

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



School Safety Engineering Project

FINAL REPORT: P.S. 155, Nicholas Herkimer School, Brooklyn



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



SEPTEMBER 15, 2006

**School Safety Engineering Project
P.S. 155, Nicholas Herkimer School, Brooklyn**

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1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Department of Transportation has developed school safety maps for 1,471 schools throughout the City. Schools currently in the program are primarily elementary and intermediate schools with an enrollment of at least 250 students. The safety plans include the designation of official school crosswalks, identified by prominent warning signs and roadway markings. DOT also designates curbside locations for school bus loading and unloading and other parking controls to improve conditions for students. In addition, nearly 350 speed reducers (humps) have been installed in the immediate vicinity of schools.

Under this consultant study, the School Safety Engineering Project, crash data in the vicinity of all program schools were 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. 155 (Nicholas Herkimer School) in Brooklyn is one of the 135 priority schools.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS

2.2 NEIGHBORHOOD DESCRIPTION

Located on Herkimer Street, P.S. 155 is bounded by Fulton Street to the north, Eastern Parkway to the east, Herkimer Street to the south and Rockaway Avenue to the west (see Exhibit 1 for Aerial Photograph). The surrounding land use is residential, with several commercial facilities on the surrounding blocks. The school is surrounded primarily by single and two-family homes, with on-street parallel parking. An apartment complex, Atlantic Towers, is located on Rockaway Avenue just south of Atlantic Avenue (see Exhibit 2 for Catchment Area).

The MTA subway A and C trains run along Fulton Street with a stop located at Rockaway Avenue, one block northwest of the school. The J and Z trains runs along Broadway with a stop located at Eastern Parkway, four blocks northeast of the school.

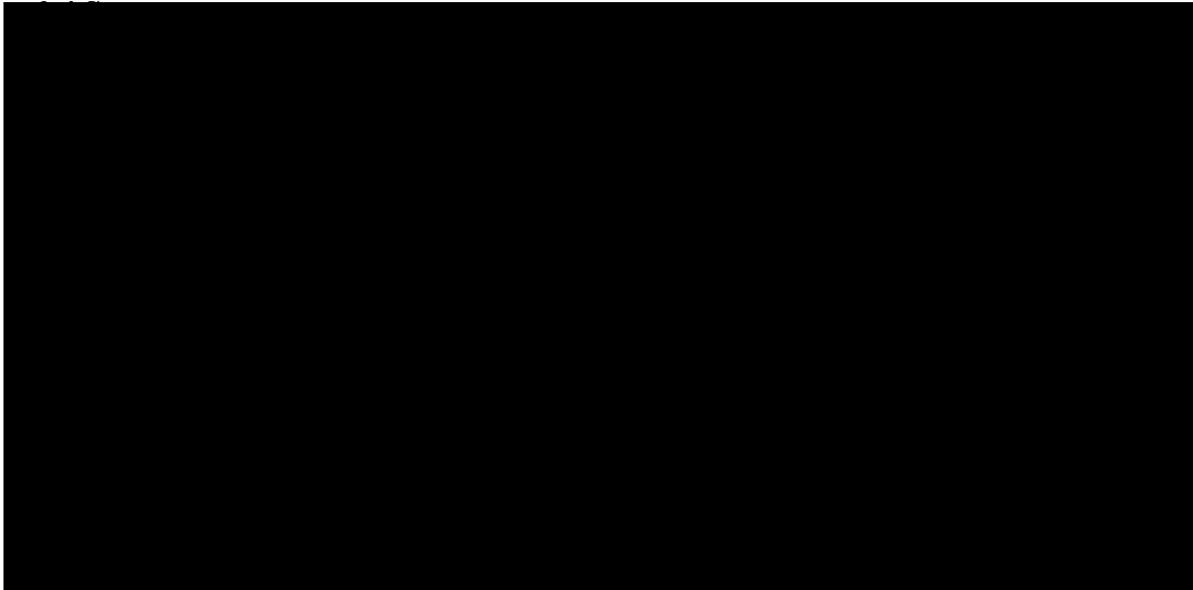
2.3 MEETING WITH SCHOOL REPRESENTATIVES

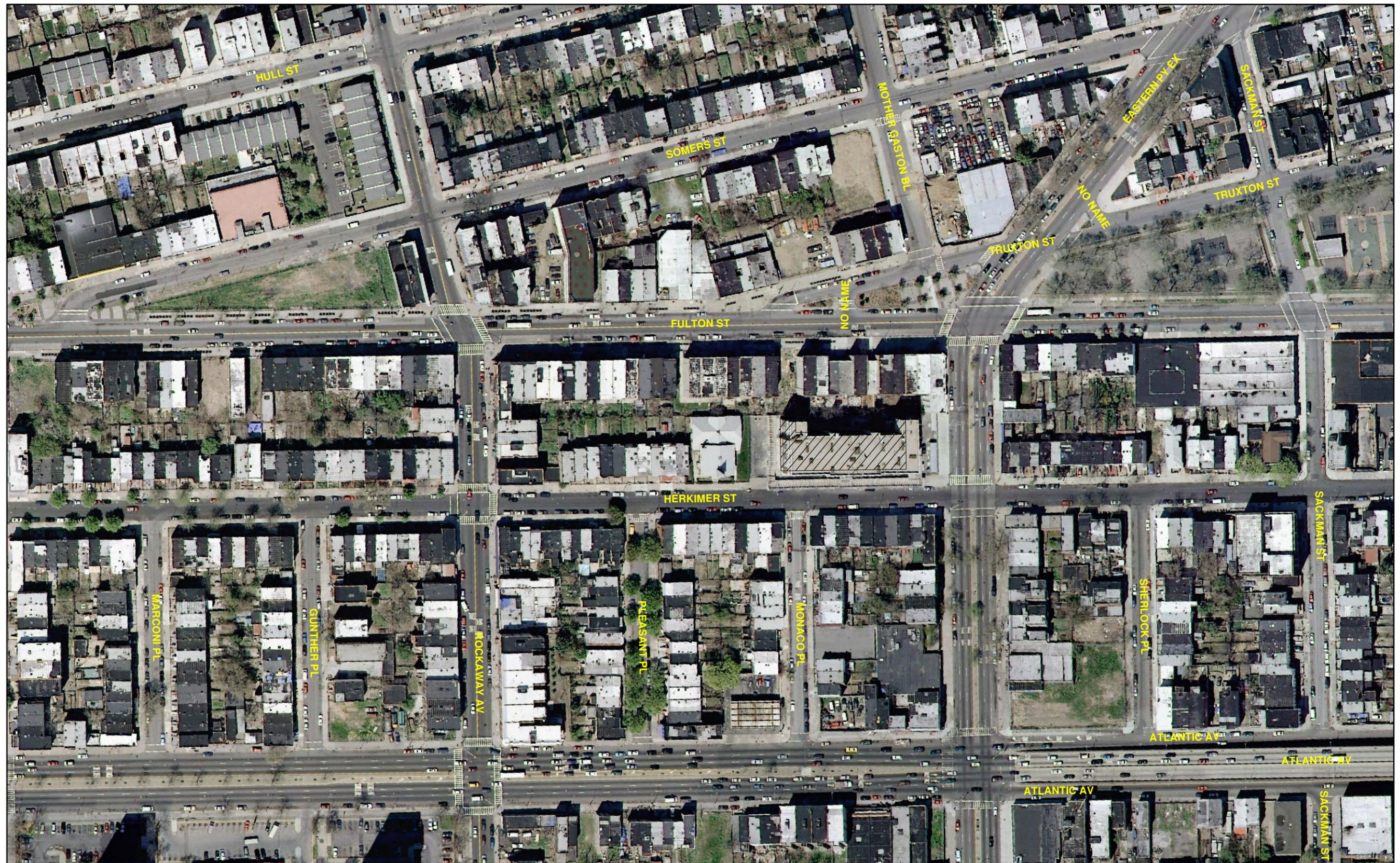
The consultant team met with representatives of P.S. 155 on the afternoon of May 21, 2004. Representatives from the school included the Assistant Principal, the District Manager of Community Board #16, a school safety agent, the parent coordinator, and a member of the PTA (see Attendance Sheet in the Appendix). The school representatives identified the following concerns regarding student pedestrian safety:

