

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



**School Safety Engineering Project**

**FINAL REPORT: P.S. 279 (Captain Manuel Rivera Jr. School), Bronx**



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**August 9, 2006**

**School Safety Engineering Project  
Final Report: P.S. 279, Bronx**

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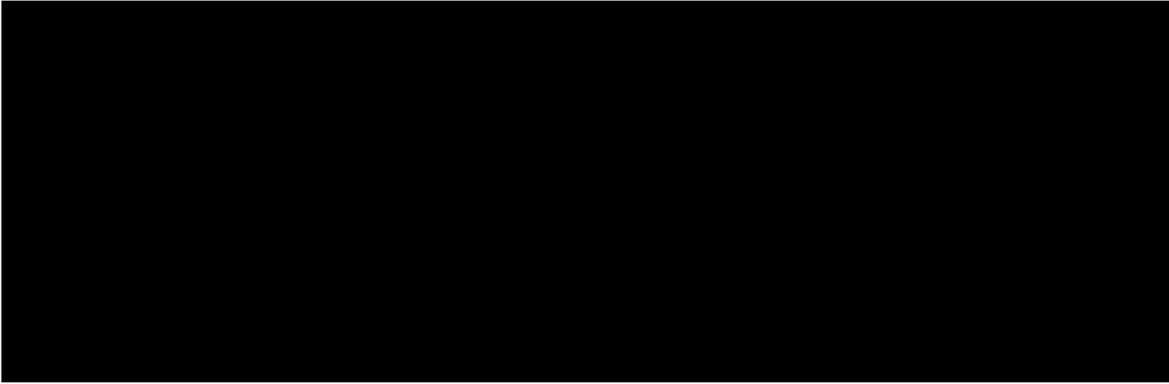
## **1. INTRODUCTION**

### **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 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. 279 (Captain Manuel Rivera Jr. 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. 279 is bounded by Walton Avenue to the west, East 181<sup>st</sup> Street to the north, Morris Avenue to the east and East Burnside Avenue to the south. The area surrounding the school is generally residential in character, with high-density apartment buildings. East 181<sup>st</sup> Street, East Burnside Avenue, and Jerome Avenue (located one block to the west) have many commercial activities.



*Figure 1: Looking east along East 181<sup>st</sup> Street across Walton Avenue*

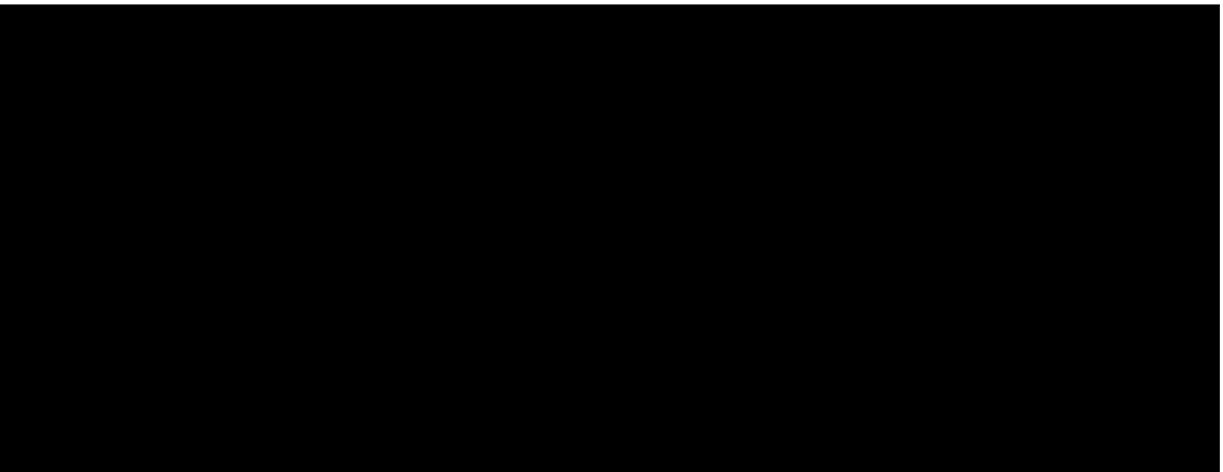


*Figure 2: Annex entrance on Walton Avenue north of East 182<sup>nd</sup> Street*

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

Consultant staff and the principal of P.S. 279 met at the school on the morning of Thursday, April 15, 2004. According to the principal of the school, the problems facing P.S. 279 student pedestrians are:

- Crossing Jerome Avenue is dangerous for the children, due to the width of the roadway, the speeding vehicles, and double-parked vehicles. The principal requested a school crossing guard for this location.
- Many of the advance warning signs get knocked down.
- There is little parking available for the staff and it creates problems getting into school.



## 2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

The school’s “catchment area” as defined by the Department of Education is shown on Exhibit 2.

The school’s catchment area is bounded by Dr. Martin Luther King, Jr. Boulevard to the west, West 181<sup>st</sup> Street and East 181<sup>st</sup> Street to the north, with an extension to Cameron Place at the north-east corner, Grand Concourse to the east and East Burnside Avenue to the south. For the Annex (Kindergarten), the catchment area extends from Harrison Avenue in the west to the Grand Concourse in the east, East 181<sup>st</sup> Street in the south and East 183<sup>rd</sup> Street in the north.

Table 1 presents the modeS of travel for P.S. 279 as identified by school representatives.

<b>TABLE 1: MODES OF TRAVEL</b> (AS ESTIMATED BY SCHOOL OFFICIALS)	<b>STUDENTS</b> (Percentage)
Walk	81%
Driven by car	5%
School bus	7%
Bus/ Subway	7%
Bicycle	0%
<b>TOTAL</b>	<b>100%</b>

