Struever Fidelco Cappelli, LLC
Yonkers, New York

SFC Redevelopment Project
City of Yonkers
Westchester County, New York

AIR QUALITY IMPACT ASSESSMENT STUDY

DRAFT

NOVEMBER 2006
REVISED JANUARY 8, 2008

Prepared by:

PAULUS, SOKOLOWSKI AND SARTOR ENGINEERING, PC
67A Mountain Boulevard Extension
Warren, Somerset County, New Jersey

SFC REDEVELOPMENT PROJECT
City of Yonkers, New York

Proposed Development
AIR QUALITY IMPACT ASSESSMENT STUDY
03113-003-014

TABLE OF CONTENTS

APPENDICES

TABLES

FIGURES

SECTION 1.0
INTRODUCTION

SFC REDEVELOPMENT PROJECT
City of Yonkers, New York

Proposed Development
AIR QUALITY IMPACT ASSESSMENT STUDY
03113-003-014

1.0 INTRODUCTION

Struever Fidelco Cappelli, LLC is proposing to revitalize the City of Yonkers within Westchester County, New York. The proposed redevelopment consists of the River Park Center and Palisades Point redevelopment areas (Project). The River Park Center redevelopment area is comprised of four project sites totaling approximately 21.4-acres: River Park Center, Government Center Site, Cacace Center and Palisade Avenue Office Building. Palisades Point is comprised of two parcels totaling approximately 6.39 acres along the Hudson River bounded by the Hudson River to the west and the Metro North Railroad (Hudson Line) tracks to the east (Site). The proposed redevelopment involves addition of luxury housing, commercial and retail space, waterfront development, a baseball stadium and parking facilities. Assessment for potential air quality impacts of emissions from traffic in the area and in the parking facilities and stationary sources associated with the Project is required to support environmental approval of the Project.

1.1 Purpose

This Air Quality Impact Assessment (Assessment) for the proposed Project has been prepared to support the environmental review process of the Project by providing a technical study of the potential for Air Quality Impacts of emissions associated with the Proposed Project. The methods, models and input parameters used in the analysis were based on the procedures contained in the New York State Department of Transportation (NYSDOT) *Environmental Procedures Manual* (EPM, January 2001) and the City of New York *City Environmental Quality Review (CEQR) Technical Manual* (October 2001). Pollutants of concern and the applicable air quality standards and impact criteria

are discussed as well as the methodologies and results of air quality analyses of mobile sources, parking garages and stationary sources.

Paulus, Sokolowski and Sartor, PC Engineering (PS&S), prepared this Air Quality Impact Assessment Study for Struever Fidelco Cappelli, LLC. PS&S reviewed the need for mobile source modeling of the intersections and performed atmospheric dispersion modeling of emissions related to proposed parking facilities to assess the potential for Air Quality Impacts from the Project. This Assessment was prepared in accordance with applicable standards, requirements, and criteria as well as other guidance.

1.2 Scope

Preparation of this Air Quality Impact Assessment for the Project involved performing the following activities:

- Reviewing traffic-related information (i.e., roadway configurations, traffic volumes, Level of Service, recommended improvements, etc.) provided by the traffic engineer for the Project;
- Reviewing appropriate standards, guidance and criteria potentially applicable to the proposed Project;
- Assessing the traffic-related information to determine if mobile source modeling is required;
- Performing atmospheric dispersion modeling of area emissions to predict concentrations of carbon monoxide at selected walkways near parking facilities;
- Identifying available mitigation measures (if necessary); and
- Summarizing and documenting the results of the Assessment, the existing and future conditions, in a technical document (this Report).

This Air Quality Impact Assessment is based partially on traffic related information and data for the Project provided by John Collins Engineers, P.C. (JCE).

SECTION 2.0
PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

The River Park Center project areas will include the River Park Center, Government Center, Cacace Center and Palisade Avenue Office Building. Palisades Point is comprised of two parcels along the Hudson River waterfront. Figure 2-1 indicates the general project area, and shows the proposed Yonkers Redevelopment areas.

2.1 Site/Area Description

The following describes each of the separate development areas proposed as components of the Yonkers Redevelopment.

2.1.1 River Park Center Project Area

The River Park Center project area comprises the River Park Center, the Palisade Avenue Office Building, the Cacace Center, and the Government Center Garage. The River Park Center site is approximately 13.14-acre site that includes the area known locally as Chicken Island (approximately 9.2-acre area) and adjacent properties, and is bounded by Nepperhan Avenue to the south, Elm Street to the north and east, and New Main Street to the west. The River Park Center will be a mixed-use retail/residential/entertainment development including a 6,500-seat ballpark and a "riverwalk". The Cacace Center site, approximately 4.3-acre site, is bounded by New Main Street on the east, South Broadway on the west and Nepperhan Avenue on the north. The Cacace Center site will be a mixed-use development including office space, a hotel, a parking structure and a fire station. The Government Center site, approximately 2.5-acre site, is situated on the northwest corner of Nepperhan Avenue and New Main Street adjacent to City Hall. This site will be a mixed-use (retail/restaurant/parking) project. The Palisade Avenue Office Building is situated on the north of the ballpark on Palisade Avenue and will be an office development and a parking structure. A 2012 completion date is anticipated for the River Park Center project area.

The following comprise the River Park Center project:

- 465,000 SF of retail;
- 90,000 SF of restaurants;
- 325,000 SF of office space;
- 80,000 SF for movie theaters;
- 950 residential units in two tower;
- 6,500-seat Minor League baseball stadium;
- 4,598 parking garage spaces (2,250 at the River Park Center site, 1,613 at the Government Center site and 4,350 at the Palisade Avenue Office Building); and
- Daylighting of 400 linear feet of the Saw Mill River with pedestrian "riverwalk".

The following comprise the Cacace Center project:

- Approximately 150 room hotel (approximately 75,000 SF);
- Approximately 50,000 SF fire station (new replacement for existing Fire Department Headquarters);
- Approximately 150,000 SF of office space; and
- Approximately 1,349 parking space garage.

2.1.2 Palisades Point Project Area

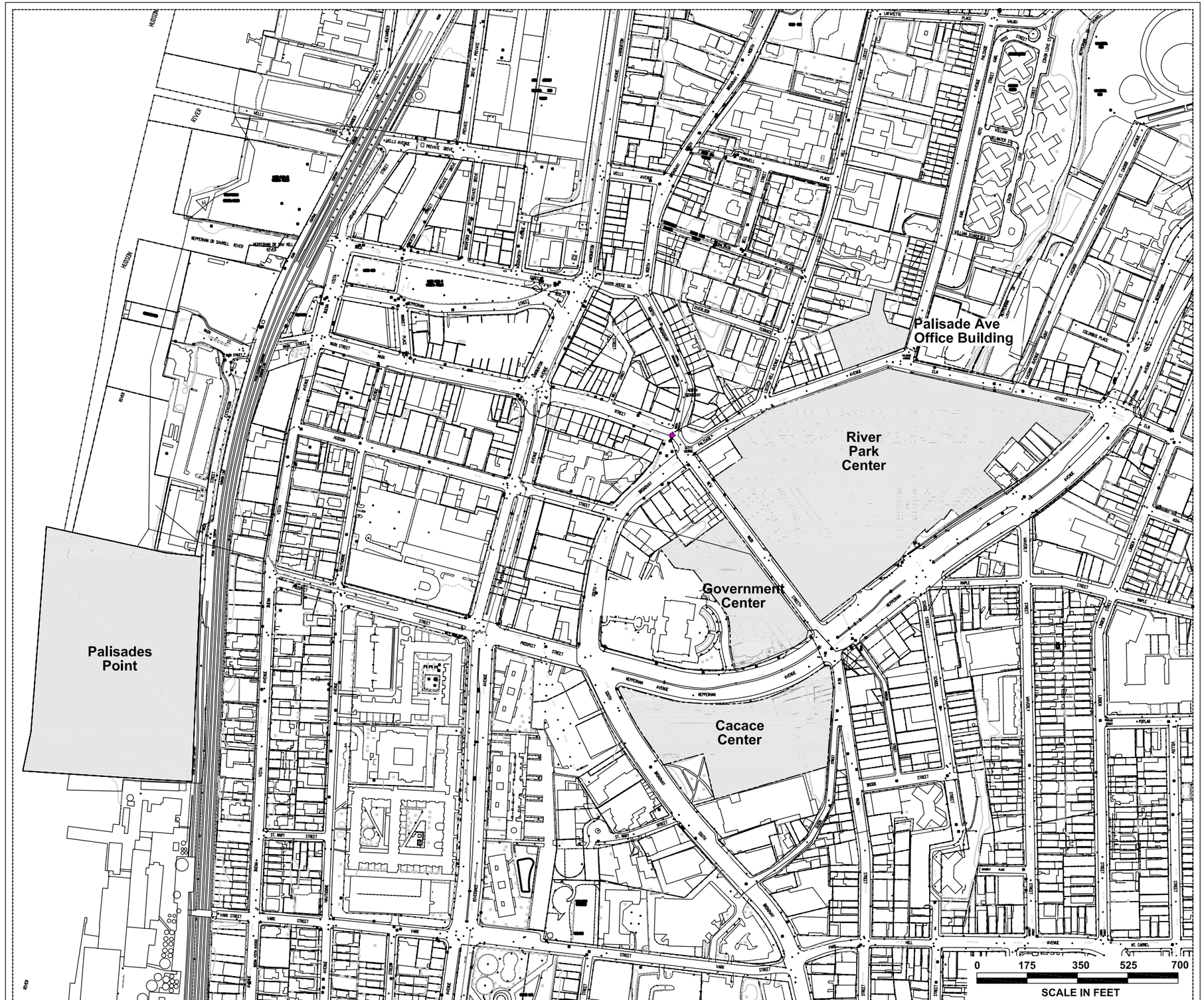
Palisades Point is the proposed housing development that comprises two (2) parcels totaling approximately 5.8-acres along the Hudson River. The area is bounded by the Hudson River to the west and the Metro North Railroad Hudson Line tracks to the east, and is situated nominally between Prospect Street to the north and Saint Mary Street to the south. The proposal for the development includes two (2) residential towers which will house 436 dwelling units, along with structured and at-grade parking and publicly accessible open space along the riverfront.

The program for Palisades Point is:

- 436 residential units in two (2) 25-story towers;
- 670 parking spaces in two (2) five story parking garages located adjacent to each tower building;
- 8,700 SF of retail or professional office space;
- 136,342 SF of publicly accessible open space along the Hudson River; and
- New road and pedestrian access to the Site with a public bridge crossing the Metro North tracks from Prospect Street to the proposed development.

2.2 Land Use

Aerial photographs were reviewed to identify and locate various land uses along the project area. According to the U.S. Census Bureau, the city of Yonkers has a total area of 20.3 mi^2 (18.1 mi^2 of it is land and 2.2 mi^2 of it is water) with an estimated population (2005) of roughly 196,500 residents. The city is spread out over many hills rising from sea level at the eastern bank of the Hudson River to as high as 416 feet at Sacred Heart Church (Wikipedia, 2006). The Project area is located in relatively dense urban/suburban setting in the downtown area of Yonkers. The downtown area is mixed use ranging from commercial and industrial to social/community service and residential. Residential units in downtown Yonkers range from two story housing to high-rise apartment buildings. Social and community services include churches, medical buildings/hospitals, schools, parks/recreation areas and other community related services (police department, fire departments, courthouse, etc.).



REVISIONS/ISSUES		
NO.	DATE	DESCRIPTION

SOURCE:
Basemap by the City of Yonkers Department of Engineering

PS&S
integrating design & engineering

67A MOUNTAIN BOULEVARD EXTENSION
P.O. BOX 4039
WARREN, NEW JERSEY 07059
PHONE: (732) 560-9700
FAX: (732) 560-9768

PROJECT

SFC REDEVELOPMENT PROJECT
CITY OF YONKERS
WESTCHESTER COUNTY, NEW YORK

SHEET TITLE

REDEVELOPMENT AREA SITE MAP

DATE	JOB NO.
01/04/08	03113.003,014
SCALE 1" = 350'	
DRAWN JA	FIGURE NO. 2-1
CHKD. DM	

PROJECT: FILE NAME: P:\03113\003\Y\N\Dwgs\659 Key Plan SFC Phase I 06-09-21_010408.dwg LAST EDIT: 01/07/2008-10:19:57 AM

SECTION 3.0
EXISTING AIR QUALITY CONDITIONS

3.0 EXISTING AIR QUALITY CONDITIONS

The current (2006) maximum monitored carbon monoxide concentrations for New York County, New York are 1.9 ppm for the 1-hour and 1.5 ppm for the 8-hour averaging periods, respectively, according to USEPA AIRS Database Monitor Values Report for Criteria Air Pollutants.

3.1 Ambient Air Quality Standards

National and New York State Ambient Air Quality Standards (NAAQS/NYSAAQS) have been adopted in accordance with requirements of the Clean Air Act, for several criteria air pollutants, to protect public health and welfare allowing for an adequate margin of safety. Criteria air pollutants include sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), inhalable particulates (i.e., particulates less than 10 μm in diameter, PM_{10}), fine particulates (i.e., particulates less than 2.5 μm in diameter, $PM_{2.5}$) and lead (Pb).

The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

For NO_2, ozone, lead and PM, the primary and secondary standards are the same; there is no secondary standard for CO. USEPA promulgated additional NAAQS which became effective September 16, 1997: a new 8-hour standard for ozone, which replaced the existing 1-hour standard; in addition to retaining the PM10 standards, USEPA adopted 24-hour and annual standards for PM2.5. Similar standards have also been adopted as the ambient air quality standards for New York State.

The area consisting of the New York City Metropolitan Area (which includes Westchester County) is designated as “Severe Nonattainment" for the 1-Hour Ozone NAAQS (NYSDEC regulations subpart 200.1). EPA has since redesignated Westchester

County, NY as “moderate” non-attainment for the 8-hour ozone NAAQS, which replaced the 1-hour ozone NAAQS.

Discussions with NYSDEC have indicated that EPA was challenged in court on the 8-hour federal ozone standard, and thus, the designations for such have been put on hold. Therefore NYSDEC currently retains the “severe non-attainment” designation for Westchester County under the 1-hour ozone NAAQS. NYSDEC uses the following “major stationary source” definitions (NYSDEC regulations subpart 201-2)

A major stationary source is defined in a nonattainment area and ozone transport region as follows:

(*a*) For ozone nonattainment areas, stationary sources with the potential to emit 100 tpy or more of oxides of nitrogen (NO_x) or 50 tons per year or more of volatile organic compounds (VOC), in areas classified as "marginal" or "moderate," 25 tpy or more of NO_x or VOCs in areas classified as "severe."

(*b*) In ozone transport regions, stationary sources with the potential to emit 50 tpy or more of volatile organic compounds or 100 tpy of NO_x.

