

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



School Safety Engineering Project

FINAL REPORT: St. Spyridon Parochial School, Manhattan



Prepared by
The RBA Group/Urbitran Associates



SEPTEMBER 15, 2006

**School Safety Engineering Project
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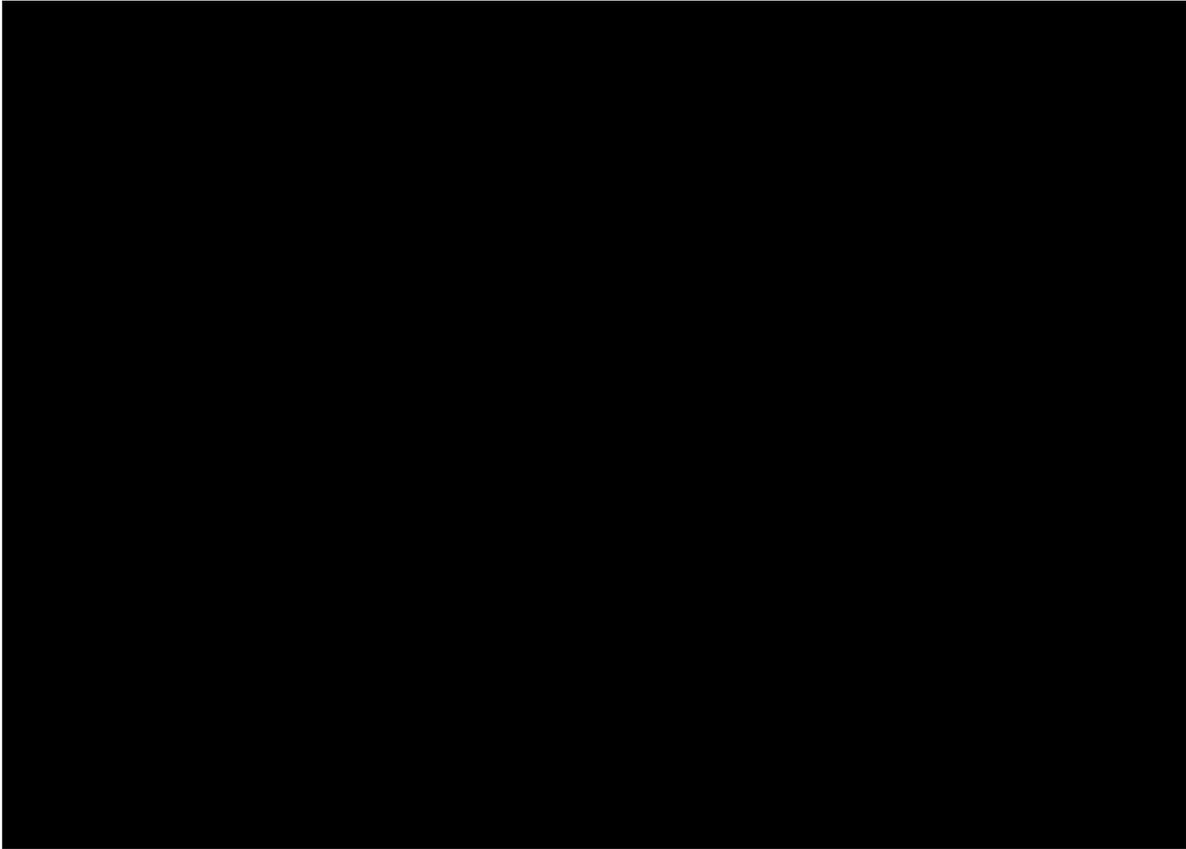
1. INTRODUCTION

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 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). St. Spyridon Parochial School in Manhattan is one of the 135 priority schools.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS



2.2 NEIGHBORHOOD DESCRIPTION

St. Spyridon is in a densely populated residential area. The school is near the George Washington Bridge Bus Terminal, which is on Broadway at West 179th Street. West 181st Street is a dense commercial shopping district and is also used as a connector between the Cross Bronx Expressway and the George Washington Bridge (see Exhibit 1 for Aerial Photograph).

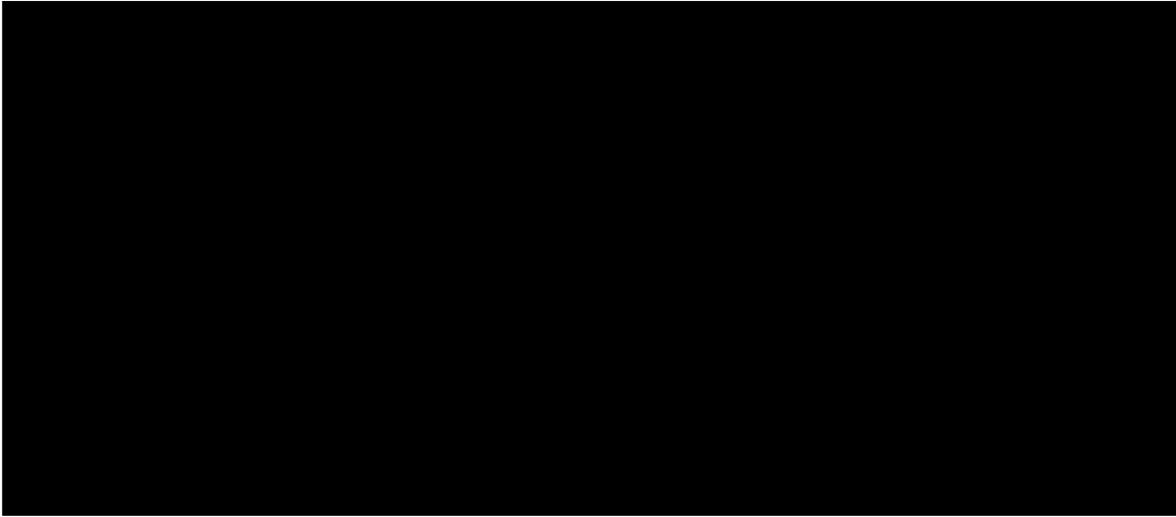
There are several bus routes in the vicinity of St. Spyridon Parochial School. The M3 bus line runs on St. Nicholas Avenue and the M100 and Bx7 bus lines run on Broadway. The Bx3, Bx11, Bx13, Bx35, and Bx36 bus lines all run south on Wadsworth Avenue and turn west at the intersection of Wadsworth Avenue and West 179th in front of the school. The M98 bus line also travels westbound on West 179th adjacent to the school.

