

# Safe Streets for Seniors

## Stuyvesant, Manhattan

**FINAL REPORT**

**November 16, 2010**



Janette Sadik-Khan, Commissioner



**Safe Streets for Seniors  
Stuyvesant Town, Manhattan**

**TABLE OF CONTENTS**

PROJECT DESCRIPTION ..... 3  
BACKGROUND ..... 4  
EXISTING CONDITION ..... 6  
SITE INDEX ..... 11  
SITE 1: AVENUE A (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET) ..... 12  
SITE 2: FIRST AVENUE (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET) ..... 13  
SITE 3: SECOND AVENUE (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET) ..... 14  
SITE 4: THIRD AVENUE (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET) ..... 15

**EXHIBITS**

EXHIBIT 1 – AREA MAP ..... 4  
EXHIBIT 2 – TRANSIT MAP ..... 4  
EXHIBIT 3 – TRUCK MAP ..... 4  
EXHIBIT 4 – BIKE MAP ..... 4  
EXHIBIT 5 – PEDESTRIAN CRASH STATISTICS (2001-2005) ..... 5

**APPENDICES**

APPENDIX A: PHOTO LOG .....16  
APPENDIX B: MAP OF PROPOSED CHANGES..... 17  
APPENDIX C: TRAFFIC COUNTS ..... 19  
APPENDIX D: SPEED STUDY ..... 21

## Project Description

Since 1990 the number of pedestrian fatalities in New York City has decreased by 56%. Moreover, prior to 1950, pedestrians accounted for  $\frac{3}{4}$  of all traffic fatalities and since then, that percentage has decreased to account for about  $\frac{1}{2}$  of all traffic fatalities. Despite these statistical improvements, pedestrians continue to be the largest at risk mode – with older adults more likely to suffer serious injuries or fatalities from traffic crashes than other pedestrians. The rate of pedestrian fatalities for every 100,000 persons in the City has decreased by nearly half since 1991 – to 2.0 from 3.8 – while the rate of senior pedestrian fatalities per 100,000 seniors has decreased even more sharply – to 6.6 from 13.1. Nevertheless, while seniors make up only 12% of the population in New York City, they still comprise 39% of pedestrian fatalities. The recognition of the disproportional representation of the senior population among severe pedestrian injuries and fatalities led to the development of the Department’s Safe Streets for Seniors (SSS) Program.

The purpose of this project is to address senior pedestrian safety issues at twenty-five Senior Pedestrian Focus Areas (SPFAs) in the five boroughs of New York City and to develop and implement mitigation measures to improve the safety of seniors and other pedestrians within the 25 SPFAs. DOT identified SPFAs to include the top senior pedestrian crash (severe injury and fatality) areas within each borough. Four of the SPFAs are located in the Bronx, seven in Brooklyn, five in Queens, eight in Manhattan and one in Staten Island. The SPFAs have been selected based on the density of senior pedestrian crashes resulting in fatalities or severe injuries in a five-year period. DOT conducted in-house studies for five pilot SPFAs and is utilizing consultant services to perform a comprehensive study of pedestrian safety conditions at intersections and along corridors within twenty selected SPFAs.

The project evaluates the crash history and existing traffic conditions and controls (e.g., roadway geometry, signal timing) at selected intersections and corridors within each SPFA in order to develop short- and long-term measures to reduce pedestrian crashes specifically for seniors, and improve safety and traffic operations for all users. The consultant makes specific safety recommendations consisting of low-cost as well as capital engineering and design improvements for these twenty areas. In addition, the consultant conducts data analysis as needed, prepares engineering and design schematics and related services, as necessary, for capital improvements.

# Background

## BACKGROUND

Land-use in the Stuyvesant Town Study Area is a mix of commercial and residential buildings. A senior center, Sirovich Senior Center, is located at 331 East 12<sup>th</sup> Street, between First Avenue and Second Avenue. The East Village Community High School is across the street from the senior center.

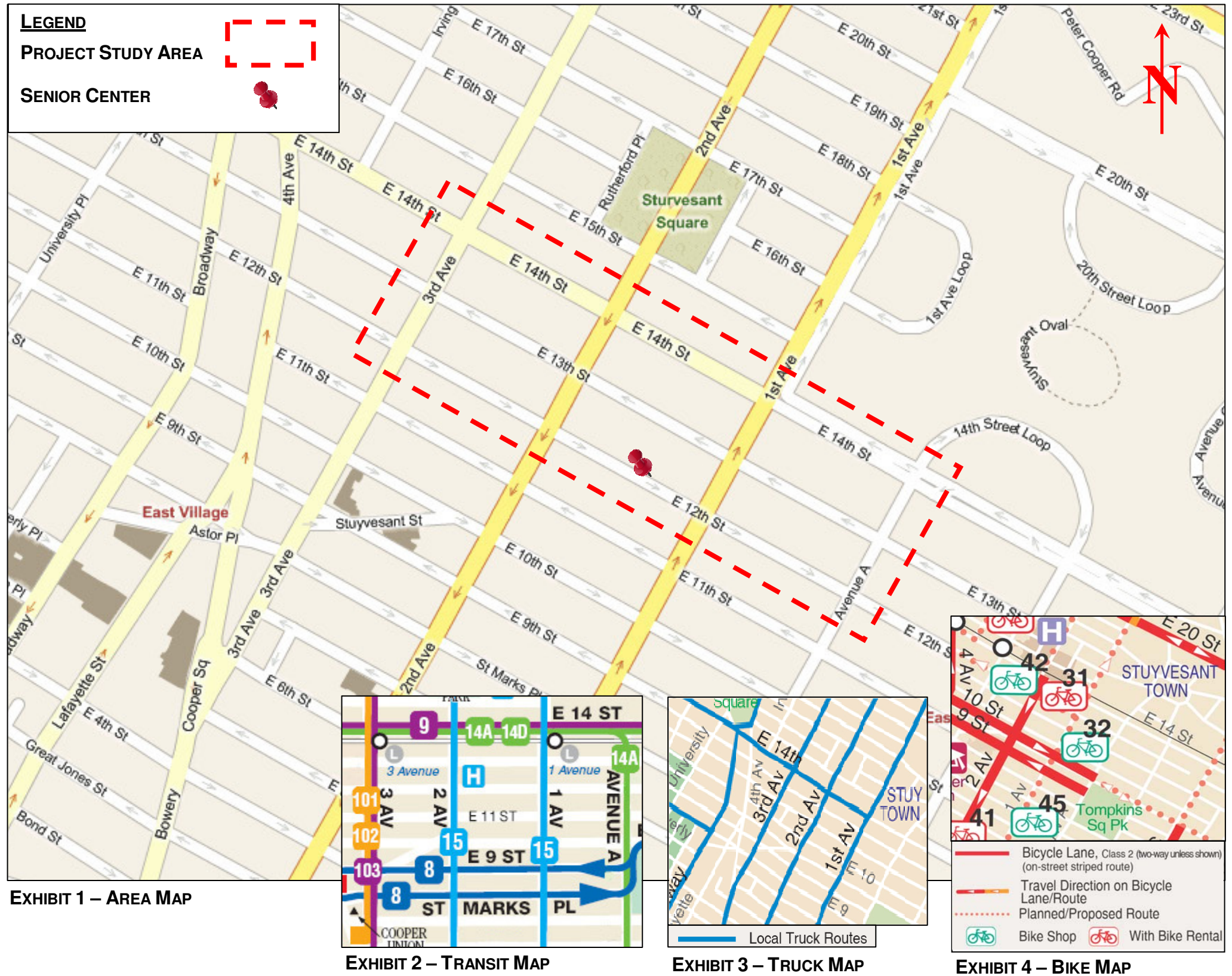
There are two medical centers:

- Beth Israel Medical Center on First Avenue between East 16<sup>th</sup> Street and East 17<sup>th</sup> Street
- Cabrini Medical Center on East 19<sup>th</sup> Street between Second Avenue and Third Avenue.