Therefore, the current NYSDEC major stationary source threshold for Westchester County NY is 25 tons per year of NOx, because of Westchester County’s severe one-hour ozone non-attainment status.

The NAAQS and the NYSAAQS for these criteria pollutants are shown in Table 3-1. The NYSAAQS also include hydrocarbons (HC) and total suspended particulates (TSP), which are no longer federal criteria air pollutants. The NAAQS and NYSAAQS for carbon monoxide are 35 ppm for a 1-hour averaging period and 9 ppm for an 8-hour averaging period. The NAAQS for carbon monoxide are not to be exceeded more than once per calendar year, while NYSAAQS are not to be exceeded more than once in any 12-month period.

3.2 Ambient Air Quality

The New York State Department of Environmental Conservation (NYSDEC) Bureau of Air Quality Surveillance operates ambient air quality monitoring stations established throughout the State to assess air quality in relation to the NAAQS. Since there are no air quality monitoring stations at the Site the regional air quality can be characterized from a review of data collected at NYSDEC air quality monitoring stations around the general vicinity of the Site (mainly within Westchester County area). The NYSDEC air quality monitoring stations used to assess potential impacts of the Project were chosen based on proximity to the proposed development and based on the highest ambient air quality concentration (see Figure 3-1). Available ambient air quality data from NYSDEC Air Monitoring stations (Obtained via EPA Airs Database) have been summarized. This data describes regional air quality characteristics near the Site for criteria pollutants and is provided in Table 3-2. Table 3-2 includes the maximum monitored (existing/background) concentrations of these pollutants for 2004, 2005, and 2006 from NYSDEC air quality monitoring stations that are considered generally representative of the site. Existing concentrations used to assess the potential impacts of the Project are identified in Table 3-2. The measured ambient concentrations of criteria pollutants are compared to applicable National AAQS (USEPA, 2004). The EPA AirData reports are produced from a monthly extract of EPA's air pollution database, AQS. The data for the year of 2006 was extracted on August 3rd, 2006.

3.3 Attainment Status/Nonattainment Areas

The Clean Air Act (CAA) requires that each state identify areas where NAAQS for criteria pollutants are exceeded, and designates these areas as "non-attainment" areas. Areas that meet the NAAQS for a criteria pollutant are designated as being in "attainment" of the air quality standards for that pollutant. Some "non-attainment" areas are subcategorized based on the severity of air contaminant concentrations (marginal, moderate, serious, severe, and extreme for ozone; and moderate and serious for PM10 and CO). According to the USEPA, Westchester County, New York's attainment status with respect to the NAAQS is listed in Table 3-3.

Westchester County, New York has been designated as attainment for criteria pollutants with the exception of CO for which it is designated as a maintenance area and it is designated as nonattainment for respirable particulates ($PM_{2.5}$) and photochemical oxidants/ozone (O_3).

3.4 Class I Areas

Class I areas were established by the CAA Amendments of 1977 as areas where air quality and visibility are important values. Class I areas include all international parks, national wilderness areas, national memorial parks and national parks. The Clean Air Act Amendments of 1977 established very low maximum allowable increases (Prevention of Significant Deterioration (PSD) Increments) of sulfur dioxide and particulate matter concentrations in Class I areas, to protect the quality of these areas. The closest Class I Area to the proposed development is the Brigantine Division of the Edwin B. Forsythe National Wilderness Refuge in Atlantic County, New Jersey, which is located approximately 120 miles to the south of Yonkers, New York. The next closest Class I area is Lye Brook Wilderness in Vermont, which is over 200 miles away from the site.

Proposed major new source or major modification projects that are within 100 km (60 miles) of Class I Areas and/or have the potential to affect other Class I Areas are required to perform a Class I Area Impact Analysis including:

- performing Class I increment analyses (including any necessary cumulative impact analyses)
- performing any preliminary analyses (modeling) required by the reviewing agency to determine if the source may have potentially significant ambient concentration impacts of any pollutant (i.e., increase concentrations by 1 µg/m3 (24-hour average) or more)
- performing an analysis for potential impacts on visibility
- providing information necessary to conduct the impact analyses (including any necessary cumulative impact analyses)
- performing any monitoring required by the reviewing agency

- providing the reviewing agency any additional relevant information the agency requests to "complete" the Class I Area Impacts Analysis.

A Class I Area impact analysis is not needed or required for this Project.

Table 3-1 National and New York Ambient Air Quality Standards						
Pollutant	**Standard**	**Averaging Period**	**New York (a)**		**National (b)**	
			(ug/m^3)	**(ppm)**	**(ug/m^3)**	**(ppm)**
Sulfur Dioxide	Primary	24-hour average	365	0.14	365	0.14
		12-month arith. Mean	80	0.03	80	0.03
	Secondary	3-hour average	1300	0.5	1300	0.5
		24-hour average	-	-	-	-
		12-month arith. Mean	-	-	-	-
Total Suspended (TSP) (c)	Primary	24-hour average	250	-	-	-
		12-month geom. Mean	75	-	-	-
	Secondary	24-hour average	-	-	-	-
		12-month geom. Mean	-	-	-	-
Inhalable Particulates (PM-10)	Primary and Secondary	24-hour average (d)	-	-	150	-
		Annual arith. Mean (e)	-	-	50	-
Fine Particulates (PM2.5)	Primary and Secondary	24-hour average (f)	-	-	35 (k)	-
		Annual arith Mean (g)	-	-	15	-
Carbon Monoxide	Primary and Secondary (h)	1-hour average	40,000	35	40,000	35
		8-hour average	10,000	9	10,000	9
Ozone (i)	Primary	Max. Daily 1 Hr. Avg. (j)	235	0.12	235	0.12
	Secondary	1-hour average	235	0.12	235	0.12
	Primary and Secondary	8-hour average	157	0.08	157	0.08
Nitrogen Dioxide	Primary and Secondary	12-month arith. Mean	100	0.05	100	0.053
Lead	Primary and Secondary	Quarterly mean	-	-	1.5	-

Notes:

(a) New York State (NYS) short-term standards are not to be exceeded more than once in any 12-month period.

(b) National short-term standards are not to be exceeded more than once in a calendar year, except as otherwise noted..

(c) As of 1991, the TSP National Standard was replaced by PM-10 standards, which emphasizes the smaller particles (< 10 µm).

(d) Not to be exceeded more than once per year on average over 3 years.

(e) As of December 17, 2006, the PM-10 Annual National Standard was rescinded.

(f) As of December 17, 2006, the PM2.5 24-hour National Standard was revised from 65 to 35 µg/m³. To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³.

(g) To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.

(h) National secondary standards for carbon monoxide have been rescinded.

(i) 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.

(j) Maximum daily 1-hr average to be exceeded no more than once per year averaged over 3 consecutive years. The expected number of days above the standards must be less than or equal to one.

(k) The USEPA strengthened the NAAQS for PM2.5 in September 2006 from 65 ug/m3 to 35 ug/m3 for a 24 hour average.

Source: 40 CFR Part 50 and NYSDEC Chapter III Part 257

Table 3-2
Existing Ambient Air Quality Concentrations
Yonkers, Westchester County, New York

Contaminant (Concentration Units)	Averaging Period	AAQS (a) (ppm)	Background Concentration							Location	Location Number	Approx. Distance from Site (miles)
			Maximum				98th Percentile	Number of Exceedences (b)	Year (d)			
			1st	2nd	3rd	4th						
Sulfur Dioxide (ppm)	3-hour (c)	0.5	0.07	0.057	-	-	-	0	2004	200th St & Southern Blvd, New York, NY	1	4.6
			0.061	0.054	-	-	-	0	2005			
			0.047	0.046	-	-	-	0	2006			
			0.072	0.061	-	-	-	0	2004	E 156th St Bet Dawson and Kelly, New York, NY (g)	2	7.9
			0.079	0.067*	-	-	-	0	2005			
			0.054	0.049	-	-	-	0	2006			
			0.039	0.038	-	-	-	0	2004	NYSDEC Field Headquarters, Gypsy Trail Road, Putnam County, NY	3	36.9
			0.022	0.021	-	-	-	0	2005			
			0.018	0.018	-	-	-	0	2006			
	24-hour (c)	0.14	0.036	0.035	-	-	-	0	2004	200th St & Southern Blvd, New York, NY	1	4.6
			0.042	0.039	-	-	-	0	2005			
			0.03	0.03	-	-	-	0	2006			
			0.036	0.035	-	-	-	0	2004	E 156th St Bet Dawson and Kelly, New York, NY (g)	2	7.9
			0.047	0.042*	-	-	-	0	2005			
			0.031	0.03	-	-	-	0	2006			
			0.014	0.014	-	-	-	0	2004	NYSDEC Field Headquarters, Gypsy Trail Road, Putnam County, NY	3	36.9
			0.012	0.01	-	-	-	0	2005			
			0.011	0.01	-	-	-	0	2006			
	Annual	0.03	0.01	-	-	-	-	0	2004	200th St & Southern Blvd, New York, NY	1	4.6
			0.009	-	-	-	-	0	2005			
			0.007	-	-	-	-	0	2006			
			0.01	-	-	-	-	0	2004	E 156th St Bet Dawson and Kelly, New York, NY (g)	2	7.9
			0.011*	-	-	-	-	0	2005			
			0.01	-	-	-	-	0	2006			
			0.003	-	-	-	-	0	2004	NYSDEC Field Headquarters, Gypsy Trail Road, Putnam County, NY	3	36.9
			0.002	-	-	-	-	0	2005			
			0.002	-	-	-	-	0	2006			
Nitrogen Dioxide (ppm)	Annual	0.05	0.024	-	-	-	-	0	2004	200th St & Southern Blvd, New York, NY	1	4.6
			0.027	-	-	-	-	0	2005			
			0.025	-	-	-	-	0	2006			
			0.03*	-	-	-	-	0	2004	E 156th St Bet Dawson and Kelly, New York, NY (g)	2	7.9
			0.029	-	-	-	-	0	2005			
			0.027	-	-	-	-	0	2006			
Ozone	1-hour	0.12	0.102	0.096	0.093	0.092	-	0	2004	200th St & Southern Blvd, New York, NY	1	4.6
			0.109	0.105	0.1	0.095	-	0	2005			
			0.106	0.099	0.09	0.087	-	0	2006			
			0.094	0.091	0.089	0.089	-	0	2004	E 156th St Bet Dawson and Kelly, New York, NY	2	7.9
			0.108	0.101	0.101	0.099	-	0	2005			
			0.114	0.089	0.089	0.08	-	0	2006			
			0.105	0.099	0.096	0.091	-	0	2004	White Plains Pump Station, Orchard Street, White Plains, Westchester County, NY	4	10.9
			0.133	0.123	0.119	0.118	-	1	2005			
			0.145	0.11	0.106	0.099	-	1	2006			

12/20/2007

Table 3-2
Existing Ambient Air Quality Concentrations
Yonkers, Westchester County, New York

Contaminant (Concentration Units)	Averaging Period	AAQS (a) (ppm)	Background Concentration							Location	Location Number	Approx. Distance from Site (miles)
			Maximum				98th Percentile	Number of Exceedences (b)	Year (d)			
			1st	2nd	3rd	4th						
(ppm)	8-hour	0.08	0.087	0.081	0.079	0.074	-	1	2004	200th St & Southern Blvd, New York, NY	1	4.6
			0.082	0.08	0.075	0.074	-	0	2005			
			0.09	0.075	0.072	0.071	-	1	2006			
			0.08	0.08	0.077	0.07	-	0	2004	E 156th St Bet Dawson and Kelly, New York, NY	2	7.9
			0.097	0.079	0.078	0.077	-	1	2005			
			0.099	0.072	0.07	0.069	-	1	2006			
			0.079	0.079	0.078	0.078	-	0	2004	White Plains Pump Station, Orchard Street, White Plains, Westchester County, NY	4	10.9
			0.106	0.098	0.097	0.095	-	9	2005			
			0.112	0.087	0.082	0.081	-	2	2006			
Carbon Monoxide (ppm)	1-hour (c)	35	3.3	2.8	-	-	-	0	2004	200th St & Southern Blvd, New York, NY (g)	1	4.6
			3.9	3.5*	-	-	-	0	2005			
			2.2	2.1	-	-	-	0	2006			
			2.9	2.6	-	-	-	0	2004	PS 59, 288 E 57th St, New York, NY	5	12.4
			2.3	2.2	-	-	-	0	2005			
			1.9	1.9	-	-	-	0	2006			
	8-hour (c)	9	2	2	-	-	-	0	2004	200th St & Southern Blvd, New York, NY (g)	1	4.6
			2.5	2.2*	-	-	-	0	2005			
			1.9	1.6	-	-	-	0	2006			
			2.1	2	-	-	-	0	2004	PS 59, 288 E 57th St, New York, NY	5	12.4
			1.6	1.5	-	-	-	0	2005			
			1.6	1.5	-	-	-	0	2006			
PM10 (ug/m3)	24-hour	150	49	40	35	34*	-	0	2004	E 156th St Bet Dawson & Kelly (1), New York, NY (g)	2	7.9
			62	61	58	53*	-	0	2005			
			-	-	-	-	-	-	2006			
			41	35	32	31	-	0	2004	E 156th St Bet Dawson & Kelly (2), New York, NY	2	7.9
			55	29	20	19	-	0	2005			
			-	-	-	-	-	-	2006			
			47	32	32	31	-	0	2004	425 Leonard St, New York, NY	6	14.9
			21	20	18	16	-	0	2005			
			-	-	-	-	-	-	2006			
	Annual	50	18	-	-	-	-	0	2004	E 156th St Bet Dawson & Kelly (1), New York, NY	2	7.9
			11	-	-	-	-	0	2005			
			-	-	-	-	-	-	2006			
			17	-	-	-	-	0	2004	E 156th St Bet Dawson & Kelly (2), New York, NY	2	7.9
			19	-	-	-	-	0	2005			
			-	-	-	-	-	-	2006			
			17	-	-	-	-	0	2004	424 Leonard St, New York, NY 425 Leonard St, New York, NY	6	14.9
			13	-	-	-	-	0	2005			
			-	-	-	-	-	-	2006			

12/20/2007

Table 3-2
Existing Ambient Air Quality Concentrations
Yonkers, Westchester County, New York

