State also has standards for beryllium, fluorides, hydrogen sulfide, and settleable particulates (dustfall). Ambient monitoring for these pollutants is not currently conducted.
2	All maximum values are concentrations not to be exceeded more than once per calendar year. (Federal 1 hour Ozone Standard not to be exceeded more than three days in three calendar years).
3	Gaseous concentrations for Federal standards are corrected to a reference temperature of 25°C and to a reference pressure of 760 millimeters of mercury.
4	Federal standard for lead not yet officially adopted by NYS. Based upon the November 22, 2011 EPA designation for areas of New York State, which became effective on 12/31/11, the 0.15 µg/m ³ standard will be effective throughout New York State on 1/1/2013 will replace the previous level of 1.5 µg/m ³ . The 1978 lead standard (1.5 µg/m ³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard (12/31/12 throughout New York State).
5	The 0.100 ppm standard is effective 1/22/2010. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average within an area must not exceed 0.100 ppm.
6	New York State also has 30, 60, and 90-day standards as well as geometric mean standards of 45, 55, and 65 µg/m ³ in Part 257 of NYCRR. While these TSP standards have been superseded by the above PM ₁₀ standards, TSP measurements may still serve as surrogates to PM ₁₀ measurements in the determination of compliance status.
7	Federal standard for PM ₁₀ not yet officially adopted by NYS, but is currently being applied to determine compliance status.
8	Federal standard was changed from 65 to 35 µg/m ³ on December 17, 2006. Compliance with the Federal standard is determined by using the average of 98th percentile 24 hour value during the past three years, which can not exceed 35 µg/m ³ .
9	Former NYS Standard for ozone of 0.08 PPM was not officially revised via regulatory process to coincide with the Federal standard of 0.12 PPM which is currently being applied by NYS to determine compliance status. Compliance with the Federal 8 hour standards is determined by using the average of the 4th highest daily value during the past three years - which can not exceed 0.084 PPM or 0.075 PPM, effective May 27, 2008).
10	(a) EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding"). (b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
11	Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Carbon monoxide (CO) is a colorless and odorless gas, primarily associated with the incomplete combustion of fossil fuels in motor vehicles. Carbon monoxide is the most widely distributed and most commonly occurring air pollutant in the urban environment. Prolonged exposure to lower levels of CO can cause headaches, drowsiness or loss of equilibrium. Very high concentrations of CO in poorly ventilated areas can be fatal. Carbon monoxide concentrations resulting from traffic activities vary greatly over short distances, with the higher concentrations typically found near the ground level. Carbon monoxide concentrations can vary greatly over comparatively short distances; relatively high concentrations are typically found near crowded intersections, along heavily trafficked and slow moving roadways and at relatively low

elevations. Therefore, predictions of roadway CO concentrations are made on a localized or microscale basis.

Hydrocarbons include a wide variety of volatile organic compounds (VOC) originating principally from the storage, handling and use of fossil fuels. Hydrocarbons are either non-reactive or reactive pollutants whose impacts occur relatively far from their sources. While the non-reactive pollutants are relatively harmless, reactive hydrocarbons react slowly in the atmosphere (as they disperse) and in the presence of sunlight, assist in the formation of ozone. Gasoline-powered motor vehicles, the evaporation of solvents and surface coatings, industrial plants and processes, dry cleaning operations and various transportation-sources (aircraft, ships, trains, etc.) all produce VOC. Gasoline-powered motor vehicles contribute about 35 percent of the total emissions produced nationwide.

Nitrogen oxides constitute a class of compounds that include nitrogen dioxide (NO₂), nitric oxide (NO) and nitrous oxide (N₂O), which are emitted by motor vehicles. Of these, nitrogen oxide is of primary concern due to its role in the formation of photochemical oxidant smog. Photochemical oxidants are a class of compounds formed by the reaction of hydrocarbons with nitrogen oxides in the presence of sunlight. The product of these reactions, which is most commonly found and measured in the atmosphere, is ozone. Photochemical oxidants are a regional problem and violations of the NAAQS for ozone have been found from Virginia to Maine. Transportation sources (gasoline-powered motor vehicles) contribute about 43 percent of the NO_x emissions nationwide.