2.3 MEETING WITH SCHOOL REPRESENTATIVES

Representatives from St. Spyridon Parochial School and the consultant team met at the school on the afternoon of May 4, 2004. According to the representatives of the school, the identifiable problems that student pedestrians encounter on a regular basis include the following:

- Lack of crossing guards at the intersection of Wadsworth Avenue and West 179th Street
- Lack of parking areas for parents to drop-off and pick-up students
- Large number of public buses and traffic congestion due to the George Washington Bus Terminal

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



2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

At the May 2004 meeting, the school representatives indicated that 58% of students walk to school, 7% of students utilize MTA buses or subway service, 33% are driven by a parent or guardian, and the remaining 2% of students ride school buses. See Table 1 for the school's estimate of the modes of travel.

TABLE 1: MODES OF TRAVEL	
(AS ESTIMATED BY SCHOOL OFFICIALS)	
DESCRIPTION	PERCENTAGE
Walk	58%
Driven by parent of guardian	33%
School bus	2%
MTA bus/subway	7%
TOTAL	100%



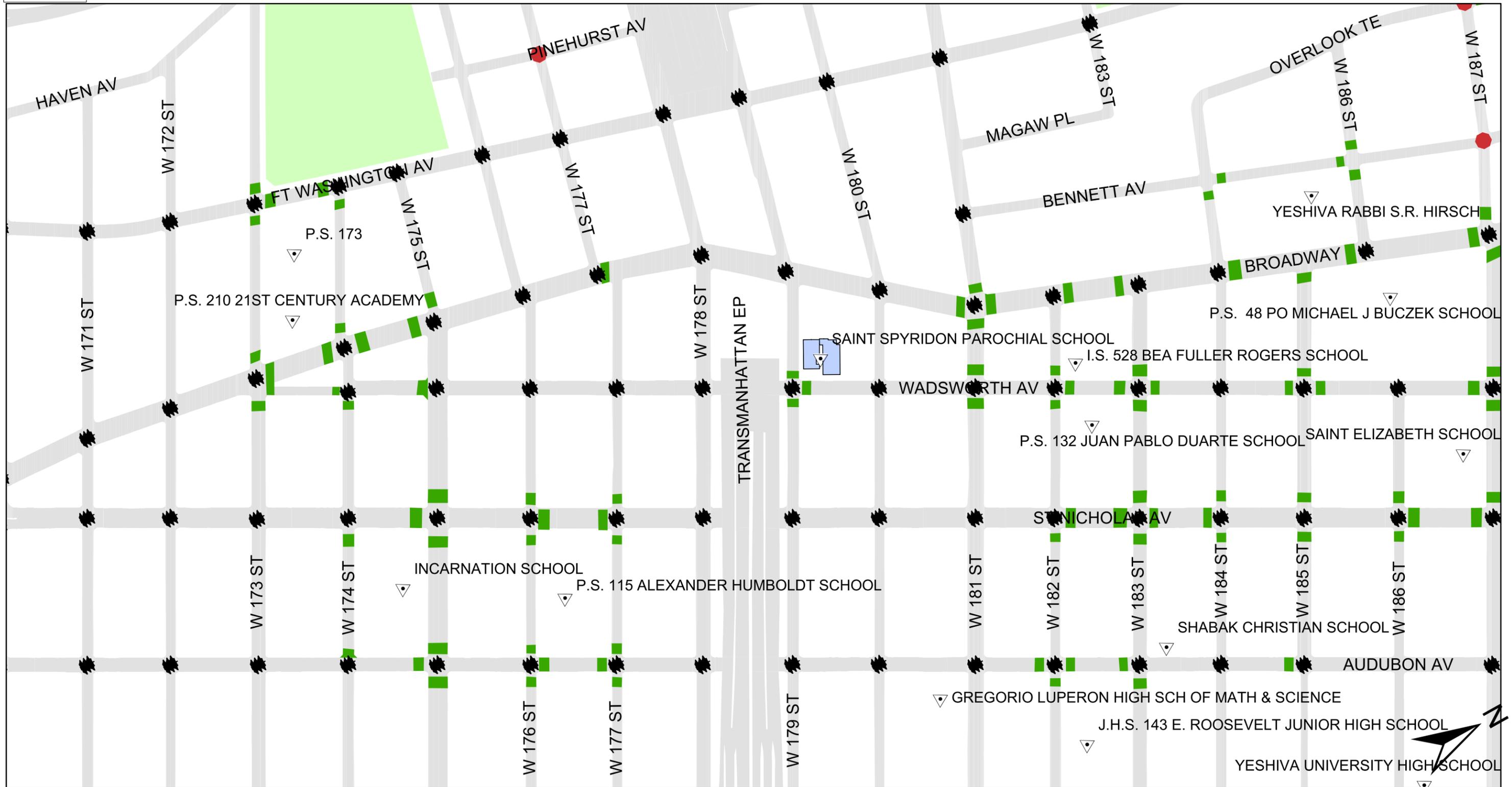
1 inch equals 200 feet

**EXHIBIT 1
ST SPYRIDON PAROCHIAL SCHOOL
MANHATTAN**

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 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 

Manhattan
ST SPYRIDON PAROCHIAL SCHOOL

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

Map created on 11/16/2006

COMM. BOARD: 112
PRECINCT: 34

1.5.1

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

There are three other public schools within a few city blocks of St. Spyridon. P.S. 115 is on West 177th Street between St. Nicholas Avenue and Audubon Avenue; P.S. 528 is located at the northeast corner of West 182nd Street and Broadway; and P.S. 132 is at the northeast corner of West 182nd Street and Wadsworth Avenue. In addition, West 181st Street is a large shopping area that attracts large numbers of pedestrians.

