

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



School Safety Engineering Project

FINAL REPORT: P.S. 79 (Creston School), Bronx,



**Prepared by
The RBA Group/Urbitran Associates**



August 9, 2006

**School Safety Engineering Project
Final Report: P.S. 79, Bronx**

TABLE OF CONTENTS

1. INTRODUCTION 3

1.1 PROJECT DESCRIPTION 3

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS 4

[REDACTED]

2.2 NEIGHBORHOOD DESCRIPTION 4

2.3 MEETING WITH SCHOOL REPRESENTATIVES 4

[REDACTED]

2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL 6

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS 6

2.8 CROSSING GUARD LOCATION 7

3. TRAFFIC OPERATIONS 12

3.1 SCHOOL BUS OPERATIONS 12

3.2 PARENT DROP-OFF OPERATIONS 12

3.3 PARKING REGULATIONS 12

3.4 EXISTING SCHOOL SIGNS AND MARKINGS 13

3.5 ACCIDENT SUMMARY 15

3.6 TRAFFIC OPERATIONS AND ISSUES 18

 3.6.1 *East 181st Street and Jerome Avenue* 18

 3.6.2 *East 181st Street and Walton Avenue* 18

 3.6.3 *East 181st Street and Morris Avenue* 19

 3.6.4 *East 181st Street and Creston Avenue* 21

 3.6.5 *East 181st Street and Grand Concourse* 22

 3.6.6 *East 181st Street and Anthony Avenue* 22

 3.6.7 *East 182nd Street and Morris Avenue* 23

 3.6.8 *East 182nd Street and Creston Avenue* 24

 3.6.9 *Morris Avenue and Cameron Place* 26

 3.6.10 *Grand Concourse and East 180th Street* 26

3.7 SIGNAL TIMING 27

3.8 PHYSICAL CONDITIONS..... 28

 3.8.1 Roadways and Sidewalks 28

 3.8.2 Pedestrian Ramps 28

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY
..... **30**

4.1 SHORT-TERM MEASURES 30

4.2 LONG-TERM MEASURES..... 32

4.3 ADDITIONAL RECOMMENDATIONS FROM PRIORITY SCHOOLS IN THE VICINITY OF
P.S. 79 33

 4.3.1 Recommendations for P.S. 279 (Captain Manuel Rivera Jr. School): 33

LIST OF EXHIBITS

EXHIBIT 1 - AERIAL PHOTOGRAPH 8

EXHIBIT 2 - CATCHMENT AREA..... 9

EXHIBIT 3 - SCHOOL TRAFFIC SAFETY MAP..... 10

EXHIBIT 4 - SCHOOL CROSSING GUARD LOCATION 11

EXHIBIT 5 - EXISTING PARKING REGULATIONS 14

EXHIBIT 6 - ACCIDENT SUMMARY (1998-2000)..... 17

EXHIBIT 7 - TRAFFIC COUNT AT E. 181ST STREET & MORRIS AVENUE..... 29

EXHIBIT 8 - PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY 36

LIST OF TABLES

TABLE 1: MODES OF TRAVEL 6

TABLE 2: ACCIDENT SUMMARY OF NYS DMV DATA (1998-2000) 15

TABLE 3: ACCIDENT SUMMARY OF NYPD DATA (2001-2004)..... 16

TABLE 4: VEHICLE VOLUMES (7:30-9:00 AM) 19

TABLE 5: PEDESTRIAN VOLUMES (7:30-9:00 AM) 19

TABLE 6: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS..... 27

APPENDIX

SPEED SURVEY DATAA5-A6

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 350 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). P.S. 79 (Creston School) in 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. P.S. 79 is bounded by East 182nd Street to the north, East 181st Street to the south, Creston Avenue to the east, and Morris Avenue to the west. The area surrounding the school is generally residential in character with primarily high-density, multi-level, apartment buildings. East 181st and East 182nd streets have commercial activities (i.e., local retail stores and delis). The Grand Concourse, a major commercial corridor with significant vehicle and pedestrian traffic, is located one block to the east of P.S. 79.

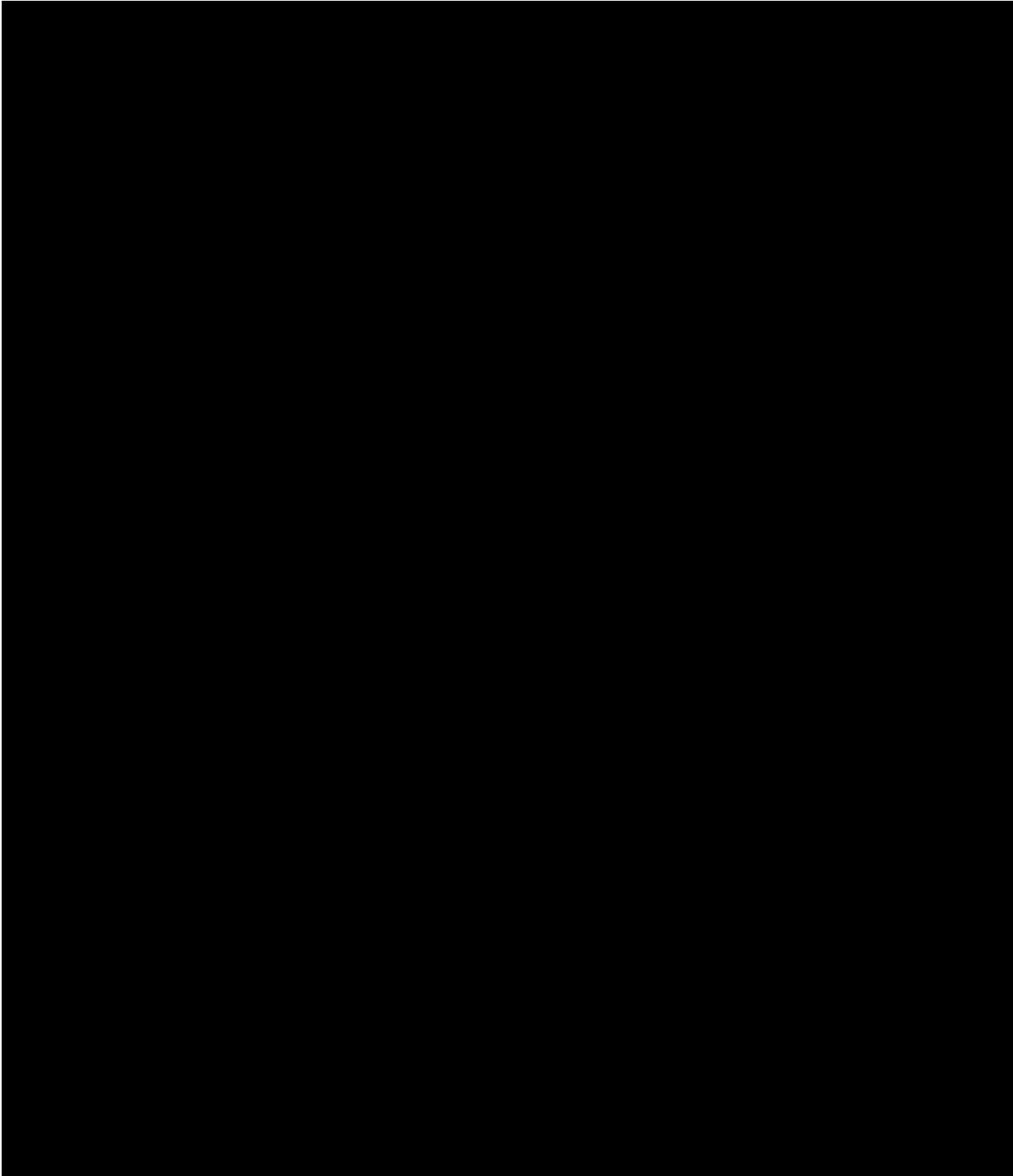
2.3 MEETING WITH SCHOOL REPRESENTATIVES

Consultant staff, the principal of P.S. 79, the school custodian, and a United Federation of Teachers (UFT) representative met at the school in the afternoon of Tuesday, June 15, 2004. According to the school principal, the problems faced by P.S. 79 students and faculty are as follows:

- East 181st Street
 - Double and triple parking is often a problem along East 181st Street, especially between Morris Avenue and Walton Avenue in the morning, and in the vicinity of the Creston Avenue and East 181st Street intersection in the afternoon.
 - Vehicular volumes are heavy on East 181st Street. (School representatives noted that East 181st Street provides access between the Grand Concourse and Major Deegan Expressway via Jerome Avenue, University Avenue and Sedgwick Avenue to the west of the school.)
 - Congestion is observed on East 181st Street due to vehicular traffic and double-parking.
 - Speeding along East 181st Street is often a problem during the middle of the day. (The school representatives noted that the speed reducers (humps) installed on Creston and Morris avenues have slowed vehicular traffic on these two streets in the vicinity of the school.)

- School representatives indicated that the traffic signals are not coordinated along East 181st Street, particularly west of the school at University Avenue, Jerome Avenue, and Walton Avenue.
- On-street parking is a problem for school faculty members. The school has nine staff spaces available; but, often gypsy cab drivers are observed using the parking spaces in order to get food at local corner stores near the school.
- Delivery loading and unloading activities at a washing machine and appliance repair shop near the 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 as defined by the Department of Education (DOE) is shown in Exhibit 2. Based upon information obtained from the school principal, the catchment area shown in Exhibit 2 is correct for P.S. 79. The school’s catchment area is defined generally by East 183rd Street and Field Place to the north, East 181st Street to the south, Grand Concourse to the east and Jerome Avenue to the west. Table 1 presents the mode of travel for P.S. 79 as identified by school representatives and verified by the DOE website.

Table 1 presents the modes of travel for P.S. 79 as identified by school representatives.

TABLE 1: MODES OF TRAVEL (AS ESTIMATED BY SCHOOL OFFICIALS)	STUDENTS (Percentage)
Walk	90%
Driven By Car	0%
School Bus	7%
MTA Bus/Subway	3%
Bicycle	0%
TOTAL	100%

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

A deli located at the northeast corner of East 181st Street and Creston Avenue (see Figure 2) generates vehicular and pedestrian traffic, including school children and taxi drivers who double-park in front of the store. Local stores on East 181st Street, East 182nd Street, and Grand Concourse generate additional vehicular and pedestrian traffic.



Figure 2: Looking east along East 181st Street at its intersection with Creston Avenue (the deli is on the northeast corner)

2.8 CROSSING GUARD LOCATION

According to the school principal, a crossing guard is assigned to P.S. 79 at the intersection of East 181st Street and Morris Avenue. The school crossing guard is also assigned to P.S. 279, located at 2100 Walton Avenue between West Burnside Avenue and East 181st Street. The crossing guard location is shown in Exhibit 4.

