APPENDIX BB

HUDSON HERITAGE PROJECT
POUGHKEEPSIE, NEW YORK

AIR QUALITY TECHNICAL REPORT

Prepared by
Sandstone Environmental Associates, Inc.
505 Main Street
Metuchen, NJ 08840

Prepared for

Maser Consulting P.A.
11 Bradhurst Avenue
Hawthorne, NY 10532

April 5, 2016

SEA
SANDSTONE ENVIRONMENTAL ASSOCIATES, INC.
505 MAIN STREET, METUCHEN, N.J. 08840
P:(732) 494-1100 F:(732) 494-1107 WWW.SANDSTONEAIRNOISE.COM

TABLE OF CONTENTS

I. INTRODUCTION 1

A. PROPOSED ACTION 1
B. SCOPE OF WORK 1

II. 2015 EXISTING CONDITIONS 3

A. SITE DESCRIPTION 3
B. SENSITIVE LAND USES 4
C. AIR QUALITY STANDARDS 5
National Ambient Air Quality Standards 5
State Implementation Plan 7
D. EXISTING AIR QUALITY 7

III. METHODOLOGY 7

A. POLLUTANTS OF CONCERN 7
B. LEVEL 1 CO SCREENING ANALYSIS FOR INTERSECTIONS 7
Level of Service (LOS) Screening 8
Capture Screening Criteria 9
C. FINE PARTICULATES 13

III. 2035 NO BUILD CONDITIONS 13

IV. 2035 BUILD CONDITIONS 14

A. PROPOSED ACTION 14
B. MOBILE SOURCES 14
C. STATIONARY SOURCES 16
C. CONSTRUCTION IMPACTS 16

IV. CONCLUSIONS 17

TABLES

Table No. 1 National and New York State Ambient Air Quality Standards 6
Table No. 2 Intersection Levels of Service (LOS) 9
Table No. 3 Intersections Subject to Screening for 10% Volume Increase 10
Table No. 4 Intersections Subject to Screening for Threshold Volume Increase 11
Table No. 5 Volume Threshold Analysis for Free Flow Roadways 12
Table No. 6 Volume Threshold Analysis for Signalized Intersections 13

FIGURES

Figure No. 1 Site Location 2
Figure No. 2 Existing Site Layout 4
Figure No. 3 Conceptual Site Plan 15

