

**NEW YORK CITY DEPARTMENT OF TRANSPORTATION**

**Office of School Safety Engineering**



**School Safety Engineering Project**

**FINAL REPORT: P.S. 190, Sheffield School, Brooklyn**



Prepared by  
The RBA Group/Urbitrans Associates



**OCTOBER 20, 2006**

**School Safety Engineering Project  
P.S.190, Brooklyn**

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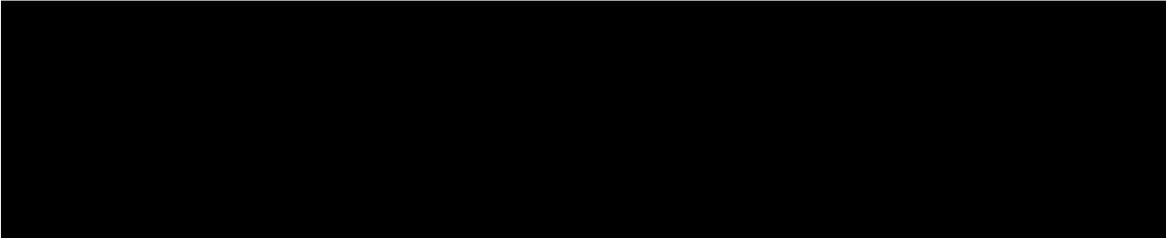
## **1. INTRODUCTION**

### **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, 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. 190 (Sheffield School) in Brooklyn is one of the 135 priority schools.

## 2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS



### 2.2 NEIGHBORHOOD DESCRIPTION

Sheffield Avenue is a residential street, with private residential units and 2-3 story residential buildings on both sides of the street (see Exhibit 1 for Aerial Photograph).



*Figure 1: Sheffield Avenue (looking east) in front of P.S. 190*

### 2.3 MEETING WITH SCHOOL REPRESENTATIVES

Representatives from New York City DOT, the consultant team, P.S. 190 and I.S. 311 met at the school on the afternoon of May 25, 2004. The representatives from the schools included the P.S. 190 and I.S. 311 school principals, and P.S. 190 budget and operations representatives (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:

- Vehicles speeding on Sheffield Avenue
- Vehicles speeding on New Lots Avenue
- Uncontrolled pedestrian crossing at the intersection of New Lots Avenue and Sheffield Avenue
- Children crossing at mid-block locations

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



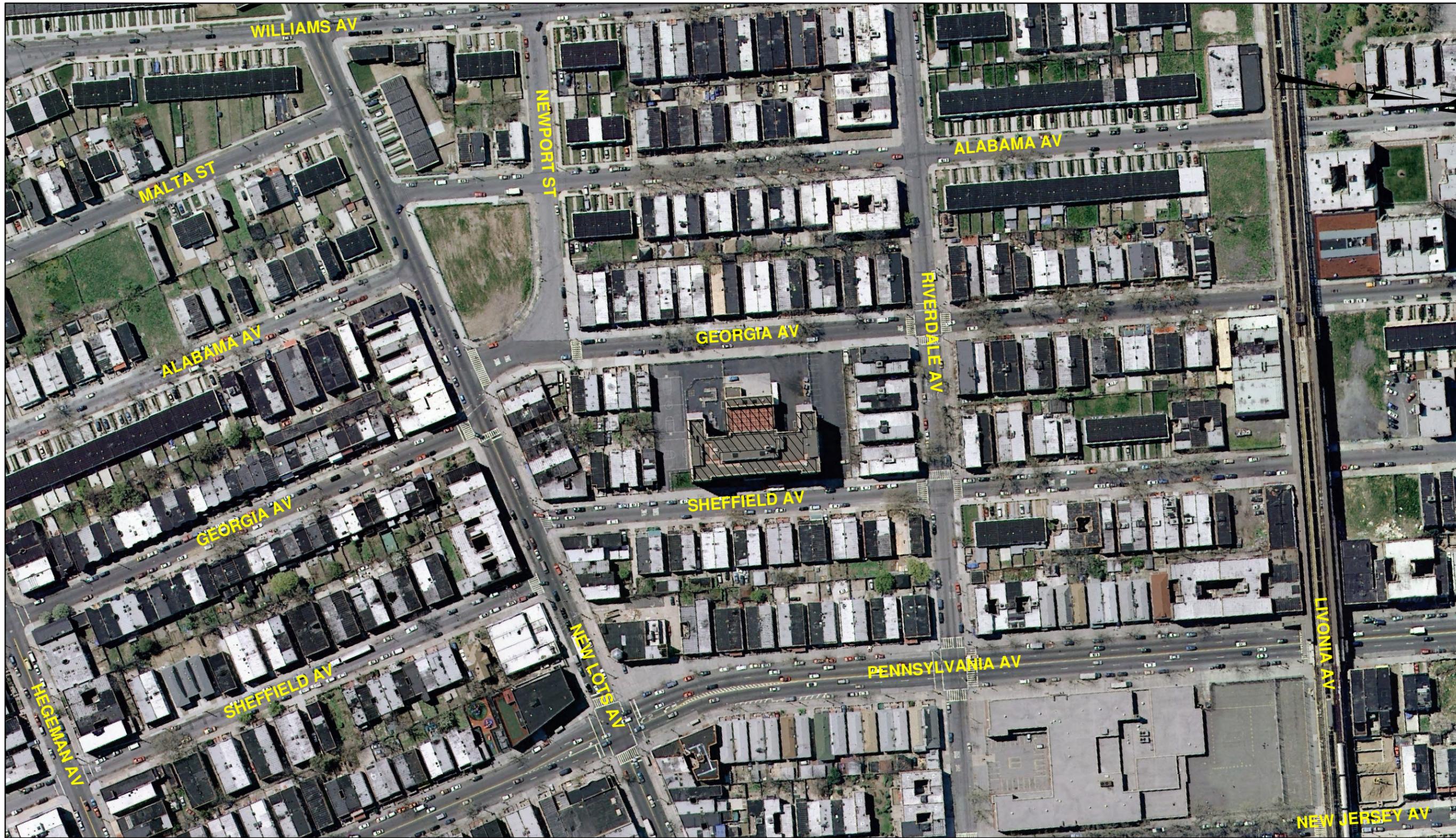
## 2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

According to P.S. 190 officials, approximately 80% of students walk to school, 3% are driven by parents or guardians, 7% arrive via public transportation, and 10% are transported by school buses. The school's catchment area is shown in Exhibit 2.

According to I.S. 311 officials, approximately 10% of students walk to school, 80% arrive via public transportation, and 5% are driven by parents or guardians and 5% are transported by school buses.

See Table 1 for the schools' estimates of the modes of travel.

	<b>P.S. 190</b> Percentage	<b>I.S. 311</b> Percentage
Walk	80%	10%
Driven by car, livery cab or mini-bus	3%	5%
School bus	10%	5%
MTA bus or subway	7%	80%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>



1 inch equals 150 feet

**EXHIBIT 1**  
**SHEFFIELD SCHOOL**  
**P.S. 190, BROOKLYN**  
**AERIAL PHOTOGRAPH**



1 inch equals 350 feet

 CATCHMENT AREA

**EXHIBIT 2**  
**P.S. 190, BROOKLYN**  
**SHEFFIELD SCHOOL**

**CATCHMENT AREA**

## 2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

A candy store at the southwest corner of the Sheffield Avenue and New Lots Avenue is popular with school children from P.S. 190/I.S. 311. Also, a supermarket frequently visited by the school children from P.S. 190/I.S. 311 is located at the same intersection, on the southeast corner of the intersection. P.S. 13 is located across Pennsylvania Avenue, one block away from P.S. 190/I.S. 311. P.S. 213 is located on New Jersey Avenue and Hegeman Avenue, approximately four blocks from P.S. 190/I.S. 311. P.S. 213 is a priority school.

## 2.8 CROSSING GUARD LOCATIONS

According to field observations, there are two crossing guards assigned to P.S. 190. The crossing guards are stationed at the following intersections:

- Riverdale Avenue at Sheffield Avenue
- New Lots Avenue at Georgia Avenue.

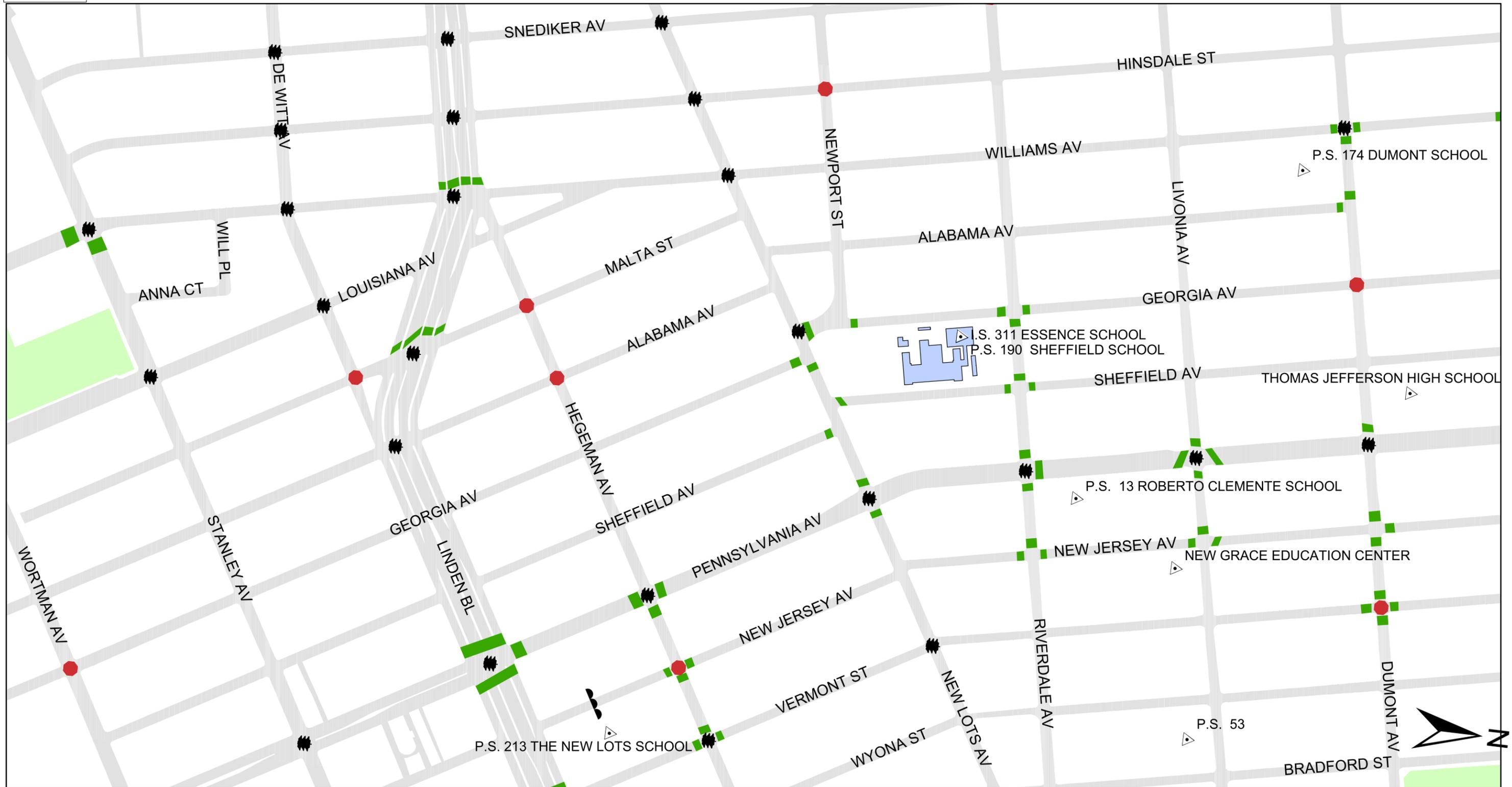
See Exhibit 4 for a map of crossing guard locations.