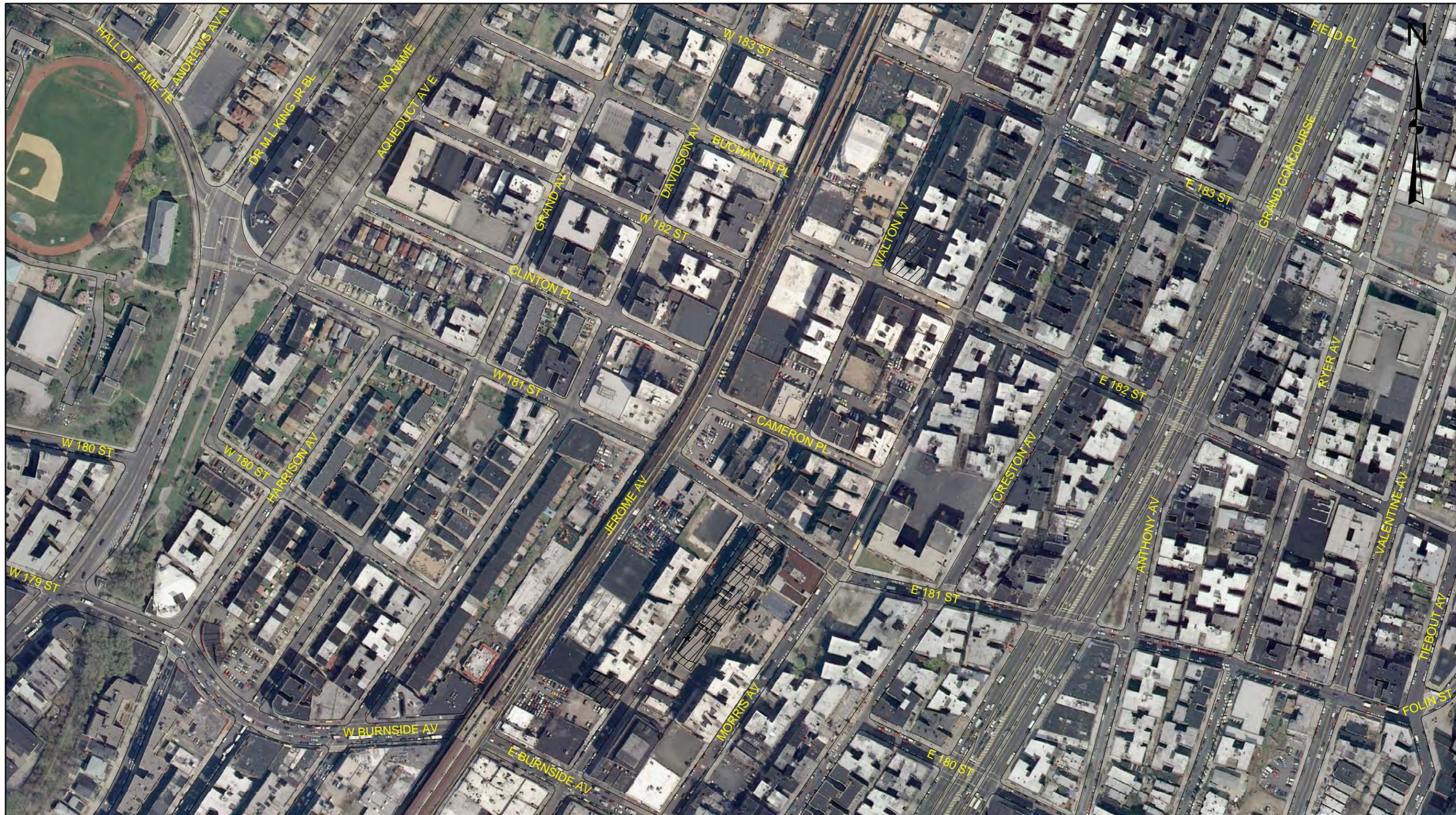
## 2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

Jerome Avenue, East 181<sup>st</sup> Street, East Burnside Avenue, and Grand Concourse are commercial streets with many shops, restaurants, and delis. They generate additional vehicular and pedestrian traffic and are an attraction for students from P.S. 279.

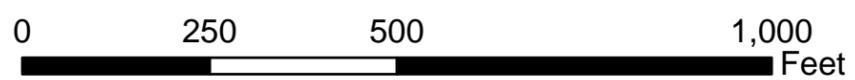
## 2.8 CROSSING GUARD LOCATION

According to school representatives and field observations, there is one crossing guard assigned to P.S. 279 at the intersection of East 181<sup>st</sup> Street and Morris Avenue. The same crossing guard is assigned for P.S. 79 which is located one block to the east on East 181<sup>st</sup> Street and has an enrollment of 1000 students (P.S. 79 is also a priority school).

The crossing guard location is shown in Exhibit 4.



**EXHIBIT 1**  
**P.S. 279 BRONX**  
**CAPTAIN MANUEL RIVERA JR. SCHOOL**  
**AERIAL PHOTOGRAPH**





**LEGEND:**

CATCHMENT AREA, (DEPARTMENT OF EDUCATION DESIGNATED AREA FROM WITHIN WHICH STUDENTS ARE ENTITLED TO ATTEND P.S. 279)



**EXHIBIT 2**

**PS.S 279 BRONX**

**CAPTAIN MANUEL RIVERA JR. SCHOOL**

**CATCHMENT AREA**







### **3. TRAFFIC OPERATIONS**

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

According to school representatives, there are approximately 76 students who ride an MTA bus to school, and approximately 73 students who ride a yellow school bus to school. Bus transportation for the students consists of three yellow buses. The buses stop at East Burnside Avenue, near the school entrance.



#### **3.3 PARKING REGULATIONS**

Parking regulations around the school block are shown in Exhibit 5.

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

Exhibit 3 shows the existing school signals and pavement markings around P.S. 279. 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 7.



*Figure 3: Looking west along East Burnside Avenue across Walton Avenue*



*Figure 4: Looking east along East 181<sup>st</sup> Street across Walton Avenue*

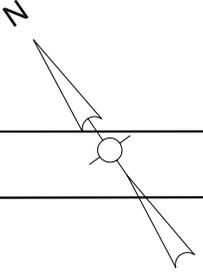
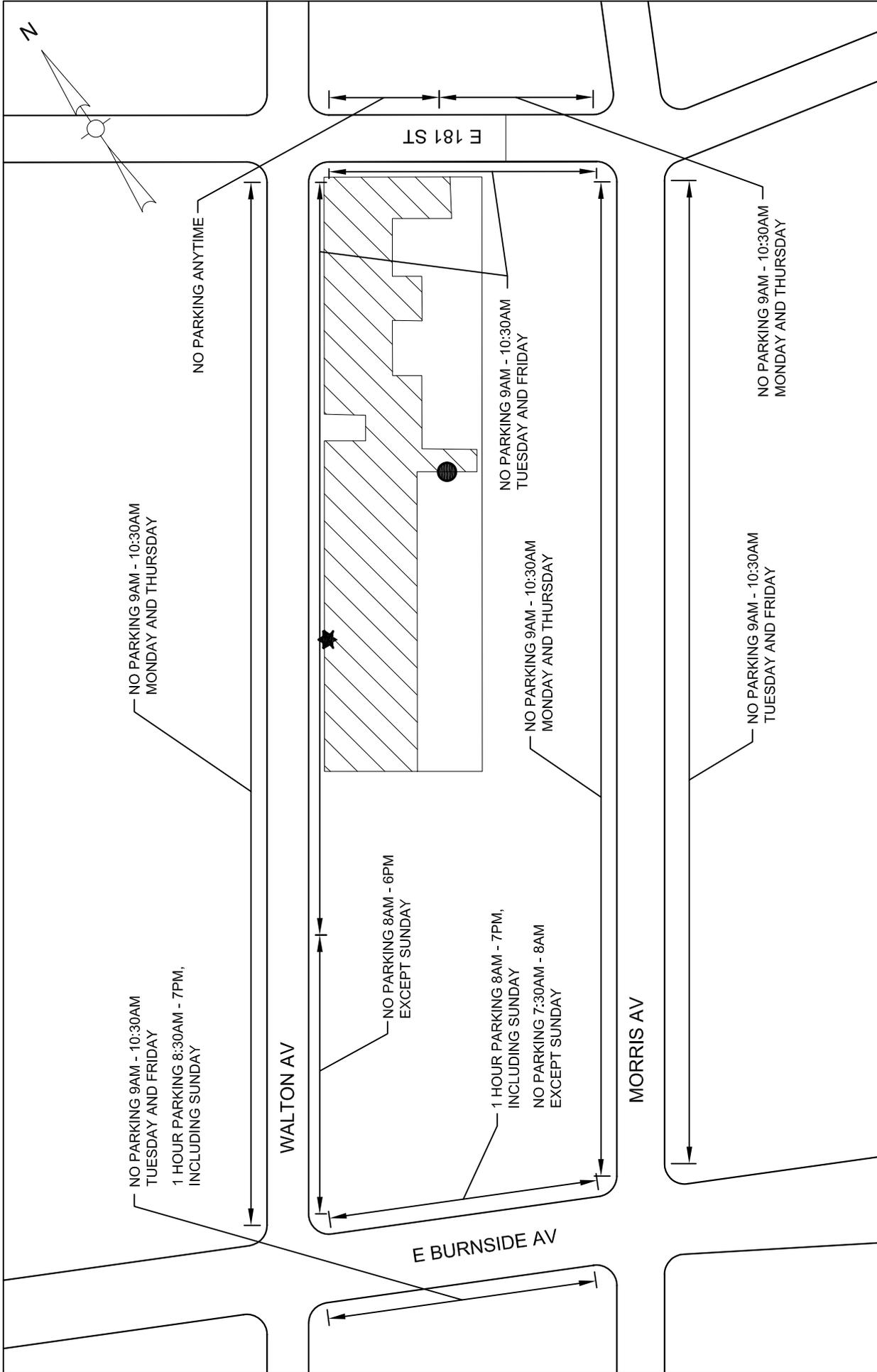
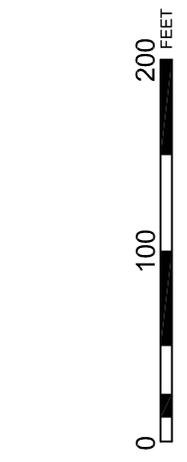


