

**NEW YORK CITY DEPARTMENT OF TRANSPORTATION**

**Office of School Safety Engineering**



**School Safety Engineering Project**

**FINAL: P.S. 256, Benjamin Banneker School, Brooklyn**



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



**OCTOBER 20, 2006**

**School Safety Engineering Project  
P.S. 256, 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, 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. 256 in Brooklyn is one of the 135 priority schools.

## 2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS



### 2.2 NEIGHBORHOOD DESCRIPTION

Located at 114 Kosciuszko Street in Brooklyn, P.S. 256 occupies most of a city block bounded by Kosciuszko Street, Lafayette Avenue, Nostrand Avenue and Marcy Avenue. The school's main entrance faces Kosciuszko Street. A Salvation Army Daycare Center is located to the west of P.S. 256, and a playground to the east. A public library and a seasonal swimming pool are located directly across Kosciuszko Street (See Exhibits 1 for Aerial Photograph and Exhibit 3 for Catchment Area). Nostrand Avenue is mostly commercial on both sides of the street. Marcy Avenue is mostly residential in the vicinity of the school.



*Figure 1: Kosciuszko Street in front of P.S. 256, looking east*

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

The consultant team and the school principal from P.S. 256 met at the school on May 27, 2004.

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

- Vehicles speeding on Kosciuszko Street and Lafayette Avenue
- Students crossing mid-block on Lafayette Avenue



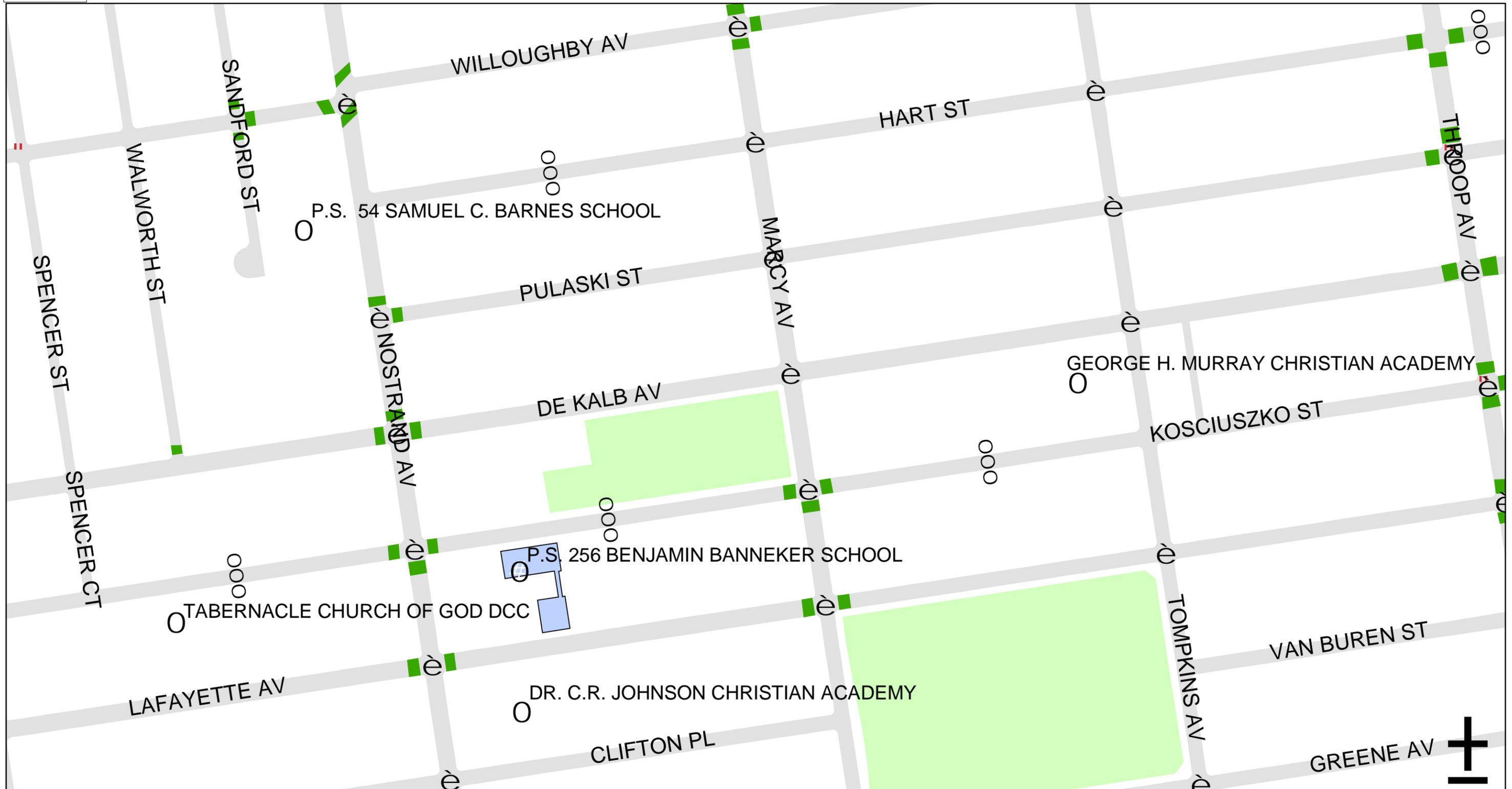


1 inch equals 150 feet

**EXHIBIT 1**  
**BENJAMIN BANNEKER SCHOOL**  
**P.S. 256, BROOKLYN**  
**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 256 Brooklyn  
BENJAMIN BANNEKER SCHOOL**

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

Map created on 9/14/2006

EXHIBIT 2

COMM. BOARD: 303  
PRECINCT: 79

1.4.0

## 2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

According to the principal, approximately 90% of students walk to school, 5% arrive by school bus and the remaining 5% of students are driven to school. Table 1 shown below indicates the school’s estimate of the modes of travel.

<b>TABLE 1: MODES OF TRAVEL (AS ESTIMATED BY SCHOOL OFFICIALS)</b>	
Description	Percentage
Walk	90%
Driven by car, livery cab or mini-bus	5%
School bus	5%
MTA bus or subway	0%
<b>TOTAL</b>	<b>100%</b>

## 2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

A Subway station for the G line is located at the corner of Nostrand Avenue and Lafayette Street. The Brooklyn Public Library branch and a seasonal swimming pool are located directly across Kosciuszko Street.

P.S. 54 is located two blocks north of Kosciuszko Street. A private school, Dr. C.R. Johnson Christian ACAD, is located on Lafayette Avenue, west of P.S. 256.

## 2.8 CROSSING GUARD LOCATIONS

According to the school principal and as confirmed by field observations, there are currently four crossing guards assigned to P.S. 256, at all four intersections abutting the school. All four crossing guards are from Police Precinct 79. Exhibit 4 shows the crossing guard locations.



*Figure 2 – Crossing guard at Kosciuszko Street and Marcy Avenue*



# School Traffic Safety Map



0 300 600 1,200 Feet

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:**

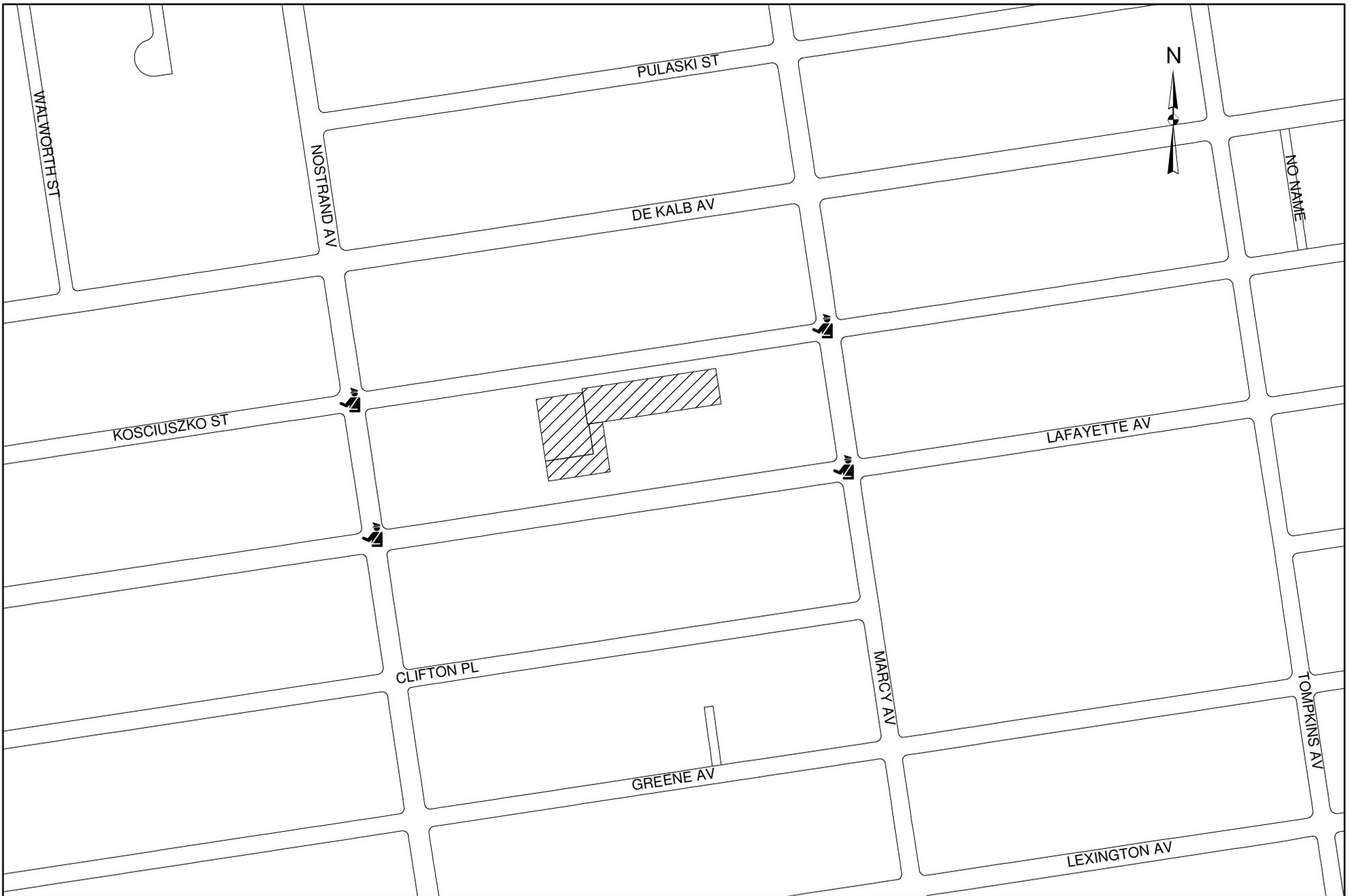
- SCHOOL LOCATION
- SCHOOL CROSSWALK
- TRAFFIC SIGNAL
- ALL - WAY STOP
- SPEED REDUCER

**PS 256 Brooklyn  
BENJAMIN BANNEKER SCHOOL**

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

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

COMM. BOARD: 303  
PRECINCT: 79



**CROSSING GUARDS ASSIGNED TO P.S. 256**

1 inch equals 250 feet

**EXHIBIT 4**

**P.S. 256, BROOKLYN  
BENJAMIN BANNEKER SCHOOL**

**CROSSING GUARDS**

### 3. TRAFFIC OPERATIONS

#### 3.1 SCHOOL BUS OPERATIONS

According to the principal, three school buses transport students from P.S. 256 to and from school. These three buses primarily carry special education students. Buses load and unload students in front of the school's entrance on Kosciuszko Street. School buses park or double park, depending on traffic conditions (Figure 3).