Second Avenue divides Stuyvesant Park, which is located north of East 15<sup>th</sup> Street. Many senior citizens from the neighborhood as well as from the Medical Centers utilize the park.

East 14<sup>th</sup> Street, First Avenue, Second Avenue and Third Avenue are designated local truck routes (Exhibit 3). And bike routes are proposed along First Avenue and Second Avenue (Exhibit 4).

Transit access in this area includes the L Subway line. A subway station for the L line is located at East 14<sup>th</sup> Street and Third Avenue. There are also several bus stops at this location making it a busy intersection with high vehicular and pedestrian volume (Exhibit 2). Bus routes operating in the vicinity of Stuyvesant Town Study Area are: M9, M14A, M14D, M15, M101, M102 and M103.



### EXHIBIT 5 – PEDESTRIAN CRASH STATISTICS (2001-2005)



## EXISTING CONDITIONS

The Stuyvesant Town Study Area consists of one major east-west corridor, namely East 14<sup>th</sup> Street, and four major north-south corridors: Avenue A, First Avenue, Second Avenue and Third Avenue. Within this area, the four intersections of East 14<sup>th</sup> Street with Avenue A, First, Second and Third Avenues, respectively, are heavily congested. The existing street geometry of the avenues includes six moving lanes with a parking lane on each side. The major east-west corridor, East 14<sup>th</sup> Street, has four moving lanes, two in each direction, with parking on both sides (Photo No. 1). The combination of heavy traffic volumes, operational factors and geometric factors make these corridors difficult for a senior pedestrian to safely cross.



There were numerous issues that were repeatedly observed during field visits and/or conveyed by senior pedestrians during interviews. Those issues are listed here:

- Insufficient crossing time
- Missing or inadequate pedestrian ramps
- Motorists turning quickly and not yielding to pedestrians

### *Avenue A*

The southwest corner of Avenue A and East 13<sup>th</sup> Street is missing a pedestrian ramp on the west side of Avenue A (Photo No. 2). A new NYCDOT standard pedestrian ramp and ADA safety surface is recommended and a signal pole may need to be relocated to accommodate the ramp. The pedestrian ramp on the northwest corner along Avenue A is in poor condition and should be replaced with a new one.



There is an entrance to Stuyvesant Town at Avenue A and East 14<sup>th</sup> Street and bus stops along East 14<sup>th</sup> Street. At this intersection, there are heavy pedestrian volumes, including a significant number of seniors. Many seniors indicated they do not feel safe crossing the street at this intersection. The east median along East 14<sup>th</sup> Street does not have at-grade cut through for pedestrians, making it more difficult for seniors to cross East 14<sup>th</sup> Street (Photo No. 3). It is recommended that the median have an at-grade cut through with an ADA safety surface installed. It is also recommended that pedestrian signals be installed on the west and east median islands. Sight lines to the current signals are not direct and the signals can be difficult to detect.



### *First Avenue*

New York City Transit (NYCT) in conjunction with the New York City Department of Transportation (NYCDOT) is installing a Bus Rapid Transit (BRT) System in New York to improve urban mobility. The First Avenue/Second Avenue Select Bus Service (SBS) are two of five corridors where the BRT is being implemented across NYC. Along these corridors, the BRT will extend from 125<sup>th</sup> Street to South Ferry. However, from 125<sup>th</sup> Street to Houston Street the BRT will have an exclusive bus lane with bus bulb outs at the stations. The SBS will improve service with increased hours of operation by utilizing a simpler service pattern including transit signal priority between Houston Street and South Ferry. The proposed design of BRT along First and Second Avenues is shown on Site Pages 2 and 3.

At the intersection of First Avenue and East 12<sup>th</sup> Street, a new NYCDOT standard pedestrian ramp and ADA safety surface is recommended for the northwest corner. A senior center, Sirovich Senior Center, is located at East 12<sup>th</sup> Street between First Avenue and Second Avenue and many seniors complained about vehicles speeding along East 12<sup>th</sup> Street. A speed study was performed on East 12<sup>th</sup> Street between First Avenue and Second Avenue on 07/21/08. The study showed that the 85<sup>th</sup> percentile speed was 23.0 mph (see Appendix D for the complete speed study). Since the 85<sup>th</sup> percentile speed is lower than the posted speed limit, a speed reducer is not applicable on East 12<sup>th</sup> Street.



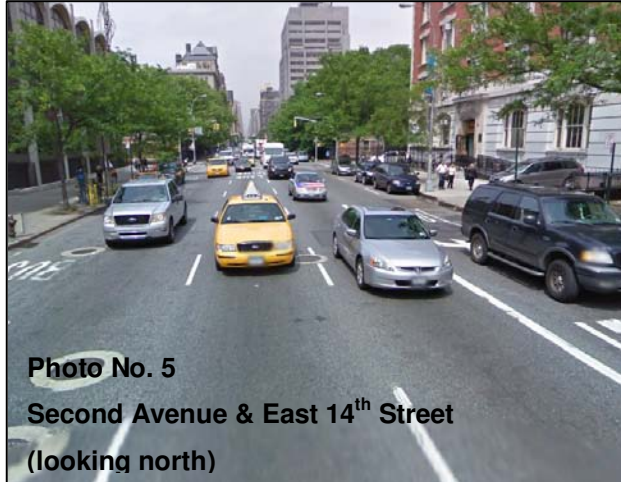
The intersection of First Avenue and East 14<sup>th</sup> Street has heavy vehicular and pedestrian volumes with an exclusive left turn signal for eastbound to northbound traffic (Photo No. 4). The exclusive left turn shortens the crossing time and many seniors raised concerns about this particular intersection. Additional pedestrian traffic is generated from the 'L' Train entrances/exits at this intersection and the three bus stops. The pedestrian ramp

along the north side of the median should be replaced with a NYCDOT standard pedestrian curb configuration and ADA safety surface. A new East 14<sup>th</sup> Street sign is recommended to be hung over First Avenue. The oversized sign will allow motorists to determine their location so they can concentrate on the traffic/pedestrian conditions.



## Second Avenue

Second Avenue is a 57-foot wide southbound corridor with 3 moving lanes and parking on both sides (Photo No. 5). As discussed under First Avenue, New York City Transit in conjunction with the New York City Department of



Transportation (NYCDOT) is installing the First Avenue/Second Avenue Select Bus Service (SBS) along Second Avenue from 125<sup>th</sup> Street to South Ferry.

