

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



School Safety Engineering Project

FINAL REPORT: I.S. 252, Arthur Somers School, Brooklyn



Prepared by
The RBA Group/Urbitrans Associates



OCTOBER 18, 2006

**School Safety Engineering Project
I.S. 252, Arthur Somers School, 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, and 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. 252 (Arthur Somers School) in Brooklyn is one of the 135 priority schools.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS



2.2 NEIGHBORHOOD DESCRIPTION

I.S. 252 is located at 1084 Lenox Road, between East 94th Street and East 95th Street. Kings Highway is a main arterial through Brooklyn, with four lanes of two-way traffic along the mainline and one additional lane of traffic in each direction along the service roads on both sides of the mainline. The service roads are separated from the mainline by a raised concrete island. Lenox Road begins at Kings Highway (Figure 1) and becomes a residential roadway one block south of I.S. 252. All other roadways surrounding I.S. 252 are residential roadways. Kings Highway has multi-story apartment buildings, as does Willmohr Street. East 94th Street and East 95th Street have two and three story houses. On Kings Highway at East 95th Street, there are commercial storefronts, including a laundromat, a supermarket, and multiple convenience stores (see Exhibit 1 for Aerial Photograph).



Figure 1 – Looking south on Lenox Road, toward Kings Highway, Brooklyn, I.S. 252 is at left

2.3 MEETING WITH SCHOOL REPRESENTATIVES

Representatives from the Borough Commissioner's Office, the New York City Department of Transportation, and the consultant team met with the I.S. 252 building manager, a parent coordinator, crossing guards and the principal of I.S. 252 at the school met on May 17th, 2004.

According to the I.S. 252 representatives, the major concerns for student pedestrians include the following:

- The safety of pedestrians at the wide intersection of Kings Highway and Lenox Road/East 94th Street and at East 95th Street
- Vehicle speeding on Lenox Road as they exit Kings Highway in front of I.S. 252
- Student crossing at mid-block locations
- Drivers fail to yield to pedestrians at crosswalks

2.4.6

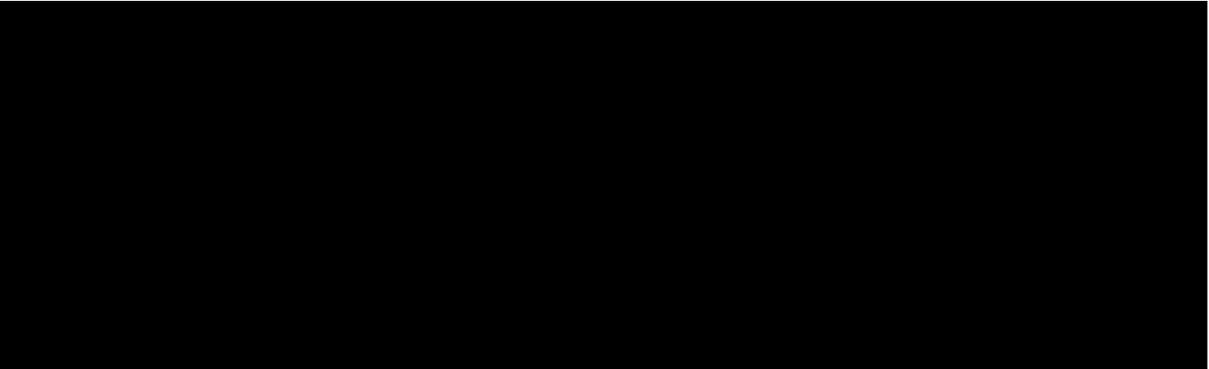


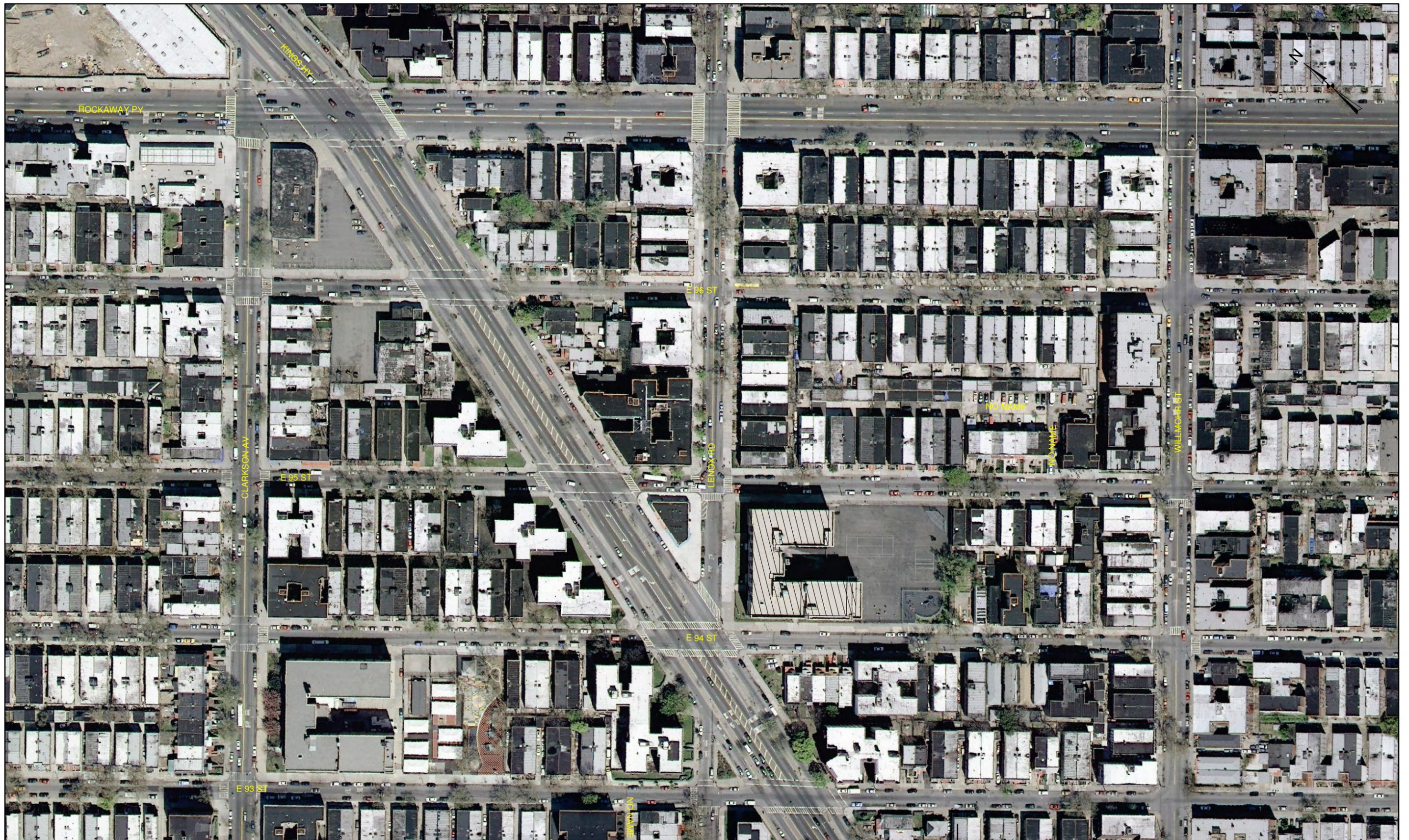


Figure 2: School entrance on Lenox Road at dismissal time

2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

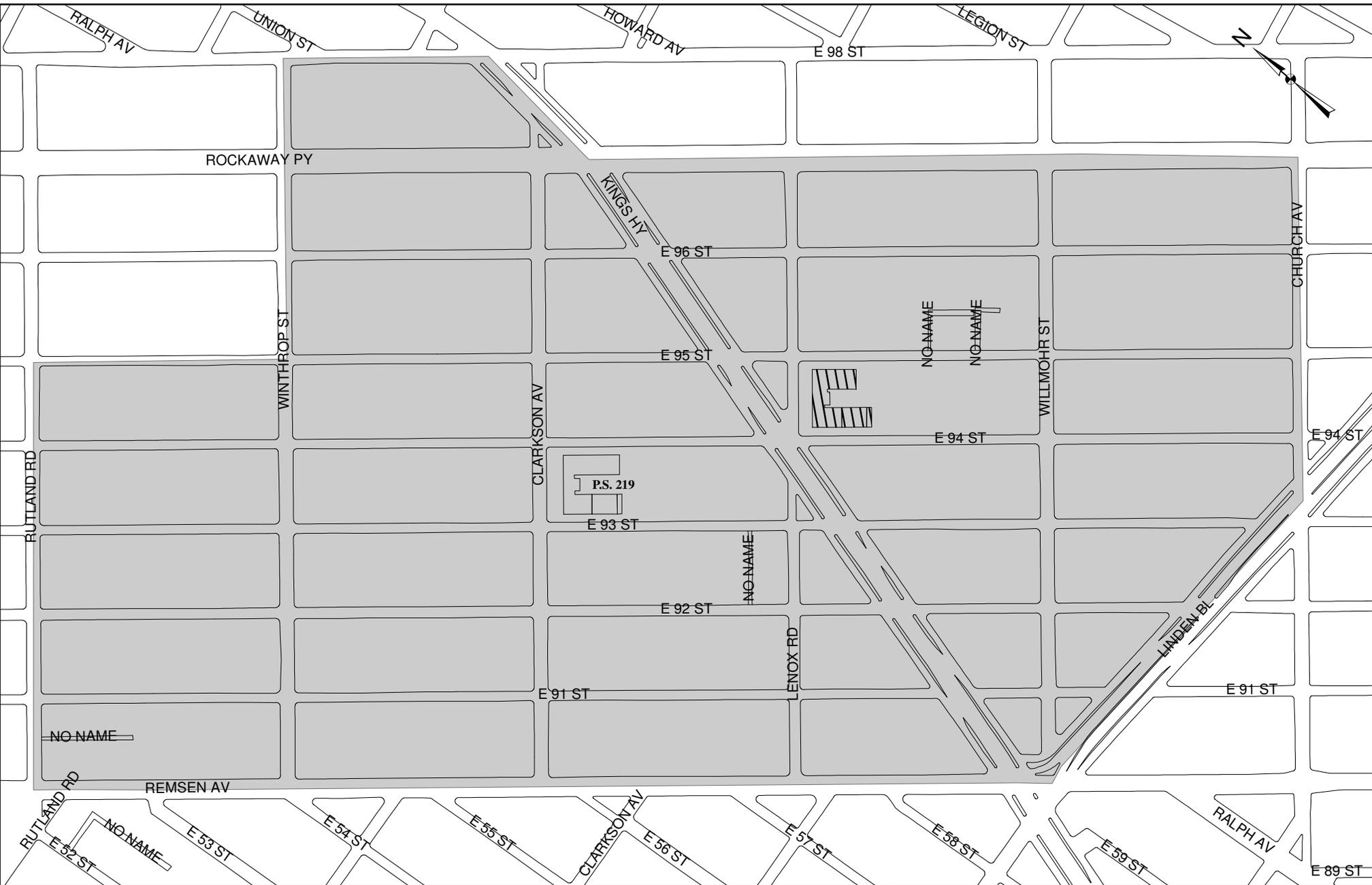
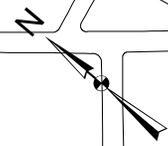
According to school officials, approximately 81% of students walk to school, 10% of the students utilize the city bus or subway systems, 5% are transported by school bus and 4% are driven by parents or guardians. See Table 1 for the school's estimates of the modes of travel.