2.8 CROSSING GUARD LOCATIONS

There are no crossing guards assigned to St. Spyridon, and there are no crossing guards assigned to other schools in the vicinity of St. Spyridon.

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to school representatives, one school bus transports seven students to and from school. The school bus double-parks on Wadsworth Avenue to load and unload the students (Figure 2).



Figure 2 – Bus double-parked to unload students on Wadsworth Avenue

3.2 PARENT DROP-OFF OPERATIONS

School officials have indicated that approximately 33% of students are driven to and from school by parents or guardians. Most parents will park or double-park in a no parking zone on Wadsworth Avenue. Some parents leave their vehicles in the no parking zone and walk the students into the building to sign them in.



Figure 3 – Queue on West 179th street during arrival time

3.3 PARKING REGULATIONS

“NO PARKING, 7 AM – 4 PM, SCHOOL DAYS AND SUNDAYS” parking regulations are posted on West 179th Street in front of St. Spyridon School. “NO PARKING ANYTIME” parking regulations are posted on Wadsworth Avenue in front of the school’s main entrance for approximately half of the block. Alternate parking side regulations are in effect 8:30 am – 10:00 am.

Exhibit 3 shows the existing parking regulations on the streets surrounding St Spyridon.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

The Traffic Safety Plan, Exhibit 2, shows existing crosswalk pavement markings. It is noted that a citywide signage program is currently underway to upgrade school signage to current Federal Manual of Uniform Traffic Control (MUTCD) standards of fluorescent yellow-green signs accompanied by downward pointing arrows. Signs scheduled to be installed under this program are shown as “existing” on Exhibit 5.



LEGEND



MAIN ENTRANCE



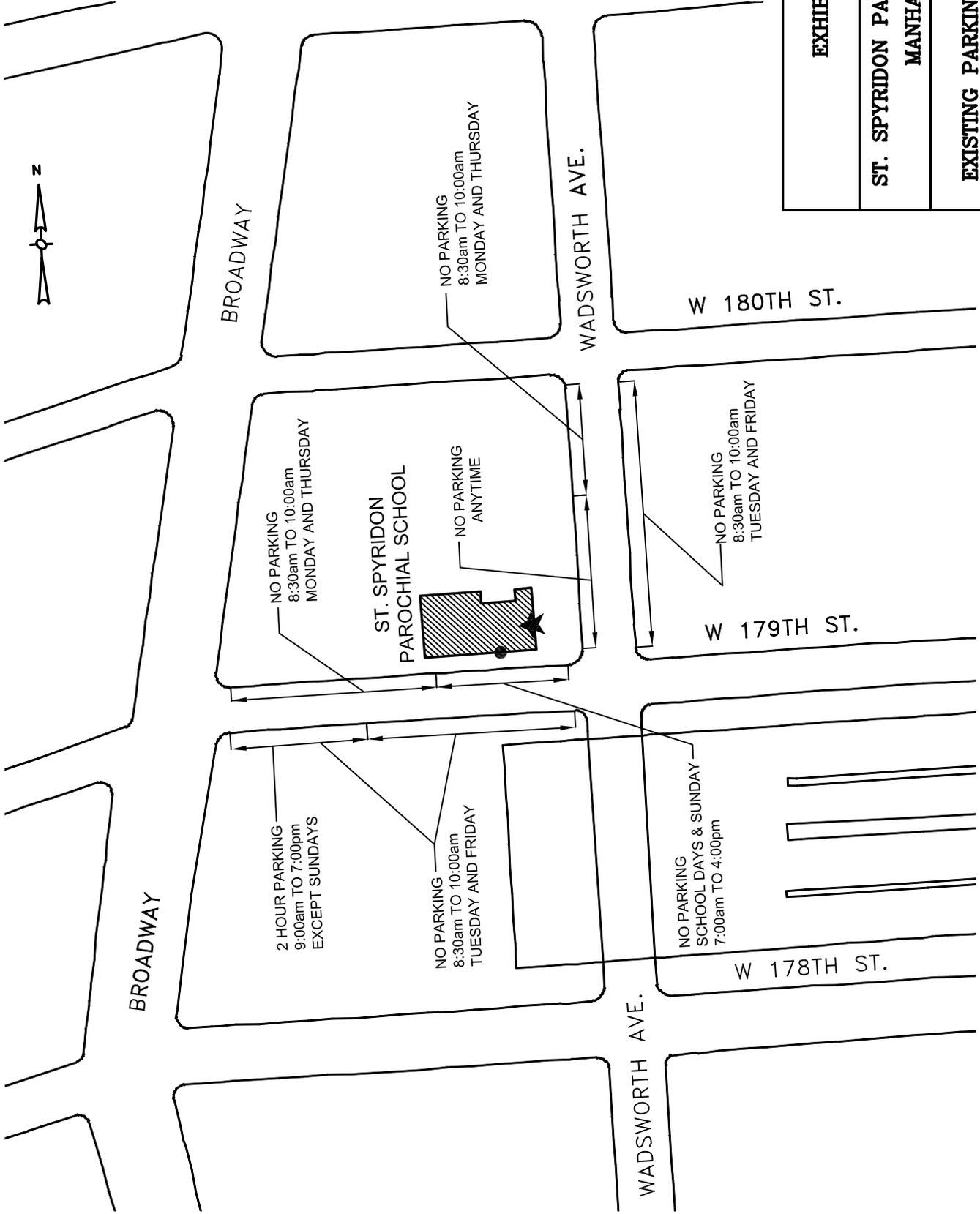
OTHER ENTRANCES

SCALE 1" = 200'