A pedestrian ramp is missing on the northwest corner of East 13<sup>th</sup> Street and Second Avenue. A new NYCDOT standard pedestrian ramp and ADA safety surface is recommended. High-visibility crosswalks are recommended for all four legs of East 13<sup>th</sup> Street and East 14<sup>th</sup> Street.

Many of the senior residents interviewed, indicated that there was not enough time to cross Second Avenue. It was observed that vehicles speed to the intersection to make both left and right turns from Second Avenue onto East 14<sup>th</sup> Street, before pedestrians could cross. This further shortens the crossing time, as pedestrians need to wait for vehicles to clear the intersection (Photo No. 6). Turning movement counts for the AM and PM peak periods were performed on 06/09/08. For southbound traffic turning right, the PM peak counts indicated that

491 pedestrians conflict with 85 vehicles turning per hour. For southbound traffic turning left, the AM peak counts indicated that 294 pedestrians conflict with 197 vehicles turning per hour (see Appendix C for complete traffic count). A Leading Pedestrian Interval (LPI) was evaluated at this intersection but the existing volume did not meet NYCDOT guidelines to warrant an LPI. The existing dedicated left turn signal for westbound traffic along



East 14<sup>th</sup> Street will be eliminated and the westbound to southbound turn will be banned at this intersection. Pedestrians often ignore the DON'T WALK signal when westbound East 14<sup>th</sup> Street has the dedicated left arrow, and this modification could help to eliminate pedestrian/vehicle conflict and also process more traffic.

### Third Avenue

Third Avenue is a 70-foot wide corridor with two moving lanes in each direction with parking on both sides. High-visibility crosswalks are recommended for all four legs of Third Avenue and East 13<sup>th</sup> Street (Photo No. 7).

Third Avenue and East 14<sup>th</sup> Street is a congested intersection with heavy truck, bus and pedestrian volumes (Photo No. 8). It was observed that westbound and eastbound traffic on East 14<sup>th</sup> Street turning onto Third Avenue were not yielding to pedestrians crossing the north leg of the intersection.



**Photo No. 7**  
**Third Avenue & East 13<sup>th</sup> Street**  
**(looking east)**

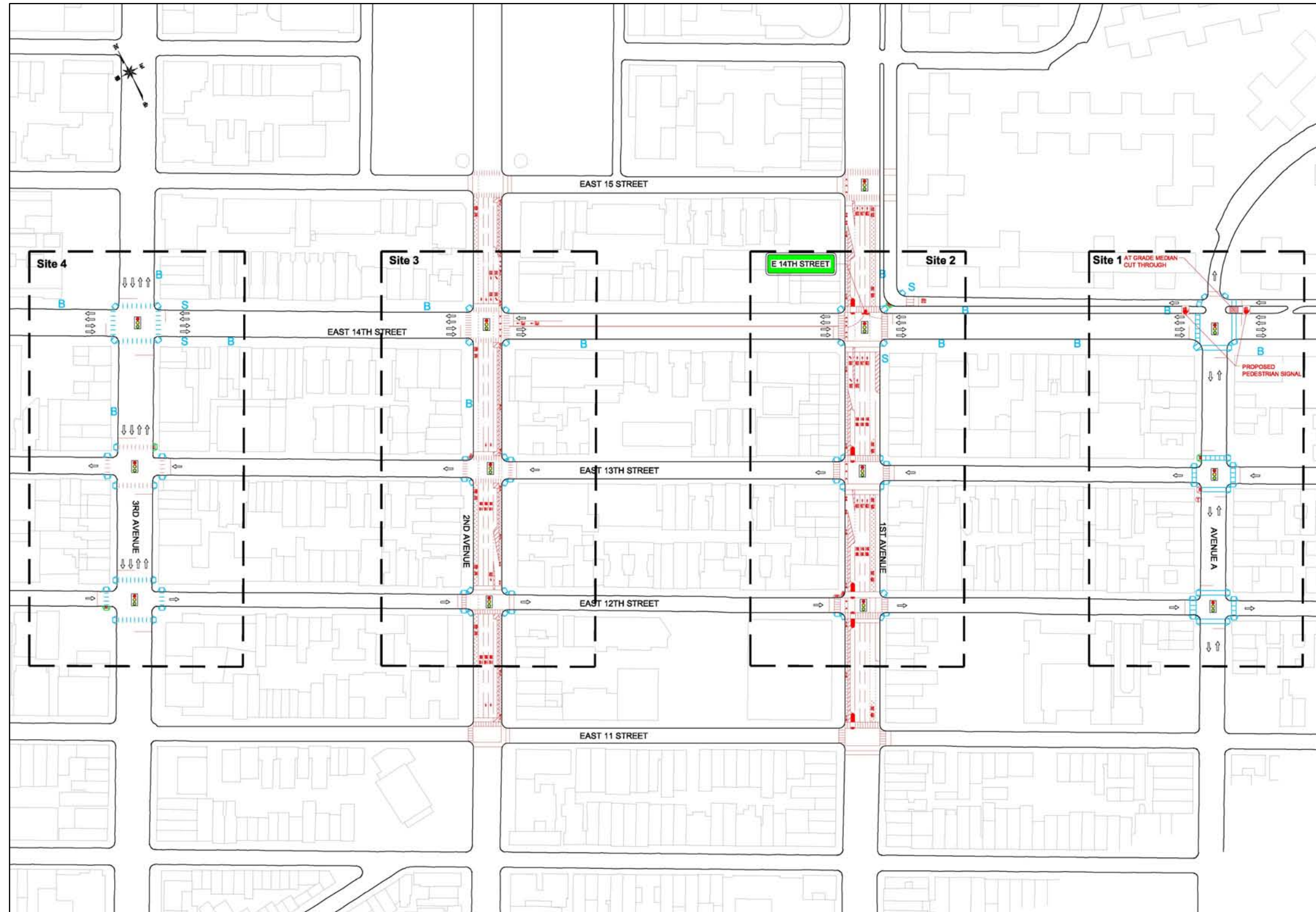


**Third Avenue & East 13<sup>th</sup> Street**  
**(looking east)**  
**Photo No. 8**

Turning movement counts for the AM and PM peak periods were performed on 06/10/08. The PM peak counts indicated that 1298 pedestrians conflict with 174 vehicles (68 westbound + 106 eastbound) turning per hour (see Appendix C for complete traffic count). In order to lengthen the pedestrian crossing time, A Leading Pedestrian Interval (LPI) was evaluated at this intersection; however, the existing volume did not meet NYCDOT guidelines to warrant an LPI.