Ozone (O₃), a principal lung and eye irritant in urban environments, is formed through a series of reactions involving hydrocarbons and nitrogen oxides that take place in the atmosphere in the presence of sunlight. Heat speeds up the reaction; concentrations of O₃ are usually higher during the summer. Gasoline-powered motor vehicles are responsible for approximately 35 percent of Ozone production on a nationwide basis. Since change in O₃ is related to the changes in the levels of VOC and NO_x (the precursors of O₃), the effect of a project on regional ozone level is therefore not separately evaluated.

Sulfur oxides (SO_x) constitute a wide range of compounds, of which sulfur dioxide (SO₂) and sulfur trioxide (SO₃) are of greatest importance. Motor vehicles emit relatively little SO_x.

Reductions in SO₂ emissions will progressively occur through the increased use of low-sulfur fuels and the promulgation of emission standards for diesel-powered vehicles. The primary source is the combustion of sulfur-bearing fossil fuels. No assessment of the effect of the project on SO₂ was conducted.

Particulate matter includes both liquid and solid particles of wide range of sizes and composition. The principal sources of particulate matter are the combustion of fossil fuels for space heating, power generation, incineration, industrial processes and construction activities. Particulate matters with an aerodynamic diameter smaller than or equal to 10 microns in size are designated and regulated by the USEPA as PM₁₀. These particles are typically formed by "crustal" or earth-based material and enter the air through a variety of actions including "entrainment" into the atmosphere by windblown dust. Particles from brake and tire wear, from pavement wear, and from other vehicle degenerative processes also contribute to this PM size. The greatest contribution from this size category has "natural" rather than "man-made" origins. The principal health effects of airborne particulate matter are on the respiratory system, aggravating diseases such as bronchitis and emphysema. With the exception of airborne lead emissions, transportation sources typically account for a relatively minor and decreasing proportion of total particulate emissions through ever more stringent emission controls.

In 1997, the EPA promulgated the NAAQS for PM_{2.5}, particulate matter smaller than 2.5 microns, in recognition of its unique adverse health risks, distinct from coarser particulate matter. PM_{2.5} can be emitted directly from stationary or mobile sources (direct PM_{2.5} emissions) or through a chemical process in ambient air (secondary PM_{2.5} formation). The present level of understanding of direct PM_{2.5} emissions and secondary PM_{2.5} formation and their relative contribution to the ambient PM_{2.5} level is generally lacking. The EPA, in cooperation with the States, has gathered and compiled data on ambient PM_{2.5} levels. On December 17th, 2004, the EPA officially classified Suffolk County as a PM_{2.5} Nonattainment Area.

Lead is a stable, persistent compound that accumulates in both the environment and living organisms. In people, it affects mostly the blood-forming (or hematopoietic), nervous and renal systems. Lead has also been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunologic and gastrointestinal systems. However,

significant individual variability in response to lead exposure has been found. Leads used in gasoline anti-knock additives represent a major proportion of the total lead consumption. Motor vehicle emissions therefore, constitute the major source of atmospheric lead emissions. Lead emissions however, have declined significantly due to a mandated decrease in gasoline lead levels and the replacement of vehicles that burn leaded gasoline. An analysis of lead emissions for the project is therefore not required.

To summarize, of the six air pollutants identified by the USEPA as being of nationwide concern, CO and PM_{2.5} are the only pollutants for which detailed, microscale, impact assessments for mobile sources related to the proposed project are required, and CO, VOC and NO_x are the pollutants for which impact assessments on a mesoscale or regional basis are required.

2.0 AFFECTED ENVIRONMENT

The affected environment is the existing ambient air quality in the project study area, Suffolk County, NY. A discussion of the affected air quality environment, including location of the study area within the New York Metropolitan Area (NYMA) of the New York-New Jersey-Connecticut Interstate Air Quality Control Region (AQCR 43) follows.

2.1 EXISTING AIR DESIGNATION AND CLASSIFICATION OF THE STUDY AREA

The CAA defines “non-attainment areas” as geographic regions that have been designated as not meeting one or more of the NAAQS. The CAA Amendment of 1990 defined five (5) severity classifications for Ozone non-attainment areas based upon the ambient air quality in an area. These classifications are marginal, moderate, serious, severe and extreme.

