

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



**School Safety Engineering Project**

**FINAL REPORT: Saint Benedict Joseph Labre, Queens**



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



**November 10, 2006**

**School Safety Engineering Project  
Final Report: Saint Benedict Joseph Labre, Queens**

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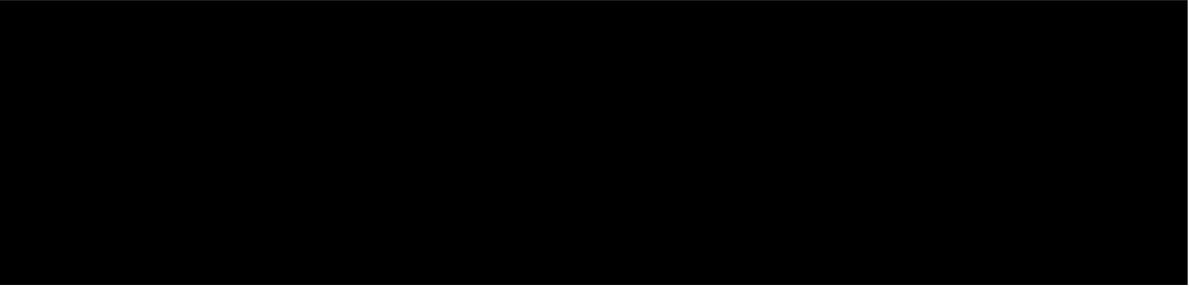
## **1. INTRODUCTION**

### **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, accident 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). Saint Benedict Joseph Labre in Queens 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**



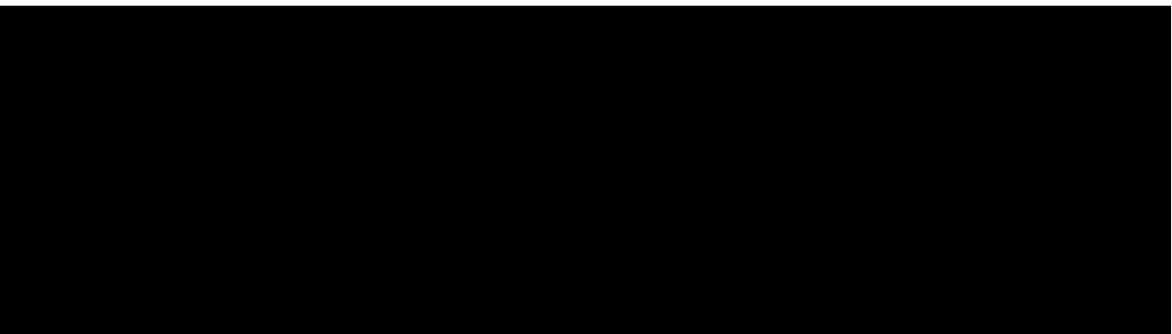
### **2.2 NEIGHBORHOOD DESCRIPTION**

Exhibit 1 shows an aerial view of the neighborhood surrounding Saint Benedict Joseph Labre School, which includes a combination of residential and commercial uses. Saint Benedict Joseph Labre is located on the east side of 117<sup>th</sup> Street, and is bounded by Atlantic Avenue to the north, 95<sup>th</sup> Avenue to the south, and 118<sup>th</sup> Street to the east. Lefferts Boulevard is located one block east of the school.

### **2.3 MEETING WITH SCHOOL REPRESENTATIVES**

Members of the consultant team met with the principal and the pastor from Saint Benedict Joseph Labre at the school on the morning of Monday, May 24, 2004. According to the principal, student pedestrians at Saint Benedict Joseph Labre School face the following problems:

- Vans and trucks park on 117<sup>th</sup> Street, south of the intersection with Atlantic Avenue, blocking drivers' view of the stop sign on the northbound approach.
- Crossing Atlantic Avenue at the intersection with 117<sup>th</sup> Street is dangerous because there is no traffic signal.
- There is not enough green time for pedestrian crossings of Atlantic Avenue.
- The pedestrian walk signal does not operate at the intersection of 95<sup>th</sup> Avenue and Lefferts Boulevard.





## **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. However, because Saint Benedict Joseph Labre is a private parochial school, the actual “catchment area” is dependent upon other factors, determined by the school administrators.

Table 1 presents the modes of travel for Saint Benedict Joseph Labre School as estimated by school officials. The school principal estimated that although approximately seventy percent of the students reside within walking distance of the school, most students are driven to school, as shown in Table 1.

<b>TABLE 1: MODES OF TRAVEL (AS ESTIMATED BY SCHOOL OFFICIALS)</b>	<b>STUDENTS (Percentage)</b>
Walk	25%
Driven by car	75%
School bus	0%
MTA Bus/Subway	0%
Bicycle	0%
<b>TOTAL</b>	<b>100%</b>

## **2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS**

There are a variety of commercial uses located along Atlantic Avenue and Lefferts Boulevard that attract student pedestrian traffic from St. Benedict Joseph Labre, as well as pedestrian and vehicular traffic in general. No other additional student pedestrian traffic generators were observed in the immediate vicinity of the school.

