

New York City Department of Transportation

Office of School Safety Engineering

NEW YORK CITY



School Safety Engineering Project

FINAL REPORT: St. Agatha's School, Brooklyn



Prepared by
The RBA Group



JULY 14, 2006

**School Safety Engineering Project
Saint Agatha's School, Brooklyn**

TABLE OF CONTENTS

1. INTRODUCTION 4

1.1 PROJECT DESCRIPTION 4

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

2.2 NEIGHBORHOOD DESCRIPTION 5

2.3 MEETING WITH SCHOOL REPRESENTATIVES..... 5

2.6 PRIMARY MODE OF TRANSPORT TO AND FROM SCHOOL 9

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS 9

2.8 CROSSING GUARD LOCATIONS..... 10

3. TRAFFIC OPERATIONS..... 12

3.1 SCHOOL BUS OPERATIONS 12

3.2 PARENT DROP-OFF OPERATIONS 12

3.3 PARKING REGULATIONS 12

3.4 EXISTING SCHOOL SIGNS AND MARKINGS 12

3.5 ACCIDENT SUMMARY 14

3.6 TRAFFIC OPERATIONS AND ISSUES 16

3.7 SIGNAL TIMING: PEDESTRIAN PHASE..... 20

3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)..... 20

4. POTENTIAL MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY..... 21

4.1 SHORT-TERM RECOMMENDATIONS 21

4.2 LONG-TERM OPTIONS 22

LIST OF EXHIBITS

EXHIBIT 1 - AERIAL PHOTOGRAPH 7

EXHIBIT 2 - EXISTING TRAFFIC SAFETY PLAN 8

EXHIBIT 3 – SCHOOL CROSSING GUARDS 11

EXHIBIT 4 – PARKING REGULATIONS 13

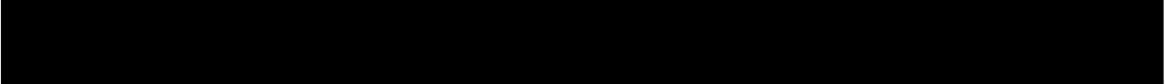
EXHIBIT 5 – ACCIDENT SUMMARY 15

EXHIBIT 6 – PROPOSED MEASURES TO IMPROVE SAFETY 23

LIST OF TABLES

TABLE 1: MODE OF TRAVEL.....	9
TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000).....	14
TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004).....	14
TABLE 4: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS.....	20

APPENDIX



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 350 speed reducers (humps) have been installed in the immediate vicinity of schools.

Under this consultant study, the School Safety Engineering Project, accident data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). Saint Agatha’s School in Brooklyn is one of the 135 priority schools.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS

2.2 NEIGHBORHOOD DESCRIPTION

St. Agatha's School is located at 736 48th Street, mid-block between Seventh and Eighth Avenues in Brooklyn (see Aerial Photograph, Exhibit 1). The school is part of a complex of buildings, including St. Agatha's Church on Seventh Avenue, and St. Agatha's Convent, which is located adjacent to the school. The school's main entrance is the furthest from Seventh Avenue of the two entrances located on 48th Street. The surrounding land use is primarily 2-3 story residential buildings on 48th Street, and retail stores on Seventh and Eighth Avenues.

2.3 MEETING WITH SCHOOL REPRESENTATIVES

Representatives from the Brooklyn Borough Commissioner's Office, the consultant staff, and the school secretary met at the school on May 14, 2004. According to the school representative, St Agatha's does not have specific student safety concerns, however they did indicate the following issues:

- Some mid-block crossings by students on 48th Street
- Double-parked vehicles during student drop-off and pick-up time

- The need for an additional crossing guard at the Eighth Avenue and 48th Street intersection

See the Appendix for the school's survey response and meeting attendee sheet.





1 inch equals 120 feet

EXHIBIT 1
ST. AGATHA SCHOOL
BROOKLYN
AERIAL PHOTOGRAPH



School Traffic Safety Map



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

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

LEGEND:

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

Brooklyn
ST AGATHA SCHOOL

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

Map created on 6/7/2006

EXHIBIT 2

COMM. BOARD: 307
PRECINCT: 72

1.3.1

2.6 PRIMARY MODE OF TRANSPORT TO AND FROM SCHOOL

According to school officials, approximately 50% of the students walk to Saint Agatha's School; 40% of the students are driven by parents or guardians, and the remaining 10% utilize the MTA bus or subway system. See Table 1 for school's estimate of the mode of travel.