EXHIBIT 3

**ST. SPYRIDON PAROCHIAL SCHOOL
MANHATTAN**

EXISTING PARKING REGULATIONS



3.5 ACCIDENT SUMMARY

Exhibit 4 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. Spyridon Parochial 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 were 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*
West 179 th Street and Broadway	58	6	0	0
West 179 th Street and Wadsworth Avenue	14	0	0	0
West 179 th Street and St. Nicholas Avenue	27	4	0	0
West 180 th Street and Broadway	30	4	0	1
West 180 th Street and Wadsworth Avenue	10	2	0	1
TOTAL	139	16	0	2

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
West 179 th Street and Broadway	91	12	1	1
West 179 th Street and Wadsworth Avenue	27	1	0	0
West 179 th Street and St. Nicholas Avenue	37	9	0	4
West 180 th Street and Broadway	65	7	0	0
West 180 th Street and Wadsworth Avenue	9	4	0	0
TOTAL	229	33	1	5

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

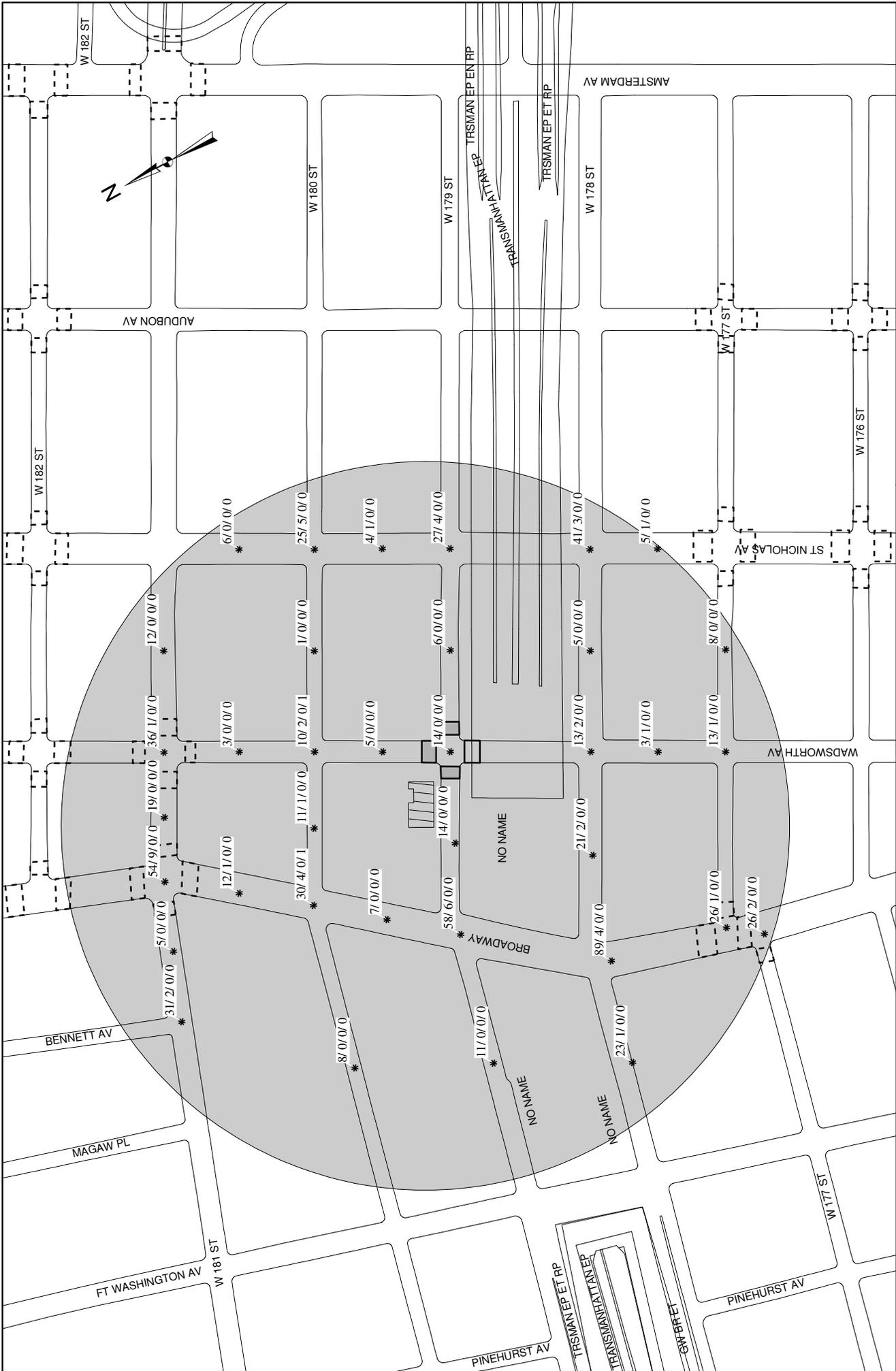


EXHIBIT 4

**ST SPYRIDON PAROCHIAL SCHOOL
MANHATTAN
ACCIDENT SUMMARY
THREE YEAR PERIOD
(1998-2000)**

1 inch equals 250 feet

- * [Symbol: Solid black rectangle]
- [Symbol: Dashed line]
- [Symbol: Open rectangle]

ACCIDENT LOCATION
SCHOOL CROSSWALK ASSIGNED TOST SPYRIDON PAROCHIAL
SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL
CROSSWALK

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

3.6 TRAFFIC OPERATIONS AND ISSUES

The following outlines the traffic accident and operational issues at the intersections in the vicinity of St. Spyridon Parochial School.

