

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



School Safety Engineering Project

FINAL REPORT: P.S. 306 (The Arts Village Complex), Bronx



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



November 17, 2006

**School Safety Engineering Project
Final Report: P.S. 306, Bronx**

TABLE OF CONTENTS

1. INTRODUCTION 3

 1.1 PROJECT DESCRIPTION 3

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS..... 4

 2.2 NEIGHBORHOOD DESCRIPTION 4

 2.3 MEETING WITH SCHOOL REPRESENTATIVES 4

 2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL 5

 2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS 5

 2.8 CROSSING GUARD LOCATION 5

3. TRAFFIC OPERATIONS 11

 3.1 SCHOOL BUS OPERATIONS 11

 3.2 PARENT DROP-OFF OPERATIONS 11

 3.4 EXISTING SCHOOL SIGNS AND MARKINGS 11

 3.5 ACCIDENT SUMMARY 14

 3.6 TRAFFIC OPERATIONS AND ISSUES..... 17

 3.6.1 *East Tremont Avenue and Walton Avenue* 17

 3.6.2 *Tremont Avenue and Jerome Avenue*..... 17

 3.6.3 *West Tremont Avenue and Davidson Avenue* 20

 3.6.4 *West Tremont Avenue and Grand Avenue* 22

 3.6.5 *West Tremont Avenue and West 177th Street* 24

 3.6.6 *West 177th Street and Davidson Avenue* 24

 3.6.7 *West 177th Street and Jerome Avenue*..... 28

 3.7 SIGNAL TIMING 30

 3.8 PHYSICAL CONDITIONS..... 30

 3.8.1 *Roadways and Sidewalks* 30

3.8.2 *Pedestrian Ramps* 30

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY **32**

4.1 SHORT-TERM MEASURES 32

4.2 LONG-TERM MEASURES..... 34

LIST OF EXHIBITS

EXHIBIT 1 - AERIAL PHOTOGRAPH 7

EXHIBIT 2 - CATCHMENT AREA..... 8

EXHIBIT 3 - SCHOOL TRAFFIC SAFETY MAP..... 9

EXHIBIT 4 - CROSSING GUARD LOCATIONS 10

EXHIBIT 5 - PARKING REGULATIONS..... 13

EXHIBIT 6 - ACCIDENT SUMMARY (1998-2000)..... 16

EXHIBIT 7 - TRAFFIC COUNT AT DAVIDSON AVENUE AND WEST 177TH STREET..... 31

EXHIBIT 8 - POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY35

LIST OF TABLES

TABLE 1: MODES OF TRAVEL 5

TABLE 2: ACCIDENT SUMMARY OF NYS DMV DATA (1998-2000)..... 14

TABLE 3: ACCIDENT SUMMARY OF NYPD DATA (2001-2004)..... 15

TABLE 4: VEHICLE TURNING MOVEMENT VOLUMES 25

TABLE 5: PEDESTRIAN CROSSING VOLUMES 26

TABLE 6: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS..... 30

APPENDIX

SPOT SPEED SURVEY.....A1-A2

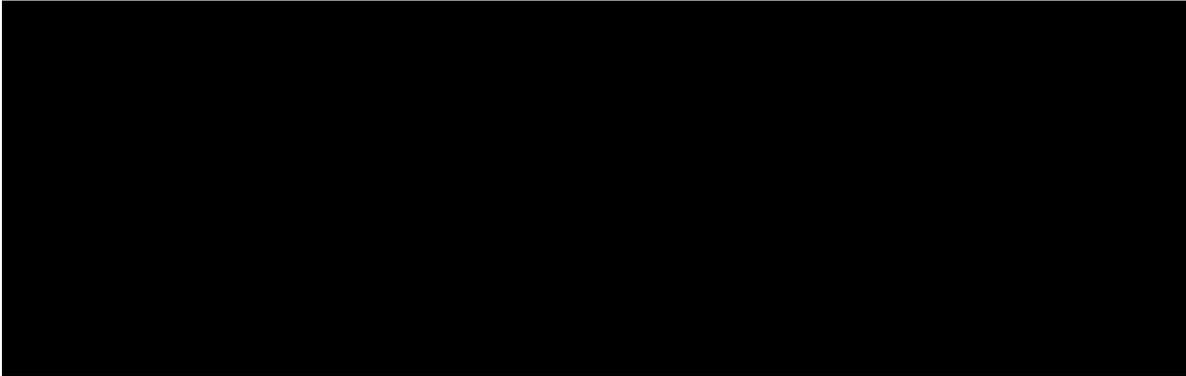
1. INTRODUCTION

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

Under this consultant study, the School Safety Engineering Project, accident data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools, safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). P.S. 306 (The Arts Village Complex) in the Bronx 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 shows an aerial view of the neighborhood surrounding the school. P.S. 306 is bounded by West Tremont Avenue to the north and west, West 177th Street to the south, and Jerome Avenue to the east. The neighborhood surrounding includes a mix of residential and commercial uses.

2.3 MEETING WITH SCHOOL REPRESENTATIVES

Members of the consultant team were unable to arrange a meeting with representatives of P.S. 306 to discuss traffic and pedestrian safety issues at and around the school. In addition, the school did not provide a response to the survey questionnaire distributed by the New York City Department of Transportation (NYCDOT).

Nevertheless, based on a field visit conducted by the consultants, a variety of safety-related issues were identified in the vicinity P.S. 306. The issues observed at and around P.S. 306 included:

- Vehicles speeding on West Tremont Avenue, including turns from Grand Avenue to West Tremont Avenue.
- Vehicles speeding on West 177th Street between West Tremont Avenue and Jerome Avenue, particularly near the schoolyard entrance (students leaving the schoolyard use this entrance).
- An existing “S”-curve on West 177th Street, between West Tremont Avenue and Davidson Avenue, limits the sight distance approaching Davidson Avenue and the schoolyard entrance.
- A lack of traffic control for school children using the school crosswalk across the west leg of the West 177th Street and Davidson Avenue intersection (this issue is compounded by the “S”-curve located to the west on West 177th Street, noted above).