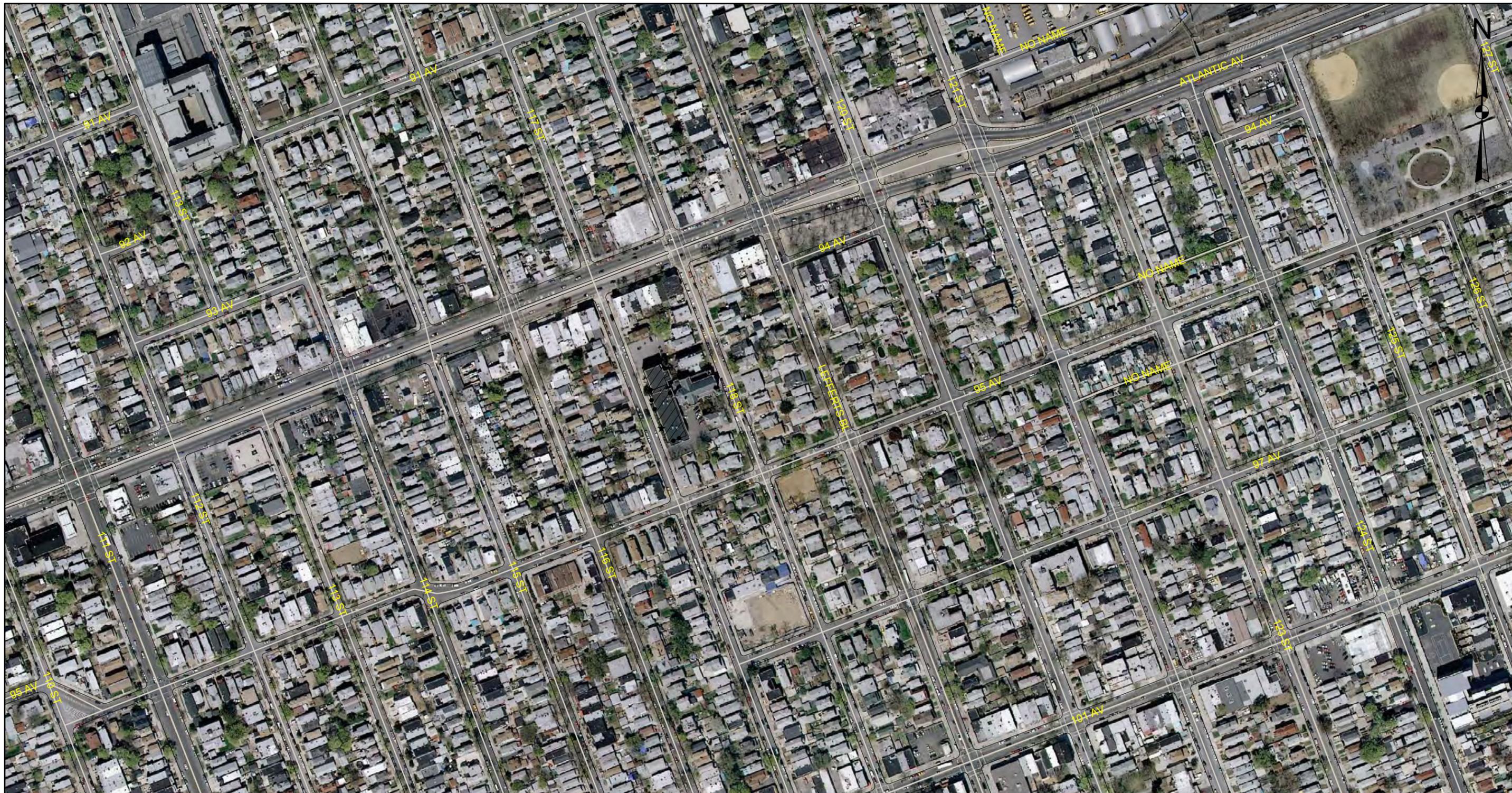
## **2.8 CROSSING GUARD LOCATION**

According to the school principal, one crossing guard is assigned to the all-way stop-controlled intersection of 95<sup>th</sup> Avenue and 117<sup>th</sup> Street.

The crossing guard location is shown in Exhibit 3.



*Figure 2: Crossing guard is shown on duty at the intersection of 117<sup>th</sup> Street and 95<sup>th</sup> Avenue*



0 250 500 1,000  
Feet

**EXHIBIT 1**  
**ST. BENEDICT JOSEPH LABRE SCHOOL QUEENS**

**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

**Queens**  
**BENEDICT JOSEPH LABRE SCHOOL**

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

**EXHIBIT 2**

Map created on 11/17/2006

COMM. BOARD: 409  
 PRECINCT: 102

1.5.1 8

N



**EXHIBIT 3**

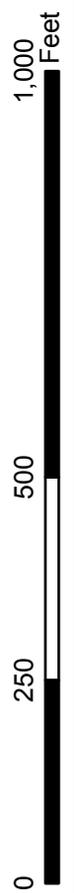
**ST. BENEDICT JOSEPH LABRE SCHOOL QUEENS**

**CROSSING GUARD LOCATION**

**LEGEND:**



CROSSING GUARD LOCATION



### **3. TRAFFIC OPERATIONS**

#### **3.1 SCHOOL BUS OPERATIONS**

According to school officials, there are no yellow school buses assigned to the school and no students ride an MTA bus to school.

#### **3.2 PARENT DROP-OFF OPERATIONS**

Parents and cabs were observed dropping off students on 117<sup>th</sup> Street during the morning arrival, resulting in some congestion and double parking in front of the school. School officials reported that congestion and double parking occur during the afternoon dismissal period as well.

#### **3.3 PARKING REGULATIONS**

Parking regulations in the vicinity of the school are shown in Exhibit 4. Atlantic Avenue is a designated “Snow Route,” which prohibits vehicles from standing on the street during an emergency weather condition.

#### **3.4 EXISTING SCHOOL SIGNS AND MARKINGS**

Exhibit 2 shows the existing signals and pavement markings around Saint Benedict Joseph Labre. 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.

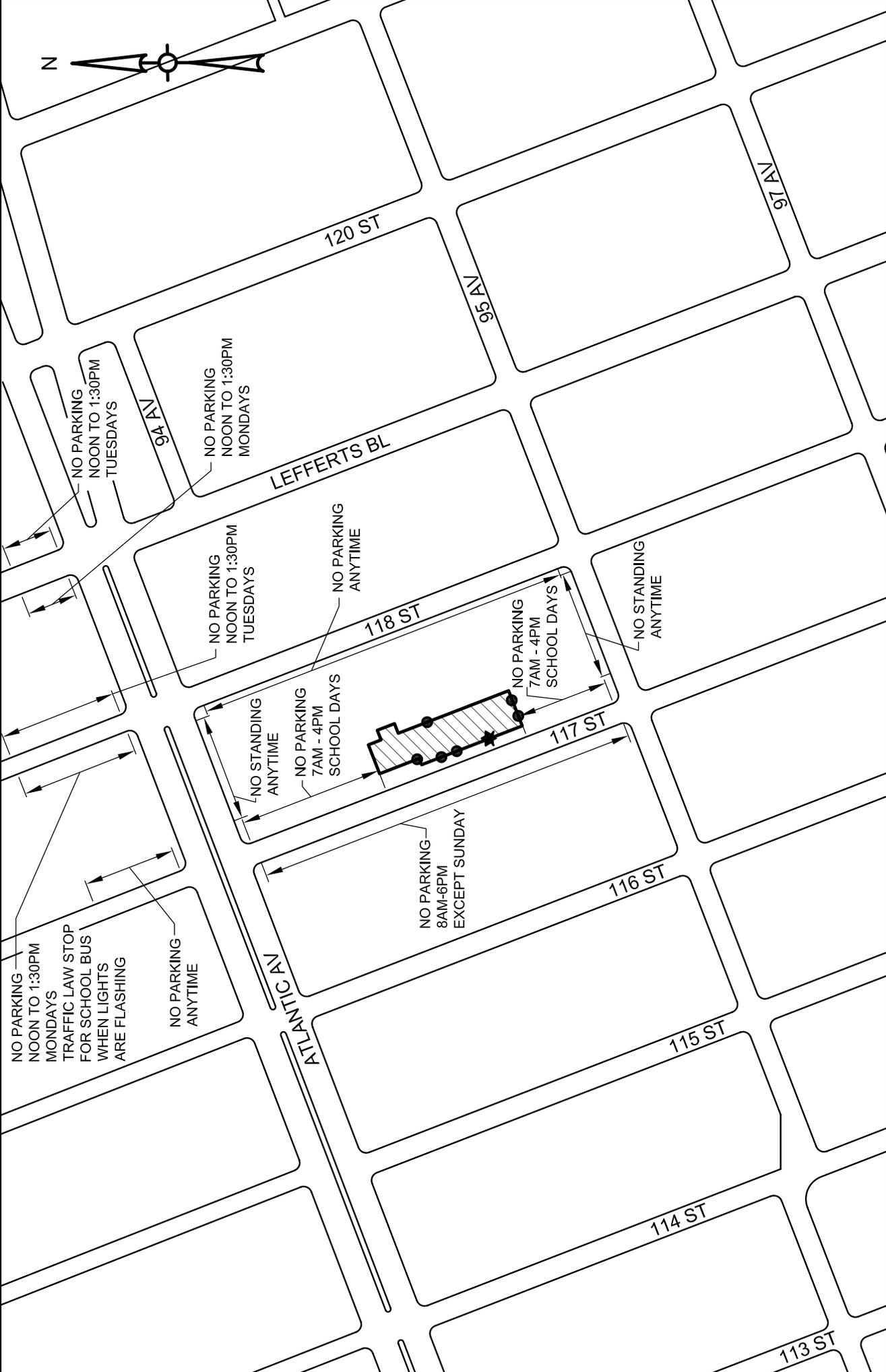


EXHIBIT 4

ST. BENEDICT JOSEPH LABRE SCHOOL  
QUEENS

EXISTING PARKING REGULATIONS

LEGEND:



MAIN ENTRANCE



ENTRANCE



### 3.5 ACCIDENT SUMMARY

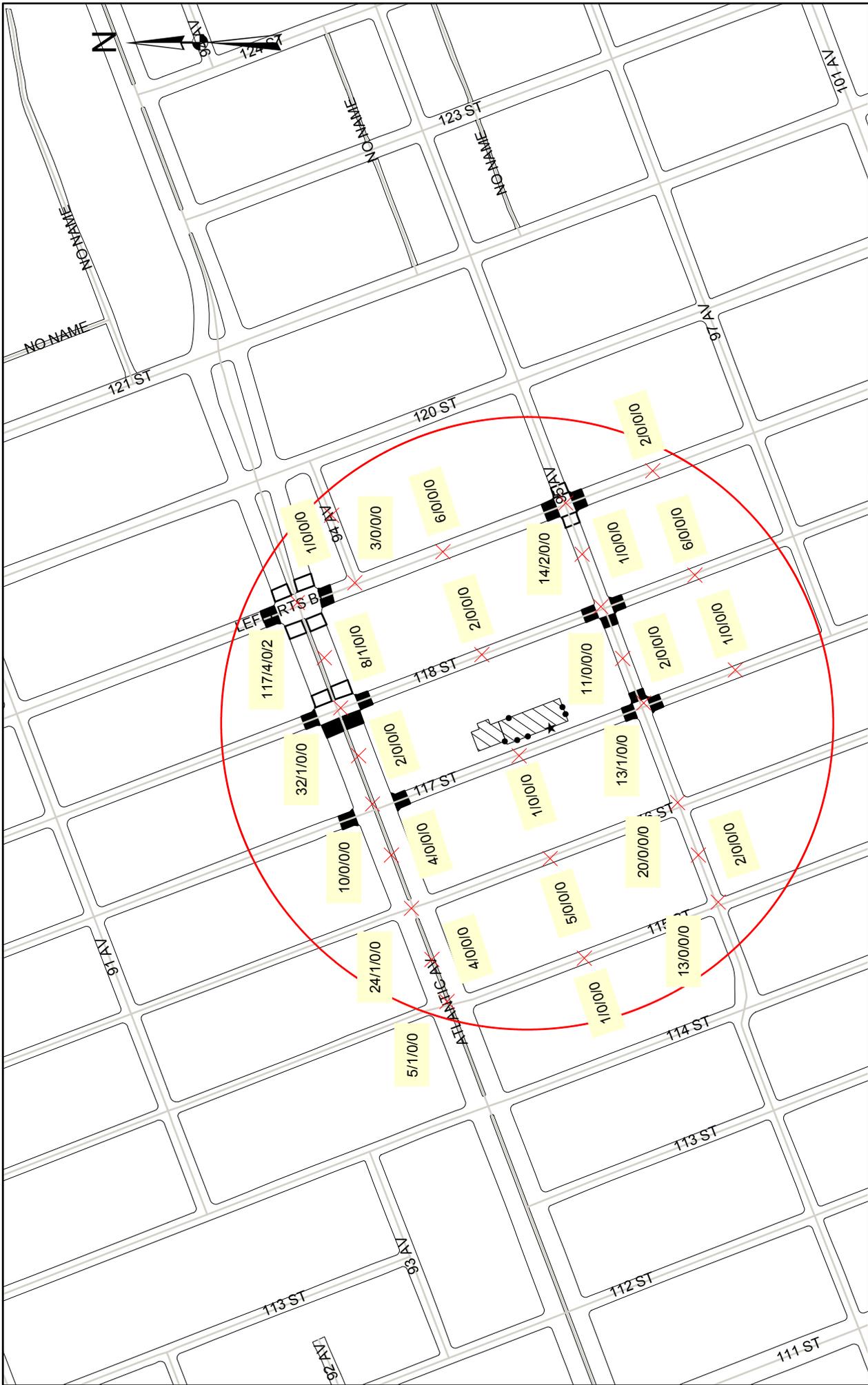
Exhibit 5 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of St. Benedict Joseph Labre School for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances 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.

<b>TABLE 2: ACCIDENT SUMMARY OF NYS DMV THREE-YEAR DATA (1998-2000)</b>				
<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
Atlantic Avenue and 117 <sup>th</sup> Street	10	0	0	0
Atlantic Avenue and 118 <sup>th</sup> Street	32	1	0	0
Atlantic Avenue and Lefferts Boulevard	117	4	0	2
95 <sup>th</sup> Avenue and 117 <sup>th</sup> Street	13	1	0	0
95 <sup>th</sup> Avenue and 118 <sup>th</sup> Street	11	0	0	0
95 <sup>th</sup> Avenue and Lefferts Boulevard	14	2	0	0
<b>TOTAL</b>	<b>197</b>	<b>8</b>	<b>0</b>	<b>2</b>

<b>TABLE 3: ACCIDENT SUMMARY OF NYPD FOUR-YEAR DATA (2001-2004)</b>				
<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
Atlantic Avenue and 117 <sup>th</sup> Street	19	0	0	0
Atlantic Avenue and 118 <sup>th</sup> Street	44	3	0	0
Atlantic Avenue and Lefferts Boulevard	136	14	0	0
95 <sup>th</sup> Avenue and 117 <sup>th</sup> Street	8	0	0	0
95 <sup>th</sup> Avenue and 118 <sup>th</sup> Street	6	0	0	0
95 <sup>th</sup> Avenue and Lefferts Boulevard	26	1	0	0
<b>TOTAL</b>	<b>239</b>	<b>18</b>	<b>0</b>	<b>0</b>

\* 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
- X/X/X/X
- TOTAL ACCD / PED ACCD / FATAL / SCHOOL\_PED ACCD

**EXHIBIT 5**

**ST. BENEDICT JOSEPH LABRE SCHOOL QUEENS**

**ACCIDENT SUMMARY (1998-2000)**

0 250 500 1,000 Feet

### 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 specific 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 St. Benedict Joseph Labre School.

