

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



**School Safety Engineering Project**

**FINAL REPORT: P.S. 132, Juan Pablo Duarte School, Manhattan**



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



**OCTOBER 13, 2006**

**School Safety Engineering Project  
P.S. 132, Juan Pablo Duarte School, Manhattan**

**TABLE OF CONTENTS**

<b>1. INTRODUCTION .....</b>	<b>4</b>
1.1 PROJECT DESCRIPTION .....	4
<b>2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS .....</b>	<b>5</b>
<b>[REDACTED]</b>	
2.2 NEIGHBORHOOD DESCRIPTION .....	5
2.3 MEETING WITH SCHOOL REPRESENTATIVES.....	6
<b>[REDACTED]</b>	
2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL.....	6
2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS .....	10
2.8 CROSSING GUARD LOCATIONS.....	10
<b>3. TRAFFIC OPERATIONS .....</b>	<b>12</b>
3.1 SCHOOL BUS OPERATIONS .....	12
3.2 PARENT DROP-OFF OPERATIONS .....	12
3.3 PARKING REGULATIONS .....	13
3.4 EXISTING SCHOOL SIGNS AND MARKINGS .....	13
3.5 ACCIDENT SUMMARY .....	15
3.6 TRAFFIC OPERATIONS AND ISSUES .....	18
3.7 SIGNAL TIMING: PEDESTRIAN PHASE.....	25
3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS).....	25
<b>4. PROPOSED MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY .....</b>	<b>26</b>
4.1 SHORT-TERM MEASURES .....	26
4.2 LONG-TERM MEASURES.....	27

**EXHIBITS**

EXHIBIT 1 – AERIAL PHOTOGRAPH .....	7
EXHIBIT 2 – CATCHMENT AREA .....	8
EXHIBIT 3 – TRAFFIC SAFETY PLAN.....	9
EXHIBIT 4 – CROSSING GUARDS.....	11
EXHIBIT 5 – EXISTING PARKING REGULATIONS .....	14
EXHIBIT 6 – ACCIDENT SUMMARY .....	17
EXHIBIT 7 – TRAFFIC COUNTS .....	24
EXHIBIT 8 – PROPOSED MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY .....	28

## TABLES

TABLE 1: MODES OF TRAVEL .....	6
TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000) .....	15
TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004).....	16
TABLE 4: SPOT SPEED STUDY .....	19
TABLE 5: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS.....	25

## APPENDIX



SPOT SPEED STUDY – WEST 183 <sup>RD</sup> STREET.....	A-3
TRAFFIC COUNT – BROADWAY AND W. 183 <sup>RD</sup> STREET.....	A-5
TRAFFIC COUNT – ST. NICHOLAS AVE. AND 183 <sup>RD</sup> STREET.....	A-7

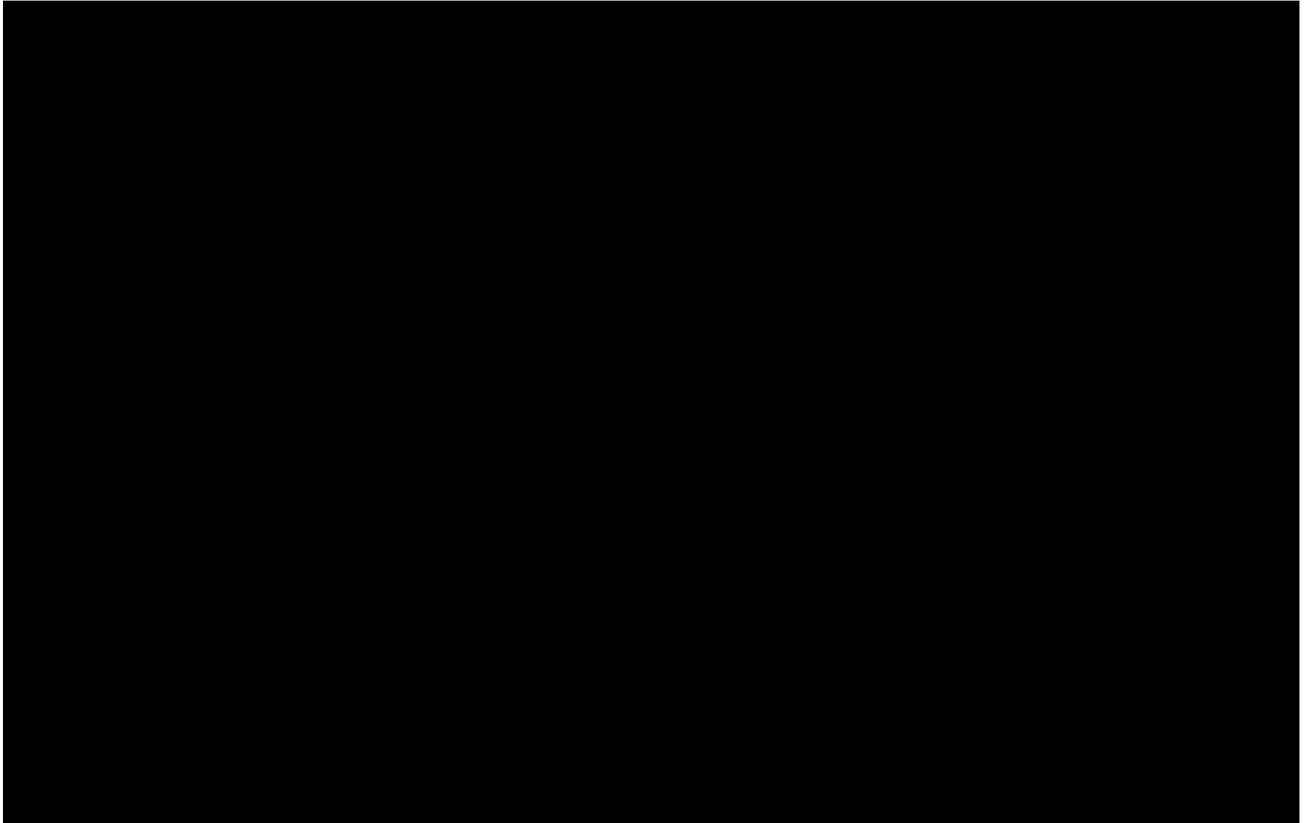
## **1. INTRODUCTION**

### **1.1 PROJECT DESCRIPTION**

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

Under this consultant study, the School Safety Engineering Project, crash data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). P.S. 132 in Manhattan is one of the 135 priority schools.

## **2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS**



### **2.2 NEIGHBORHOOD DESCRIPTION**

St. Nicholas Avenue and Broadway are both mixed-use roadways, lined by commercial storefronts such as delis, shops, pharmacies, and 3-4 story apartment buildings. Wadsworth Avenue and the cross streets are mostly residential with a few businesses throughout (see Exhibit 1 for Aerial Photograph).

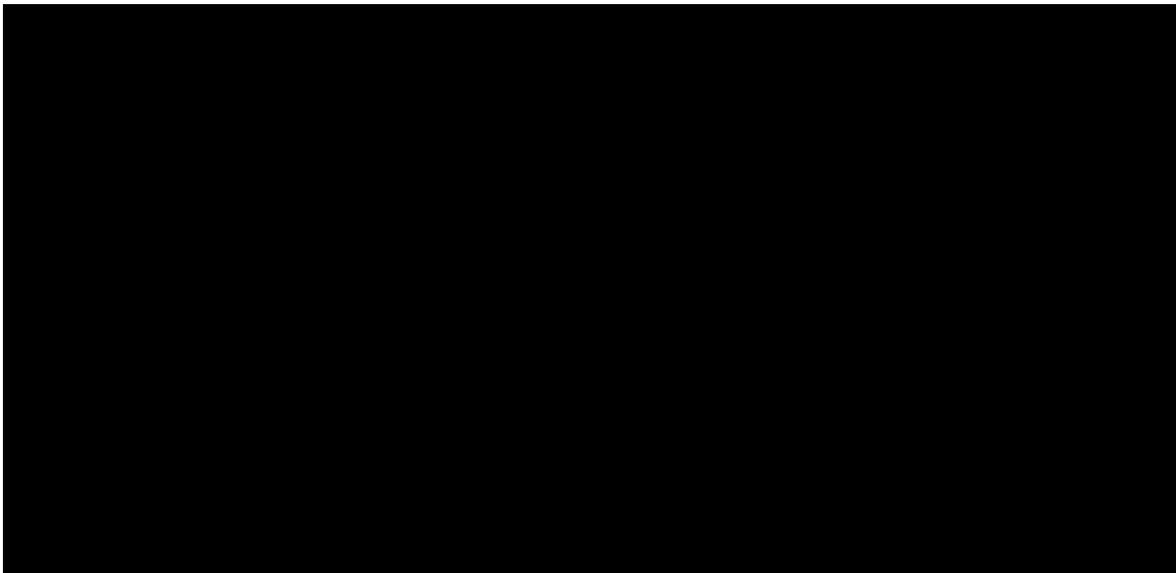
There are a several bus routes in the vicinity of P.S. 132. The M3 bus line runs along St. Nicholas Avenue and the M100 and Bx7 lines run along Broadway. The Bx3, Bx11, Bx13, Bx35, and Bx36 lines all run east-west along West 181<sup>st</sup> Street, which is one block south of P.S. 132.

### 2.3 MEETING WITH SCHOOL REPRESENTATIVES

Representatives from P.S. 132 and the consultant team met at the school on the afternoon of May 17<sup>th</sup>, 2004. According to the school representatives, the identifiable problems that student pedestrians encounter on a regular basis include the following:

- Lack of crossing guards and many unsupervised crossings (i.e. along Wadsworth Avenue and St. Nicholas Avenue).
- Vehicles do not always obey stopped school buses
- School buses and cars double park

(See Appendix for the school's survey response.)