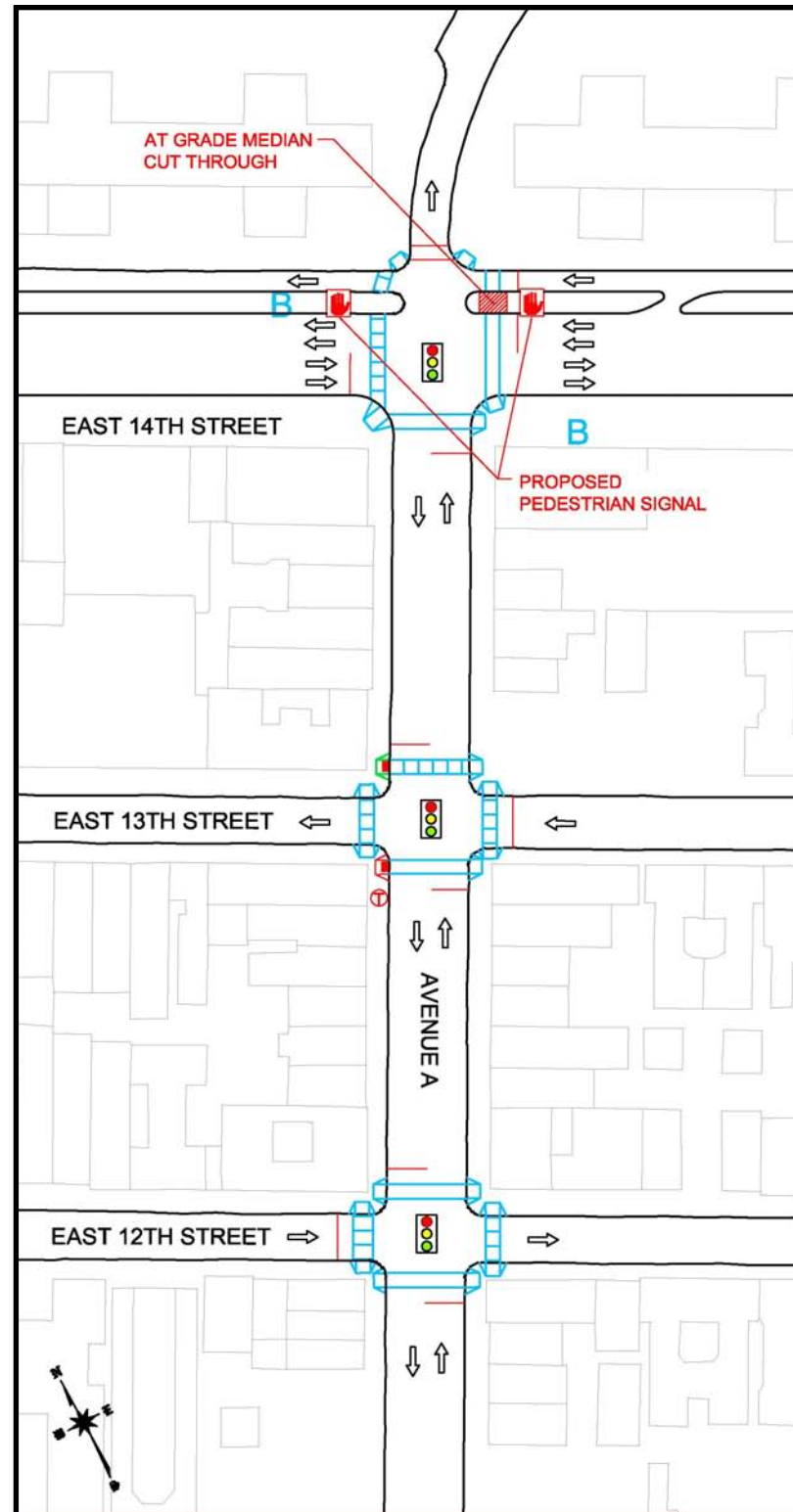
# INDEX

# Illustrating the Solution



# SITE 1: AVENUE A (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET)

# Illustrating the Solution



### Pedestrian concerns in this area:

- Signal timing (insufficient crossing time)
- Missing or inadequate pedestrian ramps

### Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Provide an at-grade median cut through on the east median of East 14<sup>th</sup> Street
- Install pedestrian signals on the west and east median islands of East 14<sup>th</sup> Street

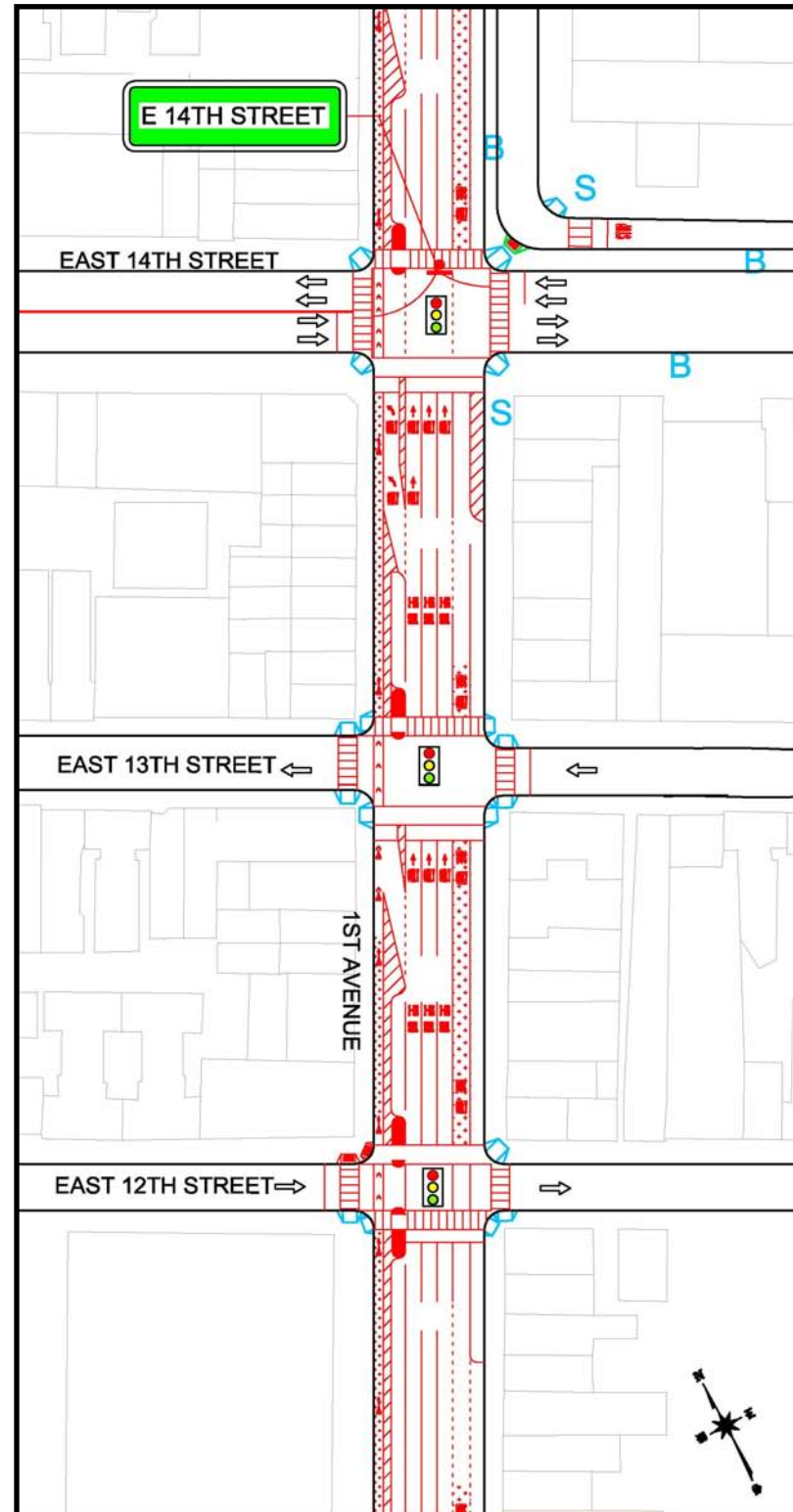
### Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix B
- This study area was visited on June 24<sup>th</sup>, 2008, October 27<sup>th</sup>, 2008 and July 1<sup>st</sup>, 2009.