#### 3.6.1 Atlantic Avenue and 117<sup>th</sup> Street

This is an unsignalized stop-controlled intersection with school crosswalks located across the north and south legs of 117<sup>th</sup> Street. Atlantic Avenue is a two-way east-west street with two travel lanes and one on-street parking lane in each direction, separated by a raised concrete median approximately 27 feet wide. 117<sup>th</sup> Street is a one-way northbound street with one travel lane and on-street parking permitted on both sides of the roadway (see Figures 3 and 4). The northbound approach of 117<sup>th</sup> Street is stop-controlled at its intersection with Atlantic Avenue.

There was a total of ten accidents reported at this intersection between 1998 and 2000, but none of these were pedestrian accidents (Table 2). No pedestrian fatalities were reported at this intersection between 1998 and 2000.



*Figure 3: Looking south along 117<sup>th</sup> Street from the intersection with Atlantic Avenue*



*Figure 4: Looking north on 117<sup>th</sup> Street to the intersection with Atlantic Avenue*

The school officials reported a speeding problem on Atlantic Avenue. Therefore, spot speed surveys were conducted on Atlantic Avenue in each direction, between 117<sup>th</sup> Street and 118<sup>th</sup> Street, in order to verify the existence of a speeding problem and to determine its extent.

In the analysis of vehicle speeds, the 85<sup>th</sup> percentile speed is considered to be the representative speed for a specified street segment. By definition, this is the speed at which 85 percent of the surveyed vehicles are traveling below and 15 percent of the surveyed vehicles are traveling above. An 85<sup>th</sup> percentile speed exceeding a 30 mph threshold indicates a potential speeding problem that may require appropriate traffic calming measures.

Eastbound and westbound vehicles on Atlantic Avenue were found to be traveling at 85<sup>th</sup> percentile speeds of 36 mph and 38 mph respectively, between 117<sup>th</sup> Street and 118<sup>th</sup> Street.

The detailed results of the spot speed surveys on Atlantic Avenue between 117<sup>th</sup> Street and 118<sup>th</sup> Street are shown in the Appendix at the end of this document.

### 3.6.2 Atlantic Avenue and 118<sup>th</sup> Street

This is a four-leg signalized intersection, with school crosswalks located across the north and south legs of 118<sup>th</sup> Street and the west leg of Atlantic Avenue, and a pedestrian crosswalk located across the east leg of Atlantic Avenue.

Atlantic Avenue is a two-way east-west street with two travel lanes and one on-street parking lane in each direction, separated by a raised concrete median. At the intersection with 118<sup>th</sup> Street, the concrete median narrows to accommodate an exclusive westbound

left-turn lane on Atlantic Avenue. 118<sup>th</sup> Street is a one-way southbound street with one travel lane and on-street parking permitted on both sides of the roadway (see Figure 5).

There was a total of 32 accidents reported at this intersection between 1998 and 2000, including one pedestrian accident that was not school-related (Table 2). There were no pedestrian fatalities reported at this intersection between 1998 and 2000.



*Figure 5: Looking west along Atlantic Avenue at the intersection with 118<sup>th</sup> Street*

### 3.6.3 Atlantic Avenue and Lefferts Boulevard

This is a four-leg signalized intersection, with school crosswalks located across the north and south legs of Lefferts Boulevard, and pedestrian crosswalks located across the east and west legs of Atlantic Avenue.

Atlantic Avenue is a two-way east-west street with two travel lanes and one on-street parking lane in each direction, separated by a raised concrete median approximately 18 feet wide, and exclusive eastbound and westbound left-turn lanes. Lefferts Boulevard is a two-way north-south street with one travel lane and one on-street parking lane in each direction (see Figure 6).

There was a total of 117 accidents reported at this intersection between 1998 and 2000, including four pedestrian accidents, two of which were school-related. In the first school-related accident, a nine-year-old pedestrian suffered an incapacitating injury on Friday, September 24, 1999 at approximately 5:00 pm while crossing against the signal. The roadway surface and weather were reported as dry and clear, respectively. In the second school-related accident, a 13-year-old pedestrian suffered a non-incapacitating injury on Friday, June 16, 2000 at approximately 8:00 am while crossing against the signal. The roadway surface and weather were reported as dry and cloudy, respectively. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.



Figure 6: Looking west along Atlantic Avenue to the intersection with Lefferts Boulevard.

#### 3.6.4 95<sup>th</sup> Avenue and 117<sup>th</sup> Street

This is a four-leg all-way stop-controlled intersection, with school crosswalks located across the north and south legs of 117<sup>th</sup> Street and the east leg of 95<sup>th</sup> Avenue.

117<sup>th</sup> Street is a one-way northbound street with one travel lane and on-street parking on the west side of the roadway and a “NO PARKING 7AM-4PM SCHOOL DAYS, on the east side of the roadway. 95<sup>th</sup> Avenue is a two-way east-west street with one travel lane and one on-street parking lane on each side of the roadway (see Figures 7 and 8).

There was a total of 13 accidents reported at this intersection between 1998 and 2000, including one pedestrian accident which was not school-related. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.



*Figure 7: Looking east on 95<sup>th</sup> Avenue to the intersection with 117<sup>th</sup> Street*



*Figure 8: Looking north on 117<sup>th</sup> Street to the intersection with 95<sup>th</sup> Avenue*

### 3.6.5 95<sup>th</sup> Avenue and 118<sup>th</sup> Street

This is a four-leg all-way stop-controlled intersection, with school crosswalks located across the north and south legs of 118<sup>th</sup> Street and the west leg of 95<sup>th</sup> Avenue, and a pedestrian crosswalk located across the east leg of 95<sup>th</sup> Avenue.

118<sup>th</sup> Street is a one-way southbound street with one travel lane and on-street parking permitted on both sides of the roadway. 95<sup>th</sup> Avenue is a two-way east-west street with one travel lane and one on-street parking lane on each side of the roadway (see Figures 9 and 10).

There was a total of 11 accidents reported at this intersection between 1998 and 2000, but none of these were pedestrian accidents.



*Figure 9: Looking west on 95<sup>th</sup> Avenue to the intersection with 118<sup>th</sup> Street*



*Figure 10: Looking south on 118<sup>th</sup> Street to the intersection with 95<sup>th</sup> Avenue*

### 3.6.6 95<sup>th</sup> Avenue and Lefferts Boulevard

This is a four-leg signalized intersection with school crosswalks located across all four legs of the intersection. Although school officials reported that the pedestrian walk signal does not operate at the intersection of 95<sup>th</sup> Avenue and Lefferts Boulevard, at the time of the field visit, the pedestrian walk signals at this intersection appeared to be operating properly.

95<sup>th</sup> Avenue is a two-way east-west street with one travel lane and one on-street parking lane on each side of the roadway. Lefferts Boulevard is a two-way north-south street with one travel lane and one on-street parking lane on each side of the roadway (see Figure 11).

There was a total of 14 accidents reported at this intersection between 1998 and 2000, including two pedestrian accidents, neither of which were school-related. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.



*Figure 11: Looking west on 95<sup>th</sup> Avenue to the intersection with Lefferts Boulevard*

### **3.7 SIGNAL TIMING**

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of St. Benedict Joseph Labre, and were found to be adequate based upon a child pedestrian walking at a rate of three feet per second.