### 2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

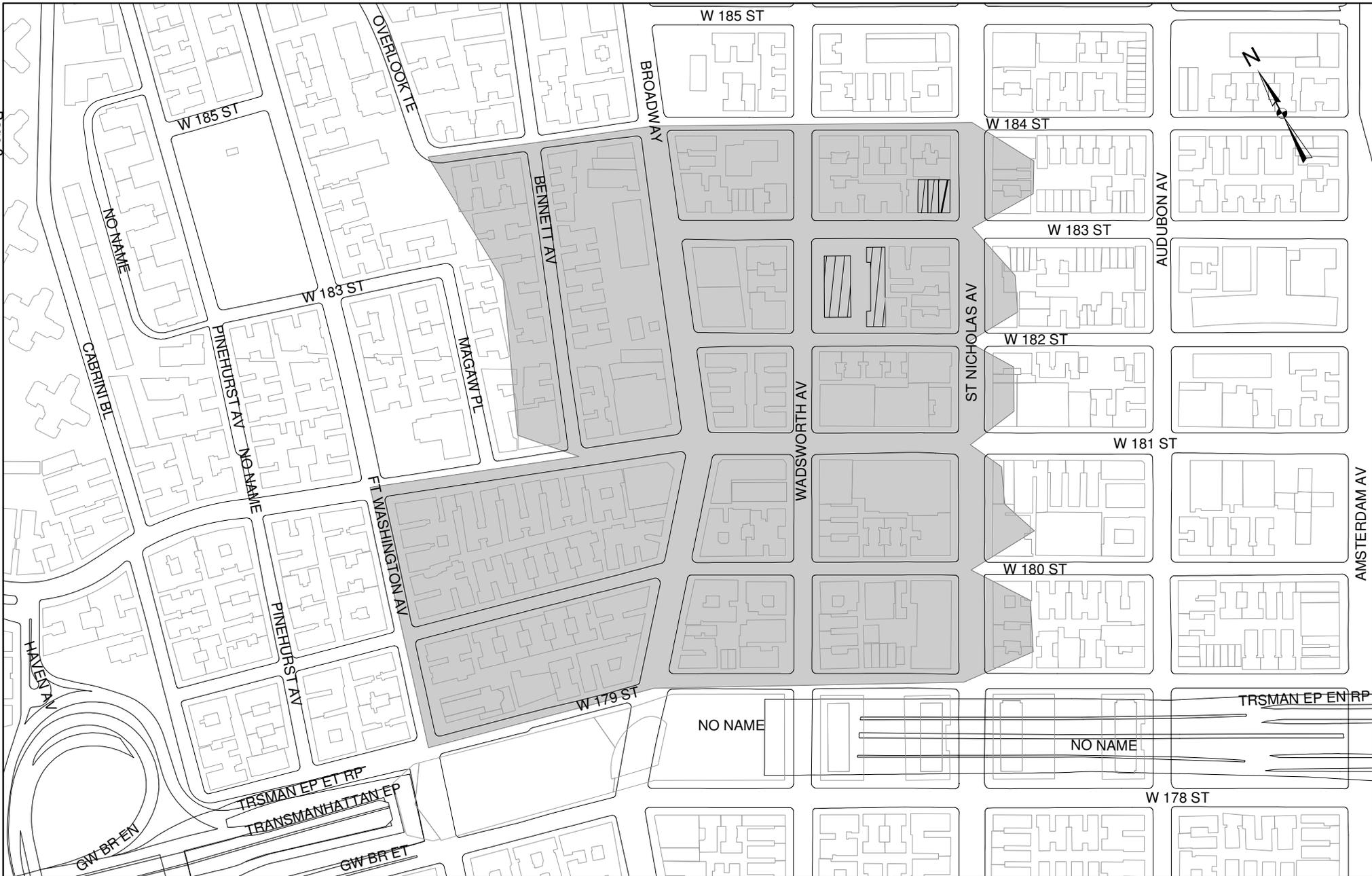
The school's catchment area is shown in Exhibit 2. According to the survey completed by the school, approximately 93% of students walk to P.S. 132, 2% arrive by private vehicles, 3% ride school buses, and the remaining 2% of students utilize MTA bus or subway service. See Table 1 for the school's estimate of the modes of travel.

<b>TABLE 1: MODES OF TRAVEL</b>	
<b>(AS ESTIMATED BY SCHOOL OFFICIALS)</b>	
<b>DESCRIPTION</b>	<b>PERCENTAGE</b>
Walk	93%
Driven by parent of guardian	2%
School bus	3%
MTA bus	1%
MTA subway	1%
<b>TOTAL</b>	<b>100%</b>