Contaminant (Concentration Units)	Averaging Period	AAQS (a) (ppm)	Background Concentration							Location	Location Number	Approx. Distance from Site (miles)
			Maximum				98th Percentile	Number of Exceedences (b)	Year (d)			
			1st	2nd	3rd	4th						
PM2.5 (ug/m3)	24-hour (c)(e)	35	39	38	31	31	31	0	2004			
			42	40	37	35	37	0	2005	200th St & Southern Blvd, New York, NY	1	4.6
			40	30	25	24	40	0	2006			
			42	42	38	32	38*	0	2004	2351 1st Ave, New York, NY (1)		
			40	37	37	36	37*	0	2005	2352 1st Ave, New York, NY (1) (g)	7	9.4
			44	31	27	24	44*	0	2006	2353 1st Ave, New York, NY (1)		
			-	-	-	-	-	-	2004	2351 1st Ave, New York, NY (2)		
			-	-	-	-	-	-	2005	2352 1st Ave, New York, NY (2)	7	9.4
			44	32	27	25	44	0	2006	2353 1st Ave, New York, NY (2)		
			38	35	34	30	34	0	2004			
			42	33	33	32	33	0	2005	5th Avenue & Madison, Thruway Exit 9,	8	7.1
			37	24	24	22	37	0	2006	Mamaroneck, Westchester Co, NY		
	Annual (f)	15	12.7	-	-	-	-	0	2004			
			13.9	-	-	-	-	0	2005	200th St & Southern Blvd, New York, NY	1	4.6
			13.4	-	-	-	-	0	2006			
			13.2*	-	-	-	-	1	2004	2351 1st Ave, New York, NY (1)		
			14.3*	-	-	-	-	0	2005	2352 1st Ave, New York, NY (1) (g)	7	9.4
			14.1*	-	-	-	-	0	2006	2353 1st Ave, New York, NY (1)		
			-	-	-	-	-	-	2004	2351 1st Ave, New York, NY (2)		
			-	-	-	-	-	-	2005	2352 1st Ave, New York, NY (2)	7	9.4
			14.5	-	-	-	-	0	2006	2353 1st Ave, New York, NY (2)		
			11.3	-	-	-	-	0	2004			
			12.4	-	-	-	-	0	2005	5th Avenue & Madison, Thruway Exit 9,	8	7.1
			11.7	-	-	-	-	0	2006	Mamaroneck, Westchester Co, NY		
Lead (ug/m3)	3-month	1.5	0.05	0.04	-	-	-	0	2004			
			0.04	0.03	-	-	-	0	2005	424 Leonard St, New York, NY	6	14.9
			-	-	-	-	-	-	2006			
			1.03	0.75	-	-	-	0	2004			
			0.14	0.09	-	-	-	0	2005	Ballard Rd, Wallkill, NY	9	43.7
			-	-	-	-	-	-	2006			

Notes:

(a) AAQS presented are the most stringent of the New York or National AAQS for each contaminant and respective averaging periods.

(b) Denotes an exceedance of National AAQS. (NOTE - 0.12 ppm standard is not exceeded unless hourly ozone concentrations > 0.124 ppm.)

(c) Not to be exceeded more than once per year (NAAQS). The PM2.5 standard was revised in September 2006 from 65 ug/m3 to 35 ug/m3.

(d) AirData reports are produced from a monthly extract of EPA's air pollution database, AQS. Data for this report were extracted on August 3, 2006. They represent the best information available to EPA from state agencies on that date.

(e) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 ug/m3 (NAAQS).

(f) To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 ug/m3 (NAAQS).

(g) Existing concentrations were used to assess the potential impacts associated with the project.

Source: USEPA AIRS Database, Monitor Values Report - Criteria Air Pollutants (URL: http://www.epa.gov/air/data/monvals.html)

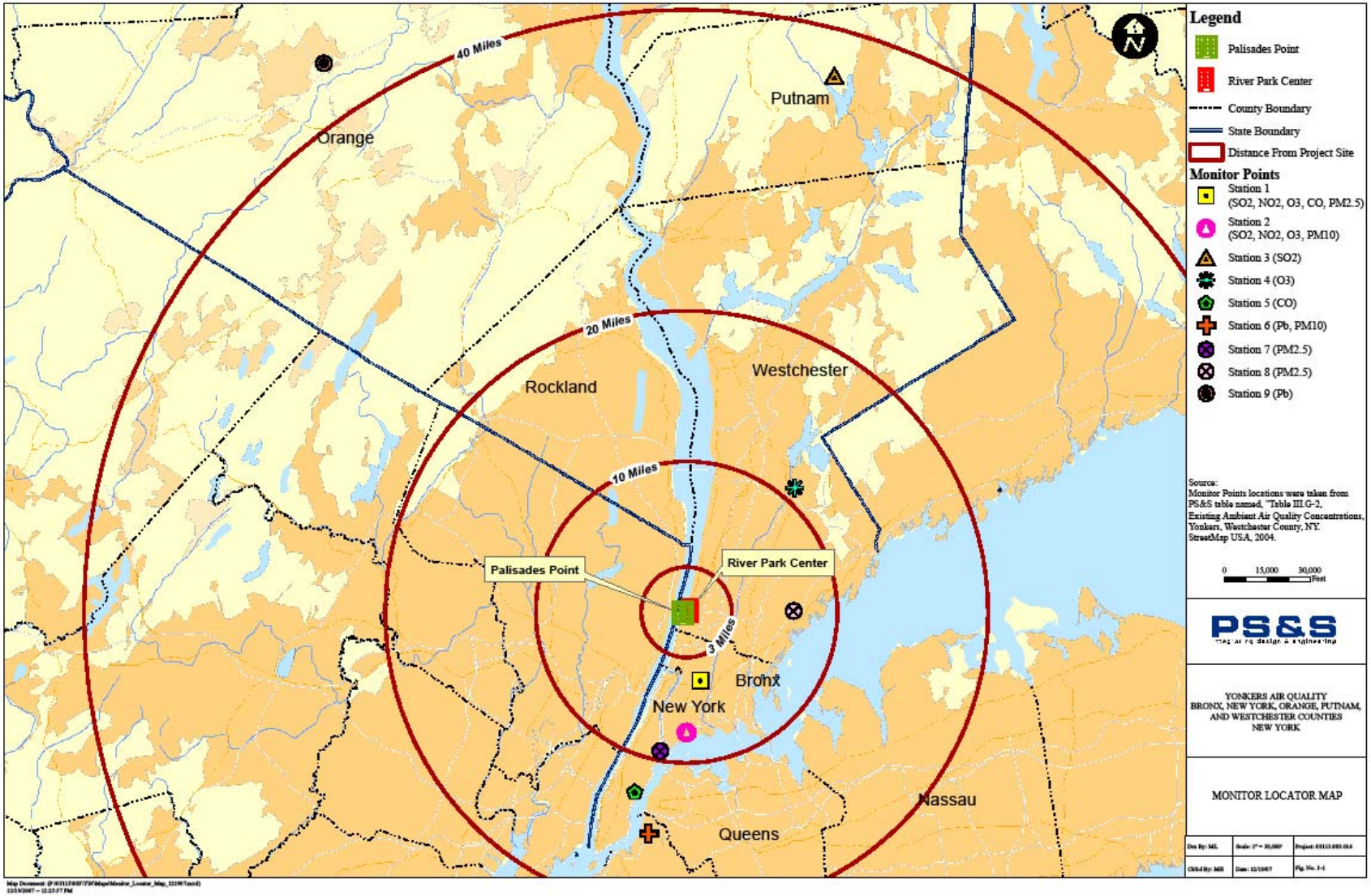
12/20/2007

Table 3-3 National Ambient Air Quality Standards Attainment Status for Westchester County, NY	
Pollutant	**National Ambient Air Quality Attainment Status(a)**
NO_2	Attainment
CO	Attainment (maintenance)
SO_2	Attainment
8-hour Ozone	Nonattainment (moderate)
1-hour Ozone	NAAQS: Standard Revoked (b) NYSAAQS: Nonattainment (severe)
PM-10	Attainment
PM-2.5	Nonattainment
Lead	Attainment

Notes:

(a) Source: The Green Book Nonattainment Areas for Criteria Pollutants http://www.epa.gov/air/oaqps/greenbk/index.html

(b) Discussions with NYSDEC have indicated that EPA was challenged in court on the 8-hour federal ozone standard, and thus, the designations for such have been put on hold. Therefore NYSDEC currently retains the "severe non-attainment" designation for Westchester County under the 1-hour ozone NAAQS. NYSDEC uses the following "major stationary source" definitions (NYSDEC regulations subpart 201-2).


Legend
Palisades Point
River Park Center
County Boundary
State Boundary
Distance From Project Site
Monitor Points
Station 1 (SO2, NO2, O3, CO, PM2.5)
Station 2 (SO2, NO2, O3, PM10)
Station 3 (SO2)
Station 4 (O3)
Station 5 (CO)
Station 6 (Pb, PM10)
Station 7 (PM2.5)
Station 8 (PM2.5)
Station 9 (Pb)
Source:
Monitor Points locations were taken from PS&S table named, "Table III.G-2, Existing Ambient Air Quality Concentrations, Yonkers, Westchester County, NY."
StreetMap USA, 2004.
0 15,000 30,000 Feet
PS&S
YONKERS AIR QUALITY
BRONX, NEW YORK, ORANGE, PUTNAM, AND WESTCHESTER COUNTIES
NEW YORK
MONITOR LOCATOR MAP
40 Miles
20 Miles
10 Miles
3 Miles
Orange
Putnam
Rockland
Westchester
Palisades Point
River Park Center
Bronx
New York
Nassau
Queens

SECTION 4.0
AIR QUALITY IMPACT ASSESSMENT – MOBILE SOURCE ANALYSIS

4.0 AIR QUALITY IMPACT ASSESSMENT - MOBILE SOURCE ANALYSIS

4.1 Traffic Information

Traffic information (including LOS, traffic volumes, speeds and delay time) for each of the intersections studied in the mobile source analysis was compiled and tabulated from data provided by the traffic engineer for the project. A three-step screening analysis following the methodology in the NYSDOT EPM (NYSDOT, 2001) was utilized to evaluate the intersections. The purpose of the screening was to identify if any of these intersections should be considered for more detailed analysis of CO emissions. The screening analysis included Build conditions with peak hour traffic and ballpark peak hour traffic. Peak hours for weekday traffic are between 7:30 and 8:30 AM and 4:30 and 5:30 PM and for weekend traffic are between 1:00 and 2:00 PM.

4.1.1 Traffic Study

John Collins Engineers, P.C. (JCE), traffic engineer for the project, provided traffic information and data for the Project that identifies anticipated traffic associated with the travel movements of residents, shoppers, and visitors to the area for the horizon year of the project. The traffic information and data were provided for sixty (60) intersections with potential to be affected by future development within the City of Yonkers. The intersections were identified by the City.

4.1.2 Intersections

The traffic information and data (JCE, 2006) for the sixty (60) intersections studied as part of the project are listed in Tables 4-1 and 4-2. The general locations of these intersections are shown on Figure 4-1.

4.1.3 Other Developments

The traffic data (JCE, 2006) for the Project includes analyses of the traffic impacts associated with the Yonkers Redevelopment with consideration for other adjacent developments expected through design year 2012. Coinciding with the Yonkers Redevelopment, other areas of the City of Yonkers downtown are anticipated to undergo significant residential and commercial redevelopment. Potential developments include Main Street Lofts, Hudson Park II, i.park, Riverdale Senior Housing, Teutonia Hall, Xavier's Pier, 35-37 Hudson Street, Father Pat Carrol Green, 7-17 Ludlow/S. Broadway and i.park Metro Center. Estimated traffic volumes associated with adjacent developments were included in projected traffic volumes for the future No-Build scenario for the Project.

4.1.4 Recommended Improvements

The construction of the Project in downtown Yonkers will result in the elimination of several streets within the development area. Traffic using these streets would be redistributed to the adjoining street system. Given the current traffic flow pattern and the capacity restrictions at Getty Square, it is suggested that New Main Street be directed away from Getty Square (towards Nepperhan Avenue). In conjunction with this, the section of Elm Street between Nepperhan Avenue and Palisade Avenue as well as Palisade Avenue between Elm Street and Getty Square would be reversed in direction. The reversal of these streets would provide additional capacity and better distribution of traffic in the area (JCE, 2006).

In addition to the above, other improvements are recommended to improve traffic related operating conditions in the area. These improvements include:

- The elimination of parking along the Yonkers Avenue/Nepperhan Avenue Corridor from the Saw Mill River Parkway to the downtown area.

- Parking will be eliminated along Palisade Avenue, Elm Street and New Main Street.

- The Saw Mill River Parkway Southbound Exit Ramp will be widened to provide two lanes. A traffic signal is proposed to handle traffic off the ramp onto Yonkers Avenue.

- Geometric improvements to the Saw Mill River Parkway Northbound Ramp will be implemented to improve traffic flow.

- The entire signal system along the Yonkers/Nepperhan Avenue Corridor extending from the Saw Mill River Parkway into the downtown area will be made part of the City's computerized traffic signal system.

- A driveway to the proposed project will be located on Nepperhan Avenue across from Waverly Street. This intersection will be made part of the City's computerized traffic signal system.

- It is recommended that the flashing traffic signal at the intersection of South Broadway/Hudson Street be activated.

- Other signals within this development area will be upgraded and linked to the City's computerized traffic signal system.

- The driveway to the proposed parking structures will be designed to provide access to/from multiple streets to improve circulation.

- A new bridge will be constructed across the railroad in the Prospect Street Corridor. This will provide access to the river from the Yonkers Avenue/Nepperhan Avenue Corridor.

- A bus drop-off lane will be provided on Nepperhan Avenue westbound between Elm Street and New Main Street for the discharge and boarding of passengers.

With the implementation of the above improvements, operating conditions in the area will be similar to the operating conditions as they currently exist within this study area. The Air Quality mobile source analysis for the Project is based on the traffic information and data for the Project which assumes that the above improvements will be implemented. Should these improvements not be implemented in conjunction with the Project then the Air Quality mobile source analysis must be updated to reflect any changes to the recommended improvements.

4.1.5 Scenarios

The mobile source air quality analysis for the Project considered the traffic from two (2) maximum build-out scenarios, one without the ballpark traffic and one with the ballpark traffic. The results of detailed capacity analyses at each of the study area intersections for both scenarios indicate that the roadway system can handle the anticipated traffic volumes. The special event traffic will require additional personnel (police officers and/or traffic control officers) at selected locations to direct traffic to/from available parking areas. In addition, supplemental signing will be provided to assist drivers to/from the Ballpark.

4.2 Intersection Screening Analysis

4.2.1 Level of Service Analysis Screening

The first of three (3) steps of the screening procedure was to screen the sixty (60) intersections based on the LOS during the peak hour traffic for the two (2) Build scenarios. The level of service (LOS) characterizes traffic flow conditions, where LOS "A" represents the best condition and a LOS "F" represents the worst condition. An intersection's LOS is based on the amount of vehicle delay computed for each approach to the intersection as well as for the overall intersection. Tables 4-1 and 4-2 show the intersections of both build-out scenarios with the values for each screening level. Intersections with LOS of A, B, or C are eliminated from consideration for further study, and the remaining intersections are passed on to the next level of screening. The LOS analyses (JCE, 2006) were reviewed for the intersections potentially impacted by the proposed development. The LOS were evaluated for morning and evening peak traffic hours for weekdays and Saturdays for the future No-Build, Build with improvements (with ballpark traffic), and Build with improvements (without

ballpark traffic) for each intersection. This analysis includes recommended improvements to bring the LOS of the intersections studied to LOS "D" or better.

