

The Coalition for a Livable West Side

P.S. 199 Proposal

for

Pedestrian Safety

Analysis

and

Recommendations

for

West 70th Street

and

West End Avenue at West 70th Street

April 2011

Prepared by Amy Pfeiffer, Consultant

On February 3, 2011, the Parent Teacher Association (PTA) of P.S. 199/The Jesse Isador Straus School, located at 270 West 70th Street, wrote a letter to Community Board 7's (CB7) Transportation Committee members regarding pedestrian safety issues at and around West 70th Street and West End Avenue.

The letter addressed two safety concerns, both related to speeding motorists:

1. Fast turning vehicles from southbound West End Avenue to eastbound West 70th Street
2. East bound motorists driving at unsafe speeds in front of the school on West 70th Street

The PTA of P.S. 199 developed a list of seven measures to mitigate speeding motorists. At the CB7 meeting on March 1, 2011, the board unanimously approved **five of the seven measures**. The New York City Department of Transportation (NYCDOT) is currently studying these recommendations. The safety measures included:

1. Instituting a 20 mile per hour school speed zone along West 70th Street
2. Installing red light safety cameras at West End Avenue and West 70th Street - from the western, northern and southern approach - to discourage red light running
3. Day lighting to increase pedestrian visibility by removing several parking spaces on the SE corner, on West 70th Street, on the SW intersection, between WEA and West 71st Street and on WEA, the NW corner between West 70th and West 71st Street.
4. Adding leading pedestrian intervals (LPI) across West End Avenue giving pedestrians a head start crossing the street
5. Installation of neck downs and pedestrian refuges at West End Avenue and West 70th Street to reduce the crossing distance

The first section of this report discusses proven benefits of each of those five measures on street safety, and ideas on how best to accomplish each of these concepts at and near West End Avenue and West 70th Street.

The second section discusses possible solutions to accomplish the two additional safety measures, traffic calming measures on West 70th Street and an analysis of protected parking spaces/traffic buffer zone in front of P.S. 199 on West 70th Street.

Safe Routes to and from P.S. 199/The Jessie Isador Straus School

The purpose of a safe routes program is heightening driver and pedestrian awareness around destinations where vulnerable populations gather daily, in this case P.S. 199 at 270 West 70th Street.

Each day almost 800 students travel to this location by various means, though a portion of all of their trips is walking. Adjacent to the school is the Seventieth Street Playground, a large park accessible to the public. This playground attracts neighborhood residents throughout the day, with the majority crossing one or more major intersections to reach this site. Due to the distance between signalized crossings at

West End Avenue and Amsterdam Avenue, some people will always cross at a midblock location, outside of a legal crosswalk.

The length of a block plays a large role in where people decide to cross the street as most people cross at the shortest distance to their desired destination rather than walking to a crosswalk. The table below presents data from 2009 for New York State, using the Fatality Analysis Reporting System (FARS) from the National Highway Traffic Safety Administration (NHTSA). The number of pedestrians involved in fatal crashes at intersections (159) and at mid-block points (137) suggests the need for changing the street environment at intersections as well as locations between intersections.

	Location		Non-Intersection		Unknown		Total	
Age	Intersection Number	Intersection Percent	Nonintersection Number	NonIntersectNum Percent	Unknown	Unknown Percent	Total Number	Total Percent
<5	3	42.9	4	57.1	0	0	7	100
5 -- 9	2	22.2	7	77.8	0	0	9	100
10 -- 15	6	75	2	25	0	0	8	100
16 -- 20	5	31.3	11	68.8	0	0	16	100
21 -- 24	8	50	8	50	0	0	16	100
25 -- 34	19	52.8	16	44.4	1	2.8	36	100
35 -- 44	15	41.7	20	55.6	1	2.8	36	100
45 -- 54	20	42.6	23	48.9	4	8.5	47	100
55 -- 64	26	60.5	16	37.2	1	2.3	43	100
65 -- 74	26	66.7	12	30.8	1	2.6	39	100
> 74	24	55.8	17	39.5	2	4.7	43	100
Unknown	5	83.3	1	16.7	0	0	6	100
Total	159	52	137	44.8	10	3.3	306	100

Barring street closures, reducing injuries and fatalities to children at and near schools has as much to do with the behavior of motorists (less so pedestrians) than the physical nature of a street. Streets themselves are not the cause of crashes. This report therefore focuses ways to force safer driving through design controls.

