

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



School Safety Engineering Project

REVISED PRE-FINAL REPORT: I.S. 296, Halsey School, Brooklyn



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



OCTOBER 27, 2006

**School Safety Engineering Project
I.S. 296, Halsey School, Brooklyn**

TABLE OF CONTENTS

1. INTRODUCTION 4

1.1 PROJECT DESCRIPTION..... 4

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS..... 5

2.2 NEIGHBORHOOD DESCRIPTION..... 5

2.3 MEETING WITH SCHOOL REPRESENTATIVES 6

2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL..... 9

2.7 OTHER STUDENT PEDESTRIAN TRAFFIC GENERATORS..... 9

2.8 CROSSING GUARD LOCATIONS..... 9

3. TRAFFIC OPERATIONS..... 11

3.1 SCHOOL BUS OPERATIONS 11

3.2 PARENT DROP-OFF OPERATIONS 11

3.3 PARKING REGULATIONS 11

3.4 EXISTING SCHOOL SIGNS AND MARKINGS 12

3.5 ACCIDENT SUMMARY 14

3.6 TRAFFIC OPERATIONS AND ISSUES 16

3.7 SIGNAL TIMING: PEDESTRIAN PHASE..... 22

3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)..... 22

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY 25

4.1 SHORT-TERM MEASURES..... 25

4.2 LONG-TERM MEASURES 27

EXHIBITS

EXHIBIT 1 – AERIAL PHOTOGRAPH 7

EXHIBIT 2 – CATCHMENT AREA 8

EXHIBIT 3 – TRAFFIC SAFETY PLAN 10

EXHIBIT 4 – EXISTING PARKING REGULATIONS 13

EXHIBIT 5 – ACCIDENT SUMMARY 15

EXHIBIT 6A – TRAFFIC COUNTS 23

EXHIBIT 6B – TRAFFIC COUNTS 24

EXHIBIT 7 – PROPOSED MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY 29

TABLES

TABLE 1: MODES OF TRAVEL	9
TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000)	14
TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004).....	14
TABLE 4: SPOT SPEED STUDY	17
TABLE 5: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS	22
TABLE 6: SPOT SPEED STUDIES	26

APPENDIX

SPOT SPEED STUDY – CENTRAL AVENUE.....	A-2
SPOT SPEED STUDY – COVERT AVENUE	A-4
SPOT SPEED STUDY – ELDERT AVENUE	A-6
TRAFFIC COUNTS – CENTRAL AVENUE AND ELDERT AVENUE.....	A-8

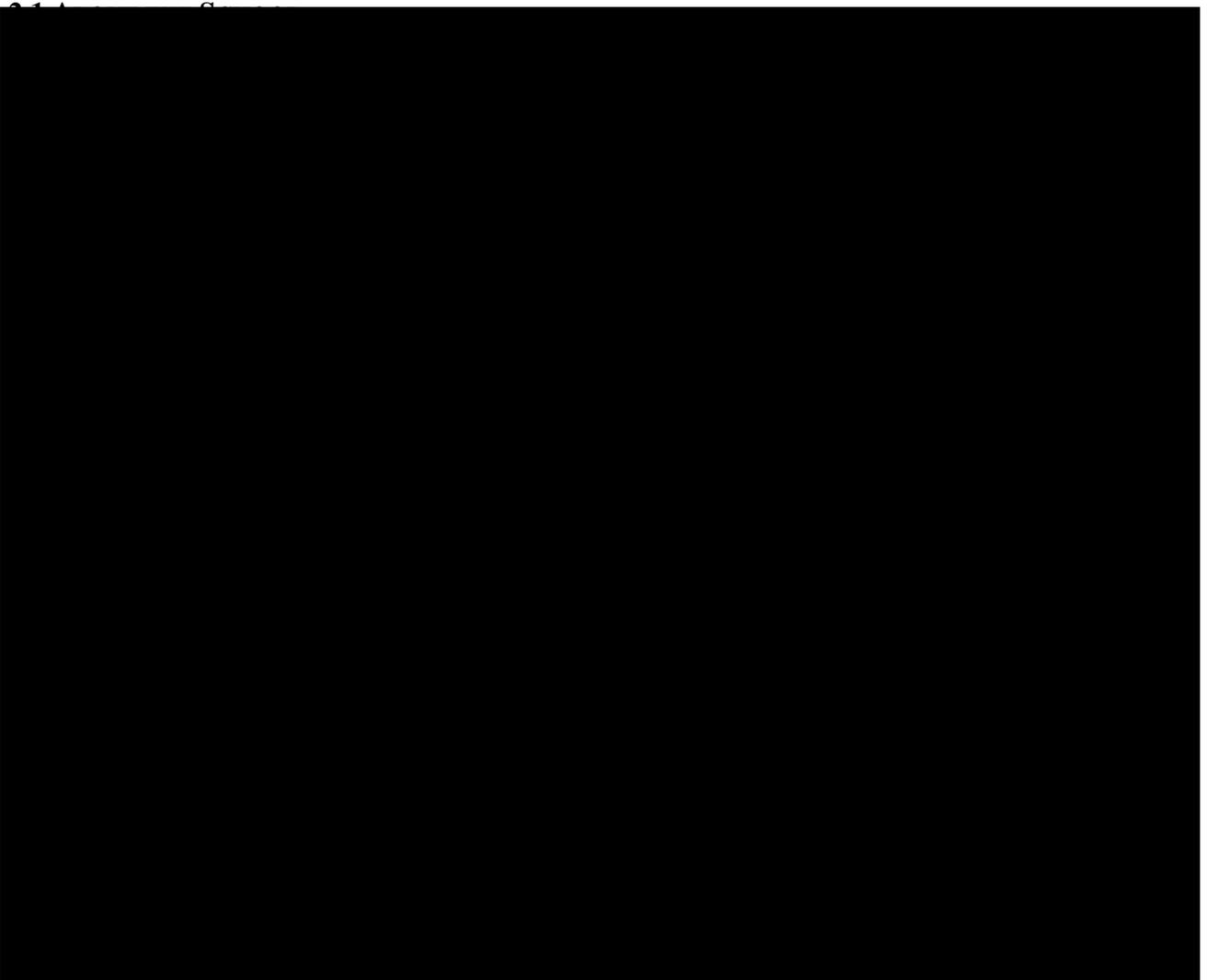
1. INTRODUCTION

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). I.S. 296 (Halsey School) in Brooklyn is one of the 135 priority schools.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS



2.2 NEIGHBORHOOD DESCRIPTION

I.S. 296 is located at 125 Covert Street in Brooklyn. The school occupies most of the city block between Central and Evergreen Avenues. The school's main entrance faces Covert Street. The surrounding area is generally residential with private homes and 2-3 story buildings. (See Exhibit 1 for Aerial Photograph and Exhibit 2 for the Catchment Area).

2.3 MEETING WITH SCHOOL REPRESENTATIVES

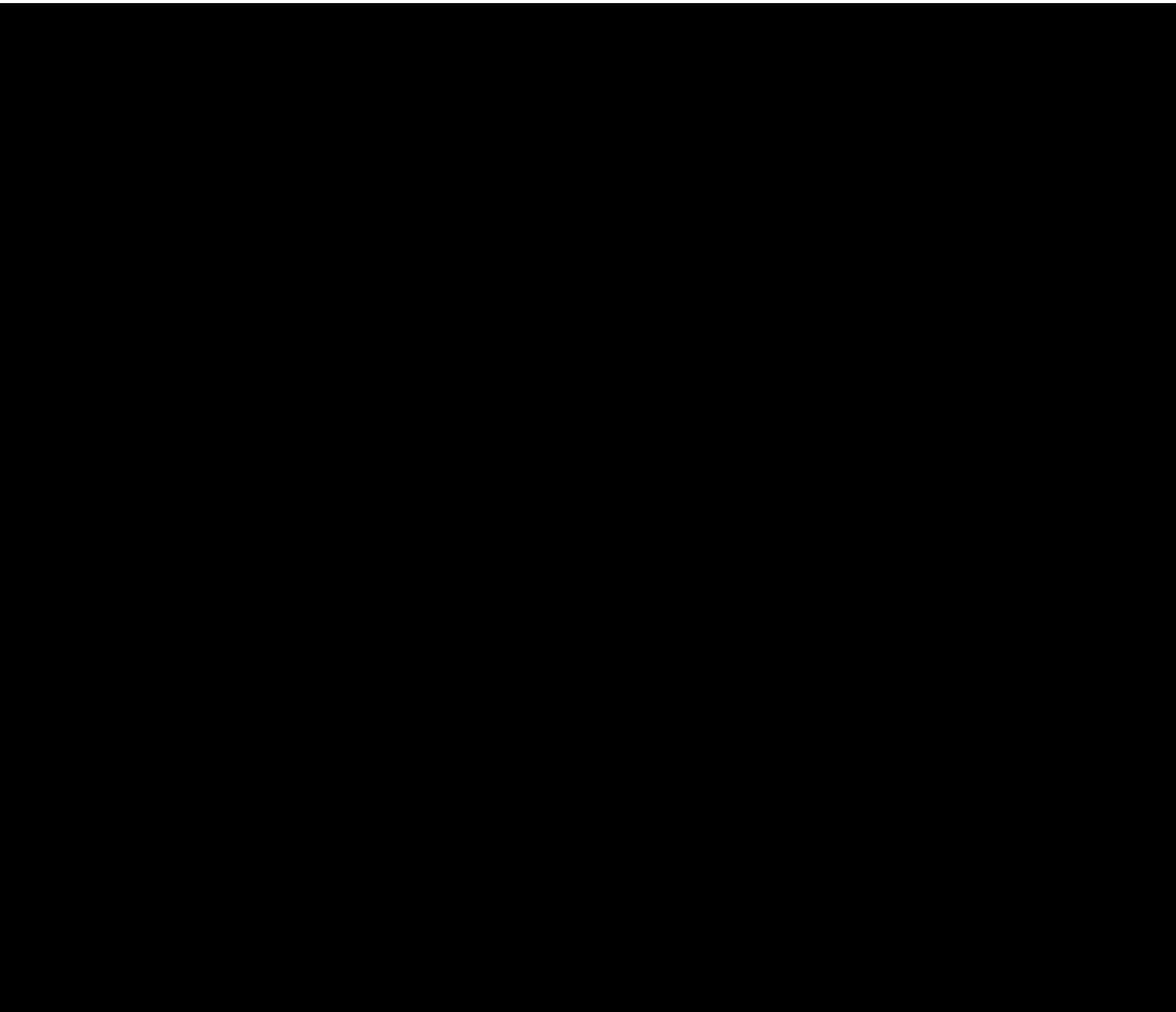
The consultant team, I.S. 296 representatives and a community board member met at the school on June 24, 2004.