Traffic information (including LOS, total volume, project volumes, and delay time) for each of the sixty (60) intersections studied in the report was compiled and tabulated for the future Build with improvements (with and without ballpark traffic), future No-Build, and existing conditions. A summary table is provided in Appendix B showing each scenario. These tables include the total traffic volumes (vehicles per hour) associated with each intersection as well as the expected traffic contribution from the Project and percentage of the total traffic due to the Project.

The LOS screening results indicate that for the 2012 Build scenario with improvements (without ballpark traffic) 39 of the 60 intersections studied will operate at LOS C or better during the AM, PM and Saturday peak traffic hours, and 37 of the 60 intersections studied will operate at LOS C or better during the PM and Saturday peak traffic hours (with ballpark traffic). Therefore 21 and 23 of the 60 intersections studied will operate with a LOS of D or worse for the Build scenarios without ballpark traffic and with ballpark traffic, respectively. These intersections will pass to the next screening step as shown in Tables 4-1 and 4-2.

4.2.2 Capture Criteria Screening

This screening step considers the following five criteria:

1. a 10% or more reduction in source/receptor distance;
2. a 10% or more increase in traffic volume;
3. a 10% or more increase in emissions;
4. an increase in the number of queued lanes (i.e., the number of lanes at an intersection approach);
5. a 10% or more reduction in speed.

More stringent criteria apply to SIP intersections (intersections analyzed in the State Implementation Plan attainment demonstration for carbon monoxide) that are located within ½ mile of the project. These criteria are the following:

1. a 5% or more reduction in source/receptor distance;
2. a 5% or more increase in traffic volume;
3. a 5% or more increase in emissions;
4. an increase in the number of queued lanes (i.e., the number of lanes at an intersection approach);
5. a 5% or more reduction in speed.

The Yonkers Ave & Ashburton Ave intersection (#18) is a SIP intersection, but is located more than ½ mile from the project. Therefore, this intersection is subject to the same capture criteria as the other intersections.

If any of the criteria are met, the intersection passes on to the next screening step. Eighteen (18) of the twenty-one (21) intersections studied that will operate at LOS D or worse met the 10% or more increase in traffic volume threshold for the 2012 Build scenario with improvements (without ballpark traffic). Twenty-one (21) of the twenty-three (23) intersections studied that will operate at LOS D or worse met the 10% or more increase in traffic volume threshold for the 2012 Build scenario with improvements (with ballpark traffic). These intersections passed to the volume threshold screening step.

4.2.3 Volume Threshold Screening

This screening step compares peak hour approach volumes with a corresponding threshold volume. The threshold volume was determined from Table 3C in the NYSDOT EPM (NYSDOT, 2001), based on the free flow and idling emission factors for the approach. The emission factors were calculated using the form on the NYSDOT EPM website and are included in Appendix A. If an approach volume is greater than the corresponding threshold volume, the subject intersection would be a candidate for a microscale mobile source modeling

analysis. A volume screening threshold of 4,000 vehicles per hour for any given approach was used. The eighteen (18) intersections for the Build scenario with improvements (without ballpark traffic) and the twenty-one (21) intersections for the Build scenario with improvements (with ballpark traffic) had approach volumes that were less than the screening threshold of 4,000 vehicles per hour.

Volume threshold screening does not apply to intersections located within ½ mile of a SIP intersection. These SIP-related intersections are subject to air quality modeling for carbon monoxide, as described below. None of the non-SIP-related intersections require a mobile source modeling analysis.

4.2.4 SIP-Related Intersections

Intersections located within ½ mile of a SIP intersection (SIP-related intersections) that exceed the LOS and capture criteria screening steps are not subject to volume threshold screening. These SIP-related intersections are subject to air quality modeling for carbon monoxide, as described below.

4.3 Mobile Source Air Quality Modeling

4.3.1 USEPA/NYSDOT Guidance

In general, NYSDOT guidance requires LOS analyses for all nearby intersections impacted by the Project. USEPA (USEPA, 1992; USEPA, 1995) and NYSDOT (NYSDOT, 2001) guidance indicates that signalized intersections with a future LOS of D, E or F, or those intersections with a LOS that will change to D, E or F because of traffic related to the development, should be considered for mobile source air quality modeling analysis. Signalized intersections that will operate with a future LOS of A, B or C do not have sufficient delay to cause congestion and excessive idle emissions and do not require air quality modeling.

Mobile source analysis was performed based on the traffic scenarios presented in the traffic study. NYSDOT guidance indicates that roadway improvements assumed in the LOS analyses and used in air quality modeling must be completed before full operation of the proposed development. If the improvements have not been agreed to, or are only recommendations, then a LOS analysis must also be performed "without the improvements" in place.

4.3.2 Intersection LOS and Project Related Traffic Volumes

Intersections identified during the screening analysis to be candidates for further air quality analysis can be ranked by LOS, delay, and traffic volumes to identify intersections with the greatest potential for project related air quality impacts. It is expected that if the modeling of representative / worst-case intersections does not show any exceedances of the AAQS, the intersections with lower-ranked total / project traffic volumes or delay would not show any exceedances.

Intersections are reviewed with regards to LOS, the total peak hour traffic volumes, project traffic (expected development-generated traffic volumes), and delay time for the peak traffic hours. The results of the screening analysis are that none of the non-SIP-related intersections warrant mobile source air quality modeling for the Build scenario with improvements, with and without ballpark traffic. However, intersections located within ½ mile of a SIP intersection (SIP-related intersections) that exceed the LOS and capture criteria screening steps are subject to air quality modeling for carbon monoxide.

4.3.3 Air Quality Modeling for SIP-Related Intersections

As shown in Tables 4-1 and 4-2, of the ten intersections that are located within ½ mile of a SIP intersection, the following seven intersections have a future LOS of D or worse and exceed the capture criteria. Modeling was performed for these

intersections for the peak (worst-case) Build traffic hour (PM peak hour with ballpark event):

14 Ashburton Ave & Nepperhan Ave
15 Ashburton Ave & NYS Rt. 9A/Walnut St
16 Yonkers Ave & Walnut St
17 Yonkers Ave & Prescott St
18 Yonkers Ave & Ashburton Ave (SIP intersection)
19 Yonkers Ave & Sawmill R Pkwy SB Ramps
20 Yonkers Ave & Sawmill R Pkwy NB Ramps

NYSDOT guidance specifies that traffic links and intersections located within 1000 ft of a receptor should be included in the CAL3QHC model analysis. The Ashburton Avenue intersections (#14 and #15) were modeled in a single model run because of their proximity to each other. The Yonkers Avenue intersections (#16 - #20) were modeled in a single model run, with the Sawmill River Parkway mainline, because of their proximity to each other.

4.3.4 CO Emission Factors

Composite vehicular carbon monoxide emission factors for the 2012 Build year were obtained using the mobile emissions factor tables reported in the NYSDOT EPM, as calculated by NYSDOT using the USEPA MOBILE6.2 model for various vehicle types and roadway functional classes for Westchester County. MOBILE6.2 CO emission factors are a function of vehicle speed and are weighted by the vehicle type distribution corresponding to the roadway functional class. The roadway functional classes used for this analysis were 14/16 (urban principal and minor arterial roadways) for all arterial and local roadways and 11/12 (urban interstate/freeway/expressway) for the Sawmill River Parkway mainline. The emission factors were calculated using the form on the NYSDOT EPM website and are included in Appendix A.

4.3.5 Meteorological Inputs

Surface Roughness – The project area includes the following land uses (surface roughness coefficients from the CALINE3 manual shown in parentheses):

coniferous forest (283 cm)
single family residential (108 cm)
apartment residential (370 cm)
office (175 cm)
park (127 cm)

When the land use is mixed, the use of the smaller roughness height is recommended by the NYSDOT for a conservative analysis. Accordingly, a surface roughness value of 108 cm was used for this analysis.

Wind and Atmospheric Stability – For the "worst-case" analysis, conservative meteorological conditions to be assumed are 1 meter/sec wind speed and Class D or E stability, depending on the surrounding land use. NYSDOT guidance recommends the use of Class D stability for urban locations. If at least half of the area is rural or suburban, the use of Class E stability is recommended (Class E stability generally results in higher predicted concentrations). For this analysis, Class E stability was used based on the prevalence of water, open space and suburban land uses. The model was run for all wind angles at 5-degree increments.

4.3.6 Traffic Links

Free-flow traffic links were extended to approximately 1000 ft from the center of the intersections. The Sawmill River Parkway mainline was modeled as a depressed section, extending approximately 1000 ft north and south from Yonkers Ave.

Queue links were modeled in accordance with USEPA and NYSDOT guidance. No adjustments were made to the queue lengths calculated by CAL3QHC.

4.3.7 Receptors

Receptors were located outside the roadway width plus 3 meters (10 feet) on each of the outside travel lanes, at an assumed breathing height of 1.8 meters (6.0 feet). Receptors were located at the center of sidewalks, except as necessary to locate the receptor outside of the 3-meter mixing zone.

At the Yonkers Ave intersections, receptors were located on sidewalks at the corners, on both sides of Yonkers Ave west of Ashburton Ave (approximately 25 meters and 55 meters from the intersection stop line), on the Ashburton Ave southbound approach (parking lot), and on the western corners of the Sawmill River Parkway Southbound Ramps. Additional receptors were located at the building on the south side of Yonkers Ave at Ashburton Ave (edge of the parking lot and at the nearest building entrances).

4.3.8 Results

Modeled 1-hour carbon monoxide concentrations for the Build case were converted to 8-hour concentrations using a persistence factor of 0.7 in conformance with the latest guidance from NYSDEC and NYSDOT. Background 1-hour and 8-hour CO concentrations listed in the NYSDOT EPM were added to the modeled concentrations for comparison with the NAAQS (NYSDOT, 2001).

The results are presented in Table 4-3. The modeled CO concentrations plus background concentrations are less than the applicable NAAQS. It can be concluded that CO emissions associated with the Project Build 2012 scenario with and without ballpark traffic will not have a significant impact on air quality.

4.4 PM10/2.5 Analysis

4.4.1 Intersection Selection

As specified in the Scoping Outline for the DEIS, the air quality analysis for particulate matter (PM_{10} and $PM_{2.5}$) was performed following the NYSDOT EPM (New York State Department of Transportation Project Level Particulate Matter Analysis Final Policy dated September, 2004). This policy document requires analysis of particulate matter impacts for all NYSDOT projects that result in increased particulate matter emissions, regardless of project location or attainment status. The document specifies that the three highest volume intersections shall be modeled for the Build and No-Build scenarios. The increases in PM10 and PM2.5 concentrations (Build minus No-Build) are compared to the following Significant Impact Thresholds: for PM10 , 1.0 μg/m3 annual concentration or 5.0 μg/m3 on a 24-hour basis; for PM2.5 , 0.3 μg/m3 annual concentration or 5.0 μg/m3 on a 24-hour basis.

Air quality sites for microscale particulate matter (PM_{10} and $PM_{2.5}$) analysis were selected in coordination with the traffic impact study. The three highest volume intersections were identified and analyzed, in accordance with the EPM New York State Department of Transportation (NYSDOT) particulate matter policy for analysis of NYSDOT transportation projects. For the peak Build traffic hour (PM peak hour with ballpark event), the following intersections were ranked as the three highest volume intersections:

18. Yonkers Ave & Ashburton Ave (6229 vph, LOS E)
19. Yonkers Ave & Sawmill River Parkway Southbound Ramps (6200 vph, LOS E)
1. Nepperhan Ave & Elm St (5767 vph, LOS D)

NYSDOT guidance specifies that traffic links and intersections located within 1000 ft of a receptor should be included in the CAL3QHC model analysis.

Accordingly, the Yonkers Avenue intersections (18 and 19) were analyzed together because they are adjacent to each other (approximately 400 ft apart). Based on the same criteria, the following adjacent intersections and roadways were also analyzed together with intersections 18 and 19:

20. Yonkers Ave & Sawmill River Parkway Northbound Ramps (5002 vph, LOS E)
17. Yonkers Ave & Prescott St (4668 vph, LOS E)
Sawmill River Parkway mainline (5442 vph)

Modeling was performed for these locations using CAL3QHC for the peak Build traffic hour (PM peak hour with ballpark event) and the corresponding No-Build condition (PM peak hour).

4.4.2 Emission Factors

Composite vehicular PM_{10} and $PM_{2.5}$ emission factors for the 2012 Build year were obtained using the mobile emissions factor tables reported in the NYSDOT EPM, as calculated by NYSDOT using the USEPA MOBILE6.2 model for various vehicle types and roadway functional classes for Westchester County. MOBILE6.2 particulate matter emission factors include exhaust emissions and brake and tire wear, and are not a function of vehicle speed but are weighted by the vehicle type distribution corresponding to the roadway functional class. The roadway functional classes used for this analysis were 14/16 (urban principal and minor arterial roadways) for all arterial and local roadways and 11/12 (urban interstate/freeway/expressway) for the Sawmill River Parkway mainline. Consistent with the traffic study, the same vehicle type distribution was used for the Build and No-Build scenarios. This is conservative in that the peak hour project traffic would be expected to have a lower fraction of heavy diesel vehicles than the No-Build traffic.

4.4.3 Meteorological Inputs

Surface Roughness – The project area includes the following land uses (surface roughness coefficients from the CALINE3 manual shown in parentheses):

coniferous forest (283 cm)
single family residential (108 cm)
apartment residential (370 cm)
office (175 cm)
park (127 cm)

When the land use is mixed, the use of the smaller roughness height is recommended by the NYSDOT for a conservative analysis. Accordingly, a surface roughness value of 108 cm was used for this analysis.

Wind and Atmospheric Stability – For the "worst-case" analysis, conservative meteorological conditions to be assumed are 1 meter/sec wind speed and Class D or E stability, depending on the surrounding land use. NYSDOT guidance recommends the use of Class D stability for urban locations. If at least half of the area is rural or suburban, the use of Class E stability is recommended (Class E stability generally results in higher predicted concentrations). For this analysis, Class E stability was used based on the prevalence of water, open space and suburban land uses. The model was run for all wind angles at 5-degree increments.

Persistence Factors – For PM_{10} and $PM_{2.5}$, 1-hour modeled concentrations were converted to 24-hour and annual concentrations using a 24-hour persistence factor of 0.4 and an annual persistence factor of 0.08, in conformance with the latest guidance from NYSDEC and NYSDOT.