<b>TABLE 4: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS</b>				
<b>INTERSECTION</b>	<b>CROSSWALK LENGTH (FEET)</b>	<b>PEDESTRIAN TIME ACTUAL (SECONDS)</b>	<b>PEDESTRIAN TIME REQUIRED (SECONDS)</b>	<b>TIMING ADJUSTMENT REQUIRED?</b>
<b>Atlantic Avenue and 118<sup>th</sup> Street</b>				
crossing Atlantic Avenue (eastbound lanes)	37	37 (AM) 40 (PM-1) 43 (PM-2)	16	NO
crossing Atlantic Avenue (westbound lanes)	37	37 (AM) 40 (PM-1) 43 (PM-2)	16	NO
crossing Atlantic Avenue (both directions)	92	37 (AM) 40 (PM-1) 43 (PM-2)	34	NO <sup>(3)</sup>
crossing 118 <sup>th</sup> Street	30	79 (AM) 46 (PM-1) 73 (PM-2)	13	NO
<b>Atlantic Avenue and Lefferts Boulevard</b>				
crossing Atlantic Avenue (eastbound lanes)	37	27 (AM) 24 (PM-1) 27 (PM-2)	16	NO
crossing Atlantic Avenue (westbound lanes)	37	27 (AM) 24 (PM-1) 27 (PM-2)	16	NO
crossing Atlantic Avenue (both directions)	92	27 (AM) 24 (PM-1) 27 (PM-2)	34	NO <sup>(3)</sup>
crossing Lefferts Boulevard	40	58 (AM) 39 (PM-1) 58 (PM-2)	17	NO
<b>95<sup>th</sup> Avenue and Lefferts Boulevard</b>				
crossing 95 <sup>th</sup> Avenue	30	38	13	NO
crossing Lefferts Boulevard	40	33	17	NO

1. A child pedestrian walking rate of 3 feet/second, plus 3 seconds reaction time, was utilized to calculate the required pedestrian crossing times.
2. AM timing is in effect Monday – Friday from 5:30 a.m. – 10:30 a.m.  
PM-1 timing is in effect Monday - Friday from 10:30 a.m. - 3:00 p.m. and from 7:30 p.m. – 5:30 a.m.  
PM-2 timing is in effect Monday - Friday from 3:00 p.m. - 7:30 p.m.
3. Although the time required to cross the entire width of Atlantic Avenue (both directions) is 34 seconds, the time to reach the concrete median is only 16 seconds. Pedestrians are expected to utilize the center median when crossing Atlantic Avenue to wait between cycles.

### **3.8 PHYSICAL CONDITIONS**

#### **3.8.1 Roadways and Sidewalks**

The roadways and sidewalks in the vicinity of Saint Benedict Joseph Labre School were observed to be in fair condition. On the school block faces, sidewalks were observed to be in fair condition and were found to vary in width from approximately ten to 14 feet.

#### **3.8.2 Pedestrian Ramps**

Pedestrian ramps in the vicinity of the school appeared to be standard.

## 4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

This section describes the proposed measures to improve student pedestrian safety around Saint Benedict Joseph Labre 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-term and long-term measures recommended for Saint Benedict Joseph Labre School is discussed as follows, and is shown in more detail in Exhibit 6.

### 4.1 SHORT-TERM MEASURES

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

A parking regulation should be instituted and signs installed reading “NO STANDING 7AM - 4PM SCHOOL DAYS” for 30 feet in front of the main entrance to the school. (This is a typical requirement for all NYC schools in order to provide for emergency access to and from the school.)

➤ *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.

➤ *Administer student pedestrian safety education program*

School officials reported that students were observed crossing Atlantic Avenue at the intersection with 117<sup>th</sup> Street where there is no traffic signal instead of crossing at the signalized intersection of Atlantic Avenue and 118<sup>th</sup> Street. It is recommended that:

- The school should participate in the NYCDOT Safety Education Program to educate students to use designated school crosswalks while crossing the street, not to cross mid-block, not to cross against signals, and not to run out between cars.
- Students should be instructed to utilize the center median on Atlantic Avenue when crossing from either direction, and to complete the crossing in two stages. This is a common practice for intersections with wide crossings and raised concrete medians.

➤ *Designate pedestrian crosswalk*

School crosswalks are located across the north, south, and east legs of the 117<sup>th</sup> Street and 95<sup>th</sup> Avenue intersection. However, no crosswalk is located across the

west leg of this intersection to accommodate pedestrians crossings at this location. Therefore, it is recommended that:

- A pedestrian crosswalk should be designated across the west leg of the 117<sup>th</sup> Street and 95<sup>th</sup> Avenue intersection, and all appropriate advance warning signs should be installed.

#### 4.2 LONG-TERM MEASURES

➤ Consider extending median to provide pedestrian refuge islands

There is a relatively wide raised concrete median island on Atlantic Avenue, separating the eastbound and westbound travel lanes. Therefore, consideration should be given to extending the median at the following locations, provided that the Final Design confirms that construction of the extensions would be feasible and not interfere with traffic operations. Final details will be developed during the Final Design/Contract Document preparation.

- Extend the existing median through the school crosswalk across the west leg and the pedestrian crosswalk across the east leg of Atlantic Avenue at the intersection with 118<sup>th</sup> Street.
- Extend the existing median through the pedestrian crosswalks across the east and west legs of Atlantic Avenue at the intersection with Lefferts Boulevard.