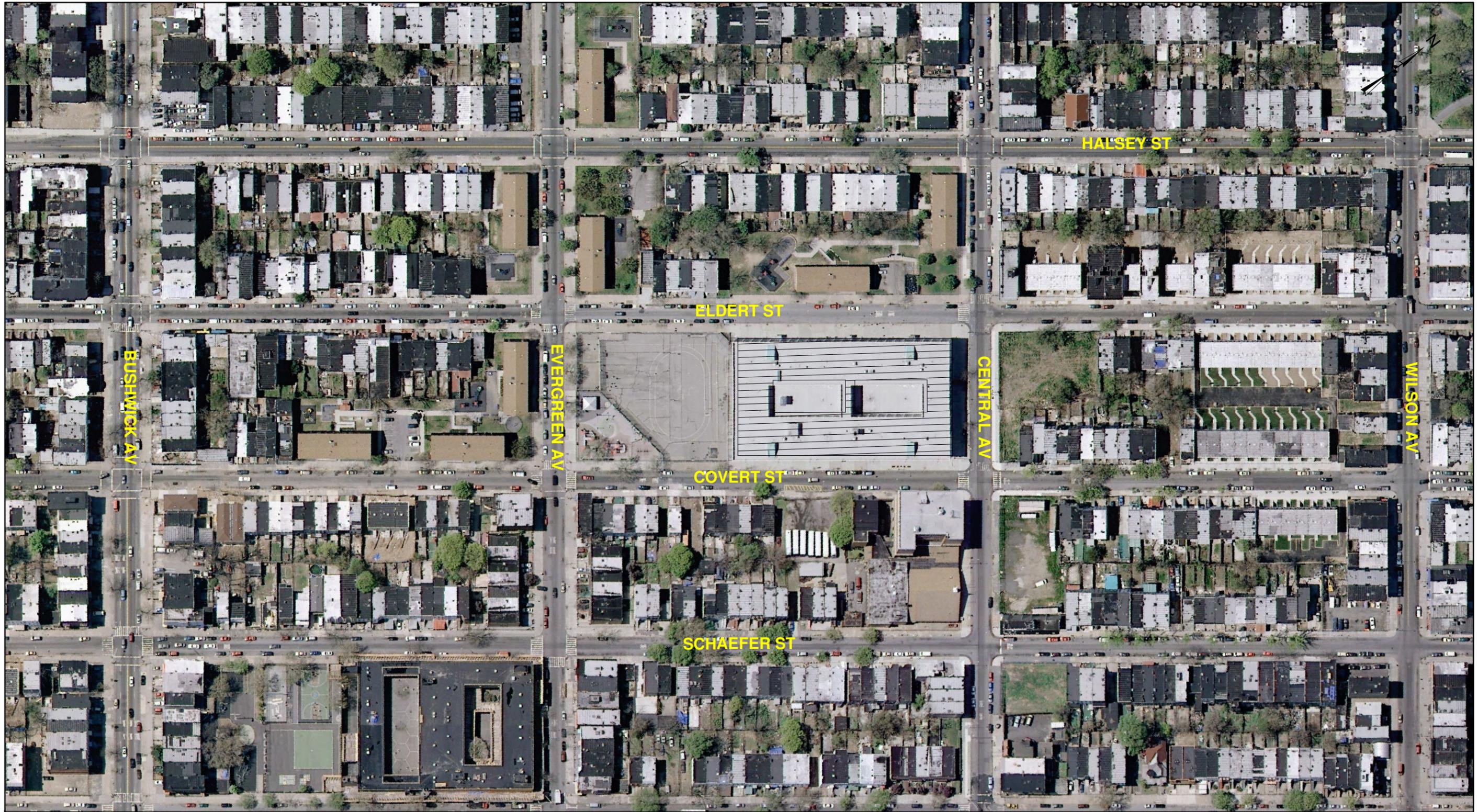
According to representatives of the school, the identifiable problems that student pedestrians encounter on a regular basis include the following:

- Vehicles speeding on Central Avenue, on Eldert Street and Covert Street
- Mid-block crossing on Covert Street and on Eldert Street
- Vehicles running the STOP sign at:
 - Central Avenue and Eldert Street
 - Central Avenue and Covert Street
 - Evergreen Avenue and Eldert Street

School officials requested traffic signals at these intersections.

- Request for crossing guards





**EXHIBIT 1
HALSEY SCHOOL
I.S. 296, BROOKLYN
AERIAL PHOTOGRAPH**

1 inch equals 150 feet



1 inch equals 700 feet



CATCHMENT AREA

EXHIBIT 2

**I.S. 296, BROOKLYN
HALSEY SCHOOL**

CATCHMENT AREA

2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

According to school officials, approximately 95% of students walk to I.S. 296, 1% arrive via public transportation, 1% are driven by parents or guardians and the remaining 3% of students ride school buses. See Table 1 for the school's estimate of the modes of travel.

Description	Percentage
Walk	95%
Driven by parents or guardians	1%
School bus	3%
MTA bus or subway	1%
TOTAL	100%

2.7 OTHER STUDENT PEDESTRIAN TRAFFIC GENERATORS

There are two other public schools in the vicinity of I.S. 296. P.S. 45 is located on Evergreen Avenue between Schaffer Street and Decatur Street. P.S. 151 is located on Wilson Avenue between Halsey Street and Weirfield Street.

2.8 CROSSING GUARD LOCATIONS

There are no crossing guards assigned to I.S. 296.



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

IS 296 Brooklyn
HALSEY INTERMEDIATE SCHOOL

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

Map created on 11/16/2006

EXHIBIT 33 COMM. BOARD: 304
PRECINCT: 83

1.5.1

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to school representatives, three school buses transport I.S. 296 students from I.S. 296 to and from school. All buses pick up and drop off students on Eldert Street.

There are six school buses carrying 35 special education students from I.S. 53 to and from P.S. 53. All buses pick up and drop off students near the school entrance on Central Avenue.

School buses park or double-park, depending on traffic conditions.

3.2 PARENT DROP-OFF OPERATIONS

According to school officials, 1% of students are driven to school by a parent or guardian. Parents mostly pick up and drop off students on Covert Street and Eldert Street. No significant traffic congestion occurs as a result of vehicles waiting to pick up students on either street.



Figure 3 – Eldert Street during morning arrival time

3.3 PARKING REGULATIONS

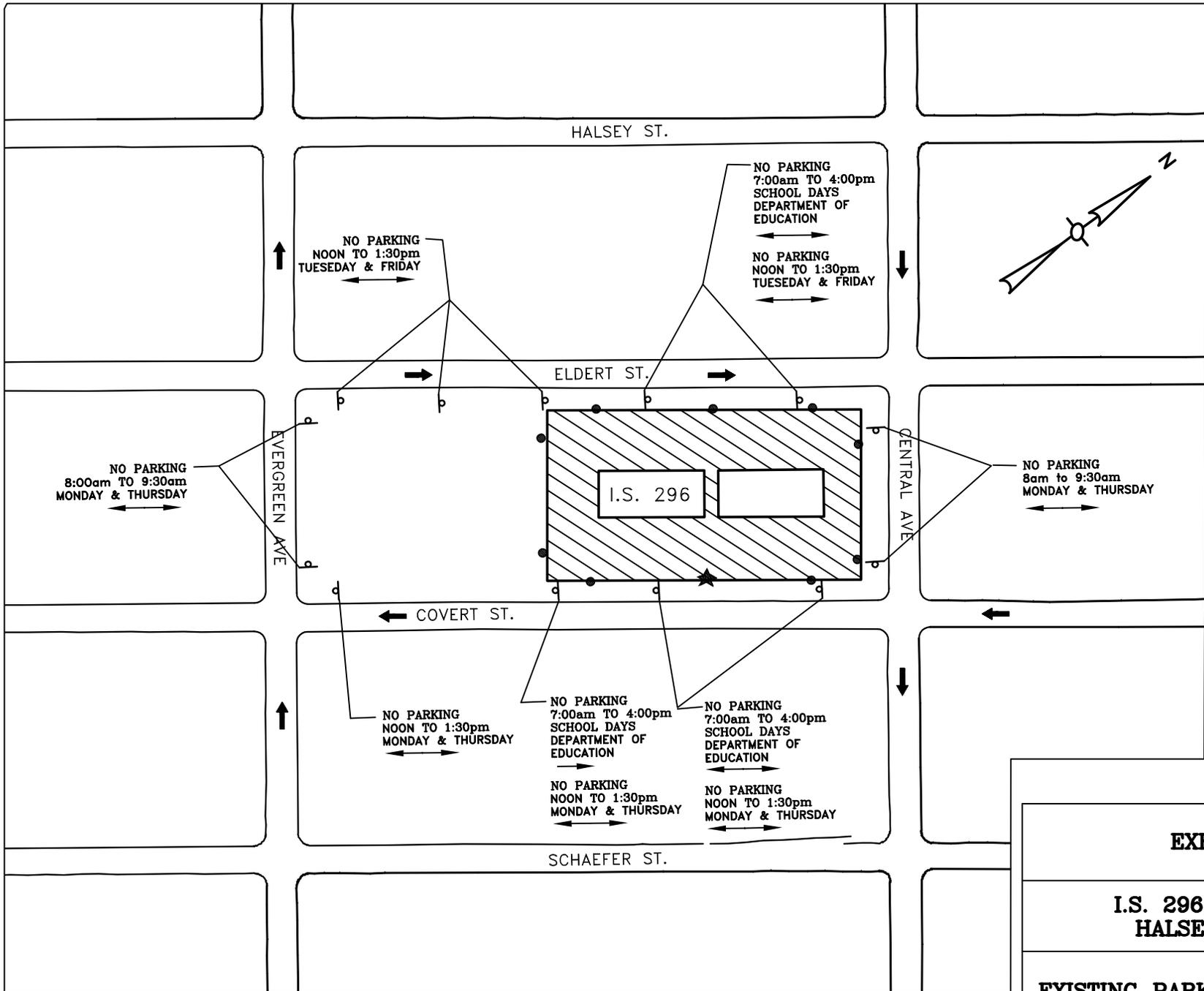
“NO PARKING, 7 AM - 4 PM, SCHOOL DAYS, EXCEPT DEPARTMENT OF EDUCATION” parking regulations are posted in front of the school on both Covert Street and Eldert Street.