*Figure 2- Crossing guard at the intersection of Sheffield Avenue and Riverdale 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:**

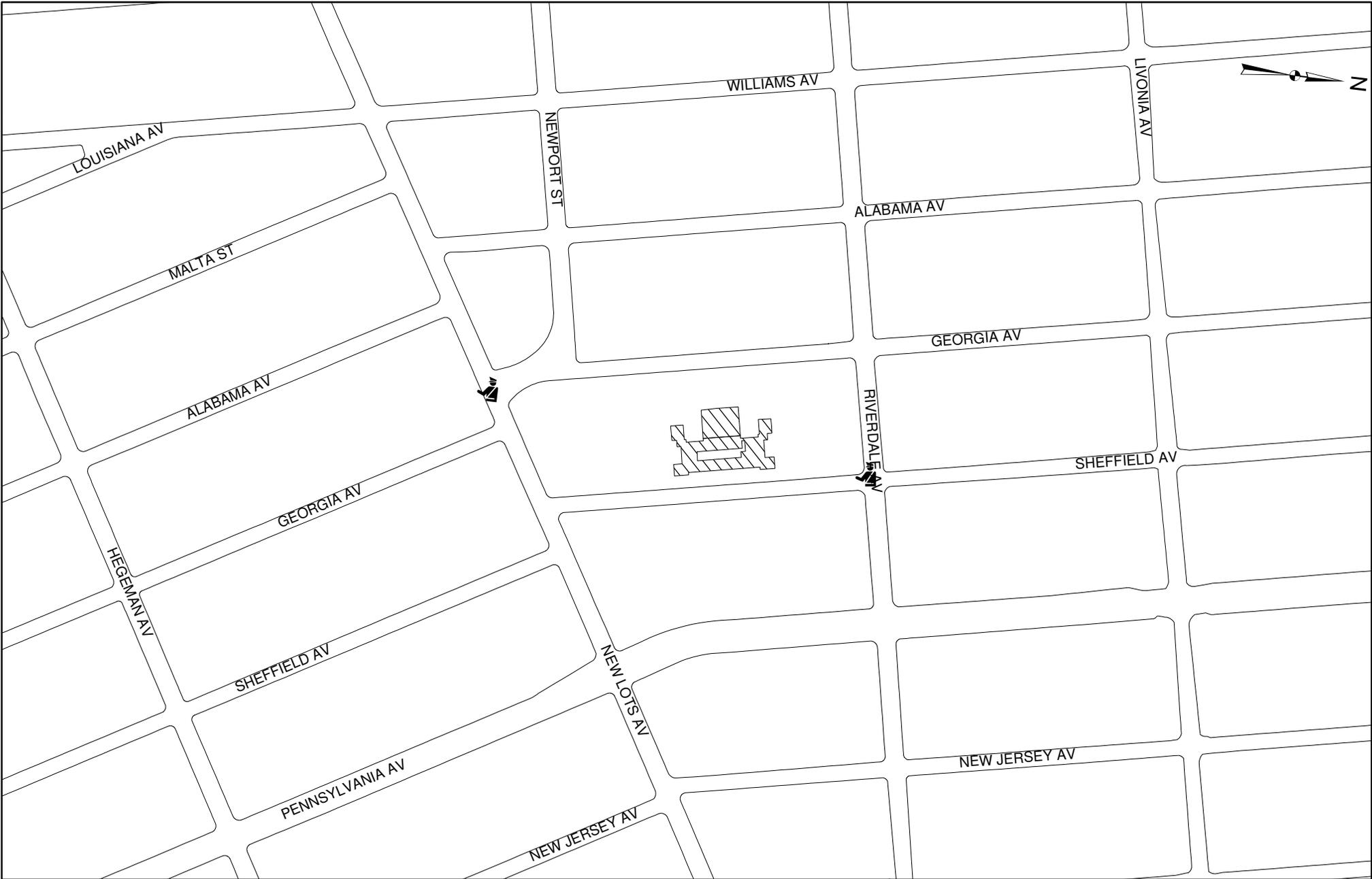
- SCHOOL LOCATION
- SCHOOL CROSSWALK
- TRAFFIC SIGNAL
- ALL - WAY STOP
- SPEED REDUCER

**PS 190 Brooklyn**  
**SHEFFIELD SCHOOL**

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

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

COMM. BOARD: 305  
 PRECINCT: 75



1 inch equals 250 feet



Crossing guard assigned to P.S. 190

**EXHIBIT 4**  
**P.S. 190, BROOKLYN**  
**SHEFFIELD SCHOOL**

**CROSSING GUARDS**

### 3. TRAFFIC OPERATIONS

#### 3.1 SCHOOL BUS OPERATIONS

According to school representatives, ten school buses are assigned to P.S. 190, and two school buses are assigned to I.S. 311. Three school buses, carrying disabled students, drop students off on Sheffield Avenue, near the school's main entrance. All other school buses pick up and drop off students on Georgia Avenue.

School buses park or double park, depending on traffic conditions while dropping off or picking up students.



*Figure 3: Double-parked school bus on Sheffield Avenue in front of P.S. 190*

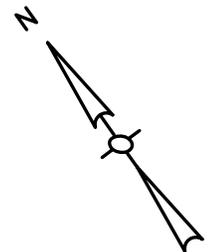
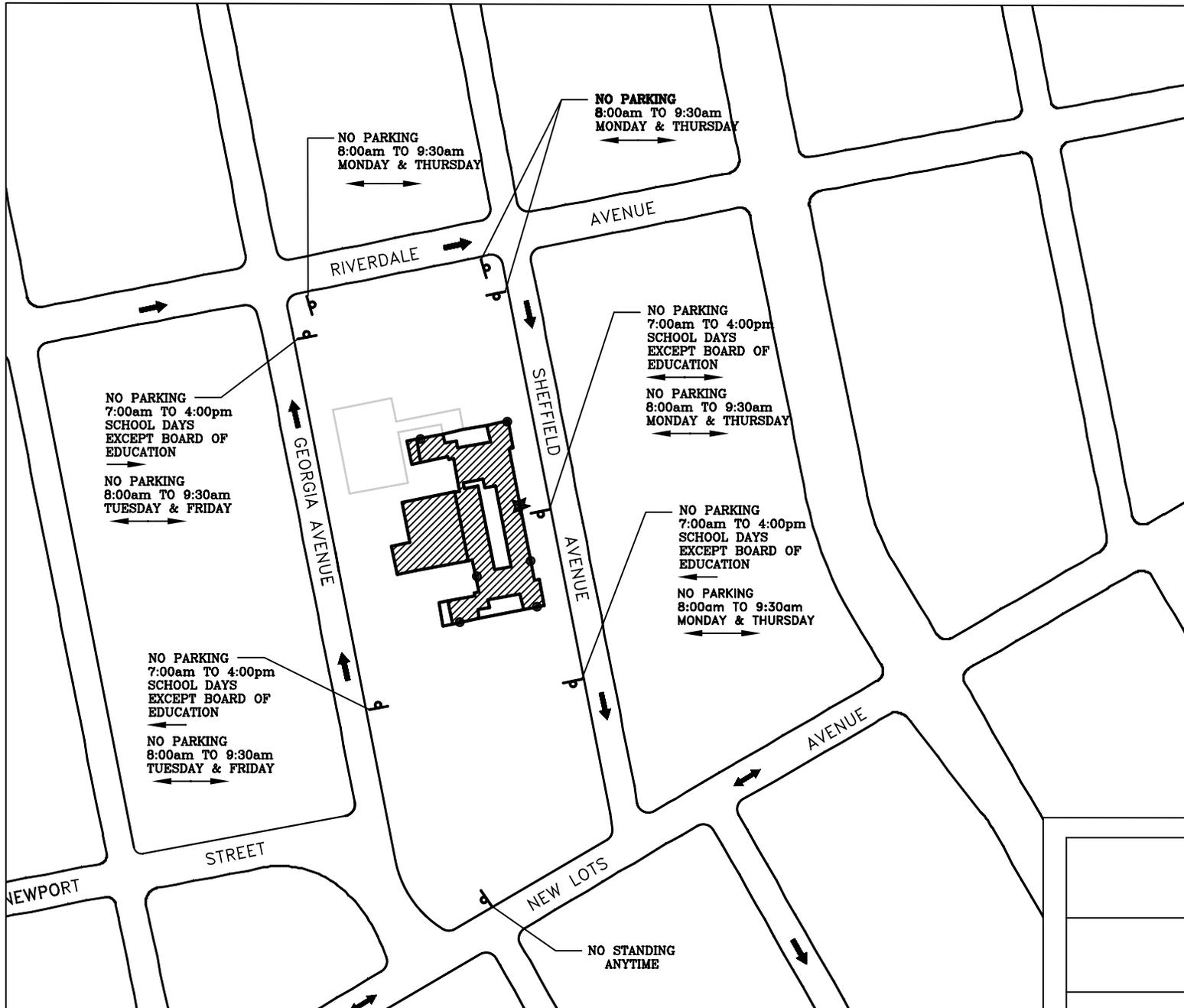
#### 3.2 PARENT DROP-OFF OPERATIONS

School officials have indicated that approximately 3% of P.S. 190 and 5% of I.S. 311 students are driven to and from school by parents or guardians. Field observations taken on May 25, 2004 indicated that parents use both Georgia Avenue and Sheffield Avenue as student drop-off points. Although vehicles are mostly double-parked, the resulting congestion created is moderate.

#### 3.3 PARKING REGULATIONS

“NO PARKING, SCHOOL DAYS, 7 AM - 4 PM, EXCEPT BOARD OF EDUCATION” parking regulations are posted on Sheffield Avenue and Georgia Avenue. Parking is prohibited on alternating sides of the roadways between 8:00 am and 9:30 am.

Exhibit 5 shows parking regulations on the roadways surrounding the school.



**LEGEND**

- ★ MAIN ENTRANCE
- OTHER ENTRANCES
- STREET SIGN

**MAY 25, 2004**

**EXHIBIT 5**

**P.S. 190**

**EXISTING PARKING REGULATIONS**

SCALE: 1" : 150'

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

The Traffic Safety Map, Exhibit 3, shows existing 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 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” 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. 190 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 accidents. Table 3 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the DMV data.

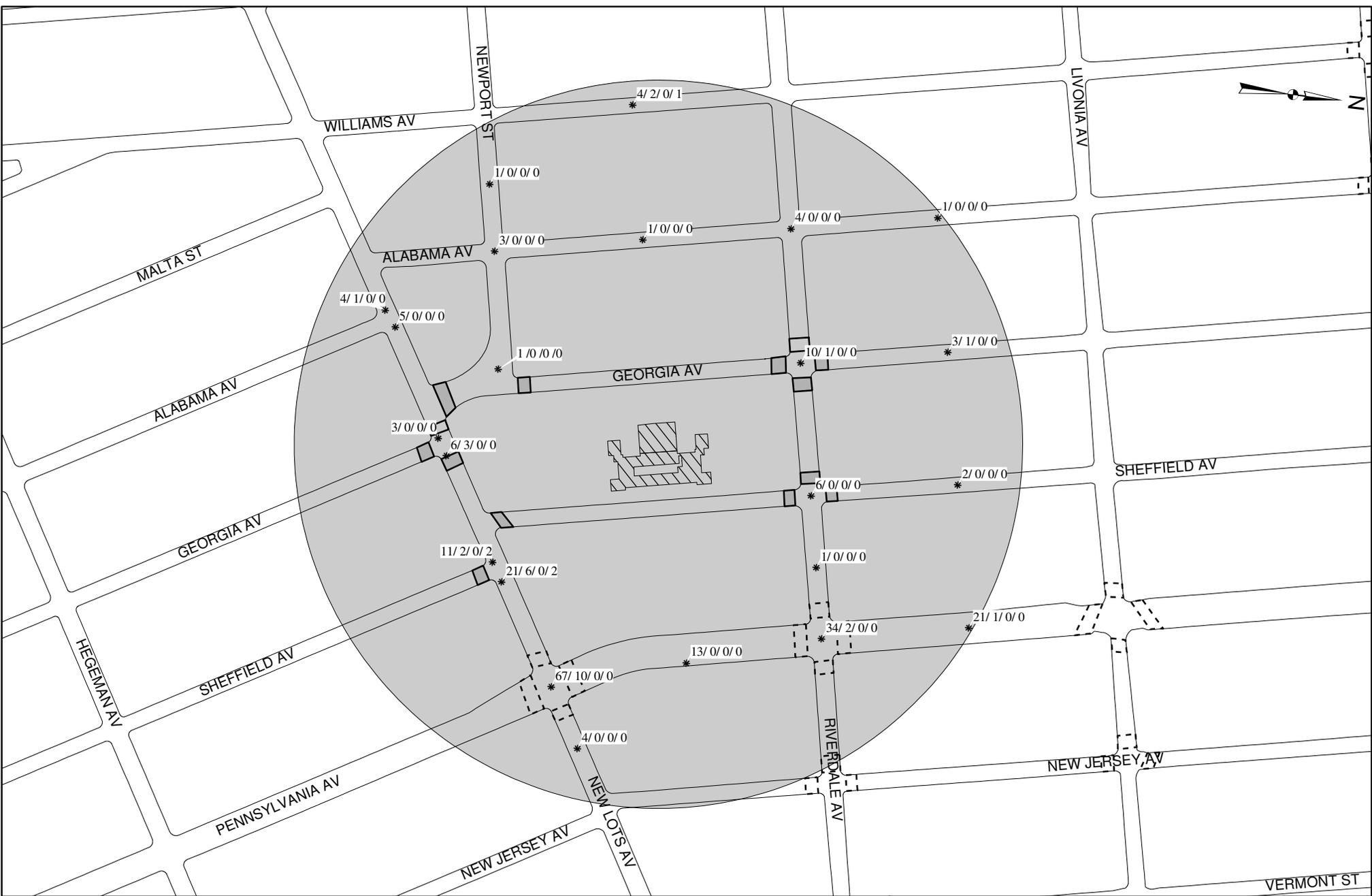
This report targets intersections closest to the school where the highest concentration of student pedestrians occurs. Intersections farther from the school and locations for which detailed data was not available at the time of this study will be addressed with the ongoing work of DOT’s School Safety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

<b>TABLE 2: 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>
Sheffield Avenue and New Lots Avenue	32	8	0	4
Georgia Avenue and New Lots Avenue	9	3	0	0
Georgia Avenue and Newport Street	1	0	0	0
Riverdale Avenue and Georgia Avenue	10	1	0	0
Riverdale Avenue and Sheffield Avenue	6	0	0	0
<b>TOTAL</b>	<b>58</b>	<b>12</b>	<b>0</b>	<b>4</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>
Sheffield Avenue and New Lots Avenue	37	7	0	2
Georgia Avenue and New Lots Avenue	9	1	0	1
Georgia Avenue and Newport Street**	2	1	0	-
Riverdale Avenue and Georgia Avenue	10	0	0	0
Riverdale Avenue and Sheffield Avenue**	14	1	0	-
<b>TOTAL</b>	<b>72</b>	<b>10</b>	<b>0</b>	<b>3</b>

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

\*\* NYPD accident data does not always provide pedestrian age or accident time



1 inch equals 250 feet

- ACCIDENT LOCATION \*
- SCHOOL CROSSWALK ASSIGNED TO P.S. 190
- SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL
- CROSSWALK

X/X/X/X

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

**EXHIBIT 6**

**P.S. 190, BROOKLYN  
SHEFFIELD SCHOOL  
ACCIDENT SUMMARY  
THREE YEAR PERIOD  
1998-2000**

### 3.6 TRAFFIC OPERATIONS AND ISSUES

The following outlines the traffic accidents and operations issues at the intersections in the vicinity P.S. 190.