TABLE 1: MODES OF TRAVEL	
(AS ESTIMATED BY SCHOOL OFFICIALS)	
DESCRIPTION	PERCENTAGE
Walk	81%
Driven by parents or guardians	4%
School bus	5%
MTA bus	10%
TOTAL	100%



1 inch equals 150 feet

EXHIBIT 1
ARTHUR SOMERS
I.S. 252, BROOKLYN
AERIAL PHOTOGRAPH



1 inch equals 400 feet



CATCHMENT AREA

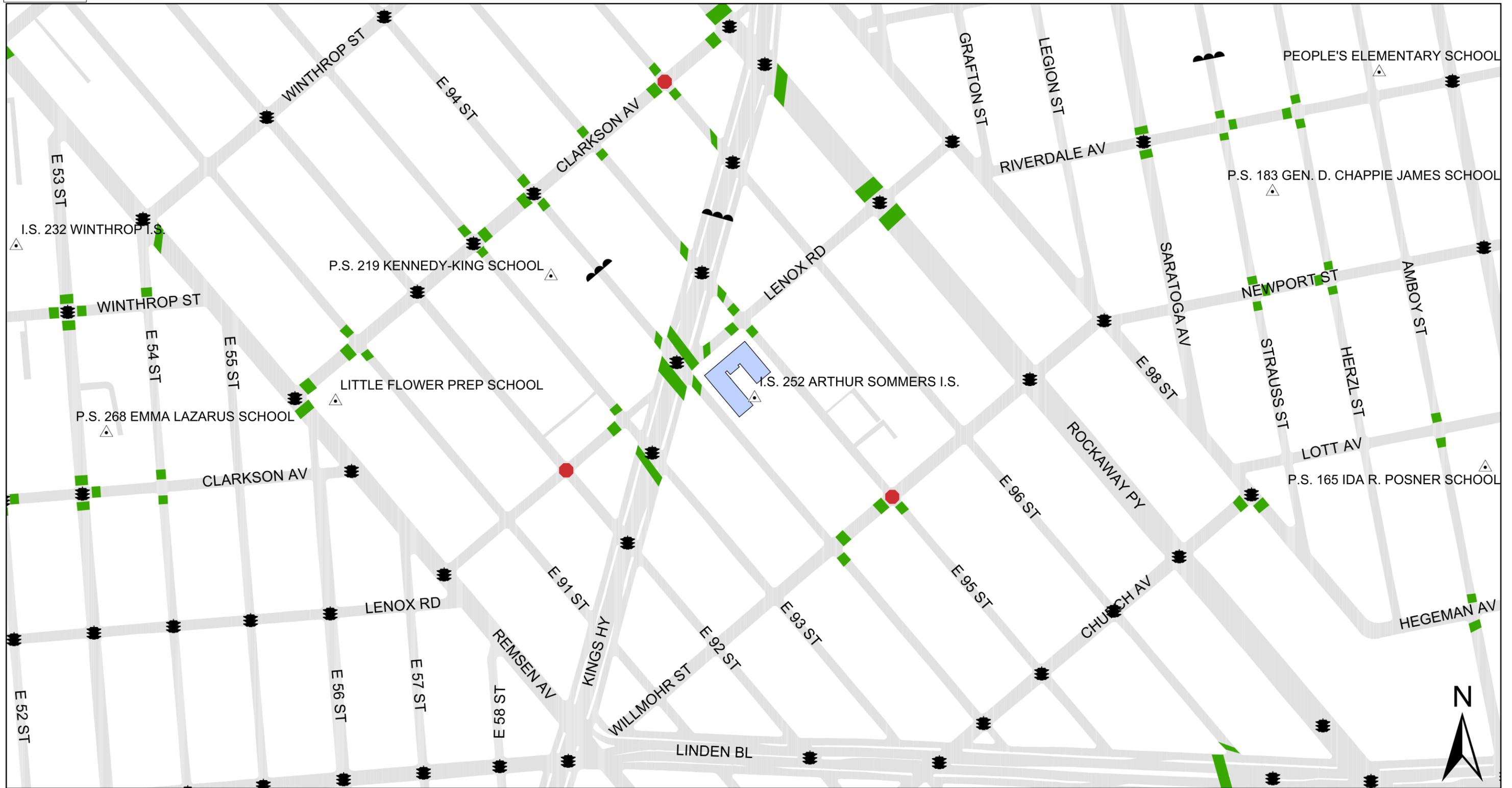
EXHIBIT 2

**I.S. 252, BROOKLYN
ARTHUR SOMERS SCHOOL**

CATCHMENT AREA



School Traffic Safety Map



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

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

LEGEND:

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

**IS 252 Brooklyn
ARTHUR SOMERS I.S.**

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

Map created on 11/16/2006

EXHIBIT 3

COMM. BOARD: 317
PRECINCT: 67

1.5.1

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

P.S. 219 is located on Clarkson Avenue between East 93rd Street and East 94th Street. According to school officials students from P.S. 219 come across Kings Highway to congregate in front of I.S. 252. The grocery store and supermarket on the southeast corner of Kings Highway and East 95th Street are popular with the students of I.S. 252. P.S. 219 is also a priority school.

There are also bus stops for the B7 and B97 bus routes along Kings Highway.

2.8 CROSSING GUARD LOCATIONS

There are no crossing guards assigned to I.S. 252. However, there are three crossing guards assigned to P.S. 219 stationed at the following intersections:

- Kings Highway and East 94th Street (two crossing guards)
- Kings Highway and East 96th Street

See Exhibit 4 for the crossing guard locations observed in the vicinity of the school.



1 inch equals 250 feet



Crossing guard assigned to another school (P.S. 219)

EXHIBIT 4

**I.S. 252, BROOKLYN
ARTHUR SOMERS SCHOOL**

CROSSING GUARDS

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to the school principal, school buses provide transportation only for students with special needs. During arrival time, buses drop off students on Lenox Road in front of the main entrance. During dismissal time, school buses line up at the curb on Lenox Road (Figure 3), within the “No Parking” zone in front of the school.



Figure 3 – School buses lining up on Lenox Road prior to dismissal of I.S. 252

3.2 PARENT DROP-OFF OPERATIONS

The school principal indicated that parents or guardians transport approximately four percent of the I.S. 252 students to and from school. During the arrival time, parents or guardians typically stop on East 95th Street to allow the students to exit the vehicles.

During dismissal, parents or guardians wait on East 95th Street for dismissed students. They park their vehicles in available spots or double-park. There were no operational issues observed on East 95th Street due to double-parked vehicles during arrival and dismissal.

3.3 PARKING REGULATIONS

A “NO PARKING 7:00 AM TO 4:00 PM SCHOOL DAYS” parking regulation is posted on Lenox Road between East 94th Street and East 95th Street. A “NO PARKING 7:00 AM TO 4:00 PM SCHOOL DAYS, EXCEPT BOARD OF EDUCATION” parking regulation is provided on both East 94th Street and East 95th Street. Street cleaning regulations, which prohibit parking on alternating sides of the roadways, are present near the school.

Parking regulations are shown in Exhibit 5.



Figure 4 – East 95 Street at I.S. 252 dismissal time, looking west



Figure 5 – Parking regulation signs on East 95th Street

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

The Traffic Safety Plan, Exhibit 2, shows existing signals and crosswalk pavement markings. It is noted that a citywide signage program is currently underway to upgrade school signage to current Federal Manual of Uniform Traffic Control (MUTCD) standards of fluorescent yellow-green signs with downward pointing arrows. Signs scheduled to be installed under this program are shown as “existing” on Exhibit 9.

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 I.S. 252 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.

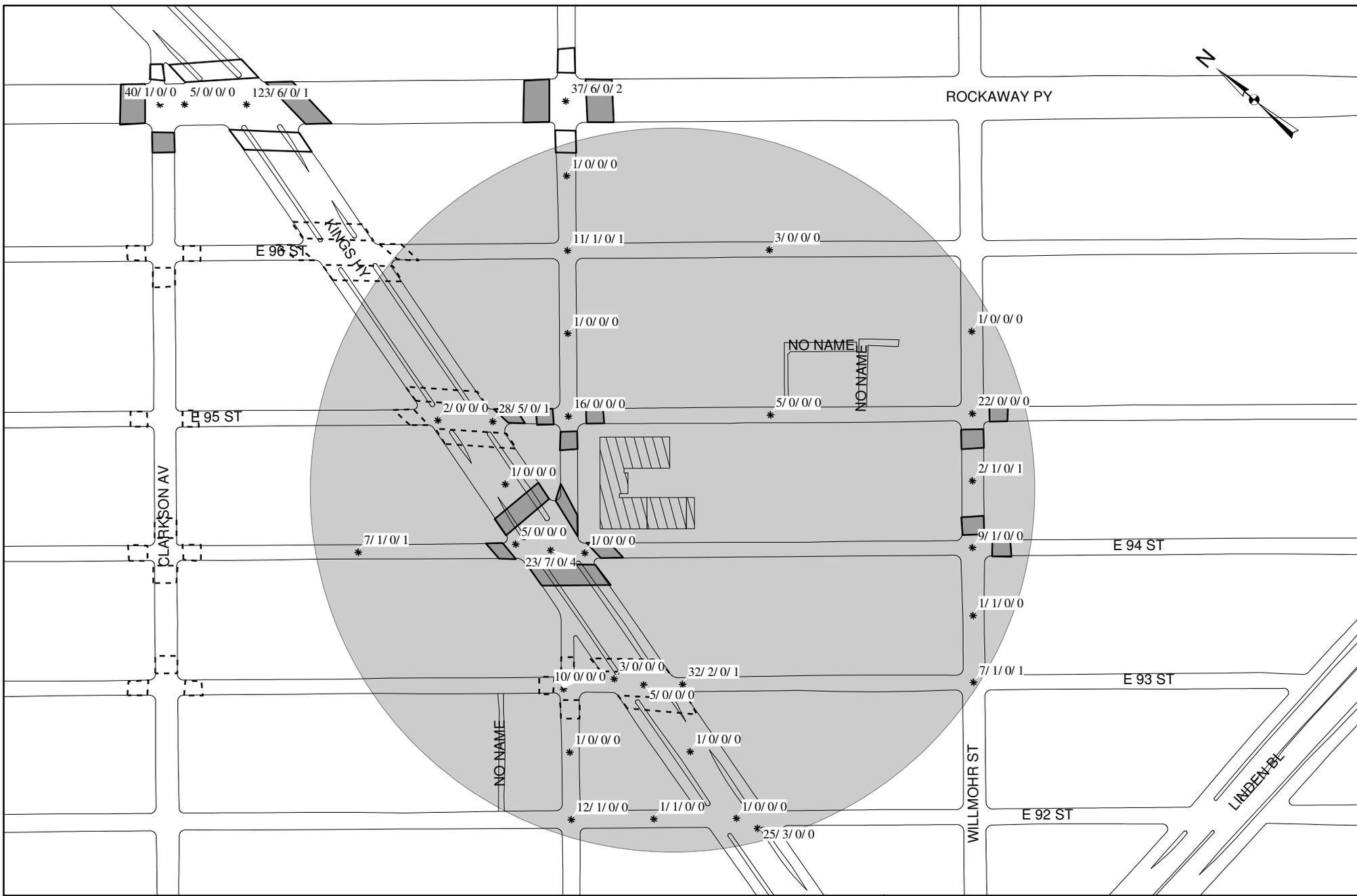
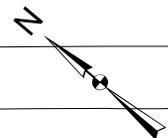
This report targets intersections closest to the school where the highest concentrations of student pedestrians occur. Intersections farther from the school and locations for which detailed data was not available at the time of this study will be addressed with the ongoing work of DOT's School Safety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