Five Safety Measures

Why do streets at and near schools need to be designed differently? Children see, hear, perceive and use streets differently than adults, requiring the additional safety benefits that crossing guards provide during school hours at all hours.

It is also necessary to understand why people are driving on a particular street in order to ascertain what the best pedestrian safety changes to that street should be to achieve a shift in the perception of that street by motorists as a desired through route.

The safety measures proposed by the PTA of P.S.199 impact street operations and influence pedestrian safety in different ways.

Essential to the process of redesigning streets for safety we must understand the pros and cons of each treatment. Therefore, the goal is to find a combination of self-enforcing mechanisms suitable for pedestrian safety on West 70th Street.

Instituting a 20 mile per hour school speed zone along West 70th Street

The speed of a street is a function of the **posted speed, design speed and operating speed**. The **posted speed** is the legal speed limit posted on signs throughout the road (the posted speed on all NYC streets is 30 miles per hour except for highways).

The **design speed** of a street follows street hierarchy, with faster design speeds for highways to the slower design speeds for local streets. The design speed is a function of roadway geometry and the spacing of traffic control devices (stop signs, yield signs, signals, etc.).

Controlling speed through design varies street by street. Streets with large distances between traffic controls tend to have higher speeds than a street of similar design with shorter blocks as the traffic controls have a larger influence on speed. In Manhattan, average speeds in Midtown top out at about 4 miles per hour due to traffic congestion, rather than design.

The **operating speed** is the actual speed motor vehicles drive on the street. In many cases, the operating speed is much lower (traffic congestion/jams) or higher (speeding) than the posted speed or the intended design speed.

Because the speed of a motor vehicle pre-crash is the most significant factor in severity of injury, lowering motor vehicle **operating speed** is the focus of almost every pedestrian safety effort.

A Swedish study concluded a strong dependence on impact speed in pedestrian crashes, with the fatality risk at 50 km/h (31 mph) being more than twice as high as the risk at 40 km/h (25 mph) and more than five times higher than the risk at 30 km/h (19 mph).¹

Additional studies on vehicle speed and severity of injury found no fatalities under the impact speed of 30 km/h (19 mph) and 4.4% of fatalities at the impact speed of 30-39 km/h (19 to 24 mph). When the impact speed was above 80 km/h (50 mph), the pedestrians were severely injured or even killed.²

Research varies on the relationship between posted speed and operating speed on urban local and commercial streets.

¹ Rosen, E. Sander, U., Pedestrian fatality risk as a function of car impact speed, Autoliv Research, Wallentinsvägen 22, 447 83, Vårgårda, Sweden, 2009.

² Zhao, H, Yin, Z, Chen, R, Chen, H, Song, C, Yang, G, Wang, Z. "Investigation of 184 passenger car-pedestrian accidents." International Journal of Crashworthiness, Volume 15, Issue 3, 2010, Pages 313-320.
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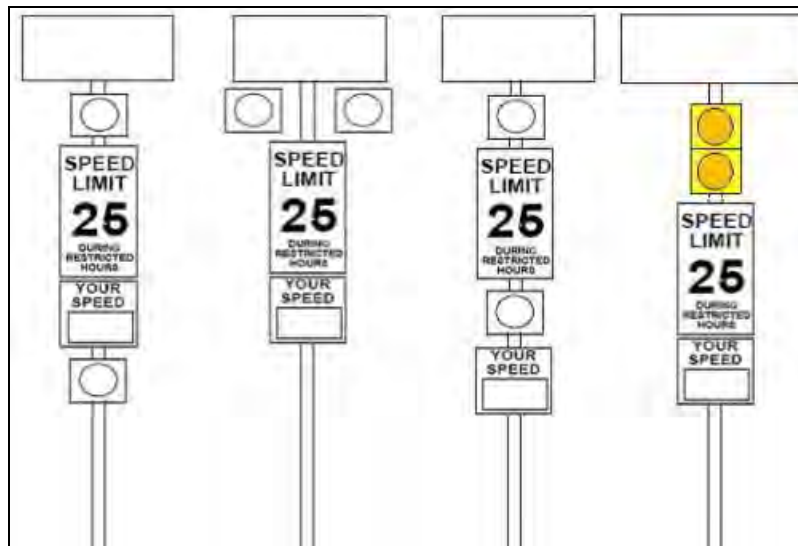
One study found the higher the posted speed, the greater the variance in operating speed. On urban commercial roads with a posted speed of 20 miles per hour, the average operating speed was about 35 miles per hour. On urban commercial roads with a posted speed of 30 miles per hour, the average operating speed was between 45 and 48 miles per hour. This same study comparing real speed versus posted speed found only 23% of the free-flow vehicles on urban commercial streets drove at the posted speed.³

Community Request# 1

In order to reduce traffic speed along West 70th Street, especially on the stretch between West End Avenue and Amsterdam Avenue, we would like a designated 20 mile per hour school speed zone enforced. Given that many of the speeders are coming from Freedom Place and Riverside Boulevard, our preference would be for the entire stretch from Riverside Boulevard to Amsterdam to be designated as 20 m.p.h.