#### 3.6.1 Sheffield Avenue and New Lots Avenue

Sheffield Avenue is a 30-foot wide, one-way southbound roadway with one travel lane and parking on both sides. New Lots Avenue is a 36-foot wide, two-way roadway with one travel lane in each direction and parking on both sides. Sheffield Avenue and New Lots Avenue is an un-signalized offset intersection with a stop sign on Sheffield Avenue for southbound traffic. There are school crosswalks on the north and south legs of the intersection.

Thirty-two accidents occurred at this intersection during the 1998-2000 study period. Eight accidents involved pedestrians, four involved school children. According to accident records, five pedestrians were struck while crossing at locations with no pedestrian crosswalks by eastbound or westbound moving vehicles. This suggests that pedestrians tend to cross New Lots Avenue at this intersection instead of going to adjacent signalized intersections, although no pedestrian crossing is provided. The other three accidents were attributed to driver error (due to unsafe backing-up and driver inattention). School officials noted that right turning vehicles (from the New Lots Avenue onto Sheffield Avenue) do not yield to crossing pedestrians. For this reason school officials cited this intersection as a primary safety concern for students. However, accident data and field observations suggest that the main reason for the high number of pedestrian accidents is pedestrian jaywalking across New Lots Avenue.



*Figure 4: Sheffield Avenue at New Lots Avenue (looking east)*

To determine the level of pedestrian-vehicle conflict, one-hour turning movement counts were conducted on September 4, 2004 between 7:30 am and 8:30 am. The traffic count shows that 154 pedestrians crossed New Lots Avenue at Sheffield Avenue (see Exhibit 7B). Based on MUTCD Section 4C.05 Signal Warrant 4 (Pedestrian Volume) the need for a traffic control signal at an intersection shall be considered if an engineering study finds that the pedestrian volume crossing the major street at an intersection during an

average day is 190 or more during any one hour. Therefore, the existing conditions do not meet warrants for the installation of a traffic signal.

A signal warrant study based on Warrant 6 (Coordinated Signal System) for this intersection performed by NYCDOT in September of 2006 found that this intersection did not meet this signal warrant criteria.



*Figure 5: The intersection of New Lots Avenue and Georgia Avenue (on New Lots Avenue looking east)*

### 3.6.2 New Lots Avenue and Georgia Avenue

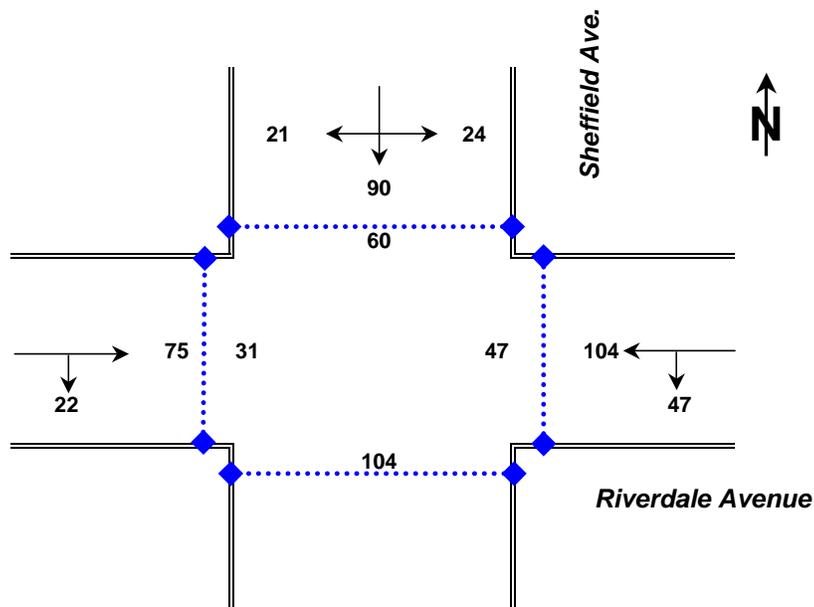
Georgia Avenue is a 30-foot wide one-way (northbound) street with one travel lane and parking on both sides. It is an offset intersection. The intersection of the south leg of Georgia Avenue and New Lots Avenue is signal controlled, but the north leg of the intersection is uncontrolled. There are school crosswalks on the north, south and east legs of the intersection. Therefore, the school crosswalk on the north leg of the intersection is uncontrolled. However, a school crossing guard is assigned to this intersection.

Nine accidents occurred at this intersection during the 1998-2000 study period. Three accidents involved pedestrians. None were school-related. Two pedestrian accidents were attributed to pedestrians crossing against the signal. No data was provided for the third pedestrian accident.

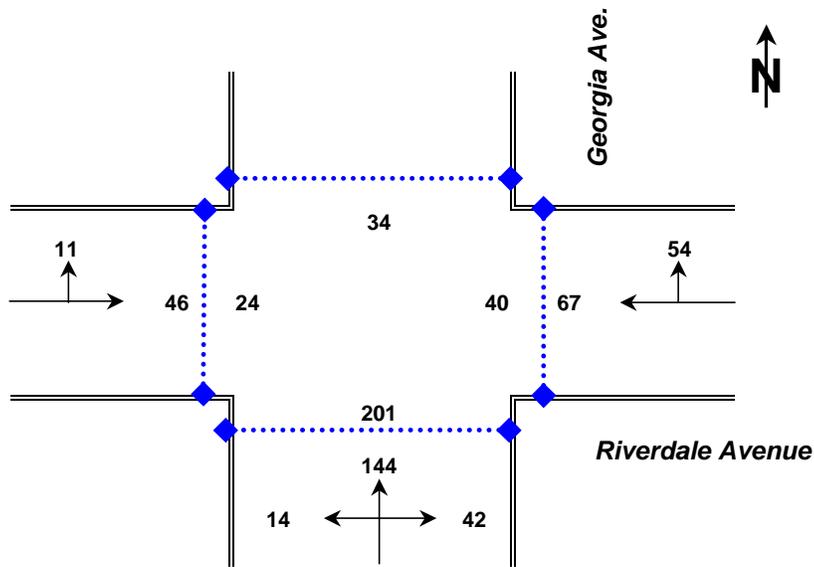


*Figure 6: New Lots Avenue  
(looking west) at Georgia Avenue*

**One Hour Traffic Count Volumes**



*Intersection of Riverdale Avenue and Sheffield Avenue (7:30 am-8:30 am, April 6, 2005)*

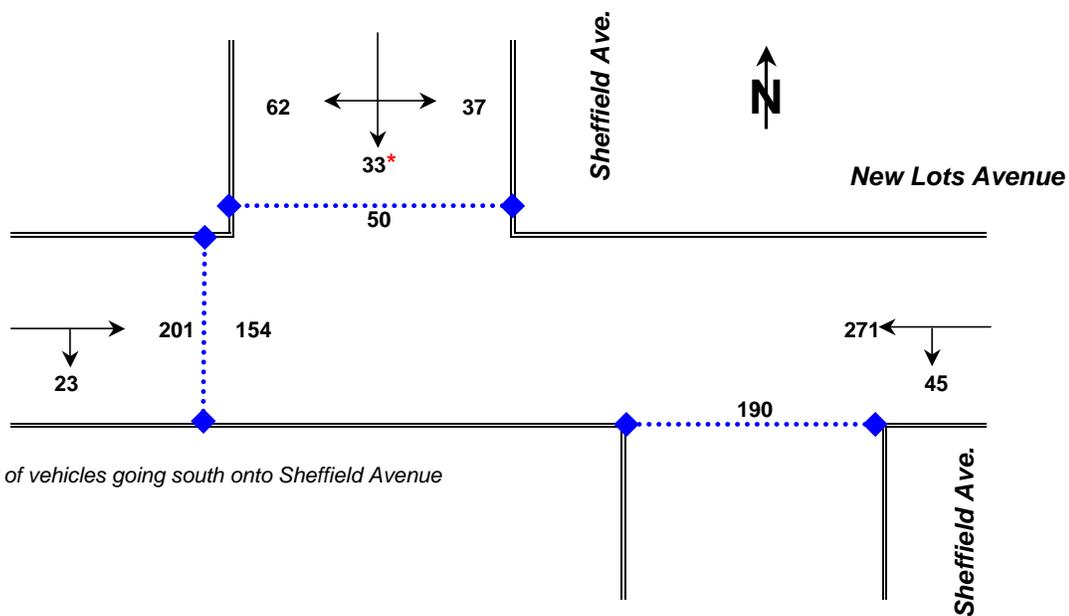


*Intersection of Georgia Ave and Riverdale Ave (7:30am - 8:30 am, Sept. 13, 2004)*

- ◆.....◆ Number of Pedestrians
- ◆.....◆ Pedestrian Crossing
- ←..... Number of Vehicles
- ←..... Vehicle Movement

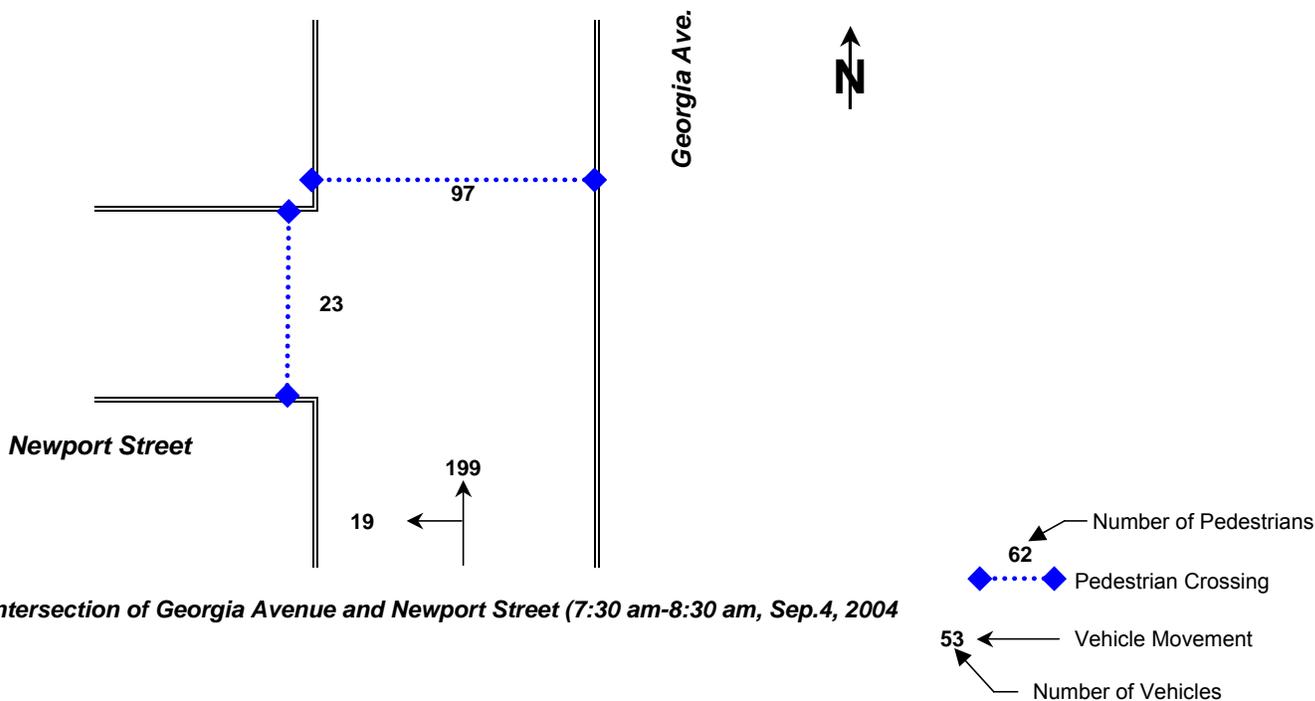
<b>EXHIBIT 7A</b>
<b>P.S. 190, BROOKLY</b>
<b>TRAFFIC COUNTS</b>

**One Hour Traffic Count Volumes**



\* Note: Number of vehicles going south onto Sheffield Avenue

*Intersection of New Lots Avenue and Sheffield Avenue (7:30 am-8:30 am, September 4, 2004)*



*Intersection of Georgia Avenue and Newport Street (7:30 am-8:30 am, Sep.4, 2004)*

<b>EXHIBIT 7B</b>
<b>P.S. 190, BROOKLYN</b>
<b>TRAFFIC COUNTS</b>

### 3.6.3 Newport Street and Georgia Avenue

Newport Street is a 36-foot wide, one-way (westbound) roadway with one travel lane and parking on both sides. Newport Street terminates at this intersection. This is an uncontrolled T-intersection with a school crosswalk on the north leg of Georgia Avenue.

