

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



**School Safety Engineering Project**

**FINAL REPORT: ST. LUKE, Bronx**



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



**June 9, 2006**

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Final Report: Saint Luke School, Bronx**

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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). Saint Luke School 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, at the end of this section, shows an aerial view of the neighborhood surrounding Saint Luke School, which is generally high density residential and commercial in character. Saint Luke is situated on the south side of East 139<sup>th</sup> Street, between St. Ann's Avenue to the west and Cypress Avenue to the east, and also fronts on the north side of East 138<sup>th</sup> Street. Bruckner Expressway and Bruckner Boulevard are one and a half blocks to the east. The Major Deegan Expressway is two short blocks to the south. The Major Deegan Expressway and the Bruckner Expressway have a direct connection to each other just to the southeast of the school site. Both of these expressways also connect with the Triborough Bridge, forming a complex interchange. There is a firehouse diagonally across from the school on the south side of East 138<sup>th</sup> Street.

### **2.3 MEETING WITH SCHOOL REPRESENTATIVES**

Consultant staff, the Principal, and the custodian of Saint Luke School met at the school on the morning of Tuesday, June 15, 2004. According to the Principal, the problems faced by Saint Luke School students are as follows:

- The sidewalk adjacent to the front of the school on the east has been under construction for eleven years (between Cypress Avenue and the school). If someone is negotiating the sidewalk in a wheelchair, the students will walk in the street to allow the wheelchair person access to the available sidewalk. A teacher fell at this location and injured a wrist.
- There is less speeding than before due to new speed reducer installed on East 139<sup>th</sup> Street. The speed reducer and the all-way stop for the East 139<sup>th</sup> Street & Cypress Avenue intersection have helped to slow traffic. Another speed reducer closer to the school entrance might help, as many drivers are speeding on East 139<sup>th</sup> Street between the stop-controlled intersection at Cypress Avenue and the speed reducer.
- A crossing guard is needed at East 139<sup>th</sup> Street & Cypress Avenue.
- Livery vehicles make frequent U-turns in front of the school by utilizing the drive apron in front of the firehouse. Sometimes these U-turns are made by tractor-trailers. These U-turns are often the cause of accidents with drivers leaving parking spaces not expecting vehicles making U-turn, and the drivers making U-turn not expecting the car leaving the parking space.

- The school requested a flashing a light on East 138<sup>th</sup> Street in front of the school for arrival and dismissal. There is firehouse directly across the street from the school. A flashing light could help both the firehouse and the school.
- The stop sign is frequently violated at East 139<sup>th</sup> Street & Cypress Avenue (more on East 139<sup>th</sup> Street).
- Parking is a problem for faculty members. Commuters to Manhattan seem to use the parking that is available for faculty and staff.
- Double parking is often a problem.
- Traffic volumes are heavy on East 138<sup>th</sup> Street, especially from 2:00 – 6:00 pm. Most of the traffic is believed to be coming from the market, trying to access Third Avenue.
- Congestion is often a problem on East 138<sup>th</sup> Street, especially during the 2:00 – 6:00 pm period
- Both the East 139<sup>th</sup> Street & Cypress Avenue and East 138<sup>th</sup> Street & Cypress Avenue intersections have a high number of accidents.

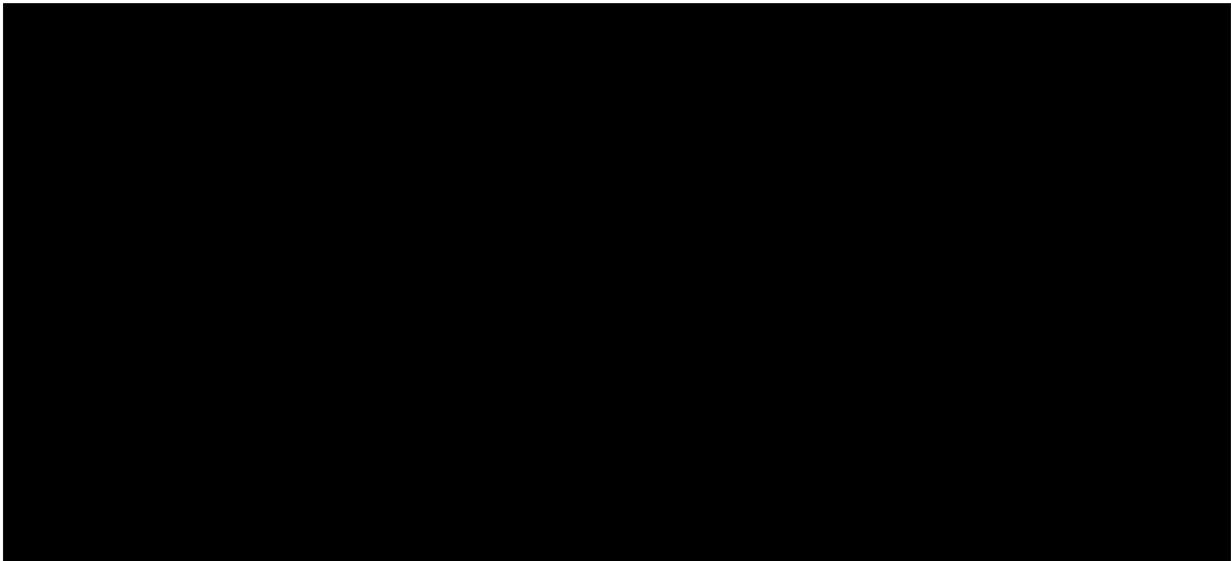




Figure 1: Looking north across East 138<sup>th</sup> Street at alternate entrance of Saint Luke School

## 2.6 PRIMARY MODE OF TRANSPORT TO AND FROM SCHOOL

The school’s catchment area is typically defined by the Department of Education and shown in an exhibit at the end of this section. Since Saint Luke is a private parochial school, the actual “catchment area” is dependent upon other factors, determined by the school administrators.

Table 1 presents the mode of travel for Saint Luke School as estimated by school representatives.

TABLE 1: MODE OF TRAVEL	STUDENTS (Percentage)
Walk	32%
Driven by car	18%
School bus	0%
MTA Bus/Subway	50%
Bicycle	0%
<b>TOTAL</b>	<b>100%</b>

## 2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

There were no additional student pedestrian traffic generators observed on East 139<sup>th</sup> Street in the vicinity of the school. East 138<sup>th</sup> Street and St. Ann’s Avenue both have many commercial activities that generate student pedestrian traffic as well as pedestrian and vehicular traffic, such as a produce markets, delis, and pizzerias.



*Figure 2: Looking northwest across St. Ann's Avenue & East 138<sup>th</sup> Street intersection at pizzeria and other stores*



*Figure 3: Looking northeast across St. Ann's Avenue at various stores along north side of East 138<sup>th</sup> Street*