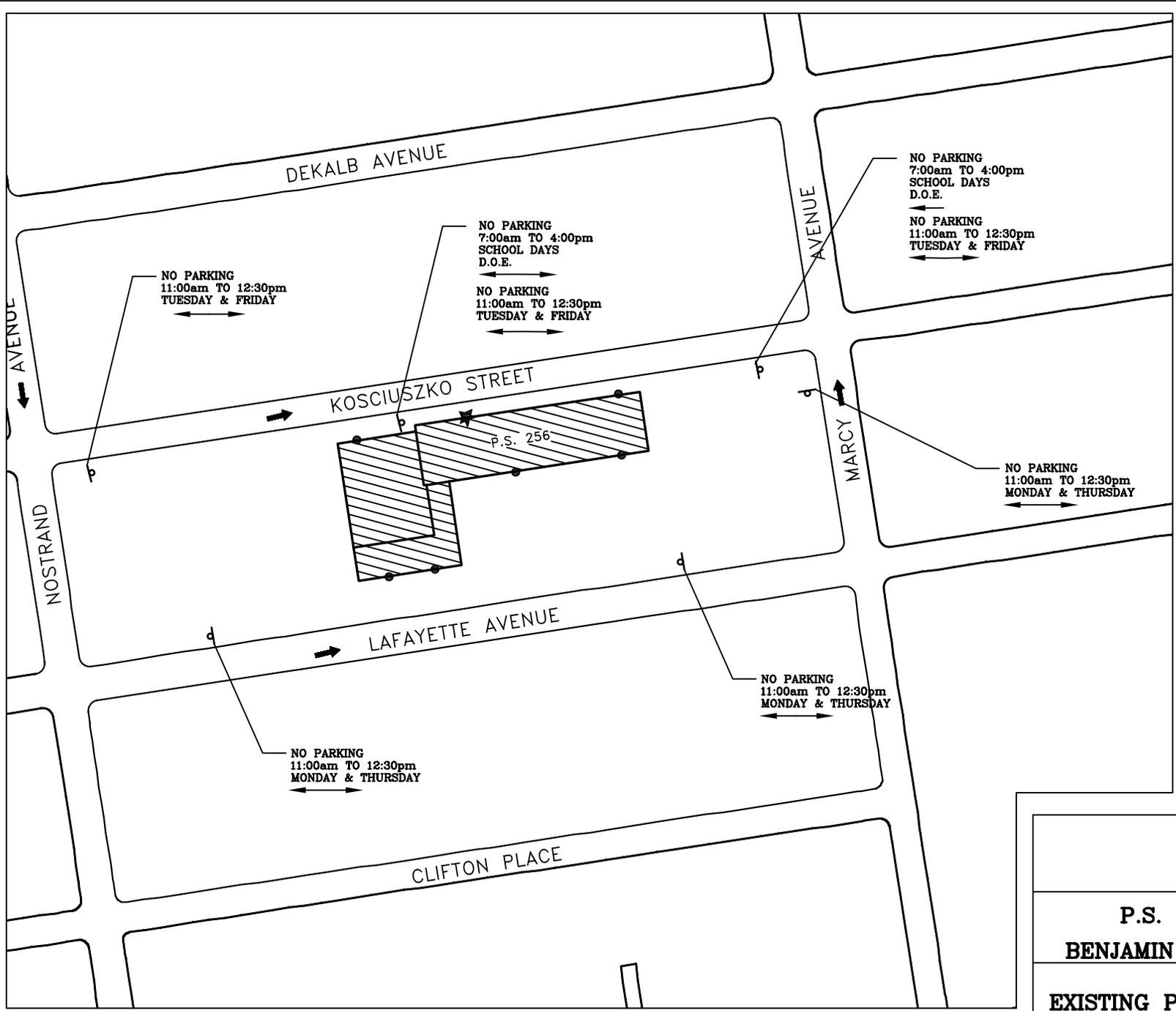
*Figure 3: School buses double-parked on Kosciuszko Street during dismissal time*

#### 3.3 PARKING REGULATIONS

On Kosciuszko Street, “NO PARKING 7 AM – 4 PM SCHOOL DAYS, EXCEPT BOARD OF EDUCATION” parking regulation signs are posted in front of the school. Alternate side of the street parking regulations are in effect 11:00 am – 12:30 pm on the roadways surrounding the school. See Exhibit 5 for parking regulations.

#### 3.4 EXISTING SCHOOL SIGNS AND MARKINGS

The Traffic Safety Plan, Exhibit 2, 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 (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.



**LEGEND**

- ★ MAIN ENTRANCE
- OTHER ENTRANCES
- P STREET SIGN

**EXHIBIT 5**

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**P.S. 256, BROOKLYN  
BENJAMIN BANNEKER SCHOOL**

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**EXISTING PARKING REGULATIONS**

NOT TO SCALE

### 3.5 ACCIDENT SUMMARY

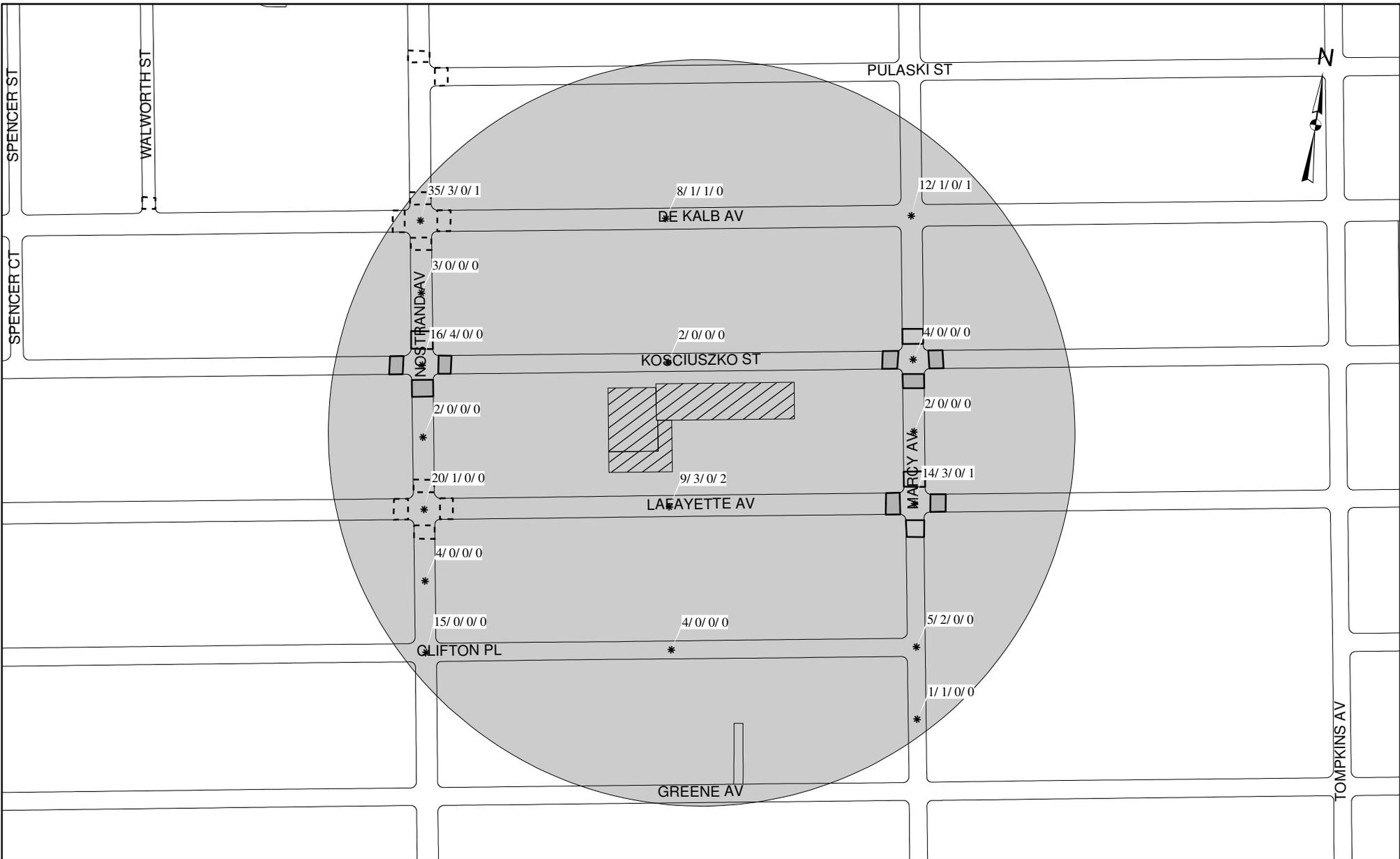
Exhibit 6 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of P.S. 256 for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of 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.

<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>
Kosciuszko St. and Nostrand Ave.	16	4	0	0
Kosciuszko St. and Marcy Ave.	4	0	0	0
Lafayette Ave. and Nostrand Ave.	20	1	0	0
Lafayette Ave. and Marcy Ave.	14	3	0	1
De Kalb Ave. and Nostrand Ave.	35	3	0	1
De Kalb Ave. and Marcy Ave.	12	1	0	1
<b>TOTAL</b>	<b>101</b>	<b>12</b>	<b>0</b>	<b>3</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>
Kosciuszko St. and Nostrand Ave.	19	2	0	1
Kosciuszko St. and Marcy Ave.	15	3	0	1
Lafayette Ave. and Nostrand Ave.	43	3	0	1
Lafayette Ave. and Marcy Ave.	27	2	0	0
De Kalb Ave. and Nostrand Ave.	51	2	0	1
De Kalb Ave. and Marcy Ave.	40	3	0	0
<b>TOTAL</b>	<b>195</b>	<b>15</b>	<b>0</b>	<b>4</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. 256

SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL

CROSSWALK

X/X/X/X

\*



1 inch equals 250 feet

TOTAL ACCIDENTS	PED ACCIDENTS	PED FATAL	SCHOOL_PED ACCIDENTS
X	X	X	X

**EXHIBIT 6**

**P.S. 256, BROOKLYN  
BENJAMIN BANNEKER 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. 256:

#### 3.6.1 Kosciuszko Street and Nostrand Avenue

Kosciuszko Street is a 34-foot wide, one-way eastbound street with one travel lane and parking on both sides of the roadway. Nostrand Avenue is a 40-foot wide, one-way southbound street with two travel lanes and parking on both sides. Nostrand Avenue has curbside moving lanes during the afternoon rush hour between 4 pm - 7 pm. Kosciuszko Street and Nostrand Avenue is a signalized intersection with school crosswalks in place on the south, east and west legs.