One-hour traffic counts were performed on September 4, 2004 from 7:30 am to 8:30 am (Exhibit 7B). A total of 97 pedestrians crossed uncontrolled Georgia Avenue during this hour, while conflicting with 199 vehicles traveling on Georgia Avenue. Based on MUTCD Section 4C.05 Signal Warrant 4 (Pedestrian Volume) the need for a traffic control signal at an intersection shall be considered if an engineering study finds that the pedestrian volume crossing the major street at an intersection during an average day is 190 or more during any one hour. Therefore, the existing conditions do not meet warrants for the installation of a traffic signal.

One accident occurred at this intersection during the 1998-2000 study period. No pedestrians were struck during this period.



*Figure 7: School crosswalk at Georgia Avenue and Newport Street*

### 3.6.4 Riverdale Avenue and Georgia Avenue

Riverdale Avenue is a 36-foot wide, two-way roadway with one travel lane in each direction and parking on both sides. Riverdale Avenue and Georgia Avenue is an unsignalized intersection with a stop sign on the south leg of Georgia Avenue for northbound traffic (see Figure 8). There are school crosswalks on the north, south and east leg of the intersection. There is an uncontrolled school crosswalk on the east leg where students cross Riverdale Avenue to reach the school.

One-hour traffic counts were performed on September 13, 2004 from 7:30 am to 8:30 am (Exhibit 7A). A total of 64 pedestrians crossed uncontrolled Riverdale Avenue during this hour, while conflicting with 178 vehicles traveling on Riverdale Avenue. Based on MUTCD Section 4C.05 Signal Warrant 4 (Pedestrian Volume) the need for a traffic control signal at an intersection shall be considered if an engineering study finds that the pedestrian volume crossing the major street at an intersection during an average day is

190 or more during any one hour. Therefore, the existing conditions do not meet warrants for the installation of a traffic signal.

Ten accidents occurred at this intersection, including one pedestrian accident, but no fatalities or school related accidents were reported.

The pedestrian ramp is missing at the northwest corner, due to a utility pole obstruction. All four corners need new standard pedestrian ramps.



*Figure 8: Riverdale Avenue at Georgia Avenue (on Riverdale Avenue looking west)*

### 3.6.5 Riverdale Avenue and Sheffield Avenue

Riverdale Avenue and Sheffield Avenue is an un-signalized intersection with a stop sign on the north leg of Sheffield Avenue for southbound traffic. There are school crosswalks on the north, south and west legs of the intersection. There is an uncontrolled school crosswalk on the west leg where students cross Riverdale Avenue to reach the school.

School officials identified this intersection as a primary school crossing, and asked for this intersection to be signalized. However, a complete Signal Warrant Study for this intersection was conducted by the NYCDOT in April 2005. According to the DOT findings this intersection did not meet any warrants for a traffic signal (see Appendix for detail). In addition, one-hour traffic counts were performed to determine the level of vehicle and pedestrian conflicts at this intersection. The traffic counts and a gap study were performed on April 6, 2005 between 7:30 am and 8:30 am. Traffic count results are shown in Exhibit 7A. The consultant findings also indicate that current level of traffic does not meet signal warrant criteria.

The northwest and northeast corners of the intersection do not have pedestrian ramps, and other corners have substandard ramps. This is one of the intersections that have a crossing guard assigned to P.S. 190.

There were six accidents at this intersection during the 1998-2000 study period. There were no pedestrian accidents during this time.

### 3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of P.S. 190, and found to be adequate for a child pedestrian walking rate of three feet per second plus three second reaction time in all directions and approaches.

<b>TABLE 4: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS</b>				
Intersection Name	Crosswalk Width (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)	Timing Adjustment? (Yes/No)
<b>New Lots Ave and Georgia Ave</b>				
Crossing New Lots Avenue	35	24	15	NO
Crossing Georgia Avenue	28	36	13	NO
<b>New Lots Ave and Williams Ave</b>				
Crossing New Lots Avenue	35	24	15	NO
Crossing Williams Avenue	30	36	13	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. The exception is the north side of New Lots Avenue, between Sheffield Avenue and Georgia Avenue where sidewalks are cracked and overgrown with vegetation (see Figure 10). The intersection of Georgia Avenue (north leg) and New Lots Avenue is wide with poorly defined alignment. The pedestrian crossing on the north side of New Lots Avenue is long due to the large turning radius at this corner.



*Figure 9: Sidewalk on Georgia Avenue (looking south)*



*Figure 10: Northwest corner of New Lots and Georgia Avenue covered with vegetation and grass*

#### 4. POTENTIAL 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

- 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.

- No-Standing Zone on Sheffield and Georgia Avenues

“NO STANDING 7:00 AM – 4:00 PM, SCHOOL DAYS” parking regulations should be considered in front of school entrances on both Sheffield and Georgia Avenues for a length of 60 feet to provide sufficient clear frontage for school buses to drop-off and pick-up students (see Exhibit 8). The existing teacher parking will be relocated south of the No Standing Zone.

- Install new school crosswalks at the following locations:

Install school crosswalks at these intersections to facilitate continuous school walking routes.

- New Lots Avenue and Williams Avenue – south leg
- New Lots Avenue and Malta Street – south leg
- New Lots Avenue and Alabama Street – south leg

- 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.

- Install/replace pedestrian ramps

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

- Riverdale Avenue and Georgia Avenue – northeast, southwest, and southeast corners
- Riverdale Avenue and Sheffield Avenue – all four corners

- Newport Street and Georgia Avenue – north-east and northwest corners

- Submit Request to Police Department for Crossing Guard

Sheffield Avenue and New Lots Avenue is an un-signalized offset intersection with a stop sign on the north leg of Sheffield Avenue for southbound traffic. There are school crosswalks on the north and south legs of this intersection. Eight pedestrian accidents occurred at this location during the 1998-2000 study period, four of which were school-related. As described in Section 3.6.1, the existing conditions do not meet warrants for the installation of a traffic signal. Therefore, it is recommended that a crossing guard be requested for Sheffield Avenue and New Lots Avenue to assist student pedestrians to cross south leg of Sheffield Avenue.

In conjunction with the crossing guard it is also recommended that a new school crosswalk be installed across New Lots Avenue at the intersection of Sheffield Avenue.

- Install a speed reducer (hump) on Sheffield Avenue and Georgia Avenue

The school officials believed that vehicles were speeding on the following two locations:

- Sheffield Avenue between New Lots Avenue and Riverdale Avenue
- Georgia Avenue between New Lots Avenue and Riverdale Avenue

Therefore, spot speed studies were conducted on Sheffield Avenue and Georgia Avenue between New Lots Avenue and Riverdale Avenue on March 3, 2005.

Spot speed studies confirmed that the 85<sup>th</sup> percentile speed was 31 mph on Sheffield Avenue and 33 mph on Georgia Avenue, both of which exceed the statutory speed limit of 30 mph. To reduce speeding in the vicinity of the school, installation of speed reducers (humps) is recommended on Sheffield Avenue and Georgia Avenue. The location and number 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 STUDIES</b>		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
Sheffield Avenue between New Lots Avenue and Riverdale Avenue	28	31
Georgia Avenue between New Lots Avenue and Riverdale Avenue	29	33

- *Install a stop sign on Georgia Avenue at Newport Street*

Georgia Avenue and Newport Street is an un-signalized T-intersection with an uncontrolled school crosswalk on the north leg. As described in Section 3.6.3, a total of 97 pedestrians crossed uncontrolled Georgia Avenue during the study hour. Therefore, it is recommended that a stop sign be installed on the south leg of Georgia Avenue for northbound traffic and a standard pedestrian crosswalk be installed on the west leg of this intersection. New standard pedestrian ramps should be installed with new pedestrian crosswalk.

#### 4.2 LONG-TERM MEASURES

- *New sidewalk on New Lots Avenue between Georgia Avenue and Sheffield Avenue*

The north sidewalk should be reconstructed from Georgia Avenue to Sheffield Avenue.

- *Revise geometry of Georgia Avenue between New Lots Avenue and Newport Street*

Geometric reconfiguration may be considered for this intersection. This would include widening of west and east sidewalk to provide uniform roadway of reduced width, and curb extension of southwest corner of the intersection (see Exhibit 8). Final details pertaining to the geometry will be developed during the Final Design/Contract Document preparation.

In conjunction with the realignment, it is recommended that school crosswalks be provided on the north and west leg of the intersection.

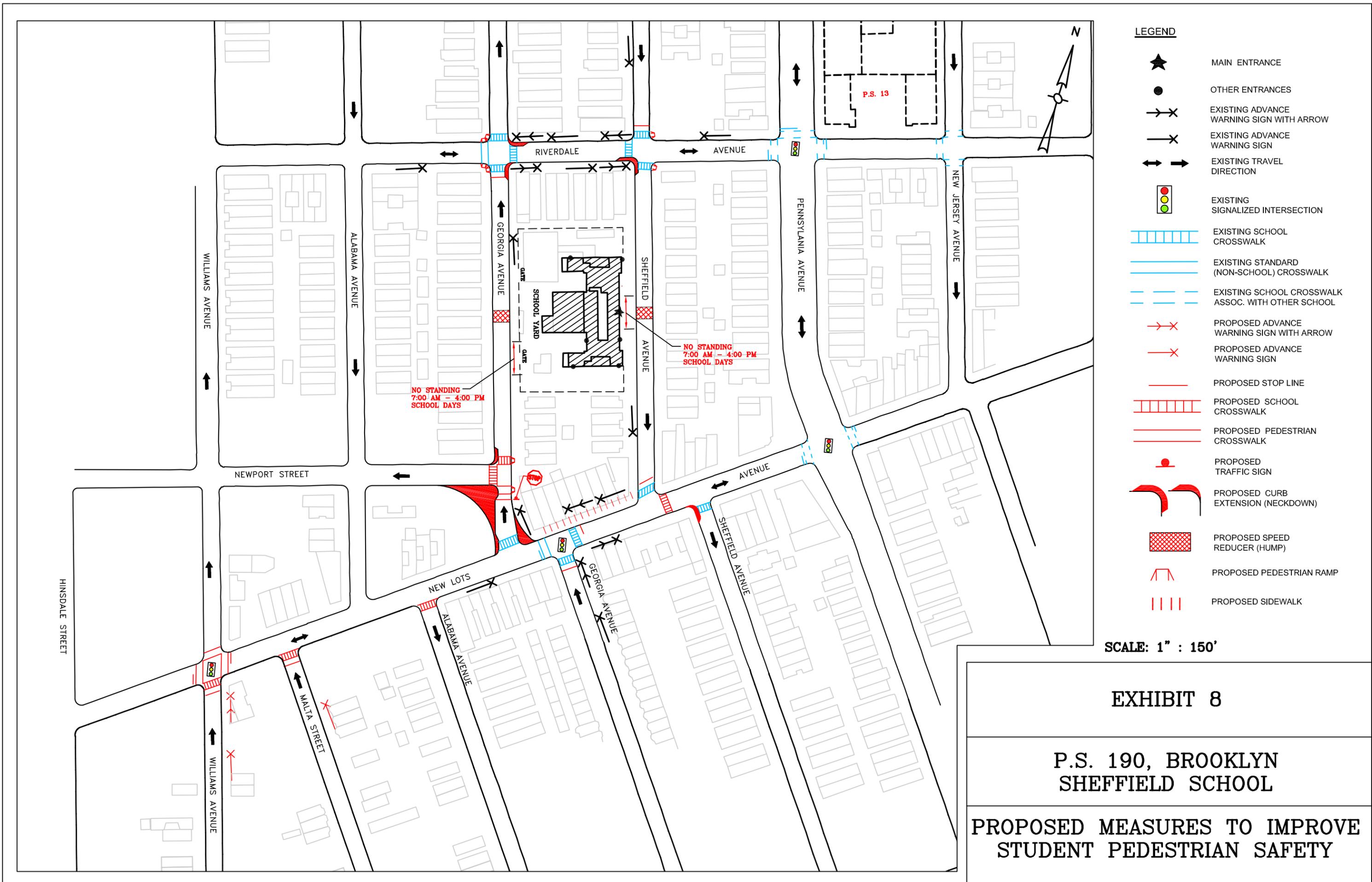
- *Consider curb extensions at the following intersections:*

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.