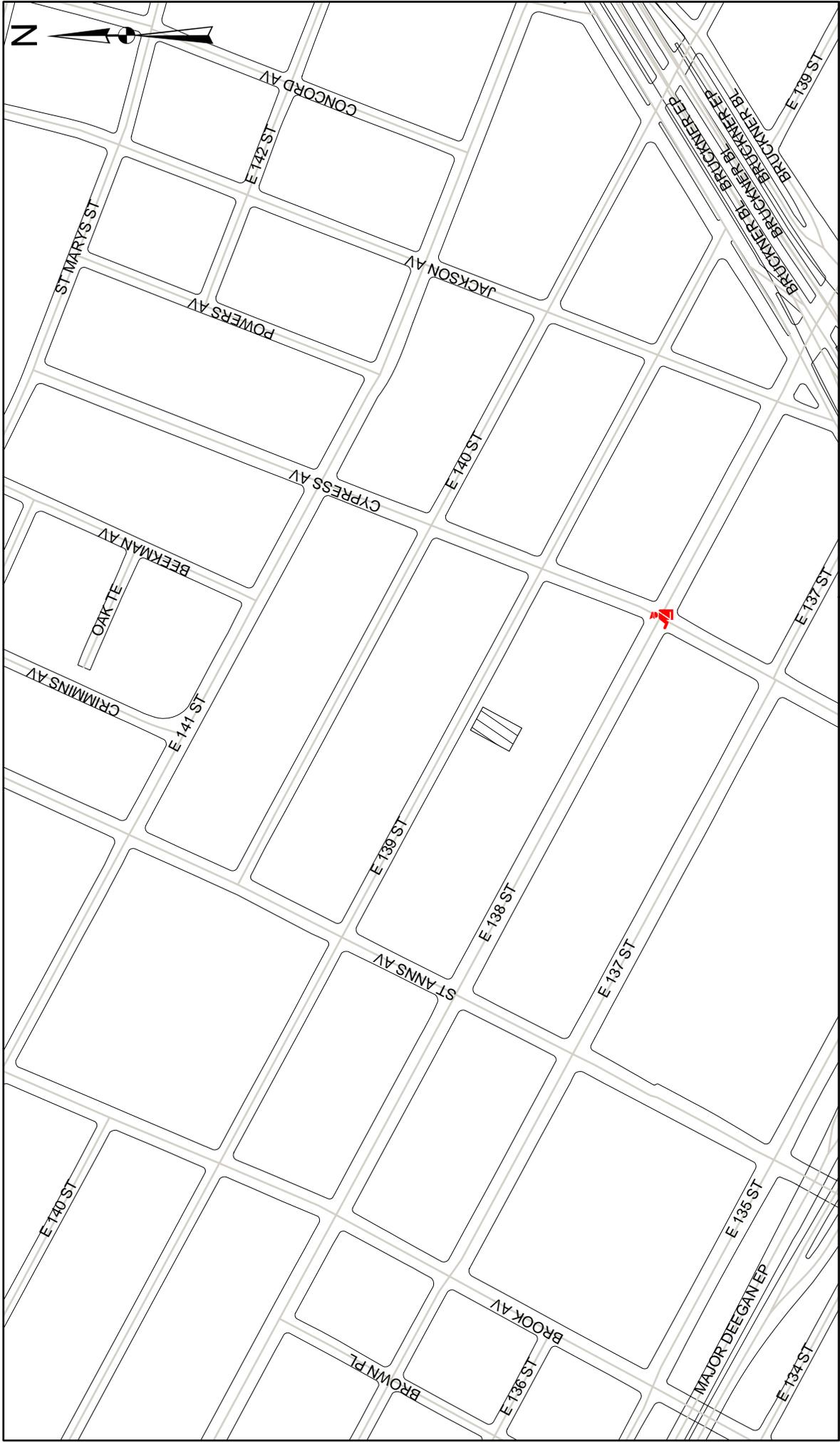
## **2.8 CROSSING GUARD LOCATIONS**

According to the school representatives, a school crossing guard is assigned to the intersection of 138<sup>th</sup> Street & Cypress Avenue.

The crossing guard location is shown in Exhibit 3 at the end of this section.







**EXHIBIT 3**

**ST LUKE SCHOOL BRONX**

**CROSSING GUARD LOCATION**

**LEGEND:**

CROSSING GUARD LOCATION 



### 3. TRAFFIC OPERATIONS

#### 3.1 SCHOOL BUS OPERATIONS

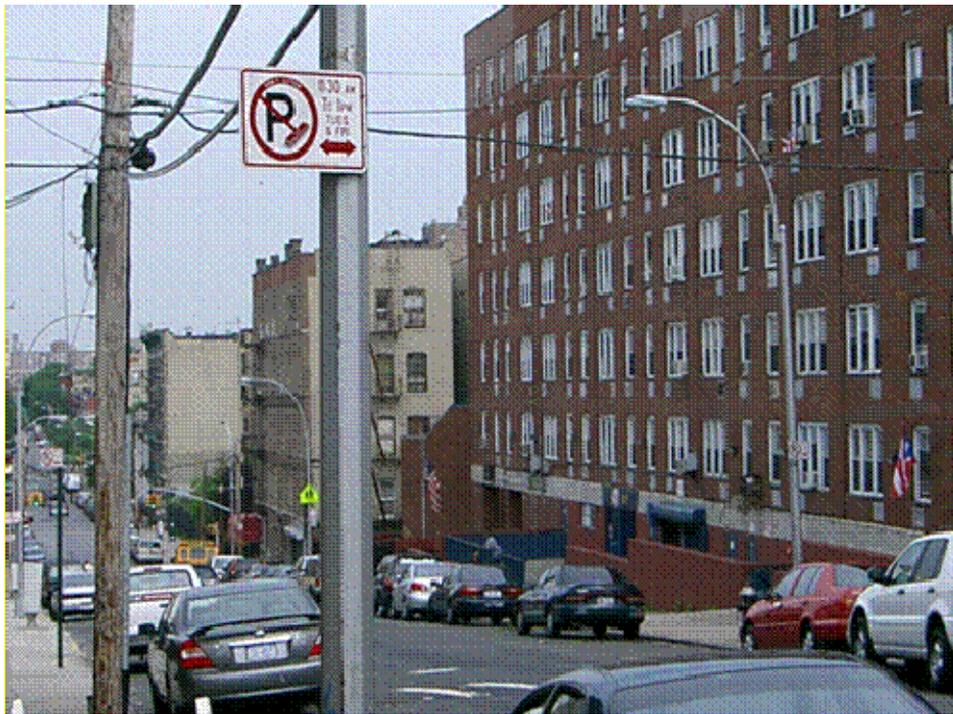
No regular yellow school buses serve Saint Luke School. According to school representatives, approximately fifty percent (50%) of students take public transportation (about 130 metro cards are issued).

#### 3.2 PARENT DROP-OFF OPERATIONS

According to school representatives, about eighteen percent (18%) of students are being dropped off. Double parking is generally a problem throughout the day. The afternoon dismissal is affected by general congestion due to high traffic volumes in the vicinity of the school during 2:00 - 6:00 pm.

#### 3.3 PARKING REGULATIONS

Parking regulations around the school block are shown in Exhibit 4, at the end of this section. East 138<sup>th</sup> Street is a “Snow Emergency Route” which prohibits vehicle standing on the street during an emergency condition. Typical parking regulation signs are shown in Figures 4 and 5.



*Figure 4: Typical parking regulations on East 139<sup>th</sup> Street in the vicinity of Saint Luke School*



*Figure 5: Looking west along East 138<sup>th</sup> Street in the vicinity of Saint Luke School*

### **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 Saint Luke School. It should be noted that a citywide signage program is currently underway to upgrade school signage to the current edition of the Federal Manual of Uniform Traffic Control Devices (MUTCD) standards of fluorescent yellow-green accompanied by downward pointing arrows. (Signs scheduled to be installed under this program are shown as “existing” in Exhibit 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. Luke 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 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.

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
East 140 <sup>th</sup> St & St Ann's Ave	3	0	0	0
East 139 <sup>th</sup> St & St Ann's Ave	12	2	0	0
East 138 <sup>th</sup> St & St Ann's Ave	42	3	0	0
East 137 <sup>th</sup> St & St Ann's Ave	13	2	0	2
East 141 <sup>st</sup> St & Beekman Ave	4	1	0	0
East 141 <sup>st</sup> St & Cypress Ave	8	1	0	0
East 140 <sup>th</sup> St & Cypress Ave	3	1	0	1
East 139 <sup>th</sup> St & Cypress Ave	11	0	0	0
East 138 <sup>th</sup> St & Cypress Ave	25	7	0	2
East 137 <sup>th</sup> St & Cypress Ave	14	0	0	0
East 138 <sup>th</sup> Street & Jackson Ave	26	2	0	0
East 138 <sup>th</sup> St & Bruckner Blvd	283	3	0	0
<b>TOTAL</b>	<b>444</b>	<b>22</b>	<b>0</b>	<b>5</b>

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

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
East 140 <sup>th</sup> St & St Ann's Ave	11	3	0	0
East 139 <sup>th</sup> St & St Ann's Ave	22	5	0	0
East 138 <sup>th</sup> St & St Ann's Ave	75	11	1	1
East 137 <sup>th</sup> St & St Ann's Ave	28	7	0	3
East 141 <sup>st</sup> St & Beekman Ave	13	5	0	1
East 141 <sup>st</sup> St & Cypress Ave	30	4	0	0
East 140 <sup>th</sup> St & Cypress Ave	10	1	0	0
East 139 <sup>th</sup> St & Cypress Ave	17	3	0	1
East 138 <sup>th</sup> St & Cypress Ave	54	14	0	1
East 137 <sup>th</sup> St & Cypress Ave	17	2	0	0
East 138 <sup>th</sup> Street & Jackson Ave	36	4	0	0
East 138 <sup>th</sup> St & Bruckner Blvd	486	15	0	0
<b>TOTAL</b>	<b>799</b>	<b>74</b>	<b>1</b>	<b>7</b>

\* 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 specific 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 Saint Luke School.