3.6.1 West 179th Street and Broadway

Broadway is a two-way street with two moving lanes in each direction and parking on both sides. West 179th Street is a one-way westbound street with parking on both sides of the roadway. Immediately to the south of West 179th Street is the George Washington Bridge Bus Terminal with a large parking lot, which passes over Broadway. This intersection is controlled by a traffic signal. All four legs have high visibility pedestrian crosswalks. However, school officials identified them as school crosswalks.



Figure 4 – Broadway and West 179th Street, looking south

There were 58 accidents at this intersection during the 1998-2000 study period. Six accidents involved pedestrians, none of which were school related. Five pedestrian accidents involved drivers making left turns and failing to yield. The details for the last accident were not reported.

3.6.2 West 179th Street and Wadsworth Avenue

Wadsworth Avenue is a two-way street with one travel lane in each direction and parking permitted on both sides. The intersection of Wadsworth Avenue and West 179th Street is controlled by a traffic signal. School crosswalks are in place on the east, west, and north legs.

There were 14 accidents at this intersection during the 1998-2000 study period, none of which involved pedestrians.



Figure 5 – Wadsworth Avenue and West 179th Street, looking west

3.6.3 West 179th Street and St. Nicholas Avenue

St. Nicholas Avenue is a two-way street with two moving lanes in each direction and parking permitted on both sides. The intersection of West 179th Street and St. Nicholas Avenue is controlled by a traffic signal. All four legs have pedestrian crosswalks, but none of them is a school crosswalk. The corner quadrants have only one pedestrian ramp or sub-standard pedestrian ramps due to conflicts with traffic signal poles or other utilities.



Figure 6 – St. Nicholas Avenue and West 179th Street, looking south

27 accidents occurred at this location during the 1998-2000 study period. Four accidents involved pedestrians, none of which were school related. Two accidents were attributed to drivers' failure to yield when making left turns. The other two accidents were due to pedestrians error.

3.6.4 West 180th Street and Broadway

West 180th Street is a one-way eastbound roadway with one moving lane and parking on the both sides. All four legs have high visibility pedestrian crosswalks.

There were 30 accidents at this signalized intersection during the 1998-2000 study period. Four accidents involved pedestrians, one of which was school related. A student was struck while crossing Broadway against the signal. Another pedestrian was working on the street when struck. The other two accidents were attributed to pedestrian error.

3.6.5 West 180th Street Wadsworth Avenue

The intersection of West 180th Street and Wadsworth Avenue is controlled by a traffic signal. All four legs have pedestrian crosswalks, but none of them is a school crosswalk.



Figure 7 – Wadsworth Avenue and West 180th Street, looking north

There were ten accidents at this signalized intersection during the 1998-2000 study period. Two accidents involved pedestrians, one of which was school related. A 12-year-old student was crossing with the signal when struck by a left turning vehicle. There were no details for the second pedestrian accident.

3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field verified at all signalized intersections in the vicinity of St. Spyridon Parochial 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 INTRSECTIONS				
Intersection Name	Crosswalk Width (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)*	Timing Adjustment? (Yes/No)
West 179th Street and Broadway				
Broadway	70	27	26	NO
West 179 th Street	35	63	15	NO
West 179th Street and Wadsworth Avenue				
AvenueWadsworth Avenue	42	39	17	NO
West 179 th Street	35	42	15	NO
West 179th Street and St. Nicholas Avenue				
St. Nicholas Avenue	60	37	23	NO
West 179 th Street	35	40	15	NO
West 180th Street and Broadway				
Broadway	60	26	23	NO
West 180 th Street	30	53	13	NO
West 180th Street and Wadsworth Avenue				
Wadsworth Avenue	42	27	17	NO
West 180 th Street	30	48	13	NO

Note:

* A rate of three feet per second plus three seconds reaction time was utilized as the child pedestrian walking rate

3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)

The roadways and sidewalks in the vicinity of St. Spyridon were observed to be in generally good condition.

Pedestrian ramps were substandard at West 179th Street and St. Nicholas Avenue due to conflicts with utilities.

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

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

4.1 SHORT-TERM MEASURES

- Upgrade No Parking Zone to No Standing Zone

“NO PARKING ANYTIME” parking regulations on Wadsworth Avenue should be upgraded to “NO STANDING ANYTIME”.

“NO PARKING, SCHOOL DAYS AND SUNDAYS, 7 AM - 4 PM” parking regulations on West 179th Street should be upgraded to “NO STANDING, SCHOOL DAYS AND SUNDAYS, 7 AM - 4 PM”.

- Submit a request to the Police Department for Crossing Guards

It is recommended that a request be submitted to the Police Department for crossing guards at the intersection of West 179th Street and Wadsworth Avenue.

- 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 WALK - FLASHING DON'T WALK - DON'T WALK pedestrian signal sequence. It is also recommended that the students be educated not to cross at mid-block locations.