There were 16 accidents at this intersection during the 1998-2000 study period. Four accidents involved pedestrians, none of which were school-related. Three pedestrians were struck while crossing against the signal. The fourth accident was attributed to the driver's failure to yield to a pedestrian while making a left turn.

A one-hour traffic count was performed at this intersection on October 14, 2004 between 7:30 am and 8:30 am to better understand pedestrian and vehicle conflicts (Exhibit 7A). The results show that turning vehicular volumes and pedestrian volumes are moderate in all directions.



*Figure 4: Kosciuszko Street and Nostrand Avenue, looking north*



*Figure 5: School children from P.S. 256 crossing Nostrand Avenue at Kosciuszko Street, accompanied by school officials*

### 3.6.2 Kosciuszko Street and Marcy Avenue

Kosciuszko Street and Marcy Avenue is a signalized intersection. Marcy Avenue is a 40-foot wide, one-way northbound street with one travel lane and parking on both sides. There are school crosswalks in place on the south, east and west legs.



*Figure 6: Kosciuszko Street and Marcy Avenue, looking east*

All four corners have substandard pedestrian ramps due to utility conflicts. The street light poles and a fire alarm box are within the corner quadrants. The sidewalk on the southeast corner of the intersection is uneven and broken (see Figure 7).



*Figure 7: Southeast corner at Kosciuszko Street and Marcy Avenue*

Four accidents occurred at this intersection during the 1998-2000 study period, none of which involved pedestrians.

A one-hour traffic count was performed at this intersection on October 14, 2004 between 7:30 am and 8:30 am to better understand pedestrian and vehicle conflicts (Exhibit 7A). The results show that turning vehicular volumes and pedestrian volumes are moderate in all directions.

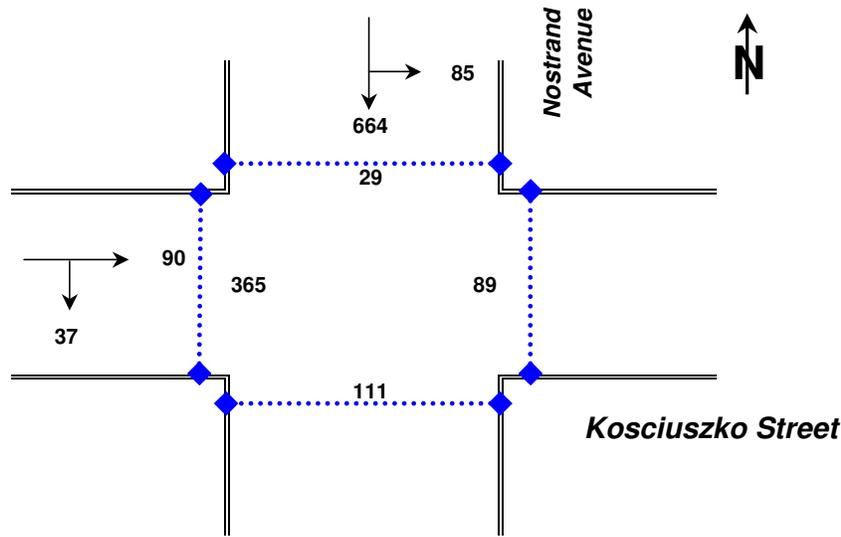
### 3.6.3 Lafayette Avenue and Nostrand Avenue

Lafayette Avenue and Nostrand Avenue is a signalized intersection. Lafayette Avenue is a 40-foot wide, one-way eastbound street with two travel lanes and parking on both sides of the street. There are school crosswalks on the east and west legs. Field observations show that a significant number of P.S. 256 students use this intersection en route to school.

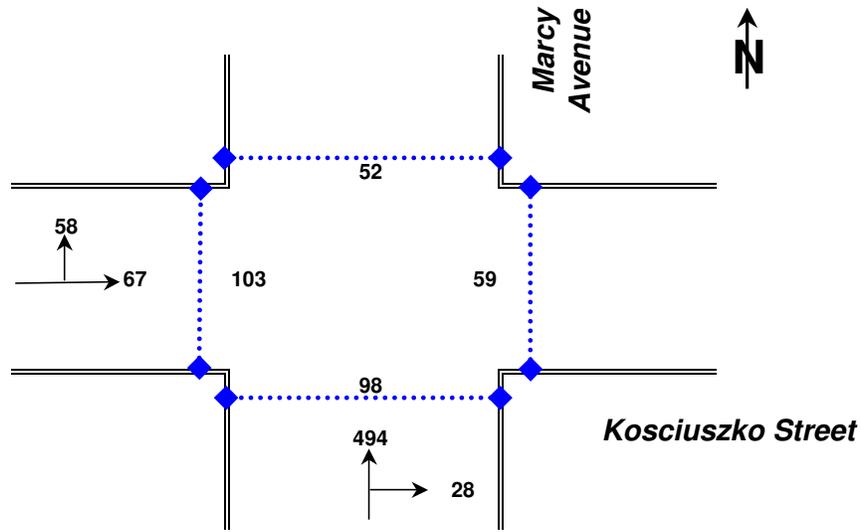
There were 20 accidents at this intersection during the 1998-2000 study period. One accident involved a pedestrian, which was not school-related. The pedestrian was struck while crossing with the signal. There were no further details for this accident.

A one-hour traffic count was performed at this intersection on June 17, 2005 between 7:30 am and 8:30 am to better understand pedestrian and vehicle conflicts (Exhibit 7B). The results show that turning vehicular volumes and pedestrian volumes are moderate in all directions.

**One Hour Traffic Count Volumes**



*Intersection of Nostrand Avenue and Kosciuszko Street - (7:30 AM - 8:30 AM October 14, 2004)*

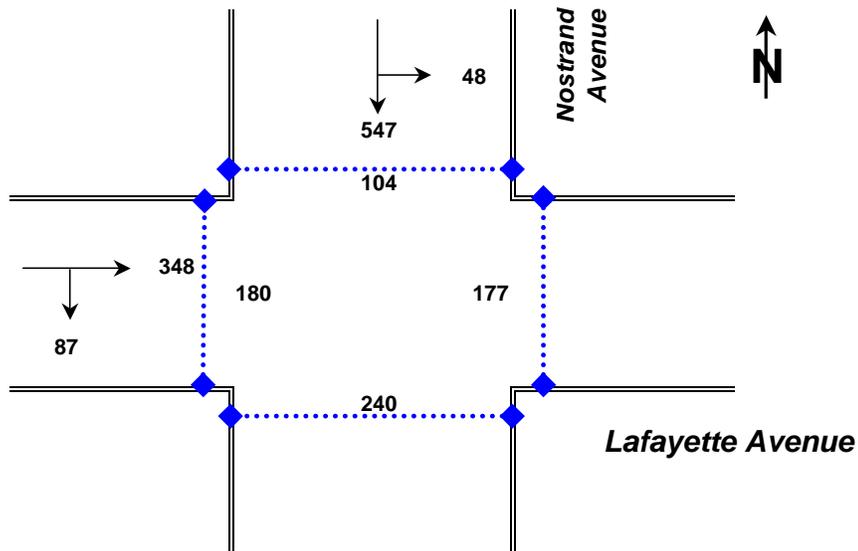


*Intersection of Marcy Avenue and Kosciuszko Street - (7:30 AM - 8:30 AM October 14, 2004)*

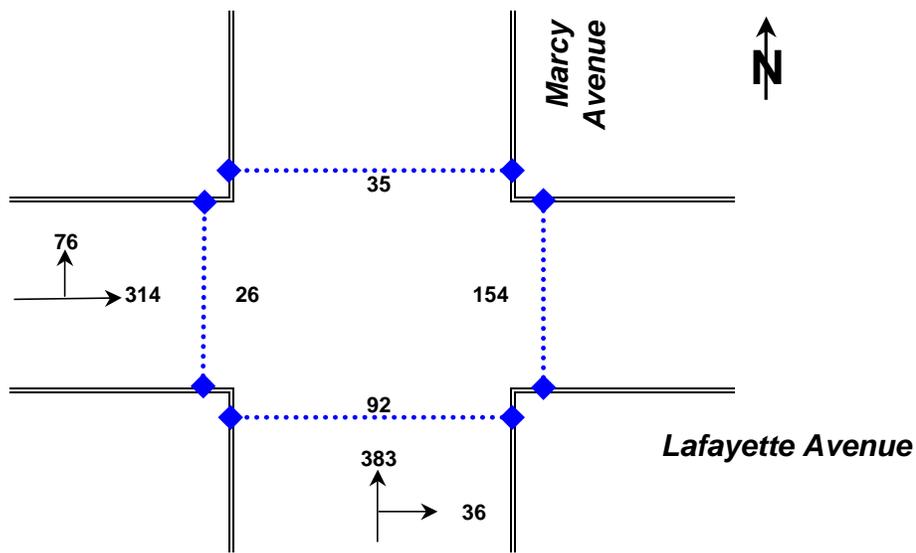
- 62 — Number of Pedestrians
- 62 — Pedestrian Crossing
- 53 — Vehicle Movement
- 53 — Number of Vehicles

<b>EXHIBIT 7A</b>
<b>P.S. 256, BROOKLYN BENJAMIN BANNEKER SCHOOL</b>
<b>TRAFFIC COUNTS</b>

One Hour Traffic Count Volumes



Intersection of Nostrand Avenue and Lafayette Avenue - (7:30 AM - 8:30 AM June 17, 2005)



Intersection of Marcy Avenue and Lafayette Avenue - (7:30 AM - 8:30 AM June 15, 2005)

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

EXHIBIT 7B
P.S. 256, BROOKLYN BENJAMIN BANNEKER SCHOOL
TRAFFIC COUNTS

### 3.6.4 Lafayette Avenue and Marcy Avenue

Lafayette Avenue and Marcy Avenue is a signalized intersection. There are school crosswalks on the west and east legs.



