

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



**School Safety Engineering Project**

**FINAL REPORT: P.S. 169, The Sunset Park School, Brooklyn**



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



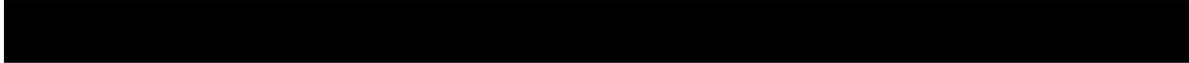
**JULY 20, 2006**



## LIST OF TABLES

TABLE 1: MODE OF TRAVEL.....	9
TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000).....	14
TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (1998-2000).....	14
TABLE 4: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS.....	19

## LIST OF EXHIBITS



SPOT SPEED STUDY ON 43 <sup>RD</sup> STREET.....	A4
SPOT SPEED STUDY ON 44 <sup>TH</sup> STREET.....	A6

## **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 350 speed reducers (humps) have been installed in the immediate vicinity of schools.

Under this consultant study, the School Safety Engineering Project, accident data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). P.S. 169 (The Sunset Park School) in Brooklyn is one of the 135 priority schools.

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



### **2.2 NEIGHBORHOOD DESCRIPTION**

Directly across from P.S. 169 is Sunset Park, which fronts Seventh Avenue from 44<sup>th</sup> Street to 41<sup>st</sup> Street. The immediate neighborhood surrounding the school is a mixture of single-family homes and 2-3 story apartment buildings. Eighth Avenue, which is west of the school, is a commercial district with a mixture of first floor storefronts, and apartments above (see Exhibit 1 for Aerial Photograph).



*Figure 2 – Seventh Avenue in front of P.S. 169*



*Figure 3 – Eighth Avenue, west of P.S. 169*

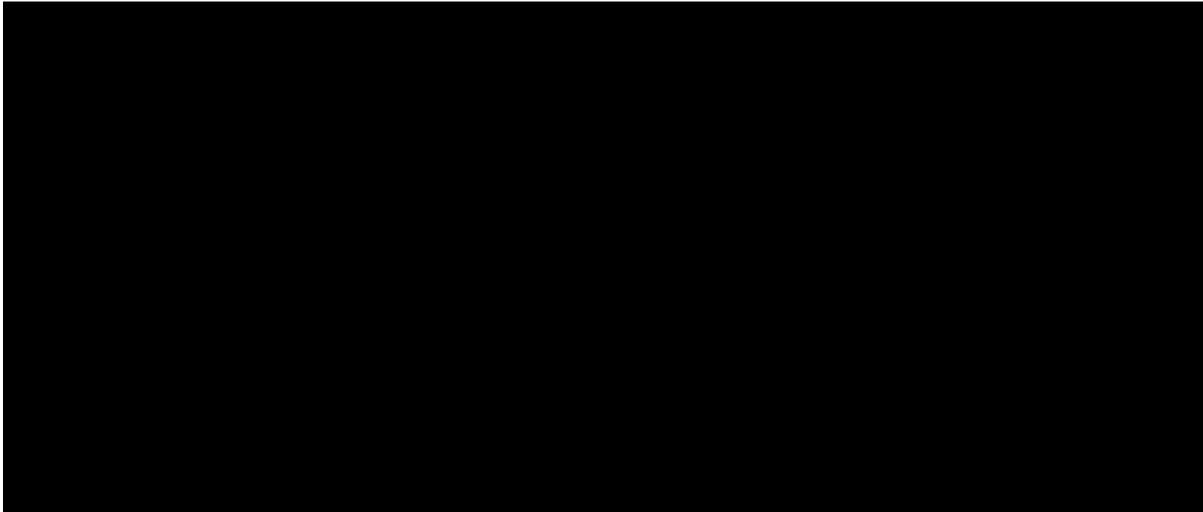
### **2.3 MEETING WITH SCHOOL REPRESENTATIVES**

Representatives from NYCDOT, P.S. 169 and the consultant team met at the school on the afternoon of April 23, 2004. The representatives from the schools included the P.S. 169 assistant principal, school crossing guards, and other members of the school staff. (See the Appendix for a list of attendees).

According to representatives of the school, the identifiable problems that student pedestrians encounter on a regular basis include the following:

- Traffic congestion along Seventh Avenue, 43<sup>rd</sup> Street and 44<sup>th</sup> Street during morning arrival and afternoon dismissal
- Double parked vehicles in front of the school
- Sidewalks damaged or in poor condition

(See the Appendix for a summary of school concerns, and the school's survey response).



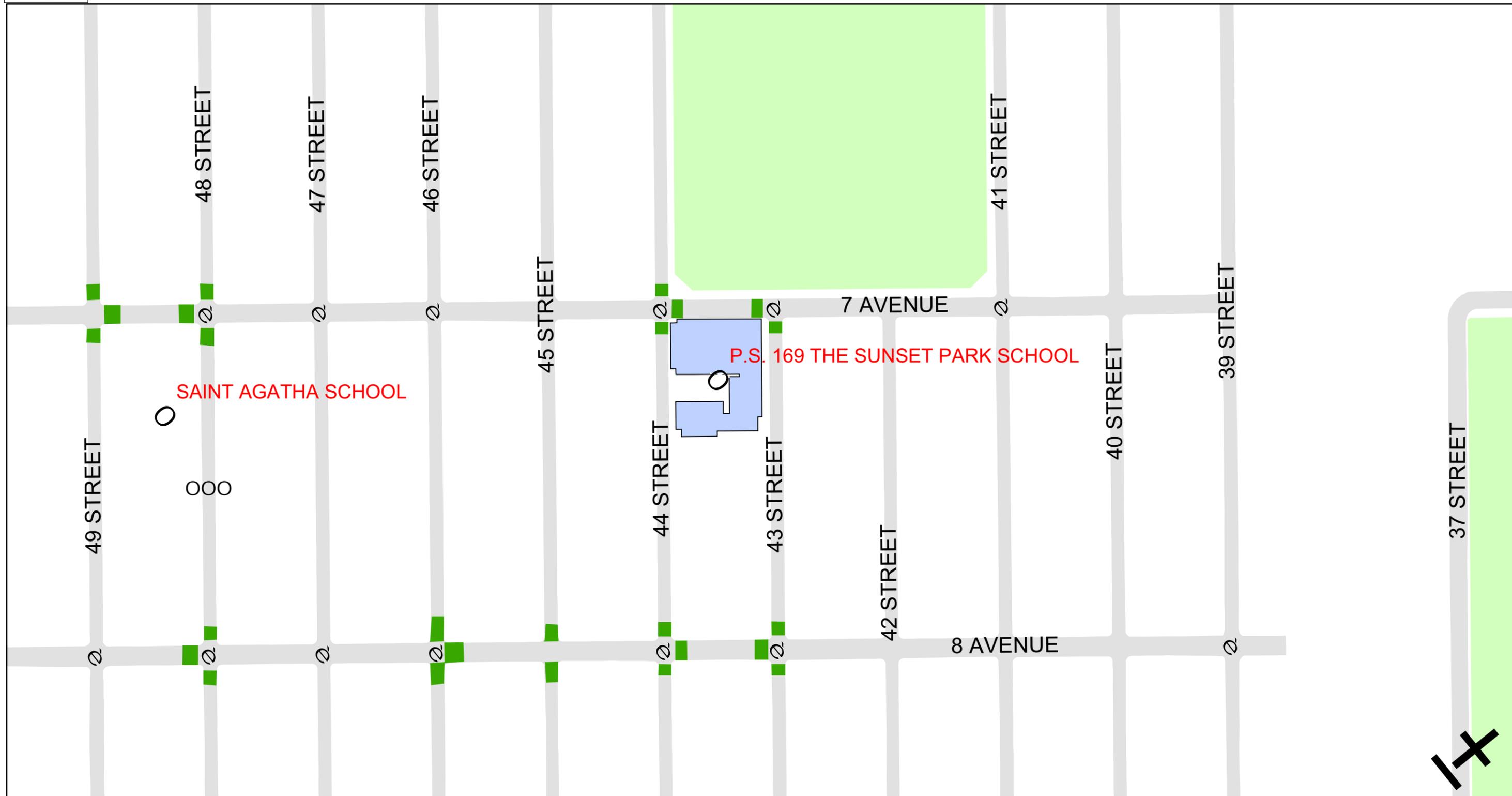


1 inch equals 200 feet

**EXHIBIT 1**  
**P.S. 169, BROOKLYN**  
**THE SUNSET PARK SCHOOL**  
**AERIAL PHOTOGRAPH**



# School Traffic Safety Map



The School Traffic Safety Map was established to help provide the maximum degree of safety for children going to and from school - by indicating the location of advance warning signs, 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 only shows 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 169 Brooklyn  
THE SUNSET PARK SCHOOL**

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

Map created on 6/7/2006

EXHIBIT 2

COMM. BOARD: 307  
PRECINCT: 72

1.3.1

## 2.6 PRIMARY MODE OF TRANSPORT TO AND FROM SCHOOL

According to school officials, approximately 94% of students walk to P.S. 169, 5% arrive by private vehicles and the remaining 1% by school buses. See Table 1 for the school's estimate of the mode of travel.