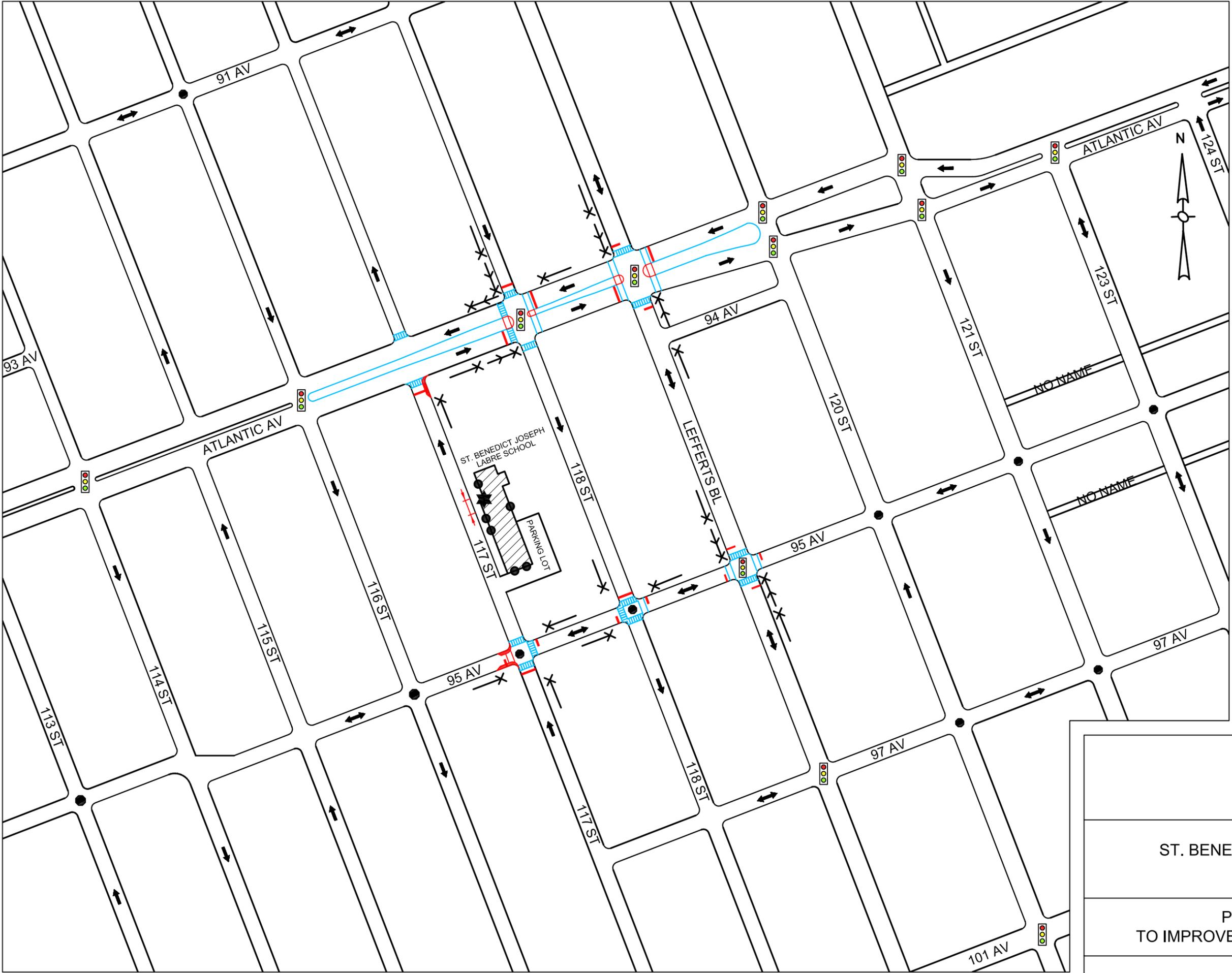
The purpose of the median extension is to provide a refuge for pedestrians who do not complete the crossing during the flashing “DON’T WALK” signal indication. The existing median should extend beyond the crosswalk, and should have at least a five foot at-grade cut-through section. These median extensions are not proposed where they would hinder the ability of vehicles to turn.

➤ Consider installing curb extensions at the following locations

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.

- Northwest and southwest corners of the 95<sup>th</sup> Avenue and 117<sup>th</sup> Street intersection.
- Southeast corner of 117<sup>th</sup> Street at Atlantic Avenue.

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 intersections. These curb extensions would not eliminate or reduce the width of any moving lanes.



- 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 SIGNALIZED LOCATION
  -  EXISTING ALL WAY STOP LOCATION
  -  EXISTING SCHOOL CROSSWALK
  -  EXISTING PEDESTRIAN CROSSWALK
  -  PROPOSED ADVANCE WARNING SIGN OR SCHEDULED
  -  PROPOSED STOP LINE IN ADVANCE OF SCHOOL CROSSWALK
  -  PROPOSED PEDESTRIAN CROSSWALK
  -  EXTEND MEDIAN TO PROVIDE REFUGE FOR PEDESTRIAN
  -  PROPOSED "NO STANDING 7:00AM - 4:00PM SCHOOL DAYS"
  -  PROPOSED CURB EXTENSION (NECKDOWN)

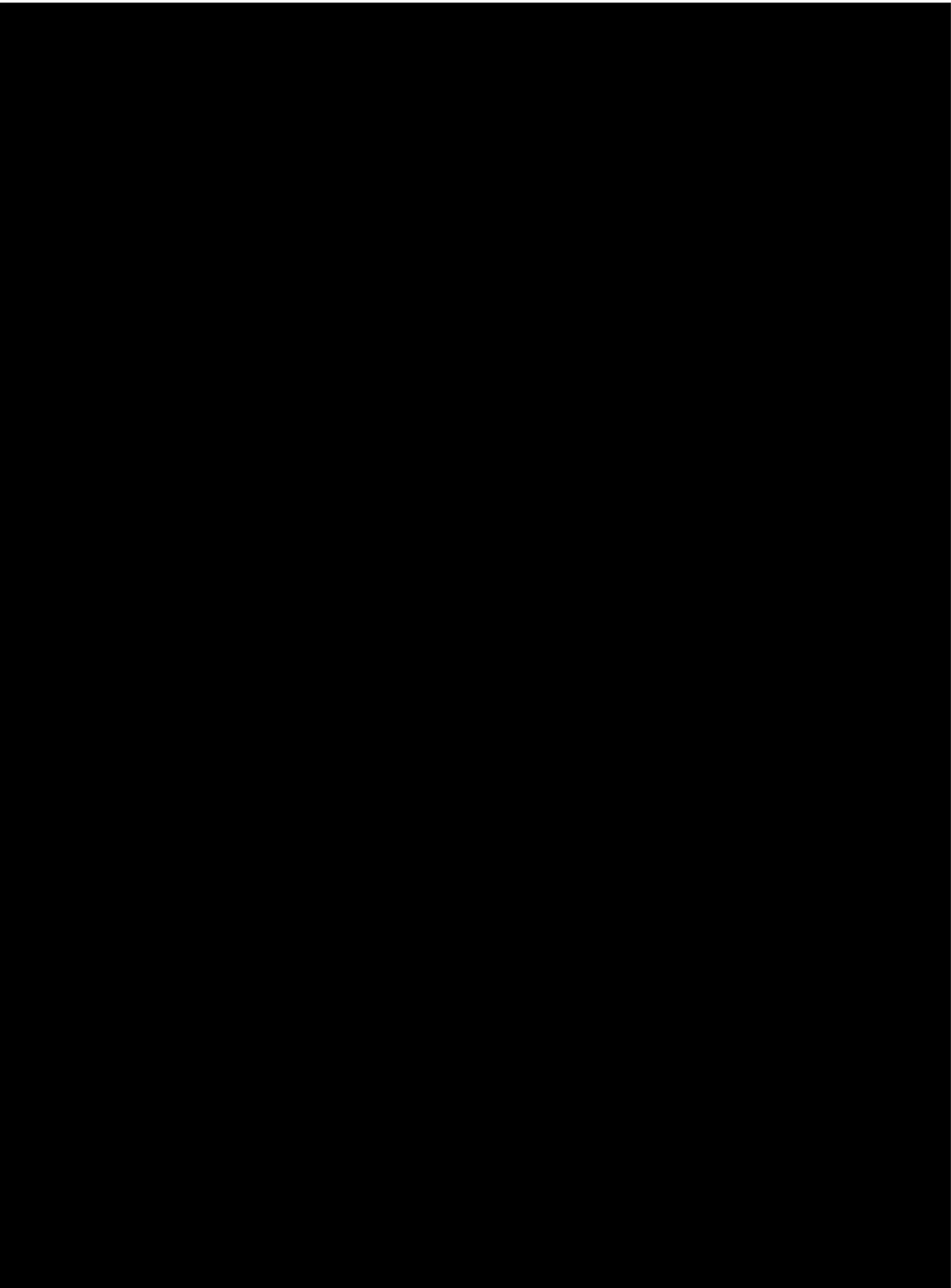
1" = 200'