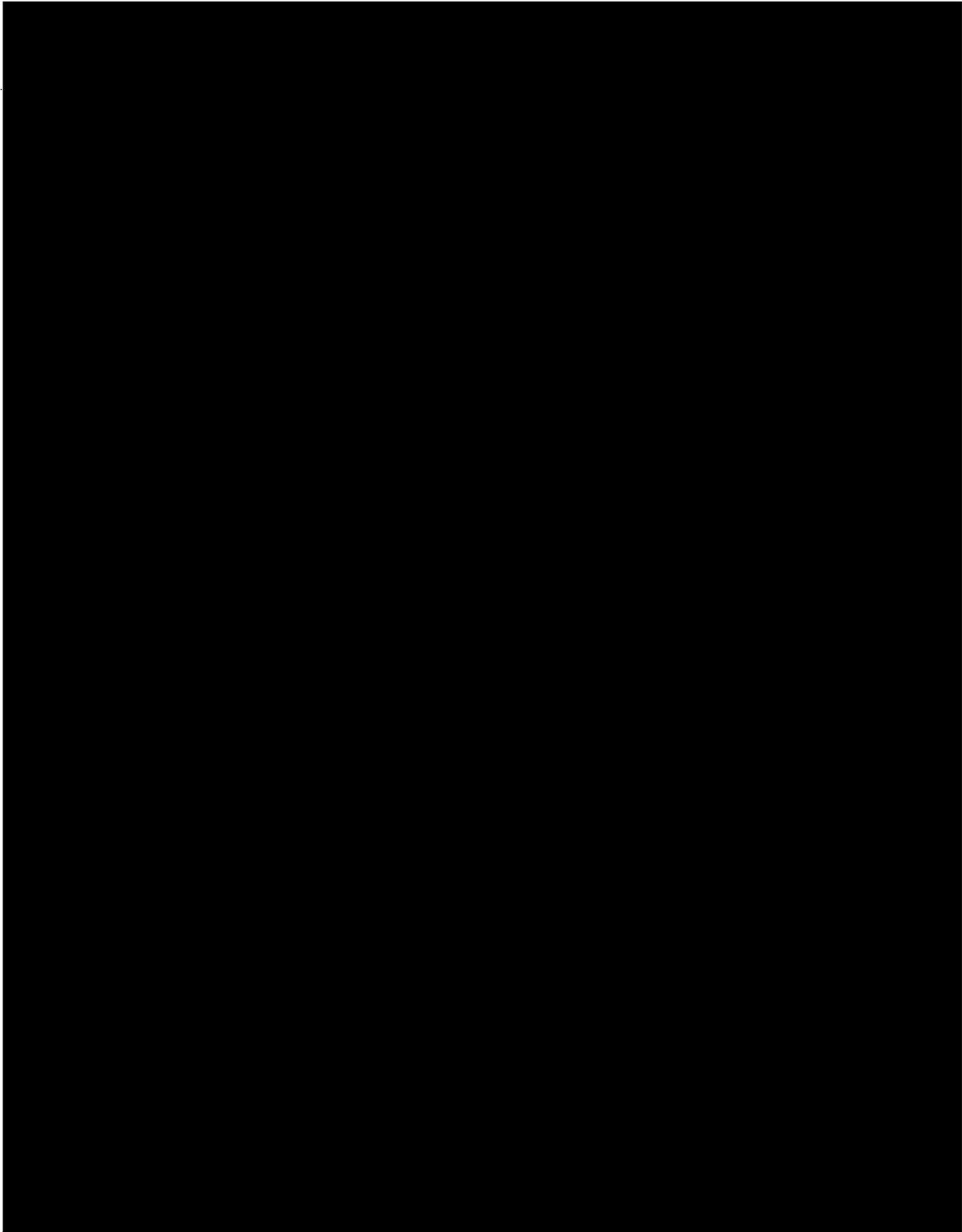
- Georgia Avenue and Riverdale Avenue
- Sheffield Avenue and Riverdale Avenue
- Sheffield Avenue and New Lots Avenue

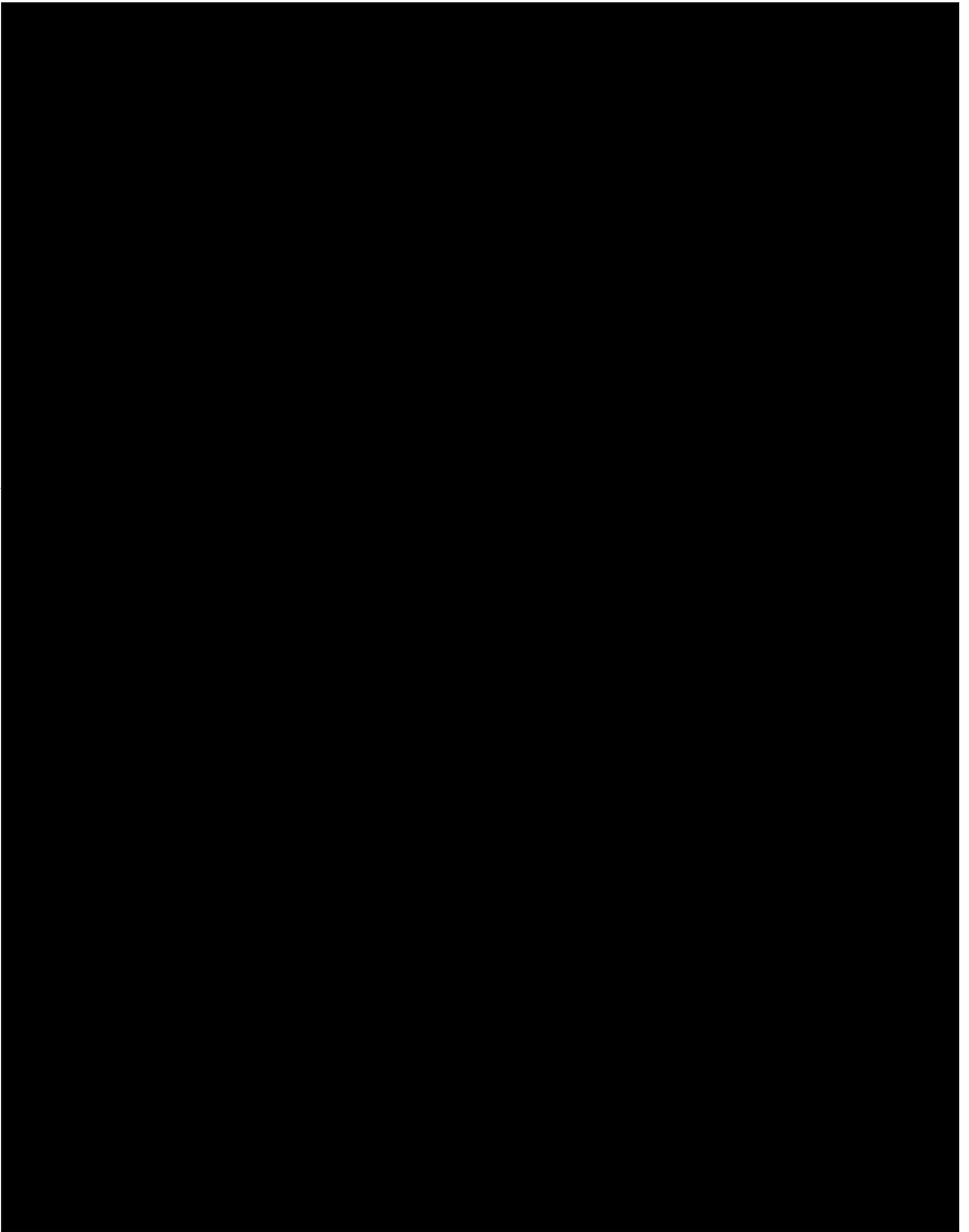
Curb extensions should be installed at the corners as shown in Exhibit 8.

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



# APPENDIX

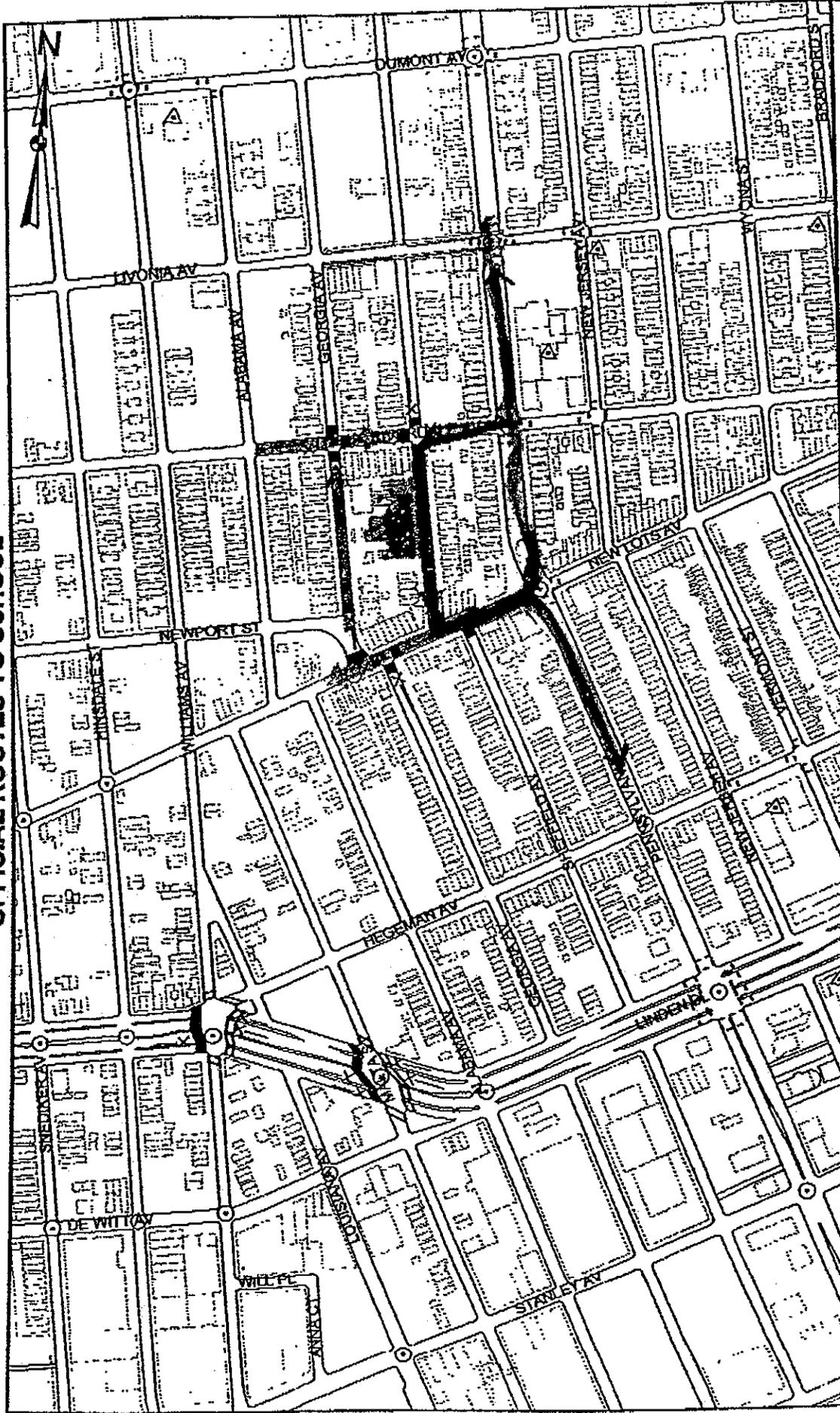




NEW YORK CITY  
DEPT. OF TRANSPORTATION

**TRAFFIC SAFETY PLAN  
OFFICIAL ROUTES TO SCHOOL**

BUREAU OF TRAFFIC



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 route and use the designated crosswalks.

**LEGEND:**

- TRAFFIC SIGNAL ○
- SCHOOL X-WALK [thick line]
- ROUTE TO SCHOOL [thick line]
- ADV. WARNING SIGN [arrow]
- SCHOOL LOCATION [triangle]
- MAIN SCHOOL ENTRANCE [star]
- OTHER SCHOOL ENTRANCES [diamond]
- PED. X-WALK [dashed line]
- STOP LINE [dotted line]
- X-WALKS ASSOCIATED WITH OTHER SCHOOLS [dashed line]
- ALL-WAY STOP [circle with diagonal line]
- 2-WAY STOP [circle with vertical line]
- SPEED HUMP [bump symbol]

**SHEFFIELD SCHOOL**

**P. S. 190**

Prepared by the NEW YORK CITY DEPARTMENT OF TRANSPORTATION  
 via Historical Commissioner, in cooperation with SCHOOL, and  
 POLICE OFFICIALS.