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Willmohr Street at East 93 rd Street	7	1	0	1
Willmohr Street at East 94 th Street	9	1	0	0
Willmohr Street at East 95 th Street	22	0	0	0
Kings Highway at East. 93 rd Street	37	2	0	1
Kings Highway at East. 94 th St. & Lenox Rd.	29	7	0	4
Kings Highway at East 95 th Street	30	5	0	1
Kings Highway at Rockaway Pkwy.	128	6	0	1
Rockaway Parkway at Clarkson Ave.	40	1	0	0
Lenox Road at East 95 th Street	16	0	0	0
Lenox Road at East 96 th Street	11	1	0	1
Lenox Road at Rockaway Parkway	37	6	0	2
TOTAL	366	30	0	11

TABLE 3: NYPD FOUR YEAR ACCIDENT SUMMARY (2001-2004)				
INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Willmohr Street at East 93 rd Street	8	1	0	0
Willmohr Street at East 94 th Street	17	1	0	0
Willmohr Street at East 95 th Street	15	3	0	N/A ¹
Kings Highway at East. 93 rd Street	58	3	0	0
Kings Highway at East. 94 th St. & Lenox Rd.	39	7	0	0
Kings Highway at East 95 th Street	38	6	1	N/A ¹
Kings Highway at Rockaway Pkwy.	101	3	0	N/A ¹
Rockaway Parkway at Clarkson Ave.	47	6	0	N/A ¹
Lenox Road at East 95 th Street	29	4	0	0
Lenox Road at East 96 th Street	13	2	0	N/A ¹
Lenox Road at Rockaway Parkway	46	7	0	2
TOTAL	411	43	1	N/A

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

¹ NYPD data did not provide pedestrian age for some pedestrian accidents



ACCIDENT LOCATION *
 SCHOOL CROSSWALK ASSIGNED TO I.S. 252 [Grey Box]
 SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL [Dashed Box]
 CROSSWALK [White Box]

1 inch equals 250 feet

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

EXHIBIT 6
I.S. 252, BROOKLYN
ARTHUR SOMERS 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 of I.S. 252.

3.6.1 Willmohr Street at East 93rd Street

Willmohr Street is a 44-foot wide, two-way street with one lane in each direction and parking on both sides. East 93rd Street is a 30-foot wide, one-way (westbound), roadway with one travel lane and parking on both sides. The intersection is stop controlled with a stop sign on Willmohr Street. There are no pedestrian crosswalks at this intersection.

Seven accidents occurred at this intersection between 1998 and 2000. One accident involved a pedestrian, which was a school-related accident. According to the accident data the pedestrian was a four-year-old child playing in the roadway when struck by a southbound traveling vehicle.

3.6.2 Willmohr Street at East 94th Street

East 94th Street is a 30-foot wide, one-way (eastbound) roadway, with one travel lane and parking on both sides. The intersection is stop controlled; with a stop sign on East 94th Street, and uncontrolled traffic on Willmohr Street. Therefore, the school crosswalk at the north leg of the intersection is uncontrolled. There are school crosswalks on the east and north legs. The pedestrian ramps on the north side are positioned incorrectly due to a conflict with the street light pole.

Nine accidents occurred at this intersection during the 1998-2000 study period, including one eight-year-old pedestrian. The child was crossing Willmohr Street when struck by a southbound vehicle at 8:00 pm.

To determine the level of vehicle and pedestrian conflicts, a one-hour turning movement count was performed on Tuesday, May 24, 2005 from 7:30 am to 8:30 am (Exhibit 7A). The results show that 36 pedestrians used the uncontrolled crosswalk, whereas between 34 to 38 pedestrians crossed each of the other three legs during the one-hour count.

A Multi-way or All-way stop was considered to mitigate the uncontrolled crosswalk. However, the moderate vehicle volumes (81 southbound, 88 northbound, 34 westbound) and pedestrian volumes do not meet the required warrants.



Figure 6 - Uncontrolled school crosswalk at the north leg of Willmohr Street and East 94th Street (looking to east)

3.6.3 Willmohr Street at East 95th Street

East 95th Street is a 30-foot wide, one-way (westbound) street with one travel lane and parking on both sides. The intersection with Willmohr Street is an un-signalized, all-way stop controlled intersection. There are school crosswalks on the east and south legs.

The pedestrian ramps on the northeast, northwest, and southeast corners are positioned outside of the corner quadrants and do not line up with pedestrian crosswalk markings.

There were 22 accidents between 1998 and 2000. None involved pedestrians.

3.6.4 Kings Highway and East 93rd Street

Kings Highway has northbound and southbound service roads, each with one travel lane of traffic and parking on the right side. The service roads are separated from the main line traffic by raised concrete medians. The mainline is composed of two through travel lanes in each direction and a left turn lane in the northbound direction. There is a school crosswalk on the south leg of the intersection.

Review of the existing signal timing indicates that a school age pedestrian needs two signal cycles to cross at three feet per second, stopping at the raised medians (refuge) separating Kings Highway and the service road to wait between cycles. However, all the raised medians observed do not extend through the crosswalks (Figure 9).

There were thirty-seven accidents at this intersection in the 1998-2000 study period. Two accidents included pedestrians, one of which involved a school age child. A nine-year-old was crossing against the signal when struck. A driver failing to yield was the cause of the other pedestrian accident.



Figure 7: Kings Highway at East 93rd Street, looking south

3.6.5 Kings Highway at East 94th Street/Lenox Road

Kings Highway is approximately 110-feet wide with two travel lanes and a left turn bay in the southbound direction on the main line. There are also northbound and southbound service roads, each with one moving lane of traffic and parking on the right side. The service roads are separated from the main line traffic by raised concrete medians.

There are school crosswalks on all four legs of the intersection. Since crosswalks across Kings Highway are striped at an angle, the total length of the crosswalk is approximately 140 feet. The raised medians separating the mainline from the service roads do not extend through the crosswalks (Figure 8).

Ramps are not positioned correctly due to conflicts with signal poles or fire alarm boxes (Figure 9). Pedestrian ramps were observed to be missing on the southeast corner of Kings Highway and East 94th Street and the southeast corner of 94th Street and Lenox Road. Two crossing guards assigned to P.S. 219 are stationed at this intersection.

Review of the existing signal timing at this intersection indicates that a school age pedestrian needs two signal cycles to cross at three feet per second, stopping at the raised medians (refuge) separating Kings Highway and the service road to wait between cycles. However, the east median ends 40 feet short of the existing north crosswalk and is not raised at the crossing (Figure 8). The other three raised medians observed do not extend through the crosswalks. In addition, there are bus stops along the mainline which pick-up and drop-off pedestrians on the raised medians.



Figure 8 – Intersection of Kings Highway and East 94 Street, looking to east



Figure 9 – Northeast corner of Lenox Road and East 94th Street

To determine the number of pedestrians at this intersection traffic counts were performed on Tuesday, June 21, 2005 from 7:30 am to 8:30 am. Traffic counts indicated that 25 pedestrians used the designated school crosswalk on the northern leg of the intersection, and 184 pedestrians crossed Kings Highway in the roadway north of the designated crosswalk.

This signalized intersection had 29 accidents during the 1998-2000 study period. There were seven pedestrian accidents at this intersection. Four of these seven pedestrian accidents are classified as school-related accidents. The other three accidents occurred during non-school hours.

All four of the school-related accidents involved children (ranging in age from 8 to 14) that were crossing against the traffic signal or outside the designated crosswalk. One of the non school-related accidents involved a 13-year-old child that was crossing with the signal when struck by a driver failing to yield. Details of the other two non school-related accidents were not available.

3.6.6 Kings Highway at East 95th Street

Review of the existing signal timing indicates that a school age pedestrian needs two signal cycles to cross at this location, while stopping at a median to wait between cycles. There are school crosswalks on the east and west legs of the intersection.



Figure 10 –Kings Highway and East 95th Street(looking north)

Thirty accidents occurred between 1998 and 2000. There were five pedestrian accidents, of which three involved school age children.

The first involved a ten-year-old child who emerged from a parked vehicle when struck by a northbound vehicle. The second involved an eleven-year-old child who was crossing outside the crosswalk when struck. No details were reported for the third accident involving a child.

3.6.7 Kings Highway at Rockaway Parkway

Rockaway Parkway is an approximately 80-foot wide two-way roadway with three travel lanes in each direction and parking on both sides. There is a school crosswalk on the east leg of the intersection (Figure 11).

Review of the existing signal timing indicates that a student pedestrian needs two signal cycles to cross at this location using the medians to wait between cycles.

A total of 128 accidents occurred at this intersection in the 1998-2000 study period. There were six pedestrian accidents, one of which was school-related. Two pedestrians

including a seven-year-old, were crossing Kings Highway against the signal when struck. One pedestrian was struck by a vehicle backing up. Two other pedestrians were struck by vehicles making right turns. Details for the sixth pedestrian accident were not reported.



Figure 11– Looking west on the south side of Kings Highway at Rockaway Parkway

3.6.8 Rockaway Parkway at Clarkson Avenue

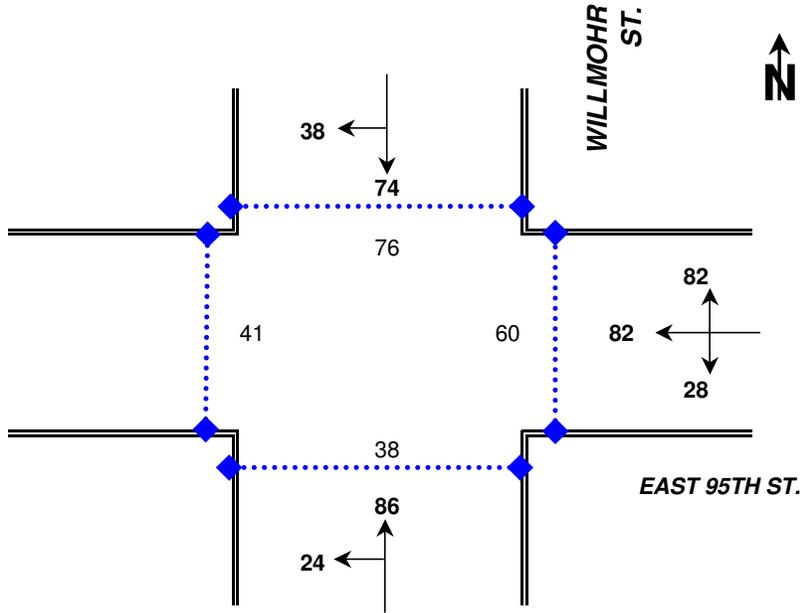
Clarkson Avenue is a 42-foot wide two-way roadway with one travel lane in each direction and parking on both sides. There are school crosswalks on the west and south legs of the intersection (Figure 12).

This signalized intersection had 40 accidents during the 1998-2000 study period. One accident involved a pedestrian, but no school children were involved. A 74-year old pedestrian was crossing Clarkson Avenue against the signal when struck by a southbound vehicle.