<b>TABLE 1: MODE OF TRAVEL</b> (AS ESTIMATED BY SCHOOL OFFICIALS)	
Description	Percentage
Walk	94%
Driven by car, livery cab or mini-bus	5%
School bus	1%
MTA bus or subway	0%
<b>TOTAL</b>	<b>100%</b>

## 2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

During recess, vendors selling hot dogs, ice cream and various products add to the congested sidewalks along 43<sup>rd</sup> Street, 44<sup>th</sup> Street and Seventh Avenue. In addition, some students walk towards Eight Avenue, which is a commercial block with multiple convenience stores.

## 2.8 CROSSING GUARD LOCATIONS

According to field observations, there are two crossing guards assigned to P.S. 169. They are stationed at the following intersections:

- 43rd Street and Seventh Avenue,
- 44th Street and Seventh Avenue.

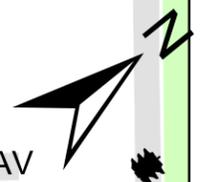
See Exhibit 4 for a map of crossing guard locations.



Figure 4- Crossing guard at 44<sup>th</sup> Street and Seventh Avenue



# 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 

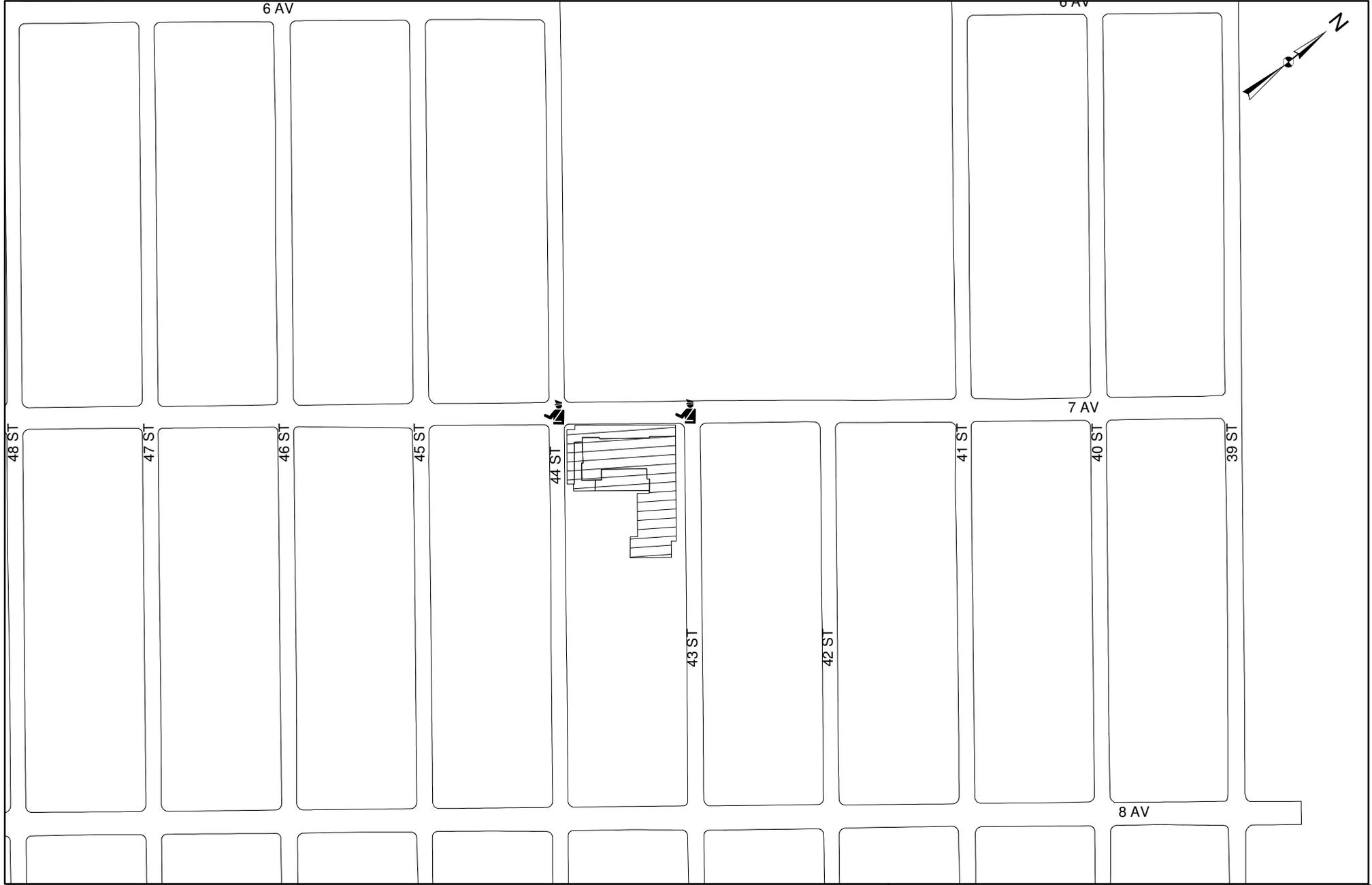
**PS 169 Brooklyn  
THE SUNSET PARK SCHOOL**

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

Map created on 11/16/2006 **EXHIBIT 3**

COMM. BOARD: 307  
PRECINCT: 72

1.5.1



1 inch equals 250 feet



**CROSSING GUARD ASSIGNED TO P.S. 169**

**EXHIBIT 4**  
**THE SUNSET PARK SCHOOL**  
**P.S. 169, BROOKLYN**  
**CROSSING GUARD**

### **3. TRAFFIC OPERATIONS**

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

According to school representatives two school buses transport students from P.S. 169 to and from school. These two school buses primarily carry disabled students. Buses load and unload students on Seventh Avenue, near the school's entrance. School buses park or double park, depending on traffic conditions.



*Figure 5: Double-parked vehicles and school buses on Seventh Avenue in front of P.S. 169*