I. INTRODUCTION

A. PROPOSED ACTION

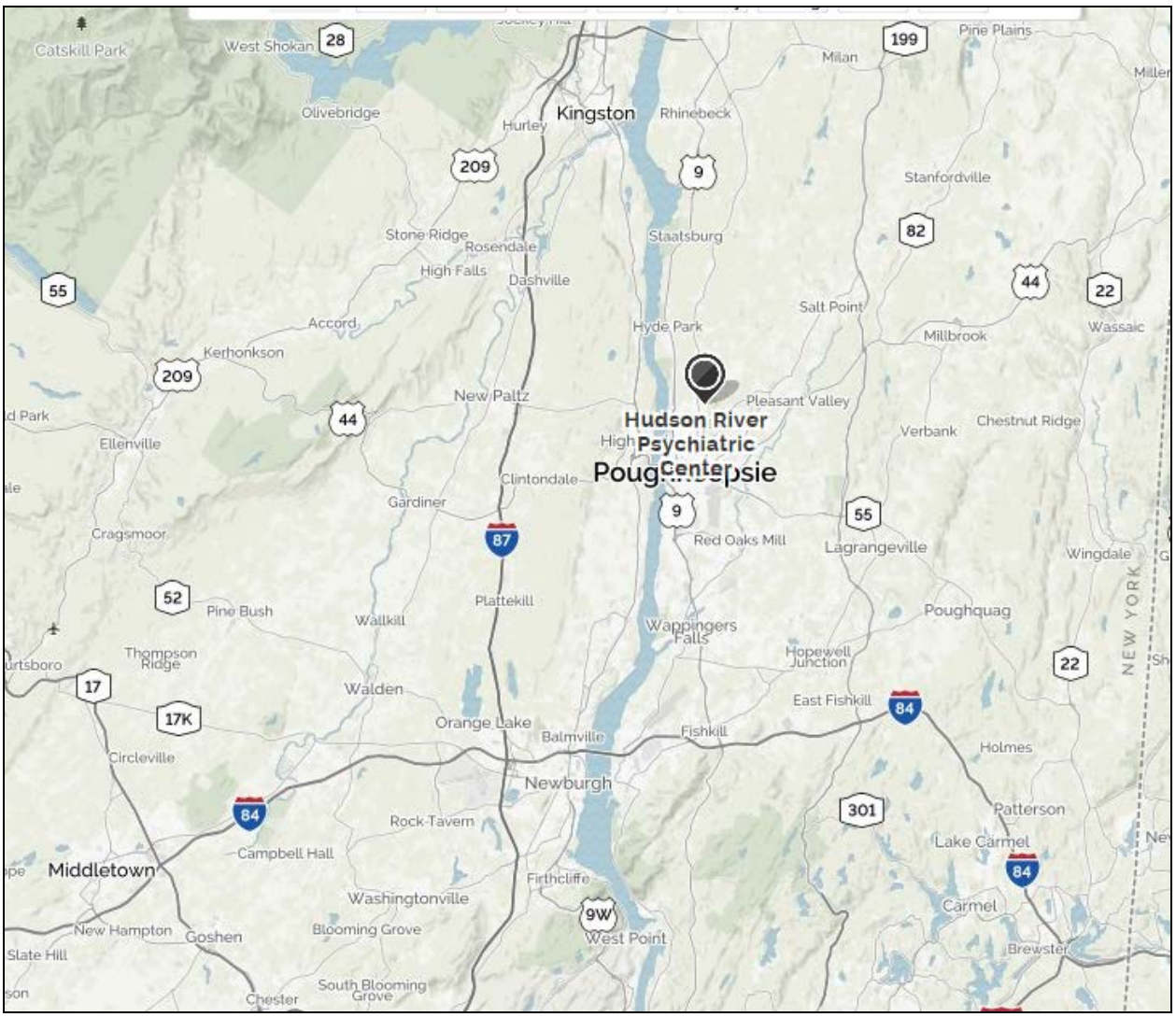
The Hudson Heritage development is a proposed mixed-use redevelopment planned on the former Hudson River Psychiatric Center property located at 3532 North Road (US Route 9) on the east side of U.S. Route 9 in the Town of Poughkeepsie, Dutchess County, New York. The 156-acre site will be redeveloped to include a total of approximately 750 residential dwelling units and approximately 350,000 sf of commercial/retail space and 80,000 sf of hotel space (described further under 2035 Build Conditions). Figure 1 shows the site location. The project is expected to be completed over several years with completion by 2025.

B. SCOPE OF WORK

This document analyzes the potential for air quality impacts from mobile and stationary (heating, ventilation, and air conditioning) sources of air pollutants. Mobile sources include motor vehicles generated by the project. The additional carbon monoxide and fine particulate matter from the additional vehicles may cause adverse impacts to other locations in the community. Stationary sources include parking lots and HVAC (heating, ventilating and air conditioning) units for the project's boilers. Emissions from these sources may cause impacts not only to the surrounding community, but also to the homes and commercial buildings within the site itself.

The air quality analysis addresses Existing Conditions, No Build Conditions, and Build Conditions. The proposed action constitutes the worst-case analysis for Build Conditions. Alternatives to the proposed action would have the same or lesser effects to and from the surrounding community and therefore are not considered. An analysis year of 2035 (ETC + 10) was utilized for the future traffic analysis, and the same year was used for the air quality analysis.

Figure 1
Site Location



Source: MapQuest, 2015

C. FINDINGS

Air quality analyses addressed mobile sources, parking facilities, stationary HVAC systems, and air toxics. The results of the analyses are summarized below.

- Emissions from project-related vehicle trips would not cause air quality impacts to the proposed action or to surrounding land uses.

- Emissions from HVAC sources associated with the proposed action would not cause significant air quality impacts to surrounding land uses or to the other proposed buildings within the site.
- As no existing large or major sources are located within 1,000 feet of the project site, emissions from existing stationary HVAC sources from existing land uses would not cause a significant air quality impact to the proposed project.

Based on the analyses in this document, the proposed action would not experience potential air quality impacts from surrounding land uses and would not cause air quality impacts to surrounding land uses.