1 inch equals 200 feet

**EXHIBIT 1**  
**JUAN PABLO DUARTE SCHOOL**  
**P.S. 132 & ANNEX, MANHATTAN**  
**AERIAL PHOTOGRAPH**



1 inch equals 300 feet

 CATCHMENT AREA

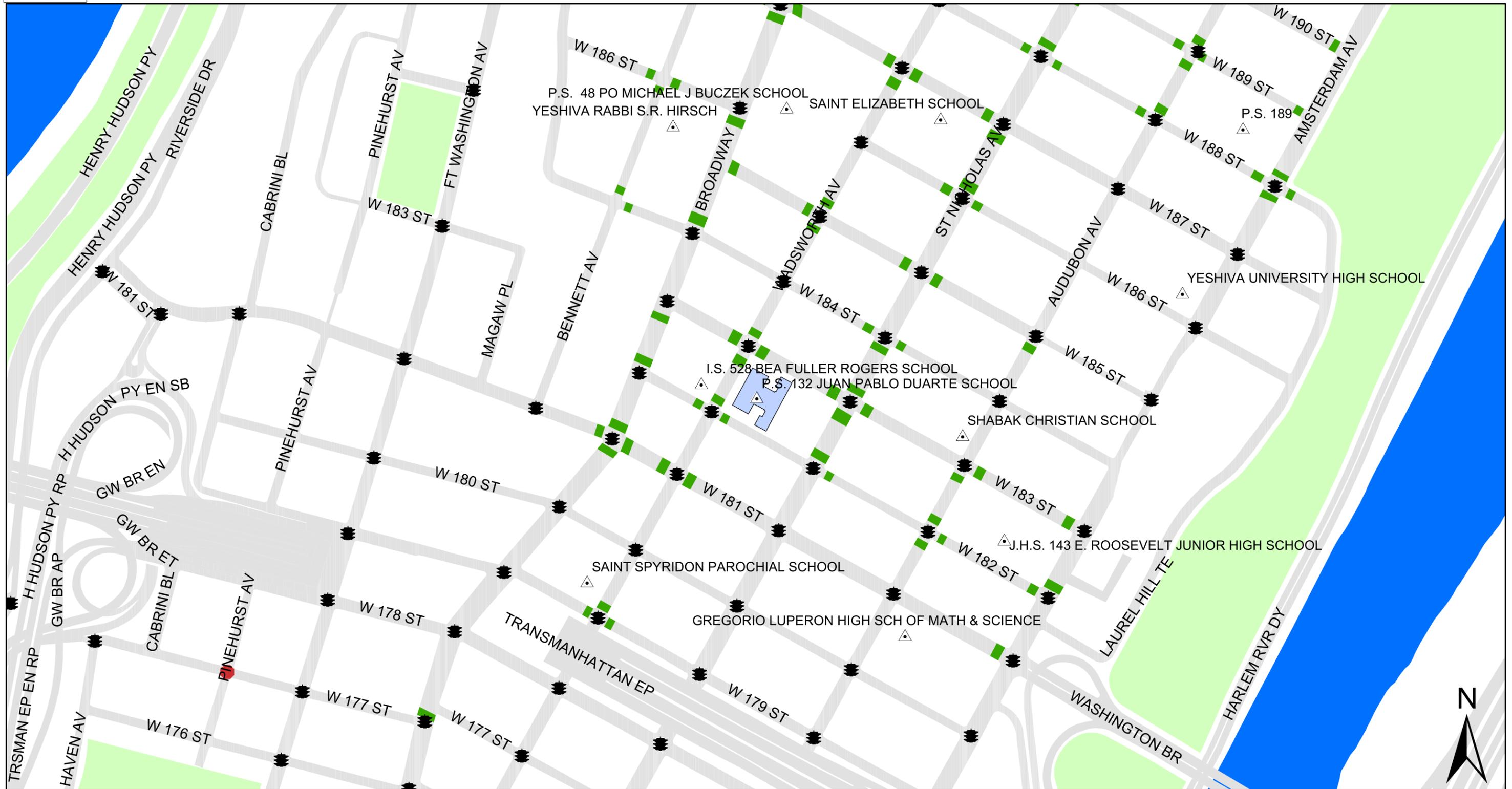
**EXHIBIT 2**

**P.S. 132 & ANNEX, MANHATTAN  
JUAN PABLO DUARTE SCHOOL**

**CATCHMENT AREA**



# School Traffic Safety Map



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

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

**LEGEND:**

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

**PS 132 Manhattan**  
**JUAN PABLO DUARTE SCHOOL**

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

Map created on 11/16/2006 **EXHIBIT 3** COMM. BOARD: 112  
 PRECINCT: 34

1.5.1

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

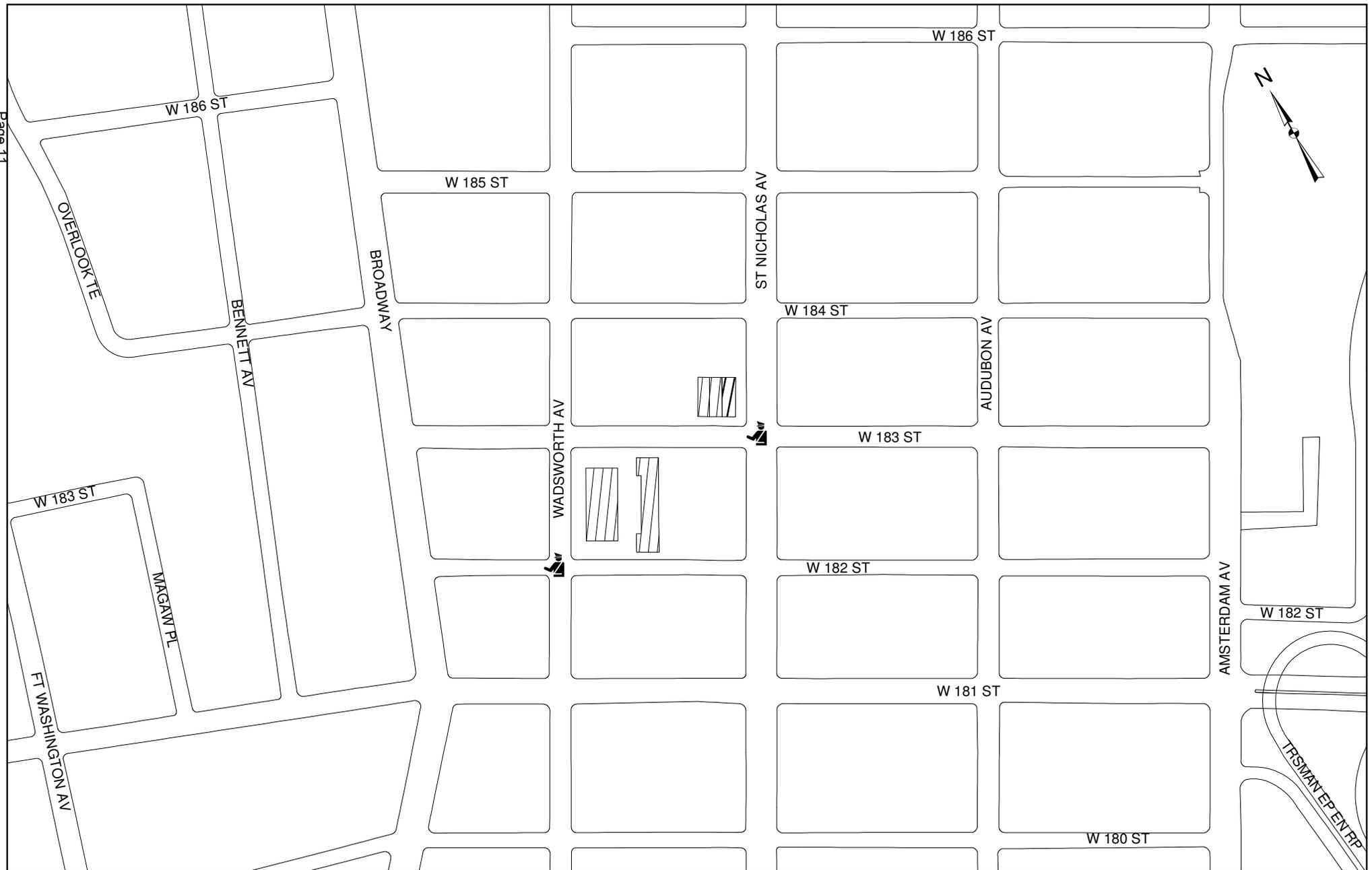
I.S. 528 is located on the northwest corner of Wadsworth Avenue and West 182<sup>nd</sup> Street, which dismisses its students at 2:30 pm. A candy store is on the southeast corner of this intersection, which is popular among students.

## **2.8 CROSSING GUARD LOCATIONS**

There are two crossing guards assigned to P.S. 132. They are stationed at the following intersections:

- West 182<sup>nd</sup> Street and Wadsworth Avenue
- West 183<sup>rd</sup> Street and St. Nicholas Avenue

See Exhibit 4 for a map of crossing guard locations.



1 inch equals 250 feet



Crossing Guard Assigned to P.S. 132

**EXHIBIT 4**

**P.S. 132 & ANNEX, MANHATTAN  
JUAN PABLO DUARTE SCHOOL**

**CROSSING GUARDS**

### 3. TRAFFIC OPERATIONS

#### 3.1 SCHOOL BUS OPERATIONS

According to school representatives, approximately three percent of students ride one of six school buses to and from P.S. 132. All school bus activity is on Wadsworth Avenue in front of the school's entrance. Buses double-park on Wadsworth Avenue due to lack of available curbside space, temporarily blocking the northbound moving traffic.

In addition, I.S. 528 also has one school bus which double parks on Wadsworth Avenue in the opposite direction, completely blocking all through traffic between West 182<sup>nd</sup> and West 183<sup>rd</sup> Streets.

#### 3.2 PARENT DROP-OFF OPERATIONS

School officials have indicated that approximately 2% of P.S. 132 students are driven to and from school by parents or guardians. It was observed that most of the parents double park on Wadsworth Avenue to unload students, which blocked the moving traffic on Wadsworth Avenue between West 182nd Street and West 183rd Street. This also caused some vehicles to get caught in the middle of intersections, blocking crosswalks as well (see Figure 2).



*Figure 2 - Cars caught in the middle of the intersection of Wadsworth Avenue and West 182<sup>nd</sup> Street, due to double-parking in front of P.S. 132.*

### **3.3 PARKING REGULATIONS**

“NO PARKING 7 AM – 4 PM, SCHOOL DAYS, EXCEPT BOARD OF EDUCATION” parking regulation signs are posted on West 183<sup>rd</sup> Street, West 182<sup>nd</sup> Street, and Wadsworth Avenue in front of the school.

Alternate side of street parking regulations are in effect 11:30 am – 1:00 pm on the roadways surrounding the school. See Exhibit 5 for the parking regulations.

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

The Traffic Safety Plan, Exhibit 3, shows existing signals and crosswalk pavement markings. It is noted that a citywide signage program is currently underway to upgrade school signage to current Federal Manual of Uniform Traffic Control (MUTCD) standards of fluorescent yellow-green signs accompanied by downward pointing arrows. Signs scheduled to be installed under this program are shown as "existing" on Exhibit 8.



### 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. 132 for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of the accident. Table 3 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the DMV data.

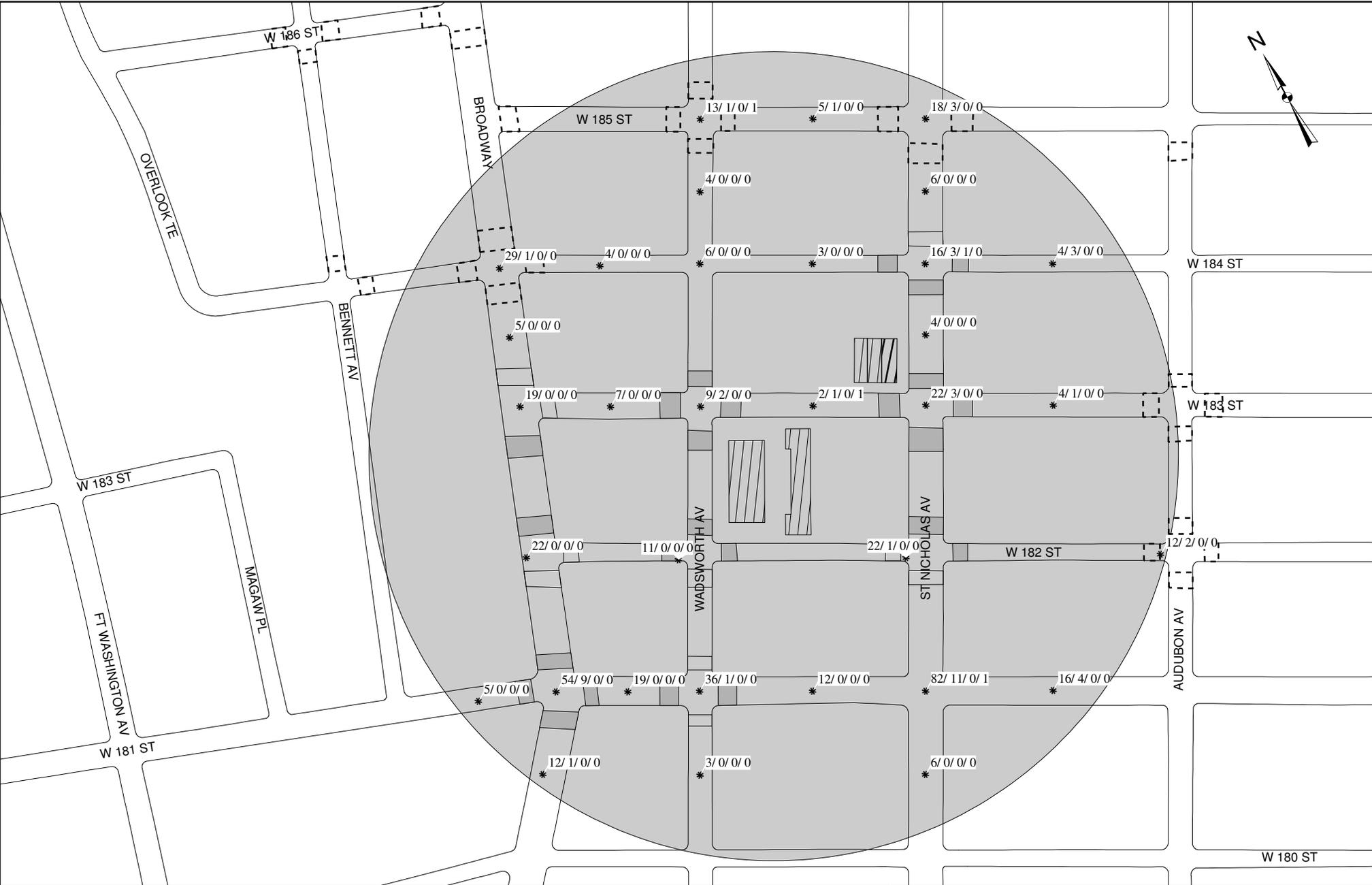
This report targets intersections closest to the school where the highest concentrations of student pedestrians occur. Intersections that are farther from the school and locations for which detailed data was not available at the time of this study will be addressed with DOT’s School Safety Engineering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

**TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000)**

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Wadsworth Avenue and W. 183 <sup>rd</sup> Street	9	2	0	0
Wadsworth Avenue and W. 182 <sup>nd</sup> Street	11	0	0	0
Wadsworth Avenue and W. 181 <sup>st</sup> Street	36	1	0	0
St. Nicholas Avenue and W. 181 <sup>st</sup> Street	82	11	0	1
St. Nicholas Avenue and W. 182 <sup>nd</sup> Street	22	1	0	0
St. Nicholas Avenue and W. 183 <sup>rd</sup> Street	22	3	0	0
St. Nicholas Avenue and W. 184 <sup>th</sup> Street	16	3	1	0
Broadway and W. 181 <sup>st</sup> Street	54	9	0	0
Broadway and W. 182 <sup>nd</sup> Street	22	0	0	0
Broadway and W. 183 <sup>rd</sup> Street	19	0	0	0
Wadsworth Avenue and W. 185 <sup>th</sup> Street	13	1	0	1
<b>TOTAL</b>	<b>306</b>	<b>31</b>	<b>1</b>	<b>2</b>

<b>TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004)</b>				
<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
Wadsworth Avenue and W. 183 <sup>rd</sup> Street	17	3	0	0
Wadsworth Avenue and W. 182 <sup>nd</sup> Street	23	2	0	0
Wadsworth Avenue and W. 181 <sup>st</sup> Street	65	13	0	2
St. Nicholas Avenue and W. 181 <sup>st</sup> Street	103	12	0	0
St. Nicholas Avenue and W. 182 <sup>nd</sup> Street	46	5	0	0
St. Nicholas Avenue and W. 183 <sup>rd</sup> Street	43	5	0	2
St. Nicholas Avenue and W. 184 <sup>th</sup> Street	20	3	0	0
Broadway and W. 181 <sup>st</sup> Street	78	17	0	1
Broadway and W. 182 <sup>nd</sup> Street	22	0	0	0
Broadway and W. 183 <sup>rd</sup> Street	37	0	0	0
Wadsworth Avenue and W. 185 <sup>th</sup> Street	14	0	0	0
<b>TOTAL</b>	<b>468</b>	<b>60</b>	<b>0</b>	<b>5</b>

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



ACCIDENT LOCATION \*

SCHOOL CROSSWALK ASSIGNED TO P.S. 132

SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL

CROSSWALK

X/X/X

TOTAL ACCIDENTS	PED ACCIDENTS	PED FATAL	SCHOOL_PED ACCIDENTS
/	/	/	/

1 inch equals 225 feet

**EXHIBIT 6**

**P.S. 132 & ANNEX, MANHATTAN  
JUAN PABLO DUARTE SCHOOL**

**ACCIDENT SUMMARY  
THREE YEAR PERIOD  
(1998-2000)**

### 3.6 TRAFFIC OPERATIONS AND ISSUES

The following outlines the traffic accident and operational issues in the vicinity of P.S. 132.

#### 3.6.1 Wadsworth Avenue and West 183<sup>rd</sup> Street

Wadsworth Avenue is a 42-foot wide, two-way street with one moving lane in each direction and parking on both sides. West 183<sup>rd</sup> Street is a 42-foot wide, two-way street with one travel lane in each direction. Parallel parking is permitted on both sides east of Wadsworth Avenue and angle parking is permitted on both sides west of Wadsworth Avenue. Wadsworth Avenue and West 183<sup>rd</sup> Street is controlled by a traffic signal. There are school crosswalks in place on all four approaches.



*Figure 3 - Wadsworth Avenue and West 183<sup>rd</sup> Street, looking east*

There were nine accidents at this intersection during the 1998-2000 study period. Two accidents involved pedestrians, none of which were school-related. One accident involved a driver making a left turn. There were no details for the second accident.

The school's main entrance is on West 183<sup>rd</sup> Street between Wadsworth Avenue and St. Nicholas Avenue. Students from the annex are also dismissed on West 183<sup>rd</sup> Street. Many students congregate at these exits during dismissal time.

A nine-year-old student was struck while crossing mid-block on West 183<sup>rd</sup> Street between Wadsworth Avenue and St. Nicholas Avenue.

A spot speed study was conducted on West 183<sup>rd</sup> Street between Wadsworth Avenue and St. Nicholas Avenue on October 4, 2005 between 2:30 pm and 3:30 pm. The results indicated that the 85<sup>th</sup> percentile was 24 mph, which does not exceed the statutory speed limit of 30 mph. See Table 4 for a summary of the results and the Appendix for further details.

<b>TABLE 4: SPOT SPEED STUDY</b>		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
West 183 <sup>rd</sup> Street between Wadsworth Avenue and St. Nicholas Avenue	20	24

3.6.2 Wadsworth Avenue and West 182<sup>nd</sup> Street

West 182<sup>nd</sup> Street is a 30-foot wide, one-way westbound street with one travel lane and parking on both sides of the roadway. Wadsworth Avenue and West 182<sup>nd</sup> Street is controlled by a traffic signal. There are school crosswalks in place on the north, east, and west legs (See Figure 4).



*Figure 4 - Wadsworth Avenue and West 182<sup>nd</sup> Street, looking northeast towards P.S. 132*

There were eleven accidents at this intersection during the 1998-2000 study period, none of which involved pedestrians.

3.6.3 Wadsworth Avenue and West 181<sup>st</sup> Street

Wadsworth Avenue and West 181<sup>st</sup> Street is a signalized intersection. West 181<sup>st</sup> Street is a 48-foot wide, two-way roadway with a travel lane in each direction and parking on both sides. West 181<sup>st</sup> is a mostly commercial street with apartments above storefronts and is also a bus route for Bx3, Bx11, Bx13 and Bx35 lines. There are two school crosswalks on the east and west legs of this intersection.

Thirty-six accidents occurred at this intersection during the 1998-2000, one of which involved a pedestrian. A driver traveling southbound struck a 47-year-old pedestrian. There were no further details for this accident.

#### 3.6.4 St. Nicholas Avenue and West 181<sup>st</sup> Street

St. Nicholas Avenue is a 60-foot wide, two-way street with two travel lanes in each direction and parking on both sides of the roadway. St. Nicholas Avenue and West 181<sup>st</sup> Street is a signalized intersection. There are no school crosswalks in place on this intersection.

There were eighteen accidents at this intersection during the 1998-2000 study period. Eleven accidents involved a pedestrian, one of which was school-related. Four pedestrians were crossing with the signal when struck by a vehicle. Three pedestrians were struck while crossing outside of the crosswalk or without the signal. One pedestrian was playing in the roadway when struck by a southbound vehicle. The school-related accident occurred when a pedestrian on the sidewalk was struck by vehicle. It was reported that the driver had fallen asleep behind the wheel. No other information is available for the other three accidents.

#### 3.6.5 St. Nicholas Avenue and West 182<sup>nd</sup> Street

St. Nicholas Avenue and West 182<sup>nd</sup> Street is a signalized intersection with school crosswalks in place on the south and east approaches.

There is only one apex pedestrian ramp at each corner quadrant due to existing utility conflicts.

There were twenty-two accidents at this intersection during the 1998-2000 study period. One accident involved a pedestrian, which was not school-related. The accident was attributed to driver's inattention.

#### 3.6.6 St. Nicholas Avenue and West 183<sup>rd</sup> Street

St. Nicholas Avenue and West 183<sup>rd</sup> Street is a signalized intersection with school crosswalks in place on all four approaches.

St. Nicholas Avenue is lined with restaurants and various other shops. Many shops set up stands on the sidewalk to sell their products, which constrict pedestrian traffic through this area (see Figure 5). There is only one apex pedestrian ramp at each corner due to existing utility conflicts.

Twenty-two accidents occurred at this intersection during the 1998-2000 study period. Three accidents involved pedestrians, none of which were school-related. One accident, in which a pedestrian was struck by a vehicle-traveling south, was attributed to driver error. There are no further details on the other two accidents.

A one-hour traffic count was performed on October 4, 2005 from 2:30 pm to 3:30 pm (see Exhibit 7) to better understand the pedestrian and vehicle conflicts. The results show that over 1500 pedestrians crossed West 183<sup>rd</sup> Street and approximately 450 pedestrians crossed St. Nicholas at this intersection during the study hour. The number of pedestrians using this intersection is high and recommendations to improve pedestrian safety are discussed in Section 4.



*Figure 5 - Racks set up on the sidewalk of St. Nicholas Avenue and West 183<sup>rd</sup> Street.*

### 3.6.7 St. Nicholas Avenue and West 184<sup>th</sup> Street

St. Nicholas Avenue and West 184<sup>th</sup> Street is a signalized intersection. West 184<sup>th</sup> Street is a one-way eastbound roadway with one travel lane and parking on both sides. There are school crosswalks in place on the east, south, and west legs of the intersection. Each corner quadrant has only one apex pedestrian ramp due to existing utility conflicts.

A total of sixteen accidents occurred at this intersection during the 1998-2000 study period. Three accidents involved pedestrians, one of which was fatal. There were no school-related accidents at this intersection.

On June 30, 2000, a pedestrian was struck and killed by a southbound vehicle while emerging from behind a parked vehicle. The pedestrian was found to be under the influence of alcohol. The second accident was attributed to the driver's failure to yield to a pedestrian while making a left turn. There were no details for the third accident.

### 3.6.8 Broadway and West 181<sup>st</sup> Street

Broadway and West 181<sup>st</sup> Street is a signalized intersection. Broadway is a two-way roadway with two travel lanes and parking on both sides. There are school crosswalks in place on all four approaches.