#### ***3.6.1 East 139<sup>th</sup> Street & Cypress Avenue***

This is a four-leg unsignalized all-way stop-controlled intersection with school crosswalks located across the west and east legs of East 139<sup>th</sup> Street, and the south leg of Cypress Avenue. Both streets are generally residential in character.

East 139<sup>th</sup> Street is one-way westbound street with one travel lane and parking on both sides of the roadway. Cypress Avenue is a two-way street with one traffic lane and a parking lane on each side of the roadway (see Figures 6 and 7).

The school principal reported that speeds have reduced on East 139<sup>th</sup> Street since the installation of a speed reducer, but there continues to be a speeding problem on East 139<sup>th</sup> Street between Cypress Avenue and the installed speed reducer. Therefore, a speed survey was conducted on East 139<sup>th</sup> Street between Cypress Avenue and St. Ann's Avenue, more specifically between Cypress Avenue and the newly installed speed reducer, in order to verify the existence of a speeding problem and to determine its extent. The detailed results of the spot speed survey are shown in the Appendix at the end of the document.

In summary, the westbound vehicles on East 139<sup>th</sup> Street between Cypress Avenue and the newly installed speed reducer were found to be traveling with an 85<sup>th</sup> percentile speed of 31 mph. The 85<sup>th</sup> percentile speed is considered to be the representative speed for the street segment. Speeds above the 30 mph threshold would indicate a speeding problem and may require appropriate traffic calming measures.

It should be noted that Saint Luke School was selected for NYCDOT's pilot program to reduce speed near school. As part of this pilot program, 139<sup>th</sup> Street has a posted speed limit of 20 mph between Cypress Avenue and St. Ann's Avenue.

This intersection has been the site of eleven (11) accidents between 1998 and 2000 with no pedestrian accidents (Table 2). The NYPD accident data (Table 3) shows seventeen (17) accidents including three pedestrian accidents, one (1) of which was school-related between 2001 and 2004. No further information is available about the school-related accident. There were no pedestrian fatalities during the same four-year period.



Figure 6: Looking northeast across intersection of East 139<sup>th</sup> Street & Cypress Avenue



Figure 7: Looking west along East 139<sup>th</sup> Street across Cypress Avenue intersection (School is down on left)

### 3.6.2 East 139<sup>th</sup> Street & St. Ann's Avenue

This is a four-leg signalized intersection, with school crosswalks located across the west and east legs of East 139<sup>th</sup> Street and the south leg of St. Ann's Avenue, with a pedestrian crosswalk located across the north leg of St. Ann's Avenue.

East 139<sup>th</sup> Street is a one-way westbound street with one travel lane and parking on both sides of the roadway. St. Ann's Avenue is a two-way street, with one travel lane, a bicycle lane, and parking on each side of the roadway. Both streets are generally residential in character, although there is some commercial activity located near the intersection (see Figures 8 and 9).

This intersection has been the site of twelve (12) accidents between 1998 and 2000; two (2) of which were pedestrian accidents, none of which were school-related. There were no pedestrian fatalities during the same three-year period (Table 2). The NYPD accident data (Table 3) shows twenty-two (22) accidents between 2001 and 2004 including five (5) pedestrian accidents. None of the pedestrian accidents were school-related. There were no pedestrian fatalities during the same four-year period.



*Figure 8: Looking north across East 139<sup>th</sup> Street on east side of St. Ann's Avenue*



*Figure 9: Looking west across St. Ann's Avenue on south side of East 139<sup>th</sup> Street*

### 3.6.3 East 138<sup>th</sup> Street & St. Ann's Avenue

This is a four-leg signalized intersection, with school crosswalks located across the east and west legs of East 138<sup>th</sup> Street and the north leg of St. Ann's Avenue, with a pedestrian crosswalk located across the south leg of St. Ann's Avenue.

East 138<sup>th</sup> Street is a two-way street with one travel lane and a parking lane on each side of the roadway. East 138<sup>th</sup> Street is generally commercial in character with residential uses. East 138<sup>th</sup> Street is a designated "local" truck route and snow emergency route. St. Ann's Avenue is a two-way street, with one travel lane, a bicycle lane, and parking on each side of the roadway. It is generally residential in character with some commercial uses (see Figures 10 and 11).

This intersection has been the site of forty-two (42) accidents between 1998 and 2000; three of these were pedestrian accidents, none of which were school-related (Table 2). The NYPD accident data (Table 3) shows seventy-five (75) accidents between 2001 and 2004; eleven (11) of these were pedestrian accidents; one (1) of which was a school-related accident and another was a fatal accident. No further information about the fatal pedestrian accident and school-related accident is available.



Figure 10: Looking southwest across East 138<sup>th</sup> Street & St. Ann's Avenue intersection



Figure 11: Looking west along East 138<sup>th</sup> Street across St. Ann's Avenue intersection

### 3.6.4 East 138<sup>th</sup> Street & Cypress Avenue

This is a four-leg signalized intersection, with school crosswalks located across the east and west legs of East 138<sup>th</sup> Street and the north leg of Cypress Avenue, with a pedestrian crosswalk located across the south leg of Cypress Avenue.

East 138<sup>th</sup> Street, a designated local truck route and snow emergency route, is a two-way street with one travel lane and a parking lane on each side of the roadway. East 138<sup>th</sup> Street is generally commercial in character with residential uses. Cypress Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway. Cypress Avenue is generally residential in character with commercial uses (see Figures 12 and 13).

This intersection has been the site of twenty-five (25) accidents between 1998 and 2000; seven (7) of these were pedestrian accidents, two (2) of which were school-related. In the first school-related accident, a fourteen-year-old pedestrian suffered a “possible injury” on Thursday, September 10, 1998 at 3:00 pm according to the NYS DMV data. Although the accident occurred at the intersection, pedestrian actions were not recorded. The road surface was dry and the weather was clear. In the second school-related accident, a nine year-old pedestrian suffered a non-incapacitating injury on Friday, June 18, 1999 at 3:00 pm while crossing against the signal. The road surface was dry and the weather was cloudy. The NYPD accident data (Table 3) shows fifty-four (54) accidents between 2001 and 2004; fourteen (14) of these were pedestrian accidents, one of which was a school-related accident. No further information about the school-related accident is available. There were no pedestrian fatalities during either time period.



*Figure 12: Looking southeast across East 138<sup>th</sup> Street at Cypress Avenue intersection*



*Figure 13: Looking west across Cypress Avenue at East 138<sup>th</sup> Street intersection*

### 3.6.5 East 137<sup>th</sup> Street & St. Ann's Avenue

This is a four-leg signalized intersection, with pedestrian crosswalks (no school crosswalks) located across all legs.

St. Ann's Avenue is a two-way street, with one travel lane, a bicycle lane, and parking on each side of the roadway. East 137<sup>th</sup> Street is a very wide one-way westbound street with no pavement (lane) markings for travel lanes and permit parking on both sides of the roadway (East 137<sup>th</sup> Street, east of the intersection, is wide enough to provide three travel lanes). East 137<sup>th</sup> Street, west of the intersection, provides angle parking along the south curblin and permits parallel parking along the north curblin. Both streets are residential in character.