TABLE 1: MODE OF TRAVEL	
(AS ESTIMATED BY SCHOOL OFFICIALS)	
Description	Percentage
Walk	50%
Driven by parents or guardians	40%
School bus	0%
MTA bus or subway	10%
TOTAL	100%

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

There are three public schools in the vicinity of Saint Agatha: P.S. 94, P.S. 169 (a priority school), and I.S. 220. Several smaller private schools are located within 2-3 blocks of Saint Agatha's School. Maimonides Medical Center is located on 48th Street at 10th Avenue. In addition, there are two churches in the vicinity of Saint Agatha's; Saint Agatha's Church is located at the corner of Seventh Avenue and 48th Street, and The Church of the Redemption is located directly across 48th Street (see Figure 3). Numerous retail stores and shops are located on Seventh Avenue.

The area is serviced by two subway lines, the N and R with a stop at 45th Street and Fourth Avenue or the D and M with a stop at Ninth Avenue and 39th Street.



Figure 3 –Looking east at the Church of The Redemption at the corner of Seventh Avenue and 48th Street

2.8 CROSSING GUARD LOCATIONS

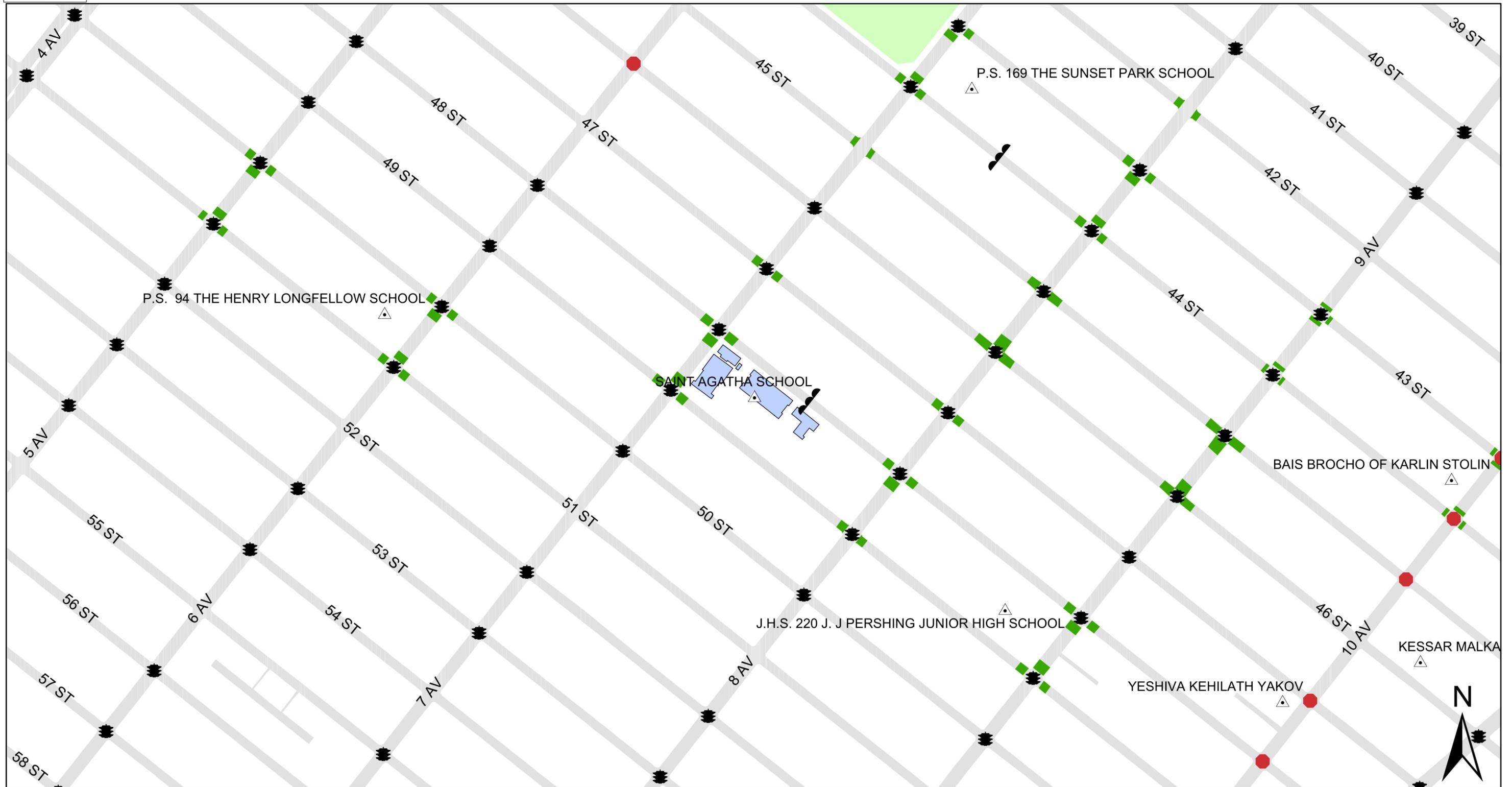
There is one crossing guard at Seventh Avenue and 48th Street assigned to this school (see Exhibit 3). During the field visit, a school student from St. Agatha's was assisting the crossing guard during dismissal time.