- Excessive vehicle speeds traveling on Fulton Street and Herkimer Street
- High traffic volume on Eastern Parkway, and at the intersection of Rockaway Avenue and Herkimer Street
- An extremely wide crossing distance on Atlantic Avenue
- Vehicles do not yield to pedestrians in crosswalks, specifically at Monaco Place



Figure 1: Looking south on Eastern Parkway at Atlantic Avenue





1 inch equals 150 feet

EXHIBIT 1
NICHOLAS HERKIMER SCHOOL
P.S. 155, BROOKLYN
AERIAL PHOTOGRAPH



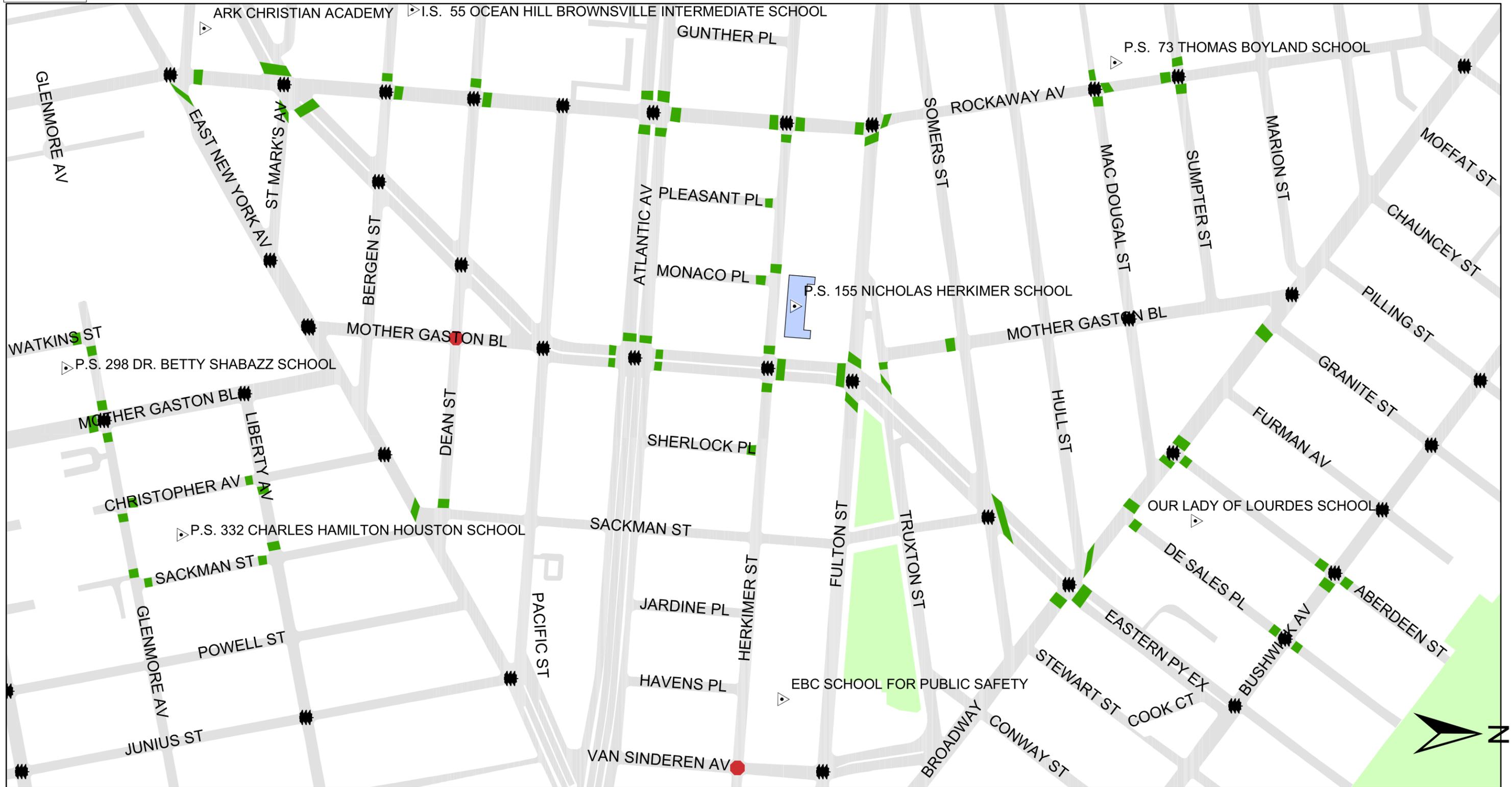
1 inch equals 500 feet

 CATCHMENT AREA

EXHIBIT 2
P.S. 155, BROOKLYN
NICHOLAS HERKIMER SCHOOL
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	TRAFFIC SIGNAL
SCHOOL CROSSWALK	ALL - WAY STOP
	SPEED REDUCER

PS 155 Brooklyn
NICHOLAS HERKIMER SCHOOL

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

EXHIBIT 3

Map created on 11/16/2006

1.5.1

COMM. BOARD:	316
PRECINCT:	73

2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

According to school officials, approximately 94% of students walk to P.S. 155; 2% are driven by parents or guardians, 3% arrive by school buses, and the remaining 1% utilize the MTA bus or subway system. See Table 1 for the school’s estimate of modal split. Students who ride MTA buses travel on either the B60 line, which runs along Rockaway Avenue, or the B20 line, which runs along Broadway.

TABLE 1: MODES OF TRAVEL (AS ESTIMATED BY SCHOOL OFFICIALS)	
DESCRIPTION	PERCENTAGE
Walk	94%
Driven by parent or guardian	2%
School bus	3%
MTA bus or Subway	1%
TOTAL	100%

2.7 OTHER PEDESTRIAN TRAFFIC GENERATORS

School officials indicated that after school, several children visit the stores near the intersection of Fulton Street and Rockaway Avenue as well as the arcade on Rockaway Avenue between Herkimer Street and Atlantic Avenue.

In addition to P.S. 155, there are three other schools in the Ocean Hill area: P.S. 73, Our Lady of Lourdes School, and EBC School for Public Service High School.

