

Safe Streets for Seniors

Upper West Side, Manhattan

FINAL REPORT
January 31, 2011



Janette Sadik-Khan, Commissioner

**Safe Streets for Seniors
Upper West Side, Manhattan**

TABLE OF CONTENTS

PROJECT DESCRIPTION4

BACKGROUND 5

EXISTING CONDITION 7

RECOMMENDATIONS 9

INDEX..... 23

SITE 1: PLAN 1 - CENTRAL PARK WEST (FROM W 61ST STREET TO W 71ST STREET).....25

SITE 1: PLAN 2 - CENTRAL PARK WEST (FROM W 72ND STREET TO W 81ST STREET).....26

SITE 2: PLAN 1 - COLUMBUS AVENUE (FROM W 60TH STREET TO W 70TH STREET).....27

SITE 2: PLAN 2 - COLUMBUS AVENUE (FROM W 71ST STREET TO W 81ST STREET).....28

SITE 3: PLAN 1 - AMSTERDAM AVENUE (FROM W 60TH STREET TO W 70TH STREET).....29

SITE 3: PLAN 2 - AMSTERDAM AVENUE (FROM W 71ST STREET TO W 81ST STREET).....30

SITE 4: PLAN 1 - BROADWAY (FROM W 60TH STREET TO W 70TH STREET).....31

SITE 4: PLAN 2 - BROADWAY (FROM W 71ST STREET TO W 81ST STREET).....32

EXHIBITS

EXHIBIT 1 - ROADWAY MAP OF THE STUDY AREA.....5

EXHIBIT 2 - TRUCK MAP5

EXHIBIT 3 - TRANSIT MAP.5

EXHIBIT 4 - BICYCLE ROUTE MAP5

EXHIBIT 5 - PEDESTRIAN CRASH STATISTICS (2001-2006)6

APPENDICES

APPENDIX A: PHOTO LOG	33
APPENDIX B: FIELD INVESTIGATION FORM.....	34
APPENDIX C: MAP OF PROPOSED CHANGES.....	40
APPENDIX D: TRAFFIC COUNTS	43
APPENDIX E: LIST OF STUDY AREA SCHOOLS.....	50
APPENDIX F: CONSTRUCTION DETAILS.....	52
APPENDIX G: SCHOOL AND PEDESTRIAN SAFETY EXHIBITS.....	55

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 SPFA areas. 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.

In this report, the Upper West Side SPFA located in Manhattan has been studied, evaluated and addressed.

Background

BACKGROUND

The Upper West Side is a densely populated section of Manhattan. It is considered to be a multi-modal hub as well as a significant generator of daily traffic and transportation activities. Land use within the Upper West Side Study Area includes a mixture of residential, commercial and office buildings. A majority of the commercial buildings are located within the corridors of Broadway, Amsterdam Avenue and Columbus Avenue. The Central Park West corridor, which is also a part of this project study area, includes famous attractions such as the American Museum of Natural History, the Hayden Planetarium and Central Park. Among the other famous destination points within the study area are the Julliard School of Music, Fordham University and Lincoln Center complex, which are located on Broadway, Amsterdam Avenue and West 66th Street, attracting significant vehicular and pedestrian traffic year round. Most of the buildings within the study area are multi-storied high rises with the ground floor commonly used by street-front stores and the other floors typically reserved for residential, commercial or office use. Some buildings within the study area are used only for residential purposes.

The Upper West Side is well connected to bus and subway lines. Within the study area, subway stations are conveniently located along Broadway and Central Park West. These subway stations provide service to the A, C, B, D, #1, #2 and #3 subway lines. All of these subway lines run north-south and are predominantly used to provide services to the downtown business district. The bus operation within the study area includes the M79, M72, M66, M10, M7, M11, M104, M5 and M20 bus lines. Pedestrian activity is also generated by the extensive use of the mass transit system, as well as by various attractions and several schools that are located within and around the study area. A list of these schools is provided in Appendix E. In addition to these pedestrian generators, senior pedestrian activity is also produced by senior centers that are located in and adjacent to the boundary of the project study area. These senior centers include: The Hamilton Senior Center, 141 W 73rd Street, New York and Hargrave Senior Center, 111 W 71st Street, New York.

Thus, the Upper West Side has all the transportation elements that are typically dominant in a densely populated urban community, including: vehicular, bus, subway and pedestrian modes of transportation. These multiple travel modes often compete with each other for the limited available right-of-way. This often constrains traffic operations and results in vehicular conflicts with the vulnerable senior pedestrians frequently seen utilizing the crosswalks and sidewalks in their travels. This project will provide recommendations to reduce such conflicts in order to improve senior pedestrian safety within the study area.



EXHIBIT 3 – TRANSIT MAP



EXHIBIT 4 – BICYCLE ROUTE MAP



EXHIBIT 1 – ROADWAY MAP OF THE STUDY AREA

EXHIBIT 5 – PEDESTRIAN CRASH STATISTICS (2001-2006)



EXISTING CONDITIONS

The Upper West Side Senior Pedestrian Focus Study Area was selected for senior pedestrian improvements because it was identified as having a history of senior pedestrian crashes. This study area mainly includes four arterial roadway segments, consisting of Central Park West, Columbus Avenue, Amsterdam Avenue and Broadway. Broadway and Central Park West are two-way arterials accommodating north-south traffic activity, while Amsterdam Avenue and Columbus Avenue are both one-way arterials providing services to northbound and southbound traffic, respectively. All of these roadways are located within or in close proximity to major traffic generators and urban activity centers. Exhibits 1, 2, 3 and 4 provide area-wide bus, subway and designated truck route information, as well as a roadway and a bicycle map of the study area. Exhibit 5 provides the statistics for senior pedestrian crashes occurring within the study area between 2001 and 2006.

In order to determine, evaluate and recommend measures associated with the safety issues faced by senior pedestrians, numerous site visits and interviews were conducted with senior pedestrians. The issues that were repeatedly observed during our field visits and noted during these interviews are listed below:

- Insufficient pedestrian crossing time
- Turning vehicles not yielding to pedestrians with right-of-way at intersections
- High traffic volume and high pedestrian volume
- Insufficient pedestrian signs
- Faded or missing crosswalk striping
- Missing or non-standard ADA pedestrian ramps
- Puddles and ponding at some pedestrian ramps
- Sidewalk obstructions
- Potholes and poor surface conditions at crosswalks

A photo log of the site visits is included in Appendix A, while the field investigation forms are presented in Appendix B.

It was noted during the site visits that these operational and geometric issues, coupled with high traffic volumes and significantly high senior pedestrian activity, have made it difficult for these pedestrians to safely cross various roadways within the study area. A description of the observations and findings are discussed below with appropriate safety recommendations.

In addition to the recommendations proposed in this SPFA report which are geared towards senior pedestrian safety improvements, the NYCDOT is

concurrently involved in a similar project which is focused on improving pedestrian safety in the immediate vicinity of 135 “priority” elementary and middle schools located throughout the five boroughs of New York City. Some of these “priority” schools are located within the SPFA projects and thus, the recommendations developed under the school safety projects have also been shown in the ***“Illustrating the Solution”*** section of this report. It is important to note that, in view of the senior pedestrian requirements at some of the common locations, the recommendations made under the SPFA project may further enhance the recommendations proposed under the school safety project.

Research has indicated that the Upper West Side SPFA has one such “priority” school safety project, as listed below:

- Collegiate School, Manhattan

A complete copy of the priority school report for this school is readily available at the following NYCDOT website:

<http://home2.nyc.gov/html/dot/html/safety/saferoutes.shtml>

As part of the research effort for this project, staff reviewed a safety study that was prepared for Assembly Member Linda Rosenthal. The findings outlined in this report (“Upper West Side – Senior Pedestrian Safety Plan” dated November 2007), which overlaps a small portion of the overall Upper West Side SPFA, were reviewed before proposing the SPFA recommendations.

Copies of the recommendations proposed in these above-noted reports have been included in Appendix G for reference. These recommendations, coupled with the SPFA recommendations, will present a complete picture of the suggested improvements within the study area.

RECOMMENDATIONS

Central Park West

The study segment of Central Park West is approximately 1.06 miles long and intersects 18 cross streets. Within the study segment, Central Park West is predominantly a two-way arterial with two moving lanes in each direction and a parking lane along each curb side (Photo No. 1). This corridor provides north-south access. Between Columbus Circle and West 62nd Street, Central Park West provides one-way northbound access. Parking is generally permitted on both sides of the arterial within the study area. This



corridor also provides a designated bicycle path along its northbound approach. The cross streets, which follow the typical grid pattern and intersect Central Park West, are mostly one-way streets providing east-west access in this urban area. Central Park West is not a designated truck route. It provides mass transit services to the M10 and M72 bus lines and the A, B, C and D subway lines. The neighborhood surrounding the Central Park West corridor consists predominantly of high-rise residential and commercial buildings along its west side, with Central Park located along its east side. Due to the numerous activities which take place in Central Park, especially in the summer, the park attracts a significant number of pedestrians, including senior citizens.

The field observations and evaluation of traffic data made within this corridor have resulted in various corridor-wide as well as localized intersection-specific recommendations. These recommendations are shown in the Site 1 illustrations and are described below.

Central Park West Corridor-Wide Recommendations

- Install high-visibility crosswalks, as well as advanced stop bars, at key intersections.
- Install oversized street name signs at key intersecting roadways.
- Install new ADA (Americans with Disabilities Act) compliant pedestrian ramps at various intersections.
- Install neck-downs at key intersections to reduce pedestrian crossing time. In addition, install new ADA-compliant pedestrian ramps at proposed neck-down locations.

Intersection-Specific Recommendations

The intersection-specific recommendations are in addition to some of the above-noted corridor-wide recommendations.

Central Park West and West 62nd Street

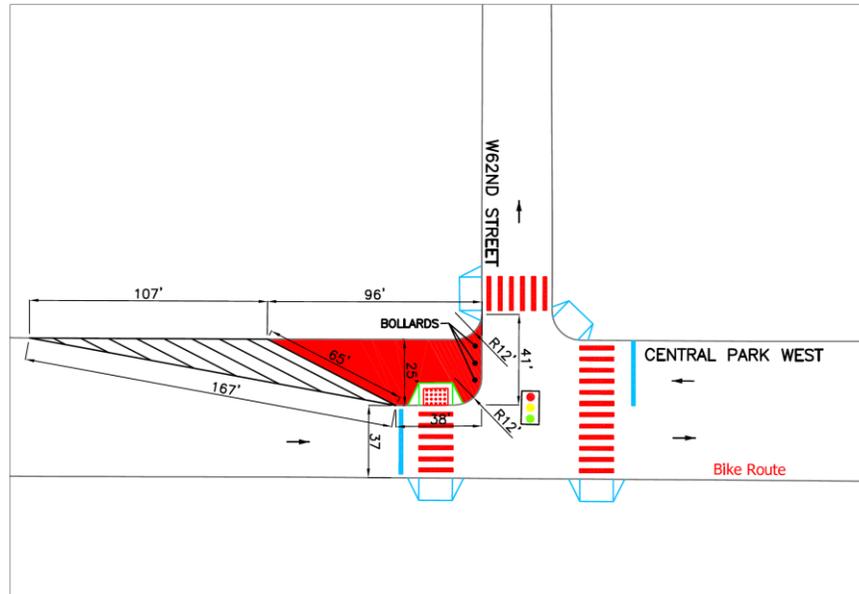
- Currently, this “T” intersection is signalized with standard crosswalks located on the north, south and west sides of this intersection (Photo No. 2). It is recommended that the existing crosswalk striping be replaced by high-visibility crosswalk striping. In addition, field observations have indicated the northbound approach of this



Central Park West & W 62nd Street (looking south)

Photo No. 2

intersection is one-way while the southbound approach accommodates two-way traffic. In order to prevent drivers from the southbound approach entering the one-way northbound leg of this intersection, pavement markings in the form of a neck-down along with corresponding traffic signs are presently in place. It is recommended that the existing neck-down pavement markings located on the northbound approach be replaced by a raised concrete neck-down. The schematics of the proposed intersection recommendations are presented below. It is further recommended that oversized street name signs be installed for W 62nd Street and that “Yield to Pedestrian” signs be installed at this intersection. These measures are anticipated to improve pedestrian safety and provide positive guidance to drivers.



Proposed Recommendations at Central Park West & W 62nd Street Intersection

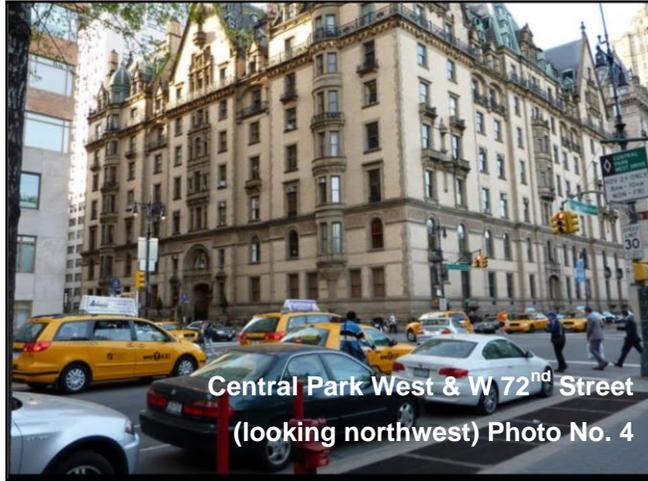
Central Park West and West 65th Street

- Under the present condition, this intersection is signalized with standard crosswalks provided on all approaches (Photo No. 3). It is recommended that all existing crosswalk striping be replaced by high-visibility crosswalk striping. This intersection provides direct pedestrian access to Central Park and is subjected to significant pedestrian activity. It is recommended that a neck-down be installed at the southeast corner of this intersection. This measure will help to reduce the pedestrian crossing time and road exposure.



Central Park West and West 72nd Street

- Under the present condition, this intersection is signalized with standard crosswalks provided on all approaches (Photo No. 4). It is recommended that the existing crosswalk striping be replaced by high-visibility crosswalk striping on all four approaches. This intersection also provides direct pedestrian access to Central Park and is subjected to significant pedestrian activity.



Central Park West & W 72nd Street
(looking northwest) Photo No. 4

It is recommended that neck-downs be installed at the southeast and northwest corners of this intersection. This measure will help to reduce the pedestrian crossing time and road exposure. It is also recommended that oversized street name signs be installed for both Central Park West and W 72nd Street to provide positive guidance for drivers.

Central Park West Pedestrian Crossing in Front of American Museum of Natural History

- This pedestrian crossing is signalized and is subjected to a significant number of pedestrians (Photo No. 5). It is recommended that the existing crosswalk striping be replaced by high-visibility crosswalk striping. Overhead pedestrian warning signs should be installed on the mast arm of the existing traffic signal facing approaching traffic in each direction.



Central Park West & W 79th Street (looking west)

Photo No. 5

It is further recommended that neck-downs be installed on both sides of this pedestrian crossing. This will require the existing bus stop (which is located in front of the museum on the southbound approach) to be relocated approximately 50 to 75 feet north of its current location.

Central Park West and West 81st Street

- Under the present condition, this intersection is signalized with standard crosswalks provided on all approaches (Photo No. 6). This intersection provides direct pedestrian access to Central Park and is also located within the immediate vicinity of the American Museum of Natural History and Hayden Planetarium. The traffic counts conducted at



at this intersection show significant pedestrian activity on a daily basis. Turning movement counts performed on 2/10/09 at this intersection for the AM and PM peak periods indicate the need to install LPI's on the east and west crosswalks of this intersection. During the AM peak hour, there are 270 pedestrians crossing W 81st Street, conflicting with 86 vehicles (36 northbound lefts + 50 southbound rights). During the PM peak hour, there are 177 pedestrians crossing W 81st Street, conflicting with 88 vehicles (57 northbound lefts + 31 southbound rights). These traffic counts are presented in Appendix D.

It is important to note that, due to the proximity of this intersection to the above-noted world famous destination points, significantly higher pedestrian activity is anticipated during the summer months. It is therefore recommended that neck-downs be installed at the northwest and southeast corners of this intersection. This measure will help to reduce the pedestrian crossing time and road exposure. In addition, it is recommended that the existing crosswalk striping be replaced by high-visibility crosswalk striping on all four approaches. It is further recommended that oversized street name signs be installed for W 8^{1st} Street. These measures will provide positive guidance to drivers and will improve pedestrian safety at this intersection.