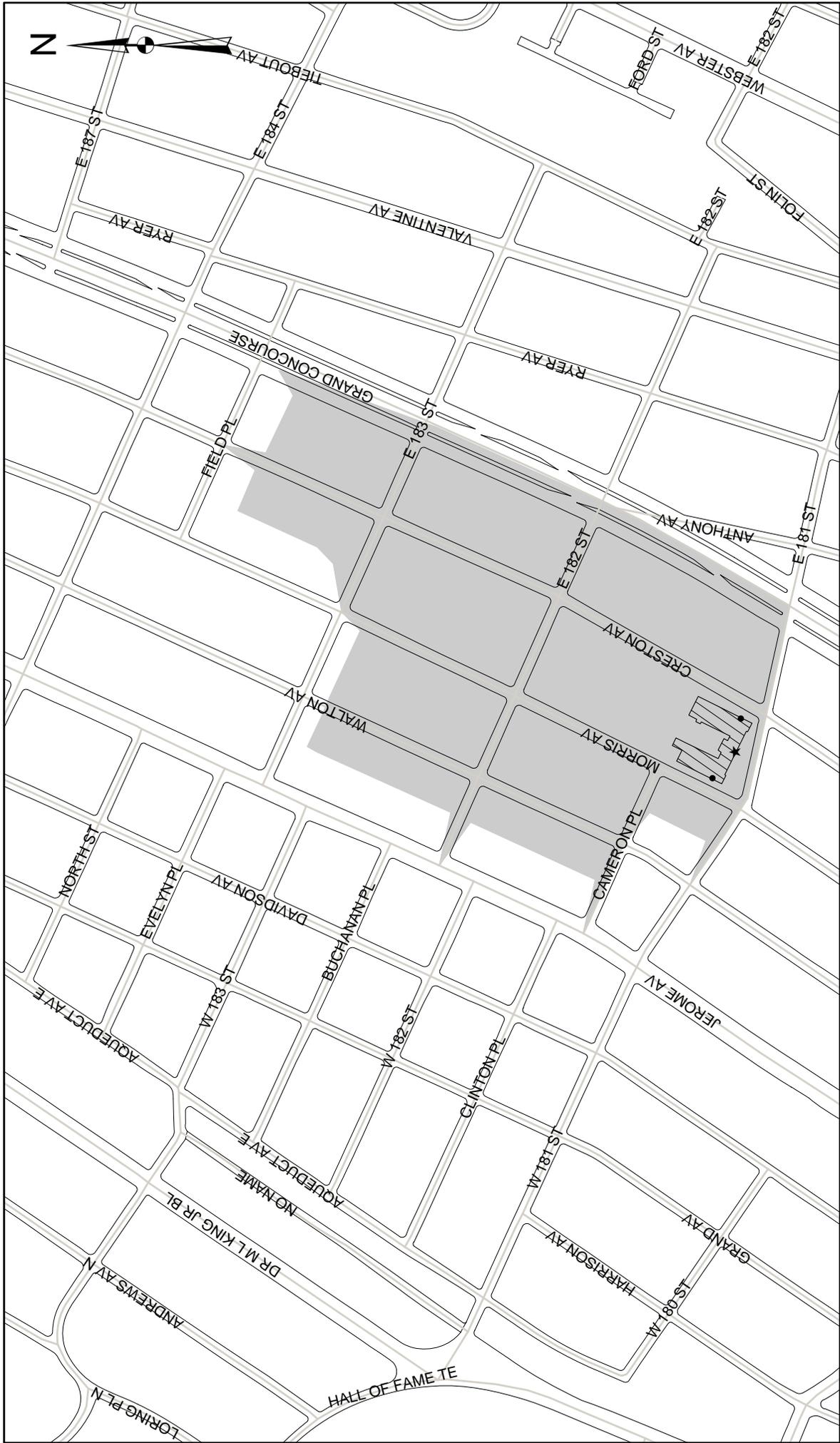


EXHIBIT 2
P.S. 79 BRONX
CRESTON SCHOOL
CATCHMENT AREA

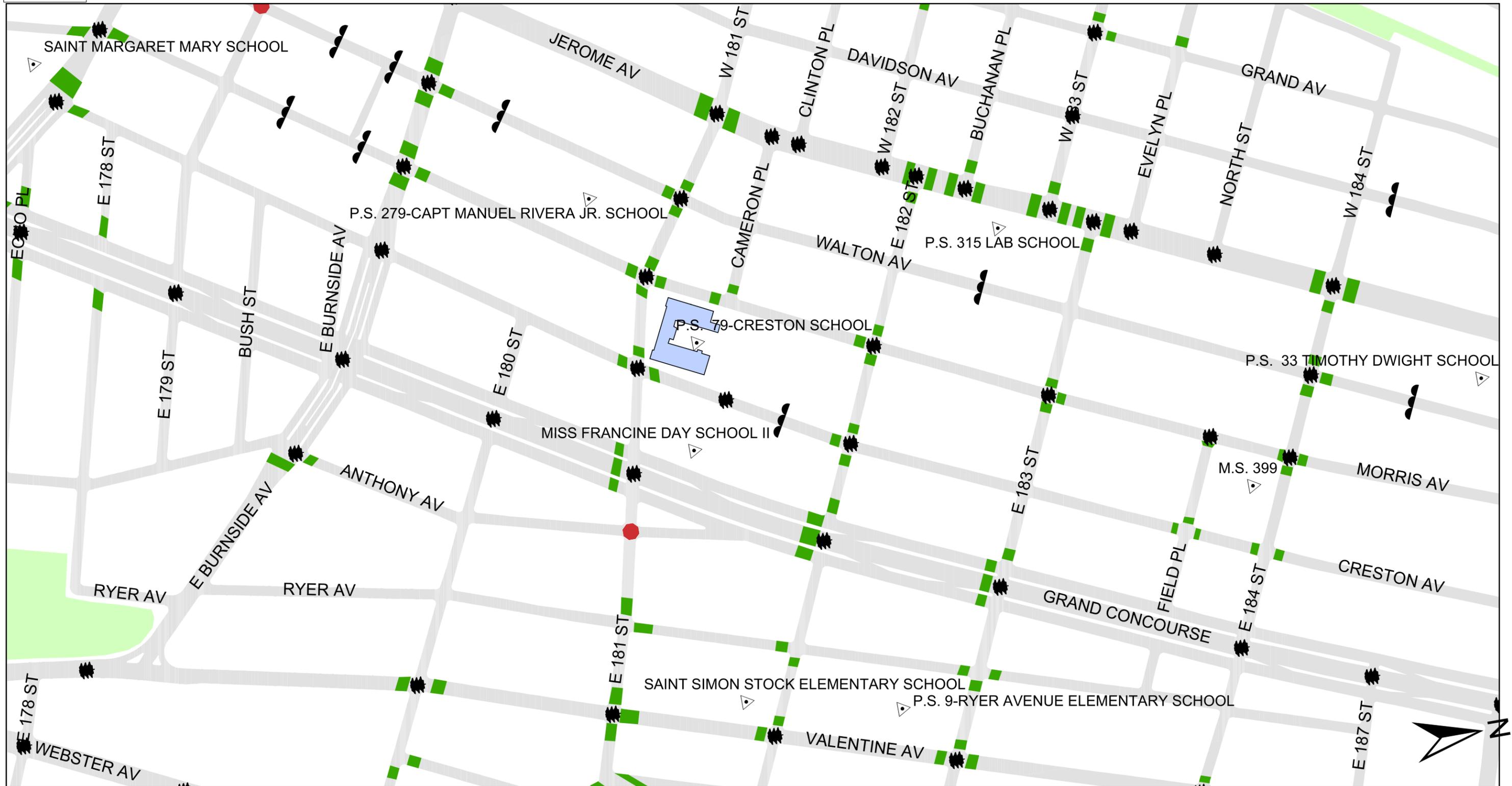
LEGEND:

-  CATCHMENT AREA, (DEPARTMENT OF EDUCATION DESIGNATED)
-  AREA FROM WITHIN WHICH STUDENTS ARE ENTITLED TO ATTEND P.S. 79)

0 250 500 1,000 Feet



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

**PS 79 Bronx
CRESTON SCHOOL**

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

Map created on 11/16/2006

EXHIBIT 3

COMM. BOARD: 205
PRECINCT: 46

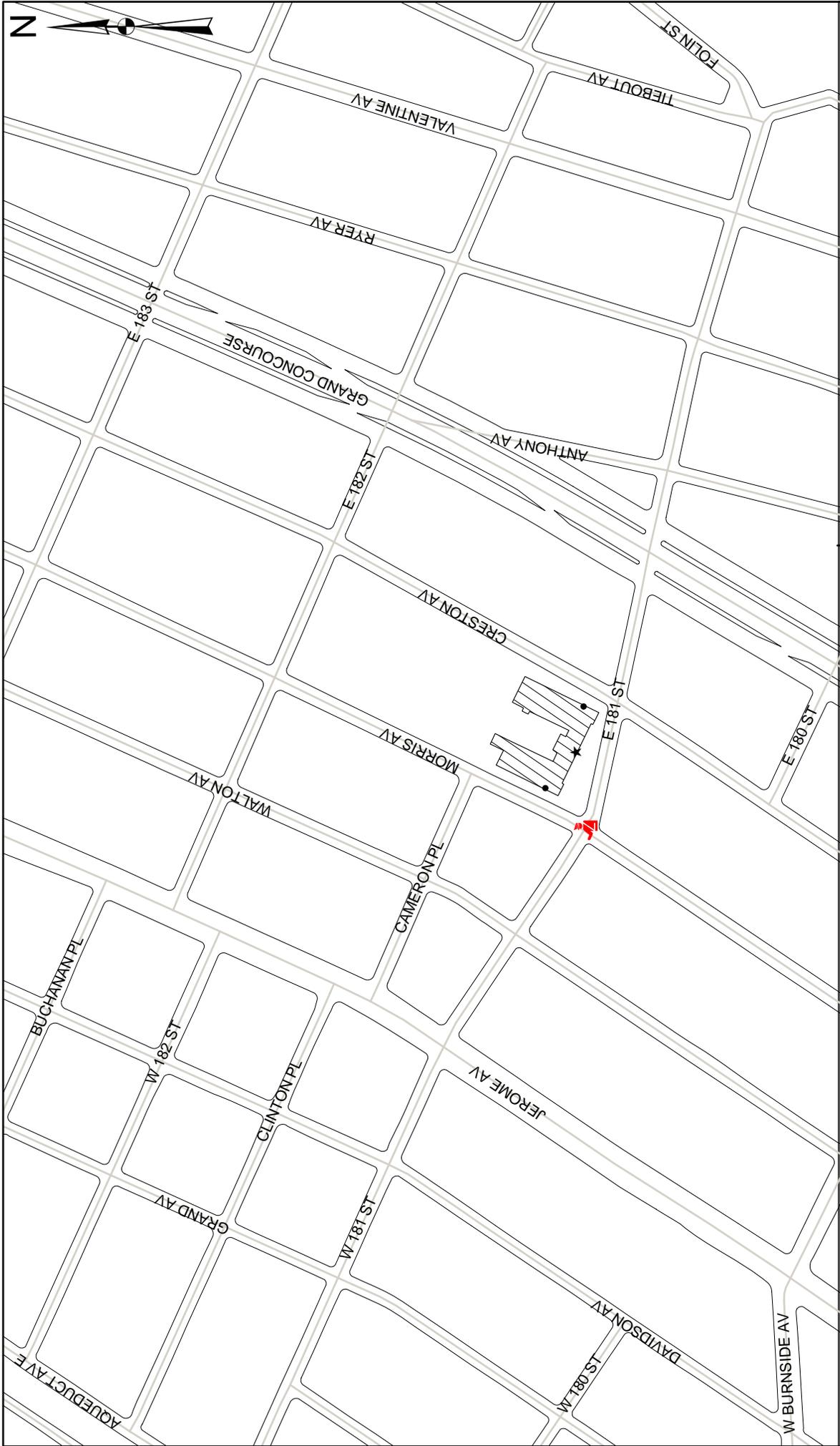


EXHIBIT 4
P.S. 79 BRONX
CRESTON SCHOOL
CROSSING GUARDS LOCATIONS

LEGEND:



CROSSING GUARD LOCATION



3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to the school representatives, there are approximately thirty (30) students who ride a MTA bus to school, and approximately seventy (70) who ride a yellow school bus to school (Table 1 in Section 2). School bus transportation for the students consists of two yellow buses and one special bus (mini-wagon). School buses load and unload students on Morris Avenue (see Figure 3). According to school representatives, school bus operations are not an issue at P.S. 79. Consultant observations concur that there is sufficient block-face on Morris Avenue for school bus operations.



Figure 3: Looking south at school buses on Morris Avenue at dismissal time

3.2 PARENT DROP-OFF OPERATIONS

Parent drop-off operations are not an issue at P.S. 79. According to Table 1 in Section 2, parent drop-off is negligible.

3.3 PARKING REGULATIONS

Parking regulations around the school block are shown in Exhibit 5. Figure 4 shows parking regulations (NO PARKING 7AM – 4PM SCHOOL DAYS EXCEPT BOARD OF EDUCATION and NO PARKING 9-10:30 AM MONDAY AND THURSDAY) on the north side of East 181st Street in front of P.S. 79.



Figure 4: Parking regulations on north side of East 181st Street in front of P.S. 79

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

Exhibit 3 shows the existing school signals and pavement markings around P.S. 79. It should be noted that a citywide signage program is currently underway to upgrade school signage to the current edition of the Federal Manual of 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 8.

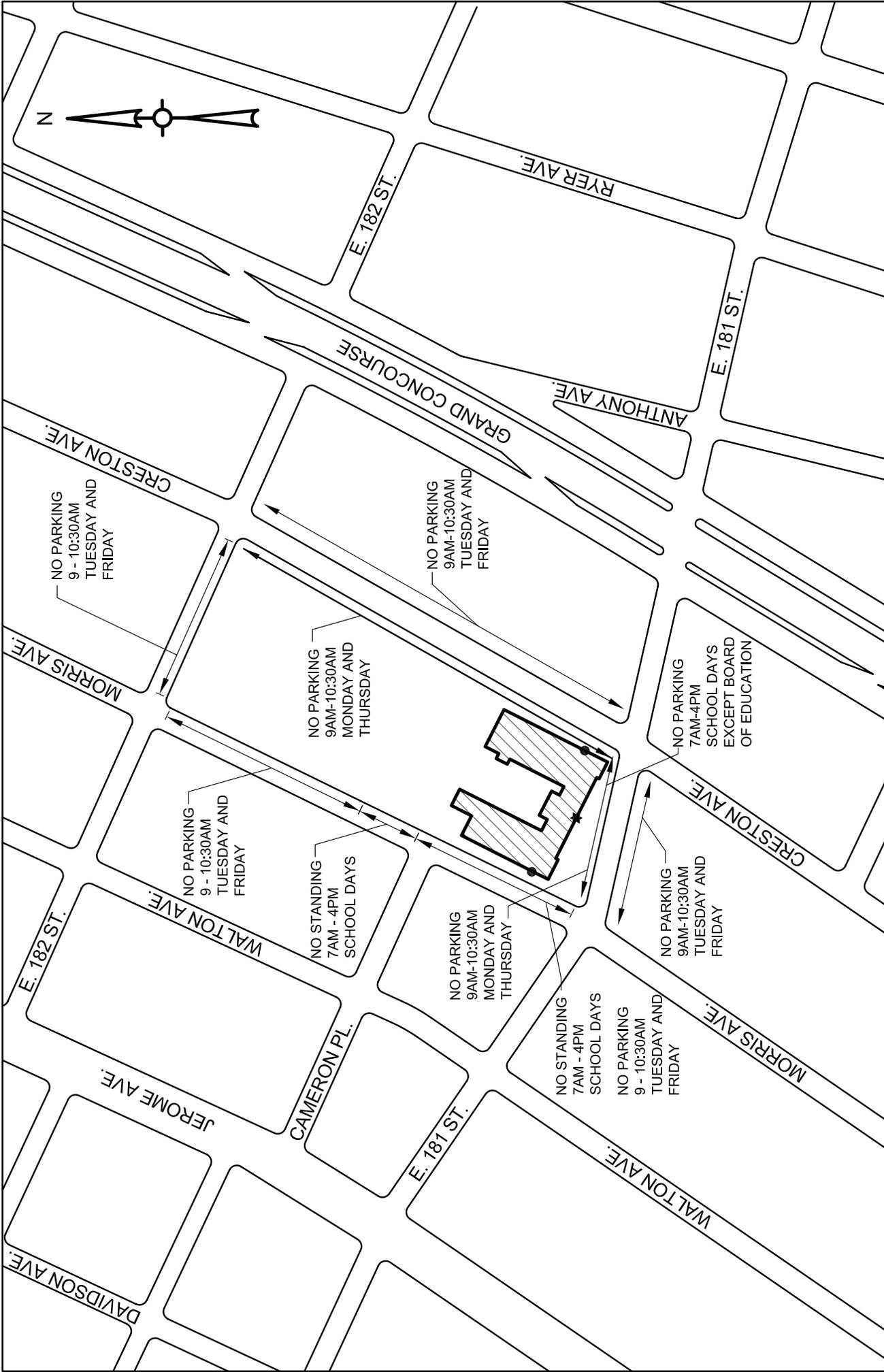
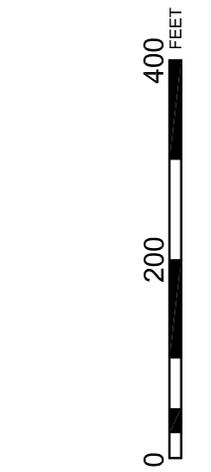


EXHIBIT 5
 P.S. 79 BRONX
 CRESTON SCHOOL
 EXISTING PARKING REGULATIONS



3.5 ACCIDENT SUMMARY

Exhibit 6 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of P.S. 79 for a three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of an 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 181 st Street and Jerome Avenue	45	4	0	2
East 181 st Street and Walton Avenue	5	2	0	1
East 181 st Street and Morris Avenue	3	0	0	0
East 181 st Street and Creston Avenue	10	4	0	0
East 181 st Street and Grand Concourse	51	5	0	0
East 181 st Street and Anthony Avenue	57	3	0	1
East 182 nd Street and Morris Avenue	8	2	0	0
East 182 nd Street and Creston Avenue	6	0	0	0
Cameron Pl. and Morris Avenue	7	1	0	0
East 180 th Street and Grand Concourse	25	4	0	0
TOTAL	217	25	0	4

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

TABLE 3: ACCIDENT SUMMARY OF NYPD DATA (2001-2004)				
INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
East 181 st Street and Jerome Avenue	59	10	0	2
East 181 st Street and Walton Avenue	15	4	0	2
East 181 st Street and Morris Avenue	18	3	0	2
East 181 st Street and Creston Avenue	18	1	0	0
East 181 st Street and Grand Concourse	68	9	1	0
East 181 st Street and Anthony Avenue	17	3	0	0
East 182 nd Street and Morris Avenue	16	2	0	0
East 182 nd Street and Creston Avenue	16	7	0	1
Cameron Pl. and Morris Avenue	7	0	0	0
East 180 th Street and Grand Concourse	36	7	0	1
TOTAL	270	46	1	8

