

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CROTON WATER TREATMENT PLANT AT THE MOSHOLU SITE

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6.9. TRAFFIC AND TRANSPORTATION

6.9.1. Introduction

This section assesses the potential operational and construction impacts on the nearby transportation system due to the Croton Water Treatment Plant (WTP) at the Mosholu Site. The existing operating conditions of the nearby transportation system, including traffic, parking, pedestrian safety and transit are presented. The study areas were established based upon anticipated volumes, logical traffic routes, and potentially problematic areas. The methodology used to prepare this analysis is presented in Data Collection and Impact Methodologies, Section 4.9, Traffic and Transportation.

6.9.2. Baseline Conditions

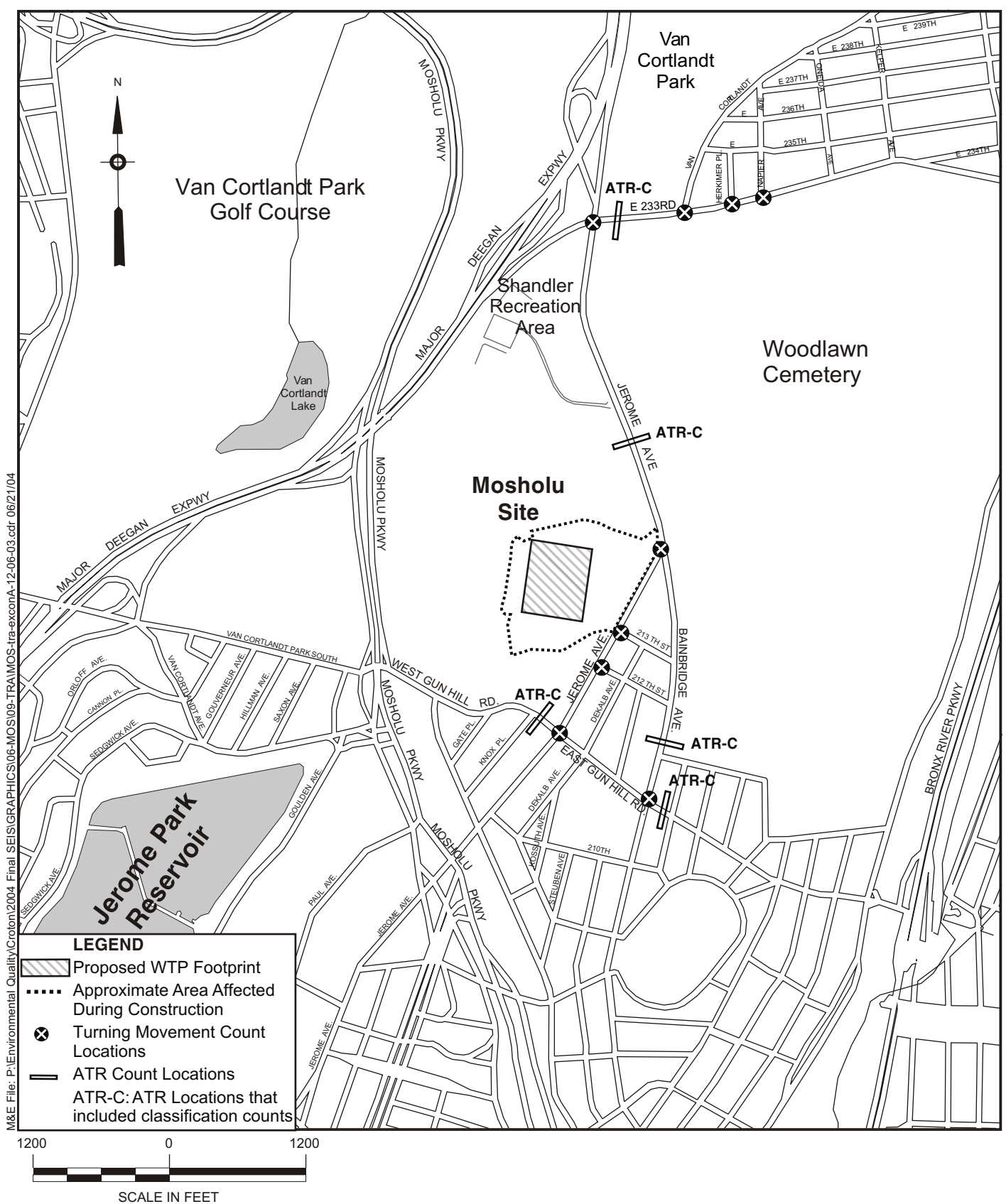
6.9.2.1. Existing Conditions

6.9.2.1.1 Traffic Study Area

The Mosholu Site is located at the Mosholu Golf Course in the Borough of the Bronx, New York. The study area for the Mosholu Site was selected to encompass those roadways most likely to be used by the majority of vehicular traffic traveling to and from the water treatment plant site. The study area extends along Jerome Avenue and consists primarily of the Jerome Avenue and Bainbridge Avenue Corridors; it is bounded to the north by the Major Deegan Expressway (Major Deegan) (I-87) interchange at East 233rd Street and to the south by Gun Hill Road. The study area includes roadways and intersections that are anticipated to carry the majority of traffic to/from the project site. The main regional highway serving the study area and traversing adjacent to the project site is I-87. The traffic study area for the Mosholu Site is presented in Figure 6.9-1.

The main regional roadway providing access to the water treatment plant site is I-87 (Major Deegan). The principal traffic corridor providing the most direct link between the I-87 and the Mosholu Site is from 233rd Street along Jerome Avenue. This corridor is heavily traveled under current traffic conditions.

The Major Deegan (I-87) is a major north-south arterial highway that provides connections south to Manhattan and to New Jersey and Connecticut via I-95. Northern New York is also accessible from the Major Deegan. In the study area, access to and from I-87 North and South is available at the East 233rd Street Interchange. In the vicinity of these interchanges, the Major Deegan consists of three travel lanes in each direction divided by a concrete barrier median. Currently, the expressway experiences delays during rush hour times at the interchanges south of the Jerome Avenue/East 233rd Interchange including the High Bridge Interchange. This section of the Major Deegan is currently being reviewed by the New York State Department of Transportation (NYSDOT) for improvement alternatives under the “Bronx Arterial Needs Major Improvement Study”.



Traffic Count Study Locations for Mosholu Site

Croton Water Treatment Plant

Figure 6.9-1

The local roads providing access to the proposed plant are described below.

Van Cortlandt Park East is a North-South roadway with two travel lanes in each direction plus parking on each side. Van Cortlandt Park East operates between East 233rd Street and Westchester County, where it continues northward as Kimball Avenue.

East 233rd Street is an east-west roadway with one to two travel lanes in each direction plus parking lanes on each side. East 233rd Street operates between I-87/Jerome Avenue and Boston Road along the northwestern edge of Bronx County.

Jerome Avenue is a north-south artery with two travel lanes in each direction plus parking lanes on each side. Jerome Avenue operates between the Macombs Dam Bridge and I-87 along the western portion of Bronx County. The Interborough Rapid Transit (IRT) elevated Jerome Avenue line runs along Jerome Avenue from the intersection with Bainbridge Avenue to the south.

Gun Hill Road is an east-west artery with two travel lanes plus parking lanes in each direction. Gun Hill Road operates between Mosholu Parkway and I-95.

6.9.2.1.2. Traffic Conditions and Analysis

Traffic counts were collected during June 2003. The counts documented traffic conditions on key study area roadways and intersections. The data collection included manual turning movement counts (TMC), automatic traffic recorders (ATR), vehicle classification counts, and travel speed runs along principal corridors. Below is a list of intersections where turning movement counts were performed:

Turning Movement Count Locations:

- East 233rd Street and Napier Avenue
- East 233rd Street and Herkimer Place
- East 233rd Street and Van Cortlandt
- East 233rd Street and Jerome Avenue
- Jerome Avenue and Bainbridge Avenue
- Jerome Avenue and 213th Street
- Jerome Avenue and 212th Street
- Jerome Avenue and East Gun Hill Road
- Bainbridge Avenue and East Gun Hill Road

The TMC at the above listed intersections were conducted on mid-weekdays (Tuesday to Thursday) from 7 AM to 10 AM and from 2 PM to 6 PM to capture the morning and afternoon peak hours.

In addition to TMC, ATR counts were performed for a 24-hour period for seven days at the following locations:

- East 233rd Street, East of Jerome Avenue
- Jerome Avenue, between East 233rd Street and Bainbridge Avenue
- W. Gun Hill Road, West of Jerome Avenue
- Bainbridge Road, North of East 211th Street
- East Gun Hill Road, East of Bainbridge Avenue

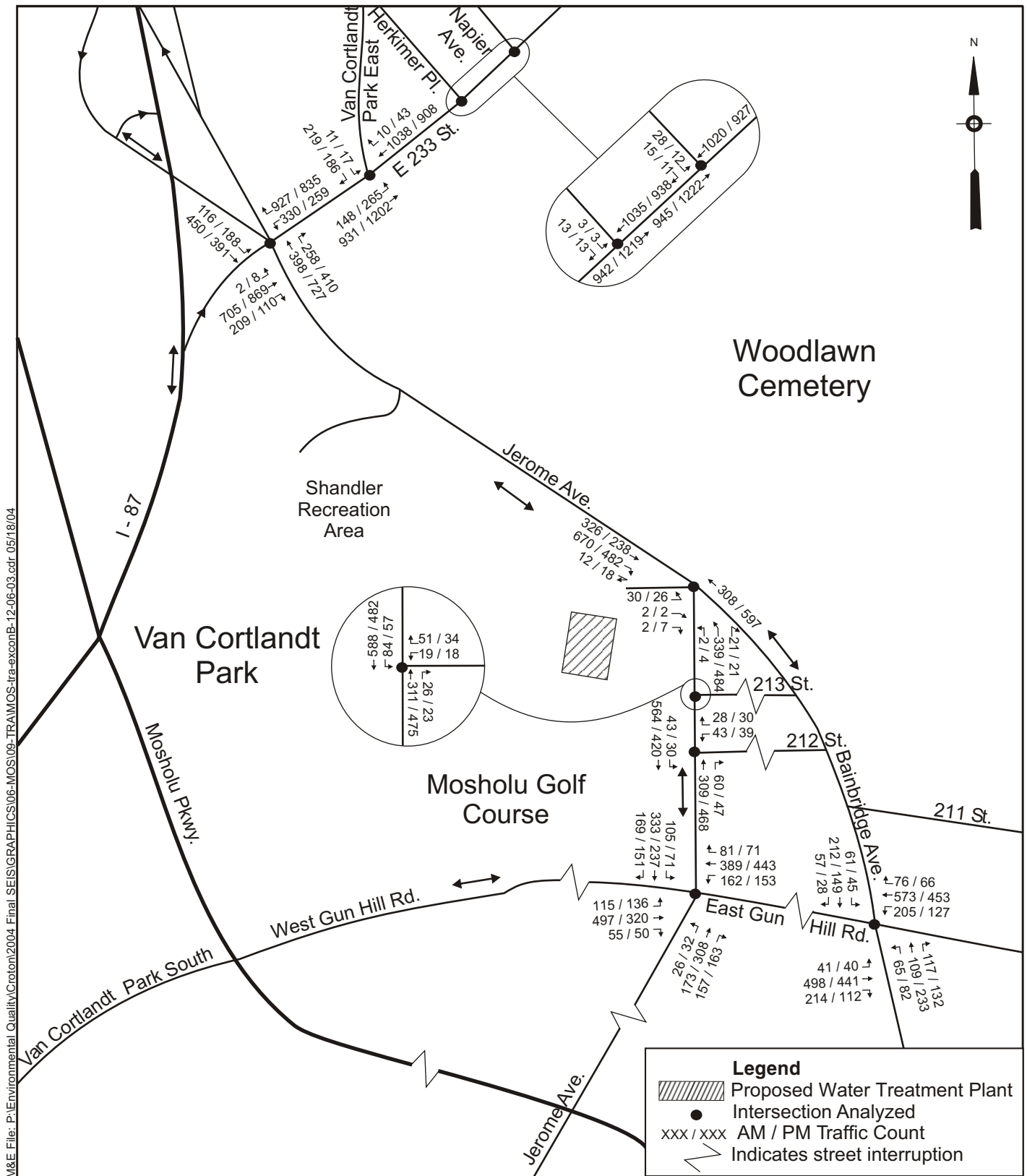
Vehicle classification counts were performed from 7 AM to 10 AM and 2 PM to 6 PM during the weekday and from 6 AM to 9 AM and 2 PM to 5 PM during the weekend. These hours, as well as the hours for which the turning movement counts were performed, were chosen as representative of the periods of heaviest traffic volumes during the potential construction and operation periods. It has been assumed that construction would typically commence at 7 AM and finish no later than 6 PM. Operation would be 24 hours a day, 365 days a year.

