

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



School Safety Engineering Project

FINAL REPORT: I.S. 192 (The Renaissance School), Queens



**Prepared by
The RBA Group and URBITRAN Associates Inc.**



March 22, 2006

**School Safety Engineering Project
Final Report: I.S. 192, Queens**

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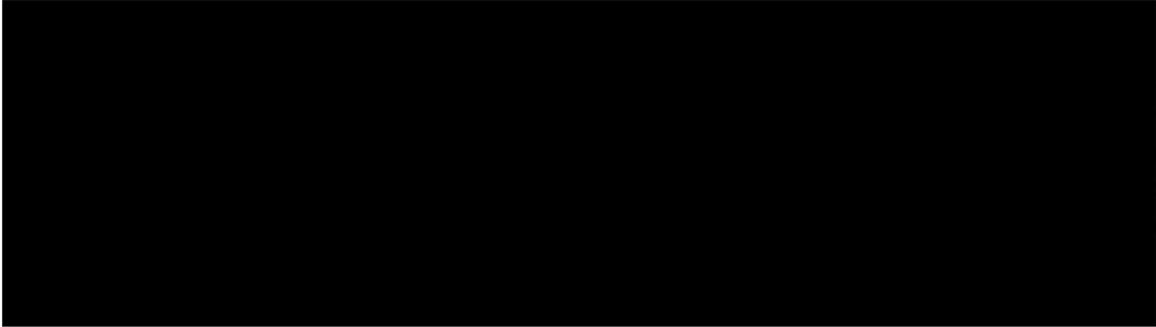
1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Department of Transportation (DOT) has developed school safety maps for 1,471 schools throughout the City. Schools currently in the program are primarily elementary and intermediate schools with an enrollment of at least 250 students. The safety plans include the designation of official school crosswalks, identified by prominent warning signs and roadway markings. DOT also designates curbside locations for school bus loading and unloading and other parking controls to improve conditions for students. In addition, nearly 350 speed reducers (humps) have been installed in the immediate vicinity of schools.

Under this consultant study, the School Safety Engineering Project, crash data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools, safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). I.S. 192 (The Renaissance School) in Queens is one of the 135 “priority” schools identified by the New York City Department of Transportation, Office of School Safety Engineering.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS



2.2 NEIGHBORHOOD DESCRIPTION

Exhibit 1, at the end of this section, shows an aerial view of the neighborhood surrounding the school. I.S. 192 is bounded by 204th Street on the west, 205th Street on the east, 111th Avenue on the south, and Hollis Avenue to the north. The area surrounding the school is generally residential in nature. Hollis Avenue has commercial activities and carries higher traffic volumes. Francis Lewis Boulevard is one block to the east, and also carries higher traffic volumes.



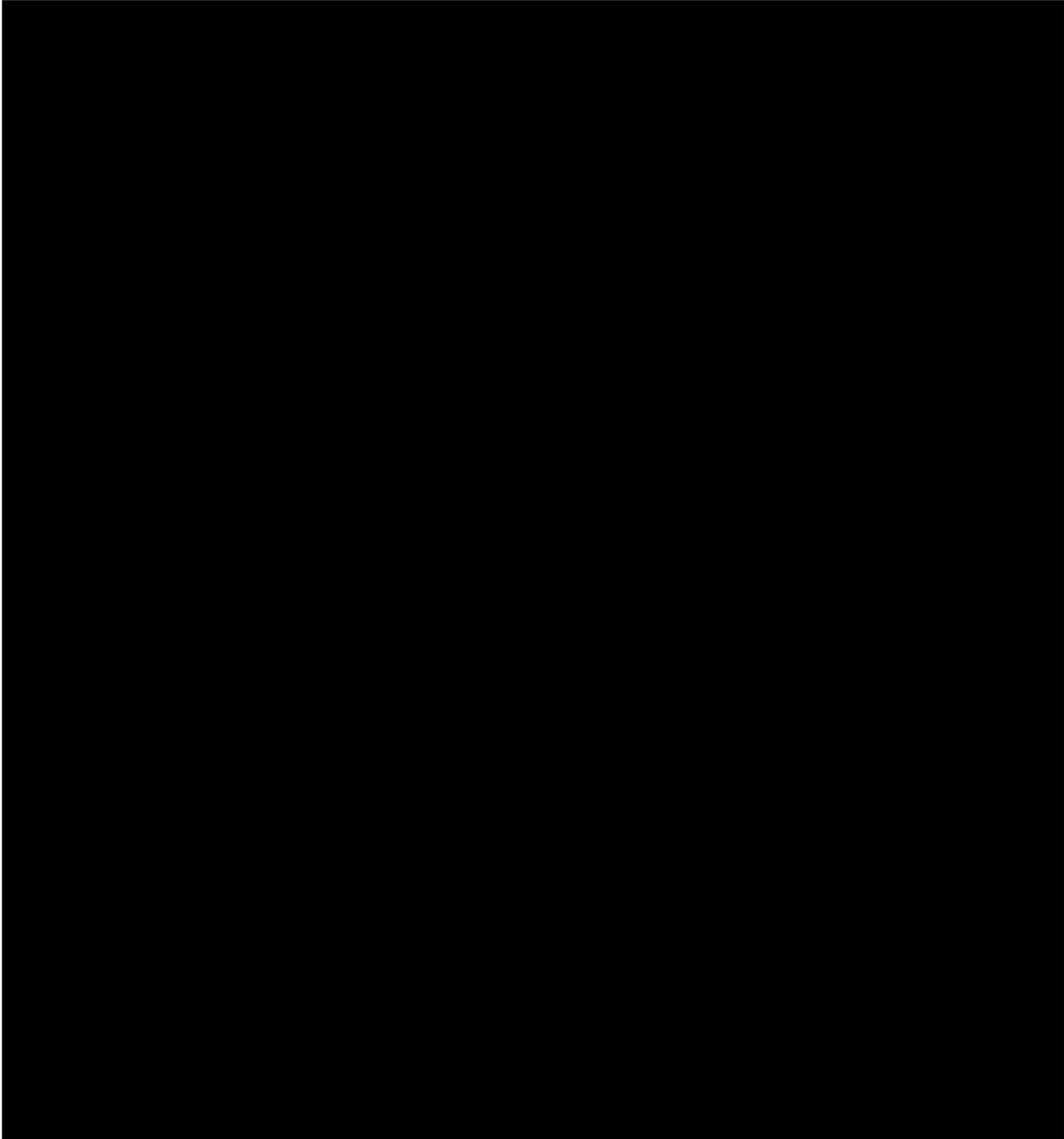
Figure 1: Looking south at 204th Street neighborhood south of the school

2.3 MEETING WITH SCHOOL REPRESENTATIVES

Consultant staff, the Principal of I.S. 192, the School Safety Officer, the PTA President, the School Staff Coordinator, and the Assistant Principal – Operations (APO) met at the school on the afternoon of May 26, 2004. According to the school officials, the problems facing I.S. 192 student pedestrians are:

- Speeding is seen as a problem on 111th Avenue, especially eastbound, and on Hollis Avenue
- Traffic volumes were not seen as being a special problem.
- No special parking problems were reported since they don't have alternate side regulations.

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



2.6 PRIMARY MODE OF TRANSPORT TO AND FROM SCHOOL

The school’s “catchment area” as defined by the Department of Education is shown in Exhibit 2 at the end of this section. Based upon information gathered from school officials, the catchment area shown in Exhibit 2 was verified as accurate for I.S. 192.

The school’s catchment area, as confirmed by the school principal agrees with that supplied by the NYC DOT. The catchment area varies, however, and is slightly irregular. The area generally includes St. Albans, Hollis, Cambria Heights, and Queens Village.

Table 1 presents the mode of travel for I.S. 192 as identified by school representatives.

TABLE 1: MODE OF TRAVEL	STUDENTS (Percentage)
Walk	50%
Driven by car	20%
School bus	1%
MTA Bus/Subway	29%
Bicycle	0%
TOTAL	100%

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

There are some stores and restaurants along Hollis Avenue that are attractions for I.S. 192 student pedestrians. The Hollis Branch of the Queens Public Library is on the northeast corner of Hollis Avenue & 204th Street. P.S. 134 and P.S. 233 on 109th Avenue are about one block north of I.S. 192 and also generate pedestrian and vehicular traffic in the neighborhood.

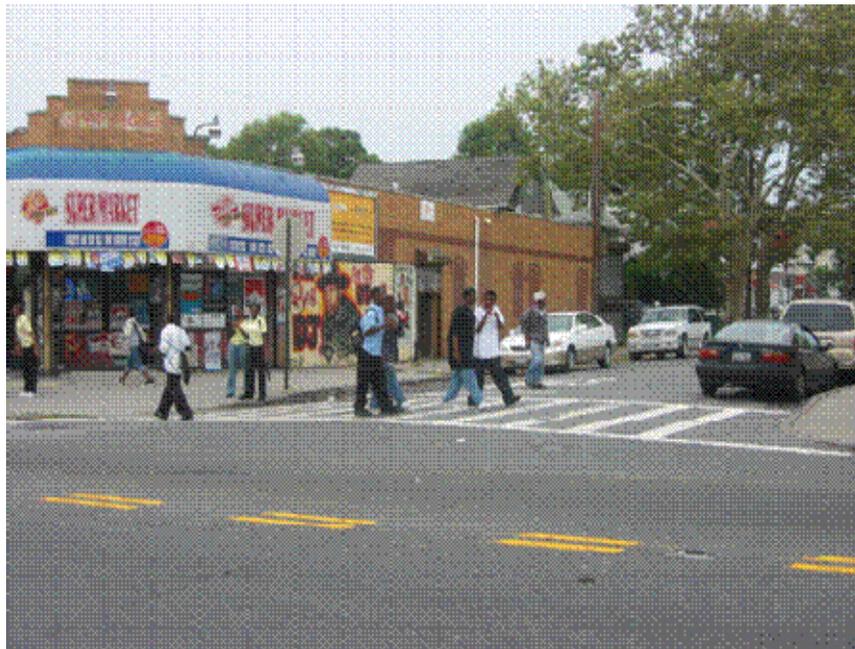


Figure 3: Looking northwest across Hollis Avenue & 205th Street intersection at corner store

2.8 CROSSING GUARD LOCATIONS

According to the school officials, there are no crossing guards assigned to I.S. 192.

There is one crossing guard in the area of the school, at Hollis Avenue & 204th Street, who is assigned to a nearby elementary school.