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

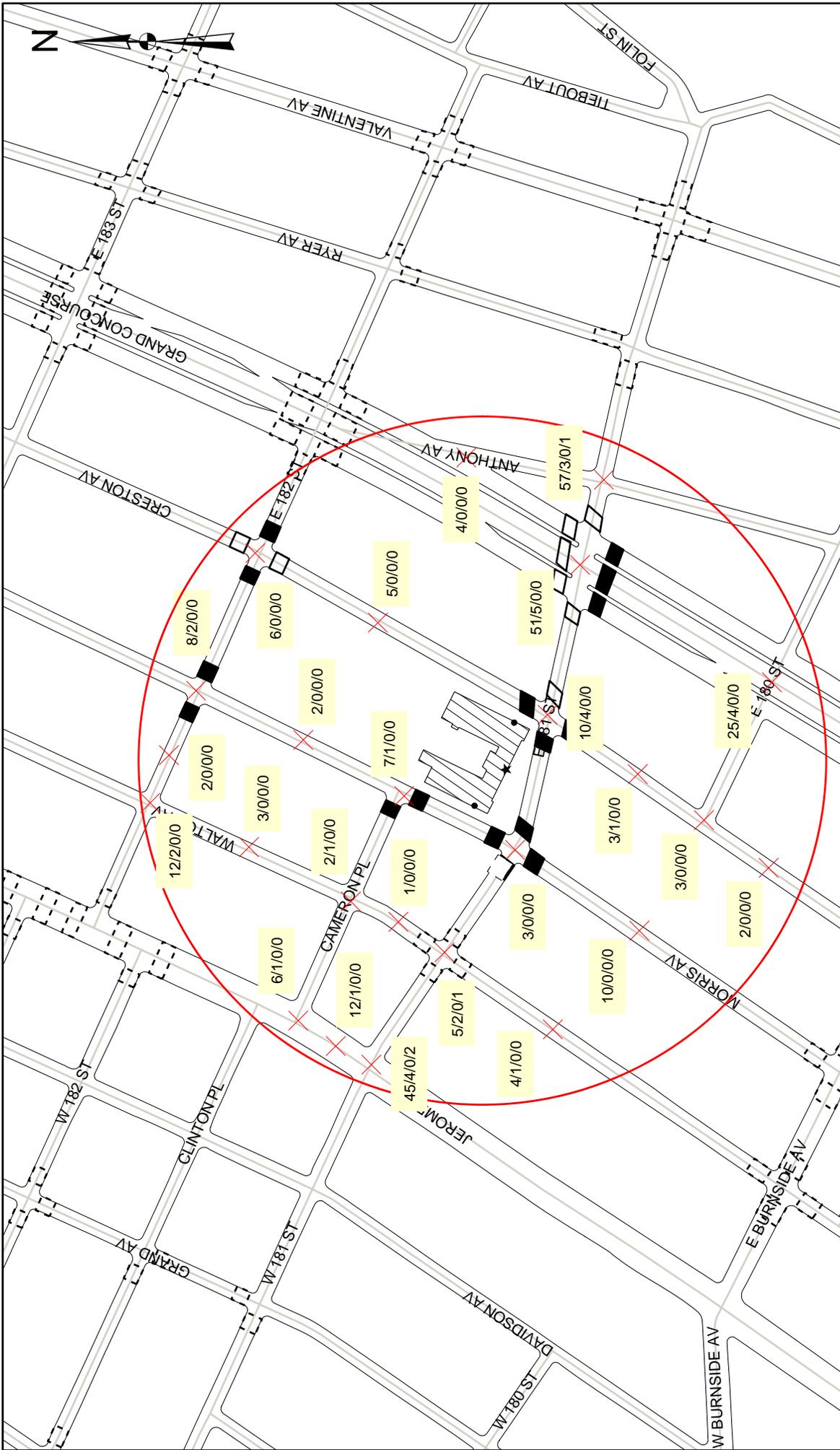


EXHIBIT 6
P.S. 79 BRONX
CRESTON SCHOOL
ACCIDENT SUMMARY (1998-2000)



LEGEND:

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

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

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 P.S. 79.

3.6.1 East 181st Street and Jerome Avenue

This is a signalized intersection with no school crosswalks. There are high visibility crosswalks across the north and south legs of Jerome Avenue, and pedestrian crosswalks across the east and west legs of East 181st Street.

East 181st Street is a one-way westbound street with one travel lane and parking on both sides of the roadway. Jerome Avenue is a two-way street with two travel lanes and a parking lane on each side of the roadway. Jerome Avenue also has an elevated train (No. 4 Train, Lexington Avenue Express) running over the center of the roadway. The supports for the train tracks located on Jerome Avenue provide an inner and an outer lane for each direction of travel.

This intersection has been the site of 45 accidents between 1998 and 2000; four of these were pedestrian accidents, two of which were school-related accidents. In the first school-related accident, a 13-year-old pedestrian sustained an "incapacitating injury" on Monday, April 20, 1998 at 8:00 am while crossing at the intersection against the signal. The road was dry and the weather was clear. In the second school-related accident, a ten-year-old pedestrian sustained a "possible injury" on Thursday, November 30, 2000 at 5:00 pm while not using either the crosswalk or the signal to cross the roadway. The road was dry and the weather was clear. There were no pedestrian fatalities reported at this intersection.

3.6.2 East 181st Street and Walton Avenue

This is a signalized intersection with school crosswalks located across the south leg of Walton Avenue, and the east and west legs of East 181st Street. East 181st Street is a one-way westbound street with one travel lane and parking on both sides of the roadway. Walton Avenue is a one-way southbound street with one travel lane and parking on both sides of the roadway. According to school representatives, a speed reducer was installed on Walton Avenue which alleviated a speeding problem. In addition, DOT has established a 15 mph speed zone along Walton Avenue adjacent to the school.

This intersection has been the site of five accidents between 1998 and 2000; two of these were pedestrian accidents, one of which was a school-related accident. In the school-related accident, an eight-year-old pedestrian sustained a "possible injury" while crossing with the signal at the intersection on Thursday, November 9, 2000 at 4:00 pm. The road was dry and the weather was clear. There were no pedestrian fatalities reported at this intersection.

3.6.3 East 181st Street and Morris Avenue

This is a signalized, four-legged, intersection with school crosswalks located across the north and south legs of Morris Avenue, and the east leg of East 181st Street (see Figure 5). East 181st Street is a one-way westbound street with one travel lane and on-street parking permitted on both sides of the roadway. Morris Avenue is a one-way northbound street with one travel lane and on-street parking permitted on both sides of the roadway.

According to school representatives, some of the traffic issues on East 181st Street include double-parking, speeding and uncoordinated signals. They further report a former speeding problem has been alleviated since a speed reducer (hump) was installed on Morris Avenue approximately mid-block between Cameron Place and East 182nd Street (see Figure 6).

A spot speed survey was conducted on East 181st Street between Creston Avenue and Morris Avenue to determine if there is a speeding problem near the school. The detailed results of the spot speed survey are shown in the Appendix at the end of the document.

In summary, the westbound vehicles on East 181st Street, between Creston Avenue and Morris Avenue, were found to be traveling with an 85th percentile speed of 30.5 mph. The 85th percentile speed is considered to be the representative speed of the street segment. Speeds above the 30 mph threshold would indicate a speeding problem and may require appropriate traffic calming measures. The 85th percentile speeds indicate that speeding is an issue on East 181st Street, however speed reducers (humps) are not feasible because the block lengths are too short (approximately 200 ft) between signalized intersections. In order to minimize the effects of speeding, traffic calming measures such as neckdowns and advanced stop bars are recommended for this street.

To assess vehicle and pedestrian volumes on East 181st Street in the vicinity of P.S. 79, a traffic count was conducted at the intersection of East 181st Street and Morris Avenue from 7:30 to 9:00 am on Thursday, May 19, 2005. The results of this count are shown in Tables 4 and 5 and in Exhibit 7 at the end of this section.

TABLE 4: VEHICLE VOLUMES (7:30-9:00 AM)		
INTESECTION	East 181ST STREET WESTBOUND	MORRIS AVENUE NORTHBOUND
East 181 st Street and Morris Avenue	455	280

TABLE 5: PEDESTRIAN VOLUMES (7:30-9:00 AM)				
INTERSECTION	CROSSING East 181ST STREET EAST-LEG X-WALK	CROSSING East 181ST STREET WEST-LEG X-WALK	CROSSING MORRIS AVENUE NORTH-LEG X-WALK	CROSSING MORRIS AVENUE SOUTH-LEG X-WALK
East 181 st Street and Morris Avenue	105	137	151	542

There were three accidents reported at this intersection between 1998 and 2000 (Table 2); none were pedestrian accidents. There were no pedestrian fatalities reported at this intersection.



Figure 5: Looking south along Morris Avenue towards its intersection with East 181st Street

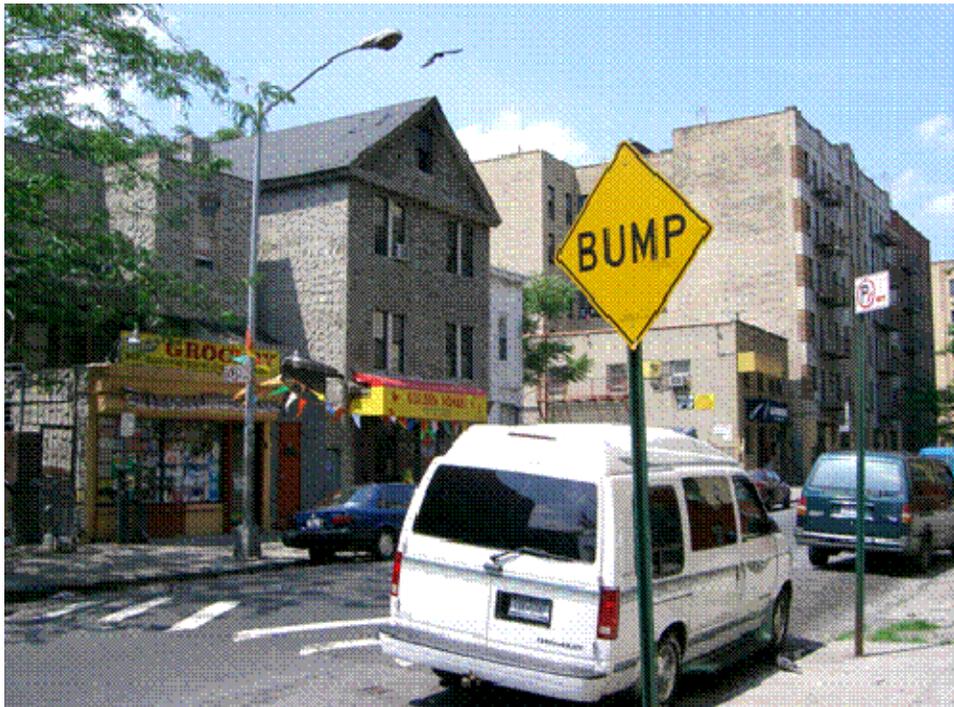


Figure 6: Looking north along Morris Avenue at speed reducer between Cameron Pace and East 182nd Street

3.6.4 East 181st Street and Creston Avenue

This is a four-leg signalized intersection with school crosswalks located across the north and south legs of Creston Avenue, and the west leg of East 181st Street (see Figures 7 and 8). East 181st Street is a one-way westbound street with one travel lane and on-street parking permitted on both sides of the roadway. Creston Avenue is a one-way southbound street with one travel lane and on-street parking permitted on both sides of the roadway.

According to school representatives, traffic issues on East 181st Street include double-parking, speeding and uncoordinated signals. They further report a former speeding problem has been alleviated since a speed reducer (hump) was installed on Creston Avenue, approximately mid-block between East 181st and East 182nd streets (See Section 3.6.1 - East 181st Street and Creston Avenue for discussion of the spot speed survey on East 181st Street between Creston Avenue and Morris Avenue.).

There were ten accidents reported at this intersection between 1998 and 2000 (Table 2). There were four pedestrian accidents reported during the same three-year period; none of the pedestrian accidents were school-related. There were no pedestrian fatalities reported at this intersection.



Figure 7: Looking north along Creston Avenue at its intersection with East 181st Street (school is on left)



Figure 8: Looking west along East 181st Street between Creston Avenue and Morris Avenue (school is on the right)

3.6.5 East 181st Street and Grand Concourse

This is a four-leg signalized intersection with school crosswalks located across the south leg of the Grand Concourse mainline and service roads. Grand Concourse is a major north-south corridor in the Bronx, extending from Mosholu Parkway at its northern terminus to East 138th Street/Madison Avenue Bridge/Major Deegan Expressway at its southern terminus. In the vicinity of P.S. 79, the mainline section of the Grand Concourse carries two travel lanes in both the northbound and southbound directions. A painted striped median, approximately ten feet (10') wide, separates the north- and southbound roadways. An exclusive left turn lane is provided on the northbound mainline approach. Both the north and south service roads carry two travel lanes and one right-side parking lane. A raised concrete buffer separates the mainline and service roadways in both directions. East 181st Street is a one-way westbound street with one travel lane and on-street parking permitted on both sides of the roadway. The intersection of Grand Concourse and East 181st Street is within the "Special Grand Concourse Preservation District" designated by the Department of City Planning (DCP).