The USEPA recently classified Suffolk County as a nonattainment area for PM_{2.5} in “Air Quality Designations and Classifications for the Fine Particles (PM_{2.5}) National Ambient Air Quality Standards – Final Rule” (40 CFR Part 81), establishing the boundaries for areas designated as nonattainment, unclassifiable, or attainment/unclassifiable with an effective date of April 5, 2005. Areas designated as attainment/unclassifiable are areas that have attained compliance with NAAQS, but lack sufficient documentation to preclude a relapse. They are therefore subject to “maintenance” requirements and are often referred to as “maintenance areas”. As of April 30, 2012, Suffolk County in New York State was reconfirming as a marginal non-attainment for the 8-hr ozone standard. Furthermore, Suffolk is no longer considered as a non-attainment area for 1-hour ozone as of June 2005. The County is in attainment for all other major pollutants.

Under the requirements of the CAA Amendments of 1990, the impact of certain transportation projects on air quality must be studied to determine if they conform to the purpose of the State Implementation Plan which is the attainment of the NAAQS. The transportation conformity regulation, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded, Developed or Approved under Title 23 U.S.C or the Federal

Transit Act" (40 CFR² Parts 51 and 93), is used for conformity determinations. The project has been classified as an exempt project under these regulations.

Projects exempted from conformity assessments to State Implementation Plans are still subject to localized, microscale (aka "hot spot") assessments. Procedures for determining localized CO and Particulate Matter (PM₁₀, and PM_{2.5}) concentrations are found in 40 CFR 93.123(a) CO "Hot-Spot" Analysis and (b) PM₁₀, and PM_{2.5} "Hot-Spot" Analysis. Because Suffolk County is located within a classified attainment area for CO, the project is not subject to CO "hot-spot" microscale analysis. With regard to PM₁₀ and PM_{2.5}, the project does not belong to a class of projects that are classified as "projects of air quality concern" according to the criteria in 40 CFR 93.123(b), and thus no quantitative microscale PM₁₀ and PM_{2.5} analyses are required.

A tabulation of recently available (2013) ambient air quality data of Ozone and PM₂₅ for the Suffolk County portion of AQCR 043 is presented in Table 2.1-1 and Table 2.1-2³. These USEPA- and NYDEC-designated ambient monitoring sites represent the County or AQCR region for the purpose of air quality classification. Monitoring sites are often located at or near areas with historically high levels of pollutants. Suffolk County is a CO classified attainment area and CO air quality monitoring is no longer conducted in Suffolk County. The 8-hour Ozone standard was exceeded in Suffolk County. This is a condition endemic to New York which is in part, due to pollutants transported into the area from other states.

² CFR: Code of Federal Regulations

³ For complete air monitoring data for 2013, visit http://www.dec.ny.gov/docs/air_pdf/2013airqualrpt.pdf.

Table 2.1-1. 2013 Ambient Ozone Suffolk County, NY
Hourly Averages in Parts per Million (ppm)

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2013

		8-hr Running Average Begin Hour				4th Highest Daily Maximum 8-Hour Average- Not to exceed an avg of 0.075 ppm during the last 3 years, <i>changed</i> from 0.08 ppm on 5/27/08*						
		Observations			Daily Highest Values, ppm							
Station	Site No.	Total Obs.	% Avail	Days >.075 ppm	1st	2nd	3rd	4th	2011	2012	2013	Avg
Babylon	5150-02	8,549	98	1	.083 [07/18, 12]	.075 [06/25, 10]	.074 [05/30, 11]	.072 [07/17, 11]	.089 [06/08]	.083 [07/01]	.072 [07/11]	.081 +
Holtsville	5151-10	8,305	95	3	.089 [07/18, 12]	.080 [06/25, 10]	.076 [05/30, 10]	.074 06/24, 10]	.082 [07/16]	.079 [07/18]	.074 [06/24]	.078 +
Riverhead (Operated 03/12-11/14)	5155-01	5,721	97	6	.086 [06/25, 10]	.084 [07/18, 11]	.083 [05/30, 10]	.078 [06/24, 10]	.080 [07/07]	.083 [06/21]	.078 [06/24]	.080 +

Due to EPA Waiver for SLAMS (Non-NAMS), % Availability may be based on operational year of less than 12 months (Riverhead)

Annual Means in parentheses are based on less than 75% of data available.