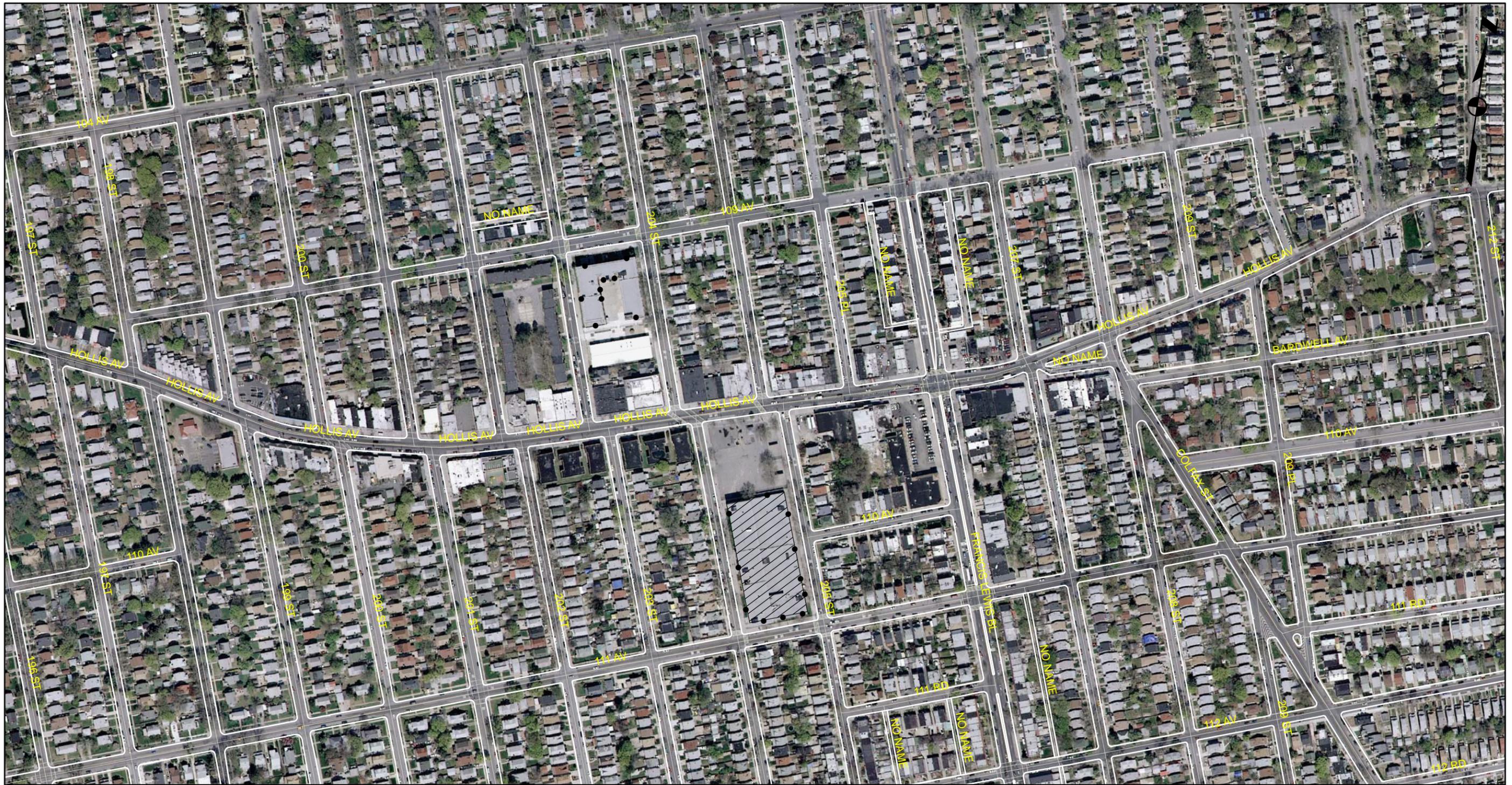


EXHIBIT 1
I.S. 192 QUEENS
THE RENAISSANCE MIDDLE SCHOOL
AERIAL PHOTOGRAPH

0 250 500 1,000 Feet

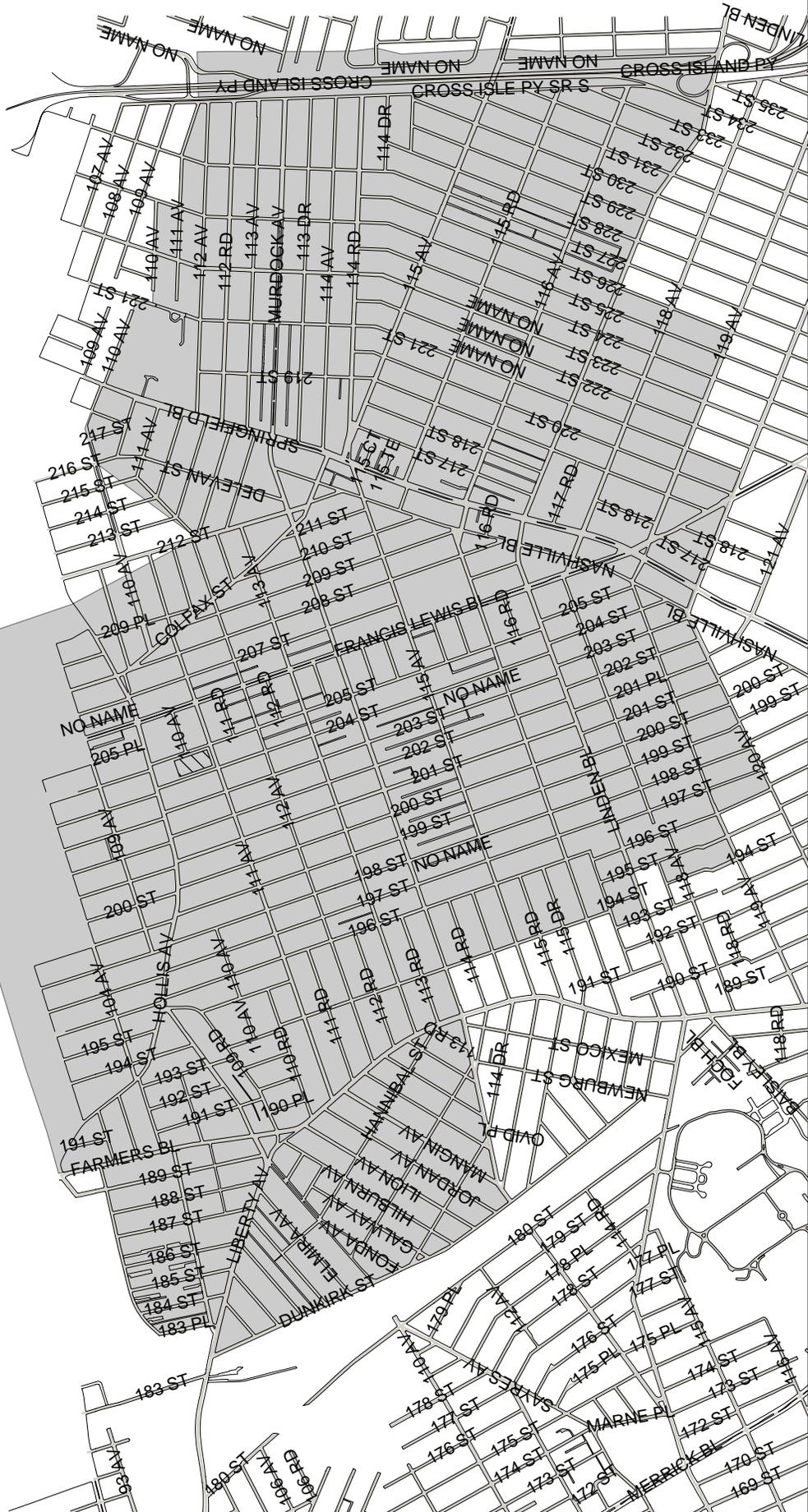


EXHIBIT 2

I.S. 192 QUEENS

THE RENAISSANCE MIDDLE SCHOOL

CATCHMENT AREA

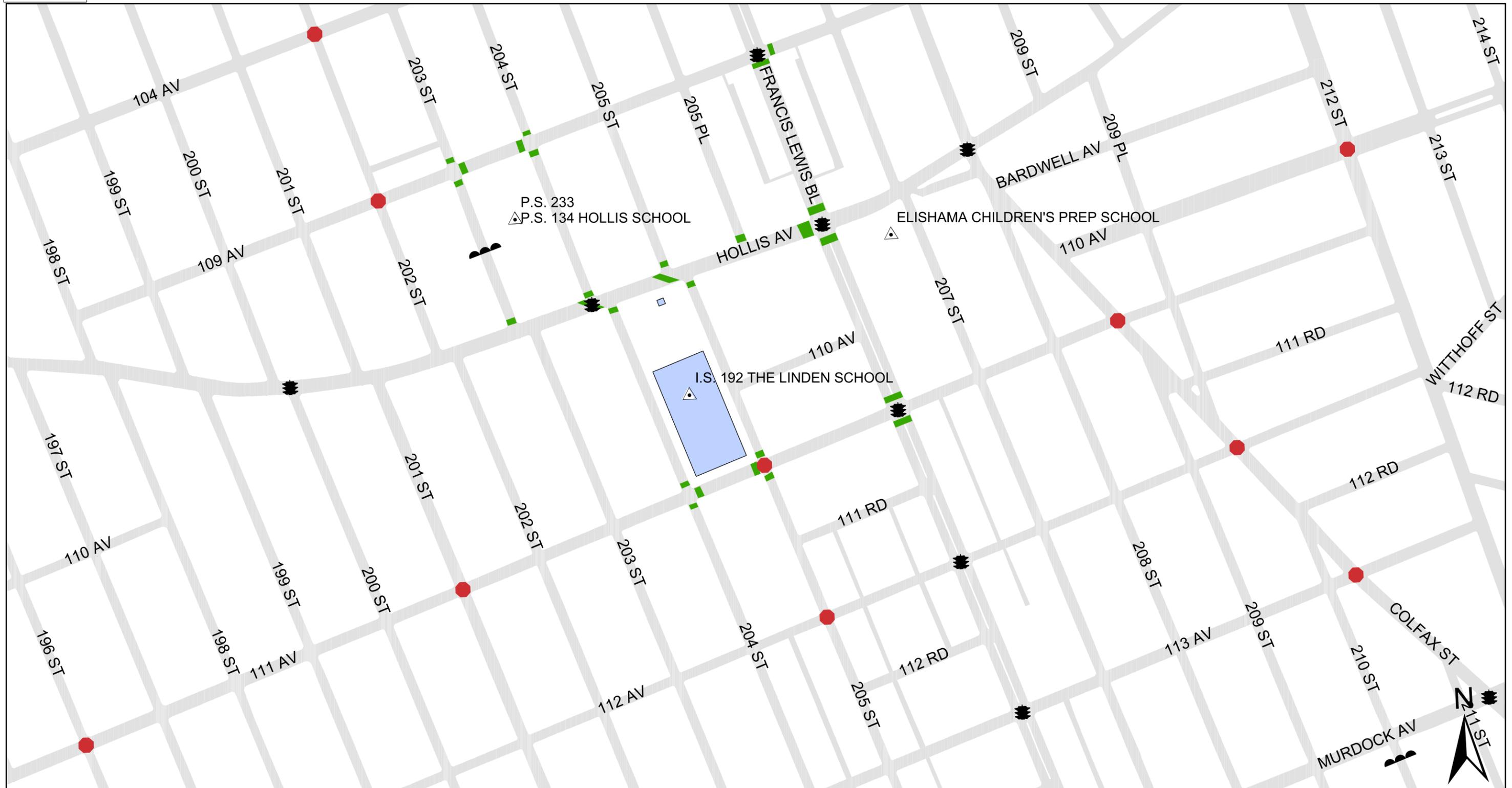


LEGEND:
 CATCHMENT AREA, (DEPARTMENT OF EDUCATION DESIGNATED AREA FROM WITHIN WHICH STUDENTS ARE ENTITLED TO ATTEND I.S. 192)





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 192 Queens
 RENAISSANCE SCHOOL**

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

Map created on 11/17/2006

1.5.1

COMM. BOARD:	412
PRECINCT:	113

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to school representatives, there are approximately three hundred (300) students who ride MTA buses to school, and approximately ten (10) students who ride a yellow school bus to school. The current web site information shows two yellow buses serving about 25 students. There are several MTA buses that stop to pick up students in front of the school on 204th Street, which include Q4, Q77, and Q83 buses.

3.2 PARENT DROP-OFF OPERATIONS

According to school representatives, twenty percent (20%) of the students are being dropped off. Congestion typically occurs at times of arrival and dismissal and there is often double-parking around the school during arrival and dismissal, although school staff virtually closes 204th Street during arrival and dismissal times. Parents generally drop-off students on 205th Street, behind the school, who then use the entrances on that street to enter the school.

3.3 PARKING REGULATIONS

Parking regulations around the school block are shown in Exhibit 4 at the end of this section.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

Exhibit 3, at the end of Section 2, shows the existing signals, and school signs and pavement markings assigned to I.S. 192. It should be noted that a citywide signage program is currently underway to upgrade school signage to the current edition of the Federal Manual of Uniform Traffic Control Devices (MUTCD) standards of fluorescent yellow-green accompanied by downward pointing arrows. Signs scheduled to be installed under this program are shown as “existing” in Exhibit 7.

3.5 ACCIDENT SUMMARY

The number and severity of accidents at a location are typical indicators used to help determine the existence and severity of any potentially safety-related situations. Such situations are then examined for possible solutions and/or remedies.

Exhibit 5, at end of this section, and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (NYS DMV) in the vicinity of I.S. 192 for a three-year period from January 1, 1998 to December 1, 2000. The NYS DMV data provides some detail relating to the cause of the accident. Table 3 provides a summary of more recent accident data obtained from the New York City Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the NYS DMV data.

Further discussions on accidents are included in Section 3.6, Traffic Operations and Issues.

TABLE 2: I.S. 192 ACCIDENT SUMMARY OF NYS DMV DATA (1998-2000)

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
111 th Ave & 204 th St	7	0	0	0
111 th Ave & 205 th St	20	1	0	1
Hollis Ave & 204 th St.	14	4	0	1
Hollis Ave & 205 th St.	13	0	0	0
Francis Lewis Blvd. & 111 th Ave.	29	1	0	1
Francis Lewis Blvd. & Hollis Ave.	81	4	0	2
Total	164	10	0	5

TABLE 3: I.S. 192 ACCIDENT SUMMARY OF NYPD DATA (2001-2004)

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
111 th Ave & 204 th St	6	1	0	0
111 th Ave & 205 th St	7	0	0	0
Hollis Ave & 204 th St.	12	3	0	1
Hollis Ave & 205 th St.	0	0	0	0
Francis Lewis Blvd. & 111 th Ave.	39	3	0	1
Francis Lewis Blvd. & Hollis Ave.	119	6	0	1
Total	183	13	0	3

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

3.6 TRAFFIC OPERATIONS AND ISSUES

The specific roadway-related physical conditions for each location within the school's vicinity directly affect the safety and efficiency of operations for both pedestrian and vehicular traffic. These conditions are required information when analyzing a location, and are the starting point for any revisions that may be considered to improve safety and/or efficiency.

The following sub-sections outline the physical conditions and issues concerning traffic operations and accidents at the intersections in the vicinity of I.S. 192. Details on specific intersections or roadway segments are given in the following Sections.

3.6.1 111th Avenue & 204th Street

This is an unsignalized intersection with school crosswalks located across the north and south legs of 204th Street and the east leg of 111th Avenue. 111th Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway. 204th Street is also a two-way street with one travel lane and a parking lane on each side of the roadway. A stop sign exists at the northbound and southbound approaches of 204th Street (see Figures 4 and 5).

There were seven (7) accidents reported at this intersection between 1998 and 2000; none of these accidents were pedestrian accidents (Table 2). The NYPD accident data (Table 3) shows six (6) accidents including one (1) pedestrian accident between 2001 and 2004. The pedestrian accident was not a fatal or school-related accident.

The school principal reported a speeding problem on 111th Avenue. Therefore, a speed survey was conducted on 111th Avenue between 204th Street and 205th Street in order to verify the existence of a speeding problem and to determine its extent.

The 85th percentile speed for eastbound vehicles on 111th Avenue between 204th Street and 205th Street were found to be 30 mph. The 85th percentile speed for westbound vehicles on 111th Avenue between 204th Street and 205th Street were found to be 29 mph.

The 85th percentile speed is considered to be the representative speed for the street segment. Speeds above the 30 mph threshold would indicate a speeding problem and may require appropriate traffic calming measures.

The detailed results of the spot speed survey on 111th Avenue between 204th Street and 205th Street are shown in the Appendix at the end of the document.

In order to determine the appropriate traffic control for the school crosswalks, a preliminary traffic signal warrant assessment was performed to assess the traffic situation and determine what type of traffic control devices would be appropriate. A traffic count was at the intersection of 111th Avenue and 204th Street from 7:30 am to 9:00 am on Wednesday, June 22, 2005. The results of the peak hour (7:45 am to 8:45 am) count are shown in Tables 4 and 5 and in Exhibit 6A at the end of this section.

In addition, a traffic signal warrant analysis was performed to determine the need of a traffic signal at this intersection. The results of the preliminary assessment based on traffic signal warrant 4 (Pedestrian Volumes) and warrant 5 (School Crossing) of the Federal MUTCD are presented in Tables 6 and 7, respectively. Since both warrants (Warrants 4 and 5) are not satisfied based on the preliminary assessment, a new traffic signal is not warranted.

TABLE 4: VEHICLE VOLUMES (7:45-8:45 AM)

INTERSECTION	111th Avenue EASTBOUND			111th Avenue WESTBOUND			204th Street NORTHBOUND			204th Street SOUTHBOUND		
	Left	Straight	Right	Left	Straight	Right	Left	Straight	Right	Left	Straight	Right
111 th Avenue & 204 th Street	8	147	1	11	177	28	6	21	13	16	13	19
TOTAL	156			216			40			48		

TABLE 5: PEDESTRIAN VOLUMES (7:45-8:45 AM)				
INTERSECTION	Crossing 111th Avenue WEST-LEG CROSSWALK	Crossing 111th Avenue EAST-LEG CROSSWALK	Crossing 204th Street SOUTH-LEG CROSSWALK	Crossing 204th Street NORTH-LEG CROSSWALK
111 th Avenue & 204 th Street	32 (10 / 22) *	81 (26 / 55) *	19 (9 / 10) *	68 (35 / 33) *

* Numbers in parenthesis indicate (adults / students).

TABLE 6: TRAFFIC SIGNAL WARRANT 4 ANALYSIS (PEDESTRIAN VOLUME)						
Intersection	Total Hourly (7:45-8:45 AM) Pedestrian Volumes			Criteria		Traffic Signal Warranted
	Crossing Street			Gap	Crossing Major Street	
	Major	Minor	Total	Fewer than 60 gaps / hour*	Greater than 190 Pedestrians / hour	
111 th Avenue & 204 th Street	113	87	200	No	No	No

* The available gap is based on the time needed for a pedestrian to walk across the street. The analysis assumed 16 seconds.

TABLE 7: TRAFFIC SIGNAL WARRANT 5 ANALYSIS (SCHOOL CROSSING)						
Intersection	Total Hourly (7:45-8:45) Student Volumes			Criteria		Traffic Signal Warranted
	Crossing Street			Gap	Crossing Major Street	
	Major	Minor	Total	Fewer than 60 gaps / hour ⁽¹⁾	Greater than 20 Students / hour	
111 th Avenue & 204 th Street	77	43	120	No	Yes	No

* The available gap is based on the time needed for a pedestrian to walk across the street. The analysis assumed 16 seconds.