Recommendations:

A 20 mile per zone along West 70th street, starting at West End Avenue through Amsterdam Avenue, with flashing lights surrounding and information showing actual speeds will reduce speeds more than signs alone. These devices come in all shapes and sizes, but generally resemble this configuration:⁴



The box at the top is a solar panel powering the device. Installing these devices in clear view for motorists is part of a “gateway” treatment as motorists enter West 70th Street from all directions. The flashing lights can be timed to operate all day or only during school hours.

This treatment, in tandem with the next four measures, creates the school zone.

³ Fitzpatrick, K, Carbon, P, Brewer, M.A., Wooldridge, M.D., Miaou, S. “Design Speed, Operating Speed, and Posted Speed Practices.” NCHRP Report 504. Transportation Research Board, Washington, DC (2003).

⁴ http://www.lightcast-public-safety.com/school_zone_flashing_beacons_radarsign.html

Installing red light cameras to discourage red light running

Red light camera systems are cameras attached to an overhead signal arm or a stand-alone post connected to a loop or magnetic detector in the roadbed. When a vehicle drives through a red light, the metal of the vehicle triggers the magnetic detector, sending a signal to the camera to take a picture of the license plate. The plate number registers in a computer system that issues a ticket. After the production of the ticket, the system erases the plate number.

Red light running is a common occurrence, resulting in numerous cases of pedestrian injury and fatality each year. Installing red light cameras provides a greater level of complete enforcement, and reduces the potential of crashes associated with police vehicles chasing red light runners through the intersection.

The NYCDOT's Red Light Camera program started in 1994. The City continues to install red light cameras each year, for a total of almost 200 cameras throughout the five boroughs.

Research:

After controlling for population density and land area, the rate of fatal red light running crashes during 2004-08 for cities with camera programs was an estimated 24 percent lower than what would have been expected without cameras. The rate of all fatal crashes at signalized intersections during 2004-08 for cities with camera programs was an estimated 17 percent lower than what would have been expected without cameras.⁵

Some studies have reported that even though red light cameras reduce front-into-side collisions and overall injury crashes, they can increase rear-end crashes. A study evaluating red light camera programs in seven communities reported a 25 percent reduction in right-angle crashes, whereas rear-end crashes increased by 15 percent. Because the types of crashes prevented by red light cameras tend to be more severe and more costly than the additional rear-end crashes that can occur, the study estimated a positive social benefit of more than \$18.5 million in the seven communities (Council et al., 2005).⁶

Recent crash-based studies from the United States have reported positive safety benefits through crash and speed reductions from mobile camera enforcement on 14 urban arterials in Charlotte, NC (Cunningham Hummer, & Moon, 2008), and from fixed camera enforcement on an urban Arizona freeway (Shin, Washington, & van Schalkwyk, 2009).⁷

⁵ Hu, W, McCartt, A, Teoh,E, 2011. Effects of Red Light Camera Enforcement on Fatal Crashes in Large US Cities. Insurance Institute for Highway Safety, Arlington, VA.

⁶ Council, F., Persaud, B., Eccles, K., Lyon, C., & Griffith, M. (2005). *Safety Evaluation of Red-Light Cameras: Executive Summary*. Report no. FHWA HRT-05-049. Washington, DC: Federal Highway Administration.

⁷ Countermeasures that Work: A Highway Safety Countermeasures Guide for State Highway Safety Offices, 6th Edition. National Highway Traffic Safety Administration, (2011).

Community Request #2:

The community would like to see red light cameras on all legs of West End Avenue and West 70th Street.

While the NYCDOT continues to install cameras on the Upper West Side, many of these cameras have been damaged or destroyed. Due to complaints of unsafe driving behavior at West End Avenue and West 96th Street, the NYCDOT installed a red light camera at this location. The camera angle has repeatedly been off-set by someone to obscure license plates of red light runners.