Alternate side street parking regulations are in effect 12:00 pm – 1:30 pm on the roadways surrounding the school. See Exhibit 4 for the existing parking regulations.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

The Traffic Safety Plan, Exhibit 3, shows existing signals and school 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 7.

All school crosswalks within the limits of Community Board 4 have been upgraded and re-painted as of August 2005.



LEGEND

- ★ MAIN ENTRANCE
- OTHER ENTRANCES
- STREET SIGN

EXHIBIT 4

**I.S. 296, BROOKLYN
HALSEY SCHOOL**

EXISTING PARKING REGULATIONS

SCALE: 1" : 30'

3.5 ACCIDENT SUMMARY

Exhibit 5 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of I.S. 296 for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of the accident. Table 3 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the DMV data.

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

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

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED* ACCIDENTS
Central Ave. and Eldert Street	7	0	0	0
Central Ave. and Covert Street	6	0	0	0
Evergreen Ave. and Eldert Street	11	1	0	0
Evergreen Ave. and Covert Street	8	3	0	2
Bushwick Ave. and Eldert Street	32	2	0	0
Evergreen Ave. and Halsey Street	9	4	0	3
Evergreen Ave. and Schaefer Street	7	1	0	1
TOTAL	80	11	0	6

TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004)

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED* ACCIDENTS
Central Ave. and Eldert Street	15	2	0	1
Central Ave. and Covert Street	12	3	0	2
Evergreen Ave. and Eldert Street	13	0	0	0
Evergreen Ave. and Covert Street	6	2	0	2
Bushwick Ave. and Eldert Street	28	3	0	1
Evergreen Ave. and Halsey Street	18	2	0	1
Evergreen Ave. and Schaefer Street	20	5	0	4
TOTAL	112	17	0	11

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

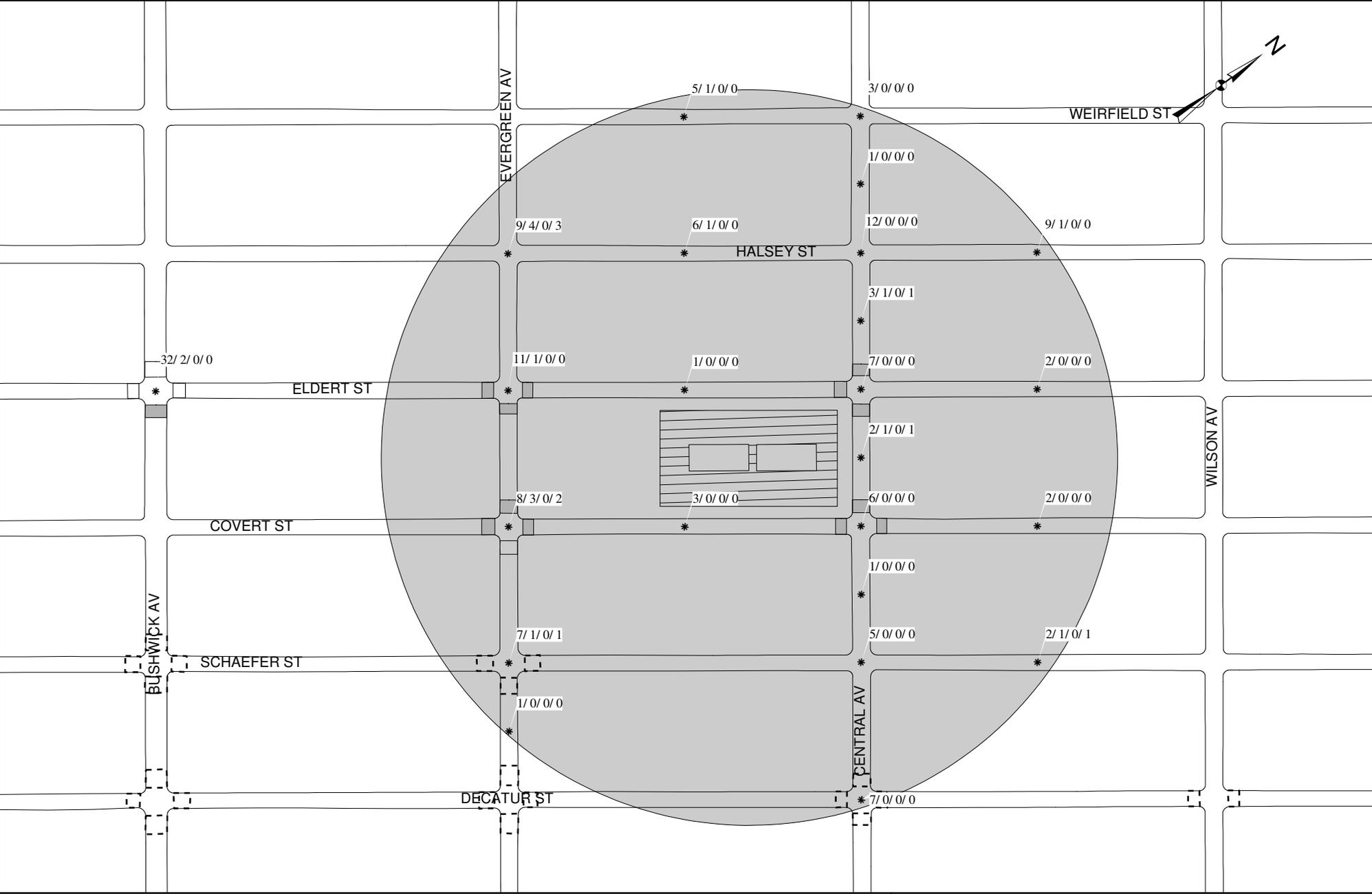


EXHIBIT 5
I.S. 296, BROOKLYN
HALSEY SCHOOL
ACCIDENT SUMMARY
THREE YEAR PERIOD
1998-2000

5/1/0/0	3/0/0/0
9/4/0/3	1/0/0/0
6/1/0/0	12/0/0/0
11/1/0/0	3/1/0/1
1/0/0/0	7/0/0/0
2/0/0/0	2/1/0/1
8/3/0/2	6/0/0/0
3/0/0/0	2/0/0/0
7/1/0/1	1/0/0/0
5/0/0/0	2/1/0/1
1/0/0/0	7/0/0/0
7/0/0/0	

3.6 TRAFFIC OPERATIONS AND ISSUES

The following describes traffic accidents and operational issues at intersections in the vicinity of I.S. 296.

3.6.1 Central Avenue and Eldert Street

Central Avenue is a 32-foot wide, one-way southbound roadway with one travel lane and parking on both sides of the street. Eldert Street is a 32-foot wide, one-way eastbound roadway with one travel lane and parking on both sides. Central Avenue and Eldert Street is an un-signalized intersection with a stop control on Eldert Street for eastbound traffic (Figure 4). There are school crosswalks on the west, north and south legs of the intersection. The school crosswalks on the north and south legs are uncontrolled. This intersection is a major safety concern of school officials.



Figure 4: Central Avenue and Eldert Street, looking north

To determine traffic conditions at this intersection, traffic counts were performed on March 22, 2005 between 7:30 am and 8:30 am (Exhibit 6A). The results indicated that during the study hour, a total of 480 vehicles (317 in the southbound direction) and 466 pedestrians utilized this intersection. Approximately 156 pedestrians crossed the north and south legs, which are currently uncontrolled school crosswalks. Based on MUTCD Section 4C.05 Signal Warrant 4 (Pedestrian Volume) the need for a traffic 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 existing conditions do not meet the criteria for signaling the intersection at this time.

School officials indicated that vehicles are speeding on Central Avenue in the vicinity of the school. A spot speed study was conducted on Central Avenue between Eldert Street and Covert Street on March 14, 2005. The study confirmed that the 85th percentile speed on Central Avenue was 35 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.

Installation of a speed reducer (hump) was considered on Central Avenue between Eldert Street and Covert Street. However, Central Avenue between Eldert Street and Covert Street is only 220 feet long, and therefore does not meet DOT criteria for installation of a speed reducer (hump). Alternative measures to improve student pedestrian safety are discussed in Section 4.

TABLE 4: SPOT SPEED STUDY		
LOCATION	MEDIAN SPEED (MPH)	85TH PERCENTILE SPEED (MPH)
Central Avenue between Covert Street and Eldert Street	29	35

Seven accidents occurred at this intersection during the 1998-2000 study period, none of which involved pedestrians. However, an eleven-year-old child was struck while crossing mid-block on Central Avenue between Eldert Street and Covert Street. Another child was struck while crossing mid-block on Central Avenue between Eldert Street and Halsey Street.