4.4.4 Traffic Links

Nepperhan Ave & Elm St (#1) – Free-flow traffic links on Nepperhan Ave and on Elm St were extended to approximately 630 to 1000 ft from the center of the

intersection, depending on roadway geometry. Queue links on these roadways were modeled in accordance with USEPA and NYSDOT guidance.

Yonkers Ave Intersections (#17, #18, #19, #20) – Free-flow traffic links on Yonkers Ave, Ashburton Ave, and Sawmill River Parkway Southbound Ramps were extended to approximately 1000 to 1400 ft from the center of the intersections of interest (#18 and #19). Free-flow traffic links on the adjacent side streets (Prescott St and Sawmill River Parkway Northbound Ramps) were extended to at least 100 ft from Yonkers Ave, consistent with NYSDOT guidance. The Sawmill River Parkway mainline was modeled as a depressed section, extending approximately 1000 ft north and south from Yonkers Ave.

Queue links were modeled in accordance with USEPA and NYSDOT guidance. No adjustments were made to the queue lengths calculated by CAL3QHC.

The No-Build case includes a stop sign at the end of the Sawmill River Parkway Southbound off-ramp (this intersection is signalized in the Build case). The approach to this stop sign was modeled as a free-flow link only, in accordance with NYSDOT guidance.

4.4.5 Receptors

Receptors were located outside the roadway width plus 3 meters (10 feet) on each of the outside travel lanes, at an assumed breathing height of 1.8 meters (6.0 feet). Receptors were located at the center of sidewalks, except as necessary to locate the receptor outside of the 3-meter mixing zone.

Nepperhan Ave & Elm St (#1) – Receptors were located on sidewalks at the four corners of the intersection, at mid-block on Elm St, and at mid-block

(approximately 25 meters and 50 meters from the intersection stop line) on the Nepperhan Ave approaches.

Yonkers Ave Intersections (#18, #19) – Receptors were located adjacent to the intersections of interest (#18 and #19). Receptors were located on sidewalks at the corners of Yonkers Ave and Ashburton Ave, on both sides of Yonkers Ave west of Ashburton Ave (approximately 25 meters and 55 meters from the intersection stop line), on the Ashburton Ave southbound approach (parking lot), and on the western corners of the Sawmill River Parkway Southbound Ramps. Additional receptors were located at the building on the south side of Yonkers Ave at Ashburton Ave (edge of the parking lot and at the nearest building entrances).

4.4.6 Results

For PM_{10} and $PM_{2.5}$, 1-hour modeled concentrations for the Build and No-Build case were converted to 24-hour and annual concentrations using a 24-hour persistence factor of 0.4 and an annual persistence factor of 0.08, in conformance with the latest guidance from NYSDEC and NYSDOT. Predicted PM_{10} and $PM_{2.5}$ concentrations with the project were compared to No-Build concentrations to determine compliance with 24-hour and annual average significant impact thresholds.

The results are presented in Tables 4-4 and 4-5. The increases in PM_{10} and $PM_{2.5}$ concentrations do not exceed the 24-hour and annual average significant impact thresholds listed in the NYSDOT particulate matter policy.

Table 4-1 - Intersection Screening - Future Build with Improvements (without Ballpark Event)						
			1st Level	2nd Level	3rd Level	
			D or worse	>10%	>4000 vph	Detailed Modeling Required (c)
Key	Intersection	Peak Hour	LOS (a)	Project Traffic % Increase	Max Approach (vph)(b)	
1	Nepperhan Ave & Elm St	PM	D	32%	2674	
2	Nepperhan Ave & School St/New School St	AM,PM,Sat	A			
3	Nepperhan Ave & New Main St	PM	D	39%	1711	
4	So Broadway & Prospect St/Nepperhan Ave	AM	D	17%	1630	
		PM	D	26%	1876	
5	So Broadway & Hudson St (No-Build unsig.)	PM,Sat	C			
6	So Broadway & Main St	AM,Sat	B			
7	Palisade Ave & Main St	PM,Sat	C			
8	Palisade Ave & Locust Hill Ave (all-way stop)	AM,PM,Sat	C			
9	Palisade Ave & Elm St/School St/Site Access	PM,Sat	C			
10	Ashburton Ave & Warburton Ave	AM,PM	C			
11	Ashburton Ave & No Broadway	AM,PM,Sat	C			
12	Ashburton Ave & Locust Hill Rd (unsig.)	PM	D	18%	658	
13	Ashburton Ave & Palisade Ave	PM	D	15%	611	
14	Ashburton Ave & Nepperhan Ave (d)	AM	E	13%	827	
		PM	F	22%	1019	Yes
		Sat	E	29%	884	
15	Ashburton Ave & NYS Rt. 9A/Walnut St (d)	AM	F	7%		
		PM	F	13%	809	Yes
		Sat	D	17%	682	
16	Yonkers Ave & Walnut St (d)	AM	D	20%	1632	
		PM	D	30%	1753	Yes
17	Yonkers Ave & Prescott St (d)	PM	D	25%	2335	Yes
18	Yonkers Ave & Ashburton Ave (SIP) (d)	AM	E	11%	2767	
		PM	E	17%	2991	Yes
19	Yonkers Ave & SMRP SB Ramps (d)	PM	D	17%	2899	Yes
20	Yonkers Ave & SMRP NB Ramps (d)	AM	E	9%		
		PM	E	13%	2216	Yes
21	Buena Vista Ave & Dock St (all-way stop)	PM	C			
22	Buena Vista Ave & Main St	AM,PM,Sat	B			
23	Buena Vista Ave & Hudson St (unsig.)	AM,PM,Sat	B			
24	Warburton St & Dock St/Nepperhan St	AM,PM	C			
25	Riverdale Ave/Warburton Ave & Main St	AM,PM,Sat	C			
26	Riverdale Ave & Hudson St	AM,PM,Sat	B			
27	Riverdale Ave & Prospect St	AM	D	11%	1081	
		PM	E	21%	1196	
		Sat	D	29%	1027	
28	Riverdale Ave & Vark St	AM,PM,Sat	C			
29	Riverdale Ave & Herriot St	AM,PM,Sat	B			
30	Riverdale Ave & Ludlow St	AM,PM	C			
31	Riverdale Ave & Radford St	AM,PM,Sat	B			

Table 4-1 - Intersection Screening - Future Build with Improvements (without Ballpark Event)						
			1st Level	2nd Level	3rd Level	Detailed Modeling Required (c)
			D or worse	>10%	>4000 vph	
Key	Intersection	Peak Hour	LOS (a)	Project Traffic % Increase	Max Approach (vph)(b)	
32	Riverdale Ave & Valentine Ln	AM,PM,Sat	B			
33	So Broadway & Vark St	PM	D	25%	417	
34	So Broadway & Herriot St	AM,PM,Sat	B			
35	So Broadway & Bright Place	PM	C			
36	So Broadway & Ludlow St	AM,PM,Sat	B			
37	So Broadway & McLean Ave	PM	C			
38	So Broadway & Radford St	AM,PM,Sat	C			
39	So Broadway & Valentine Ln	AM,PM,Sat	B			
40	Yonkers Ave & Midland Ave - West	AM,PM,Sat	C			
41	Yonkers Ave & Midland Ave - East	AM	C			
42	Yonkers Ave & Seminary Ave	PM,Sat	C			
43	Yonkers Ave & Central Park SB	PM	D	13%	922	
44	Yonkers Ave & Central Park NB	PM	D	7%		
45	Warburton Ave & Glenwood Ave	AM,PM,Sat	B			
46	Warburton Ave & Lamartine Ave	AM,PM,Sat	B			
47	North Broadway & Glenwood Ave	AM,PM,Sat	B			
48	North Broadway & Lamartine Ave	AM,PM,Sat	B			
49	Nepperhan Ave & Lake St	AM,PM,Sat	C			
50	Prospect St & Buena Vista Ave (all way stop)	PM	D	15%	547	
51	Prospect St & Hawthorne Ave	PM	C			
52	Rumsey Rd & SMRP/CCP Ramps (d)	AM	C			
53	Rumsey Rd & Spruce St	AM	D	6%		
54	Van Cortlandt Park Ave & Spruce St (AWS)	AM,PM,Sat	B			
55	Elm St & Van Cortlandt Park Ave (unsig) (d)	PM,Sat	C			
56	Elm St & Walnut St (d)	PM,Sat	C			
57	Elm St & Linden St (all way stop)	PM	C			
58	Lockwood Ave & SMRP SB Ramp (unsig)	AM	E	15%	502	
		PM	F	27%	496	
		Sat	E	36%	425	
59	Palmer Rd & SMRP NB Ramp (unsig)	AM	F	9%		
		PM	F	20%	543	
		Sat	F	27%	463	
60	Nepperhan Ave & Executive Blvd	AM	D	2%		
		PM	D	3%		

Notes:

(a) Worst LOS of intersection for any of the peak traffic hours (AM, PM, Sat)

(b) Maximum vehicle per hour approach of intersection

(c) Modeling is required for SIP intersection or intersections located within 1/2 mile of SIP intersection if LOS D or worse and > 10% traffic increase. Modeling performed for peak Build hour (PM with ballpark event).

(d) SIP intersection or intersection located within 1/2 mile of SIP intersection

Table 4-2 - Intersection Screening - Future Build with Improvements (with Ballpark Event)

Key	Intersection	Peak Hour	1st Level D or worse LOS (a)	2nd Level >10% Project Traffic % Increase	3rd Level >4000 vph Max Approach (vph)(b)	Detailed Modeling Required
1	Nepperhan Ave & Elm St	PM	D	41%	2853	
2	Nepperhan Ave & School St/New School St	PM,Sat	A			
3	Nepperhan Ave & New Main St	PM	D	49%	1754	
4	So Broadway & Prospect St/Nepperhan Ave	PM	D	26%	1876	
5	So Broadway & Hudson St (No-Build unsig.)	PM	D	65%	786	
		Sat	D	104%	857	
6	So Broadway & Main St	PM	C			
7	Palisade Ave & Main St	PM	D	159%	1172	
		Sat	D	217%	962	
8	Palisade Ave & Locust Hill Ave (all-way stop)	PM	C			
9	Palisade Ave & Elm St/School St/Site Access	PM,Sat	C			
10	Ashburton Ave & Warburton Ave	PM,Sat	C			
11	Ashburton Ave & No Broadway	PM,Sat	C			
12	Ashburton Ave & Locust Hill Rd (unsig.)	PM	D	18%	658	
13	Ashburton Ave & Palisade Ave	PM	D	17%	621	
14	Ashburton Ave & Nepperhan Ave (d)	PM	F	25%	1045	Yes
		Sat	F	36%	936	
15	Ashburton Ave & NYS Rt 9A/Walnut St (d)	PM	F	15%	809	Yes
		Sat	E	23%	682	
16	Yonkers Ave & Walnut St (d)	PM	D	40%	1897	Yes
		Sat	D	60%	1987	
17	Yonkers Ave & Prescott St (d)	PM	E	34%	2646	Yes
		Sat	D	50%	2584	
18	Yonkers Ave & Ashburton Ave (SIP) (d)	PM	E	23%	3301	Yes
		Sat	E	34%	3108	
19	Yonkers Ave & SMRP SB Ramps (d)	PM	E	23%	2899	Yes
		Sat	E	34%	2312	
20	Yonkers Ave & SMRP NB Ramps (d)	PM	E	17%	2216	Yes
		Sat	E	26%	1790	
21	Buena Vista Ave & Dock St (all-way stop)	PM	C			
22	Buena Vista Ave & Main St	PM,Sat	B			
23	Buena Vista Ave & Hudson St (unsig.)	PM,Sat	B			
24	Warburton St & Dock St/Nepperhan St	PM,Sat	B			
25	Riverdale Ave/Warburton Ave & Main St	PM,Sat	C			
26	Riverdale Ave & Hudson St	PM,Sat	B			
27	Riverdale Ave & Prospect St	PM	E	22%	1196	
		Sat	D	32%	1027	
28	Riverdale Ave & Vark St	PM,Sat	C			
29	Riverdale Ave & Herriot St	PM,Sat	B			

Table 4-2 - Intersection Screening - Future Build with Improvements (with Ballpark Event)						
			1st Level D or worse	2nd Level >10%	3rd Level >4000 vph	Detailed Modeling Required
Key	Intersection	Peak Hour	LOS (a)	Project Traffic % Increase	Max Approach (vph)(b)	
30	Riverdale Ave & Ludlow St	PM	C			
31	Riverdale Ave & Radford St	PM,Sat	B			
32	Riverdale Ave & Valentine Ln	PM,Sat	B			
33	So Broadway & Vark St	PM	D	30%	452	
34	So Broadway & Herriot St	PM,Sat	B			
35	So Broadway & Bright Place	PM,Sat	C			
36	So Broadway & Ludlow St	PM,Sat	B			
37	So Broadway & McLean Ave	PM,Sat	C			
38	So Broadway & Radford St	PM,Sat	C			
39	So Broadway & Valentine Ln	PM,Sat	B			
40	Yonkers Ave & Midland Ave - West	PM	C			
41	Yonkers Ave & Midland Ave - East	PM,Sat	B			
42	Yonkers Ave & Seminary Ave	PM,Sat	C			
43	Yonkers Ave & Central Park SB	PM	D	15%	948	
44	Yonkers Ave & Central Park NB	PM	D	7%		
45	Warburton Ave & Glenwood Ave	PM,Sat	B			
46	Warburton Ave & Lamartine Ave	PM,Sat	B			
47	North Broadway & Glenwood Ave	PM,Sat	B			
48	North Broadway & Lamartine Ave	PM,Sat	B			
49	Nepperhan Ave & Lake St	Sat	D	32%	760	
50	Prospect St & Buena Vista Ave (all way stop)	PM	D	15%	547	
51	Prospect St & Hawthorne Ave	PM	C			
52	Rumsey Rd & SMRP/CCP Ramps (d)	PM,Sat	B			
53	Rumsey Rd & Spruce St	PM	C			
54	Van Cortlandt Park Ave & Spruce St (AWS)	PM,Sat	C			
55	Elm St & Van Cortlandt Park Ave (unsig) (d)	PM,Sat	C			
56	Elm St & Walnut St (d)	PM,Sat	C			
57	Elm St & Linden St (all way stop)	PM	C			
58	Lockwood Ave & SMRP SB Ramp (unsig)	PM	F	32%	522	
		Sat	F	50%	477	
59	Palmer Rd & SMRP NB Ramp (unsig)	PM	F	24%	569	
		Sat	F	36%	515	
60	Nepperhan Ave & Executive Blvd	PM	D	6%		

Notes:

(a) Worst LOS of intersection for any of the peak traffic hours (PM, Sat)

(b) Maximum vehicle per hour approach of intersection

(c) Modeling is required for SIP intersection or intersections located within 1/2 mile of SIP intersection if LOS D or worse and > 10% traffic increase. Modeling performed for peak Build hour (PM with ballpark event).