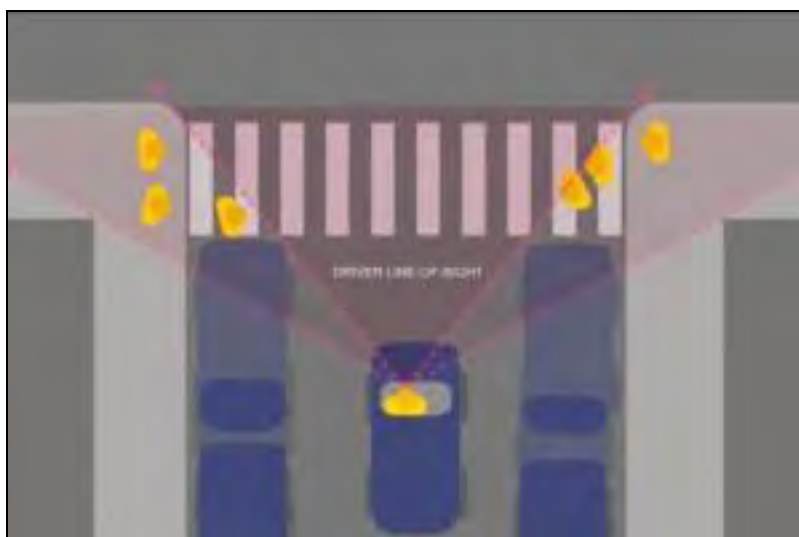
Recommendations:

Red light cameras are not popular with motorists because they work. One of the best methods of encouraging better driving behavior is charging motorists a fee for traffic violations. Red light cameras reduce the cost of enforcement and will reduce red light running at West End Avenue and West 70th Street.

Removing several parking spaces near the intersection of West End Avenue and West 70th Street to increase pedestrian visibility

“Day lighting” is a term referring to the removal of parking spaces at the near and far sides of an intersection. Day lighting creates better sight lines and communication between motorists and pedestrians as all road users see each other from a better angle and greater distance. A residual impact is a reduction in conflicts between pedestrians and motorists seeking to park in the last spot before the crosswalk.

The graphic from NYC DOT depicts the enhanced view corridor, or visual communication between motorists and pedestrians with the removal of parking spots at crosswalks.



Research:

An extensive review of the literature found significant use of “day lighting” throughout the country, yet no studies of the safety benefits of this design were found. As such, we decided to take a windshield approach to see what motorists do and don’t see at corners with parking at the crosswalk. While anecdotal, it is worth considering:

Federal regulation 49 CFR Part 581 is the “bumper standard”. It is a performance standard for passenger vehicles to reduce the impact of front and rear end collisions, setting the bumper height at 16 to 20 inches above the ground. No such requirement exists for SUVs or mini-vans, although scientists and safety experts have lobbied the National Highway Traffic Safety Administration for years to set new standards.

For comparison, we measured the bumper heights of 20 small and medium sized SUVs. These bumpers ranged in height from 34 to 44 inches. This is also the average height of a five or six year old child. According to 2009 attendance records for P.S. 199, this age group is 40% of the entire student population.⁸

Therefore, even at very low motor vehicle speeds, the lack of visibility and ability to make eye contact between children and SUV drivers is a significant pedestrian safety concern.

Community Request #3:

Vehicles parked too close to the intersection of West End Avenue and West 70th Street hinder pedestrian and vehicle visibility. We believe that prohibiting parking at the following spots will significantly improve the ability of pedestrians to see oncoming traffic as they cross the street and will enable motorists to more readily see pedestrians. Locations:

- *On West End Avenue, the SE Corner, in front of the CVS*
- *One West 70th Street, the SW corner, between West End Avenue and Freedom Place*
- *On West End Avenue, the NW corner, between West 70th Street and West 71st Street*

Recommendation:

Removing parking at crosswalks improves eye contact between all road users and reduces the occurrence of motorists doubling parking at intersections. An on-street parking space in NYC is 20 feet in length, allowing motorists to see pedestrians in the crosswalk at a greater distance from the crosswalk. This can be a great, low-cost safety improvement, as long as pedestrians continue to cross at the marked crosswalks, rather than leading off the curb in this extra space.

Consideration should be given to demarcating these areas with flexible bollards to reduce delivery and private vehicles from illegally parking in these areas.