This intersection has been the site of thirteen (13) accidents between 1998 and 2000; two (2) of these were pedestrian accidents, which were also school-related. In the first school-related accident, an eight-year-old pedestrian suffered a "non-incapacitating injury" on April 3, 1998 at 8:00 am while crossing against the signal. The accident occurred on a straight and level roadway segment under daylight conditions. At the time of accident, the road surface was dry and the weather was clear. In the second school-related accident, a seven-year-old pedestrian was struck on November 17, 1999 at 6:00 pm while crossing against the signal. The roadway character was reported as "straight and level" and the light condition was reported as "dark road lighted." The road surface was dry and the weather was cloudy. The NYPD accident data (Table 3) shows twenty-eight (28) accidents between 2001 and 2004; seven (7) of these were pedestrian accidents, three of which were school-related accidents. No further information about the school-related accidents is available. There were no pedestrian fatalities during either time period.

### 3.6.6 East 140<sup>th</sup> Street & Cypress Avenue

This is a four-leg two-way stop-controlled intersection, with no crosswalks located across any legs. Cypress Avenue is a two-way street with one travel lane and a parking lane on each side of the roadway. Cypress Avenue is generally residential in character with some commercial uses. East 140<sup>th</sup> Street is a one-way eastbound street with one travel lane and parking on both sides of the roadway. East 140<sup>th</sup> Street is residential in character. The eastbound approach of East 140<sup>th</sup> Street is controlled by a stop sign.

This intersection has been the site of three (3) accidents between 1998 and 2000; one of these was a pedestrian accident, which was also school-related. In the school-related accident, a seven-year-old pedestrian suffered a “possible injury” on February 28, 2000 at 3:00 pm while crossing the street with no signal or marked crosswalk. The accident occurred on a straight and level roadway segment under daylight condition. At the time of accident, the road surface was dry and the weather was cloudy. The NYPD accident data (Table 3) shows ten (10) accidents between 2001 and 2004; one of these was pedestrian accident, which was not school-related. There were no pedestrian fatalities during either time period.

### 3.6.7 East 141<sup>st</sup> Street & Beekman Avenue

This is a four-leg two-way stop-controlled intersection, with no crosswalks located across any legs. Beekman Avenue is a two-way, north-south, roadway with one travel lane and a parking lane on both sides of the roadway. East 141<sup>st</sup> Street is a two-way east-west roadway with one travel lane and a parking lane on both sides of the roadway. Both streets are residential in character. The southbound approach of Beekman Avenue is controlled by a stop sign.

This intersection has been the site of four (4) accidents between 1998 and 2000; none of which was a pedestrian accidents. The NYPD accident data (Table 3) shows thirteen (13) accidents between 2001 and 2004; five (5) of these were pedestrian accidents, one of which was a school-related accident. No further information about the school-related accident is available. There were no pedestrian fatalities during the same four-year period.

### 3.6.8 East 138<sup>th</sup> Street & Jackson Avenue

This is a four-leg signalized intersection, with a school crosswalk located across the south leg of Jackson Avenue and pedestrian crosswalks located across the north leg of Jackson Avenue and the east and west legs of East 138<sup>th</sup> Street. Jackson Avenue, north of the intersection, is a two-way north-south roadway with one travel lane and a parking lane on both sides of the roadway. East 138<sup>th</sup> Street is a two-way east-west roadway with one travel lane and a parking lane on both sides of the roadway.

This intersection has been the site of twenty-six (26) accidents between 1998 and 2000; two of which were pedestrian accidents, none of which was a school-related accident. The NYPD accident data (Table 3) shows thirteen (13) accidents between 2001 and 2004; four (4) of these were pedestrian accidents, none of which was a school-related accident. There were no pedestrian fatalities reported during either time period.

3.6.9 East 138<sup>th</sup> Street & Bruckner Boulevard

This is a signalized intersection with school crosswalks located across the north and south legs of Bruckner Boulevard and pedestrian crosswalks located across the east and west legs of East 138<sup>th</sup> Street.

Bruckner Boulevard is a major commercial through-route for south Bronx. It runs northeast/southwest directly underneath the Bruckner Expressway. The wide Boulevard consists of both the central express lanes and the outer service (local) lanes and is bounded by industrial land uses. Parking is permitted on the right side of both Bruckner Boulevard service roadways. East 138<sup>th</sup> Street is a two-way east-west roadway with one travel lane and permits parking on both sides of the roadway.

This intersection has been the site of two hundred eighty-three (283) accidents between 1998 and 2000; three of which were pedestrian accidents, none were school-related. The NYPD accident data (Table 3) shows four hundred eighty-six (486) accidents between 2001 and 2004; fifteen (15) of these were pedestrian accidents, none were school-related accidents. There were no pedestrian fatalities reported during either time period.

**3.7 SIGNAL TIMING**

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of Saint Luke School, and were found to be adequate based upon a child pedestrian walking at a rate of 3 feet per second.

TABLE 4: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS				
INTERSECTION	CROSSWALK LENGTH (FEET)	PEDESTRIAN TIME ACTUAL (SECONDS) <sup>2</sup>	PEDESTRIAN TIME REQUIRED <sup>1</sup> (SECONDS)	TIMING ADJUSTMENT REQUIRED?
<b>East 139<sup>th</sup> St. &amp; St. Ann’s Ave.</b>				
crossing East 139 <sup>th</sup> St.	34	88 (timing 1) 66 (timing 2)	15	No
crossing St. Ann’s Ave.	41	28 (timing 1) 20(timing 2)	17	No
<b>East 138<sup>th</sup> St. &amp; St. Ann’s Ave.</b>				
crossing East 138 <sup>th</sup> St	50	46 (timing 1) 34 (timing 2)	20	No
crossing St. Ann’s Ave	44	70 (timing 1) 52 (timing 2)	18	No
<b>East 138<sup>th</sup> St. &amp; Cypress Ave.</b>				
crossing East 138 <sup>th</sup> St	50	46 (timing 1) 34 (timing 2)	20	No
crossing St. Cypress Ave	40	70 (timing 1) 52 (timing 2)	17	No

1. A rate of 3 ft/sec plus 3 seconds reaction time was utilized as the child pedestrian walking rate.
2. Timing 1 is in effect Monday – Friday from 6:30 am – 10:00 am and from 3:00 pm – 7:00 pm  
Timing 2 is in effect Monday - Friday from 10:00 am – 3:00 pm and from 7:00 pm – 6:30 am

The school principal requested a flashing beacon (light) on East 138th Street in front of the school for arrival and dismissal. There is a firehouse directly across from the school.

This is not a school crossing location and is it not the policy of the NYCDOT to provide a flashing light for firehouses.

### **3.8 PHYSICAL CONDITIONS**

#### **3.8.1 Roadways and Sidewalks**

The roadways and sidewalks in the vicinity of Saint Luke School are generally fifteen to twenty feet wide and in fair condition except for one location. This location is on East 138<sup>th</sup> Street between the school and Cypress Avenue where a chain link fence is occupying a large portion of the sidewalk. The school officials report that this has been on going “construction site” for the last twelve years, with little or no activity. The chain link fence that has been there since previous activities at the site, has left an open foundation, or excavation in the ground. It is further reported that students will walk out into the street to enable someone in a wheelchair to negotiate this section of the sidewalk. They also report a teacher has hurt her wrist in a fall while negotiating this section of the sidewalk. The available sidewalk width is approximately five feet (see Figure 14).



*Figure 14: Looking east on East 138<sup>th</sup> Street at sidewalk occupied by chain link fence*

#### **3.8.2 Pedestrian Ramps**

Overall, pedestrian ramps in the area of the school are standard, with the following exceptions:

- The northeast corner of East 139<sup>th</sup> Street & St. Ann’s Avenue where a traffic signal pole and trash basket are obstructing the path of the north crosswalk across St. Ann’s Avenue (see Figure 8).

- The southeast corner where a traffic signal pole and trash basket are obstructing the path of the crosswalk located across the south leg of St. Ann's Avenue (see Figure 9).
- The southwest corner where a traffic signal pole and trash basket are obstructing the path of the crosswalk located across the south leg of St. Ann's Avenue (see Figure 9).
- The southwest corner where the edge of the pavement has unraveled in the gutter in the center of the crosswalk located across the west leg of East 139<sup>th</sup> Street (see Figure 9).
- The northwest corner of East 138<sup>th</sup> Street & Cypress Avenue where a utility pole is blocking the path of the crosswalk located across the north leg of Cypress Avenue (see Figure 13).