*Federal Ambient Air Quality Standard

+ Denotes a contravention of Federal AAQS

Table 2.1-2. 2013 Ambient PM_{2.5} Suffolk County, NY

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2013

(Average of last 3 years' annual means not to exceed 12 µg/m³ *;
and average of 98th percentile for last 3 years not to exceed 35 µg/m³ *)

Station	Site No.	Total Obs.	Maximum Values, µg/m ³			98th Percentile, µg/m ³				Quarterly Averages, 2013				Annual Mean, µg/m ³			
			1 st	2 nd	3 rd	2013	2012	2011	3-yr avg	1 st	2 nd	3 rd	4 th	2013	2012	2011	3-yr avg
Eisenhower Park(T)	2950-10	356	33.0 [07/19]	32.0 [01/09]	25.6 [09/11]	23.9	23.1	29.5	25.5	10.1	7.7	8.1	9.0	8.7	9.1	10.9	9.6
Hempstead (F)	2950-18	113	xxx	xxx	xxx	xxx	xxx	23.1	xxx	xxx	xxx	xxx	xxx	xxx	xxx	8.9	xxx
Babylon (F)	5150-01	116	24.1 [12/03]	23.0 [01/28]	21.4 [07/18]	21.4	18.7	21.7	20.6	7.2	7.4	8.2	7.5	7.6	8.0	8.8	8.1
Holtsville (T)	5151-10	342	29.1 [07/18]	23.4 [12/04]	23.1 [01/09]	20.3	19.1	21.2	20.2	9.6	6.9	7.7	8.4	8.2	(6.8)	8.5	(7.8)

Sampling at 2950-18 was terminated on 12/31/2011

*Federal Ambient Air Quality Standard

F=Fed. Reference Method

T=TEOM (Tapered Element Oscillating Microbalance)

+ Denotes a contravention of Federal AAQS

3.0 ENVIRONMENTAL CONSEQUENCES

As mentioned in a previous section, if and when boiler and heating equipment and fuel are considered for specific building or structure, they must conform to federal and state environmental regulations, and must comply with all applicable local building and environmental regulations for installations and operations. Therefore, their compliance with applicable air quality standards is assumed and excluded from further discussion.

The potential environmental consequences of the proposed project on the air quality of the study area are:

1. the potential for the project to cause or contribute to new violation of NYAAQS/NAAQS;
2. the potential that the project may increase the frequency or severity of any existing violation of NYAAQS/NAAQS; and,
3. the potential that the project may delay timely attainment of NAAQS or required interim emission reductions or other milestones in the project area.

As stated previously, a CO and Ozone SIP Conformity Analysis and a PM SIP Conformity Analysis would determine the extent of the air quality consequences of the project with respect to criteria (2) and (3) above. However, a CO conformity analysis is not required for this project since it is located in a CO attainment area.

3.1 NETWORK TRAFFIC DATA

The traffic volume and average speed data for each roadway were developed in a separate project traffic study report (Traffic Impact Study, prepared by Nelson & Pope Engineers and Surveyors, dated December 2014). The geographic scope of the traffic study area is sufficiently large to develop traffic data sufficient to assess air quality impacts to the project area.

The base year used in the traffic analysis was 2019, the Estimated Time of Completion (ETC) for the project. The project Design Year is also 2019.

The latest USEPA/NYS DOT-approved emission factors (MOVES2010b)⁴ for the years 2016, 2026 and 2036 were provided by the NYSDOT and are presented in Table 3.1-1 below. These

⁴ MOVES: Motor Vehicle Emissions Simulator developed by USEPA's Office of Transportation and Air Quality to estimate emissions for mobile sources covering a broad range of pollutants and allows multiple scale analysis.

factors were used to extrapolate the emissions factors for the years of interest based upon roadway speeds, Federal Highway Administration (FHWA) Functional Roadway Classifications and the NYS Department of Environmental Conservation (NYSDEC) MOVES2010b vehicle mixes for Nassau and Suffolk County.