⁸ <https://www.nystart.gov/publicweb-rc/2009/8b/AOR-2009-310300010199.pdf>
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Adding leading pedestrian intervals across West End Avenue giving pedestrians a head start crossing the street

In reviewing counter measures to increase street safety, one of the first pieces to consider is the risk exposure of a street. Pedestrian risk exposure is the amount of time pedestrians and moving motor vehicles share the same space in the roadway. Mechanisms such as curb extensions, medians, and leading pedestrian intervals (**LPI**) reduce pedestrian exposure by shortening the amount of time pedestrians and moving motor vehicles share during the WALK phase.

A leading pedestrian interval (**LPI**), or pedestrian head start, is a signal phase giving pedestrians a **WALK** phase while all motor vehicle traffic has a red light. While leading pedestrian intervals can be of any length of time, they are traditionally calculated by measuring the distance from the curb to the center of the street and dividing that distance by 3.5 or 4.

Leading pedestrian intervals are great low-cost safety measures, as pedestrians can establish themselves in the crosswalk before motor vehicles begin turning, creating better visual communication between motorists and pedestrians. This is particularly important for senior citizens, as research has shown that ascending and descending the curb is the longest part of the senior crossing.

Research:

Pedestrian safety at intersections is a major concern because almost 37% of the pedestrian injury crashes and 20% of fatal pedestrian crashes occur at intersections.⁹

In 2000, a field evaluation of LPI signal phase completed by Van Houten (Van Houten *et al*, 2000) assessed the influence of LPI on pedestrian behavior and turning movement conflicts at three intersections in St. Petersburg, Florida. The number of conflicts between pedestrians and turning vehicles and frequency of a pedestrian yielding to a turning vehicle were recorded before and after LPI installation.

They defined conflict as “any situation in which the driver engaged in abrupt braking or either the driver or pedestrian took sudden evasive action to avoid a collision.” Analyses of before and after results were performed using logistic regression models that also accounted for possible effects of time, pedestrian age and site location. The results showed nearly non-existent conflicts after use of LPI. The likelihood of a pedestrian yielding to a turning vehicle was found to decrease by 60 percent and chances for pedestrians leaving the curb at the time of walk period reduced by about 95 percent.¹⁰

Additional research found that providing an exclusive pedestrian interval reduces pedestrian collisions by 50 percent.¹¹

⁹ Van Houten, R; Retting, RA; Farmer, CM; Van Houten, J, 2000. Field evaluation of a leading pedestrian interval signal phase at three urban intersections. Transportation Research Record 1734, pp 86-92.

¹⁰ Ibid.

¹¹ Campbell, B.J., Zegeer, C.V., Huang, H.H., Cynecki, M.J. “A Review of Pedestrian Safety Research in the United States and Abroad.” FHWA-RD-03-042. Federal Highway Administration, McLean, VA (2004).

Community Request #4:

There is already an LPI on West 70th Street. Adding an LPI on West End Avenue would benefit pedestrian safety.

Recommendation:

The addition of LPIs on West End Avenue would assist all local residents. LPIs work particularly well in tandem with red light cameras in minimizing crashes occurring as motorists speed through the end of a signal phase as pedestrians begin crossing.

The possibility of neck downs or pedestrian islands at West End Avenue and West 70th Street to reduce the crossing distance

Neck downs are extensions of the curb into the roadway. The typical design is replacing one parking spot at the curb, a literal extension of the sidewalk, with curb ramps, or demarcated with paint and flexible bollards. Neck downs provide the same safety benefits of day lighting, while also shortening the crossing distance for pedestrians and slowing down right turning vehicles.

Pedestrian islands or refuges are built up areas in the center of the roadway at an intersection or midblock. Pedestrian refuges provide important safety areas, especially on streets of 60 feet or greater, for people to wait if they can't make it across the street in one signal. These refuges also force left turning vehicles to make 90-degree turns at slower speeds, creating better visual communication between motorists and pedestrians in the crosswalk. The NYCDOT recently installed two refuges on West End Avenue at West 61st Street and West 66th Street to mitigate potential conflicts between turning vehicles and pedestrians, previously a serious safety concern at these locations.

