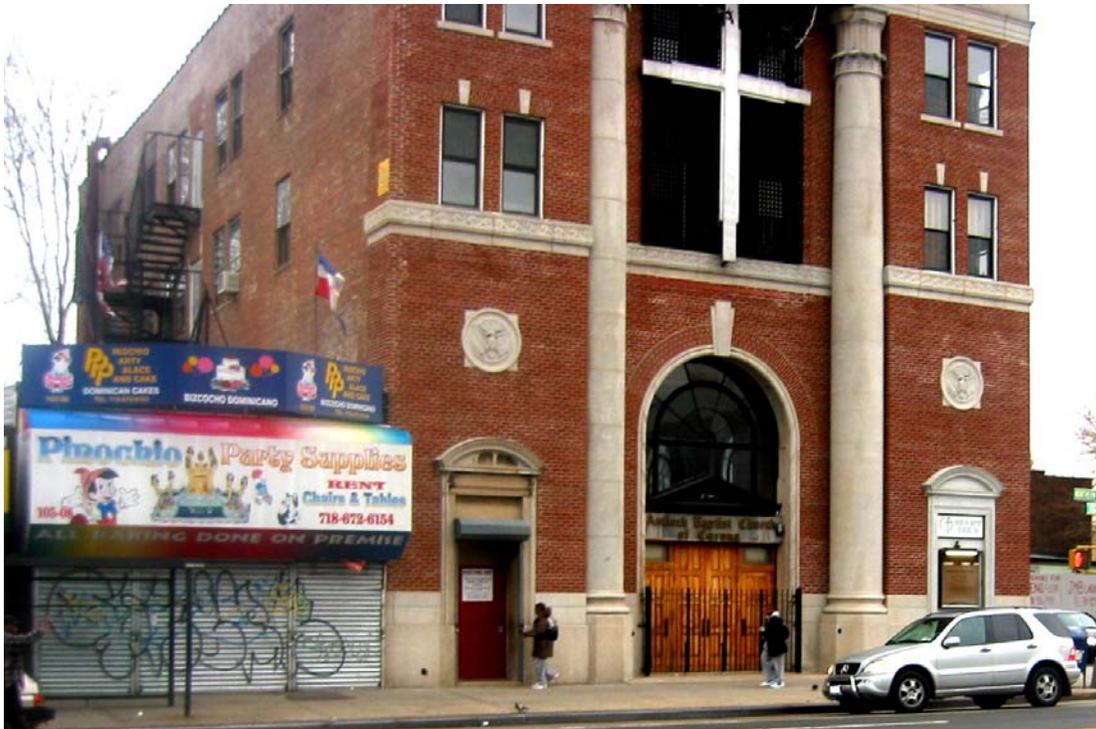


**New York City Department of Transportation
Office of School Safety Engineering**



School Safety Engineering Project

FINAL REPORT: Learning Tree Multi-Cultural School, Queens



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



May 4, 2006

**School Safety Engineering Project
Final Report: Learning Tree Multi-Cultural School, 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). The Learning Tree Multi-Cultural 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



Figure 1: Looking west on Northern Boulevard (school building is on the left)

2.2 NEIGHBORHOOD DESCRIPTION

Exhibit 1, at the end of this section, shows an aerial view of the neighborhood surrounding the school. The Learning Tree Multi-Cultural School is bounded by Northern Boulevard on the north, 34th Avenue to the south, 104th Street to the east, and 103rd Street on the west. The area surrounding the school is generally residential in character, consisting primarily of one and two family houses. Commercial activity is found along Northern Boulevard, a major east-west arterial, which fronts on the north side of the school.

2.3 MEETING WITH SCHOOL REPRESENTATIVES

Consultant staff and the Principal and Dean of the Learning Tree Multi-Cultural School met at the school on the morning of Wednesday, June 16, 2004. The school representatives identified the following issues and concerns facing student pedestrians and staff:

- Traffic congestion on Northern Boulevard by the school is a problem especially during the PM peak period.
- Traffic on Northern Boulevard and 34th Avenue is exceptionally heavy whenever there is an event at Shea Stadium.
- There are no designated school crosswalks or advance school warning signs on Northern Boulevard in front of the school (see Figure 2).
- Bus stops are on the south side of Northern Boulevard on the far side of 103rd Street and on the east side of 103rd Street on near side of Northern Boulevard. Both bus stops are located near the front and side entrances of the school, respectively (see Figures 5 and 6 in Section 3.2).

(See Appendix for a summary of school concerns.)

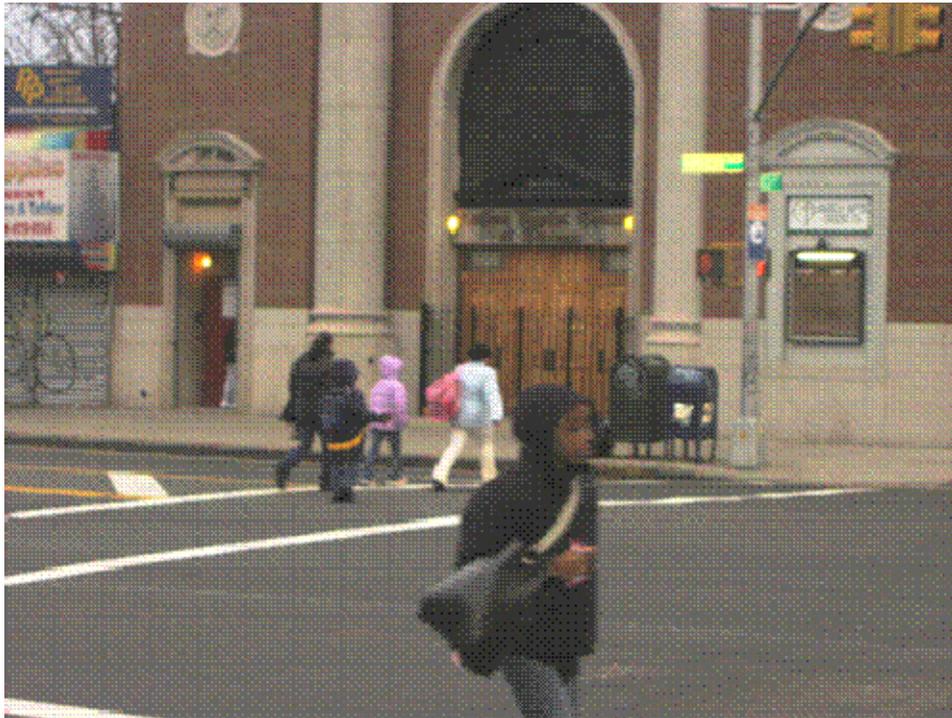


Figure 2: Pedestrian crosswalk on east leg of Northern Boulevard at 103rd Street (school is in background)