Table 3.1-1. CO Emission Factors

	Free Flow EF (gm/mi)	Queue EF (gm/hr)
2016	6.57	23.45
2026	4.96	10.85
2036	4.90	8.90

4.0 REGIONAL CO EMISSIONS ANALYSIS AND CO MICROSCALE SCREENING

As noted in Section 2.1.1, the project is exempt from regional emissions analysis for ozone precursor pollutants. However, the project requires screening for possible microscale (hot-spot) CO analysis as required by the NYSDOT EPM/ TEM - Air Quality Chapter.

4.1 MICROSCALE CO SCREENING

High concentrations of CO are usually limited to within a short distance of highly travelled or congested roadways. Three levels of screening have been developed to determine if detailed microscale modeling is warranted. The three screening criteria are: Level of Service (LOS), Capture Criteria, and Volume Threshold.

4.1.1 Level of Service (LOS) Screening

Intersections with a LOS grade of C or better under the build conditions are generally excluded from detailed microscale air quality analysis. Those intersections with a LOS grade of D or worse would go on to the next level of screening. Under the Build Alternative, several intersections are expected have a LOS grade of D or worse at ETC, as presented in Table 4.1.1-1. Consequently, the Capture Criteria Screening was applied.

Table 4.1.1-1. Worst LOS at Signalized Intersections

	Existing (2014)			No Build (2019)			Build (2019)		
	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
SR 110 & CR 11	C	D	D	C	D	D	C	D	D
SR110 & Railroad St./Broadway	C	D	C	C	D	C	C	D	D
SR 110 & Olive St.	C	C	C	C	C	D	D	C	D
CR 11 & Depot Road/Fairground Ave	D	D	C	D	D	C	D	D	C

Note: LOS of D or worse shown in bold text.

4.1.2 Capture Criteria Screening

If intersections and roadways impacted by a project with a build LOS of D, E, or F exhibit any one of the following conditions:

- 10% or more reduction in source-receptor distance,
- 10% or more increase in roadway volume,

- 10% or more increase in vehicle emissions,
- Increase in the number of queue lanes, or
- 20% reduction in speed, when average speed is 30 mph or less,

a Volume Threshold Screening will be required to determine the need for a CO Microscale Analysis.

Of the four intersections screened under the Capture Criteria Screening, three of the four intersections do not exhibit any of the criteria that would indicate a need for a CO Microscale Analysis. The intersection at New York Avenue and Railroad Street/Broadway is expected to have traffic volume increases of 11%, 15%, and 12% for the AM Peak, PM Peak, and Saturday Peak periods respectively. Consequently, the Volume Threshold Screening was applied to this intersection to determine the need for a CO Microscale Analysis.

4.1.3 Volume Threshold Screening

The Volume Threshold Screening utilizes the “Peak Hour Traffic Volume Threshold at any Approach for Signalized Intersections” table (Table 3c - NYSDOT EPM Chapter 1.1 Air Quality), which ties emissions factors (EF) with traffic volume thresholds. The volume thresholds establish traffic volumes below which a violation of the NAAQS for carbon monoxide is extremely unlikely. Those projects whose peak hour volumes are equal or less than the applicable threshold do not need a CO Microscale Analysis. Table 4.1.3-1 below compares the Peak Hour Volume Threshold with the heaviest approach volume for the New York Avenue at Railroad Street/Broadway intersection under the Build alternative that did not pass the first two screening tests (Level of Service Screening and the Capture Criteria), utilizing the following factors:

- emission factors for the Years 2109, 2029, and 2039 provided by NYSDOT,
- approach volumes for these years based on a 1% traffic growth, the growth rate for this area as determined by NYSDOT,
- the peak travel period with the greatest traffic volume.

Since the threshold volumes were not exceeded under the Build Alternative, it is concluded that a CO Microscale Analysis is not needed and no impact to air quality from mobile sources is anticipated.

Table 4.1.3-1. Volume Threshold Screening

	Free Flow EF (gm/mi)	Queue EF (gm/hr)	Threshold Volume	Heaviest Approach Volume	Microscale Analysis Required?
New York Avenue and Railroad Street/Broadway					
2019	6.09	19.67	4000	1433	No
2029	4.95	13.52	4000	1583	No
2039	4.91	8.89	4000	1749	No

4.2 CO MICROSCALE IMPACTS

Based on the CO microscale screening, the potential for an air quality impact is insignificant and a detail CO Microscale Analysis is not warranted. It can therefore be stated that the project has no potential to cause or contribute to new violation of NYAAQS/NAAQS with respect to CO.