II. 2015 EXISTING CONDITIONS

A. SITE DESCRIPTION

The project site is located in the Fairview secton of the Town of Poughkeepsie, NY, and is within the Historic Revitalization Development Zoning District (HRDD) of the Town. It is identified as tax parcel 6163-03-011149 on the Town of Poughkeepsie tax map. An extimated 0.04 acres at the northern edge of the site is located in the Town of Hyde Park, but no development is planned for that portion of the site. The site includes the southerly portion of the Hudson River Psychiatric Center (HRPC) property located east of the north-south trending portion of Winslow Gate Road, south of Hudson View Drive, andwest of the former railroad right-of-way.

Figure 2 shows the existing layout. The site contains several buildings, all of which are vacant. They include:

- a main building (the Kirkbride) that has National Landmark Status,
- patient housing wings that split off the Kirkbride,
- Presbyterian and Catholic churches,
- a morgue on the northeast portion of the property,
- a power house to the northeast of Kirkbride to provide power to the various buildings,
- Ryan Hall,
- The Clarence O. Cheny Building, and
- the Herman R. Snow Rehabilitation Center.

Figure 2 Existing Site Layout

☆ *=Site Loctaion*
Source: Google Earth, Inc.

The main entrance is located on Route 9 at the intersection of Hudson View Drive. Paint Shop Road Provides access from Rute 40, but the entrance to the facility from this road is gated, and no through traffic is permitted at this time. This will lbe modified as part of the development. The primary access will be to U.S. Route 9 via the two existing roadway connections, which will be reconstructed to meet current standards.

The project site is bordered on the north by commercial and residential development and by the Town of Hyde Park town line, on the south by the Mid-Hudson Plaza, on the east by New York State owned property, and on the west by New York State Route 9. The site is located directly across from Dutchess County's Quiet Cove Park and the Marist College Campus. Land abutting the site is zoned for residential use.

B. SENSITIVE LAND USES

Sensitive land uses are those that are especially sensitive to air pollutant emissions. Examples

include homes, hospitals, schools, parks, and churches. Existing land uses at off-site locations that would be sensitive to potential air quality impacts from the project include:

- Mid Hudson Regional Hospital,
- Residences abutting the northern property line along Big Meadow Lane,
- Residences abutting property line on the east along Windsor Court and Legion Road,

However, EPA considers any site to which the general public has access as a sensitive receptor. Therefore, air quality concentrations at the boundaries of a site are often treated as sensitive receptor points for a worst-case analysis.

C. AIR QUALITY STANDARDS

National Ambient Air Quality Standards

New York State and National Ambient Air Quality Standards (NAAQS) were promulgated by USEPA for the protection of public health and welfare, allowing for an adequate margin of safety. EPA has promulgated NAAQS for six major pollutants, deemed criteria pollutants, because threshold criteria can be established for determining adverse effects on human health. They consist of primary standards, established to protect public health with an adequate safety margin, and secondary standards, established to protect "plants and animals and to prevent economic damage." The six pollutants are:

- Carbon Monoxide (CO), a colorless, odorless gas produced from the incomplete combustion of gasoline and other fossil fuels. The primary source of CO in urban areas is from motor vehicles.

- Inhalable Particulates, also known as Respirable Particulates. The PM_{10} standard covers only those particles with diameters of 10 micrometers or less, which are the ones most likely to reach the lungs. The $PM_{2.5}$ standard covers particulates with diameters of 2.5 micrometers or less.

- Lead (Pb), lead emissions are principally associated with industrial sources. Since most U.S. vehicles produced since 1975, and all produced after 1980, are designed to use unleaded fuel, emissions of lead from motor vehicles have declined significantly.

- Nitrogen dioxide (NO_2), a highly oxidizing, extremely corrosive toxic gas, is formed by chemical conversion from nitric oxide (NO), which is emitted primarily by industrial

furnaces, power plants, and motor vehicles.

- Ozone (O_3), a principal component of smog. Ozone is not emitted directly into the air, but is formed through a series of chemical reactions between hydrocarbons and nitrogen oxides in the presence of sunlight

- Sulfur dioxide (SO_2). Sulfur dioxides are heavy gases primarily associated with the combustion of sulfur-containing fuels such as coal and oil. No significant quantities are emitted from mobile sources.