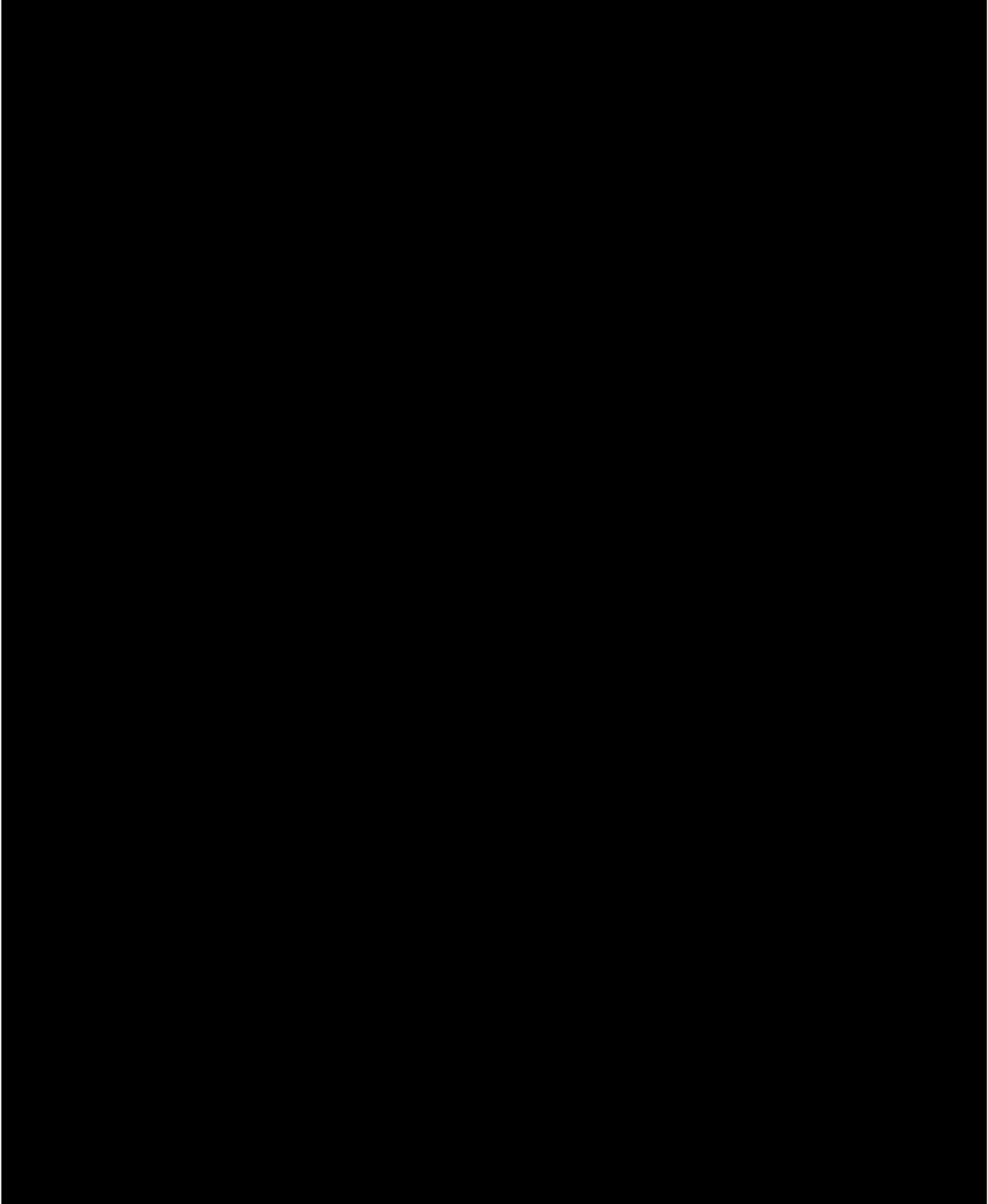




Figure 4: Side entrance on 103rd Street (west side of building)

2.6 PRIMARY MODE OF TRANSPORT TO AND FROM SCHOOL

The school’s catchment area is typically defined by the Department of Education and normally shown in an Exhibit at the end of this section. Since Learning Tree Multi-Cultural School is a private parochial school, the actual “catchment area” is dependent upon other factors, determined by the school administrators.

Table 1 presents the estimated mode of travel for the Learning Tree Multi-Cultural School as identified by school representatives.

TABLE 1: MODE OF TRAVEL	STUDENTS (Percentage)
Walk	50%
Driven by Car	50%
School Bus	0%
MTA Bus	0%
MTA Subway	0%
Bicycle	0%
TOTAL	100%

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

Northern Boulevard is a major commercial corridor, which generates both pedestrian and vehicular traffic around the school. Nearby public and private schools in the area include: P.S. 92 (Harry T. Stewart School) at 99-01 34th Avenue; Mount Olivet Christian School at 33-27 97th Street; Our Lady of Sorrows School at 35-34 105th Street; and Sister Clara Muhammed School at 105-01 Northern Boulevard (refer to Exhibit 2 for school locations).

2.8 CROSSING GUARD LOCATIONS

According to school representatives, school crossing guards are not assigned to the school or at posts in the vicinity of the school.