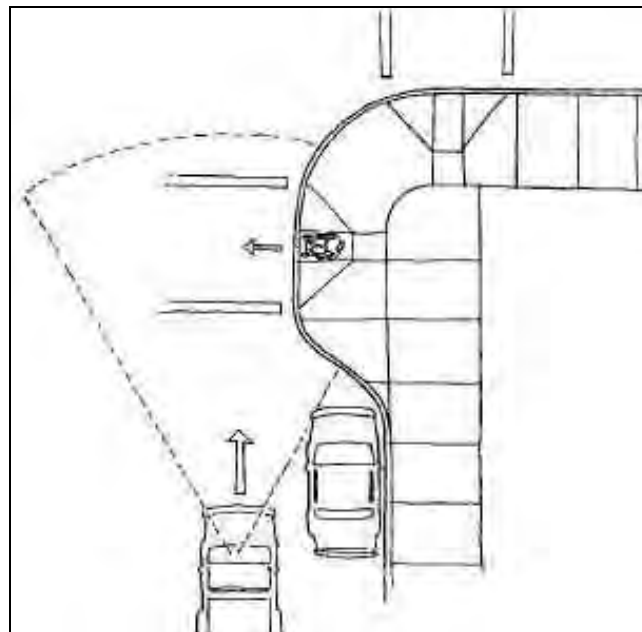
Research:

Curb extensions have been demonstrated to significantly decrease the percentage of pedestrian crashes. The factors contributing to pedestrian safety include: reduced conflicts, reduced vehicle speeds approaching the island (the approach can be designed to force a greater slowing of cars, depending on how dramatic the curvature is), greater attention called to the existence of a pedestrian crossing, opportunities for additional signs in the middle of the road, and reduced exposure time for pedestrians.¹²

¹² Zegeer, C.V., K.S. Opiela, and M.J. Cynecki, *Pedestrian Signalization Alternatives*, Report No. FHWA/RD-83-102, Federal Highway Safety Administration, Washington, DC, 1983.



Curb extensions, like day lighting, are particularly effective in reducing crashes between motorists and children, senior citizens and people in wheelchairs as they are more readily visible to people driving SUVs, trucks and buses.¹³



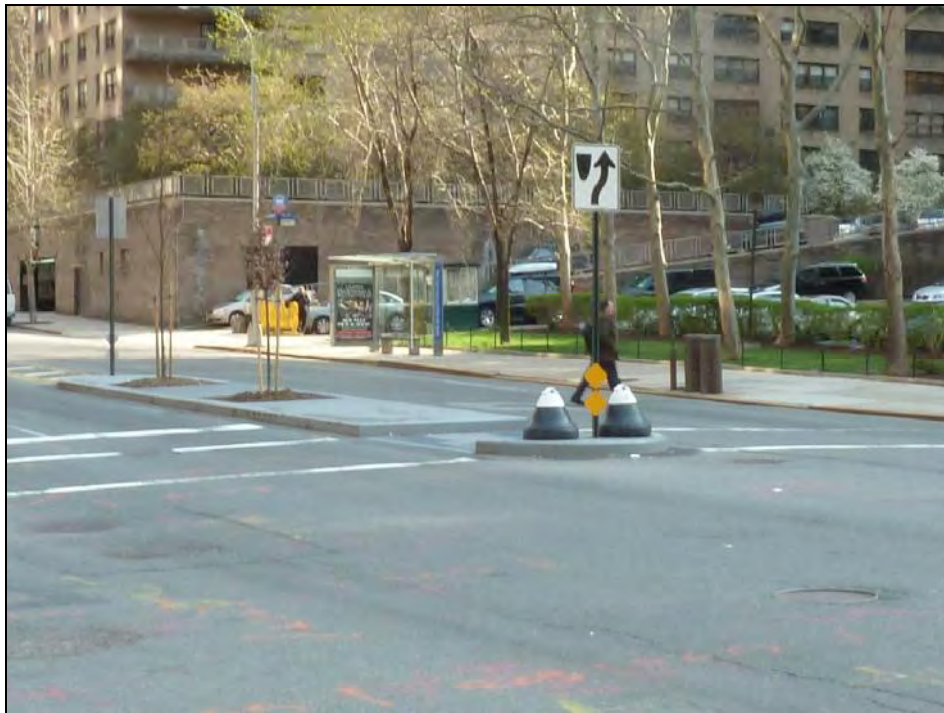
According to the Federal Highway Administration, providing raised medians or pedestrian refuge areas at pedestrian crossings at marked crosswalks has demonstrated a 46% reduction in pedestrian crashes.

¹³ "Designing Sidewalks and Trails for Access, Part 1 of 2: Review of Existing Guidelines and Practices", FHWA, (1999).
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Installing such raised channelization on approaches to multi-lane intersections has been shown to be particularly effective. At unmarked crosswalk locations, medians have demonstrated a 39% reduction in pedestrian crashes. Medians are especially important in areas where pedestrians access a transit stop or other clear origin/destinations across from each other.