ORIG. DATE: 8/22/1953  
 CAS CONV'T: 04/12/52  
 REVISIONS: \_\_\_\_\_  
 DRAWING NO. CC-302  
 NS-3108  
 COMM. BOARD, BROOKLYN  
 BOROUGH: \_\_\_\_\_  
 PRECINCT: \_\_\_\_\_

## SPOT SPEED STUDY

Date: **March 3, 2005**                      Time: **10:00 am - 11:00 am**  
 Location: **Sheffield Avenue btw. New Lots Avenue & Riverdale Avenue**  
 Surveyor: **The RBA Group**

School: **P.S. 190**  
 Direction: **North-South**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	0	0.0%	0.0%	0	0
24	4	14.3%	14.3%	96	2304
25	4	14.3%	28.6%	100	2500
26	3	10.7%	39.3%	78	2028
27	4	14.3%	53.6%	108	2916
28	2	7.1%	60.7%	56	1568
29	5	17.9%	78.6%	145	4205
30	2	7.1%	85.7%	60	1800
31	0	0.0%	85.7%	0	0
32	1	3.6%	89.3%	32	1024
33	2	7.1%	96.4%	66	2178
34	0	0.0%	96.4%	0	0
35	1	3.6%	100.0%	35	1225
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
	28	100.0%		776	21748

Mean Speed = 27.7 mph  
 Standard Deviation = 3.0 mph  
 Margin of Error (95% Confidence) = ± 1.1 mph

Median Speed = 27.7 mph  
 15th Percentile Speed = 24.6 mph  
 85th Percentile Speed = 30.8 mph

# SPOT SPEED STUDY

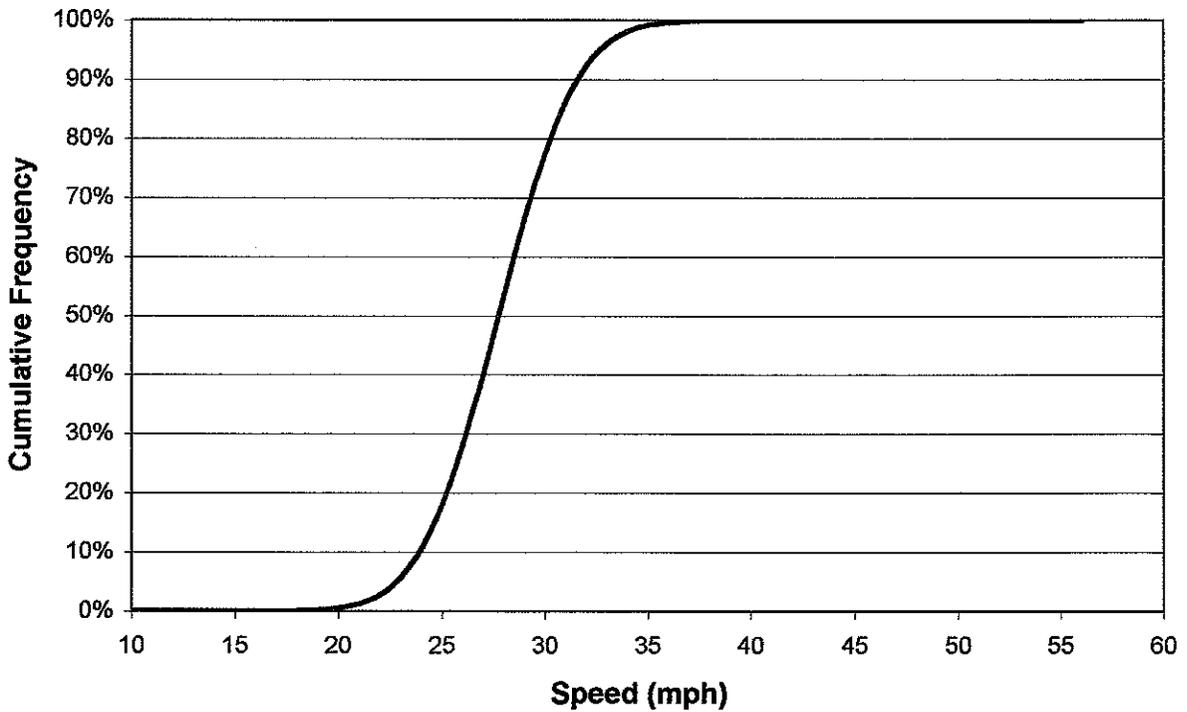
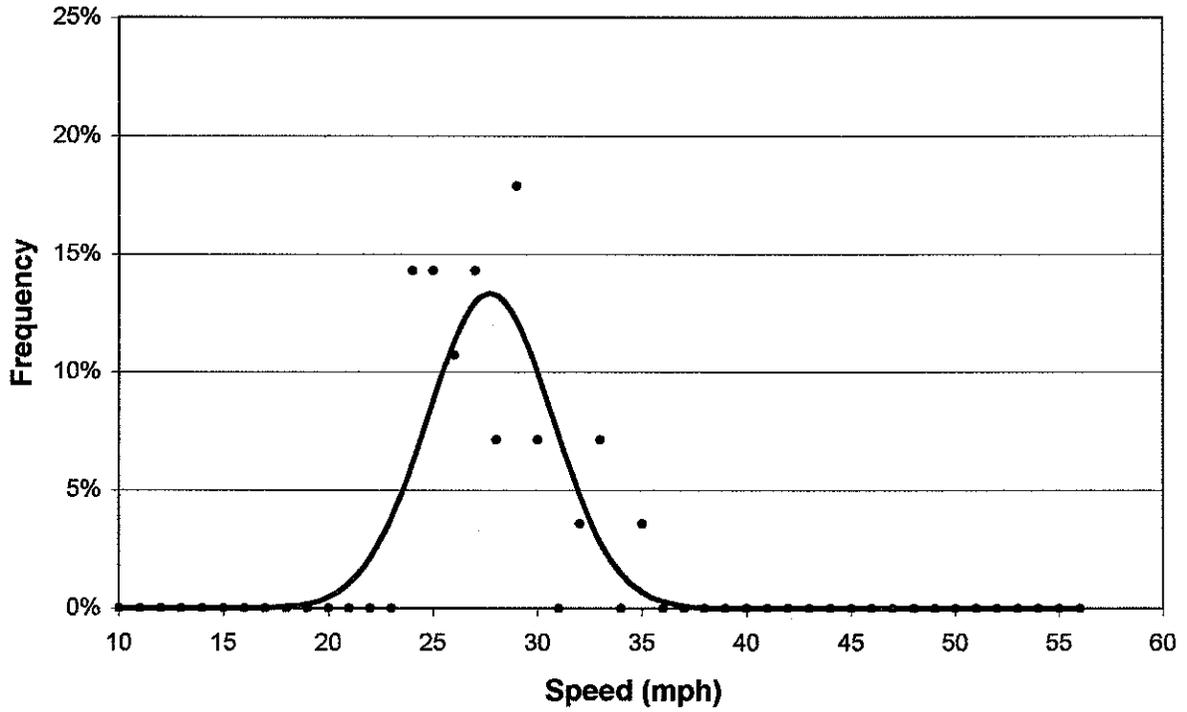
Date: **March 3, 2005**  
Location: **Sheffield Avenue btw. New Lots Avenue & Riverdale Avenue**  
Surveyor: **The RBA Group**

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

School: **P.S. 190**  
Direction: **North-South**  
Comments:

Mean Speed = 27.7 mph  
Standard Deviation = 3.0 mph  
Margin of Error (95% Confidence) =  $\pm 1.1$  mph

Median Speed = 27.7 mph  
15th Percentile Speed = 24.6 mph  
85th Percentile Speed = 30.8 mph



## SPOT SPEED STUDY

Date: **March 3, 2005**                      Time: **9:00 am - 10:00 am**  
 Location: **Georgia Avenue btw. New Lots Avenue & Riverdale Avenue**  
 Surveyor: **The RBA Group**

School: **P.S. 190**  
 Direction: **North-South**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	0	0.0%	0.0%	0	0
24	10	11.8%	11.8%	240	5760
25	10	11.8%	23.5%	250	6250
26	7	8.2%	31.8%	182	4732
27	8	9.4%	41.2%	216	5832
28	6	7.1%	48.2%	168	4704
29	7	8.2%	56.5%	203	5887
30	7	8.2%	64.7%	210	6300
31	7	8.2%	72.9%	217	6727
32	7	8.2%	81.2%	224	7168
33	6	7.1%	88.2%	198	6534
34	3	3.5%	91.8%	102	3468
35	3	3.5%	95.3%	105	3675
36	1	1.2%	96.5%	36	1296
37	1	1.2%	97.6%	37	1369
38	0	0.0%	97.6%	0	0
39	1	1.2%	98.8%	39	1521
40	0	0.0%	98.8%	0	0
41	1	1.2%	100.0%	41	1681
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
	<b>85</b>	<b>100.0%</b>		<b>2468</b>	<b>72904</b>

Mean Speed = 29.0 mph  
 Standard Deviation = 3.8 mph  
 Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 29.0 mph  
 15th Percentile Speed = 25.0 mph  
 85th Percentile Speed = 33.0 mph

# SPOT SPEED STUDY

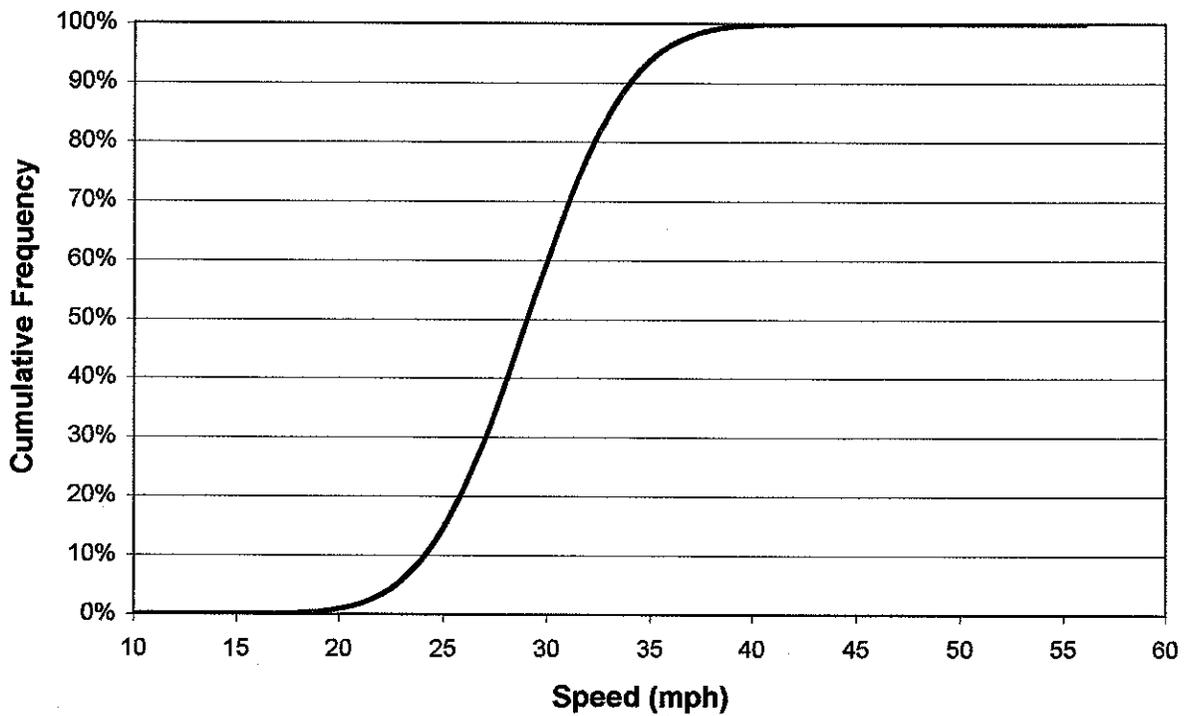
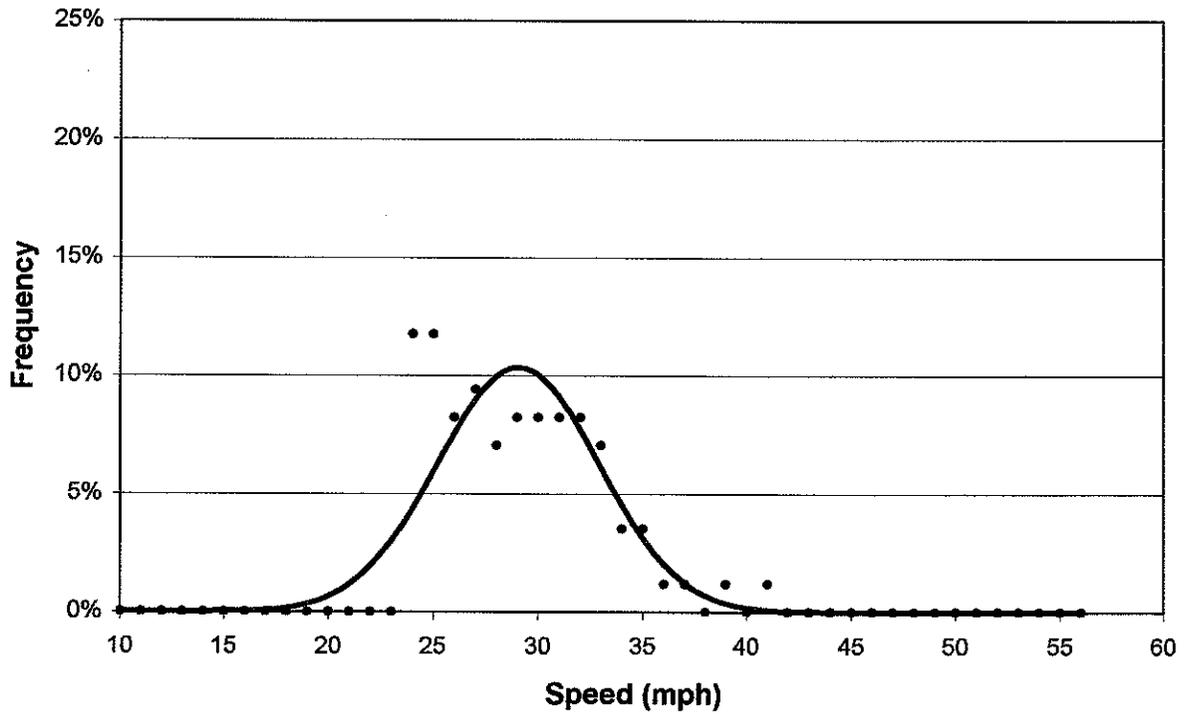
Date: **March 3, 2005**  
Location: **Georgia Avenue btw. New Lots Avenue & Riverdale Avenue**  
Surveyor: **The RBA Group**