To develop year 2003 traffic volumes for the study intersections, the traffic volumes from the TMC's were factored utilizing adjacent ATR counts. The resultant intersection turning movement volumes represent an average mid-weekday volume. Since the study intersections represent only a portion of the roadway networks in the study area, the turning movement volumes of adjacent intersections may not balance. This is due to several possible factors including other intersecting roads and residential and commercial entrances between study intersections and different count days. The year 2003 traffic volumes for the AM and PM peak hours are illustrated in Figure 6.9-2.

A review of the manual count data and the 24-hour ATR data indicates that traffic in the area exhibits some typical commuter characteristics. Traffic volumes increase from the early morning hours and peak between 7:45 and 8:45 AM. Traffic decreases only slightly in the midday periods until the evening peak between 5 and 6 PM.

As noted above, each study area intersection was analyzed in terms of its capacity to accommodate existing traffic volumes and its resulting Level of Service (LOS) using the Highway Capacity Manual procedures. A summary of findings is presented in Table 6.9-1 with the key findings discussed below. See Section 4.9, Data Collection and Impact Methodologies, Traffic and Transportation for the procedural details.

Currently, all of the signalized intersections in the study area operate at an overall LOS D or better in both peak hours. At the intersection of E. 233rd Street and Jerome Avenue, one individual movement operates at worse LOS. The one unsignalized intersection in the study area, East 233rd Street and Herkimer Place, operates at acceptable levels of service in both peak hours.



Not To Scale

Mosholu Site Existing Traffic Volumes - AM/PM Hour

Croton Water Treatment Plant

Figure 6.9-2

TABLE 6.9-1. 2003 EXISTING TRAFFIC CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	EXISTING CONDITIONS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS
East 233rd Street at Napier Avenue	EB – T	0.50	14.2	B	0.61	16.0	B
	WB – T	0.56	15.1	B	0.46	13.6	B
	SB – LR	0.12	30.6	C	0.06	29.5	C
	Intersection		15.0	B		15.1	B
East 233rd Street at Van Cortlandt Park	EB – LT	0.76	6.2	A	0.94	15.0	B
	WB – TR	0.58	10.4	B	0.49	9.2	A
	SB – L	0.04	34.3	C	0.05	34.4	C
	SB – R	0.61	46.7	D	0.47	42.2	D
	Intersection		11.9	B		14.9	B
East 233rd Street at Jerome Avenue ¹	EB – LT	0.89	49.6	D	0.89	50.3	D
	WB – L	0.64	39.4	D	0.58	45.0	D
	WB – R	0.85	12.9	B	0.76	14.9	B
	NB – T	0.44	38.0	D	0.60	35.0	D
	NB – R	0.27	6.4	A	0.38	7.3	A
	SB – L	0.77	69.9	E	1.02	122.3	F
	SB – T	0.50	39.0	D	---	---	---
	SB – LT	---	---	---	0.51	34.9	C
	Intersection		34.0	C		36.2	D
Jerome Avenue at Bainbridge Avenue	EB – LTR	0.08	34.8	C	0.09	35.0	C
	WB – R	0.29	7.1	A	0.60	11.2	B
	NB – LT	0.42	22.1	C	0.66	27.9	C
	NB – R	0.03	16.9	B	0.04	16.9	B
	SB – L	0.46	5.7	A	0.43	6.8	A
	SB – TR	0.27	1.6	A	0.22	1.5	A
	Intersection		8.3	A		12.9	B

TABLE 6.9-1. 2003 EXISTING TRAFFIC CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	EXISTING CONDITIONS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS
Jerome Avenue at 213th Street	WB – LR	0.14	25.2	C	0.11	20.5	C
	NB – TR	0.39	11.1	B	0.56	10.9	B
	SB – LT	0.83	23.3	C	0.65	13.0	B
	Intersection		19.6	B		12.4	B
Jerome Avenue at 212th Street	WB – LR	0.13	25.1	C	0.13	25.0	C
	NB – TR	0.43	11.7	B	0.58	14.0	B
	SB – LT	0.71	17.3	B	0.53	13.1	B
	Intersection		15.9	B		14.4	B
Gun Hill Road (E-W) at Jerome Avenue (N-S)	EB – LTR	0.70	25.7	C	0.51	24.6	C
	WB – LTR	0.75	28.2	C	0.67	23.4	C
	NB – LTR	0.58	23.7	C	0.77	29.9	C
	SB – LTR	0.97	54.8	D	0.76	29.5	C
	Intersection		33.9	C		26.5	C
Gun Hill Road (E-W) at Bainbridge Avenue (N-S)	EB – LTR	0.71	25.1	C	0.52	20.6	C
	WB - LTR	0.68	18.3	B	0.45	7.0	A
	NB – LT	0.43	30.9	C	0.70	43.0	D
	NB - R	0.28	27.7	C	0.31	31.6	C
	SB – LTR	0.69	38.9	D	0.61	40.7	D
	Intersection		25.1	C		22.8	C

Notes:

1. Southbound left turning traffic utilizes the exclusive left turn lane and the adjacent SB through lane during PM Peak conditions due to high traffic volumes.

TABLE 6.9-1. 2003 EXISTING TRAFFIC CONDITIONS FOR MOSHOLU SITE

UNSIGNALIZED INTERSECTIONS	LANE GROUP	EXISTING CONDITIONS					
		WEEKDAY AM PEAK			WEEKDAY PM PEAK		
		V/C	DELAY		V/C	DELAY	
		RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS
East 233rd Street at Herkimer Place	SB-LR	0.06	18.6	C	0.06	18.4	C

ABBREVIATIONS:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, E-W: East-West Roadway, N-S: North-South Roadway

V/C Ratio - Volume to Capacity Ratio

SEC/VEH - Seconds per Vehicle

LOS - Level of Service

At the East 233rd Street and Van Cortlandt Park Avenue intersection, the southbound right turns experience some congestion during the AM and PM peak hours. This movement operates at marginally unacceptable LOS D in the AM peak hour and marginally acceptable LOS D in the PM peak hour, though the overall intersection operates at LOS B in the AM and PM peak hours.

At the East 233rd Street and Jerome Avenue intersection, the eastbound approach and the southbound left turns experience considerable delays in the AM and PM peak hours. The eastbound approach operates at marginally unacceptable LOS D, while the southbound left turns experience LOS E and LOS F conditions in the AM and PM peak hours, respectively. In the PM peak hour, it was discovered through field observation that southbound left turning vehicles make use of the center lane, which is marked for through movement only, to make the maneuver in addition to the exclusive left turn lane. This attests to the fact that the heavy volumes making this movement have insufficient green time to accommodate them. The Highway Capacity Software results reported in Table 6.9-1 reflect the actual use of the lanes as was observed in the field.

6.9.2.1.3. Safety

Accident data information was obtained from the period from May 1, 1998 to April 30, 2001. Table 6.9-2 below summarizes the accident data. Within the study area, there were a total of 154 reportable accidents between May 1, 1998 and April 30, 2001, of which 0 involved a fatality, 116 involved injuries, and 38 were property damage only.

6.9.2.1.4. Parking

Parking availability in the study area consists of curbside parking and restricted off-street parking lots for residential, commercial, and industrial developments. Figure 6.9-3 and Table 6.9-3 shows study area parking options. Alternate side of the street parking is located along Jerome and Bainbridge Avenues. Metered parking is available along East Gun Hill Road. In addition, there are several parking garages that may be utilized for parking. The parking area at the Shandler Recreation Area is also within the study area.

6.9.2.1.5. Transit

Bus services along Jerome Avenue and East 233rd Street include two New York City Transit (NYC Transit) routes (Bx16 and Bx34) and four Westchester County Bee-Line routes (W4, W20, W20x and W21). The Bx16 provides service between the Bedford Park and Eastchester neighborhoods of the Bronx with a frequency of service of approximately six buses per peak hour. The Bx34 provides service between the Fordham and Woodlawn neighborhoods of the Bronx with a frequency of service of approximately seven buses per peak hour. The W4 and W20 provide service between the IRT No. 4 subway line in the Bronx and the cities of Yonkers and White Plains, respectively. The W21 provides service similar to the W20, but with limited stops along this route. Subway transit services in the vicinity of the project site are located along Jerome Avenue. Woodlawn station, the northern terminus of the IRT Jerome Avenue Line, served by the No. 4 train is located immediately south of the site entrance at the intersection of Jerome Avenue and Bainbridge Avenue.

TABLE 6.9-2. MOSHOLU SITE INVENTORY OF ACCIDENTS

Intersection	Total # of Reportable Accidents (1)	Total # of FTL	Total # of INJ	Total # of PDO
E. 233rd Street and Napier Avenue	4	0	4	0
E. 233rd Street and Herkimer Pl.	2	0	2	0
E. 233rd Street and Van Cortlandt Pk.	15	0	11	4
E. 233rd Street and Jerome Avenue	50	0	35	15
Jerome Ave. and Bainbridge Ave.	12	0	9	3
Jerome Ave. and 213th Street	10	0	9	1
Jerome Ave. and 212th Street	5	0	3	2
Jerome Ave. and E. Gun Hill Road	28	0	20	8
Bainbridge Ave. and E. Gun Hill Road	28	0	23	5

NOTES:

(1) Reportable accidents consist of all fatal, injury or property damage accidents that exceed NYS criteria for minimum damage.

Source:

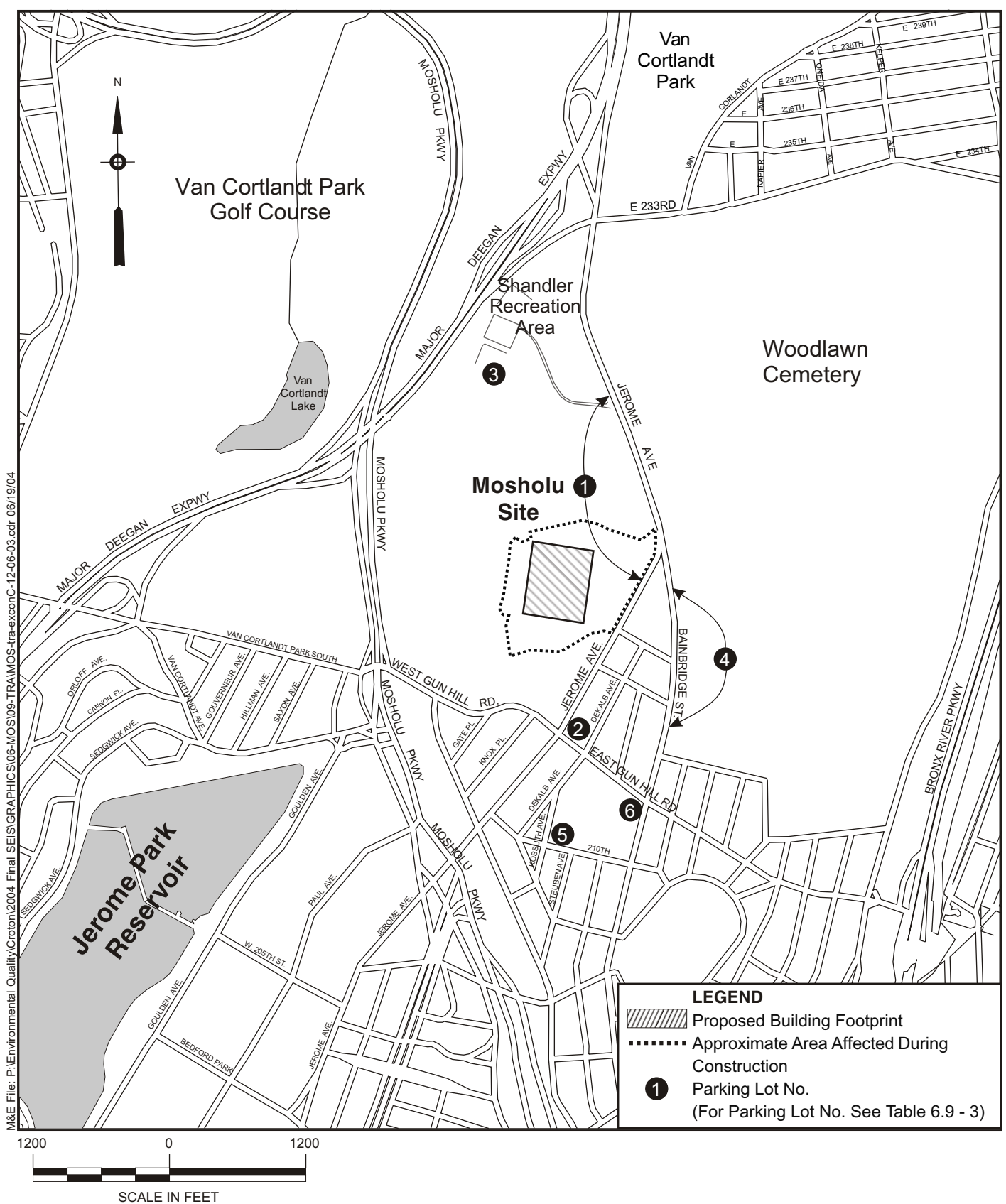
New York Department of Transportation

ABBREVIATION:

FTL – Accidents with a fatality

INJ – Accidents with personal injury

PDO – Property Damage Only Accidents



Parking Availability for Mosholu Site Van Cortlandt Park, NY

TABLE 6.9-3. 2008 EXISTING PARKING FOR MOSHOLU SITE

#	NAME	LOCATION	SPACES	USAGE	NOTES
1	Jerome Street Parking	Between Bainbridge and E 233rd	243	Between Bainbridge Avenue and E. 233rd Street, approximately 95 spaces available.	200 spaces west side (20 metered), 175 spaces east side (20 metered); No Parking (9:30-11am) - West side: Wednesday & Saturday, East side: Tuesday & Friday
2	Municipal Parking Garage	Jerome & Gunhill Road	300	Permit spaces mostly full, paid parking fairly empty. Approximately 50 spaces available	250 permit spaces, 50 pay by hour spaces - 25 cents for 15 minutes
3	Shandler Rec Area	Van Cortlandt Park	230	Approximately 103 spaces used, approximately 100 spaces available	Lot is poorly striped. Additional spaces may be available by re-striping
4	Bainbridge street parking	From Jerome to Gunhill Road	150	Fairly full, approximately 50 spaces available	East side 100 spaces, West side 50 spaces; No Parking (11:30 AM - 1 PM) - East side: Tuesday & Thursday, West side: Monday & Thursday
5	Montefiore Visitor's Parking Garage	120 E. 120th Street	862	Completely full, no spaces available	Some valet parking. Some doctor permit parking
6	Bainbridge parking garage	3450 Bainbridge Avenue	390	Completely full, no spaces available	

6.9.2.2. *Future Without the Project*

The Future Without the Project considerations include the anticipated year of peak construction activities (2010) and the anticipated year of operation (2011) for the proposed water treatment plant. General background traffic growth in the study area is anticipated, though no specific site development is anticipated within the time frame of the proposed project. To account for potential general traffic increases in the Bronx area, an annual growth rate of 0.5 percent per year, as recommended by NYSDOT, was applied to the 2003 Existing Traffic Volumes. Figures 6.9-4 and 6.9-5 show the turning movements anticipated for the study intersections in 2010 and 2011, respectively.

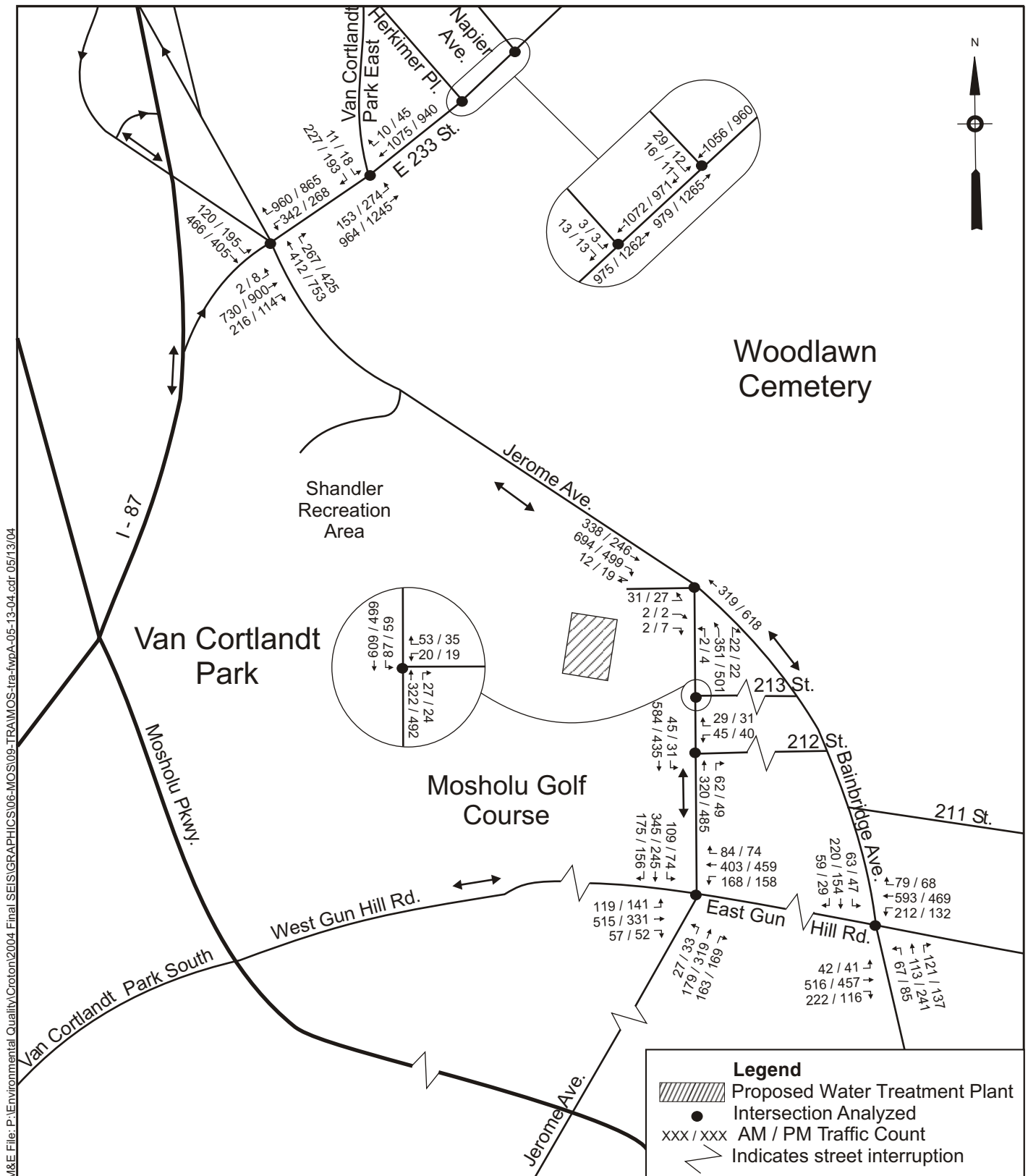
The traffic volumes due to the background growth have increased the congestion in the project area. Results of the 2010 analysis are presented in Table 6.9-4 and the 2011 analysis are presented in Table 6.9-5. In both the 2010 and 2011 analysis years, all intersections would continue to operate at acceptable levels of service (marginally acceptable LOS D or better) in both the AM and PM peak hours.

Under the 2010 and 2011 Future Without the Project conditions, three intersections would have slightly increased overall congestion, or worse LOS, from the 2003 Existing Conditions in the AM peak hour, although both intersections would continue to operate at acceptable LOS conditions. All other study intersections in this area would continue to experience levels of service unchanged from the 2003 Existing Conditions. These intersections and their relative operations are described below.

Under the 2010 and 2011 Future Without the Project conditions, the intersection of East 233rd Street and Jerome Avenue would have increased overall congestion from the 2003 Existing Conditions. The intersection would experience marginally acceptable AM peak hour LOS D in the 2010 and 2011 Future Without the Project conditions, downgraded from LOS C in the 2003 Existing Conditions. In the PM peak hour, the intersection would continue to operate at marginally acceptable LOS D conditions.

Under the 2010 and 2011 Future Without the Project conditions, the intersection of 213th Street at Jerome Avenue would operate at LOS C in the AM peak hour for the 2010 and 2011 Future Without the Project conditions, downgraded from LOS B in the 2003 Existing Conditions. In the PM peak hour, this intersection would continue to operate at acceptable LOS B conditions.

Under the 2010 and 2011 Future Without the Project conditions, the intersection of Gun Hill Road at Jerome Avenue would operate at a marginally acceptable LOS D in the AM peak hour for the 2010 and 2011 Future Without the Project conditions, downgraded from LOS C in the 2003 Existing Conditions. In the PM peak hour, this intersection would continue to operate at acceptable LOS C conditions.

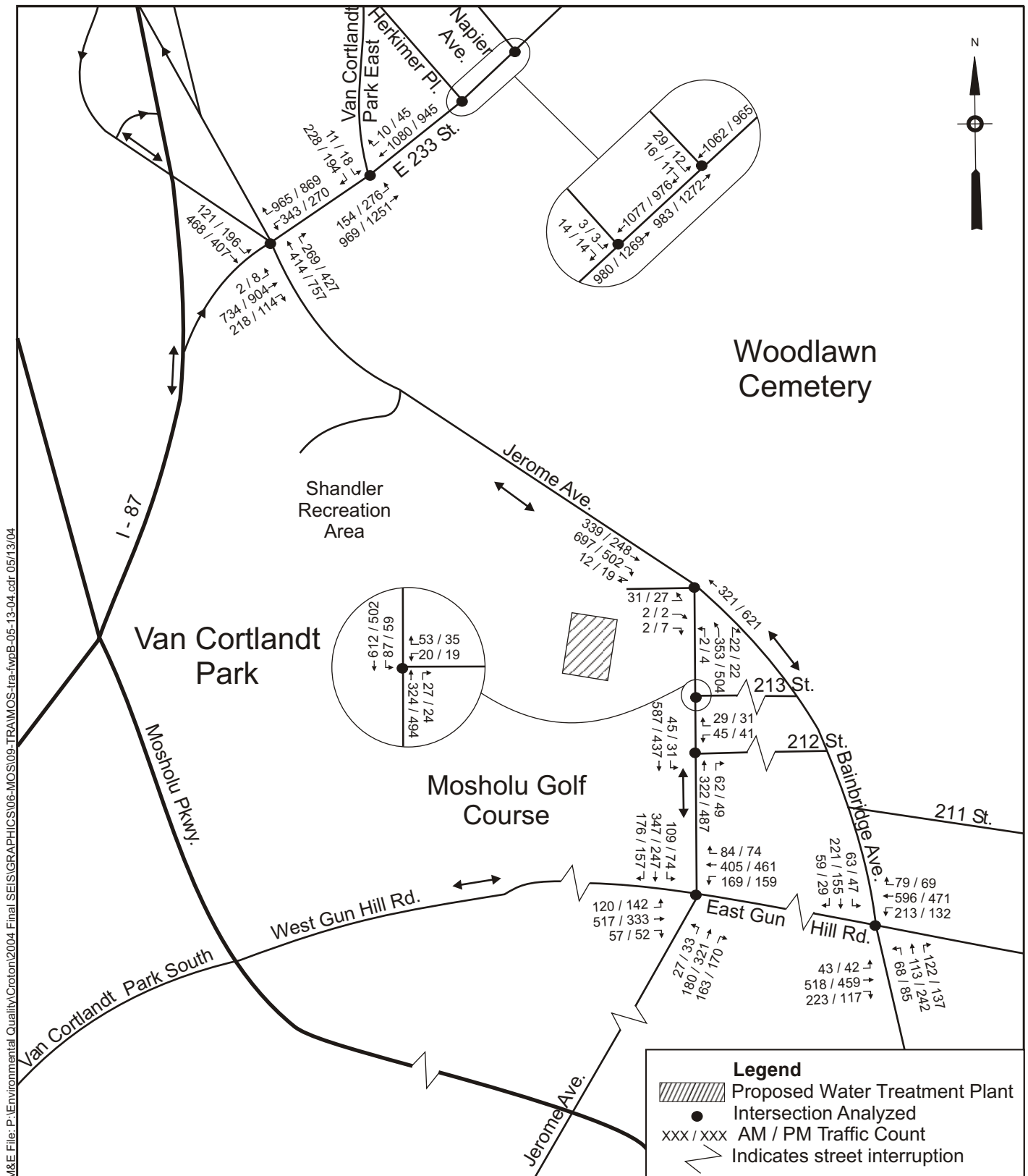


Not To Scale

Mosholu Site 2010 Future Without the Project Traffic Volumes - AM/PM Hour

Croton Water Treatment Plant

Figure 6.9-4



Not To Scale

Mosholu Site 2011 Future Without the Project Traffic Volumes - AM/PM Hour

Croton Water Treatment Plant

Figure 6.9-5

TABLE 6.9-4. 2010 FUTURE WITHOUT THE PROJECT CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	2010 FUTURE WITHOUT THE PROJECT					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS
East 233rd Street at Napier Avenue	EB – T	0.52	14.5	B	0.63	16.5	B
	WB – T	0.58	15.5	B	0.48	13.8	B
	SB – LR	0.13	30.7	C	0.06	29.5	C
	Intersection		15.3	B		15.5	B
East 233rd Street at Van Cortlandt Park	EB – LT	0.80	7.2	A	0.98	21.3	C
	WB – TR	0.60	10.7	B	0.50	9.4	A
	SB – L	0.04	34.3	C	0.05	34.4	C
	SB – R	0.63	47.6	D	0.49	42.6	D
	Intersection		12.6	B		18.6	B
East 233rd Street at Jerome Avenue	EB – LT	0.93	53.2	D	0.92	53.0	D
	WB – L	0.66	40.3	D	0.59	45.2	D
	WB – R	0.88	15.3	B	0.79	16.1	B
	NB – T	0.46	38.3	D	0.63	35.5	D
	NB – R	0.30	6.6	A	0.40	7.4	A
	SB – L	0.86	84.1	F	1.15	>150	F
	SB – T	0.52	39.4	D	---	---	---
		---	---	---	0.54	35.7	D
	Intersection		36.3	D		39.1	D
Jerome Avenue at Bainbridge Avenue	EB – LTR	0.08	34.8	C	0.09	35.0	D
	WB – R	0.30	7.2	A	0.62	11.6	B
	NB – LT	0.43	22.4	C	0.68	28.7	C
	NB – R	0.04	16.9	B	0.04	17.0	B
	SB – L	0.48	6.1	A	0.45	7.2	A
	SB – TR	0.28	1.7	A	0.23	1.5	A
	Intersection		8.5	A		13.3	B