Columbus Avenue

The study segment of Columbus Avenue is located one block west of Central Park West. It is also approximately 1.06 miles long and intersects 21 east-west cross streets. Within the study segment, Columbus Avenue is a one-way urban arterial with three moving lanes and a metered parking lane along each curb side (Photo No. 7). It should be noted, however, that the NYCDOT has recently constructed a protected bike lane along the east side of Columbus Avenue from 77th to 81st Street. This corridor provides southbound access only. Columbus Avenue is a designated local truck route and provides bus services to the M7, M11 and M20 bus lines; cross streets provide bus services to the M79 line. This corridor is surrounded by a broad range of retail and residential land-use activities.



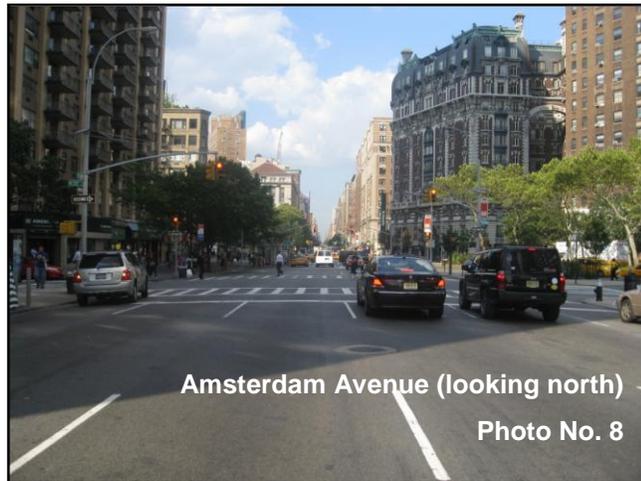
The field observations and evaluation of traffic data made within this corridor have resulted in various corridor-wide recommendations. These recommendations are shown in the Site 2 illustrations and are described below.

Columbus Avenue Corridor-Wide Recommendations

- Install high-visibility crosswalks, as well as advanced stop bars, at key intersections.
- Install oversized street name signs at key intersecting roadways.

Amsterdam Avenue

The study segment of Amsterdam Avenue is approximately 1.06 miles long and intersects 21 cross streets. Within the study segment, Amsterdam Avenue is a one-way urban roadway with four moving lanes and a parking lane along each curb side (Photo No. 8). This corridor provides northbound access only. The cross streets that intersect Amsterdam Avenue are mainly one-way streets that create the typical grid pattern that is dominant in Manhattan. These cross streets provide east or west access to the surrounding community. Amsterdam Avenue is a designated local truck route and provides bus services to the M7 line. There are no subway lines along Amsterdam Avenue; however, at its intersection with West 72nd Street, it is served by the 1, 2 and 3 subway lines. This corridor is located adjacent to a residential land use, predominantly surrounded by four to seven-story apartment buildings with the ground floor used as a local store front.



The field observations made within this corridor have resulted in various corridor-wide as well as localized intersection-specific recommendations. These recommendations are shown in the Site 3 illustrations and are described below.

Amsterdam Avenue Corridor-Wide Recommendations

- Install high-visibility crosswalks, as well as advanced stop bars, at key intersections.
- Install oversized street name signs at key intersecting roadways.
- Install new ADA (Americans with Disabilities Act) compliant pedestrian ramps at various intersections.
- Install neck-downs at key intersections to reduce pedestrian crossing time. In addition, install new ADA-compliant pedestrian ramps at proposed neck-down locations.

Intersection-Specific Recommendations

The intersection-specific recommendations are in addition to some of the above-noted corridor-wide recommendations.

Amsterdam Avenue and West 66th Street

- Under the present condition, this intersection is signalized with school crosswalks provided on the north, east and west approaches and a standard crosswalk on the south approach (Photo No. 9). Due to the proximity of LaGuardia High School, significant pedestrian activity is observed at these intersections. It is therefore recommended that a neck-down be installed on the southwest corner of this intersection. This neck-down installation may require the relocation of a utility manhole which is located near the southwest curb.



Amsterdam Avenue and West 72nd and 73rd Streets

- Under the present condition, both of these intersections are signalized and are provided with a combination of high-visibility and standard crosswalks (Photo Nos. 10 and 11). It is recommended that the north and east crosswalks at the W 73rd Street intersection be restriped as high-visibility crosswalks. In addition, field observations and the traffic counts conducted at these intersections show significant pedestrian activity on a daily basis. Turning movement counts performed on 2/11/09 at the intersection of Amsterdam Avenue and W 72nd Street for the AM and PM peak periods indicate the need to install LPI's on the north



and south crosswalks for Amsterdam Avenue. During the AM peak hour, there are 412 pedestrians crossing Amsterdam Avenue, conflicting with 181 vehicles (10 eastbound lefts + 171 westbound rights). During the PM peak hour, there are 736 pedestrians crossing Amsterdam Avenue, conflicting with 100 vehicles (13 eastbound lefts + 87 westbound rights). Similarly, turning movement counts performed on 2/25/09 at the intersection of Amsterdam Avenue and W 73rd Street for the AM and PM peak periods indicate the need to install LPI's on the east and west crosswalks for W 73rd Street. During the AM peak hour, there are 246 pedestrians crossing W 73rd Street, conflicting with 279 northbound left-turning vehicles. During the PM peak hour, there are 305 pedestrians crossing W 73rd Street, conflicting with 240 northbound left-turning vehicles. These traffic counts are presented in Appendix D. The installation of LPI's at these locations will help to reduce the potential for pedestrian-vehicle conflicts at these busy intersections. It is further recommended that oversized street name signs be installed for W 72nd Street.

Amsterdam Avenue and West 79th Street

- Under the present condition, this intersection is signalized with school crosswalks located on the east and west approaches and standard crosswalks located on the north and south approaches (Photo No. 12). Consideration should be given to installing neck-downs at the southeast and northwest corners of this intersection. These neck-



down installations would require the relocation of utility manholes which are located near the respective roadside curbs. It is also recommended that oversized street name signs be installed for both Amsterdam Avenue and W 79th Street at this intersection. In order to improve pedestrian/vehicular visibility, it is further recommended that the bus-stop on the westbound W 79th Street approach be relocated 20 feet in advance of its existing location.

Broadway

Broadway is the only arterial within the study area that does not follow the typical grid pattern, but instead, intersects all other study area corridors at an angle. The study segment of Broadway is approximately 1.15 miles long and intersects 22 cross streets. Within the study segment, Broadway is mainly a two-way urban roadway with three moving lanes in each direction and a metered parking lane along each curb side. The corridor provides



north-south access, and incorporates a median island which acts as a refuge for pedestrians who may not be able to cross this very wide roadway in one cycle length. The right curb side of each Broadway approach has a parking lane (Photo No. 13). Broadway is a designated local truck route. It provides mass transit services to the M5, M7, M20 and M104 bus lines and the 1, 2, and 3 subway lines. Its cross streets provide bus service to the M73 bus line. The study segment is located adjacent to residential and commercial land use, predominantly surrounded by high-rise buildings.

The field observations made within this corridor have resulted in various corridor-wide as well as localized intersection-specific recommendations. These recommendations are shown in the Site 4 illustrations and are described below.

Broadway Corridor-Wide Recommendations

- Install high-visibility crosswalks, as well as stop bars, at key intersections.
- Install new ADA (Americans with Disabilities Act) compliant pedestrian ramps at various intersections.
- Conduct periodic maintenance of the vegetation growth in the median island to ensure a safe sight distance for turning vehicles. In particular, it is recommended that the vegetation growth be controlled within 30 feet of an intersection.
- Install two additional pedestrian signals at crosswalk locations on the raised median island along Broadway in order to enhance the visibility of pedestrian signals for senior pedestrians. Under the present condition, most of the crosswalks on Broadway are approximately 100 feet long, including the raised median island width, which can vary between 8 and 20 feet. It has been noted that with increased age, vision declines. Thus, senior pedestrians may have problems recognizing “Walk/Don’t Walk” pedestrian signals if they are installed more than 60 feet away. Therefore,

as a corridor-wide improvement, it is recommended that additional pedestrian signals be installed on the raised median island along Broadway where they currently do not exist within the study area.

- Install oversized street name signs at key intersecting roadways.

Intersection-Specific Recommendations

The intersection-specific recommendations are in addition to some of the above-noted corridor-wide recommendations.

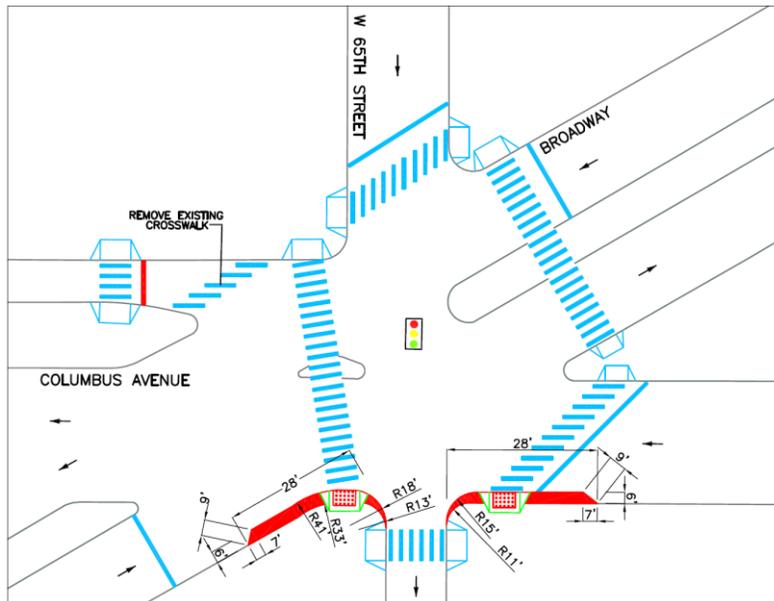
Broadway/ Columbus Avenue/ Service Road and West 65th Street

- This is a major, multi-legged, skewed intersection with four approaching legs and five receiving legs. It intersects two major streets and a comparatively minor street, as well as a service road adjacent to the New York Philharmonic and New York State Theatre (or Lincoln Center for the Performing Arts). The intersection geometry is constrained by the diagonally intersecting roadways. As a result, the pedestrian crosswalk layout is not typical of a standard intersection. Under the present condition, this intersection is signalized, with high-visibility crosswalks located on all major approaches. In addition, the receiving leg of the



Service Road is provided with a diagonal high-visibility crosswalk (Photo Nos. 14 & 15). The traffic counts at this intersection show significantly high vehicular and pedestrian activity on a daily basis. These traffic and pedestrian counts are presented in Appendix D. Although the pedestrian counts are significantly high on all of the crosswalks at this intersection,

the main conflicting pedestrian movements are on the east crosswalk at W 65th Street and the south crosswalk at Broadway. It is recommended that neck-downs be installed at the southeast and northeast corners of this intersection. The existing diagonal, high-visibility crosswalk on the receiving leg of the Service Road should be removed, as there is another crosswalk located 50 feet south of this location, facilitating the same pedestrian movement. In addition, it is recommended that oversized street name signs for W 65th Street be installed at this intersection. The south crosswalk also has street signs for Broadway and Columbus Avenue on a pole. It is recommended that these signs be replaced by large letter signs. It is further recommended that three “Yield to Pedestrian” signs with appropriate turn arrows be installed at this intersection. One additional left-turn restriction sign should also be installed for the eastbound W 65th Street traffic to further emphasize the existing left-turn restriction. These measures are anticipated to improve pedestrian safety and provide positive guidance to drivers. The schematics of the proposed intersection recommendations are presented below.



Proposed Recommendations at Broadway/Columbus Avenue & W 65th Street Intersection

Broadway/Amsterdam Avenue and West 71st Street

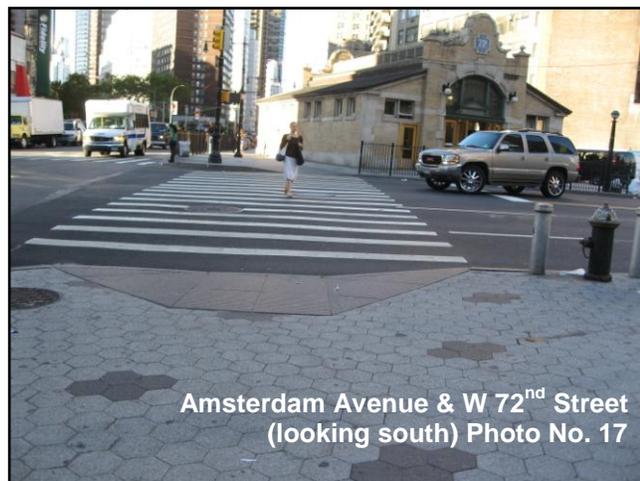
- This is a major, multi-legged skewed intersection with four approaching legs and three receiving legs. It intersects two major streets and a comparatively minor street. The intersection geometry is constrained by the diagonally intersecting roadways. As a result, the pedestrian crosswalk layout is also



skewed. Under the present condition, this intersection is signalized with high-visibility crosswalks located on all approaches (Photo No. 16). It should be noted that curb extensions, new pedestrian ramps and new crosswalks are being evaluated for installation by the DOT at this intersection. These recommended measures are being proposed as a part of the Amsterdam Avenue, Broadway and W 71 Street intersection improvements, designed by the DOT under a separate assignment to improve pedestrian safety. It is further recommended that oversized street name signs for W 71st Street be installed at this intersection. All of these proposed measures are anticipated to improve pedestrian safety and provide positive guidance to drivers.

Subway Station b/w Broadway and Amsterdam Avenue on West 72nd Street

- This subway station provides services to the 1, 2 and 3 subway lines and generates a significant number of pedestrian trips throughout the day. It is located in very busy traffic surroundings, sandwiched between two highly travelled roadways (Amsterdam Avenue and Broadway) and their cross streets (71st Street and 72nd Street) (Photo No. 17). Apart from

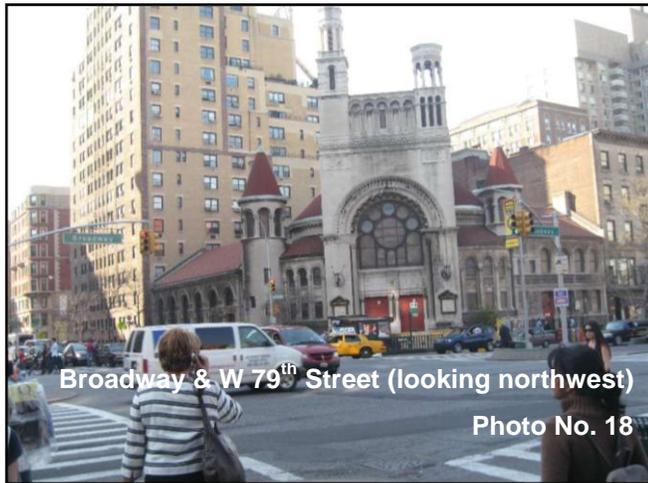


the recommendations to improve pedestrian safety at the surrounding intersections and pedestrian crossing points, it is important to improve pedestrian safety around the subway station. During various field visits, it

was noted that the existing pedestrian railing surrounding the subway station would not be able to stop or deflect an errant vehicle back onto the roadway. Instead, a vehicle could break through these railings and enter the subway station frontage which is subject to significant pedestrian volumes at any given time. This type of errant vehicle accident could potentially result in a significant number of pedestrian injuries. Thus, in order to protect and improve pedestrian safety around this busy subway station, the existing pedestrian railing will be replaced with more impact resistant, closely-spaced, and architecturally attractive bollards.