EXHIBIT 5  
 P.S. 279 BRONX  
 CAPTAIN MANUEL RIVERA JR. SCHOOL  
 EXISTING PARKING REGULATIONS



- LEGEND:**
- ★ MAIN ENTRANCE
  - ENTRANCE

### 3.5 ACCIDENT SUMMARY

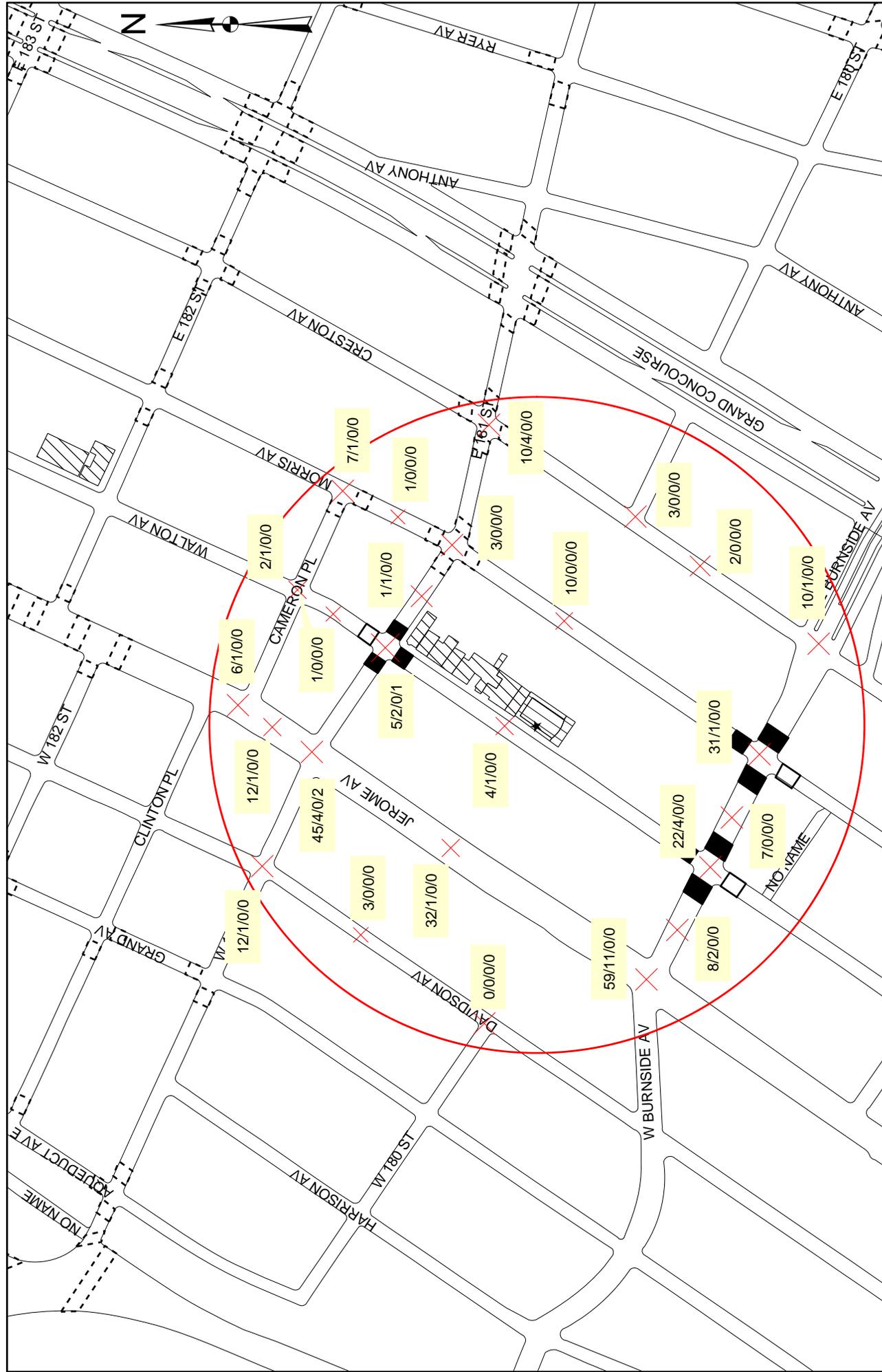
Exhibit 6 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of P.S. 279 for a three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of an 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.

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
East 181 <sup>st</sup> Street and Jerome Avenue	45	4	0	2
East 181 <sup>st</sup> Street and Walton Avenue	5	2	0	1
East 181 <sup>st</sup> Street and Morris Avenue	3	0	0	0
East Burnside Avenue and Walton Avenue	22	4	0	0
East Burnside Avenue and Morris Avenue	31	1	0	0
East Burnside Avenue and Jerome Avenue	59	11	0	0
<b>TOTAL</b>	<b>165</b>	<b>22</b>	<b>0</b>	<b>3</b>

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
East 181 <sup>st</sup> Street and Jerome Avenue	59	10	0	2
East 181 <sup>st</sup> Street and Walton Avenue	15	4	0	2
East 181 <sup>st</sup> Street and Morris Avenue	18	3	0	2
East Burnside Avenue and Walton Avenue	48	14	1	1
East Burnside Avenue and Morris Avenue	36	9	0	2
East Burnside Avenue and Jerome Avenue	95	15	0	0
<b>TOTAL</b>	<b>217</b>	<b>55</b>	<b>1</b>	<b>9</b>

\* 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. 279 BRONX**

**CAPTAIN MANUEL RIVERA JR. SCHOOL**

**ACCIDENT SUMMARY (1998-2000)**

**LEGEND:**

- ACCIDENT LOCATION
- SCHOOL CROSSWALK
- SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL
- BORDER OF 700 FEET
- X/X/X
- TOTAL ACCD / PED ACCD / PED FATAL / SCHOOL\_PED ACCD

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 affects 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.