(d) SIP intersection or intersection located within 1/2 mile of SIP intersection

Table 4-3
Carbon Monoxide Modeling Results – SIP-Related Intersections
2012 Build Condition
PM Peak Hour with Ballpark Event

	Intersection (a)		**AAQS**
	#14, 15	**#16, 17, 18, 19, 20**	
Maximum 1-hr concentration (ppm)	**1.1**	**2.4**	
+ 1-hr background (ppm) (b)	3.7	3.7	
= Total 1-hr concentration (ppm)	**4.8**	**6.1**	35
Maximum 1-hr concentration (ppm)	1.1	2.4	
× persistence factor (b)	0.7	0.7	
= Maximum 8-hr concentration (ppm)	**0.8**	**1.7**	
+ 8-hr background (ppm) (b)	2.6	2.6	
= Total 8-hr concentration (ppm)	**3.4**	**4.3**	9

Notes:

(a) Intersection numbers:
14 Ashburton Ave & Nepperhan Ave
15 Ashburton Ave & NYS Rt 9A/Walnut St
16 Yonkers Ave & Walnut St
17 Yonkers Ave & Prescott St
18 Yonkers Ave & Ashburton Ave (SIP)
19 Yonkers Ave & SMRP SB Ramps
20 Yonkers Ave & SMRP NB Ramps

(b) NYSDOT EPM background concentrations for Westchester County

1-hr background (ppm)	3.7
8-hr background (ppm)	2.6
Persistence factor	0.7

Table 4-4- PM10/PM2.5 Modeling Results
Yonkers Avenue and Ashburton Avenue (#18)
Yonkers Avenue and Sawmill River Parkway Southbound Ramps (#19)
PM Peak Hour with Ballpark Event

		PM_{10} ($\mu g/m^3$)					$PM_{2.5}$ ($\mu g/m^3$)				
Averaging Time	Persistence Factor (a)	Build	No-Build	Concentration Increase		Significant Increase Threshold	Build	No-Build	Concentration Increase		Significant Increase Threshold
1-hour	-	12	8	4 (b)	6 (c)	-	7	6	1 (b)	2 (c)	-
24-hour	0.4	4.8	3.2	1.6 (b)	2.4 (c)	5	2.8	2.4	0.4 (b)	0.8 (c)	5
Annual	0.08	0.96	0.64	0.32 (b)	0.48 (c)	1	0.56	0.48	0.08 (b)	0.16 (c)	0.3

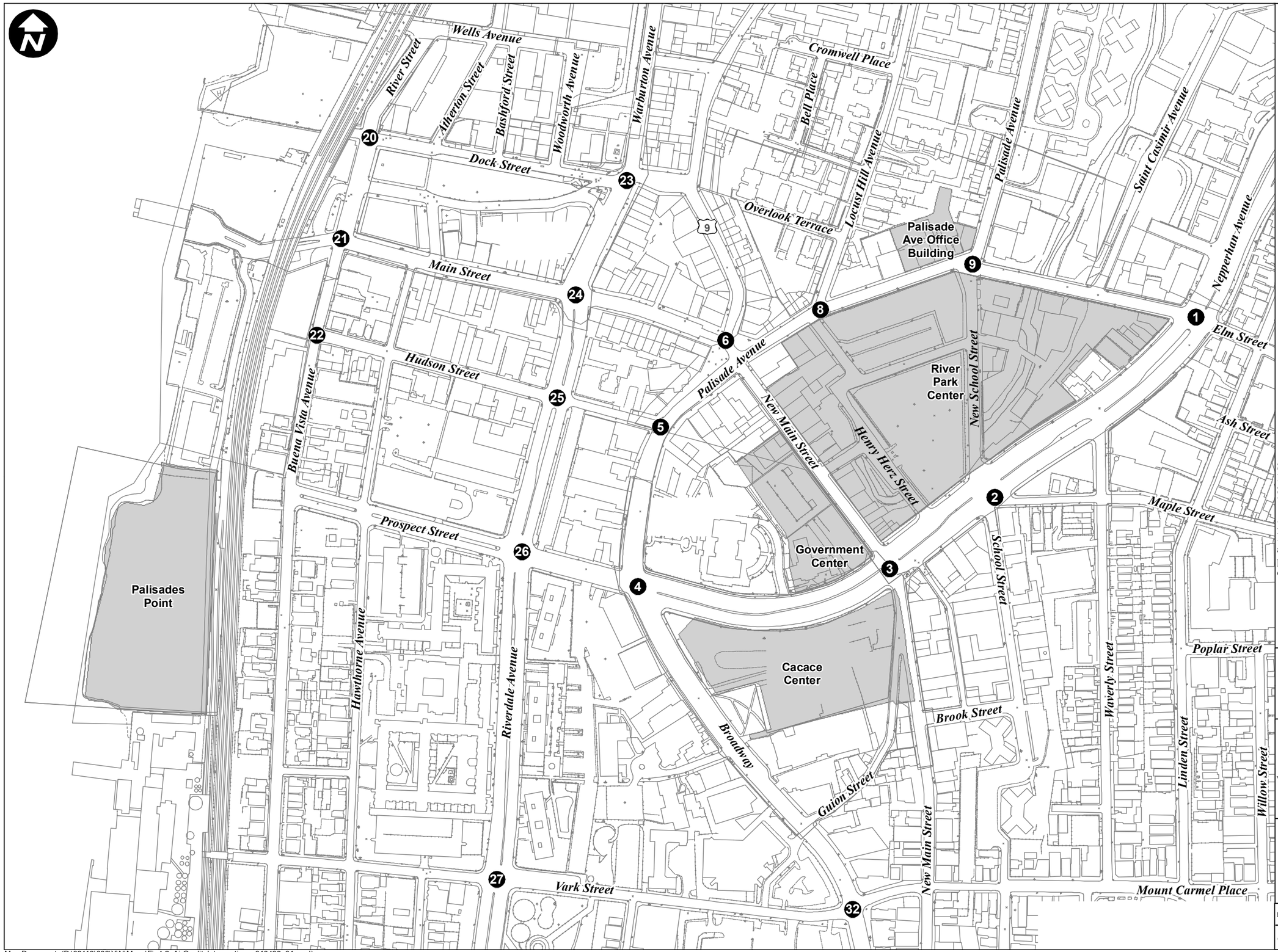
(a) Conversion factor from 1-hour average.
(b) Maximum Build concentration (all receptors) - Maximum No-Build concentration (all receptors).
(c) Maximum increase at same receptor.

Table 4-5- PM10/PM2.5 Modeling Results
Nepperhan Avenue and Elm Street (#1)
PM Peak Hour with Ballpark Event

		PM_{10} ($\mu g/m^3$)					$PM_{2.5}$ ($\mu g/m^3$)				
Averaging Time	Persistence Factor (a)	Build	No-Build	Concentration Increase		Significant Increase Threshold	Build	No-Build	Concentration Increase		Significant Increase Threshold
1-hour	-	9	6	3 (b)	3 (c)	-	5	4	1 (b)	2 (c)	-
24-hour	0.4	3.6	2.4	1.2 (b)	1.2 (c)	5	2.0	1.6	0.4 (b)	0.8 (c)	5
Annual	0.08	0.72	0.48	0.24 (b)	0.24 (c)	1	0.40	0.32	0.08 (b)	0.16 (c)	0.3

(a) Conversion factor from 1-hour average.
(b) Maximum Build concentration (all receptors) - Maximum No-Build concentration (all receptors).
(c) Maximum increase at same receptor.

Figure 4-1 Study Area Locations
Note: Line Diagram Is Not To Scale.
Source: John Collins Engineers, PC, Hawthorne, NY, April 2007



Legend

- 26 — Intersection Location Number
- Redevelopment Project Site

Source:
Redevelopment Project Sites taken from SFC plan entitled "SFC Infrastructure Budget Water Main Improvements", dated 4/30/07.

Basemap taken from plan entitled "SFC Development Project: Yonkers Gateway and Palisades Point Traffic Study.", prepared by Struever, Fidelco Capelli, LLC, dated August, 2006

0 150 300 Feet

PS&S
integrating design & engineering

SFC REDEVELOPMENT PROJECT
CITY OF YONKERS
WESTCHESTER COUNTY, NEW YORK

INTERSECTIONS IN THE VICINITY OF THE REDEVELOPMENT PROJECTS STUDIES IN THE AIR QUALITY ANALYSIS

Drn By: JA	Scale: 1" = 300'	Project: 03113.003.014
Ch'kd By: MH	Date: 01/04/08	Figure No. : 4-2

Map Document: (P:\03113\003\Y\N\Maps\Fig4-2_AirQualityIntersections_010408_01.mxd)
1/4/2008 -- 1:51:36 PM

SECTION 5.0
AIR QUALITY IMPACT ASSESSMENT – PARKING FACILITIES

5.0 AIR QUALITY IMPACT ASSESSMENT – PARKING FACILITIES

The proposed parking needs for the River Park Center project area require the construction of six (6) multi-leveled parking facilities. The River Park Center will provide three (3) on-site garages for its occupants and patrons. Three (3) additional parking facilities within the River Park Center project area include the Cacace Center and the Government Center garages. Palisades Point requires the construction of two (2) multi-leveled parking facilities, one in each of its residential towers.

The maximum 1-hour and 8-hour CO concentrations from the River Park Stadium parking garage were predicted to be 10.1 ppm and 7.1 ppm, respectively, the values include impacts due to the adjacent street system and background levels (see Table 5.1). These concentrations do not exceed the NAAQS of 35 ppm and 9 ppm for the maximum 1-hour and 8-hour CO concentrations, respectively.

5.1 Emissions from Parking Facilities

Several nearby parking facilities are proposed for the redevelopment project in both the River Park Center project area and in Palisades Point project area. The air quality analysis considers impacts of the parking facilities on ambient CO concentrations. The impacts of these emissions were determined through a series of dispersion equations. The input parameters used in the analysis and the subsequent results are discussed below.

5.2 Parking Facilities Information

The proposed parking needs for the River Park Center project area require the construction of six (6) multi-leveled parking facilities. The total on-site parking for the River Park Center will require three (3) of these facilities and will accommodate approximately 2,580 vehicles. Three (3) additional parking facilities within the River Park Center project area include the Cacace Center and the Government Center. The

Cacace and the Government project sites will each accommodate approximately 1,500 vehicles.

Palisades Point is to include two (2) multi-leveled parking facilities with a combined capacity of 630 vehicles.

5.3 Methodology

Estimated 1-hour and 8-hour CO concentrations due to the parking garages have been calculated for receptors located on a nearby sidewalk. The methodology for analyzing multi-story, naturally ventilated garage is given in Air Quality Appendix 3 of the CEQR Technical Manual. Traffic emissions were determined based on the volume of vehicles within the garage, the average distance traveled, the average speed, the amount of idling time, and the engine operating conditions. EPA MOBILE emission factors were used to estimate the maximum emission rates; in-bound trips to the garage were assumed to be operating in a stabilized mode, and out-bound trips assumed to be operating in a cold start mode. Vehicle speed within the garages was assumed to be 5 mph, and when leaving the garage, each vehicle would idle for 1 minute after engine start-up.

The River Park Stadium parking garage was analyzed as a representative worst case. PM and Saturday peak hour traffic volumes entering and leaving the River Park parking facilities were used as worst-case 1-hour traffic volumes (ins/outs). As a conservative simplifying assumption, the total peak hour traffic volumes entering and leaving the River Park parking facilities were all assigned to the central (stadium) parking garage. Average vehicle travel distances were assigned to each level in proportion to the parking capacity of the level (as shown on project drawings), assuming that all vehicles would exit through Level 1.

Emission factors were obtained from the NYSDOT tables of MOBILE emission factors. For arriving vehicles, assuming warm engine conditions, NYSDOT MOBILE6 emission factors were used, using the NYSDOT vehicle distribution for light-duty vehicles and a

speed of 5 mph. For departing vehicles, since the NYSDOT MOBILE6 emission factor tables do not include vehicle start emissions, the most recent NYSDOT tables for MOBILE5b emission factors were used and extrapolated to 100% cold starts for both 5 mph and idle emission factors. This procedure is conservative, in that MOBILE5b emission factors for idle and for low speeds are significantly higher than MOBILE6 emission factors.

Hourly emission rates for each level were calculated using average vehicle travel distances, volumes of arriving and departing vehicles, and MOBILE emission factors. Idle emissions were calculated assuming vehicles idle for an average of 1 minute.

Dispersion calculations were performed using the USEPA SCREEN3 model in place of the manual calculation procedures in the NYC CEQR Manual. Emissions were modeled as a point source with no plume rise, located at the highest parking level (Level 6). The overall dimensions of the stadium were used as input to the building downwash routines in SCREEN3, which calculates both cavity and building wake concentrations.

Carbon monoxide concentrations from traffic on adjacent streets were estimated using the USEPA CAL3QHC model in place of the manual line source dispersion equations in the NYC CEQR Manual. Peak hour Build traffic volumes on Nepperhan Avenue and MOBILE6 emission factors for a speed of 10 mph were used in this analysis.

The 8-hour CO concentrations were conservatively estimated by multiplying the total modeled 1-hour concentration by the persistence factor (NYSDOT 2001), without adjusting the emission rates. The 1-hour and 8-hour background concentrations added to the modeled concentrations were those listed in the NYSDOT EPM (NYSDOT 2001), which are more conservative (higher) than monitored concentrations. Appendix A provides the input and output parameters used in the MOBILE modeling.

5.4 Results

As shown in Table 5-1, the results of the parking garage modeling indicate that the carbon monoxide emissions from vehicles entering and leaving the garage, combined with the impacts from traffic on adjacent streets and background concentrations, will not result in any exceedance of ambient air quality standards.

Table 5-1 River Park Parking Garage Modeling Results SCREEN3 Point Source with Building Downwash				
				NAAQS
	Modeled normalized 1-hr concentration	703.6	(ug/m3)/(g/s)	
×	1-hr average CO emission rate from garage	6.96	g/s	
=	Modeled 1-hr CO concentration from garage	4,897.4	ug/m3	
=		4.3	ppm	
+	Modeled 1-hr CO concentration from adjacent street traffic	2.1	ppm	
=	**Total modeled 1-hr CO concentration**	**6.4**	ppm	
+	Background 1-hr CO concentration*	3.7	ppm	
=	**Total 1-hr CO concentration**	**10.1**	**ppm**	**35.0 ppm**
	Total modeled 1-hr CO concentration	6.4	ppm	
×	Persistence factor*	0.7		
=	**Total modeled 8-hr CO concentration**	**4.5**	ppm	
+	Background 8-hr CO concentration*	2.6	ppm	
=	Total 8-hr CO concentration, ppm*	**7.1**	ppm	**9.0 ppm**
	*NYSDOT EPM 2001, Chapter 1.1, Table 8			

SECTION 6.0
STATIONARY SOURCES

6.0 STATIONARY SOURCES

6.1 Project Related Stationary Sources

Stationary emission sources associated with various Project components will include combustion equipment such as boilers, emergency generators, and heating units. This equipment will be used for space heating, HVAC, and emergency services to support various components of the Project. Appropriate air permits will be obtained for these stationary sources. Preliminary design of this equipment indicates that equipment items as well as the Project will not be classified as major sources.

