

**New York City Department of Transportation
Office of School Safety Engineering**



School Safety Engineering Project

FINAL REPORT: Our Lady of Mercy, Bronx



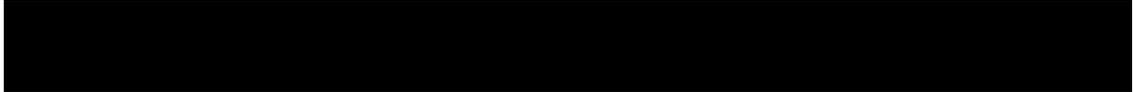
**Prepared by
The RBA Group and URBITRAN Associates Inc.**



November 3, 2006

**School Safety Engineering Project
Final Report: Our Lady of Mercy School, Bronx**

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HSC REPORTA3-A4

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Department of Transportation (DOT) has developed school safety maps for 1,471 schools throughout the City. Schools currently in the program are primarily elementary and intermediate schools with an enrollment of at least 250 students. The safety plans include the designation of official school crosswalks, identified by prominent warning signs and roadway markings. DOT also designates curbside locations for school bus loading and unloading and other parking controls to improve conditions for students. In addition, nearly 600 speed reducers (humps) have been installed in the immediate vicinity of schools.

Under this consultant study, the School Safety Engineering Project, crash data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools, safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). Our Lady of Mercy School in the Belmont section of the Bronx is one of the 135 “priority” schools identified by the New York City Department of Transportation, Office of School Safety Engineering.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS

2.2 NEIGHBORHOOD DESCRIPTION

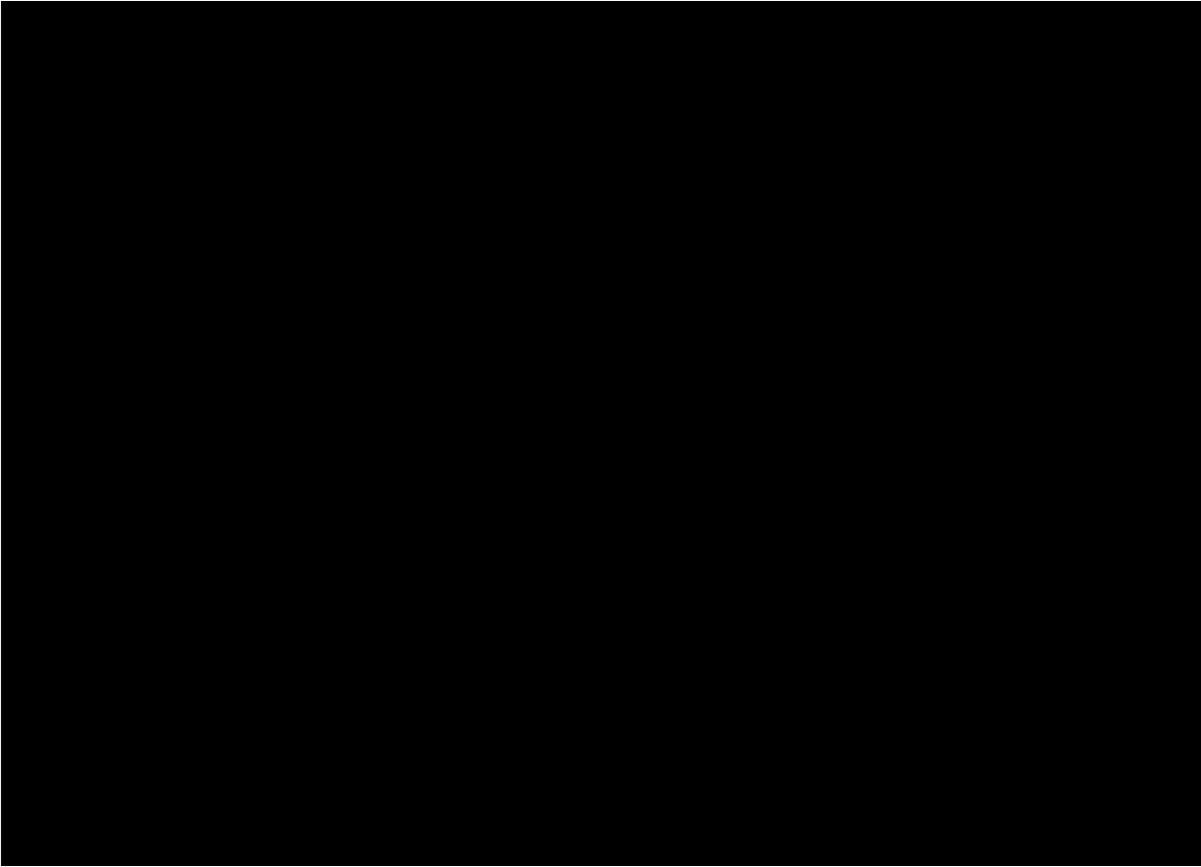
Exhibit 1 shows an aerial view of the neighborhood surrounding the school. Our Lady of Mercy School is bounded by East Fordham Road to the north, East 188th Street to the south, Webster Avenue to the east, and Marion Avenue to the west. The area surrounding the school is generally residential in character with primarily high-density, multi-level apartment buildings. However, Webster Avenue and East Fordham Road are major commercial corridors with significant vehicle and pedestrian traffic. Commercial activities are also found on East Kingsbridge Road, one block to the north of Our Lady of Mercy School. In addition, the Grand Concourse is a major commercial corridor located four blocks to the west of Our Lady of Mercy School. Fordham University and Rose Hill Park are situated north of East Fordham Road and east of Webster Avenue.

2.3 MEETING WITH SCHOOL REPRESENTATIVES

Consultant staff and the principal of Our Lady of Mercy School met at the school on the morning of Wednesday, May 26, 2004. According to the school principal, some of the problems faced by students and staff are as follows:

- Significant commercial activities on Fordham Road create congestion, particularly at the intersection of Fordham Road and Marion Avenue during the school dismissal
- Parking is generally a problem in the vicinity of the school
- Speeding is a problem on the Grand Concourse (the Grand Concourse is four blocks west of the Our Lady of Mercy School)

(See the Appendix for a summary of school concerns.)



2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

The school’s catchment area is typically defined by the Department of Education and normally shown in an exhibit at the end of this section. Since Our Lady of Mercy is a private parochial school, the actual “catchment area” is dependent upon other factors determined by the school administrators.

According to school officials, approximately 20% of the students walk to school, 10% arrive by private vehicles and the majority of 70% use public transportation.

Table 1 presents the modes of travel for Our Lady of Mercy School, as identified by the school principal.

TABLE 1: MODES OF TRAVEL (AS ESTIMATED BY SCHOOL OFFICIALS)	STUDENTS (Percentage)
Walk	20%
Driven By Car	10%
School Bus	0%
MTA Bus/Subway	70%
Bicycle	0%
TOTAL	100%

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

East Fordham Road to the north and Webster Avenue to the east of the school are heavily commercial and generate significant pedestrian and vehicular traffic. There is a McDonald's restaurant on south side of East Fordham Road between Marion Avenue and Webster Avenue. On west side of Webster Avenue, there is a Domino's Pizza and other restaurants. On the east side of Webster Avenue, there is a Carvel ice-cream shop. In addition, a Blimpie restaurant is located at the southwest corner of East Fordham Road and Webster Avenue. East 188th Street to the south of the school has retail uses on the south side of the roadway that generates significant pedestrian and vehicular activities.

2.8 CROSSING GUARD LOCATION

According to the school principal, one school crossing guard is assigned to the intersection of Marion Avenue and East 188th Street.

The crossing guard location is shown in Exhibit 3 at the end of this section.