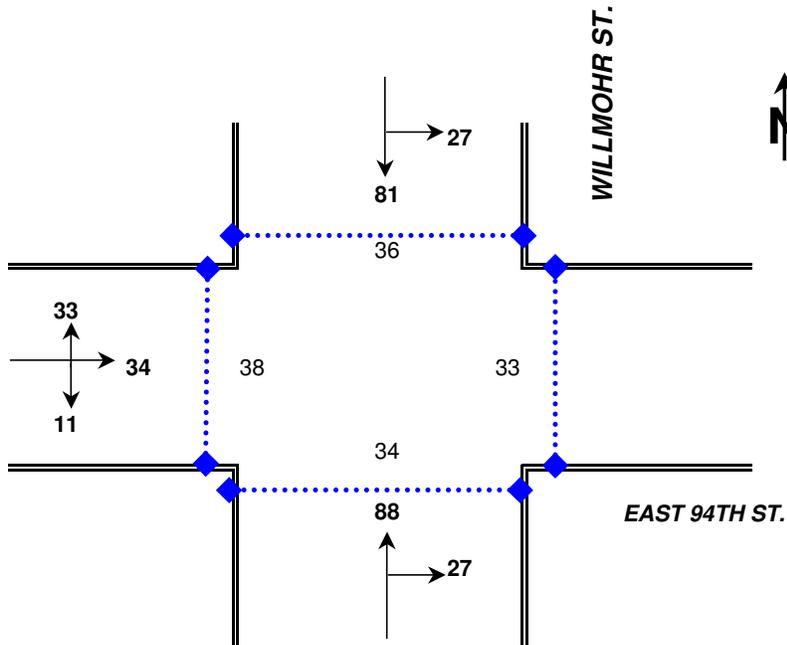


Figure 12 – Intersection of Rockaway Parkway and Clarkson Avenue (looking north)

One Hour Traffic Count Volumes



Intersection of E. 95 Street and Willmohr Street
(7:30 AM - 8:30 AM MAY 26, 2005)



Intersection of E. 94 Street and Willmohr Street
(7:30 AM - 8:30 AM MAY 23, 2005)

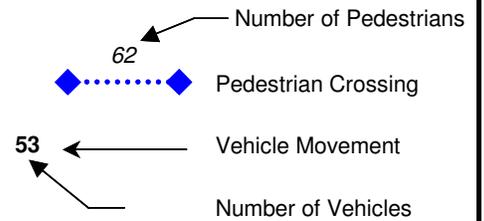
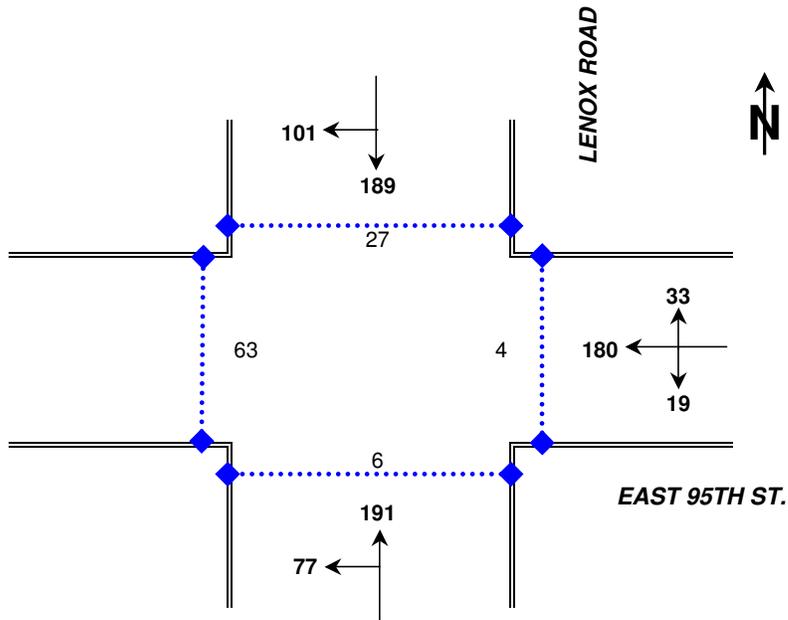


EXHIBIT 7A
I.S 252 , BROOKLYN ARTHUR SOMERS SCHOOL
TURNING MOVEMENT COUNTS

One Hour Traffic Count Volumes

(7:30 AM - 8:30 AM MAY 5, 2005)



Intersection of E. 95 Street and Lenox Road

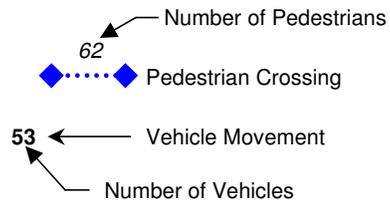
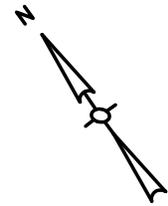
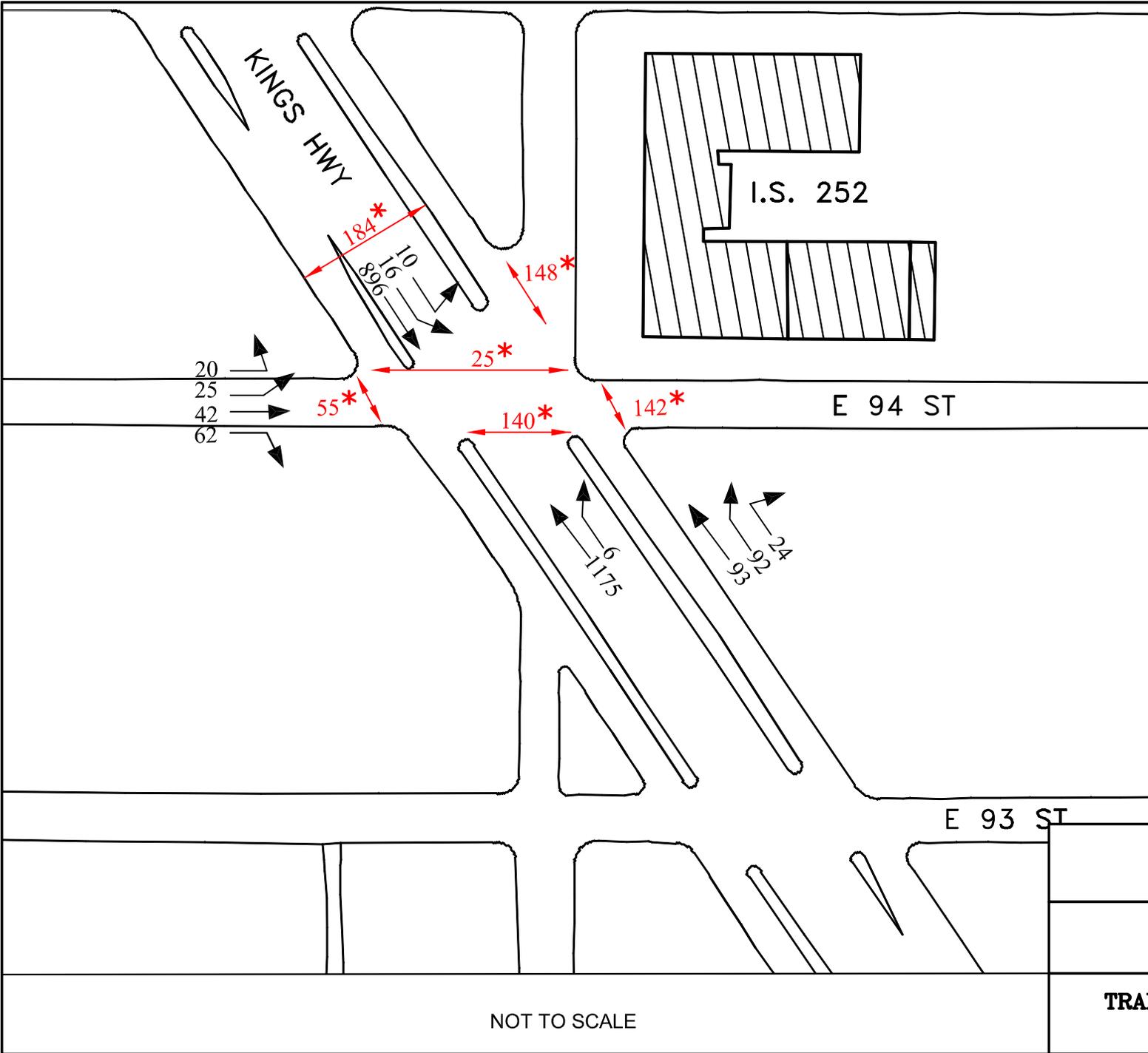


EXHIBIT 7B
I.S 252 , BROOKLYN ARHTUR SOMERS SCHOOL
TURNING MOVEMENT COUNTS



LEGEND

- ← 25* → PEDESTRIAN VOLUME
- 92 → VEHICLE VOLUME

EXHIBIT 8

**I.S. 252
BROOKLYN**

**TRAFFIC AND PEDESTRIAN
VOLUMES**

NOT TO SCALE

3.6.9 Lenox Road and East 95th Street

North of the intersection with East 95th Street, Lenox Road is a 35-foot wide two-way roadway with one lane in each direction and parking on both sides. South of East 95th Street, Lenox Road is a one-way (southbound) roadway with parking on both sides. There are school crosswalks on the east, west and south legs. East 95th Street is controlled by a stop sign at this intersection (Figure 13), while Lenox Road is not controlled at this intersection. Therefore, the school crosswalk at the south leg is uncontrolled.

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

A one-hour traffic count was performed at the intersection on Thursday, May 5, 2005 from 7:30 am to 8:30 am (Exhibit 7B). The results indicated that six pedestrians used the uncontrolled school crosswalk at the south leg during the one-hour count. However, 27 pedestrians used the north leg of Lenox Road, where no crosswalk is provided. Therefore, current traffic and pedestrian volumes do not meet the criteria for either signaling the intersection or installing an all-way stop control.



Figure 13 –Lenox Road and East 95th Street.

3.6.10 Lenox Road at East 96th Street

There are no crosswalks on any legs of this intersection.

There were 11 accidents during the 1998-2000 study period. One accident involved a pedestrian, which was a school-related accident. According to accident data, the pedestrian was a twelve-year old who was emerging from behind a parked vehicle when struck by a southbound vehicle. No further information is available.

3.6.11 Lenox Road at Rockaway Parkway

This is a signalized intersection with school crosswalks on the west and east legs of the intersection (Figure 14).

There were 37 accidents during the 1998-2000 study period. Six accidents included pedestrians and four involved school age children. Two of the four accidents involving school age children are classified as school-related accidents because the other two occurred outside of school hours or days.

Two children (8 and 13 year old) were crossing Rockaway Parkway against the signal when struck. Two other children (13 and 15 years old) were struck by turning vehicles failing to yield.



Figure 14 – Pedestrian crosswalk on Rockaway Parkway at Lenox Road

3.6.12 Kings Highway and East 93rd Street

This is a signalized intersection with school crosswalks on the south leg of the intersection.

There were 37 during the 1998-2000 study period. Two accidents involved pedestrians, one of which was school-related. According to accident data, one pedestrian was struck while crossing against the signal. The second pedestrian was struck by a southbound vehicle that failed to yield. This accident was attributed to driver error.

3.6.13 Lenox Road in front of I.S. 252

Lenox Road in front of I.S. 252 is a one-way northbound, approximately 33-foot wide and includes one travel lane and parking lanes against both sides. The B7 bus route travels along Lenox Road in front of the school. Yellow buses use the school zone on Lenox Avenue during arrival and dismissal.

During the 1998-2000 study period, there were no reported mid-block accidents. However, school representatives felt that there is a speeding problem along this roadway section in front of the school.

On Thursday June 9, 2005, a speed study was conducted on Lenox Road in front of I.S. 252 from 9:00am to 10:00 am. The 85th percentile speed was 28 mph, which did not exceed the statutory speed limit of 30 mph (Table 4 and Appendix). Therefore, no speed reducer (hump) is recommended at this location.