3.6.2 Central Avenue and Covert Street

Central Avenue and Covert Street is an un-signalized intersection with a stop control on Covert Street for westbound traffic. Covert Street is a 28-foot wide, westbound street with one travel lane and parking on both sides of the street (see Figure 5). There are school crosswalks on the east, west and north legs of the intersection. The school crosswalk on the north leg is uncontrolled.



Figure 5 –Central Avenue and Covert Street, looking west

To determine traffic conditions at this intersection, traffic counts were performed on September 13, 2005 between 2:30 pm and 3:30 pm (Exhibit 6A). The results indicated that during the study hour, a total of 434 vehicles (314 in the southbound direction) and 247 pedestrians utilized this intersection. Approximately 133 pedestrians crossed the

north leg, which is currently an uncontrolled school crosswalk. Based on MUTCD Section 4C.05 Signal Warrant 4 (Pedestrian Volume) the need for a traffic 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 existing conditions do not meet the criteria for signaling the intersection at this time.

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

3.6.3 – Evergreen Avenue and Eldert Street

Evergreen Avenue and Eldert Street is an all-way stop controlled intersection. Evergreen Avenue is a 34-foot wide, one-way northbound roadway with one travel lane and parking on both sides of the street. There are school crosswalks in place on the east, west and south legs of the intersection (Figures 6 and 7). During field observations, it was noted that vehicles generally obey stop signs in both directions.

Eleven accidents occurred at this intersection during the 1998-2000 study period, one of which was a non school-related pedestrian accident. A pedestrian was struck while crossing outside the crosswalk by an eastbound left turning vehicle.



Figure 6 – Evergreen Avenue and Eldert Street, looking west



Figure 7– Evergreen Avenue and Eldert Street, looking west

3.6.4 – Evergreen Avenue and Covert Street

Evergreen Avenue and Covert Street is a signalized intersection with school crosswalks in place on the east, west and north legs (Figure 8).

Eight accidents occurred at this intersection during the 1998-2000 study period. Three accidents involved pedestrians, two of which were school-related. A 13-year old child was struck while crossing Evergreen Avenue against the signal. A four-year-old child was struck while emerging between parked vehicles. The third pedestrian was struck while crossing outside of the crosswalk.



Figure 8 – Evergreen Avenue and Covert Street, looking west

3.6.5 – Bushwick Avenue and Eldert Street

Bushwick Avenue is a 40-foot wide, two-way street with one travel lane in each direction and parking on both sides. Parking lanes on both sides are utilized as moving lanes at morning peak hours. Bushwick Avenue and Eldert Street is a signalized intersection with school crosswalks on the south leg (Figures 9 and 10).

Thirty-two accidents occurred at this location during the 1998-2000 study period. Two accidents involved pedestrians, none of which were school-related. A pedestrian was struck by a left turning vehicle. There were no further details for the second accident.

The intersections along Bushwick Avenue are located in close proximity to each other (approximately 250 feet apart). During the peak hour, vehicle queues were observed to extend back to the adjacent intersection. This results in vehicles blocking the intersection box. Pedestrians were then forced to negotiate between vehicles to get across the street.



Figure 9 –Bushwick Avenue and Eldert Street, looking north



Figure 10 –Bushwick Avenue and Eldert Street, looking west

3.6.6 Evergreen Avenue and Halsey Street

Evergreen Avenue and Halsey Street is a signalized intersection. Halsey Street is a 30-foot wide, two-way roadway with one travel lane and parking on both sides of the street. There are pedestrian crosswalks on all four legs of the intersection, none of which are school crosswalks.

Nine accidents occurred at this intersection during the 1998-2000 study period. Four accidents involved pedestrians, three of which were school-related. Two school-related accidents were attributed to drivers' failure to yield to pedestrians while making right turns. Another school-related accident involved a driver backing up his vehicle unsafely. The fourth pedestrian was struck while crossing outside of the crosswalk.

3.6.7 Evergreen Avenue and Schaefer Street

Evergreen Avenue and Schaefer Street is an un-signalized intersection with a stop control on Schaefer Street for westbound traffic. Schaefer Street is a 30-foot wide, one-way westbound roadway with one travel lane and parking on both sides. There are school crosswalks on the south, east and west legs of the intersection. The school crosswalk on the south leg is uncontrolled.

To determine traffic conditions at this intersection, traffic counts were performed on September 13, 2005 between 2:30 pm and 3:30 pm (Exhibit 6B). The results indicated that during the study hour, a total of 255 vehicles (177 in the northbound direction) and 200 pedestrians utilized this intersection. Approximately 37 pedestrians crossed the south leg, which is currently an uncontrolled school crosswalk. Seven pedestrians crossed the north leg where no crosswalk is installed. Based on MUTCD Section 4C.05 Signal Warrant 4 (Pedestrian Volume) the need for a traffic 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 existing conditions do not meet the criteria for signaling the intersection at this time.

Seven accidents occurred at this intersection during the 1998-2000 study period, one of which involved a pedestrian. A school child was struck while crossing outside of the school crosswalk. The accident was due to driver error.

3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of P.S. 296, and found to be adequate for a child pedestrian walking rate of three feet per second in all directions and approaches.

TABLE 5: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS				
Intersection Name	Crosswalk Width (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)	Timing Adjustment? (Yes/No)
Evergreen Avenue and Covert Street				
Crossing Evergreen Avenue	32	35	13	NO
Crossing Covert Street	30	85	13	NO
Bushwick Avenue and Eldert Street				
Crossing Bushwick Avenue	40	30	16	NO
Crossing Eldert Street	28	30	12	NO

3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)

The roadways and sidewalks in the vicinity of the school were observed to be in good condition except at the following locations.

The sidewalk on Evergreen Avenue between Eldert Street and Covert Street is in poor condition (see Figure 11). There are empty tree pits on the sidewalk along Covert Street (see Figure 12).

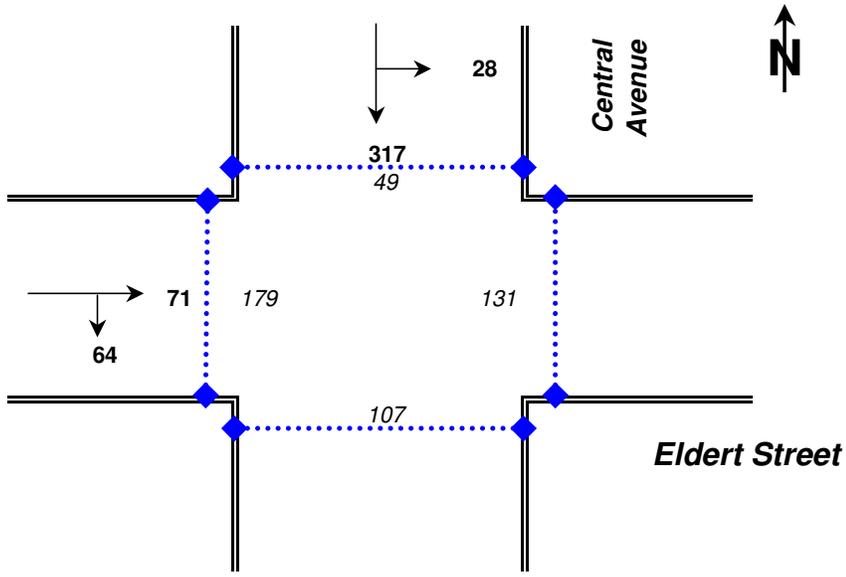


Figure 11 – Sidewalk cracks at Evergreen Avenue between Elder Street and Covert Street

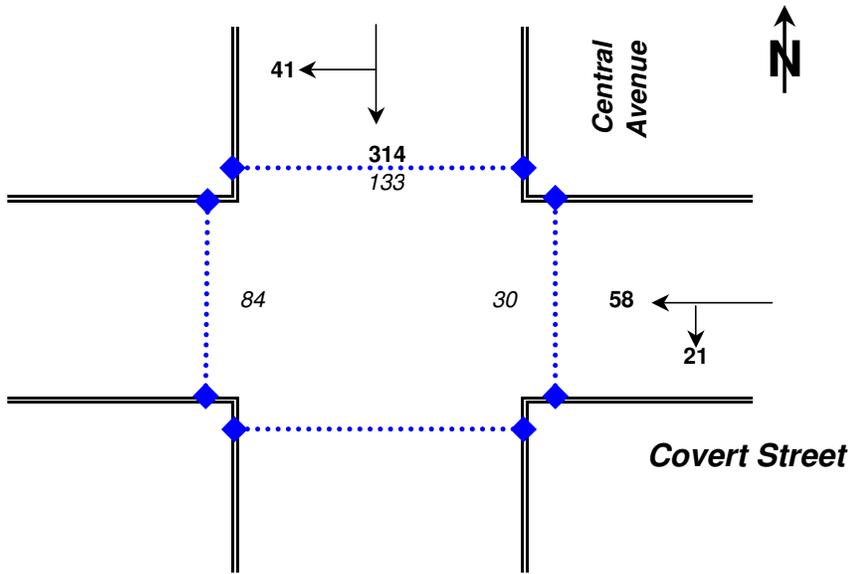


Figure 12 – Empty tree pit on the sidewalk along Covert Street

One Hour Traffic Count Volumes



Intersection of Central Avenue and Eldert Street
(7:30 AM - 8:30 AM, March 22, 2005)



Intersection of Central Avenue and Covert Street
(2:30 PM - 3:30 PM, September 13, 2006)