TABLE 6.9-4. 2010 FUTURE WITHOUT THE PROJECT CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	2010 FUTURE WITHOUT THE PROJECT					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS
Jerome Avenue at 213th Street	WB – LR	0.14	25.3	C	0.11	20.5	C
	NB – TR	0.40	11.3	B	0.58	11.3	B
	SB – LT	0.87	26.1	C	0.68	13.6	B
	Intersection		21.4	C		12.9	B
Jerome Avenue at 212th Street	WB – LR	0.14	25.2	C	0.13	25.1	C
	NB – TR	0.45	11.9	B	0.60	14.4	B
	SB – LT	0.73	18.1	B	0.55	13.5	B
	Intersection		16.4	B		14.7	B
Gun Hill Road (E-W) at Jerome Avenue (N-S)	EB – LTR	0.74	27.0	C	0.53	26.1	C
	WB – LTR	0.78	29.9	C	0.70	24.4	C
	NB – LTR	0.60	24.3	C	0.80	31.9	C
	SB – LTR	1.01	64.0	E	0.80	32.1	C
	Intersection		37.3	D		28.2	C
Gun Hill Road (E-W) at Bainbridge Avenue (N-S)	EB – LTR	0.73	26.0	C	0.54	21.0	C
	WB - LTR	0.71	19.4	B	0.47	7.2	A
	NB – LT	0.45	31.5	C	0.73	44.8	D
	NB - R	0.29	27.8	C	0.33	31.9	C
	SB – LTR	0.73	40.9	D	0.66	43.0	D
	Intersection		26.2	C		23.6	C

TABLE 6.9-4. 2010 FUTURE WITHOUT THE PROJECT CONDITIONS FOR MOSHOLU SITE

UNSIGNALIZED INTERSECTIONS	LANE GROUP	2010 FUTURE WITHOUT THE PROJECT					
		WEEKDAY AM PEAK			WEEKDAY PM PEAK		
		V/C	DELAY		V/C	DELAY	
		RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS
East 233rd Street at Herkimer Place	SB-LR	0.06	19.5	C	0.06	19.3	C

ABBREVIATIONS:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, E-W: East-West Roadway, N-S: North-South Roadway

V/C Ratio - Volume to Capacity Ratio

SEC/VEH - Seconds per Vehicle

LOS - Level of Service

--- HCS results not provided for given lane group

TABLE 6.9-5. 2011 FUTURE WITHOUT THE PROJECT CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	2011 FUTURE WITHOUT THE PROJECT					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS
East 233rd Street at Napier Avenue	EB – T	0.52	14.5	B	0.64	16.5	B
	WB – T	0.58	15.6	B	0.48	13.8	B
	SB – LR	0.13	30.7	C	0.06	29.5	C
	Intersection		15.4	B		15.5	B
East 233rd Street at Van Cortlandt Park	EB – LT	0.81	7.4	A	0.98	22.7	C
	WB – TR	0.61	10.7	B	0.51	9.4	A
	SB – L	0.04	34.3	C	0.05	34.4	C
	SB – R	0.63	47.8	D	0.49	42.7	D
	Intersection		12.8	B		19.4	B
East 233rd Street at Jerome Avenue	EB – LT	0.93	54.1	D	0.92	53.7	D
	WB – L	0.66	40.3	D	0.60	45.5	D
	WB – R	0.89	15.6	B	0.82	17.6	B
	NB – T	0.46	38.3	D	0.63	35.6	D
	NB – R	0.30	6.6	A	0.40	7.5	A
	SB – L	0.87	86.5	F	1.16	>150	F
	SB – T	0.52	39.4	D	---	---	---
	SB – LT	---	---	---	0.55	35.9	D
	Intersection		36.7	D		39.8	D
Jerome Avenue at Bainbridge Avenue	EB – LTR	0.08	34.8	C	0.09	35.0	D
	WB – R	0.30	7.2	A	0.62	11.7	B
	NB – LT	0.44	22.5	C	0.68	28.9	C
	NB – R	0.04	16.9	B	0.04	17.0	B
	SB – L	0.48	6.1	A	0.46	7.3	A
	SB – TR	0.28	1.7	A	0.23	1.5	A
	Intersection		8.5	A		13.4	B

TABLE 6.9-5. 2011 FUTURE WITHOUT THE PROJECT CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	2011 FUTURE WITHOUT THE PROJECT					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS
Jerome Avenue at 213th Street	WB – LR	0.14	25.3	C	0.11	20.5	C
	NB – TR	0.40	11.3	B	0.58	11.3	B
	SB – LT	0.87	26.4	C	0.68	13.7	B
	Intersection		21.6	C		12.9	B
Jerome Avenue at 212th Street	WB – LR	0.14	25.2	C	0.13	25.1	C
	NB – TR	0.45	12.0	B	0.61	14.5	B
	SB – LT	0.74	18.3	B	0.55	13.5	B
	Intersection		16.5	B		14.8	B
Gun Hill Road (E-W) at Jerome Avenue (N-S)	EB – LTR	0.74	27.2	C	0.53	26.3	C
	WB – LTR	0.79	30.2	C	0.70	24.6	C
	NB – LTR	0.60	24.4	C	0.81	32.2	C
	SB – LTR	1.01	65.2	E	0.80	32.5	C
	Intersection		37.8	D		28.5	C
Gun Hill Road (E-W) at Bainbridge Avenue (N-S)	EB – LTR	0.74	26.2	C	0.54	21.1	C
	WB - LTR	0.72	19.7	B	0.48	7.2	A
	NB – LT	0.45	31.6	C	0.73	45.1	D
	NB - R	0.29	27.9	C	0.33	31.9	C
	SB – LTR	0.73	41.1	D	0.66	43.2	D
	Intersection		26.4	C		23.7	C

TABLE 6.9-5. 2011 FUTURE WITHOUT THE PROJECT CONDITIONS FOR MOSHOLU SITE

UNSIGNALIZED INTERSECTIONS	LANE GROUP	2011 FUTURE WITHOUT THE PROJECT					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	DELAY		V/C	DELAY	
		RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS
East 233rd Street at Herkimer Place	SB-LR	0.06	19.2	C	0.06	19.0	C

ABBREVIATIONS:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, E-W: East-West Roadway, N-S: North-South Roadway

V/C Ratio - Volume to Capacity Ratio

SEC/VEH - Seconds per Vehicle

LOS - Level of Service

--- HCS results not provided for given lane group

6.9.3. Potential Impacts

Potential impact analyses were performed for the water treatment plant site to determine projected future conditions with the proposed project in place and fully operational as well as during the project construction phase. The 2011 Future With the Project conditions were compared with the 2011 Future Without the Project conditions to determine whether or not the proposed project would have impacts on the study area traffic and safety. In addition, the 2010 Future With the Project conditions were compared to the 2010 Future Without the Project conditions to determine whether the construction of the proposed project would have impacts on the study area traffic and safety. The following section describes the potential project impacts should the proposed plant be constructed and made operational at the water treatment plant site.

6.9.3.1. Potential Project Impacts

When fully constructed and operational, the future peak hour trips associated with the proposed project would be almost entirely employee-related. Based on conceptual engineering design, Table 6.9-6 shows the number of employees for each shift. For a more conservative analysis, however, it was assumed that employees for the first shift would arrive at the proposed water treatment plant during the AM peak hour as those for the off shift leave, and that they would leave during the PM peak hour, as those for the off shift would arrive. Table 6.9-7 shows the anticipated truck deliveries during plant activities, which are based on conceptual engineering design. All truck deliveries would be scheduled during normal working hours and would not impact either the AM or PM peaks.

TABLE 6.9-6. WATER TREATMENT PLANT STAFFING

	Employees	
	Shift 1	Off-Shift*
Mosholu Water Treatment Plant	41	12

*Off-shift consists of one shift M-F and three shifts S-S.

TABLE 6.9-7. WATER TREATMENT PLANT TRUCK DELIVERIES

Type of Truck	Operation	Average Traffic	Peak Traffic
Tanker Trucks	Chemical	16 deliveries/week Potential 4 deliveries/day	32 deliveries/week Potential 6 deliveries/day
Medium Trucks	Misc. Deliveries	2 deliveries/day	2 deliveries/day
Total		6 deliveries/day	8 deliveries/day

As described in Section 4.9, Data Collection and Impact Methodologies, Traffic and Transportation, it is assumed that employees would arrive at the site via mass transit, bus, or

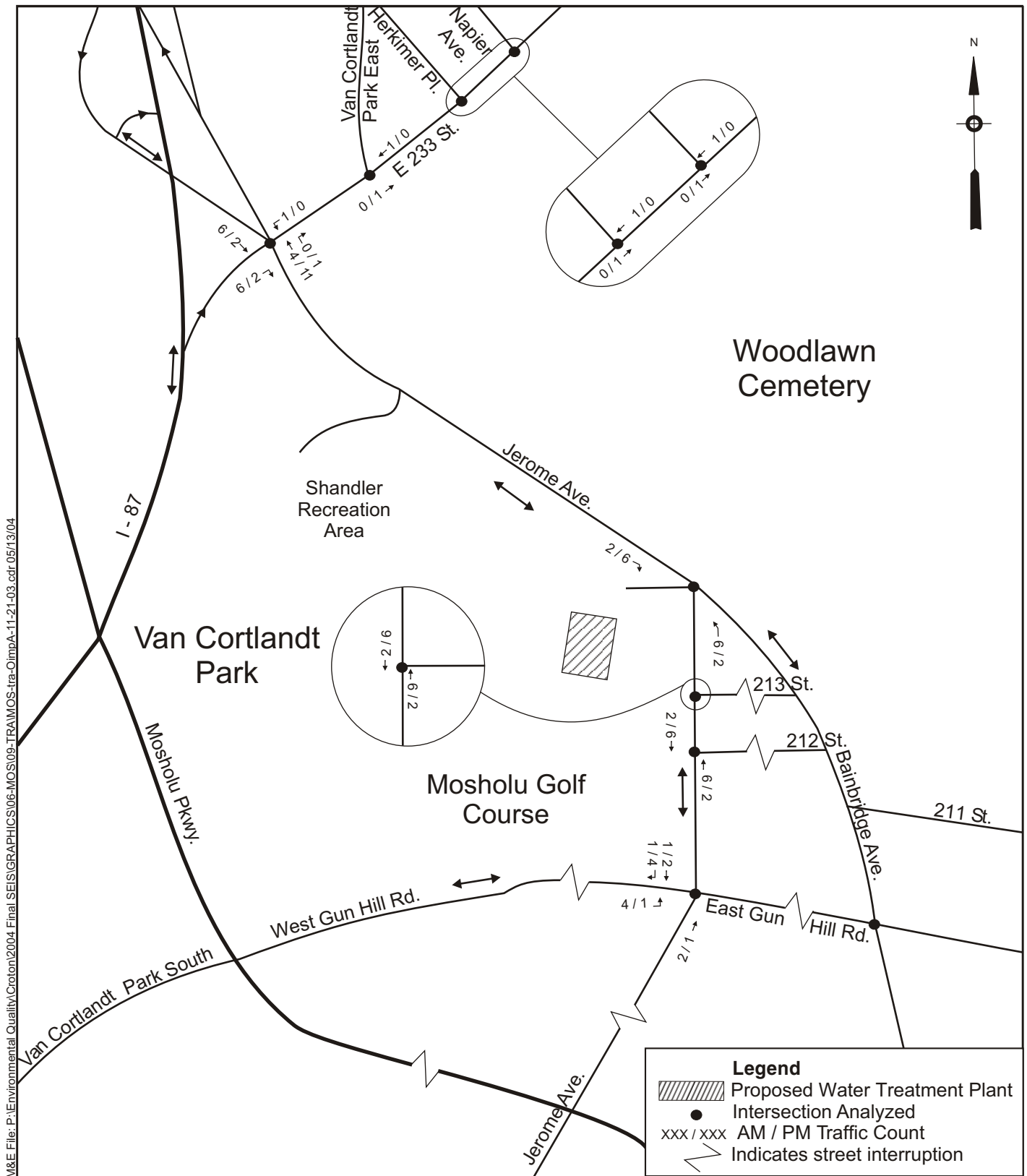
private vehicles. It was likewise assumed that the vehicle occupancy rate would be 1.2 or that 20 percent of employees would carpool to the site. Table 6.9-8 shows the vehicular trip forecast for the proposed project.