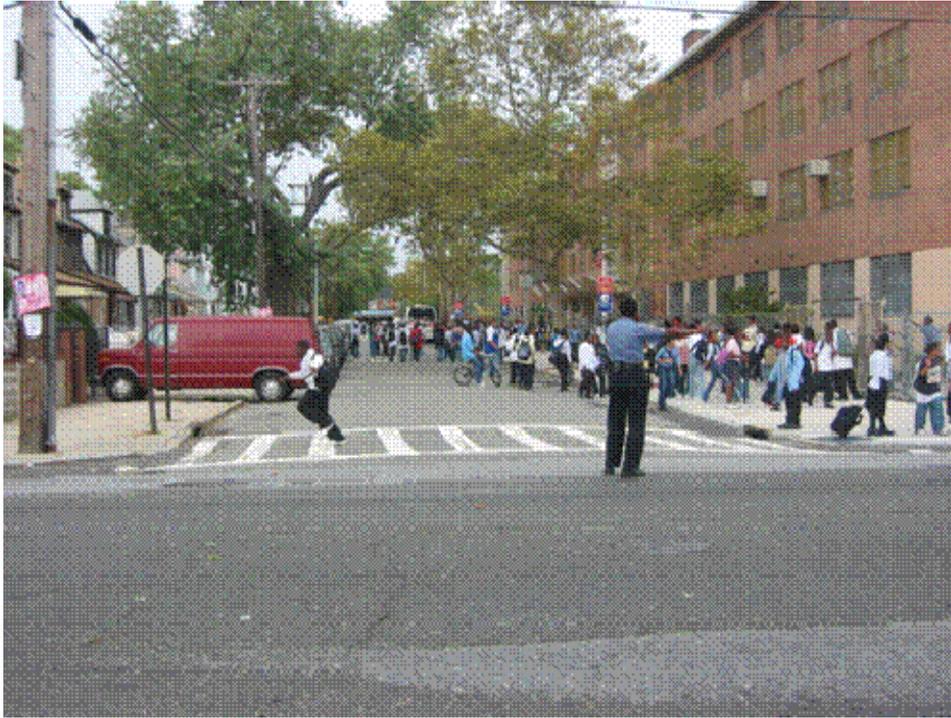


Figure 4: Looking north on 204th Street across 111th Avenue at dismissal time for I.S. 192 (School is on the right)



Figure 5: Looking east on 111th Avenue across 204th Street at dismissal time for I.S. 192 (School is on the left)

3.6.2 111th Avenue & 205th Street

This is an unsignalized all-way stop-controlled intersection with school crosswalks located across the north and south legs of 205th Street and the west leg of 111th Avenue. 111th Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway. 205th Street is also a two-way street with one travel lane and a parking lane on each side of the roadway. There are stop signs for all four approaches to the intersection (see Figures 6 and 7).

To more fully assess the situation for the area in the neighborhood of I.S. 192, the consultant performed a search of the NYC DOT records for any warrant studies that may have been performed at any of the intersections. A warrant study was completed for the intersection of 111th Avenue & 205th Street to determine the need for an All-Way Stop control for the intersection, which was subsequently approved on February 25, 2003. The study included a full warrant analysis including vehicle and pedestrian counts and accident analysis. The All-Way Stop signs and markings for the intersection were installed subsequent to the approval.

There were twenty (20) accidents reported at this intersection between 1998 and 2000; one (1) of these accidents was a pedestrian accident, which was also a school-related accident (Table 2). In the school-related accident, a twelve-year old pedestrian sustained a “possible injury” on Tuesday, December 21, 1999 at 8:00 am while walking along the roadway against traffic at the intersection. The road was dry and the weather was clear. The NYPD accident data (Table 3) shows a total of seven (7) accidents, none of which were pedestrian accidents reported at this intersection between 2001 and 2004.

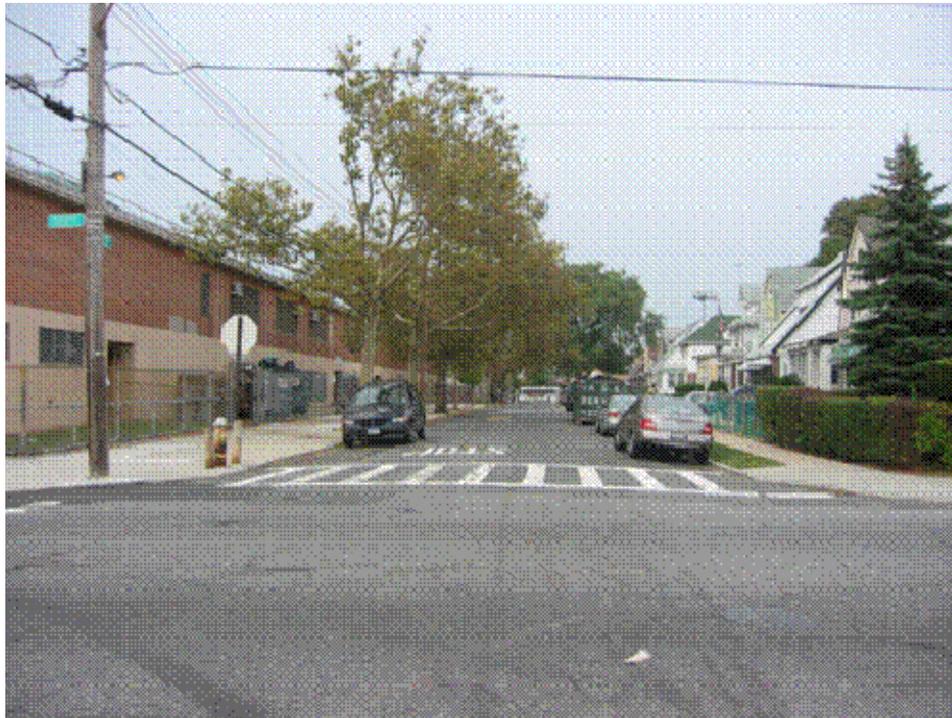


Figure 6: Looking north on 205th Street across 111th Avenue (School is on the left)



Figure 7: Looking west on 111th Avenue across 205th Street intersection (the school is on the right)

3.6.3 Hollis Avenue & 204th Street

This is a signalized intersection with school crosswalks located across the north and south legs of 204th Street and the west leg of Hollis Avenue. A pedestrian crosswalk is located across the east leg of Hollis Avenue. This is an offset intersection with the north leg of 204th Street west of the south leg (see Exhibits 1, 3 and 7). Hollis Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway. 204th Street is also a two-way street with one travel lane and a parking lane on each side of the roadway (see Figures 8, 9 and 10). Higher volumes of traffic are experienced on Hollis Avenue. The school crosswalks at the intersection are used by P.S. 192 students, but are actually assigned to P.S. 134.

This intersection has been the site of fourteen (14) accidents between 1998 and 2000; four (4) of these were pedestrian accidents, one (1) of which was a school-related accident. There were no fatal pedestrian accidents during the same three-year period. In the school-related accident, a twelve-year old pedestrian sustained an incapacitating injury on Wednesday, March 25, 1998 at 2:00 pm while crossing the roadway but without the signal and not using the crosswalk. Although in the vicinity of the intersection, the pedestrian's actual location was not reported. The NYPD accident data (Table 3) shows twelve (12) accidents including three pedestrian accidents, one (1) of which was school-related. There were no fatalities between 2001 and 2004. There is no further information on the school-related accident.



Figure 8: Looking south on 204th Street across Hollis Avenue (School is on far left)



Figure 9: Looking east on Hollis Avenue across 204th Street intersection



Figure 10: Looking north on 204th Street across Hollis Avenue intersection

3.6.4 Hollis Avenue & 205th Street

This is an unsignalized intersection with school crosswalks located across the north and south legs of 205th Street and the west leg of Hollis Avenue. This is an offset intersection with the north leg of 205th Street west of the south leg (see Exhibits 1, 3 and 7). Hollis Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway. 205th Street is also a two-way street with one travel lane and a parking lane on each side of the roadway (see Figures 11 and 12). Higher volumes of traffic are experienced on Hollis Avenue.

This intersection has been the site of thirteen (13) accidents between 1998 and 2000; none of which were pedestrian accidents. The NYPD accident data (Table 3) shows no accidents between 2001 and 2004 at this location.

The school principal reported a speeding problem on Hollis Avenue. Therefore, a speed survey was conducted on Hollis Avenue between 204th Street and 205th Street in order to verify the existence of a speeding problem and to determine its extent.

The 85th percentile speed for eastbound vehicles on Hollis Avenue between 204th Street and 205th Street were found to be 29 mph. The 85th percentile speed for westbound vehicles on Hollis Avenue between 204th Street and 205th Street were found to be 32 mph.

The 85th percentile speed is considered to be the representative speed for the street segment. Speeds above the 30 mph threshold would indicate a speeding problem and may require appropriate traffic calming measures.

The detailed results of the spot speed survey on Hollis Avenue between 204th Street and 205th Street are shown in the Appendix at the end of the document.

In order to determine the appropriate traffic control for the intersection of Hollis Avenue and 205th Street, a preliminary traffic signal warrant assessment was performed to assess the traffic situation and determine what type of traffic control devices would be appropriate. A traffic count was conducted at this intersection from 7:30 to 9:00 am on Thursday, June 23, 2005. The results of the peak hour (7:30 am to 8:30 am) count are shown in Tables 8 and 9 and in Exhibit 6B at the end of this section.

In addition, a traffic signal warrant analysis was performed to determine the need of a traffic signal control at this intersection. The results of the preliminary assessment based on traffic signal warrant 4 (Pedestrian Volumes) and warrant 5 (School Crossing) of the Federal MUTCD are presented in Tables 10 and 11, respectively.

TABLE 8: VEHICLE VOLUMES (7:30 - 8:30 AM)												
INTERSECTION	Hollis Avenue EASTBOUND			Hollis Avenue WESTBOUND			205 th Street NORTHBOUND			205 th Street SOUTHBOUND		
	Left	Straight	Right	Left	Straight	Right	Left	Straight	Right	Left	Straight	Right
Hollis Avenue & 205 th Street	12	317	18	23	408	15	26	12	45	3	10	18
TOTAL	347			446			83			31		

TABLE 9: PEDESTRIAN VOLUMES (7:30 - 8:30 AM)				
INTERSECTION	Crossing Hollis Avenue WEST-LEG CROSSWALK	Crossing Hollis Avenue EAST-LEG CROSSWALK	Crossing 205 th Street SOUTH-LEG CROSSWALK	Crossing 205 th Street NORTH-LEG CROSSWALK
Hollis Avenue & 205 th Street	122 (16 / 106) *	7 (4 / 3) *	79 (38 / 41) *	69 (35 / 34) *

* Numbers in parenthesis indicate (adults / students)

TABLE 10: TRAFFIC SIGNAL WARRANT 4 ANALYSIS (PEDESTRIAN VOLUME)						
Intersection	Total Hourly (7:30 - 8:30 am) Pedestrian Volumes			Criteria		Traffic Signal Warranted
	Crossing Street			Gap	Crossing Major Street	
	Major	Minor	Total	Fewer than 60 gaps / hour*	Greater than 190 Pedestrians / hour	
Hollis Avenue & 205 th Street	129	148	277	Yes	No	No

* The available gap is based on the time needed for a pedestrian to walk across the street. The analysis assumed 14 seconds.

TABLE 11: TRAFFIC SIGNAL WARRANT 5 ANALYSIS (SCHOOL CROSSING)						
Intersection	Total Hourly (7:30 - 8:30 am) Student Volumes			Criteria		Traffic Signal Warranted
	Crossing Street			Gap	Crossing Major Street	
	Major	Minor	Total	Fewer than 60 gaps / hour ⁽¹⁾	Greater than 20 Students / hour	
Hollis Avenue & 205 th Street	109	75	190	Yes	Yes	Yes

* The available gap is based on the time needed for a pedestrian to walk across the street. The analysis assumed 14 seconds.



Figure 11: Looking west on Hollis Avenue across 205th Street intersection



Figure 12: Looking southeast across Hollis Avenue at 205th Street intersection

3.6.5 Francis Lewis Boulevard & 111th Avenue

This is a signalized intersection with school crosswalks located across the north and south legs of Francis Lewis Boulevard and pedestrian crosswalks located across the east and west legs of 111th Avenue. Francis Lewis Boulevard is a two-way street with two travel lanes and a parking lane on each side of the roadway, and a raised approximately four feet wide concrete median along the center of the roadway, separating northbound and southbound traffic. 111th Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway (see Figures 13 and 14). Higher volumes of traffic are experienced on Francis Lewis Boulevard.

This intersection has been the site of twenty-nine (29) accidents between 1998 and 2000; one (1) of these was a pedestrian accident, which was also a school-related accident. In the school-related accident, a thirteen-year old pedestrian sustained a “possible injury” on Friday, September 29, 2000 at 8:00 am while crossing with the signal at the intersection. The road was dry and the weather was clear. The NYPD accident data (Table 3) shows thirteen (13) accidents including three (3) pedestrian accidents, one (1) of which was school related. No further information about the school-related accident is available. There were no pedestrian fatalities during either time period.



Figure 13: Looking north on Francis Lewis Boulevard across 111th Avenue intersection



Figure 14: Looking west on 111th Avenue across Francis Lewis Boulevard intersection

3.6.6 Francis Lewis Boulevard. & Hollis Avenue

This is a signalized intersection with school crosswalks located across the north and south legs of Francis Lewis Boulevard and pedestrian crosswalks located across the east and west legs of Hollis Avenue. Francis Lewis Boulevard is a two-way street with two travel lanes and a parking lane on each side of the roadway, and a raised approximately four feet wide concrete median along the center of the roadway, separating northbound and southbound traffic. Hollis Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway. Higher volumes of traffic are experienced on Francis Lewis Boulevard.

This intersection has been the site of eighty-one (81) accidents between 1998 and 2000; four (4) of these were pedestrian accidents, two (2) of which were school-related accidents. In the first school-related accident, an eleven-year old pedestrian sustained a “non-incapacitating injury” on Monday, May 24, 1999 at 3:00 pm while crossing against the signal at the intersection. The road surface was wet and the weather was raining. In the second school-related accident, an eight-year old pedestrian sustained a “possible injury” on Thursday, May 27, 1999 at 8:00 am while at the intersection. The pedestrian’s actual actions were unreported, and traffic control was reported as none, which may indicate the traffic control was not a factor in the accident. The road was dry and the weather was clear. The NYPD accident data (Table 3) shows one hundred nineteen (119) accidents including six (6) pedestrian accidents, one (1) of which was school related. No further information about the school-related accident is available. There were no pedestrian fatalities during either time period.

3.7 SIGNAL TIMING

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of I.S. 192, and were found to be adequate in most directions and approaches based upon a child pedestrian walking at the rate of 3 feet per second. Signal timings are shown in Table 12.