In February 2006, NYCDOT representatives met with school officials from PS 279 to further assess traffic safety needs for students around the school. At this meeting school officials requested consideration of the installation of pedestrian-actuated signals on Jerome Avenue at 181st Street, 184th Street and Fordham Road. The DOT Signals Division investigated this request and found that the signals are operating properly with adequate pedestrian crossing time.

School officials had requested an additional speed study (and speed reducer) for Walton Avenue where the existing 15 MPH speed zone exists. DOT studies confirm that vehicles are traveling well below 30 mph on Walton Avenue. On Walton Avenue between East 181st Street and Burnside Avenue, 85th percentile speeds (before and after installation of the reduced speed limit) were found as follows:

Before speed AM:	19.3
After speed AM:	20.1
Before speed PM:	23.5
After speed PM:	19.5

DOT also found that the existing speed reducer on Walton Avenue was installed to correct specifications

The following sub-sections outline the physical conditions and issues concerning traffic operations and accidents at the intersections in the vicinity of P.S. 279.

#### ***3.6.1 East 181<sup>st</sup> 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 181<sup>st</sup> Street. East 181<sup>st</sup> 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.



*Figure 5: Looking south along Walton Avenue across East 181<sup>st</sup> Street (school is on east side of street)*



*Figure 6: 15 mph Speed limit sign along Walton Avenue*



*Figure 7: Looking south along Walton Avenue at a speed reducer*

### 3.6.2 East 181<sup>st</sup> Street and Morris Avenue

This is a four-leg signalized intersection, with school crosswalks located on the north, east and south legs of the intersection.

East 181<sup>st</sup> Street is a one-way, westbound street with one travel lane and parking on both sides of the roadway. Morris Avenue is a one-way, northbound street with one travel lane and parking on both sides of the roadway. According to school representatives, a speed reducer installed on Morris Avenue between East Burnside Avenue and East 181<sup>st</sup> Street alleviated a speeding problem.

This intersection has been the site of three accidents between 1998 and 2000; none were pedestrian accidents. There were no pedestrian fatalities during this four-year period.



*Figure 8: Looking north along Morris Avenue across East 181<sup>st</sup> Street*



*Figure 9: Looking north at a speed reducer on Morris Avenue (back of school is on the left)*

### 3.6.3 East 181<sup>st</sup> 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 181<sup>st</sup> Street.

East 181<sup>st</sup> 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 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 (see Figure 9).

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

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 but 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 during the same three-year period.

In addition, the school principal reported a speeding problem on Jerome Avenue in the area of the East 181<sup>st</sup> Street intersection. Therefore, a speed survey was conducted on Jerome Avenue between East 181<sup>st</sup> Street and East Burnside Avenue in order to verify the existence of a speeding problem and to determine its extent.

The northbound vehicles on Jerome Avenue between East 181<sup>st</sup> Street and East Burnside Avenue were found to be traveling with an 85<sup>th</sup> percentile speed of 31 mph. The southbound vehicles on Jerome Avenue between East 181<sup>st</sup> Street and East Burnside Avenue were found to be traveling with an 85<sup>th</sup> percentile speed of 30 mph.

The 85<sup>th</sup> percentile speed is considered to be the representative speed for the street segment. Speeds above the 30 mph threshold would indicate a speeding problem and may require appropriate traffic calming measures. The 85<sup>th</sup> percentile speeds indicate that speeding is an issue on Jerome Avenue; however speed reducers (humps) are not feasible because it is a wide street and also a bus route. In order to minimize the effects of speeding, traffic calming measures such as neckdowns, advanced stop bars, and new school crosswalks are recommended for this street.

The detailed results of the spot speed survey on Jerome Avenue between East 181<sup>st</sup> Street and East Burnside Avenue are shown in the Appendix at the end of the document.



*Figure 10: Looking north along Jerome Avenue at East 181<sup>st</sup> Street*

#### 3.6.4 East Burnside and Walton Avenue

This is a four-leg signalized intersection, with school crosswalks located across the north leg of Walton Avenue and across the east and west legs of East Burnside Avenue. A pedestrian crosswalk is located across the south leg of Walton Avenue.

East Burnside Avenue is a two-way street with one travel lane and a parking lane in each direction. Walton Avenue is a one-way, southbound street with one travel lane and parking on both sides of the roadway.

This intersection has been the site of 22 accidents between 1998 and 2000; four of which were pedestrian accidents. None of the accidents were school-related.



*Figure 11: Looking north along Walton Avenue across East Burnside Avenue*

### 3.6.5 East Burnside Avenue and Morris Avenue

This is a four-leg signalized intersection, with school crosswalks located across the north leg of Morris Avenue and across the east and west legs of East Burnside Avenue. A pedestrian crosswalk is located across the south leg of Morris Avenue.

East Burnside Avenue is a two-way street with one travel lane and a parking lane in each direction. Morris Avenue is a one-way, northbound street with one travel lane and parking on both sides of the roadway.

This intersection has been the site of 31 accidents between 1998 and 2000; one of the accidents was a pedestrian accident which was not a school-related accident. There were no pedestrian fatalities reported during the same three-year period.



*Figure 12: Looking west along East Burnside Avenue across Morris Avenue*



*Figure 13: Looking north along Morris Avenue across East Burnside Avenue*

3.6.6 East Burnside Avenue and Jerome Avenue

This is a four-leg signalized intersection with pedestrian crosswalks located across all four legs. East Burnside Avenue is a two-way street with one travel lane and a parking lane in each direction. 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 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 59 accidents between 1998 and 2000; 11 of these accidents were pedestrian accidents; none of the pedestrian accidents were school-related. There were no pedestrian fatalities reported during the same three-year period.

**3.7 SIGNAL TIMING: PEDESTRIAN PHASE**

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of P.S. 279, and were found to be adequate based upon a child pedestrian walking at a rate of 3 feet per second. 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 (SECONDS)	TIMING ADJUSTMENT REQUIRED?
<b>East 181<sup>st</sup> Street and Walton Avenue</b>				
crossing East 181 <sup>st</sup> St	38	19	16	No
crossing Walton Ave	37	19	16	No
<b>East 181<sup>st</sup> Street and Morris Avenue</b>				
crossing East 181 <sup>st</sup> St	38	28	16	No
crossing Morris Ave	34	28	15	No
<b>East Burnside Avenue and Walton Avenue</b>				
crossing East Burnside Ave	54	30	21	No
crossing Walton Ave	37	57	16	No
<b>East Burnside Avenue and Morris Avenue</b>				
crossing East Burnside Ave	54	34	21	No
crossing Morris Ave	34	52	15	No

*Note – A rate of 3 ft/sec plus 3 seconds reaction time was utilized as the child pedestrian walking rate*

**3.8 PHYSICAL CONDITIONS**

3.8.1 Roadways and Sidewalks

The roadways in the vicinity of P.S. 279 are generally in fair condition, except for an area at the intersection of Walton Avenue and East Burnside Avenue and an area in front of the school on Walton Avenue. In these areas, and especially on Walton Avenue, the roadway is in need of maintenance with cracks and holes in the pavement surface. This condition appears to be a result of previous utility work in the roadway (see Figures 14 and 15).