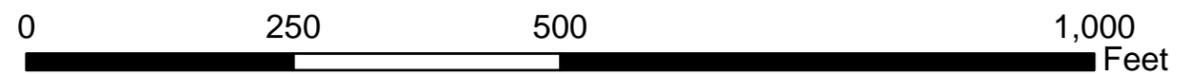
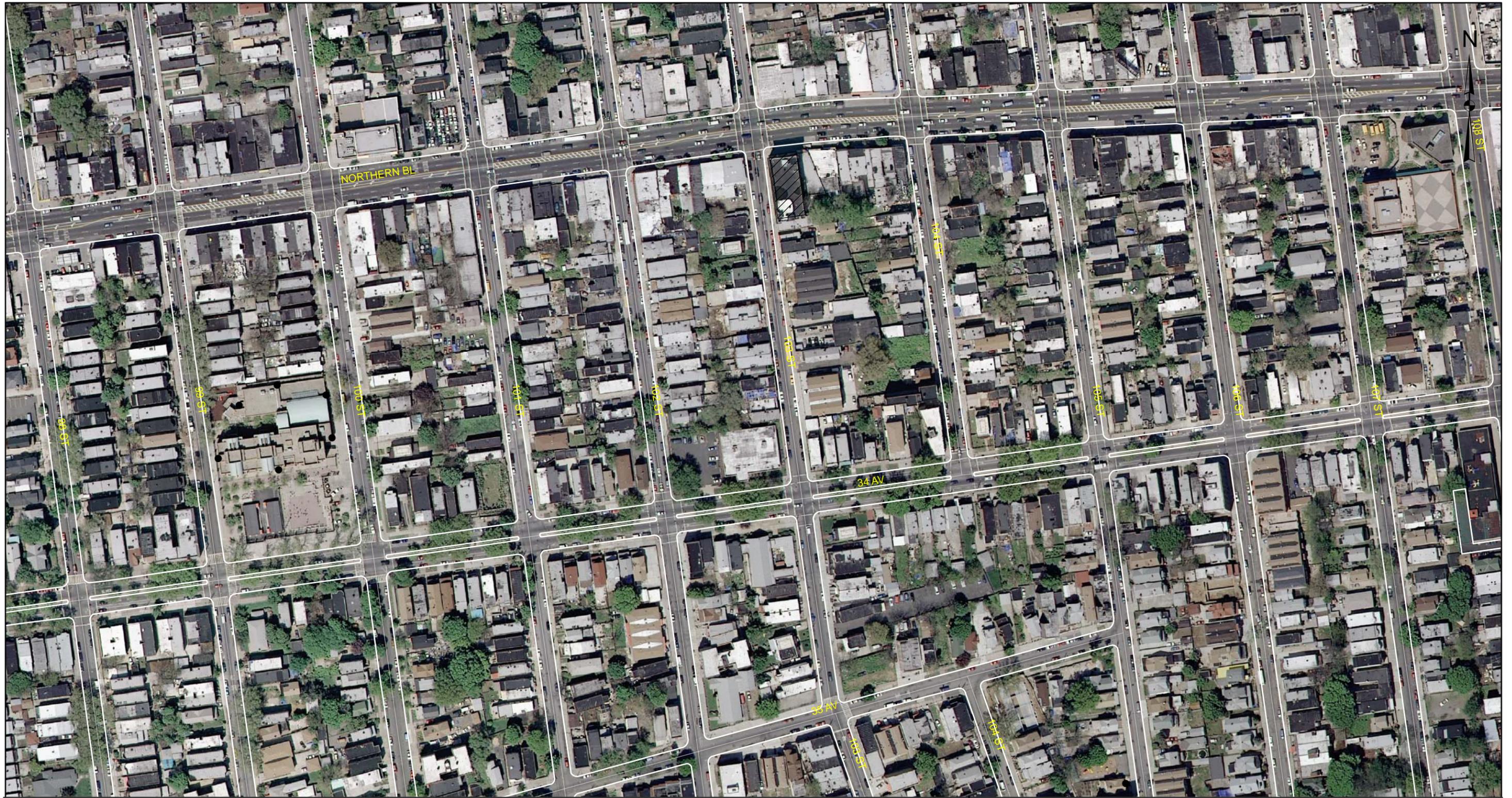


EXHIBIT 1

LEARNING TREE MULTI-CULTURAL SCHOOL QUEENS

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		TRAFFIC SIGNAL	
SCHOOL CROSSWALK		ALL - WAY STOP	
		SPEED REDUCER	

Queens
LEARNING TREE MULTI-CULTURAL SCHOOL (THE)

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

Map created on 11/17/2006

EXHIBIT 2

COMM. BOARD: 403
 PRECINCT: 115

1.5.1 8

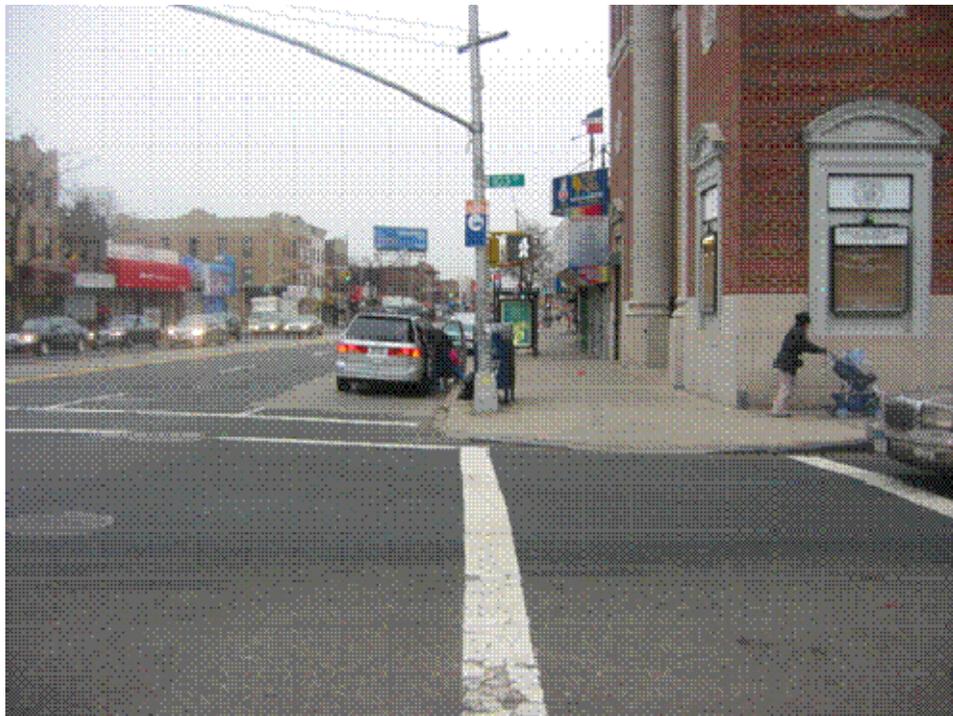
3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to school representatives, school bus transportation is not provided by the school; therefore, most students walk, are driven to and from the school, or could take public transportation. In the vicinity of the school, public bus transportation is provided on Northern Boulevard (Q66) and on 103rd Street (Q23). There is no nearby subway service. Representatives of the school indicated that virtually all students walk or are driven.