- The elevated subway structure on Jerome Avenue limits sight distance and reduces the visibility of pedestrians using crosswalks along that roadway.



2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

The school’s “catchment area” as defined by the Department of Education is shown in Exhibit 2.

The modes of travel for P.S. 306 are usually obtained during the meeting with school representative’s officials.

Table 1 presents the modes of travel for P.S. 306 students as identified by the NYC Department of Education website.

TABLE 1: MODES OF TRAVEL (SOURCE : DEPARTMENT OF EDUCATION)	STUDENTS (Percentage)
Walk	80%
Driven by car	10%
School bus	3%
MTA Bus / Subway	7%
Bicycle	0%
TOTAL	100%

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

Commercial uses located on both West Tremont Avenue and Jerome Avenue generate additional pedestrian activity and vehicular traffic in the vicinity of P.S. 306.

2.8 CROSSING GUARD LOCATION

As shown in Figures 1 and 2 below, and in Exhibit 4, a crossing guard is assigned to the intersection of West Tremont Avenue and Davidson Avenue on school days.



Figure 1: School crossing guard shown at the intersection of West Tremont Avenue and Davidson Avenue (P.S. 306 is visible in the background).

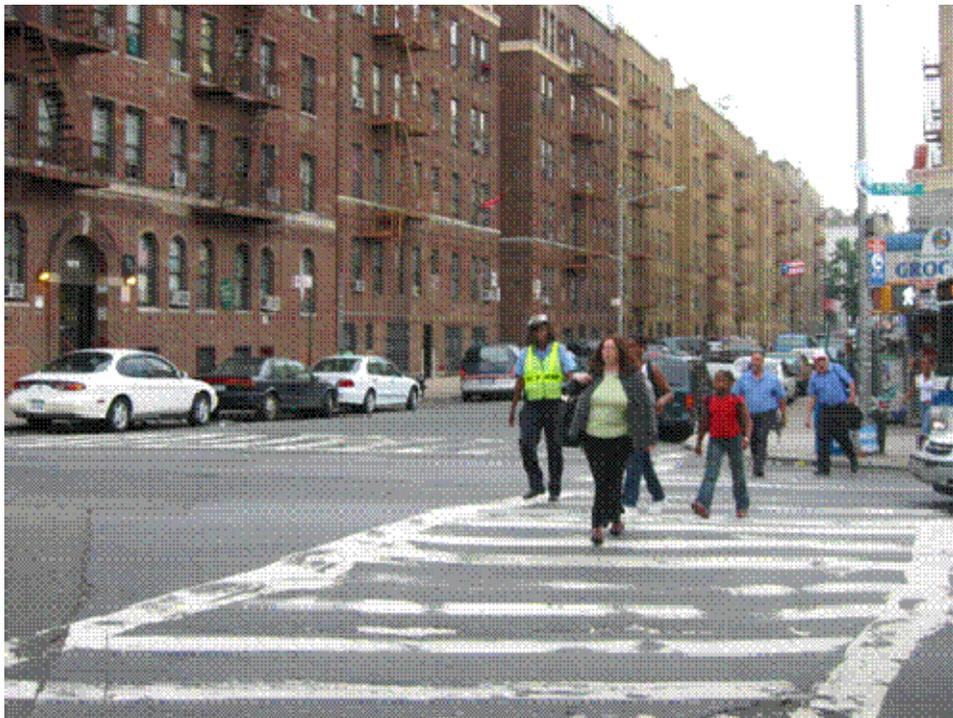


Figure 2: School crossing guard shown facilitating pedestrian crossings at the intersection of West Tremont Avenue and Davidson Avenue.

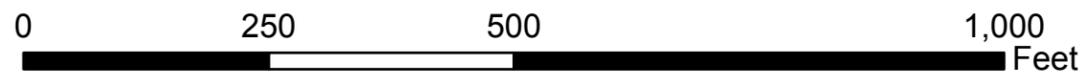


EXHIBIT 1
P.S. 306 BRONX
THE ARTS VILLAGE COMPLEX
AERIAL PHOTOGRAPH



LEGEND:

CATCHMENT AREA, (DEPARTMENT OF EDUCATION DESIGNATED AREA WITHIN WHICH STUDENTS ARE ENTITLED TO ATTEND P.S. 306)