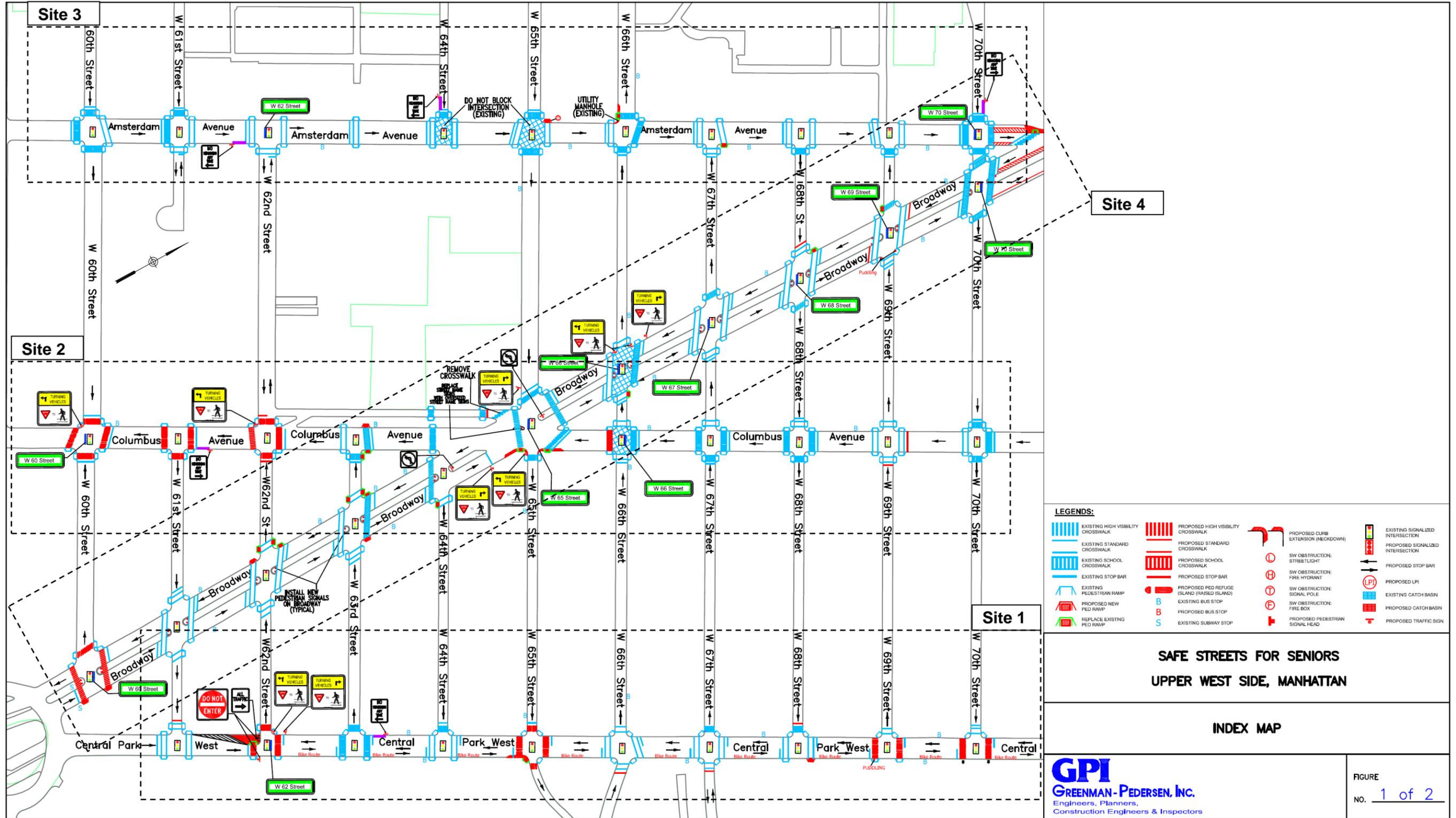
Broadway and West 79th Street

- Under the present condition, this intersection is signalized with school crosswalks located on its south, east and west approaches and a standard crosswalk located on its north approach (Photo No. 18). It is recommended that a neck-down be installed at the southeast corner of this intersection. This measure will help to reduce the pedestrian crossing time and road exposure. It is further recommended that a “Yield to Pedestrian” sign with the appropriate turn arrow be installed at this intersection.

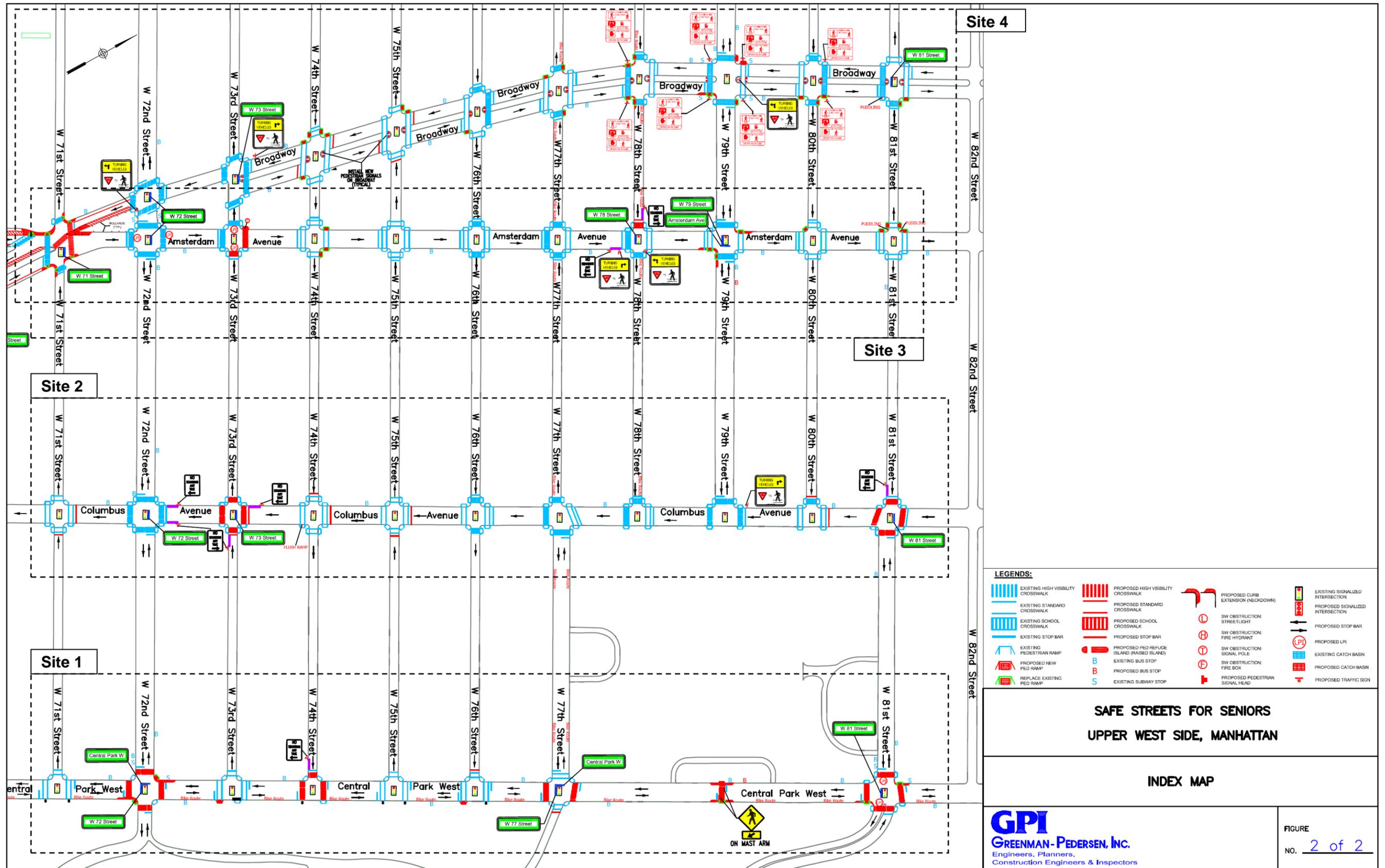


INDEX

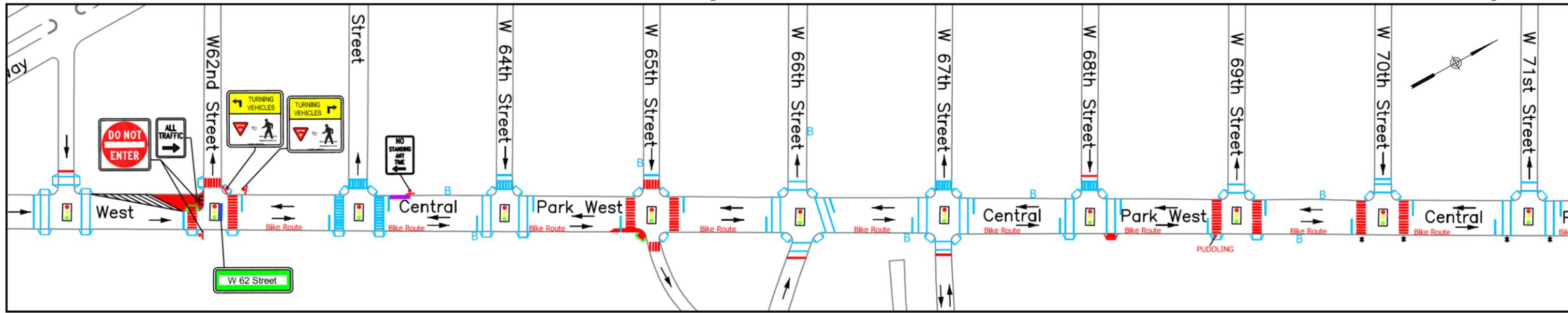
Illustrating the Solution



Illustrating the Solution



SITE 1: PLAN 1 – CENTRAL PARK WEST (FROM W 61ST STREET TO W 71ST STREET)



LEGENDS:

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	PROPOSED STOP BAR
EXISTING STOP BAR	PROPOSED STOP BAR	SW OBSTRUCTION: SIGNAL POLE	PROPOSED LPT
EXISTING PEDESTRIAN RAMP	PROPOSED PED REFUGE ISLAND (RAISED ISLAND)	SW OBSTRUCTION: FIRE BOX	EXISTING CATCH BASIN
PROPOSED NEW PED RAMP	EXISTING BUS STOP	PROPOSED PEDESTRIAN SIGNAL HEAD	PROPOSED CATCH BASIN
REPLACE EXISTING PED RAMP	PROPOSED BUS STOP		PROPOSED TRAFFIC SIGN
	EXISTING SUBWAY STOP		

Pedestrian concerns in this area:

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

Additional Information:

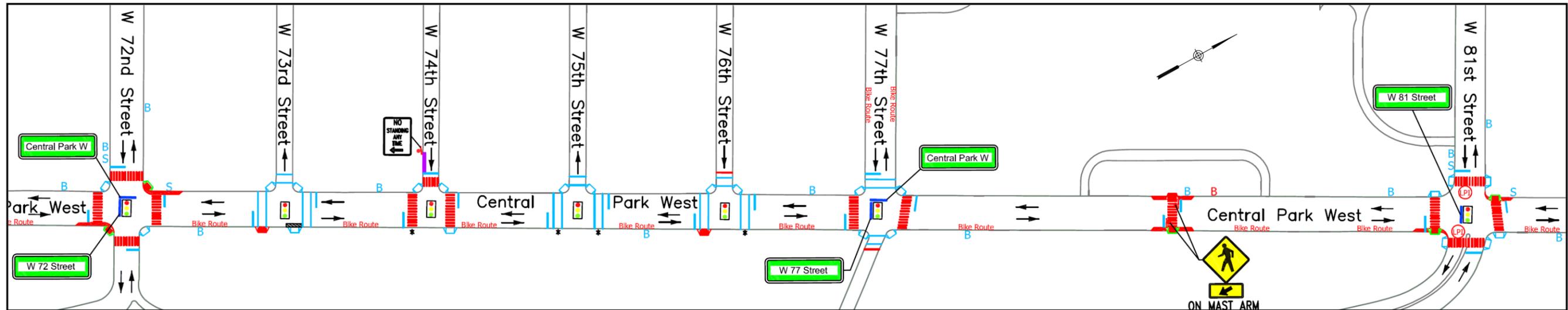
- Parking regulations for the project area have been collected and are shown in Appendix C
- Details of neck-down construction are shown in Appendix F
- This study area was visited on August 18 and 20, 2008

Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new high visibility crosswalks
- Install new advanced stop bars
- Install new pedestrian ramps. Where proposed, align the ramps with the crosswalks
- Install new “Yield to Pedestrian” signs at the intersection shown in the illustration
- Install oversized street name signs at the intersection of Central Park West and W 62nd Street. These signs are to be located on the signal mast arm facing Central Park West traffic in both directions
- Remove the first parking space along the west side of Central Park West at W 63rd Street in advance of the north crosswalk
- Install a neck-down or a curb extension:
 - On the southwest corner of Central Park West and W 62nd Street
 - On the southeast corner of Central Park West and W 65th Street. This may require the removal of one parking space from the existing curb-side parking
- Install a new “All Traffic” (with right arrow) sign at the intersection of Central Park West and W 62nd Street facing southbound traffic
- Install new “Do Not Enter” signs facing southbound traffic at the intersection of Central Park West and W 62nd Street as shown in the illustration
- * At these locations, pedestrian ramps could not be proposed because of the subway ventilation ducts

Illustrating the Solution

SITE 1: PLAN 2 – CENTRAL PARK WEST (FROM W 72ND STREET TO W 81ST STREET)



LEGENDS:

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	PROPOSED STOP BAR
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 PEDESTRIAN SIGNAL HEAD	PROPOSED CATCH BASIN
REPLACE EXISTING PED RAMP	PROPOSED BUS STOP		PROPOSED TRAFFIC SIGN
	EXISTING SUBWAY STOP		

- Pedestrian concerns in this area:**
- Non-standard pedestrian ramps
 - Turning vehicles not yielding to pedestrians
 - Signal timing (insufficient crossing time)

Traffic Analysis:

Turning Movement and Pedestrian Counts at
- Central Park West and W 81st Street

Traffic count data is shown in Appendix D

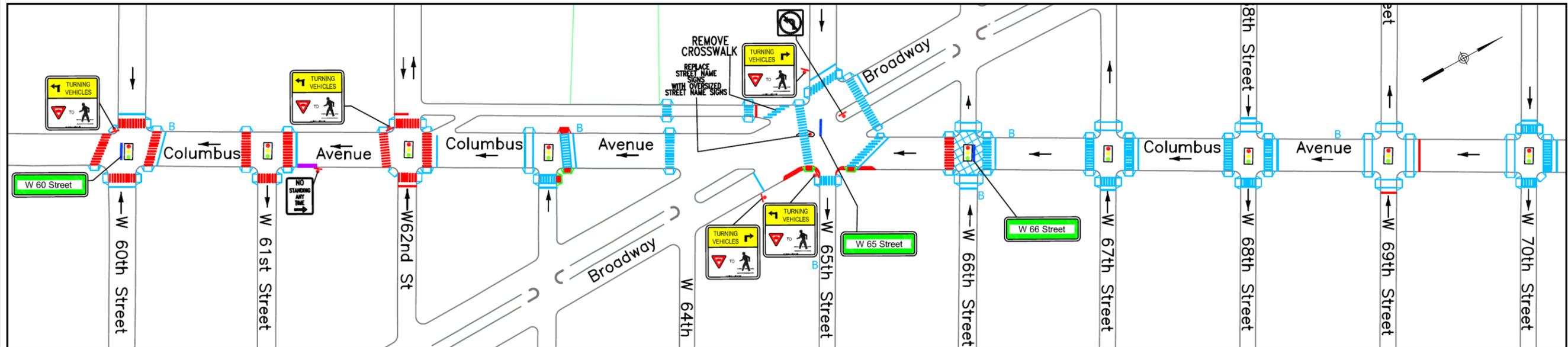
- Additional Information:**
- Parking regulations for the project area have been collected and are shown in Appendix C
 - Details of neck-down construction are shown in Appendix F
 - This study area was visited on August 18 and 20, 2008