TABLE 6.9-8. VEHICULAR TRIP FORECAST

Peak Hour	Trips/Hour via Auto		
	In	Out	Total
AM	19	6	25
PM	6	19	25

Vehicle trips were assigned to the study area network, using the assignment pattern for autos, as discussed in Section 4.9, Data Collection and Methods of Analysis, Traffic and Transportation, and the project generated traffic for the proposed plant is shown in Figure 6.9-6. Figure 6.9-7 shows the total combined traffic under operation conditions.

Overall, the 25 vehicles per hour (vph) generated for the operations of the facility at the Mosholu Site after construction is substantially below the threshold of 50 vph, which is typically used to determine the need for detailed quantitative analysis for potential impacts. Furthermore, when distributed among the different ingress/egress routes to the site, this already low level of generated traffic would be even further reduced, minimizing the likelihood for potential traffic impacts during the operation of the proposed facility. A qualitative analysis was undertaken at each intersection to ensure that no adverse impacts would occur as a result of the traffic generated for operation of the proposed facility.

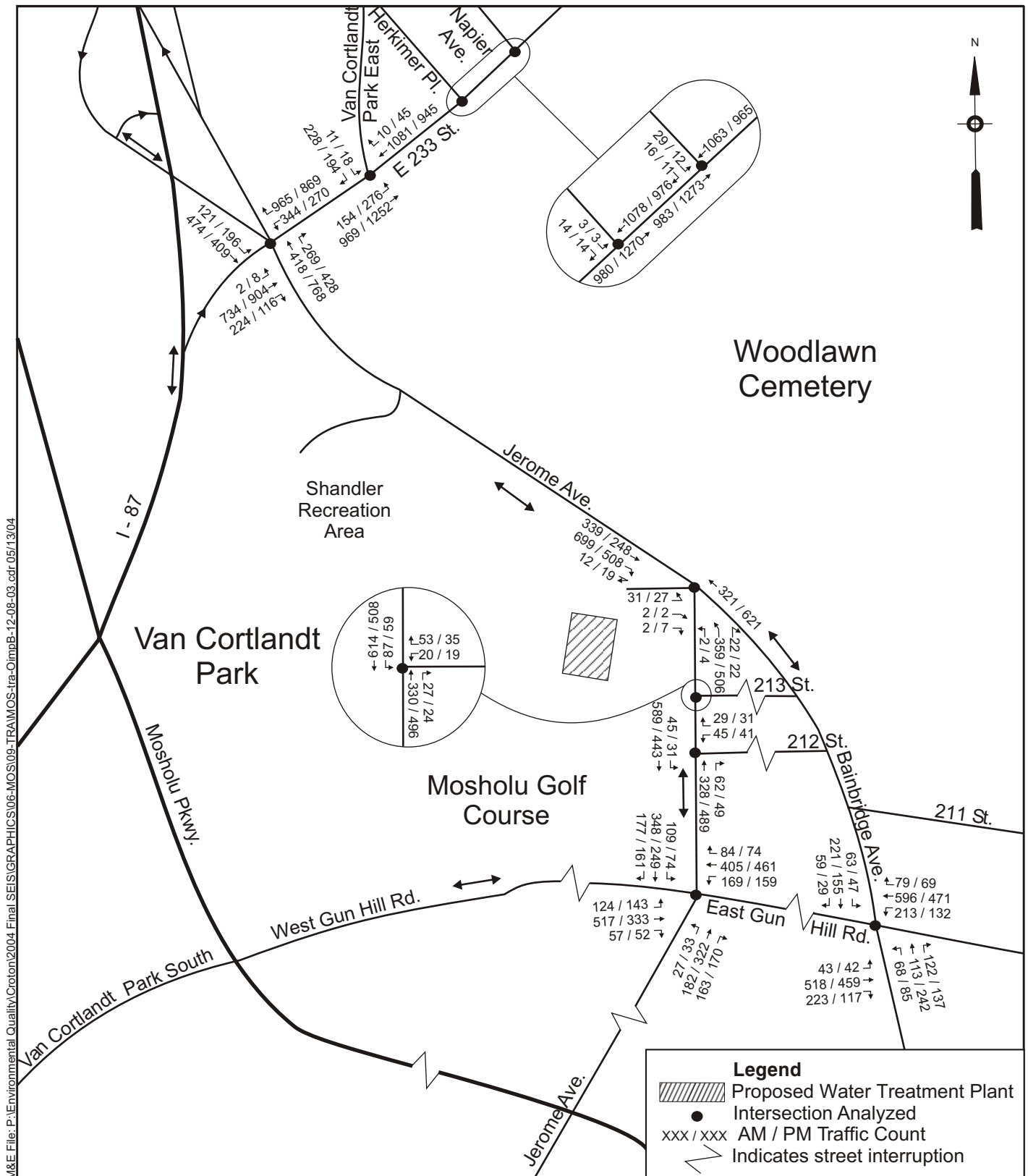


Not To Scale

Mosholu Site Operations Traffic Distribution - AM/PM Hour

Croton Water Treatment Plant

Figure 6.9-6



Not To Scale

Mosholu Site Operational Year 2011 Traffic Volumes - AM/PM Hour

Croton Water Treatment Plant

Figure 6.9-7

6.9.3.1.1. Traffic

Applying the potential traffic impact criteria described in Section 4.9, Data Collection and Impact Methodologies, Traffic and Transportation, and as shown in Table 6.9-9, one signalized intersection would potentially experience adverse impacts due to operation traffic in the AM and/or PM peak hours. That intersection is described below.

At the 233rd Street and Jerome Avenue intersection, the southbound left turns would experience an increase in delay in both the AM and PM peak hours. In the AM peak hour, the southbound left turns would experience an increase in delay from 86.5 seconds (LOS F) to 89.1 seconds (LOS F). In the PM peak hour, the southbound left turns would experience an increase in delay that would exceed established traffic impact thresholds included in the CEQR Tech Manual Guidelines – in both the 2011 Future Without the Project and the 2011 Future With the Project conditions, the delay exceeds 150 seconds.

6.9.3.1.2. Parking

With the provision of on-site parking for employees after construction is complete, no adverse parking impacts would be anticipated.

6.9.3.1.3. Safety

No additional accidents are anticipated given the low traffic volumes generated by the proposed project; therefore, no adverse traffic safety impacts are anticipated

6.9.3.1.4. Transit

The proposed project would generate approximately 21 transit trips utilizing multiple transit stations. Specifically, operational activity is anticipated to generate additional transit ridership using NYC Transit buses, Westchester County buses and one (1) MTA subway station. One (1) MTA subway station, Woodlawn Station of Route 4, is anticipated to be utilized during the proposed plant's operation. Routes BX 16, BX 34, W 4, W 20, W 20x and W 21 would be bus services utilized.

This volume of transit trips falls below the threshold where detailed analysis would be necessary; therefore, no adverse transit-related impacts would be anticipated under the 2011 Future With the Project conditions at the proposed site.

TABLE 6.9-9. 2011 FUTURE WITH THE PROJECT CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	2011 FUTURE WITHOUT THE PROJECT						2011 OPERATIONAL IMPACTS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	DELAY (SEC/VEH)	LOS	V/C	DELAY (SEC/VEH)	LOS	V/C	DELAY (SEC/VEH)	LOS	V/C	DELAY (SEC/VEH)	LOS
RATIO					RATIO			RATIO			RATIO		
East 233rd Street at Napier Avenue	EB – T	0.52	14.5	B	0.64	16.5	B	0.52	14.5	B	0.64	16.5	B
	WB – T	0.58	15.6	B	0.48	13.8	B	0.58	15.6	B	0.48	13.8	B
	SB – LR	0.13	30.7	C	0.06	29.5	C	0.13	30.7	C	0.06	29.5	C
	Intersection		15.4	B		15.5	B		15.4	B		15.5	B
233rd Street (E-W) at Van Cortlandt Park East (N-S)	EB – LT	0.81	7.4	A	0.98	22.7	C	0.81	7.4	A	0.98	22.8	C
	WB – TR	0.61	10.7	B	0.51	9.4	A	0.61	10.7	B	0.51	9.4	A
	SB – L	0.04	34.3	C	0.05	34.4	C	0.04	34.3	C	0.05	34.4	C
	SB – R	0.63	47.8	D	0.49	42.7	D	0.63	47.8	D	0.49	42.7	D
	Intersection		12.8	B		19.4	B		12.8	B		19.4	B
233rd Street (E-W) at Jerome Avenue (N-S)	EB – LT	0.93	54.1	D	0.92	53.7	D	0.94	55.0	D	0.92	53.9	D
	WB – L	0.66	40.3	D	0.60	45.5	D	0.67	40.7	D	0.60	45.5	D
	WB – R	0.89	15.6	B	0.82	17.6	B	0.93	20.8	C	0.82	17.6	B
	NB – T	0.46	38.3	D	0.63	35.6	D	0.46	38.4	D	0.64	35.9	D
	NB – R	0.30	6.6	A	0.40	7.5	A	0.30	6.6	A	0.40	7.5	A
	SB – L	0.87	86.5	F	1.16	>150	F	0.88	89.1	F	1.21	>150	F
	SB – T	0.52	39.4	D	---	---	---	0.53	39.6	D	---	---	---
	SB - LT	---	---	---	0.55	35.9	D	---	---	---	0.56	36.1	D
	Intersection		36.7	D		39.8	D		38.5	D		40.6	D
Jerome Avenue at Bainbridge Avenue	EB – LTR	0.08	34.8	C	0.09	35.0	D	0.08	34.8	C	0.09	35.0	D
	WB – T	0.30	7.2	A	0.62	11.7	B	0.30	7.2	A	0.62	11.7	B
	NB – LT	0.44	22.5	C	0.68	28.9	C	0.44	22.6	C	0.69	29.0	C
	NB – R	0.04	16.9	B	0.04	17.0	B	0.04	16.9	B	0.04	17.0	B
	SB – L	0.48	6.1	A	0.46	7.3	A	0.49	6.2	A	0.46	7.3	A
	SB – TR	0.28	1.7	A	0.23	1.5	A	0.28	1.7	A	0.23	1.5	A
	Intersection		8.5	A		13.4	B		8.6	A		13.4	B