Figure 4 – Crossing guard at the Seventh Avenue and 48th Street intersection during dismissal time



School Traffic Safety Map



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

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

LEGEND:

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

**Brooklyn
ST AGATHA SCHOOL**

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

Map created on 11/16/2006

EXHIBIT 3

COMM. BOARD: 307
PRECINCT: 72

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to school representatives, none of the students use school buses to travel to and from school.

3.2 PARENT DROP-OFF OPERATIONS

School representatives indicated that parents or guardians transport approximately 40% of students by private vehicles. During school commuting times vehicles typically double-park along 48th Street, on both sides of the street (see Figure 5).



Figure 5 – Double-parked vehicles on 48th Street during dismissal time

3.3 PARKING REGULATIONS

Exhibit 4 shows the parking regulations on the roadways surrounding the school.

On 48th Street in front of the school a “NO PARKING 7AM-4PM, SCHOOL DAYS” parking regulation sign is posted. Street cleaning regulations prohibit parking on alternating sides of the roadways facing the school between 11:30 am and 1:00 pm.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

The Traffic Safety Map, Exhibit 2, indicates existing signs, signals and pavement markings. It is noted that a citywide signage program is currently underway to upgrade school signage to current MUTCD standards of fluorescent yellow-green signs accompanied by downward pointing arrows. Signs that are scheduled to be installed under this program are shown as “existing” on Exhibit 6.

3.5 ACCIDENT SUMMARY

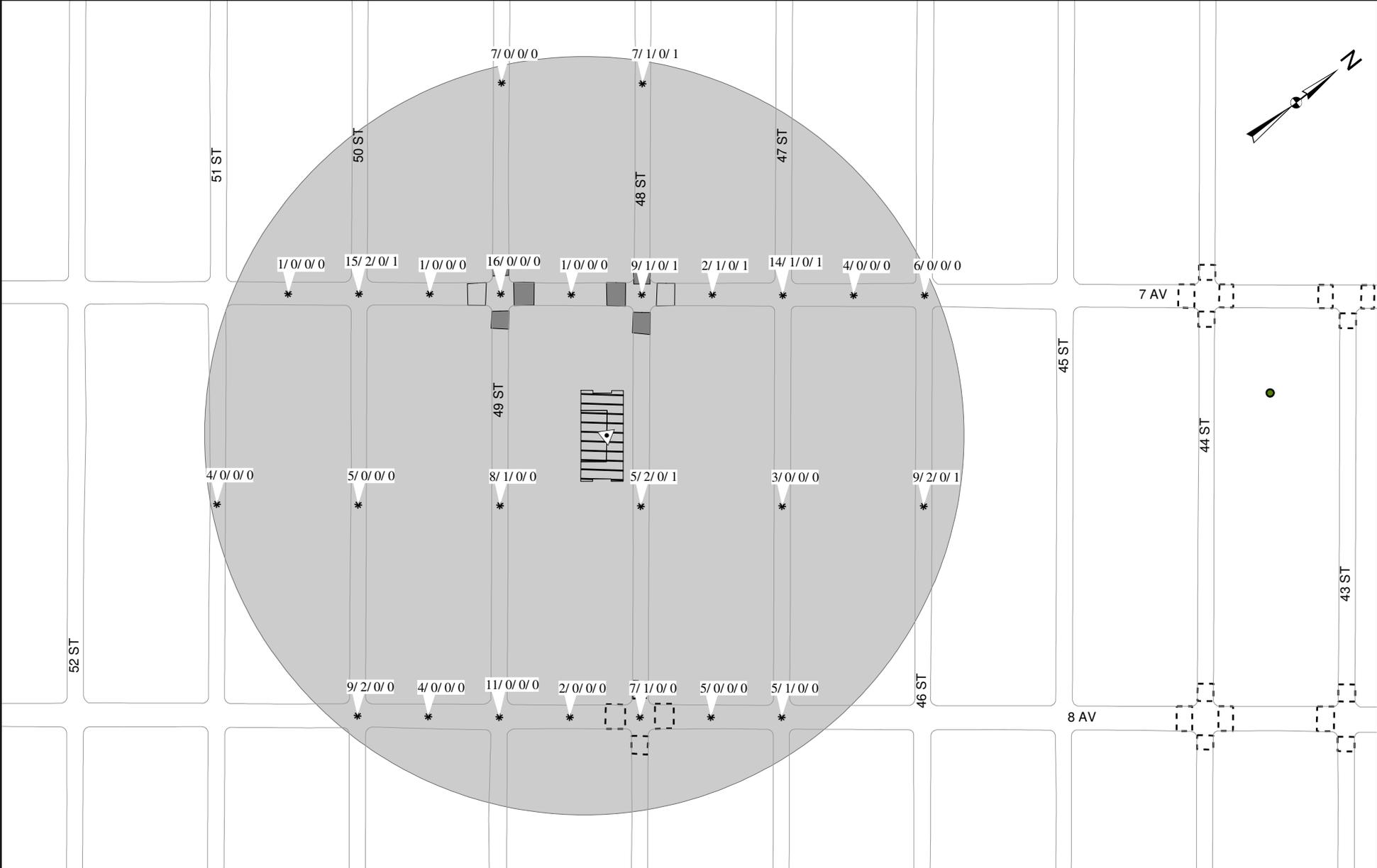
Exhibit 5 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of St. Agatha's School for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and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