Figure 2: Crossing guard at the intersection of Marion Avenue and East 188th Street at arrival time

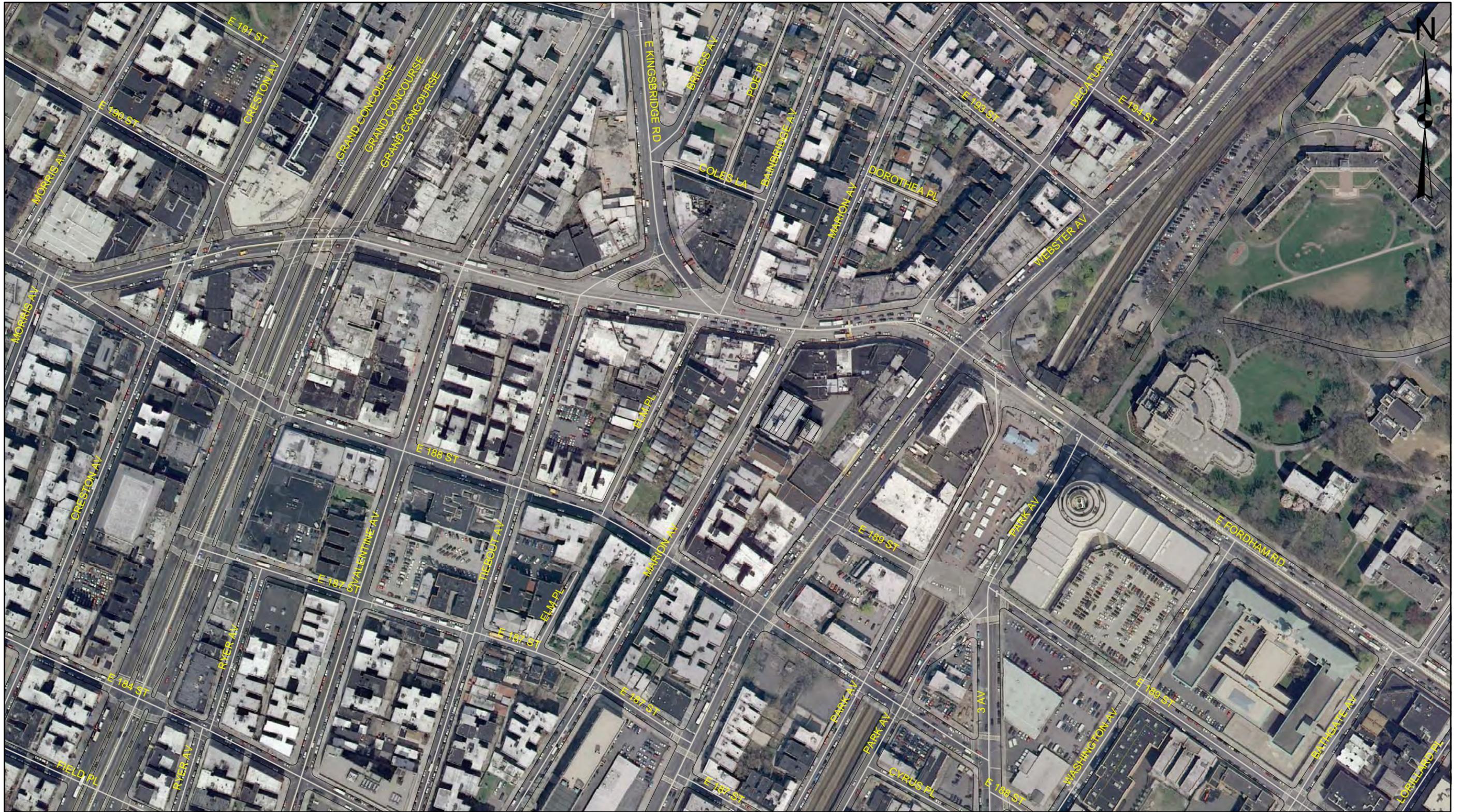


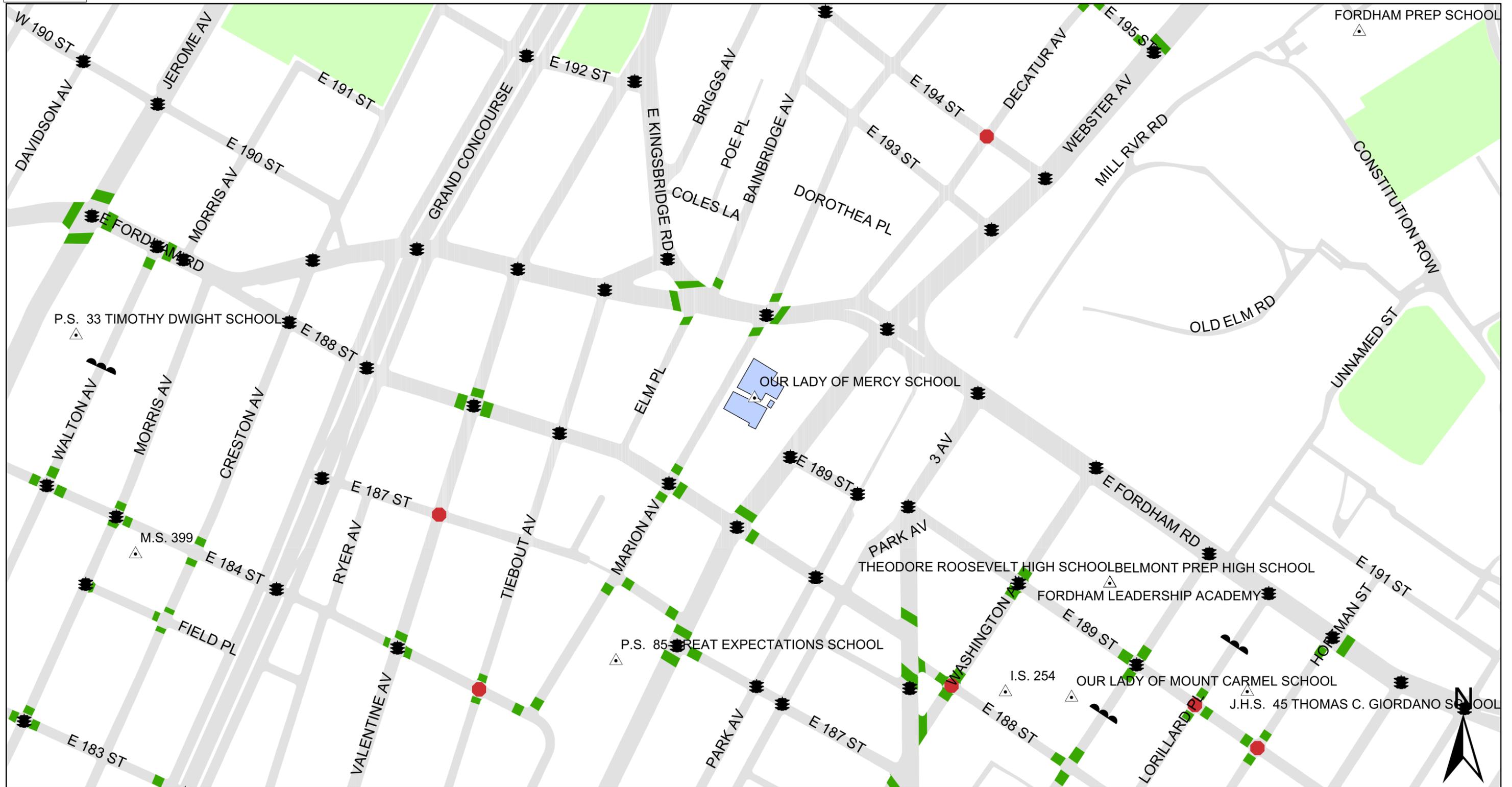
EXHIBIT 1

OUR LADY OF MERCY SCHOOL BRONX

AERIAL PHOTOGRAPH



School Traffic Safety Map



The School Traffic Safety Map was established to help provide the maximum degree of safety for children going to and from school - by indicating the location of speed reducers, school crosswalks and some traffic control devices. (While virtually all intersections in NYC benefit from traffic control devices - such as stop signs, traffic signals, yield signs, and all way stop signs - this map shows only traffic signals and all way stop signs.) The school crosswalks that are shown are ladder striped and make the crosswalk more visible to drivers and help make the intersection safer. These crosswalks are where school children are recommended to cross.