*Figure 8: Lafayette Avenue and Marcy Avenue, looking east*

There were 14 accidents at this location during the 1998-2000 study period. Three accidents involved pedestrians, one of which was school-related. A 14-year-old student was struck while crossing Lafayette Avenue with the signal. A pedestrian was struck while crossing outside of crosswalk. There were no details for the third accident.

A one-hour traffic count was performed at this intersection on June 15, 2005 between 7:30 am and 8:30 am to better understand pedestrian and vehicle conflicts (Exhibit 7B). The results show that turning vehicular volumes and pedestrian volumes are moderate in all directions.



*Figure 9: Lafayette Avenue between Marcy Avenue and Nostrand Avenue, looking west*

According to the principal, students crossing mid-block on Lafayette Avenue was one of the primary safety concerns for P.S. 256. Field observations indicate that many students leaving the schoolyard prefer to cross mid-block on Lafayette Avenue rather than walking to the signalized intersections with Nostrand Avenue and Marcy Avenue.

The principal also indicated that vehicles are speeding on Lafayette Avenue in the vicinity of school. A spot speed study was conducted on Lafayette Avenue between Nostrand Avenue and Marcy Avenue on June 30, 2005. The study confirmed that the 85<sup>th</sup> percentile speed on Lafayette Avenue was 37 mph, which exceeds the statutory 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 STUDY (LAFAYETTE AVENUE)</b>		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
Lafayette Avenue between Nostrand Avenue and Marcy Avenue	32	37

Installation of a speed reducer (hump) was considered on Lafayette Avenue between Nostrand Avenue and Marcy Avenue. However, Lafayette Avenue at this section is a bus route, which does not meet the criteria to install a speed reducer (hump). Alternative measures to improve student pedestrian safety are discussed in Section 4.

Three pedestrians were struck while crossing mid-block on Lafayette Avenue between Nostrand Avenue and Marcy Avenue during the 1998-2000 study period. All these three pedestrians were school age children. However, one accident occurred at night, out of school time.

3.6.5 De Kalb Avenue and Nostrand Avenue

De Kalb Avenue and Nostrand Avenue is a signalized intersection. De Kalb Avenue is a one-way westbound street with two travel lanes and parking on both sides. There are school crosswalks on the north, east and west legs.

There were 35 accidents at this location during the 1998-2000 study period. Three accidents involved pedestrians, one of which was school-related. Two pedestrians, including a 14-year-old student, were struck while crossing Nostrand Avenue against the signal. The third accident involved a vehicle turning right and was attributed to driver error.

3.6.6 De Kalb Avenue and Marcy Avenue

De Kalb Avenue and Marcy Avenue is a signalized intersection. There are pedestrian crosswalks on all four approaches, but none of which are school crosswalks.

There were 12 accidents at this location during the 1998-2000 study period, one of which was a school-related pedestrian accident. A four-year-old child was struck while emerging from the parked vehicles.

There was a fatal pedestrian accident on mid-block De Kalb Avenue between Marcy Avenue and Nostrand Avenue. A 47-year-old pedestrian was struck and killed while crossing mid-block on De Kalb Avenue. The pedestrian was found to be under the influence of alcohol.

### 3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of P.S. 256 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>				
Intersection Name	Crosswalk Width (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)	Timing Adjustment? (Yes/No)
<b>Nostrand Avenue and Kosciuszko Street</b>				
Crossing Nostrand Avenue	40	35	16	NO
Crossing Kosciuszko Street	34	55	14	NO
<b>Marcy Avenue and Kosciuszko Street</b>				
Crossing Marcy Avenue	40	50	16	NO
Crossing Kosciuszko Street	33	50	14	NO
<b>Marcy Avenue and Lafayette Avenue</b>				
Crossing Marcy Avenue	40	50	16	NO
Crossing Lafayette Avenue	40	50	16	NO
<b>Nostrand Avenue and Lafayette Avenue</b>				
Crossing Nostrand Avenue	40	35	16	NO
Crossing Lafayette Avenue	40	55	16	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 observed to be in generally good condition. However, sidewalks at the southeast corner of Marcy Avenue and Kosciuszko Street are uneven and the concrete is broken.

#### **4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIANS 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 on Kosciuszko Street*

“NO STANDING 7:00 AM – 4:00 PM, SCHOOL DAYS” parking regulations should be installed for 60 feet in front of school building on Kosciuszko Street to provide sufficient clear frontage for school buses to drop-off and pick-up students and will also improve visibility of those students arriving and leaving the school. The existing teacher parking will be relocated to Lafayette Avenue.

- *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 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.

- *Install new school crosswalks at the following intersections:*

- Lafayette Avenue and Marcy Avenue – north leg
- Lafayette Avenue and Nostrand Avenue – north leg

According to the principal, some students utilize these intersections en route to P.S. 256. Providing a new school crosswalk at these two locations will complete a network of contiguous school crosswalks in the immediate school vicinity. Therefore, it is recommended that school crosswalks be installed at these two intersections.

- *Install speed reducers (humps) on Kosciuszko Street*

According to the school principal, vehicles are speeding on Kosciuszko Street in the vicinity of school. Spot speed studies were conducted on Kosciuszko Street between Nostrand Avenue and Marcy Avenue on June 30, 2005.

Spot speed studies confirmed that the 85<sup>th</sup> percentile speed on Kosciuszko Street was 36 mph, which exceeds the statutory speed limit of 30 mph. To reduce speeding in the vicinity of the school, installation of speed reducers (humps) was recommended on Kosciuszko Street. In response, DOT installed two speed reducers on this street in October 2005. See Table 6 for a summary of the results and the Appendix for further detail.

<b>TABLE 6: SPOT SPEED STUDY (KOSCIUSZKO STREET)</b>		
<b>LOCATION</b>	<b>MEDIAN SPEED (MPH)</b>	<b>85TH PERCENTILE SPEED (MPH)</b>
Kosciuszko Street between Nostrand Avenue and Marcy Avenue	31	36

- *Narrow Lafayette Avenue with a channelized buffer*

The principal indicated that vehicles are speeding on Lafayette Avenue in the vicinity of school. A spot speed study conducted on Lafayette Avenue between Nostrand Avenue and Marcy Avenue on June 30, 2005 confirmed that the 85<sup>th</sup> percentile speed on Lafayette Avenue was 37 mph, which exceeds the statutory speed limit of 30 mph. See Table 4 for a summary of the results and the Appendix for further detail. Lafayette Avenue is bus route and does not comply with DOT criteria for speed reducers (humps).

It is recommended that the roadway area be narrowed visually by using channelization. This has been shown as an effective way to slow down vehicles. By using striping instead of a raised median, the additional width is still available for emergency and other service vehicles.

## 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.

- Nostrand Avenue and Kosciuszko Street
- Nostrand Avenue and Lafayette Avenue
- Marcy Avenue and Kosciuszko Street
- Marcy Avenue and Lafayette Avenue
- Nostrand Avenue and De Kalb 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.

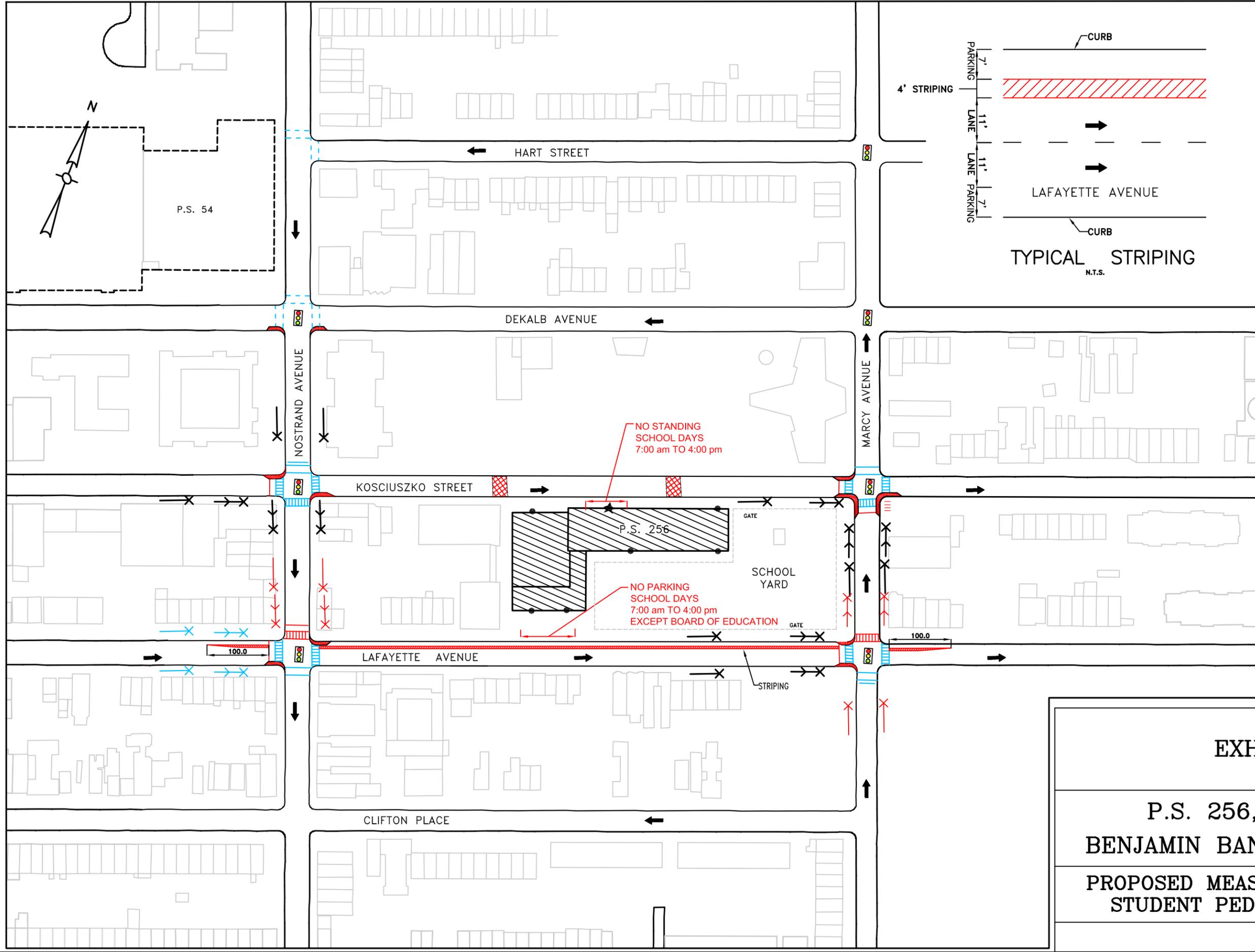
- Installation/replacement of Complex pedestrian ramps