TABLE 6.9-9. 2011 FUTURE WITH THE PROJECT CONDITIONS FOR MOSHOLU SITE

SIGNALIZED INTERSECTIONS	LANE GROUP	2011 FUTURE WITHOUT THE PROJECT						2011 OPERATIONAL IMPACTS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	DELAY (SEC/VEH)	LOS	V/C	DELAY (SEC/VEH)	LOS	V/C	DELAY (SEC/VEH)	LOS	V/C	DELAY (SEC/VEH)	LOS
RATIO					RATIO			RATIO			RATIO		
Jerome Avenue at 213th Street	WB – LR	0.14	25.3	C	0.11	20.5	C	0.14	25.3	C	0.11	20.5	C
	NB – TR	0.40	11.3	B	0.58	11.3	B	0.41	11.4	B	0.59	11.3	B
	SB – LT	0.87	26.4	C	0.68	13.7	B	0.88	26.8	C	0.69	13.9	B
	Intersection		21.6	C		12.9	B		21.8	C		13.0	B
Jerome Avenue at 212th Street	WB – LR	0.14	25.2	C	0.13	25.1	C	0.14	25.2	C	0.13	25.1	C
	NB – TR	0.45	12.0	B	0.61	14.5	B	0.46	12.0	B	0.61	14.5	B
	SB – LT	0.74	18.3	B	0.55	13.5	B	0.74	18.4	B	0.56	13.6	B
	Intersection		16.5	B		14.8	B		16.6	B		14.8	B
Gun Hill Road (E-W) at Jerome Avenue (N-S)	EB – LTR	0.74	27.2	C	0.53	26.3	C	0.75	27.6	C	0.53	26.5	C
	WB – LTR	0.79	30.2	C	0.70	24.6	C	0.79	30.3	C	0.70	24.6	C
	NB – LTR	0.60	24.4	C	0.81	32.2	C	0.61	24.5	C	0.81	32.3	C
	SB – LTR	1.01	65.2	E	0.80	32.5	C	1.01	66.0	E	0.81	33.1	C
	Intersection		37.8	D		28.5	C		38.2	D		28.7	C
Gun Hill Road (E-W) at Bainbridge Avenue (N-S)	EB – LTR	0.74	26.2	C	0.54	21.1	C	0.74	26.2	C	0.54	21.1	C
	WB - LTR	0.72	19.7	B	0.48	7.2	A	0.72	19.7	B	0.48	7.2	A
	NB – LT	0.45	31.6	C	0.73	45.1	D	0.45	31.6	C	0.73	45.1	D
	NB - R	0.29	27.9	C	0.33	31.9	C	0.29	27.9	C	0.33	31.9	C
	SB – LTR	0.73	41.1	D	0.66	43.2	D	0.73	41.1	D	0.66	43.2	D
	Intersection		26.4	C		23.7	C		26.4	C		23.7	C

TABLE 6.9-9. 2011 FUTURE WITH THE PROJECT CONDITIONS FOR MOSHOLU SITE

UNSIGNALIZED INTERSECTIONS	LANE GROUP	2011 FUTURE WITHOUT THE PROJECT						2011 OPERATIONAL IMPACTS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	DELAY		V/C	DELAY		V/C	DELAY		V/C	DELAY	
		RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS
East 233rd Street at Herkimer Place	WB-R	0.06	19.2	C	0.06	19.0	C	0.06	19.2	C	0.06	19.0	C

ABBREVIATIONS:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, E-W: East-West Roadway, N-S: North-South Roadway

V/C Ratio - Volume to Capacity Ratio

SEC/VEH - Seconds per Vehicle

LOS - Level of Service

--- HCS results not provided for given lane group

6.9.3.2. *Potential Construction Impacts*

Transportation data and planning assumptions for the construction workers as well as the construction trucks during the 2010 peak construction period were presented previously in Section 4.9, Data Collection and Impact Methodologies, Traffic and Transportation. As described above in Existing Conditions, there is a subway line and multiple bus routes along major streets in the vicinity of the water treatment plant site.

The construction workers would access the site based upon the following modal splits. It was assumed that 55 percent of construction workers would arrive in private vehicles, 39 percent would arrive by mass transit and 6 percent by other means. Based on conceptual engineering design, Table 6.9-10 shows the anticipated 2010 peak year construction resources based upon conceptual engineering design. Construction resource loading estimates throughout the construction period are available from the conceptual engineering design for both trucks and workers. These estimates were analyzed to determine the combined truck and worker peak year and volumes. Tables 6.9-11 and 6.9-12 show the resulting peak construction generated traffic and transit trips, respectively. Typically, construction vehicles are considered to be equivalent to 1.5 passenger cars for 2-axle trucks and 2.0 passenger cars for 3-axle trucks. To obtain conservative traffic analysis results, however, all construction trucks were assumed to be 3-axle trucks, or equivalent to 2.0 passenger cars.

Traffic assignment of construction workers to and from the site was determined through the use of population densities from census information within a 5-mile radius of the site. Census areas that exhibited larger population densities within this area were assumed to generate a higher number of project-related trips. Traffic assignment of construction trucks was based on anticipated truck origins and known truck routes in the study area.

The traffic assignment pattern for auto vehicles generated by construction workers was assumed to be the same as the one generated by employees during operation. Since the project site does not have parking for the majority construction work force, construction worker vehicles were distributed to the roadway network in the vicinity of the project site to public parking areas that could be utilized by the contractor to provide worker parking. Construction worker vehicles would park at the Shandler Park lot and along Jerome Avenue. Presently, parking is in high demand along Jerome Avenue and is also subject to alternate street parking.

The site access plan has been revised to provide a one-way entrance just north of the intersection of Jerome Avenue and Bainbridge Avenue. The present access road to the golf course would be widened and used as a truck and vehicular egress roadway with signal control. Trucks would only be allowed to travel north on Jerome Avenue on exiting the site and would have to enter the site traveling south on Jerome Avenue (Figure 6.9-8).

The site access roadway for vehicles traveling south on Jerome Avenue would be located approximately 150 feet north of the intersection of Jerome Avenue, Bainbridge Avenue, and the existing golf course access road. The existing road to the golf course would temporarily be converted to an eastbound one-way roadway. The access road and the golf course road would merge into one two-way roadway west of the intersection. There would be a left-turn prohibition

for all trucks seeking to enter the project site from the south or exit the project site to the south. A traffic control agent would be positioned at this intersection during peak construction periods to enforce this restriction. This would cause the vast majority of trucks to access or exit the project site via the Major Deegan Expressway at the 233rd Street intersection (Figure 6.9-8).

The Major Deegan Expressway at the 233rd Street intersection also will be widened to facilitate its use by construction trucks. The right turn lane of the northbound exit ramp will be widened and turned into a right-turn only lane. In addition, a new right turn lane will be added to the westbound portion of East 233rd Street at the intersection of East 233rd Street and Jerome Avenue. The purpose of this additional lane will be to effectively provide two lanes for left turns from the westbound E. 233rd Street on to Jerome Avenue in the south direction (Figure 6.9-9).

TABLE 6.9-10. CONSTRUCTION RESOURCE REQUIREMENTS

Potential Construction Impacts	Mosholu
Peak Year	2010
Construction Hours	7:00AM to 6:00 PM
Construction Shifts	1
Construction workers on a peak day	660
Construction vehicles on a peak day	108
Peak time of arrival (workers)	6:00 AM to 7:00 AM
Peak time of departure (workers)	6:00 PM to 7:00 PM
Period of arrivals and departures (trucks)	7:00 AM to 6:00 PM

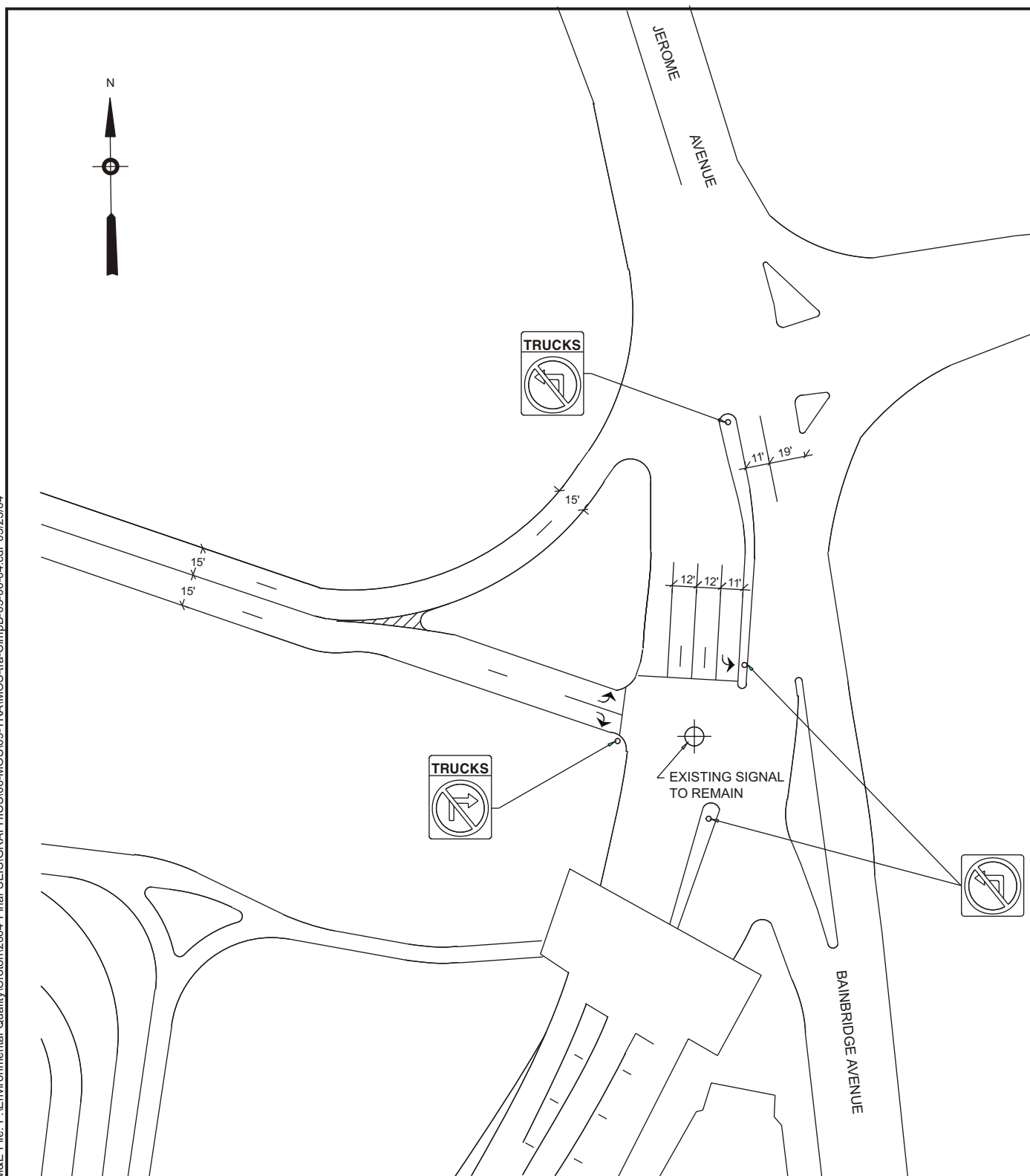
TABLE 6.9-11. CONSTRUCTION TRIP GENERATION

	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Auto	282	15	297	15	282	297
Trucks	20	2	22	2	20	22
Total	302	17	319	17	302	319
PCE Total	322	19	341	19	322	341

TABLE 6.9-12. CONSTRUCTION TRANSIT GENERATION

Transit	Line	Station	AM and PM Peak
MTA	4	Woodlawn	166 Passengers
NYC Transit	Bx 16 & Bx 34	Bronx	88 Passengers
Westchester County Bee Line Buses	W4, W20, W20x, W21	Westchester	3 Passengers
Total			257 Passengers