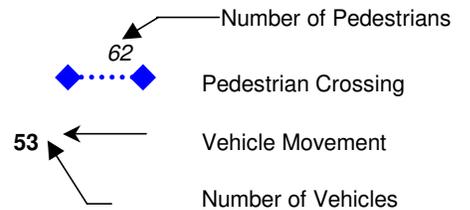
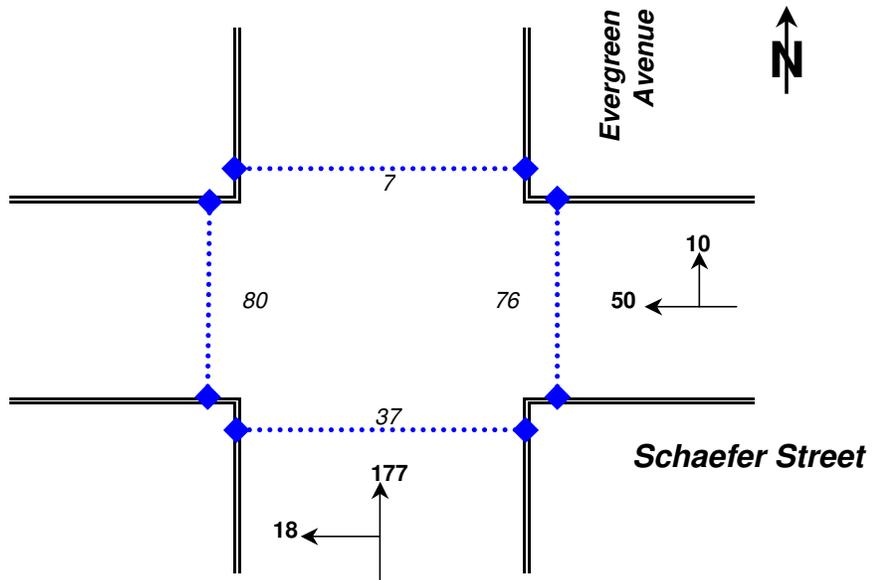


EXHIBIT 6A
I.S. 296, BROOKLYN HALSEY SCHOOL
TRAFFIC COUNTS

One Hour Traffic Count Volumes



Intersection of Evergreen Avenue and Schaefer Street
 (2:30 PM - 3:30 PM, september 13, 2006)

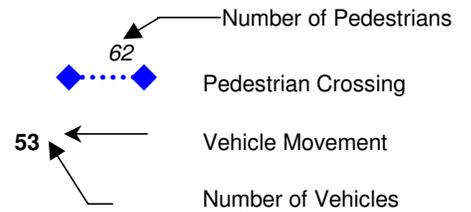


EXHIBIT 6B
I.S. 296, BROOKLYN HALSEY SCHOOL
TRAFFIC COUNTS

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

- *No-Standing Zone on Eldert Street and Covert Street*

Six school buses transporting handicapped students from P.S. 53 load and unload students on Central Avenue. Three school buses transporting students from I.S. 296 load and unload students on Covert Street. It is recommended that all school buses assigned to I.S. 296 and P.S. 53 load and unload students on Eldert Street or Covert Street in front of the school entrances.

“NO STANDING 7 AM - 4 PM, SCHOOL DAYS” parking regulations should be considered in front of the school entrances for a length of 60 feet on Eldert Street and Covert Street. This will allow school buses and parents a place to load and unload students at the curb, and will also improve visibility of those students arriving and leaving the school.

The teacher parking should be relocated to the west on both Covert Street and Eldert Street.

- *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 crosswalk at the following intersections:*

- Evergreen Avenue and Halsey Street – south and east leg
- Central Avenue and Halsey Street – south and west leg
- Central Avenue and Schaefer Street - west leg

Crosswalks at these three locations should be installed as school crosswalks to facilitate students walking to I.S. 296 (see Exhibit 7).

- Install speed reducers (humps) at the following locations:
 - Covert Street between Evergreen Avenue and Central Avenue
 - Eldert Street between Evergreen Avenue and Central Avenue

School officials believed that vehicles were speeding on both Eldert Street and Covert Street in the vicinity of I.S. 296. Spot speed surveys were conducted on Covert Street and Eldert Street between Evergreen Avenue and Central Avenue on September 7, 2005.

Spot speed studies confirmed that the 85th percentile speed is 32 mph on Covert Street and is 31 mph on Eldert Street, both of which exceed the legal speed limit of 30 mph. To reduce speeding in the vicinity of the school, speed reducers (humps) should be installed on both Eldert Street and Covert Street between Evergreen Avenue and Central Avenue (see Exhibit 7). The location and number of speed reducers (humps) will be determined by NYCDOT. See Table 6 for a summary of the results and the Appendix for detail.

TABLE 6: SPOT SPEED STUDIES		
LOCATION	MEDIAN SPEED (MPH)	85 TH PERCENTILE SPEED (MPH)
Covert Street between Central Avenue and Evergreen Avenue	27	32
Eldert Street between Central Avenue and Evergreen Avenue	27	31

- Submit Request to Police Department for Crossing Guards

There are uncontrolled school crosswalks on Central Avenue at Eldert Street and at Covert Street. Spot speed studies also confirmed that vehicles were speeding on Central Avenue in the vicinity of I.S. 296. It is recommended that crossing guards be requested for the following two intersections:

- Central Avenue and Eldert Street
- Central Avenue and Covert Street

- Install new sidewalks at the following locations:

- Evergreen Avenue between Covert Street and Eldert Street
- Central Avenue in the vicinity of the school

It is recommended to install new sidewalks on Evergreen Avenue between Covert Street and Eldert Street to correct broken sidewalks and to replace missing trees on Central Avenue. Existing tree pits are empty and should have new trees installed in them. It is recommended that NYC Department of Parks and Recreation be requested to place street trees at these locations.

- *Narrow Central Avenue using a bike lane*

School officials indicated that vehicles are speeding on Central Avenue in the vicinity of school. A spot speed study conducted on Central Avenue between Eldert Street and Covert Street on Mar 14, 2005 confirmed that the 85th percentile speed on Central Avenue was 35 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. However Central Avenue between Eldert Street and Covert Street is only 220 feet long and therefore does not comply with DOT criteria for speed reducers (humps).

It is recommended that DOT install proposed a 5-foot bike lane along Central Avenue. DOT has recommended this street for a bike lane as part of it's master plan of bike routes. The proposed bike lane would narrow the effective width of the roadway and should help to reduce the effects of speeds.

- *Install enlarged signal lenses*

Consideration should be given to the installation of an enlarged 12" red signal lens at the following two intersections:

- Bushwick Avenue and Eldert Street
- Evergreen Avenue and Covert Street

Replacing existing 8-inch signal lenses with 12-inch signal lenses will improve visibility at these locations.