	EXISTING HIGH VISIBILITY CROSSWALK		PROPOSED HIGH VISIBILITY CROSSWALK		PROPOSED CURB EXTENSION (NECKDOWN)		EXISTING SIGNALIZED INTERSECTION
	EXISTING STANDARD CROSSWALK		PROPOSED STANDARD CROSSWALK		SW OBSTRUCTION: STREETLIGHT		PROPOSED SIGNALIZED INTERSECTION
	EXISTING SCHOOL CROSSWALK		PROPOSED SCHOOL CROSSWALK		SW OBSTRUCTION: FIRE HYDRANT		EXISTING TRAVEL DIRECTION
	EXISTING STOP BAR		PROPOSED STOP BAR		SW OBSTRUCTION: SIGNAL POLE		PROPOSED LPI
	EXISTING PEDESTRIAN RAMP		PROPOSED PED REFUGE ISLAND (RAISED ISLAND)		SW OBSTRUCTION: FIRE BOX		EXISTING CATCH BASIN
	PROPOSED NEW PED RAMP		EXISTING BUS STOP		PROPOSED CATCH BASIN		PROPOSED TRAFFIC SIGN
	REPLACE EXISTING PED RAMP		EXISTING SUBWAY STOP				

# SITE 2: FIRST AVENUE (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET)

Illustrating the Solution



**Pedestrian concerns in this area:**

- Speeding vehicles
- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)
- Missing or inadequate pedestrian ramps

**Recommended improvements include:**

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Install Bus Rapid Transit (BRT) along First Avenue
- Install new sign  
-oversized E 14<sup>th</sup> Street sign to be hung over First Avenue

**Traffic Analysis:**  
Speed study on East 12<sup>th</sup> Street between 1<sup>st</sup> & 2<sup>nd</sup> Avenue

- 85<sup>th</sup> Percentile = 23.0 mph

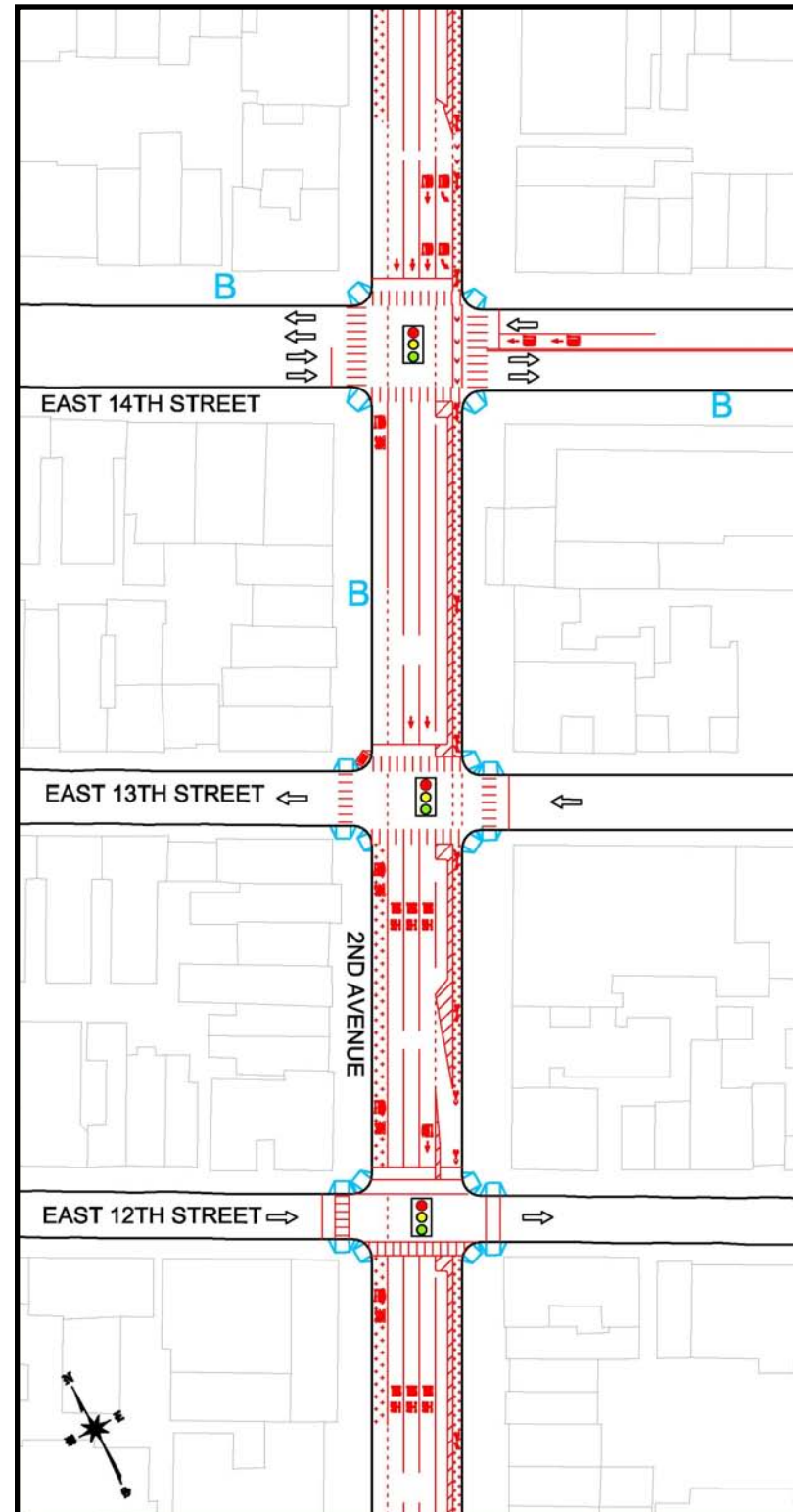
**Additional Information:**

- Parking regulations for the project area have been collected and are shown in Appendix B
- Complete speed study is shown in Appendix D
- This study area was visited on June 24<sup>th</sup>, 2008, October 27<sup>th</sup>, 2008 and July 1<sup>st</sup>, 2009.