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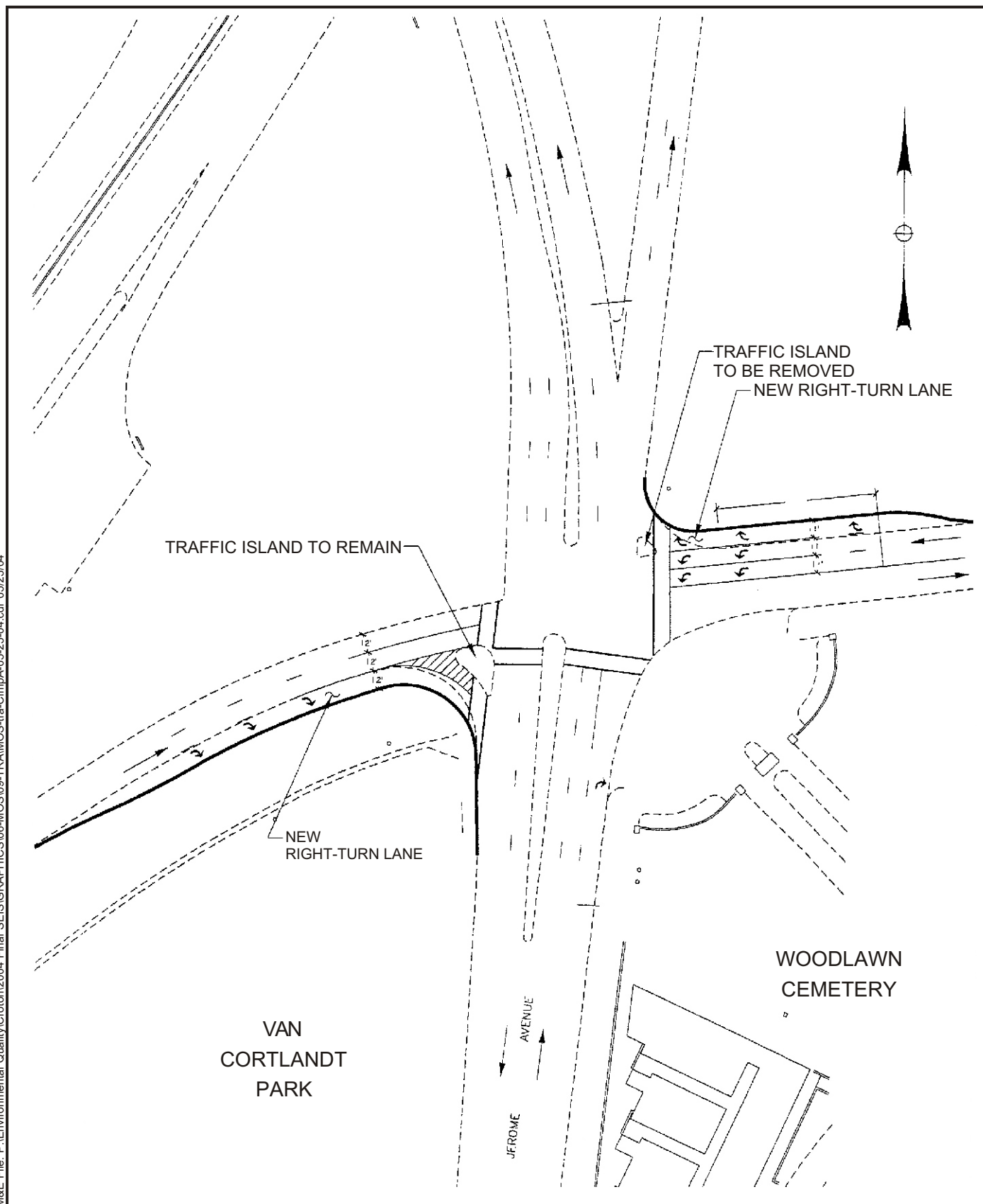
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Mosholu Site Proposed Site Access

Croton Water Treatment Plant

Figure 6.9-8

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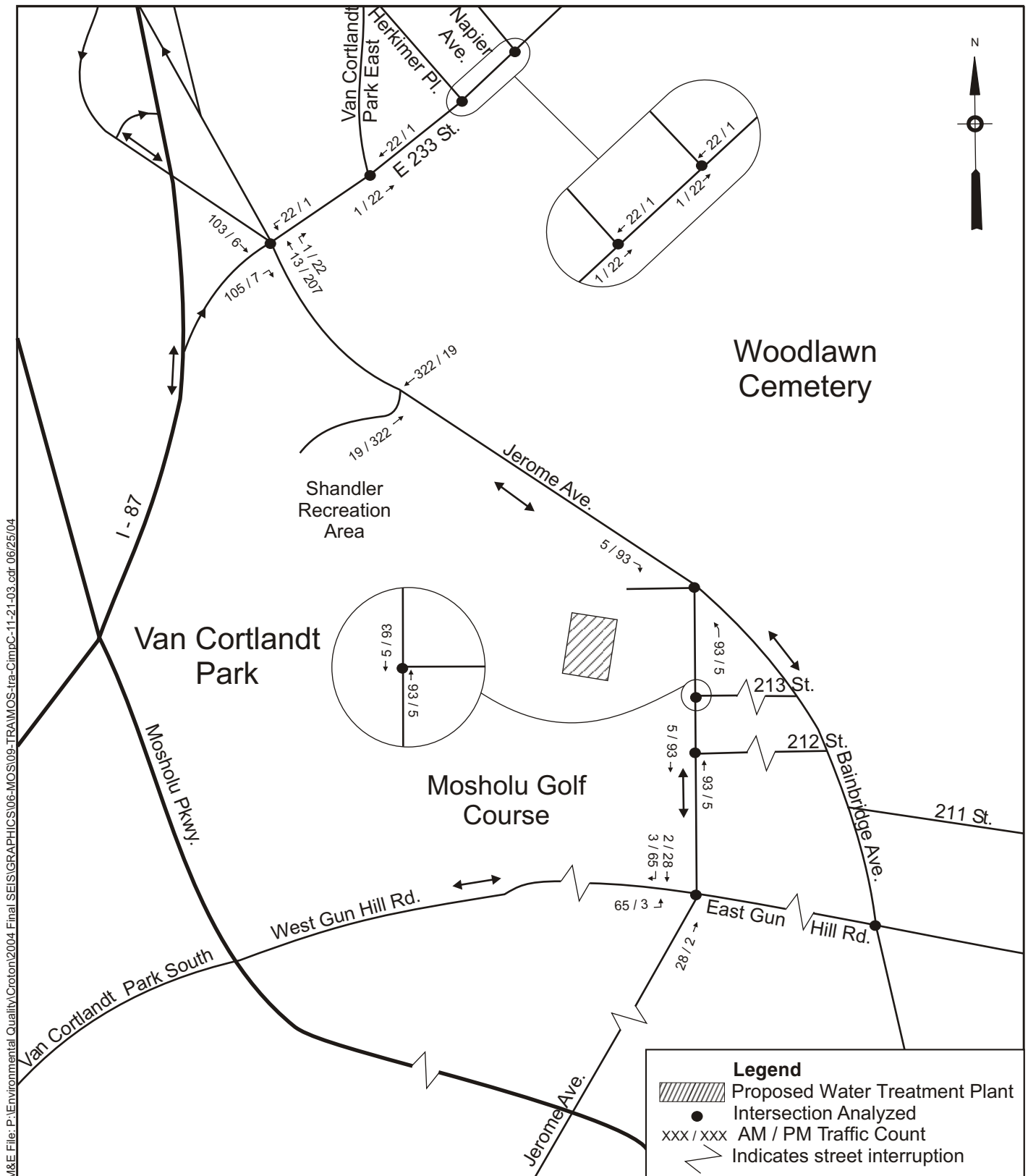
Mosholu Site Proposed Roadway Widening

Croton Water Treatment Plant

Figure 6.9-9

The project-generated construction traffic was added to the year 2010 Future Without the Project volumes in the AM and PM peak hours and capacity analyses were performed for these combined conditions. Figure 6.9-10 shows the proposed facility's construction generated traffic. Figure 6.9-11 shows the total combined traffic under construction conditions. Table 6.9-13 shows a comparison of the traffic conditions for the 2010 Future Without the Project and the 2010 Potential Construction Impacts.

The following is a summary of potential impacts associated with constructing the proposed project at the water treatment plant site.



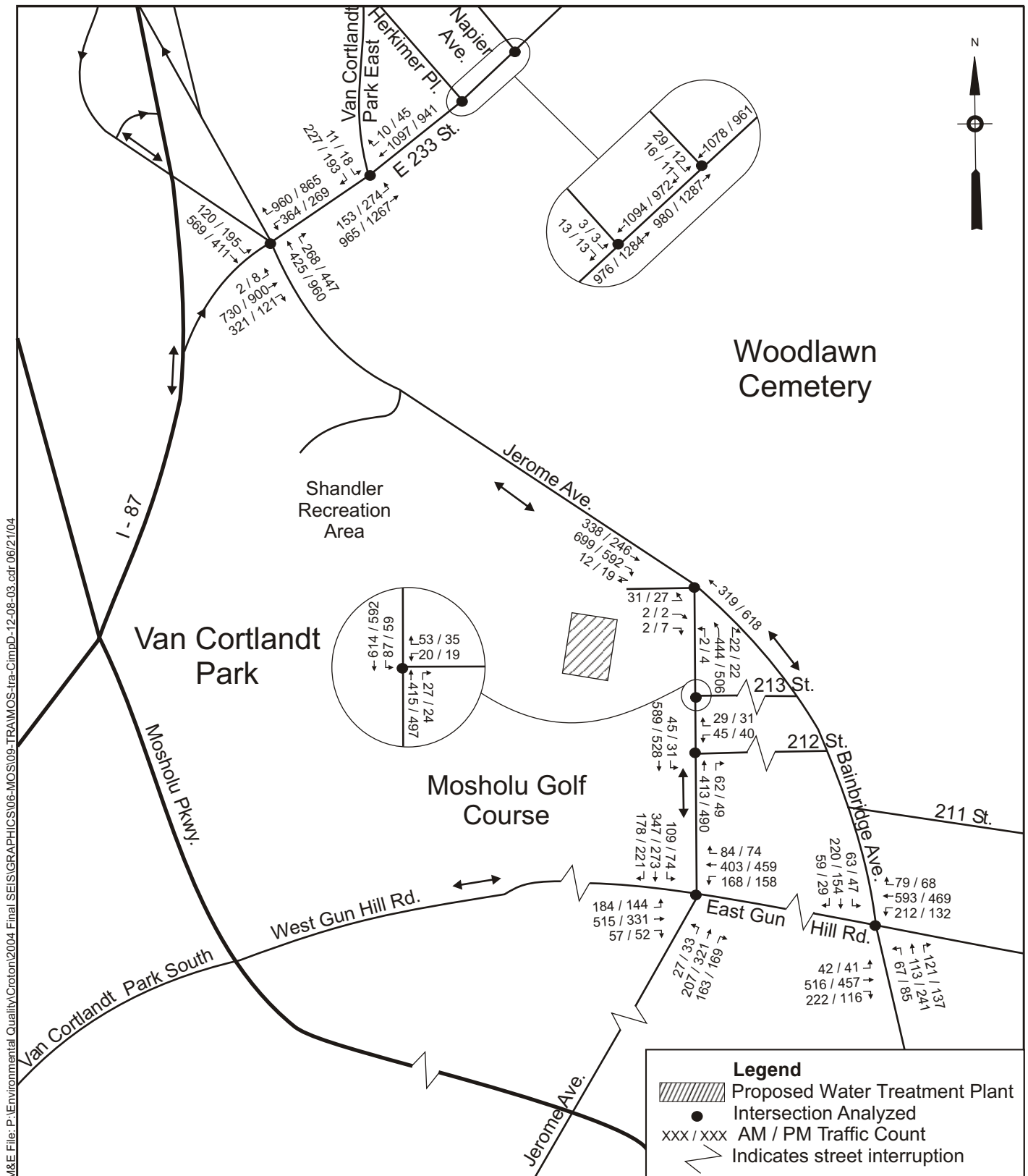
Not To Scale

Note: Entering/exiting construction passenger vehicles would park along Jerome Avenue and at the Allen Shandler Recreation Area.