Note: Every attempt has been made to provide complete and accurate information that is updated regularly. The City's streets are constantly changing and it is not always possible to present information without error.

LEGEND:

SCHOOL LOCATION 	TRAFFIC SIGNAL 
SCHOOL CROSSWALK 	ALL - WAY STOP 
	SPEED REDUCER 

Bronx
OUR LADY OF MERCY SCHOOL

Prepared by the NEW YORK CITY DEPARTMENT OF TRANSPORTATION, Iris Weinshall, COMMISSIONER.

Map created on 11/16/2006

EXHIBIT 2

COMM. BOARD: 205
 PRECINCT: 46

1.5.1

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

Our Lady of Mercy School did not provide school bus transportation as of June 3, 2004, the date the school was visited. According to the school's principal, approximately 70% of the students take public transportation (MTA bus and the subway) to and from the school.

3.2 PARENT DROP-OFF OPERATIONS

According to school's principal, approximately ten percent of the students are being dropped off in the morning.

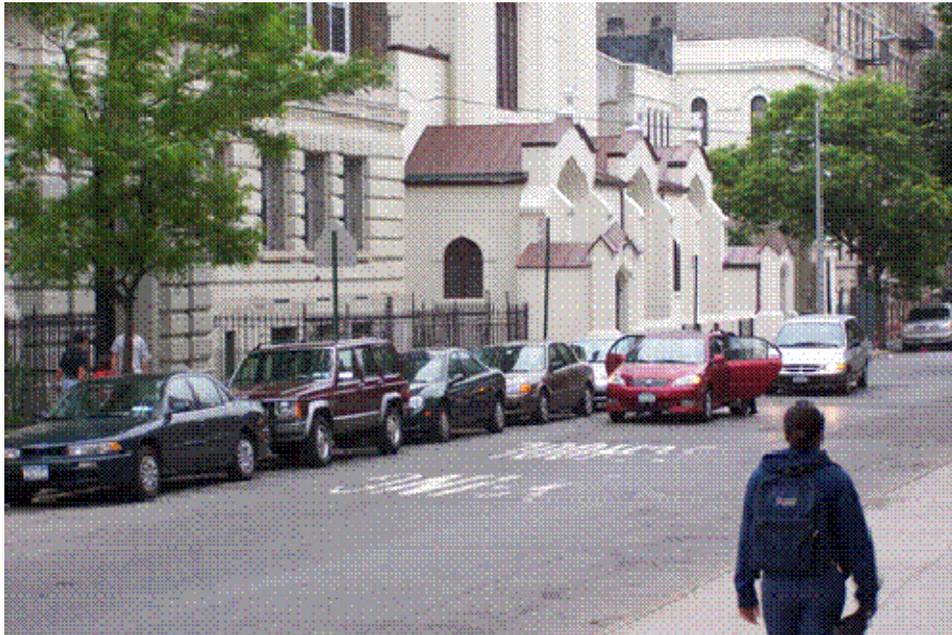


Figure 3: Looking south at student drop-off on Marion Avenue

3.3 PARKING REGULATIONS

Parking regulations around the school block-faces are shown in Exhibit 4 at this section.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

Exhibit 2 shows the existing school signals and pavement markings around Our Lady of Mercy School. It should be noted that a citywide signage program is currently underway to upgrade school signage to current Federal Manual on Uniform Traffic Control Devices (MUTCD) standards of fluorescent yellow-green signs accompanied by downward pointing arrows. Signs scheduled to be installed under this program are shown as “existing” in Exhibit 6.

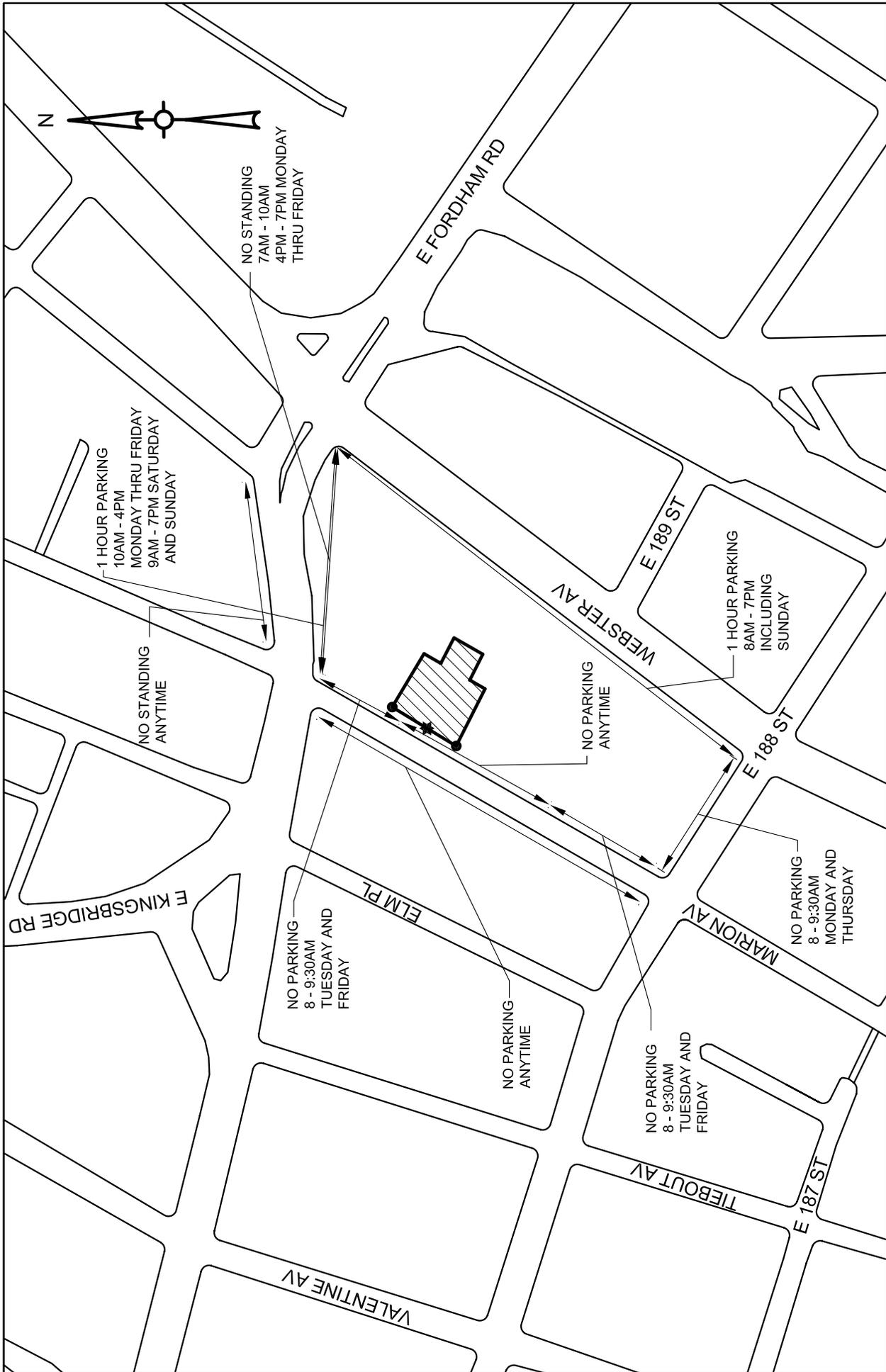


EXHIBIT 4

OUR LADY OF MERCY SCHOOL BRONX
EXISTING PARKING REGULATIONS

LEGEND:

★ MAIN ENTRANCE

● ENTRANCE



3.5 ACCIDENT SUMMARY

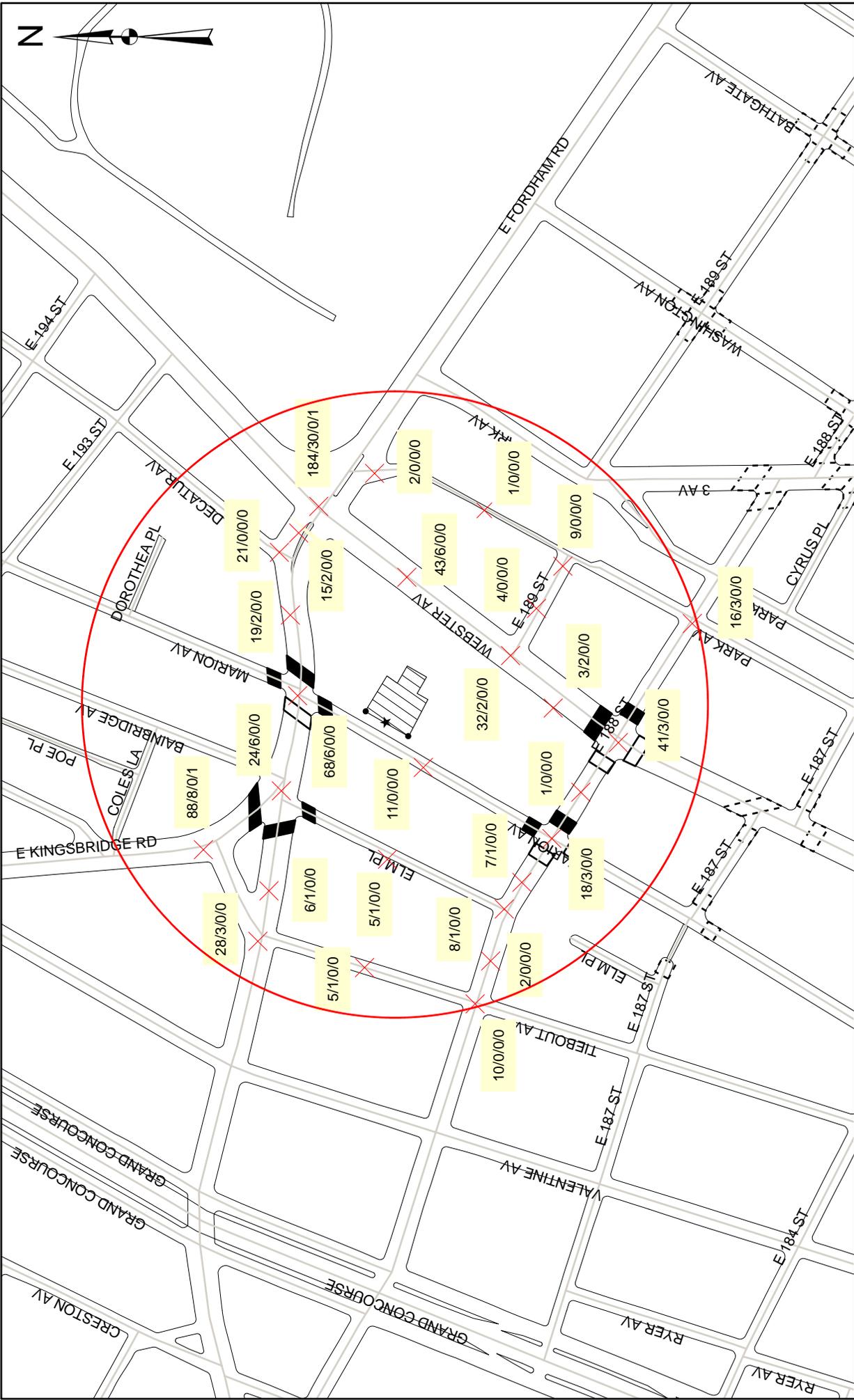
Exhibit 5 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of Our Lady of Mercy School for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of the accident. Table 3 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the DMV data.

This report targets intersections closest to the school where the highest concentration of student pedestrians occurs. Intersections farther from the school and locations for which detailed data was not available at the time of this study will be addressed with the ongoing work of DOT's School Safety Engineering Program. DMV accident data is discussed in Section 3.6, Traffic Operations and Issues.

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
East Fordham Road and Tiebout Avenue	28	3	0	0
East Fordham Road and East Kingsbridge Road/Bainbridge Avenue/Elm Place	112	14	0	1
East Fordham Road and Marion Avenue	68	6	0	0
East Fordham Road and Webster Avenue	184	30	0	1
East 188 th Street and Marion Avenue	18	3	0	0
East 188 th Street and Webster Avenue	41	3	0	0
TOTAL	451	59	0	2

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
East Fordham Road and Tiebout Avenue	53	3	0	1
East Fordham Road and East Kingsbridge Road/Bainbridge Avenue/Elm Place	44	7	0	1
East Fordham Road and Marion Avenue	109	14	0	0
East Fordham Road and Webster Avenue	281	57	0	3
East 188 th Street and Marion Avenue	27	5	0	3
East 188 th Street and Webster Avenue	80	14	1	0
TOTAL	594	100	0	8

* School-related accidents are defined as accidents involving school-age pedestrians (age 4 to 14), occurring on weekdays during the school year.



LEGEND:

- × ACCIDENT LOCATION
- ▬ SCHOOL CROSSWALK
- ⋯ SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL
- BORDER OF 700 FEET

TOTAL ACCD / PED ACCD / FATAL / SCHOOL_PED ACCD
 X/X/X/X

EXHIBIT 5

OUR LADY OF MERCY SCHOOL BRONX

ACCIDENT SUMMARY (1998-2000)

3.6 TRAFFIC OPERATIONS AND ISSUES

The specific roadway-related physical conditions for each location within the school's vicinity directly affect the safety and efficiency of operations for both pedestrian and vehicular traffic. These conditions are required information when analyzing a location, and are the starting point for any revisions that may be considered to improve safety and/or efficiency.

The following sub-sections outline the physical conditions and issues concerning traffic operations and accidents at the intersections in the vicinity of Our Lady of Mercy School.

3.6.1 East Fordham Road and East Kingsbridge Road/Elm Place/Bainbridge Avenue

This is a five-leg signalized intersection. All the crosswalks at this intersection are constructed with brick-pavers. However, the School Traffic Safety Map shows the north, south, and west legs of the intersection as school crosswalks (see Figure 4). East Fordham Road is a major, east-west corridor in the Bronx. In the vicinity of Our Lady of Mercy School, East Fordham Road has three travel lanes during the morning (7:00 am to 10:00 am) and afternoon (4:00 pm to 7:00 pm) peak periods with a curb lane designated as a bus lane on both sides of the street. One hour muni-meter parking is permitted on East Fordham Road between 10:00 am and 4:00 pm. However parking is not permitted along the north curb of East Fordham Road between Marion Avenue and Bainbridge Avenue. East Kingsbridge is a two-way street with one travel lane in each direction and parking permitted on both sides of the street. Bainbridge Avenue, north of East Fordham Road, is a one-way northbound street with one travel lane and on-street parking permitted on both sides of the roadway. Elm Place, south of East Fordham Road, is a one-way southbound street with one travel and parking permitted on both sides of the street

There were 112 accidents reported at this intersection between 1998 and 2000 (Table 2), 14 of which were pedestrian accidents including one school-related accident. The school-related accident occurred on Wednesday, October 14, 1998 at approximately 3:00 pm, and involved a 12-year-old pedestrian who was crossing the street against the signal. The pedestrian suffered an incapacitating injury. The accident occurred at the curved roadway section under daylight conditions. At the time of accident, the roadway surface was dry and the weather was clear. There were no pedestrian fatalities reported at this intersection during the same three-year period.