2.8 CROSSING GUARD LOCATIONS

Four crossing guards are assigned to P.S. 155. They are stationed at the following intersections:

- Eastern Parkway at Atlantic Avenue
- Eastern Parkway at Herkimer Street
- Eastern Parkway at Fulton Street
- Herkimer Street at Rockaway Avenue

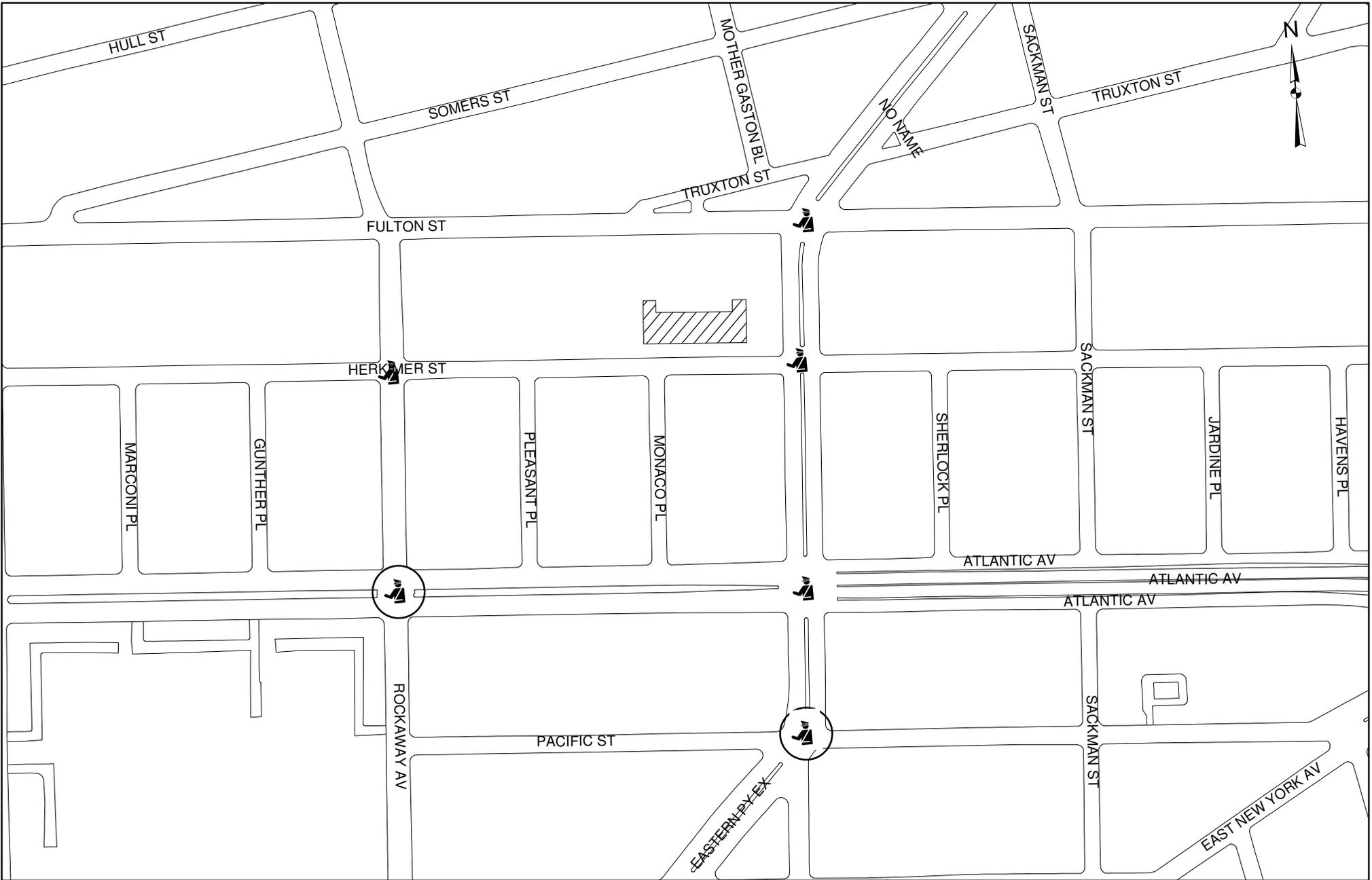
Crossing guards are also located at the intersection of Atlantic Avenue and Rockaway Avenue, and at Eastern Parkway and Pacific Street, although these intersections are assigned to other schools in the area (see Exhibit 4 for detail).



Figure 2: Looking north on Eastern Parkway at the intersection of Fulton Street adjacent to P.S. 155 during dismissal



Figure 3: Looking east on Herkimer Street at the intersection of Eastern Parkway



1 inch equals 250 feet



CROSSING GUARDS ASSIGNED TO ANOTHER SCHOOL



CROSSING GUARDS ASSIGNED TO P.S. 155

EXHIBIT 4

**P.S. 155, BROOKLYN
NICHOLAS HERKIMER SCHOOL**

CROSSING GUARD

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to school officials, 3% of students from P.S. 155 are transported to and from school by school bus. School representatives noted that four school buses drop off and pick up students in front of the school entrance on Herkimer Street. Field observations indicated that due to current parking regulations, school buses must double park on Herkimer Street while loading and unloading students.



Figure 4: School buses on Herkimer Street in front of P.S. 155

3.2 PARENT DROP-OFF OPERATIONS

According to the survey provided by the school representatives, 2% of students from P.S. 155 are driven to and from school by parents or guardians. Vehicles double park during arrival and dismissal time, which results in congestion on Herkimer Street.