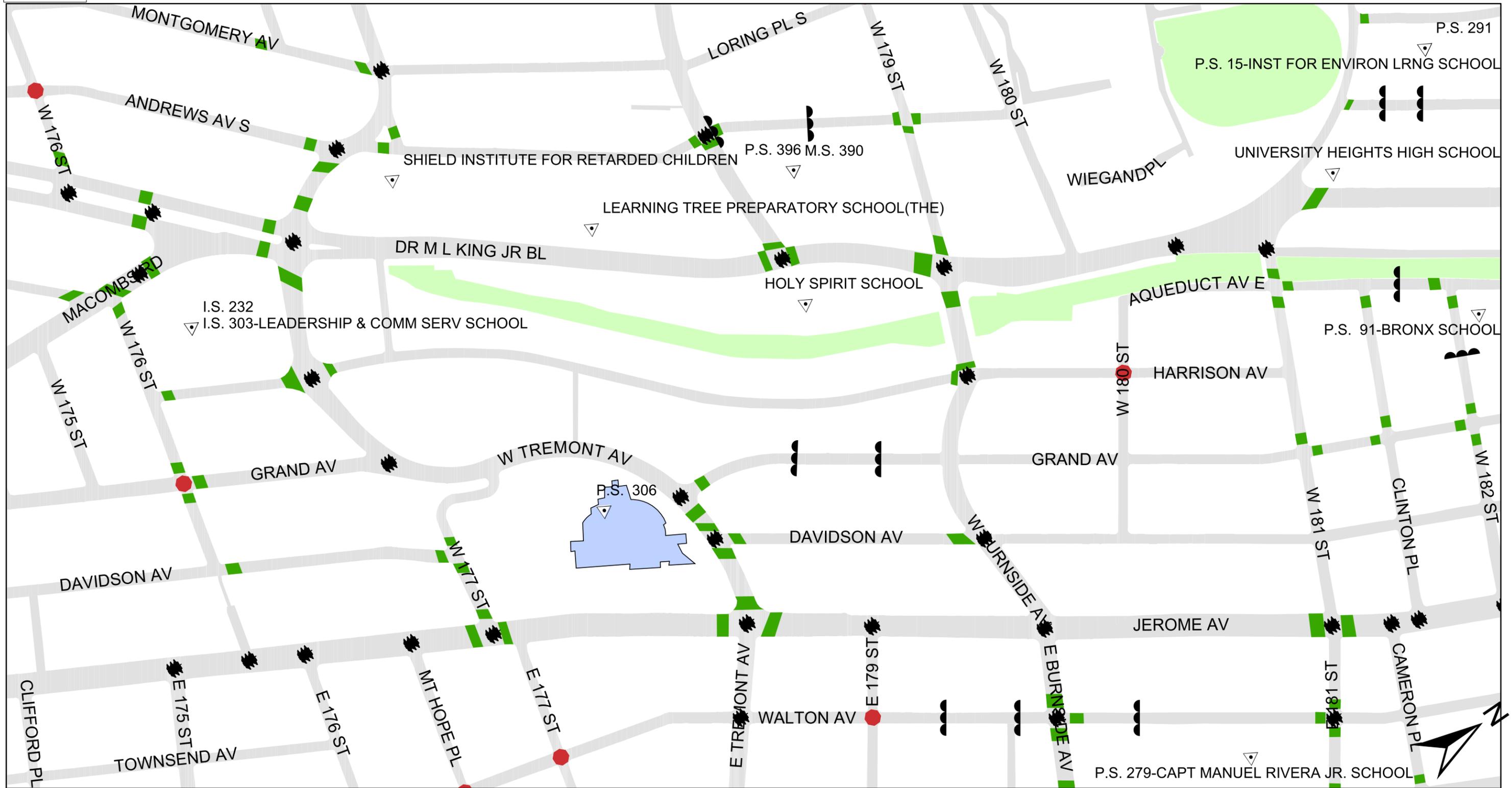
EXHIBIT 2

P.S. 306 BRONX
 THE ARTS VILLAGE COMPLEX
 CATCHMENT AREA





School Traffic Safety Map



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

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

LEGEND:

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

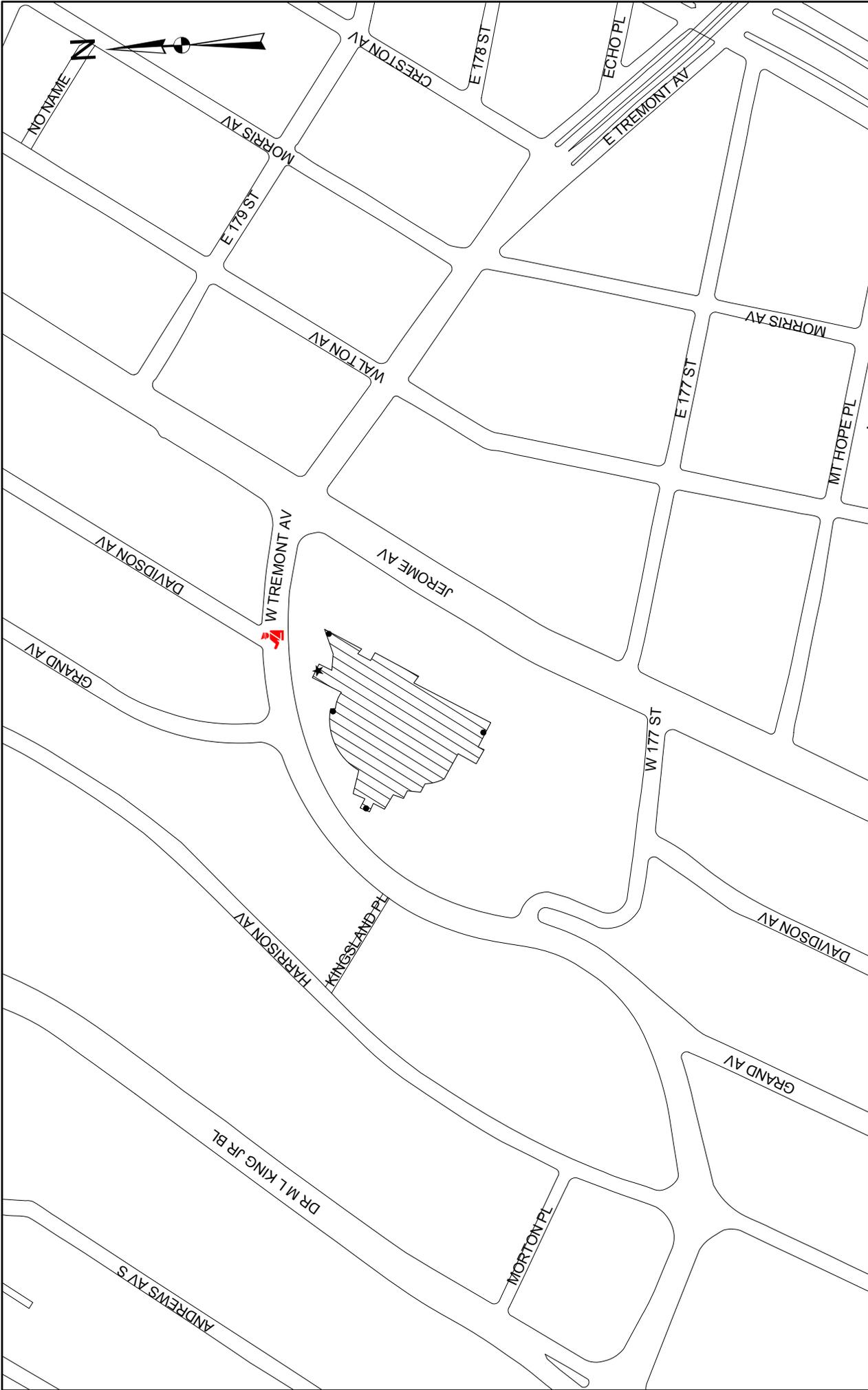
PS 306 Bronx

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

Map created on 11/16/2006

EXHIBIT 3

COMM. BOARD: 205
 PRECINCT: 46



LEGEND:

CROSSING GUARD LOCATION

EXHIBIT 4

P.S. 306 BRONX

THR ARTS VILLAGE COMPLEX



CROSSING GUARD LOCATION

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

Information regarding school bus operations obtained from NYC Department of Education website indicates that P.S. 306 provides door-to-door transportation for 44 special education students through seven bus routes. The school also issues 28 half-fare Metro Cards and 75 full-fare Metro Cards.

During the site visit, yellow school buses (both regular buses and mini-wagons) were observed parked on West Tremont Avenue near the intersections with Davidson Avenue and Kingsland Place (see Figures 3 and 4).

3.2 PARENT DROP-OFF OPERATIONS

Information concerning parent drop off operations are not available (typically, this information is obtained during the meeting with school representatives).

3.3 PARKING REGULATIONS

Parking regulations around the school block are shown in Exhibit 5.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

Exhibit 3 shows the existing signals and pavement markings in the vicinity of P.S. 306. It should be noted that a citywide signage program is currently underway to upgrade school signage to current Federal Manual on Uniform Traffic Control Devices (MUTCD) standards of fluorescent yellow-green signs accompanied by downward pointing arrows. Signs scheduled to be installed under this program are shown as “existing” in Exhibit 8.



Figure 3: Yellow school bus parked on the south side of West Tremont Avenue near the intersection with Davidson Avenue.



Figure 4: School buses parked along West Tremont Avenue near the intersection with Kingsland Place.

3.5 ACCIDENT SUMMARY

Exhibit 6 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of P.S. 306 for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of the accident. Table 3 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the DMV data.

This report targets intersections closest to the school where the highest 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.

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
East Tremont Avenue and Walton Avenue	25	8	0	1
Tremont Avenue and Jerome Avenue	65	2	0	1
West Tremont Avenue and Davidson Avenue	18	3	0	0
West Tremont Avenue and Grand Avenue (north leg)	11	1	0	0
West Tremont Avenue and West 177 th Street	7	0	0	0
West 177 th Street and Davidson Avenue	0	0	0	0
West 177 th Street and Jerome Avenue	9	0	0	0
TOTAL	135	14	0	2

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

TABLE 3: ACCIDENT SUMMARY OF NYPD DATA (2001-2004)				
INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
East Tremont Avenue and Walton Avenue	41	3	0	0
Tremont Avenue and Jerome Avenue	107	7	0	1
West Tremont Avenue and Davidson Avenue	22	4	0	1
West Tremont Avenue and Grand Avenue (north leg)	0	0	0	0
West Tremont Avenue and West 177 th Street	15	1	0	0
West 177 th Street and Davidson Avenue	0	0	0	0
West 177 th Street and Jerome Avenue	17	0	0	0
TOTAL	202	14	0	2

* School-related accidents are defined as accidents involving school-age pedestrians (age 4 to 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 P.S. 306.

3.6.1 East Tremont Avenue and Walton Avenue

This is a four-leg signalized intersection with pedestrian crosswalks located across all four legs. East Tremont Avenue is a two-way east-west street with one travel lane and one on-street parking lane on each side of the roadway. Walton Avenue is a one-way southbound roadway with one travel lane and on-street parking permitted on both sides of the roadway.

There was a total of 25 accidents reported at this intersection between 1998 and 2000 (Table 1), including eight pedestrian accidents, one of which was school-related. The school-related accident occurred at approximately 5:00 pm on June 9, 1999 when a 12-year-old pedestrian sustained a "possible injury" when crossing against the signal at the intersection. The roadway surface and weather conditions were reported as dry and clear, respectively, and the accident occurred during daylight conditions. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.

3.6.2 Tremont Avenue and Jerome Avenue

This is a four-leg signalized intersection with school crosswalks located across the north and south legs, and pedestrian crosswalks located across the east and west legs. Tremont Avenue is a two-way east-west street with one travel lane and one on-street parking lane on each side of the roadway (see Figures 5 and 6). Jerome Avenue is a two-way north-south street with two travel lanes and one on-street parking lane on each side of the roadway. Jerome Avenue also has an elevated subway structure aligned over the center of the roadway. The supports for the subway structure are located so that they provide an inner and an outer lane in each direction of travel (see Figures 7 and 8).

There was a total of 65 accidents reported at this intersection between 1998 and 2000 (Table 1), including two pedestrian accidents, one of which was school-related. The school-related accident occurred at approximately 8:00 am on September 7, 2000 when two seven-year-old pedestrians were struck while crossing against the traffic signal at the intersection. One pedestrian sustained an incapacitating injury, and the other pedestrian was reported as having a "possible injury." The roadway and weather conditions were reported as dry and clear, respectively, and the accident occurred during daylight conditions. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.