New York State Ambient Air Quality Standards may further regulate concentrations of the criteria pollutants discussed above. The New York State Department of Environmental Conservation (NYSDEC), Air Resources Division, is responsible for air quality monitoring for each of the criteria pollutants to assess compliance. Table 1 shows the New York and National Ambient Air Quality Standards and monitored values for the criteria pollutants based on the nearest monitors.

Table No. 1
National and New York State Ambient Air Quality Standards

Pollutant	Averaging Period	Standard	2014 Value	Monitoring Station
Sulfur Dioxide	1-hour average[e]	197 µg/m^3(75 ppb)	6.3 ppb	Mt. Ninham
Inhalable Particulates (PM_{10})	24-hour average	150 µg/m^3	38 µg/m^3	IS52
Inhalable Particulates ($PM_{2.5}$)	3-yr average annual mean	12 µg/m^3	7.3 µg/m^3	Newburgh
	Maximum 24-hr. 3-yr. avg.[d]	35 µg/m^3	19.7 µg/m^3	
Ozone	Maximum daily 8-hr avg.[b]	0.075 ppm	0.067 ppm	Mt. Ninham
Carbon Monoxide	8-hour average[a]	9 ppm	0.8 ppm	Loudonville
	1-hour average[a]	35 ppm	1.5 ppm	
Nitrogen Dioxide	12-month arithmetic mean	100 µg/m^3(53 ppb)	17.2	Botanical Gardens/ Pfizer Lab
	1-hr average[e]	188 µg/m^3(100 ppb)	58.16	
Lead	Quarterly mean	0.15 µg/m^3	0.02 µg/m3	Wallkill

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter.
a. Not to be exceeded more than once a year.
b. Three-year average of the annual fourth highest maximum 8-hour average concentration effective May 27, 2008.
c. Not to be exceeded by the 98th percentile of 24-hour $PM_{2.5}$ concentrations in a year (averaged over 3 years).
d. Three-year average of the 98th percentile of the daily maximum 1-hour average, effective January 22, 2010.
e. Three-year average of the 99th percentile of the daily maximum 1-hour average, final rule signed June 2, 2010.
Sources: New York State Department of Environmental Conservation; New York State Ambient Air Quality Development Report, 2014; New York City Department of Environmental Protection, 2014.

State Implementation Plan

An area that does not meet (or contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for a pollutant is referred to as a nonattainment area. The Clean Air Act requires states to submit to the U.S. Environmental Protection Agency (EPA) a State Implementation Plan (SIP) for attainment of the NAAQS. The 1977 and 1990 amendments to the Clean Air Act require comprehensive plan revisions for areas where one or more of the standards have yet to be attained. Within New York State, various counties are in nonattainment of ozone, and/or PM_{10}. Dutchess County, which is in NYSDEC Region 3 and NYSDOT Region 8 is in attainment for all pollutants. New York State is implementing measures to reduce pollutant emissions as part of its effort to attain the NAAQS.

D. EXISTING AIR QUALITY

Hudon Heritage is located in Dutchess County, which ispart of NYSDEC Region 3. Currently Dutchess County meets the NAAQS for all pollutants. Based on the most recent information available from NYSDEC and NYSDOT, no vehicular emission hot spots are in the vicinity of the project site or in Dutchess County. Table 1 showed the pollutant concentrations for the air quality monitors closest to the site over the past three years. The Newburgh, Mt Ninham, and Wallkill monitors are located in NYSDEC Region 3.

III. METHODOLOGY

A. POLLUTANTS OF CONCERN

Under the proposed action, air emissions of carbon monoxide, nitrogen oxides, hydrocarbons, sulfates and fine particulates may be a source of concern due to site traffic, boilers for heating and hot water, and on-site construction activities. Carbon monoxide from site-generated traffic is the primary source of potential impacts at off-site locations because emissions during peak traffic conditions can create locally high concentrations of CO at congested intersections. PM_{10} and $PM_{2.5}$ are also of concern when a project generates significant diesel-fueled trucks or buses or a large volume of mixed traffic. Boiler stacks can generate SO_2, PM_{10} and $PM_{2.5}$ if fuel oil #2 is used. If natural gas is used, the critical pollutants are NO_2 and $PM_{2.5}$ from NO_2.