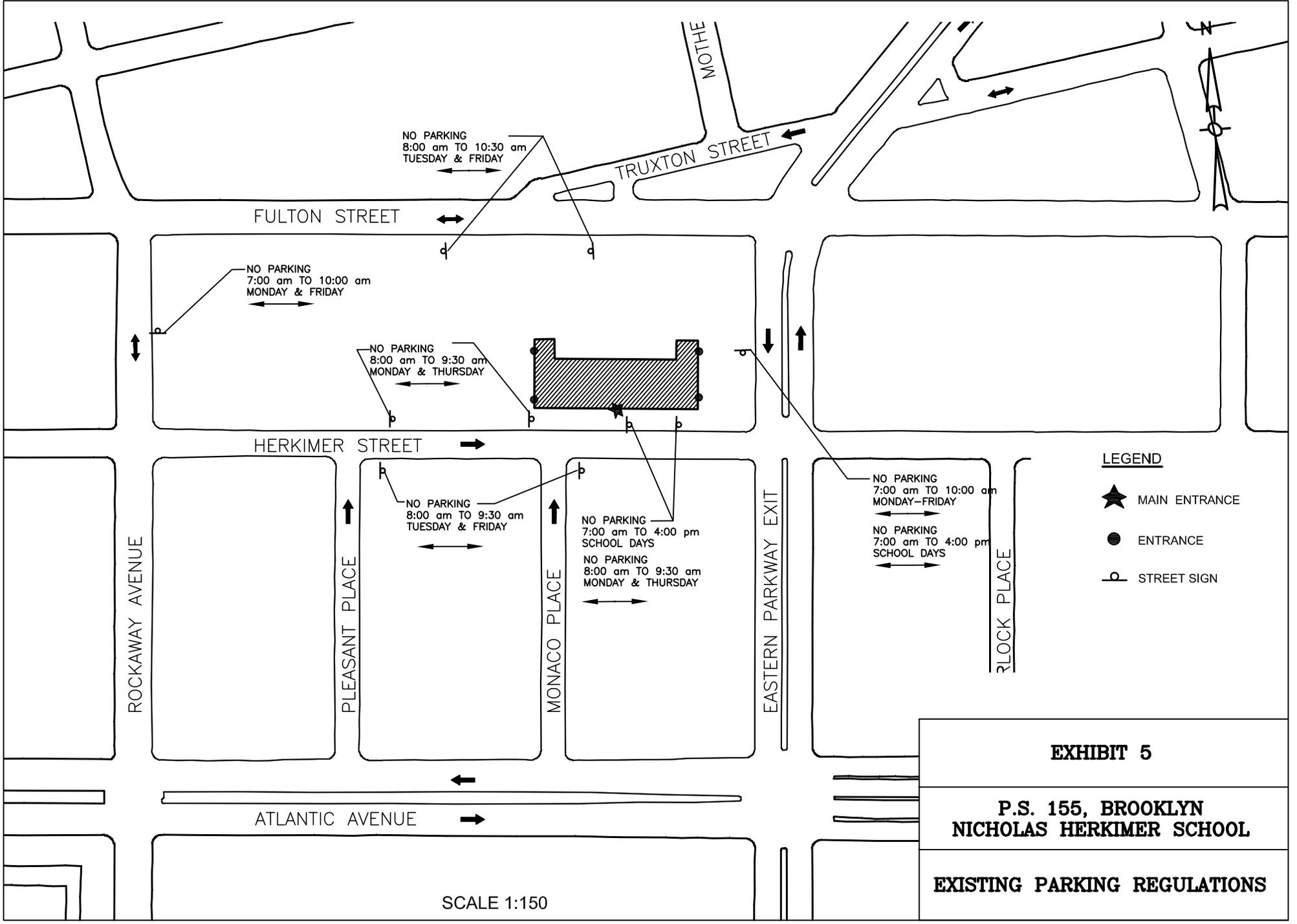
Figure 5: Vehicles double parked on Herkimer Street during afternoon dismissal time

3.3 PARKING REGULATIONS

“NO PARKING 7:00 AM – 4:00 PM, SCHOOL DAYS” parking regulations are posted on Eastern Parkway in front of the school and on Herkimer Street in front of the school. Parking regulations in the vicinity of P.S. 155 are shown in Exhibit 5.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

The Traffic Safety Map, Exhibit 3, shows existing crosswalk pavement markings. It is noted that a citywide signage program is currently underway to upgrade school signage to current Federal Manual of Uniform Traffic Control 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” on Exhibit 8.



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. 155 for the three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of the accidents. Table 3 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the DMV data.

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

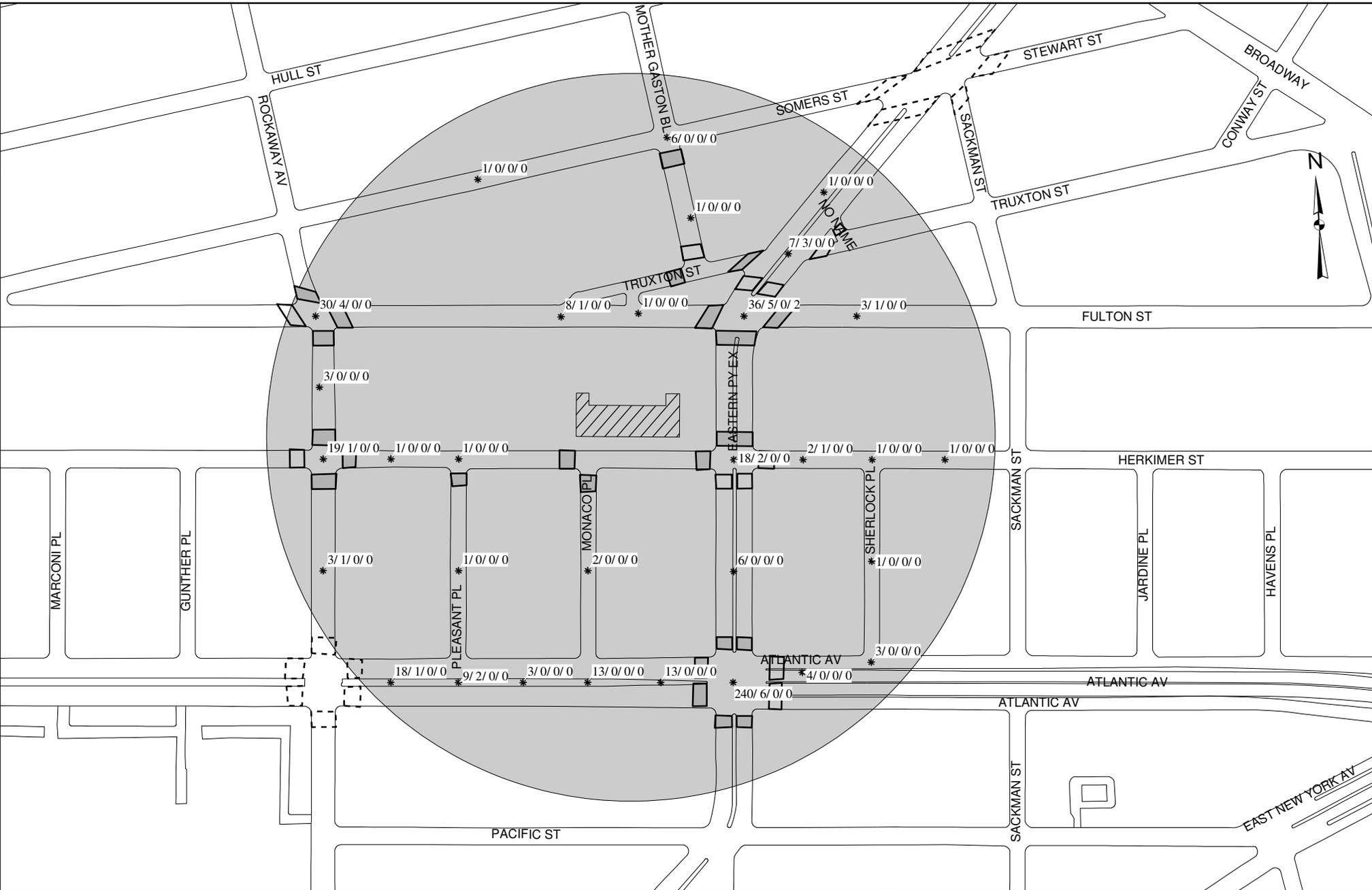
TABLE 2: DMV THREE-YEAR ACCIDENT SUMMARY (1998-2000)				
INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Rockaway Ave. / Fulton St.	30	4	0	0
Rockaway Ave. / Herkimer St.	19	1	0	0
Herkimer St. / Pleasant Pl.	1	0	0	0
Herkimer St. / Monaco Pl.**	-	-	-	-
Herkimer St. / Eastern Parkway	18	2	0	0
Eastern Parkway / Atlantic Ave.	240	6	0	0
Eastern Parkway / Fulton St.	36	5	0	2
Eastern Parkway / Truxton St.	7	3	0	0
Mother Gaston Bl. / Truxton St.**	-	-	-	-
Mother Gaston Bl. / Somers St.	6	0	0	0
TOTAL	357	21	0	2