There were 54 accidents at this intersection during the 1998-2000 study period. Nine accidents involved pedestrians, none of which were school-related. Five accidents were attributed to driver failure to yield to pedestrians. Four other accidents were due to pedestrian error.



*Figure 6 – Broadway and West 181<sup>st</sup> Street*

### 3.6.9 Broadway and West 182nd Street

Broadway and West 182<sup>nd</sup> Street is a signalized T-intersection. On Broadway, north of West 182<sup>nd</sup> Street, the roadway is reduced to one travel lane in each direction due to 90-degree angle parking on both sides of the street. This condition continues north for two blocks and ends south of West 184<sup>th</sup> Street. There is a school crosswalk on the north leg.

Twenty-two accidents occurred at this intersection during the 1998-2000 study period. None of the accidents involved pedestrians.



*Figure 7 – Broadway and West 182<sup>nd</sup> Street, looking west*

### 3.6.10 Broadway and West 183rd Street

Broadway and West 183<sup>rd</sup> Street is a signalized T-intersection. The 34<sup>th</sup> Precinct of the NYPD is located at this intersection on the west side of Broadway. As noted in Section 3.6.8, Broadway is reduced to one moving lane in each direction due to the 90-degree angle parking on both sides of the street. There is a school crosswalk on the south leg.

There were nineteen accidents at this intersection during the 1998-2000 study period. None of the accidents involved pedestrians.



*Figure 8 – Broadway and West 183<sup>rd</sup> Street, looking west*

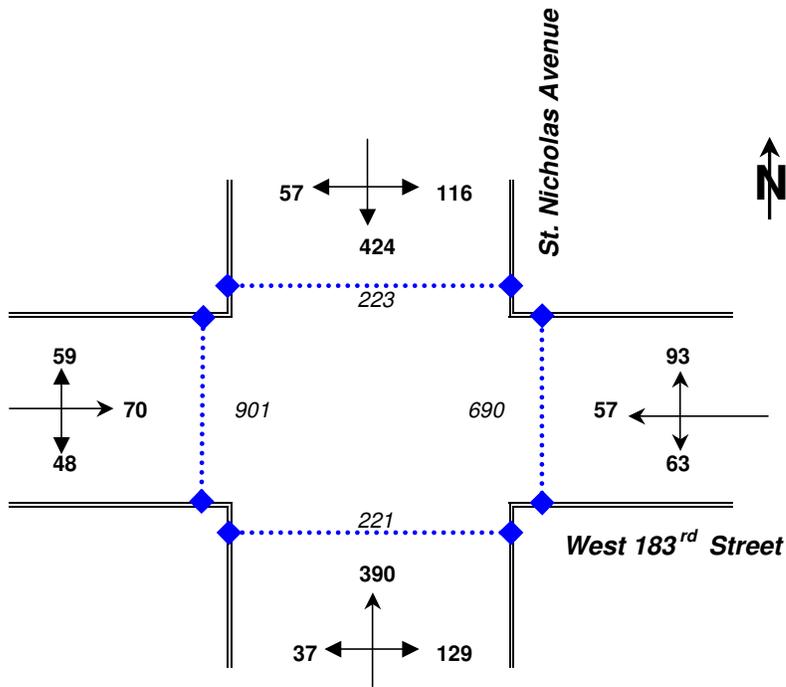
A one-hour traffic count was performed on October 4, 2005 from 2:30 pm to 3:30 pm (see Exhibit 7) to better understand the pedestrian and vehicle conflicts.

### 3.6.11 Wadsworth Avenue and West 185th Street

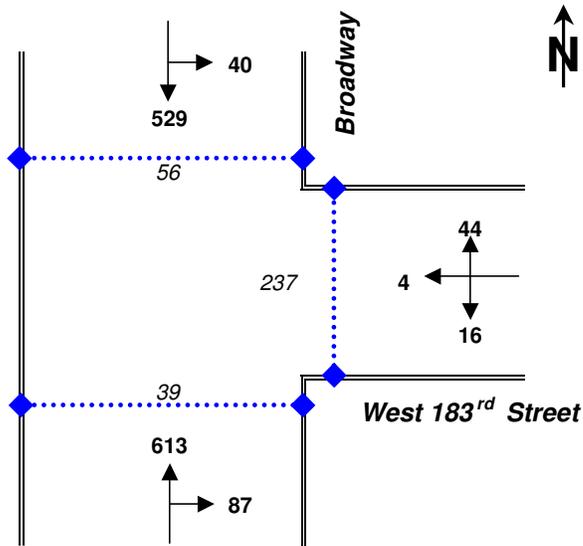
Wadsworth Avenue and West 185<sup>th</sup> Street is a signalized intersection. West 185<sup>th</sup> Street is a two-way street with one travel lane and parking on the both sides. There are school crosswalks on the north, south and west legs.

There were thirteen accidents at this intersection during the 1998-2000 study period, one of which was a school-related pedestrian accident. A nine-year-old student was struck by a left turning vehicle. It was due to pedestrian error.

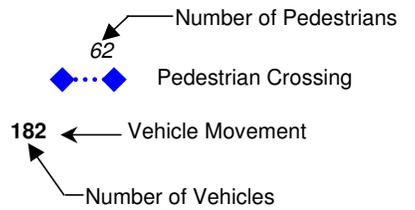
**One Hour Traffic Count Volumes**  
(2:30 AM - 3:30 AM October 4, 2005)



**St. Nicholas Avenue and West 183<sup>rd</sup> Street**



**Broadway and West 183<sup>rd</sup> Street**



<b>EXHIBIT 7</b>
<b>P.S. 132, MANHATTAN</b>
<b>JUAN PABLO DUARTE SCHOOL</b>
<b>TRAFFIC COUNTS</b>

### 3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of P.S. 132 and found to be adequate for a child pedestrian walking rate of three feet per second in all directions and approaches.

<b>TABLE 5: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS</b>				
<b>Intersection Name</b>	<b>Crosswalk Width (Feet)</b>	<b>Ped. Phase Actual (Seconds)</b>	<b>Ped. Phase Req'd (Seconds)*</b>	<b>Timing Adjustment? (Yes/No)</b>
<b>Wadsworth Avenue and West 182<sup>nd</sup> Street</b>				
Crossing Wadsworth Avenue	42	30	17	NO
Crossing West 182 <sup>nd</sup> Street	30	60	13	NO
<b>Wadsworth Avenue and West 183<sup>rd</sup> Street</b>				
Crossing Wadsworth Avenue	42	30	17	NO
Crossing West 183 <sup>rd</sup> Street	42	60	17	NO
<b>St. Nicholas Avenue and West 182<sup>nd</sup> Street</b>				
Crossing St. Nicholas Avenue	60	28	23	NO
Crossing West 182 <sup>nd</sup> Street	30	62	13	NO
<b>St. Nicholas Avenue and West 181<sup>st</sup> Street</b>				
Crossing St. Nicholas Avenue	60	45	23	NO
Crossing West 181 <sup>st</sup> Street	50	45	16	NO
<b>St. Nicholas Avenue and West 183<sup>rd</sup> Street</b>				
Crossing St. Nicholas Avenue	60	28	23	NO
Crossing West 183 <sup>rd</sup> Street	42	62	17	NO
<b>St. Nicholas Avenue and West 84<sup>th</sup> Street</b>				
St. Nicholas Avenue	60	28	23	NO
Crossing West 184 <sup>th</sup> Street	30	62	13	NO
<b>Wadsworth Avenue and West 181<sup>st</sup> Street</b>				
Crossing Wadsworth Avenue	42	45	17	NO
Crossing West 181 <sup>st</sup> Street	48	45	19	NO
<b>Broadway and West 181<sup>st</sup> Street</b>				
Crossing Broadway	60	35	23	NO
Crossing West 181 <sup>st</sup> Street	48	55	17	NO
<b>Broadway and West 182<sup>nd</sup> Street</b>				
Crossing Broadway	60	28	23	NO
Crossing West 182 <sup>nd</sup> Street	30	62	13	NO
<b>Broadway and West 183<sup>rd</sup> Street</b>				
Crossing Broadway	60	28	23	NO
Crossing West 183 <sup>rd</sup> Street	30	62	17	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 (ROADWAYS AND SIDEWALKS)

The roadways and sidewalks in the vicinity of P.S. 132 were observed to be in generally good condition.

Many of the intersections studied in the vicinity of P.S. 132 have only one pedestrian ramp per corner quadrant due to utility conflicts.

#### 4. PROPOSED MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

This section describes potential countermeasures. These countermeasures are divided into short-term and long-term measures. Short-term measures are those that potentially can be performed in-house, long term measures are proposed capital improvements.

##### 4.1 SHORT-TERM MEASURES

- No Standing Zone

“NO STANDING 7:00 AM – 4:00 PM, SCHOOL DAYS” parking regulations should be considered for the full length of Wadsworth Avenue between West 182<sup>nd</sup> Street and West 183<sup>rd</sup> Street.

“NO STANDING 7:00 AM – 4:00 PM, SCHOOL DAYS” parking regulations should be considered on the north side of West 183<sup>rd</sup> Street in front of annex for a length of 30 feet.

This will allow school buses and parents a place to load and unload students at the curb, and will also improve visibility of those students arriving and leaving the school. The teacher parking now provided on Wadsworth Avenue could be relocated to West 182<sup>nd</sup> Street.

- Administer student pedestrian safety education program

It is recommended that the NYCDOT Safety Education Program work with the school to educate students on pedestrian safety, including crossing the street with the WALK phase, the meaning of WALK - FLASHING DON'T WALK - DON'T WALK pedestrian signal sequence, and instructing students not to cross at mid-block locations.