Anticipated equipment to be used for the Project is described below. Fuel fired equipment will be provided within the buildings of the project sites. Fuel gas boilers will be provided to produce heating hot water and domestic hot water. Multiple units will be provided and will be sized in the 100 to 500 boiler horsepower range. Boiler equipment will be located indoors in either basements or penthouse machine rooms. Burners will be of the low NOx type. Heating boilers are expected to operate 2600 hours (2000 equivalent full load hours) and domestic hot water burners are expected to operate 4500 hours.

Emergency electric generators will be provided and will be of the reciprocating engine type. Emergency power will support fire pumps, life safety lighting, fire alarm, life safety ventilation and emergency operation of elevators. The engines will be fuel oil fired with a maximum of 660 gallons of fuel oil stored in the building. The generators will be sized in the 500 to 1000 KW range. Generators will be located indoors in parking garage machine rooms. The generator will be run tested throughout the year resulting in a run time of 15 hours without considering an emergency event. Engine exhaust pipe will be in the range of 8 to 12 inches.

Proposed Project Estimated Potential to Emit (PTE)

The proposed Project will utilize natural gas fired boilers, natural gas fired roof-top heating units, and No. 2 oil fired emergency electrical generators. Table 6-1 shows the proposed Project combustion equipment. Annual air emissions from the proposed combustion equipment was estimated using typical equipment operating conditions (i.e., annual operating hours), and air pollutant emission factors such as those from USEPA AP 42, Fifth Edition, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources.* Based on this assessment, the PTE for the proposed projects criteria pollutants is shown in Table 6-2. The estimated PTE as shown in Table 6-2 indicates that the Project as proposed is below NYSDEC major facility thresholds and will not be a major source.

6.2 Other Stationary Sources

6.2.1 Stationary Source Inventory

Major stationary sources within 1000 feet and minor sources within 400 feet of the project footprint areas were identified (see Figure 6-1). This stationary source inventory was compiled by assessing the shape file from the United States Environmental Protection Agency (USEPA) Aerometric Information Retrieval System/AIRS Facility Subsystem Permits in the EPA Region 2 website to assess stationary sources in the vicinity of the project site. The Region 2 AIRS/AFS Permits Regulated Facility GIS layer contains identification (name, address, ID), and location (latitude, longitude, and locational metadata), attributes of stationary source(s) of air pollution associated with facilities that are regulated by the USEPA. The GIS layer identification and permit data are the USEPA Facility Registry System (FRS) of Envirofacts and the Envirofacts module of the Aerometric Information Retrieval System - Air Facility Subsystem (AIRS/AFS). The source for the locational data for this and all R2 Regulated Facility Layers is the Locational Reference Tables (LRT), of Envirofacts augmented by R2

Locational Data Improvement records that may not yet have been cycled into the LRT. The AFS subsystem contains emissions, compliance, and permit data for stationary sources regulated by the USEPA and state and local air pollution agencies.

Major Sources

The results of this assessment indicate that the only major stationary source within 1000 feet of the Project areas is the American Sugar Refinery Company, Inc. plant (NYSDEC ID 3551800214). This facility emits particulate matter from the processing and refining of sugar, and criteria pollutants (NOx, CO, SO_2, PM-10, PM-2.5) from combustion sources (boiler, diesel engine generator, gas turbine cogeneration system).

Minor Sources

The review of minor sources of emissions indicates that a number of minor sources with emissions of less than 100 tons per year are present in the Yonkers area as shown in Figure 6-1. None of the minor sources identified in the area are within 400 feet from the Project Sites. No further assessment was performed on these sources. The minor sources consist mostly of dry cleaners, auto body shops, etc.

6.2.2 Major Source Assessment

The only major stationary source within 1000 feet of the Project areas is the American Sugar Refinery Company, Inc. plant (NYSDEC ID 3551800214). Preliminary screening modeling indicated that there is potential for interactions of emissions from the Plant and the proposed Palisades Point structures. Atmospheric dispersion modeling was performed to assess the potential for

interaction between emissions from the American Sugar Refinery Company, Inc. facility and the proposed Palisades Point structures.

Emissions Estimation

Emission parameters from the American Sugar Refinery Company, Inc. facility (Plant) were estimated from information from the NYSDEC Title V operating Permit and permit application for the facility. Major equipment items at this facility include boilers, a gas turbine/cogeneration system, and a diesel engine. The Plant Title V Operating Permit contains information on the emission sources at the Plant but does not clearly identify each emission point regarding emissions, stack release point, exit gas temperatures, stack heights and flows, etc. Much of this information is not included or is agglomerated (combined for simplification purposes). A number of assumptions on the Plant emissions were made to establish modeling scenarios and estimate emission parameters.

Emission statement data for the Plant is not suitable for modeling purposes and would be inappropriate, since the data does not represent the worst case situation. However, this information was useful to assess the Plant's current fuel usage and emissions in relation to the permitted amounts and is included as Appendix C.

AERMOD Atmospheric Dispersion Modeling

Atmospheric Dispersion Modeling Analysis was performed to assess the potential for air quality impacts from the Plant on the Project in accordance with the pDEIS Scoping Document for the Project. A summary of the report, including emission sources and further complex detail is shown in Appendix C. Refined modeling was performed in accordance with current USEPA and New York State Department of Environmental Conservation (NYSDEC) modeling guidance, as applicable. The most recent version (Version 07026) of the AMS/EPA Regulatory Model with the PRIME downwash algorithm (AERMOD) was used for this

analysis. AERMOD is a steady-state gaussian plume model that can be used to assess pollutant concentrations from a wide variety of sources associated with an industrial source complex.

6.2.3 Modeling Results and Summary

Atmospheric Dispersion Modeling was performed for Plant emissions of criteria pollutants that included NOx, SO_2, CO, and PM 10/2.5 from combustion sources and PM 10/2.5 from process sources. A summary of the report, including emission sources and further complex detail is shown in Appendix C. The combustion sources include a Cogen system with duct burner, boiler, and diesel generator. The primary fuel for the Cogen and boiler is natural gas with secondary fuel (No. 2 fuel oil). The generator burns No. 2 fuel oil. Annual operating hours for each of the major equipment items are not identified in the Title V Operating Permit for the Plant. However, typical operating hours that correlate with the Title V permitted emission limits and facility PTE (Potential to Emit) were estimated and used for modeling purposes. Emission rates were based on information in the Title V Operating Permit as related to the type and capacity of the equipment.

The modeling scenarios conservatively assume that the Cogen with duct burner, boiler and diesel generator are operating at full capacity at the same time continuously for five years of hour by hour meteorology. This provides worst-case estimates of short-term concentrations for this scenario, which is an extremely conservative approach.

Based on atmospheric dispersion modeling (AERMOD), the Plant has the ability to emit high concentrations for SO2 based on the three combustion sources operating at the same time, at full capacity, burning No. 2 fuel oil which the Plant is permitted for based on the NYSDEC Title V Operating Permit for the Plant. The predicted 24-hour SO_2 concentration with three emission sources operating at

the same time, burning No. 2 fuel oil at full capacity, were greater than the applicable SIL, and with the addition of background concentrations, was greater than the 24-hour SO_2 NAAQS at a number receptor points located at the south tower and north tower.

The predicted annual concentrations of NOx along with background are less than the NAAQS at Palisades Point receptors. The predicted 8-hour concentrations of CO with the Cogen with duct burner, boiler, and diesel generator operating at full capacity at the same time, burning No. 2 fuel oil, were above the applicable SIL at a couple of receptor locations at Palisades Point, but along with background were well below the applicable CO NAAQS. The predicted annual concentrations of PM 2.5 with the three combustion and process emission sources together were below the NAAQS at all of the receptors. Process emissions account for concentrations of PM2.5 at most of the receptors. The predicted PM 10 concentration at Palisades Point with the Plant cogen, boilers, and diesel generator all burning No. 2 Fuel Oil at full capacity at the same time along with process emissions, plus background concentrations, are less than the applicable PM 10 NAAQS at all of the receptors. The greatest contribution to PM10 concentrations at many of the receptors was from the process sources.

The high SO_2 levels were predicted during operations of the combustion equipment burning No. 2 fuel oil. In general, facilities similar to the Plant burn gas instead of oil when it is available and oil usually if there is a gas curtailment, where residential users get priority for gas. This usually occurs in winter. Therefore it has been assumed that the Plant would be most likely to burn oil in these three combustion sources in the winter and gas in the Cogen and boiler most of the rest of the year. The estimated permitted usage of No. 2 fuel oil in the Cogen is approximately 11% of the time, in the boiler approximately 16% of the time, and in the generator 5% of the time. Based on meteorological conditions, if the Cogen and the boiler were operating at the same time on No. 2 fuel oil during the winter months of January, February and December, the potential for high,

worst case, SO_2 levels at Palisades Point would be less than 4%. The emissions for the Plant for 2005 and 2006 indicate that for the past two years, the Plant has used less than 1% of the amount that the Plant is permitted to use. Should this mode of operation of Plant continue, it makes the likelihood of the high worst case SO_2 impact scenario at Palisades Point not rare, but extremely unlikely to occur.

Palisades Point Mitigation Design Features

The Palisades Point residential tower design will incorporate features to mitigate the potential impact from interaction of the nearby Plant emissions. Although, there is potential for impacts from the Plant emissions, the occurrence is dependent on a number of variable factors such as Plant operations, fuel combustion, process operations, season, meteorological conditions especially wind direction, etc. A number of mitigation measures will be incorporated into the building designs to prevent or minimize effects from the Plant. The Palisades Point towers will be ventilated by a central HVAC system that will be located at the top of the towers. The system will provide fresh/conditioned air that will be injected into the residential units therefore providing positive flow of air to the living space. The HVAC system fresh air inlets will be located on the roof of the towers. The systems will incorporate high efficiency particulate air filters on the outside fresh air inlets. In addition the systems will include carbon filters on the outside air inlets. Other design considerations may include units with non opening windows, use of Juliet balconies instead regular balcony with patios, etc.

Table 6-1 SFC/GATEWAY CENTER Proposed Project Combustion Equipment				
PROJECT COMPONENT	**EQUIPMENT TYPE**	**SIZE**	**NO. OF UNITS**	**FUEL**
Palisades Point	Boilers	400 Boiler HP, low NOx burners	4 (2 per tower)	NG
	Emergency Generators	500 kW	2 (1 per tower)	No. 2 FO
River Park Center Residential Towers	Boilers	600 Boiler HP, low NOx burners	4 (2 per tower)	NG
	Emergency Generators	500 kW	2 (1 per tower)	No. 2 FO
River Park Center Retail Component	Roof Top Package Heaters	approx. 0.975 MMBTU/hr	approx. 15	NG
	Emergency Generators	1000 kW	2 (1 per tower)	No. 2 FO
River Park Center Office Space	Boilers	200 HP	2	NG
	Emergency Generator	500 kW	1	No. 2 FO
Fire Station	Emergency Generator	500 kW	1	No. 2 FO
	Roof Top Package Heaters	approx. 0.975 MMBTU/hr	approx. 6	NG
New Main Street Parking Garage	Emergency Generator	500 kW	1	No. 2 FO
Office/Hotel	Boilers	300 HP	2	NG
	Emergency Generator	500 kW	1	No. 2 FO
Palisade Avenue Office Building	Boilers	400 HP	2	NG
	Emergency Generator	500 kW	1	No. 2 FO
Government Center Parking Garage	Emergency Generator	500 kW	1	No. 2 FO

Table 6-2 SFC/Gateway Center - Combustion Sources Estimated Potential to Emit (tons/year)						
Project Component	**NOx**	**CO**	**PM-10**	**PM-2.5**	**SO_2**	**VOC**
Palisades Point	5.95	9.63	0.88	0.88	0.13	0.64
River Park Center Residential	8.78	14.38	1.31	1.31	0.16	0.95
River Park Center Retail	2.23	1.56	0.15	0.15	0.17	0.12
River Park Center Office	1.57	2.44	0.22	0.22	0.05	0.16
Fire Station	1.16	0.91	0.08	0.08	0.04	0.06
New Main Street Garage	0.15	0.07	0.01	0.01	0.03	0.01
Office/Hotel	1.81	2.85	0.26	0.26	0.05	0.16
Palisade Avenue Office Building	2.98	4.82	0.44	0.44	0.06	0.32
Government Center Parking Garage	0.15	0.07	0.01	0.01	0.03	0.01
TOTAL PROJECT PTE	**24.78**	**36.73**	**3.37**	**3.37**	**0.72**	**2.42**

POLYCHROME CORP
ARISTA NOVELTY PRINT CO INC
EXCELSIOR PACKAGING GROUP INC
DAMIAN CLEANERS
CRESTHILL INDUSTRIES
ALEXANDER ST TERMINAL
LIFE CLEANERS & LAUNDERERS OF YONKERS
GABRIEL SPORTS CAR INC
PALISADE AVE OFFICE BUILDING
RIVER PARK CENTER
REFINED SYRUP & SUGAR INC.
Proposed Minor League Ballpark
GOVERNMENT CENTER
PALISADES POINT
RIVERDALE CLEANERS
CACACE CENTER
REFINED SYRUP & SUGAR INC.
STACK LOCATION PER TITLE V PERMIT
GUILLET CLEANERS
TAVARAS CLEANERS
RICARDO TIRIFORERO DRY CLEANERS
ST JOSEPH MEDICAL CENTER
A CARRILS AUTO BODY SHOP INC
POLO COLLISION INC
AMERICAN SUGAR REFINING COMPANY INC

Legend

- Redevelopment Project Site
- Development Areas

NYSDEC Title V Permit

- Emission Point

AIRS Facility Subsystem (Region 2)

- Air Major
- Air Minor
- Air Synthetic Minor
- Air Major, Air Minor
- Air Major, Air Synthetic Minor
- Air Minor, Air Synthetic Minor

Source:
Parcel data based on Tax Maps from 1952-1955

Aerometric Information Retrieval System (AIRS)/ AIRS Facility Subsystem (AIRS/AFS) Permits in EPA Region 2 - U.S. EPA Air Releases - AIRS/AFS

Permits in EPA Region 2 (Clean Air Act), 2007

Redevelopment Project Sites taken from SFC plan entitled "SFC Infrastructure Budget Water Main Improvements", dated 4/30/07.