The image below shows the pedestrian refuge recently installed on West End Avenue at West 66th Street. This design not only gives pedestrians a safe place to wait while making their crossing, it also provides a planted area, improving the overall look of the street.

Perhaps most importantly, the length of this design alerts motorists traveling both north and south far in advance to pay attention to pedestrians. While no data has been collected on before and after speeds at this intersection, it is likely that speeds have decreased as motorists pay closer attention to the obstacle in the roadway.



The FHWA recommends raised medians (or pedestrian refuge areas) be considered in curbed sections of multi-lane urban roadways, particularly where pedestrians, high traffic volumes (exceeding 12,000 average daily trips per day), and intermediate or high travel speeds occur together. Medians/refuge islands should be at least 4 feet wide, but preferably 8 feet for pedestrian comfort and safety. The medians on West End Avenue are 10 feet. They should also be of adequate length to allow the anticipated number of pedestrians to stand and wait for gaps in traffic before crossing the second half of the street.¹⁴

¹⁴ Zegeer, C.V., J.R. Stewart, H.H. Huang, P.A. Lagerway, J. Feaganes, B.J. Campbell, "Safety Effects of Marked versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines". Federal Highway Administration, McLean, VA. August, 2005.

Community Request #5:

Installation of neck downs/consideration of pedestrian islands.

Recommendation:

Pedestrians crossing West End Avenue would benefit from the installation of pedestrian refuges. The excess width on the east side of the intersection of West End Avenue and West 70th Street could easily accommodate neckdowns, or curb extensions. These two mechanisms reduces conflicts from turning vehicles and places people walking to P.S. 199 at a greater advantage.

Section 2

This section discusses additional opportunities to create a safe school zone at and around P.S. 199/The Jesse Isador Straus School, building on the traffic calming measures described in the first memo.

The traffic calming recommendations for this area are broken down by:

1. Motorist behavior
2. Pedestrian behavior
3. Traffic Operations/Roadway geometry

Motorist Behavior

Field visits to the school during and after school hours confirm the concerns of the PTA of P.S. 199 in their letter to CB7. The graphic below shows the two primary motor vehicle movements that appear to be the most hazardous to pedestrians:

1. Motorists driving above the speed limit **and** heading east toward the school. In addition to driving above the speed limit, motorists heading east tend to swerve from their travel lane on the west side of the intersection to the center of West 70th street, creating a general feeling of confusion at the east side of the intersection.
2. Southbound motorists on West End Avenue making the left turn to West 70th Street make the turn at unsafe speeds, tend not to yield to people in the crosswalk, and make the turn at various angles (rather than making safer 90-degree turns). Left turning trucks were noticeably aggressive in their behavior.



Parking is also a safety issue, as noted in the PTA letter. The parking regulations on West 70th Street east of West End Avenue include: No Parking 8am-6pm Except Sunday, No Standing 7am-4pm School Days and standard alternate side signage. **The No Parking areas are frequently occupied, as seen in this image.**



This picture shows another safety concern with parking, as the black car above speeds to the parking garage located next to the school. Cars illegally parked on the south side of the street make seeing the parking garage and the vehicles entering and exiting the garage difficult.

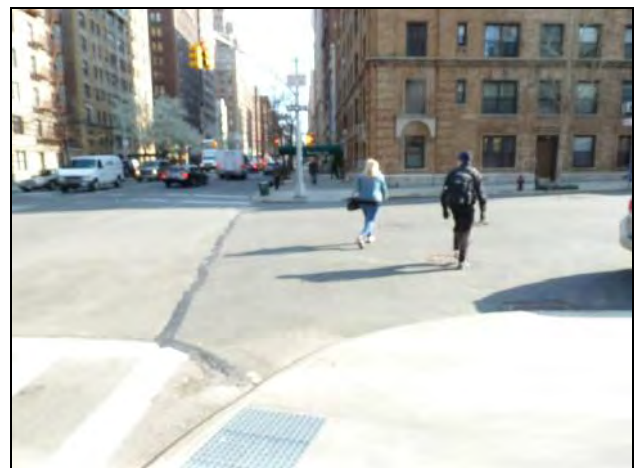


There are no markings alerting pedestrians of vehicles mounting the curb. In addition, as shown in the image below, the structural wall between P.S. 199 and the parking garage completely obstructs the view of pedestrians to motor vehicles leaving the garage, as the motorist must pull half across the sidewalk in order to see pedestrian activity.