There were 51 accidents reported at this intersection between 1998 and 2000 (Table 2) five of which were pedestrian accidents. None of the five pedestrian accidents was school-related. There were no pedestrian fatalities reported during the same three-year period.

3.6.6 East 181st Street and Anthony Avenue

This is a four-leg unsignalized intersection with no school or pedestrian crosswalks across any legs. East 181st Street is a one-way westbound street with one travel lane and

parking on both sides of the roadway. Anthony Avenue is a one-way northbound street with one travel lane and parking on both sides of the roadway. The northbound approach of Anthony Avenue is controlled by a stop sign. Anthony Avenue terminates one block north at the Grand Concourse.

There were 57 accidents reported at this intersection between 1998 and 2000 (Table 2). There were three pedestrian accidents reported during the same three-year period including one school-related accident. The school-related accident occurred on Tuesday, September 15, 1998 at 6:00 pm. The accident involved a seven-year-old pedestrian who was reported playing in the street. The extent of the injury was not reported. The accident occurred on a straight and level roadway under daylight conditions. The road surface was dry and the weather was cloudy. There were no pedestrian fatalities reported at this intersection.

3.6.7 East 182nd Street and Morris Avenue

This is a four-leg signalized intersection with school crosswalks located across the east and west legs of East 182nd Street, and pedestrian crosswalks located across the north and south legs of Morris Avenue (see Figure 9 and 10). East 182nd Street is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway. Morris Avenue is a one-way northbound street with one travel lane and on-street parking permitted on both sides of the roadway.

There were eight accidents reported at this intersection between 1998 and 2000 (Table 2), including two pedestrian accidents. Neither of the pedestrian accidents was school-related. There were no pedestrian fatalities reported at this intersection.



Figure 9: Looking south along Morris Avenue at its intersection with East 182nd Street



Figure 10: Looking west along East 182nd Street at its intersection with Morris Avenue

3.6.8 East 182nd Street and Creston Avenue

This is a four-leg signalized intersection with school crosswalks located across the east and west legs of East 182nd Street, and pedestrian crosswalks across the north and south legs of Creston Avenue. East 182nd Street is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway. Creston Avenue is a one-way southbound street with one travel lane and on-street parking permitted on both sides of the roadway.

There were six accidents reported at this intersection between 1998 and 2000 (Table 2); none were pedestrian accidents. There were no pedestrian fatalities reported at this intersection during the same four-year period.



Figure 11: Looking south along Creston Avenue at its intersection with East 182nd Street



Figure 12: Looking west along East 182nd Street between Creston Avenue and Morris Avenue

3.6.9 Morris Avenue and Cameron Place

This is an unsignalized T-intersection with school crosswalks located across the south leg of Morris Avenue and the west leg of Cameron Place. Morris Avenue is a one-way northbound street with one travel lane and on-street parking permitted on both sides of the roadway. Cameron Place is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway. The eastbound approach of Cameron Avenue is stop-controlled at its intersection with Morris Avenue.

There were seven accidents reported at this intersection between 1998 and 2000 (Table 2); one was a pedestrian accident that was not school-related. There were no pedestrian fatalities reported during the same three-year period.



Figure 13: Looking west along Cameron Place at its intersection with Morris Avenue

3.6.10 Grand Concourse and East 180th Street

This is a four-leg signalized intersection with pedestrian crosswalks located across all legs. At this location, the mainline section of the Grand Concourse carries two travel lanes in both the northbound and southbound directions, separated by an approximately ten-foot (10') wide painted striped median. The north and south service roads carry two travel lanes and one right-side parking lane. A raised concrete buffer separates the mainline and service roadways in both directions.

East 180th Street is a one-way eastbound street with one travel lane and an on-street parking on both sides of the roadway. East 182nd Street does not cross the Grand Concourse roadway, as in a typical four-leg intersection. There is no gap in the raised concrete median to allow vehicles to cross the Grand Concourse mainline roadways at

this intersection. East 180th Street actually forms two T-intersections with the service roads, so all eastbound East 182nd Street vehicles must turn right to head southbound on the Grand Concourse service road, and no vehicles can turn left to head eastbound on East 182nd Street from the Grand Concourse mainline roadway. The intersection of Grand Concourse and East 182nd Street is within the “Special Grand Concourse Preservation District” designated by the Department of City Planning (DCP).

There were 25 accidents reported at this intersection between 1998 and 2000 (Table 2); four of which were pedestrian accidents. None of the pedestrian accidents was school-related. There were no pedestrian fatalities reported at this intersection

3.7 SIGNAL TIMING

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of P.S. 79, and were found to be adequate based upon a child pedestrian walking at the rate of three feet per second. Signal timings are shown in Table 6.

TABLE 6: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS				
INTERSECTION	CROSSWALK LENGTH (FEET)	PEDESTRIAN TIME ACTUAL (SECONDS)	PEDESTRIAN TIME REQUIRED ⁽¹⁾ (SECONDS)	TIMING ADJUSTMENT REQUIRED?
East 181st St. and Morris Ave.				
crossing East 181 st Street	34	19	15	NO
crossing Morris Avenue	34	19	15	NO
East 181st St. and Creston Ave.				
crossing East 181 st Street	34	29	15	NO
crossing Creston Avenue	34	29	15	NO
East 182nd St. and Morris Ave.				
crossing East 182 nd Street	34	35	15	NO
crossing Morris Avenue	34	23	15	NO
East 182nd St. and Creston Ave.				
crossing East 182 nd Street	34	35	15	NO
crossing Creston Avenue	34	23	15	NO
Grand Concourse and E.181st St.				
crossing Grand Concourse	125	41-AM / 47-PM	45	NO ⁽²⁾
crossing Grand Concourse E-W, curb to S.R. median	81	41-AM / 47-PM	30	NO
crossing Grand Concourse W-E, curb to S.R. median	94	41-AM / 47-PM	35	NO
crossing East 181 st Street	34	74-AM / 68-PM	15	NO

Note:

1. A rate of 3 ft/sec plus 3 seconds reaction time was utilized as the child pedestrian walking rate.
2. A child pedestrian at the intersection of Grand Concourse and East 181st Street does not have sufficient time to completely cross the Grand Concourse in one pedestrian phase during the morning, based on the existing crossing times shown in Table 6. An additional four seconds of crossing time would be needed. The raised concrete buffers between the mainline and service roads, approximately eight to ten feet in width, provide refuge areas between pedestrian phases. (As discussed in Section 3.6.6, the north and south roadways of the Grand Concourse mainline are separated by a painted striped median, approximately ten feet (10') wide.) There is sufficient crossing time to these areas from both sides of the Grand Concourse mainline. The crossing time for a child pedestrian is sufficient to cross the Grand Concourse in one pedestrian phase during the afternoon.

3.8 PHYSICAL CONDITIONS

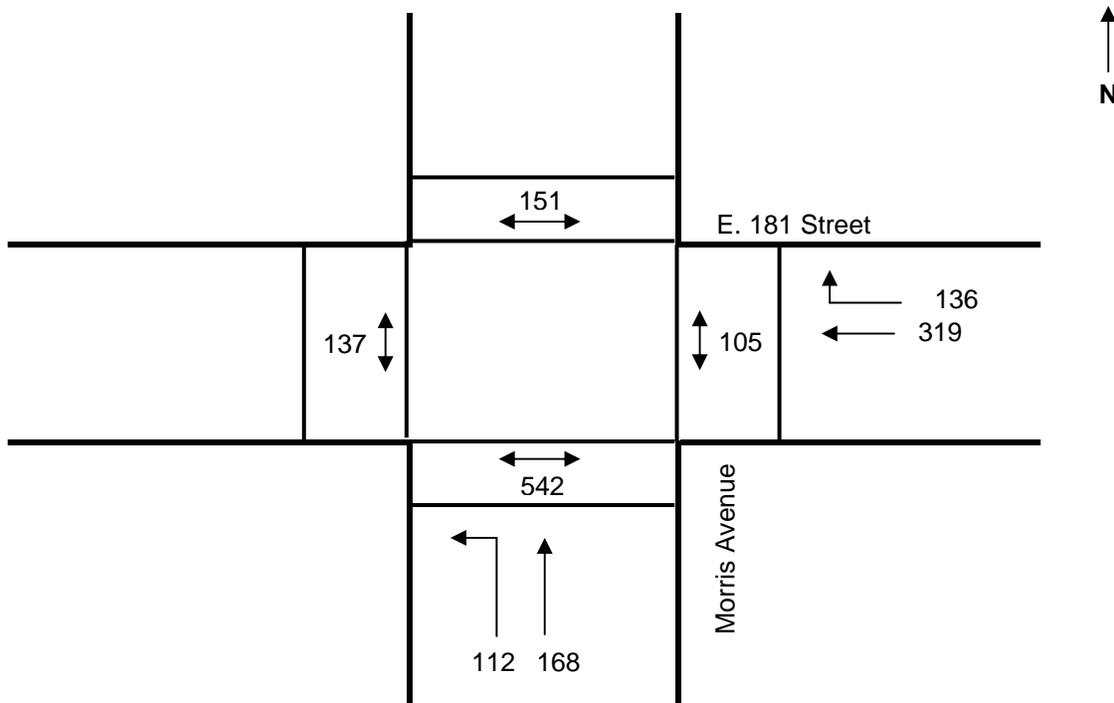
3.8.1 Roadways and Sidewalks

The roadways in the vicinity of P.S. 79 were observed to be in generally fair condition. Sidewalks are about ten feet wide on the school block-faces. They are in fair condition.

3.8.2 Pedestrian Ramps

Overall, pedestrian ramps in the vicinity of P.S. 79 were observed to be standard.

One Hour Traffic Volumes
Thursday, May 19th, 2005 7:30am - 9am



Intersection of E. 181st Street and Morris Avenue

Table of Content:	
←→	Pedestrian Counts
—↑	Vehicle Movement

EXHIBIT 7
P.S. 79 BRONX CRESTON SCHOOL
TRAFFIC AND PEDESTRIAN COUNTS

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

This section describes the proposed measures to improve school pedestrian safety around P.S. 79. 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 P.S. 79 is discussed as follows, and is shown in more detail in Exhibit 8 at the end of this section. See section 4.3 for additional recommendations for this area from the report on P.S. 279, a nearby priority school.