- Place stop bars ten feet in advance of school crosswalks

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

- Submit a request to the Police Department for crossing guards

It is recommended that a crossing guard be requested for the following locations:

- Wadsworth Avenue and West 183<sup>rd</sup> Street
- Wadsworth Avenue and West 181<sup>st</sup> Street

- Install new school crosswalks at the following intersection:

- Wadsworth Avenue and West 181<sup>st</sup> Street - north leg
- St. Nicholas Avenue and West 181<sup>st</sup> Street – west leg
- St. Nicholas Avenue and West 182<sup>nd</sup> Street – west leg

Providing a new school crosswalk at each of this location will complete a network of contiguous school crosswalks in the immediate school vicinity. Therefore, it is recommended that school crosswalks be installed at these intersections.

#### 4.2 LONG-TERM MEASURES

- Consider curb extensions at the following intersections:

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

- Wadsworth Avenue and West 182<sup>nd</sup> Street
- Wadsworth Avenue and West 183<sup>rd</sup> Street
- St. Nicholas Avenue and West 183<sup>rd</sup> Street
- St. Nicholas Avenue and West 182<sup>nd</sup> Street

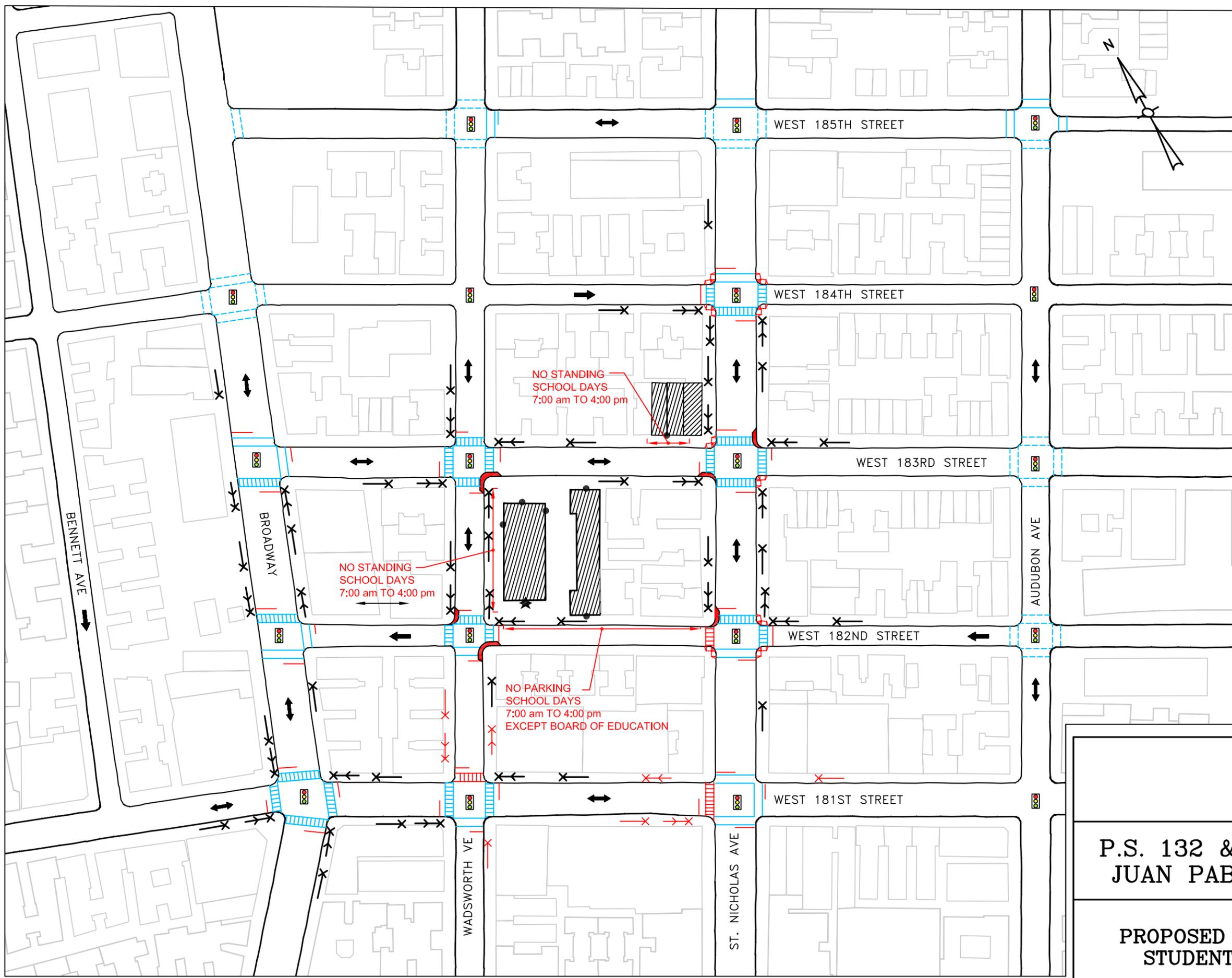
Curb extensions should be considered at the corners as shown in Exhibit 8.

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

- Installation/replacement of Complex pedestrian ramps

Due to existing utility conflicts, the following pedestrian ramps are considered complex. Consideration should be given to the installation of pedestrian ramps per NYCDOT standards at the following locations:

- St. Nicholas Avenue and West 182<sup>nd</sup> Street - all four corners
- St. Nicholas Avenue and West 183<sup>rd</sup> Street - all four corners
- St. Nicholas Avenue and West 184<sup>th</sup> Street - all four corners



**LEGEND**

- ★ MAIN ENTRANCE
- OTHER ENTRANCES
- X EXISTING ADVANCE WARNING SIGN WITH ARROW
- X EXISTING ADVANCE WARNING SIGN
- ↔ EXISTING TRAVEL DIRECTION
- 🚦 SIGNALIZED INTERSECTION
- ▬▬▬ EXISTING SCHOOL CROSSWALK
- ▬▬▬ EXISTING STANDARD (NON-SCHOOL) CROSSWALK
- - - - EXISTING SCHOOL CROSSWALK ASSOC. WITH OTHER SCHOOL
- PROPOSED STOP LINE
- PROPOSED TRAFFIC SIGN
- ⤴⤵ PROPOSED CURB EXTENSION (NECKDOWN)
- ⤴⤵ PROPOSED PEDESTRIAN RAMP
- ▬▬▬ PROPOSED SCHOOL CROSSWALK
- X PROPOSED ADVANCE WARNING SIGN WITH ARROW
- X PROPOSED ADVANCE WARNING SIGN
- ⤴⤵ PROPOSED PARKING REGULATIONS

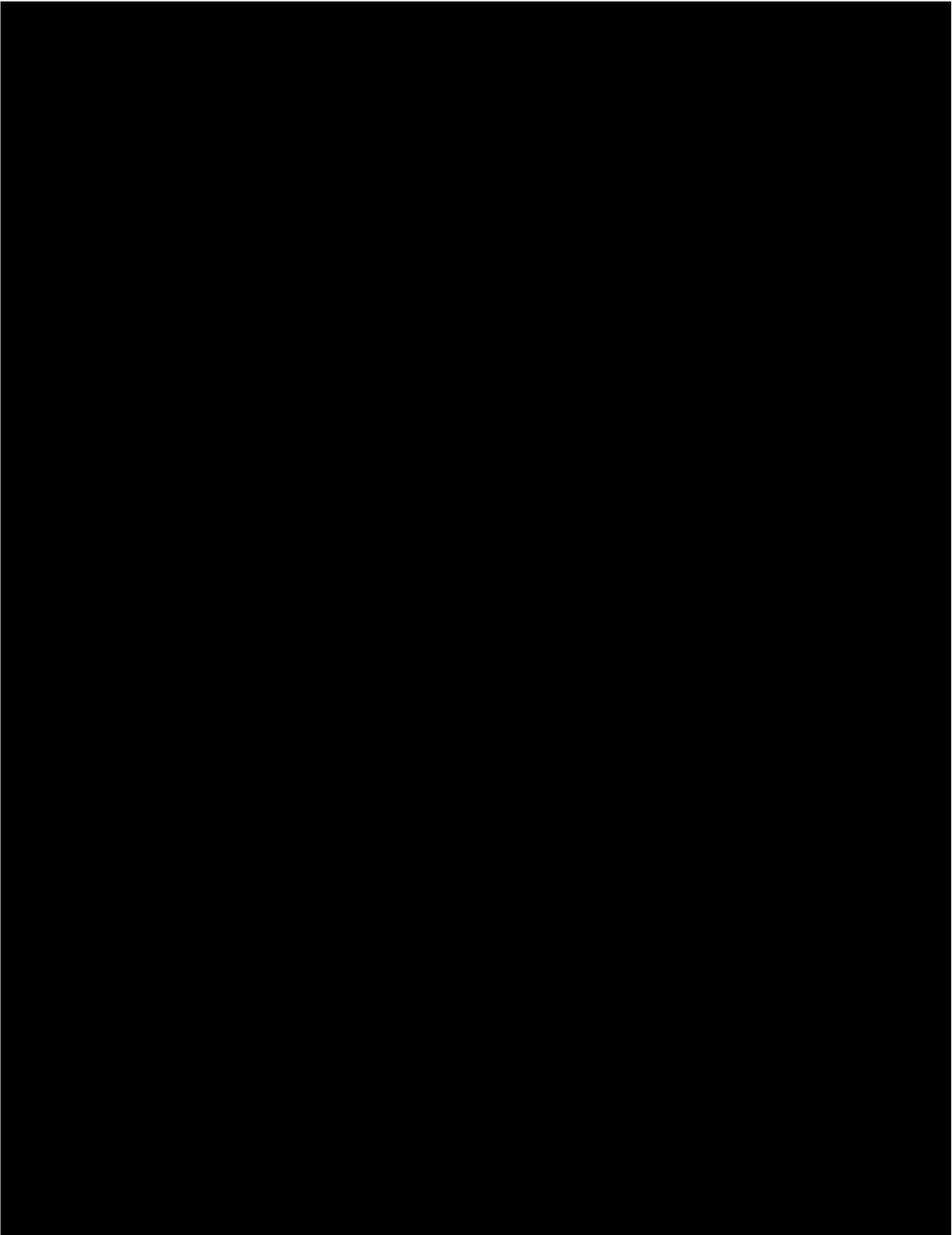
SCALE: 1" : 140'