TABLE 3: NYPD FOUR-YEAR ACCIDENT SUMMARY (2001-2004)				
INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Rockaway Ave. / Fulton St.	35	4	0	0
Rockaway Ave. / Herkimer St.	35	3	0	0
Herkimer St. / Pleasant Pl.	6	2	0	1***
Herkimer St. / Monaco Pl.	7	2	0	1
Herkimer St. / Eastern Parkway	28	1	0	1
Eastern Parkway / Atlantic Ave.	352	7	0	0
Eastern Parkway / Fulton St.	76	2	0	0
Eastern Parkway / Truxton St.	3	1	0	0
Mother Gaston Bl. / Truxton St.**	1	0	0	0
Mother Gaston Bl. / Somers St.	24	2	0	0
TOTAL	567	24	0	3

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

** *Accident data was not available for this intersection.*

*** *One pedestrian was a 3-year old child struck around dismissal time. It is assumed that this is a school-related accident and has been included in this calculation.*



ACCIDENT LOCATION *
 SCHOOL CROSSWALK ASSIGNED TO P.S. 155 [Solid Grey Box]
 SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL [Dashed Box]
 CROSSWALK [White Box]

1 inch equals 250 feet

X/X/X/X			
TOTAL ACCIDENTS	PED ACCIDENTS	PED FATAL	SCHOOL PED ACCIDENTS

EXHIBIT 6
P.S. 155, BROOKLYN
NICHOLAS HERKIMER SCHOOL

ACCIDENT SUMMARY
THREE YEAR PERIOD
(1998-2000)

3.6 TRAFFIC OPERATIONS AND ISSUES

The following describes the traffic accidents and operational issues of intersections in the vicinity of P.S. 155.

3.6.1 Rockaway Avenue and Fulton Street

Rockaway Avenue is a 48-foot wide two-way (north-south) street with one travel lane in each direction, and parking on both sides. Fulton Street is a 43-foot wide two-way (east-west) street with one travel lane in each direction, and parking on both sides. The intersection is signalized with school crosswalks located on all legs except the west leg across Fulton Street.

A total of 30 accidents occurred at this intersection during the 1998-2000 study period. Four accidents involved pedestrians. Two of these accidents involved pedestrians crossing with the signal where the driver failed to yield; one turning left onto Rockaway Avenue traveling northwest, the other turning left onto Fulton Street traveling east. The third accident at this intersection involved a stalled vehicle; the driver was pushing his vehicle north on Rockaway Avenue when he was struck by an inattentive driver. There was no detailed information available on the fourth accident. Of the four accidents at this intersection, none were school-related.

3.6.2 Rockaway Avenue and Herkimer Street

This is a signalized intersection. Herkimer Street is a 33-foot wide one-way (eastbound) street with one travel lane and parking on both sides. School crosswalks are on the north, south and east legs of the intersection. As indicated in Section 2.7, a crossing guard is assigned to this intersection.

There were 19 accidents at this intersection during the 1998-2000 study period. One accident involved a pedestrian. The pedestrian accident was not school-related; no further information is available regarding this incident.

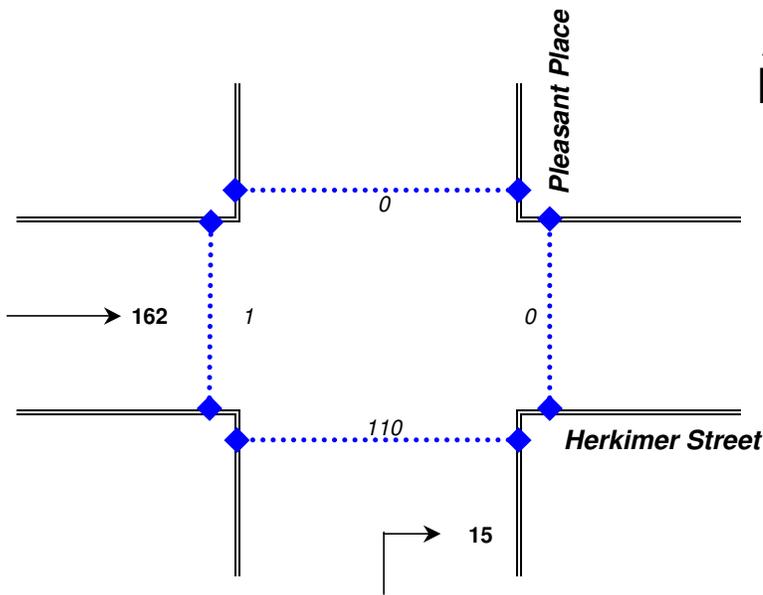
3.6.3 Herkimer Street and Pleasant Place

Pleasant Place is a 30-foot wide one-way (northbound) local street with one travel lane and parking on both sides. This intersection is stop controlled with a stop sign on Pleasant Place. School crosswalks are on the south leg (crossing Pleasant Place).

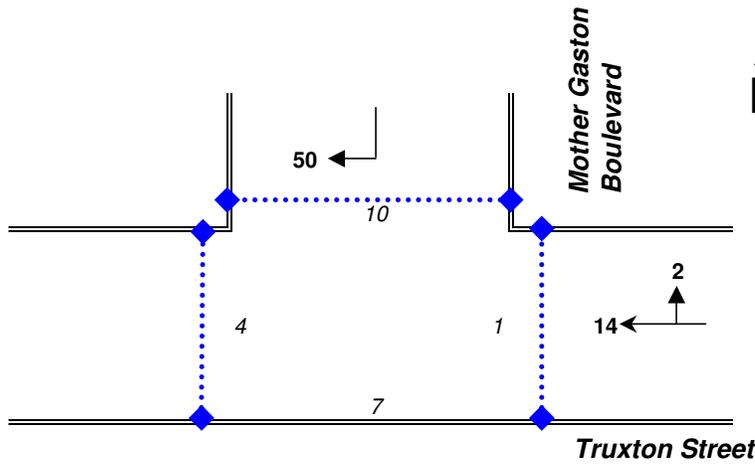
One accident occurred at this intersection during the 1998-2000 study period. No pedestrians were involved.

Traffic counts were conducted at this intersection on Monday June 6, 2005. The counts show that the school crosswalk, on the south leg, was utilized by 110 pedestrians. Only 15 vehicles used Pleasant Place during the study hour (see Exhibit 7).

One Hour Traffic Count Volumes



Intersection of Herkimer Street and Pleasant Place
(7:30 AM - 8:30 AM June 6, 2005)



Intersection of Mother Gaston Boulevard and Truxton Street
(7:30 AM - 8:30 AM June 9, 2005)

- 62 — Number of Pedestrians
- ◆...◆ Pedestrian Crossing
- 53 ← Vehicle Movement
- ← Number of Vehicles

EXHIBIT 7
P.S. 155, Brooklyn Nicholas Herkimer School
TRAFFIC COUNTS

3.6.4 Herkimer Street and Monaco Place

Monaco Place, like Pleasant Place, is a one block long 30-foot wide, one way (northbound) local street that connects Atlantic Avenue to Herkimer Street. The roadway has one travel lane and parking on both sides. This intersection is stop controlled with a stop sign on Monaco Place. There is a school crosswalk on the south leg crossing Monaco Place, and an uncontrolled school crosswalk on the west leg crossing Herkimer Street. School representatives noted that private vehicles use this area heavily during arrival and dismissal time while cars are often parked within the crosswalk (Figure 6).