4.1 SHORT-TERM MEASURES

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

“NO PARKING 7AM – 4PM SCHOOL DAYS / EXCEPT BOARD OF EDUCATION” signs are installed currently on the block-faces near the entrances/exits to P.S. 79. However, it is recommended to install “NO STANDING 7AM-4PM SCHOOL DAYS” signs for a distance of thirty feet (30’) in front of 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” sign

Install “YIELD TO PEDESTRIAN” sign at an intersection with substantial vehicle–student pedestrian volumes. “YIELD TO PEDESTRIAN” sign is recommended on the following approach of a signalized intersection around P.S. 79:

- Westbound approach of East 181st Street and Grand Concourse

The sign is suggested to improve visibility and safety of student-pedestrians.

➤ Place advanced stop bars before school crosswalks

The MUTCD and New York City DOT standard for placement of a stop bar is four feet (4’) in advance of a marked crosswalk. At signalized intersections and mid-block crossings, the vehicle stop line can be moved farther back from the pedestrian crosswalk.

For school crosswalks with significant potential for vehicular / pedestrian conflicts, it is recommended that the advance stop bar be placed ten feet (10’) in advance of the crosswalk to maximize the safety benefit for school-aged pedestrians. (This would improve visibility of pedestrians to motorists, and allow pedestrians to proceed in a crosswalk before motor vehicles turn.)

Ten-foot (10’) advanced stop bars before school crosswalks are recommended on the following approaches of signalized intersections surrounding P.S. 79:

- Northbound mainline and service road approaches of the Grand Concourse at East 181st Street.
- Northbound approach of Morris Avenue at East 181st Street and northbound approach of Morris Avenue at East 182nd Street.

- Eastbound approach of East 182nd Street at Morris Avenue and westbound approach of East 181st Street at Morris Avenue.
- Eastbound approach of East 182nd Street at Creston Avenue and southbound approach of Creston Avenue at East 182nd Street.
- Eastbound approach of Cameron Place at Morris Avenue.

The stop bar at each of these approaches should be moved to ten feet (10') in advance of the crosswalk to maximize school pedestrian safety.

➤ Meeting with representatives of local police precinct

According to school representatives, double parking near the school is a major problem. It is therefore recommended that:

- NYC DOT should consider arranging a meeting with representatives of the local police precinct and school officials in order to discuss this problem and identify corrective actions.

➤ Signal timing adjustment at the Grand Concourse and East 181st Street

This intersection is located one block east of P.S. 79 and has a school crosswalk located across the south leg of the Grand Concourse mainline and service roads (this school crosswalk is designated to P.S. 79). Based upon on the existing crossing times in Table 6 in Section 3, a child pedestrian does not have sufficient time to completely cross the Grand Concourse in one pedestrian phase during the morning hours. Therefore, we recommend that 4 seconds be added to the crossing time provided during AM peak period.

In addition, there are raised concrete buffers between the mainline and service roads, approximately ten foot in width, which provide refuge areas between pedestrian phases.

➤ Re-designate existing pedestrian crosswalks as school crosswalks

There are pedestrian crosswalks located across the south legs of both Morris Avenue and Creston Avenue at East 182nd Street. These crosswalks connect with the northerly corners of the school block, and are locations students would be expected to cross going to and from school. These crosswalk locations should be designated as school crosswalks due to their proximity to the school location.

It is therefore recommended to:

- Convert the pedestrian crosswalk located across the south leg of Creston Avenue at East 182nd Street into a school crosswalk and provide associated advance warning signs.
- Convert the pedestrian crosswalk located across the south leg of Morris Avenue at East 182nd Street into a school crosswalk and provide associated advance warning signs. Set stop bar ten feet in advance of the proposed school crosswalk.

4.2 LONG-TERM MEASURES

➤ Consider refuge islands at the intersection of Grand Concourse/East 181st Street and Grand Concourse/East 180th Street

There were nine pedestrian accidents including one pedestrian fatality at the intersection of Grand Concourse and East 181st Street between 2001 and 2004. A ten-foot wide painted striped median separates the northbound and southbound mainline of the Grand Concourse. It is therefore recommended to:

- Provide a pedestrian refuge island at the south leg of the Grand Concourse with at least a five-foot at-grade cut through section.

There were seven pedestrian accidents including one school-related accident at the intersection of Grand Concourse and East 180th Street. A ten-foot wide painted striped median separates the northbound and southbound mainline of the Grand Concourse. It is therefore recommended to:

- Provide a pedestrian refuge island at both the north and south legs of the Grand Concourse with at least a five-foot at-grade cut through section.

The refuge islands with extended medians will provide a refuge for pedestrians who do not complete the crossing during the flashing “Don’t Walk” indication. The proposed extended median should extend beyond the crosswalk, and should have at least five-foot at-grade cut through section. These medians are not proposed where they would hinder the ability of vehicles to turn. Final details pertaining to proposed extended medians will be developed during Final Design.

➤ Consider curb extensions at the following intersections:

- Northeast and southeast corners of the Grand Concourse northbound service road at East 181st Street
- Northwest and southwest corners of the Grand Concourse southbound service road at East 181st Street
- Northeast and northwest corners of the Grand Concourse northbound service road at East 180th Street
- Northwest and southeast corners of the Grand Concourse southbound service road at East 180th Street
- Southeast corner of the East 182nd Street and Morris Avenue intersection
- Southeast corner of the East 182nd Street and Creston Avenue intersection
- Southwest corner of the Morris Avenue and Cameron Place intersection. In addition, consider extending the east sidewalk by six feet in order to reduce the crossing distance at the school crosswalk located across the uncontrolled south leg of Morris Avenue.
- Northeast and southeast corners of the East 181st Street and Morris Avenue intersection

- Northwest and southwest corners of the East 181st Street and Creston Avenue intersection

Curb extensions (neckdowns) should be installed at the corners as shown in Exhibit 8. The purpose of the curb extension is to provide additional refuge space for pedestrians, to shorten the crossing distance for pedestrians, and to reduce the speed of vehicles approaching and turning on school crosswalks. The curb extension will not eliminate or reduce the width of any travel lanes. Curb extensions are not proposed where they would hinder the ability of a vehicle to turn.

4.3 ADDITIONAL RECOMMENDATIONS FROM PRIORITY SCHOOLS IN THE VICINITY OF P.S. 79

4.3.1 RECOMMENDATIONS FOR P.S. 279 (CAPTAIN MANUEL RIVERA JR. SCHOOL):

The following recommendations are proposed as part of the proposed measures to improve school pedestrian safety around P.S. 279, which is also a priority school.

➤ *Place advanced stop bar before school crosswalk*

The MUTCD and New York City DOT standard for placement of a stop bar is four feet (4') in advance of a marked crosswalk. At signalized intersections and mid-block crossings, the vehicle stop line can be moved farther back from the pedestrian crosswalk.

For school crosswalks with significant potential for vehicular / pedestrian conflicts, it is recommended that the advance stop bar be placed ten feet (10') in advance of the crosswalk to maximize the safety benefit for school-aged pedestrians. (This would improve visibility of pedestrians to motorists, and allow pedestrians to proceed in a crosswalk before motor vehicles turn.)

Ten feet (10') advanced stop bars before school crosswalks are recommended on the following approaches of signalized intersections surrounding P.S. 279:

- Eastbound, westbound, and southbound approaches of the intersection of East Burnside Avenue and Walton Avenue
- Eastbound and westbound approaches of East Burnside Avenue at its intersection with Morris Avenue
- Westbound approach of East 181st Street at its intersection with Walton Avenue
- Northbound and southbound approaches of Jerome Avenue at its intersection with East 181st Street

There are no school crosswalks at the intersection of Jerome Avenue and East Burnside Avenue. However, this intersection experienced fifteen (15) pedestrian accidents during the four-year period between 2001 and 2004. It is therefore recommended to:

- Provide ten feet advanced stop bars before pedestrian crosswalks at all four approaches of East Burnside Avenue and Jerome Avenue intersection

➤ Provide school crosswalks and assign a crossing guard at the intersection of Jerome Avenue & East 181st Street

The principal of P.S. 279 considers Jerome Avenue hazardous for his students to negotiate crossing at East 181st Street, due to the width of the roadway, vehicles' speeding, and double-parked vehicles. The principal has also requested a school crossing guard for this location.

This intersection experienced four pedestrian accidents including two school-related accidents between 1998 and 2000, and ten pedestrian accidents including two school-related accidents between 2001 and 2004.

As student pedestrians were observed crossing the Jerome Avenue at 181st Street, it is therefore recommended to:

- Replace the high visibility crosswalks located across the north and south legs of Jerome Avenue with school crosswalks and provide associated advance warning signs.
- Assign a crossing guard to the intersection of Jerome Avenue and East 181st Street.

➤ Consider curb extensions at the intersection of Jerome Avenue and East 181st Street:

In addition to the short-term measures proposed for this intersection, it is recommended to:

- Provide curb extensions at all four corners of Jerome Avenue.

➤ Consider curb extensions at the intersection of East 181st Street and Walton Avenue

There were two pedestrian accidents including one school-related accident between 1998 and 2000, and four pedestrian accidents including two school-related accidents between 2001 and 2004. It is therefore recommended to:

- Provide curb extensions at the northeast and southeast corners of this intersection.

➤ Consider curb extensions at the intersection of East Burnside Avenue and Walton Avenue

There were 14 pedestrian accidents including one school-related accident between 2001 and 2004. During the same four-year period, there was a pedestrian fatality reported at this intersection. It is therefore recommended to:

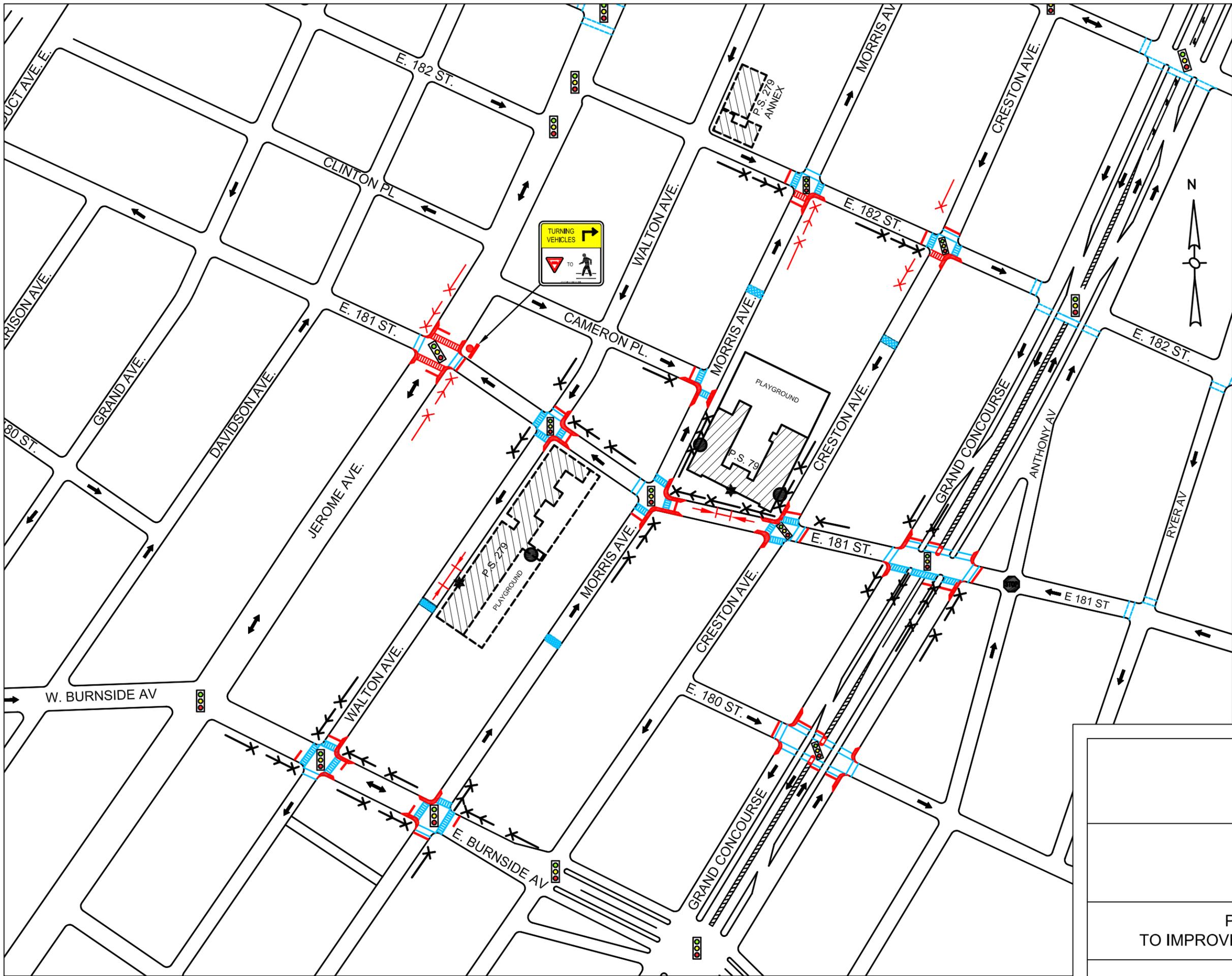
- Provide curb extensions at the northeast and southeast corners of this intersection.

➤ *Consider curb extensions at the intersection of East Burnside Avenue and Morris Avenue*

There were nine pedestrian accidents including two school-related accidents between 2001 and 2004. It is therefore recommended to:

- Provide curb extensions at the northwest and southwest corners of the intersection.

The purpose of the curb extension is to shorten the crossing distance for pedestrians, and to reduce the speed of vehicles approaching and turning on school crosswalks. The curb extension will not eliminate or reduce the width of any travel lanes. Curb extensions are not proposed where they would hinder the ability of a vehicle to turn.



- 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 ALL WAY STOP LOCATION
 - SIGNALIZED LOCATION
 - EXISTING SCHOOL CROSSWALK
 - EXISTING PEDESTRIAN CROSSWALK
 - PROPOSED SCHOOL CROSSWALK ASSOCIATED WITH ANOTHER SCHOOL
 - EXISTING SPEED REDUCER
 - PROPOSED ADVANCE WARNING SIGN
 - PROPOSED SCHOOL CROSSWALK WARNING ASSEMBLY
 - PROPOSED SCHOOL CROSSWALK
 - PROPOSED TRAFFIC SIGN
 - PROPOSED STOP LINE IN ADVANCE OF SCHOOL CROSSWALK
 - PROPOSED "NO STANDING 7:00AM - 4:00PM SCHOOL DAYS"
 - PROPOSED CURB EXTENSION (NECKDOWN)
 - PROPOSED CONCRETE REFUGE ISLAND

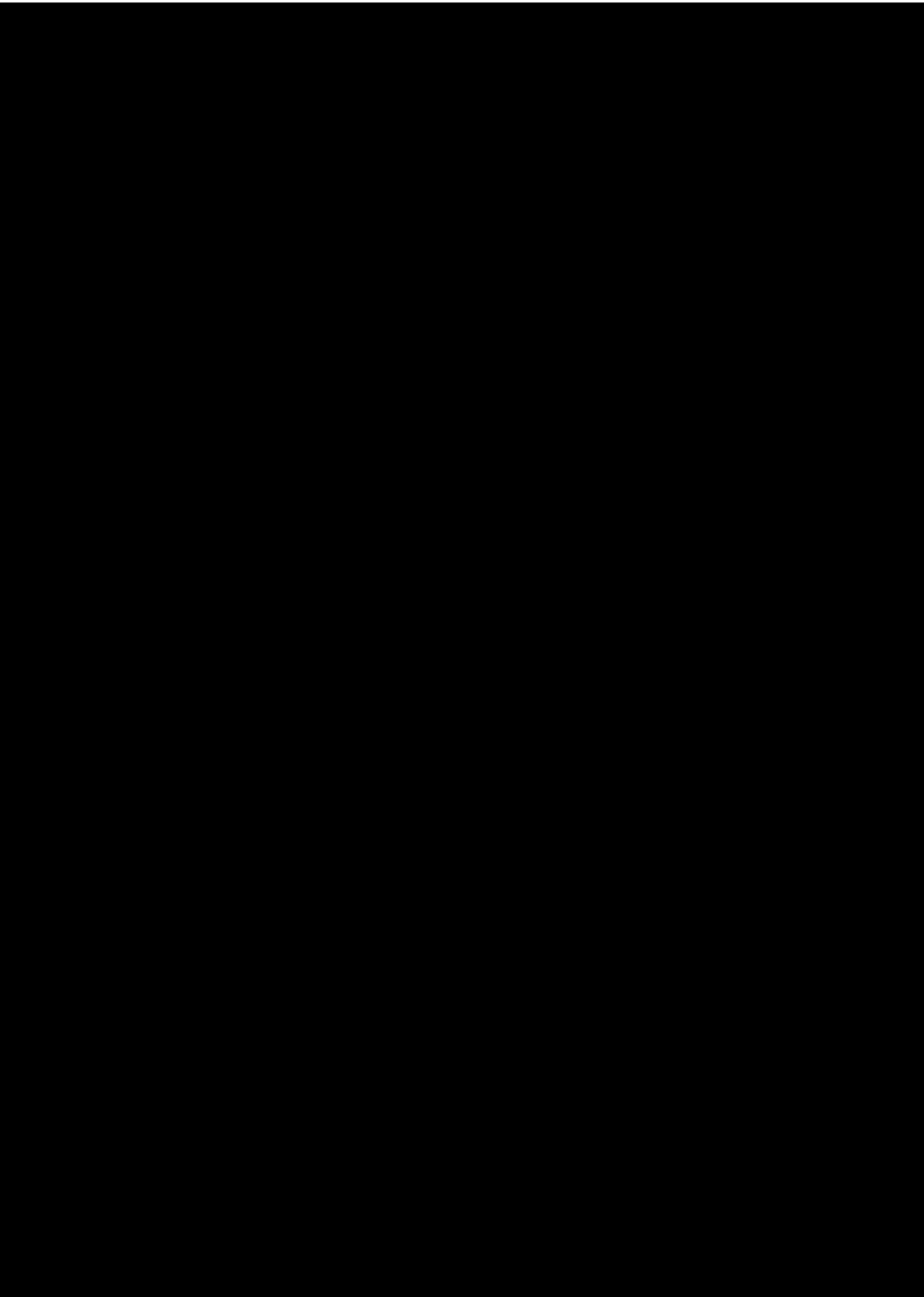
1" = 200'