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

TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000)				
INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	*SCHOOL-RELATED ACCIDENTS
Seventh Avenue and 47 th Street	14	1	0	1
Seventh Avenue and 48 th Street	9	1	0	1
Seventh Avenue and 49 th Street	16	0	0	0
Seventh Avenue and 50 th Street	15	2	0	1
Eighth Avenue and 48 th Street	7	1	0	0
TOTAL	61	5	0	3

TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004)				
INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	*SCHOOL-RELATED ACCIDENTS
Seventh Avenue and 47 th Street	18	2	0	0
Seventh Avenue and 48 th Street	17	1	0	0
Seventh Avenue and 49 th Street	36	1	0	0
Seventh Avenue and 50 th Street	19	2	0	0
Eighth Avenue and 48 th Street	27	2	0	1
TOTAL	117	8	0	1

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



ACCIDENT LOCATION	*				
SCHOOL CROSSWALK ASSIGNED TO ST. AGATHA	■				
SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL	□				
CROSSWALK	□				
X/X/X/X	<table border="1"> <tr> <td>TOTAL ACCIDENTS</td> <td>PED ACCIDENTS</td> <td>PED FATAL</td> <td>SCHOOL PED ACCIDENTS</td> </tr> </table>	TOTAL ACCIDENTS	PED ACCIDENTS	PED FATAL	SCHOOL PED ACCIDENTS
TOTAL ACCIDENTS	PED ACCIDENTS	PED FATAL	SCHOOL PED ACCIDENTS		

EXHIBIT 5
ST. AGATHA SCHOOL
BROOKLYN
ACCIDENT SUMMARY
THREE YEAR PERIOD
1998-2000

3.6 TRAFFIC OPERATIONS AND ISSUES

The following outlines the traffic accidents and operations issues at intersections in the vicinity of Saint Agatha's School.

3.6.1 – Seventh Avenue and 48th Street

Seventh Avenue is a 42-foot wide, two-way roadway with one travel lane in each direction and parking on both sides (see Figure 6). Seventh Avenue is a designated bike route (Class II), and has bike lanes in both the northbound and southbound directions. 48th Street is a 30-foot wide, one-way roadway with one travel lane and parking on both sides. There are school crosswalks on the east, west and south legs of the intersection.

Most Saint Agatha students walking to and from school utilize this intersection to cross the street. During observed dismissal on May 14, 2004, students were organized in groups and were led out of the school building by school officials. Further, school officials led students to the intersection of Seventh Avenue and 48th Street, where a school crossing guard (assisted by a student crossing guard) is stationed (see Figure 7).

This signalized intersection had nine accidents between 1998 and 2000, of which one was school-related. According to the accident data, the pedestrian was a 5-year-old child who was struck while emerging from behind a parked car. This accident occurred at 4:00 pm on February 14, 2000.

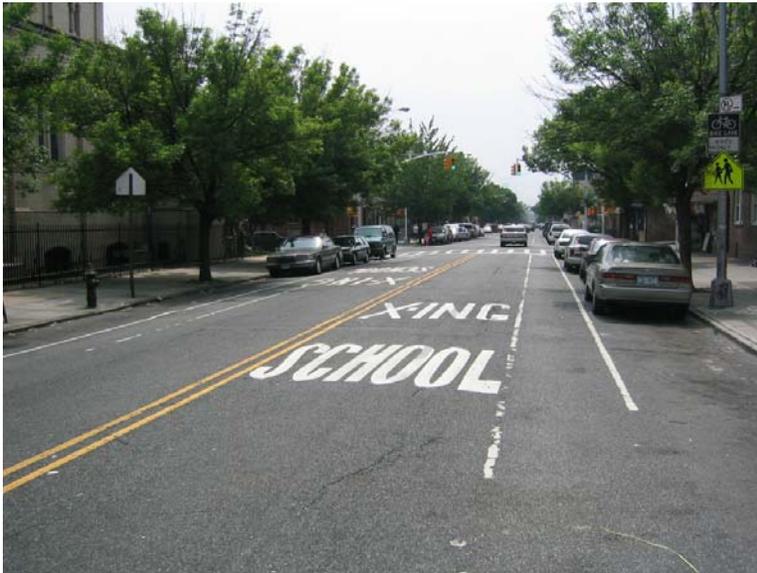


Figure 6 – Seventh Avenue between 48th and 49th Streets



Figure 7 – Saint Agatha's students crossing the street at Seventh Avenue and 48th Street