## 4. PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY

This section describes the proposed measures to improve student pedestrian safety around Saint Luke 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 Saint Luke School are discussed as follows, and are shown in more detail in Exhibit 6 at the end of this section.

### 4.1 SHORT-TERM MEASURES

➤ *Install “No Standing 7AM – 4PM School Days” signs*

Install “No Standing 7AM – 4PM School Days” signs for a distance of thirty feet (30’) in front of the school’s main entrance. (This is a typical requirement for all NYC schools in order to provide for emergency access to and from the school.)

➤ *Place advanced stop bar before school crosswalk*

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

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

Ten feet (10’) advanced stop bars before school crosswalks are recommended on the following approaches of signalized intersections surrounding Saint Luke School:

- Eastbound, westbound, and southbound approaches of the intersection of St. Ann’s Avenue and East 138<sup>th</sup> Street.
- Northbound and westbound approaches of the intersection of St. Ann’s Avenue and East 139<sup>th</sup> Street.
- Eastbound, westbound, and southbound approaches of the intersection of Cypress Avenue and East 138<sup>th</sup> Street.
- Northbound and southbound approaches of the intersection of Bruckner Boulevard and East 138<sup>th</sup> Street.

➤ *Install graphic “Yield to Pedestrian” sign*

Install “YIELD TO PEDESTRIAN” signs at intersection approaches with substantial vehicle–student pedestrian volumes at intersections assigned to this school. A “YIELD TO PEDESTRIAN” sign is recommended on the following approaches of signalized intersections around Saint Luke School:

- Southbound approach of Cypress Avenue at its intersection with East 139<sup>th</sup> Street
- Northbound approach of Cypress Avenue at its intersection with East 138<sup>th</sup> Street
- Southbound approach of St. Ann's Avenue at its intersection with East 139<sup>th</sup> Street
- Northbound approach of St. Ann's Avenue at its intersection with East 138<sup>th</sup> Street
- Eastbound approach of East 138<sup>th</sup> Street at its intersection with Jackson Avenue
- Eastbound and westbound approaches of East 138<sup>th</sup> Street at its intersection with Bruckner Boulevard

These signs are suggested to improve visibility and safety of student-pedestrians.

➤ Provide pedestrian crosswalk at the following locations

The intersection of Cypress Avenue and East 139<sup>th</sup> Street is a multi-way stop-controlled intersection and there is no crosswalk across the north leg of Cypress Avenue. It is therefore recommended to:

- Provide a pedestrian crosswalk at the north leg of the Cypress Avenue at its intersection with East 139<sup>th</sup> Street

The intersection of Cypress Avenue and East 140<sup>th</sup> Street is a two-way stop-controlled intersection and there is no crosswalk across the stop-controlled legs of East 140<sup>th</sup> Street. It is therefore recommended to:

- Provide pedestrian crosswalks at the east and west legs of the East 140<sup>th</sup> Street at its intersection with Cypress Avenue

The intersection of Beekman Avenue and East 141<sup>st</sup> Street is a two-way stop-controlled intersection and there is no crosswalk across the stop-controlled leg of Beekman Avenue. It is therefore recommended to:

- Provide a pedestrian crosswalk at the north leg of the Beekman Avenue at its intersection with East 141<sup>st</sup> Street

➤ Additional crossing guard

The school principal expressed the need for an additional crossing guard to be assigned to the intersection of East 139<sup>th</sup> Street & Cypress Avenue. High volumes of traffic, congestion, double parking, and drivers not stopping for the stop sign were reported at this intersection. School crosswalks are located across the west, east, and south legs of the intersection. It is therefore recommended to:

- Consider an additional crossing guard to be assigned at the intersection of East 139<sup>th</sup> Street & Cypress Avenue.

➤ Other Traffic Issues

The school principal reported the following additional traffic issues which are primarily enforcement related:

- Livery vehicles make frequent U-turns in front of the school utilizing the drive apron in front of the firehouse. Sometimes these U-turns are made by tractor-trailers. These U-turns are often the cause of accidents with drivers leaving parking spaces not expecting the vehicle making U-turn, and the driver making a U-turn not expecting the car leaving the parking space.
- The stop sign is frequently violated at East 139<sup>th</sup> Street & Cypress Avenue (more on East 139<sup>th</sup> Street).
- Double parking is often a problem.

The following is therefore recommended:

- NYCDOT should consider arranging a meeting with a representative of the local police precinct and school officials in order to discuss these problems in detail and to identify appropriate corrective measures.

➤ East 138<sup>th</sup> Street Sidewalk Obstruction

A chain link fence is occupying a large portion of the sidewalk on East 138<sup>th</sup> Street between the school and Cypress Avenue, immediately adjacent to and east of the school. The school officials reported that this has been an on going “construction site” for the last twelve years, with little to no activity. The chain link fence was apparently installed to protect pedestrians from the open foundation/excavation. It is further reported that students walk out into the street to enable someone in a wheelchair to negotiate this section of sidewalk. They also reported that a teacher had hurt her wrist in a fall while negotiating this section of sidewalk. The available sidewalk width between the chain link fence and the street trees has been reduced to approximately five feet in this area (see Figure 15). It may be possible to relocate the fence farther away from the street, thereby increasing the available width for pedestrian use.

The following is therefore recommended to:

- Increase the sidewalk width available for pedestrian use. This will require an investigation of the site to determine if it may be possible to relocate the fence situated to the east of the school, closer to the property line/right-of-way.

➤ Speeding on East 139<sup>th</sup> Street

The school principal reported that speeds have reduced on East 139<sup>th</sup> Street since the installation of the speed reducer, but there continues to be a speeding problem on East 139<sup>th</sup> Street between Cypress Avenue and the speed reducer. Therefore, a speed survey was conducted on East 139<sup>th</sup> Street between Cypress Avenue and newly installed speed reducer, in order to verify the existence of a speeding problem and to determine its extent. The westbound vehicles on East 139<sup>th</sup> Street between Cypress Avenue and the newly installed speed reducer were found to be traveling with an 85<sup>th</sup> percentile speed of 31 mph. The 85<sup>th</sup> percentile speed is

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

New York City Department of Transportation criteria for the placement of speed reducers require a minimum distance of two hundred feet from a stop sign and three – six hundred feet between speed reducers installed in series.

Implementation of a second speed reducer is not considered feasible because of the presence of multiple closely spaced driveways on 139<sup>th</sup> Street between Cypress Avenue and the newly installed speed reducer.

It should be noted that Saint Luke School was selected for NYCDOT's pilot program for reduced speed zones near schools. As part of this pilot program, 139<sup>th</sup> Street has a posted speed limit of 20 mph between Cypress Avenue and St. Ann's Avenue.

#### **4.2 LONG-TERM MEASURES**

➤ *Consider curb extension at the following intersections:*

- Southeast and southwest corners of East 139<sup>th</sup> Street and St. Ann's Avenue intersection
- Southeast and southwest corners of East 139<sup>th</sup> Street and Cypress Avenue intersection
- Northwest corner of Cypress Avenue at its intersection with East 138<sup>th</sup> Street
- Northeast corner of St. Ann's Avenue at its intersection with East 138<sup>th</sup> Street
- All four corners of St. Ann's Avenue and East 137<sup>th</sup> Street intersection

Curb extensions (neckdowns) should be installed at the corners as shown in Exhibit 6. The purpose of the curb extension is to provide additional reservoir space for pedestrian, to shorten the crossing distance for pedestrians, and to reduce the speed of vehicles approaching and turning on school crosswalks. The curb extension will not eliminate or reduce the width of any travel lanes. Curb extensions are not proposed where they would hinder the ability of a vehicle to turn.

➤ *Relocate Traffic Signal Poles*

At the signalized intersection of East 139<sup>th</sup> Street & St. Ann's Avenue, there are several locations where a traffic signal pole and a trash basket block the crosswalk path. They are the following locations:

- The northeast corner of East 139<sup>th</sup> Street & St. Ann's Avenue where a traffic signal and a trash basket are obstructing the path for the north crosswalk across St. Ann's Avenue (see Figure 8).
- The southeast corner where a traffic signal pole and a trash basket are obstructing the path for the crosswalk located across the south leg of St. Ann's Avenue (see Figure 9).