Mosholu Site 2010 Construction Traffic Distribution - AM/PM Hour

Croton Water Treatment Plant

Figure 6.9-10



Not To Scale

Mosholu Site Construction Year 2010 Traffic Volumes - AM/PM Hour

Croton Water Treatment Plant

Figure 6.9-11

TABLE 6.9-13. 2010 POTENTIAL CONSTRUCTION IMPACTS TRAFFIC CONDITIONS FOR MOSHOLU SITE ALTERNATIVE

SIGNALIZED INTERSECTIONS	LANE GROUP	2010 FUTURE NO-BUILD						2010 CONSTRUCTION IMPACTS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			WEEKDAY AM PEAK			WEEKDAY PM PEAK		
		V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS	V/C RATIO	DELAY (SEC/ VEH)	LOS
East 233rd Street at Napier Avenue	EB – T	0.52	14.5	B	0.63	16.5	B	0.52	14.5	B	0.64	16.7	B
	WB – T	0.58	15.5	B	0.48	13.8	B	0.59	15.7	B	0.48	13.8	B
	SB – LR	0.13	30.7	C	0.06	29.5	C	0.13	30.7	C	0.06	29.5	C
	Intersection		15.3	B		15.5	B		15.5	B		15.6	B
East 233rd Street at Van Cortlandt Park	EB – LT	0.80	7.2	A	0.98	21.3	C	0.81	7.4	A	0.99	23.9	C
	WB – TR	0.60	10.7	B	0.50	9.4	A	0.62	10.8	B	0.50	9.4	A
	SB – L	0.04	34.3	C	0.05	34.4	C	0.04	34.3	C	0.05	34.4	C
	SB – R	0.63	47.6	D	0.49	42.6	D	0.63	47.6	D	0.49	42.6	D
	Intersection		12.6	B		18.6	B		12.8	B		20.0	C
East 233rd Street at Jerome Avenue	EB – LT	0.93	53.2	D	0.92	53.0	D	1.04	77.5	E	0.92	53.9	D
	WB – L	0.66	40.3	D	0.59	45.2	D	0.70	42.0	D	0.60	45.3	D
	WB – R	0.88	15.3	B	0.79	16.1	B	0.88	15.3	B	0.79	16.1	B
	NB – T	0.46	38.3	D	0.63	35.5	D	0.47	38.5	D	0.80	41.1	D
	NB – R	0.30	6.6	A	0.40	7.4	A	0.30	6.6	A	0.42	7.7	A
	SB – L	0.86	84.1	F	1.15	>150	F	0.89	90.6	F	>1.5	>150	F
	SB – T	0.52	39.4	D	---	---	---	0.63	41.9	D	---	---	---
	SB - LT	---	---	---	0.54	35.7	D	---	---	---	0.64	38.6	D
	Intersection		36.3	D		39.1	D		44.7	D		58.8	E
Jerome Avenue at Bainbridge Avenue	EB – LTR	0.08	34.8	C	0.09	35.0	D	0.08	34.8	C	0.09	35.0	D
	WB – R	0.30	7.2	A	0.62	11.6	B	0.30	7.2	A	0.62	11.6	B
	NB – LT	0.43	22.4	C	0.68	28.7	C	0.55	24.8	C	0.69	29.0	C
	NB – R	0.04	16.9	B	0.04	17.0	B	0.04	16.9	B	0.04	17.0	B
	SB – L	0.48	6.1	A	0.45	7.2	A	0.52	7.3	A	0.45	7.3	A
	SB – TR	0.28	1.7	A	0.23	1.5	A	0.28	1.7	A	0.27	1.6	A
	Intersection		8.5	A		13.3	B		9.9	A		12.9	B

TABLE 6.9-13. 2010 POTENTIAL CONSTRUCTION IMPACTS TRAFFIC CONDITIONS FOR MOSHOLU SITE ALTERNATIVE

SIGNALIZED INTERSECTIONS	LANE GROUP	2010 FUTURE NO-BUILD						2010 CONSTRUCTION IMPACTS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			WEEKDAY AM PEAK			WEEKDAY PM PEAK		
		V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY (SEC/VEH)	LOS	V/C	DELAY (SEC/VEH)	LOS
		RATIO	(SEC/VEH)	LOS	RATIO	(SEC/VEH)	LOS	RATIO			RATIO		
Jerome Avenue at 213th Street	WB – LR	0.14	25.3	C	0.11	20.5	C	0.14	25.3	C	0.11	20.5	C
	NB – TR	0.40	11.3	B	0.58	11.3	B	0.51	12.7	B	0.59	11.4	B
	SB – LT	0.87	26.1	C	0.68	13.6	B	0.89	28.8	C	0.78	17.0	B
	Intersection		21.4	C		12.9	B		22.7	C		14.7	B
Jerome Avenue at 212th Street	WB – LR	0.14	25.2	C	0.13	25.1	C	0.14	25.2	C	0.13	25.1	C
	NB – TR	0.45	11.9	B	0.60	14.4	B	0.56	13.6	B	0.61	14.6	B
	SB – LT	0.73	18.1	B	0.55	13.5	B	0.75	18.7	B	0.65	15.6	B
	Intersection		16.4	B		14.7	B		17.1	B		15.7	B
Gun Hill Road (E-W) at Jerome Avenue (N-S)	EB – LTR	0.74	27.0	C	0.53	26.1	C	0.76	27.8	C	0.53	26.5	C
	WB – LTR	0.78	29.9	C	0.70	24.4	C	0.67	33.5	C	0.70	24.4	C
	NB – LTR	0.60	24.3	C	0.80	31.9	C	0.64	25.5	C	0.81	32.6	C
	SB – LTR	1.01	64.0	E	0.80	32.1	C	1.03	69.3	E	0.94	47.8	D
	Intersection		37.3	D		28.2	C		39.7	D		32.5	C
Gun Hill Road (E-W) at Bainbridge Avenue (N-S)	EB – LTR	0.73	26.0	C	0.54	21.0	C	0.73	26.0	C	0.54	21.0	C
	WB – LTR	0.71	19.4	B	0.47	7.2	A	0.71	19.4	B	0.47	7.2	A
	NB – LT	0.45	31.5	C	0.73	44.8	D	0.45	31.5	C	0.73	44.8	D
	NB - R	0.29	27.8	C	0.33	31.9	C	0.29	27.80	C	0.33	31.9	C
	SB – LTR	0.73	40.9	D	0.66	43.0	D	0.73	40.9	D	0.66	43.0	D
	Intersection		26.2	C		23.6	C		26.2	C		23.6	C

TABLE 6.9-13. 2010 POTENTIAL CONSTRUCTION IMPACTS TRAFFIC CONDITIONS FOR MOSHOLU SITE ALTERNATIVE

UNSIGNALIZED INTERSECTIONS	LANE GROUP	2010 FUTURE WITHOUT THE PROJECT						2010 CONSTRUCTION IMPACTS					
		WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	DELAY		V/C	DELAY		V/C	DELAY		V/C	DELAY	
		RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS	RATIO	(SEC/ VEH)	LOS
East 233rd Street at Herkimer Place	WB-R	0.06	19.5	C	0.06	19.3	C	0.06	19.9	C	0.06	19.4	C

ABBREVIATIONS:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, E-W: East-West Roadway, N-S: North-South Roadway

V/C Ratio - Volume to Capacity Ratio

SEC/VEH - Seconds per Vehicle

LOS - Level of Service

--- HCS results not provided for given lane group

6.9.3.2.1. Traffic

Applying the potential traffic impact criteria described in Section 4.9, Data Collection and Impact Methodologies, Traffic and Transportation, two (2) signalized intersections would potentially experience adverse impacts due to construction traffic in the AM and/or PM peak hours. Those intersections are described below.

At the 233rd Street and Jerome Avenue intersection, the eastbound approach would experience an increase in delay in the AM peak hour, from 53.2 seconds (LOS D) to 77.5 seconds (LOS E). The southbound left-turn approach would experience an increase in delay in the AM peak hour, from 84.1 seconds (LOS F) to 90.6 seconds (LOS F). In the PM peak hour, the overall intersection delay would increase from 39.1 seconds (LOS D) to 58.8 seconds (LOS E).

At the Gun Hill Road and Jerome Avenue intersection, the southbound approach would experience an increase in delay in the PM peak hour, from 32.1 seconds (LOS C) to 47.8 seconds (LOS D).

6.9.3.2.2. Parking

As discussed above, the proposed project is anticipated to provide some on-site parking for some supervisors and NYCDEP personnel. Other construction workers would access the site via MTA subway or NYC Transit or Westchester buses or would park at nearby parking facilities in the vicinity of the project site. Based on the transportation data and planning assumptions presented in the Potential Construction Impacts, Section 4.9, Data Collection and Impact Methodologies, Traffic and Transportation, the parking facilities would need to accommodate approximately 282 construction worker vehicles (see Table 6.9-11). The parking for this would be provided in the Shandler Recreation Area parking lot. In addition, 52 parking spaces along Jerome Avenue between Bainbridge Avenue and East 233rd Street would be reserved for NYCDEP contractor parking between the hours of 6 AM and 7 PM throughout the construction period. If the parking spaces are not reserved, there would be a shortfall of approximately 52 parking spaces for construction workers during the peak construction period. These workers would be required to find parking somewhere within the neighborhood, most likely on the street but possibly in off-street parking locations.

The remaining construction generated parking would be accommodated in the Shandler Recreation Area parking lot. The Shandler Recreation Area parking lot adjacent to the construction site has approximately 230 spaces, of which approximately 130 spaces are currently being utilized by employees of Montefiore Hospital under contract with the NYC Department of Parks and Recreation until June 2004. Upon the expiration of this agreement, the NYCDEP would take over this agreement to provide for the excess parking required during construction.

The use of the Shandler Recreation Area parking lot and securing dedicated NYCDEP parking spaces would provide approximately 282 parking spaces, which is equal to the construction generated parking requirements and would provide adequate parking for area residents and commuters. No parking shortfall is predicted to occur as a result of the construction period demand for parking and therefore, no adverse parking impact would occur.

6.9.3.2.3. Safety

Four intersections experienced a high rate of accidents between May 1998 and April 2001; Table 6.9-2 summarizes the accident data listed below:

1. East 233rd Street and Van Cortlandt Park Avenue
2. East 233rd Street and Jerome Avenue
3. Jerome Avenue and East Gun Hill Road
4. Bainbridge Avenue and East Gun Hill Road

At the East 233rd Street and Van Cortlandt Park Avenue intersection, there are projected to be 2,441 vehicles entering the intersection in the AM peak hour and 2,714 vehicles entering in the PM peak hour. The construction activities would increase these volumes by 23 vehicles in each of the peak hours, or by 0.9 percent in the AM peak hour and by 0.8 percent in the PM peak hour. With 5 reportable accidents annually, this increase in traffic at this location can be anticipated to translate to less than one additional accident per year and less than one additional accident over the entire construction period. It is possible that the proposed mitigation may ameliorate this risk

At the East 233rd Street and Jerome Avenue intersection, there are projected to be 3,516 vehicles entering the intersection in the AM peak hour and 3,952 vehicles entering in the PM peak hour. The construction activities would increase these volumes by 243 vehicles in each of the peak hours, or by 6.9 percent and 6.1 percent in the AM and PM peak hours, respectively. With 17 reportable accidents annually, this increase in traffic at this location can be anticipated to translate to one additional accident per year and seven accidents over the entire construction period. Traffic improvements proposed at this location would improve the efficiency and operation of this intersection thereby reducing the number of accidents.

At the Jerome Avenue and East Gun Hill Road intersection, there are projected to be 2,342 vehicles entering the intersection in the AM peak hour and 2,211 vehicles entering in the PM peak hour. The construction activities would increase these volumes by 98 vehicles in each of the peak hours, or by 4.2 percent and 4.4 percent in the AM and PM peak hours, respectively. With 9 reportable accidents annually, this increase in traffic at this location can be anticipated to translate to less than one additional accident per year and two accidents over the entire construction period.

At the Bainbridge Avenue and East Gun Hill Road intersection, there are projected to be 2,307 vehicles entering the intersection in the AM peak hour and 1,976 vehicles entering in the PM peak hour. The construction activities would not increase these volumes in either of the peak hours. No additional accidents per year are anticipated at this intersection due to construction activities.

6.9.3.2.4. Transit

Construction of the proposed project is anticipated to generate additional transit ridership using one (1) MTA subway station and several NYC Transit and Westchester buses. During the AM peak period (6 AM to 7 AM) and the PM peak period (6 PM to 7 PM), a total of 260 additional passengers are anticipated to utilize mass transit during these hours. One (1) MTA subway station, the Woodlawn Station of Route 4, is anticipated to be utilized during construction. NYC Transit bus lines Bx 16 and Bx 34, as well as Westchester County Beeline bus lines W4, W20, W20x and W21, are anticipated to be utilized during construction. Approximately 21 construction workers would utilize mass transit to get to and from the site.

6.9.3.2.5. Pavement Infrastructure

Roadway pavements deteriorate with traffic loads, environmental conditions and time. Highways are typically able to carry higher traffic loads than arterials and other lower volume roadways. The principal measure of traffic loading is “equivalent 18,000 pounds single axle loads” (18 kip Equivalent Single Axle Load (EASL)) over the useful life of the pavement, typically 20 years. As these loads are applied, over time, the pavement’s serviceability declines to the point where it must be repaired. Different types of trucks affect pavement differently. Trucks that have concentrated wheel loads (e.g., full concrete trucks) would have worse pavement effects than a flat-bed tractor-trailer combination carrying steel reinforcing rods. Highways can have design loads of 10,000,000 to 80,000,000 (or more) ESAL, arterials generally between 2,000,000 to 5,000,000 ESAL and low-volume roadways 50,000 to 500,000 ESAL.

The proposed project is anticipated to generate a total of approximately 162,300 truck entering/exiting truck trips over the approximately five year construction period. These truck trips equate to a total of approximately 442,000 ESAL, 221,000 ESAL inbound and 221,000 ESAL outbound, respectively. Based on the anticipated distribution of trucks arriving/departing from the site and the primary access point from Major Deegan and West Fordham Road, the anticipated loads generated from the project are not anticipated to be adversely because they are not anticipated to affect the useful life of the pavement.

Based on the analyses presented above, the proposed Croton project at the Mosholu Site would have potential significant adverse impacts on traffic that would be mitigated. For comparison purposes, this is true of the Eastview and Harlem River Sites as well.