3.6.2 - Seventh Avenue and 49th Street

49th Street is a 30-foot wide one-way roadway with one travel lane and parking on both sides. There are school crosswalks on the east, west and north legs of the intersection (see Figure 8).

There were 16 accidents at this signalized intersection in the three-year period between 1998-2000. There were no pedestrian related accidents during this time period.



Figure 8 – Seventh Avenue and 49th Street (looking east)

3.6.3 – Seventh Avenue and 47th Street

This signalized intersection does not have school crosswalks delineated across any of the four legs of the intersection. 47th Street is a 30-foot wide, one-way roadway with one travel lane and parking on both sides.

Fourteen accidents occurred at this intersection during the 1998 and 2000 study period. There was one pedestrian accident that was school-related during this period. According to the accident data, the pedestrian was crossing against the signal when struck by a vehicle.

3.6.4 – Seventh Avenue and 50th Street

50th Street is a 30-foot wide, one-way roadway with one travel lane and parking on both sides. There are no school crosswalks at this intersection. All four legs of the intersection have standard pedestrian crosswalks.

Fifteen accidents occurred at this intersection between 1998 and 2000. Two accidents involved pedestrians, of which one was school related. According to the accident data both pedestrians were struck while crossing against the signal.

3.6.5 – Eighth Avenue and 48th Street

Eighth Avenue is a 44-foot wide, two-way roadway with one travel lane in each direction and parking on both sides. There are school crosswalks on the east, west, and south legs of the intersection (see Figure 9).



Fig 9 – Eighth Avenue and 48th Street (looking east)

Seven accidents occurred at this location between 1998 and 2000, one of which involved a pedestrian. According to the accident data, the pedestrian was crossing against the signal and outside the crosswalk when struck by a vehicle.

3.6.6 - 48th Street between Seventh Avenue and Eighth Avenue

Five accidents occurred along this segment between 1998 and 2000, two of which involved school-aged pedestrians. The children were 10 and 11 years old and were crossing mid-block at 3:00 pm (March 24, 1998) and 4:00 pm (May 20, 2000), respectively.



Figure 10 – Saint Agatha students being escorted by school officials during dismissal time

A speed reducer (hump) is in place on 48th Street, at the school's main entrance and was observed to effectively slow down traffic (see Figure 11).



Figure 11 – Speed hump on 48th Street

3.7 SIGNAL TIMING: PEDESTRIAN PHASE

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

TABLE 4: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS				
INTERSECTION NAME	CROSSWALK WIDTH (FEET)	PED. PHASE ACTUAL (SECONDS)	PED. PHASE REQ'D (SECONDS)	TIMING ADJUSTMENT? (YES/NO)
Seventh Avenue and 48 th Street				
Crossing Seventh Avenue	40	25	17	NO
Crossing 48 th Street	30	35	13	NO
Seventh Avenue and 49 th Street				
Crossing Seventh Avenue	40	23	17	NO
Crossing 49 th Street	30	37	13	NO
Eighth Avenue and 48 th Street				
Crossing Eighth Avenue	44	40	18	NO
Crossing 48 th Street	30	50	13	NO

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

3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)

The roadways in the vicinity of the project are generally in good condition. The sidewalk fronting the school on 48th Street is approximately 11 feet wide and is in fair condition. There are two pedestrian ramps, in fair condition, at the corner quadrants of schools crosswalks.

4. POTENTIAL MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY

This section describes potential countermeasures. 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 are capital improvements.

4.1 SHORT-TERM RECOMMENDATIONS

- Upgrade No Parking Zone to No Standing Zone on 48th Street

Existing “NO PARKING 7:00 AM-4:00 PM, SCHOOL DAYS” parking regulations on 48th Street in front of the school should be upgraded to “NO STANDING 7:00 AM-4:00 PM, SCHOOL DAYS” for a length of 30 feet. This will allow parents a place to load and unload students at the curb, and also improve motorist visibility of students arriving and leaving the school.