	EXISTING HIGH VISIBILITY CROSSWALK		PROPOSED HIGH VISIBILITY CROSSWALK		PROPOSED CURB EXTENSION (NECKDOWN)		EXISTING SIGNALIZED INTERSECTION
	EXISTING STANDARD CROSSWALK		PROPOSED STANDARD CROSSWALK		SW OBSTRUCTION: STREETLIGHT		PROPOSED SIGNALIZED INTERSECTION
	EXISTING SCHOOL CROSSWALK		PROPOSED SCHOOL CROSSWALK		SW OBSTRUCTION: FIRE HYDRANT		EXISTING TRAVEL DIRECTION
	EXISTING STOP BAR		PROPOSED STOP BAR		SW OBSTRUCTION: SIGNAL POLE		PROPOSED LPI
	EXISTING PEDESTRIAN RAMP		PROPOSED PED REFUGE ISLAND (RAISED ISLAND)		SW OBSTRUCTION: FIRE BOX		EXISTING CATCH BASIN
	PROPOSED NEW PED RAMP		EXISTING BUS STOP		PROPOSED CATCH BASIN		PROPOSED TRAFFIC SIGN
	REPLACE EXISTING PED RAMP		EXISTING SUBWAY STOP				

# SITE 3: SECOND AVENUE (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET)

Illustrating the Solution



### Pedestrian concerns in this area:

- Speeding vehicles
- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)
- Missing or inadequate pedestrian ramps

### Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Stripe new high visibility crosswalks on East 13<sup>th</sup> Street & East 14<sup>th</sup> Street
- Install Bus Rapid Transit (BRT) along Second Avenue

### Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix B
- Complete traffic counts are shown in Appendix C
- Complete speed study is shown in Appendix D
- This study area was visited on June 24<sup>th</sup>, 2008, October 27<sup>th</sup>, 2008 and July 1<sup>st</sup>, 2009.

### Traffic Analysis:

#### Southbound Traffic at East 14<sup>th</sup> Street Turning Movement Counts

#### AM CONFLICT

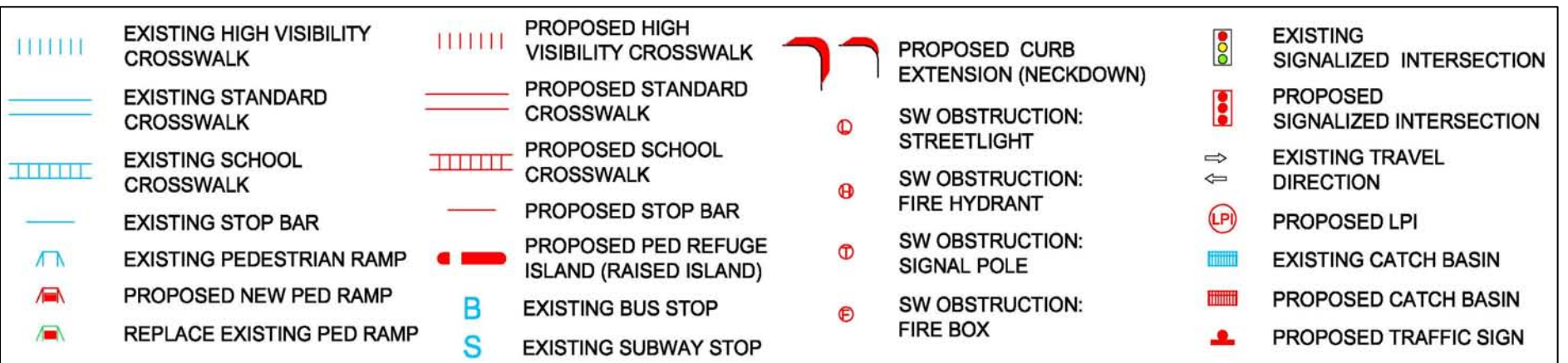
	Left Turn	Right Turn	Pedestrians
East Leg	197	VS	294
West Leg		156	VS 327

#### PM CONFLICT

East Leg	263	VS	206
West Leg		85	VS 491

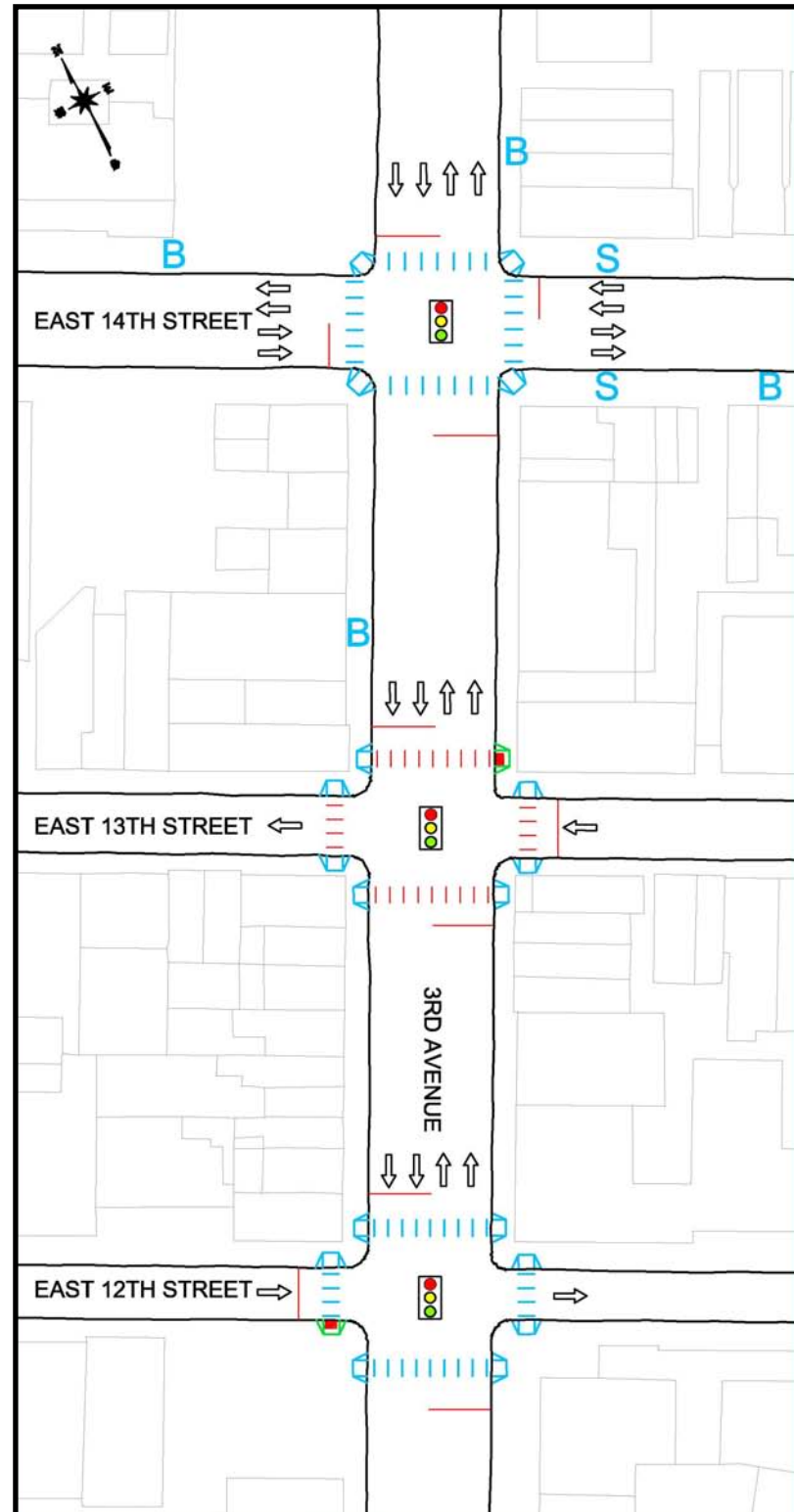
#### Speed study on East 12<sup>th</sup> Street between 1<sup>st</sup> & 2<sup>nd</sup> Avenue

- 85<sup>th</sup> Percentile = 23.0 mph



# SITE 4: THIRD AVENUE (FROM EAST 12<sup>TH</sup> STREET TO EAST 14<sup>TH</sup> STREET)

Illustrating the Solution



### Pedestrian concerns in this area:

- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)
- Missing or inadequate pedestrian ramps

### Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Stripe high visibility crosswalks for all four legs at East 13<sup>th</sup> Street

### Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix B
- Complete traffic counts are shown in Appendix C
- This study area was visited on June 24<sup>th</sup>, 2008, October 27<sup>th</sup>, 2008 and July 1<sup>st</sup>, 2009.

### Traffic Analysis:

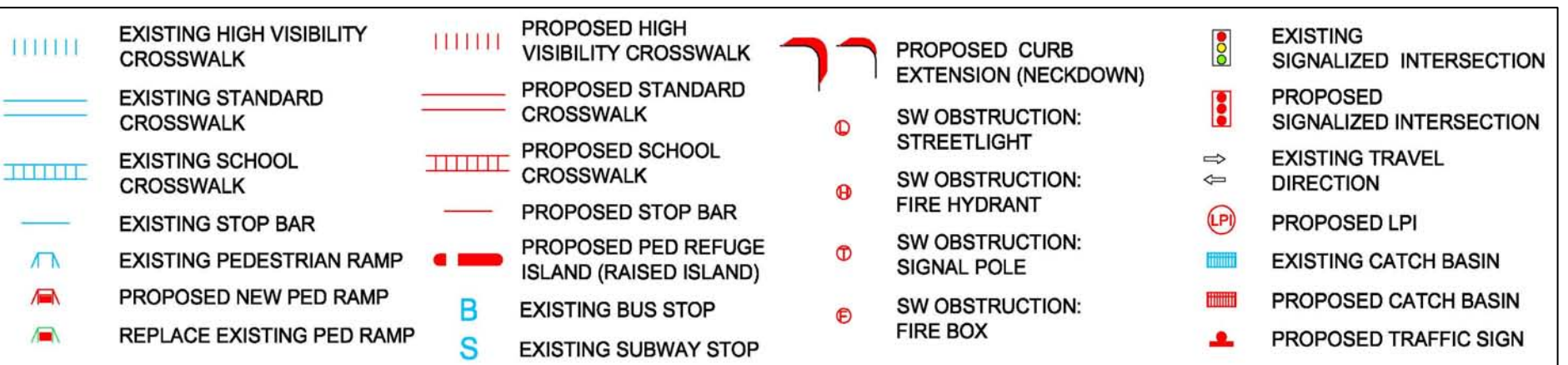
#### Southbound Traffic at East 14<sup>th</sup> Street Turning Movement Counts

#### AM CONFLICT

	Left Turn	Right Turn	Pedestrians
East Leg	103	VS	879
West Leg		41	VS 879

#### PM CONFLICT

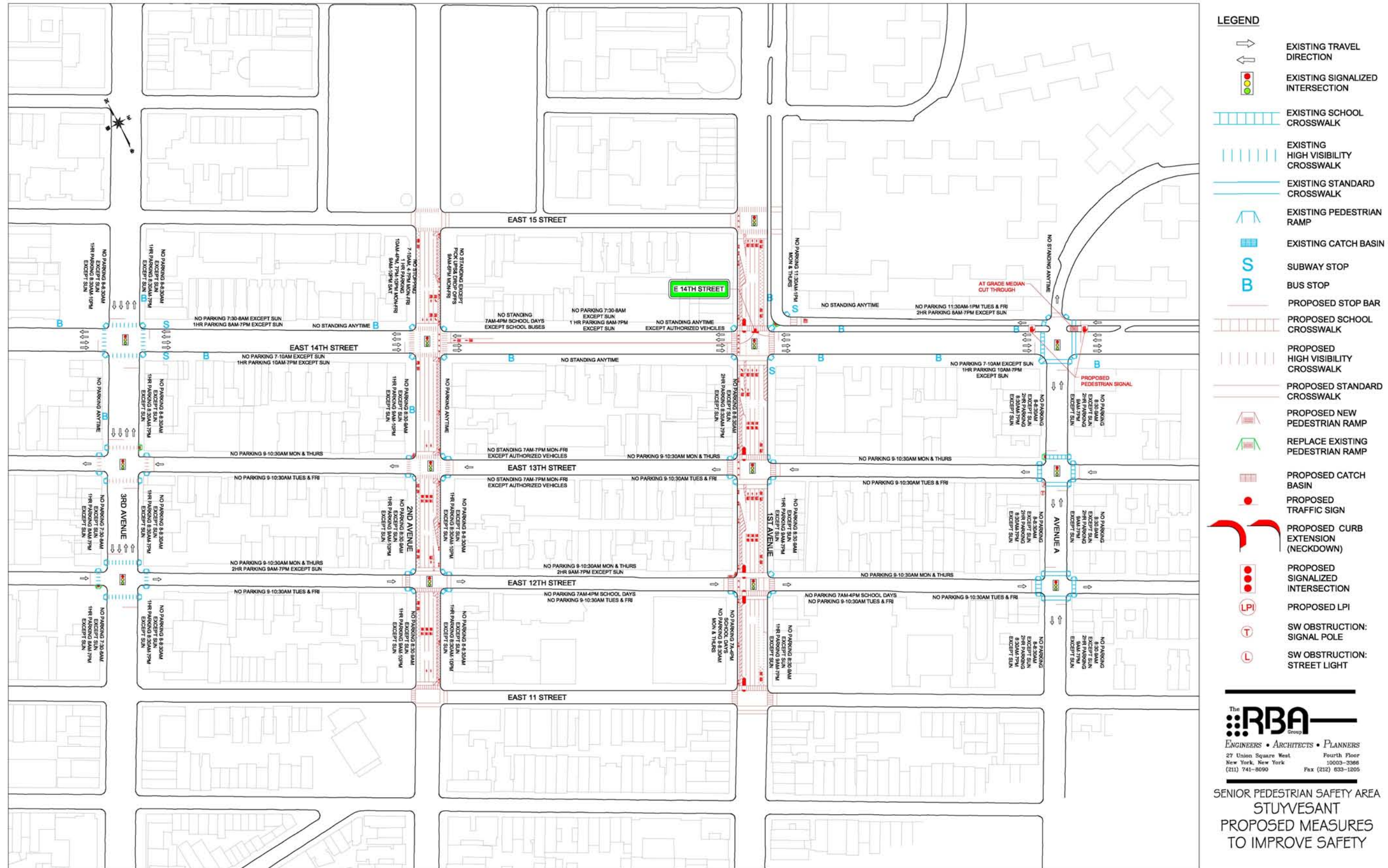
East Leg	106	VS	1298
West Leg		68	VS 1298



**APPENDIX A:  
PHOTO LOG  
(SEPARATE COVER)**



# **APPENDIX B: MAP OF PROPOSED CHANGES**



- LEGEND**
- EXISTING TRAVEL DIRECTION
  - EXISTING SIGNALIZED INTERSECTION
  - EXISTING SCHOOL CROSSWALK
  - EXISTING HIGH VISIBILITY CROSSWALK
  - EXISTING STANDARD CROSSWALK
  - EXISTING PEDESTRIAN RAMP
  - EXISTING CATCH BASIN
  - SUBWAY STOP
  - BUS STOP
  - PROPOSED STOP BAR
  - PROPOSED SCHOOL CROSSWALK
  - PROPOSED HIGH VISIBILITY CROSSWALK
  - PROPOSED STANDARD CROSSWALK
  - PROPOSED NEW PEDESTRIAN RAMP
  - REPLACE EXISTING PEDESTRIAN RAMP
  - PROPOSED CATCH BASIN
  - PROPOSED TRAFFIC SIGN
  - PROPOSED CURB EXTENSION (NECKDOWN)
  - PROPOSED SIGNALIZED INTERSECTION
  - PROPOSED LPI
  - SW OBSTRUCTION: SIGNAL POLE
  - SW OBSTRUCTION: STREET LIGHT

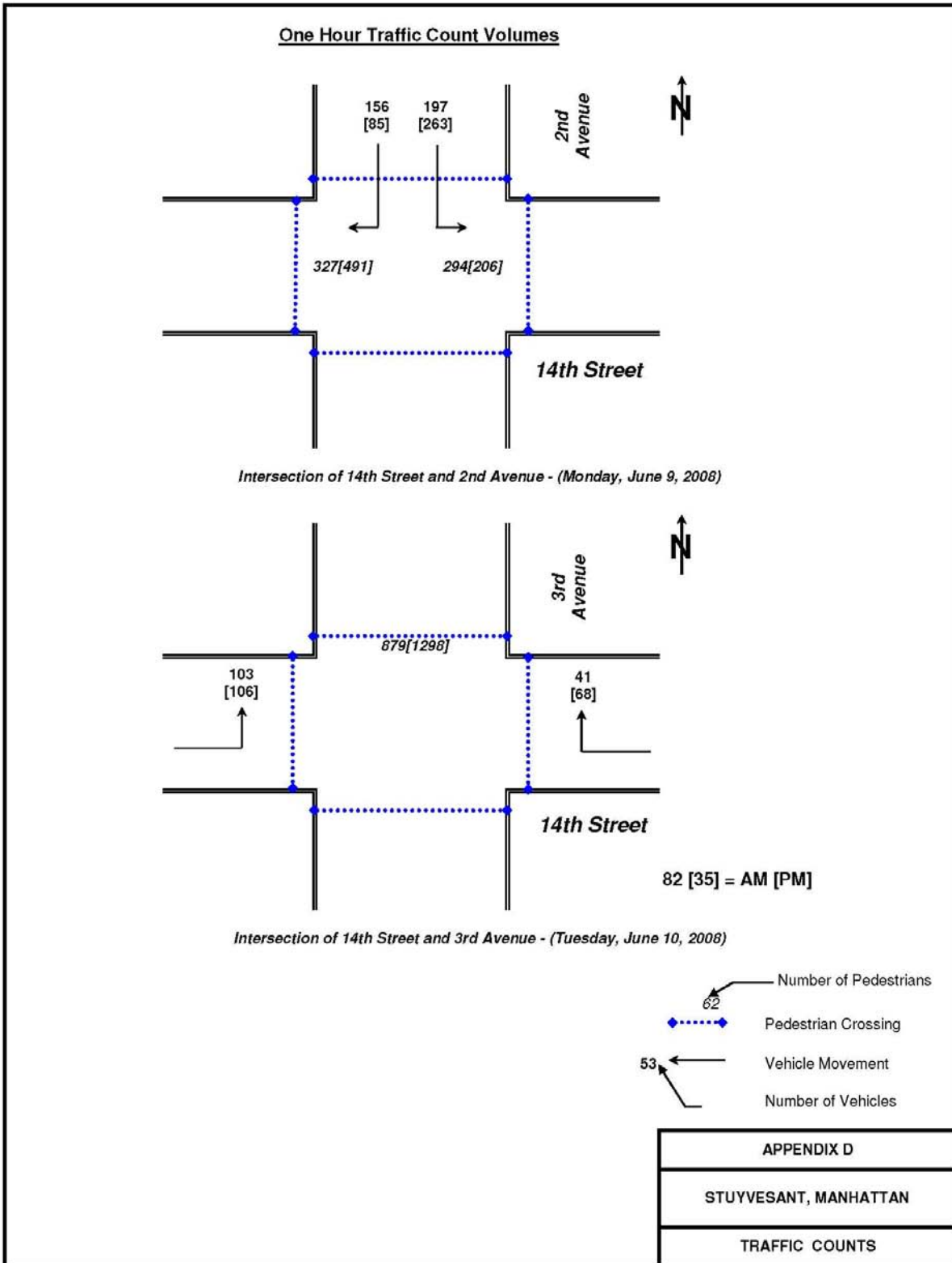
**The RBA Group**  
**ENGINEERS • ARCHITECTS • PLANNERS**  
 27 Union Square West, Fourth Floor  
 New York, New York 10003-3366  
 (211) 741-8090 Fax (212) 633-1205

SENIOR PEDESTRIAN SAFETY AREA  
 STUYVESANT  
 PROPOSED MEASURES  
 TO IMPROVE SAFETY

# APPENDIX C: TRAFFIC COUNTS

**APPENDIX C – TRAFFIC COUNT**

**EAST 14<sup>TH</sup> STREET AT SECOND AVENUE & THIRD AVENUE**



# **APPENDIX D: SPEED STUDY**

**APPENDIX D – SPEED STUDY  
EAST 12<sup>TH</sup> STREET BETWEEN FIRST AVENUE & SECOND AVENUE**

**RADAR SPEED SURVEY**

Arterial: E. 12th St E/B                      From: 2nd Ave                      To: 1st Ave

Boro:	Manhattan	Average Speed:	20.0 mph
Date:	07/21/08	15th Percentile:	16.9 mph
Day:	Mon.	50th Percentile:	19.0 mph
Weather:	Clear	85th Percentile:	23.0 mph
Time:	12:45PM-1:45PM		
Speed Limit:	30 mph	Above Speed Limit:	1.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	31.0 mph
Type of Roadway:	One-Way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	30'	In Pace:	94.0 %
Number of Moving Lanes:	1	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	6.0 %
Observer:	B. Patel	Standard Deviation:	3.5 mph

