

Safe Streets for Seniors

Chinatown, Manhattan

FINAL REPORT

November 17, 2010



Janette Sadik-Khan, Commissioner



Safe Streets for Seniors Chinatown, Manhattan

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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

The Chinatown Study Area is a mix-use of commercial and residential buildings. A senior center, NY Chinatown Senior Citizen Coalition Center, is located at 70 Mulberry Street, on the corner of Bayard Street and Mulberry Street.

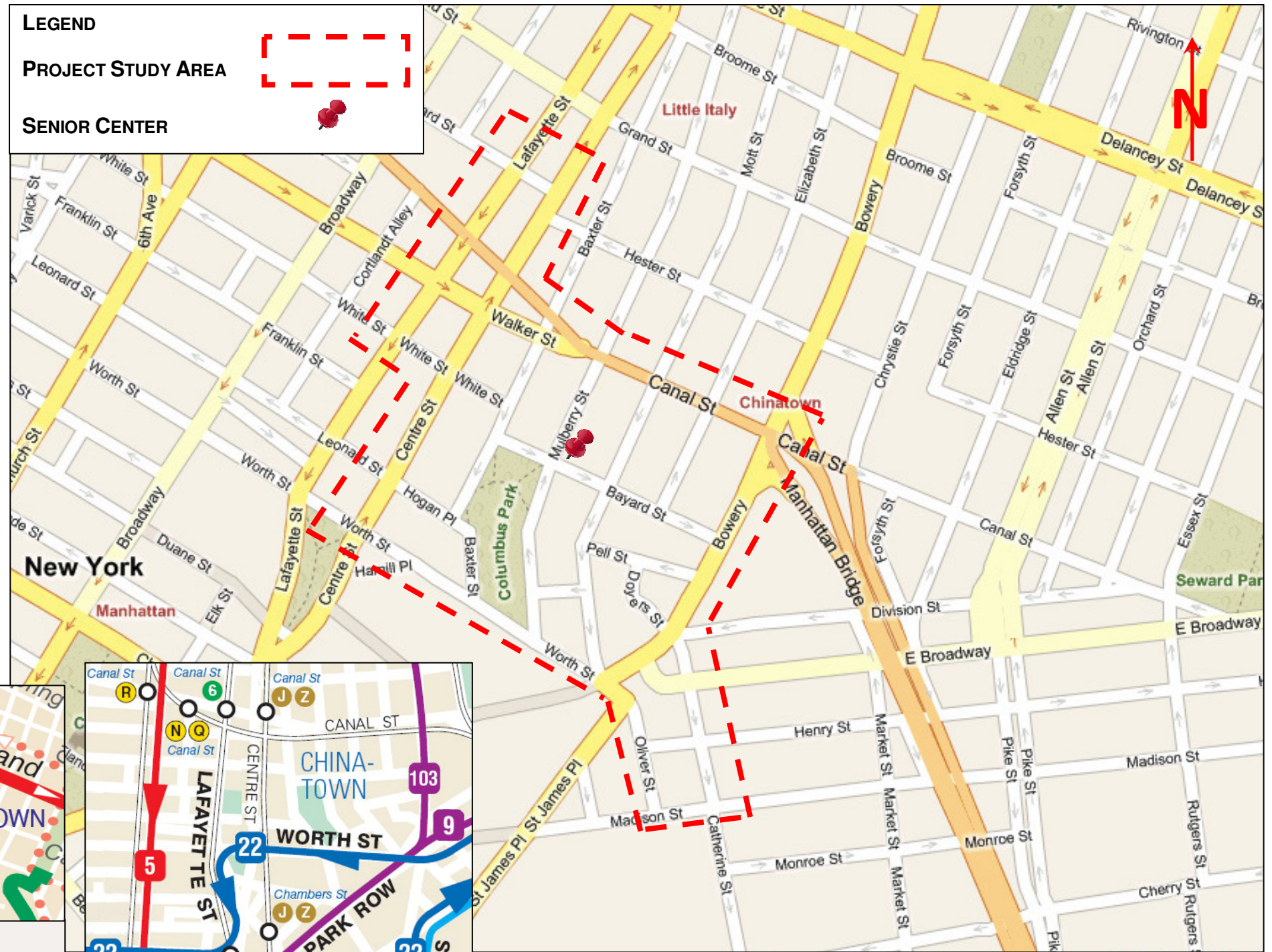
A public park, Columbus Park, is located on the west side of the study area and is bordered by Bayard Street, Mulberry Street, Worth Street and Baxter Street.

The entrance and exit to the Manhattan Bridge is located at Canal Street and Bowery. This creates an enormous amount of truck volume and makes conditions for senior pedestrians intimidating. PS 124, Yung Wing School, is located at 40 Division Street, east of the intersection of Bowery and Division Street.

Canal Street, Worth Street and Bowery are designated truck routes (Exhibit 2) and Lafayette Street is a bike route (Exhibit 3).

There are a few bus routes operating in the vicinity of the Chinatown Study Area (Exhibit 4): M1, M22, B51 and the M103. In addition, a subway station for the 6, N, Q, R, J, and Z lines exists with entrances at the intersections of Canal Street and Centre Street as well as Canal Street and Lafayette Street.

EXHIBIT 1 – AREA MAP



EXISTING CONDITIONS

The Chinatown Study Area consists of one major east-west corridor along Canal Street and two major north-south corridors, Bowery and Lafayette Street (Exhibit 1). Canal Street intersects both north-south corridors and five smaller streets. All these intersections are heavily congested. At the east end of the project limits along Canal Street is the entrance to the Manhattan Bridge, where heavy truck volumes make it difficult for pedestrians to cross safely (Photo No. 1). The existing street geometry of Canal Street includes six moving lanes, three in each direction, with parking lanes on each side. Bowery includes five moving lanes, three northbound and two southbound, with parking on both sides. Lafayette Street includes three moving lanes, traveling southbound, with parking lanes on each side and is paired with Centre Street which has three northbound lanes. The combination of operational and geometric factors makes these corridors very difficult for a senior pedestrian to safely cross.



Photo No. 1
Canal Street &
Bowery (looking west)

The existing street geometry of Canal Street includes six moving lanes, three in each direction, with parking lanes on each side. Bowery includes five moving lanes, three northbound and two southbound, with parking on both sides. Lafayette Street includes three moving lanes, traveling southbound, with parking lanes on each side and is paired with Centre Street which has three northbound lanes. The combination of operational and geometric factors makes these corridors very difficult for a senior pedestrian to safely cross.

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

- Insufficient crossing time
- Missing or inadequate pedestrian ramps
- Missing crosswalk striping
- Motorists turning at high speeds and not yielding to pedestrians

Prior to this study, the first phase of the school safety engineering project, a NYCDOT initiative to improve pedestrian safety in the immediate vicinity of elementary and middle schools citywide, was completed in 2007. This study reviewed some of the same intersections that are in the current study area and developed recommendations to improve pedestrian safety for students that are applicable to senior pedestrian safety. The recommendations developed under the school safety project have been shown in the section “Illustrating the Solution” of this report. The schools in this project area studied under the school safety engineering project were:

- P.S. 124, The Yung Wing School
- P.S. 1, Alfred E. Smith School

The full copy of the priority school report for each school is available on the NYCDOT’s website at <http://www.nyc.gov/html/dot/html/safety/saferoutes.shtml>. Copies of the proposed recommendation maps from those reports have been included in Appendix E for reference.

Canal Street

Canal Street is a major east-west corridor that connects the Holland Tunnel on the west side of Manhattan to the Manhattan Bridge on the east side (Photo No. 2). Within our project area, Canal Street has six moving lanes and parking during non-peak hours.



Currently, the New York Metropolitan Transportation Council (NYMTC) is conducting a large traffic study, the Canal Area Transportation Study (CATS) underway in this area. The study will provide broad transportation solutions for the corridor. The recommendations proposed by this senior safety report will focus on site-specific improvements.

Many of the pedestrian ramps and crosswalks are blocked by street furniture and streetlights located within the corner quadrants, thereby limiting access to the crosswalks. To keep the corner quadrants clear for pedestrians, it will be necessary to relocate some street furniture and possibly several streetlights and signal poles. At the following intersections there is a traffic pole or signal to be relocated:

- Canal Street and Mulberry Street – southeast corner
- Canal Street and Elizabeth Street – northeast and southeast corner

It is recommended that the signal poles be relocated to allow new NYCDOT standard pedestrian ramps and ADA safety surface to be installed and provide space for pedestrians to queue up for crossing. At the following intersections new yield to pedestrian signs are recommended:

- For westbound and eastbound traffic on Canal Street between Centre Street and Baxter Street
- For westbound and eastbound traffic on Canal Street between Mulberry Street and Mott Street

Oversized Canal Street signs should be hung over Lafayette Street and Centre Street. The oversized signs will allow motorists to determine their location so they can concentrate on the traffic/pedestrian conditions. The pedestrian ramps on the northwest and the southeast corners of Lafayette and the northwest corner of Centre Street should be replaced with NYCDOT standard pedestrian ramps and ADA safety surface.



Photo No. 3
Canal Street/Manhattan Bridge Exit & Bowery
(northeast corner)

At the intersection of Canal Street and Baxter Street, a new pedestrian ramp or a replacement for an existing pedestrian ramp is recommended for the southwest and southeast corner.