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:

- Kosciuszko Street and Marcy Avenue – all four corners

- Install new sidewalks at the southeast corner of Kosciuszko Street and Marcy Avenue

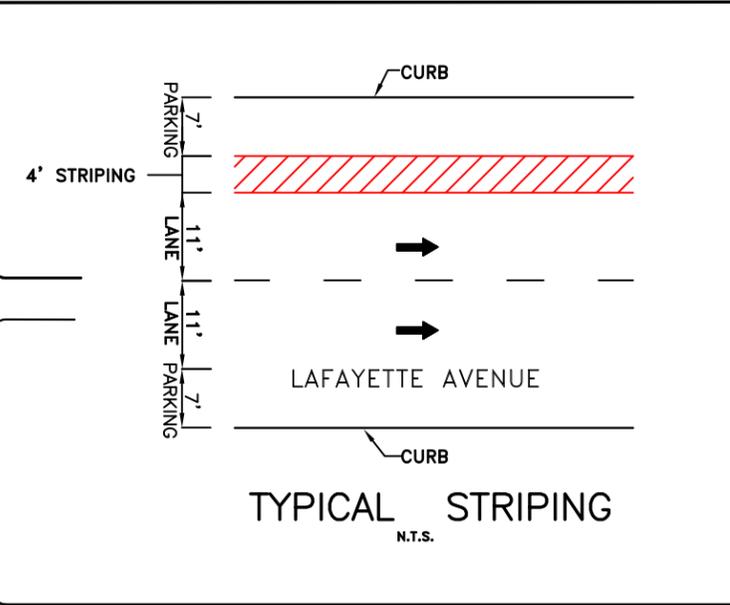
It is recommended to install new sidewalks at the southeast corner of Kosciuszko Street and Marcy Avenue to correct broken sidewalk area.



**LEGEND**

- ★ MAIN ENTRANCE
- OTHER ENTRANCES
- X EXISTING ADVANCE WARNING SIGN WITH ARROW
- X EXISTING ADVANCE WARNING SIGN
- ← → EXISTING TRAVEL DIRECTION
- 🚦 EXISTING SIGNALIZED INTERSECTION
- ▬ EXISTING SCHOOL CROSSWALK
- ▬ EXISTING STANDARD (NON-SCHOOL) CROSSWALK
- - - EXISTING SCHOOL CROSSWALK ASSOC. WITH OTHER SCHOOL
- 🚦 PROPOSED TRAFFIC SIGN
- 📏 PROPOSED CURB EXTENSION (NECKDOWN)
- ▬ PROPOSED SCHOOL CROSSWALK
- X PROPOSED ADVANCE WARNING SIGN WITH ARROW
- X PROPOSED ADVANCE WARNING SIGN
- PROPOSED STOP LINE
- ↔ PROPOSED PARKING REGULATIONS
- ▨ PROPOSED SPEED REDUCER (HUMP)
- ▬ PROPOSED SIDEWALK
- ▨ PROPOSED STRIPING

**SCALE: 1" : 150'**



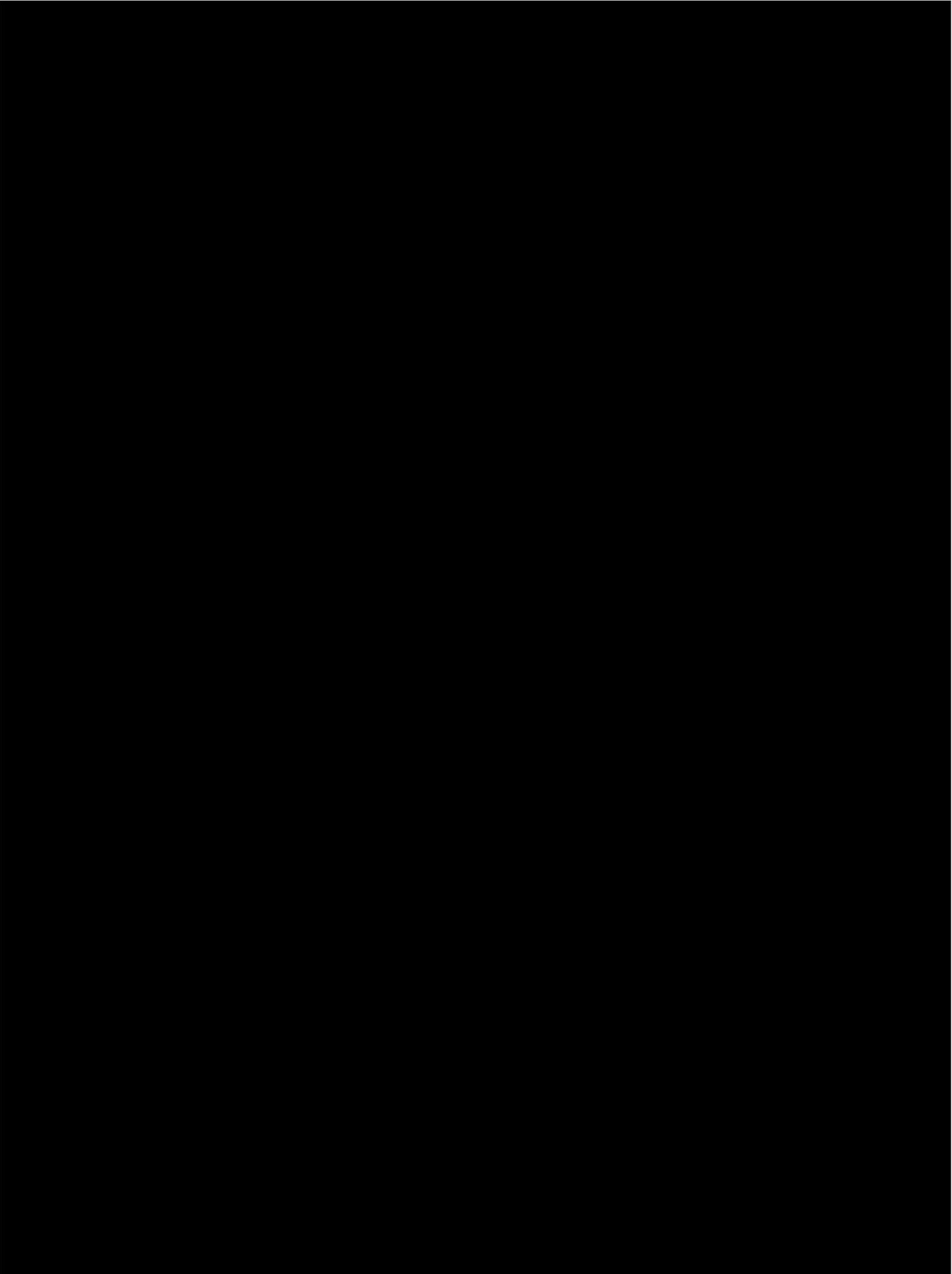
**EXHIBIT 8**

**P.S. 256, BROOKLYN**

**BENJAMIN BANNEKER SCHOOL**

**PROPOSED MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY**

# APPENDIX



**P.S. 256**  
 June 15, 2005  
 7:30 am - 8:30 am

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

Site:  
 Date: 06/15/05

Combined  
 \*Peds not included in table data

Begin Time	Total	MARCY AVENUE			LAFAYETTE AVENUE			MARCY AVENUE		LAFAYETTE AVENUE			
		N-R	N-T	E-T	E-L	N-R	N-T	E-T	E-L				
07:30:00	181	0	0	0	0	0	0	9	83	0	0	67	22
07:45:00	201	0	0	0	0	0	0	8	87	0	0	82	24
08:00:00	218	0	0	0	0	0	0	11	107	0	0	84	16
08:15:00	209	0	0	0	0	0	0	8	106	0	0	81	14
	<b>809</b>	0	0	0	0	0	0	36	383	0	0	314	76

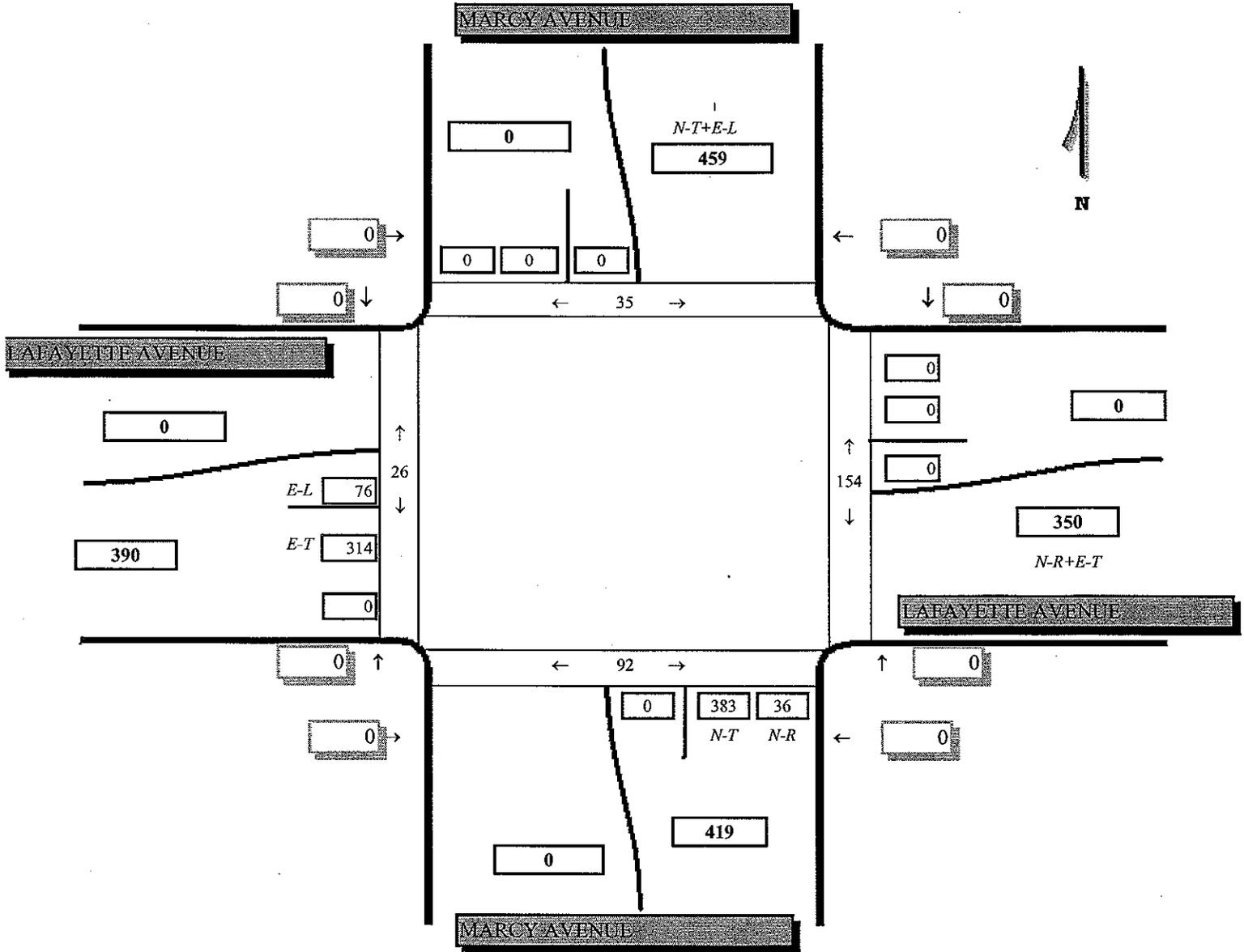
Peak Volume Periods (1 hour Res 15 min)					
	Period		Peak Period		Volume
AM	05:00:00	To 10:00:00	07:30:00	To 08:30:00	809
Noon	10:00:00	To 15:00:00	NA	To NA	0
PM	15:00:00	To 20:00:00	NA	To NA	0