3.2 PARENT DROP-OFF OPERATIONS

According to school officials, about 50 percent of the students are driven to school by a parent or guardian. Field observations taken on Monday, December 13, 2004 indicated that students were dropped-off primarily in front of the school on Northern Boulevard (see Figure 5). This is a problem because there is a bus stop (Q66) in front of the school. There is also a bus stop (Q23) on the east side of 103rd Street in front of the side entrance of the school (see Figure 6). School officials also indicated that there is no parking allowed on Northern Boulevard (between 103rd and 104th streets) Monday through Friday between 4:00 and 7:00 p.m. During school dismissal, parents or guardians must ring the bell at the main entrance in order to pick-up students, which can be problematic due to parking problems. This leads school officials to estimate a slightly higher percentage of students walk from school during afternoon dismissal than to school during morning arrival.



*Figure 5: Student being driven to school and dropped-off on Northern Boulevard
(bus stop and shelter is located near the front of the school)*



Figure 6: Looking south from Northern Boulevard at bus stop located on east side of 103rd Street (School is on left)

3.3 PARKING REGULATIONS

Parking regulations around the school block are shown in Exhibit 3 at the end of this section.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

Exhibit 2, at the end of Section 2, shows the existing school signs, signals, and pavement markings around the Learning Tree Multi-Cultural School as of June 2005. 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 accompanied by downward pointing arrows. The MUTCD further directs that the School Crosswalk Warning assembly shall not be installed on approaches controlled by a STOP sign. Signs scheduled to be installed under this program are shown as “existing” in Exhibit 5.

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 4, 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 the Learning Tree Multi-Cultural School 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 is 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.

In the vicinity of the Learning Tree Multi-Cultural School (which includes four intersections around the school block), there were ninety-five (95) accidents reported between 1998 and 2000 (Table 2). Five (5) of these were pedestrian accidents, one of which was a school-related accident. A school-related accident is defined as an accident involving a school-age pedestrian (age 4 through 14), occurring on a weekday during the school year. The school-related accident occurred at the intersection of Northern Boulevard and 104th Street. There were no pedestrian fatalities during the same three-year period. The NYPD accident data (Table 3) shows that there were one hundred ten (110) accidents between 2001 and 2004; eight (8) of these were pedestrian accidents, two (2) of which were school-related accidents. There were no pedestrian fatalities during the same four-year period. Further discussions on accidents are included in Section 3.6, Traffic Operations and Issues.

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Northern Blvd. & 103 rd Street	33	2	0	0
Northern Blvd. & 104 th Street	38	3	0	1
34 th Avenue & 103 rd Street	17	0	0	0
34 th Avenue & 104 th Street	7	0	0	0
TOTAL	95	5	0	1

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Northern Blvd. & 103 rd Street	43	2	0	1
Northern Blvd. & 104 th Street	25	5	0	1
34 th Avenue & 103 rd Street	29	1	0	0
34 th Avenue & 104 th Street	13	0	0	0
TOTAL	110	8	0	2

* 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 the Learning Tree Multi-Cultural School.

3.6.1 Northern Boulevard and 103rd Street

This is a four-leg signalized intersection with pedestrian crosswalks located across all four legs of the intersection. However there is no school crosswalk at this intersection. Northern Boulevard is a two-way, east-west, arterial consisting of two travel lanes and a parking lane in both directions of travel (see Figure 7). A painted center median separates the eastbound and westbound travel lanes on Northern Boulevard. At this intersection, an eastbound left turn lane is provided in the center median. 103rd Street is a one-way, northbound, street with one travel lane and a parking lane on both sides of the roadway (see Figure 8). Bus stops for the Q66 are located in front of the school on both the north and south sides of Northern Boulevard. A bus stop for the Q23 is located on the east side of 103rd Street by the side entrance to the school.

There were thirty-three (33) accidents reported at this intersection between 1998 and 2000 (Table 2); two (2) of these were pedestrian accidents, neither of which was school-related. Between 2001 and 2004 (Table 3), there were forty-three (43) accidents reported at this intersection. Two (2) of the accidents were pedestrian accidents, one (1) of which was school-related. No additional information about this school-related accident is available. For both accident summary periods (1998-2000 and 2001-2004), there were no pedestrian fatalities reported at this intersection.

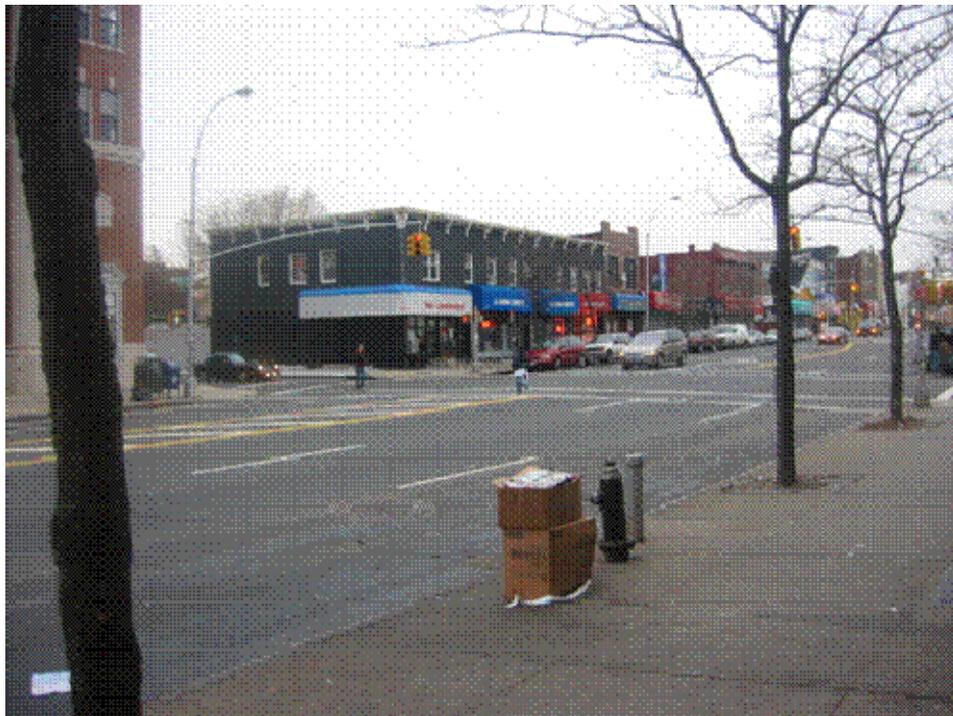


Figure 7: Looking west on Northern Boulevard towards 103rd Street



Figure 8: Looking south on 103rd Street from Northern Boulevard (school is on left)