- Recommended improvements include:**
- Time all signals for seniors and where feasible, the crossing time will be extended
 - Install new high visibility crosswalks
 - Install new advanced stop bars
 - Install new pedestrian ramps. Where proposed, align the ramps with the crosswalks
 - Install oversized street name signs at the various intersections shown along Central Park West. These signs are to be located on the signal mast arm facing the appropriate roadway traffic in both directions
 - Remove the first parking space along the south side of W 74th Street at Central Park West in advance of the west crosswalk
 - Install a neck-down or a curb extension:
 - On the northwest and southeast corners of Central Park West at W 72nd Street. This may require the removal of parking spaces from the existing curb-side parking
 - On the east and west sides of the crosswalk located at the American Museum of Natural History on Central Park West. This may require the removal of parking spaces from the existing curb-side parking
 - On the northwest and southeast corners of Central Park West at W 81st Street. This may require the removal of parking spaces from the existing curb-side parking
 - Consider installation of a Leading Pedestrian Interval (LPI) at Central Park West and W 81st Street (for the east and west crosswalks)
 - Install new pedestrian crossing signs with arrows on Central Park West at the American Museum of Natural History for both the northbound and southbound approaches
 - Relocate the bus-stop on southbound Central Park West at the American Museum of Natural History back from its existing location to accommodate the proposed curb extension
 - * At these locations, pedestrian ramps could not be proposed because of the subway ventilation ducts

Illustrating the Solution

SITE 2: PLAN 1 – COLUMBUS AVENUE (FROM W 60TH STREET TO W 70TH STREET)

Illustrating the Solution



LEGENDS:

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	PROPOSED STOP BAR
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 PEDESTRIAN SIGNAL HEAD	PROPOSED CATCH BASIN
REPLACE EXISTING PED RAMP	PROPOSED BUS STOP		PROPOSED TRAFFIC SIGN
	EXISTING SUBWAY STOP		

Pedestrian concerns in this area:

- Non-standard pedestrian ramps
- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

Traffic Analysis:

- Turning Movement and Pedestrian Counts at
 - Columbus Avenue and W 62nd Street
 - Columbus Avenue/Broadway and W 65th Street

Traffic count data is shown in Appendix D

Additional Information:

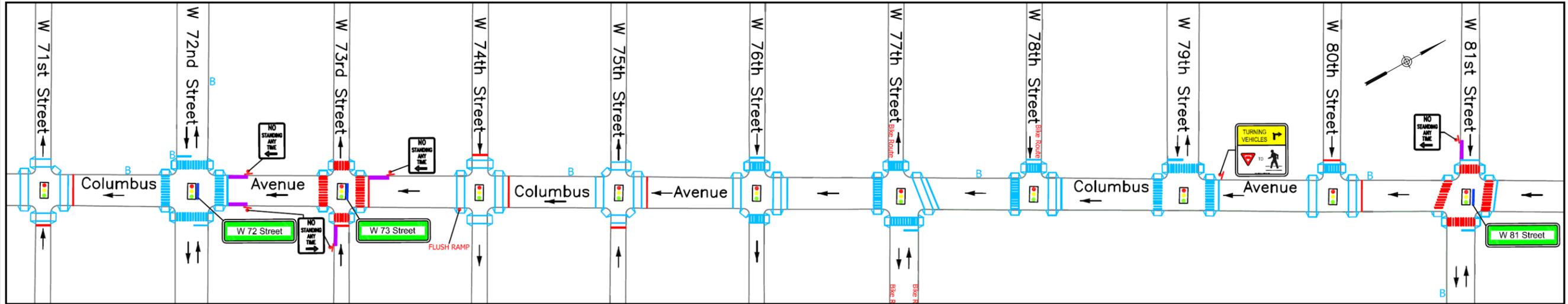
- Parking regulations for the project area have been collected and are shown in Appendix C
- Details of neck-down construction are shown in Appendix F
- This study area was visited on August 18 and 20, 2008

Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new high visibility crosswalks
- Install new advanced stop bars
- Install new pedestrian ramps. Where proposed, align the ramps with the crosswalks
- Install new "Yield to Pedestrian" signs at the intersections shown in the illustration
- Install oversized street name signs at the various intersections shown along Columbus Avenue. These signs are to be located on the signal mast arm facing Columbus Avenue traffic
- Remove the first parking space along the east side of Columbus Avenue at W 61st Street in advance of the north crosswalk
- Install a neck-down or a curb extension:
 - On the northeast and southeast corners of Columbus Avenue/Broadway and W 65th Street. This may require the removal of one parking space from the existing curb-side parking
- Install new "No Left Turn" sign at the intersection of Columbus Avenue/Broadway and W 65th Street facing the eastbound W 65th Street approach

SITE 2: PLAN 2 – COLUMBUS AVENUE (FROM W 71ST STREET TO W 81ST STREET)

Illustrating the Solution



LEGENDS:

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	PROPOSED STOP BAR
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 PEDESTRIAN SIGNAL HEAD	PROPOSED CATCH BASIN
REPLACE EXISTING PED RAMP	PROPOSED BUS STOP		PROPOSED TRAFFIC SIGN
	EXISTING SUBWAY STOP		

Pedestrian concerns in this area:

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

Traffic Analysis:

- Turning Movement and Pedestrian Counts at
 - Columbus Avenue and W 72nd Street
 - Columbus Avenue and W 81st Street
- Traffic count data is shown in Appendix D

Recommended improvements include:

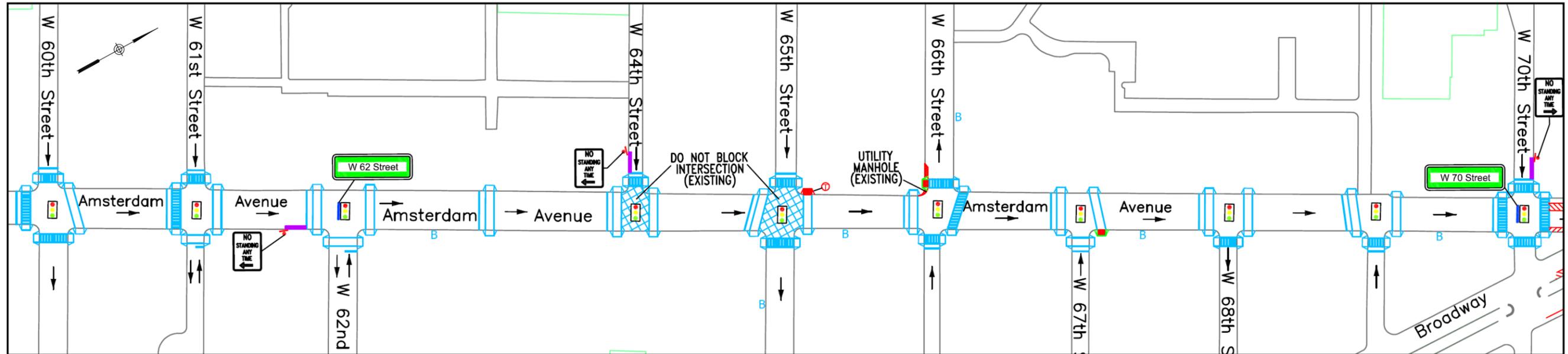
- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new high visibility crosswalks
- Install new advanced stop bars
- Install new “Yield to Pedestrian” sign at the intersection shown in the illustration
- Install oversized street name signs at the various intersections shown along Columbus Avenue. These signs are to be located on the signal mast arm facing Columbus Avenue traffic
- Remove the first parking space along both sides of Columbus Avenue at W 72nd Street in advance of the north crosswalk. Remove the first parking space along the west side of Columbus Avenue at W 73rd Street in advance of the north crosswalk, and along the south side of W 73rd Street at Columbus Avenue in advance of the east crosswalk. Remove the first parking space along the south side of W 81st Street at Columbus Avenue in advance of the west crosswalk

Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix C
- This study area was visited on August 18 and 20, 2008

SITE 3: PLAN 1 – AMSTERDAM AVENUE (FROM W 60TH STREET TO W 70TH STREET)

Illustrating the Solution



LEGENDS:

	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		PROPOSED STOP BAR
	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 PEDESTRIAN SIGNAL HEAD		PROPOSED CATCH BASIN
	REPLACE EXISTING PED RAMP		PROPOSED BUS STOP				PROPOSED TRAFFIC SIGN
			EXISTING SUBWAY STOP				

Pedestrian concerns in this area:

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

Traffic Analysis:

- Turning Movement and Pedestrian Counts at - Amsterdam Avenue and W 62nd Street

Traffic count data is shown in Appendix D

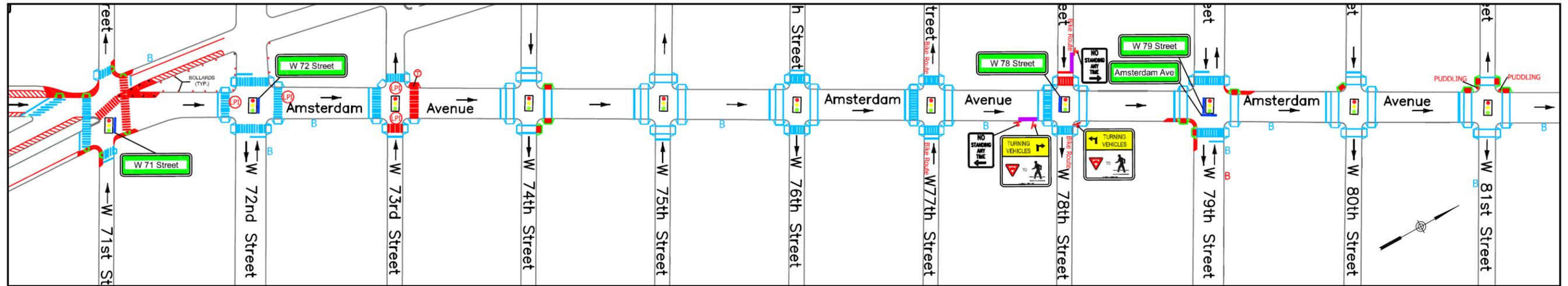
Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix C
- Details of neck-down construction are shown in Appendix F
- This study area was visited on August 18 and 20, 2008

Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new pedestrian ramps. Where proposed, align the ramps with the crosswalks
- Install oversized street name signs at the intersections shown along Amsterdam Avenue. These signs are to be located on the signal mast arm facing Amsterdam Avenue traffic
- Remove the first parking space along the east side of Amsterdam Avenue at W 62nd Street in advance of the south crosswalk. Remove the first parking space along the south side of W 64th Street at Amsterdam Avenue in advance of the west crosswalk. Remove the first parking space along the north side of W 70th Street at Amsterdam Avenue in advance of the west crosswalk
- Install a neck-down or a curb extension:
 - On the southwest corner of W 66th Street at Amsterdam Avenue. This may require the removal of one parking space from the existing curb-side parking

SITE 3: PLAN 2 – AMSTERDAM AVENUE (FROM W 71ST STREET TO W 81ST STREET)



LEGENDS:

	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		PROPOSED STOP BAR
	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 PEDESTRIAN SIGNAL HEAD		PROPOSED CATCH BASIN
	REPLACE EXISTING PED RAMP		EXISTING SUBWAY STOP				PROPOSED TRAFFIC SIGN

Pedestrian concerns in this area:

- Non-standard pedestrian ramps
- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

Traffic Analysis:

- Turning Movement and Pedestrian Counts at
 - Amsterdam Avenue and W 72nd Street
 - Amsterdam Avenue and W 73rd Street
 - Amsterdam Avenue and W 79th Street
- Traffic count data is shown in Appendix D

Additional Information:

- Parking regulations for the project area have been collected and are shown in Appendix C
- Details of neck-down construction are shown in Appendix F
- This study area was visited on August 18 and 20, 2008

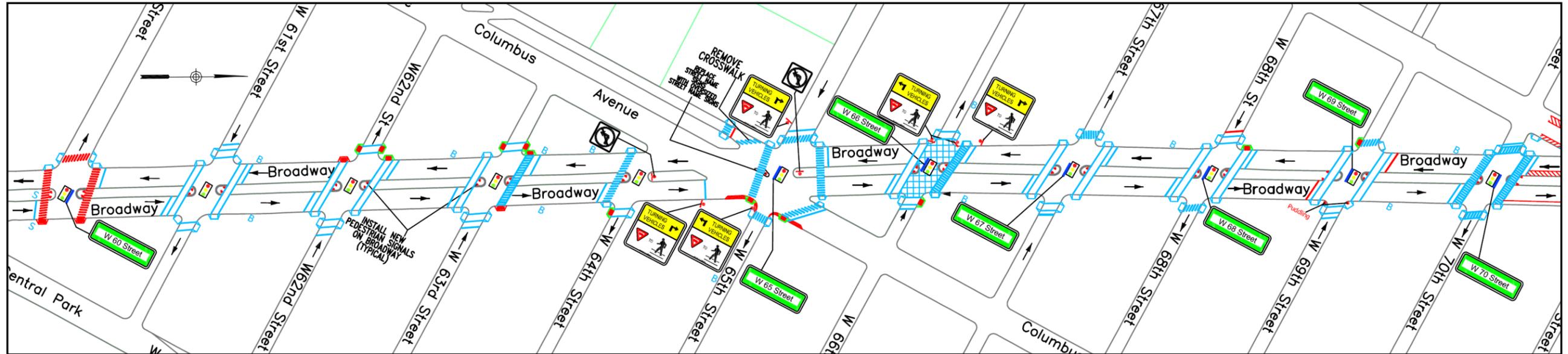
Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new high-visibility crosswalks
- Install new advanced stop bars
- Install new pedestrian ramps. Where proposed, align the ramps with the crosswalks
- Install oversized street name signs at the intersections shown along Amsterdam Avenue. These signs are to be located on the signal mast arm facing Amsterdam Avenue traffic at various intersections and facing W 79th Street traffic in both directions
- Remove the first parking space along the east side of Amsterdam Avenue at W 78th Street in advance of the south crosswalk. Remove the first parking space along the north side of W 78th Street at Amsterdam Avenue in advance of the west crosswalk
- Install a neck-down or a curb extension:
 - On the southeast and northwest corners of Amsterdam Avenue and W 79th Street. This may require the removal of parking spaces from the existing curb-side parking
 - On the northeast, northwest, southeast and southwest corners of Amsterdam Avenue/Broadway and W 71st Street and on the triangular median island between Amsterdam Avenue and Broadway. This may require the removal of parking spaces from the existing curb-side parking (proposed by the DOT under separate contract)
- Consider installation of a Leading Pedestrian Interval (LPI) on Amsterdam Avenue and W 73rd Street (for the east and west crosswalks), and Amsterdam Avenue and W 72nd Street (for the north and south crosswalks);
- Relocate the bus-stop on the westbound W 79th Street approach at Amsterdam Avenue 20 feet in advance of its existing location in order to improve pedestrian/vehicular visibility

Illustrating the Solution

SITE 4: PLAN 1 – BROADWAY (FROM W 60TH STREET TO W 70TH STREET)

Illustrating the Solution



LEGENDS:

	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		PROPOSED STOP BAR
	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 PEDESTRIAN SIGNAL HEAD		PROPOSED CATCH BASIN
	REPLACE EXISTING PED RAMP		EXISTING SUBWAY STOP				PROPOSED TRAFFIC SIGN

Pedestrian concerns in this area:

- Non-standard pedestrian ramps
- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

Traffic Analysis:

- Turning Movement and Pedestrian Counts at
 - Broadway/Columbus Avenue and W 65th Street
 - Broadway and W 66th Street

Traffic count data is shown in Appendix D

Additional Information:

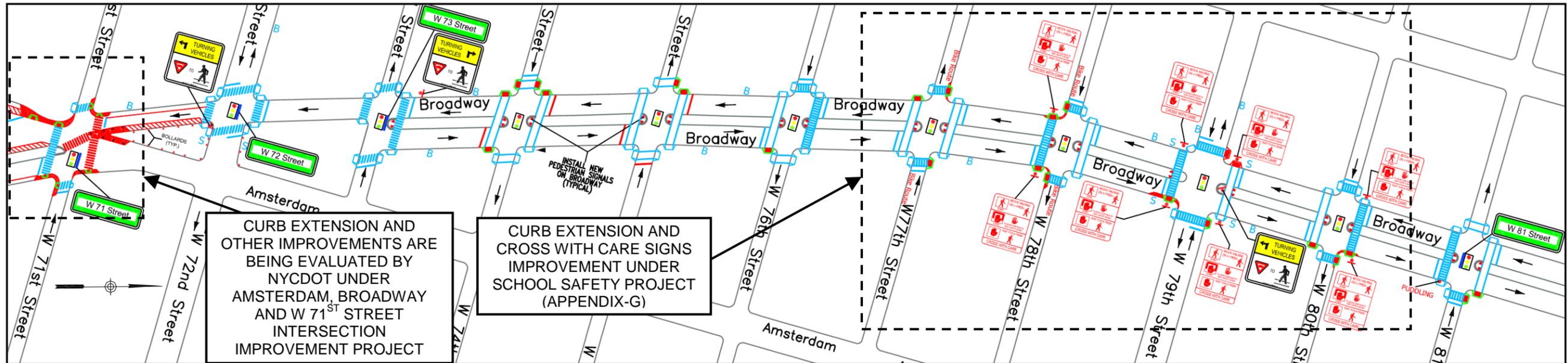
- Parking regulations for the project area have been collected and are shown in Appendix C
- Details of neck-down construction are shown in Appendix F
- This study area was visited on August 18 and 20, 2008

Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new high visibility crosswalks
- Install new advanced stop bars
- Install two new pedestrian signals on the median island along Broadway at each crosswalk within the study area
- Install new pedestrian ramps. Where proposed, align the ramps with the crosswalks
- Install new "Yield to Pedestrian" signs at the intersections shown in the illustration
- Install oversized street name signs at various intersections along Broadway. These signs are to be located on the signal mast arm facing Broadway traffic in both directions
- Install a neck-down or a curb extension:
 - On the northeast and southeast corners of Broadway/Columbus Avenue and W 65th Street. This may require the removal of one parking space from the existing curb-side parking
- Install new "No Left Turn" signs at the intersections of Broadway and W 64th Street and Broadway/Columbus Avenue and W 65th Street
- Provide new oversized street name signs for the traffic island at Columbus Avenue/Broadway and W 65th Street. These signs are to be located on the signal pole or mast arm facing traffic in both directions

SITE 4: PLAN 2 – BROADWAY (FROM W 71ST STREET TO W 81ST STREET)

Illustrating the Solution



LEGENDS:

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	PROPOSED STOP BAR
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 PEDESTRIAN SIGNAL HEAD	PROPOSED CATCH BASIN
REPLACE EXISTING PED RAMP	EXISTING SUBWAY STOP		PROPOSED TRAFFIC SIGN

- Pedestrian concerns in this area:**
- Non-standard pedestrian ramps
 - Turning vehicles not yielding to pedestrians
 - Signal timing (insufficient crossing time)

- Traffic Analysis:**
- Turning Movement and Pedestrian Counts at
 - Broadway and W 72nd Street
 - Broadway and W 73rd Street
- Traffic count data is shown in Appendix D

- Additional Information:**
- Parking regulations for the project area have been collected and are shown in Appendix C
 - Details of neck-down construction are shown in Appendix F
 - This study area was visited on August 18 and 20, 2008
 - Recommendations developed for Collegiate School, Manhattan are shown in Appendix G

- Recommended improvements include:**
- Time all signals for seniors and where feasible, the crossing time will be extended
 - Install new high visibility crosswalks
 - Install new advanced stop bars
 - Install two new pedestrian signals on the median island along Broadway at each crosswalk within the study area
 - Install new pedestrian ramps. Where proposed, align the ramps with the crosswalks
 - Install new "Yield to Pedestrian" signs at the intersections shown in the illustration
 - Install new "Cross With Care" signs (School Safety Improvement)
 - Install oversized street name signs at various intersections along Broadway. These signs are to be located on the signal mast arm facing Broadway traffic in both directions
 - Install a neck-down or a curb extension:
 - On the northeast, northwest, southeast and southwest corners of Broadway/Amsterdam Avenue and W 71st Street and on the northern median between Broadway and Amsterdam Avenue. This may require the removal of parking spaces from the existing curb-side parking (to be constructed by others). These curb extension improvements are being evaluated by NYCDOT under Amsterdam Avenue, Broadway and W 71st Street intersection improvement project and are not considered final.
 - On the northwest corner of Broadway and W 77th Street. This may require the removal of one parking space from the existing curb-side parking (School Safety Improvement)
 - On the southwest and southeast corners of Broadway and W 78th Street. This may require the removal of parking spaces from the existing curb-side parking (School Safety Improvement)
 - On the southeast corner of Broadway and W 79th Street. This may require the removal of parking spaces from the existing curb-side parking (School Safety Improvement)
 - On the northeast corner of Broadway and W 80th Street. This may require the removal of one parking space from the existing curb-side parking (School Safety Improvement)

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

APPENDIX B: FIELD INVESTIGATION FORM

APPENDIX B – FIELD INVESTIGATIONS FORM

Upper West Side LOCATIONS	Subway/Bus Stop/Bike Rt	Issues							Short Term Solutions					Long Term Solutions							Photos			
		Heavy Left Turns	Congestion	P-V Visual Conflict	Faded X-Walk	Apex Curb	SW Obstruction	Broken SW & Curbs	Puddling	New X-Walk	High V / School X-Walk	Restripe X-Walk	Move Stop Bars Back 10'	New Signs	LPI	Resurface	New Ped Ramp	Update Ped Ramp w Safety	Daylighting	Relocate Obstruction		Do not block intersection	Proposed Curb Extension	New Ped Signals
Example:	1 S-NE	2 E->N				3 ALL	4 x	5 NW		6				7 E->N		8 ALL			9 SL					10 6-9
Explanation	1.Subway Stop on NE Corner 2.Heavy left turns going Eastbound to Northbound 3.Apex curb on NW, NE, SW, SE corners 4.Sidewalk obstruction on SW & NE corners 5.Broken curb on NW corner 6.New crosswalk is recommended for the east leg of this intersection 7.LPI for Eastbound to Northbound traffic 8.New ped ramp for NW, NE, SW, SE corners 9.Relocate obstruction(street light) on SW & NE corners 10.Intersection photo in photo log, picture # 4, 5, 6, 7, 8.																							
1. Central Park West & W 61st St.					x																			1
2. Central Park West & W 62nd St.	BR-NB			x	x										Y2P,HS,ALL TRAFFIC									2-4
3. Central Park West & W 63rd St.	BR-NB			x	x										NSA									
4. Central Park West & W 64th St.	B-SE,SW BR-NB			x	x																			5
5. Central Park West & W 65th St.	B-SW BR-NB		x	x	x	ALL																		
6. Central Park West & W 66th St.	B-NW BR-NB			x	x	ALL																		
7. Central Park West & W 67th St.	B-SE BR-NB					ALL																		
8. Central Park West & W 68th St.	B-SW BR-NB				x																			
9. Central Park West & W 69th St.	B-NE BR-NB				x																			
10. Central Park West & W 70th St.	B-SW BR-NB			x	x																			
11. Central Park West & W 71st St.	BR-NB				x																			
12. Central Park West & W 72nd St.	B-SW,NE,NW BR-NB S-NW,SW		x	x		ALL								HS										
13. Central Park West & W 73rd St.	BR-NB				x																			
14. Central Park West & W 74th St.	B-SW BR-NB			x	x									NSA										6-9
15. Central Park West & W 75th St.	B-NE BR-NB																							
16. Central Park West & W 76th St.	BR-NB			x	x																			
17. Central Park West & W 77th St.	B-SW,NE, BR-NB,EB,WB			x	x	ALL								HS										
18. Central Park West & W 81st St.	B-SW,NE,NW BR-NB S-NW,SW		x	x	x									HS	E,W									10-14
S Subway	ALL	All 4 corners (NW, NE, SW, SE)							HS	High Visibility Street Sign				NSA	No Standing Anytime			PC	Ped. Crossing		SP	Signal Pole		
B Bus stop	Y2P	Yield to Pedestrians							ATD	Attention Drivers			CWC	Cross With Care			NL	No Left Turn		BR	Bike Route			

APPENDIX B – FIELD INVESTIGATIONS FORM (CONT.)

Upper West Side LOCATIONS	Subway/Bus Stop/Bike Rt	Issues							Short Term Solutions					Long Term Solutions							Photos			
		Heavy Left Turns	Congestion	P-V Visual Conflict	Faded X-Walk	Apex Curb	SW Obstruction	Broken SW & Curbs	Puddling	New X-Walk	High V / School X-Walk	Restripe X-Walk	Move Stop Bars Back 10'	New Signs	LPI	Resurface	New Ped Ramp	Update Ped Ramp w Safety	Daylighting	Relocate Obstruction		Do not block intersection	Proposed Curb Extension	New Ped Signals
Example:	¹ S-NE	² E->N				³ ALL	⁴ x	⁵ NW						⁷ E->N	⁸ ALL				⁹ SL					¹⁰ 6-9
Explanation	1.Subway Stop on NE Corner 2.Heavy left turns going Eastbound to Northbound 3.Apex curb on NW, NE, SW, SE corners 4.Sidewalk obstruction on SW & NE corners 5.Broken curb on NW corner 6.New crosswalk is recommended for the east leg of this intersection 7.LPI for Eastbound to Northbound traffic 8.New ped ramp for NW, NE, SW, SE corners 9.Relocate obstruction(street light) on SW & NE corners 10.Intersection photo in photo log, picture # 4, 5, 6, 7, 8.																							
19. Columbus Ave. & W 60th St.	B-NW	x	x	x	x									Y2P, HS										34-35
20. Columbus Ave. & W 61st St.				x	x									NSA										31-33
21. Columbus Ave. & W 62nd St.				x	x									Y2P										92-93
22. Columbus Ave. & W 63rd St.	B-NW				x																			29-30
23. Columbus Ave. & W 64th St.																								
24. Columbus Ave. & W 66th St.	B-NW, NE		x	x	x									HS										26-28
25. Columbus Ave. & W 67th St.																								
26. Columbus Ave. & W 68th St.					x																			
27. Columbus Ave. & W 69th St.	B-SW			x	x																			
28. Columbus Ave. & W 70th St.				x	x																			
29. Columbus Ave. & W 71st St.				x	x																			
30. Columbus Ave. & W 72nd St.	B-SW, NW	x	x	x	x									HS, NSA										22-25
31. Columbus Ave. & W 73rd St.			x	x	x									HS, NSA										19-21
32. Columbus Ave. & W 74th St.				x	x			x																
33. Columbus Ave. & W 75th St.	B-SW			x	x																			
34. Columbus Ave. & W 76th St.				x	x																			
35. Columbus Ave. & W 77th St.	BR-EB, WB			x	x																			
36. Columbus Ave. & W 78th St.	B-SW, BR-EB			x	x																			
S Subway	ALL	All 4 corners (NW, NE, SW, SE)							HS	High Visibility Street Sign			NSA	No Standing Anytime			PC	Ped. Crossing			SP	Signal Pole		
B Bus stop	Y2P	Yield to Pedestrians							ATD	Attention Drivers			CWC	Cross With Care			NL	No Left Turn			BR	Bike Route		

APPENDIX B – FIELD INVESTIGATIONS FORM (CONT.)

Upper West Side LOCATIONS	Subway/Bus Stop/Bike Rt	Issues							Short Term Solutions						Long Term Solutions							Photos		
		Heavy Left Turns	Congestion	P-V Visual Conflict	Faded X-Walk	Apex Curb	SW Obstruction	Broken SW & Curbs	Puddling	New X-Walk	High V / School X-Walk	Restripe X-Walk	Move Stop Bars Back 10'	New Signs	LPI	Resurface	New Ped Ramp	Update Ped Ramp w Safety	Daylighting	Relocate Obstruction	Do not block intersection		Proposed Curb Extension	New Ped Signals
Example:	1 S-NE	2 E->N				3 ALL	4 x	5 NW	6					7 E->N	8 ALL				9 SL					10 4-8
Explanation	1.Subway Stop on NE Corner 2.Heavy left turns going Eastbound to Northbound 3.Apex curb on NW, NE, SW, SE corners 4.Sidewalk obstruction on SW & NE corners 5.Broken curb on NW corner 6.New crosswalk is recommended for the east leg of this intersection 7.LPI for Eastbound to Northbound traffic 8.New ped ramp for NW, NE, SW, SE corners 9.Relocate obstruction(street light) on SW & NE corners 10.Intersection photo in photo log, picture # 4, 5, 6, 7, 8.																							
37. Columbus Ave. & W 79th St.				x	x								Y2P											
38. Columbus Ave. & W 80th St.	B-NW			x	x																			
39. Columbus Ave. & W 81st St.	B-SE	x	x	x	x								NSA, HS											15-18
40. Amsterdam Ave. & W 60th St.				x																				
41. Amsterdam Ave. & W 61st St.				x																				
42. Amsterdam Ave. & W 62nd St.	B-NE		x	x									NSA, HS											36-38
43. Amsterdam Ave. & W 63rd St.																								
44. Amsterdam Ave. & W 64th St.			x	x									NSA											
45. Amsterdam Ave. & W 65th St.	B-NE, SE		x	x																				
46. Amsterdam Ave. & W 66th St.	B-NW		x	x																				
47. Amsterdam Ave. & W 67th St.	B-NE																							
48. Amsterdam Ave. & W 68th St.																								
49. Amsterdam Ave. & W 69th St.	B-NE																							
50. Amsterdam Ave. & W 70th St.		x	x	x									HS, NSA											39-40
51. Amsterdam Ave. & W 72nd St.	B-NE S, NW, S W	x	x	x									HS	N,S										41-43
52. Amsterdam Ave. & W 73rd St.			x	x										E,W										
53. Amsterdam Ave. & W 74th St.				x																				44-45
S Subway	ALL	All 4 corners (NW, NE, SW, SE)					HS	High Visibility Street Sign					NSA	No Standing Anytime					PC	Ped. Crossing		SP	Signal Pole	
B Bus stop	Y2P	Yield to Pedestrians					ATD	Attention Drivers					CWC	Cross With Care					NL	No Left Turn		BR	Bike Route	

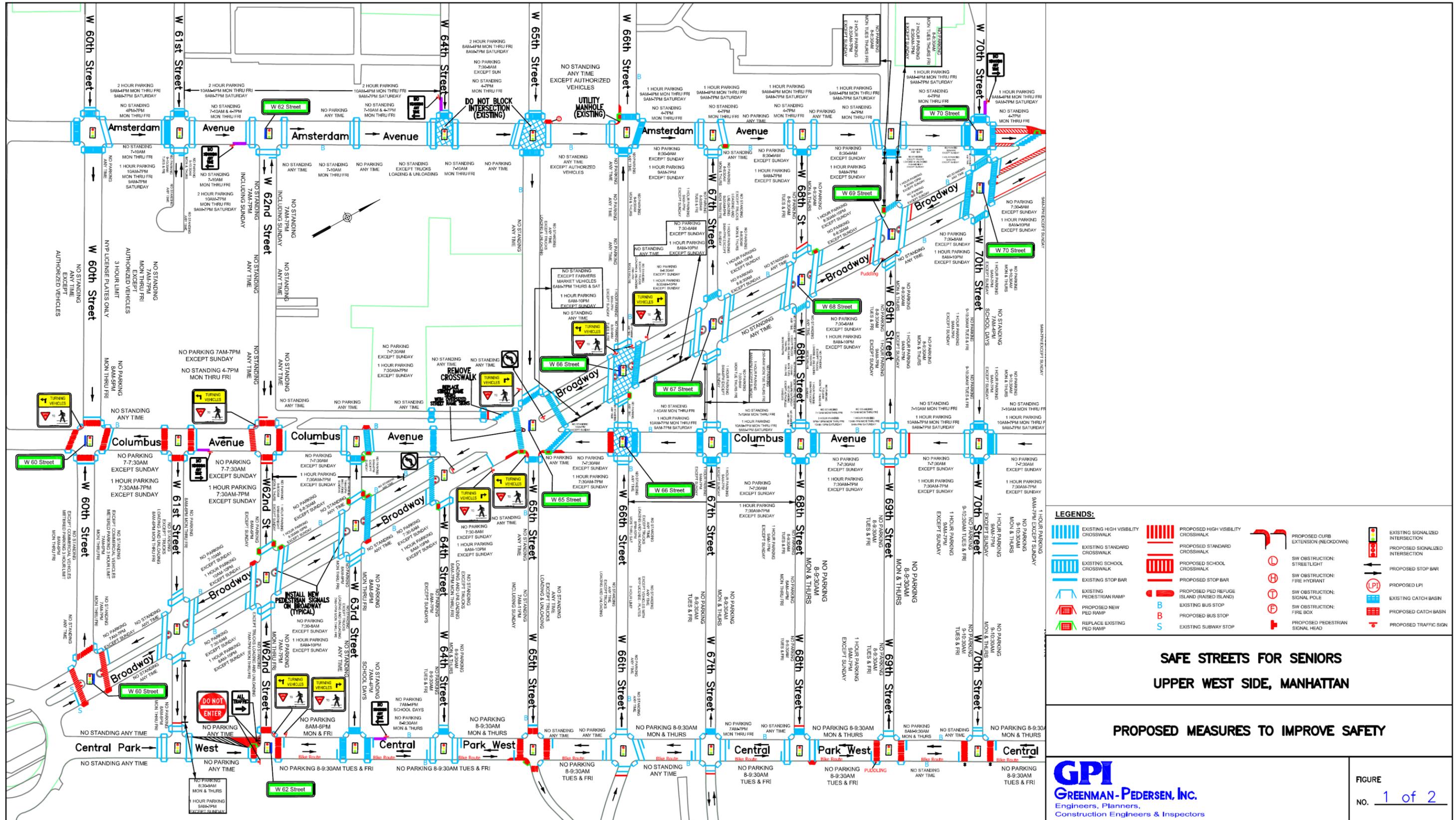
APPENDIX B – FIELD INVESTIGATIONS FORM (CONT.)