- The southwest corner where a traffic signal pole and a trash basket are obstructing the path for the crosswalk located across the south leg of St. Ann's Avenue (see Figure 9).

It is therefore recommended to:

- Redesign and reconstruct the pedestrian ramp located at the northeast corner of East 139<sup>th</sup> Street & St. Ann's Avenue for the north crosswalk across St. Ann's Avenue.
- Redesign and reconstruct the pedestrian ramp located at the southeast corner of East 139<sup>th</sup> Street & St. Ann's Avenue for the south crosswalk across St. Ann's Avenue.
- Redesign and reconstruct the pedestrian ramp located at the southwest corner of East 139<sup>th</sup> Street & St. Ann's Avenue for the south crosswalk across St. Ann's Avenue.

➤ Relocate Utility Pole

At the signalized intersection of East 138<sup>th</sup> Street & Cypress Avenue, a utility pole on the northwest corner is obstructing the path for the crosswalk located across the north leg of Cypress Avenue.

It is therefore recommended to:

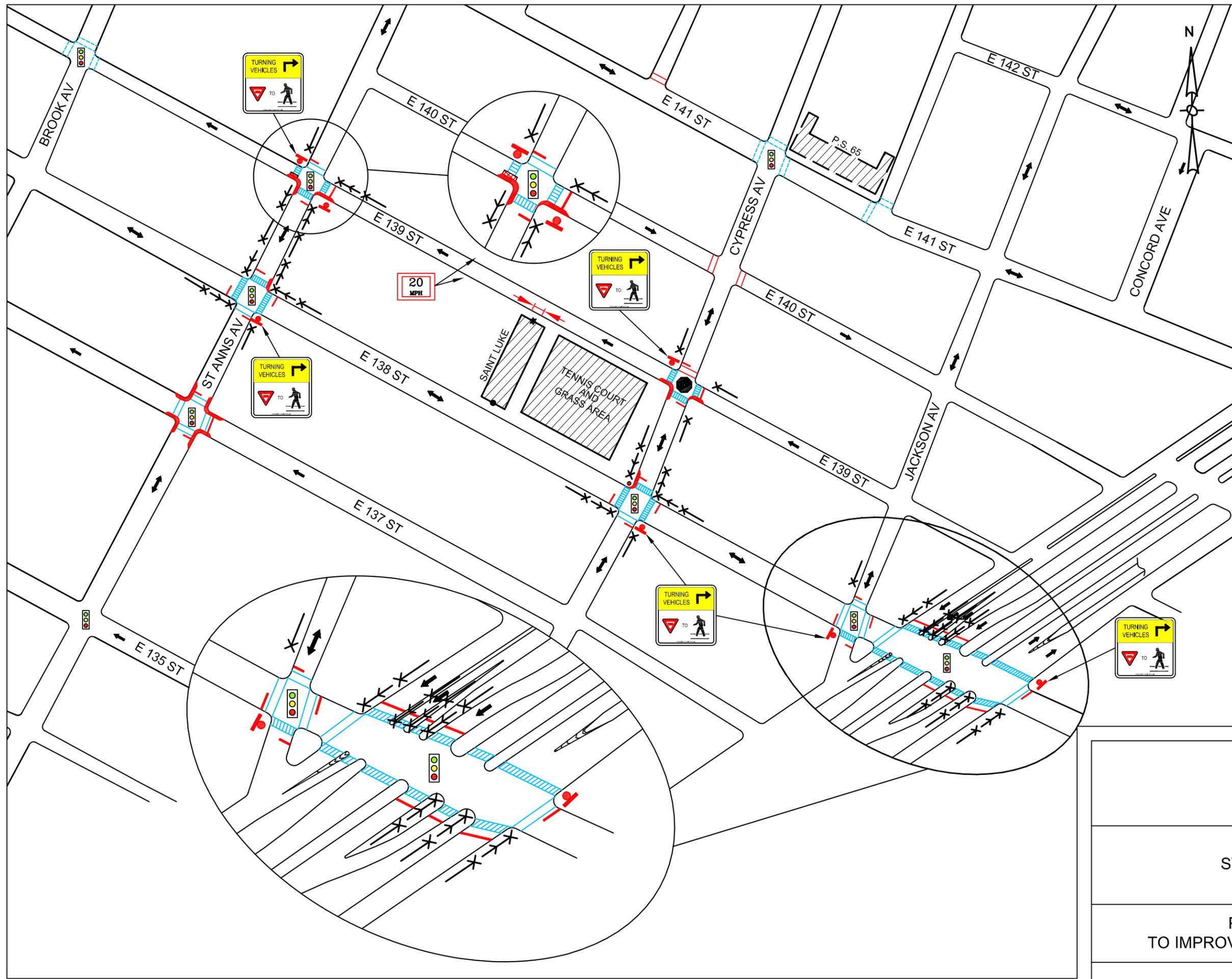
- Redesign and reconstruct the pedestrian ramp located at the northwest corner of East 138<sup>th</sup> Street & Cypress Avenue for the crosswalk located across the north leg of Cypress Avenue.

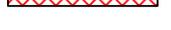
➤ Replace Pavement

The pavement on the southwest corner of East 139<sup>th</sup> Street & St. Ann's Avenue is in need of replacement in the center of the crosswalk located across the west leg of East 139<sup>th</sup> Street.

It is therefore recommended to:

- Replace the pavement along the gutter at the southwest corner of East 139<sup>th</sup> Street & St. Ann's Avenue for the crosswalk located across the west leg of East 139<sup>th</sup> Street.



- LEGEND**
-  MAIN ENTRANCE
  -  OTHER ENTRANCES
  -  EXISTING TRAVEL DIRECTION
  -  EXISTING ADVANCE WARNING SIGN OR SCHEDULED TO BE INSTALLED
  -  EXISTING SCHOOL CROSSWALK WARNING ASSEMBLY OR SCHEDULED TO BE INSTALLED
  -  EXISTING SIGNALIZED LOCATION
  -  EXISTING ALL WAY STOP LOCATION
  -  EXISTING SCHOOL CROSSWALK
  -  EXISTING PEDESTRIAN CROSSWALK
  -  PROPOSED PEDESTRIAN CROSSWALK
  -  PROPOSED TRAFFIC SIGN
  -  AREA OF PAVEMENT TO BE RECONSTRUCTED
  -  PROPOSED "NO STANDING 7:00AM - 4:00PM SCHOOL DAYS"
  -  UTILITY POLE TO BE RELOCATED
  -  PROPOSED CURB EXTENSION (NECKDOWN)
  -  SPEED BOARD