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

School: **P.S. 190**  
Direction: **North-South**  
Comments:

Mean Speed = 29.0 mph  
Standard Deviation = 3.8 mph  
Margin of Error (95% Confidence) =  $\pm 0.8$  mph

Median Speed = 29.0 mph  
15th Percentile Speed = 25.0 mph  
85th Percentile Speed = 33.0 mph



R.	1	2	3	4	
EED	CK#1	CK#2	CK#3	CK#4	COMB.
82-83					
80-81					
78-79					
76-77					
74-75					
72-73					
70-71					
68-69					
66-67					
64-65					
62-63					
60-61					
58-59					
56-57					
54-55					
52-53					
50-51					
48-49					
46-47					
44-45					
42-43					
40-41					
38-39					
36-37					
34-35					
32-33					
30-31					
28-29					
26-27					
24-25					

SPEED DATA & ANALYSIS SHEET

Road Georgia Ave (BTWN.) Riverdale & New Lots  
 County Kings Town New Lots  
 Locality \_\_\_\_\_

Speed Characteristic	Check No.1	Check No.2	Check No.3	Check No.4	Comb.
85% Speed					
10-Mile Pace					
5 mi Pace					
Legal Limit					
% over Legal Limit					
% over MPH					
% over MPH					
% over MPH					

- Check No.1 Date: 3/30  
 1 Time: From 9:00 To 10:00 Weather: clear  
 Location: Georgia Ave @ Riverdale & New Lots  
 Pavement: \_\_\_\_\_
- 2 Check No.1 Date: 3/30  
 Time: From 10:00 To 11:00 Weather: \_\_\_\_\_  
 Location: Sheffield Ave @ Riverdale & New Lots  
 Pavement: \_\_\_\_\_
- 3 Check No.1 Date: 3/30  
 Time: From 11:30 To 12:30 Weather: \_\_\_\_\_  
 Location: Sullivan Pl @ Bedford & McKee  
 Pavement: \_\_\_\_\_
- 4 Check No.1 Date: 3/30  
 Time: From 1:00 To 2:00 Weather: \_\_\_\_\_  
 Location: 59th St. @ 6th & 7th  
 Pavement: \_\_\_\_\_

Sample

**SCHOOL SAFETY ENGINEERING PROJECT**

School: P.S. 190  
 Location: Riverdale Ave

Date: 4-6-05  
 Time: 7:30 - 8:30

	Gap Time	Veh #		Gap Time	Veh #		Gap Time	Veh #
1	18	1	41	51	2	81	17	1
2	19	2	42	5	2	82	12	1
3	20	1	43	3	1	83	35	1
4	9	1	44	2	1	84	15	1
5	1-06	2	45	13	1	85	29	2
6	21	2	46	17	1	86	4	1
7	1-40	4	47	20	1	87	2	2
8	18	1	48	7	1	88	29	1
9	10	2	49	4	1	89	12	1
10	12	1	50	15	2	90	12	2
11	8	1	51	3	1	91	14	1
12	13	2	52	9	1	92	3	2
13	18	2	53	16	2	93	24	1
14	33	2	54	10	1	94	2	1
15	10	2	55	14	1	95	3	1
16	50	2	56	8	1	96	3	1
17	25	2	57	23	1	97	2	2
18	32	1	58	17	1	98	3	1
19	3	3	59	7	1	99	2	23
20	5	1	60	10	1	100	59	1
21	4	1	61	3	1	101	45	1
22	4	1	62	16	1	102	3	1
23	7	1	63	10	1	103	3	2
24	15	1	64	4	2	104	4	1
25	4	2	65	2	3	105	3	1
26	43	1	66	46	1	106	5	1
27	3	1	67	30	1	107	12	1
28	5	1	68	26	2	108	13	2
29	4	1	69	4	2	109	12	1
30	7	2	70	8	1	110	21	1
31	25	1	71	36	1	111	6	2
32	22	1	72	1-04	1	112	28	1
33	49	1	73	8	1	113	2	1
34	25	1	74	6	1	114	2	2
35	2	1	75	10	1	115	6	3
36	33	2	76	5	1	116	27	1
37	20	1	77	3	1	117	10	1
38	5	1	78	31	1	118	14	1
39	3	1	79	5	1	119	14	1
40	25	1	80	2	1	120	6	1

\* Needed crossing time + start up for 36 feet wide street @ 3 ft/sec =  $\frac{36}{3} + 3 = 15$  sec  
 Total gaps (> 15 sec) = 12

Ray  
+  
TASHI

SCHOOL SAFETY ENGINEERING PROJECT

School: PS. 190  
Location: \_\_\_\_\_

Riverdale Ave

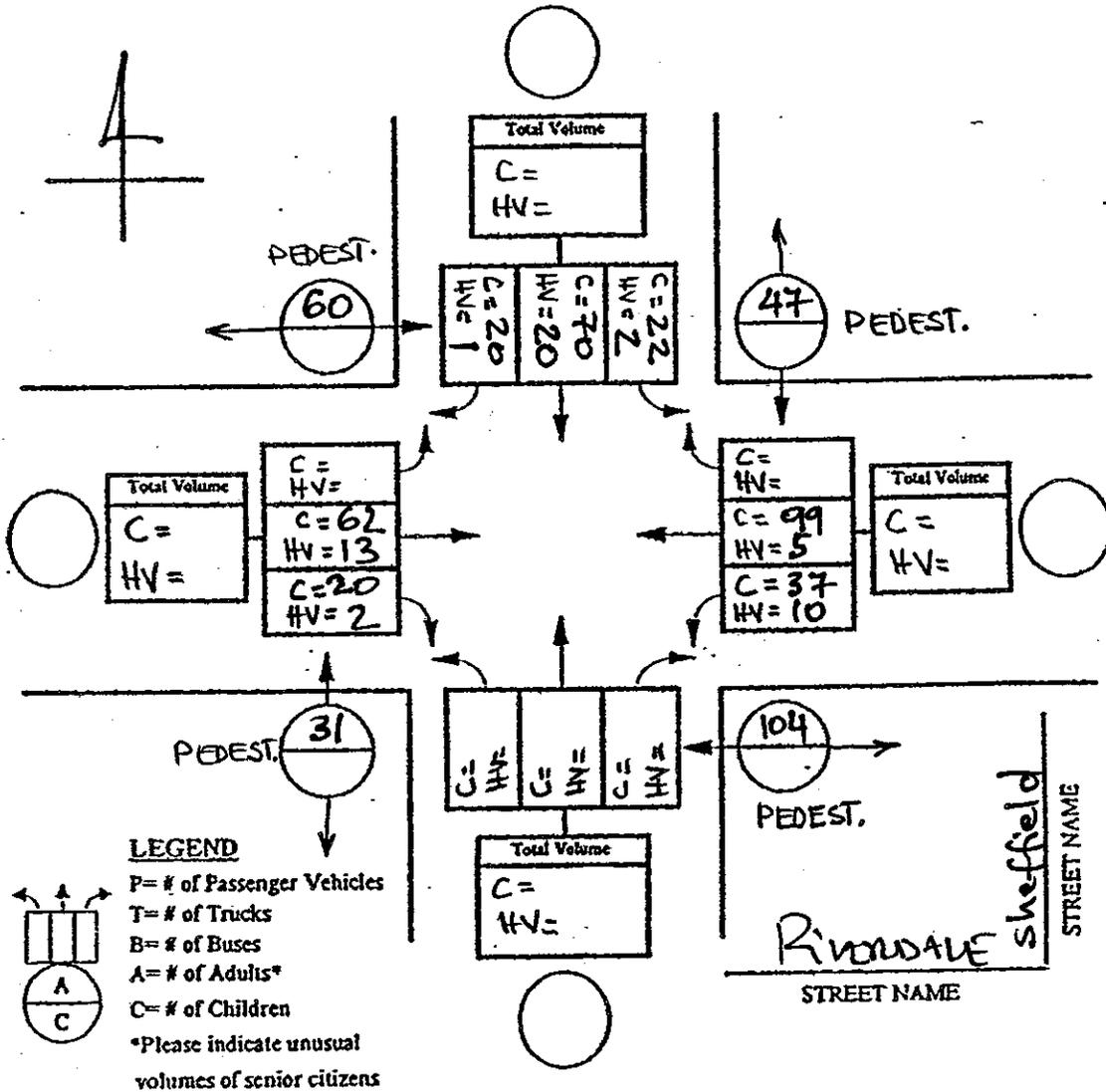
Date: 4/6/05  
Time: 8:30 - 8:30

	Gap Time	Veh #		Gap Time	Veh #		Gap Time	Veh #
1	9	1	41	18	1	81	4	1
2	14	1	42	10	1	82	6	1
3	7	1	43	8	1	83	14	1
4	11	1	44	2	1	84	5	1
5	2	1	45	2	1	85	19	1
6	22	1	46	5	1	86	57	2
7	24	1	47	15	1	87	2	2
8	51	1	48	9	1	88	19	2
9	5	1	49	8	1	89	3	1
10	4	1	50	23	1	90	7	1
11	3	1	51	2	2	91	30	1
12	2	1	52	9	1	92		
13	21	1	53	4	1	93		
14	41	1	54	4	1	94		
15	2	1	55	8	1	95		
16	7	1	56	6	1	96		
17	13	1	57	11	1	97		
18	6	1	58	13	1	98		
19	3	2	59	52	1	99		
20	2	1	60	8	1	100		
21	3	2	61	4	2	101		
22	21	1	62	2	1	102		
23	19	1	63	3	1	103		
24	27	1	64	2	1	104		
25	2	1	65	21	1	105		
26	43	1	66	46	1	106		
27	4	1	67	10	1	107		
28	9	1	68	10	1	108		
29	12	1	69	5	1	109		
30	8	1	70	16	3	110		
31	9	2	71	2	2	111		
32	9	1	72	8	2	112		
33	10	1	73	33	1	113		
34	30	1	74	3	1	114		
35	18	1	75	14	1	115		
36	27	1	76	17	1	116		
37	15	1	77	2	1	117		
38	3	1	78	9	1	118		
39	1-03	1	79	3	1	119		
40	20	1	80	6	1	120		

# VOLUME CLASSIFICATION AND TURNING COUNTS

DATE: 4-6-04  
 DAY: \_\_\_\_\_

TIME: 7:30-8:30 AM  
 INSPECTOR: Glenn



COMMENTS:

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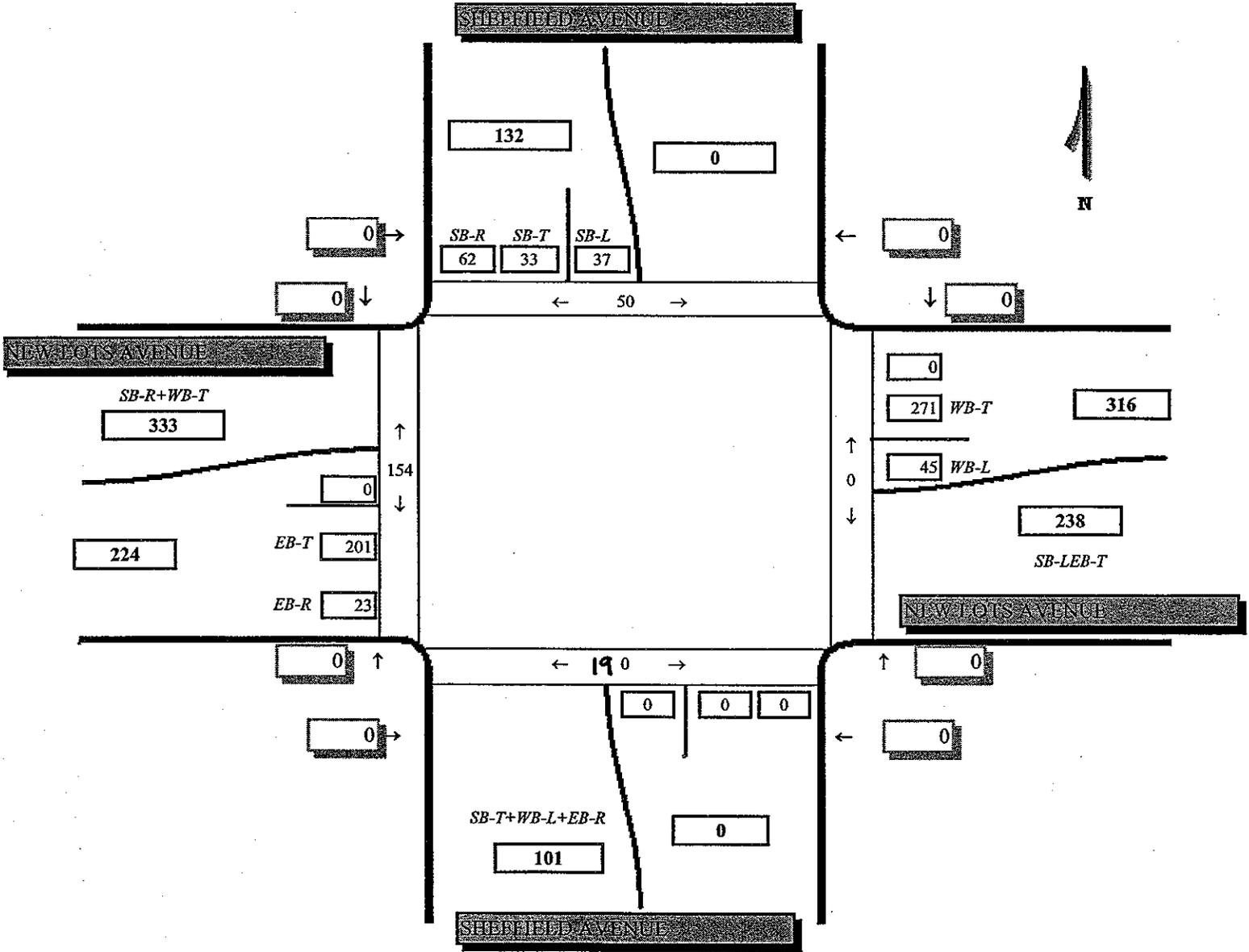
MAJOR	
MINOR	
PEDS	
SC	
Other	