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

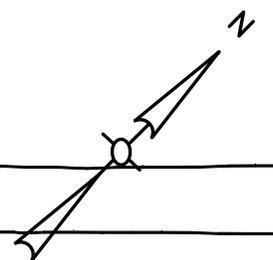
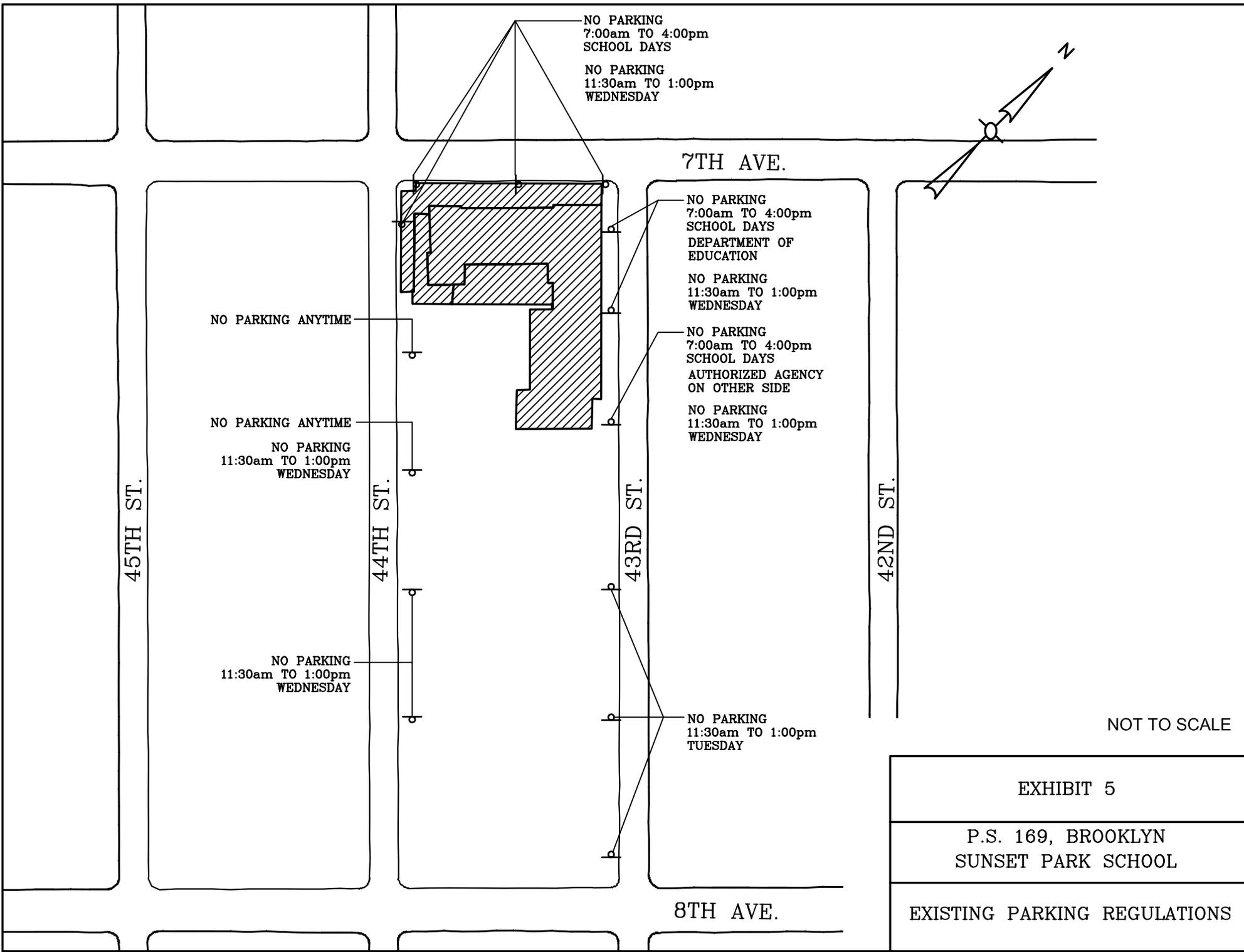
School officials have indicated that approximately 5% of P.S. 169 students are driven to and from school by parents or guardians. Field observations taken on May 25, 2004 indicated that parents use all three surrounding streets; 44<sup>th</sup> Street, Seventh Avenue, and 43<sup>rd</sup> Street as student drop-off points.

#### **3.3 PARKING REGULATIONS**

“NO PARKING, 7 AM – 4:00 PM, SCHOOL DAYS” parking regulation is posted for the full length of Seventh Avenue between 43<sup>rd</sup> Street and 44<sup>th</sup> Street. “NO PARKING 7AM – 4 PM, SCHOOL DAYS, EXCEPT BOARD OF EDUCATION” is posted on 43<sup>rd</sup> Street in front of the school. Alternate parking regulations are in effect 11:30 am – 1:00 pm Wednesdays. Exhibit 5 shows the parking regulations on the roadways surrounding the school.

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

The Traffic Safety Plan, Exhibit 2, shows existing signs, signals, and pavement markings as of April 2004. It is noted that a citywide signage program is currently underway to upgrade school signage to current MUTCD standards of fluorescent yellow-green signs with downward pointing arrows. Signs scheduled to be installed under this program are shown as “existing” on Exhibit 8.



NOT TO SCALE

EXHIBIT 5
P.S. 169, BROOKLYN SUNSET PARK SCHOOL
EXISTING PARKING REGULATIONS

### 3.5 ACCIDENT SUMMARY

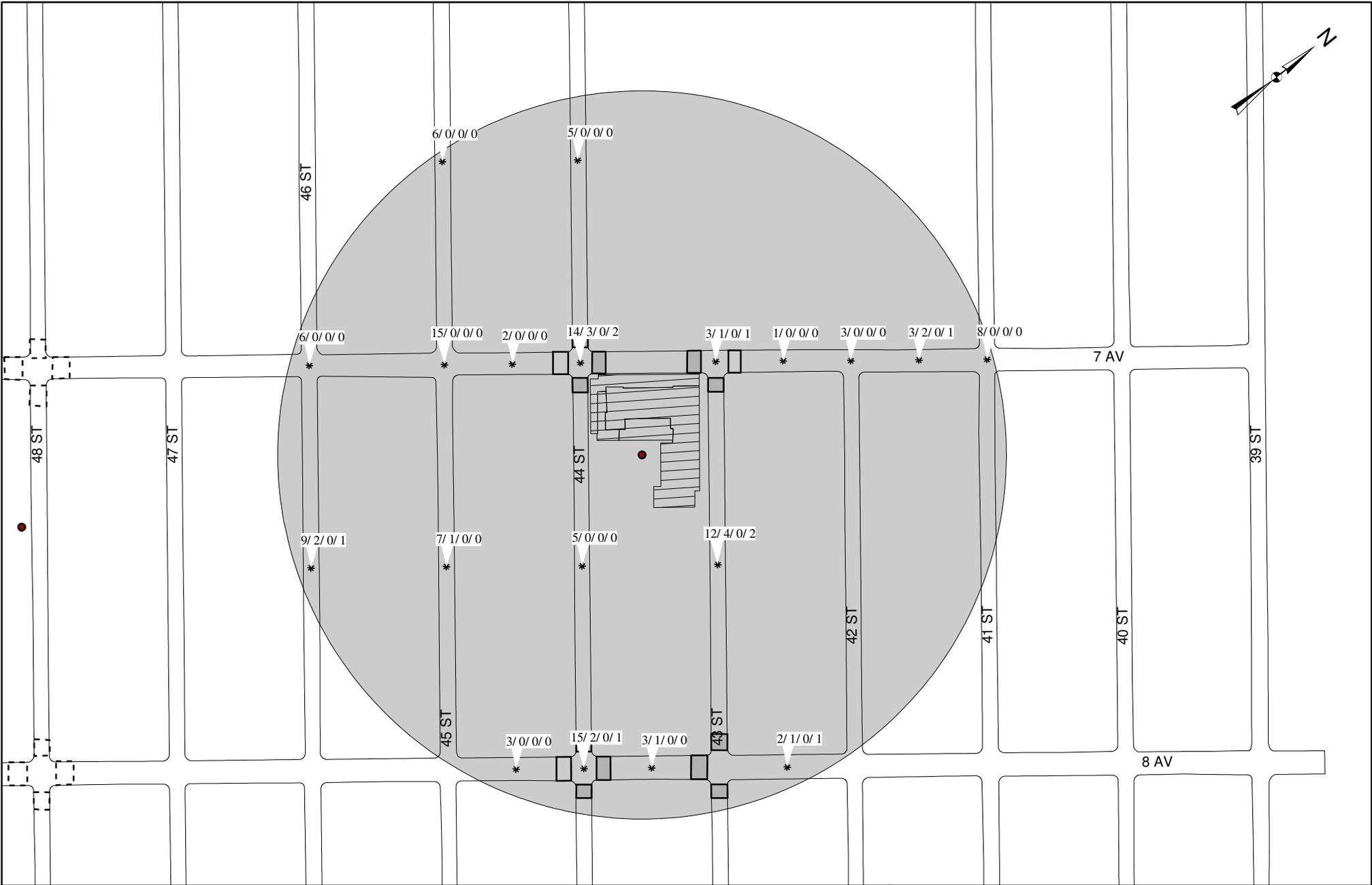
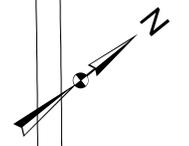
Exhibit 6 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of P.S. 169 for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of 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 which did not detailed data 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.