At the time of this writing, the consultant team was unable to conduct spot speed surveys on West Tremont Avenue, due to on-going construction activities associated with a new building on the north (west) side of West Tremont Avenue, opposite P.S. 306. These activities include construction traffic control and lane restrictions along West Tremont Avenue that result in reduced vehicle speeds on this roadway relative to normal, non-construction conditions. Consequently, spot speed surveys conducted at this time would not be representative of typical conditions. It is recommended that NYCDOT monitor this particular location over time, and conduct spot speed surveys on West Tremont Avenue once construction activities in the vicinity of P.S. 306 have ended.



Figure 5: Looking west on Tremont Avenue at the signalized intersection with Jerome Avenue.



Figure 6: Looking east on Tremont Avenue at the signalized intersection with Jerome Avenue.



Figure 7: Looking north on Jerome Avenue at the signalized intersection with Tremont Avenue.



Figure 8: Looking south on Jerome Avenue at the signalized intersection with Tremont Avenue.

3.6.3 West Tremont Avenue and Davidson Avenue

This is a signalized “T”-intersection with school crosswalks located across all three legs. West Tremont Avenue is a two-way east-west street with one travel lane and one on-street parking lane on each side of the roadway (see Figures 9 and 10). Davidson Avenue is a one-way northbound street with on-street parking permitted on both sides of the roadway (see Figure 11).

There was a total of 18 accidents reported at this intersection between 1998 and 2000 (Table 1), including three pedestrian accidents, none of which were school-related. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.



Figure 9: Looking east on West Tremont Avenue at the signalized intersection with Davidson Avenue.



Figure 10: Looking west on West Tremont Avenue at the signalized intersection with Davidson Avenue.



Figure 11: Looking north on Davidson Avenue at the signalized intersection with West Tremont Avenue.

3.6.4 West Tremont Avenue and Grand Avenue (north leg)

This is a signalized “T”-intersection with school crosswalks located across north and east legs, and a pedestrian crosswalk located across the west leg. West Tremont Avenue is a two-way east-west street with one travel lane and one on-street parking lane on each side of the roadway (see Figures 12 and 13). The north leg of Grand Avenue is a one-way southbound street with on-street parking permitted on both sides of the roadway (see Figure 14). It should be noted that the south leg of Grand Avenue continues south of West Tremont Avenue at a separate signalized intersection located to the southwest of this intersection.

There was a total of 11 accidents reported at this intersection between 1998 and 2000 (Table 1), including one pedestrian accident that was not school-related. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.



Figure 12: Looking east on West Tremont Avenue at the signalized intersection with Grand Avenue (north leg).



Figure 13: Looking west on West Tremont Avenue at the signalized intersection with Grand Avenue (north leg).



Figure 14: Looking north on Grand Avenue at the signalized intersection with West Tremont Avenue.

3.6.5 West Tremont Avenue and West 177th Street

This is an unsignalized “T”-intersection with no crosswalks. At the intersection with West 177th Street, West Tremont Avenue is a two-way north-south street with one travel lane and one on-street parking lane on each side of the roadway. At the intersection with West Tremont Avenue, West 177th Street is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway.

There was a total of seven accidents reported at this intersection between 1998 and 2000 (Table 1), but none of these were pedestrian accidents.

3.6.6 West 177th Street and Davidson Avenue

This is an unsignalized “T”-intersection with school crosswalks located across the south and west legs. At the intersection with Davidson Avenue, West 177th Street is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway (see Figures 15 and 16). Davidson Avenue is a one-way northbound street with on-street parking permitted on both sides of the roadway (see Figure 17). A gated entrance to P.S. 306 is located opposite Davidson Avenue at the intersection with West 177th Street (see Figure 18).

There were no accidents reported at this intersection between 1998 and 2000 (Table 1).

A field visit by members of the consultant team indicated a possible speeding problem in this location as well. Therefore, a spot speed survey was conducted on West 177th Street between West Tremont Avenue and Davidson Avenue in order to verify the existence of a speeding problem and to determine its extent.

In the analysis of vehicle speeds, the 85th percentile speed is considered to be the representative speed for a specified street segment. By definition, this is the speed at which 85 percent of the surveyed vehicles are traveling below and 15 percent of the surveyed vehicles are traveling above. An 85th percentile speed exceeding a 30 mph threshold indicates a potential speeding problem that may require appropriate traffic calming measures.

The results of the spot speed survey indicated that eastbound vehicles on West 177th Street between West Tremont Avenue and Davidson Avenue were traveling at an 85th percentile speed of 23 mph. Because this is lower than the 30 mph threshold, no speed reduction measures are recommended on West 177th Street as part of this study. The detailed results of the spot speed survey are shown in the Appendix at the end of this document.

To assess vehicle and pedestrian volumes on West 177th Street in the vicinity of P.S. 306, vehicular turning movement and pedestrian crossing counts were conducted at the intersection of West 177th Street and Davidson Avenue from 7:30 to 9:00 am on Wednesday, June 15, 2005. The results of these counts during the weekday morning peak hour (7:45 to 8:45 am) are shown in Tables 4 and 5, and in Exhibit 7 at the end of this section.

As shown in Table 5, the pedestrian crossing count indicated that there were 163 pedestrians (including 48 adults and 115 students) utilizing the school crosswalk located across the west leg of West 177th Street, and 143 pedestrians (including 36 adults and 107 students) utilizing the pedestrian crosswalk located across the east leg of West 177th Street. This is a total of 306 pedestrians crossing West 177th Street at the intersection with Davidson Avenue (84 adults and 222 students) during the weekday morning peak hour (7:45 to 8:45 am).