TABLE 12: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS				
INTERSECTION	CROSSWALK LENGTH (FEET)	PEDESTRIAN TIME ACTUAL (SECONDS)	PEDESTRIAN TIME REQUIRED (SECONDS)	TIMING ADJUSTMENT REQUIRED?
Hollis Ave. & 204th Street				
crossing Hollis Avenue	40	23	17	NO
crossing 204 th Street (East)	30	35	13	NO
crossing 204 th Street (West)	30	35	13	NO
Francis Lewis Blvd. & Hollis Ave.				
crossing Francis Lewis Blvd. (NB)	28	23	13	NO
crossing Francis Lewis Blvd. (SB)	28	23	13	NO
crossing Francis Lewis Blvd.	60	23	23	NO
crossing Hollis Avenue	50	35	20	NO
Francis Lewis Blvd. & 111th Avenue				
crossing Francis Lewis Blvd. (NB)	28	23	13	NO
crossing Francis Lewis Blvd. (SB)	28	23	13	NO
crossing Francis Lewis Blvd.	60	23	23	NO
crossing 111 th Avenue	40	34	17	NO

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

3.8 PHYSICAL CONDITIONS

3.8.1 Roadways and Sidewalks

The roadways in the vicinity of I.S. 192 are generally in fair condition. Sidewalks are 10 to 15 feet wide on the school block face, and are in fair condition.

3.8.3 Pedestrian Ramps

Overall, Pedestrian ramps in the area of the school appear to be standard, except for the intersection of Francis Lewis Boulevard & 111th Avenue where the grades are too steep on the southwest and northwest corners. Also, the pedestrian ramp on the northeast corner of 111th Avenue & 204th Street, for the crosswalk located across the north leg of 204th Street, which has a small lip at the curb.

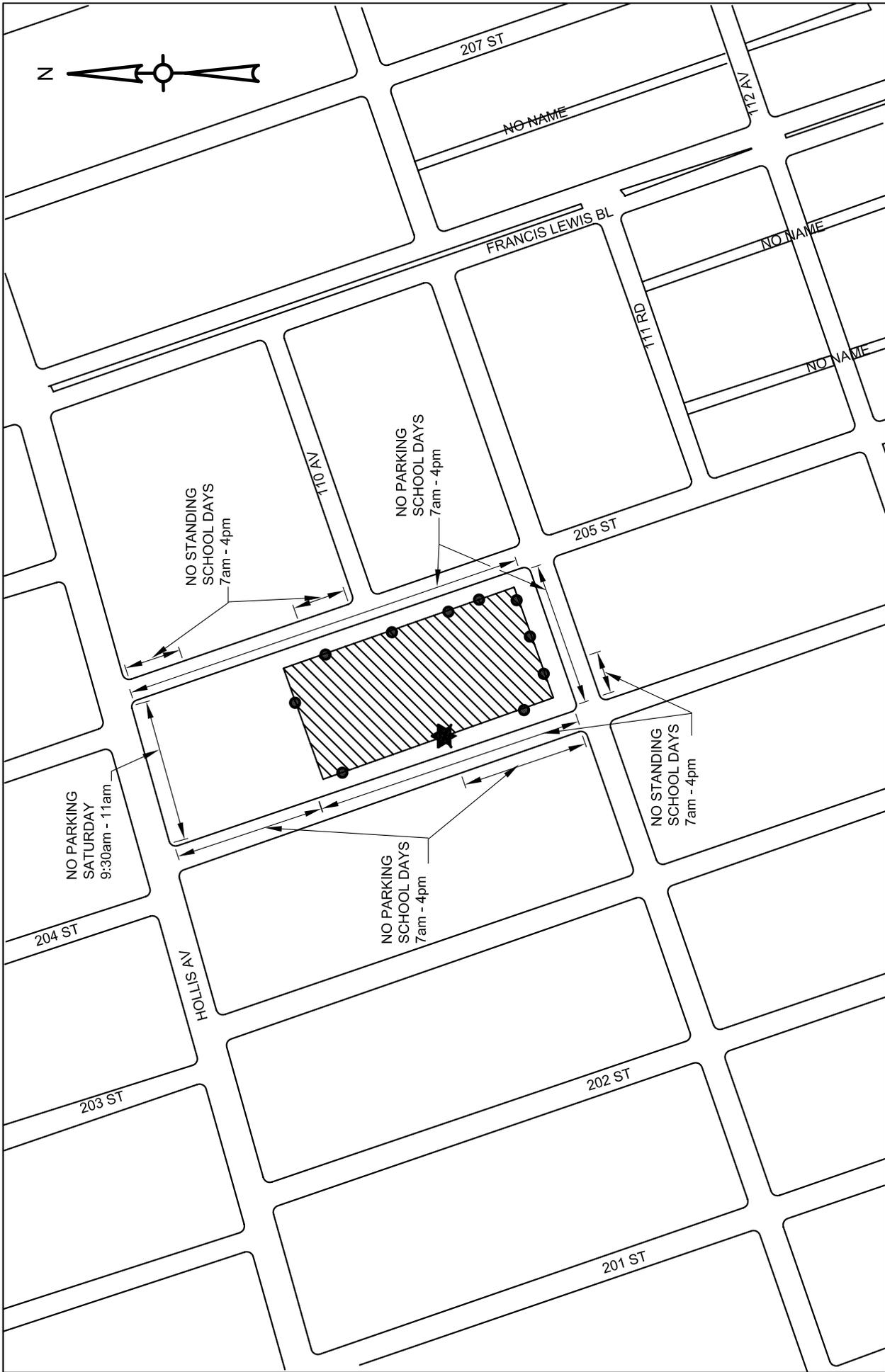
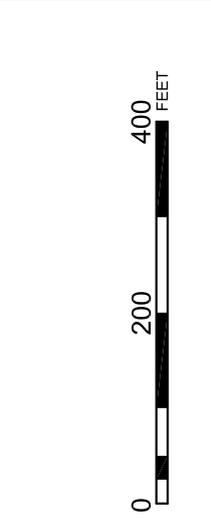


EXHIBIT 4
 I.S. 192 QUEENS
 THE RENAISSANCE MIDDLE SCHOOL
 EXISTING PARKING REGULATION



LEGEND:

- ★ MAIN ENTRANCE
- ENTRANCE

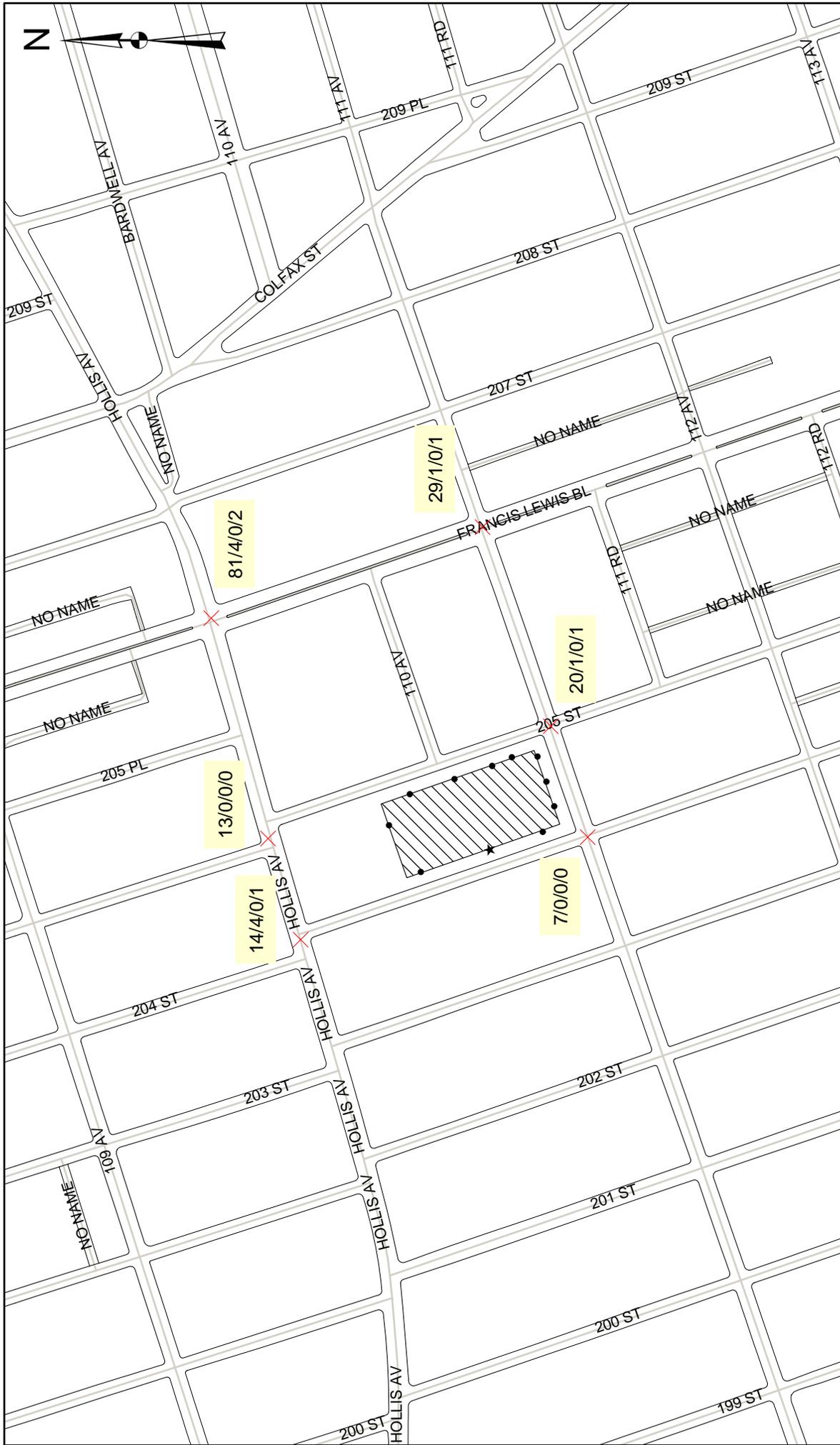


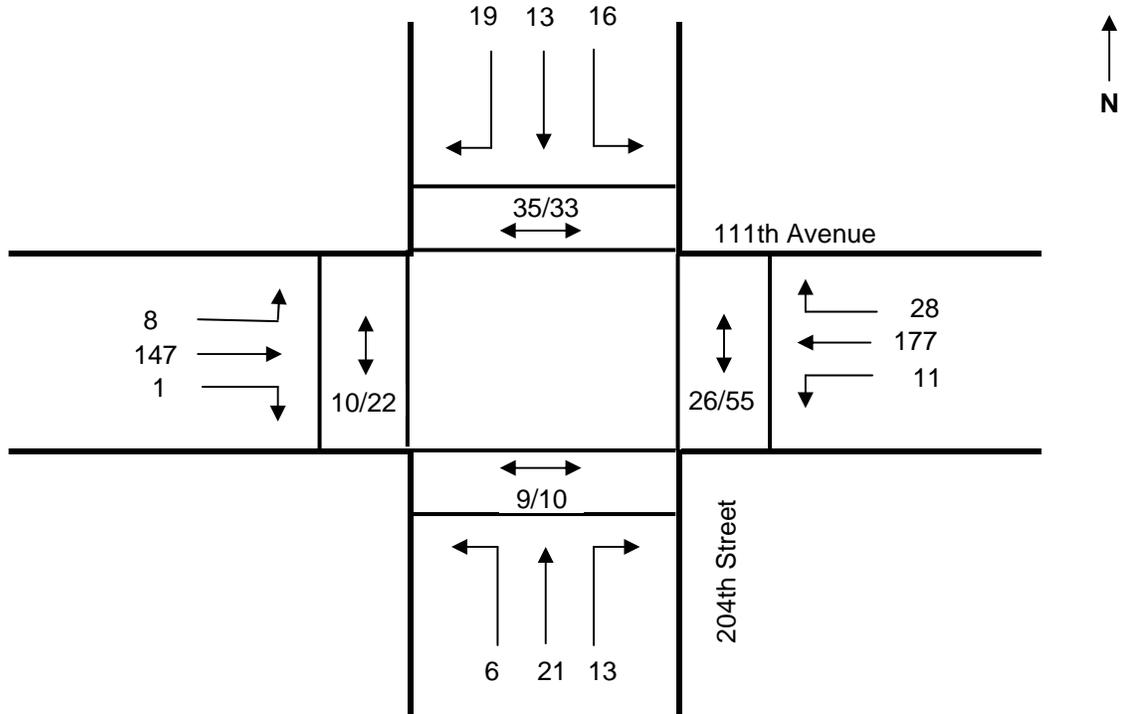
EXHIBIT 5
I.S. 192 QUEENS
THE RENAISSANCE MIDDLE SCHOOL
ACCIDENT SUMMARY (1998-2000)

LEGEND:

- ACCIDENT LOCATION
- SCHOOL CROSSWALK
- SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL
- X/XX/XX
- TOTAL ACCD / PED ACCD / PED FATAL / SCHOOL_PED ACCD

0 250 500 1,000 Feet

One Hour Traffic Volumes
Wednesday, June 22nd, 2005 7:45 am - 8:45 am



Intersection of 204th Street and 111th Avenue

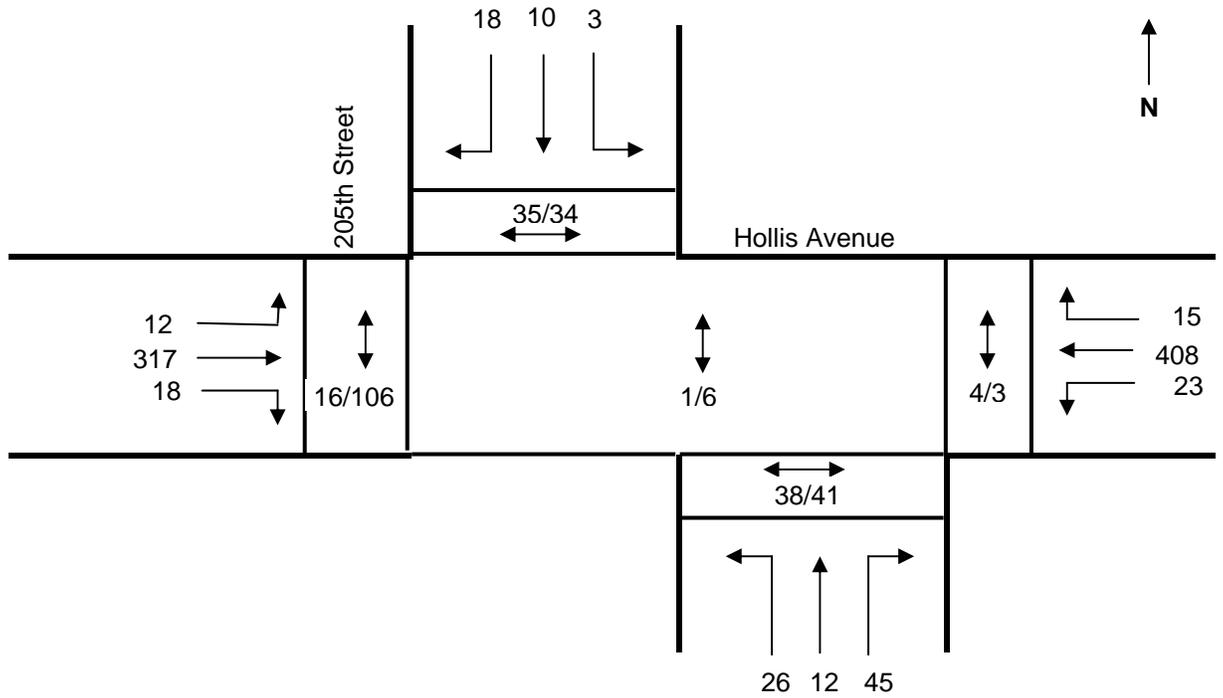
Table of Content:

XX / XX	Adult / Child
	Pedestrian Counts
	Vehicle Movement

EXHIBIT 6A

**I.S. 192 QUEENS
THE RENAISSANCE MIDDLE SCHOOL
TRAFFIC AND PEDESTRIAN COUNTS**

One Hour Traffic Volumes
Thursday, June 23rd, 2005 7:30 am - 8:30 am



Intersection of 205th Street and Hollis Avenue

Table of Content:

XX / XX	Adult / Child
←→	Pedestrian Counts
—↑	Vehicle Movement

EXHIBIT 6B

**I.S. 192 QUEENS
THE RENAISSANCE MIDDLE SCHOOL
TRAFFIC AND PEDESTRIAN COUNTS**

4. PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY

This section describes the proposed measures to improve school pedestrian safety around I.S. 192. The proposed recommendations are divided into short-term and long-term measures. Short-term measures are those that potentially can be performed in-house. Long-term measures involve capital improvements. Each of the short- and long-term measures recommended for I.S. 192 is discussed as follows, and is shown in more detail in Exhibit 6 at the end of this section.