- Install new school crosswalks, advance stop lines and roadway markings

Install new school crosswalks, associated signage and markings on

- 47th Street and Seventh Avenue (east and west leg)
- 47th Street and Eighth Avenue (east and west leg)
- 49th Street and Eighth Avenue (east and west leg)

- Daylighting

Removing the first parking space adjacent to an intersection at critical locations will provide an improved line of sight for vehicles and pedestrians. It is recommended that a “No Standing Anytime” sign be posted 20 feet from the corner on the east side of Seventh Avenue and 48th Street (south leg).

- Submit Request to Police Department for Additional Crossing Guard

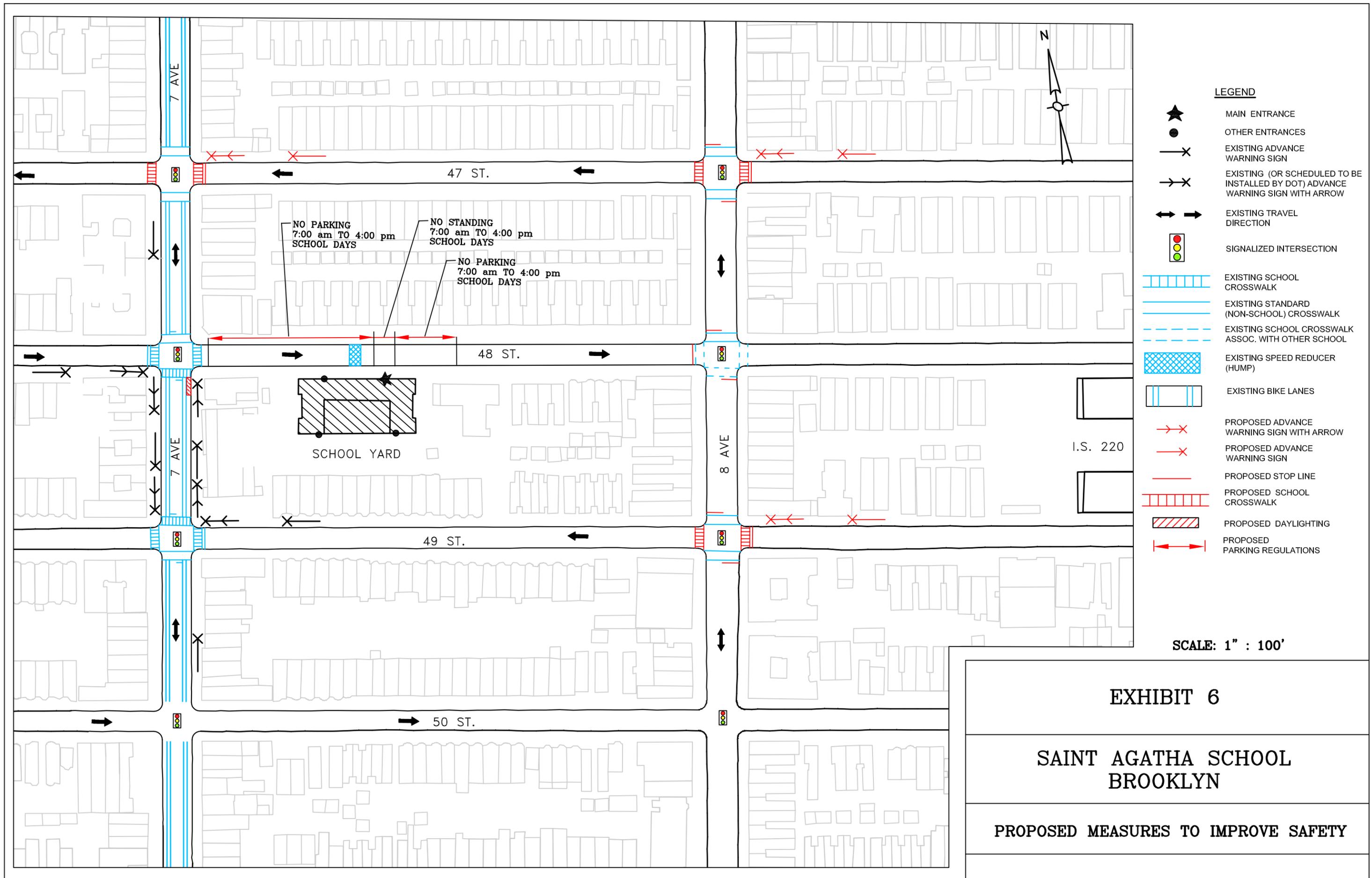
It is recommended that an additional crossing guard be requested for the intersection of 48th Street and Eighth Avenue. This intersection is one block from both St. Agatha's School and I.S. 220 (J.J. Pershing Intermediate School), which has an enrollment of approximately 1400 students.