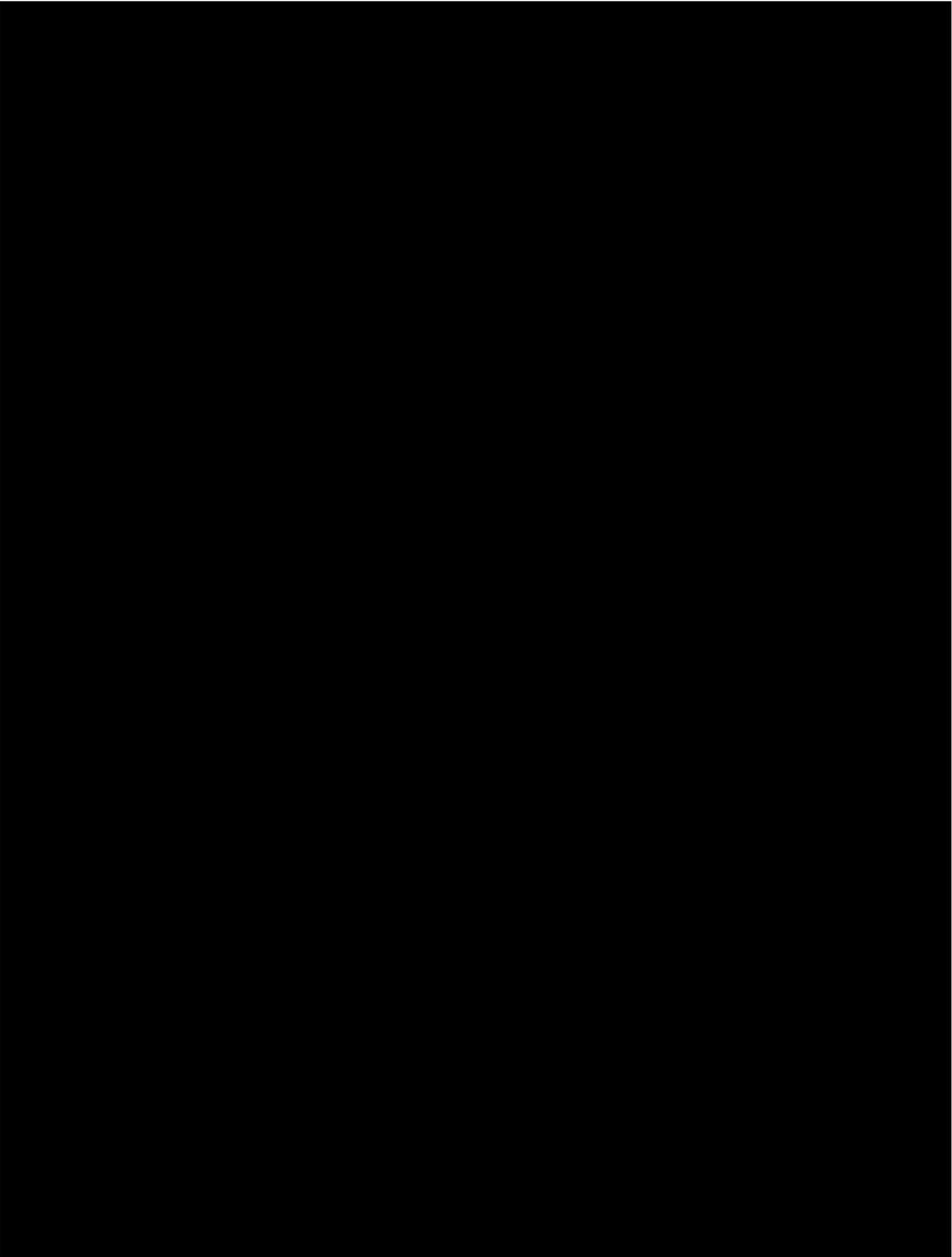
EXHIBIT 6

ST. BENEDICT JOSEPH LABRE SCHOOL  
QUEENS

POTENTIAL MEASURES  
TO IMPROVE STUDENT PEDESTRIAN SAFETY

# APPENDIX





## SPOT SPEED STUDY

Date: **October 18, 2005**                      Time: **10:00 am**  
 Location: **Atlantic Avenue between 117th Street & 118th Street**  
 Surveyor: **R. Calvache/ H. Salinas**

School: **St. Joseph Benedict**  
 Direction: **EB**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	1	1.0%	1.0%	23	529
24	1	1.0%	2.0%	24	576
25	1	1.0%	3.0%	25	625
26	4	4.0%	7.0%	104	2704
27	3	3.0%	10.0%	81	2187
28	6	6.0%	16.0%	168	4704
29	12	12.0%	28.0%	348	10092
30	19	19.0%	47.0%	570	17100
31	8	8.0%	55.0%	248	7688
32	8	8.0%	63.0%	256	8192
33	2	2.0%	65.0%	66	2178
34	10	10.0%	75.0%	340	11560
35	8	8.0%	83.0%	280	9800
36	4	4.0%	87.0%	144	5184
37	2	2.0%	89.0%	74	2738
38	3	3.0%	92.0%	114	4332
39	3	3.0%	95.0%	117	4563
40	1	1.0%	96.0%	40	1600
41	3	3.0%	99.0%	123	5043
42	0	0.0%	99.0%	0	0
43	1	1.0%	100.0%	43	1849
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	100	100.0%		3188	103244

Mean Speed = 31.9 mph  
 Standard Deviation = 4.0 mph  
 Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 31.9 mph  
 15th Percentile Speed = 27.7 mph  
 85th Percentile Speed = 36.1 mph