<b>TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000)</b>				
<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED* ACCIDENTS</b>
44 <sup>th</sup> Street and Seventh Avenue	14	3	0	2
43 <sup>rd</sup> Street and Seventh Avenue	3	1	0	1
44 <sup>th</sup> Street and Eight Avenue	15	2	0	1
43 <sup>rd</sup> Street and Eight Avenue	NO AVAILABLE DATA			
<b>TOTAL</b>	<b>49</b>	<b>11</b>	<b>0</b>	<b>6</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>
44 <sup>th</sup> Street and Seventh Avenue	28	4	0	2
43 <sup>rd</sup> Street and Seventh Avenue	11	2	0	0
44 <sup>th</sup> Street and Eight Avenue	20	1	0	0
43 <sup>rd</sup> Street and Eight Avenue	21	0	0	0
<b>TOTAL</b>	<b>80</b>	<b>7</b>	<b>0</b>	<b>2</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 I.S. 169

SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL

CROSSWALK

X/X/X/X

TOTAL ACCIDENTS	PED ACCIDENTS	PED FATAL	SCHOOL PED ACCIDENTS
X	X	X	X

1 inch equals 250 feet

**EXHIBIT 6  
THE SUNSET PARK SCHOOL**

**P.S. 169, BROOKLYN  
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. 169:

#### 3.6.1 44<sup>th</sup> Street and Seventh Avenue

This is a signalized intersection. Seventh Avenue is a 44-foot wide, two-way (north-south) roadway with one travel lane in each direction, bicycle lanes, and parking on both sides. 44<sup>th</sup> Street is a one way (eastbound) 30 feet wide street with one moving lane and parking on both sides. There are school crosswalks on the north, south and east legs.

Fourteen accidents have occurred at the intersection during the 1998-2000 study period. Three accidents involved pedestrians, two of which were school age children. The first accident involved a 7-year-old child who was crossing Seventh Avenue with the signal when struck by an eastbound left turning vehicle. According to the accident data, this accident was attributed to driver error and pedestrian confusion/error. The second accident involved an 8-year-old child who was struck while crossing 44<sup>th</sup> Street against the signal. The time of both accidents coincides with afternoon dismissal.

The northeast corner of the intersection does not have any pedestrian ramps. This is one of the two intersections that have an assigned crossing guard. Traffic counts were performed on April 4, 2005 to better understand the pedestrian/vehicle conflicts at the intersection.



*Figure 6: 44<sup>th</sup> Street and Seventh Avenue  
(looking east across 44<sup>th</sup> Street)*

#### 3.6.2 43<sup>rd</sup> Street and Seventh Avenue

43<sup>rd</sup> Street is a one-way (westbound) 30-foot wide, roadway that forms a signalized T-intersection with Seventh Avenue. 43<sup>rd</sup> Street has one travel lane and parking along both sides. There are school crosswalks on the south and west legs.

There were three accidents at this intersection between 1998-2000, including one pedestrian accident, and one accident involving a child. The accident involved an 8-year-old boy, who was crossing 43<sup>rd</sup> Street against the signal outside of the crosswalk when struck by a vehicle. The time of the accident coincides with school dismissal time. No fatalities occurred at the intersection.



Figure 7: 43<sup>rd</sup> Street and Seventh Avenue (looking north across Seventh Ave.)

There are no pedestrian ramps in place at this intersection due to the presence of utility poles. This intersection has a crossing guard assigned to P.S. 169. Traffic counts were performed on April 4, 2005 to better understand the pedestrian/vehicle conflicts at the intersection.

To determine vehicular speeds along this street, a spot speed study was conducted on July 7, 2005 between 10:00 am and 11:00 am. The 85<sup>th</sup> percentile speed was found to be 26 mph, which is below the legal speed limit of 30 mph. See Table 4 for a summary of the results and the Appendix for further detail.

<b>TABLE 4: SPOT SPEED STUDIES</b> (July 7, 2005: 10:00 am – 11:00 am)		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
43 <sup>rd</sup> Street between Seventh Avenue and Eight Avenue	23	26

### 3.6.3 43<sup>rd</sup> Street and Eight Avenue

This is a signalized intersection. Eighth Avenue is 44 feet wide, with one travel lane in each direction, and parking on both sides. There are school crosswalks on the north, south and west legs.

There was no DMV accident data available for this intersection. All four corners have substandard pedestrian ramps and need new standard pedestrian ramps.

### 3.6.4 44<sup>th</sup> Street and Eight Avenue

This intersection is controlled by a two-phase signal. There are school crosswalks on the north, south and east legs of the intersection.

There were fifteen accidents at this location in the three-year period from 1998-2000. During the three-year period, two accidents involved pedestrians and one accident involved a child. According to the accident data, one accident occurred when a northbound vehicle struck a 14-year-old pedestrian, crossing against the signal. The second pedestrian accident involved a 12-year-old student who was crossing with the signal when struck by a vehicle, which was traveling at an excessive speed.

### 3.6.5 43<sup>rd</sup> Street between Seventh and Eight Avenue

There were twelve accidents in the mid-block of 43<sup>rd</sup> Street between Seventh Avenue and Eight Avenue in the three-year period between 1998 and 2000. During this period there were four accidents involving pedestrians, all of which involved school age pedestrians. However, two accidents were during times when school was not in session. In two cases, a 4-year-old and a 10-year-old child emerged from behind parked cars into oncoming traffic. In the case of the 4-year-old, the report cites driver inattention as one cause of the accident. In June of 2000, a 10-year-old, boy was struck, while playing in the roadway, and in July of the same year a 5-year-old was crossing the street when struck by a vehicle. There is an existing speed hump near the school entrance on 43<sup>rd</sup> Street.



*Figure 8: 44th and Eight Avenue (looking southwest.)*

### 3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of P.S. 169 and found to be adequate for a child pedestrian walking rate of 3 feet per second in all directions and approaches.

TABLE 4: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS				
Intersection Name	Crosswalk Width (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)	Timing Adjustment? (Yes/No)
44 <sup>th</sup> Street and Seventh Avenue				
Crossing 44 <sup>th</sup> Street	30	36	13	No
Crossing Seventh Avenue	44	24	18	No
43 <sup>rd</sup> Street and Seventh Avenue				
Crossing 43 <sup>rd</sup> Street	30	24	13	No
Crossing Seventh Avenue	44	36	18	No
44 <sup>th</sup> Street and Eight Avenue				
Crossing 44 <sup>th</sup> Street	30	36	13	No
Crossing Eight Avenue	44	24	18	No
43 <sup>rd</sup> Street and Eight Avenue				
Crossing 43 <sup>rd</sup> Street	30	24	13	No
Crossing Eight Avenue	44	36	18	No

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

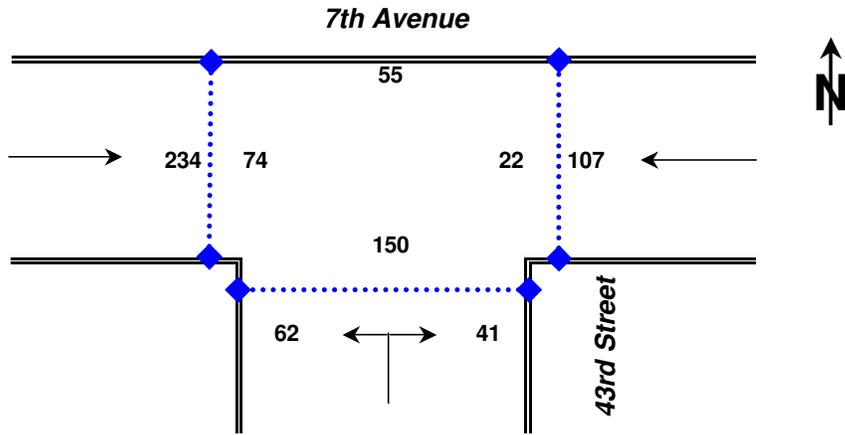
### 3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)

The roadways and sidewalks in the vicinity of the school were generally observed to be in good condition. Many of the corner quadrants are missing ADA compliant pedestrian ramps (see Exhibit 7).