Sidewalks are generally in good condition.

### 3.8.2 Pedestrian Ramps

Overall, pedestrian ramps in the area of the school are standard.



*Figure 14: Looking east along East Burnside Avenue across Walton Avenue*



*Figure 15: Looking south along Walton Avenue at pavement in front of the school*

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

This section describes the proposed measures to improve school pedestrian safety around P.S. 279. 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. 279 is discussed as follows, and is shown in more detail in Exhibit 7 at the end of this section. See section 4.3 for additional recommendations for this area from the report on P.S. 79, a nearby priority school.

### **4.1 SHORT-TERM MEASURES**

➤ *Install “NO STANDING 7am-4pm SCHOOL DAYS” signs*

Install “NO STANDING 7 AM – 4 PM SCHOOL DAYS” signs for sixty feet 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.) In addition, the school buses will use this area to drop off and pick up the students.

➤ *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 181<sup>st</sup> Street and Grand Concourse

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

➤ *Place advanced stop bar before school crosswalk*

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 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 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 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 181<sup>st</sup> Street at its intersection with Walton Avenue

- Northbound and southbound approaches of Jerome Avenue at its intersection with East 181<sup>st</sup> 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 181<sup>st</sup> Street

The principal of P.S. 279 considers Jerome Avenue hazardous for his students to negotiate crossing at East 181<sup>st</sup> 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 181<sup>st</sup> 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 181<sup>st</sup> Street.

#### 4.2 LONG-TERM MEASURES

- Consider curb extensions at the intersection of Jerome Avenue and East 181<sup>st</sup> 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 181<sup>st</sup> 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.

#### **4.3 ADDITIONAL RECOMMENDATIONS FROM PRIORITY SCHOOLS IN THE VICINITY OF P.S. 279**

##### *4.3.1 RECOMMENDATIONS FOR P.S. 79 (CRESTON SCHOOL):*

The following recommendations are proposed as part of the proposed measures to improve school pedestrian safety around nearby P.S. 79, which is also a priority school.

➤ 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 181<sup>st</sup> Street.
- Northbound approach of Morris Avenue at East 181<sup>st</sup> Street and northbound approach of Morris Avenue at East 182<sup>nd</sup> Street.

- Eastbound approach of East 182<sup>nd</sup> Street at Morris Avenue and westbound approach of East 181<sup>st</sup> Street at Morris Avenue.
- Eastbound approach of East 182<sup>nd</sup> Street at Creston Avenue and southbound approach of Creston Avenue at East 182<sup>nd</sup> 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 181<sup>st</sup> 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 182<sup>nd</sup> 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 182<sup>nd</sup> 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 182<sup>nd</sup> Street into a school crosswalk and provide associated advance warning signs. Set stop bar ten feet in advance of the proposed school crosswalk.

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

There were nine pedestrian accidents including one pedestrian fatality at the intersection of Grand Concourse and East 181<sup>st</sup> 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 180<sup>th</sup> Street. A ten-foot wide painted striped median separates the northbound and southbound mainline of the Grand Concourse. It is therefore recommended to:

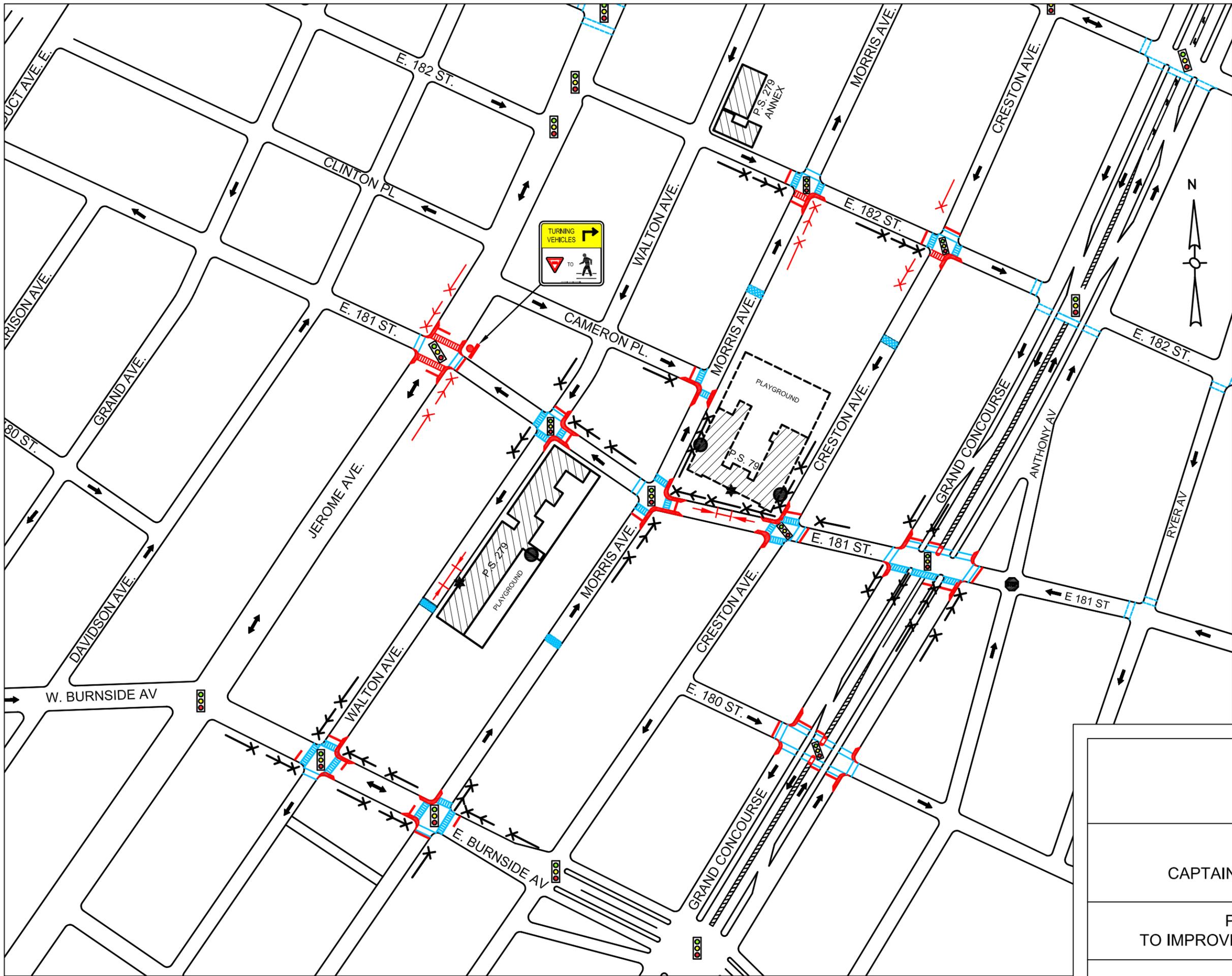
- Provide a pedestrian refuge island at both the north and south legs of the Grand Concourse with at least a five-foot at-grade cut through section.