3.6.2 Northern Boulevard and 104th Street

This is a four-leg signalized intersection with pedestrian crosswalks located across all four legs of the intersection (there is no school crosswalk at this intersection). Northern Boulevard is a two-way, east-west, arterial consisting of two travel lanes and a parking lane in both directions of travel. A painted center median separates the eastbound and westbound travel lanes on Northern Boulevard. 104th Street is a one-way, southbound, street with one travel lane and a parking lane on both sides of the roadway (see Figure 9). A westbound left turn lane is provided in the Northern Boulevard center median at this intersection, for traffic to turn from westbound Northern Boulevard to travel southbound on 104th Street.

There were thirty-eight (38) accidents reported at this intersection between 1998 and 2000 (Table 2). Three (3) of these were pedestrian accidents, one (1) of which was a school-related accident. The school-related accident involved a fourteen-year old pedestrian who was reported struck by a vehicle while crossing the street at the intersection but against the signal. The crosswalk location was not reported. The extent of the injuries was reported as “possible injury.” The accident occurred on a straight and level segment, and the roadway and weather conditions were dry and clear, respectively. Between 2001 and 2004 (Table 3), there were twenty-five (25) accidents reported at this intersection. Five (5) of these were pedestrian accidents, one of which was school-related. However, no additional information about this school-related accident is available. For both accident summary periods (1998-2000 and 2001-2004), there were no pedestrian fatalities reported at this intersection.



Figure 9: Looking south on 104th Street across Northern Boulevard

3.6.3 34th Avenue and 103rd Street

This is a four-leg signalized intersection with pedestrian crosswalks located across all four legs of the intersection (there is no school crosswalk at this intersection). 34th Avenue is a two-way, east-west, collector consisting of one travel lane, a bicycle lane, and a parking lane in both directions of travel. A landscaped median along the center of the roadway separates the eastbound and westbound travel lanes on 34th Avenue. 103rd Street is a one-way northbound street with one travel lane and a parking lane on both sides of the roadway.

There were seventeen (17) accidents reported at this intersection between 1998 and 2000 (Table 2); none were pedestrian accidents. Between 2001 and 2004 (Table 3), there were twenty-nine (29) accidents reported at this intersection; of which, one (1) was a pedestrian accident. It was not a school-related accident. For both accident summary periods (1998-2000 and 2001-2004), there were no pedestrian fatalities reported at this intersection.

3.6.4 34th Avenue and 104th Street

This is a three-leg signalized intersection with pedestrian crosswalks located across all four legs of the intersection (there is no school crosswalk located across any leg of the intersection). 34th Avenue is a two-way, east-west, collector consisting of one travel lane, a bicycle lane, and a parking lane in both directions of travel. A landscaped median

along the center of the roadway separates the eastbound and westbound travel lanes on 34th Avenue. 104th Street is a one-way, southbound, street with one travel lane and a parking lane on both sides of the roadway.

There were seven (7) accidents reported at this intersection between 1998 and 2000 (Table 2); none were pedestrian accidents. Between 2001 and 2004 (Table 3), there were thirteen (13) accidents reported at this intersection, none were pedestrian accidents. For both accident summary periods (1998-2000 and 2001-2004), there were no pedestrian fatalities reported at this intersection.

3.7 SIGNAL TIMING

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of the Learning Tree Multi-Cultural School, and were found to be adequate in all directions and on all approaches based upon a child pedestrian walking at the rate of 3 feet per second. Signal timings are shown in Table 4.

TABLE 4: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS				
INTERSECTION	CROSSWALK WIDTH (FEET)	PEDESTRIAN TIME ACTUAL (SECONDS)	PEDESTRIAN TIME REQUIRED (SECONDS)	TIMING ADJUSTMENT REQUIRED?
Northern Blvd. & 103rd Street				
crossing Northern Blvd.	70	27	27	NO
crossing 103 rd Street	30	89	13	NO
Northern Blvd. & 104th Street				
crossing Northern Blvd.	70	29	27	NO
crossing 104 th Street	30	87	13	NO
34th Avenue & 103rd Street				
crossing 34 th Avenue	55	31	22	NO
crossing 103 rd Street	30	55	13	NO
34th Avenue & 104th Street				
crossing 34 th Avenue	55	31	22	NO
crossing 104 th Street	30	55	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

3.8.1 Roadways and Sidewalks

In the vicinity of the Learning Tree Multi-Cultural School, the roadways and sidewalks were observed to be in generally fair condition. Sidewalks varied from about 8 to 15 feet in width on the school block-faces.