Proposed Development Areas taken from SFC Infrastructure Budget Water Main Improvements Plan, SFC Phase I Sites, Yonkers, New York, 4/30/2007 and PS&S Plan, 03113006c-bs07-yk.dwg, 4/13/2007

Emission Point from NYDEC Title V Database, 2007

Proposed Junior League Ballpark taken from SFC plan entitiled, Field Level Plan, dated 04/03/07.

NYSDOP Aerial Imagery, 2004.

0 300 600 Feet

PS&S
integrating design & engineering

SFC REDEVELOPMENT PROJECT
CITY OF YONKERS
WESTCHESTER COUNTY, NEW YORK

AIR SOURCES IN PROJECT AREA

Dm By: JA	Scale: 1" = 600'	Project: 03113.003.004
Ch'kd By: MH	Date: 01/04/08	Figure No. 6-1

Map Document: (P:\03113\003\Y\N\Maps\Fig6-1_ChickenIs_EPA_010408_08.mxd)
1/4/2008 -- 4:59:32 PM

SECTION 7.0
CONSTRUCTION

7.0 CONSTRUCTION

Construction activities for the proposed Project have the potential to generate air emissions.

7.1 Construction Activities

Building Demolition: Building demolition associated with the River Park Center Area will consist of the existing active Firehouse on the River Park Center site and the existing garage and government building on the Cacace Center site.

Building Construction: Building construction associated with the River Park Center will consist of two (50-story) residential towers (950 residential units), hotel, office building, fire station, restaurants and retail space. Building construction associated with Palisades Point will consist of two (25-story) residential towers (436 residential units). Construction activities associated with the buildings will include clearing, foundation, erection and the finishing phases of construction. This construction activity may use mobile cranes, jackhammers, trucks, concrete cutters, bulldozers, graders, asphalt pavers, rollers etc.

Roadway Improvements: The proposed Project will result in minor changes to roadways, street geometries and traffic volumes throughout the Project area. A new bridge (road access) crossing the metro-north tracks is proposed for the Palisades Point development. Construction activities associated with roadway improvements will include clearing, leveling, widening, foundation and sidewalk construction; erection and finishing phases of construction will be a component of the bridge building.

Publicly accessible space: The Palisades Point development plans for publicly accessible space along the Hudson including a promenade, boardwalk, boat launch, and on-street parking. Construction activities associated with the development/improvement

of open space will include clearing, leveling, widening, foundation and sidewalk construction.

Parking Garages: Six parking garages are planned for the River Park Center Project Area development and two parking garages (located adjacent to each building) are planned for the Palisades Point development. Construction activities related to parking facilities would be similar to that for construction of new buildings.

Ballpark: A 6,500 seat Minor League Baseball Stadium (Ballpark) is proposed for the River Park Center development. Construction activities related to the Ballpark would be similar to that for construction of new buildings.

7.2 Fugitive Emissions

The proposed activities may generate fugitive dust during site clearing, grading and construction, which may temporarily increase localized levels of total suspended particulates and PM10. The impact of fugitive dust emissions on local air quality will vary depending on the type and level of construction activity and meteorological conditions (i.e., precipitation, wind speed and temperature). Although fugitive dust emissions have the potential to create locally high levels of particulates, impacts can be minimized by the implementation of mitigation measures. Fugitive dust emissions may be generated as a result of soil disturbances caused by construction equipment. These impacts will be localized and will be mitigated by use of dust suppression activities, such as watering as needed to control dust emissions.

7.3 Construction Equipment

The building construction equipment to be used for the Project is expected to include cranes, jackhammers, trucks, concrete cutters, bulldozers, graders, asphalt pavers, rollers, pile drivers, etc.

Emissions can result from the operation of construction vehicles and equipment and potential generation of fugitive dust during construction activities. Engine exhaust and crankcase emissions from gasoline and diesel engines are subject to applicable USEPA mobile source emission regulations (40 CFR Part 85).

Exhaust emissions from gasoline and diesel-fueled construction equipment would include carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM10, PM2.5) and will be emitted during various construction operations. The diversity of the equipment type, number, and operations will vary throughout the temporary construction period and thus are not expected to have a significant impact on local air quality. It is expected that there would be a localized increase in mobile source emissions, however these air quality impacts would be temporary and are not expected to be significant.

Based on the action condition traffic analysis, the morning construction peak hour will coincide with the morning Build peak hour. The afternoon construction peak hour will be during a Build off-peak traffic hour. Based on available construction schedules, truck traffic (construction trip generation) to the Site will be limited. The maximum number of trucks present on Site at one time is anticipated to be less than 30 trucks (including shuttle buses). Additionally, construction traffic will tend to be spatially dispersed across the Sites.

Based on information of truck and traffic volumes from on-site activities, such as the number of trucks delivering construction materials, re-routing patterns and the timing of construction, fewer peak hour vehicle trips would be generated during the proposed project's construction period than the peak hour traffic for the Build scenario. The CO and particulate matter mobile source air quality impact is expected to be much less than that of the Project Build scenario with ballpark event. Since no significant adverse mobile source air quality impacts were predicted by the Project Build with ballpark event scenario traffic, a more detailed assessment of construction traffic is not warranted.

The vehicle trip generation from construction worker private vehicles to and from the Site is not expected to have a significant impact. Worker vehicles will be staged at designated parking areas outside the Project sites and workers will be shuttled to and from the Site. Four shuttle buses will transport workers to the work sites each day minimizing local traffic and parking concerns at the Project sites.

There are no stationary sources (i.e., concrete batch plant, etc.) proposed during the construction of the Project. Construction vehicles and equipment anticipated to operate on-site will vary during the different construction phases as well as on a daily basis during each individual phase. A preliminary estimate of construction equipment and schedule are shown in Appendix D.

7.4 Mitigation Measures

The potential emissions during construction activities will be localized and of a temporary nature. The following are mitigation measures that can be used to minimize construction emissions:

- Use of tarps over open-body trucks transporting materials to and within the site;
- Use of temporary vegetative cover such as annual grasses on soil stockpiles and disturbed areas awaiting additional construction;
- Application of water or other dust suppressant to on-site dirt roads during construction to mitigate dust;
- Prohibition of on-site burning of construction wastes;
- Unnecessary idling of internal combustion engines will be prohibited;
- Keeping equipment well maintained;
- Use of ultra-low sulfur diesel (ULSD) to reduce emissions from non-road equipment; and
- Use of PM Traps on diesel equipment to minimize PM2.5 emissions.

SECTION 8.0
SUMMARY AND CONCLUSIONS

8.0 SUMMARY AND CONCLUSIONS

This Air Quality Impact Assessment was prepared to assess the potential impacts of the Project on air quality including review of traffic related emissions, emissions related to the proposed parking facilities and emissions related to major stationary sources. The procedures used to perform this air quality impact assessment followed the methodologies approved and/or recommended by NYSDEC, NYSDOT and EPA.

A number of potential sources of air quality emissions associated with the proposed Project have been reviewed to assess the potential for Project related impacts on air quality. These possible sources of emissions associated with the River Park Center and Palisades Point developments included:

- Various traffic scenarios, without and with the ballpark traffic and with various improvements to the roadway/traffic network near the Project
- Eight parking facilities
- Stationary sources
- Construction activities, and
- Other stationary sources

A number of conclusions can be made based on the results of this air quality assessment that include the following:

- Traffic associated with the Project is not expected to result in significant impacts to air quality in the area, based on a number of analyses of Project related traffic data and the implementation of a number of improvements to the traffic network recommended by the Project traffic engineer.

- The results of modeling of carbon monoxide emissions from vehicles entering and leaving the parking structures, combined with emissions from roadway traffic on adjacent streets is not expected to result in exceedances of applicable ambient air quality standards.

- The results of the mobile source PM10/2.5 analysis indicates that modeled concentrations are less than 24 hour and annual average significant impact thresholds.

- Stationary source equipment (i.e., boilers, emergency generators, emergency fire pumps, HVAC equipment, etc.) associated with the Project may be subject to NYSDEC air permitting requirements and are not expected to be major sources of emissions. Appropriate air permits will be obtained for this equipment which is expected to conform to applicable emission limits and requirements and are not anticipated to result in significant air quality impacts.

- Construction activities have the potential to generate fugitive dust emissions and also emissions from use of construction equipment. Diesel equipment can emit fine particulate matter that can be mitigated with use of ultra-low sulfur diesel fuel or use of exhaust filters for diesel equipment. Fugitive dust can be mitigated with a number of dust suppression techniques.

- No minor emission sources were identified within 400 feet of the River Park Center or the Palisades Point Residential Towers.

- Only one (1) major source was identified within 1,000 feet of the Palisades Point Residential Towers and no major sources were identified within 1,000 feet of the River Park Center.

- The results of the analyses and assessments of this DEIS indicate that the Project will not contravene or significantly contribute to contravention of NAAQS based on review of Project related traffic, traffic network improvements, construction activities, and Project related stationary source equipment (it is anticipated that equipment will satisfy appropriate requirements) and that appropriate NYSDEC air permits will be obtained for Project related stationary sources and thus that the Project will be consistent with and conform to the NYS SIP.

SECTION 9.0
REFERENCES

9.0 REFERENCES

John Collins Engineers, PC., 2006. *Traffic Data - Yonkers.* Hawthorne, New York. 2006

NYC, 2001. *City Environmental Quality Review (CEQR) Technical Manual.* City of New York, Mayor's Office of Environmental Coordination, October 2001.

NYSDOT 2000. *Carbon Monoxide Emission Factor Table EF1 (MOBILE5b Emission Factors)* http://www.dot.state.ny.us/eab/epm/tbl-ef1.pdf, New York State Department of Transportation, Environmental Analysis Bureau, April 2000.

NYSDOT, 2001. *NYSDOT Environmental Procedures Manual,* Table 8, CHAPTER 1.1 - AIR QUALITY. http://www.dot.state.ny.us/eab/epm.html, New York State Department of Transportation, Environmental Analysis Bureau, January, 2001.

NYSDOT, 2004. *Environmental Analysis Bureau Air Quality Analysis Application Programs: MOBILE6.2 CO Emission Factor Tables Look Up and Calculation Program for Microscale Analysis.* http://www.dot.state.ny.us/eab/tools/envtools.html, New York State Department of Transportation, Environmental Analysis Bureau. Last Update: November 18, 2004.

TRB, 1985. *The Highway Capacity Manual*. TRB Special Report 209. Transportation Research Board, Washington, D.C., 1985.

TRB, 2000. *The Highway Capacity Manual.* Transportation Research Board, Washington, D.C., 1985.

USEPA, 1978. *Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9 (Revised): Evaluating Indirect Sources*. U.S. Environmental Protection Agency, Office of Air, Noise and Radiation, Research Triangle Park, North Carolina. EPA-450/4-78-001 OAQPS No.1.2-028R, 1979.

USEPA, 1992. *Guideline for Modeling Carbon Monoxide from Roadway Intersections*. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. EPA-454/R-92-005, November 1992.

USEPA, 1994. *User's Guide to MOBILE5 (Mobile Source Emissions Factor Model)* U.S. Environmental
Protection Agency, Ann Arbor, Michigan. EPA-AA-TEB-94-01, May 1994.

USEPA, 1995. *User's Guide to CAL3QHC Version 2.0 (A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections).* U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. EPA-454/R-92-006, September 1995.

USEPA 1996. *MOBILE5B User Guide Update (Chapter 2).* U.S. Environmental Protection Agency, http://www.epa.gov/otaq/models/mobile5/mob5b use.pdf, September 1996.

USEPA, 2003. *User's Guide to MOBILE6.1 and MOBILE6.2 (Mobile Source Emissions Factor Model).* U.S. Environmental Protection Agency, Ann Arbor, Michigan. EPA420-R-03-010, August 2003.

APPENDIX A
MOBILE MODELING INPUT AND OUTPUT

APPENDIX B
TRAFFIC SUMMARY TABLES

APPENDIX C
ATMOSPHERIC DISPERSION MODELING REPORT

APPENDIX D
CONSTRUCTION EQUIPMENT

Yonkers Project Equipment Matrix
Revised May 9, 2007
Note: Estimates are based on average number each type of equipment will be present onsite each day at any given time
Note: Estimates only include diesel equipment
Note: Dump Trucks/Concrete Trucks/Flatbed Trucks indicate maximum number of trucks present onsite at one time
Note: Tower Cranes are all assumed to be electric driven and are not listed here
Note: Cranes listed here are mobile crawlers or wheeled cranes using diesel engines

	Month																													
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Shuttle Buses	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
River Park																														
Demolition Equipment	5	5	5																											
Bulldozers	4	4	4	4	4	4																								
Excavators	5	5	5	5	5	5	3	3	2	2	2	2																		
Dump Trucks	5	6	7	7	7	7	6	6	5	5	4	4	3	3																
Concrete Trucks	2	5	10	10	10	10	10	10	10	10	10	10	10	10	10	5	5													
Cranes	1	1	2	2	3	3	3	3	3	3	3	2	2	2	1	1	1													
Flatbed Delivery Trucks	3	3	4	4	5	5	5	5	5	8	8	8	8	6	6	6	5	5	5	5	5	5	5	5	5	5	5	4	4	4
Misc. Remaining Equipment	5	5	5	5	5	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	5	5	5	5	5	5	5	5	5
Palisades Point																														
Pile Drivers	2	2	2																											
Bulldozers	1	1	1	1																										
Excavators	2	2	2	2	2																									
Dump Trucks	3	3	3	3	3	3																								
Concrete Trucks		1	5	5	5	5	5	5	5	5																				
Cranes			1	1	1	1																								
Flatbed Delivery Trucks	2	2	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	2	2	2						
Misc. Remaining Equipment	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2						

Diesel Engine Description

Demolition Equipment	6-Cylinder diesel engine rated at 350 HP
Line Drills	4-Cylinder diesel engine rated at 150 HP
Pile Drivers	6-Cylinder diesel engine rated at 350 HP
Pile Driver Compressor	4-Cylinder diesel engine rated at 150 HP
Bulldozers	6-Cylinder diesel engine rated at 350 HP
Excavators	6-Cylinder diesel engine rated at 350 HP
Dump Trucks	6-Cylinder diesel engine rated at 400 HP
Concrete Trucks	6-Cylinder diesel engine rated at 400 HP
Cranes	6-Cylinder diesel engine rated at 350 HP
Flatbed Delivery Trucks	6-Cylinder diesel engine rated at 400 HP
Misc. Remaining Equipment	4-Cylinder diesel engine rated at 150 HP