TABLE 4: VEHICLE TURNING MOVEMENT VOLUMES (7:45-8:45 AM)				
INTERSECTION	West 177th Street EASTBOUND		Davidson Avenue NORTHBOUND	
	Left	Straight	Straight	Right
West 177 th Street and Davidson Avenue	3	128	0	58
TOTAL	131		58	

TABLE 5: PEDESTRIAN CROSSING VOLUMES (7:45-8:45 AM)			
INTERSECTION	Crossing West 177th Street WEST-LEG CROSSWALK	Crossing West 177th Street EAST-LEG CROSSWALK	Crossing Davidson Avenue SOUTH-LEG CROSSWALK
West 177 th Street and Davidson Avenue	163 (48 / 115) *	143 (36 / 107) *	55 (33 / 22) *

** Numbers in parenthesis indicate (adults / students).*



Figure 15: Looking east on West 177th Street at the unsignalized intersection with Davidson Avenue.



Figure 16: Looking west on West 177th Street at the unsignalized intersection with Davidson Avenue.



Figure 17: Looking south to Davidson Avenue at the unsignalized intersection with West 177th Street.



Figure 18: Looking north from the intersection of West 177th Street and Davidson Avenue at the gated entrance to the P.S. 306 school yard and staff parking area (P.S. 306 is visible in the background).

3.6.7 West 177th Street and Jerome Avenue

This is a signalized “T”-intersection with school crosswalks located across the north, south and west legs. West 177th Street is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway (see Figure 19). Jerome Avenue is two-way north-south street with two travel lanes and one on-street parking lane on each side of the roadway (see Figure 20). Jerome Avenue also has an elevated subway structure aligned over the center of the roadway. The supports for the subway structure are located so that they provide an inner and an outer lane in each direction of travel.

There was a total of nine accidents reported at this intersection between 1998 and 2000 (Table 1), but none of these accidents involved pedestrians.



Figure 19: Looking west to West 177th Street at the signalized intersection with Jerome Avenue.



Figure 20: Looking north on Jerome Avenue at the signalized intersection with West 177th Street.

3.7 SIGNAL TIMING

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of P.S. 306, and were found to be adequate based upon a child pedestrian walking at the rate of three feet per second. A comparison of existing pedestrian crossing times and required pedestrian crossing times is shown in Table 6.

TABLE 6: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS				
INTERSECTION	CROSSWALK LENGTH (FEET)	PEDESTRIAN TIME ACTUAL (SECONDS)	PEDESTRIAN TIME REQUIRED (SECONDS)	TIMING ADJUSTMENT REQUIRED?
West Tremont Avenue and Jerome Avenue				
crossing West Tremont Avenue	63	58	24	No
crossing Jerome Avenue	77	58	29	No
West Tremont Avenue and Davidson Avenue				
crossing West Tremont Avenue	58	32	23	No
crossing Davidson Avenue	40	81	17	No
West Tremont Avenue and Grand Avenue (north leg)				
crossing West Tremont Avenue	50	41	20	No
crossing Grand Avenue (north leg)	57	71	22	No
Jerome Avenue and West 177th Street				
crossing Jerome Avenue	78	31	29	No
crossing East 177 th Street	34	53	15	No
crossing West 177 th Street	38	53	16	No
<i>Note – A child pedestrian walking rate of 3 feet/second, plus 3 seconds reaction time, was utilized to calculate the required pedestrian crossing times.</i>				

3.8 PHYSICAL CONDITIONS

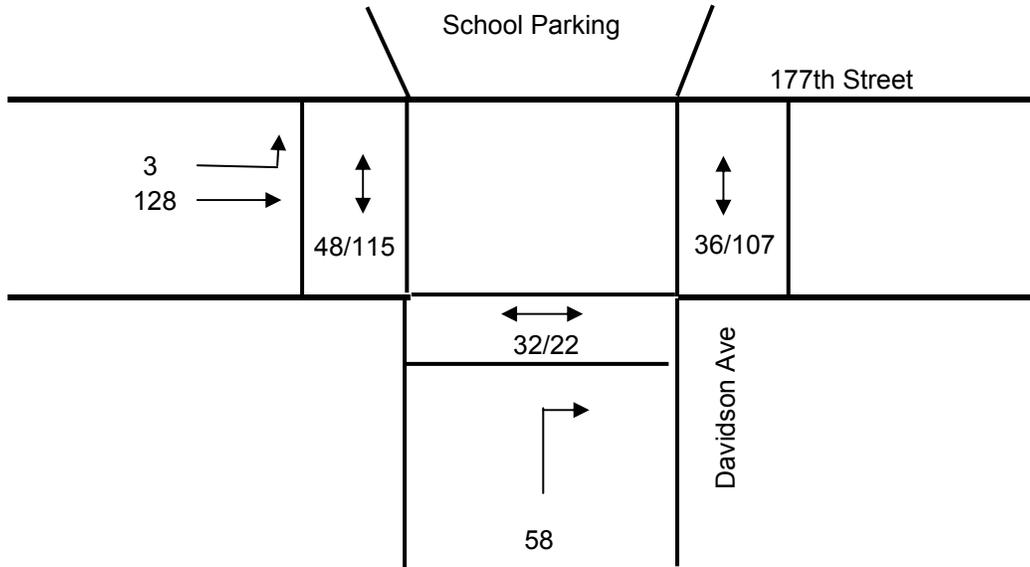
3.8.1 Roadways and Sidewalks

The roadways and sidewalks in the vicinity of P.S. 306 were observed to be in fair condition. Sidewalks on the school’s block faces are in fair condition and are approximately 12 to 15 feet wide.