P.S. 256  
 June 15, 2005  
 7:30 am - 8:30 am

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

Site:  
 Date: 06/15/05

Combined  
 \*Peds not included in table data



**P.S. 256**  
 October 14, 2004  
 7:30 am - 8:30 am

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

Site:  
 Date: 10/14/04

Combined  
 \*Peds not included in table data

Begin Time	Total	NOSTRAND AVENUE			KOSCIUSCO STREET			NOSTRAND AVENUE			KOSCIUSCO STREET	
		SB-T	SB-L							EB-R	EB-T	
07:30:00	196	0	156	12	0	0	0	0	0	0	6	22
07:45:00	227	0	171	23	0	0	0	0	0	0	13	20
08:00:00	211	0	163	19	0	0	0	0	0	0	11	18
08:15:00	242	0	174	31	0	0	0	0	0	0	7	30
	<b>876</b>	0	<b>664</b>	<b>85</b>	0	0	0	0	0	0	<b>37</b>	<b>90</b>

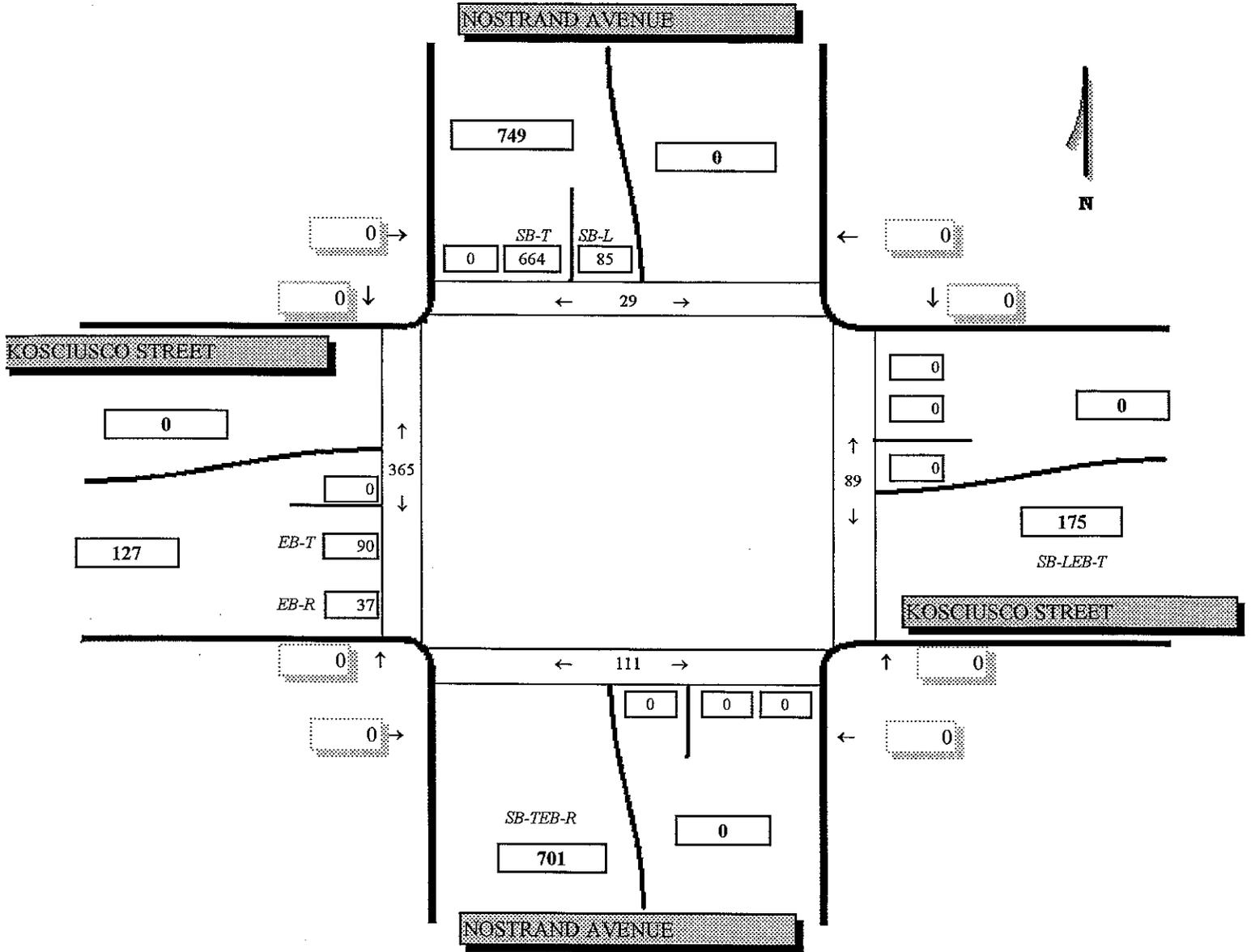
Peak Volume Periods <small>(1 hour Res: 15 min)</small>					
	Period		Peak Period		Volume
AM	05:00:00	To 10:00:00	07:30:00	To 08:30:00	876
Noon	10:00:00	To 15:00:00	NA	To NA	0
PM	15:00:00	To 20:00:00	NA	To NA	0

P.S. 256  
October 14, 2004  
7:30 am - 8:30 am

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

Site:  
Date: 10/14/04

Combined  
\*Peds not included in table data



**P.S. 256**  
 June 17, 2005  
 7:30 am - 8:30 am

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

Site:  
 Date: 06/17/05

Combined

\*Peds not included in table data

Begin Time	Total	NOSTRAND AVE		LAFAYETTE STREET		NOSTRAND AVE		LAFAYETTE STREET			
		S-T	S-L			N-T	N-L	E-R	E-T		
07:31:00	214	0	114	11	0	0	0	0	21	68	0
07:45:00	271	0	146	12	0	0	0	0	17	96	0
08:00:00	266	0	145	15	0	0	0	0	19	87	0
08:15:00	279	0	142	10	0	0	0	0	30	97	0
	<b>1,030</b>	0	547	48	0	0	0	0	87	348	0

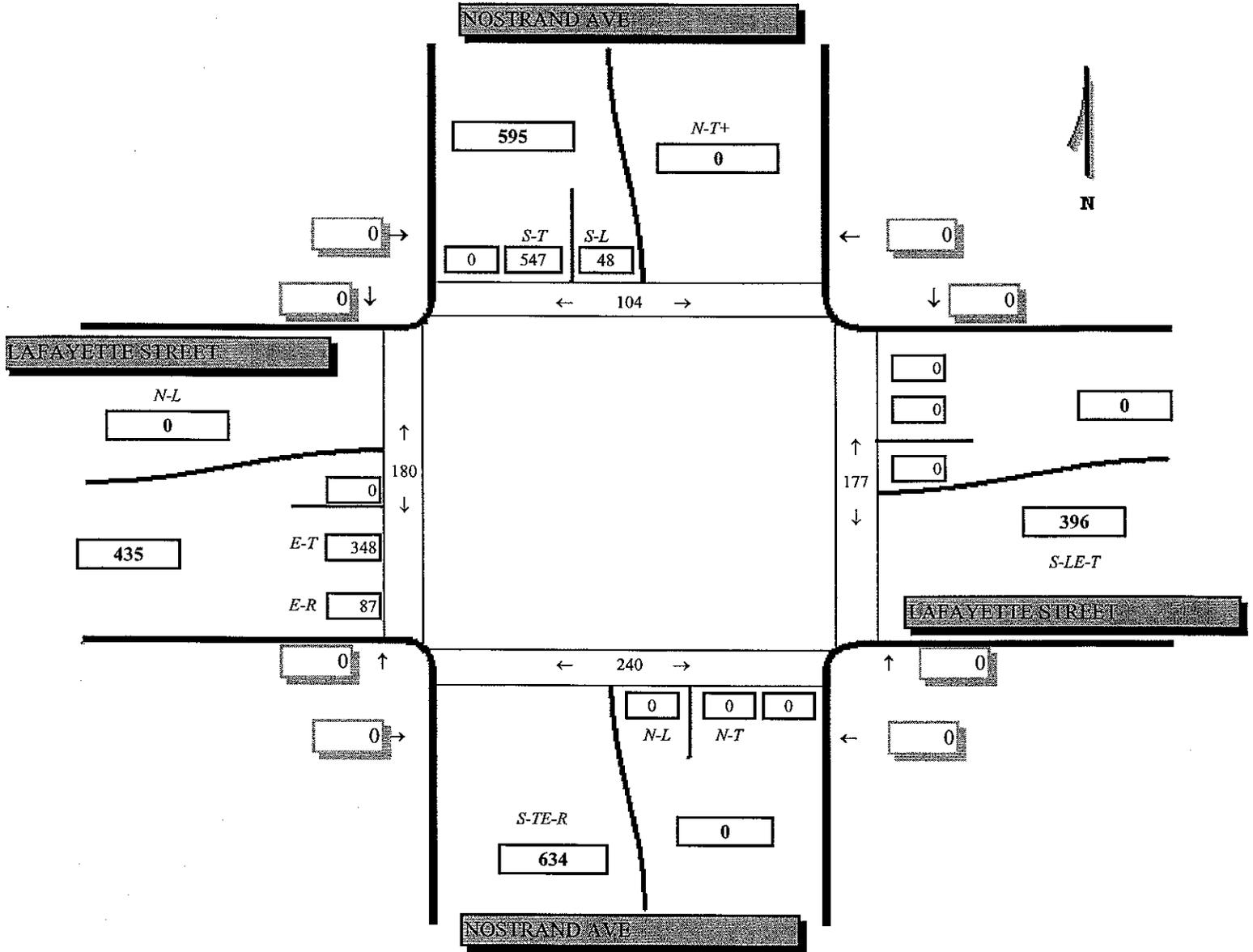
Peak Volume Periods (1 hour Res 15 min)					
	Period		Peak Period		Volume
AM	05:00:00	To 10:00:00	07:30:00	To 08:30:00	1,030
Noon	10:00:00	To 15:00:00	NA	To NA	0
PM	15:00:00	To 20:00:00	NA	To NA	0