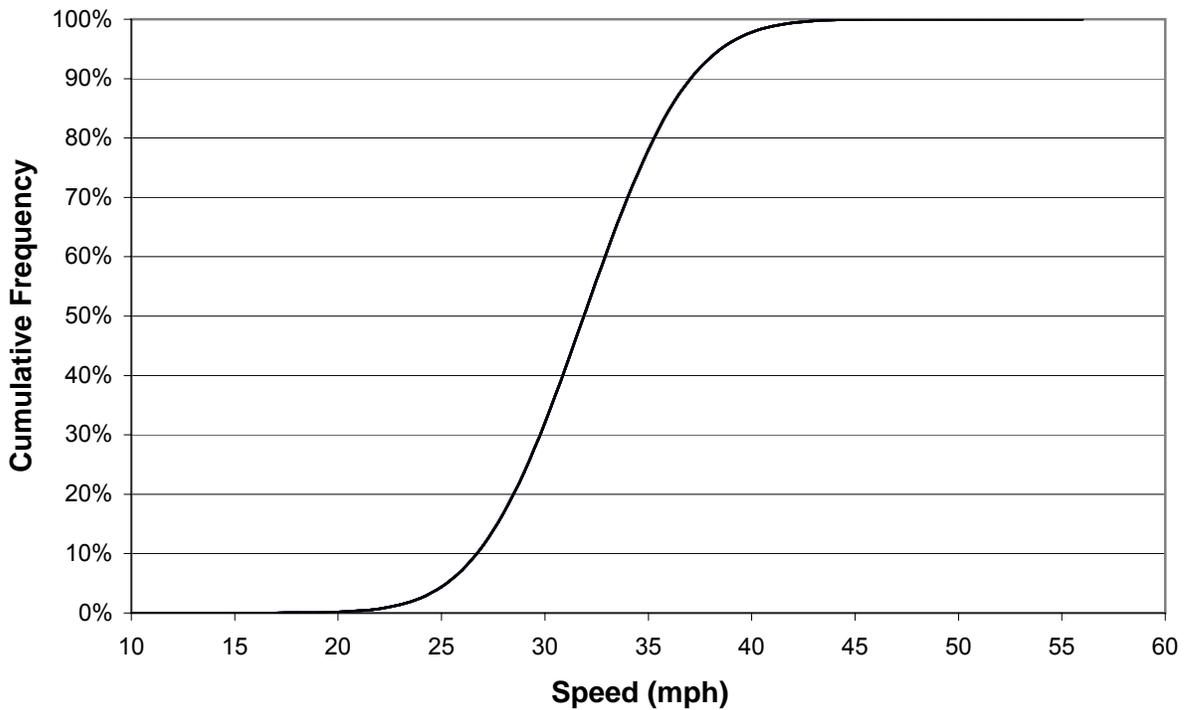
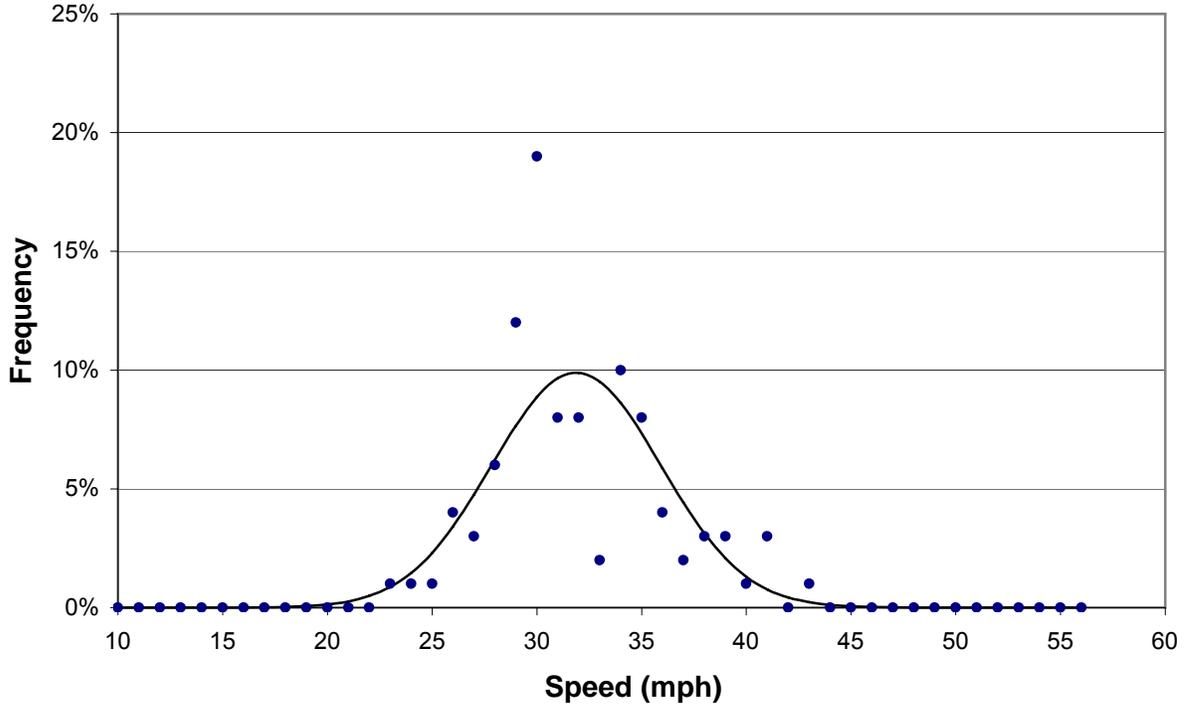
# SPOT SPEED STUDY

Date: **October 18, 2005** Time: **10:00 am**  
Location: **Atlantic Avenue between 117th Street & 118th Street**  
Surveyor: **R. Calvache/ H. Salinas**

School: **St. Joseph Benedict**  
Direction: **EB**  
Comments:

Mean Speed = 31.9 mph  
Standard Deviation = 4.0 mph  
Margin of Error (95% Confidence) =  $\pm 0.8$  mph

Median Speed = 31.9 mph  
15th Percentile Speed = 27.7 mph  
85th Percentile Speed = 36.1 mph



## SPOT SPEED STUDY

Date: **October 18, 2005**                      Time: **11:00 am**  
 Location: **Atlantic Avenue between 117th Street & 118th Street**  
 Surveyor: **R. Calvache/ H. Salinas**

School: **St. Joseph Benedict**  
 Direction: **WB**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	0	0.0%	0.0%	0	0
24	0	0.0%	0.0%	0	0
25	2	2.0%	2.0%	50	1250
26	2	2.0%	4.0%	52	1352
27	1	1.0%	5.0%	27	729
28	4	4.0%	9.0%	112	3136
29	6	6.0%	15.0%	174	5046
30	12	12.0%	27.0%	360	10800
31	10	10.0%	37.0%	310	9610
32	15	15.0%	52.0%	480	15360
33	6	6.0%	58.0%	198	6534
34	9	9.0%	67.0%	306	10404
35	9	9.0%	76.0%	315	11025
36	5	5.0%	81.0%	180	6480
37	3	3.0%	84.0%	111	4107
38	6	6.0%	90.0%	228	8664
39	0	0.0%	90.0%	0	0
40	2	2.0%	92.0%	80	3200
41	3	3.0%	95.0%	123	5043
42	4	4.0%	99.0%	168	7056
43	0	0.0%	99.0%	0	0
44	0	0.0%	99.0%	0	0
45	0	0.0%	99.0%	0	0
46	0	0.0%	99.0%	0	0
47	0	0.0%	99.0%	0	0
48	0	0.0%	99.0%	0	0
49	0	0.0%	99.0%	0	0
50	0	0.0%	99.0%	0	0
51	1	1.0%	100.0%	51	2601
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	100	100.0%		3325	112397

Mean Speed = 33.3 mph  
 Standard Deviation = 4.3 mph  
 Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 33.3 mph  
 15th Percentile Speed = 28.8 mph  
 85th Percentile Speed = 37.7 mph

# SPOT SPEED STUDY

Date: **October 18, 2005** Time: **11:00 am**  
Location: **Atlantic Avenue between 117th Street & 118th Street**  
Surveyor: **R. Calvache/ H. Salinas**

School: **St. Joseph Benedict**  
Direction: **WB**  
Comments:

Mean Speed = 33.3 mph  
Standard Deviation = 4.3 mph  
Margin of Error (95% Confidence) =  $\pm 0.8$  mph

Median Speed = 33.3 mph  
15th Percentile Speed = 28.8 mph  
85th Percentile Speed = 37.7 mph