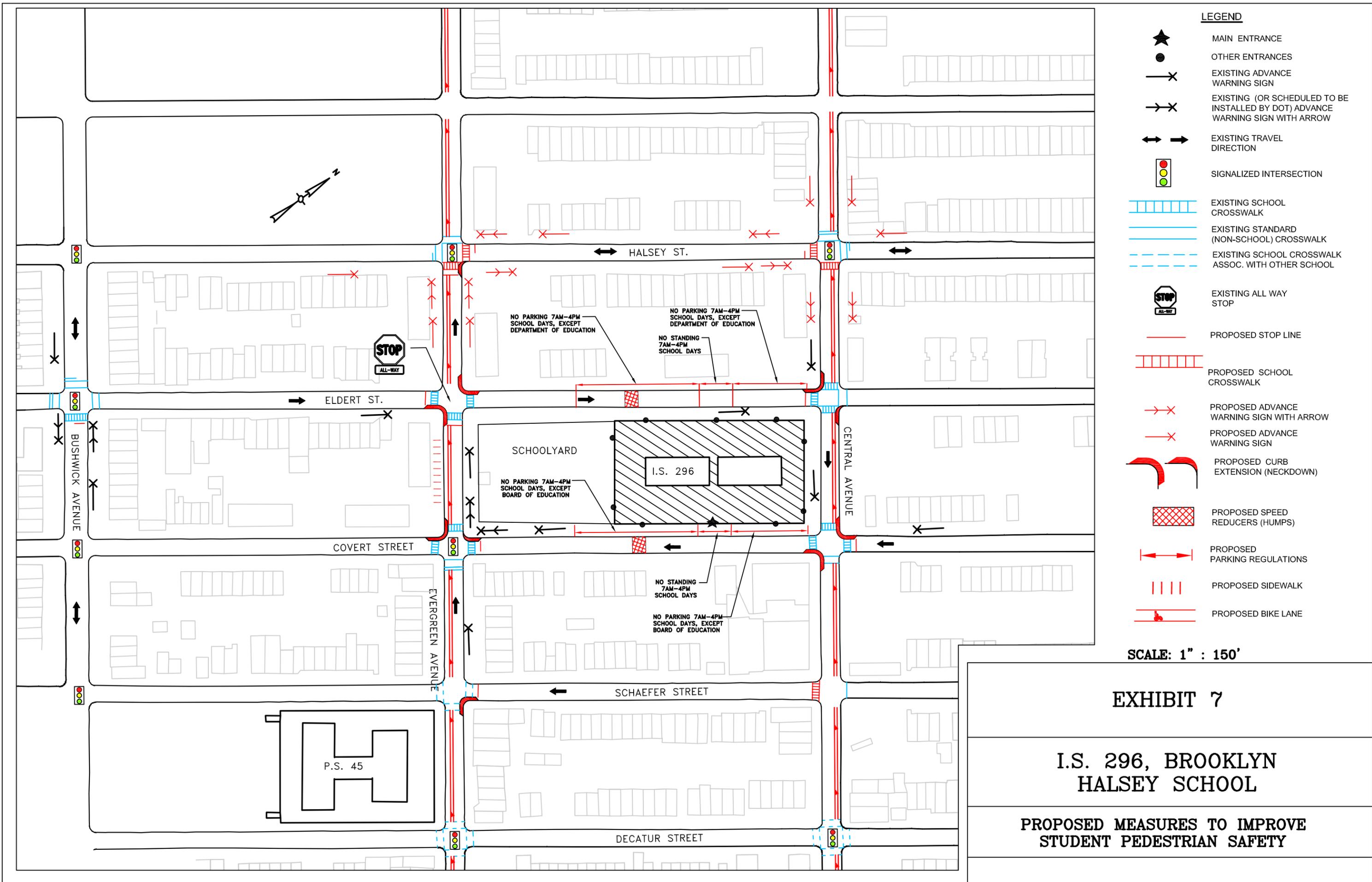
4.2 LONG-TERM MEASURES

- *Consider curb extensions at the following intersections:*

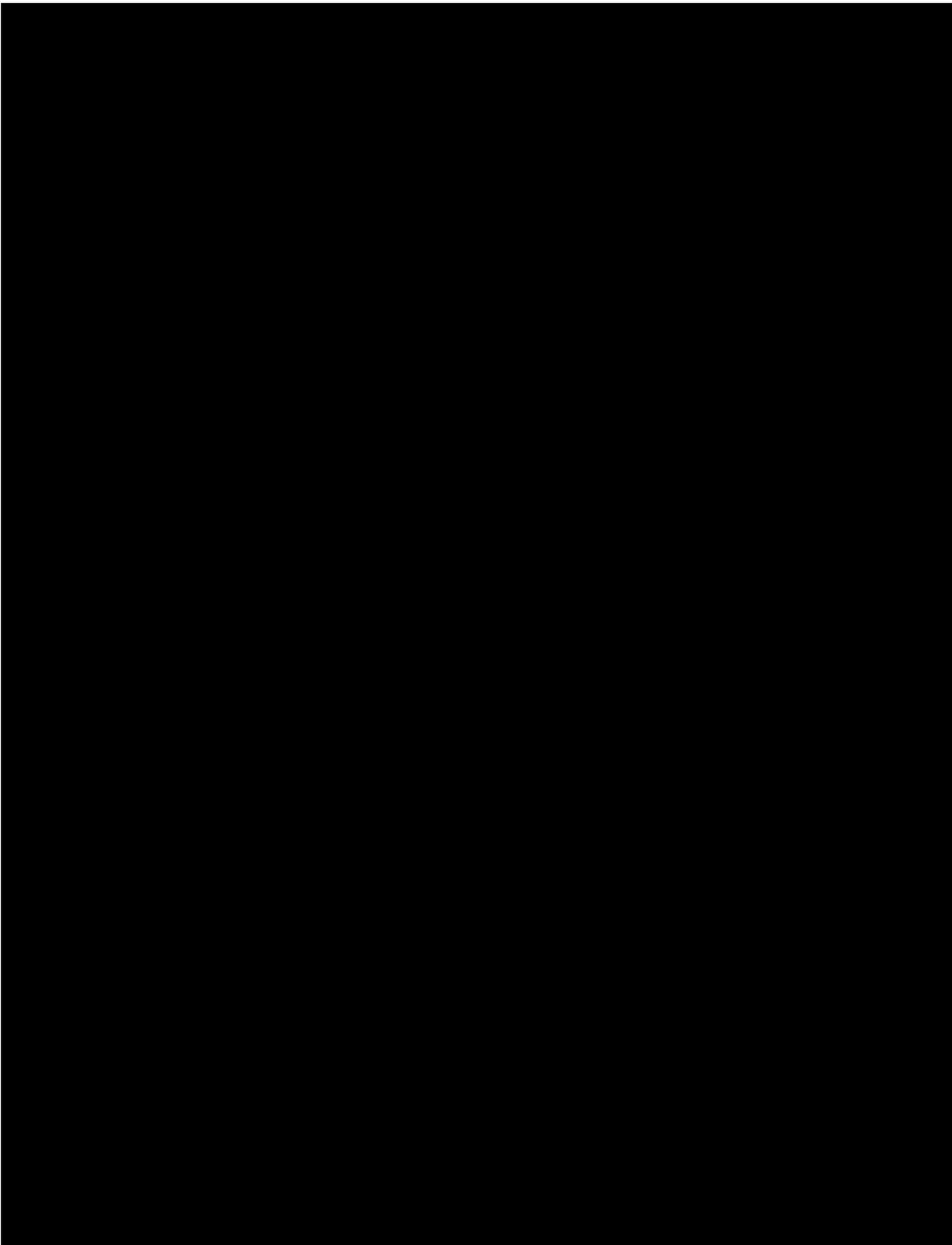
Consideration should be given to installing curb extensions at the following locations, provided that the Final Design confirms that construction of the recommended curb extension would be feasible and would not interfere with traffic operations. Final details pertaining to the number, location and geometry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

- Eldert Street and Central Avenue
- Covert Street and Central Avenue
- Eldert Street and Evergreen Avenue
- Covert Street and Evergreen Avenue
- Halsey Street and Evergreen Avenue
- Schaefer Street and Evergreen Avenue

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 (or intersections). These curb extensions would not eliminate or reduce the width of any moving lanes.



APPENDIX



SPOT SPEED STUDY

Date: **March 14, 2005** Time: **11:00 AM To 12:25 PM**
 Location: **Central Avenue btw. Eldert Street and Covert Street**
 Surveyor: **Eyad Yousef**

School: **I.S. 296**
 Direction: **South**
 Comments: **Sunny and Dry**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
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	3	2.6%	2.6%	60	1200
21	3	2.6%	5.2%	63	1323
22	5	4.3%	9.6%	110	2420
23	5	4.3%	13.9%	115	2645
24	8	7.0%	20.9%	192	4608
25	8	7.0%	27.8%	200	5000
26	9	7.8%	35.7%	234	6084
27	8	7.0%	42.6%	216	5832
28	10	8.7%	51.3%	280	7840
29	9	7.8%	59.1%	261	7569
30	8	7.0%	66.1%	240	7200
31	10	8.7%	74.8%	310	9610
32	5	4.3%	79.1%	160	5120
33	6	5.2%	84.3%	198	6534
34	2	1.7%	86.1%	68	2312
35	3	2.6%	88.7%	105	3675
36	2	1.7%	90.4%	72	2592
37	2	1.7%	92.2%	74	2738
38	1	0.9%	93.0%	38	1444
39	1	0.9%	93.9%	39	1521
40	1	0.9%	94.8%	40	1600
41	1	0.9%	95.7%	41	1681
42	1	0.9%	96.5%	42	1764
43	0	0.0%	96.5%	0	0
44	1	0.9%	97.4%	44	1936
45	1	0.9%	98.3%	45	2025
46	0	0.0%	98.3%	0	0
47	1	0.9%	99.1%	47	2209
48	0	0.0%	99.1%	0	0
49	1	0.9%	100.0%	49	2401
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
	115	100.0%		3343	100883

Mean Speed = 29.1 mph Median Speed = 29.1 mph
 Standard Deviation = 5.7 mph 15th Percentile Speed = 23.2 mph
 Margin of Error (95% Confidence) = ± 1.0 mph 85th Percentile Speed = 35.0 mph

SPOT SPEED STUDY

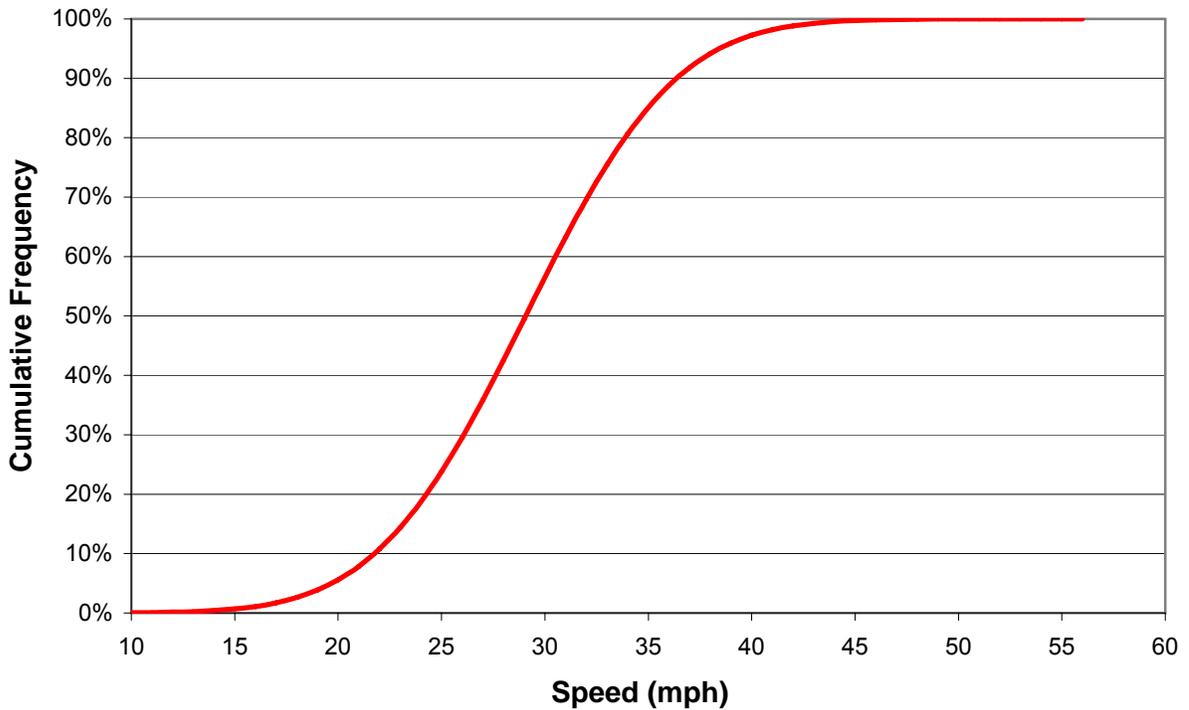
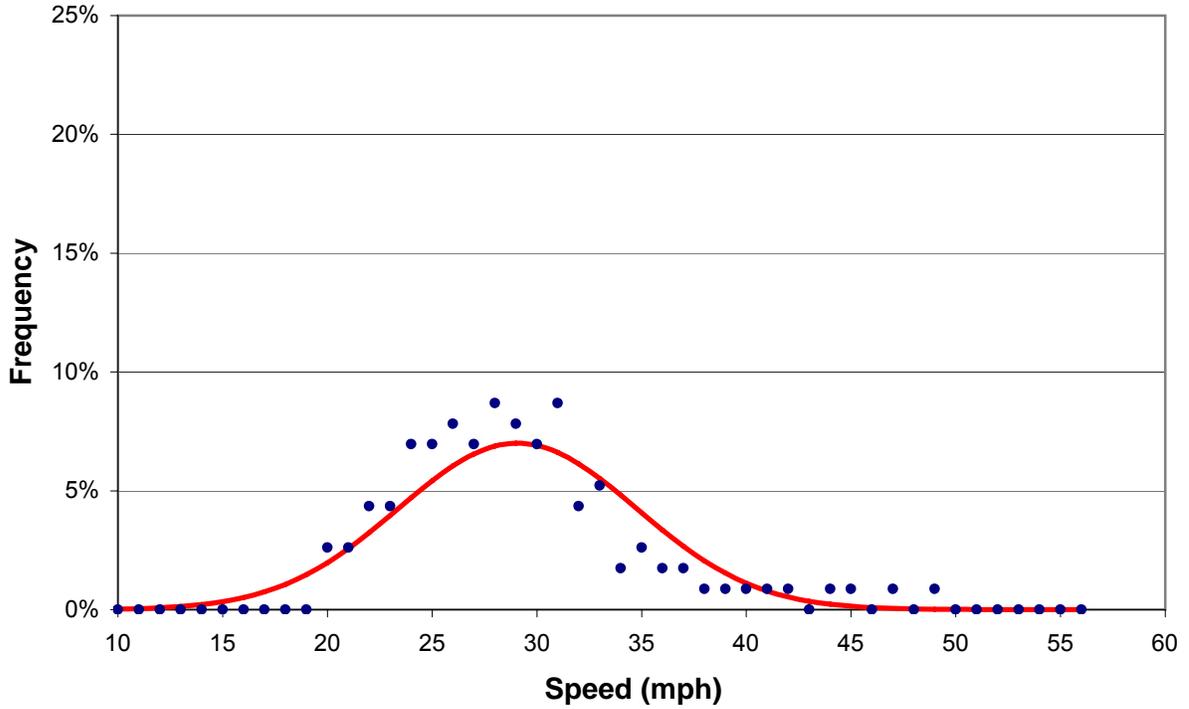
Date: **March 14, 2005**
Location: **Central Avenue btw. Eldert Street and Covert Street**
Surveyor: **Eyad Yousef**