**P.S. 256**  
 June 17, 2005  
 7:30 am - 8:30 am

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

Site:  
 Date: 06/17/05

Combined  
 \*Peds not included in table data



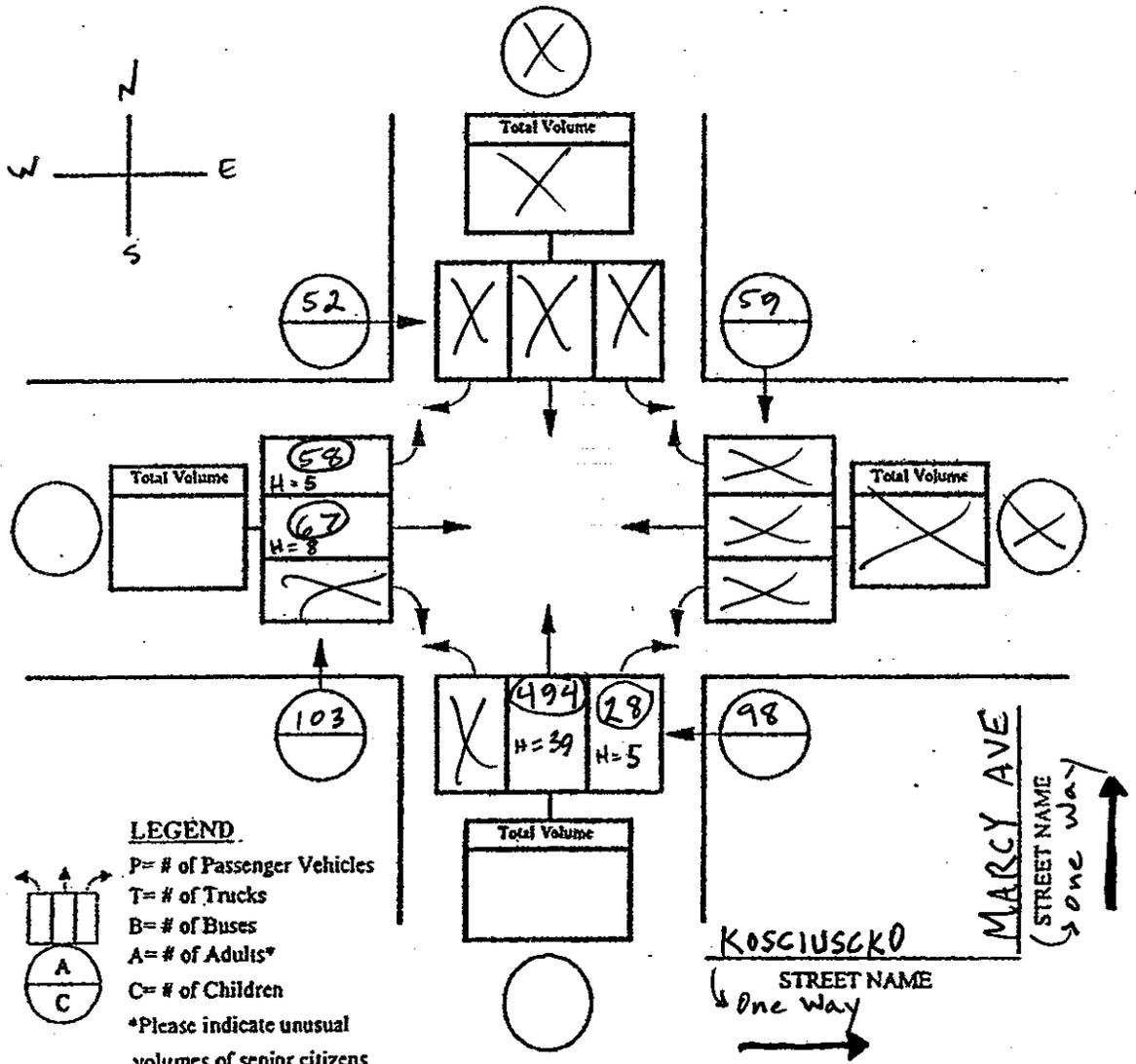
# VOLUME CLASSIFICATION AND TURNING COUNTS

DATE: 10-14-2004

TIME: 7:30am - 8:30am

DAY: Thursday

INSPECTOR: Ray Gehring



COMMENTS:

H = Heavy Vehicles


MAJOR	
MINOR	
PEDS	
SC	
Other	

## SPOT SPEED STUDY

Date: **June 30, 2005**  
 Location: **Kosciuszko Street btw. Nostrand Avenue and Marcy Avenue**  
 Surveyor: **The RBA Group**

Time: **2:45 pm - 3:45 pm**  
 School: **P.S. 256**  
 Direction: **East-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	2	2.0%	2.0%	40	800
21	1	1.0%	2.9%	21	441
22	2	2.0%	4.9%	44	968
23	1	1.0%	5.9%	23	529
24	4	3.9%	9.8%	96	2304
25	4	3.9%	13.7%	100	2500
26	4	3.9%	17.6%	104	2704
27	4	3.9%	21.6%	108	2916
28	5	4.9%	26.5%	140	3920
29	6	5.9%	32.4%	174	5046
30	8	7.8%	40.2%	240	7200
31	9	8.8%	49.0%	279	8649
32	10	9.8%	58.8%	320	10240
33	9	8.8%	67.6%	297	9801
34	9	8.8%	76.5%	306	10404
35	9	8.8%	85.3%	315	11025
36	4	3.9%	89.2%	144	5184
37	5	4.9%	94.1%	185	6845
38	2	2.0%	96.1%	76	2888
39	2	2.0%	98.0%	78	3042
40	1	1.0%	99.0%	40	1600
41	1	1.0%	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
	102	100.0%		3171	100687

Mean Speed = 31.1 mph  
 Standard Deviation = 4.6 mph  
 Margin of Error (95% Confidence) = ± 0.9 mph

Median Speed = 31.1 mph  
 15th Percentile Speed = 26.4 mph  
 85th Percentile Speed = 35.8 mph

# SPOT SPEED STUDY

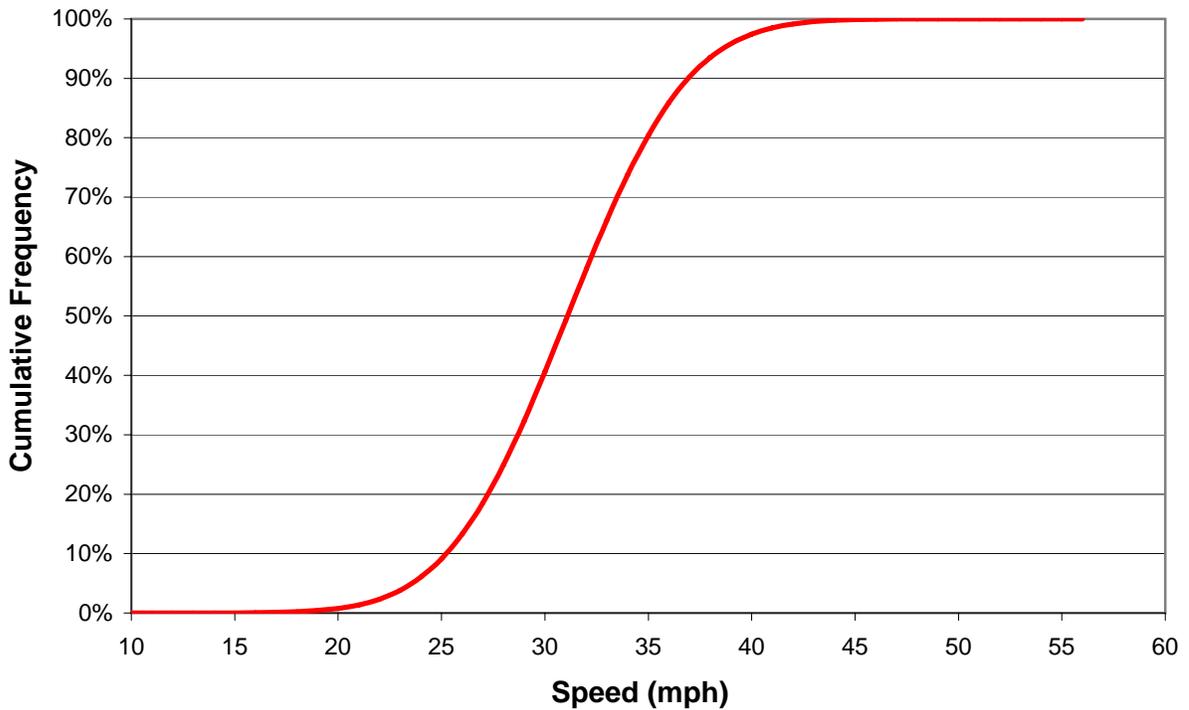
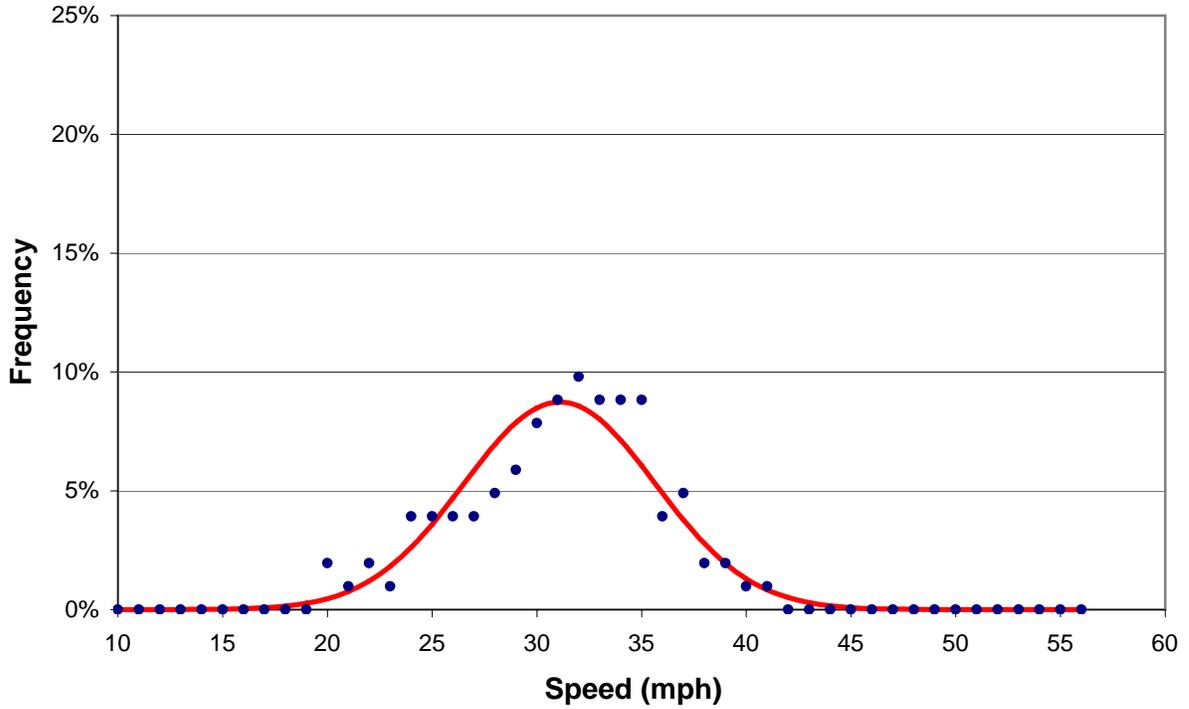
Date: June 30, 2005  
Location: Kosciuszko Street btw. Nostrand Avenue and Marcy Avenue  
Surveyor: The RBA Group