TABLE 4: SPOT SPEED STUDY (LENOX ROAD)		
LOCATION	MEDIAN SPEED (MPH)	85TH PERCENTILE SPEED (MPH)
Lenox Road between East 94 th Street and East 95 th Street	24	28

3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of I.S. 252, 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 INTRSECTIONS				
INTERSECTION NAME	Crosswalk Width (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)*	Timing Adjustment? (Yes/No)
Kings Highway at East 94th Street				
Kings Highway	32/62/32 ¹	40/40 ²	14/24/14	NO
East 94 th Street	36	80	15	NO
Kings Highway at East 95th Street				
Kings Highway	32/62/32 ¹	40/40 ²	14/24/14	NO
East 95 th Street	35	80	15	NO
Kings Highway at Rockaway Pkwy.				
Kings Highway	32/62/32 ¹	40/40 ²	14/24/14	NO
Rockaway Parkway	81	80	30	NO
Rockaway Parkway at Clarkson Ave.				
Rockaway Parkway	76	35	28	NO
Clarkson Avenue	44	75	18	NO
Lenox Road at Rockaway Pkwy				
Lenox Road	35	75	15	NO
Rockaway Parkway	84	35	31	NO

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

1. *The service roads of Kings Highway are each 32 feet wide and the mainline is 62 feet wide.*
2. *A pedestrian needs two signal cycles to cross Kings Highway at a rate of three feet per second while stopping at the raised medians separating the mainline and the service roads.*

3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)

Generally, the roadways and sidewalks were found to be in fair condition. Locations where pedestrian ramps are missing have been noted in Section 3.6.

4. PROPOSED MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

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

4.1 SHORT-TERM MEASURES

- *No Standing Zone on Lenox Road*

“NO PARKING 7AM-4PM, SCHOOL DAYS” parking regulations on Lenox Road between East 94th and East 95th Street should be replaced by “NO STANDING 7AM-4 PM, SCHOOL DAYS” to provide sufficient clear frontage for school buses to drop-off and pick-up students.

- *Install a new school crosswalk*

It is recommended that a school crosswalk be installed at the following intersection:

- Kings Highway and East 95th Street - south leg

Students from I.S. 252 were observed to cross at this intersection, although there is no school crossing delineated across Kings Highway at this intersection. Therefore, a school crosswalk at this location should be striped to facilitate students walking to I.S. 252 (see Exhibit 9).

- *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.

- *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 students be educated to utilize raised medians on Kings Highway while waiting for the next signal cycle.



Figure 15 – Students crossing Kings Highway at East 94th Street

- *Install pedestrian Information sign that explains the signal phases*

The safety of pedestrians at the wide intersection of Kings Highway at East 93rd Street, at East 94th Street, at East 95th Street, at East 96th Street, at Rockaway Parkway, and Rockaway Parkway at Lenox Road is the major concern of school representatives. Installation of a pedestrian information sign adjacent to each school crosswalk that explains the signal phases is recommended. The pedestrian should also be informed to wait at refuge between signal cycles.

- *Submit a request to the Police Department for crossing guards*

It is recommended that a crossing guard be requested at the following intersections:

- Lenox Road and East 95th Street
- Willmohr Street and East 94th Street

- *Install enlarged signal lens*

Install enlarged signal lens for vehicles traveling on the following intersections:

- Kings Highway at East 94th Street
- Rockaway Parkway at Kings Highway and Clarkson Avenue

The enlarged heads will allow drivers to see the red signal and deter drivers from traveling through the red signal.

- Install speed reducers (humps) at the following locations:
 - East 94th Street between Lenox Road and Willmohr Street
 - East 95th Street between Lenox Road and Willmohr Street

Spot speed surveys were conducted on East 94th Street between Lenox Road and Willmohr Street and East 95th Street between Lenox Road and Willmohr Street on June 30, 2005. The objective of the survey was to determine if there is a speeding problem on these sections of East 95th Street and 95th Street, as reported by several school officials.

The speed study results are shown in Table 6 and in the Appendix. The 85th percentile speed on East 94th Street was 31 mph, and 43 mph on East 95th Street. This indicates that operating speeds along these two streets exceeded the legal speed limit of 30 mph. Therefore, to reduce speeding in the vicinity of I.S. 252, speed reducers (humps) should be installed on East 94th Street between Lenox Road and Willmohr Street and East 95th Street between Lenox Road and Willmohr Street.

TABLE 6: SPOT SPEED STUDIES		
LOCATION	MEDIAN SPEED (MPH)	85TH PERCENTILE SPEED (MPH)
East 94 th Street between Lenox Road and Willmohr Street	26	31
East 95 th Street between Lenox Road and Willmohr Street	28	34

4.2 LONG-TERM MEASURES

- Install or replace pedestrian ramps at all crosswalks where required

New pedestrian ramps should be installed at all locations in which there are currently no pedestrian ramps, where only one ramp currently exists or where a pole requires relocation to facilitate the standard ramp installation (Figure 16).

- Extend concrete raised medians on Kings Highway through adjacent crosswalks and provide pedestrian ramps within the extended medians

Since pedestrians must cross Kings Highway in more than one signal phase, all raised medians should be extended through the adjacent crosswalk at the following intersections:

- Kings Highway and East 93rd Street
- Kings Highway and East 94th Street
- Kings Highway and East 95th Street
- Kings Highway and East 96th Street

In addition, ADA compliant at-grade cut throughs should be provided at all medians. By extending the raised median, a physically protected refuge location can be provided for pedestrians as they wait for the next cycle to cross the street.

- Install Pedestrian refuge islands

The median striping should be replaced with an extended raised median at the following locations:

- North leg of Kings Highway at East 95th Street
- South leg of Kings Highway at East 96th Street
- South leg of Kings Highway at East 93rd Street

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

- Install curb extensions at:

Consideration should be given to installing curb extensions at the following location, provided that the Final Design confirms that construction of the recommended curb extensions 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.

- Lenox Road and East 95th Street - both curbs of the southeast corner

Curb extensions should be considered as shown in Exhibit 9.

The purpose of 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.

- Install pedestrian fence on Kings Highway medians, from East 94th Street to East 95th Street

Traffic counts on June 21, 2005 showed that only 25 pedestrians were using the designated school crosswalk on the north leg of the intersection. However, 184 pedestrians were crossing mid-block without a crosswalk to and from the traffic island just north of the crosswalk. It is recommended that pedestrian fences be installed on both east and west medians separating the service road from the mainline to deter mid-block crossing.

- Repair roadway and sidewalk deficiencies within the walking routes or in the vicinity of I.S. 252

Pavement repairs should be performed at the following locations:

- Intersection of Rockaway Parkway and Kings Highway
- On Lenox Road, north of Kings Highway around catch basin and basin chute trench
- On East 94th Street, west of Willmohr Street, depression in roadway
- On East 95th Street, mid-block, repaired depression in roadway



Figure 16 – Existing east school crosswalk at East 94th Street at Kings Highway

4.3 ADDITIONAL RECOMMENDATIONS FROM PRIORITY SCHOOLS IN THE VICINITY OF I.S. 252

4.3.1 RECOMMENDATIONS FOR P.S. 219:

The following action are recommended as part of proposed measures to improve student pedestrian safety around P.S. 219, which is a nearby priority school:

- *Submit Request to NYPD for Crossing Guard*

It is recommended that a crossing guard be requested for each of the following intersections:

- Clarkson Avenue and East 96th Street
- Clarkson Avenue and East 94th Street

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

- East 92nd Street and Clarkson Avenue – east and west legs
- Kings Highway and East 96th Street – south leg

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

- *Install enlarged signal lens*

Install enlarged signal lens for vehicles traveling on the following intersection:

- Kings Highway at East 96th Street

The enlarged heads will improve drivers' ability to see the signal heads.

- *Install speed reducers (humps)*

On Thursday, July 21, 2005 two speed studies were conducted. The first was from 1:00 pm to 2:00 pm on East 94th Street between Clarkson Avenue and Kings Highway, and the second was from 2:00 pm to 3:00 pm on East 93rd Street between Clarkson Avenue and Kings Highway. Also, a speed study was performed on Kings Highway Southbound Service Road between East 95th Street and East 96th Street on July 12, 2005 between 10:00 am and 10:30 am.

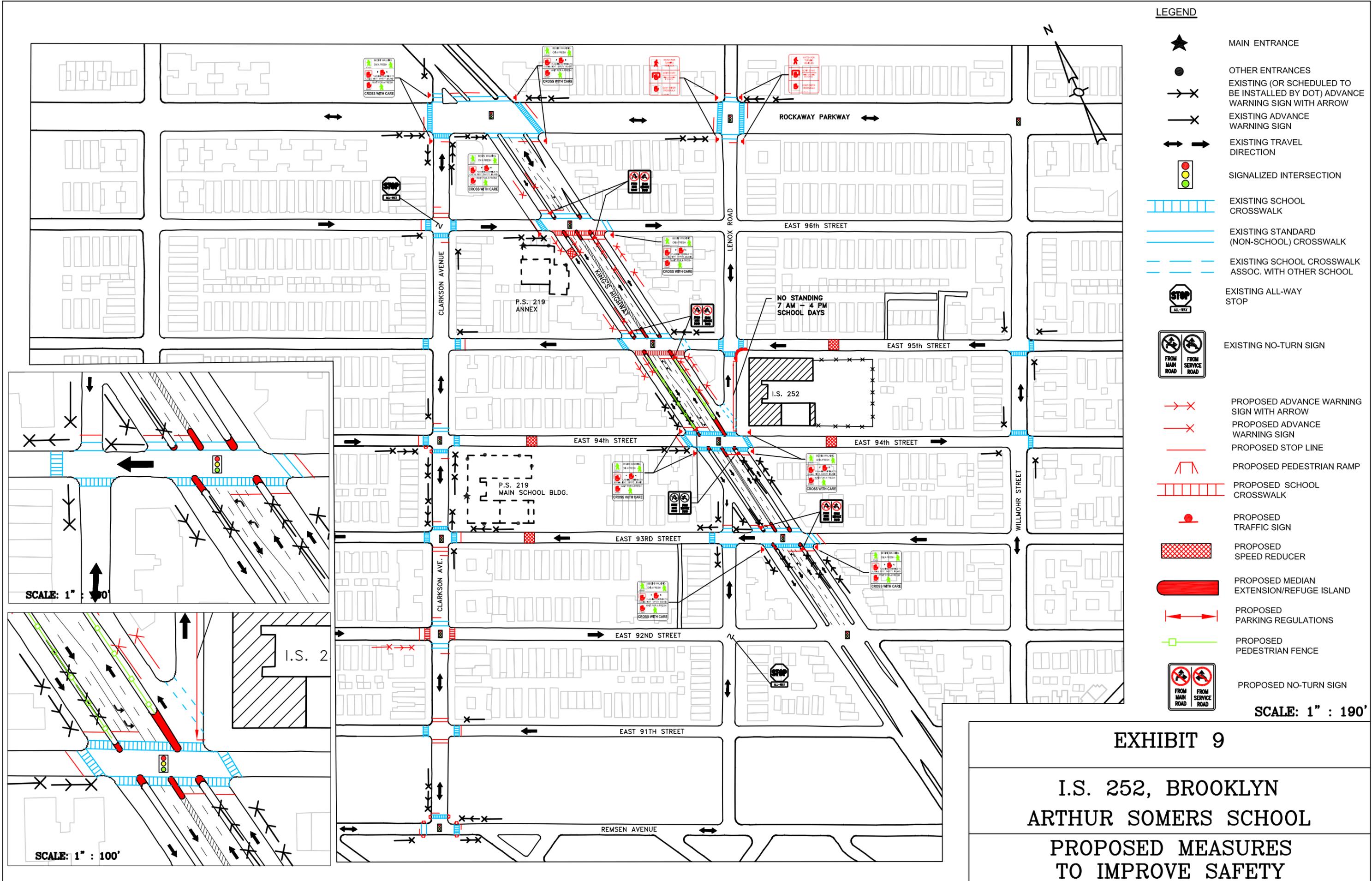
The results indicated that the 85th percentile speed at all three locations exceeded the statutory speed limit of 30 mph. Therefore, speed reducers should be installed at the following locations:

- East 94th Street - between Clarkson Avenue and Kings Highway
- East 93rd Street - between Clarkson Avenue and Kings Highway
- Kings Highway Service Road - between East 95th Street and East 96th Street

The actual number and location of speed reducers (humps) will be determined by NYCDOT prior to installation.