4.1 SHORT-TERM MEASURES

➤ Maintain “No Standing 7AM - 4PM School Days” signs

There is an existing “No Standing 7AM - 4PM School Days” sign in front of the school building on 204th Street including the main entrance of the school (see Exhibit 4 at the end of Section 3). (This is a typical requirement for all NYC schools in order to provide for emergency access to and from the school.)

➤ Install graphic “Yield to Pedestrian” signs

Install “YIELD TO PEDESTRIAN” signs at intersection approaches with substantial vehicle–student pedestrian volumes at intersections assigned to this school. “YIELD TO PEDESTRIAN” signs are recommended on the following approaches of signalized intersections around I.S 192:

- Eastbound approach of East 111th Avenue at Francis Lewis Boulevard
- Westbound approach of East 111th Avenue at Francis Lewis Boulevard

➤ Place advanced stop bar before school crosswalk

The MUTCD and New York City DOT standard for placement of a stop bar is four feet (4’) in advance of a marked crosswalk. At signalized intersections and mid-block crossings, the vehicle stop line can be moved farther back from the pedestrian crosswalk.

For school crosswalks with significant potential for vehicular / pedestrian conflicts, it is recommended that the advance stop bar be placed ten feet (10’) in advance of the crosswalk to maximize the safety benefit for school-aged pedestrians. (This would improve visibility of pedestrians to motorists, and allow pedestrians to proceed in a crosswalk before motor vehicles turn.)

Ten feet (10’) advanced stop bars before school crosswalks are recommended on the following approaches of signalized intersections surrounding I.S. 192:

- Eastbound, northbound, and southbound approaches of Hollis Avenue and 204th Street intersection
- Eastbound, northbound, and southbound approaches of Hollis Avenue and 205th Street intersection
- Eastbound, northbound and southbound approaches of Hollis Avenue and Francis Lewis Boulevard intersection

- Westbound, northbound, and southbound approaches of 111th Avenue and 204th Street intersection
- Westbound, northbound, and southbound approaches of 111th Avenue and 205th Street intersection
- Northbound and southbound approaches of 111th Avenue and Francis Lewis Boulevard intersection

➤ Re-designate the pedestrian crosswalks as school crosswalks at the following locations

The existing pedestrian crosswalks located across the north leg of 205th Place at Hollis Avenue and across the west leg of Hollis Avenue at Francis Lewis Boulevard are natural crossing points for students going to and from I.S. 192. They also “fill in” between other school crosswalks these students are currently using.

It is therefore recommended:

- Re-designate the following existing pedestrian crosswalks as school crosswalks and install all appropriate warning devices:
 - The crosswalk located across the north leg of 205th Place at Hollis Avenue
 - The crosswalk located across the west leg of Hollis Avenue at Francis Lewis Boulevard

➤ Modify pedestrian ramps

The pedestrian ramp on the northeast corner of 111th Avenue & 201st Street, for the crosswalk located across the north leg of 201st Street, does not provide a smooth transition from pavement to sidewalk. The curb has a small lip.

The following is therefore recommended:

- Modify the pedestrian ramp on the northeast corner of 111th Avenue & 201st Street for the crosswalk located across the north leg of 201st Street to eliminate the small lip at the curb and provide a smooth transition from pavement to curb for the pedestrian ramp.

➤ Reconstruct Pedestrian Ramps

The pedestrian ramps on the southwest and the northwest corners, of the 111th Avenue & Francis Lewis Boulevard intersection appear to have substandard grades.

The following is therefore recommended:

- Reconstruct the pedestrian ramps on the southwest and the northwest corners, of the 111th Avenue & Francis Lewis Boulevard intersection to provide a standard grade for these ramps.

- Speeding was reported as a problem on Hollis Avenue by the school principal. A speed survey was therefore conducted on Hollis Avenue between 204th Street and 205th Street in order to verify the existence of a speeding problem and to determine its extent. The 85th percentile speed for westbound vehicles on Hollis Avenue between 204th Street and 205th Street were found to be 32 mph. This would indicate the need for a speed reducer (hump) for this section of roadway. This roadway is a local bus route however, which precludes the use of a speed reducer in the roadway. A neckdown would also not be conducive to the bus movements at this location. The NYC DOT is presently conducting a pilot program to determine the effectiveness of installing school zone reduced speed limits. However, NYCDOT's pilot program for reducing speeds near schools does not encompass two-way avenues.

It is therefore recommended:

- The proposed signal at the intersection of Hollis Avenue and 205th Street is projected to help reduce the impacts of speeding on Hollis Avenue between 204th Street and 205th Street.
- *Crossing guard at the intersection of 111th Avenue and 204th Street*

There is an uncontrolled school crosswalk located across the east leg of 111th Avenue at 204th Street. I.S. 192 students were observed crossing 111th Avenue at 204th Street, and the school is immediately adjacent to the intersection. In order to determine the appropriate traffic control for the school crosswalk, a preliminary traffic signal warrant assessment was performed to assess the traffic situation and determine what type of traffic control devices would be appropriate. The results of the preliminary assessment based on traffic signal warrants 4 (pedestrian volumes) and 5 (school crossing) of the Federal MUTCD indicated the installation of a traffic signal is not warranted at this time. It is therefore recommend to:

- Assign a crossing guard at this location.
- *Install traffic signal at the intersection of Hollis Avenue and 205th Street*

There is a school crosswalk located across the west leg of Hollis Avenue at 205th Street. I.S. 192 students were observed crossing Hollis Avenue at 205th Street, and the school is on the southerly portion of the block for this intersection. In order to determine the appropriate traffic control for the school crosswalk, a preliminary traffic signal warrant assessment was performed to assess the traffic situation and determine what type of traffic control devices would be appropriate. The traffic data collected to assess the need for a traffic signal included pedestrian and vehicle counts and a pedestrian gap study. The results of the preliminary assessment based on traffic signal warrants 4 (pedestrian volumes) and 5 (school crossing) of the Federal MUTCD indicated the installation of a traffic signal is warranted under Warrant 5 (school crossing). The results of the warrant analysis

crossing) of the Federal MUTCD indicated the installation of a traffic signal is warranted under Warrant 5 (school crossing). The results of the warrant analysis are shown in Tables 8, 9, 10, and 11 and in Exhibit 6B. The need for the traffic control appears to exist, and we therefore recommend the following:

- Install a traffic signal at this location.
- Provide a school crosswalk at the east leg of the intersection.

4.2 LONG-TERM MEASURES

➤ Consider curb extension at the following intersection:

- Provide curb extensions (neckdowns) at all four corners of 111th Avenue at its intersection with 204th Street.
- Provide curb extensions (neckdowns) at all four corners of 111th Avenue at its intersection with 205th Street.
- Provide curb extension at the northwest corner of 204th Street at its intersection with Hollis Avenue.
- Provide curb extension at the northwest corner of 205th Street at its intersection with Hollis Avenue.

Curb extensions (neckdowns) should be installed at the corners as shown in Exhibit 7. The purpose of the curb extension is to provide additional reservoir space for pedestrians, to shorten the crossing distance for pedestrians, and to reduce the speed of vehicles approaching and turning on school crosswalks. The curb extension will not eliminate or reduce the width of any travel lanes. Curb extensions are not proposed where they would hinder the ability of a vehicle to turn.

➤ Consider refuge islands on Francis Lewis Boulevard at its intersection with Hollis Avenue and 111th Avenue as shown in Exhibit 7:

There is a raised approximately six (6) feet wide concrete median along the center of Francis Lewis Boulevard, separating northbound and southbound traffic. A school crosswalk is located at the north and south legs of Francis Lewis Boulevard at its intersection with Hollis Avenue and 111th Avenue. It is therefore recommended to:

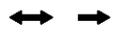
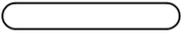
- Extend the center concrete median through the pedestrian and school crosswalks to provide refuge islands at the north and south legs of Francis Lewis Boulevard at its intersection with Hollis Avenue and 111th Avenue, as shown in Exhibit 7.

The refuge islands with extended medians will provide a refuge for pedestrians who do not complete the crossing during the flashing “Don’t Walk” indication. The proposed median should be at least 5-foot wide, should extend beyond the crosswalk, and should have at least 5-feet at grade cut through section. These medians are not proposed where they would hinder the ability of vehicles to turn.

Final details pertaining to proposed refuge islands and curb extensions will be developed during Final Design.



LEGEND

-  MAIN ENTRANCE
-  OTHER ENTRANCES
-  EXISTING TRAVEL DIRECTION
-  EXISTING ADVANCE WARNING SIGN
-  EXISTING SCHOOL CROSSWALK WARNING ASSEMBLY
-  EXISTING SIGNALIZED LOCATION
-  EXISTING CONCRETE MEDIAN
-  EXISTING PEDESTRIAN CROSSWALK
-  EXISTING SCHOOL CROSSWALK
-  SCHOOL CROSSWALK ASSOCIATED WITH ANOTHER SCHOOL
-  PROPOSED SCHOOL CROSSWALK
-  PROPOSED TRAFFIC SIGN
-  PROPOSED STOP LINE IN ADVANCE OF SCHOOL CROSSWALK
-  PROPOSED "NO STANDING 7:00AM - 4:00PM SCHOOL DAYS"
-  PROPOSED SIGNALIZED LOCATION
-  RECONSTRUCT EXISTING PEDESTRIAN RAMP
-  EXISTING ALL WAY STOP LOCATION
-  PROPOSED CONCRETE REFUGE ISLAND
-  PROPOSED CURB EXTENSION (NECKDOWN)



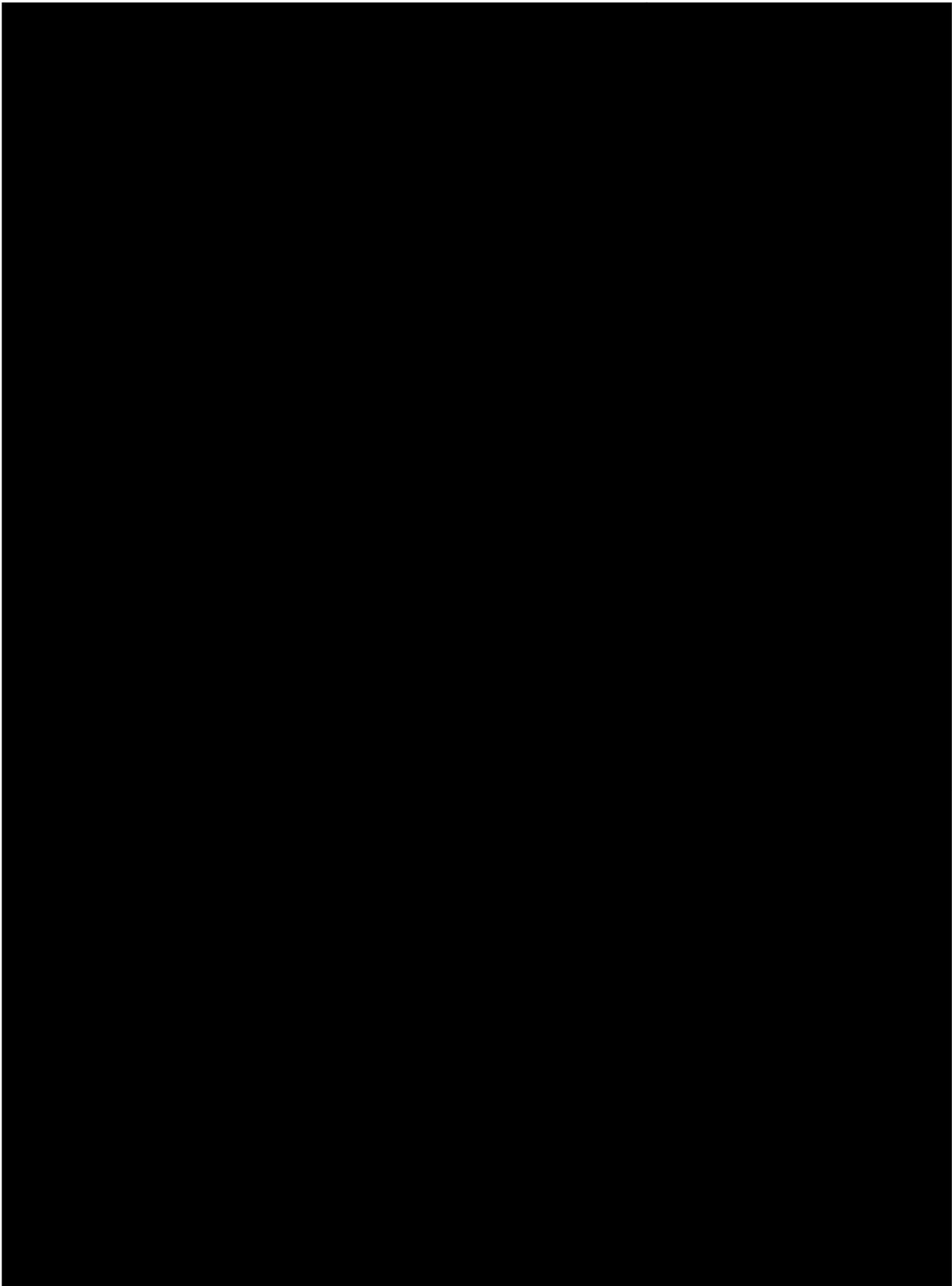
1" = 200'