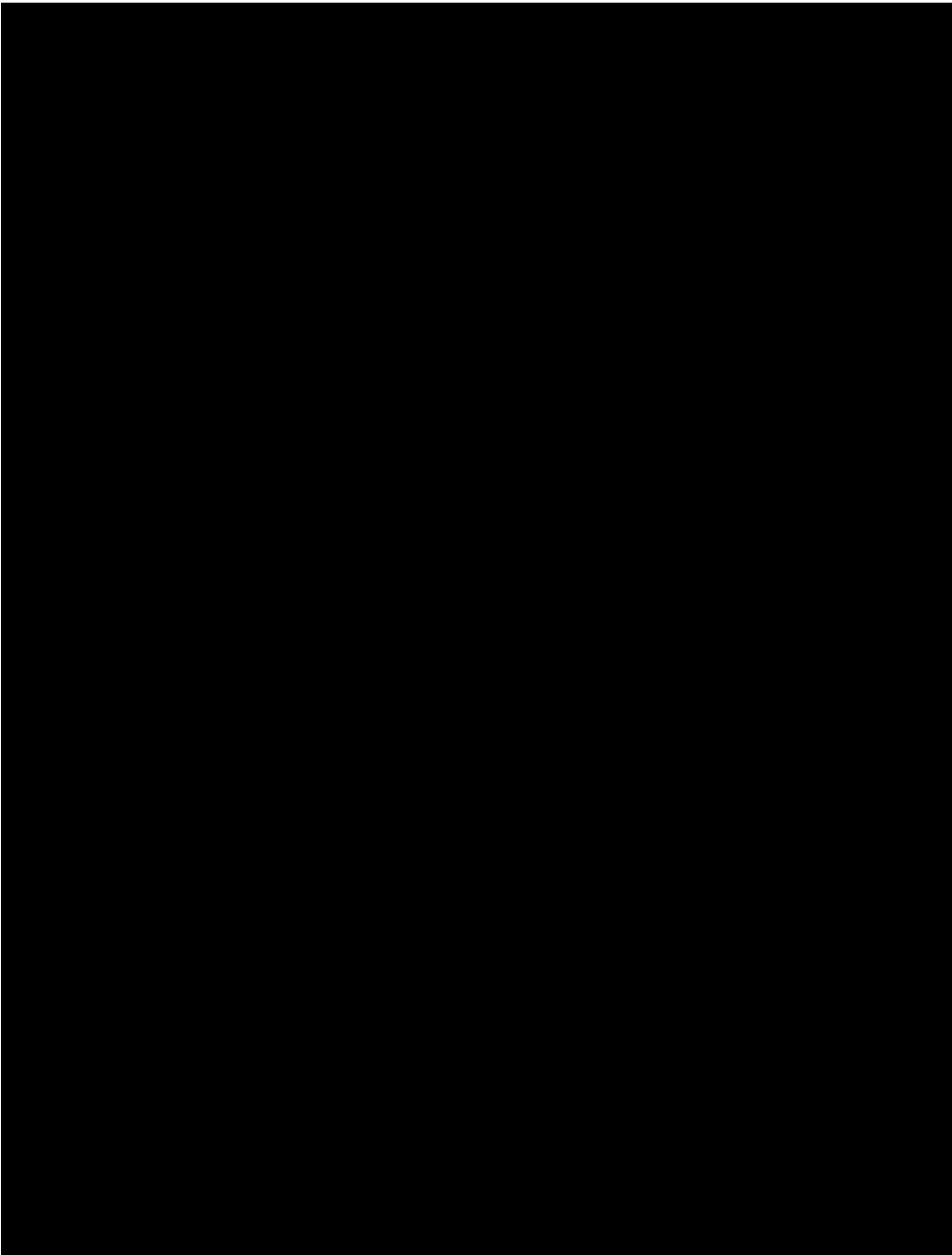
1" = 200'