- Administer student pedestrian safety education program

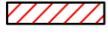
It is recommended that the NYCDOT, Safety Education Program work with the school to educate students on pedestrian safety including crossing the street with the WALK phase, and the meaning of the WALK - FLASHING DON'T WALK - DON'T WALK pedestrian signal sequence.

4.2 LONG-TERM OPTIONS

All recommendations for improving pedestrian safety in the vicinity of the school will be implemented as short-term measures.



LEGEND

-  MAIN ENTRANCE
-  OTHER ENTRANCES
-  EXISTING ADVANCE WARNING SIGN
-  EXISTING (OR SCHEDULED TO BE INSTALLED BY DOT) ADVANCE WARNING SIGN WITH ARROW
-  EXISTING TRAVEL DIRECTION
-  SIGNALIZED INTERSECTION
-  EXISTING SCHOOL CROSSWALK
-  EXISTING STANDARD (NON-SCHOOL) CROSSWALK
-  EXISTING SCHOOL CROSSWALK ASSOC. WITH OTHER SCHOOL
-  EXISTING SPEED REDUCER (HUMP)
-  EXISTING BIKE LANES
-  PROPOSED ADVANCE WARNING SIGN WITH ARROW
-  PROPOSED ADVANCE WARNING SIGN
-  PROPOSED STOP LINE
-  PROPOSED SCHOOL CROSSWALK
-  PROPOSED DAYLIGHTING
-  PROPOSED PARKING REGULATIONS

SCALE: 1" : 100'