Pedestrian Behavior

Pedestrians at and near P.S. 199 tend to cross in the crosswalks of West End Avenue and the west crossing of West 70th Street. One of the most traveled crossings, along the east side of the intersection has no crosswalk marking, thus pedestrians tend to cross the streets when they see gaps in traffic. The image below shows the common practice of looking at potential turning vehicles when crossing West 70th Street.

Another common crossing pattern included pedestrians crossing West 70th Street at angles from the curb. This usually indicates a low perception of risk by pedestrians. Pedestrians behave differently on West End Avenue probably due to the width of the road, the volume of motor vehicles, and the two-way traffic.



Traffic Operations/Roadway Geometry

There are several traffic operations and roadway issues at West End Avenue and West 70th Street contributing to unsafe behavior by motorists. These include:

- Heavy vehicle volumes on West End Avenue cause left turning motorists to watch for gaps in traffic to make the turn, rather than watching pedestrians in the crosswalks.
- The lack of a marked crosswalk on the east side of the intersection reduces yielding to pedestrians and making the crossing this leg of the intersection difficult for people with visual impairments.
- There are no signs or markings indicating motorists are entering a school zone. While the yellow buses in front of the school serve as an indicator of the presence of a school they seem to have no influence on driver's speed on that section of West 70th Street.
- Wide intersections such as West End Avenue at West 70th Street tend to increase motor vehicle speed through the intersection as motorists perceive a greater risk in being struck by another motor vehicle.
- The width of West 70th Street on the east side of the intersection with West End Avenue is excessively wide, accommodating as many as three travel lanes at the approach to the school.

Recommendations: Traffic Calming Measures/Traffic Buffer Zone

Creating a school safety zone around P.S. 199 requires moving all roadway users through the intersection of West End Avenue and West 70th Street more slowly and maintaining these speeds throughout the corridor. As such, treatments at the intersection, throughout West 70th Street and at the entrances to the school and the playground together will create the desired quality of life at this location.

This memo provides additional information on two matters brought to the attention of Manhattan's Community Board 7 (CB7) by the PTA at P.S. 199 for which they seek further ideas from the New York City Department of Transportation (NYCDOT) in making this area safer for all road users. These two measures include:

1. Traffic calming measures on West 70th Street
2. Analysis of protected parking spaces/traffic buffer in front of P.S. 199

These two measures are in addition to the five initial treatments, proposed by the PTA of P.S. 199 to CB7 start the process. These include: a 20 mile per hour zone denoted with signs, installation of red light cameras, day lighting two corners and one mid-block location, adding protected time for pedestrians to cross West End Avenue, and adding extensions to the curb.

Building on these treatments, five additional traffic calming measures are recommended:

Treatment #1:

A raised crosswalk^{15, 16} on the east leg of the intersection.



Proven to: Reduce crashes of turning and through vehicles at signalized intersections.¹⁷

A less expensive alternative: color the crosswalk to alert motorists they are entering a different zone.¹⁸



¹⁵ civilsketchup.blogspot.com

¹⁶ derekneighbors.com

¹⁷ http://www.walkinginfo.org/pedsafe/pedsafe_ca_crashtypes.cfm

¹⁸ Thetravelingwheelchair.com

Treatment #2:

A pedestrian refuge on the east leg of the intersection, with a planted median strip extending down West 70th Street until the roadway narrows near Amsterdam Avenue.¹⁹



Proven to: Reduce crashes of through vehicles at signalized intersections and at mid-block locations.

Treatment #3:

Curb extensions on the east leg of the intersection.²⁰



Proven to: Reduce crashes from left and right turning vehicles, as well as crashes occurring from lack of visibility at crosswalks.

¹⁹ nysdot.gov

²⁰ Photo Credit: Dan Burden

Treatment #4:

Textured pavement in front of the school and the playground.²¹



Proven to: Reduce crashes common with children walking to and from school areas and playground as motorists slow down as they encounter different pavement treatments.

Treatment #5:

Flashing school zone lights at the approach to the intersection from Freedom Place, on the NE and SE corners of the intersection, and at the front of the school.²²



Proven to: Reduce crashes common with children walking to and from school areas and playground.

As to issue #2, CB 7 member Mark Darin proposed “to move the parking between the front of P.S. 199 and West End Avenue away from the south curb and instead have floating parking.” Floating parking refers to a design where parking is removed from the curb side and “floats” in what was formally a travel

²¹ Streetprint.com

²² inetgiant.com

lane. From a safety perspective, the traffic calming measures described above are preferable to floating parking at this location.