3.8.2 Pedestrian Ramps

Overall, pedestrian ramps in the area of the school were observed to be standard and in generally fair condition. However, two light poles are situated close to pedestrian ramps at the following locations:

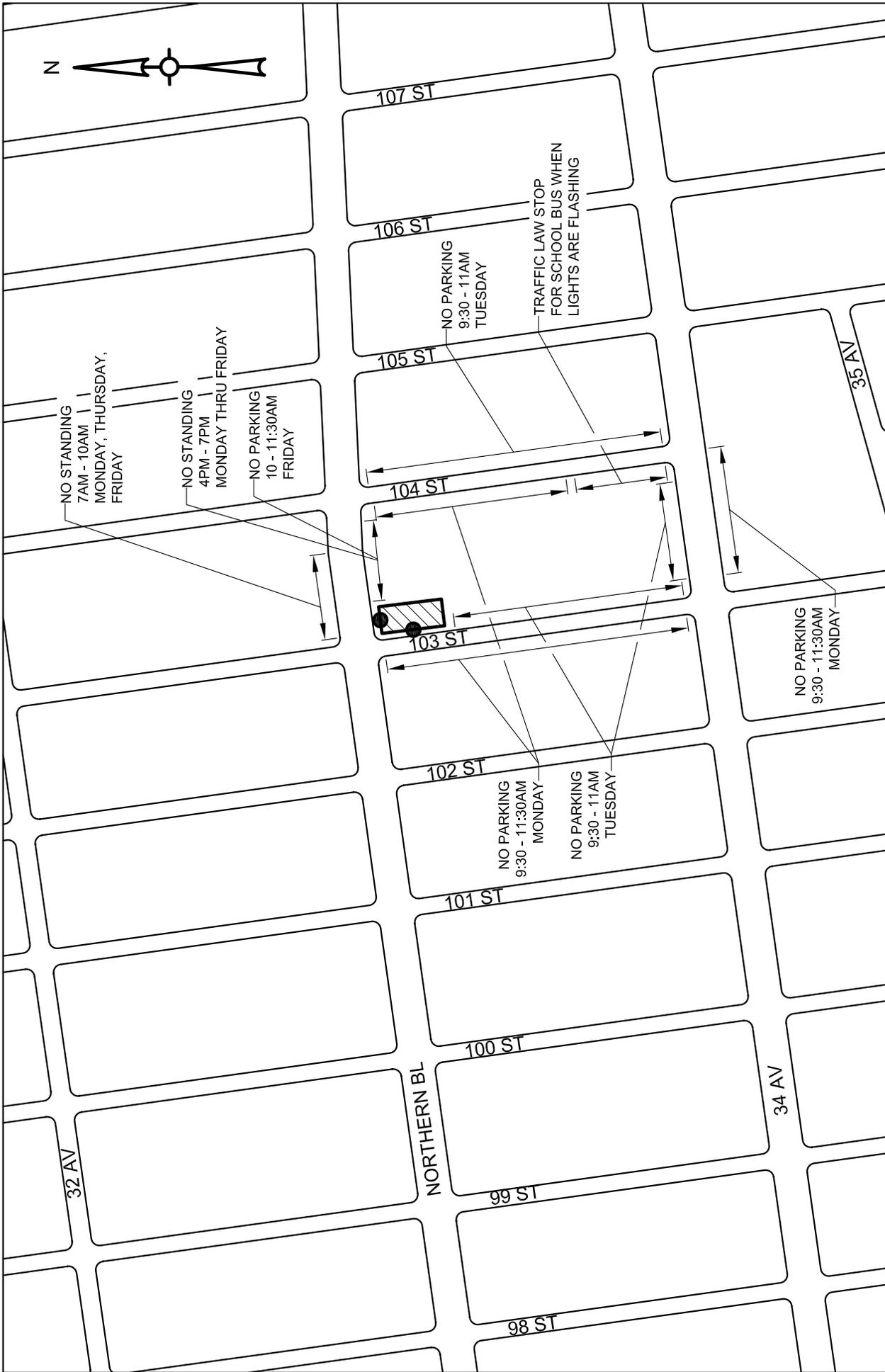
- The northeast corner of 34th Avenue & 103rd Street.
- The southwest corner of 34th Avenue & 103rd Street

Several pedestrian ramps do not meet current NYC DOT standards. These locations are:

- The southeast corner of Northern Boulevard & 104th Street where the ramp has a small lip at the curb and prevents a smooth transition between the pavement and the sidewalk. The sidewalk is also in disrepair.
- The pedestrian ramps in the center median of 34th Avenue for the crosswalks on the both the east and west sides of 103rd Street and 104th Street are relatively narrow and have a lip at the curb preventing a smooth transition between the pavement and the sidewalk (eight ramps).

Two pedestrian ramps are missing at the following locations:

- The south side of 34th Avenue at 104th Street for the crosswalk located across the west leg of 34th avenue
- The south side of 34th Avenue at 104th Street for the crosswalk located across the west leg of 34th Avenue



LEGEND:

- ★ MAIN ENTRANCE
- ENTRANCE

EXHIBIT 3

**LEARNING TREE MULTICULTURAL SCHOOL
QUEENS**

EXISTING PARKING REGULATIONS



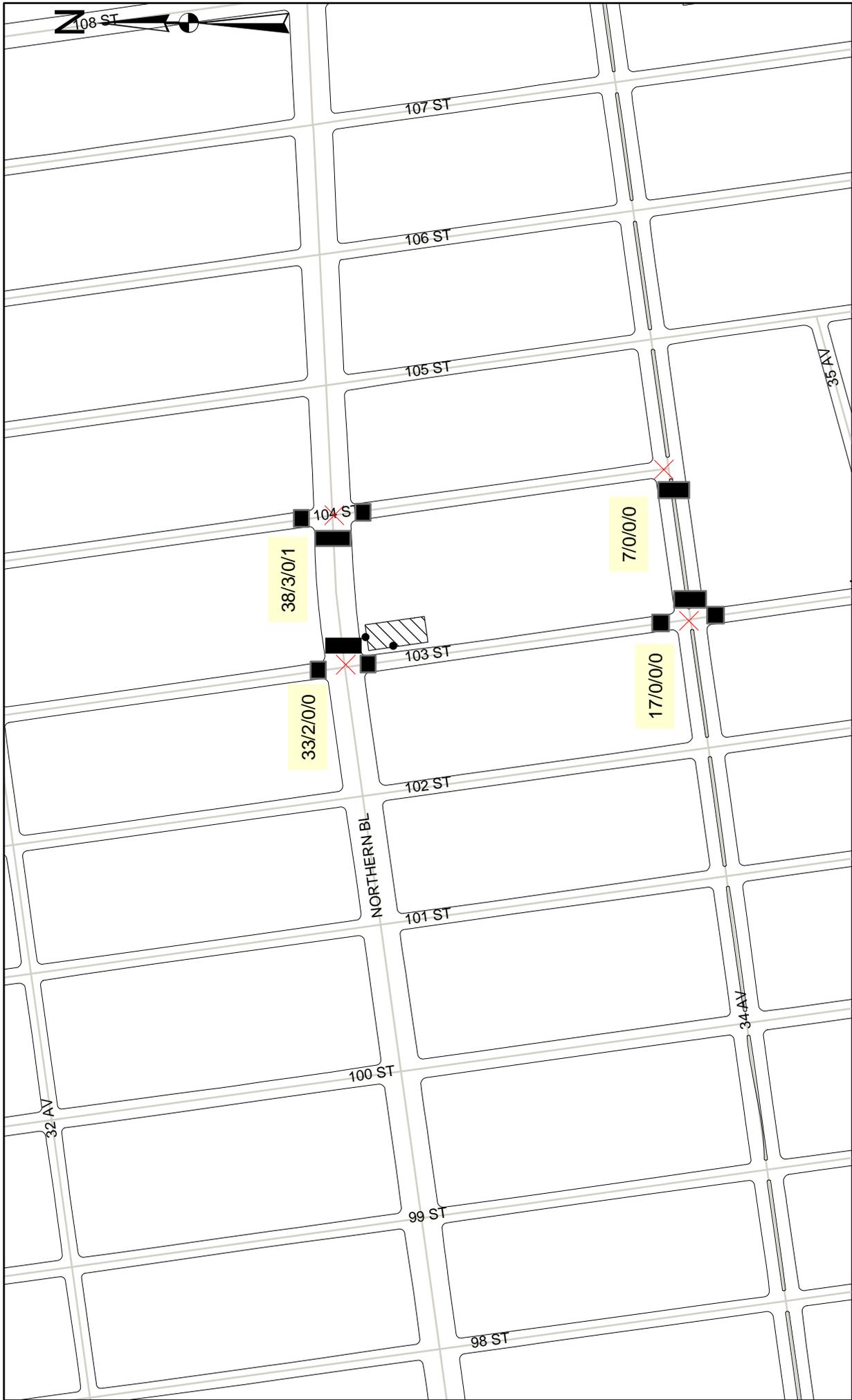


EXHIBIT 4
LEARNING TREE MULTICULTURAL SCHOOL QUEENS
ACCIDENT SUMMARY (1998-2000)

LEGEND:

- ACCIDENT LOCATION (Red X)
- SCHOOL CROSSWALK (Black rectangle)
- X/X/X/X (Legend for accident types)

TOTAL / PED / PED / SCHOOL_PED / ACCD / ACCD / FATAL / ACCD

0 250 500 1,000 Feet

4. PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY

This section describes the proposed measures to improve school pedestrian safety around the Learning Tree Multi-Cultural School. 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 Learning Tree Multi-Cultural School is discussed as follows, and is shown in more detail in Exhibit 5 at the end of this section.

4.1 SHORT-TERM MEASURES

- *“No Standing 7AM - 4PM School Days” signs are not needed in front of school main entrance*

There is a typical requirement for all NYC schools to install signs for a minimum distance of thirty feet (30') in front of the main entrance of the school to provide for emergency access to and from the school. There is a “No Standing Handicap Bus Stop” sign for a length of hundred feet (100'). Therefore, there is no need to provide “No Standing 7AM-4PM School Days” signs for a distance of thirty feet (30') in front of the school main entrance.

- *Update pedestrian crosswalk to school crosswalks*

There are no designated school crosswalks and advanced warning signs (including W9-1 and Rider signs) for Learning Tree Multi-Cultural School. It is therefore recommended to provide school crosswalks at the following locations:

- East, north, and south legs of Northern Boulevard and 103rd Street intersection
 - West, north, and south legs of Northern Boulevard and 104th Street intersection
 - East, north, and south legs of 34th Avenue and 103rd Street intersection
 - West and north legs of 34th Avenue and 104th Street intersection
- *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 proposed school crosswalks are recommended on the following approaches of signalized intersections surrounding Learning Tree Multi-Cultural School:

- Westbound and northbound approaches of Northern Boulevard and 103rd Street intersection
- Eastbound and southbound approaches of Northern Boulevard and 104th Street intersection
- Westbound and northbound approaches of 34th Avenue and 103rd Street intersection
- Eastbound and southbound approaches of 34th Avenue at 104th Street intersection

4.2 LONG-TERM MEASURES

➤ Reconstruct Pedestrian Ramps

Several pedestrian ramps do not meet current NYC DOT standards. These locations are:

- The southeast corner of Northern Boulevard & 104th Street where the ramp has a small lip at the curb and prevents a smooth transition between the pavement and the sidewalk. The sidewalk is also in disrepair.
- The pedestrian ramps in the center median of 34th Avenue for the crosswalks on the both the east and west sides of 103rd Street and 104th Street are relatively narrow and have a lip at the curb preventing a smooth transition between the pavement and the sidewalk (For the pedestrian ramps in the center median of 34th Avenue, see “Long-Term Measures” which includes an extended median with at least 5-feet at grade cut through section).

It is therefore recommended to:

- Reconstruct the pedestrian ramp located at the southeast corner of Northern Boulevard & 104th Street for the crosswalk located across the east leg of Northern Boulevard, to provide a smooth transition between the pavement and the sidewalk.

➤ Construct Pedestrian Ramps

Two pedestrian ramps are missing at the following locations:

- The south side of 34th Avenue at 104th Street for the crosswalk located across the west leg of 34th Avenue
- The south side of 34th Avenue at 104th Street for the crosswalk located across the east leg of 34th Avenue

It is therefore recommended to:

Construct pedestrian ramps at the following locations:

- The south side of 34th Avenue at 104th Street for the crosswalk located across the west leg of 34th Avenue
- The south side of 34th Avenue at 104th Street for the crosswalk located across the east leg of 34th Avenue

➤ Relocate light poles

Two light poles are situated close to pedestrian ramps at the following locations:

- The northeast corner of 34th Avenue & 103rd Street.
- The southwest corner of 34th Avenue & 103rd Street.