Time: **11:00 AM To 12:25 PM**

School: **I.S. 296**
Direction: **South**
Comments: **Sunny and Dry**

Mean Speed = 29.1 mph
Standard Deviation = 5.7 mph
Margin of Error (95% Confidence) = ± 1.0 mph

Median Speed = 29.1 mph
15th Percentile Speed = 23.2 mph
85th Percentile Speed = 35.0 mph



SPOT SPEED STUDY

Date: **September 7, 2005** Time: **9:30 AM To 10:30 AM**
 Location: **Covert Avenue btw. Central Avenue and Evergreen Avenue**
 Surveyor: **Eyad Yousef**

School: **I.S. 296**
 Direction: **NS**
 Comments: **Sunny and Dry**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
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	8	14.5%	14.5%	160	3200
21	0	0.0%	14.5%	0	0
22	0	0.0%	14.5%	0	0
23	6	10.9%	25.5%	138	3174
24	4	7.3%	32.7%	96	2304
25	2	3.6%	36.4%	50	1250
26	4	7.3%	43.6%	104	2704
27	6	10.9%	54.5%	162	4374
28	4	7.3%	61.8%	112	3136
29	1	1.8%	63.6%	29	841
30	4	7.3%	70.9%	120	3600
31	6	10.9%	81.8%	186	5766
32	0	0.0%	81.8%	0	0
33	2	3.6%	85.5%	66	2178
34	3	5.5%	90.9%	102	3468
35	1	1.8%	92.7%	35	1225
36	4	7.3%	100.0%	144	5184
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
	55	100.0%		1504	42404

Mean Speed = 27.3 mph Median Speed = 27.3 mph
 Standard Deviation = 4.9 mph 15th Percentile Speed = 22.3 mph
 Margin of Error (95% Confidence) = ± 1.3 mph 85th Percentile Speed = 32.4 mph

SPOT SPEED STUDY

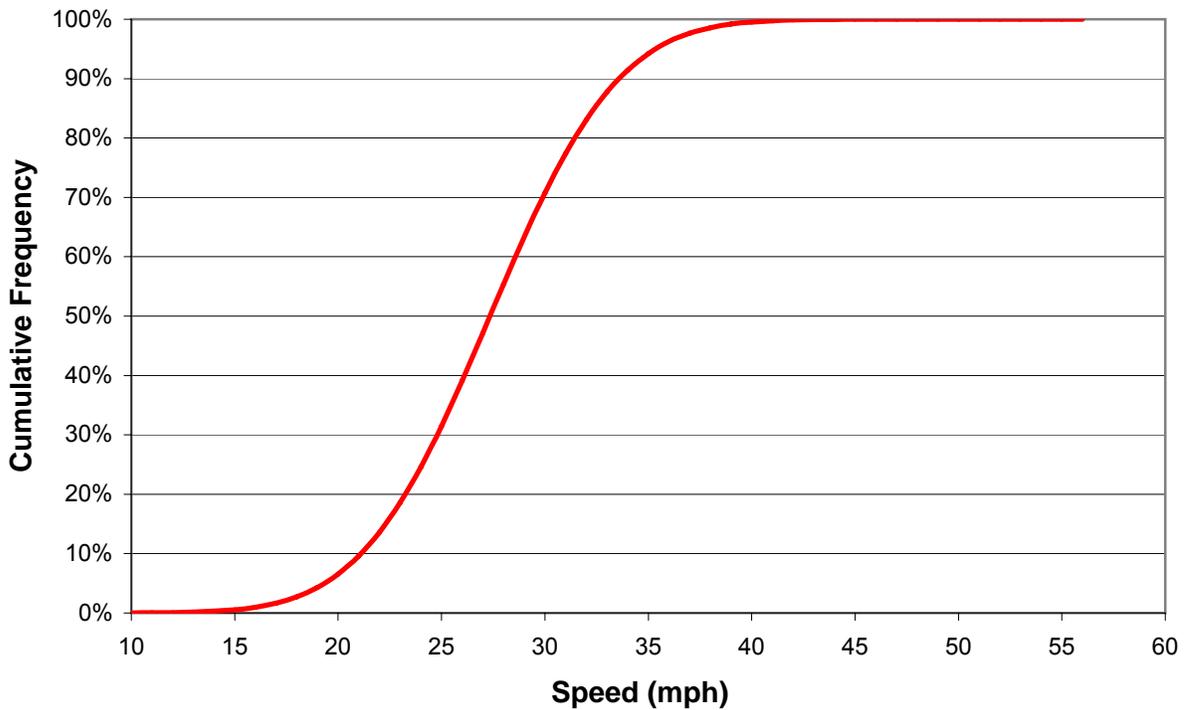
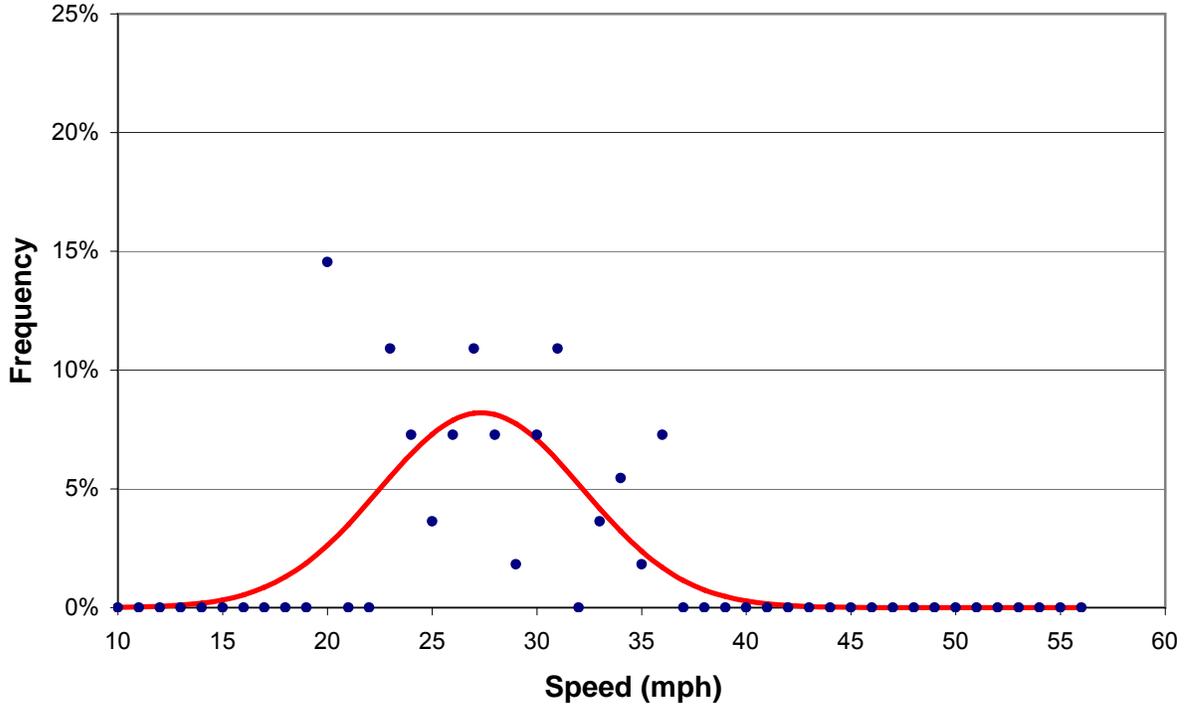
Date: **September 7, 2005**
Location: **Covert Avenue btw. Central Avenue and Evergreen Avenue**
Surveyor: **Eyad Yousef**