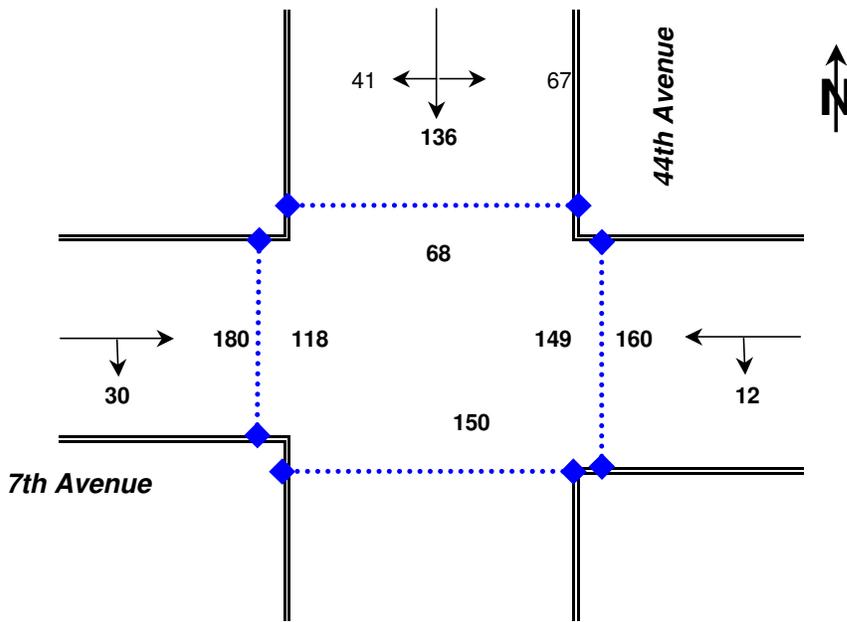


*Figure 9: 43<sup>rd</sup> Street sinkhole (looking north)*

**One Hour Traffic Count Volumes**



*Intersection of 7th Avenue and 43rd Street (7:30 am - 8:30 am, April 4, 2005)*



*Intersection of 7th Avenue and 44th Street (7:30 am - 8:30 am, April 4, 2005)*

- Number of Pedestrians
- 62 Pedestrian Crossing
- 53 Vehicle Movement
- Number of Vehicles

<b>EXHIBIT 7</b>
<b>P.S. 169, BROOKLYN THE SUNSET PARK SCHOOL</b>
<b>TRAFFIC COUNTS</b>

#### **4. POTENTIAL MEASURES TO IMPROVE 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 OPTIONS**

- Administer student pedestrian safety education program

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

- Upgrade No Parking Zone to No Standing Zone

Existing “NO PARKING 7:00AM-4:00 PM, SCHOOL DAYS” parking regulations on Seventh Avenue and 43<sup>rd</sup> Street should be upgraded to “NO STANDING 7:00AM-4:00 PM, SCHOOL DAYS”. 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.

- Install a speed reducer (hump) on 44<sup>th</sup> Street

The school officials believed that vehicles were speeding on 44<sup>th</sup> Street between Seventh Avenue and Eight Avenue. A spot speed study was conducted on 44<sup>th</sup> Street between Seventh Avenue and Eight Avenue on July 7, 2005 between 10:00 am - 11:00 am.

Spot speed studies confirmed that the 85<sup>th</sup> percentile speed was 31 mph, which exceeds the statutory speed limit of 30 mph. To reduce speeding in the vicinity of the school, installation of two speed reducers (humps) is recommended on 44<sup>th</sup> Street. The location of speed reducers (humps) will be determined by NYCDOT. See Table 5 for a summary of the results and the Appendix for further detail.

<b>TABLE 5: SPOT SPEED STUDY</b>		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
44 <sup>th</sup> Street. btw. Seventh Avenue and Eight Avenue	26	31

▪ Install new school crosswalks

According to the school principal, some students walk to P.S. 169 along Seventh Avenue and Eight Avenue. Therefore, it is recommended that school crosswalks be delineated at the following intersections:

- Seventh Avenue and 41<sup>st</sup> Street, east and west legs
- Seventh Avenue and 42<sup>nd</sup> Street, east leg
- Seventh Avenue and 45<sup>th</sup> Street, east and west legs
- Eight Avenue and 42<sup>nd</sup> Street, east and west legs
- Eight Avenue and 45<sup>th</sup> Street, east and west legs

▪ Install/replace pedestrian ramps

Consideration should be given to the installation and/or replacement of pedestrian ramps per NYCDOT standards at the following locations:

- Eight Avenue and 43<sup>rd</sup> Street – all four corners
- Seventh Avenue and 43<sup>rd</sup> Street – northwest corner

(Curb extensions are proposed at all three intersections -Section 4.2. New standard pedestrian ramps would be installed with new curb extensions)

## 4.2 LONG-TERM OPTIONS

- Consider curb extensions at the following intersections:
  - Seventh Avenue and 43<sup>rd</sup> Street
  - Seventh Avenue and 44<sup>th</sup> Street
  - Eight Avenue and 43<sup>rd</sup> Street
  - Eight Avenue and 44<sup>th</sup> Street

Curb extensions should be installed 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 school crosswalks.

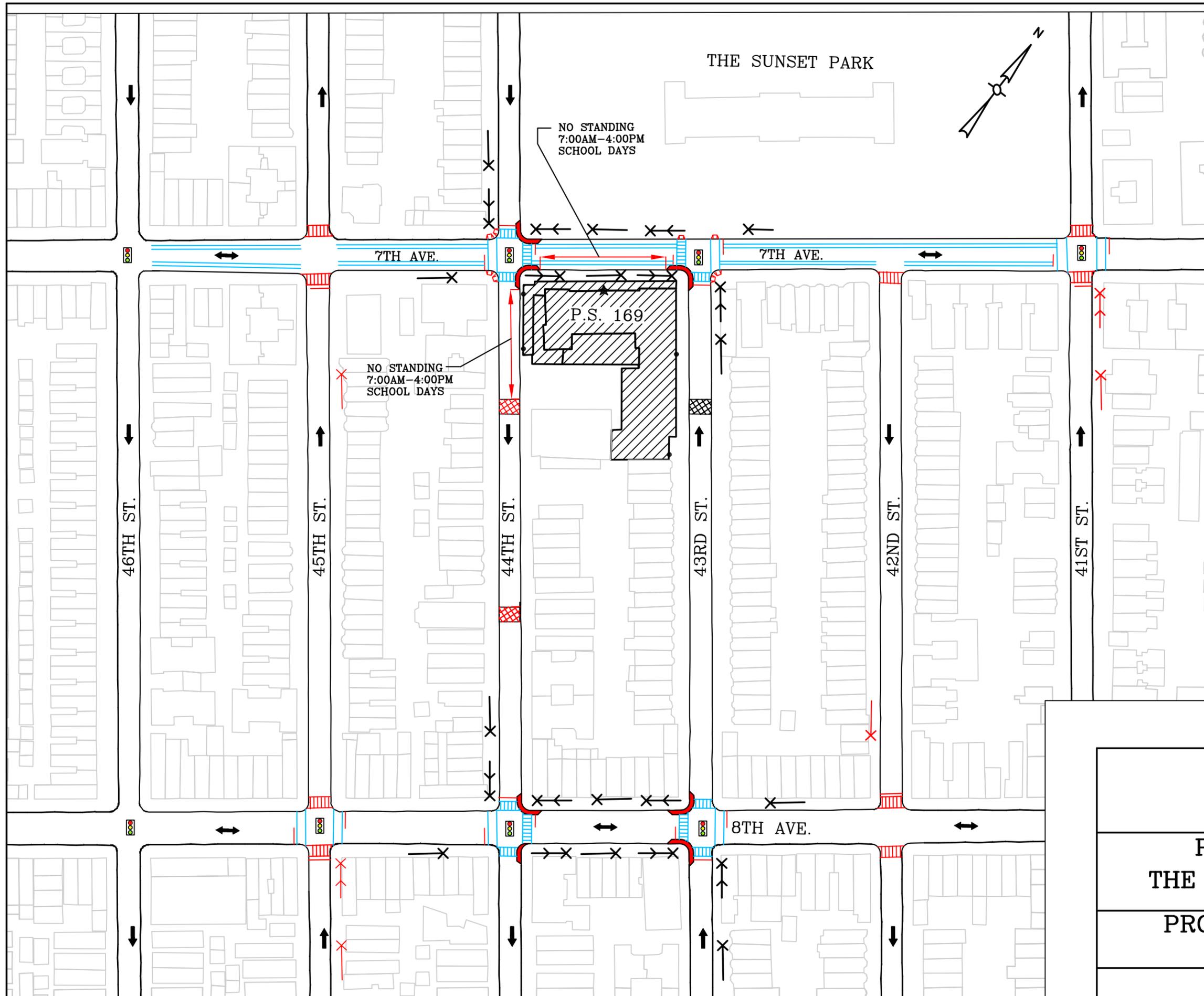
These curb extensions will not eliminate or reduce the width of any moving lanes. Curb extensions are not proposed where they would hinder the ability of vehicles to turn. Final details pertaining to curb extensions will be developed during the Final Design/Contract Document preparation.