3.8.2 Pedestrian Ramps

Pedestrian ramps in the vicinity of the school were observed to be standard.

One Hour Traffic Volumes
Friday, September 16th, 2005 7:45am - 8:45am



Intersection of Davidson Avenue and 177th Street

Table of Content:	
XX / XX	Adult / Child
	Pedestrian Counts
	Vehicle Movement

EXHIBIT 7
P.S. 306
ALBERT EINSTEIN SCHOOL
TRAFFIC AND PEDESTRIAN COUNTS

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

This section describes proposed measures to improve school pedestrian safety around P.S. 306. 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 the P.S. 306 is discussed as follows, and is shown in more detail in Exhibit 8 at the end of this section.

4.1 SHORT-TERM MEASURES

➤ Install “NO STANDING 7AM - 4PM SCHOOL DAYS” signs

Signs reading “NO STANDING 7AM - 4PM SCHOOL DAYS” should be installed for a distance of 30 feet in front of main entrance to the school to allow the seven school buses adequate parking area. (This is a typical requirement for all NYC schools in order to provide for emergency access to and from the school.) Signs indicating “NO STANDING 7AM-4PM SCHOOL DAYS EXCEPT FOR SCHOOL BUSES” should be installed along the remaining length of this block face for a distance of 200 feet to accommodate the school’s seven yellow buses.

➤ Install graphic “YIELD TO PEDESTRIAN” signs

Install “YIELD TO PEDESTRIAN” signs at an intersection with substantial vehicle–student pedestrian volumes. “YIELD TO PEDESTRIAN” signs are recommended on the following approaches around P.S. 306:

- Northbound and Southbound approaches of West Tremont Avenue and West 177th Street

The sign is suggested to improve visibility and safety of student-pedestrians.

➤ Place ten foot stop bars in advance of school crosswalks

The MUTCD and New York City DOT standard for placement of a stop bar is four feet in advance of a marked crosswalk. At signalized (or stop-controlled) crosswalks, the vehicle stop line can be placed farther back from the crosswalk in order to maximize visibility of pedestrians and to minimize the potential for pedestrian/vehicle conflicts. Therefore, it is recommended that stop bars be placed ten feet in advance of all school crosswalks.

➤ Administer student pedestrian safety education program

According to the field visit, students were observed crossing West Tremont Avenue at uncontrolled locations in the vicinity of P.S. 306. Therefore, the following action is recommended:

- The school should participate in the NYCDOT Safety Education Program to educate students to use designated school crosswalks while crossing the street,

not to cross mid-block, not to cross against signals, and not to run out between cars.”

➤ Crossing guard at West 177th Street and Davidson Avenue

A designated school crosswalk is located on the west leg of this intersection. However, there is no positive traffic control for vehicles traveling eastbound on West 177th Street. In addition, West 177th Street has an “S”-shaped horizontal alignment with poor sight distance and a downgrade on the eastbound approach to Davidson Avenue. Because the entrance to the schoolyard is located opposite Davidson Avenue at this intersection, there were a significant number of students who use the westerly crosswalk (see Table 4 and Exhibit 7).

It is therefore recommended to:

- Request that NYPD assign a school crossing guard at the intersection of West 177th Street and Davidson Avenue.

➤ Convert pedestrian crosswalks to school crosswalks

The existing pedestrian crosswalk across the west leg of the Tremont Avenue and Jerome Avenue intersection should be converted to a school crosswalk. This crosswalk is adjacent to the school block, is located in close proximity to the main entrance to P.S. 306, and provides a key pedestrian crossing of West Tremont Avenue which is a relatively high-volume roadway.

In addition, the existing pedestrian crosswalk across the west leg of the West Tremont Avenue and Grand Avenue (north leg) intersection should be converted to a school crosswalk. This crosswalk is adjacent to the school block, is located in close proximity to the westerly entrance to P.S. 306, and provides a key pedestrian crossing of West Tremont Avenue which is a relatively high-volume roadway.

➤ Provide school crosswalk at the intersection of West 177th Street and West Tremont Avenue

This is an unsignalized “T”-intersection with no crosswalks in the vicinity of the school.

It is therefore recommended to:

- Provide a school crosswalk at east leg of the intersection, on West 177th Street.