Time: **9:30 AM To 10:30 AM**

School: **I.S. 296**
Direction: **NS**
Comments: **Sunny and Dry**

Mean Speed = 27.3 mph
Standard Deviation = 4.9 mph
Margin of Error (95% Confidence) = ± 1.3 mph

Median Speed = 27.3 mph
15th Percentile Speed = 22.3 mph
85th Percentile Speed = 32.4 mph



SPOT SPEED STUDY

Date: **September 7, 2005** Time: **8:30 AM To 9:30 AM**
 Location: **Eldert Avenue btw. Central Avenue and Evergreen Avenue**
 Surveyor: **Eyad Yousef**

School: **I.S. 296**
 Direction: **NS**
 Comments: **Sunny and Dry**

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
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	4	3.2%	3.2%	80	1600
21	4	3.2%	6.4%	84	1764
22	6	4.8%	11.2%	132	2904
23	4	3.2%	14.4%	92	2116
24	12	9.6%	24.0%	288	6912
25	16	12.8%	36.8%	400	10000
26	20	16.0%	52.8%	520	13520
27	20	16.0%	68.8%	540	14580
28	12	9.6%	78.4%	336	9408
29	0	0.0%	78.4%	0	0
30	5	4.0%	82.4%	150	4500
31	0	0.0%	82.4%	0	0
32	4	3.2%	85.6%	128	4096
33	9	7.2%	92.8%	297	9801
34	4	3.2%	96.0%	136	4624
35	3	2.4%	98.4%	105	3675
36	2	1.6%	100.0%	72	2592
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	125	100.0%		3360	92092

Mean Speed = 26.9 mph Median Speed = 26.9 mph
 Standard Deviation = 3.8 mph 15th Percentile Speed = 23.0 mph
 Margin of Error (95% Confidence) = ± 0.7 mph 85th Percentile Speed = 30.8 mph

SPOT SPEED STUDY

Date: **September 7, 2005**

Time: **8:30 AM To 9:30 AM**

School: **I.S. 296**

Location: **Eldert Avenue btw. Central Avenue and Evergreen Avenue**

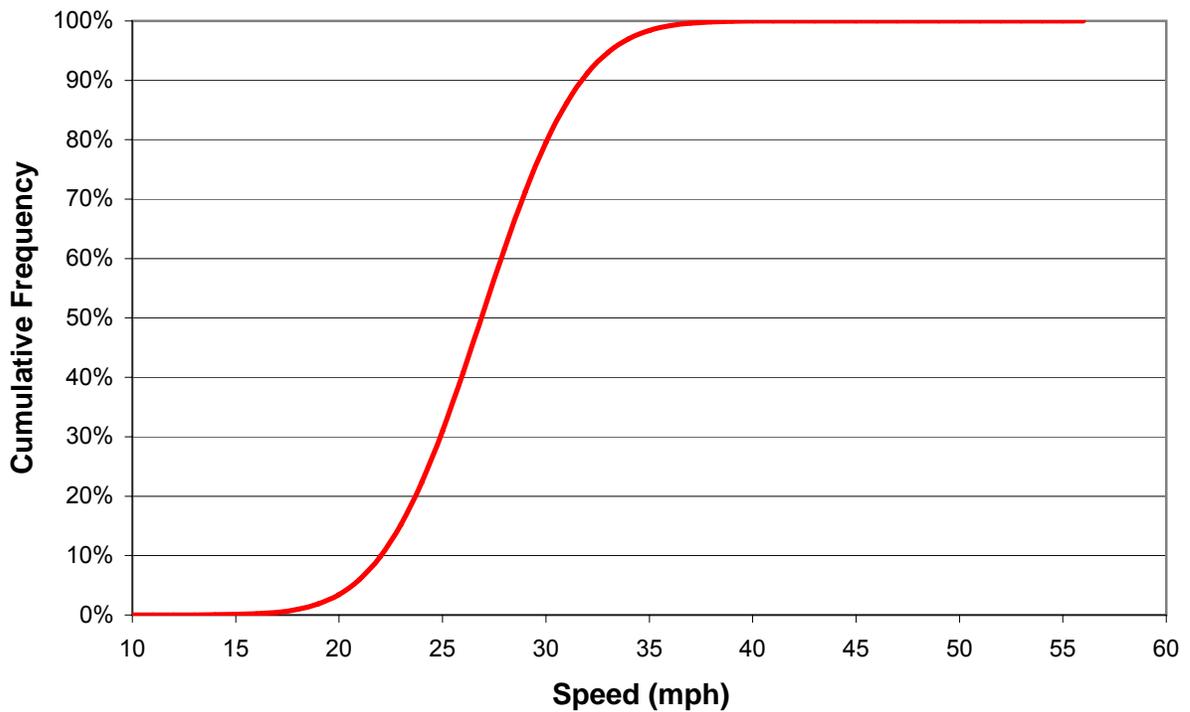
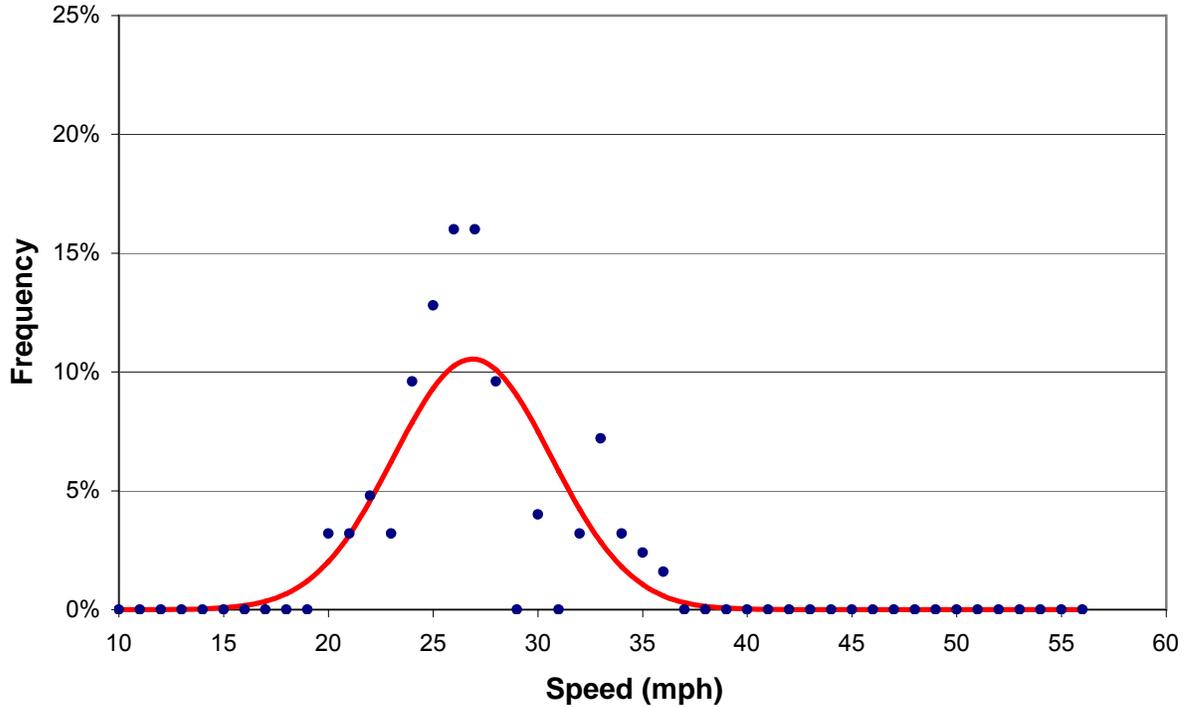
Direction: **NS**

Surveyor: **Eyad Yousef**

Comments: **Sunny and Dry**

Mean Speed = 26.9 mph
Standard Deviation = 3.8 mph
Margin of Error (95% Confidence) = ± 0.7 mph

Median Speed = 26.9 mph
15th Percentile Speed = 23.0 mph
85th Percentile Speed = 30.8 mph



I.S. 296
 March 22, 2005
 7:30 am - 8:30 am

Title1 : SCHOOL SAFETY PROJECT
 Title2 : BOROUGH OF BROOKLYN
 Title3 : I.S. 296

Site:
 Date: 03/22/05

Combined
**Peds not included in table data*

Begin Time	Total	ELDERT STREET			CENTRAL AVENUE			ELDERT STREET			CENTRAL AVENUE		
		WB-L	WB-T	WB-R	NB-R	NB-T	NB-L	EB-L	EB-T	EB-R	SB-R	SB-T	SB-L
07:30:00	114	0	0	0	0	0	0	8	20	0	0	81	5
07:45:00	126	0	0	0	0	0	0	17	16	0	0	85	8
08:00:00	139	0	0	0	0	0	0	25	18	0	0	85	11
08:15:00	101	0	0	0	0	0	0	14	17	0	0	66	4
480		0	0	0	0	0	0	64	71	0	0	317	28

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	480
Noon	10:00:00	To 15:00:00	NA	To NA	0
PM	15:00:00	To 20:00:00	NA	To NA	0

I.S. 296
 March 22, 2005
 7:30 am - 8:30 am

Title1 : SCHOOL SAFETY PROJECT
 Title2 : BOROUGH OF BROOKLYN
 Title3 : I.S. 296

Site:
 Date: 03/22/05

Combined
 *Peds not included in table data