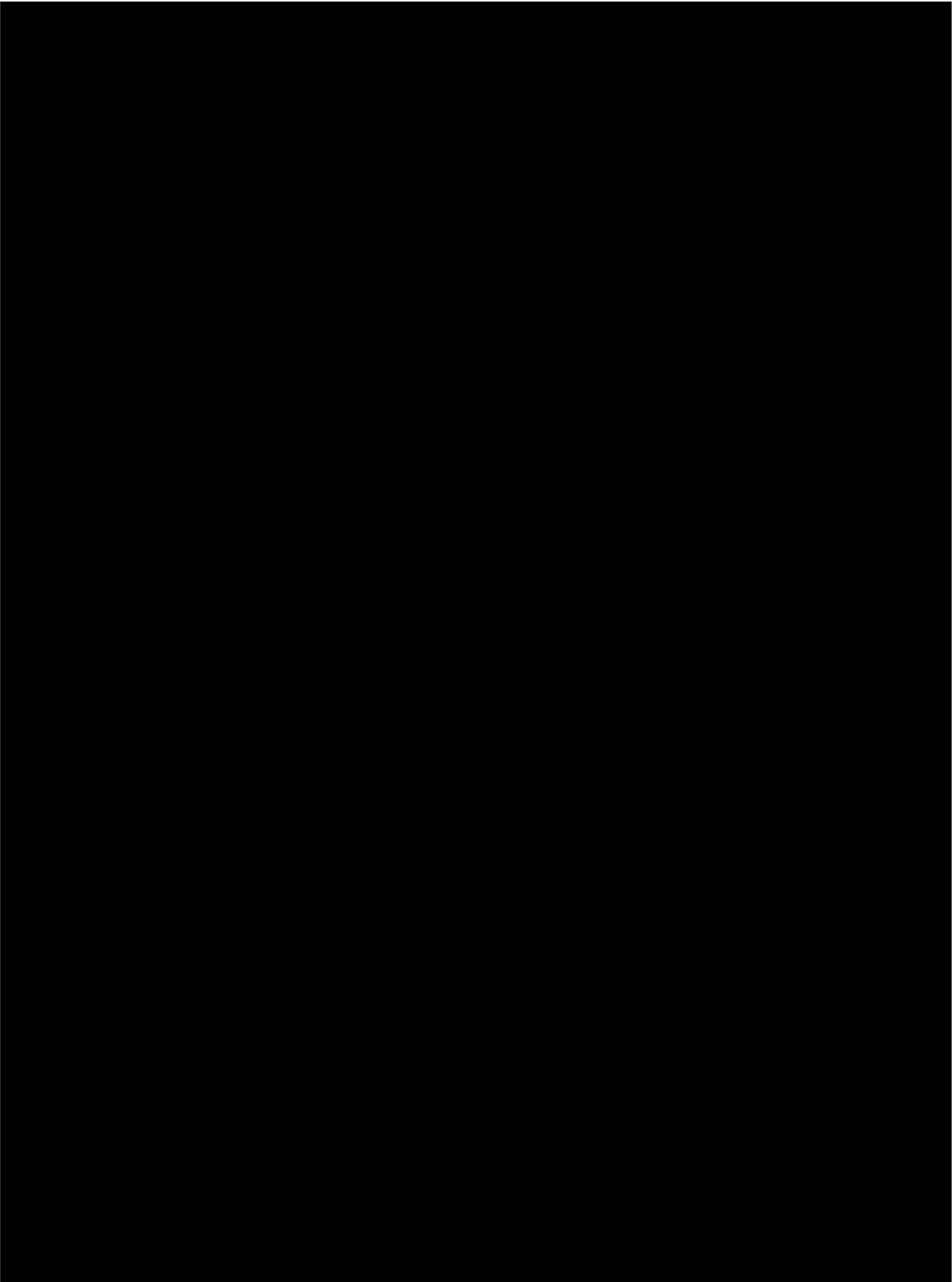
EXHIBIT 6

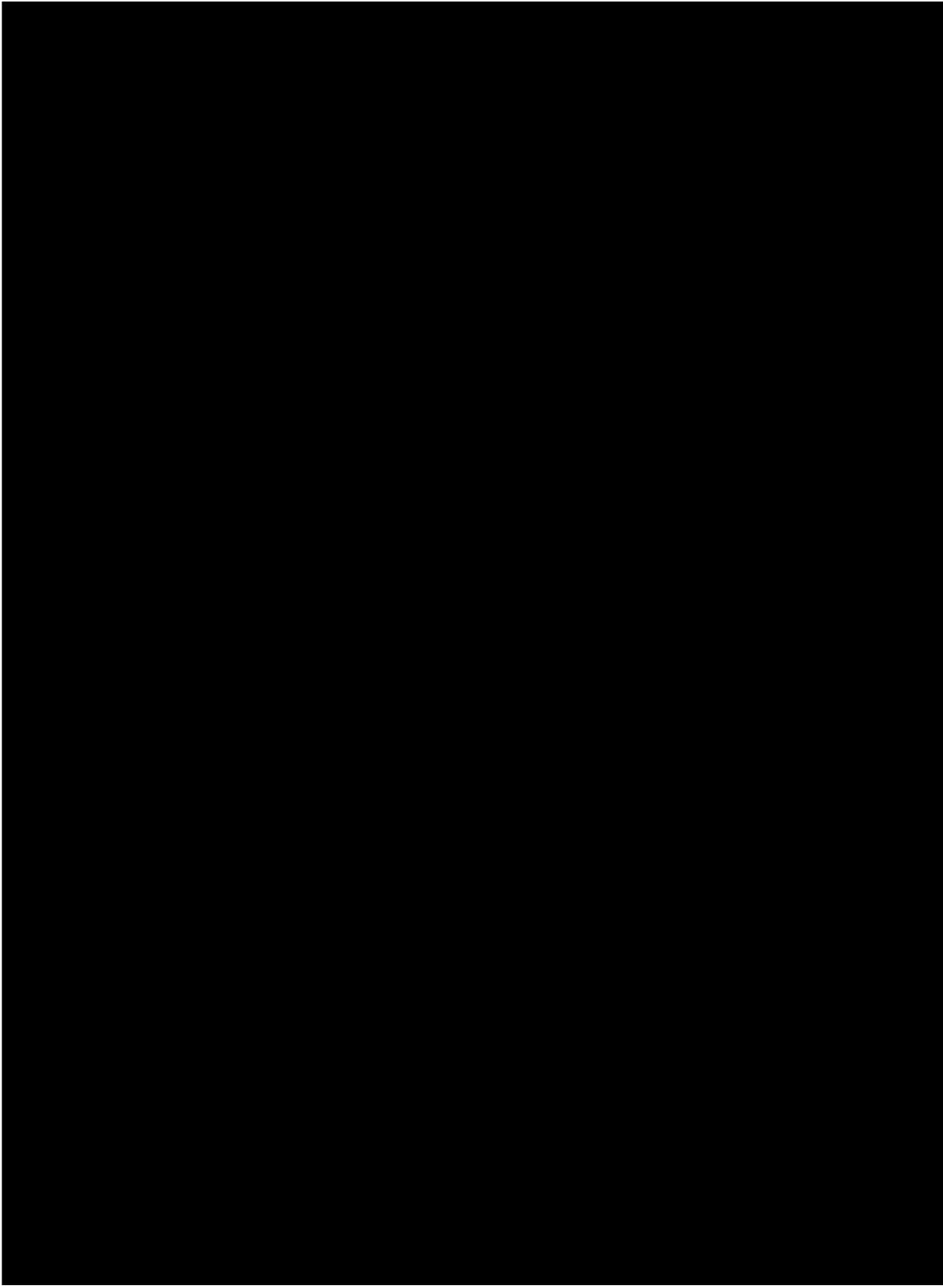
ST LUKE SCHOOL BRONX

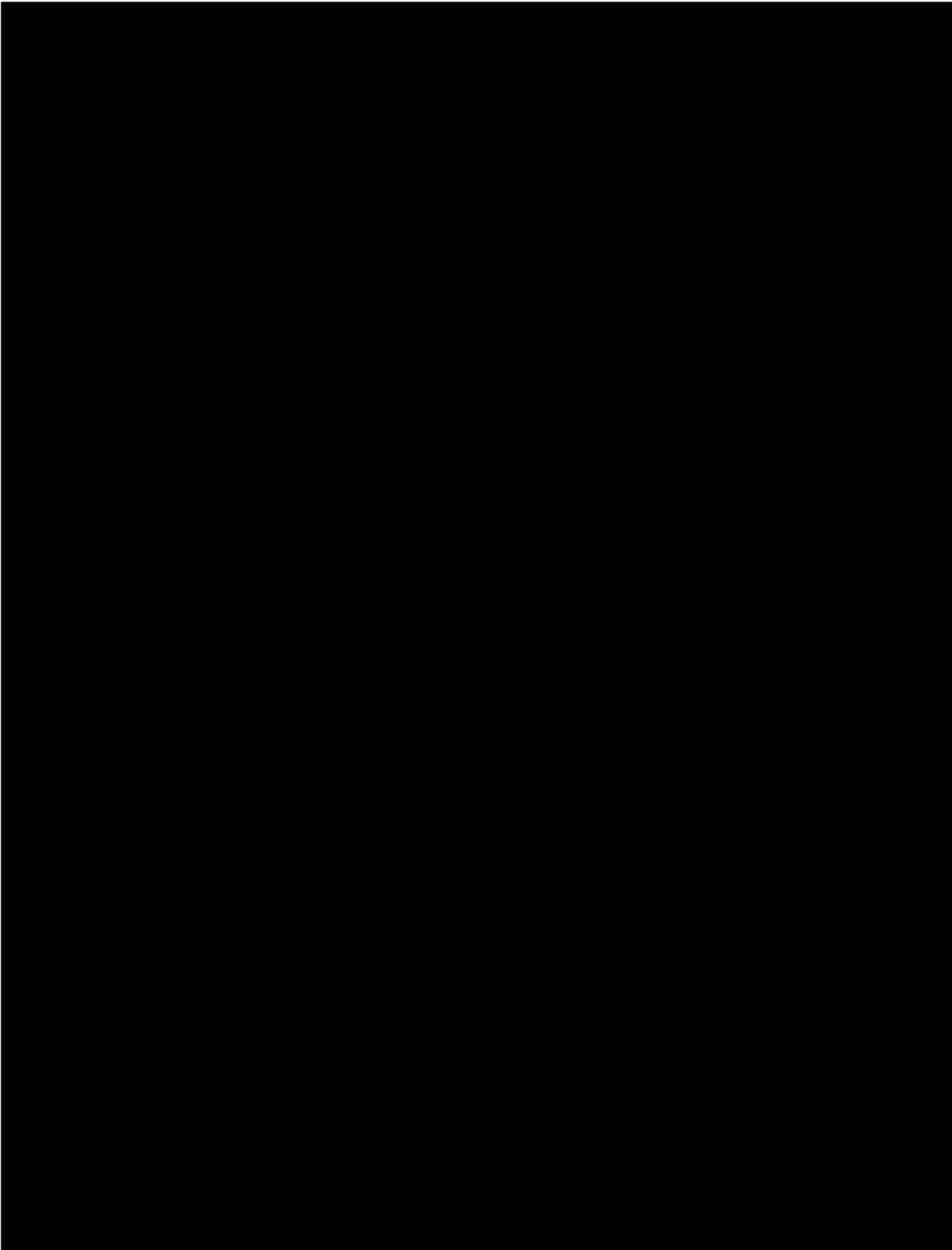
PROPOSED MEASURES  
TO IMPROVE SCHOOL PEDESTRIAN SAFETY

# APPENDIX









## SPOT SPEED STUDY

Date: **June 15, 2005**  
 Location: **139th Street between Cypress Avenue & St. Anns Avenue**  
 Surveyor: **Richard Calvache & Hugo Salinas**

Time: **12:30 p.m.**

School: **St. Luke**  
 Direction: **Westbound**  
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS <sup>2</sup>
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	1	1.0%	1.0%	15	225
16	1	1.0%	2.0%	16	256
17	1	1.0%	3.0%	17	289
18	1	1.0%	4.0%	18	324
19	1	1.0%	5.0%	19	361
20	2	2.0%	7.0%	40	800
21	6	6.0%	13.0%	126	2646
22	8	8.0%	21.0%	176	3872
23	4	4.0%	25.0%	92	2116
24	9	9.0%	34.0%	216	5184
25	11	11.0%	45.0%	275	6875
26	5	5.0%	50.0%	130	3380
27	10	10.0%	60.0%	270	7290
28	10	10.0%	70.0%	280	7840
29	7	7.0%	77.0%	203	5887
30	9	9.0%	86.0%	270	8100
31	3	3.0%	89.0%	93	2883
32	5	5.0%	94.0%	160	5120
33	3	3.0%	97.0%	99	3267
34	1	1.0%	98.0%	34	1156
35	2	2.0%	100.0%	70	2450
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
	100	100.0%		2619	70321

Mean Speed = 26.2 mph  
 Standard Deviation = 4.2 mph  
 Margin of Error (95% Confidence) = ± 0.8 mph

Median Speed = 26.2 mph  
 15th Percentile Speed = 21.9 mph  
 85th Percentile Speed = 30.5 mph

# SPOT SPEED STUDY

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School: **St. Luke**  
Direction: **Westbound**  
Comments:

Mean Speed = 26.2 mph  
Standard Deviation = 4.2 mph  
Margin of Error (95% Confidence) =  $\pm 0.8$  mph

Median Speed = 26.2 mph  
15th Percentile Speed = 21.9 mph  
85th Percentile Speed = 30.5 mph