Heading1  
 Heading2  
 Heading3

Title1 : SCHOOL SAFETY PROJECT  
 Title2 : BOROUGH OF BROOKLYN  
 Title3 : P.S. 190

Site:  
 Date: 09/14/04

Combined  
 \*Peds not included in table data



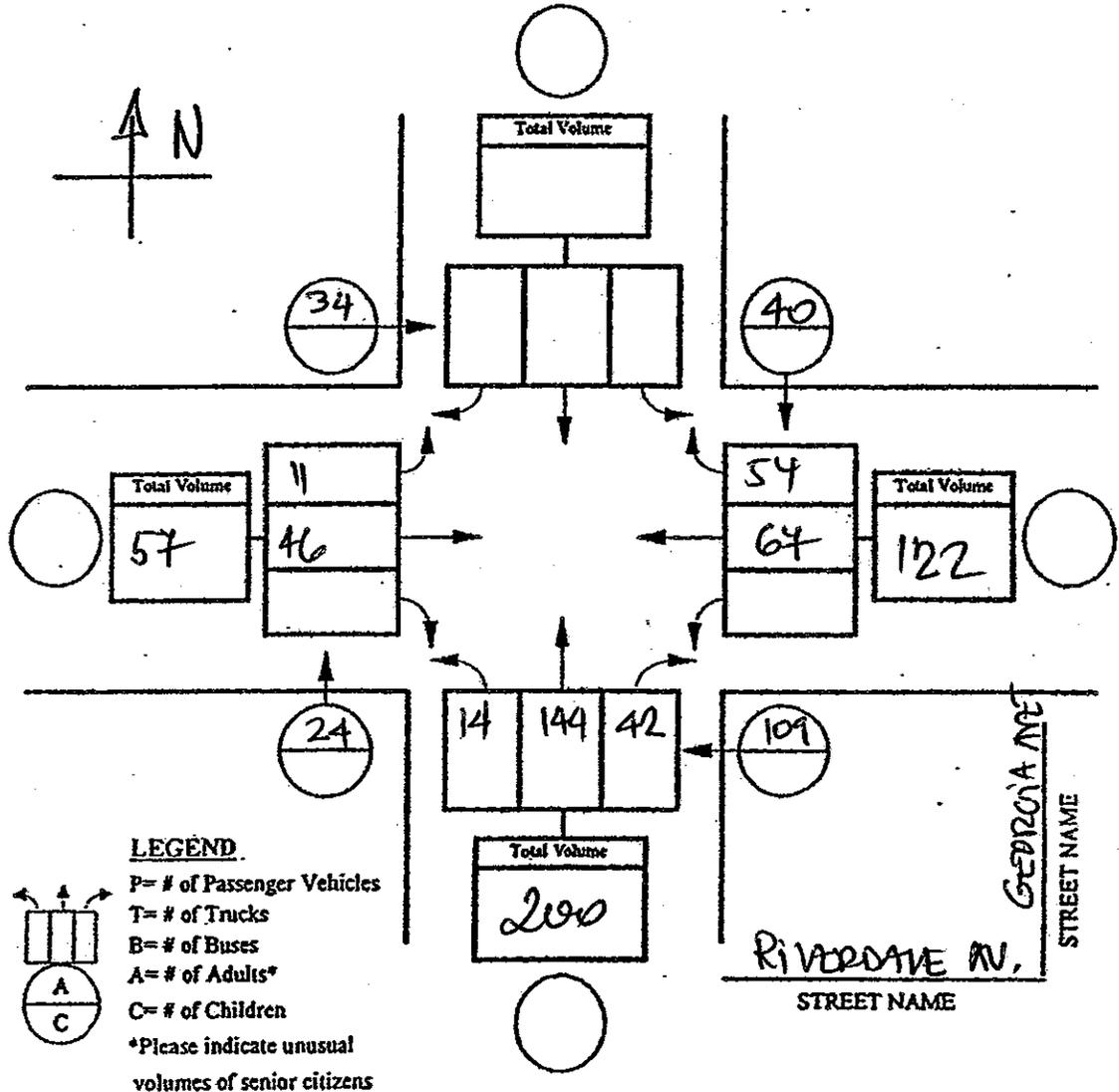
# VOLUME CLASSIFICATION AND TURNING COUNTS

DATE: 9-13-04

TIME: 7<sup>30</sup> - 8<sup>30</sup> AM

DAY: TUESDAY

INSPECTOR: \_\_\_\_\_



COMMENTS:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

MAJOR	
MINOR	
PEDS	
SC	
Other	

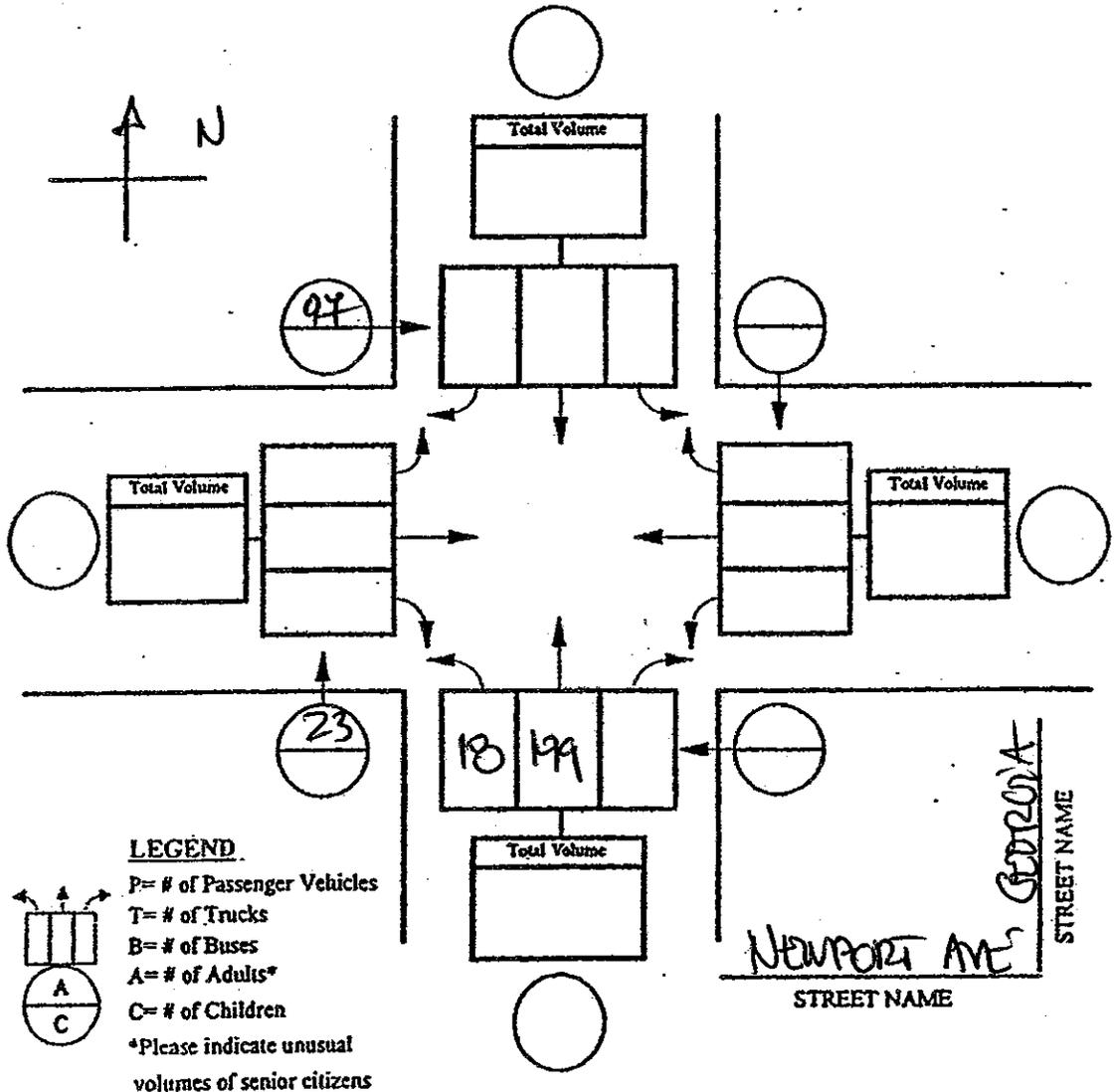
# VOLUME CLASSIFICATION AND TURNING COUNTS

DATE: 9-13-04

TIME: 7<sup>30</sup>-8<sup>30</sup> AM

DAY: TUESDAY

INSPECTOR: \_\_\_\_\_



COMMENTS:

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MAJOR	
MINOR	
PEDS	
SC	
Other	

Intersection Control Tracking Sheet

419

Ref # \_\_\_\_\_ Location: Sheffield Av @ Rensselaer Av

0005-0266

Board: K CE#: 16 PCT#: 23 SC#: 15190

C-Order #: 002714 SC Order #: 988311

Type of Request: 1/5 Date Rec'd: \_\_\_\_\_ Requested By: \_\_\_\_\_

ACCIDENT INFORMATION

NYS Acc. Report Print Date: \_\_\_\_\_ NYS Acc. Ord. Date: \_\_\_\_\_

Node(s): \_\_\_\_\_

Non-Rep. Acc. Rec'd: \_\_\_\_\_

NYPD Acc. Ord. Date: MAR 17 2005 2nd Req: \_\_\_\_\_ Acc. Rec'd: \_\_\_\_\_

Comments: \_\_\_\_\_

INSPECTOR'S REVIEW

AM Count: 4/14 SC Dismissal: 4/14 IPM Count: 4/14

Mid-Day Count: \_\_\_\_\_ Adopt Count(s): \_\_\_\_\_ X-ING GUARD: YES / NO

Preliminary Review: \_\_\_\_\_ Machine Counts Ordered: \_\_\_\_\_

ATR Rec'd: \_\_\_\_\_ Recurrence: \_\_\_\_\_

Gap Studies: \_\_\_\_\_ Speed Studies: 4/14

Ped Count: \_\_\_\_\_ Other Studies: \_\_\_\_\_

DIRECTOR / SENIOR REVIEW

Final Review: 4/20/05 Determination/Comments: 4/5

ENGINEERING REVIEW / RE-EVALUATION

Engg. Review: \_\_\_\_\_ RE-EVALUATED: YES / NO

MEMORANDUM

**To:** Lori Ardito  
Brooklyn Borough Commissioner

**From:** Ernest Athanailos, P. E.  
Director of Signal and ITS Engineering

**Re:** Riverdale Avenue with Sheffield Avenue CK05-0266, Powell CK05-0262 and Herzl Streets CK05-0264, Livonia Avenue with Herzl Street CK05-0263, Powell CK05-0261 and Junius Streets CK05-0265  
BBC05-134

**Date:** June 1, 2005

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This is in response in part to your January 31<sup>st</sup> request for additional traffic controls at the intersections of Riverdale Avenue with Sheffield Avenue, Powell and Herzl Streets and Livonia Avenue with Herzl, Powell and Junius Streets. This was a request for the East Brooklyn Congregations submitted by EDC.

We completed our analyses last month. Factors such as vehicular and pedestrian volumes, accident experience, vehicular speeds, visibility and signal spacing were taken into consideration in making our determination. Based upon our evaluation of the data collected, it is our judgment that additional controls are unwarranted at this time. However, we have proposed orders to repaint the "Stop" word and "Crosswalk" on the Herzl Street approach to Livonia Avenue.

EA:cc:gb

c: L. Ardito, C. Circelli, Brooklyn Borough Engineering Office