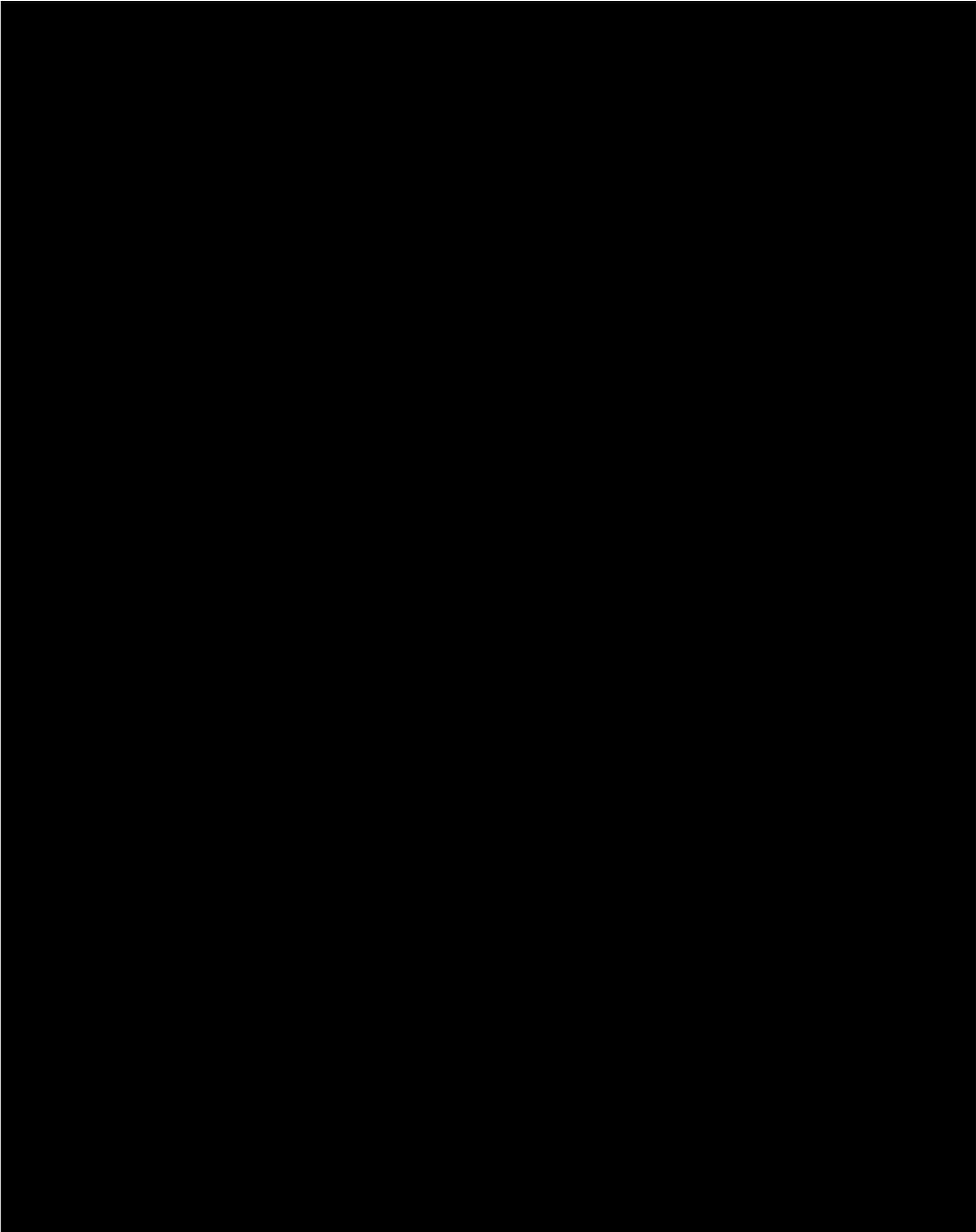
EXHIBIT 8

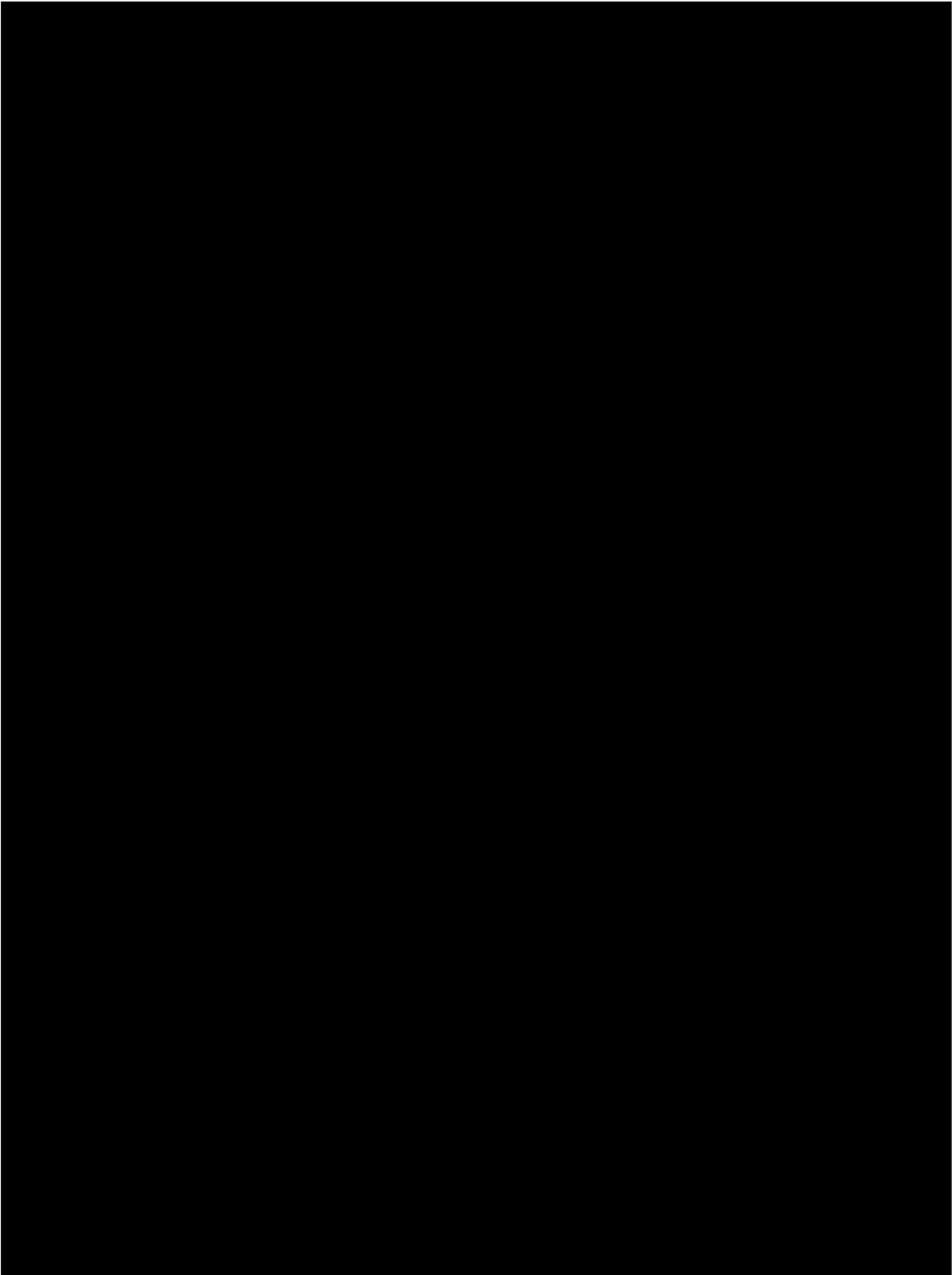
P.S. 79 BRONX
CRESTON SCHOOL

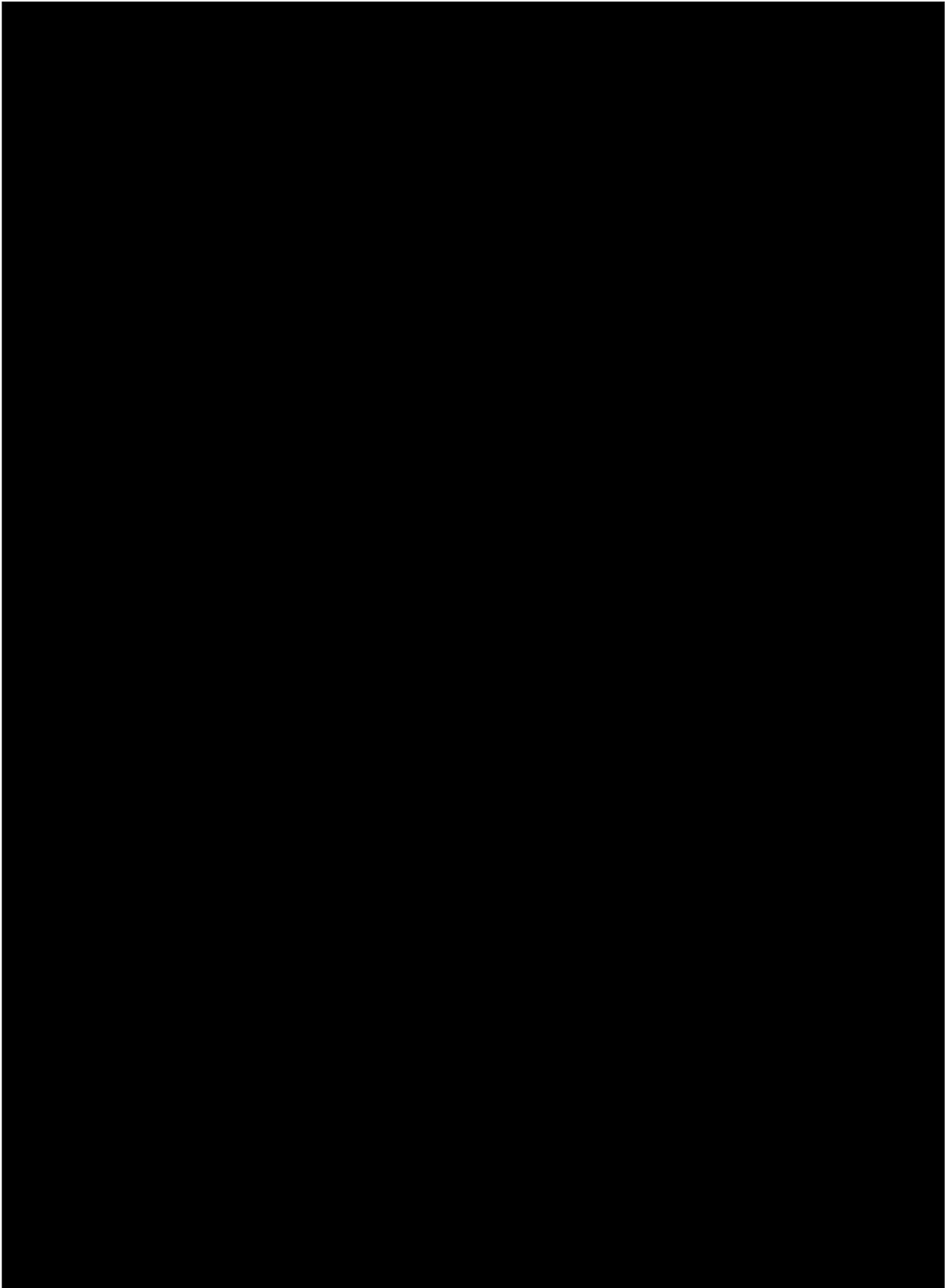
POTENTIAL MEASURES
TO IMPROVE STUDENT PEDESTRIAN SAFETY

APPENDIX









SPOT SPEED STUDY

Date: **May 19, 2005** Time: **9:30am-10:30am**
 Location: **181 Street between Creston Avenue & Morris Avenue**
 Surveyor: **Richard Calvache**

School: **P.S.79**
 Direction: **Westbound**
 Comments: **Most of the times speeds w**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
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	1	1.0%	1.0%	15	225
16	1	1.0%	2.0%	16	256
17	1	1.0%	3.0%	17	289
18	1	1.0%	4.0%	18	324
19	1	1.0%	5.0%	19	361
20	2	2.0%	7.0%	40	800
21	6	6.0%	13.0%	126	2646
22	8	8.0%	21.0%	176	3872
23	4	4.0%	25.0%	92	2116
24	9	9.0%	34.0%	216	5184
25	11	11.0%	45.0%	275	6875
26	5	5.0%	50.0%	130	3380
27	10	10.0%	60.0%	270	7290
28	10	10.0%	70.0%	280	7840
29	7	7.0%	77.0%	203	5887
30	9	9.0%	86.0%	270	8100
31	3	3.0%	89.0%	93	2883
32	5	5.0%	94.0%	160	5120
33	3	3.0%	97.0%	99	3267
34	1	1.0%	98.0%	34	1156
35	2	2.0%	100.0%	70	2450
36	0	0.0%	100.0%	0	0
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
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%		2619	70321

Mean Speed = 26.2 mph Median Speed = 26.2 mph
 Standard Deviation = 4.2 mph 15th Percentile Speed = 21.9 mph
 Margin of Error (95% Confidence) = ± 0.8 mph 85th Percentile Speed = 30.5 mph

SPOT SPEED STUDY

Date: **May 19, 2005**
Location: **181 Street between Creston Avenue & Morris Avenue**
Surveyor: **Richard Calvache**

Time: **9:30am-10:30am**

School: **P.S.79**
Direction: **Westbound**
Comments: **Most of the times speeds 1**

Mean Speed = 26.2 mph
Standard Deviation = 4.2 mph
Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 26.2 mph
15th Percentile Speed = 21.9 mph
85th Percentile Speed = 30.5 mph