- Install new school crosswalks at the following intersections

- West 179th Street and St. Nicholas Avenue – south and north legs
- West 179th street and Broadway – north, south, east and west legs
- West 180th street and Wadsworth Avenue – south, east and west legs

School officials identified pedestrian crosswalks at the two intersections on West 179th Street as being heavily utilized by students. According to accident data, school related accident occurred at West 180th Street and Wadsworth Avenue during the 1998-200 study period. Therefore, it is recommended that school crosswalks be installed to facilitate students walking to school as shown in Exhibit 5.

- 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.

- Correct ponding issues at the intersection of West 179th Street and Wadsworth Avenue.

There is an existing low point at the base of the pedestrian ramp at the southeast corner of 179th Street and Wadsworth Avenue. Standing water can be a safety issue, especially in the winter, when the standing water can result in an icy condition for student pedestrians. It is recommended the roadway be re-graded at the corner to provide positive drainage away from the base of the pedestrian ramp and to the nearest existing catch basin.

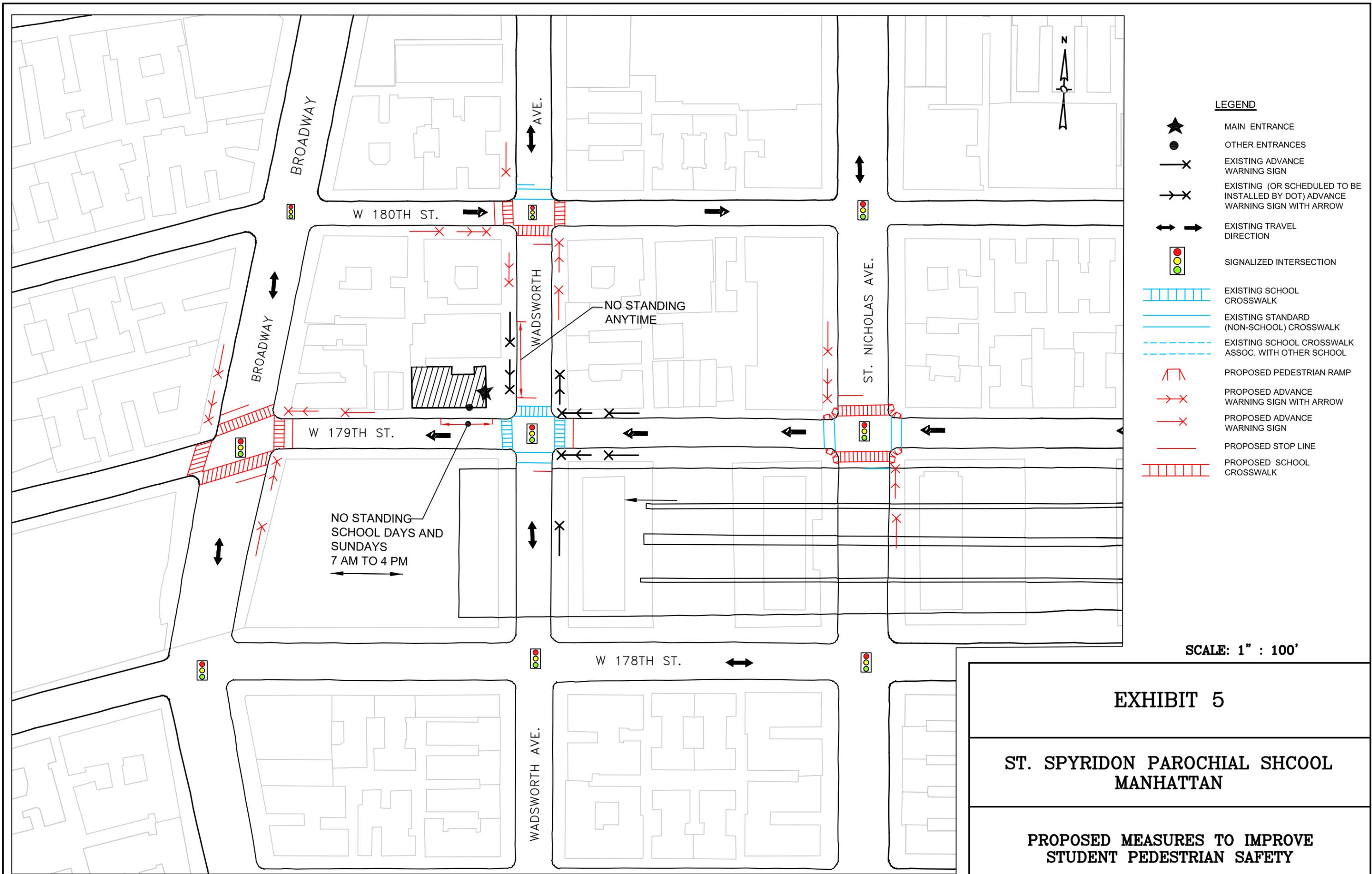


Figure 8 – southeast corner of 179th Street and Wadsworth Avenue

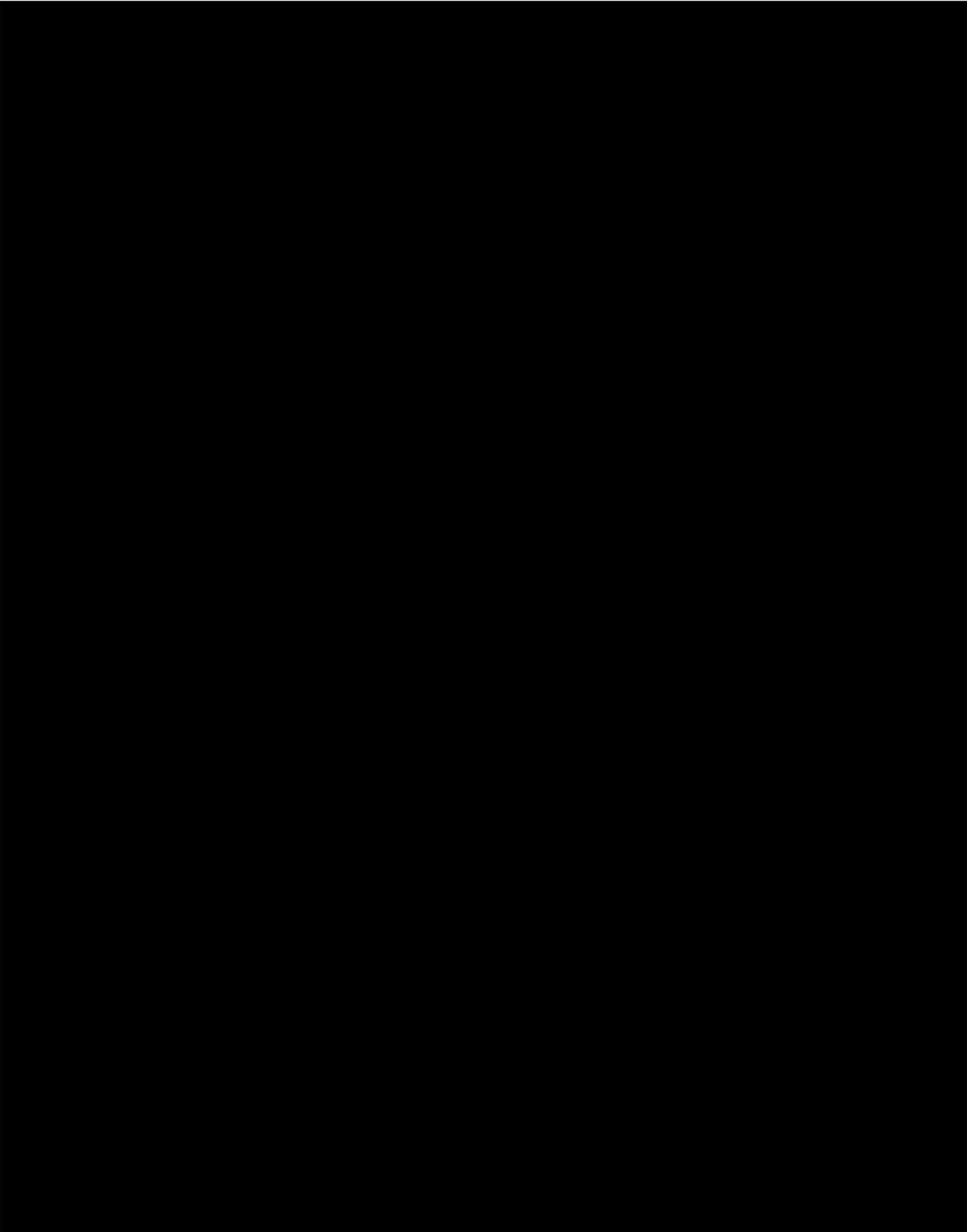
4.2 LONG-TERM MEASURES

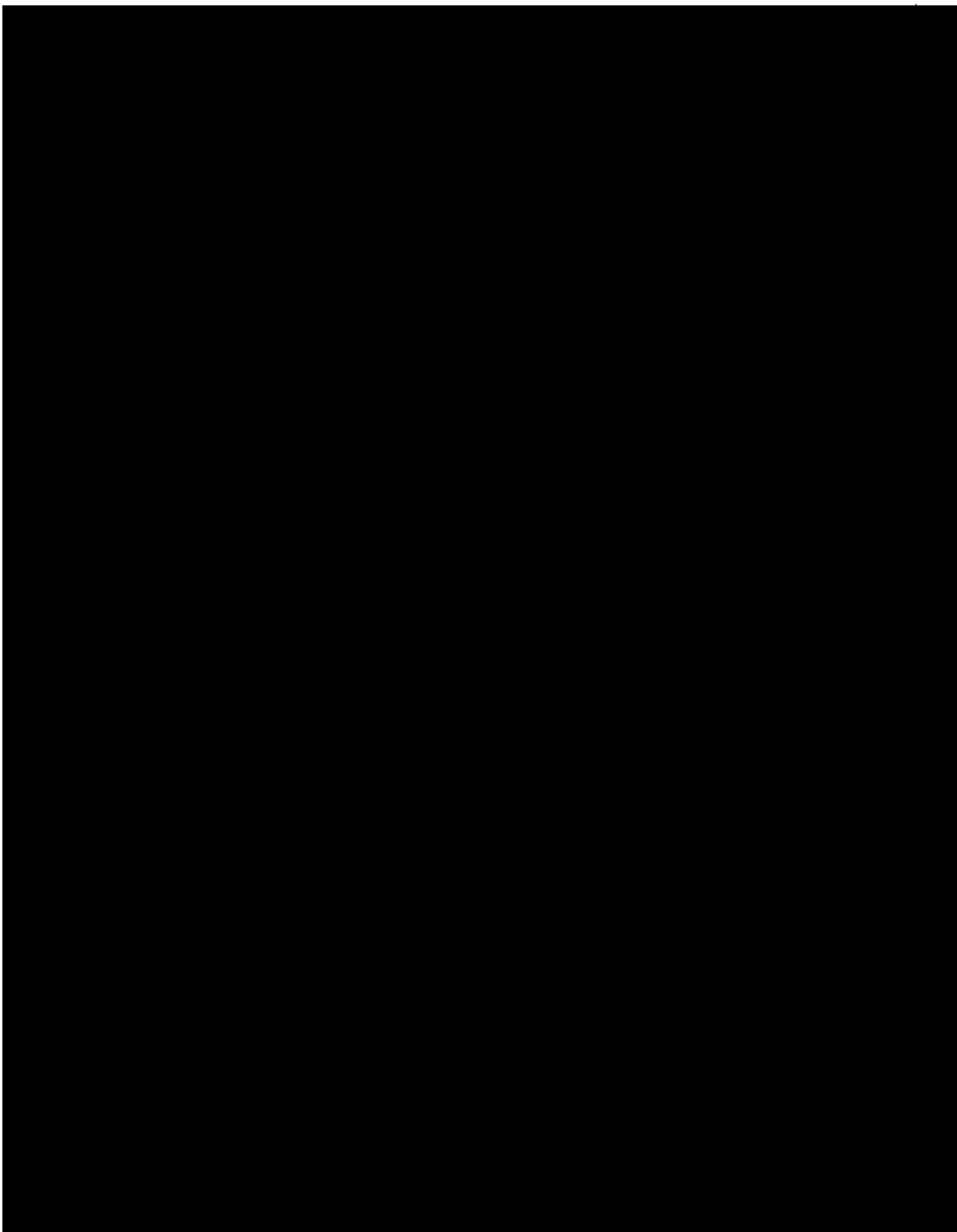
- *Install complex pedestrian ramps at St. Nicholas Avenue and West 179th Street*