Figure 4: Looking northwest across East Fordham Road at its intersection with East Kingsbridge Road

3.6.2 East Fordham Road and Tiebout Avenue/East Kingsbridge Road

This is a four-leg signalized intersection with no school crosswalks across any legs. East Fordham Road, in the vicinity of Our Lady Mercy School, provides three travel lanes in each direction during the morning (7:00 am to 10:00 am) and afternoon (4:00 pm to 7:00 pm) peak periods. The curb lane on both sides of East Fordham Road is designated as a bus lane during the morning and afternoon peak periods. On-street muni-meter parking is permitted on both sides of East Fordham Road between 10:00 am and 4:00 pm. Tiebout Avenue, the south leg of the intersection, is a one-way southbound street with one travel lane and parking on both sides of the roadway. East Kingsbridge Road, the north leg of the intersection, is also a one-way southbound street wide enough to provide two approach lanes and on-street parking along the west side of the roadway.

There were 28 accidents reported at this intersection between 1998 and 2000 (Table 2), including three pedestrian accidents, none of which were school-related. There were no pedestrian fatalities reported at this intersection.

3.6.3 East Fordham Road and Marion Avenue

This is a four-leg signalized intersection. All the crosswalks at this intersection are constructed with brick-pavers. However, the School Traffic Safety Map shows the north, south, and east legs of the intersection as school crosswalks (see Figures 5 and 6). In the vicinity of Our Lady of Mercy School, East Fordham Road provides three travel lanes in each direction during the morning (7:00 am to 10:00 am) and afternoon (4:00 pm to 7:00 pm) peak periods. The curb lane on both sides of East Fordham Road is designated as a bus lane during the morning and afternoon peak periods. On-street muni-meter parking is permitted on both sides of East Fordham Road between 10:00 am and 4:00 pm. Marion Avenue, south of East Fordham Road, is a one-way northbound street and wide enough to provide two travel lanes and on-street parking on the east side of the roadway. Marion

Avenue, north of East Fordham Road, is a one-way southbound street with one travel lane and on-street parking permitted on both sides of the roadway.

There were 68 accidents reported at this intersection between 1998 and 2000 (Table 2), including six pedestrian accidents, none of which were school-related. There were no pedestrian fatalities reported at this intersection.



Figure 5: Looking northeast across Marion Avenue and the East Fordham Road intersection



Figure 6: Looking north across East Fordham Road at the Marion Avenue intersection

3.6.4 East Fordham Road and Webster Avenue

This is a four-leg signalized intersection with a school crosswalk located across the north leg and pedestrian crosswalks located across the east, west, and south legs. East Fordham Road is a two-way, east-west Street with three travel lanes in each direction during the morning (7:00 am to 10:00 am) and afternoon (4:00 pm to 7:00 pm) peak periods. The curb lane on both sides of East Fordham Road, west of Webster Avenue, is designated as a bus lane during the morning and afternoon peak periods. A left-turn bay is provided on both the eastbound and westbound approaches of East Fordham Road. There is also a free (channelized) right turn lane on the westbound approach of this intersection. East Fordham Road is a designated snow emergency route and also a designated truck route. Webster Avenue is a two-way, north-south, street with two travel lanes and on-street meter parking on each sides of the roadway. Both the northbound and southbound approaches of Webster Avenue also provide an exclusive left-turn lane (bay). Webster Avenue is a designated local truck route.

There were 184 accidents reported at this intersection between 1998 and 2000 (Table 2), including 30 pedestrian accidents, one of which was school-related. The school-related accident occurred on Friday, January 9, 1998 at approximately 3:00 pm, and involved an 11-year-old pedestrian. The extent of the injury was reported as an “incapacitating injury.” The pedestrian’s location and action at the time of accident were not reported. At the time of accident, the roadway surface was dry and the weather was clear. There were no pedestrian fatalities reported at this intersection.

3.6.5 East 188th Street and Marion Avenue

This is a four-leg signalized intersection with school crosswalks located across the north and east legs. East 188th Street is a one-way eastbound street with no lane markings, and on-street parking permitted on both sides of the roadway. During the field visit, three lanes were observed to be formed on East 188th Street approaching Marion Avenue. Marion Avenue, south of East 188th Street is a two-way roadway with one travel lane and an on-street parking lane on each side of the roadway. North of East 188th Street, Marion Avenue is a one-way northbound street and on-street parking permitted only on the east side of the roadway. Marion Avenue has no lane markings, but is wide enough to provide two travel lanes (see Figures 7 and 8).

There were 18 accidents reported at this intersection between 1998 and 2000 (Table 2), including three pedestrian accidents, none of which were school-related. There were no pedestrian fatalities reported at this intersection.



Figure 7: Looking north on Marion Avenue toward the intersection with East 188th Street



Figure 8: Looking east along East 188th Street toward the intersection with Marion Avenue

3.6.6 East 188th Street and Webster Avenue

This is a four-leg signalized intersection with school crosswalks located across the north and east legs. East 188th Street is a one-way eastbound street with no lane markings. However, during the field visit, three lanes were observed to be formed on East 188th Street approaching Webster Avenue. On-street parking is permitted on both sides of East 188th Street. Webster Avenue is a two-way north-south street with two travel lanes and

on-street metered parking on both sides of the roadway. The southbound approach of Webster Avenue also provides an exclusive left-turn lane (bay). Webster Avenue is a designated local truck route (see Figures 9 and 10).

There were 41 accidents reported at this intersection between 1998 and 2000 (Table 2), including three pedestrian accidents, none of which were school-related.



Figure 9: Looking east along East 188th Street toward the Webster Avenue intersection



Figure 10: Looking west along East 188th Street toward the Webster Avenue intersection

3.7 SIGNAL TIMING

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of Our Lady of Mercy School, and were found to be adequate based upon a child pedestrian walking at a rate of three feet per second. The signal timings are shown in Table 4.

TABLE 4: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS				
INTERSECTION	CROSSWALK LENGTH (FEET)	PEDESTRIAN TIME ACTUAL (SECONDS)	PEDESTRIAN TIME REQUIRED⁽¹⁾ (SECONDS)	TIMING ADJUSTMENT REQUIRED?
East Fordham Road and Kingsbridge Road				
crossing Kingsbridge/Bainbridge Road	70	84	27	NO
crossing Fordham Road	63	29	24	NO
East Fordham Road and Marion Avenue				
crossing Marion Avenue	30	75-AM/86-PM	13	NO
crossing Fordham Road	67	41-AM/30-PM	26	NO
East 188th Street and Marion Avenue				
crossing East 188 th Street	50	26	20	NO
crossing Marion Avenue	30	32	13	NO
East 188th Street and Webster Avenue				
crossing East 188 th Street	48	83	19	NO
crossing Webster Avenue	69	32	26	NO

1. A child pedestrian walking rate of 3 ft/sec, plus 3 seconds reaction time, was used to calculate the required crossing time.

3.8 PHYSICAL CONDITIONS

3.8.1 Roadways and Sidewalks

The roadways in the vicinity of Our Lady of Mercy School were observed to be in fair condition. Existing sidewalks vary from 10 to 20 feet wide on all school block-faces and are generally in fair condition. However the sidewalk along the west side of Webster Avenue between East 189th Street and East Fordham Road has some uneven sections.