B. LEVEL 1 CO SCREENING ANALYSIS FOR INTERSECTIONS

The first component of the analysis focuses on local (microscale) carbon monoxide concentration from site generated traffic. CO air quality guidelines and protocols described in this section are based

on the NYSDOT *Environmental Procedures Manual (EPM)*, Chapter 1.1 (January 2001). NYSDOT in the process of updating the EPM, which is now *The Environmental Manual (TEM).* Air quality will be part of Chapter 4 in the revised Manual. Currently, the CO screening procedures remain the same, but some components of the air quality section are obsolete and must be modified for use in current projects.

Level of Service (LOS) Screening

Six categories for level of service (LOS) define the traffic operations at an intersection or approach. They are summarized below.

- LOS A: Most vehicles arrive during the green phase. Many vehicles do not stop at all.
- LOS B: More vehicles stop than with LOS A, causing higher levels of delay.
- LOS C: The number of vehicles stopping is significant, although many still pass through the intersection without stopping.
- LOS D: Congestion becomes more noticeable. Many vehicles stop, and the number of vehicles not stopping declines.
- LOS E: This is considered to be the limit of acceptable delay.
- LOS F: Drivers may have to wait through one or more signal cycles to get through an intersection. This level is considered unacceptable to most drivers.

For signalized intersections, the traffic LOS is typically calculated for each intersection approach, as well as the intersection as a whole. For signalized intersections, the overall LOS is a key indication of intersection congestion. For unsignalized intersections, however, the LOSs on minor approaches are of primary concern because the major approaches are free-flow links and their traffic does not stop at the unsignalized intersection. The minor approach with the poorest LOS is termed the critical movement or critical approach. In the discussion that follows, the overall LOS for an intersection is represented by a capital letter while the individual approaches are shown in lower case letters.

To determine whether the level of delay would cause an air quality impact for carbon monoxide, the NYSDOT *Environmental Procedures Manual* provides screening criteria. The criteria determine whether a microscale CO analysis should be carried out for an intersection. The first criterion is a level of service LOS screening. Intersections with a projected LOS of A, B, or C under Build Conditions are generally excluded from a microscale CO analysis. Intersections with an overall LOS of D or worse, or a critical movement with an LOS of d or worse, are further evaluated using NYSDOT's capture screening criteria:

Table 2 shows the LOSs for the nineteen intersections analyzed by the traffic study for 2035 Build Conditions. For unsignalized intersections, the table shows the critical minor movement's LOS rather than an overall intersection LOS. As shown in Table 3, five intersections are recommended for further consideration because they have an overall LOS of D or worse or they have a critical movement with an LOS of d or worse during one or more peak periods. These intersections were further analyzed according to the capture screening criteria in NYSDOT's *Environmental Procedures Manual*.

Table No. 2
Intersection Levels of Service (LOS)

ID No.	Type	Intersections	LOS, 2035 Build Conditions		
			AM Peak	PM Peak	Midday Peak
1	S	US Route 9 & Culinary Institute of America	A	B	A
2	S	US Route 9 & W. Dorsey Lane/Culinary Institute of America	B	B	B
3	U	US Route 9 & River Point Road	c	b	c
4	U	US Route 9 & Big Meadow Lane	c	e	c
5	S	US Route 9 & HudsonView Drive	NA	NA	NA
6	S	US Route 9 & Winslow Gate Road	A	B	B
7	S	US Route 9 & Marist Drive/Mid Hudson Plaza	A	B	B
8	S	Fulton Street & US Route 9	B	**E**	**D**
9	S	US Route 9 & Marist Drive/NYS Routre 9G	C	**F**	C
10	S	NYS Route 9oG (Violet Avenue) & Pendell Road	B	C	C
11	U	NYS Route 9G (Violet Avenue) & East Cedar Street	b	b	a
12	S	NYS Route 9G (Violet Avenue) & Fulton Avenue	B	B	A
13	S	NYS Route 9G (Violet Avenue) & West Cottage Road/Cottage Road	B	B	B
14	S	NYS Route 9G (Violet Avenue) & East Dorsey Lane/West Dorsey Lane	C	C	C
15	S	US Route 9 & Clear Water Drive (North)	A	**D**	D
16	U	US Route 9 & Clear Water Drive	c	b	b
17	S	US Route 9 & North Road	B	C	C
18	U	North Road & West Cedar Street	b	**f**	c
19	S	NYS Route 9G & North Road	A	B	A

Notes: S= signalized intersection; U=unsignalized intersection
For unsignalized intersections, the approach LOS for critical movements is shown by a lower case letter.
Boldface type indicates intersections and peak periods subject to further screening.
Source: Maser Consulting, November 2015.