See Table 7 for a summary of the results and the appendix for further detail.

TABLE 7: SPOT SPEED STUDIES		
LOCATION	MEDIAN SPEED (MPH)	85TH PERCENTILE SPEED (MPH)
Kings Hwy Service Road btw. E.95 th St. and E. 96 th St.	37	42
East 94 th Street btw. Clarkson Avenue and Kings Hwy	29	33
East 93 rd Street btw. Clarkson Avenue and Kings Hwy	28	32



- LEGEND**
- ★ MAIN ENTRANCE
 - OTHER ENTRANCES
 - X EXISTING (OR SCHEDULED TO BE INSTALLED BY DOT) ADVANCE WARNING SIGN WITH ARROW
 - X EXISTING ADVANCE WARNING SIGN
 - ↔ EXISTING TRAVEL DIRECTION
 - 🚦 SIGNALIZED INTERSECTION
 - ▬▬▬ EXISTING SCHOOL CROSSWALK
 - ▬▬▬ EXISTING STANDARD (NON-SCHOOL) CROSSWALK
 - ▬▬▬ EXISTING SCHOOL CROSSWALK ASSOC. WITH OTHER SCHOOL
 - 🛑 EXISTING ALL-WAY STOP
 - 🚫 EXISTING NO-TURN SIGN
 - X PROPOSED ADVANCE WARNING SIGN WITH ARROW
 - X PROPOSED ADVANCE WARNING SIGN
 - PROPOSED STOP LINE
 - 🚶 PROPOSED PEDESTRIAN RAMP
 - ▬▬▬ PROPOSED SCHOOL CROSSWALK
 - 🚦 PROPOSED TRAFFIC SIGN
 - ▨ PROPOSED SPEED REDUCER
 - 🚶 PROPOSED MEDIAN EXTENSION/REFUGE ISLAND
 - ↔ PROPOSED PARKING REGULATIONS
 - 🚧 PROPOSED PEDESTRIAN FENCE
 - 🚫 PROPOSED NO-TURN SIGN

SCALE: 1" : 190'