3.8.2 Pedestrian Ramps

Overall, the pedestrian ramps in the vicinity of Our Lady of Mercy School were observed to be standard with the exception of those located on the southwest and southeast corners of the Marion Avenue and East Fordham Road intersection, where the grades of the ramps appear to be substandard.

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

This section describes the proposed measures to improve school pedestrian safety around Our Lady of Mercy School. The proposed recommendations are divided into short-term and long-term measures. Short-term measures are those that potentially can be performed in-house. Long-term measures involve capital improvements. Each of the short- and long-term measures recommended for Our Lady of Mercy School is discussed as follows, and is shown in more detail in Exhibit 6 at the end of this section.

4.1 SHORT-TERM MEASURES

➤ *Install “NO STANDING 7AM-4PM SCHOOL DAYS” signs*

There is an existing “NO PARKING ANYTIME” sign located along the east side of Marion Avenue in front of the school and the church located just south of the school. It is recommended that “NO STANDING 7AM-4PM SCHOOL DAYS” signs be installed for a distance of 30 feet in front of the school at the main entrance of the school. (This is a typical requirement for all NYC schools in order to provide for emergency access to and from the school.)

➤ *Install graphic “YIELD TO PEDESTRIAN” signs*

Install “YIELD TO PEDESTRIAN” signs at intersection approaches with substantial vehicle–student pedestrian volumes. “YIELD TO PEDESTRIAN” sign is recommended at the following signalized intersection:

- Westbound approach of East Fordham Road at East Kingsbridge Road.

These sign is suggested to improve driver awareness, and the visibility and safety of student-pedestrians.

➤ *Place stop bars ten feet in advance of school crosswalks*

The MUTCD and New York City DOT standard for placement of a stop bar is four feet in advance of a marked crosswalk. At signalized (or stop controlled) crosswalks, the vehicle stop line can be placed farther back from the crosswalk in order to maximize visibility of pedestrians and to minimize the potential for pedestrian/vehicle conflicts. Therefore, it is recommended that stop bars be placed ten feet in advance of all school crosswalks, as shown in Exhibit 6.

➤ *Request that NYPD assign a crossing guard at the intersection of East Fordham Road and Marion Avenue*

The school has requested an additional crossing guard be assigned to the East Fordham Road and Marion Avenue intersection. This is a very busy intersection with much vehicular and pedestrian traffic. Therefore, the following is recommended:

- Consider assigning a school crossing guard to the intersection of East Fordham Road and Marion Avenue.

➤ Provide pavement markings on East 188th Street

East 188th Street is a one-way eastbound street with no lane markings. Despite the lack of lane markings, vehicles were observed forming three lanes on East 188th Street approaching both Marion Avenue and Webster Avenue during the field visit.

Therefore, the following is recommended:

- Provide pavement markings on East 188th Street between the eastbound approach to Valentine Avenue and the eastbound approach of Park Avenue as shown in Exhibit 6.

➤ Blockbuster treatment at the intersection of East Fordham Road and Marion Avenue

Marion Road is one-way northbound roadway south of East Fordham Road. North of East Fordham Road, Marion Avenue is a one-way southbound roadway.

In order to reduce the propensity for head-on collisions, the following is recommended:

- Provide a channelized blockbuster type of treatment at the East Fordham Road and Marion Avenue intersection, as shown in Exhibit 6.

4.2 LONG-TERM MEASURES

➤ Consider installing curb extensions (neckdowns) at the following intersections:

Consideration should be given to installing curb extensions at the following locations, provided that the Final Design confirms that construction of the recommended curb extensions would be feasible and not interfere with traffic operations. Final details pertaining to the number, location and geometry of curb extensions will be developed during the Final Design/Contract Document preparation

- Provide curb extensions on the northeast, southeast, and northwest corners of the Marion Avenue and East 188th Street intersection, as shown in Exhibit 6.
- Provide curb extensions on all four corners of the Webster Avenue and East 188th Street intersection, as shown in Exhibit 6.

In addition, there are existing painted markings on the north side of East Fordham Road, on the east side of East Kingsbridge Road, and around the triangular island located north of East Fordham Road between Elm Place and Tiebout Avenue. It is recommended to:

- Change the painted areas to raised concrete areas by extending the sidewalks on the triangular island, as shown in Exhibit 6.
- Provide a curb extension on the northwest corner of the East Fordham Road and East Kingsbridge Road/Tiebout Avenue intersection.

- Provide a curb extension on the northeast corner of the East Fordham Road and East Kingsbridge Road/Elm Place intersection.
- In conjunction with the improvements above, modify the location of the lane striping on East Kingsbridge Road, north of East Fordham Road, to provide for standard lane widths.

The purpose of the curb extensions is to shorten the crossing distance for pedestrians, and to reduce speeds of vehicles approaching and turning at these heavily utilized school crosswalks. These curb extensions would not eliminate or reduce the width of any moving lanes.

➤ *Eliminate channelized westbound right-turn lane at the East Fordham Road and Webster Avenue intersection*

This intersection experienced a total of 184 accidents between 1998 and 2000—including 30 pedestrian accidents, one of which was school-related. Between 2001 and 2004, there were a total of 281 accidents at the intersection, including 57 pedestrian accidents, three of which were school-related. It should be noted that there is an uncontrolled, channelized right-turn lane on the westbound approach of East Fordham Road at this intersection. This channelized right-turn lane has a school crosswalk across the north leg crossing and a pedestrian crosswalk across the east leg crossing. The following proposed elimination of the right-turn lane should be considered provided that the Final Design confirms its feasibility. Final details pertaining to the geometry of the measure will be developed during the Final Design/Contract Document preparation.

Therefore, the following is recommended:

- Eliminate the uncontrolled, channelized westbound right-turn lane and provide an exclusive right-turn lane on the westbound approach to accommodate these turns through the intersection. In conjunction with this improvement, an additional traffic signal head should be installed on the mast arm facing the westbound approach to provide signal control for the right-turn movements (westbound right-turn movements should be controlled by the traffic signal, rather than remain uncontrolled).
- Eliminating the uncontrolled, channelized westbound right-turn lane in favor of an exclusive westbound right-turn lane at the signal will eliminate the existing vehicle-pedestrian conflicts associated with the two crosswalks currently located across the channelized right-turn lane.