Due to existing utility conflicts, the pedestrian ramps at St. Nicholas Avenue and West 179th Street are considered complex. Relocation of utility poles or drainage structures will be required in order to install ramps to NYCDOT standards. Consideration should be given to the installation of pedestrian ramps per NYCDOT standards. (see Exhibit 5)

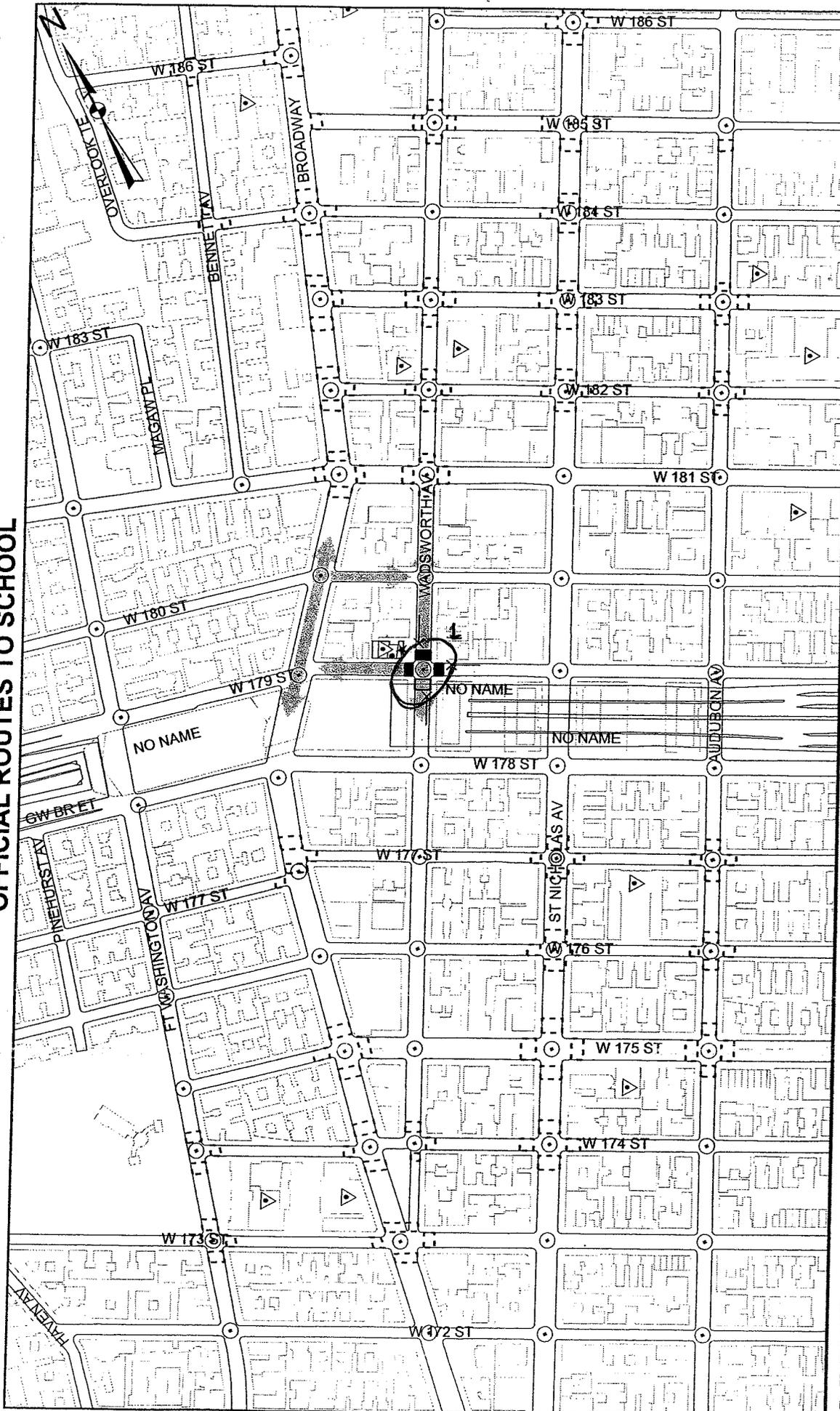


APPENDIX





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

**ST SPYRIDON PAROCHIAL SCHOOL
(O-16)**

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

ORIG. DATE: 10/19/1964
GIS CONVRT: 04/2002
REVISIONS:

COMM. BOARD: 12
BOROUGH: MANHATTAN
PRECINCT: 34

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MS-4071