5.0 PARTICULATE MATTER ANALYSIS

A PM_{2.5} hot-spot analysis would be required for “projects of air quality concern” as defined in 40 CFR 93.123(b)(1). These projects include certain highway and transit projects with significant levels of diesel traffic or projects identified by the PM_{2.5} SIP as a localized air quality concern. The guidance provides examples of projects of air quality concern:

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 (Annual Average Daily Traffic) AADT traffic and 8% or more of the AADT is diesel truck traffic;
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal;
- Expansion of an existing highway or other facility that affects a congested intersection (operated at LOS of D, E, or F) that has a significant increase in diesel trucks; and,
- Similar highway projects that involve a significant increase in the number of diesel transit buses and/or diesel trucks.

5.1 PARTICULATE MATTER SCREENING

The purpose of this project is to revitalize a portion of the Huntington Station commercial/mixed use Route 110/New York Avenue corridor through redevelopment of three underutilized parcels. The only roadway changes are an extension of a right-turn only lane and signal timing/phase modification at one intersection to reduce congestion and improve traffic flow.

The busiest roadway in the corridor is New York Avenue with an AADT of 18,474 vehicles. It is not a new highway or an expressway. No roadways within the project corridor approaches, much less exceeds, the 125,000 vehicles per day that would trigger the need for a microscale analysis of PM_{2.5} emissions.

The project does not connect a highway or expressway to a major freight, bus, or intermodal terminal. The Long Island Rail Road (LIRR) Huntington Station provides passenger service only and there are no plans to modify this service or bus services in the project area. The diesel-engine truck volume fraction is expected to be unchanged.

While several intersections are expected to have a LOS of D or worse for the Design Year, the diesel-engine truck volume fraction is expected to be unchanged at these intersections.

The project does not result in a significant increase in the number of diesel transit buses and/or diesel trucks.

5.2 PM MICROSCALE IMPACTS

Because the project does not qualify as a project of air quality concern nor approach the scope of actions provided in the guidance contained in 40 CFR93.123, no quantitative analysis is necessary. Projects that are not of air quality concern are unlikely to cause or contribute to any new violation of the NAAQS for PM_{2.5}, increase the frequency or severity of any existing violation, or delay timely attainment of the NAAQS or required interim emissions reductions or other milestones in the area.

6.0 MOBILE SOURCE AIR TOXICS

The MSAT assessment follows the most recent USEPA guidance, contained in the December 6, 2012 memorandum, “Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA”. The purpose of this project is to revitalize the existing mixed commercial/residential corridor along Route 110/NY Avenue in Huntington Station in accordance with the goals of the Town Comprehensive Plan Update. The Proposed Project seeks to redevelop three specific parcels in a form that conforms to the Town and community vision as outlined in the Town Comprehensive Plan Update as described in Section 1.1. Proposed roadway changes and vehicular traffic use restrictions are limited to an extension of an existing right-turn lane and signalization timing/phasing changes at New York Avenue and Railroad Street/Broadway to improve traffic flow. This project has been determined to generate minimal air quality impacts for CAA and its Amendments criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.

Moreover, USEPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with USEPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while vehicle-miles of travel are projected to increase by 145 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

7.0 IMPACTS DURING CONSTRUCTION

No roadway construction is proposed by this project other than an extension of an existing right-turn lane and would only involve restriping. Construction detours will not last long enough (which would be two or more consecutive winter CO seasons) to warrant CO microscale analysis, as per the NYSDOT EPM/TEM Air Quality Chapter.

8.0 MITIGATION MEASURES

The previous analyses conservatively examined potential air quality impacts under the Build Alternatives as well as the No Build Alternative. These analyses showed no potential for violations of any ambient air quality standard, and no impacts are expected. As such, no mitigation measures are recommended, other than good standard engineering and construction practices during construction.

9.0 SUMMARY

This air quality analysis followed the methodology as described in NYSDOT's EPM/TEM – Air Quality Chapter, which complies with the requirements of the CAA and its Amendments of 1990, 1977 and 1970 and the final rule on transportation conformity. Based upon this assessment, the proposed Project will not cause any air quality violations, result in or increase the severity or frequency of existing NAAQS or NYAAQS violations, or delay the timely attainment of any standard or required interim emissions reductions or other milestones in the New York Metropolitan Area. Furthermore, the project has not been linked with any special MSAT concerns based on USEPA guidelines. Therefore, the project will not have an air quality impact.