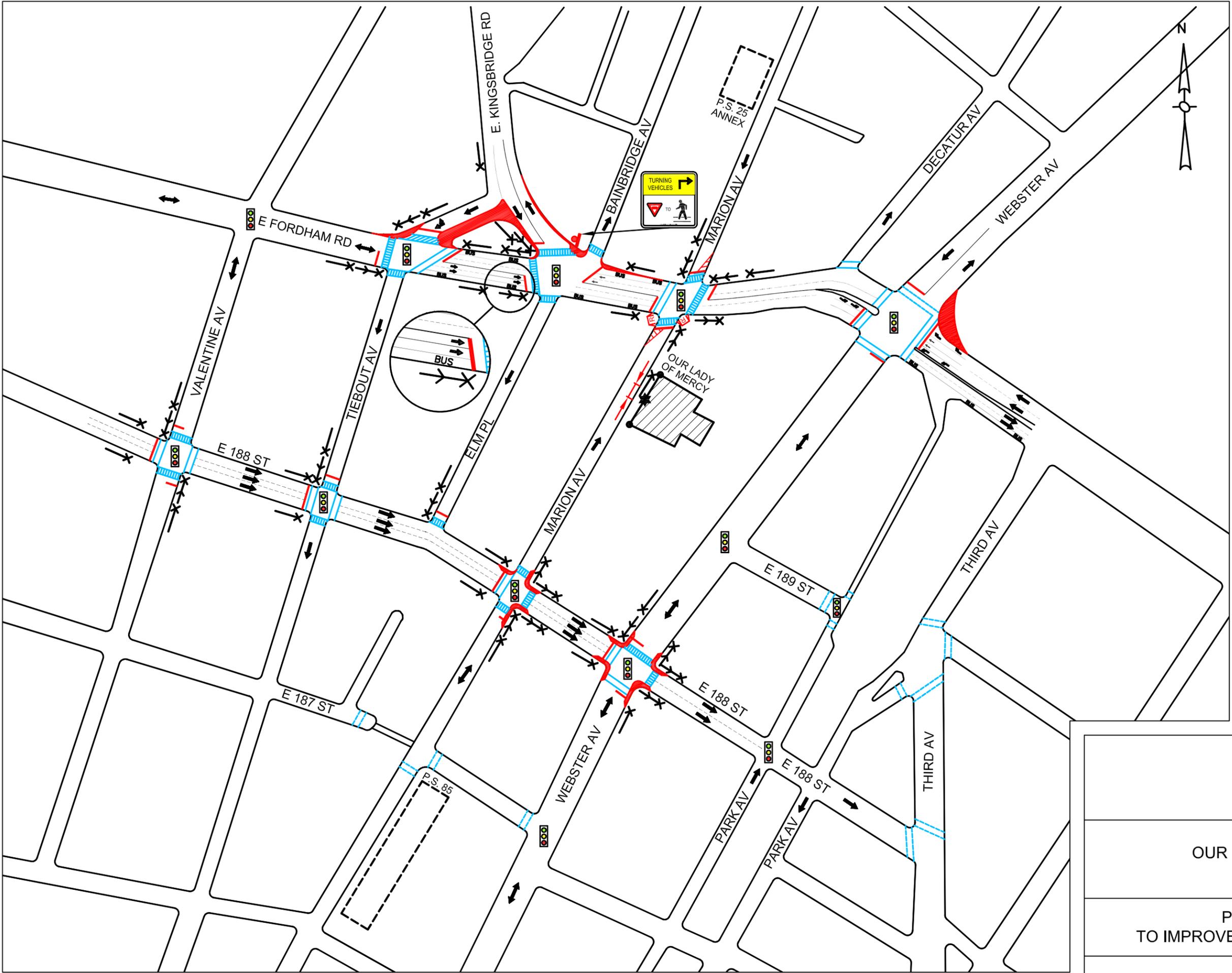
Vehicular turning-movement counts were conducted at this intersection during the weekday am peak hour. A capacity analysis of the intersection under the recommended geometric configuration and weekday am peak hour conditions was conducted using the Highway Capacity Software (HCS). The results of this analysis, shown in the Appendix of this report, indicate that the intersection will continue to operate at the same level-of-service (LOS) under the recommended geometric configuration.

➤ *Reconstruct Pedestrian Ramps*

The pedestrian ramps on the southwest and the southeast corners of the East Fordham Road and Marion Avenue intersection appear to have substandard grades.

Therefore, the following is recommended:

- Reconstruct the pedestrian ramps on the southwest and the southeast corners of the East Fordham Road and Marion Avenue intersection.



LEGEND

-  MAIN ENTRANCE
-  OTHER ENTRANCES
-  EXISTING TRAVEL DIRECTION
-  EXISTING ADVANCE WARNING SIGN OR SCHEDULED TO BE INSTALLED
-  EXISTING SCHOOL CROSSWALK WARNING ASSEMBLY OR SCHEDULED TO BE INSTALLED
-  EXISTING SCHOOL CROSSWALK
-  EXISTING PEDESTRIAN CROSSWALK
-  EXISTING SCHOOL CROSSWALK ASSOCIATED WITH ANOTHER SCHOOL
-  EXISTING SIGNALIZED LOCATION
-  PROPOSED TRAFFIC SIGN
-  RECONSTRUCT EXISTING PEDESTRIAN RAMP
-  PROPOSED STOP LINE IN ADVANCE OF SCHOOL CROSSWALK
-  PROPOSED "NO STANDING 7:00AM - 4:00PM SCHOOL DAYS"
-  PROPOSED CURB EXTENSION (NECKDOWN)
-  BLOCKBUSTER STRIPING TREATMENT

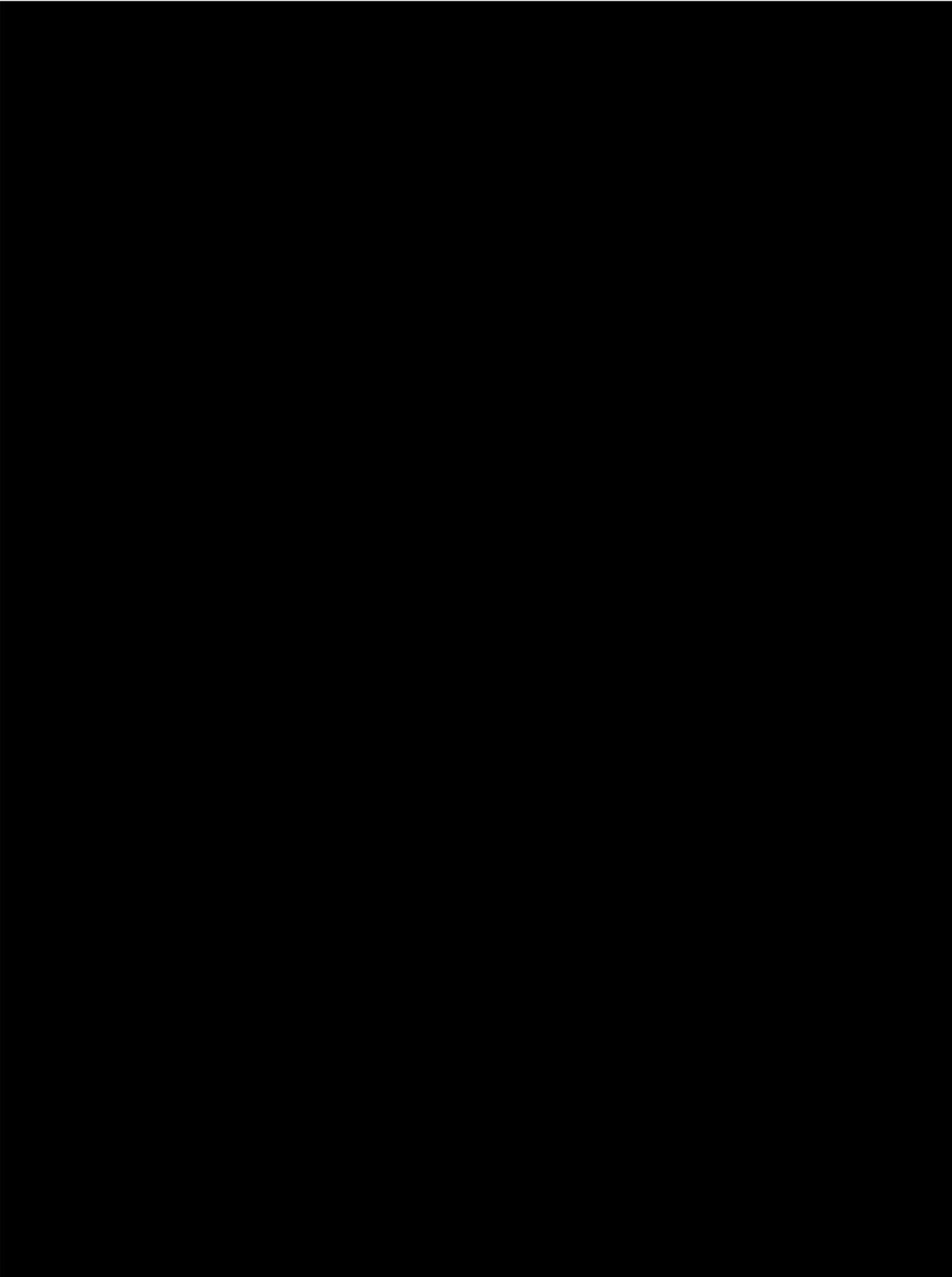
1" = 200'