Curb extensions on Seventh Avenue should be designed in accordance with design guidelines for bike lanes.

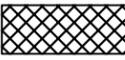
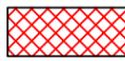
### ▪ Complex Installation/replacement of pedestrian ramps

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:

- Seventh Avenue and 43<sup>rd</sup> Street – southeast and northeast corners
- Seventh Avenue and 44<sup>th</sup> Street – southeast corner



**LEGEND**

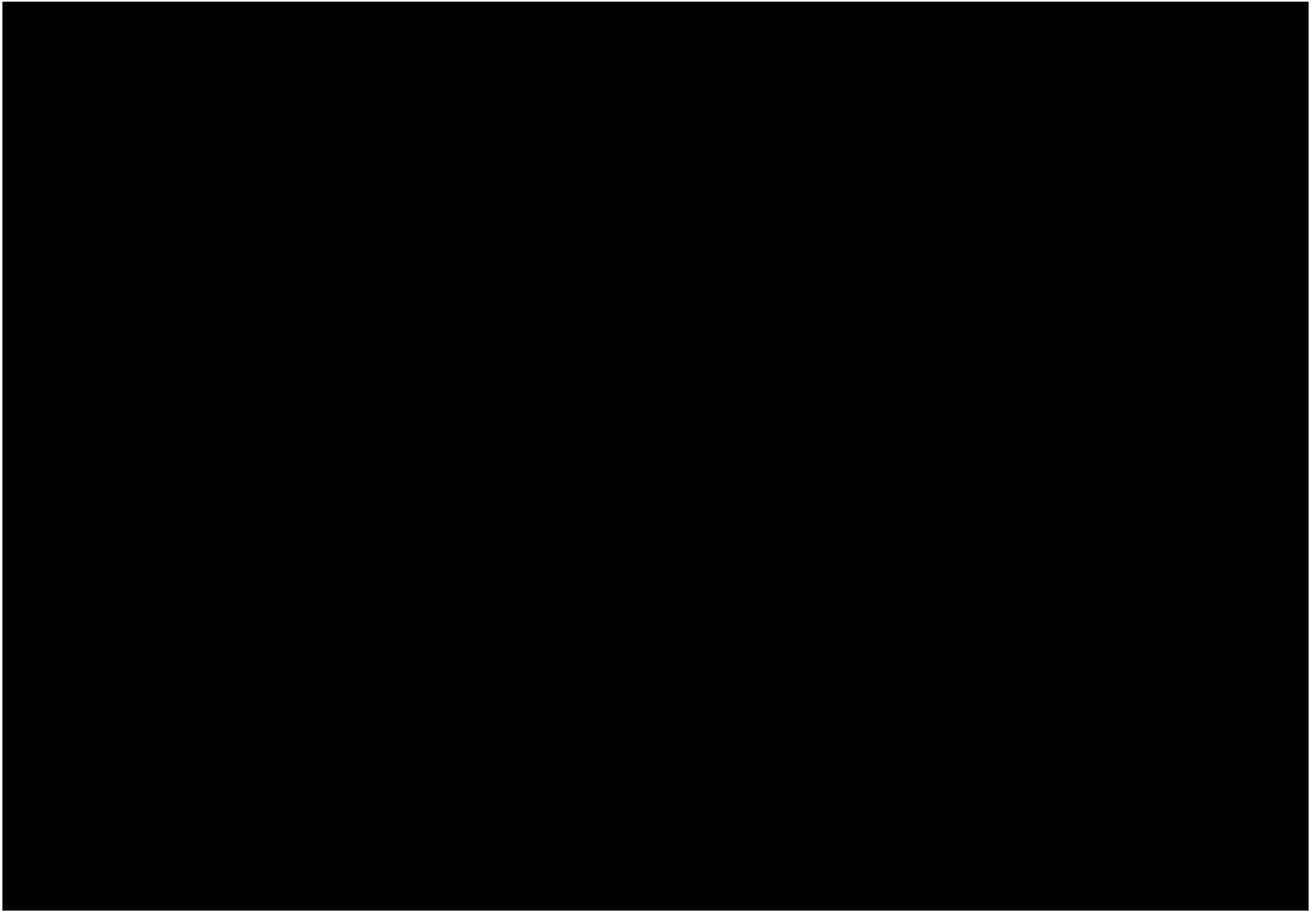
-  MAIN ENTRANCE
-  OTHER ENTRANCES
-  EXISTING ADVANCE WARNING SIGN WITH ARROW
-  EXISTING ADVANCE WARNING SIGN
-  EXISTING TRAVEL DIRECTION
-  SIGNALIZED INTERSECTION
-  EXISTING SCHOOL CROSSWALK
-  EXISTING STANDARD (NON-SCHOOL) CROSSWALK
-  EXISTING STOP LINE
-  EXISTING BICYCLE LANES
-  EXISTING SPEED REDUCER
-  PROPOSED ADVANCE WARNING SIGN WITH ARROW
-  PROPOSED ADVANCE WARNING SIGN
-  PROPOSED STOP LINE
-  PROPOSED PARKING REGULATIONS
-  PROPOSED SCHOOL CROSSWALK
-  PROPOSED PEDESTRIAN RAMP
-  PROPOSED SPEED REDUCER
-  PROPOSED CURB EXTENSION (NECKDOWN)

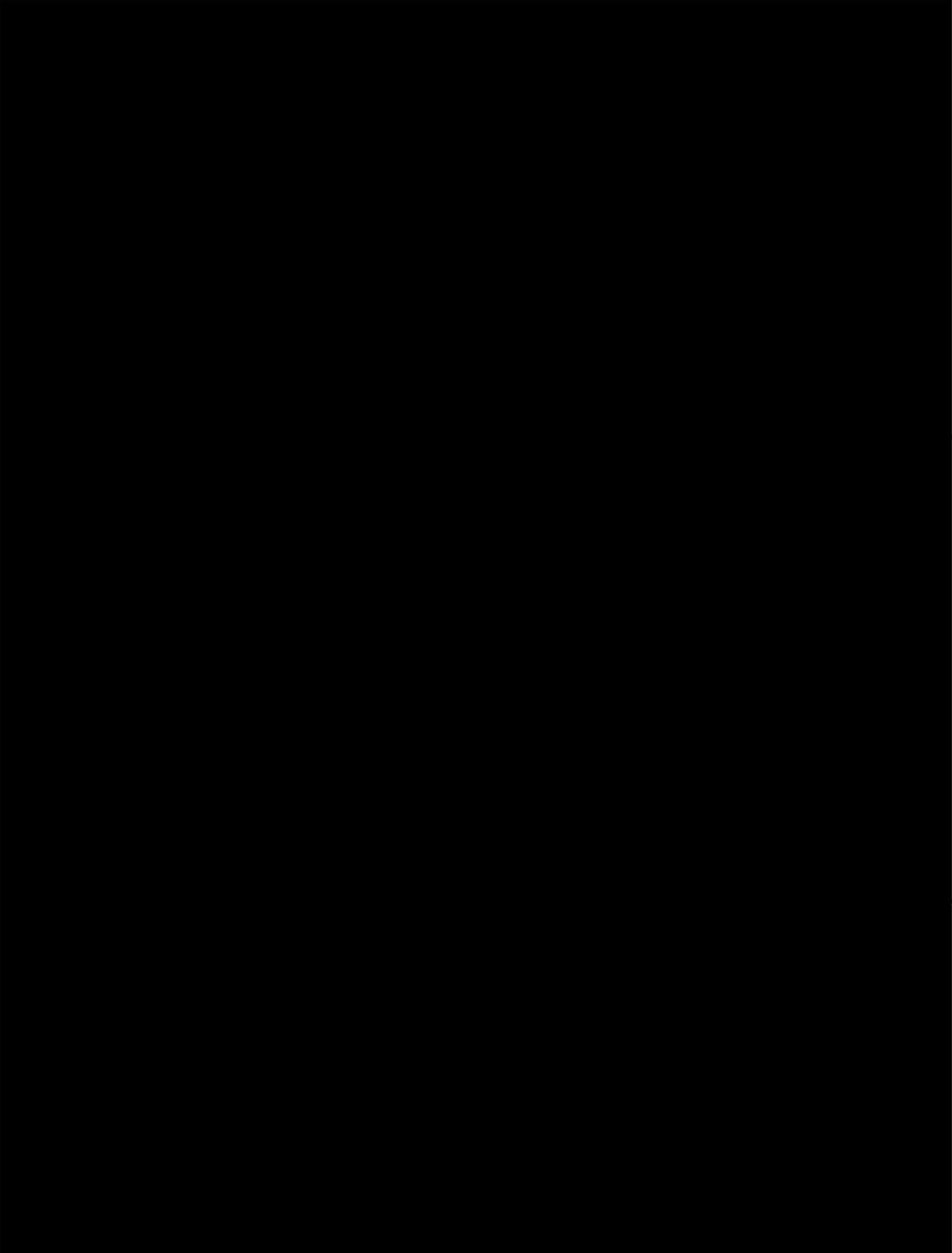
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**EXHIBIT 8**