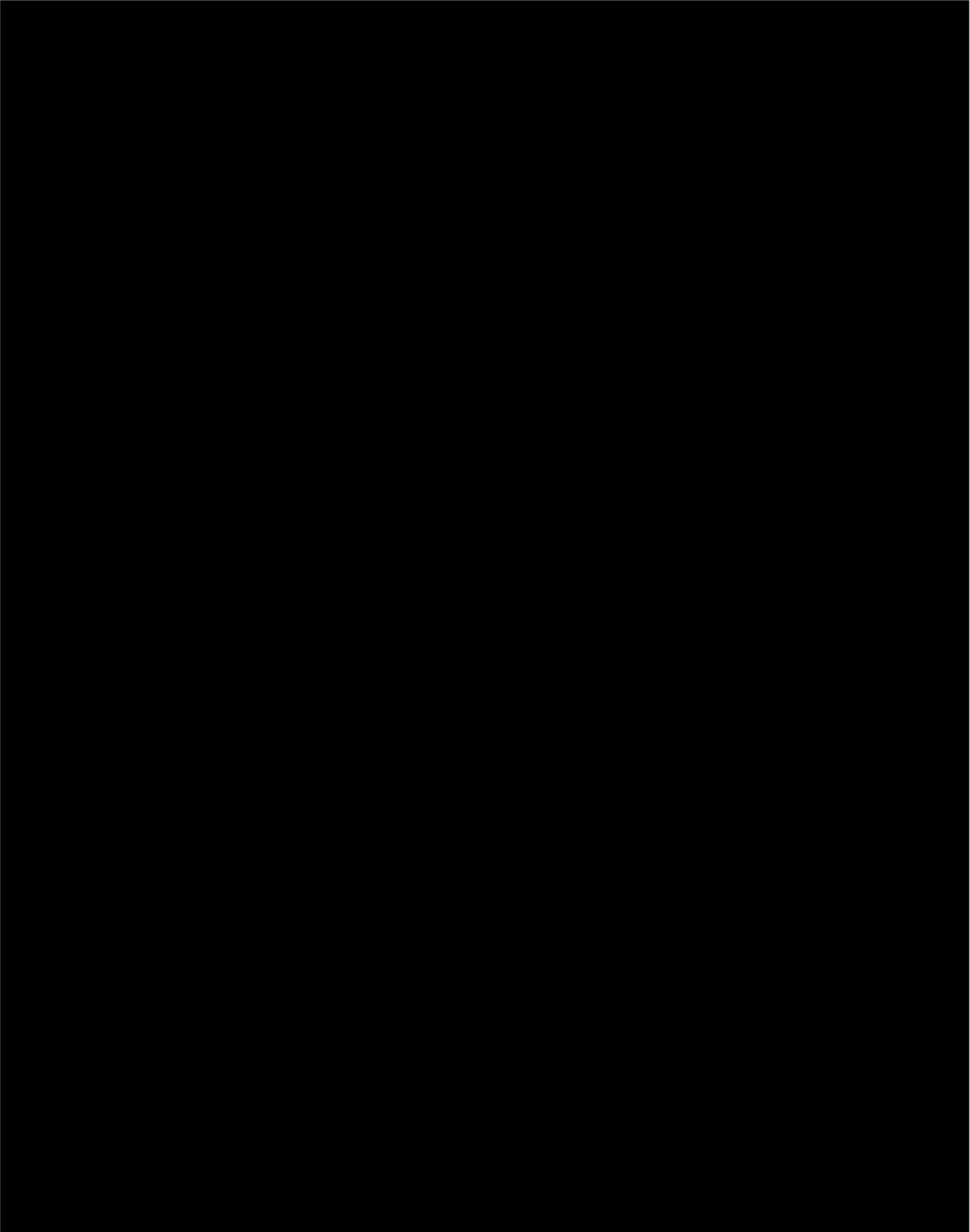
EXHIBIT 7

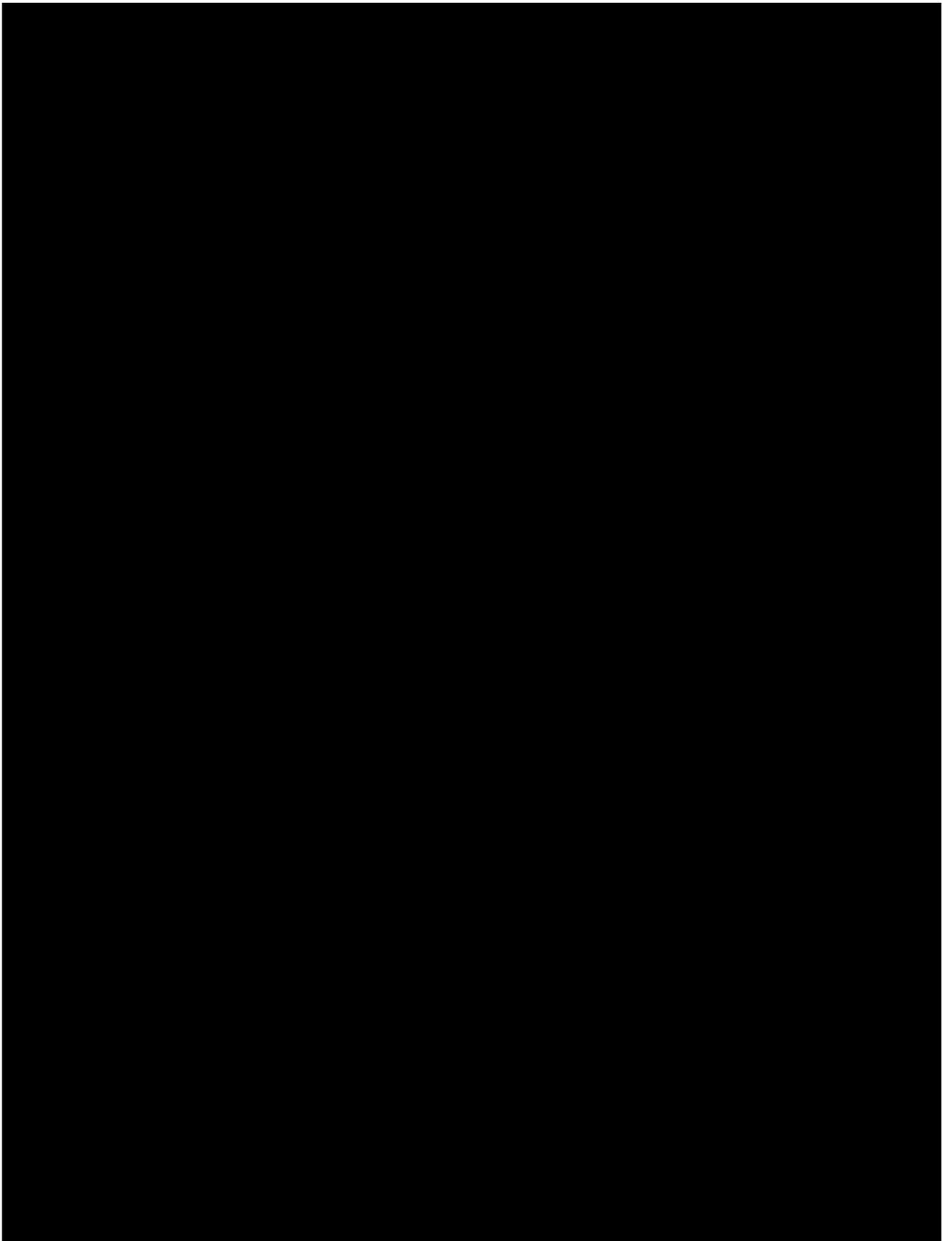
**I.S. 192 QUEENS
THE RENAISSANCE MIDDLE SCHOOL**

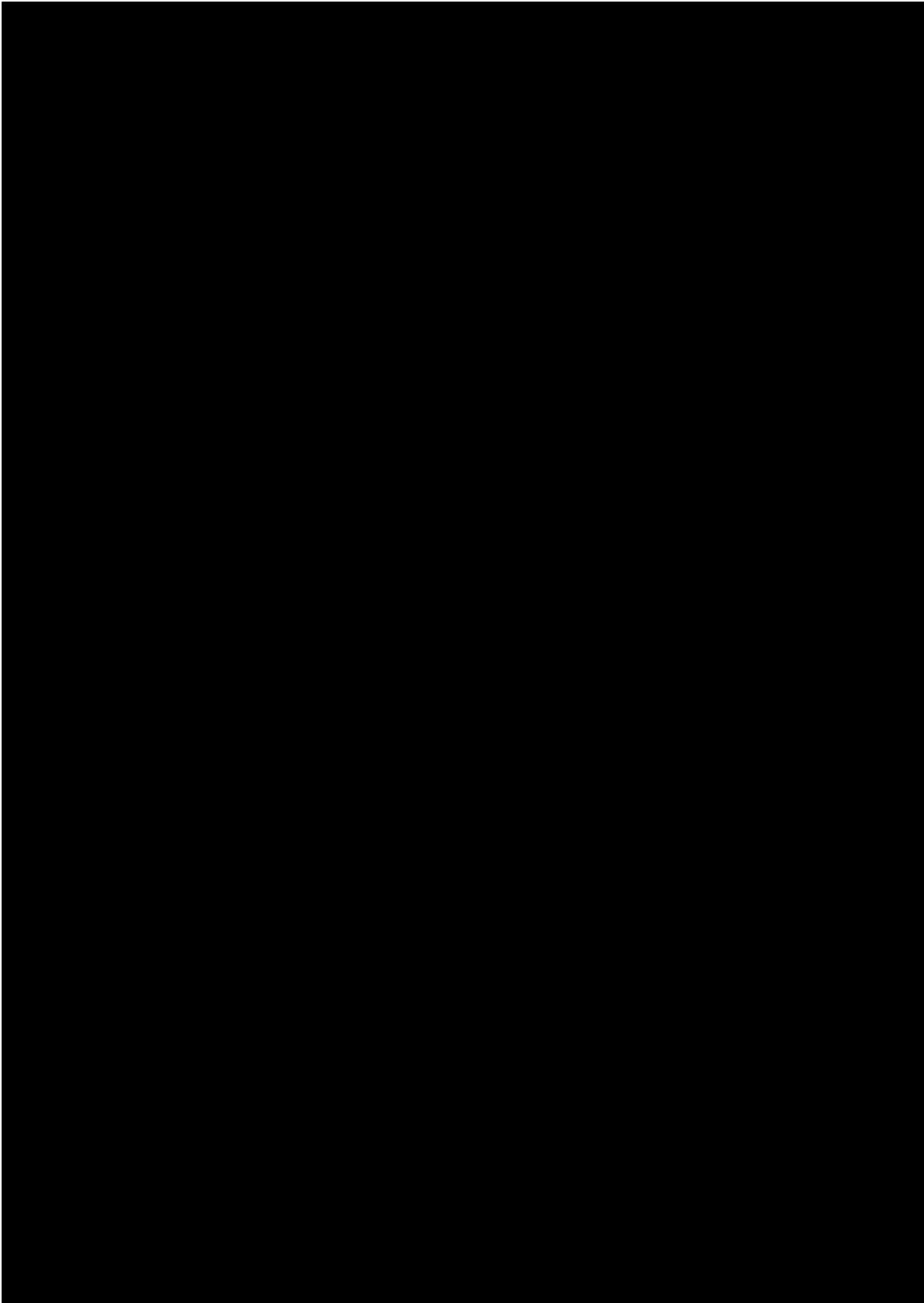
**PROPOSED MEASURES
TO IMPROVE SCHOOL PEDESTRIAN SAFETY**

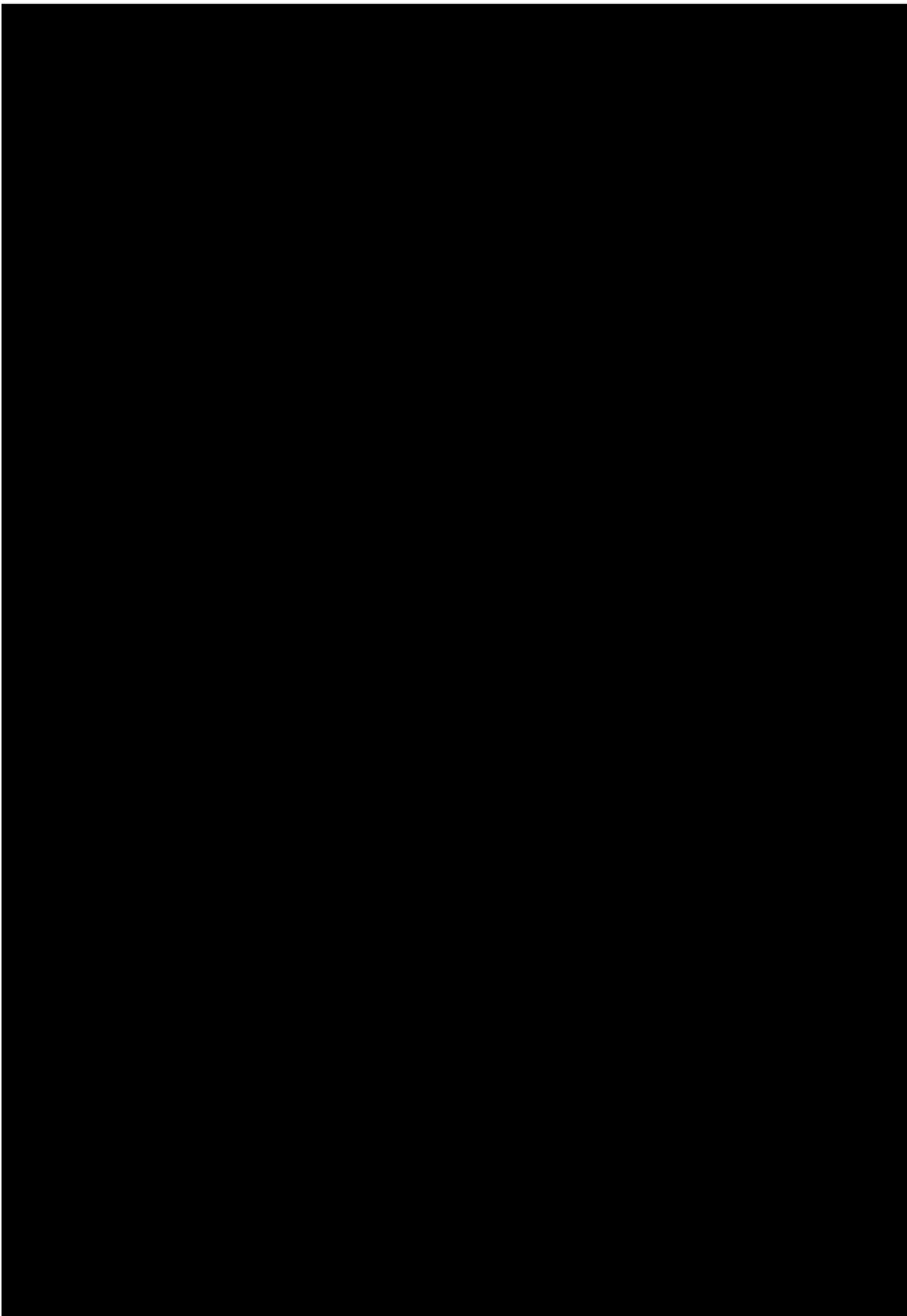
APPENDIX











SPOT SPEED STUDY

Date: **June 22, 2005** Time: **10am**
 Location: **111th Avenue between 204th Street & 205th Street**
 Surveyor: **Richard Calvache & Hugo Salinas**