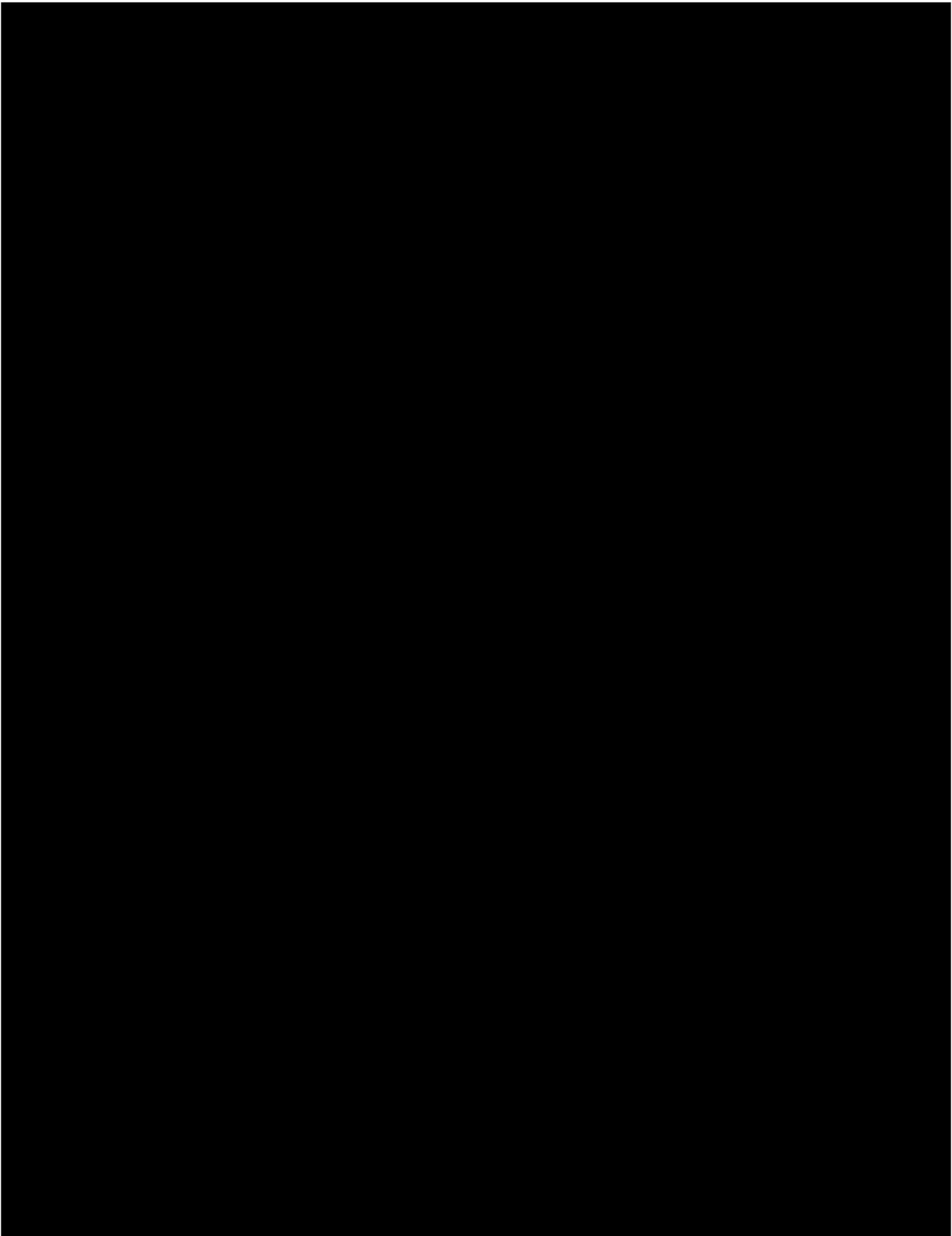
EXHIBIT 6

OUR LADY OF MERCY SCHOOL
BRONX

POTENTIAL MEASURES
TO IMPROVE STUDENT PEDESTRIAN SAFETY

APPENDIX





Analyst: RC Inter.: E. Fordham Road/Webster Avenue
 Agency: Urbitran Associates Inc., Area Type: All other areas
 Date: 6/29/2006 Jurisd: NYC
 Period: AM Year : Existing AM 2006
 Project ID:
 E/W St: E. Fordham Road N/S St: Webster Avenue

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	1	2	0	1	2	0
LGConfig	L	TR		L	T		L	TR		L	TR	
Volume	29	663	97	120	938		73	487	108	171	617	131
Lane Width	11.0	12.0		11.0	12.0		10.0	11.0		10.0	11.0	
RTOR Vol			0						0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		P			NB Left	P	P	
Thru			P		Thru		P	
Right			P		Right		P	
Peds			X		Peds		X	
WB Left	P				SB Left	P	P	
Thru			P		Thru		P	
Right					Right		P	
Peds			X		Peds		X	
NB Right					EB Right			
SB Right					WB Right			
Green	8.0	58.0			9.0	25.0		
Yellow	3.0	3.0			3.0	3.0		
All Red	2.0	2.0			2.0	2.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
L	251	1634	0.13	0.59	14.5	B		
TR	1509	3123	0.56	0.48	23.5	C	23.1	C
Westbound								
L	300	1566	0.44	0.59	17.9	B		
T	1532	3170	0.68	0.48	26.3	C	25.4	C
Northbound								
L	174	1518	0.44	0.32	41.6	D		
TR	619	2973	1.01	0.21	86.9	F	82.0	F
Southbound								
L	170	1465	1.02	0.32	109.6	F		
TR	717	3188	1.05	0.22	89.6	F	93.4	F

Intersection Delay = 52.8 (sec/veh) Intersection LOS = D

Analyst: RC Inter.: E. Fordham Road/Webster Avenue
 Agency: Urbitran Associates Inc., Area Type: All other areas
 Date: 6/29/2006 Jurisd: NYC
 Period: AM Year : Proposed
 Project ID: Eliminate free right turns.
 E/W St: E. Fordham Road N/S St: Webster Avenue

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	1	1	2	0	1	2	0
LGConfig	L	TR		L	T	R	L	TR		L	TR	
Volume	29	663	97	120	938	136	73	487	108	171	617	131
Lane Width	11.0	12.0		11.0	12.0	12.0	10.0	11.0		10.0	12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		P			NB Left	P	P	
Thru			P		Thru		P	
Right			P		Right		P	
Peds			X		Peds		X	
WB Left	P		P		SB Left	P	P	
Thru			P		Thru		P	
Right			P		Right		P	
Peds			X		Peds		X	
NB Right					EB Right			
SB Right					WB Right			
Green	8.0	58.0			9.0	25.0		
Yellow	3.0	3.0			3.0	3.0		
All Red	2.0	2.0			2.0	2.0		

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
L	251	1634	0.13	0.59	14.5	B		
TR	1509	3123	0.56	0.48	23.5	C	23.1	C
Westbound								
L	300	1566	0.44	0.59	17.9	B		
T	1634	3381	0.64	0.48	25.1	C	23.7	C
R	559	1157	0.27	0.48	19.6	B		
Northbound								
L	174	1518	0.44	0.32	41.6	D		
TR	619	2973	1.01	0.21	86.9	F	82.0	F
Southbound								
L	170	1465	1.02	0.32	109.6	F		
TR	742	3298	1.02	0.22	78.6	E	84.4	F

Intersection Delay = 49.0 (sec/veh) Intersection LOS = D