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 181<sup>st</sup> Street
- Northwest and southwest corners of the Grand Concourse southbound service road at East 181<sup>st</sup> Street
- Northeast and northwest corners of the Grand Concourse northbound service road at East 180<sup>th</sup> Street
- Northwest and southeast corners of the Grand Concourse southbound service road at East 180<sup>th</sup> Street
- Southeast corner of the East 182<sup>nd</sup> Street and Morris Avenue intersection
- Southeast corner of the East 182<sup>nd</sup> 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 181<sup>st</sup> Street and Morris Avenue intersection
- Northwest and southwest corners of the East 181<sup>st</sup> 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.



- 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

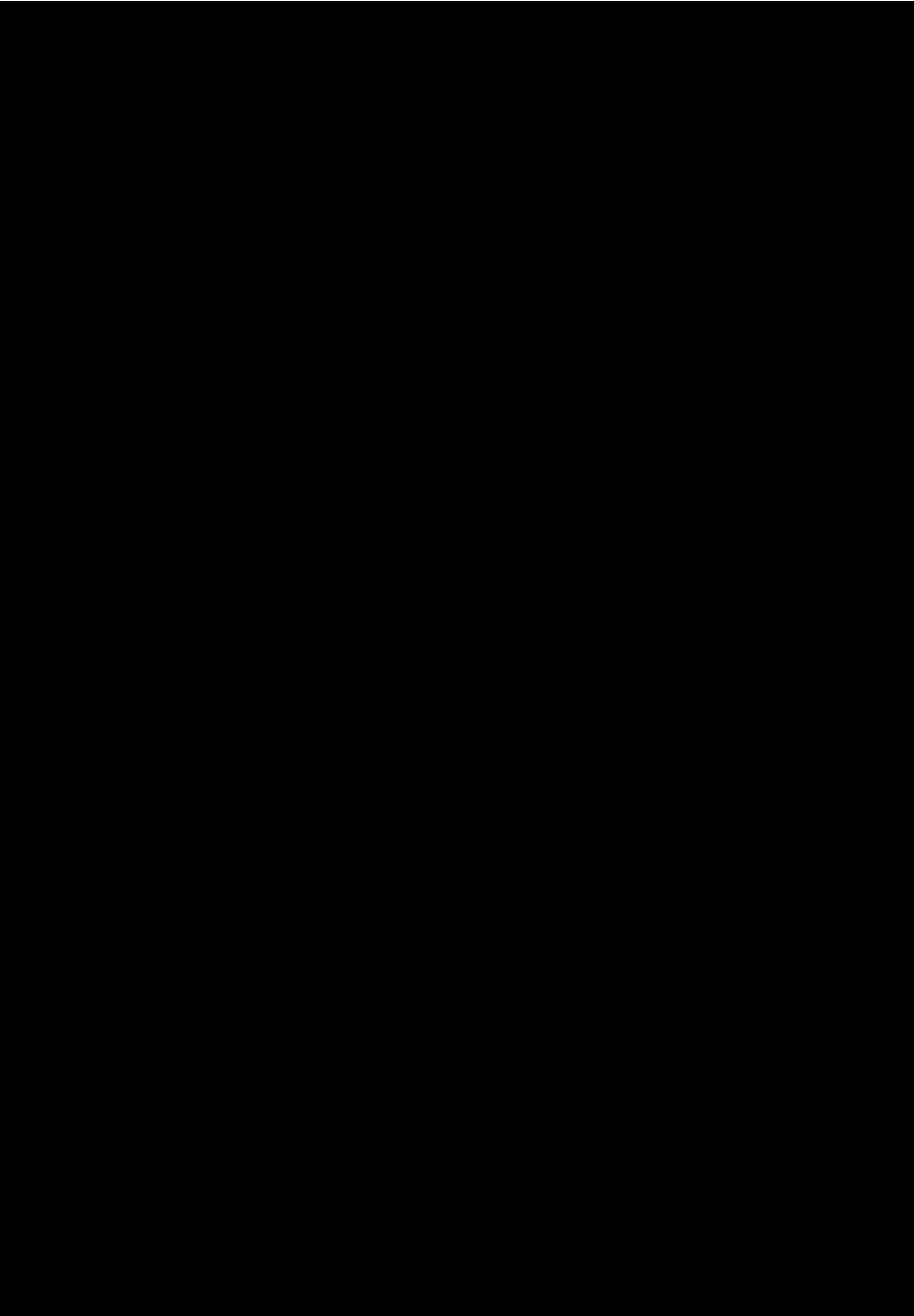
1" = 200'