It is therefore recommended to:

Relocate the light poles away from the pedestrian ramps at the following locations:

- The northeast corner of 34th Avenue & 103rd Street.
- The southwest corner of 34th Avenue & 103rd Street

➤ Consider refuge islands at the following locations as shown in Exhibit 5:

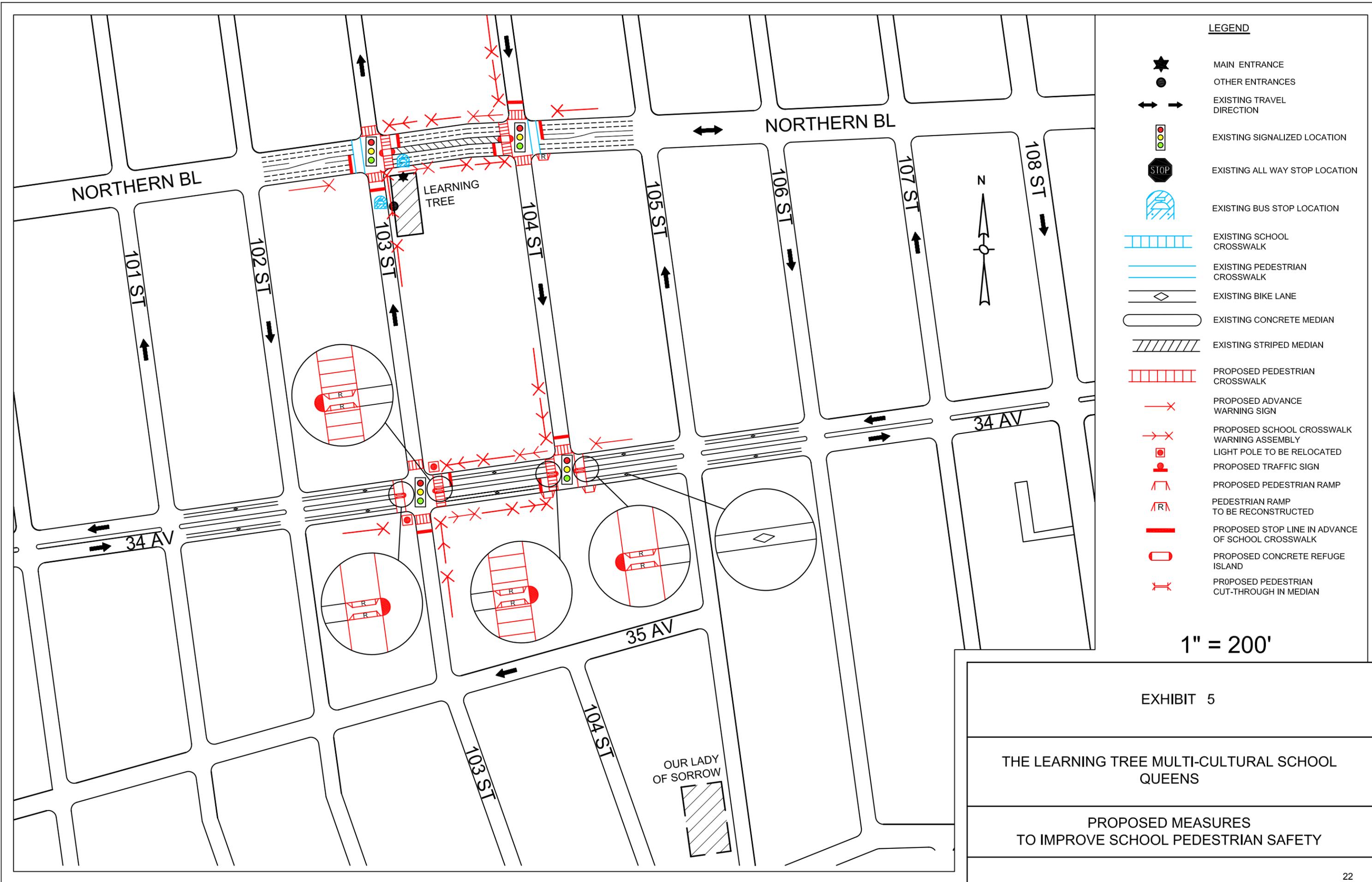
There is a striped median along the center of Northern Boulevard, separating eastbound and westbound traffic. School crosswalks are proposed at the east leg of Northern Boulevard at its intersection with 103rd Street and at the west leg of Northern Boulevard at its intersection with 104th Street. It is therefore recommended to:

- Provide a pedestrian refuge island at the east leg of Northern Boulevard/103rd Street intersection and at the west leg of Northern Boulevard/104th Street intersection, as shown in Exhibit 5.

There is a landscaped median along the center of 34th Avenue, separating eastbound and westbound traffic. This landscaped median does not extend through the pedestrian crosswalks. School crosswalks are proposed at the east leg of 103rd Street and at the west leg of 104th Street. It is therefore recommended to:

- Provide pedestrian refuge islands by modifying and extending the existing concrete median through the pedestrian and proposed school crosswalks located across 34th Avenue.

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 extended median 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 extended medians will be developed during Final Design.



- LEGEND**
- ★ MAIN ENTRANCE
 - OTHER ENTRANCES
 - ↔ EXISTING TRAVEL DIRECTION
 - 🚦 EXISTING SIGNALIZED LOCATION
 - STOP EXISTING ALL WAY STOP LOCATION
 - 🚏 EXISTING BUS STOP LOCATION
 - ▬ EXISTING SCHOOL CROSSWALK
 - ▬ EXISTING PEDESTRIAN CROSSWALK
 - ◇ EXISTING BIKE LANE
 - EXISTING CONCRETE MEDIAN
 - ▨ EXISTING STRIPED MEDIAN
 - ▬ PROPOSED PEDESTRIAN CROSSWALK
 - ⚡ PROPOSED ADVANCE WARNING SIGN
 - ⚡ PROPOSED SCHOOL CROSSWALK WARNING ASSEMBLY
 - 🚦 LIGHT POLE TO BE RELOCATED
 - 🚦 PROPOSED TRAFFIC SIGN
 - ▬ PROPOSED PEDESTRIAN RAMP
 - ▬ PEDESTRIAN RAMP TO BE RECONSTRUCTED
 - ▬ PROPOSED STOP LINE IN ADVANCE OF SCHOOL CROSSWALK
 - PROPOSED CONCRETE REFUGE ISLAND
 - ⚡ PROPOSED PEDESTRIAN CUT-THROUGH IN MEDIAN

1" = 200'

EXHIBIT 5

THE LEARNING TREE MULTI-CULTURAL SCHOOL
QUEENS

PROPOSED MEASURES
TO IMPROVE SCHOOL PEDESTRIAN SAFETY

APPENDIX