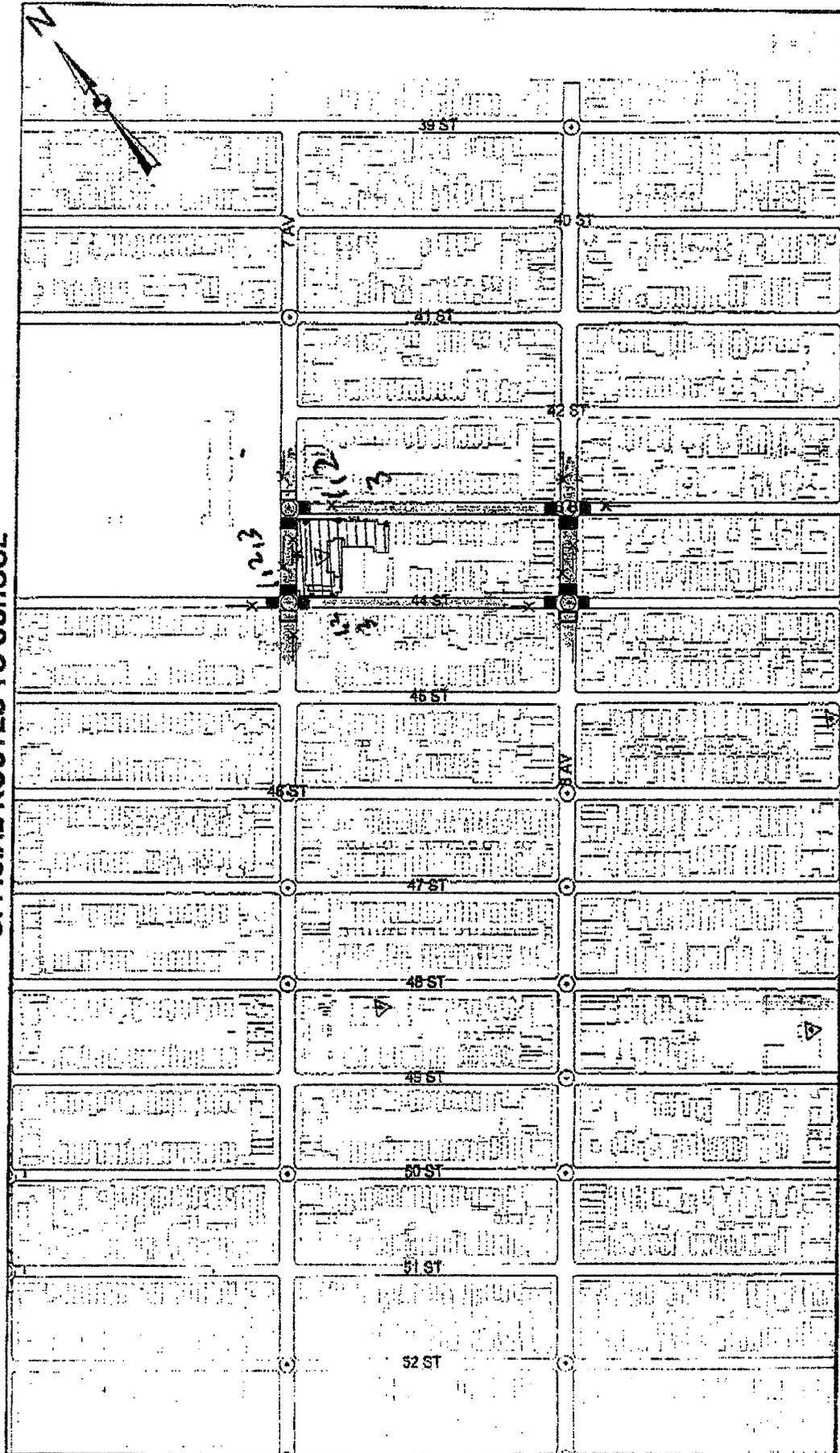
**P.S. 169, BROOKLYN  
THE SUNSET PARK SCHOOL  
PROPOSED MEASURES TO  
IMPROVE SAFETY**

# APPENDIX





**TRAFFIC SAFETY PLAN  
OFFICIAL ROUTES TO SCHOOL**



The TRAFFIC SAFETY PLAN shown on this map was established to provide the maximum degree of safety for children going to and from school. It is required that all children follow the prescribed routes and use the designated crosswalks.

- LEGEND:**
- TRAFFIC FLOW
  - ROUTE TO SCHOOL
  - ADV. WARNING SIGN
  - SCHOOL LOCATION
  - MARK SCHOOL ENTRANCE
  - OTHER SCHOOL ENTRANCES

- SCHOOL X-WALK
- FED. X-WALK
- STOP LINE
- X-WALKS ASSOCIATED WITH OTHER SCHOOLS
- SPEED JUMP

- TRAFFIC SIGNAL
- ALL-WAY STOP
- 2-WAY STOP

**THE SUNSET PARK SCHOOL  
P.S. 169**

Prepared by the NEW YORK CITY DEPARTMENT OF TRANSPORTATION,  
in cooperation with the POLICE OFFICERS.

DRGK DATE: 08/18/01  
GIS COUNTY: 05/2002  
REVISIONS:

DRAWING NO. 00-3233  
CORN. BOARD: 7  
BOROUGH: BROOKLYN  
PRECINCT: 12

## SPOT SPEED STUDY

Date: **July 7, 2005**  
 Location: **43rd Street btw. 8th Avenue and 7th avenue**  
 Surveyor: **The RBA Group**

Time: **10:00 am - 11:00 am**

School: **P.S. 169**  
 Direction: **East**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	9	19.6%	19.6%	180	3600
21	10	21.7%	41.3%	210	4410
22	6	13.0%	54.3%	132	2904
23	6	13.0%	67.4%	138	3174
24	4	8.7%	76.1%	96	2304
25	4	8.7%	84.8%	100	2500
26	2	4.3%	89.1%	52	1352
27	2	4.3%	93.5%	54	1458
28	0	0.0%	93.5%	0	0
29	1	2.2%	95.7%	29	841
30	0	0.0%	95.7%	0	0
31	2	4.3%	100.0%	62	1922
32	0	0.0%	100.0%	0	0
33	0	0.0%	100.0%	0	0
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
	46	100.0%		1053	24465

Mean Speed = 22.9 mph  
 Standard Deviation = 2.8 mph  
 Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 22.9 mph  
 15th Percentile Speed = 20.0 mph  
 85th Percentile Speed = 25.8 mph