Capture Screening Criteria

Signalized intersections with an overall LOS D or worse, as well as unsignalized intersections projected to experience LOS d or worse on a minor approach, are further screened by the following NYSDOT capture screening criteria:

- A 10% or more increase in traffic volume,
- A reduction of 10% (or more) in the source-receptor distance, (i.e., the straight line distance between the edge of the travel lane closest to the receptor and that point of the receptor closest to the roadway),
- A decrease of 20% (or more) in speed, where the existing speed is 48 km/h (30 mph) or less,
- An increase in the number of queued lanes at an intersection,
- A 10% or more increase in vehicular emissions due to changes in speed, traffic mix, etc., and,
- Potential impacts on an intersection evaluated for CO in the State Implementation Plan (SIP).

A review of the traffic information indicates that no changes in emissions due to changes in traffic mix are projected for the intersections within the study area. The project area does not encompass any intersections used by NYSDOT to demonstrate compliance with the NAAQS in the SIP, and none are within 0.5 mile of the project area. A comparison of future speeds with and without the Proposed Action shows that none would decrease by 20% or more. Therefore, the only applicable capture screening criteria is a 10% increase in traffic volume.

Five of the intersections in Table 2 were evaluated to determine whether their volumes would increase by 10% or more with the proposed action. The results are shown in Table 3. All five intersections in Table 3 would be subject to further analysis using traffic volume threshold criteria because the project would increase volumes by 10% or more. Therefore, a volume threshold screening analysis was carried out for the intersections and peak periods shown in Table 3.

Table No. 3
Intersections Subject to Screening for 10% Volume Increase

ID No.	Type	Intersection	2035 Volumes			
			Build LOS	No Build	Build	% Diff.
		Peak Weekday PM Period				
4	U	US Route 9 & Big Meadow Lane	e	2,808	3,106	10.6
8	S	Fulton Street & US Route 9	E	3,162	4,401	39.2
9	S	US Route 9 & Marist Drive/NYS Route 9G	F	4,103	4,774	16.4
15	S	US Route 9 & Clear Water Drive (North)	D	2,762	3,531	27.8
18	U	North Road & West Cedar Street	f	1,099	1,269	15.5
		Peak Saturday Period				
8	S	Fulton Street & US Route 9	D	2,733	3,943	44.3
15	S	US Route 9 & Clear Water Drive (North)	D	2,372	3,299	39.1

Source Maser Consulting, October 2015

The volume threshold analysis uses Tables 3a, 3b, and/or 3c from the 2001 NYSDOT *Environmental Procedures Manual*, Chapter 1.1. This analysis requires information on the approach volumes as well as estimated CO emission factors, vehicular mix, and speeds for the selected roadways. Table 4 below shows the approach volumes for the five intersections.

Table No. 4
Intersections Subject to Screening for Threshold Volume Increase

ID No.	Type	Intersection	2035 Approach Volumes, Build Conditions			
			EB	WB	NB	SB
		Peak Weekday PM Period				
4	U	US Route 9 & Big Meadow Lane	NA	47	1705	1354
8	S	Fulton Street & US Route 9	NA	604	2196	1601
9	S	US Route 9 & Marist Drive/NYS Route 9G	287	699	1980	1808
15	S	US Route 9 & Clear Water Drive (North)	6	340	1835	1350
18	U	North Road & West Cedar Street	NA	538	731	NA
		Peak Saturday Period				
8	S	Fulton Street & US Route 9	NA	418	1840	1687
15	S	US Route 9 & Clear Water Drive (North)	9	446	1521	1323

Source Maser Consulting, October 2015

For the volume threshold analysis, the user needs to obtain CO emission factors for both freeflow links and queue links used in the study. The emission factors are termed composite emission factors because they are applicable to the combined mixture of vehicle types in a given approach volume. Previously, NYSDOT provided tables for calculating composite emission factors. However, they were based on EPA's MOBILE6.2 emissions model. MOBILE6.2 is obsolete, and the NYSDOT tables cannot be used. Therefore, MOVES2010b, a currently accepted EPA emissions model, was used.