No accident data were available for the 1998-2000 study period.



Figure 6: Looking north across Herkimer Street from Monaco Place

3.6.5 Herkimer Street and Eastern Parkway

Eastern Parkway is a two-way arterial with four travel lanes and parking on both sides. Northbound and southbound traffic are separated by a six-foot wide raised median. This is a signalized intersection with school crosswalks on the north, east and west legs of the intersection. School officials noted that heavy vehicular traffic and speeding on Eastern Parkway create dangerous conditions for children crossing this intersection. As indicated in Section 2.8, a crossing guard is assigned to this intersection to assist the students.

There were 18 accidents at this location during the 1998-2000 study period. Two accidents involved pedestrians. None were school-related. Both pedestrians were struck by northbound vehicles while crossing Eastern Parkway against the signal.

A spot speed study was conducted on Wednesday, April 6, 2006 on Herkimer Street between Rockaway Avenue and Eastern Parkway. The objective of the study was to determine if vehicles were speeding on this section of Herkimer Street, which is adjacent to the school.

The spot speed study results are shown in Table in 4 and in the Appendix. The 85th percentile speed is 28 mph on Herkimer Street. Since the 85th percentile speed does not

indicate vehicles are exceeding the legal speed limit of 30 mph, a speed reducer is not recommended at this location.

TABLE 4: SPOT SPEED STUDIES (HERKIMER STREET)		
LOCATION	MEDIAN SPEED (MPH)	85TH PERCENTILE SPEED (MPH)
Herkimer Street between Rockaway Avenue and Eastern Parkway	24	28



Figure 7: Looking north on Eastern Parkway at Herkimer Street

3.6.6 Eastern Parkway and Atlantic Avenue

The intersection of Eastern Parkway and Atlantic Avenue is a heavily utilized signalized intersection. Atlantic Avenue is a two-way arterial with six travel lanes and parking on both sides. There is a dedicated right turn lane for westbound vehicles turning north onto Eastern Parkway. There are school crosswalks on all legs of this intersection except the east leg across Atlantic Avenue. School officials indicated that both roadways are very wide for the children to cross. However, signal timing analysis confirms that there is sufficient time for students to cross the street (see Section 3.7).

There were 240 accidents at this location during the 1998-2000 study period. Six of these accidents involved pedestrians; none of them were school-related. Three pedestrians were crossing with the signal when struck by vehicles failing to yield; two of the vehicles were making right turns onto Eastern Parkway and the other was traveling southbound on Eastern Parkway. Another two accidents involved pedestrians crossing against the signal. The sixth accident was a pedestrian walking along Eastern Parkway; the driver was traveling north at excessive speed.



Figure 8: Looking east on Atlantic Avenue at the intersection of Eastern Parkway

3.6.7 Eastern Parkway and Fulton Street

The intersection of Fulton Street and Eastern Parkway is signalized and has school crosswalks on all legs except for the north leg. The raised medians on Eastern Parkway do not extend through the crosswalk.

The accident data indicate that 36 accidents occurred at this intersection during the 1998-2000 study period. Five accidents involved pedestrians, of which two were school-related. Three of the accidents occurred because pedestrians crossed the street against the signal. One accident was due to driver inattention while making a left turn onto Eastern Parkway. No information was available regarding the fifth accident.



Figure 9: Looking north on Eastern Parkway at Fulton Street

School officials felt that vehicles travel at excessive speeds on Fulton Street. A spot speed survey was conducted on Fulton Street between Rockaway Avenue and Eastern Parkway on April 6, 2006 from 2:30 pm to 3:15 pm.

The speed study results are shown Table 6 and in the Appendix. The 85th percentile speed is 30mph, which does not exceed the legal speed limit of 30mph. Additionally, Fulton Street is 43 feet wide and does not meet DOT criteria for speed reducer installation. Therefore, no speed reducer is recommended at this location.

TABLE 5: SPOT SPEED STUDY (FULTON STREET)		
LOCATION	MEDIAN SPEED (MPH)	85TH PERCENTILE SPEED (MPH)
Fulton Street between Rockaway Avenue and Eastern Parkway	26	30

3.6.8 Eastern Parkway and Truxton Street

Truxton Street forms a skewed intersection with Eastern Parkway. East of Eastern Parkway Truxton Street is a 37-foot wide two-way street with curbside parking on the north side of the street; while west of Eastern Parkway is a 27-foot wide, one-way (westbound) street. Truxton Street is stop-controlled at Eastern Parkway. The continuous center median along Eastern Parkway forces all westbound traffic on Truxton Street to make a right turn onto Eastern Parkway. There is a school crosswalk on the west leg of the intersection.

West of Eastern Parkway Truxton Street ends approximately about 200 feet past the intersection of Eastern Parkway as it merges with Fulton Street. Truxton Street is a one-way westbound street with parking along the north curb. Vehicles can either use a slip lane around the nose of the island to make a left turn onto Fulton Street or continue westbound to merge with Fulton Street. Truxton Street is stop controlled at Fulton Street. A school crosswalk is designated on the west leg of Truxton Street at Eastern Parkway.

Seven accidents occurred at this location during the 1998-2000 study period. Three accidents involved pedestrians. None were school-related. Two of these accidents involved pedestrians crossing without the signal. The third accident involved a pedestrian walking against the traffic on Truxton Street who was struck by a southbound vehicle.

3.6.9 Mother Gaston Boulevard and Truxton Street

Mother Gaston Boulevard is a 40-foot wide, two-way street with one travel lane in each direction and parking on both sides. At the intersection with Truxton Street, Mother Gaston Boulevard is stop-controlled. There is a school crosswalk on the east leg of the intersection.

The accident data for the 1998-2000 study period was not available. Traffic counts taken on Thursday June 9, 2005 indicated that very few pedestrians and vehicles used this intersection (see Exhibit 7).

3.6.10 Mother Gaston Boulevard and Somers Street

Somers Street is a 30-foot wide one-way (westbound) street with two travel lanes and parking on both sides. At the intersection with Mother Gaston Boulevard, Mother Gaston Boulevard is stop-controlled.

Accident data during the 1998-2000 study period indicate that six accidents occurred at this intersection, none of which involved pedestrians.

3.7 SIGNAL TIMING: PEDESTRIAN PHASE

Pedestrian crossing time was field-verified at all signalized intersections in the vicinity of P.S. 155 and found to be adequate for a child pedestrian walking rate of three feet per second, in all directions and approaches.

TABLE 6: PEDESTRIAN CROSSING TIME AT SIGNALIZED INTERSECTIONS				
Intersection Name	Crosswalk length (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)	Timing Adjustment? (Yes/No)
Rockaway Ave. and Fulton St.				
crossing Rockaway Avenue	34	40	15	NO
crossing Fulton Street	40	47	17	NO
Rockaway Ave. and Herkimer St.				
crossing Rockaway Avenue	44	30	18	NO
crossing Herkimer Street	35	26	15	NO
Eastern Parkway and Atlantic Ave.				
crossing Eastern Parkway	68	34	26	NO
crossing Atlantic Avenue	95	59	35	NO
Eastern Parkway and Herkimer St.				
crossing Eastern Parkway	70	32	27	NO
crossing Herkimer Street	35	63	15	NO
Eastern Parkway and Fulton St.				
crossing Eastern Parkway	80	56	30	NO
crossing Fulton Street	42	42	17	NO

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

3.8 PHYSICAL CONDITIONS (ROADWAYS AND SIDEWALKS)

In general, roadways and sidewalks are in fair to good condition in the vicinity of the project. School officials indicated that roadway resurfacing was done throughout the area recently.

4. POTENTIAL MEASURES TO IMPROVE STUDENT PEDESTRIAN SAFETY

Potential countermeasures are divided into short-term and long-term measures. Short-term measures are those that potentially can be performed in-house; long-term measures are proposed capital improvements.

4.1 SHORT-TERM MEASURES

- Administer student pedestrian safety education program

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

- Install pedestrian signal head information signs

It was noted that students and others attempted to cross Atlantic Avenue and Eastern Parkway in one pedestrian signal phase. Pedestrians should be informed of the need to wait at the refuge island between signal cycles. Pedestrian signal head information signs should be installed at:

- East and west side of Eastern Parkway at Herkimer Street
- North and south side of Atlantic Avenue at Eastern Parkway

- Upgrade No Parking to No Standing School Days 7am-4pm on Herkimer Street and Eastern Parkway

“NO STANDING SCHOOL DAYS 7AM-4PM” signs should be installed on Herkimer Street from the west end of the school to the intersection of Herkimer Street and Eastern Parkway. This zone will keep the entrance of the school clear, to provide better visibility between students and vehicles as well as providing an area for buses to unload and load students.

Also, existing “NO PARKING, 7:00AM-4:00PM, SCHOOL DAYS” parking regulations should be upgraded to “NO STANDING 7:00AM-4:00PM SCHOOL DAYS” on Eastern Parkway.

- Daylighting

Removing the first parking space adjacent to an intersection at critical locations will provide an improved line of sight for vehicles and pedestrians. It is recommended that a “No Standing Anytime” sign be posted for a distance of 20 feet starting from the building/property line at the following locations:

- Southeast corner of Pleasant Place and Herkimer Street

- Southeast corner of Monaco Place and Herkimer Street

Installation of the “No Standing Anytime” signs will be subject to review by the NYCDOT.

- Submit Request to Police Department for Additional Crossing Guard

The intersection of Monaco Place and Herkimer Street has school crosswalks on the west, and south legs. The west leg, which serves as a primary school crosswalk for students en route to P.S. 155 is uncontrolled. Traffic volumes on Herkimer Street are relatively low; however students use this intersection en route to P.S. 155. Therefore it is recommended that a crossing guard be assigned to this intersection to assist students crossing Herkimer Street.

- Place stop bars ten feet in advance of school crosswalks.

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

4.2 LONG-TERM MEASURES

- Consider curb extensions at the following intersections:

Consideration should be given to installing a curb extension at the following locations, provided that the Final Design confirms that construction of the recommended curb extension would be feasible and would 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.

- Eastern Parkway and Atlantic Avenue – northwest corner
- Eastern Parkway and Herkimer Street – northwest corner
- Rockaway Avenue and Herkimer Street – northeast corner

Curb extensions should be considered at the corners as shown in Exhibit 8.

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 (or intersections). These curb extensions would not eliminate or reduce the width of any moving lanes.

- Extend raised medians on Eastern Parkway and Atlantic Avenue through adjacent crosswalks and provide pedestrian ramps within the extended medians

Review of the existing signal timing at the intersections of Eastern Parkway at Atlantic Avenue, Eastern Parkway at Herkimer Street, and Eastern Parkway at Fulton Street indicates that the pedestrian phase provides adequate time for pedestrians to cross in one cycle at a walking rate of three feet per second plus a three second reaction time.

However, extending the existing medians through the crosswalk will provide pedestrians with a refuge area in case they do not cross the street in one cycle and have to wait for the next cycle. Extending the medians also provides physical protection of pedestrians from turning vehicles.

Therefore, raised medians should be extended through the crosswalk at the following locations:

- West leg of Atlantic Avenue, at the intersection of Atlantic Avenue and Eastern Parkway
- North and south legs of Eastern Parkway, at the intersection of Atlantic Avenue and Eastern Parkway
- North leg of Eastern Parkway, at the intersection of Atlantic Avenue and Herkimer Street
- South leg of Eastern Parkway, at the intersection of Atlantic Avenue and Fulton Street

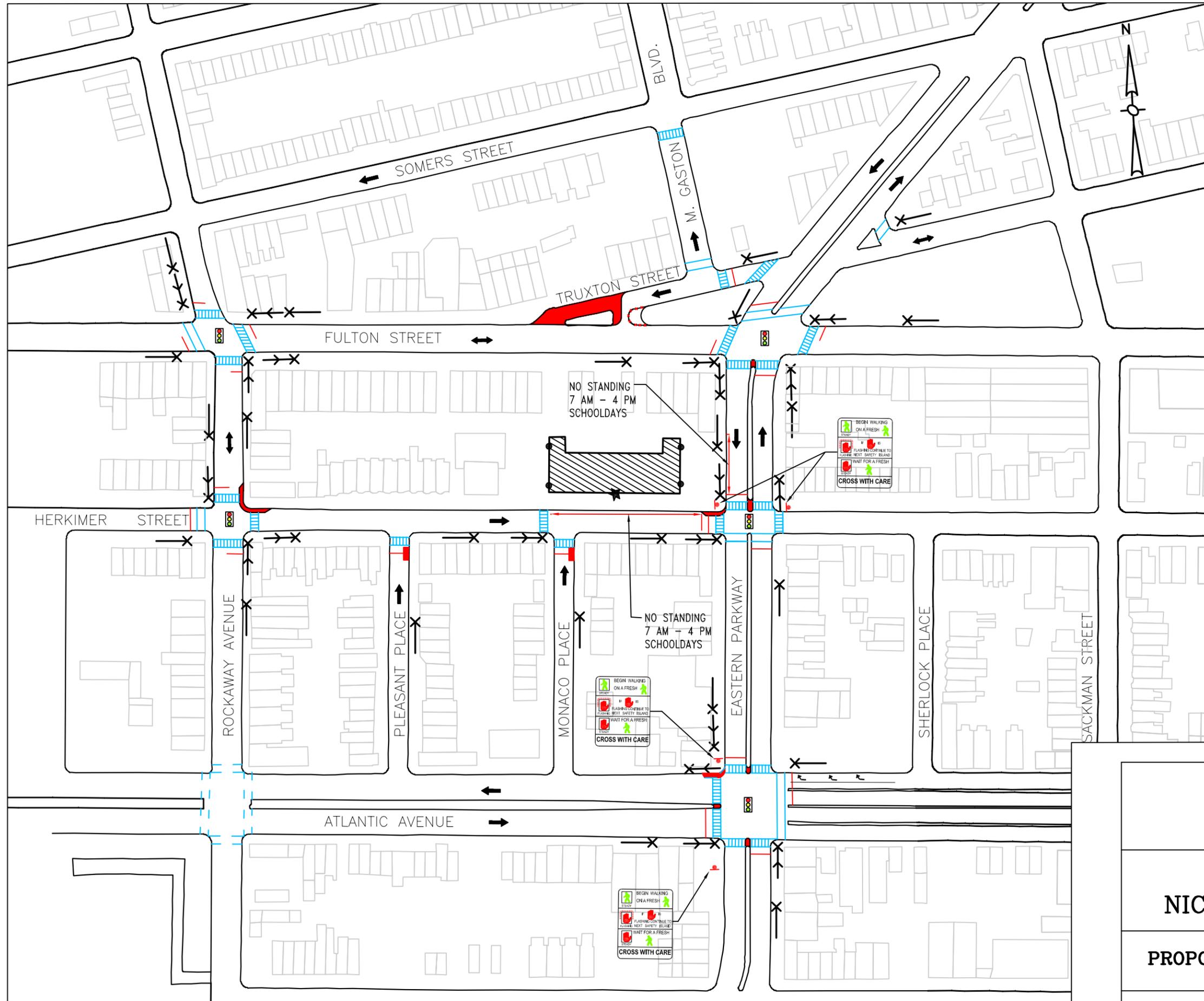
Review of the turning path of a Standard Unit Vehicle (SU) showed that these design vehicles would be able to complete a left turn movement with the new extended center medians.

ADA-compliant at-grade cut-throughs should be provided at all medians within the crosswalk.

- *Re-alignment of the Truxton Street and Fulton Street Intersection*

To minimize driver and pedestrian conflicts, it is recommended that the slip lane at the intersection of Truxton Street and Fulton Street is eliminated. This reduces the number of pedestrian crosswalks and therefore the number of times student pedestrian comes in conflict with a turning vehicles. The re-aligned intersection forms a T-intersection.

The new alignment will not eliminate or reduce the width of any moving lanes and will not hinder the ability of vehicles to turn. Final details pertaining to curb extensions will be developed during the Final Design/Contract Document preparation.



LEGEND

-  MAIN ENTRANCE
-  OTHER ENTRANCES
-  EXISTING ADVANCE WARNING SIGN
-  EXISTING (OR SCHEDULED TO BE INSTALLED BY DOT) ADVANCE WARNING SIGN WITH ARROW
-  EXISTING TRAVEL DIRECTION
-  SIGNALIZED INTERSECTION
-  EXISTING SCHOOL CROSSWALK
-  EXISTING STANDARD (NON-SCHOOL) CROSSWALK
-  EXISTING SCHOOL CROSSWALK ASSOC. WITH OTHER SCHOOL
-  PROPOSED ADVANCE WARNING SIGN WITH ARROW
-  PROPOSED ADVANCE WARNING SIGN
-  PROPOSED STOP LINE
-  PROPOSED STANDARD CROSSWALK
-  PROPOSED SCHOOL CROSSWALK
-  PROPOSED TRAFFIC SIGN
-  PROPOSED CURB EXTENSION (NECKDOWN)
-  PROPOSED MEDIAN EXTENSION
-  PROPOSED DAYLIGHTING
-  PROPOSED CURB REMOVAL

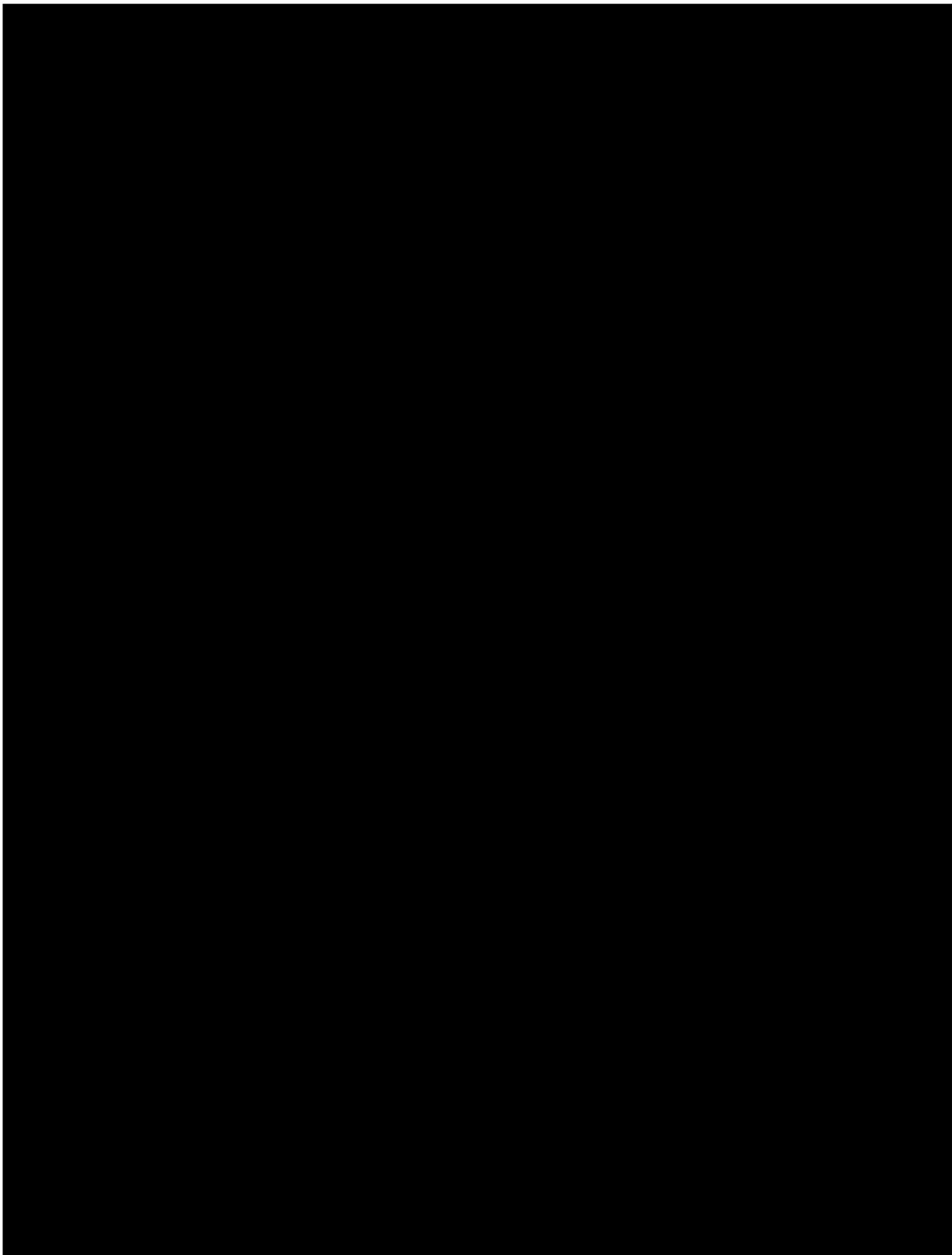
SCALE: 1"=150'

EXHIBIT 8

**P.S. 155, BROOKLYN
NICHOLAS HERKIMER SCHOOL**

PROPOSED MEASURES TO IMPROVE SAFETY

APPENDIX



P.S. 155
June 6, 2005
7:30 am - 8:30 am

Title1 : SCHOOL SAFETY ENGINEERING
Title2 : BOROUGH OF BROOKLYN
Title3 : NYC-DOT

Site:
Date: 06/06/05

Combined
*Peds not included in table data