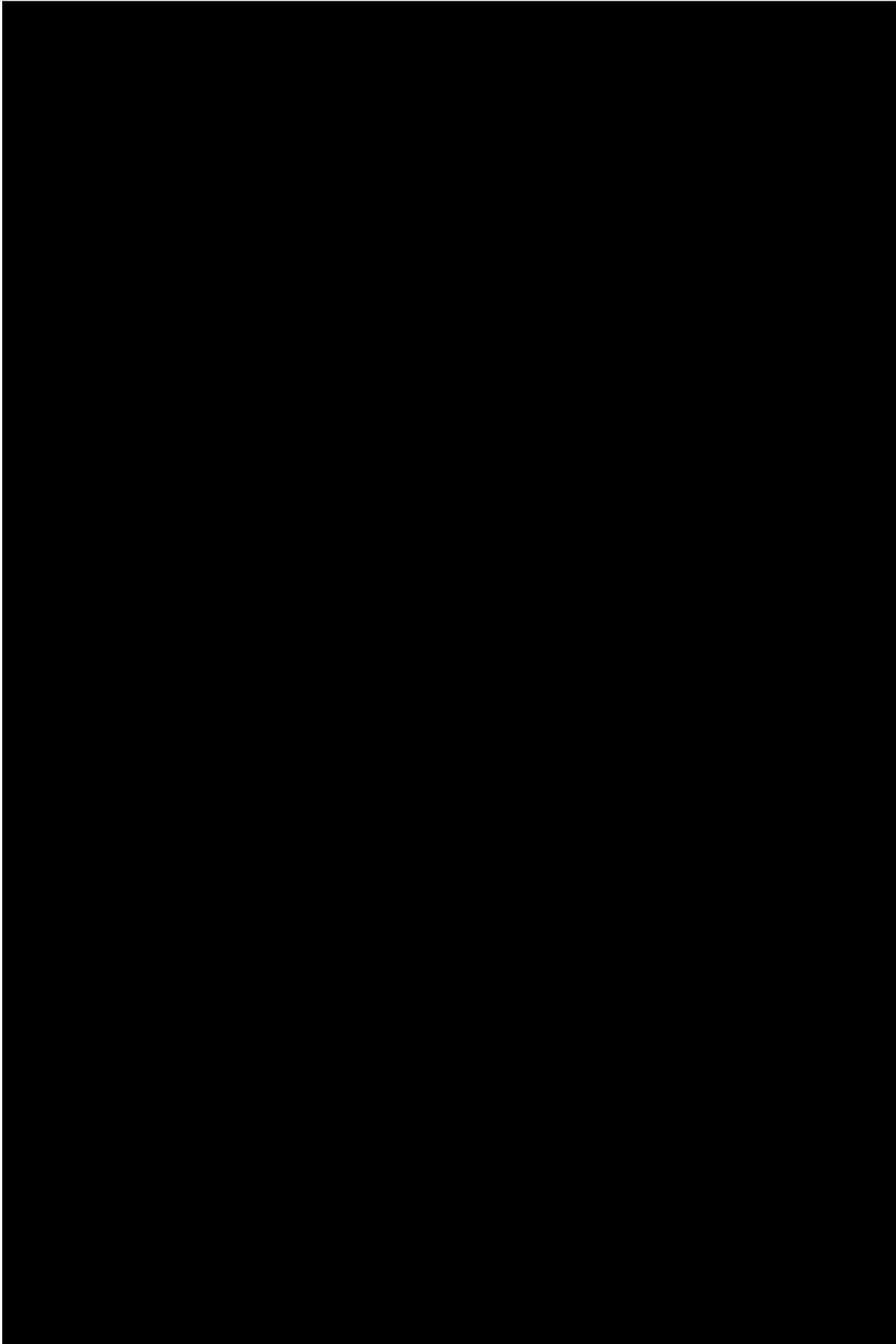
EXHIBIT 7

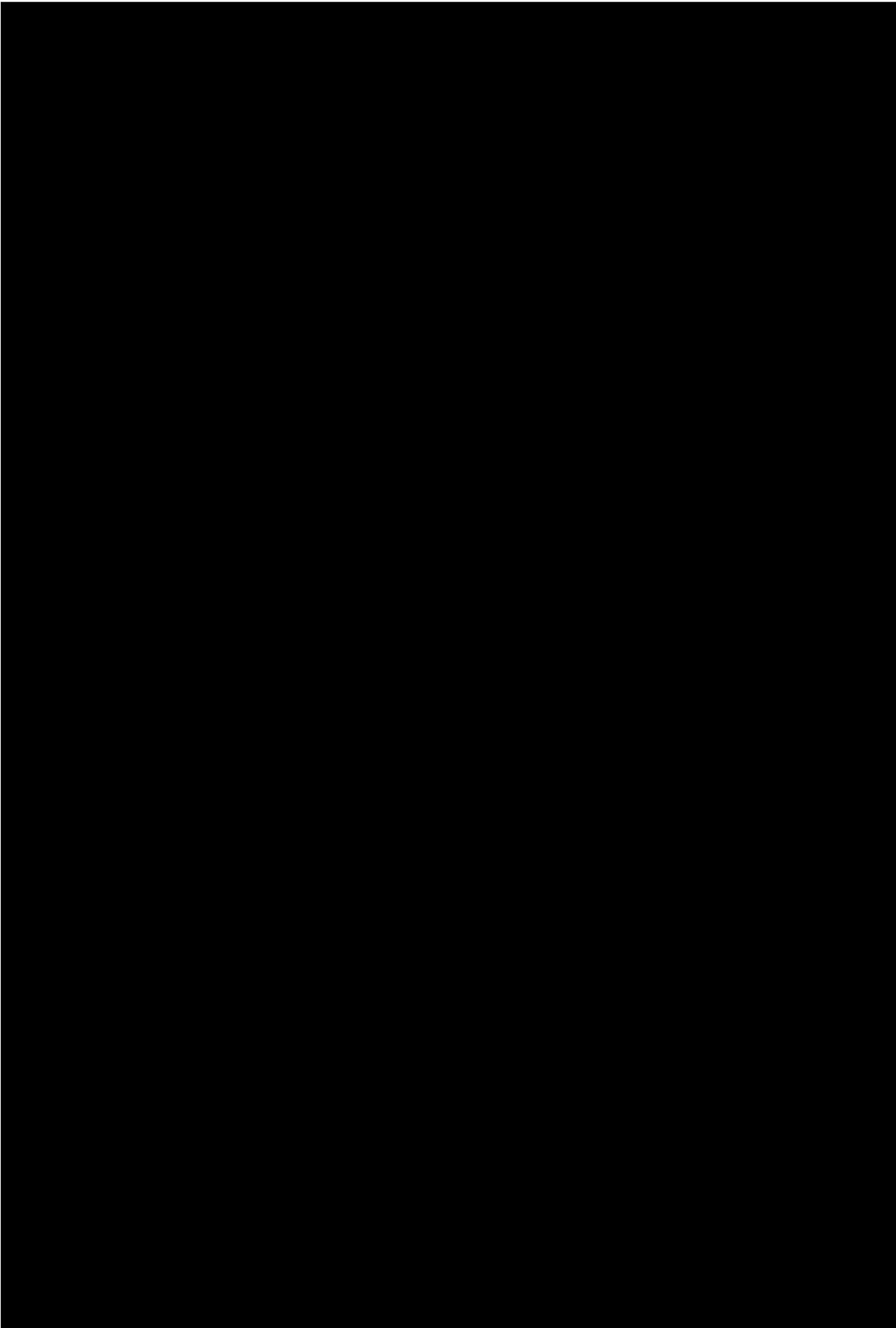
P.S. 279 BRONX  
CAPTAIN MANUEL RIVERA JR. SCHOOL

POTENTIAL MEASURES  
TO IMPROVE STUDENT PEDESTRIAN SAFETY

# APPENDIX







## SPOT SPEED STUDY

Date: **May 17, 2005**                      Time: **10:30-11:30 am**  
 Location: **Jerome Avenue between 181 Street & Burnside Avenue**  
 Surveyor: **Richard Calvache**

School: **P.S. 279**  
 Direction: **Northbound**  
 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	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