Appendix A

Qualifications

FIRM RELEVANT PRIOR EXPERIENCE

NYS Rte 112 Reconstruction Project from Granny Road to NYS Rte 25, Suffolk County, NY. NYSDOT PIN 0016.25. A conducted an air quality and noise impact assessment of proposed reconstruction of NYS Rte 112 to include addition of Two-Way, Left-Turn Lanes as per NYSDOT guidelines. 2013-2014.

Noise and Air Quality Impact Assessment for a Rail C&D Transfer Station in Queens, NYC. Conducted impact assessment using TNM, NonROads, MOVES2010b, and AERMOD for induced truck traffic and on-site operations of a C&D rail transfer station in Maspeth, Queens per NYCDEP Guideline. 2013-2014.

Highway Design Safety Improvements on Bronx River Parkway at Gun Hill Road, Phases I-IV, Bronx County, NY. NYSDOT D030608-04, PIN X110.25. A conducted an air quality and noise impact assessment of proposed Exit Ramp modifications as per NYSDOT guidelines. 2013-2014.

Air Quality Screening for 580 Gerard Avenue Project, Bronx, NY. Conducted Air Quality Screening per NYC's C.E.Q.R. Technical Manual. Conducted an indoor CO air quality assessment for a proposed indoor garage as part of air quality screening. 2011.

LIE (I-495) Service Roads Operational Improvements at Walt Whitman Road, Suffolk County, NY. NYSDOT PIN 0229.38. Performed Air Quality and Ground Water Screenings in accordance with 40CFR51 and 40 CFR93 and NYSDOT/NYSDEC requirements. 2010.

Air Quality and Noise Screening for East 11th Street Project, LES Peoples Mutual Housing Assoc. Inc. / NYCHPD, Manhattan, NY. Conducted Air Quality and Noise Screening as per NYC's C.E.Q.R. Technical Manual. Screened for potential stationary and mobile Air Quality and Noise impacts for a low-income housing project with facilities for homeless recovering from mental illness. 2010.

Bridge Widening and Intersection Improvement Project at Hospital Road and NYS Route 27, Suffolk County, NY. Town of Brookhaven Job ID OT2384. Performed Air Quality, Noise and Ground Water Screenings in accordance with 40CFR51 and 40 CFR93 and NYSDOT/NYSDEC requirements. 2009 - 2010.

Korean War Veterans Highway Terminus Ramp, Phases I-IV, Richmond County, NY. NYSDOT PIN X349.13. Performed Noise Impact Assessment and Air Quality SIP Conformity Analysis for 6 Project Alternatives and micro scale air quality impact assessment for the project in accordance with 40CFR51 and 40 CFR93 and NYSDOT/NYSDEC requirements. 2002-09.

Pelham Parkway & Hutchinson Parkway Interchange Improvement Project, Bronx County, NY. NYCDOT PIN X349.13. Performed Noise Impact Assessment and Air Quality Analysis for Project Alternatives and microscale air quality impact assessment for the project in accordance with 40CFR51 and 40 CFR93 and NYSDOT/NYSDEC requirements. 2006-08.

Air Quality and Noise Impact Assessment of, Long Island Jewish Hospital, Hillside, NYC. Conducted air quality and noise impact assessment of proposed facility modernization program in Hillside, Queens per NYCEQR, NYSEQR and DASNY requirements. 2001-08.

The Nassau Expressway (SR 878) Operational Improvements - Burnside Avenue to Rockaway Turnpike Project, Queens County, NY. NYSDOT PIN 0072.14.101. Performed Noise Impact Assessment and Air Quality Analysis for Project Alternative for the project in accordance with 40CFR51 and 40 CFR93 and NYSDOT/NYSDEC requirements. 2006-2007.

Reconstruction of CR-57, Suffolk County, NY. SCDPW PIN 0756.69, CP 5523.1. Performed an environmental assessment in the areas of Air Quality, Hazardous Materials/Waste, Groundwater Quality and Surface Water Quality per NYSDOT PEG in support of the project. 2004-06.