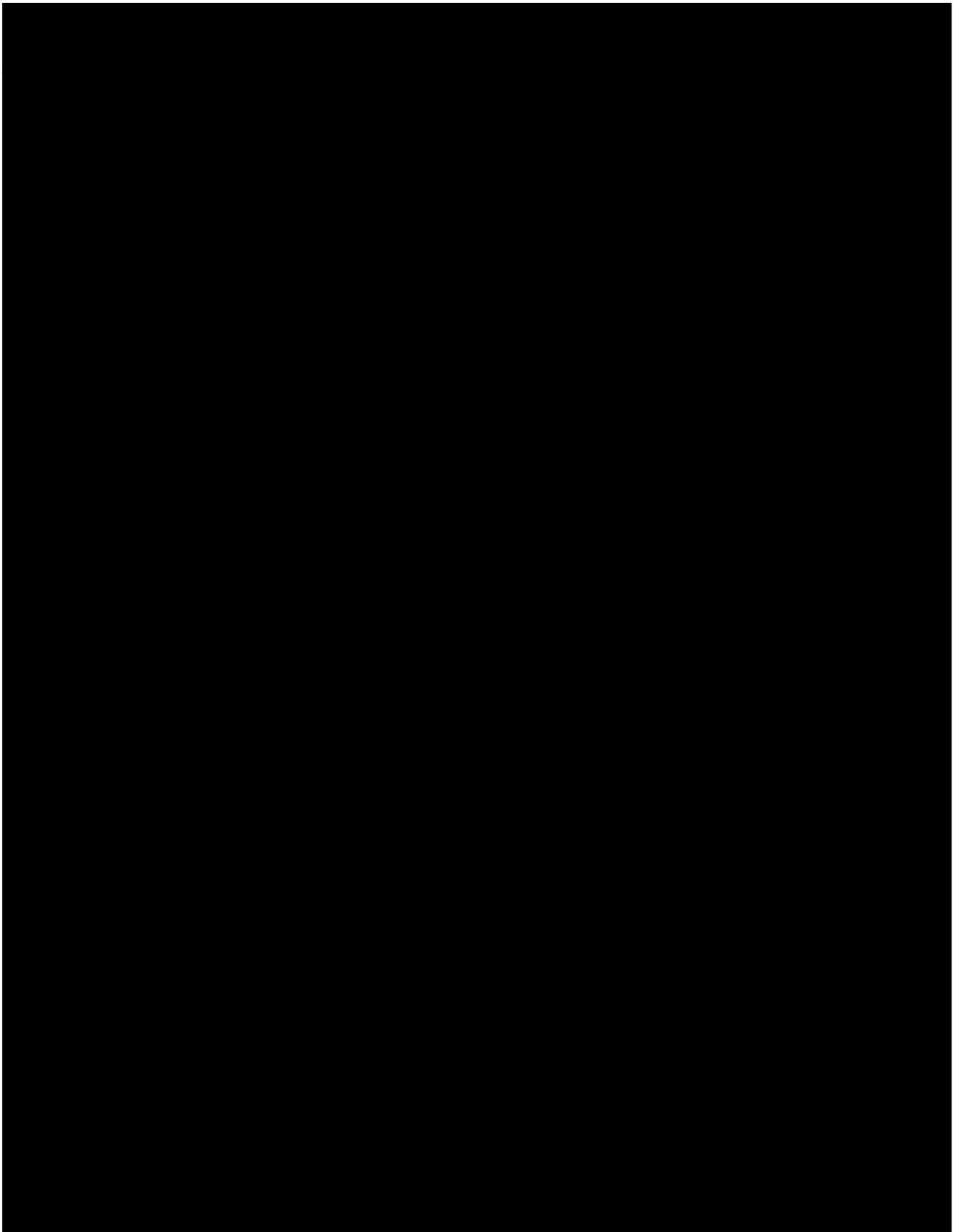
**EXHIBIT 8**

**P.S. 132 & ANNEX, MANHATTAN  
JUAN PABLO DUARTE SCHOOL**

**PROPOSED MEASURES TO IMPROVE  
STUDENT PEDESTRIAN SAFETY**

# APPENDIX





## SPOT SPEED STUDY

Date: **October 4, 2005**                      Time: **2:30 pm - 3:30 am**  
 Location: **183rd Street between Wadsworth Avenue and St. Nicholas Avenue**  
 Surveyor: **Eyad Yousef**

School: **P.S. 132**  
 Direction: **Eastbound**  
 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	6	9.7%	9.7%	90	1350
16	3	4.8%	14.5%	48	768
17	6	9.7%	24.2%	102	1734
18	7	11.3%	35.5%	126	2268
19	4	6.5%	41.9%	76	1444
20	8	12.9%	54.8%	160	3200
21	7	11.3%	66.1%	147	3087
22	8	12.9%	79.0%	176	3872
23	7	11.3%	90.3%	161	3703
24	2	3.2%	93.5%	48	1152
25	0	0.0%	93.5%	0	0
26	1	1.6%	95.2%	26	676
27	2	3.2%	98.4%	54	1458
28	0	0.0%	98.4%	0	0
29	0	0.0%	98.4%	0	0
30	0	0.0%	98.4%	0	0
31	0	0.0%	98.4%	0	0
32	0	0.0%	98.4%	0	0
33	1	1.6%	100.0%	33	1089
34	0	0.0%	100.0%	0	0
35	0	0.0%	100.0%	0	0
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
	62	100.0%		1247	25801

Mean Speed = 20.1 mph  
 Standard Deviation = 3.4 mph  
 Margin of Error (95% Confidence) = ± 0.9 mph

Median Speed = 20.1 mph  
 15th Percentile Speed = 16.6 mph  
 85th Percentile Speed = 23.7 mph

# SPOT SPEED STUDY

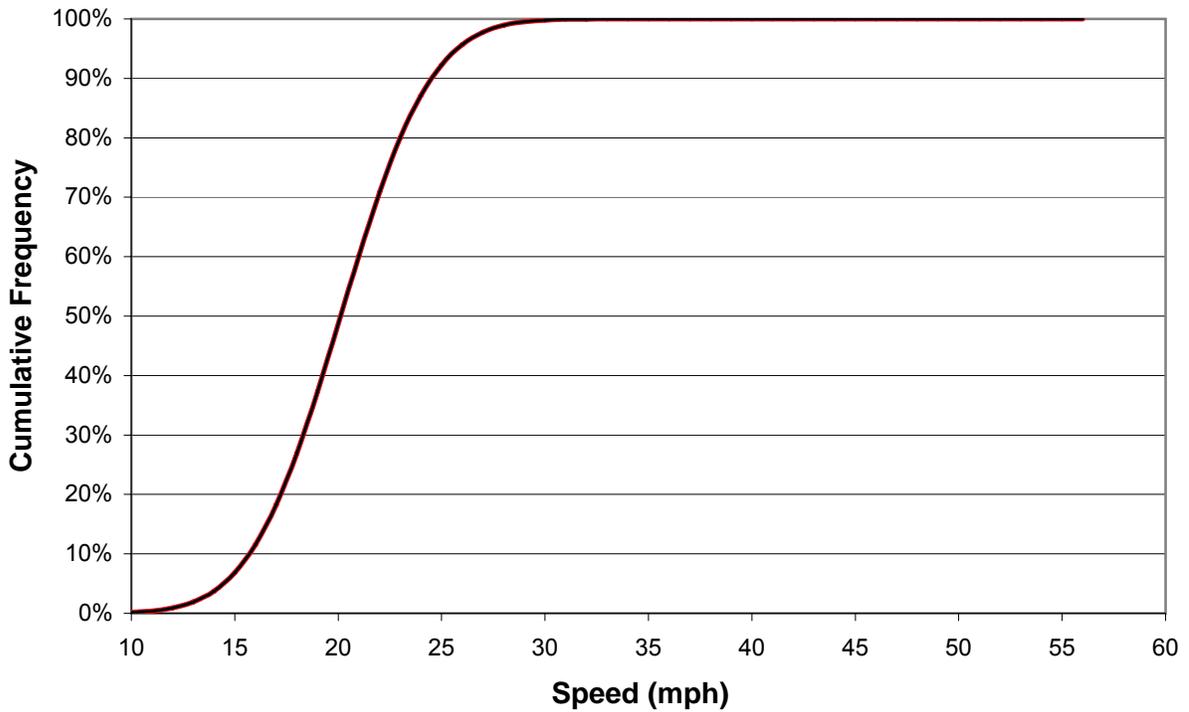
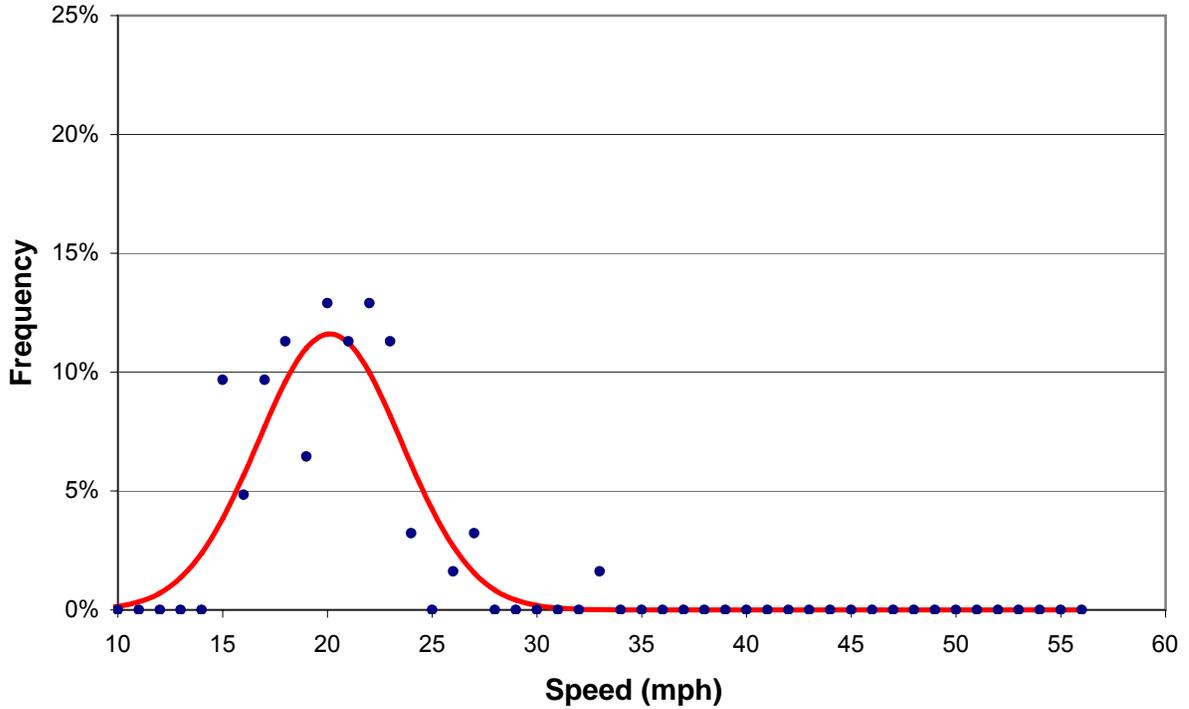
Date: **October 4, 2005**  
Location: **183rd Street between Wadsworth Avenue and St. Nicholas Avenue**  
Surveyor: **Eyad Yousef**