# SPOT SPEED STUDY

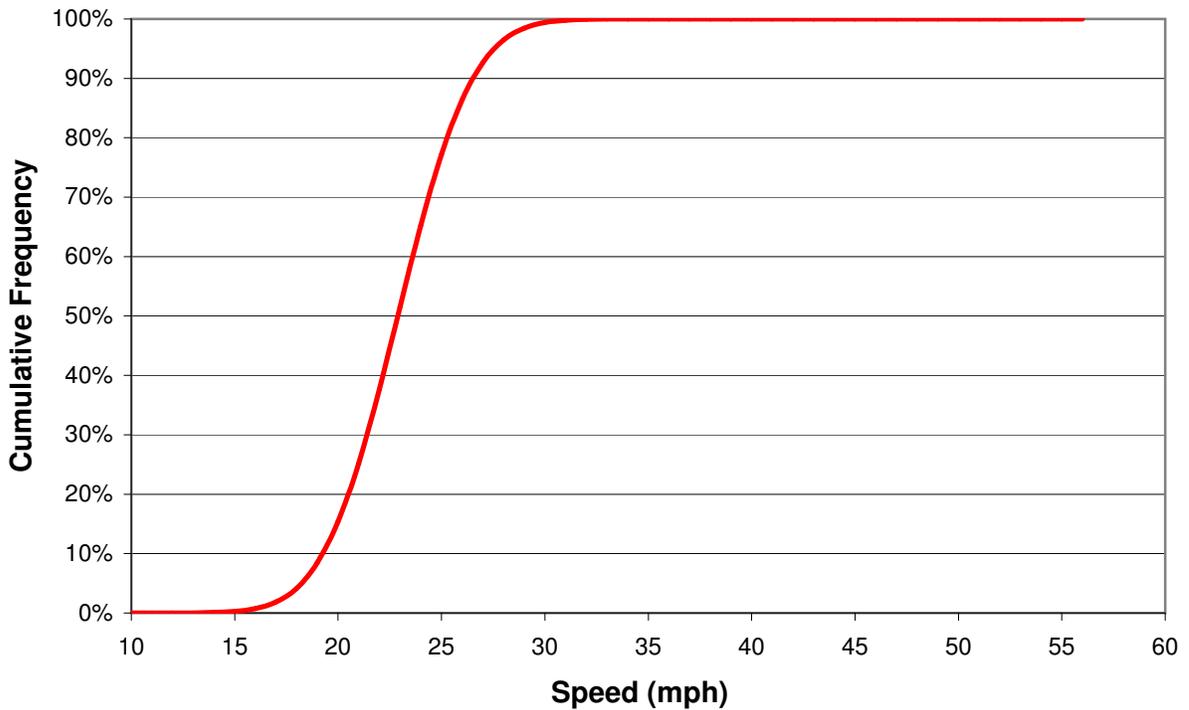
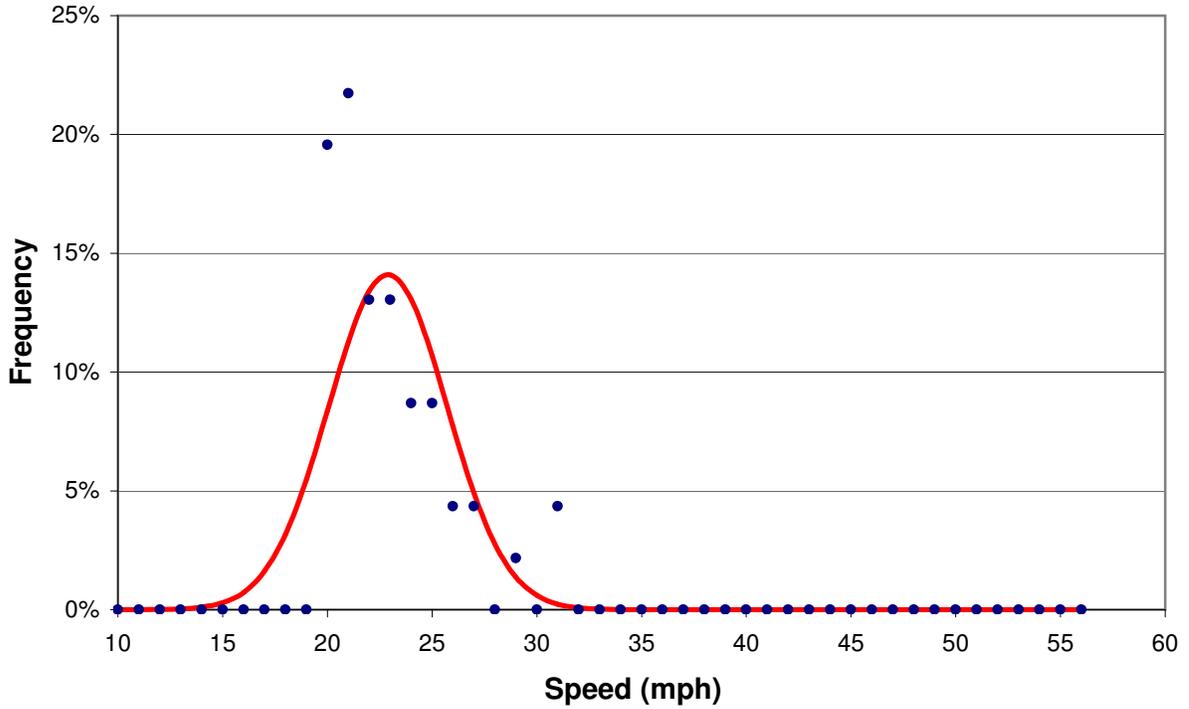
Date: **July 7, 2005**  
 Location: **43rd Street btw. 8th Avenue and 7th avenue**  
 Surveyor: **The RBA Group**

Time: **10:00 am - 11:00 am**

School: **P.S. 169**  
 Direction: **East**  
 Comments:

Mean Speed = 22.9 mph  
 Standard Deviation = 2.8 mph  
 Margin of Error (95% Confidence) =  $\pm 0.8$  mph

Median Speed = 22.9 mph  
 15th Percentile Speed = 20.0 mph  
 85th Percentile Speed = 25.8 mph



## SPOT SPEED STUDY

Date: **July 7, 2005**  
 Location: **44th Street btw. 8th Avenue and 7th avenue**  
 Surveyor: **The RBA Group**

Time: **9:00 am - 10:00 am**

School: **P.S. 169**  
 Direction: **West**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	9	10.0%	10.0%	180	3600
21	7	7.8%	17.8%	147	3087
22	8	8.9%	26.7%	176	3872
23	8	8.9%	35.6%	184	4232
24	6	6.7%	42.2%	144	3456
25	6	6.7%	48.9%	150	3750
26	6	6.7%	55.6%	156	4056
27	7	7.8%	63.3%	189	5103
28	3	3.3%	66.7%	84	2352
29	8	8.9%	75.6%	232	6728
30	2	2.2%	77.8%	60	1800
31	6	6.7%	84.4%	186	5766
32	3	3.3%	87.8%	96	3072
33	3	3.3%	91.1%	99	3267
34	3	3.3%	94.4%	102	3468
35	3	3.3%	97.8%	105	3675
36	0	0.0%	97.8%	0	0
37	2	2.2%	100.0%	74	2738
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
	90	100.0%		2364	64022

Mean Speed = 26.3 mph  
 Standard Deviation = 4.7 mph  
 Margin of Error (95% Confidence) = ± 1.0 mph

Median Speed = 26.3 mph  
 15th Percentile Speed = 21.4 mph  
 85th Percentile Speed = 31.1 mph

# SPOT SPEED STUDY

Date: July 7, 2005  
Location: 44th Street btw. 8th Avenue and 7th avenue  
Surveyor: The RBA Group

Time: 9:00 am - 10:00 am

School: P.S. 169  
Direction: West  
Comments:

Mean Speed = 26.3 mph  
Standard Deviation = 4.7 mph  
Margin of Error (95% Confidence) =  $\pm 1.0$  mph

Median Speed = 26.3 mph  
15th Percentile Speed = 21.4 mph  
85th Percentile Speed = 31.1 mph