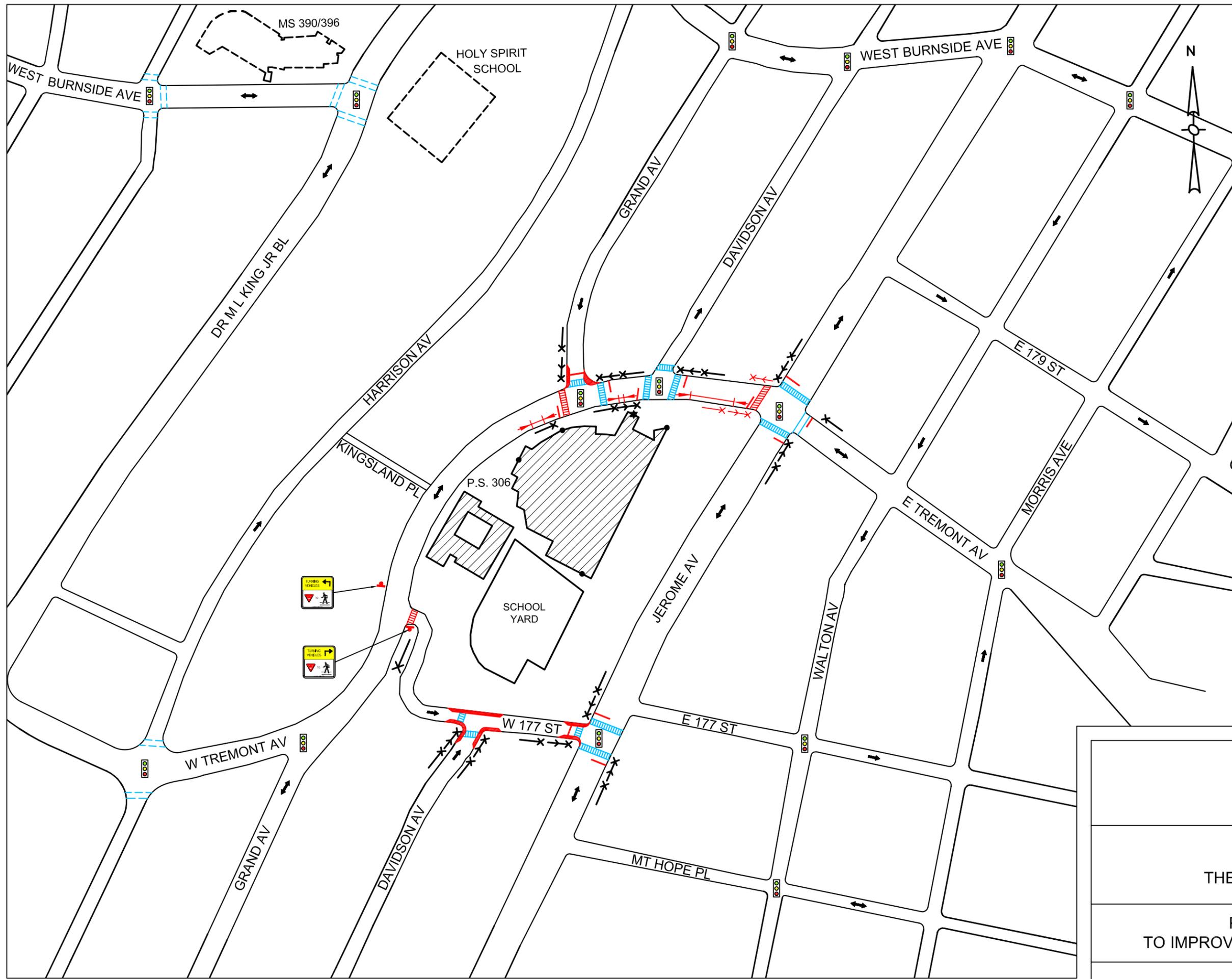
4.2 LONG-TERM MEASURES

➤ Consider installing curb extensions (neckdowns)

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

- Northeast and northwest corners of the West Tremont Avenue and Grand Avenue (north leg) intersection.
- North side of West 177th Street at the intersection with Davidson Avenue. Also, on the southeast and southwest corners of the West 177th Street and Davidson Avenue intersection.
- Northwest and southwest corners of the West 177th Street and Jerome Avenue intersection.

The purpose of the curb extensions is to shorten the crossing distance for pedestrians, and to reduce speeds of vehicles approaching and turning at these heavily utilized school crosswalks. These curb extensions would not eliminate or reduce the width of any moving lanes.



LEGEND

-  MAIN ENTRANCE
-  OTHER ENTRANCES
-  EXISTING ADVANCE WARNING SIGN OR SCHEDULED TO BE INSTALLED
-  EXISTING SCHOOL CROSSWALK WARNING ASSEMBLY OR SCHEDULED TO BE INSTALLED
-  EXISTING TRAVEL DIRECTION
-  EXISTING SIGNALIZED LOCATION
-  EXISTING SCHOOL CROSSWALK
-  EXISTING PEDESTRIAN CROSSWALK
-  EXISTING SCHOOL CROSSWALK ASSOCIATED WITH ANOTHER SCHOOL
-  PROPOSED SCHOOL CROSSWALK
-  PROPOSED TRAFFIC SIGN
-  PROPOSED ADVANCE WARNING SIGN
-  PROPOSED SCHOOL CROSSWALK WARNING ASSEMBLY
-  PROPOSED "NO STANDING 7:00AM - 4:00PM SCHOOL DAYS"
-  PROPOSED CURB EXTENSION (NECKDOWN)

1" = 200'

EXHIBIT 8

P.S. 306 BRONX
THE ARTS VILLAGE COMPLEX

POTENTIAL MEASURES
TO IMPROVE STUDENT PEDESTRIAN SAFETY

APPENDIX

SPOT SPEED STUDY

Date: **September 16th, 2005**
 Location: **177th Street and Davidaon Ave**
 Surveyor: **Richard Calvache**

Time: **11:45AM - 12:45PM**

School: **P.S. 306**
 Direction: **EB**
 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	3	7.9%	7.9%	36	432
13	0	0.0%	7.9%	0	0
14	1	2.6%	10.5%	14	196
15	8	21.1%	31.6%	120	1800
16	3	7.9%	39.5%	48	768
17	1	2.6%	42.1%	17	289
18	1	2.6%	44.7%	18	324
19	3	7.9%	52.6%	57	1083
20	4	10.5%	63.2%	80	1600
21	8	21.1%	84.2%	168	3528
22	3	7.9%	92.1%	66	1452
23	0	0.0%	92.1%	0	0
24	2	5.3%	97.4%	48	1152
25	0	0.0%	97.4%	0	0
26	0	0.0%	97.4%	0	0
27	0	0.0%	97.4%	0	0
28	0	0.0%	97.4%	0	0
29	0	0.0%	97.4%	0	0
30	1	2.6%	100.0%	30	900
31	0	0.0%	100.0%	0	0
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
	38	100.0%		702	13524

Mean Speed = 18.5 mph
 Standard Deviation = 3.9 mph
 Margin of Error (95% Confidence) = ± 1.2 mph

Median Speed = 18.5 mph
 15th Percentile Speed = 14.5 mph
 85th Percentile Speed = 22.5 mph

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