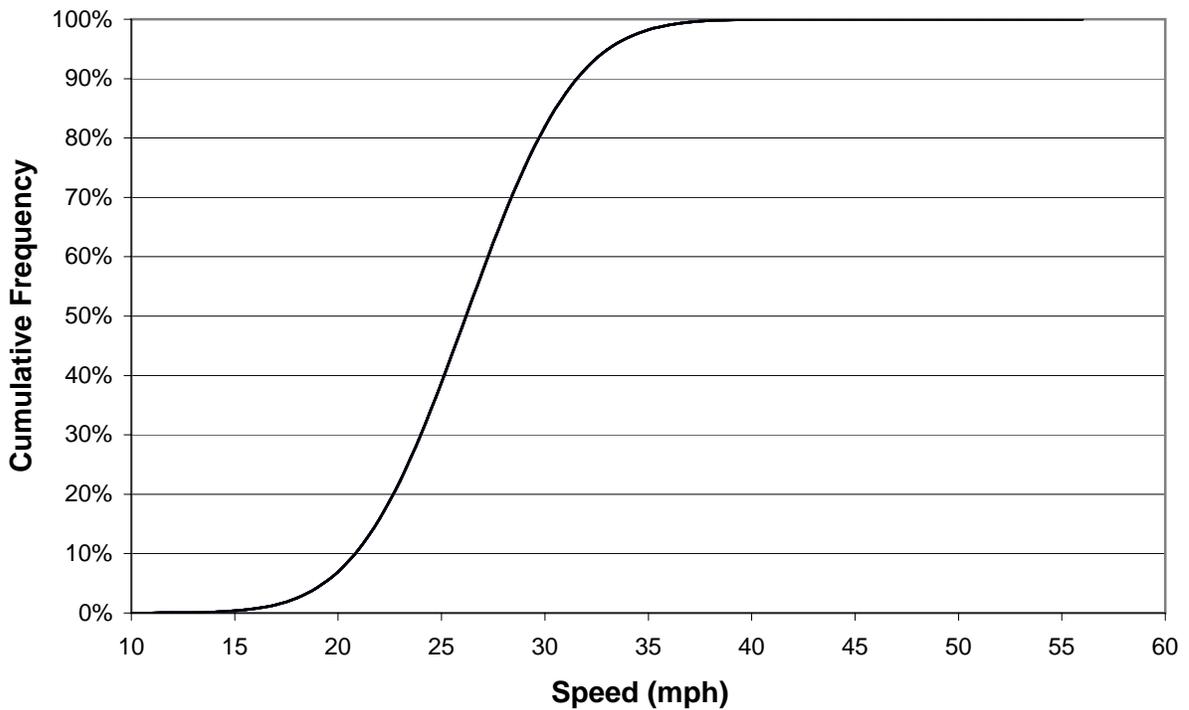
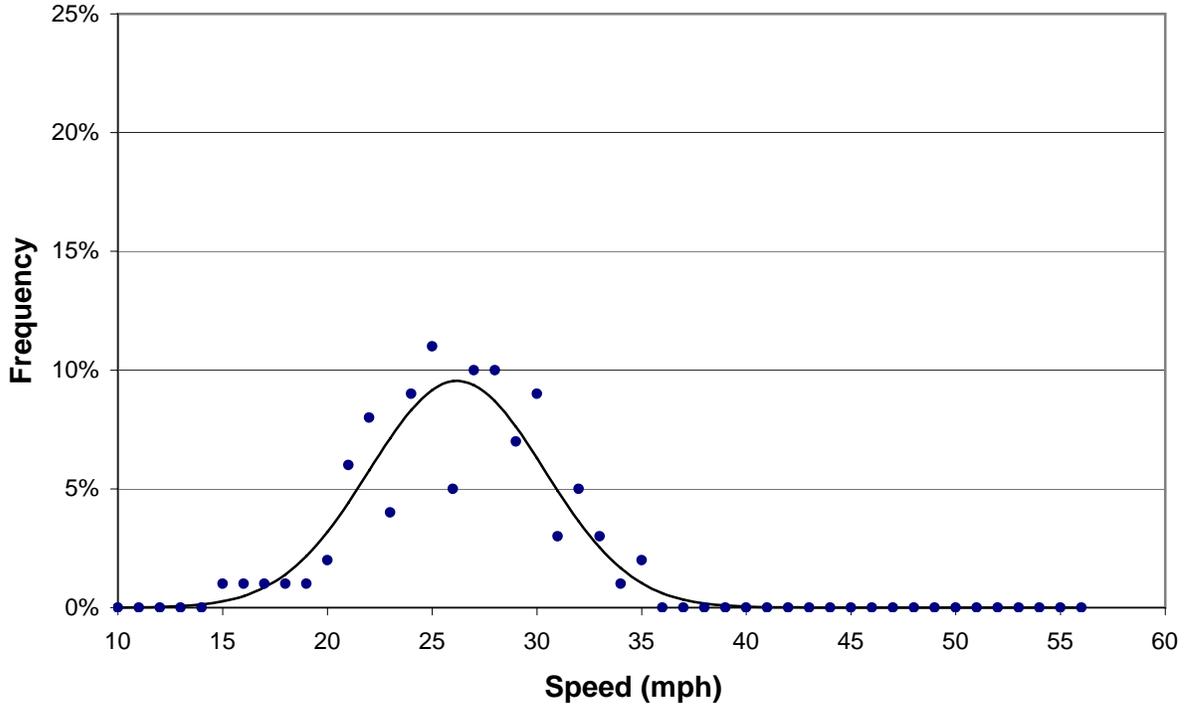
# SPOT SPEED STUDY

Date: **May 17, 2005** Time: **10:30-11:30 am**  
Location: **Jerome Avenue between 181 Street & Burnside Avenue**  
Surveyor: **Richard Calvache**

School: **P.S. 279**  
Direction: **Northbound**  
Comments:

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

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



## SPOT SPEED STUDY

Date: **May 17, 2005**  
 Location: **Jerome Avenue between 181 Street & Burnside Avenue**  
 Surveyor: **Richard Calvache**

Time: **9:30AM**

School: **Captain Manuel Rivera JR. :**  
 Direction: **Southbound**  
 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	2	2.0%	2.0%	36	648
19	2	2.0%	4.0%	38	722
20	1	1.0%	5.0%	20	400
21	4	4.0%	9.0%	84	1764
22	5	5.0%	14.0%	110	2420
23	6	6.0%	20.0%	138	3174
24	8	8.0%	28.0%	192	4608
25	15	15.0%	43.0%	375	9375
26	13	13.0%	56.0%	338	8788
27	11	11.0%	67.0%	297	8019
28	9	9.0%	76.0%	252	7056
29	6	6.0%	82.0%	174	5046
30	6	6.0%	88.0%	180	5400
31	2	2.0%	90.0%	62	1922
32	3	3.0%	93.0%	96	3072
33	3	3.0%	96.0%	99	3267
34	1	1.0%	97.0%	34	1156
35	1	1.0%	98.0%	35	1225
36	2	2.0%	100.0%	72	2592
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%		2632	70654

Mean Speed = 26.3 mph  
 Standard Deviation = 3.7 mph  
 Margin of Error (95% Confidence) = ± 0.7 mph

Median Speed = 26.3 mph  
 15th Percentile Speed = 22.5 mph  
 85th Percentile Speed = 30.2 mph

# SPOT SPEED STUDY

Date: **May 17, 2005**  
Location: **Jerome Avenue between 181 Street & Burnside Avenue**  
Surveyor: **Richard Calvache**

Time: **9:30AM**

School: **Captain Manuel Rivera JR.**  
Direction: **Southbound**  
Comments:

Mean Speed = 26.3 mph  
Standard Deviation = 3.7 mph  
Margin of Error (95% Confidence) =  $\pm 0.7$  mph

Median Speed = 26.3 mph  
15th Percentile Speed = 22.5 mph  
85th Percentile Speed = 30.2 mph