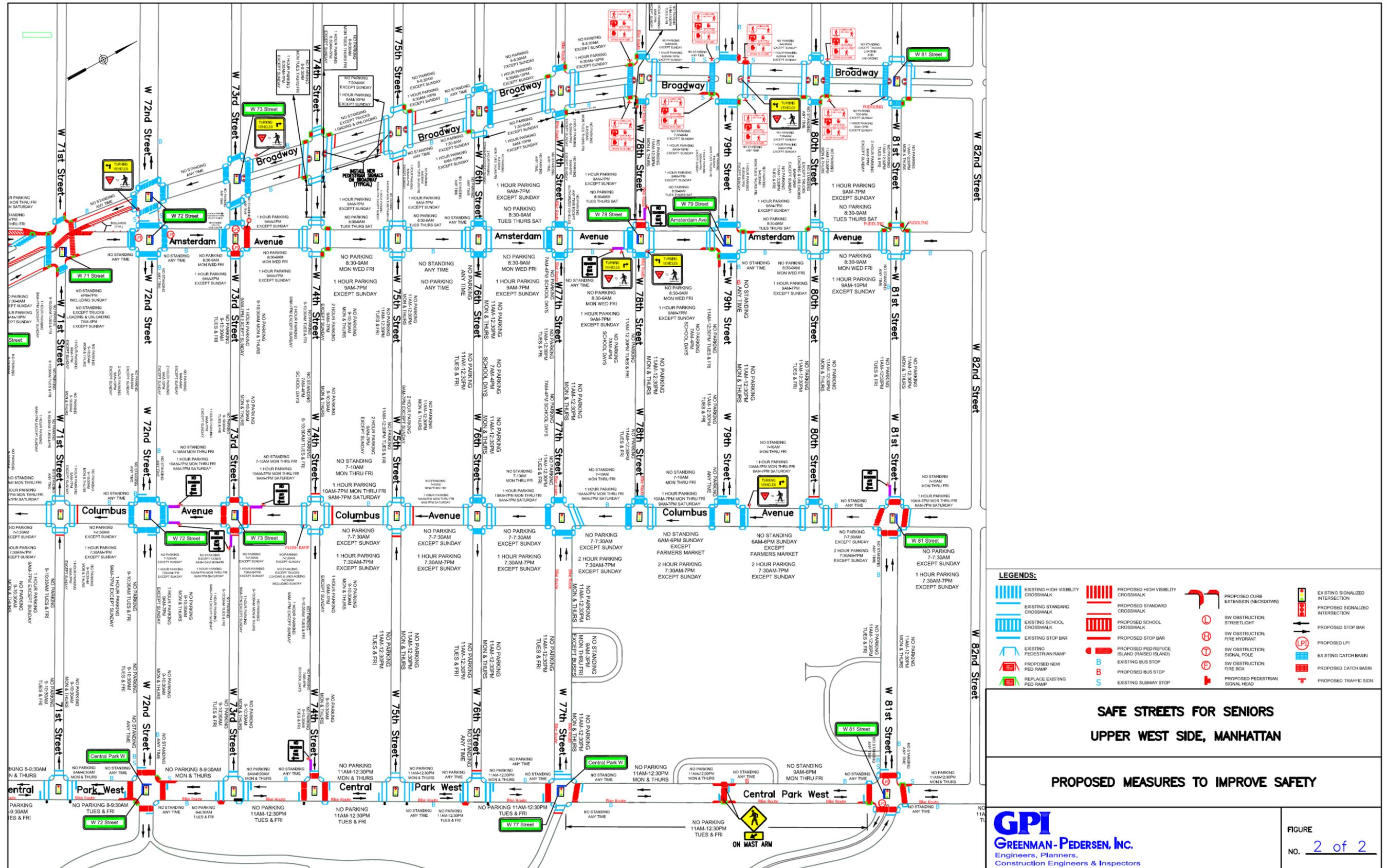
Upper West Side LOCATIONS	Subway/Bus Stop/Bike Rt	Issues							Short Term Solutions					Long Term Solutions							Photos			
		Heavy Left Turns	Congestion	P-V Visual Conflict	Faded X-Walk	Apex Curb	SW Obstruction	Broken SW & Curbs	Puddling	New X-Walk	High V / School X-Walk	Restripe X-Walk	Move Stop Bars Back 10'	New Signs	LPI	Resurface	New Ped Ramp	Update Ped Ramp w Safety	Daylighting	Relocate Obstruction		Do not block intersection	Proposed Curb Extension	New Ped Signals
Example:	1 S-NE	2 E->N				3 ALL	4 x	5 NW	6					7 E->N	8 ALL				9 SL					10 6-9
Explanation	1.Subway Stop on NE Corner 2.Heavy left turns going Eastbound to Northbound 3.Apex curb on NW, NE, SW, SE corners 4.Sidewalk obstruction on SW & NE corners 5.Broken curb on NW corner 6.New crosswalk is recommended for the east leg of this intersection 7.LPI for Eastbound to Northbound traffic 8.New ped ramp for NW, NE, SW, SE corners 9.Relocate obstruction (street light) on SW & NE corners 10.Intersection photo in photo log, picture # 4, 5, 6, 7, 8.																							
54. Amsterdam Ave. & W 75th St.	B-NE			x																				
55. Amsterdam Ave. & W 76th St.				x																				46
56. Amsterdam Ave. & W 77th St.	B-NE, BR-WP			x	x																			
57. Amsterdam Ave. & W 78th St.	BR-EB		x	x	x								NSA, HS											47-49
58. Amsterdam Ave. & W 79th St.	B-NE, SW	x	x	x	x		x						HS						B					50-53
59. Amsterdam Ave. & W 80th St.				x	x		x																	
60. Amsterdam Ave. & W 81st St.	B-NE, SE			x	x																			
61. Broadway & W 60th St.	S-SES		x	x	x								HS											N,S
62. Broadway & W 61st St.	B-NE, NW			x	x																			N,S
63. Broadway & W 62nd St.				x	x																			N,S
64. Broadway & W 63rd St.	B-NW, SW,NE			x	x																			N,S
65. Broadway & W 64th St.	B-SW			x	x								NL											S
66. Broadway & Columbus/W 65th	B-SE		x	x	x								Y2P, HS, NL											84-91
67. Broadway & W 66th St.	B-NE, NW S-SE, SW		x	x	x								Y2P, HS											N,S
68. Broadway & W 67th St.			x	x	x								HS											N,S
69. Broadway & W 68th St.	B-SW		x	x	x								HS											N,S
70. Broadway & W 69th St.	B-NE		x	x	x								HS											N,S
S Subway	ALL	All 4 corners (NW, NE, SW, SE)					HS	High Visibility Street Sign			NSA	No Standing Anytime			PC	Ped. Crossing			SP	Signal Pole				
B Bus stop	Y2P	Yield to Pedestrians					ATD	Attention Drivers			CWC	Cross With Care			NL	No Left Turn			BR	Bike Route				

APPENDIX B – FIELD INVESTIGATIONS FORM (CONT.)

Upper West Side LOCATIONS	Subway/Bus Stop/Bike Rt	Issues							Short Term Solutions						Long Term Solutions						Photos			
		Heavy Left Turns	Congestion	P-V Visual Conflict	Faded X-Walk	Apex Curb	SW Obstruction	Broken SW & Curbs	Puddling	New X-Walk	High V / School X-Walk	Restripe X-Walk	Move Stop Bars Back 10'	New Signs	LPI	Resurface	New Ped Ramp	Update Ped Ramp w Safety	Daylighting	Relocate Obstruction		Do not block intersection	Proposed Curb Extension	New Ped Signals
Example:	1 S-NE	2 E->N				3 ALL	4 x	5 NW	6					7 E->N	8 ALL				9 SL					10 4-8
Explanation	1.Subway Stop on NE Corner 2.Heavy left turns going Eastbound to Northbound 3.Apex curb on NW, NE, SW, SE corners 4.Sidewalk obstruction on SW & NE corners 5.Broken curb on NW corner 6.New crosswalk is recommended for the east leg of this intersection 7.LPI for Eastbound to Northbound traffic 8.New ped ramp for NW, NE, SW, SE corners 9.Relocate obstruction(street light) on SW & NE corners 10.Intersection photo in photo log, picture # 4, 5, 6, 7, 8.																							
71. Broadway & W 70th St.	B-SW		x	x	x								HS										N,S	70-72
72. Broadway & Amsterdam/W 71st	B-NW	x	x	x	x			x					HS											65-69
73. Broadway & W 72nd St.	B-NW S-SE NE		x	x									Y2P, HS											62-64
74. Broadway & W 73rd St.	B-NE		x	x	x								Y2P, HS										N,S	58-61
75. Broadway & W 74th St.	B-SW			x	x			x																N,S
76. Broadway & W 75th St.	B-NE			x	x			x																N,S
77. Broadway & W 76th St.	B-SW			x	x			x																N,S
78. Broadway & W 77th St.	B-NE, BR-WP			x	x			x																N,S
79. Broadway & W 78th St.	BR-EB			x	x								CWC											N,S
80. Broadway & W 79th St.	B-NE,NW,SW S-ALL		x	x	x			x					CWC, Y2P											N,S
81. Broadway & W 80th St.				x	x			x					CWC											N,S
82. Broadway & W 81st St.			x	x	x			x					HS											N,S
83. Central Park West & 79th St.				x	x								PC											
S Subway	ALL	All 4 corners (NW, NE, SW, SE)							HS	High Visibility Street Sign			NSA	No Standing Anytime			PC	Ped. Crossing			SP	Signal Pole		
B Bus stop	Y2P	Yield to Pedestrians							ATD	Attention Drivers			CWC	Cross With Care			NL	No Left Turn			BR	Bike Route		

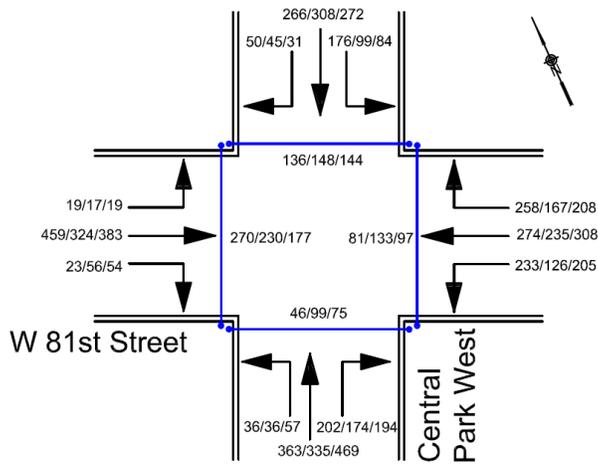
APPENDIX C: MAP OF PROPOSED CHANGES





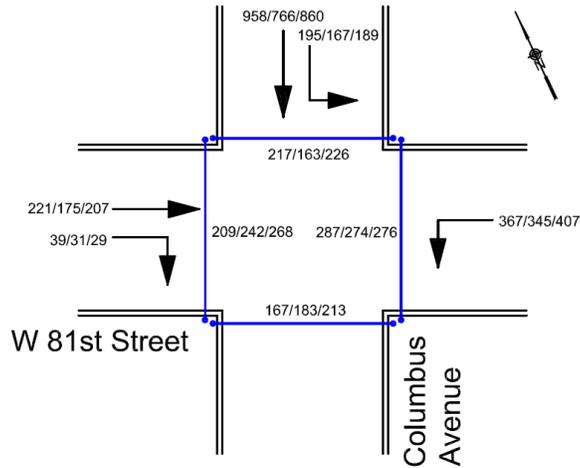
APPENDIX D: TRAFFIC COUNTS

APPENDIX D – TRAFFIC COUNT



Intersection of Central Park West and West 81st Street

Note: Counts conducted on Tuesday, 02/10/2009.



Intersection of Columbus Avenue and West 81st Street

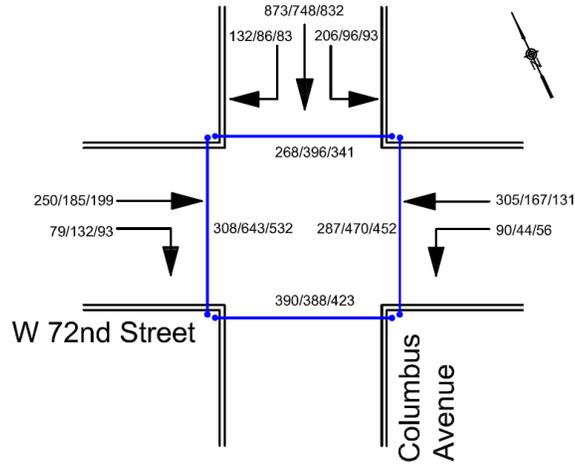
Note: Counts conducted on Tuesday, 02/10/2009.

LEGENDS:

- 161/146/224 AM/MD/PM
- 25/15/53 Conflicting Pedestrians
- 36/36/66 Turning Movement

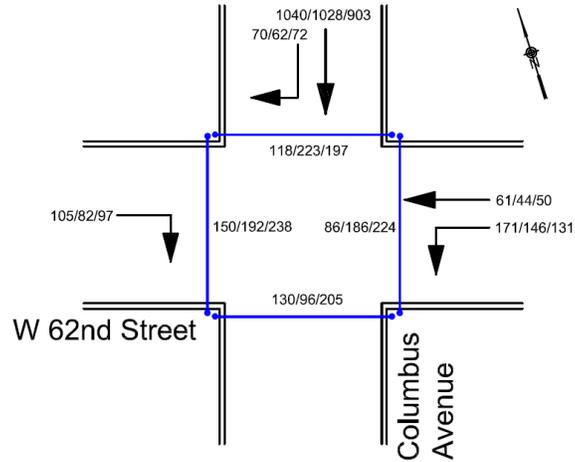
APPENDIX - D
UPPER WEST SIDE, MANHATTAN
PEAK HOUR TRAFFIC COUNTS

APPENDIX D – TRAFFIC COUNT (CONT.)



Intersection of Columbus Avenue and West 72nd Street

Note: Counts conducted on Wednesday, 02/11/2009.



Intersection of Columbus Avenue and West 62nd Street

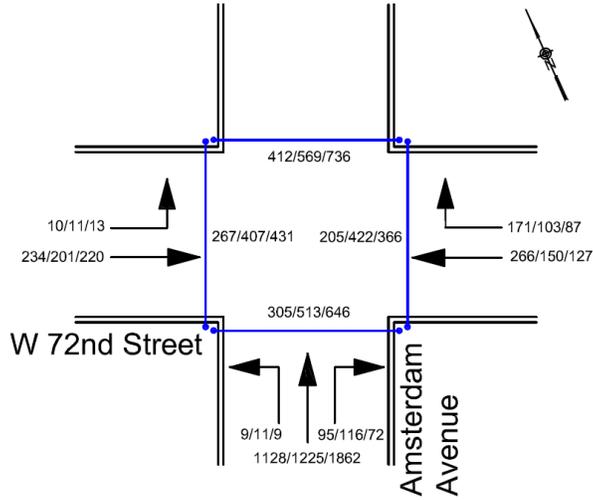
Note: Counts conducted on Tuesday, 02/24/2009.