MOVES2010b requires vehicular mix, speeds, and roadway link lengths specific to the project. Vehicular mix and speeds were obtained from the traffic study. The percentage of heavy vehicles, 2%, was assigned to MOVES category 52 for short-haul, single-unit and combination trucks. The remaining 98% was assigned to MOVES category 21 for passenger vehicles. All speeds were 30 mph. Roadway links for the approaches were assumed to be 1,000 feet long. Additional MOVES inputs for meteorology, fuel supply, etc., specific to Dutchess County were obtained from NYSDEC. Since the volumes for the peak PM period are higher than those for the peak Saturday period, only the PM period was analyzed as a worst case. MOVES2010b was run for the month of January and the hour from 5 to 6 pm. The resulting emission factors for each roadway approach link were used with the NYSDOT EPM tables.

Because they are unsignalized, the intersections for US Route 9/Big Meadow Lane and North road/West Cedar Street were treated as two-way free-flow sites. They were evaluated using NYSDOT's Table 3b. *Peak hour directional traffic volume thresholds for two-way free flow sites.* Only the major approaches ae evaluated. As shown in Table 5, the approaches are below the volume threshold, and these two intersections do not require further analysis.

Table No. 5
Volume Threshold Analysis for Free Flow Roadways

Roadway	Free Flow Approach	2035 Build Volumes	Approach Speed (mph)	MOVES 2010b EF (g/mi.)	NYSDOT Volume Threshold
U.S. Route 9 @ Big Meadow Lane	NB	1705	30	3.0	8,000
U.S. Route 9 @ Big Meadow Lane	SB	1354	30	3.0	8,000
North Road @ West Cedar Street	NB	731	30	3.0	8,000

Source: Sandstone Environmental Associates, Inc.

The other three intersections were evaluated using NYSDOT's Table 3c: *Peak hour traffic volume thresholds at any applicable approach for signalized intersections*. The table provides threshold volumes based on the idle and free flow emission factors. In this case, the applicable threshold volume is 4,000 vehicles based on a free flow emission factor of 2.5 to 5.0 grams/vehicle mile and a queue (idle) emission factor of up to 100 grams per vehicle hour. Due to continuing improvements in automotive technology, the projected CO emission factors for 2035 are very low: 3.0 grams/vehicle mile and 1.8 grams per vehicle hour. As shown in Table 6, all three intersections are below the volume threshold, and no further analysis is required for them.

Table No. 6
Volume Threshold Analysis for Signalized Intersections

Roadway	Approach	2035 Build Volumes	Approach Speed (mph)	MOVES 2010b EFS (2035)		NYSDOT Volume Threshold
				g/mi.	g/hr	
Fulton Street & U.S. 9	WB	604	30	3.0	1.8	4000
	NB	2196	30	3.0	1.8	4000
	SB	1601	30	3.0	1.8	4000
U.S. Route 9 & Marist Drive/NYS Route 9G	EB	287	30	3.0	1.8	4000
	WB	699	30	3.0	1.8	4000
	NB	1980	30	3.0	1.8	4000
	SB	1808	30	3.0	1.8	4000
U.S. Route (& Clear Water Drive (North)	EB	6	30	3.0	1.8	4000
	WB	340	30	3.0	1.8	4000
	NB	1835	30	3.0	1.8	4000
	SB	1350	30	3.0	1.8	4000

Note: Volume threshold applies to each approach, not the combined intersection total.
Source: Sandstone Environmental Associates, Inc. and NYSDOT Environmental Procedures Manual

C. FINE PARTICULATES

The NYSDOT EPM section addressing screening for fine particulates was rescinded in December 2012. Currently, the NYSDOT screening for fine particulates from mobile sources is based on EPA's "Transportation Conformity Guidance for Quantitative Hot-Spot Analyses In $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas." The traffic generated by the project would be primarily gasoline-powered passenger vehicles. It would not generate a significant number of diesel vehicles or increase congestion at locations with a significant number of diesel vehicles. The project would include improvements that would improve traffic flow and reduce congestion. Therefore, the project would not be of local air quality concern and further analysis of PM hotspots is not warranted for the off-site intersections, roadway segments, or parking facilities.

III. 2035 NO BUILD CONDITIONS

For the purposes of this analysis, the site was assumed to remain vacant under No Build Conditions. No additional redevelopment of the site is anticipated.