EXHIBIT 9

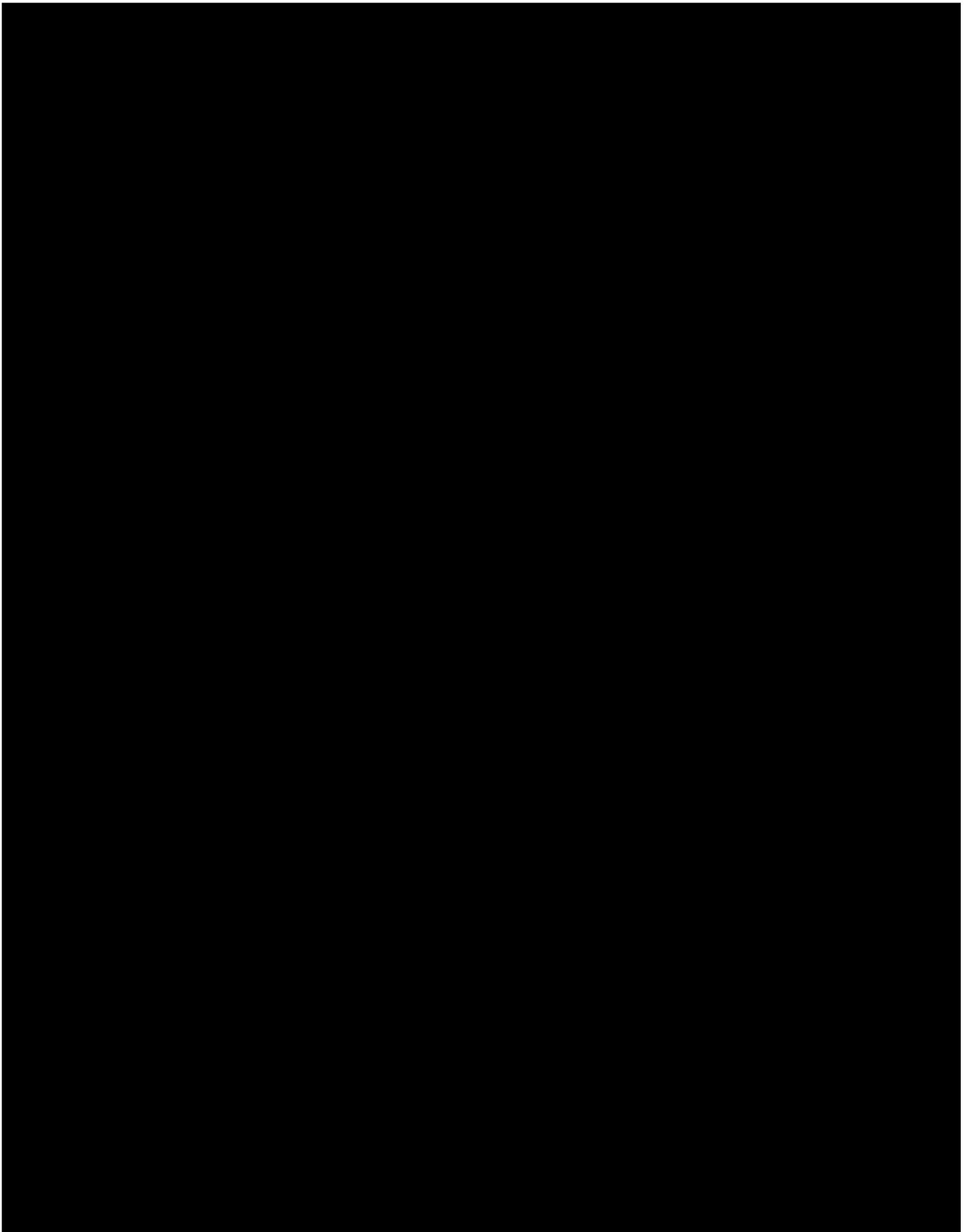
I.S. 252, BROOKLYN

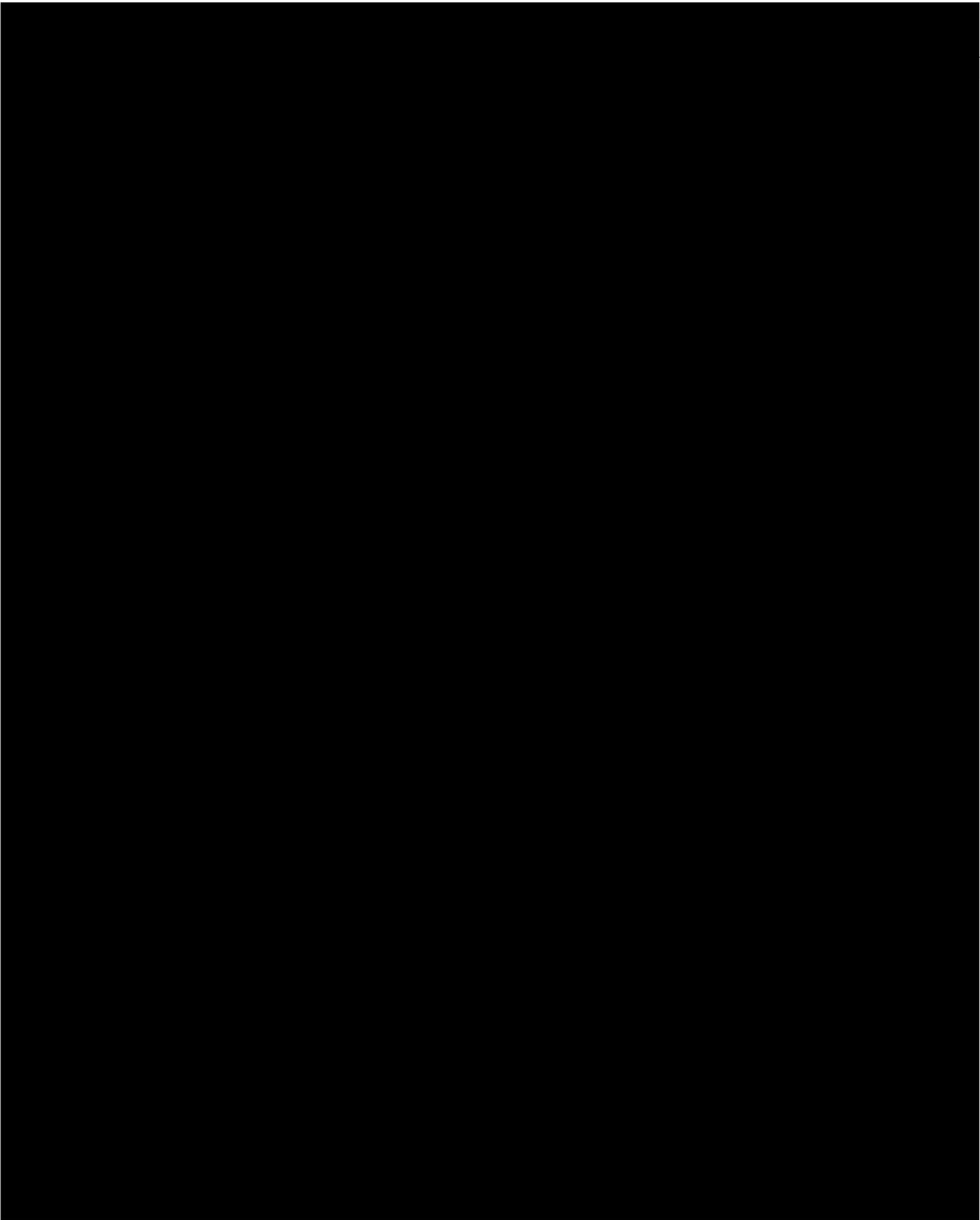
ARTHUR SOMERS SCHOOL

PROPOSED MEASURES

TO IMPROVE SAFETY

APPENDIX

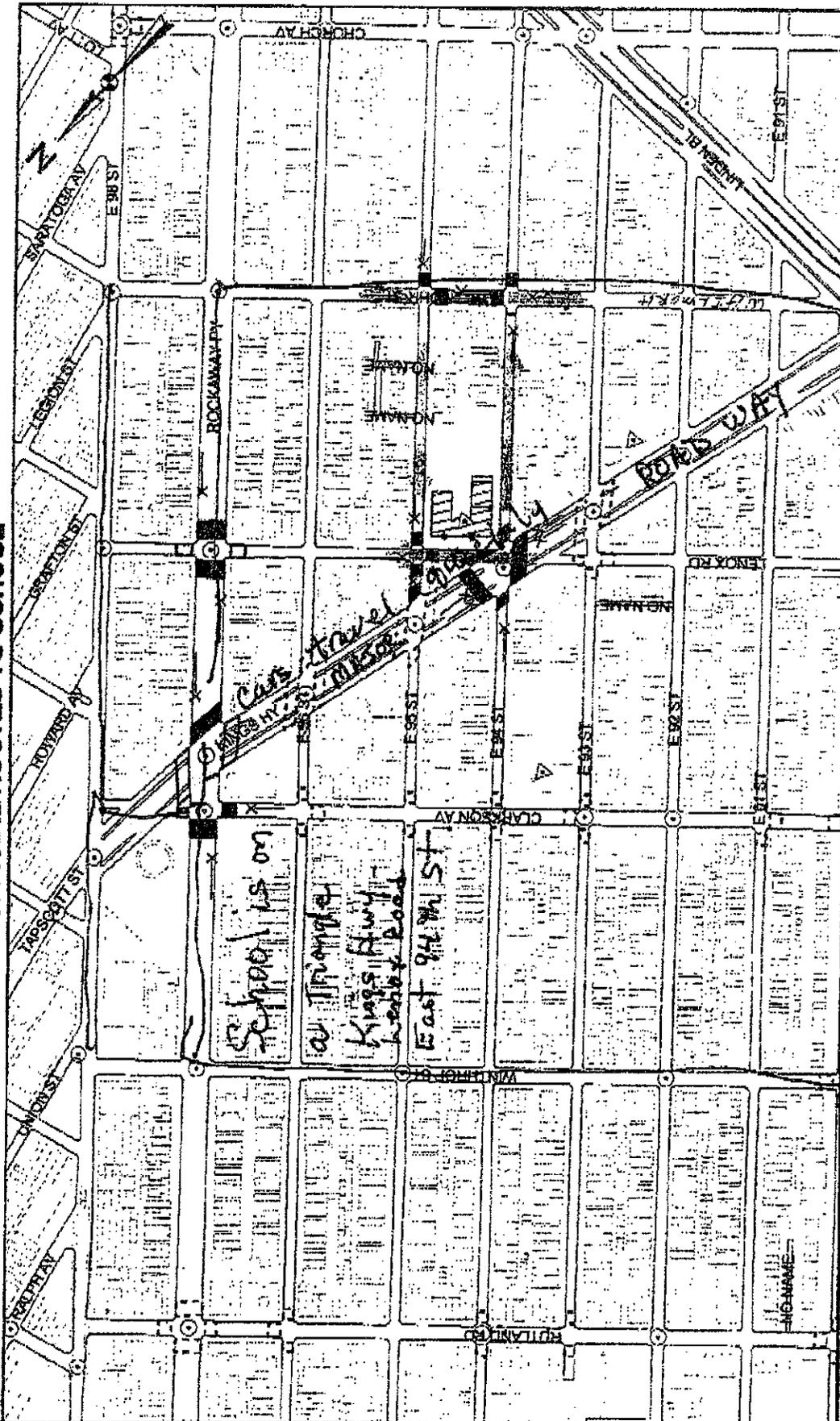




NEW YORK CITY
DEPT. OF TRANSPORTATION

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 routes and use the designated crosswalks.

- LEGEND:**
- TRAFFIC FLOW
 - ROUTE TO SCHOOL
 - ADV. WARNING SIGN
 - SCHOOL LOCATION
 - MAIN SCHOOL ENTRANCE
 - OTHER SCHOOL ENTRANCES
 - SCHOOL X-WALK
 - PER. X-WALK
 - STOP LINE
 - X-WALKS ASSOCIATED WITH OTHER SCHOOLS
 - SPEED HUMP
 - TRAFFIC SIGNAL
 - ALL-WAY STOP
 - 2-WAY STOP

ARTHUR SOMERS
I.S. 252

Prepared by the NEW YORK CITY DEPARTMENT OF TRANSPORTATION, its Vicarious COMMISSIONER, in cooperation with SCHOOL, and POLICE OFFICIALS.

ORIG. DATE 11/15/38
SIS. CORRECT. 3/1/2002
REVISIONS:

DRAWING NO. 45-207
DEC. 207
45-207

COMM. BOARD. RECORDS
BY BROUGH. RECORDS
PRECEDENT. 71

HCS2000: Signalized Intersections Release 4.1e

Analyst: The RBA Group
 Agency: NYC-DOT
 Date: 6/21/2005
 Period:
 Project ID: SCHOOL SAFETY ENGINEERING
 E/W St: E 94th STREET

Inter.:
 Area Type: All other areas
 Jurisd:
 Year :
 N/S St: KINGS HIGHWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	0	2	0	1	2	0
LGConfig	LTR						TR			L T		
Volume	45	42	62				1175 120			26 815		
Lane Width	12.0						12.0			12.0 12.0		
RTOR Vol	0						0					

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left			
Thru	P				Thru P			
Right	P				Right P			
Peds	X				Peds X			
WB Left					SB Left P			
Thru					Thru P			
Right					Right			
Peds	X				Peds X			
NB Right					EB Right			
SB Right					WB Right			
Green	30.0				80.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
LTR	442	1767	0.38	0.25	39.7	D	39.7	D
Westbound								
Northbound								
TR	2378	3567	0.61	0.67	12.3	B	12.3	B
Southbound								
L	164	246	0.18	0.67	9.9	A		
T	2412	3618	0.38	0.67	9.3	A	9.4	A

Intersection Delay = 13.0 (sec/veh) Intersection LOS = B

HCS2000: Signalized Intersections Release 4.1e

Analyst: The RBA Group
 Agency: NYC-DOT
 Date: 6/21/2005
 Period: 2:30-3:30 PM
 Project ID: SCHOOL SAFETY ENGINEERING
 E/W St: E 92nd STREET

Inter.:
 Area Type: All other areas
 Jurisd:
 Year :
 N/S St: KINGS HIGHWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	0	2	0	1	2	0
LGConfig	LTR						TR			L	T	
Volume	45	42	62				1175 120			26	815	
Lane Width	12.0						12.0			12.0	12.0	
RTOR Vol	0						0					

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		P			NB Left			
Thru		P			Thru	P		
Right		P			Right	P		
Peds		X			Peds	X		
WB Left					SB Left	P		
Thru					Thru	P		
Right					Right			
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0				80.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS

Eastbound

LTR 442 1767 0.38 0.25 39.7 D 39.7 D

Westbound

Northbound

TR 2378 3567 0.61 0.67 12.3 B 12.3 B

Southbound

L 164 246 0.18 0.67 9.9 A
 T 2412 3618 0.38 0.67 9.3 A 9.4 A

Intersection Delay = 13.0 (sec/veh) Intersection LOS = B

SPOT SPEED STUDY

Date: **June 9, 2005** Time: **9:00 am - 10:00 am**
 Location: **Lenox Road between East 94th Street and East 95th Street**
 Surveyor:

School: **I.S. 252**
 Direction: **North bound**
 Comments:

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	13.0%	13.0%	60	1200
21	3	13.0%	26.1%	63	1323
22	4	17.4%	43.5%	88	1936
23	4	17.4%	60.9%	92	2116
24	2	8.7%	69.6%	48	1152
25	3	13.0%	82.6%	75	1875
26	0	0.0%	82.6%	0	0
27	1	4.3%	87.0%	27	729
28	0	0.0%	87.0%	0	0
29	1	4.3%	91.3%	29	841
30	0	0.0%	91.3%	0	0
31	1	4.3%	95.7%	31	961
32	0	0.0%	95.7%	0	0
33	0	0.0%	95.7%	0	0
34	0	0.0%	95.7%	0	0
35	1	4.3%	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
	23	100.0%		548	13358

Mean Speed = 23.8 mph Median Speed = 23.8 mph
 Standard Deviation = 3.7 mph 15th Percentile Speed = 20.0 mph
 Margin of Error (95% Confidence) = ± 1.5 mph 85th Percentile Speed = 27.7 mph

SPOT SPEED STUDY

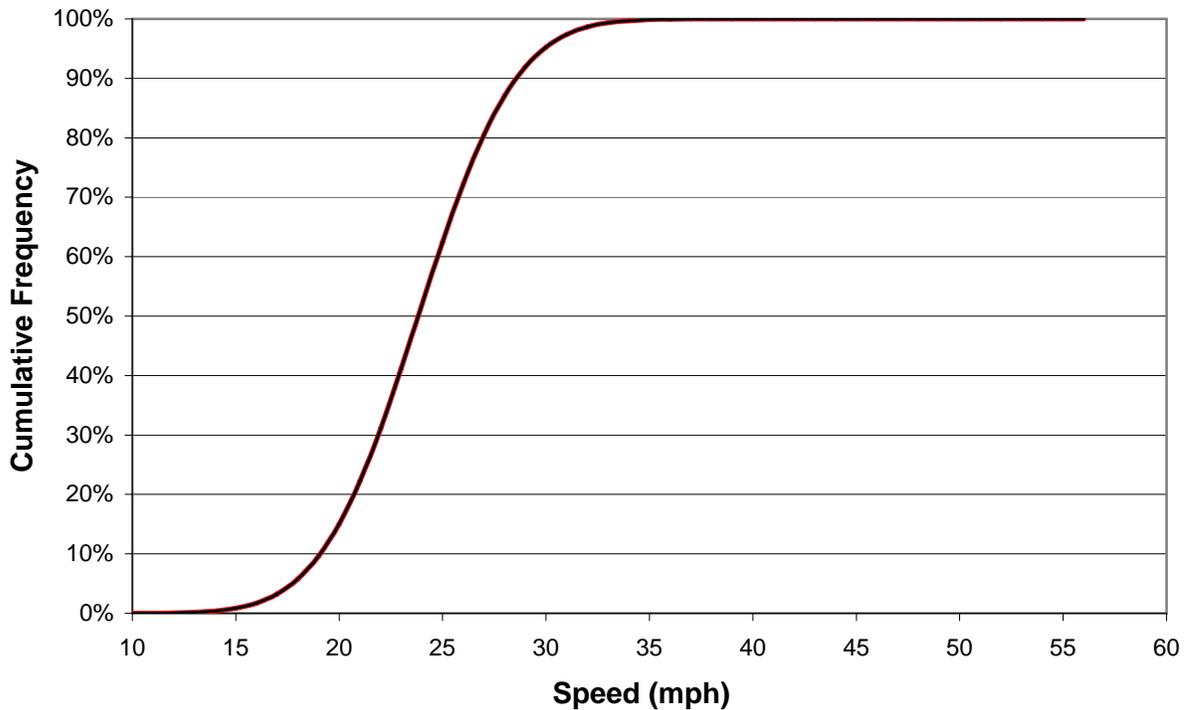
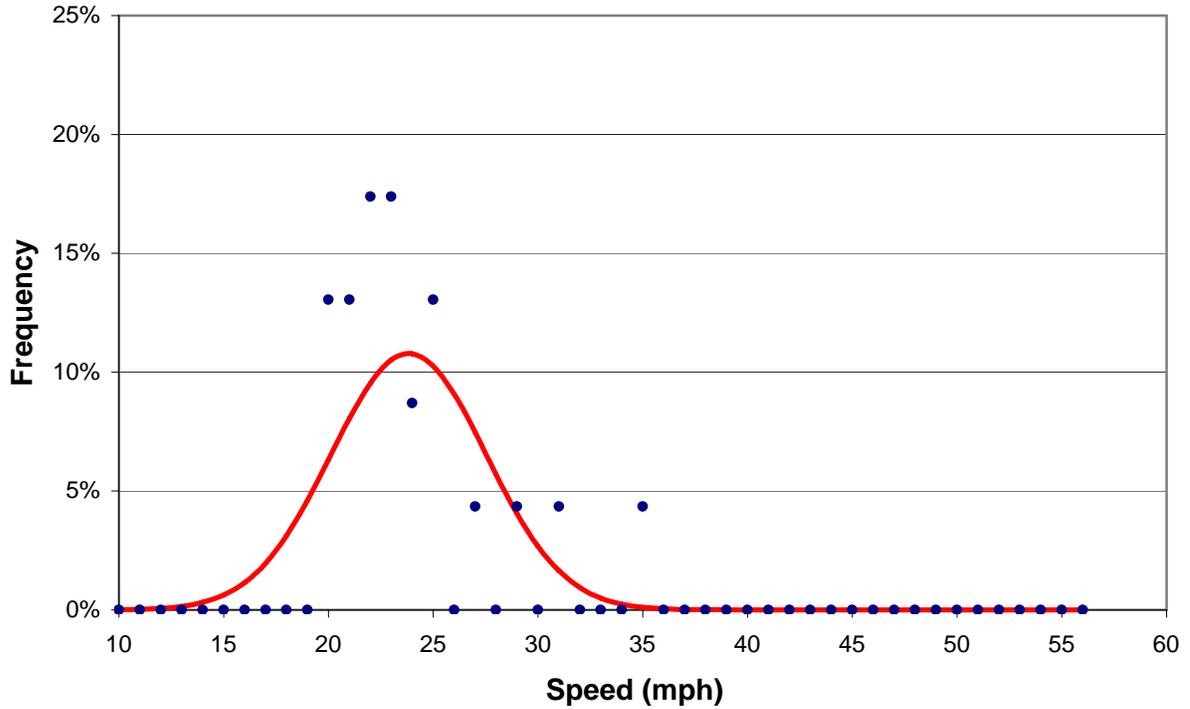
Date: **June 9, 2005**
Location: **Lenox Road between East 94th Street and East 95th Street**
Surveyor:

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

School: **I.S. 252**
Direction: **North bound**
Comments:

Mean Speed = 23.8 mph
Standard Deviation = 3.7 mph
Margin of Error (95% Confidence) = ± 1.5 mph

Median Speed = 23.8 mph
15th Percentile Speed = 20.0 mph
85th Percentile Speed = 27.7 mph



SPOT SPEED STUDY

Date: **June 30, 2005** Time: **8:30 AM to 9:30 AM**
 Location: **East 94th Street Between Lennox Road and Willmohr Street**
 Surveyor: **Eyad Yousef**

School:
 Direction:
 Comments:

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	10.7%	10.7%	60	1200
21	3	10.7%	21.4%	63	1323
22	4	14.3%	35.7%	88	1936
23	4	14.3%	50.0%	92	2116
24	1	3.6%	53.6%	24	576
25	2	7.1%	60.7%	50	1250
26	1	3.6%	64.3%	26	676
27	1	3.6%	67.9%	27	729
28	1	3.6%	71.4%	28	784
29	2	7.1%	78.6%	58	1682
30	1	3.6%	82.1%	30	900
31	1	3.6%	85.7%	31	961
32	1	3.6%	89.3%	32	1024
33	1	3.6%	92.9%	33	1089
34	1	3.6%	96.4%	34	1156
35	0	0.0%	96.4%	0	0
36	0	0.0%	96.4%	0	0
37	0	0.0%	96.4%	0	0
38	0	0.0%	96.4%	0	0
39	1	3.6%	100.0%	39	1521
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%		715	18923

Mean Speed = 25.5 mph Median Speed = 25.5 mph
 Standard Deviation = 5.0 mph 15th Percentile Speed = 20.4 mph
 Margin of Error (95% Confidence) = ± 1.8 mph 85th Percentile Speed = 30.7 mph

SPOT SPEED STUDY

Date: **June 30, 2005**

Time: **8:30 AM to 9:30 AM**

School:

Location: **East 94th Street Between Lennox Road and Willmohr Street**

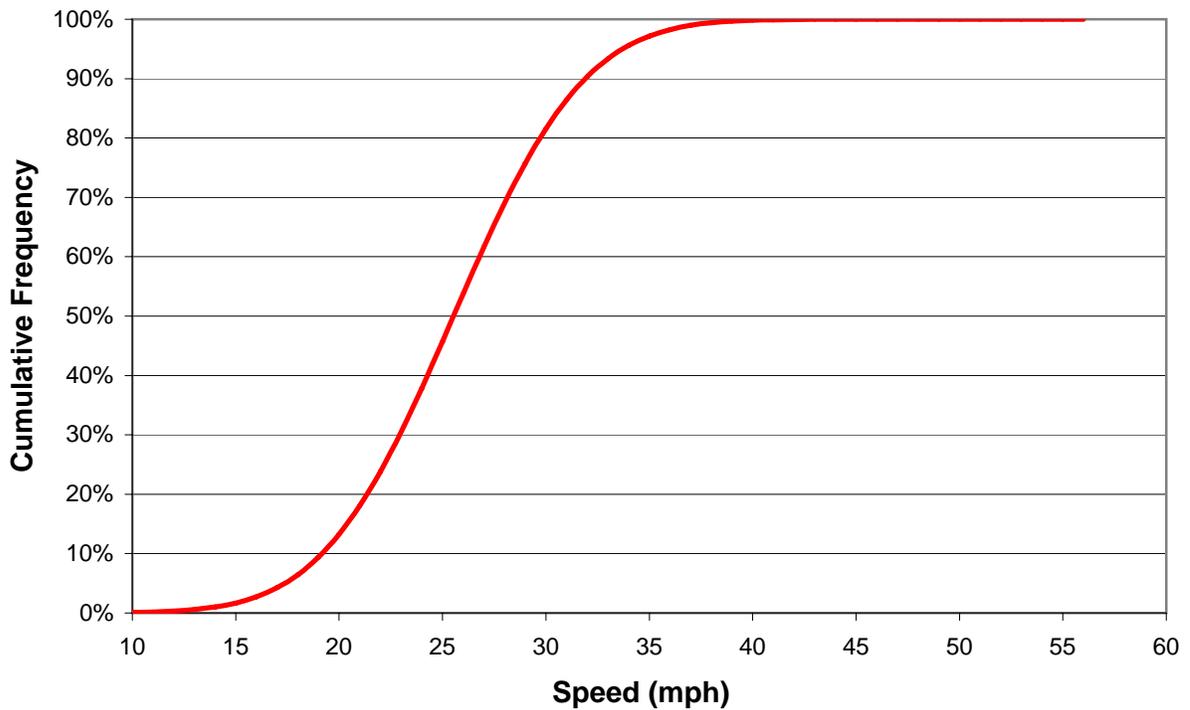
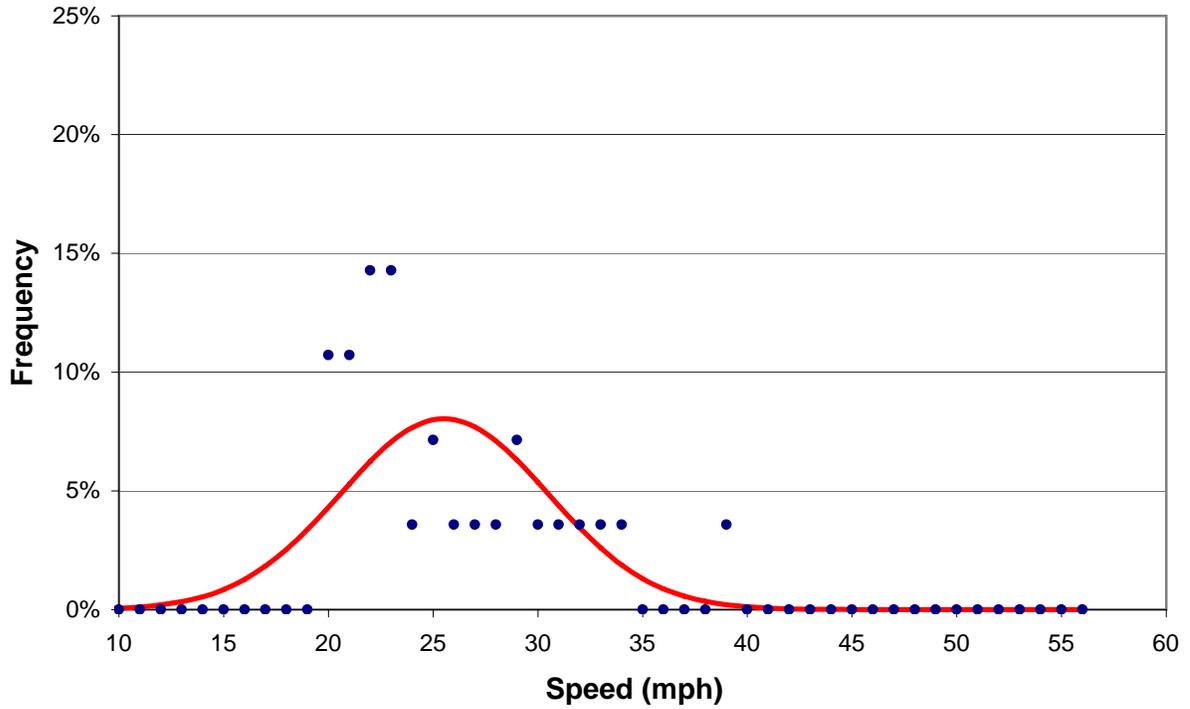
Direction:

Surveyor: **Eyad Yousef**

Comments:

Mean Speed = 25.5 mph
 Standard Deviation = 5.0 mph
 Margin of Error (95% Confidence) = ± 1.8 mph

Median Speed = 25.5 mph
 15th Percentile Speed = 20.4 mph
 85th Percentile Speed = 30.7 mph



SPOT SPEED STUDY

Date: **June 30, 2005** Time: **9:30 AM 10:30AM**
 Location: **East 95th Street Between Lenox Road and Willmohr Street**
 Surveyor: **Eyad Yousef**

School:
 Direction:
 Comments:

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	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	7	11.5%	11.5%	154	3388
23	7	11.5%	23.0%	161	3703
24	4	6.6%	29.5%	96	2304
25	4	6.6%	36.1%	100	2500
26	4	6.6%	42.6%	104	2704
27	4	6.6%	49.2%	108	2916
28	6	9.8%	59.0%	168	4704
29	6	9.8%	68.9%	174	5046
30	3	4.9%	73.8%	90	2700
31	3	4.9%	78.7%	93	2883
32	2	3.3%	82.0%	64	2048
33	2	3.3%	85.2%	66	2178
34	0	0.0%	85.2%	0	0
35	0	0.0%	85.2%	0	0
36	1	1.6%	86.9%	36	1296
37	2	3.3%	90.2%	74	2738
38	1	1.6%	91.8%	38	1444
39	1	1.6%	93.4%	39	1521
40	1	1.6%	95.1%	40	1600
41	0	0.0%	95.1%	0	0
42	1	1.6%	96.7%	42	1764
43	2	3.3%	100.0%	86	3698
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
	61	100.0%		1733	51135

Mean Speed = 28.4 mph
 Standard Deviation = 5.6 mph
 Margin of Error (95% Confidence) = ± 1.4 mph

Median Speed = 28.4 mph
 15th Percentile Speed = 22.6 mph
 85th Percentile Speed = 34.2 mph

SPOT SPEED STUDY

Date: **June 30, 2005**
Location: **East 95th Street Between Lenox Road and Willmohr Street**
Surveyor: **Eyad Yousef**

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

School:
Direction:
Comments:

Mean Speed = 28.4 mph
Standard Deviation = 5.6 mph
Margin of Error (95% Confidence) = ± 1.4 mph

Median Speed = 28.4 mph
15th Percentile Speed = 22.6 mph
85th Percentile Speed = 34.2 mph