LEGENDS:

- 161/146/224 AM/MD/PM
- 25/15/53 Conflicting Pedestrians
- 36/36/66 Turning Movement

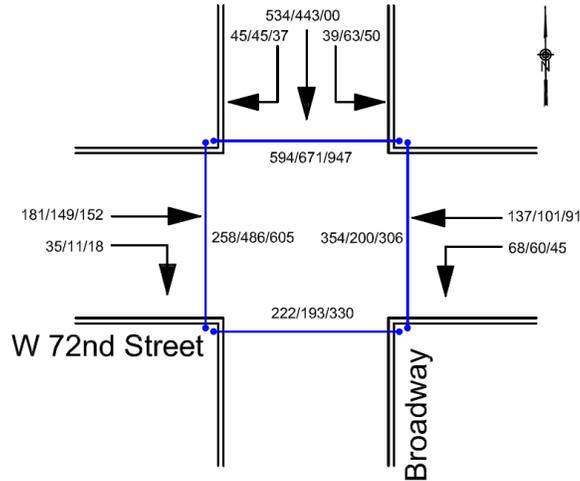
APPENDIX - D
UPPER WEST SIDE, MANHATTAN
PEAK HOUR TRAFFIC COUNTS

APPENDIX D – TRAFFIC COUNT (CONT.)



Intersection of Amsterdam Avenue and West 72nd Street

Note: Counts conducted on Wednesday, 02/11/2009.



Intersection of Broadway and West 72nd Street

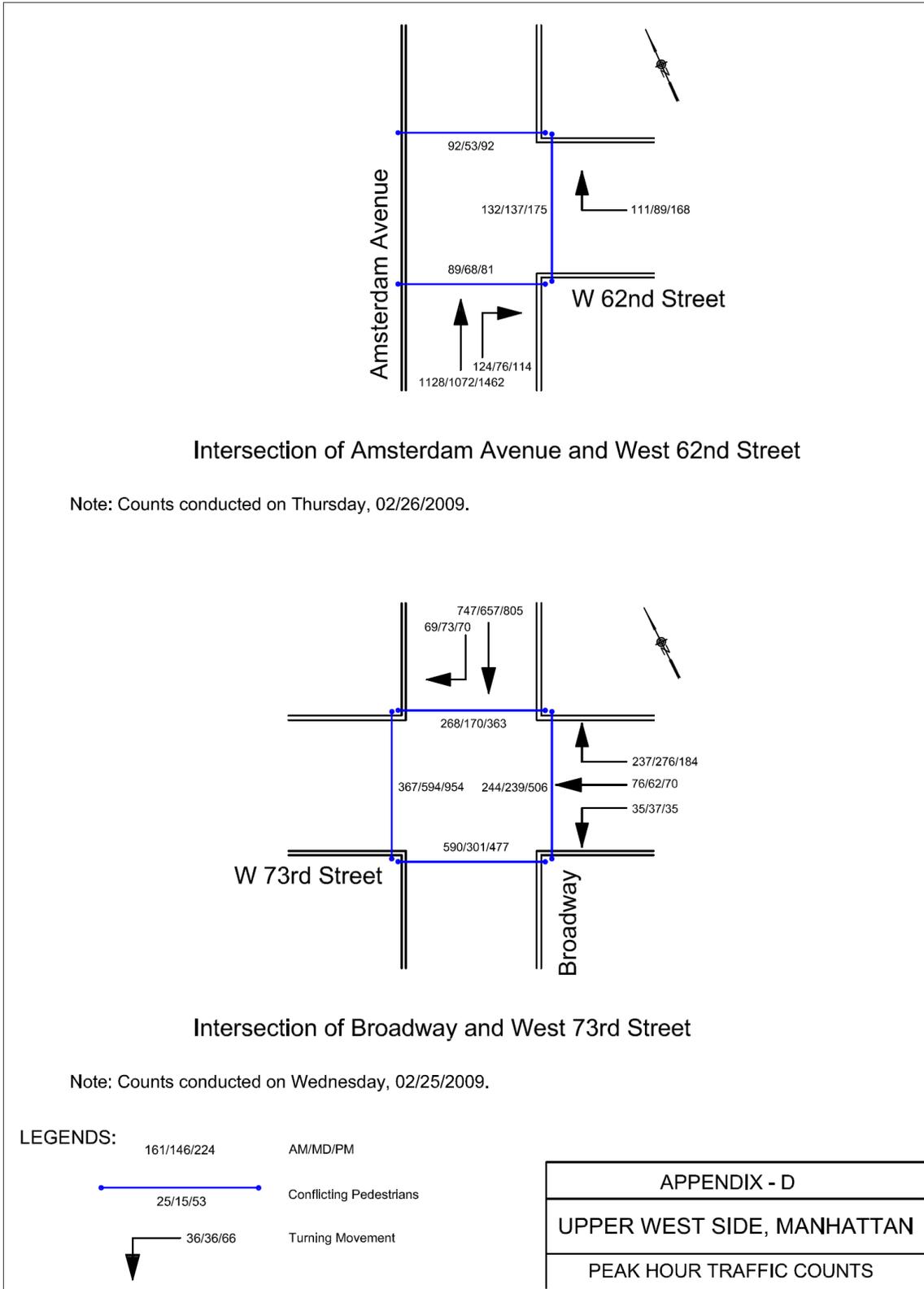
Note: Counts conducted on Wednesday, 02/11/2009.

LEGENDS:

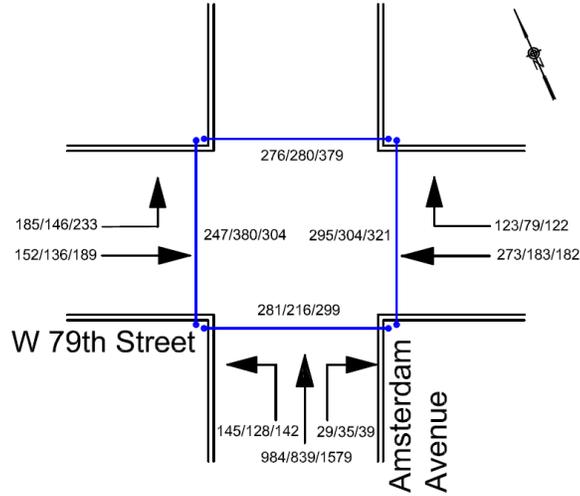
- 161/146/224 AM/MD/PM
- 25/15/53 Conflicting Pedestrians
- 36/36/66 Turning Movement

APPENDIX - D
UPPER WEST SIDE, MANHATTAN
PEAK HOUR TRAFFIC COUNTS

APPENDIX D – TRAFFIC COUNT (CONT.)

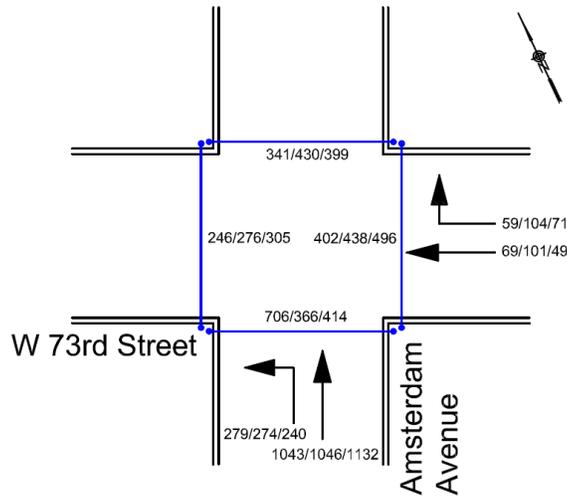


APPENDIX D – TRAFFIC COUNT (CONT.)



Intersection of Amsterdam Avenue and West 79th Street

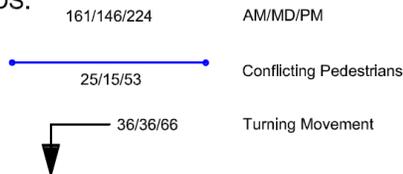
Note: Counts conducted on Tuesday, 02/24/2009.



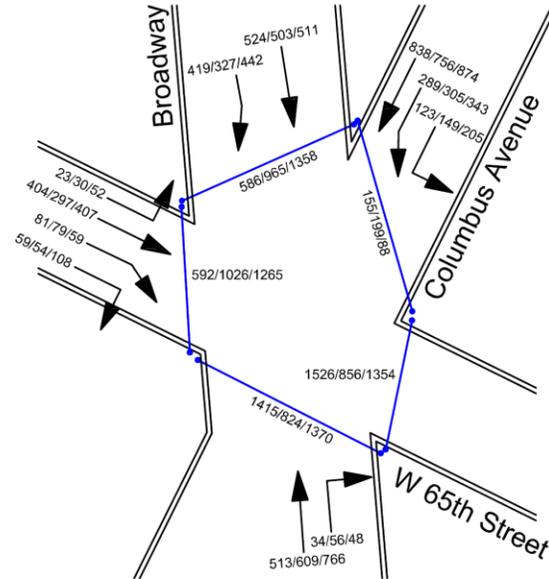
Intersection of Amsterdam Avenue and West 73rd Street

Note: Counts conducted on Wednesday, 02/25/2009.

LEGENDS:



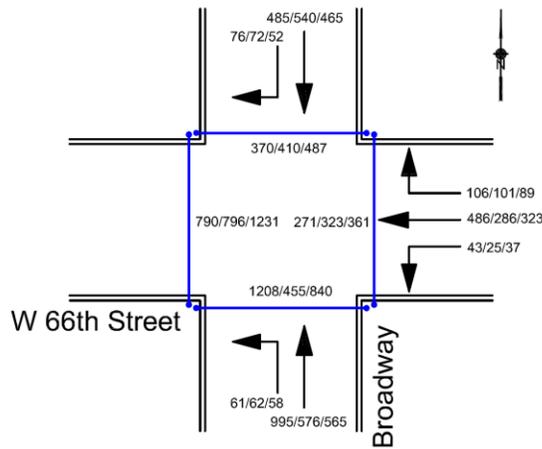
APPENDIX - D
UPPER WEST SIDE, MANHATTAN
PEAK HOUR TRAFFIC COUNTS



Intersection of Broadway and Columbus Avenue / West 65th Street

Note: Pedestrian counts conducted on Thursday, 02/26/2009.

Note: Volumes taken from West 61st Street Rezoning Project EIS and increased @ 0.5%/year for 5 year.



Intersection of Broadway and West 66th Street

Note: Counts conducted on Tuesday, 02/24/2009.

LEGENDS:

- 161/146/224 AM/MD/PM
- 25/15/53 Conflicting Pedestrians
- 36/36/66 Turning Movement

APPENDIX - D
UPPER WEST SIDE, MANHATTAN
PEAK HOUR TRAFFIC COUNTS

APPENDIX E: LIST OF STUDY AREA SCHOOLS

School Name	Address
Collegiate School, Manhattan	260 W 78 th Street, New York, NY 10024
PS 87 William Sherman School	160 W 78 th Street, New York, NY 10024
York Prep. School	40 W 68 th Street, New York, NY 10023
Blessed Sacrament School	147 W 70 th Street, New York, NY 10023
The Calhoun School	433 West End Avenue, New York, NY 10024
Mount Pleasant Christian Academy	142 W 81 st Street, New York, NY 10024
JHS 44 William J. O'Shea Junior High School	100 W 77 th Street, New York, NY 10024
MS 244 Columbus Middle School	100 W 77 th Street, New York, NY 10024
MS 245 Computer School	100 W 77 th Street, New York, NY 10024
Winston Preparatory School	4 W 76 th Street, New York, NY 10023
Stephen Gaynor School	22 W 74 th Street, New York, NY 10023
Parkside School	48 W 74 th Street, New York, NY 10023
Robert Louis Stevenson School	24 W 74 th Street, New York, NY 10023
Beit Rabban Day School	8 W 70 th Street, New York, NY 10023
West End Day School	255 W 71 st Street, New York, NY 10023
MS 243 Center School	270 W 70 th Street, New York, NY 10023
PS 199 Jesse I. Strauss School	270 W 70 th Street, New York, NY 10023
Martin Luther King High School	122 Amsterdam Avenue, New York, NY 10023
Fiorello H. LaGuardia High School	100 Amsterdam Avenue, New York, NY 10023
PS 191 Amsterdam School	210 W 61 st Street, New York, NY 10023
Professional Children's School	132 W 60 th Street, New York, NY 10023
JGB Education Services	15 W 65 th Street, New York, NY 10023
Ethical Culture – Fieldston School	33 Central Park West, New York, NY 10023

APPENDIX F: CONSTRUCTION DETAILS

APPENDIX G – CONSTRUCTION DETAIL – CURB EXTENSIONS

REVISIONS

DATE	APPD	DESCRIPTION

NOTES:

1. ALL CROSSWALK LINES TO BE 12" WIDE THERMOPLASTIC PAVEMENT MARKINGS
2. STOP LINES SHALL BE 24" WIDE AND LOCATED AT EITHER:
 - A. THE BUILDING LINE
 - B. 4' FROM STANDARD CROSSWALK
 - C. 10' FROM SCHOOL CROSSWALK
3. THE RADIUS, R, OF THE CORNER QUADRANT SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF H-1101 FOR SIDEWALK PEDESTRIAN RAMPS AND THE FOLLOWING GUIDELINES SHALL BE APPLIED IN DETERMINING THE RADIUS, R, OF THE CORNER QUADRANT:
 - R=12' INTERIOR > 90
 - R=13' INTERIOR BET. 83 AND 93
 - R=14' INTERIOR BET. 77 AND 90
 - R=15' INTERIOR BET. 72 AND 81
4. CURB EXTENSIONS SHALL BE CONSTRUCTED OF STEEL FACED CONCRETE CURB, 18" MINIMUM DEPTH. REFER TO H1010 R79 (LATEST REVISION) FOR STEEL FACED CURB – TYPE D.
5. REFER TO H1011 (LATEST REVISION) FOR DETECTABLE WARNING SURFACE
6. REFER TO H1011 (LATEST REVISION) FOR ADDITIONAL NOTES AND REQUIREMENTS FOR THE PEDESTRIAN RAMPS CORNER QUADRANT AREA OF THE SIDEWALK.
7. THE WIDTH, W, OF THE NECKDOWN IS EQUAL TO WIDTH OF THE PARKING LANE MINUS TWO (2) FEET. SEE TABLE BELOW.

WIDTH OF PARKING LANE (FT)	WIDTH OF NECKDOWN, W (FT)
7	5
8	6
8. INSTALLATION OF A NECKDOWN MUST ALLOW FOR THE TURNING MOVEMENT OF A THIRTY FOOT SIGNLE UNIT TRUCK (SU-30). ON DESIGNATED TRUCK ROUTES OR REGULARLY SCHEDULED BUS ROUTES THAT REQUIRE TURNING, THE APPROPRIATE DESIGN VEHICLE SHALL BE USED.
9. A FIRE TRUCK TURNING ZONE WITH A FIFTY FOOT OUTSIDE RADIUS SHALL BE MAINTAINED CLEAR OF PHYSICAL OBSTRUCTIONS (SIGNS, PLANTERS, NON-FLEXIBLE BOLLARDS, TRESS, ETC).
10. A 22-FOOT MINIMUM ROADWAY WIDTH (FROM CURB TO CURB OR PARKED VEHICLE) MUST BE MAINTAINED AT A FIRE HYDRANT, SO THAT A FIRE TRUCK MAY PASS ANOTHER PARKED AT THE HYDRANT.
11. FIRE HYDRANTS AND PARKING METERS SHALL BE MOVED ONTO THE NECKDOWN. PLACEMENT SHALL BE IN ACCORDANCE WITH APPROPRIATE NYCDOT AND NYCDPE DESIGN STANDARDS.