IV. 2035 BUILD CONDITIONS

A. PROPOSED ACTION

The Applicant, EFG/DRA Heritage, LLC, proposes to develop a mixed use pedestrian-oriented residential and commercial development on an approximately156 acre site (the "project site") located primarily in the Town of Poughkeepsie (0.04 acres at the northern edge of project site is located in the Town of Hyde Park, but no development is proposed on this portion of the site). The project site is identified as tax parcel 6163-03-011149 on the Town of Poughkeepsie Tax Map. The project site is located within the Historic Revitalization Development District (HRDD) of the Town.

The site will be redeveloped to include a total of approximately 750 residential dwelling units (564 multi-family homes, 166 townhomes and 20 single-family homes) and commercial/retail space consisting of 344,600 s.f. of retail, 7,700 s.f. gas station with convenience market, 6,000 s.f. drive-in bank, 80,000 sf hotel with 60-seat restaurant, and a 15-room bed and breakfast or museum. The existing power plant in the site would not be maintained.

The existing internal access roads will be reconfigured to improve the geometry and to accommodate the development layout. A secondary access connection via Paint Shop Road and West Cottage Road will provide connection to NYS Route 9G at Cottage Road. Figure 3 shows the site layout.

B. MOBILE SOURCES

Based on the screening analysis discussed previously, no mobile source analysis is required.

Figure 3
Conceptual Site Plan

Source: Chazen Engineering, Surveying, & Landscape Architecture Co. O.P.C.

C. STATIONARY SOURCES

The buildings associated with the proposed action would be low-rise structures scattered throughout the site. With regard to stationary source impacts, the primary source of concern is the adaptive re-use of the 80,000 square foot main wing of the former Hudson River Psychiatric Center (HRPC) Administration Building as a hotel. As a worst-case analysis, the hotel was presumed to use fuel oil #2. The building currently is four stories. It would be 50 feet high, and the stack would be at least 53 feet high. The primary source of emissions would be SO_2 from the combustion of #2 oil. For the purposes of the analysis, the hotel was treated as a residential use, which would be a worst case. Therefore, Figure 17-5 from the NYC *CEQR Technical Manual Appendices* (2014) was used as a first-stage screening analysis to determine the potential for impacts. For 80,000 SF of commercial space, the screening analysis indicates a minimum distance of 100 feet between the stack and the nearest building of similar height. No existing or planned future buildings of similar height are within 100 feet of the stack. Therefore, no potential impacts are likely.

C. CONSTRUCTION IMPACTS

Construction is expected to be completed over several years with completion by 2035. No information is available on construction staging or construction equipment. Therefore, the potential for construction impacts is addressed in a qualitative manner. During construction, emision reduction measures would be implemented as appropriate during construction phases to minimize emissions of fugitive dust and emissions from trucks and on-site equipment. Fugitive dust impacts from excavation and storage of materials are temporary in nature and will be mitigated by using best construction practices such as wetting the soil surfaces, covering trucks and stored materials with a tarp to reduce windborne dust, and proper maintenance of equipment. Typical erosion control measures include silt fences, wheel wash down areas, temporary seeding, outlet protection, dust control, temporary sediment traps and outlet control devices, covering of stockpile materials and hay bales. Exposed areas will be stabilized as soon as possible after disturbance to minimize dust. Soils will be stabilized with tackifiers, geotechnical fabrics, natural ground coverings, and the establishment of seed beds. Roadway and haul roads will be stabilized with tackifiers, geotechnical fabrics and stone ballast as required to minimize dust. Tracking pads will be established where trucking vehicles move from construction areas to established roadways to prevent dirt from being tracked on to pavement. Wash stations will be installed at the tracking pads and their utilization will be required prior to leaving a disturbed area. Stockpiles will be covered and/or stabilized with an established seed bed to prevent windblown soil and dust from leaving the piles. Roadways will be washed regularly to prevent dust from being generated by vehicle traffic. Dust associated with demolition activities will be controlled with misting systems that will minimize the generation of dusts. Emission reduction and related construction measures will be included in the specifications of

the construction contracts.

IV. CONCLUSIONS

No significant air quality impacts are anticipated as a result of project-generated traffic or boilers used for heating and hot water or construction activities.