Time: **2:30 pm - 3:30 am**

School: **P.S. 132**  
Direction: **Eastbound**  
Comments:

Mean Speed = 20.1 mph  
Standard Deviation = 3.4 mph  
Margin of Error (95% Confidence) =  $\pm 0.9$  mph

Median Speed = 20.1 mph  
15th Percentile Speed = 16.6 mph  
85th Percentile Speed = 23.7 mph



**P.S. 132**  
 OCTOBER 4, 2005  
 2:30 pm - 3:30 pm

Title1 : SCHOOL SAFETY ENGINEERING  
 Title2 : BOROUGH OF MANHATTAN  
 Title3 : NYC-DOT

Site:  
 Date: 10/04/05

Combined  
*\*Peds not included in table data*

Begin Time	Total	W 183 STREET			BROADWAY			W 183 STREET			BROADWAY		
		S-R	S-T	S-L	W-R	W-T	W-L	N-R	N-T	N-L	E-R	W-T	W-L
14:30:00	339	0	139	9	13	0	3	23	152	0	0	0	0
14:45:00	293	0	104	10	12	0	6	17	144	0	0	0	0
15:00:00	337	0	142	4	13	0	3	16	159	0	0	0	0
15:15:00	364	0	144	17	6	4	4	31	158	0	0	0	0
<b>1,333</b>		0	529	40	44	4	16	87	613	0	0	0	0

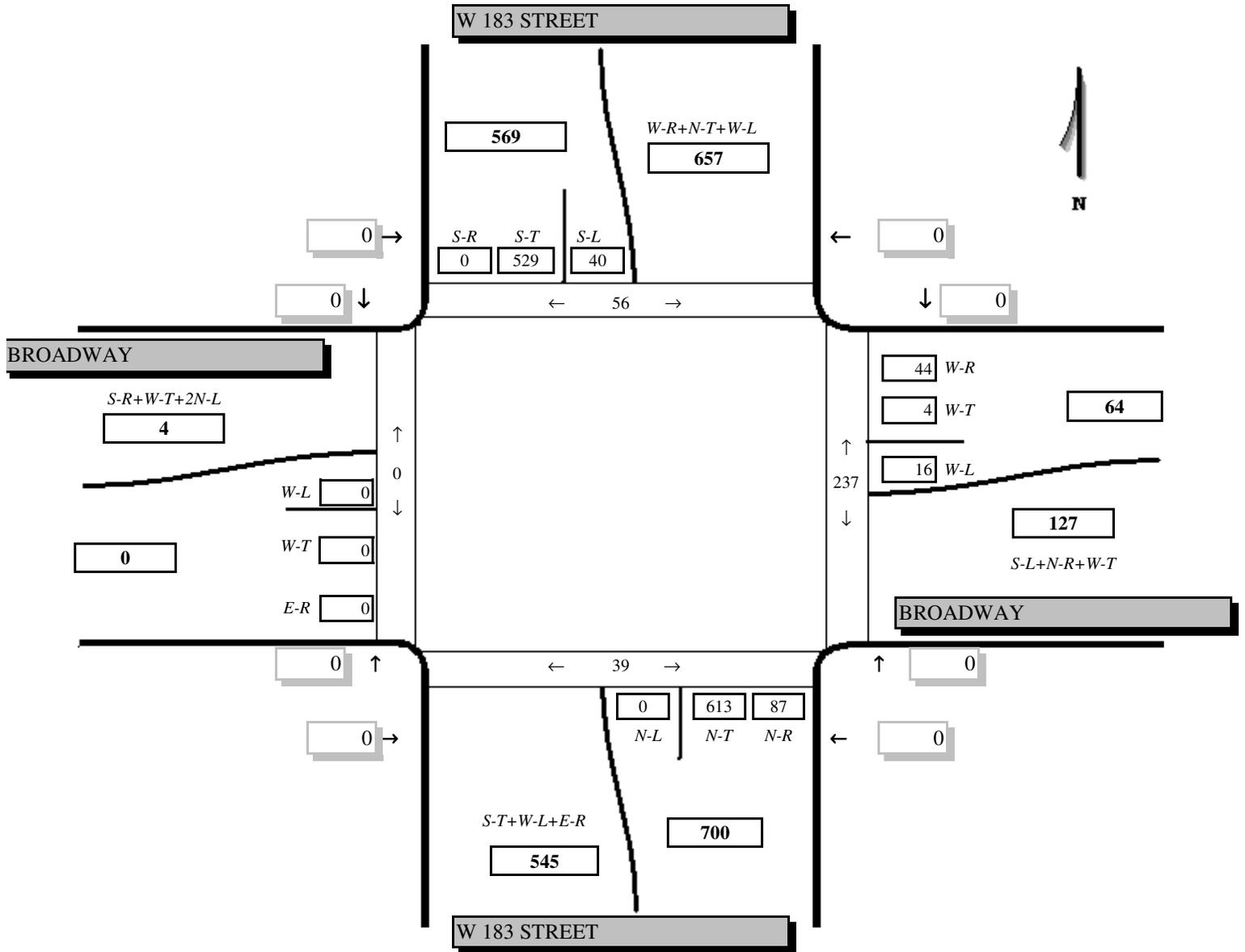
Peak Volume Periods <i>(1 hour Res:15 min.)</i>					
Period			Peak Period		Volume
<b>AM</b>	05:00:00	To 10:00:00	NA	To NA	0
<b>Noon</b>	10:00:00	To 15:00:00	14:15:00	To 15:15:00	632
<b>PM</b>	15:00:00	To 20:00:00	14:30:00	To 15:30:00	1,333

**P.S. 132**  
 OCTOBER 4, 2005  
 2:30 pm - 3:30 pm

Title1 : SCHOOL SAFETY ENGINEERING  
 Title2 : BOROUGH OF MANHATTAN  
 Title3 : NYC-DOT

Site:  
 Date: 10/04/05

Combined  
 \*Peds not included in table data

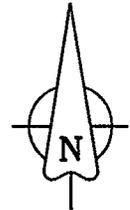


# SCHOOL SAFETY ENGINEERING

INTERSECTION: W. 183<sup>rd</sup> & St. Nick.

TIME : 2:30 - 3:30

DATE : 10-4-05

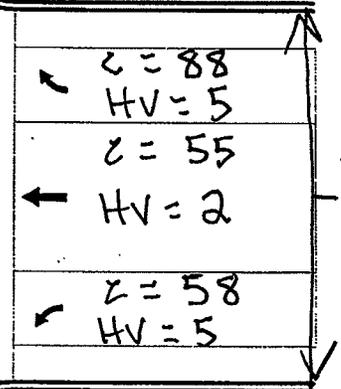
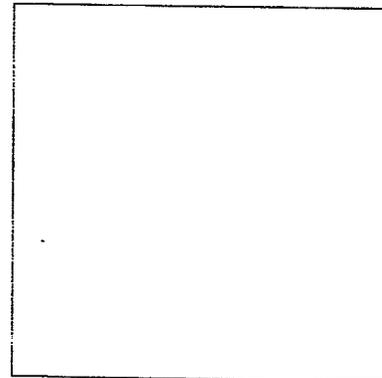
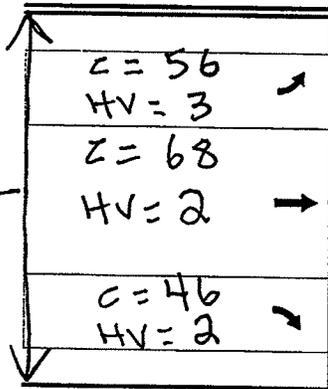


P = 223

STREET NAME:

W. 183<sup>rd</sup> St.

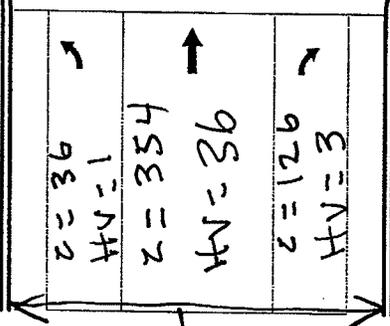
P = 901



P = 691

STREET NAME:

St. Nick.



P = 221