School: **I.S. 192**
 Direction: **Eastbound**
 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	1	3.7%	3.7%	18	324
19	0	0.0%	3.7%	0	0
20	0	0.0%	3.7%	0	0
21	0	0.0%	3.7%	0	0
22	4	14.8%	18.5%	88	1936
23	1	3.7%	22.2%	23	529
24	3	11.1%	33.3%	72	1728
25	1	3.7%	37.0%	25	625
26	4	14.8%	51.9%	104	2704
27	4	14.8%	66.7%	108	2916
28	1	3.7%	70.4%	28	784
29	1	3.7%	74.1%	29	841
30	3	11.1%	85.2%	90	2700
31	3	11.1%	96.3%	93	2883
32	0	0.0%	96.3%	0	0
33	0	0.0%	96.3%	0	0
34	0	0.0%	96.3%	0	0
35	0	0.0%	96.3%	0	0
36	1	3.7%	100.0%	36	1296
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
	27	100.0%		714	19266

Mean Speed = 26.4 mph Median Speed = 26.4 mph
 Standard Deviation = 3.8 mph 15th Percentile Speed = 22.5 mph
 Margin of Error (95% Confidence) = ± 1.5 mph 85th Percentile Speed = 30.4 mph

SPOT SPEED STUDY

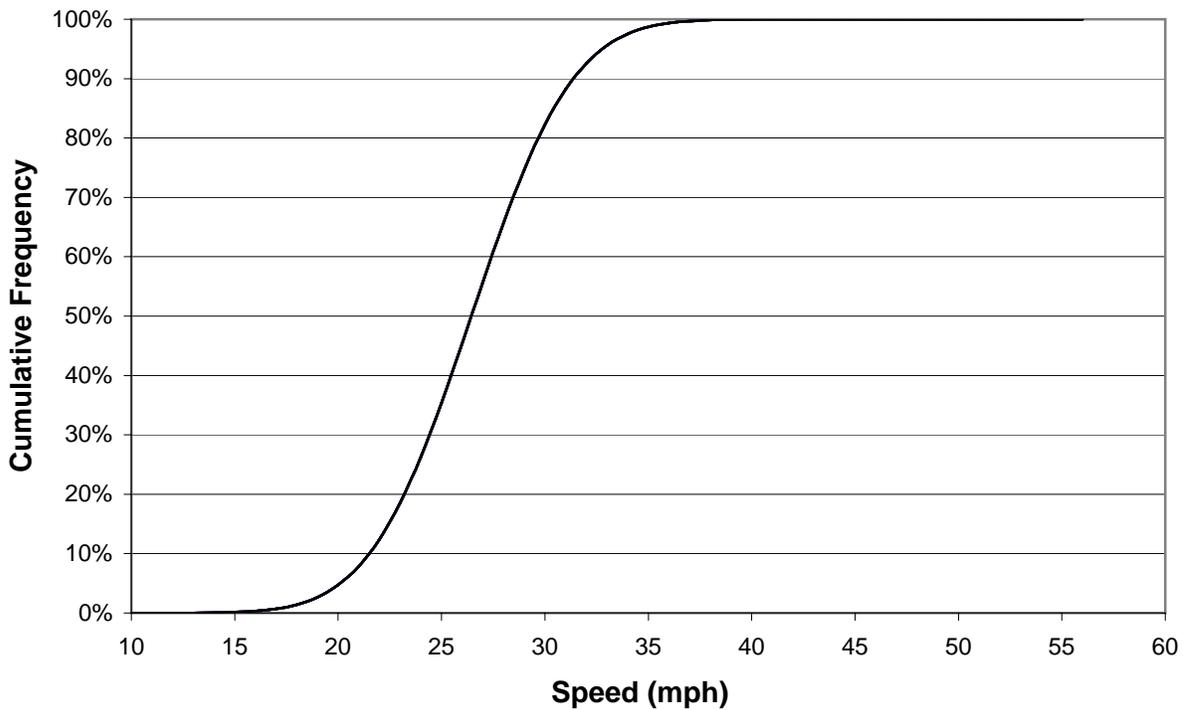
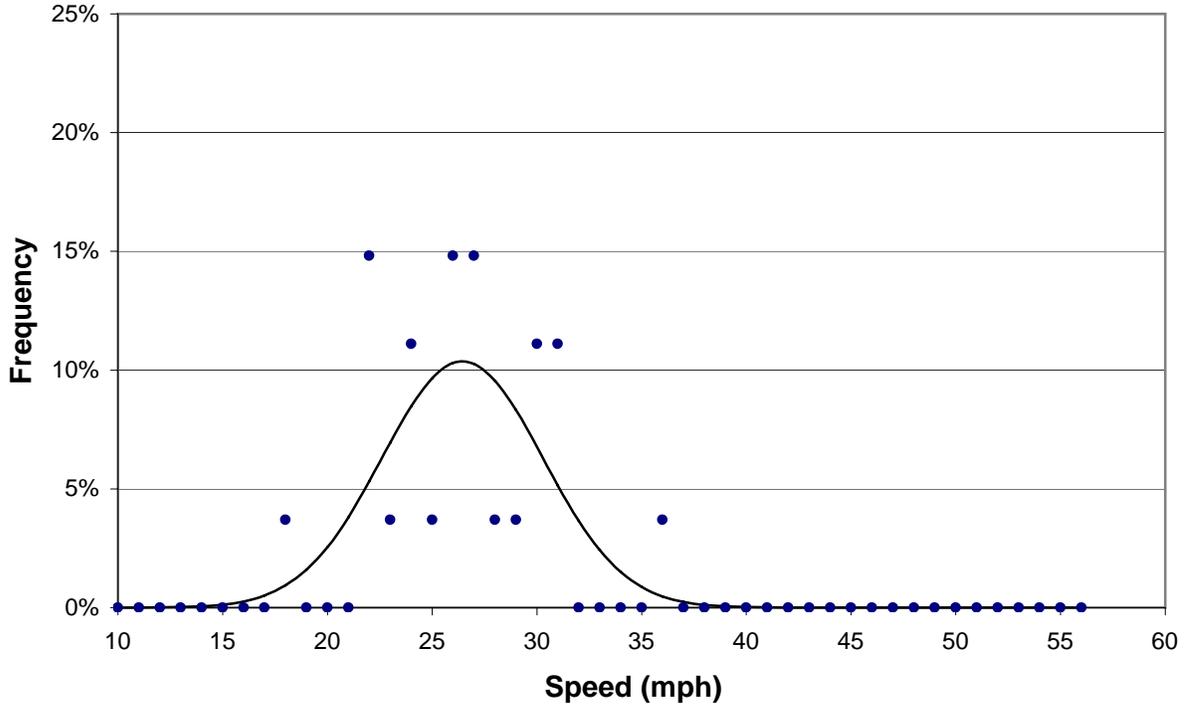
Date: **June 22, 2005**
Location: **111th Avenue between 204th Street & 205th Street**
Surveyor: **Richard Calvache & Hugo Salinas**

Time: **10am**

School: **I.S. 192**
Direction: **Eastbound**
Comments:

Mean Speed = 26.4 mph
Standard Deviation = 3.8 mph
Margin of Error (95% Confidence) = ± 1.5 mph

Median Speed = 26.4 mph
15th Percentile Speed = 22.5 mph
85th Percentile Speed = 30.4 mph



SPOT SPEED STUDY

Date: **June 22, 2005** Time: **10 am**
 Location: **111th Avenue between 204th Street & 205th Street**
 Surveyor: **Richard Calvache & Hugo Salinas**

School: **I.S. 192**
 Direction: **Westbound**
 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	2	5.1%	5.1%	44	968
23	3	7.7%	12.8%	69	1587
24	7	17.9%	30.8%	168	4032
25	4	10.3%	41.0%	100	2500
26	5	12.8%	53.8%	130	3380
27	5	12.8%	66.7%	135	3645
28	7	17.9%	84.6%	196	5488
29	3	7.7%	92.3%	87	2523
30	1	2.6%	94.9%	30	900
31	2	5.1%	100.0%	62	1922
32	0	0.0%	100.0%	0	0
33	0	0.0%	100.0%	0	0
34	0	0.0%	100.0%	0	0
35	0	0.0%	100.0%	0	0
36	0	0.0%	100.0%	0	0
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	39	100.0%		1021	26945

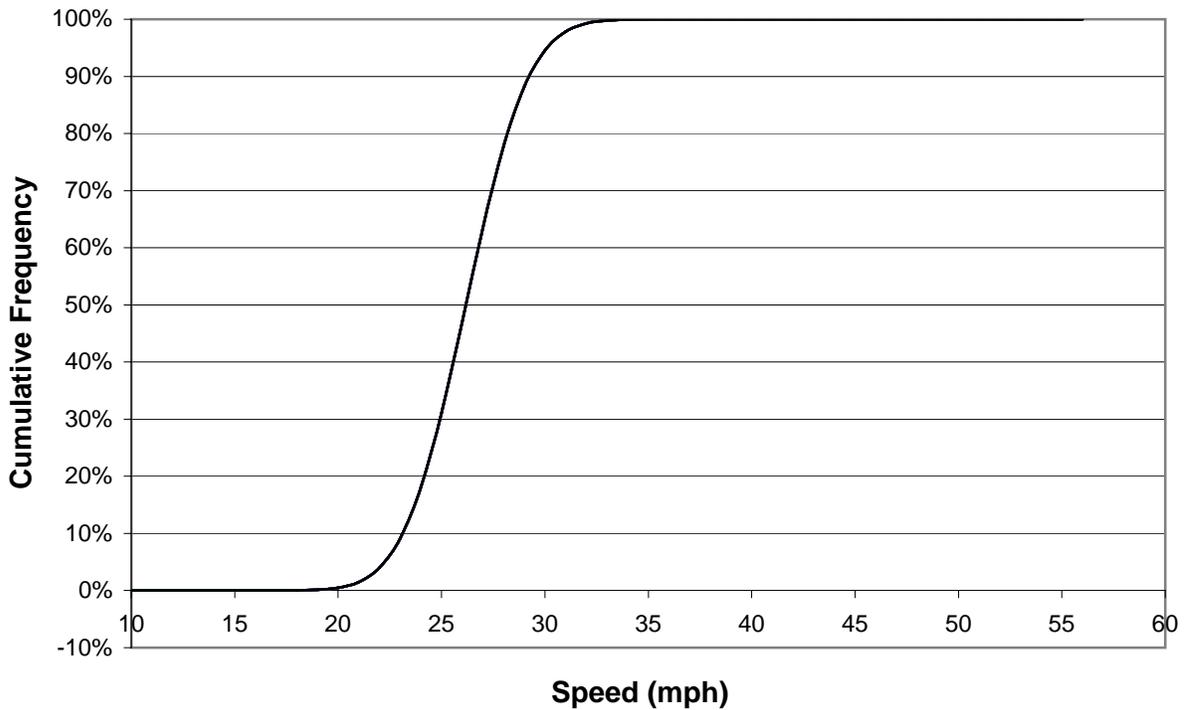
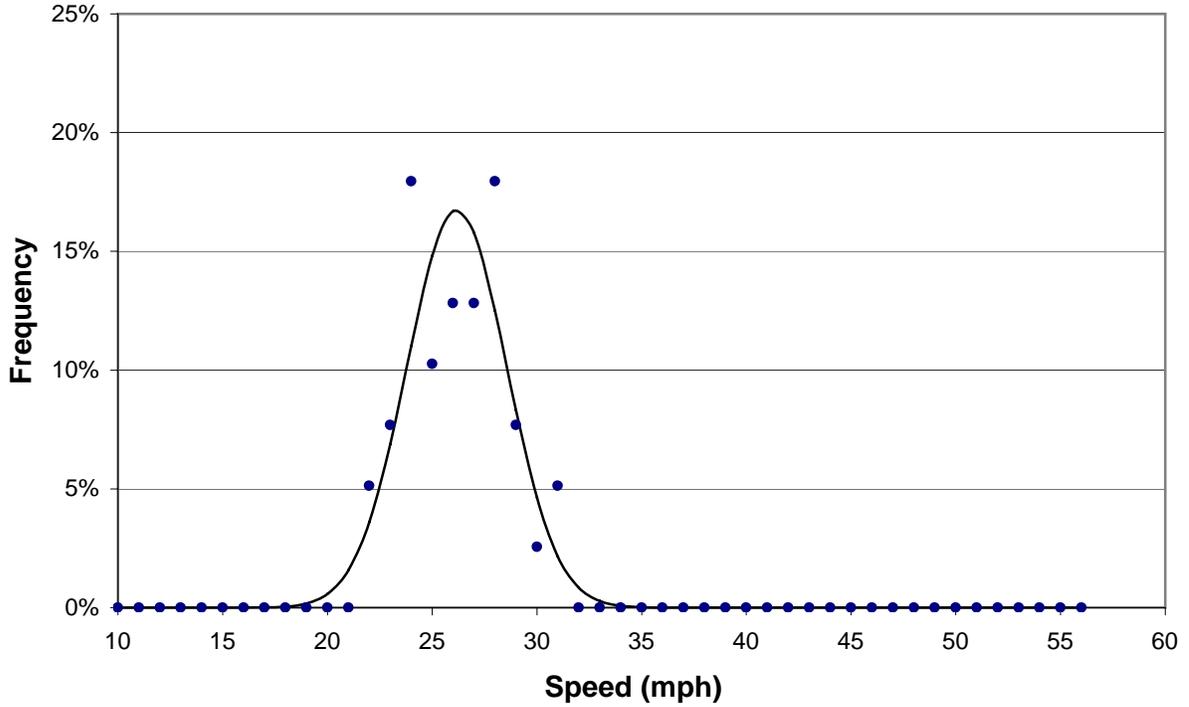
Mean Speed = 26.2 mph Median Speed = 26.2 mph
 Standard Deviation = 2.4 mph 15th Percentile Speed = 23.7 mph
 Margin of Error (95% Confidence) = ± 0.7 mph 85th Percentile Speed = 28.6 mph

SPOT SPEED STUDY

Date: **June 22, 2005** Time: **10 am**
 Location: **111th Avenue between 204th Street & 205th Street**
 Surveyor: **Richard Calvache & Hugo Salinas**

School: **I.S. 192**
 Direction: **Westbound**
 Comments:

Mean Speed = 26.2 mph Median Speed = 26.2 mph
 Standard Deviation = 2.4 mph 15th Percentile Speed = 23.7 mph
 Margin of Error (95% Confidence) = ± 0.7 mph 85th Percentile Speed = 28.6 mph



SPOT SPEED STUDY

Date: **June 22, 2005** Time: **11:10 am**
 Location: **Hollis Avenue between 204th Street & 205th Street**
 Surveyor: **Richard Calvache & Hugo Salinas**

School: **I.S. 192**
 Direction: **Eastbound**
 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	1	2.8%	2.8%	20	400
21	0	0.0%	2.8%	0	0
22	1	2.8%	5.6%	22	484
23	1	2.8%	8.3%	23	529
24	4	11.1%	19.4%	96	2304
25	9	25.0%	44.4%	225	5625
26	6	16.7%	61.1%	156	4056
27	3	8.3%	69.4%	81	2187
28	4	11.1%	80.6%	112	3136
29	2	5.6%	86.1%	58	1682
30	2	5.6%	91.7%	60	1800
31	1	2.8%	94.4%	31	961
32	1	2.8%	97.2%	32	1024
33	0	0.0%	97.2%	0	0
34	1	2.8%	100.0%	34	1156
35	0	0.0%	100.0%	0	0
36	0	0.0%	100.0%	0	0
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	36	100.0%		950	25344