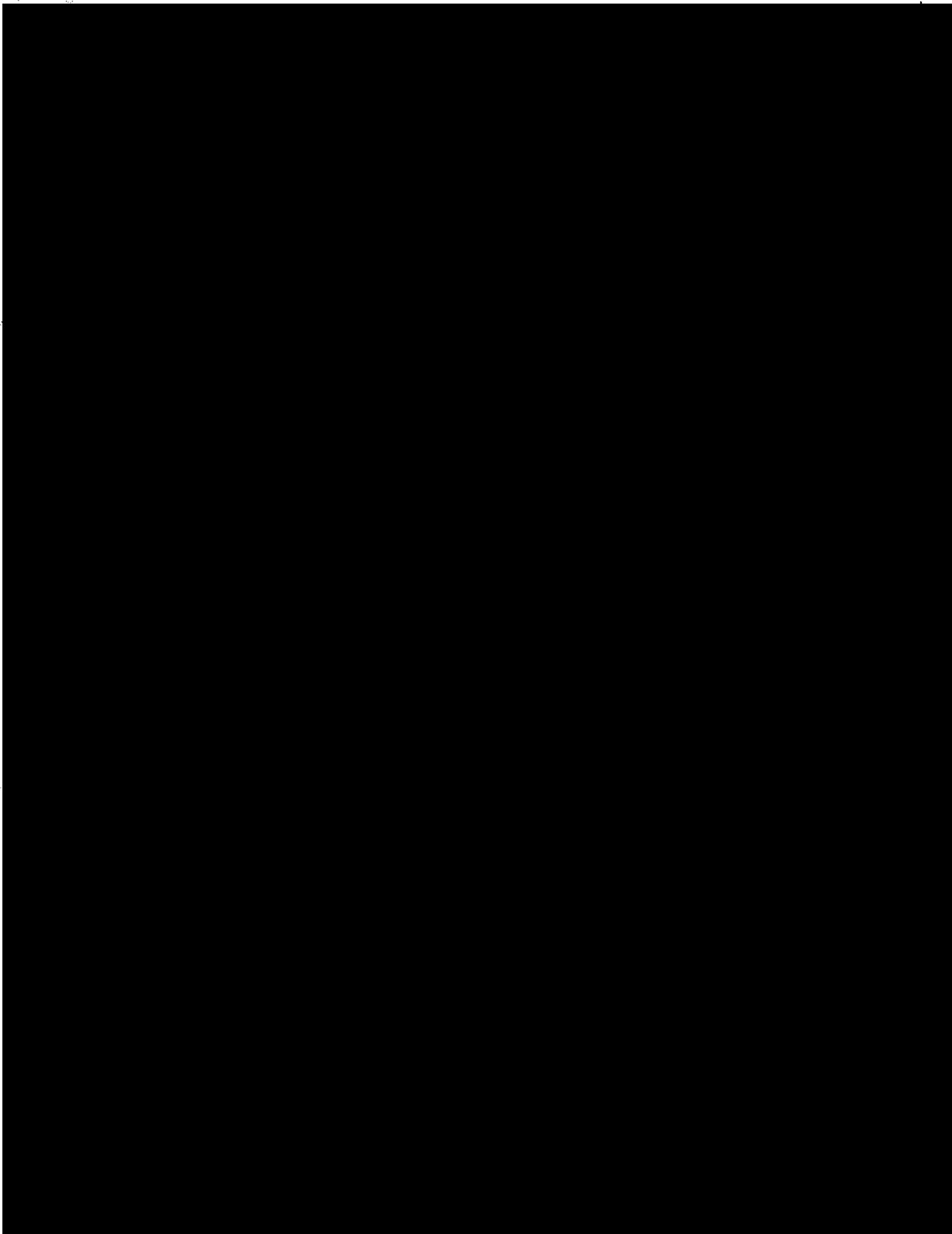
EXHIBIT 6

**SAINT AGATHA SCHOOL
BROOKLYN**

PROPOSED MEASURES TO IMPROVE SAFETY

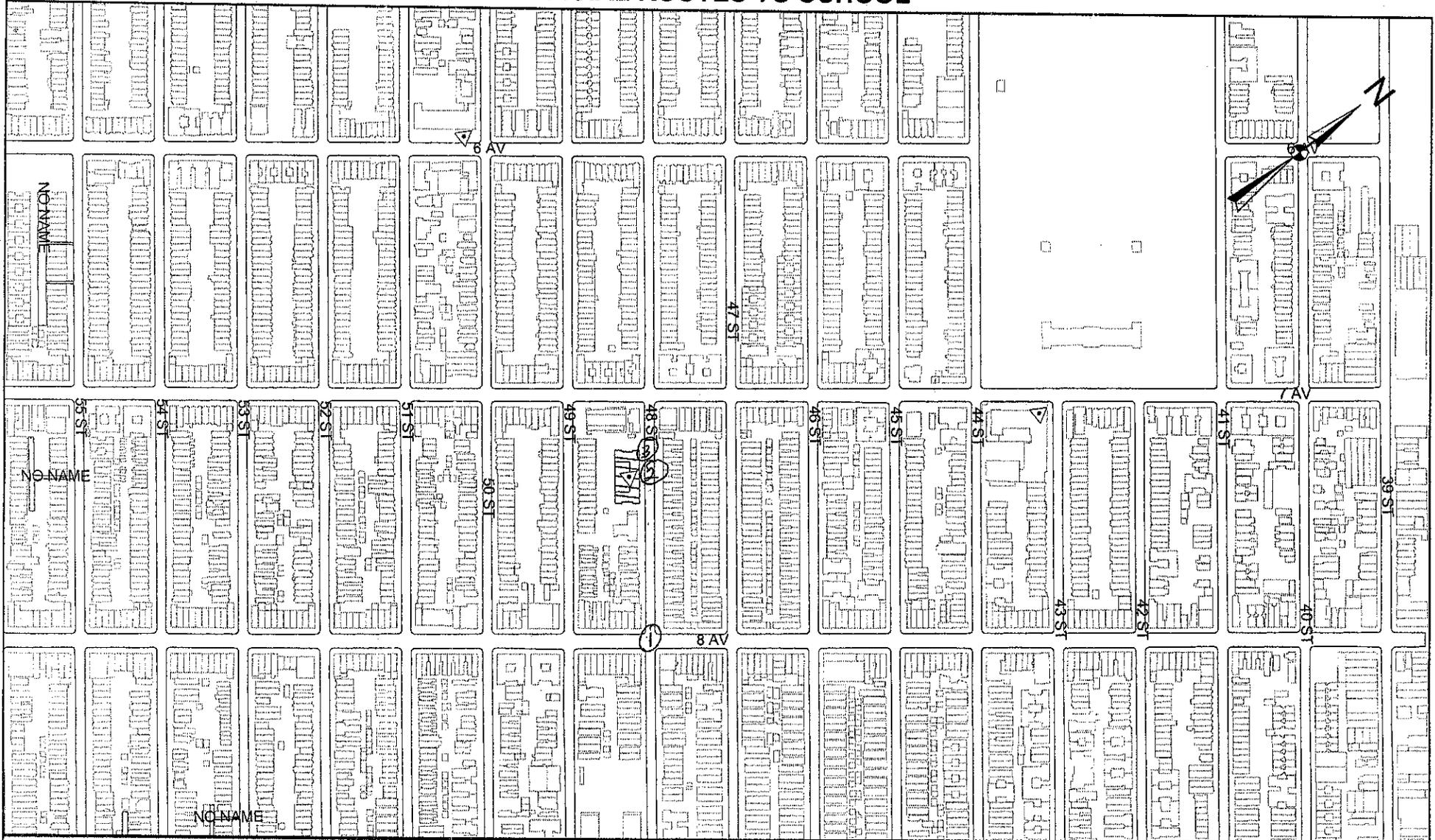
APPENDIX





TRAFFIC SAFETY PLAN

OFFICIAL ROUTES TO SCHOOL



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

ST AGATHA SCHOOL C-29

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

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	REV3			