On the northeast corner of Canal Street and Mulberry Street, both pedestrian ramps should be replaced.

At the northwest corner of Canal Street and Mott Street, a pedestrian ramp should be

replaced with a NYCDOT standard pedestrian ramp and ADA safety surface.

On the northwest, northeast and southwest corner of Canal Street and Bowery, new pedestrian ramps or replacements for existing pedestrian ramps are recommended (Photo No. 3).

Howard Street

On the northeast corner of Howard Street and Lafayette Street, both ramps should be replaced with NYCDOT standard pedestrian ramps and ADA safety surface.

The intersection of Howard Street and Centre Street is located one block north of Canal Street and is an uncontrolled intersection (Photo No. 4). At the southwest corner of the intersection, both pedestrian ramps should be replaced with NYCDOT standard pedestrian ramps and ADA safety surface. New ramps are also required along the east side of the T-intersection. For the northeast ramp, a parking spot will need to be removed. It is not recommended that crosswalks be striped on Centre Street since the intersection is not controlled.



Photo No. 4

Howard Street & Centre Street (looking west)

South of Howard Street and Centre Street is Hester Street and Centre Street, the west side and the northeast corner of this T-intersection are missing pedestrian ramps. New pedestrian ramps are recommended.

Walker Street

Walker Street is a 30-foot wide one-way eastbound street that terminates at Canal Street.

The northeast corner of Walker Street and Lafayette Street is missing pedestrian ramps. NYCDOT standard pedestrian ramps and ADA safety surface are recommended for both sides of the corner.

On the northwest and southwest corner of Walker Street and Centre Street, new pedestrian ramps are recommended. There is a signal pole on the northwest corner that should be relocated to allow for the placement of new NYCDOT standard pedestrian ramps and ADA safety surface.

At the intersection of Walker Street and Baxter Street, the southwest and the southeast corner need new pedestrian ramps or replacements for existing ramps.



Photo No. 5

White Street & Baxter Street (looking west)

White Street

White Street is a narrow one-way westbound (18-foot wide) roadway with parking on the north side.

Between Centre Street and Baxter Street, it is a parking lot for the Manhattan Detention Center (Photo No. 5) and has low pedestrian volume. New pedestrian ramps should be built on the northeast and southeast sides of White Street and Centre Street.

White Street and Baxter Street has no crosswalks or pedestrian ramps, but neither are recommended because this intersection has low pedestrian and vehicular volume.

Bayard Street

Bayard Street is a 26-foot wide one-way eastbound street with parking on both sides. Bayard Street begins at the T-intersection with Baxter Street and ends 4-blocks east at the T-intersection with Bowery. The NY Chinatown Senior Citizen Coalition Center is located at the corner of Bayard Street and Mulberry Street.

On the northwest corner of Bayard Street and Baxter Street, there is a street light that should be relocated to allow for the placement of new NYCDOT standard pedestrian ramps and ADA safety surface.

At the intersection of Bayard Street and Mulberry Street, there are heavy pedestrian volumes including a significant number of seniors at this location. Few vehicles were perceived to be speeding on Mulberry Street during a recent field visit; a speed study performed on Mulberry Street on 08/05/08 confirmed speeding was not an issue as the 85th percentile speed was only 16.3 mph in AM and 18.0 mph in PM (see Appendix D for complete study information). Since the

85th percentile speed is lower than the posted speed limit, a speed reducer is not applicable on Mulberry Street. The northeast and the southeast corner of this intersection need new pedestrian ramps or have ramps that need to be replaced.

New NYCDOT standard pedestrian ramps and ADA safety surface are recommended for the northwest, southwest and southeast corners of Bayard Street and Mott Street.



Bayard Street and Elizabeth Street is an uncontrolled intersection with heavy pedestrian volume. Turning movement counts for the AM and PM peak periods were performed on 08/05/08. The AM peak indicated that 378 pedestrians crossing Bayard Street conflict with 60 vehicles turning per hour. The PM peak indicated that 306 pedestrians crossing Bayard Street conflict with 109

eastbound vehicles per hour. To help regulate the intersection, a stop sign is recommended for eastbound traffic on Bayard Street (Photo No. 6) and new NYCDOT standard pedestrian ramps and ADA safety surface are needed for the south side of Bayard Street and the northeast corner on Bayard Street. Both pedestrian ramps on the northwest corner of the intersection should be replaced. New standard crosswalks should be striped across Bayard Street and a high visibility crosswalk should be striped across Elizabeth Street.

Leonard Street/Hogan Place

At the intersection of Leonard Street and Centre Street, the pedestrian ramps on the northwest, northeast and southwest corners should be replaced with new NYCDOT standard pedestrian ramps and ADA safety surface.

At the T-intersection of Hogan Place and Baxter Street, Hogan Place is uncontrolled while Baxter Street is stop controlled. Columbus Park is adjacent to the east side of Baxter Street. The intersection has low vehicular volume but high pedestrian volume. There is no pedestrian striping across either street.



Crosswalk striping is only recommended for the controlled leg of Baxter Street.

Worth Street

Worth Street is a 40-foot wide roadway with one moving lane in each direction and parking on both sides.

A new pedestrian ramp should be built for the northwest and northeast corners of Worth Street and Centre Street (Photo No. 7).

At Worth Street and Baxter Street, the pedestrian ramps on the northeast corner and the southwest side should be replaced and a new NYCDOT standard pedestrian ramps and ADA safety surface are required for the southeast side along Worth Street.



Mosco Street

Mosco Street is a narrow (21-foot wide) westbound street. The street is one block long beginning at Mott Street and ending at Mulberry Street.

Mosco Street and Mulberry Street (Photo No. 8) are both stop-controlled but there is no

crosswalk striping across Mosco Street. A new standard crosswalk is recommended across Mosco Street and a new NYCDOT standard pedestrian ramps and ADA safety surface is recommended for the southwest side on Mulberry Street. On the northeast and southeast corners, the existing catch basin should be relocated onto Mosco Street to install new apex pedestrian ramps. On the northeast corner of this intersection, there is a streetlight that should be relocated.

Mosco Street and Mott Street are both uncontrolled. Turning movement counts for the AM and PM peak periods were performed on 08/07/08 to determine if a stop sign is necessary for southbound traffic on Mott Street. The PM peak indicated that 382 pedestrians crossing Mosco Street conflict with 62 vehicles turning per hour. It also indicated that 62 pedestrians (34 across the north leg + 28 across the south leg) crossing Mott Street conflict with 109 southbound vehicles per hour. Therefore, a stop sign is recommended for southbound traffic on Mott Street as well as a new yield to pedestrian sign. New NYCDOT standard pedestrian ramp configurations and ADA safety surface are recommended for the northwest side, southwest and southeast corner of the intersection. In order to install the ramps, a parking spot on the northeast side of Mott Street should be

removed and a streetlight on the northwest corner should be relocated. A school crosswalk is recommended across Mott Street.



Pell Street

The intersection of Pell Street and Mott Street is a T-intersection where Pell Street terminates. At this intersection, Pell Street is stop controlled and Mott Street is uncontrolled. A stop sign is recommended for southbound traffic on Mott Street at this

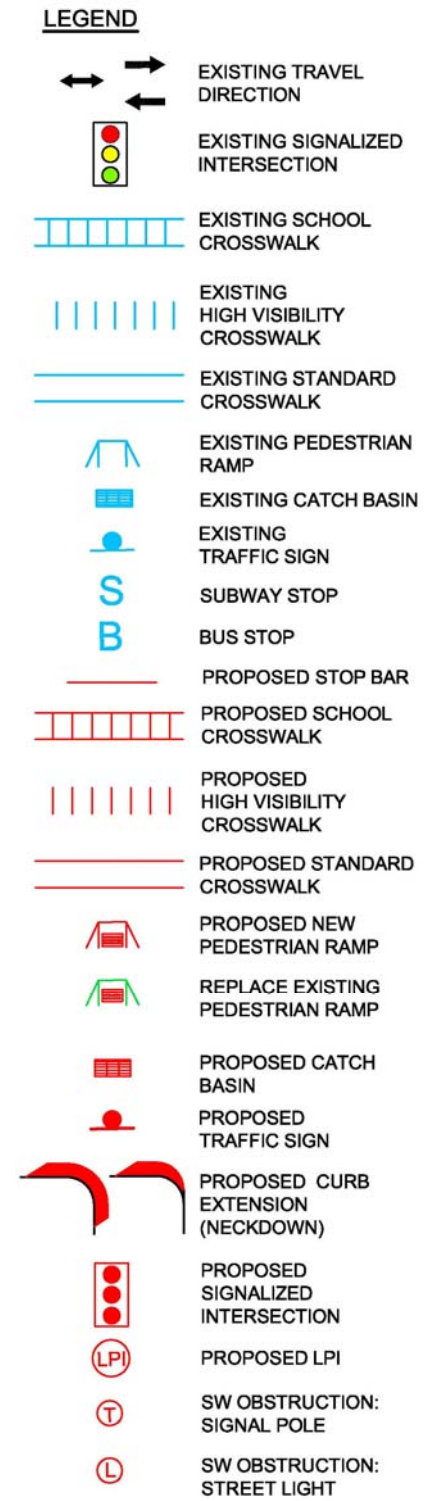
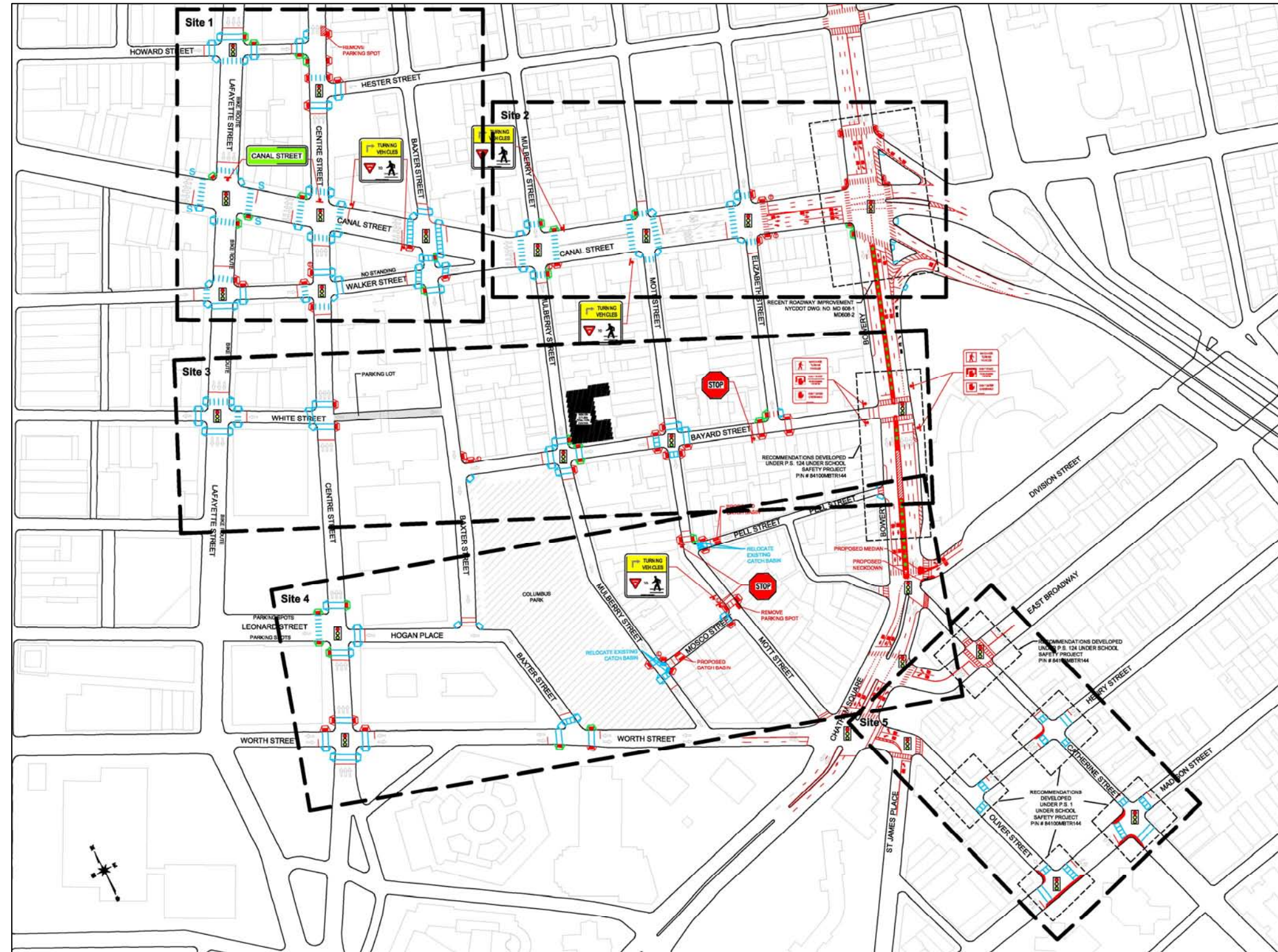
intersection. There is no crosswalk striping across Mott Street and a standard crosswalk is recommended. The catch basins on the west and east side of Pell Street should be relocated to install new NYCDOT standard pedestrian ramp configurations and ADA safety surface on the northwest and northeast corner and the southwest side along Mott Street needs a new ramp (Photo No. 9).

Division Street

The intersection of Division Street and Bowery is a busy intersection with heavy vehicular and pedestrian traffic. A new median is recommended for the east leg of the intersection and a new neckdown is recommended for the southeast corner. These measures will slow turning traffic, discourage pedestrians from crossing mid-block and provide a refuge area.

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Illustrating the Solution

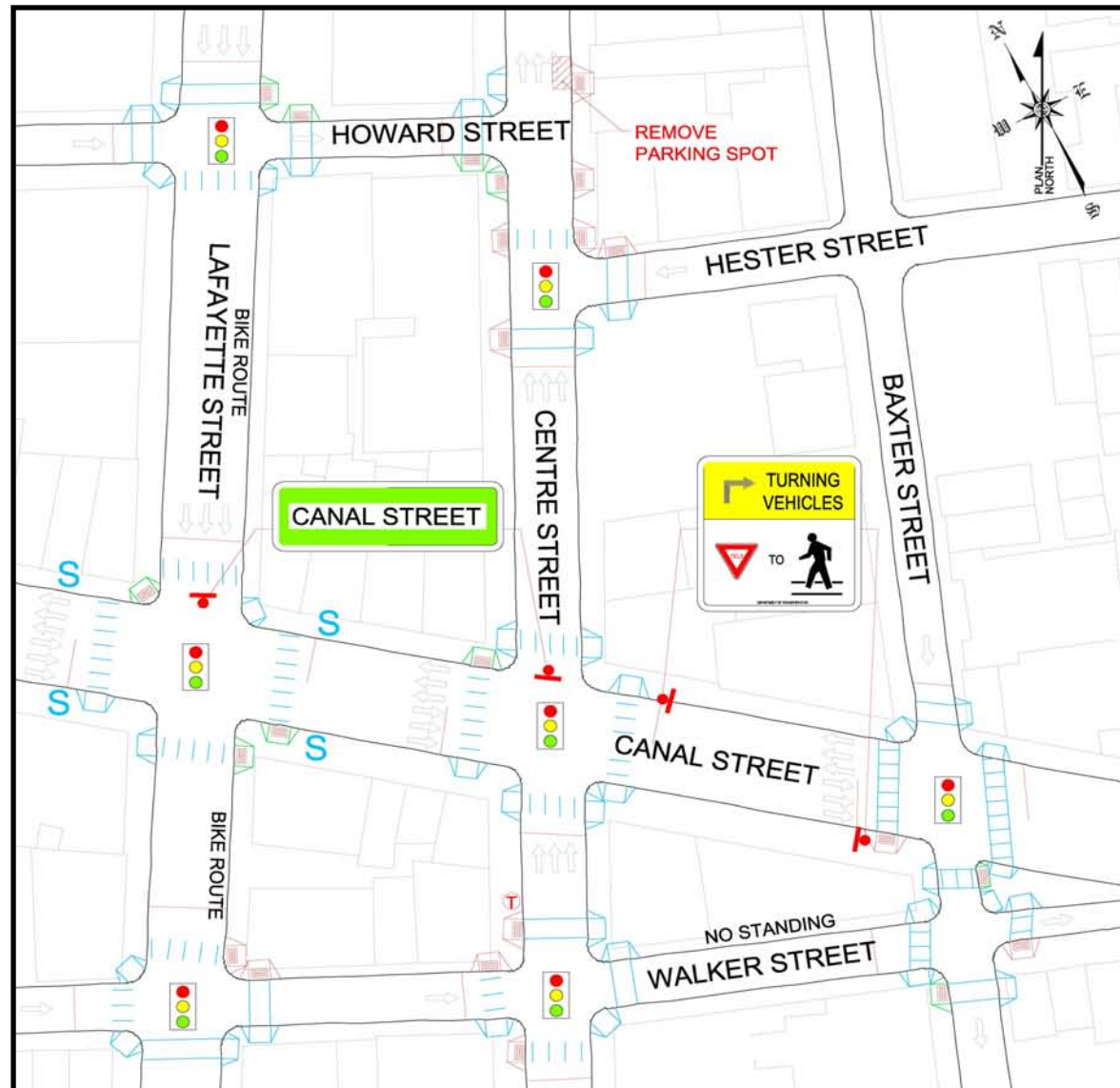


SITE 1: CANAL STREET (FROM LAFAYETTE STREET TO BAXTER STREET)

Illustrating the Solution

	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
	REPLACE EXISTING PED RAMP		EXISTING SUBWAY STOP				PROPOSED TRAFFIC SIGN

- Pedestrian concerns in this area:**
- Signal timing (insufficient crossing time)
 - Missing or inadequate pedestrian ramps
 - Vehicles not yielding to pedestrians

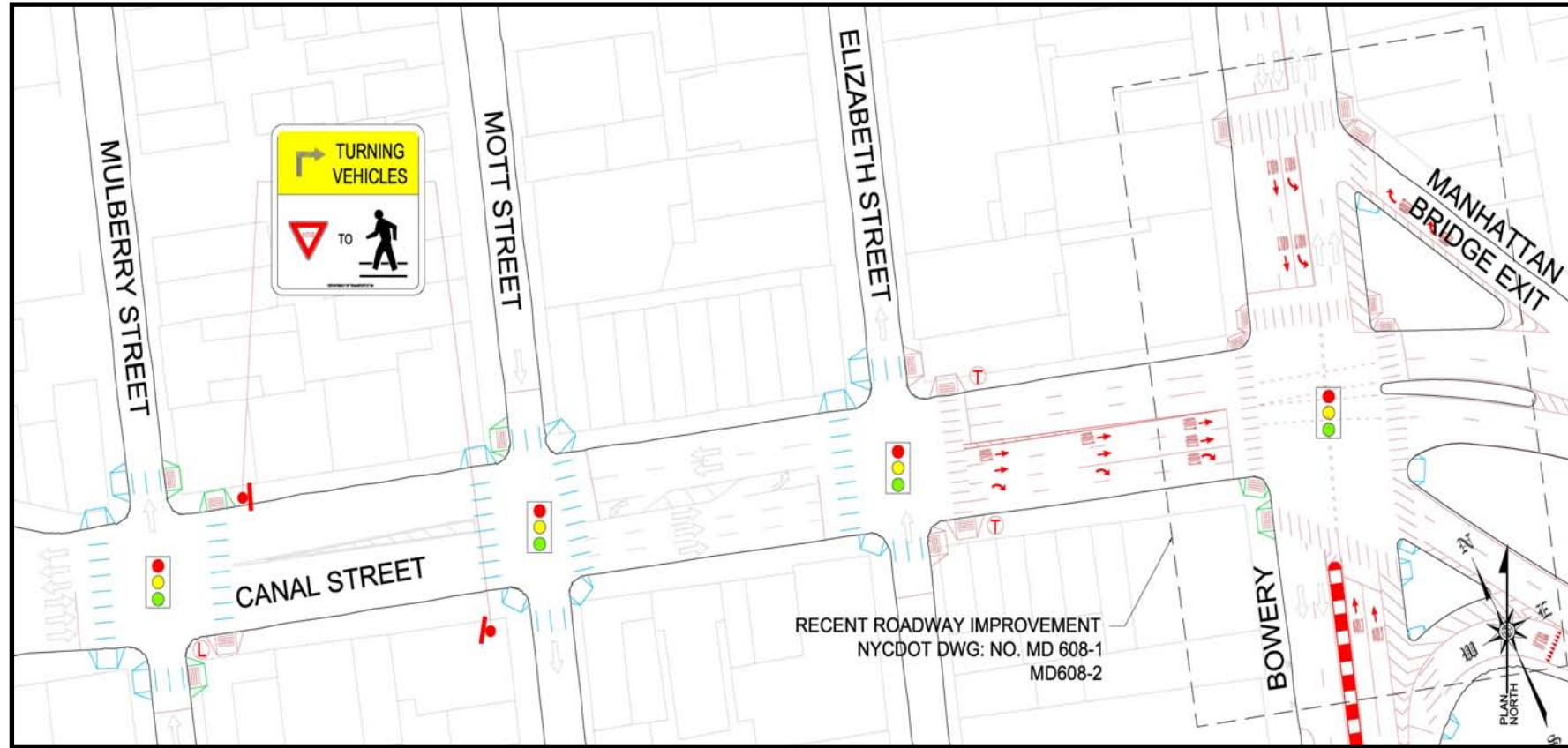


- Recommended improvements include:**
- Time all signals for seniors and where feasible, the crossing time will be extended
 - Install new advanced stop bars
 - Remove parking spot on Centre Street where Howard Street ends for pedestrian ramp
 - Install new signs
 - oversized Canal Street sign to be hung over Lafayette Street & Centre Street
 - yield to pedestrian sign for westbound and eastbound traffic on Canal Street between Centre Street and Baxter 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 30th, 2008 and May 20th, 2009

SITE 2: CANAL STREET (FROM BAXTER STREET TO BOWERY)

Illustrating the Solution



	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				

Pedestrian concerns in this area:

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

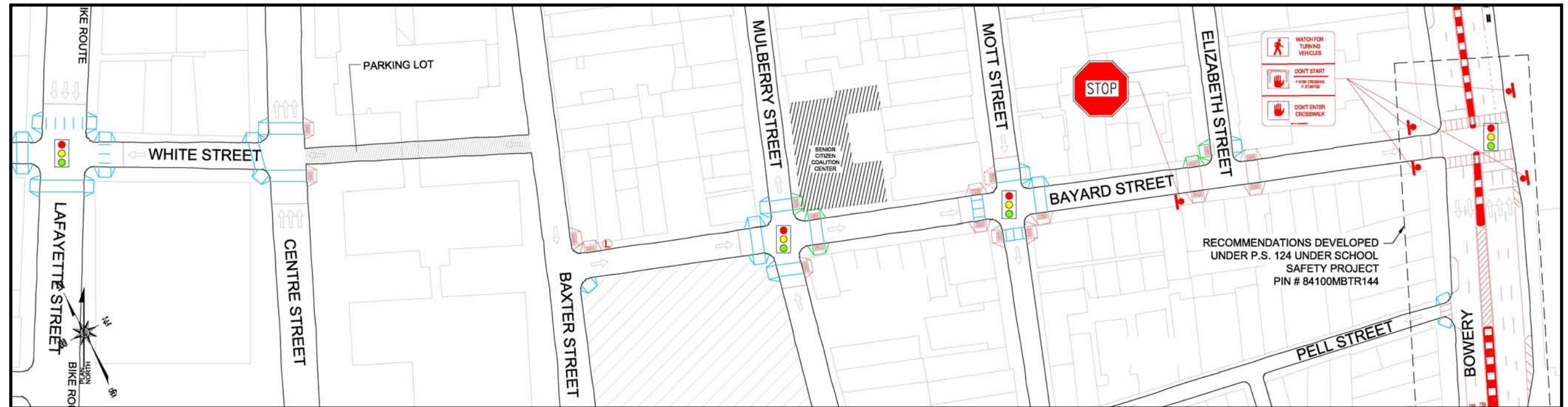
Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Install new striping & concrete work along Bowery
- Install new signs
-yield to pedestrian signs for westbound and eastbound traffic on Canal Street between Mulberry Street and Mott Street

Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix B
- Recent roadway improvement NYCDOT DWG. No. MD608-1 & MD608-2 are shown along Bowery
- This study area was visited on June 30th, 2008 and May 20th, 2009

SITE 3: WHITE STREET & BAYARD STREET (FROM LAFAYETTE STREET TO BOWERY)



Illustrating the Solution

	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
	REPLACE EXISTING PED RAMP		EXISTING SUBWAY STOP				PROPOSED TRAFFIC SIGN

- Recommended improvements include:**
- Time all signals for seniors and where feasible, the crossing time will be extended
 - Install new advanced stop bars
 - Stripe new standard and high-visibility crosswalks
 - Install new striping, signs & islands along Bowery
 - Install new stop sign on Bayard St. & Elizabeth St.

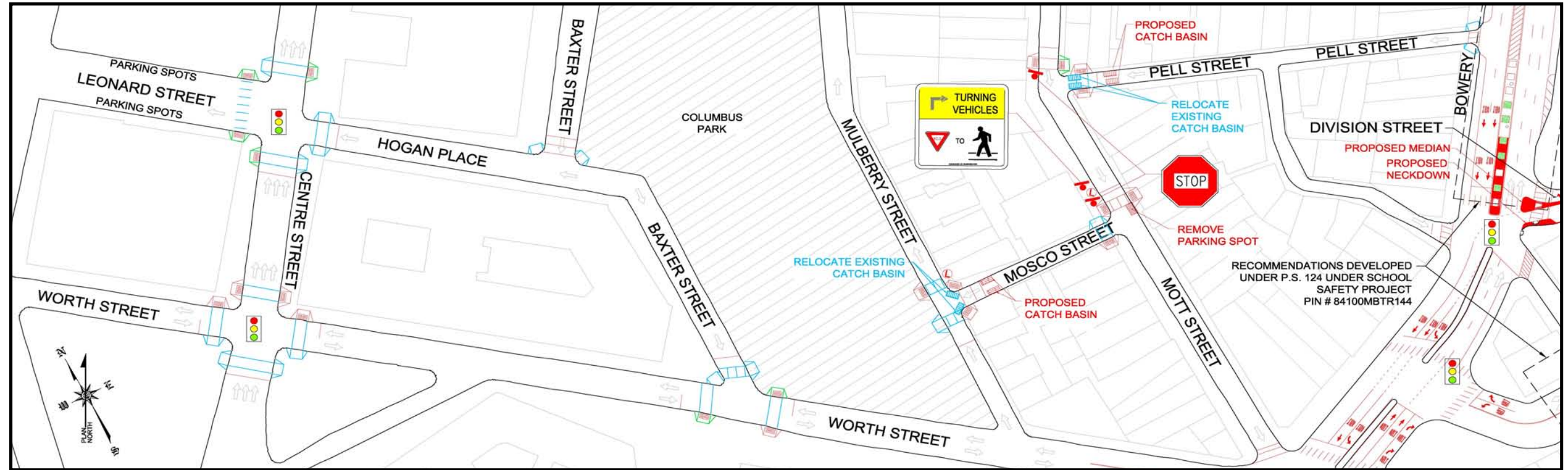
- Pedestrian concerns in this area are:**
- Speeding vehicles
 - Turning vehicles not yielding to pedestrians
 - Missing or inadequate pedestrian ramps
 - Signal timing (insufficient crossing time)

- Traffic Analysis:**
- Speed study on Mulberry Street between Bayard Street & Canal Street (Appendix D)
 - Turning Movement Counts for Bayard Street and Elizabeth Street (Appendix C)

- Additional Information:**
- Parking regulations for the project area have been collected and are shown in Appendix B
 - Recommendations developed for P.S. 124 are shown in Appendix E
 - Recent roadway improvement NYCDOT DWG. No. MD608-1 & MD608-2 are shown along Bowery
 - This study area was visited on June 30th, 2008 and May 20th, 2009

SITE 4: WORTH STREET (FROM CENTRE STREET TO CHATHAM SQUARE)

Illustrating the Solution



	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
	REPLACE EXISTING PED RAMP		EXISTING SUBWAY STOP				PROPOSED TRAFFIC SIGN

Recommended improvements include:

- Stripe new standard & school crosswalk
- Install new advanced stop bars
- Relocate existing catch basin
 - on the northeast & southeast corners of Mulberry St. & Mosco St.
 - on the north & south side of Pell St. at Mott St.
- Install new signs
 - yield to pedestrian sign on Mott St.
 - stop sign for southbound traffic at Mott St. & Pell St.
 - stop sign for southbound traffic at Mott St. & Mosco St.
- Install new striping & signs along Bowery
- Install a neckdown on the southeast corner of Division St. & Bowery
- Install a median on the east leg of Division St. & Bowery

Pedestrian concerns in this area are:

- Turning vehicles not yielding to pedestrians
- Missing or inadequate pedestrian ramps

Traffic Analysis:

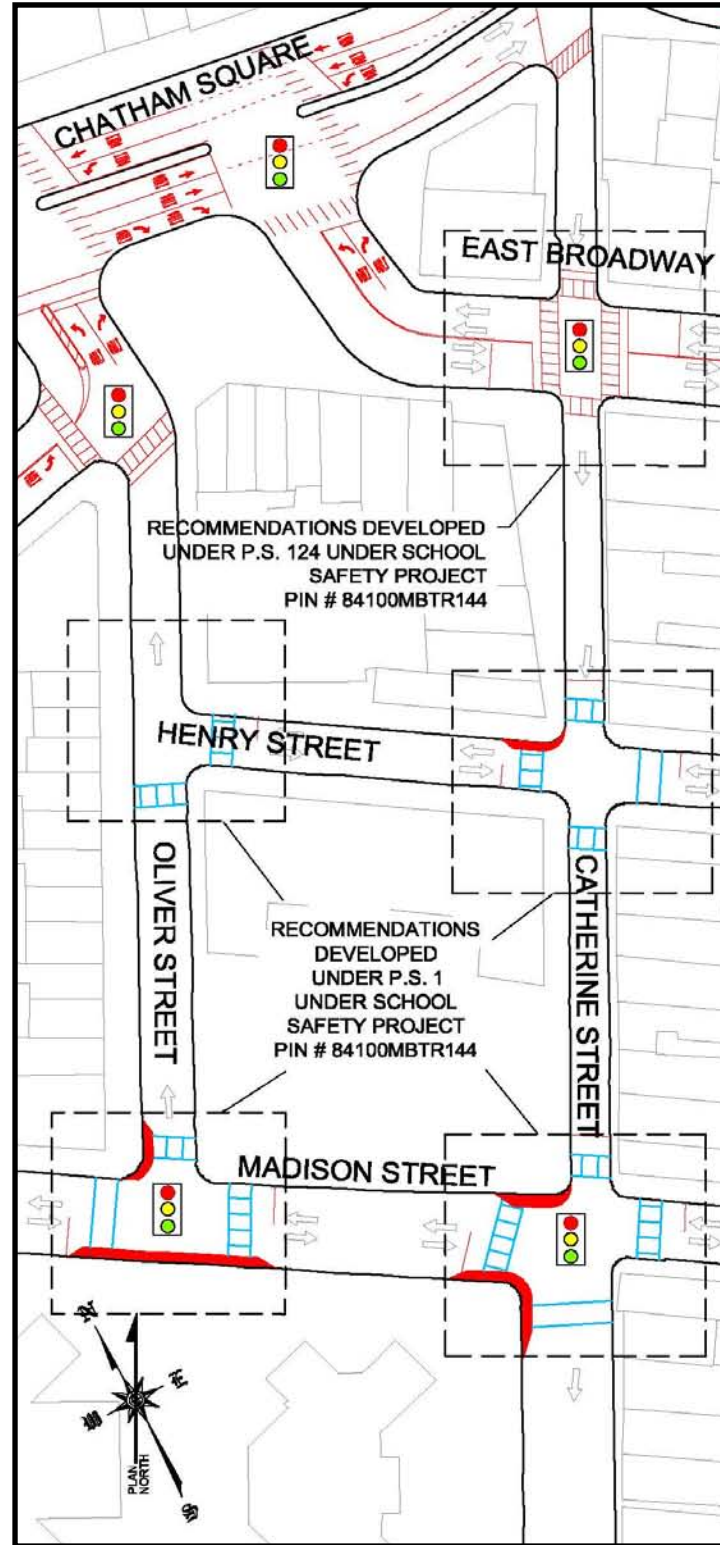
- Turning Movement Counts for southbound traffic on Mott Street (Appendix C)

Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix B
- This study area was visited on June 30th, 2008 and May 20th, 2009

SITE 5: CATHERINE STREET (FROM MADISON STREET TO EAST ROADWAY)

Illustrating the Solution



Pedestrian concerns in this area are:

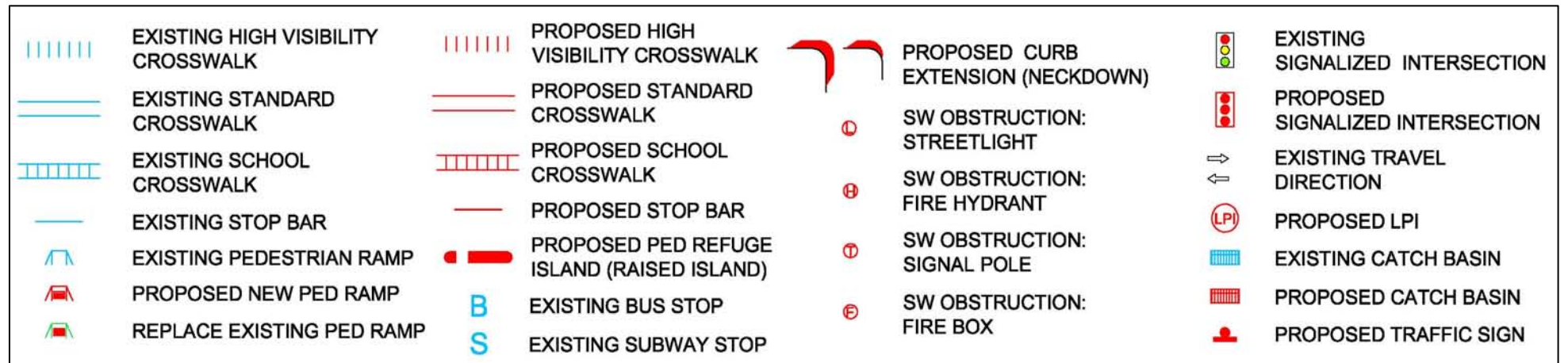
- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

Recommended improvements include:

- Install a neckdown or a curb extension
 - on the northwest corner of Henry St. & Catherine St.
 - on the northwest corner of Madison St. & Oliver St.
 - south side of Madison St. at Madison St. & Oliver St.
 - on the northwest corner of Madison St. & Catherine St.
 - on the southwest corner of Madison St. & Catherine St.
- Install new striping along Chatham Square

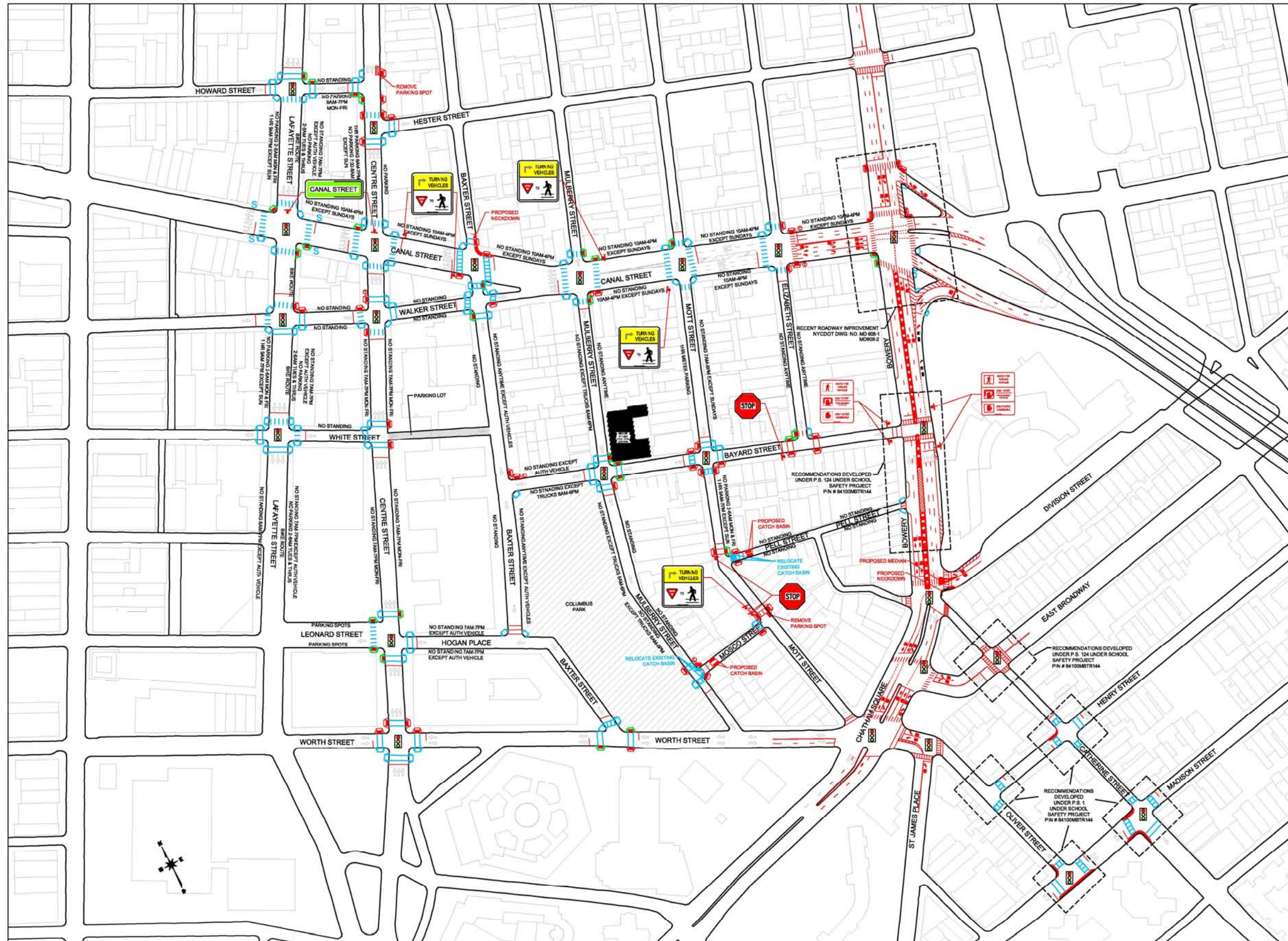
Additional Information:
























- Parking regulations for the project area have been collected and are shown in Appendix B
- Recommendations developed for P.S. 124 are shown in Appendix E
- This study area was visited on June 30th, 2008



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

APPENDIX B: MAP OF PROPOSED CHANGES



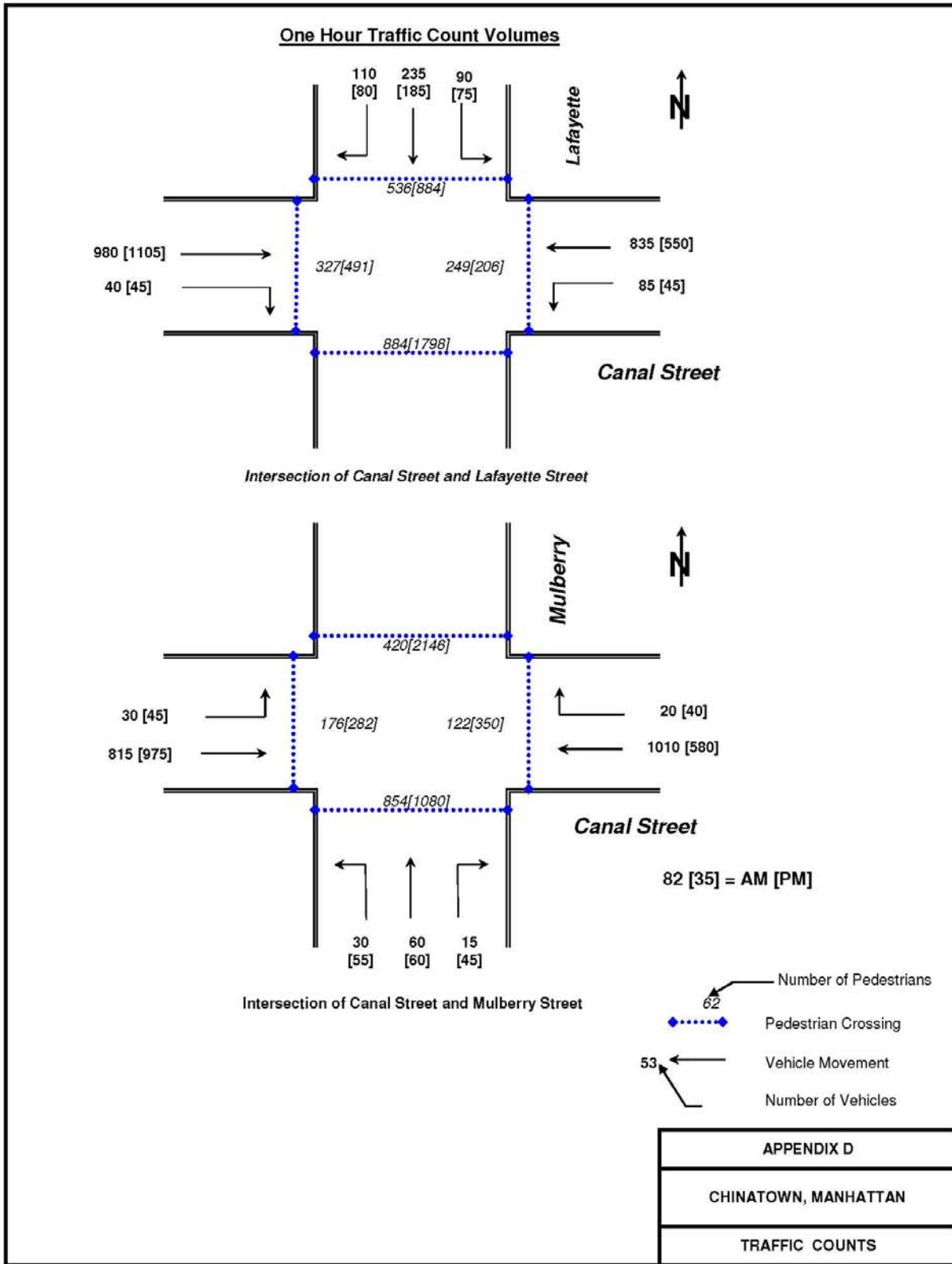
- LEGEND**
-  EXISTING TRAVEL DIRECTION
 -  EXISTING SIGNALIZED INTERSECTION
 -  EXISTING SCHOOL CROSSWALK
 -  EXISTING HIGH VISIBILITY CROSSWALK
 -  EXISTING STANDARD CROSSWALK
 -  EXISTING PEDESTRIAN RAMP
 -  EXISTING CATCH BASIN
 -  EXISTING TRAFFIC SIGN
 -  SUBWAY STOP
 -  BUS STOP
 -  PROPOSED STOP 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

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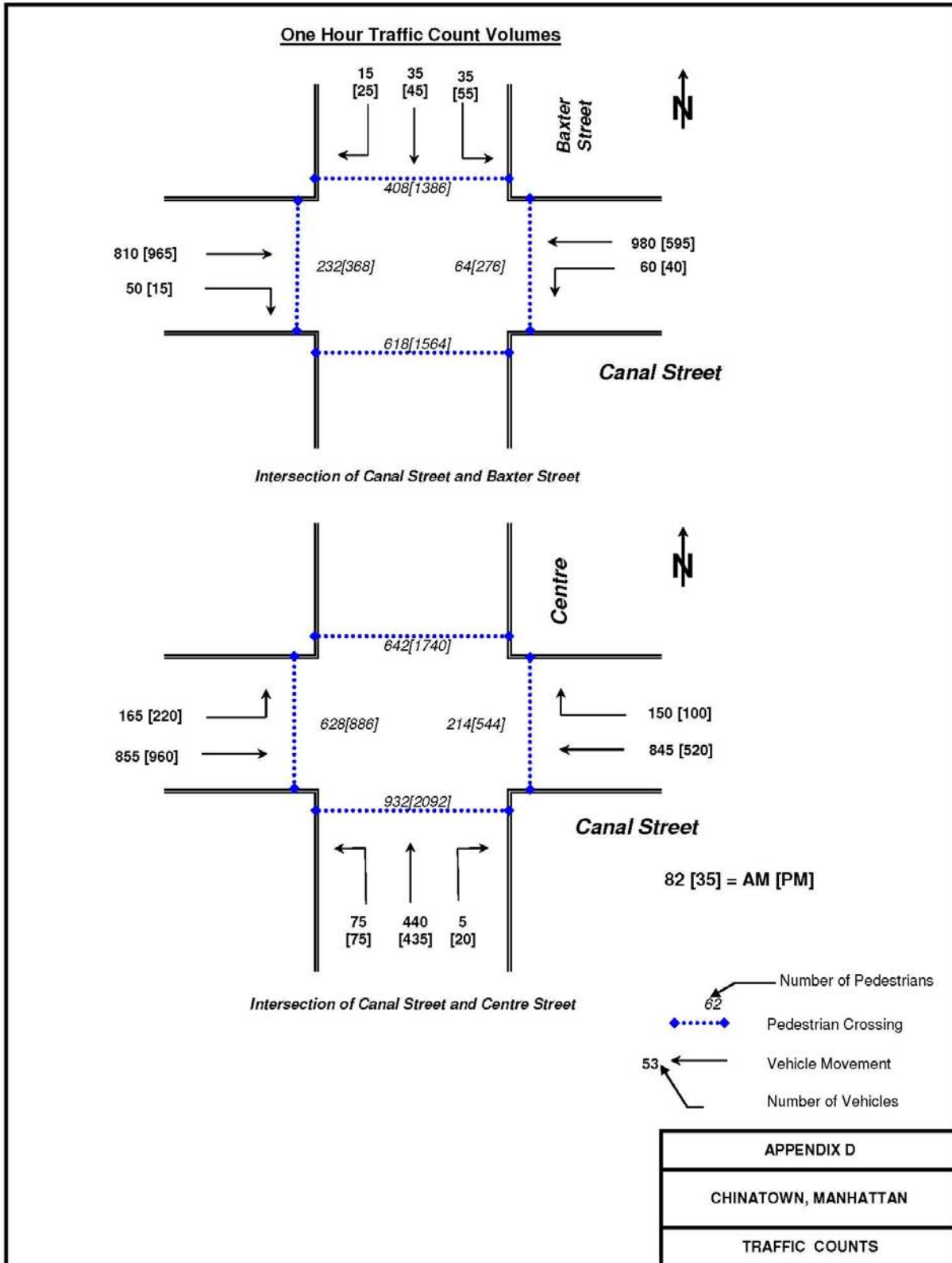
SENIOR PEDESTRIAN SAFETY AREA
 CHINATOWN
 PROPOSED MEASURES
 TO IMPROVE SAFETY

APPENDIX C: TRAFFIC COUNTS

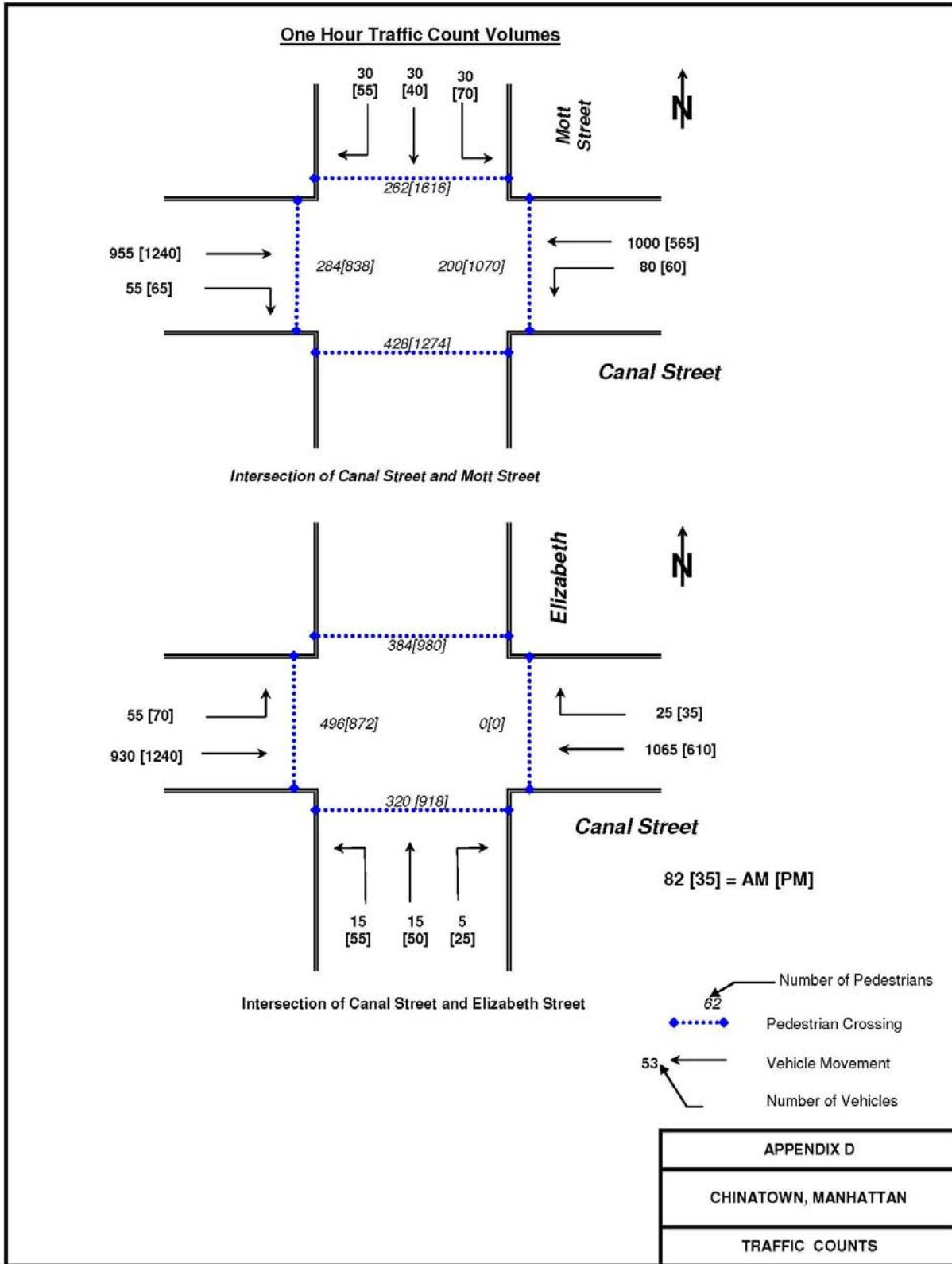
APPENDIX C – TRAFFIC COUNT



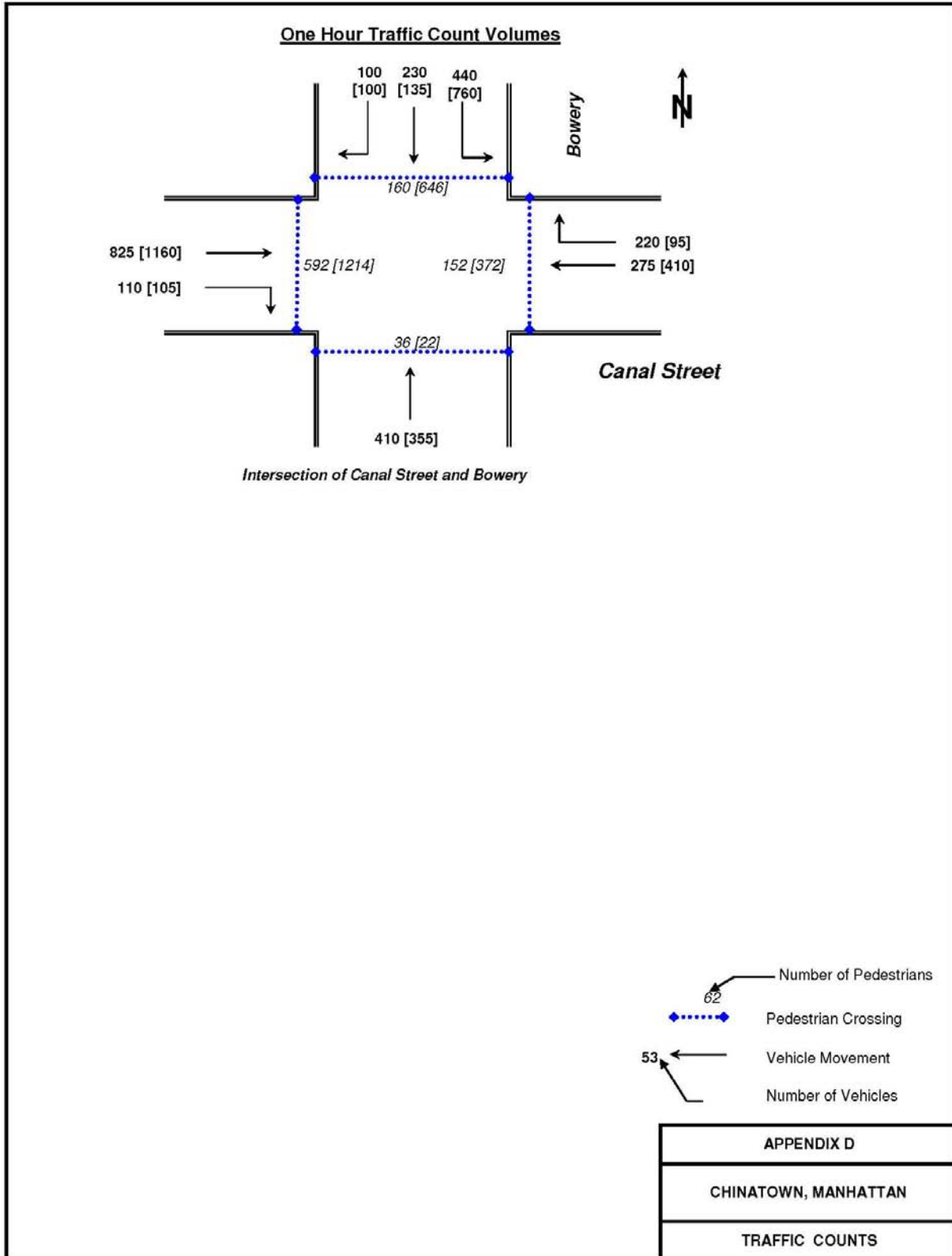
APPENDIX C – TRAFFIC COUNT (CONT.)



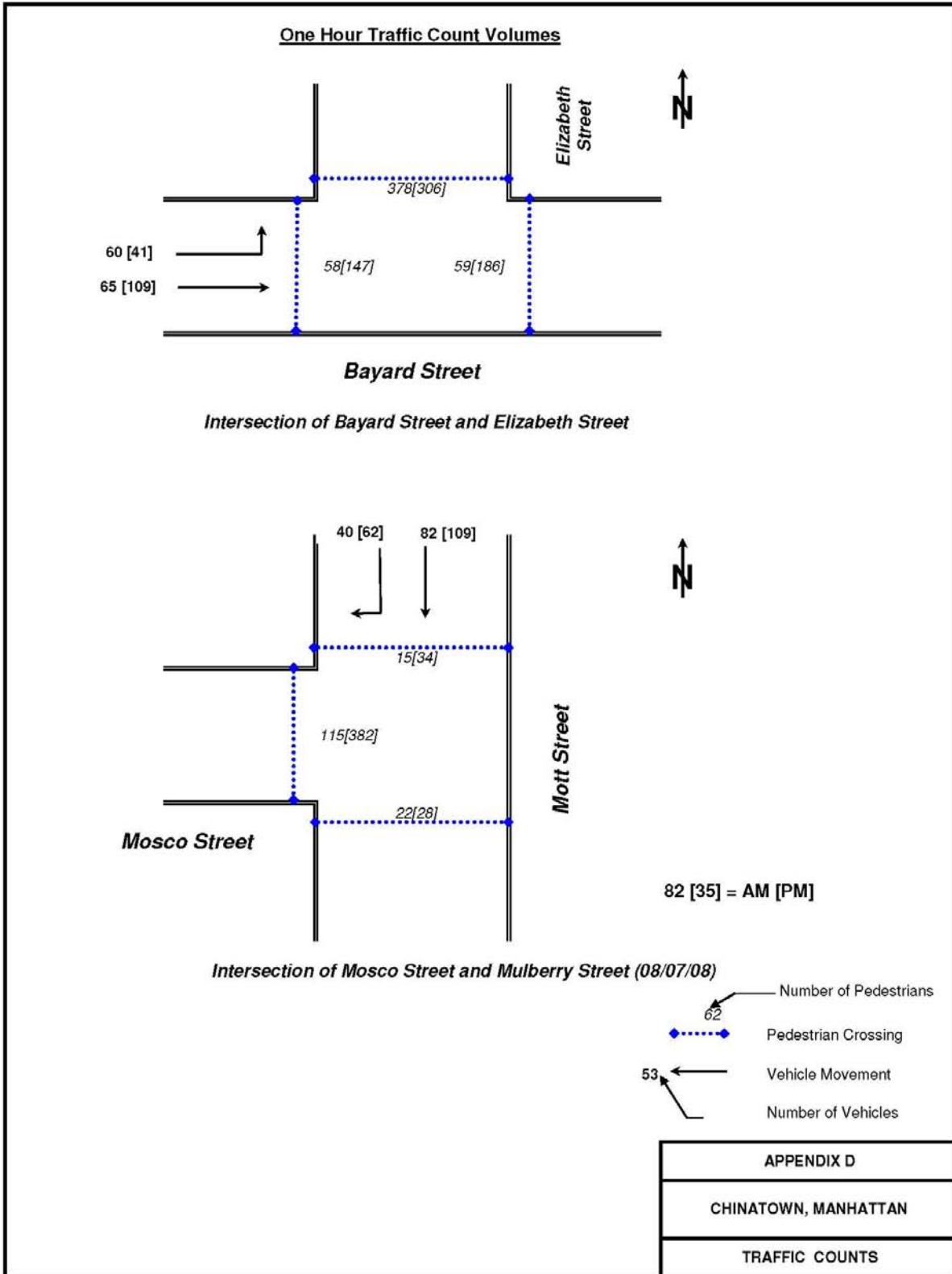
APPENDIX C – TRAFFIC COUNT (CONT.)



APPENDIX C – TRAFFIC COUNT (CONT.)



APPENDIX C – TRAFFIC COUNT (CONT.)



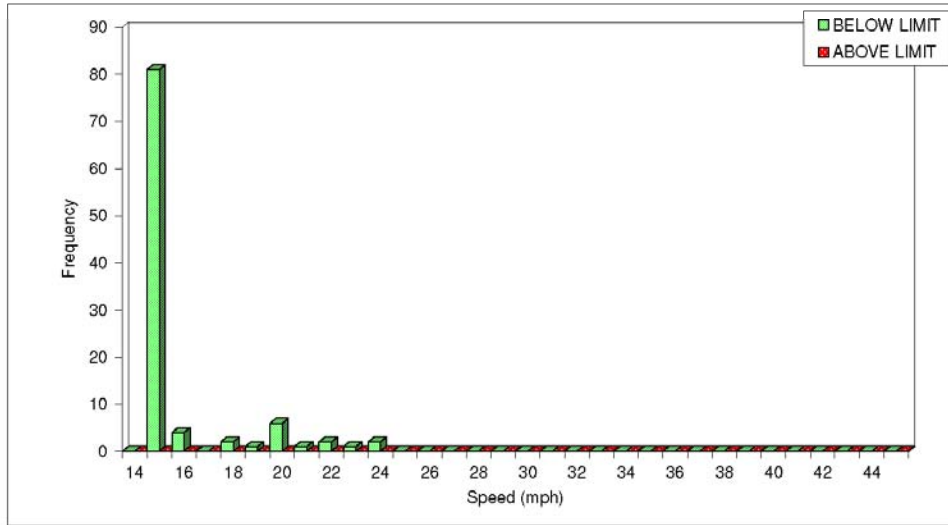
APPENDIX D: SPEED STUDY

**APPENDIX D – SPEED STUDY
MULBERRY STREET BETWEEN BAYARD STREET & CANAL STREET**

RADAR SPEED SURVEY

Arterial: Mulberry Street N/B From: Bayard Street To: Canal Street

Boro:	Manhattan	Average Speed:	15.9 mph
Date:	08/05/08	15th Percentile:	15.0 mph
Day:	Tue.	50th Percentile:	15.0 mph
Weather:	Clear	85th Percentile:	16.3 mph
Time:	10:23 - 11:10		
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	24.0 mph
Type of Roadway:	One-Way	Pace:	14.0 - 24.0 mph
Width of Road by Direction:	23'	In Pace:	100.0 %
Number of Moving Lanes:	1	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	0.0 %
Observer:	J. Munoz	Standard Deviation:	2.2 mph

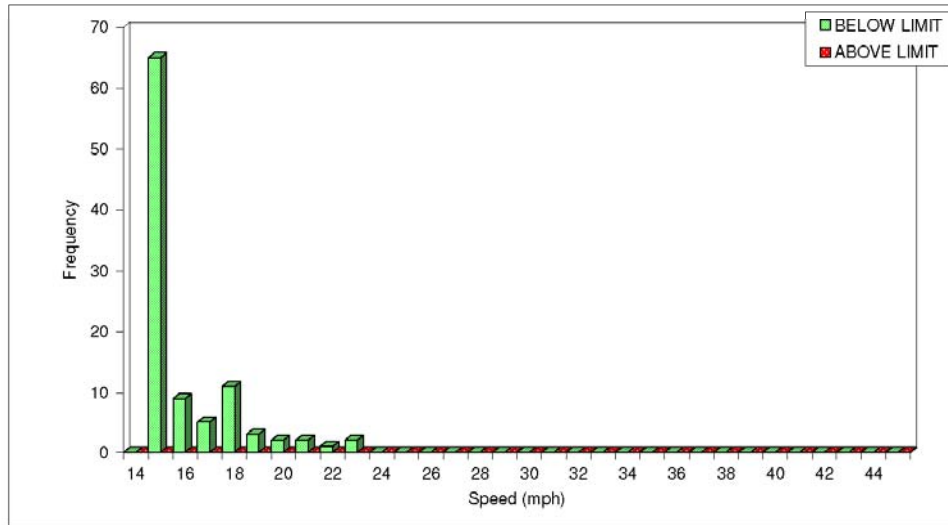


**APPENDIX D – SPEED STUDY
MULBERRY STREET BETWEEN BAYARD STREET & CANAL STREET (CONT.)**

RADAR SPEED SURVEY

Arterial: Mulberry Street N/B From: Bayard Street To: Canal Street

Boro:	Manhattan	Average Speed:	16.1 mph
Date:	08/05/08	15th Percentile:	15.0 mph
Day:	Tue.	50th Percentile:	15.0 mph
Weather:	Clear	85th Percentile:	18.0 mph
Time:	2:00 -2:42		
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	23.0 mph
Type of Roadway:	One-Way	Pace:	14.0 - 24.0 mph
Width of Road by Direction:	23'	In Pace:	100.0 %
Number of Moving Lanes:	1	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	0.0 %
Observer:	J. Munoz	Standard Deviation:	1.9 mph



APPENDIX E: SCHOOL SAFETY EXHIBITS