Mean Speed = 26.4 mph Median Speed = 26.4 mph
 Standard Deviation = 2.8 mph 15th Percentile Speed = 23.5 mph
 Margin of Error (95% Confidence) = ± 0.9 mph 85th Percentile Speed = 29.3 mph

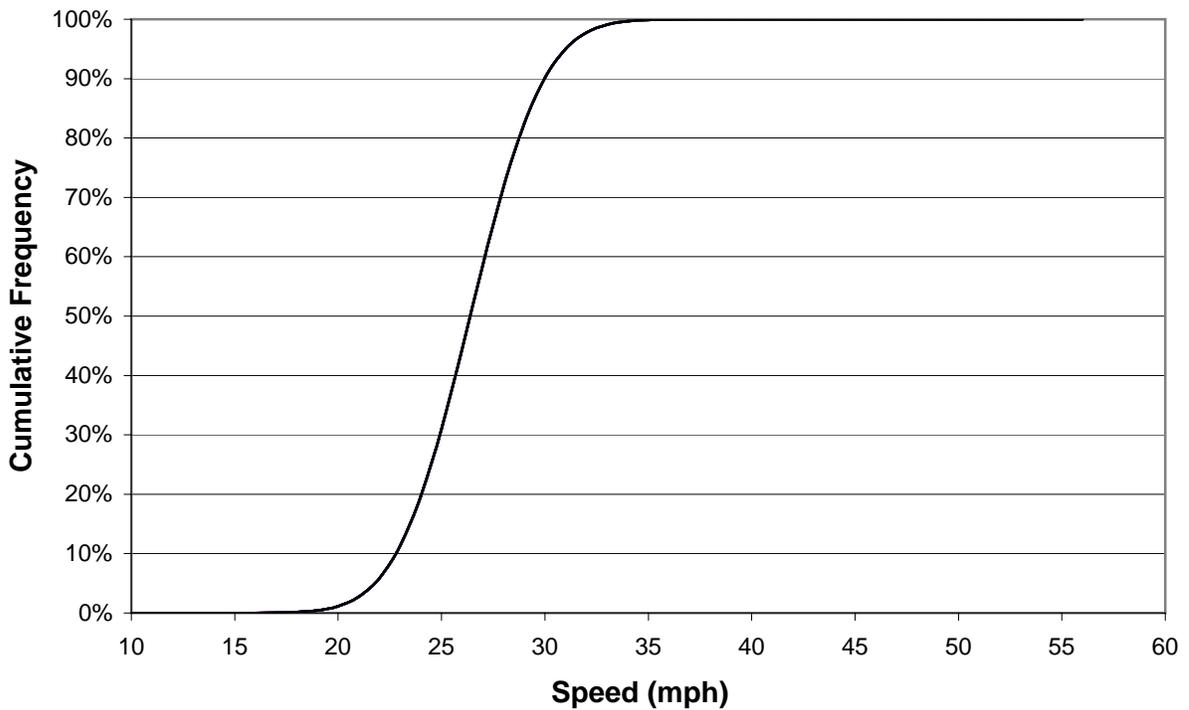
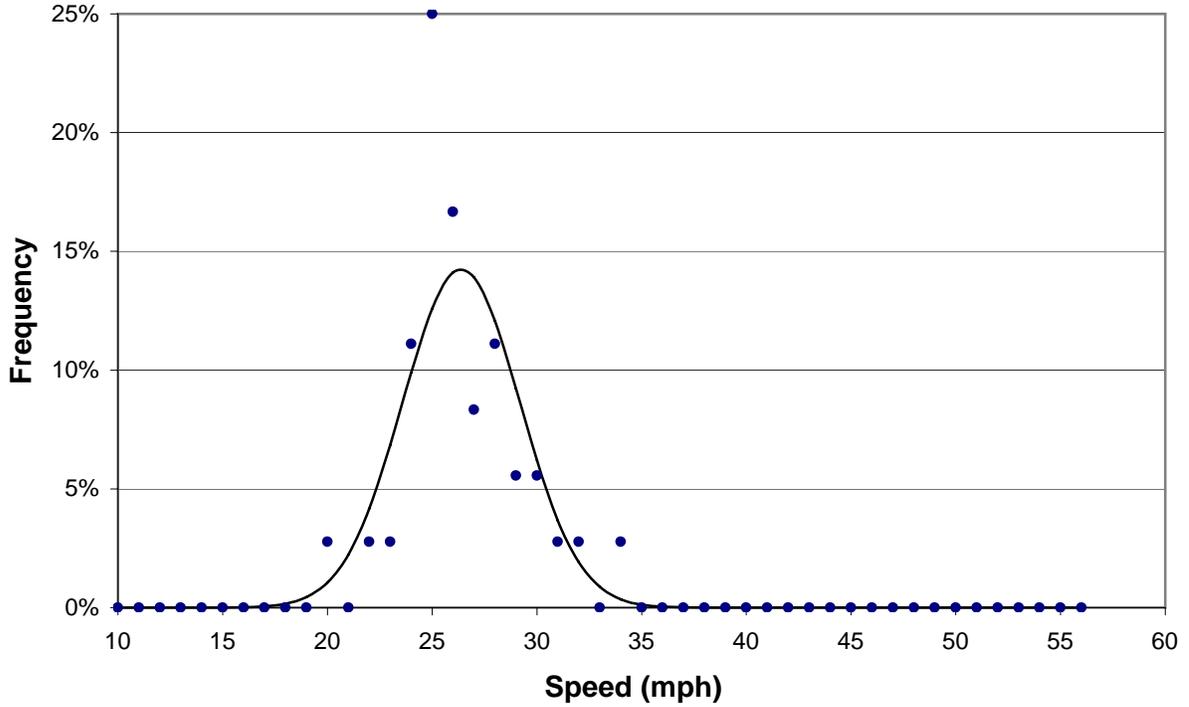
SPOT SPEED STUDY

Date: **June 22, 2005** Time: **11:10 am**
Location: **Hollis Avenue between 204th Street & 205th Street**
Surveyor: **Richard Calvache & Hugo Salinas**

School: **I.S. 192**
Direction: **Eastbound**
Comments:

Mean Speed = 26.4 mph
Standard Deviation = 2.8 mph
Margin of Error (95% Confidence) = ± 0.9 mph

Median Speed = 26.4 mph
15th Percentile Speed = 23.5 mph
85th Percentile Speed = 29.3 mph



SPOT SPEED STUDY

Date: **June 22, 2005** Time: **11:10 am**
 Location: **Hollis Avenue between 204th Street & 205th Street**
 Surveyor: **Richard Calvache & Hugo Salinas**

School: **I.S. 192**
 Direction: **Westbound**
 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	1	1.9%	1.9%	21	441
22	1	1.9%	3.8%	22	484
23	5	9.6%	13.5%	115	2645
24	8	15.4%	28.8%	192	4608
25	4	7.7%	36.5%	100	2500
26	3	5.8%	42.3%	78	2028
27	6	11.5%	53.8%	162	4374
28	3	5.8%	59.6%	84	2352
29	5	9.6%	69.2%	145	4205
30	5	9.6%	78.8%	150	4500
31	0	0.0%	78.8%	0	0
32	6	11.5%	90.4%	192	6144
33	1	1.9%	92.3%	33	1089
34	1	1.9%	94.2%	34	1156
35	0	0.0%	94.2%	0	0
36	1	1.9%	96.2%	36	1296
37	0	0.0%	96.2%	0	0
38	1	1.9%	98.1%	38	1444
39	1	1.9%	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
	52	100.0%		1441	40787

Mean Speed = 27.7 mph
 Standard Deviation = 4.1 mph
 Margin of Error (95% Confidence) = ± 1.1 mph

Median Speed = 27.7 mph
 15th Percentile Speed = 23.5 mph
 85th Percentile Speed = 32.0 mph

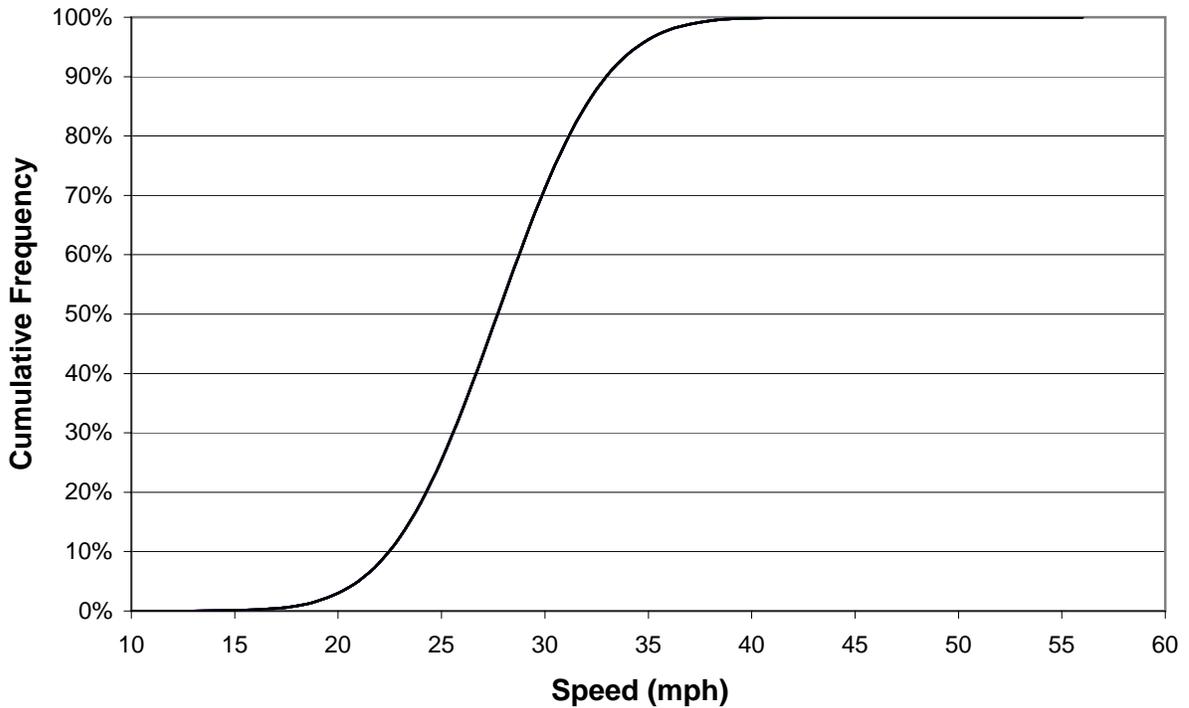
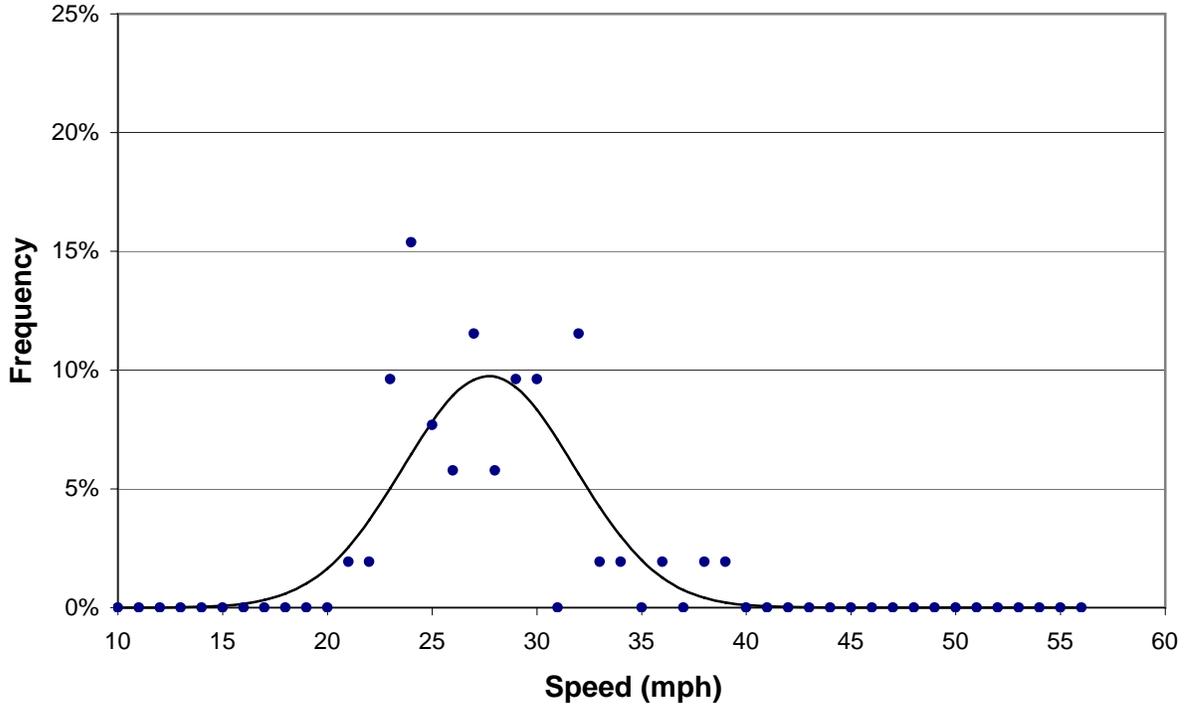
SPOT SPEED STUDY

Date: **June 22, 2005** Time: **11:10 am**
 Location: **Hollis Avenue between 204th Street & 205th Street**
 Surveyor: **Richard Calvache & Hugo Salinas**

School: **I.S. 192**
 Direction: **Westbound**
 Comments:

Mean Speed = 27.7 mph
 Standard Deviation = 4.1 mph
 Margin of Error (95% Confidence) = ± 1.1 mph

Median Speed = 27.7 mph
 15th Percentile Speed = 23.5 mph
 85th Percentile Speed = 32.0 mph



GAP STUDY FIELD SHEET

Date: 6/23/05

Location: Hollis Ave and 205 st

Gap Information:

Crossing Distance	<u>43</u>	ft
Reaction Time	<u>3</u>	sec
Walking Speed	<u>3</u>	sec/ft
Minimum Acceptable Gap	<u>17</u>	sec

Gap Survey:

Time:	From: <u>7:45 am</u>	To: <u>8:45 am</u>	
Gap (sec)	Tally		Total
10			5
11			6
12			8
13			3
14			
15			2
16			1
17			1
18			4
19			
20			2
21			1
22			1
23			1
24			
25			
26			
27			
28			
29			1
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45		<i>Total</i>	- 36

DISCARD GAPS LESS THAN 17 SEC

111 Ave at 204 St

C206-0124A

These Are The Default Titles
Change These In The Preferences Window
Press the 'Saved Titles' Right Arrow
To Add A New Set of Titles

File Name : untitled24
Site Code : 00060124
Start Date : 03/10/2006
Page No : 1

Directions Printed: Direction 1

Start Time	Volume	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22-23	24-25	26-27	28-29	>29	Int. Total
Factor	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	
07:45 AM	0	0	0	0	0	0	0	0	13	11	14	6	9	6	4	18	82
Grand Total	0	0	0	0	0	0	0	0	13	11	14	6	9	6	4	18	82
Total %		0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	13.6	17.3	7.4	11.1	7.4	4.9	22.2	

Factored w/Gap = 17 sec.

Using 3 feet per sec. walk speed.

82 Gaps For 60 minutes

Enough Gaps