UPPER WEST SIDE SENIOR PEDESTRIAN FOCUS AREA (SPFA) PROPOSED CURB EXTENSION LOCATIONS

LOCATION	CASE	LENGTH
SOUTHWEST CORNER OF CENTRAL PARK WEST AND W 62ND STREET	CUSTOM**	96'
SOUTHEAST CORNER OF CENTRAL PARK WEST AND W 65TH STREET	A	28'
NORTHWEST CORNER OF CENTRAL PARK WEST AND W 72ND STREET	A	28'
SOUTHEAST CORNER OF CENTRAL PARK WEST AND W 72ND STREET	A	28'
EAST SIDE OF CENTRAL PARK WEST & AMERICAN MUSEUM OF NATURAL HISTORY	CUSTOM	39'
WEST SIDE OF CENTRAL PARK WEST & AMERICAN MUSEUM OF NATURAL HISTORY	CUSTOM	39'
NORTHWEST CORNER OF CENTRAL PARK WEST AND W 81ST STREET	A	28'
SOUTHEAST CORNER OF CENTRAL PARK WEST AND W 81ST STREET	D	35'

LOCATION	CASE	LENGTH
SOUTHWEST CORNER OF AMSTERDAM AVENUE AND W 66TH STREET	A	28'
NORTHWEST CORNER OF AMSTERDAM AVENUE AND W 79TH STREET	A	35'
SOUTHEAST CORNER OF AMSTERDAM AVENUE AND W 79TH STREET	B/D*	68'
NORTHEAST CORNER OF COLUMBUS/BROADWAY AND W 65TH STREET	A	28'
SOUTHEAST CORNER OF BROADWAY AND W 65TH STREET	A	28'
NORTHEAST CORNER OF AMSTERDAM/BROADWAY AND W 71ST STREET	B/D*	63'
SOUTHEAST CORNER OF BROADWAY AND W 79TH STREET	A	37'

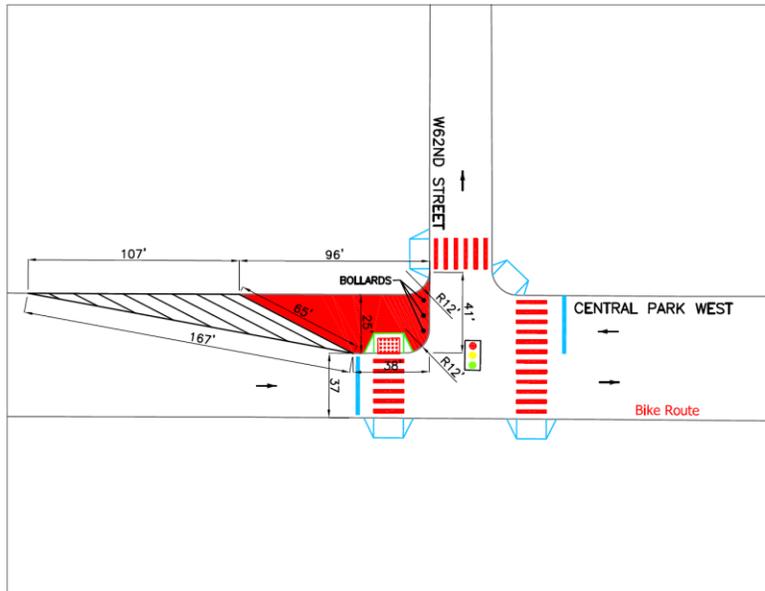
Note: 1. Dimensions of proposed Curb Extensions may vary depending upon the survey and design requirements.
 2. The level of detail depicted in the above table shall be considered conceptual. All dimensions shown are approximate.
 3. * Case B and D shall both be applied at these locations. However Case D shall be applicable for the side where the curb extension includes a fire hydrant.
 4. ** The width of the customized curb extensions may vary depending upon the specific site conditions.
 5. Curb Extension proposed in Upper West Side Senior Pedestrian Safety Plan (Assembly Member Rosenthal Study) and School Safety Project are not depicted in the table above.
 6. The Curb Extensions proposed for Amsterdam Avenue, Broadway and W 71st Street intersection improvements, designed by DOT are provided in Appendix – G.

GPI
GREENMAN-PEDERSEN, INC.
Engineers, Planners,
Construction Engineers & Inspectors

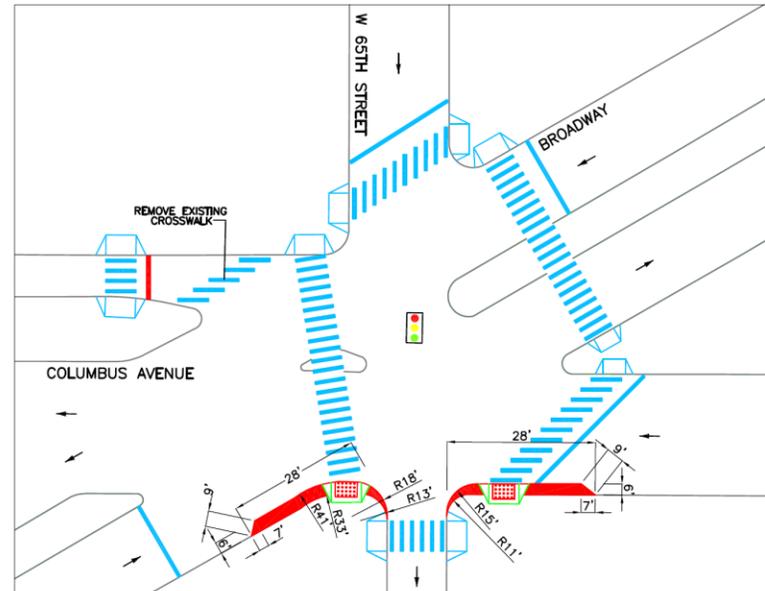
CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC OPERATIONS
28-11 Queens Plaza North L.L.C., N.Y. 11101

CURB EXTENSIONS AND PAVEMENT MARKING CONFIGURATIONS (UPPER WEST SIDE, MANHATTAN)

APPROVED	Drawn By <u> C.K. </u>	DRAWING
BY <u> </u>	Checked by <u> N/A </u>	Borough <u> N/A </u>
	Scale <u> AS NOTED </u>	NO. <u> XXX-X </u>
	Date <u> </u>	



Intersection of Central Park West and W 62nd Street



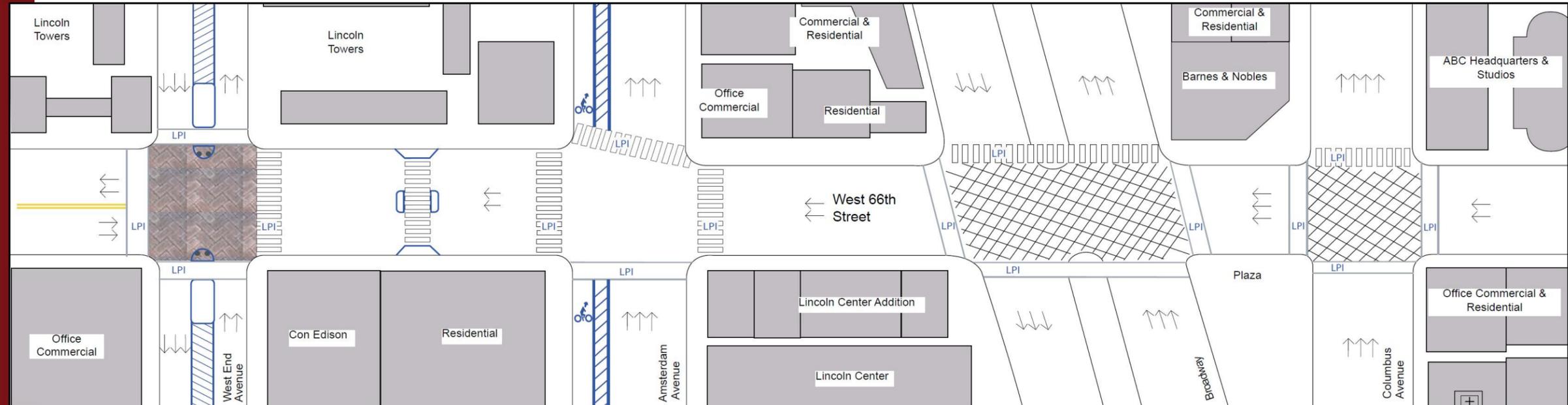
Intersection of Broadway/Columbus Avenue and W 65th Street

NOTES:

1. These plans are not for construction.
2. All existing curb lines are based on the NYCDOT GIS database warehouse and are approximate.
3. The level of detail depicted in these sketches shall be considered conceptual. All dimensions shown are approximate and should in no way be considered adequate for construction.

APPENDIX G: SCHOOL AND PEDESTRIAN SAFETY EXHIBITS

Proposed Changes West 66th Street (from West End Avenue to Columbus Avenue)



Amsterdam Avenue -
Proposed Changes

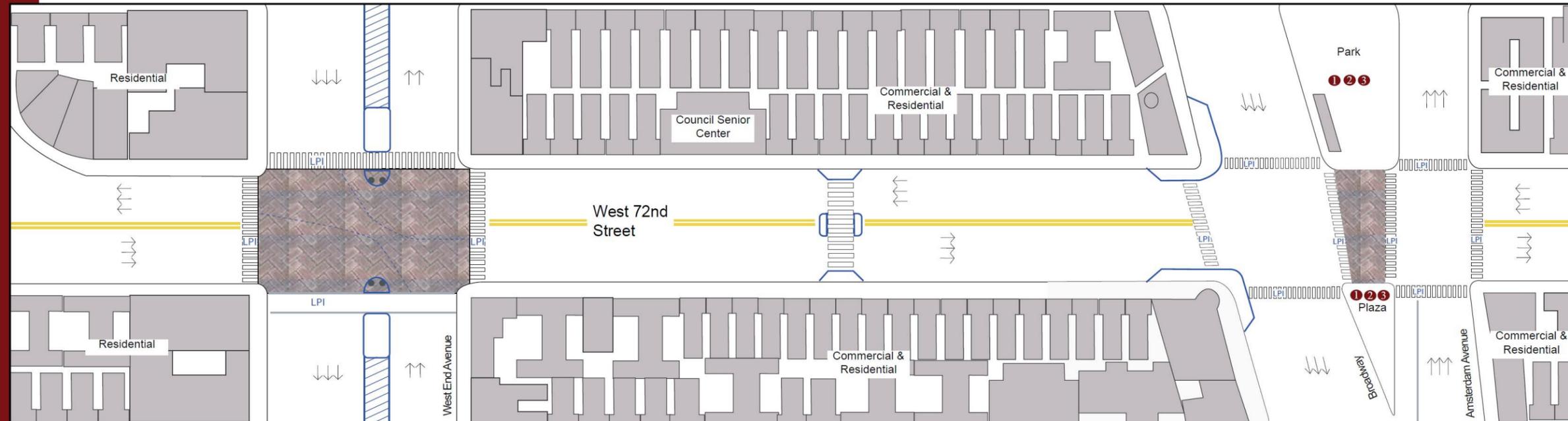
Illustrating the Solution

The following recommendations include:

- Leading pedestrian intervals at all legs of every crossing.
- Median pedestrian refuge at West 66th Street and West End Avenue.
- Midblock crossings on West 66th Street between Amsterdam and West End Avenues with curb extensions.
- Install protected bike lane. The bike lane would begin at West 57th Street and terminate at 69th Street, one block before the intersection where Amsterdam Avenue crosses diagonally over Broadway.
- "Street Print" treatment at the intersection of West 66th Street at West End Avenue.

Proposed Changes West 72nd Street

(West End Avenue to Amsterdam Avenue)



Illustrating the Solution

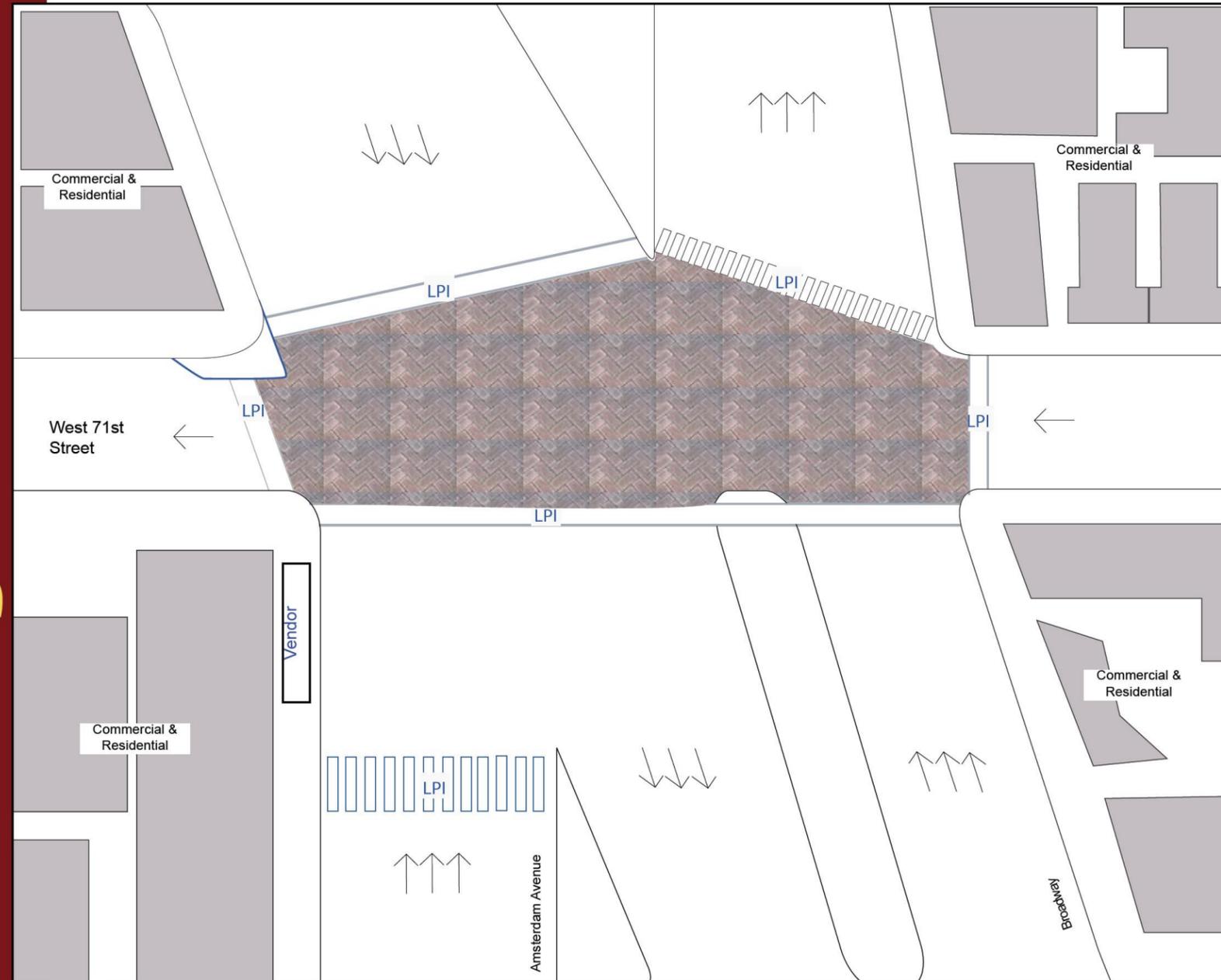


The following recommendations include:

- Leading pedestrian intervals at all intersections.
- Enforcement of parking regulations.
- Install curb extensions at Broadway and 72nd street on the NW and SW corners.
- "Street Print" pavement treatment at the intersections of West 72nd Street at West End Avenue and at Broadway and Amsterdam between the subway stations.
- Modify all signals to a crossing speed of 2.5 feet per second.
- Move all news boxes and construction materials away from curbs.
- Create mid-block crossing on West 72nd Street between Broadway and West End Avenue.

Illustrating the Solution

Proposed Changes Broadway & Amsterdam Avenue (West 71st Street)



The following recommendations include:

- Leading pedestrian intervals at every crossing and give adequate time to cross the street.
- Channelize vehicles as much as possible through the intersection.
- Make the diagonal crossing of Amsterdam perpendicular.
- Consider curb extensions on West 71st street on the NW corner.
- Add "Street Print" treatment to the intersection of West 71st Street at Broadway and Amsterdam to slow down motorists and improve the existing quality of the pavement at these intersections.
- Move vendors south of the intersection on Amsterdam, away from West 71st street.