Time: 2:45 pm - 3:45 pm

School: P.S. 256  
Direction: East-West  
Comments:

Mean Speed = 31.1 mph  
Standard Deviation = 4.6 mph  
Margin of Error (95% Confidence) =  $\pm 0.9$  mph

Median Speed = 31.1 mph  
15th Percentile Speed = 26.4 mph  
85th Percentile Speed = 35.8 mph



## SPOT SPEED STUDY

Date: **June 30, 2005**  
 Location: **Lafayette Avenue btw. Nostrand Avenue and Marcy Avenue**  
 Surveyor: **The RBA Group**

Time: **1:45 pm - 2:45 pm**  
 School: **P.S. 256**  
 Direction: **East-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	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	3	2.7%	2.7%	72	1728
25	2	1.8%	4.5%	50	1250
26	8	7.2%	11.7%	208	5408
27	7	6.3%	18.0%	189	5103
28	7	6.3%	24.3%	196	5488
29	6	5.4%	29.7%	174	5046
30	9	8.1%	37.8%	270	8100
31	10	9.0%	46.8%	310	9610
32	11	9.9%	56.8%	352	11264
33	11	9.9%	66.7%	363	11979
34	7	6.3%	73.0%	238	8092
35	7	6.3%	79.3%	245	8575
36	5	4.5%	83.8%	180	6480
37	4	3.6%	87.4%	148	5476
38	4	3.6%	91.0%	152	5776
39	4	3.6%	94.6%	156	6084
40	1	0.9%	95.5%	40	1600
41	2	1.8%	97.3%	82	3362
42	1	0.9%	98.2%	42	1764
43	1	0.9%	99.1%	43	1849
44	1	0.9%	100.0%	44	1936
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
	111	100.0%		3554	115970

Mean Speed = 32.0 mph  
 Standard Deviation = 4.4 mph  
 Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 32.0 mph  
 15th Percentile Speed = 27.4 mph  
 85th Percentile Speed = 36.6 mph

# SPOT SPEED STUDY

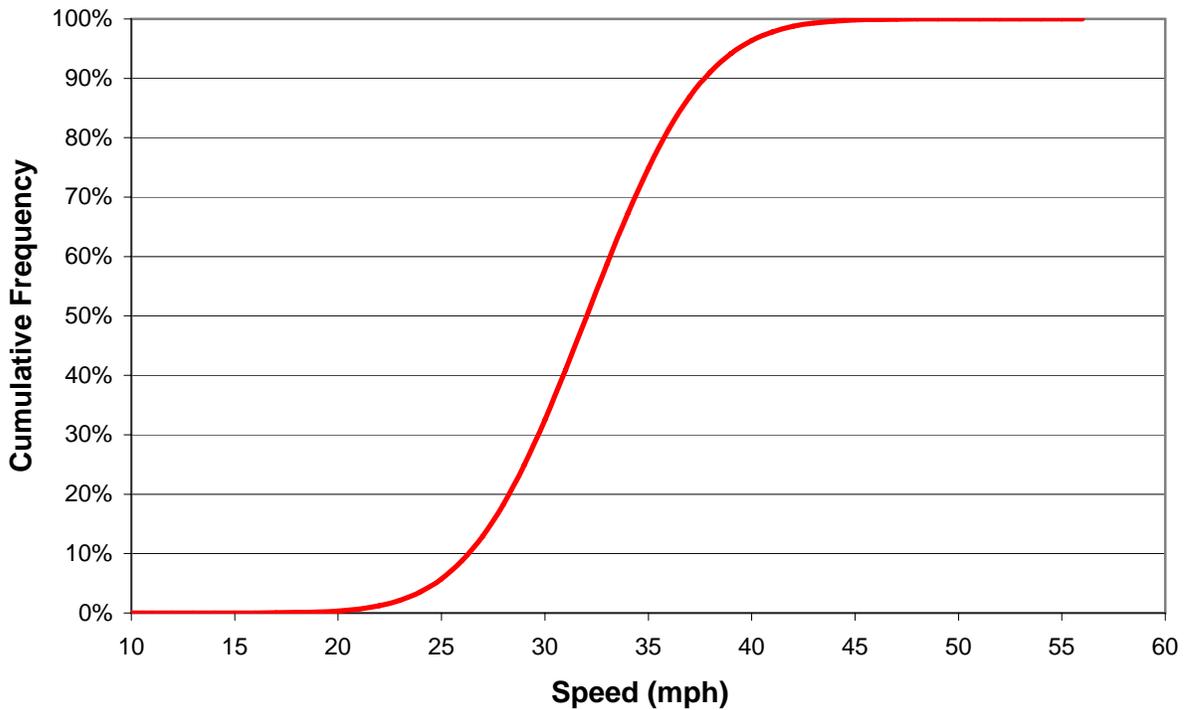
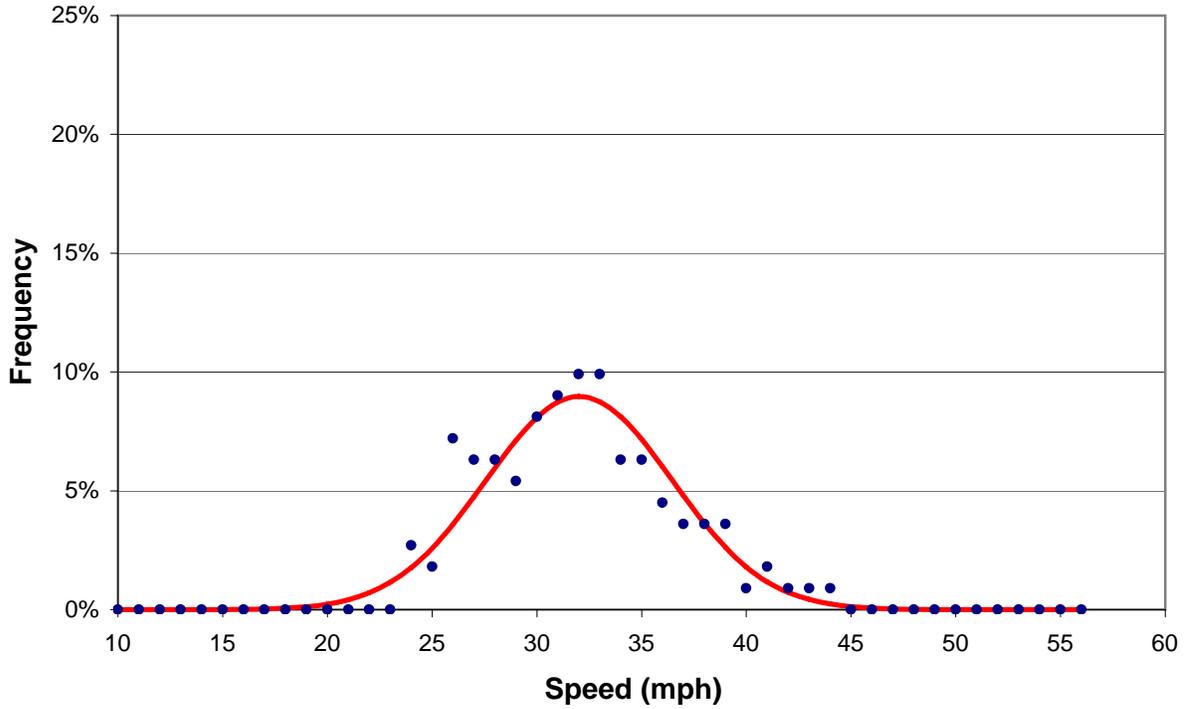
Date: **June 30, 2005**  
Location: **Lafayette Avenue btw. Nostrand Avenue and Marcy Avenue**  
Surveyor: **The RBA Group**

Time: **1:45 pm - 2:45 pm**

School: **P.S. 256**  
Direction: **East-West**  
Comments:

Mean Speed = 32.0 mph  
Standard Deviation = 4.4 mph  
Margin of Error (95% Confidence) =  $\pm 0.8$  mph

Median Speed = 32.0 mph  
15th Percentile Speed = 27.4 mph  
85th Percentile Speed = 36.6 mph



JULY 29 2004 10:42

FIELD TRAFFIC OFFICE

SPEED DATA & ANALYSIS SHEET

F. 01/02

DIR.	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		1			
42-43		2			
40-41		3			
38-39		8			
36-37		9			
34-35		14			
32-33		22			
30-31		19			
28-29		13			
26-27		15			
24-25		5			
22-23					
20-21					

Road LAFAYETTE Ave.

County \_\_\_\_\_ Town \_\_\_\_\_

Locality BROOKLYN

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

Check No.1 Date: 6-30-05  
 Time: From 1:45 PM To 2:45 PM Weather: CLEAR  
 Location: LAFAYETTE AVE B/K Nostrand Ave  
 &  
MERCY AVE.  
 Pavement:

Check No.1 Date:  
 Time: From To Weather:  
 Location:  
 Pavement:

Check No.1 Date:  
 Time: From To Weather:  
 Location:  
 Pavement:

Check No.1 Date:  
 Time: From To Weather:  
 Location:  
 Pavement: