CITY OF MANHATTAN BEACH
DEPARTMENT OF COMMUNITY DEVELOPMENT

TO: Parking and Public Improvements Commission

FROM: Richard Thompson, Director of Community Development
Nhung Madrid, Senior Management Analyst
Erik Zandvliet, Traffic Engineer

DATE: April 24, 2014

SUBJECT: Consider Pedestrian Crossing and Speed Reduction Measures at Ardmore Avenue and Flournoy Road (Continued from February 27, 2014)

RECOMMENDATION:

Staff recommends that the Parking and Public Improvements Commission recommend the following:

1. Installation of an electronic speed awareness sign in the eastbound and/or westbound direction on Ardmore Avenue near Flournoy Road, and
2. Installation of pedestrian crossing enhancements on the east leg of Ardmore Avenue at Flournoy Road subject to the final adopted Mobility Plan Update and prioritization of other active transportation projects.

BACKGROUND:

On December 19, 2013, the City received a petition from Ms. Amy Brantly, a local resident, to install a crosswalk and stop signs in all directions at the intersection of Ardmore Avenue and Flournoy Road (Exhibit 1). The petition states that a crosswalk is needed for pedestrians to cross Ardmore Avenue and a stop sign is needed to control traffic speed and for cars to stop for pedestrians. In January 2014, the Traffic Engineer evaluated Ms. Brantly's request and recommended no change to the intersection at this time, based on low side street volumes, sufficient sight distance, and absence of an accessible path at the intersection.

On February 27, 2014, the Parking and Public Improvements Commission (Commission) reviewed Ms. Brantly's request and discussed the Traffic Engineer's findings. After hearing public testimony from Ms. Brantly, her two sons and two other residents, the Commission voted unanimously to continue the item, directed staff to take pedestrian counts, to evaluate possible enhancements of Veterans Parkway pathway connection, and to explore possible speed reduction measures. This report summarizes this information and provides additional traffic engineering analysis.

DISCUSSION:

The intersection of Ardmore Avenue at Flournoy Avenue is located in a residential area along Veterans Parkway east of Sepulveda Boulevard (Exhibit 2). Flournoy Road is a 30-feet wide local residential street that forms the south leg of the intersection and terminates at Ardmore Avenue. Flournoy Road is stopped at Ardmore Avenue. Ardmore Avenue is a 32-feet wide

residential collector street that carries approximately 4,300 vehicles per day and has a speed limit of 35 mph. Ardmore Avenue is stopped at 19th Street to the west and Pacific Avenue to the east. Ardmore Avenue is improved with curbs on both sides and sidewalks on the south side only. Flournoy Road is improved with curbs, gutters and narrow sidewalks on both sides. Curb parking is allowed on the south side of Ardmore Avenue and both sides of Flournoy Road. Curb parking demand is generally light during the day to moderate at night. Ardmore Avenue is relatively straight in this segment with sufficient sight distance from the stop sign on Flournoy Road. There is a walkway and stairs on the north side of Ardmore Avenue for access to Veterans Parkway; however, it is not ADA compliant. Ardmore Avenue is posted with pedestrian warning signs in both directions at the intersection for greater driver awareness of possible pedestrians.

In 2005, the City installed high visibility pedestrian warning signs at the intersection to raise driver awareness of possible pedestrians along this portion of Ardmore Avenue. The sign in the eastbound direction is partly obscured by existing trees, while the sign in the westbound direction is clearly visible to approaching motorists.

Field Observations

Field observations were made on typical days during peak and non-peak periods. Field observations confirm low traffic volumes on Flournoy Road and other physical characteristics at the intersection as noted above. Proper right-of-way is assigned by stop signs on the northbound (terminating) approach. There is adequate sight distance for motorists stopped on Flournoy Road looking east and west (Exhibit 3). However, a bush overhanging the sidewalk on the southwest corner should be removed for greater sight distance (Exhibit 2). The adjacent resident will be informed to trim the bush behind the sidewalk. Speeds on Ardmore Avenue are higher than local residential streets, but are appropriate for its functional classification as a residential collector street. Pedestrians have good sight distance at the corner of approaching traffic, but vegetation partly obstructs the view of oncoming cars for pedestrians on the north side of Ardmore Avenue at the path connection to Veterans Parkway.

Pedestrian Counts

A pedestrian count was conducted on April 10, 2014 between 7am and 9am, and between 2:30pm and 7:30pm. A summary is provided below:

TIME	PEDESTRIAN VOLUME		
	EAST LEG (Ardmore Ave.)	WEST LEG (Ardmore Ave.)	SOUTH LEG (Flournoy Rd.)
7-8am	8	0	1
8-9am	4	1	0
2:30-3:30pm	0	0	1
3:30-4:30pm	1	1	2
4:30-5:30pm	1	0	4
5:30-6:30pm	1	1	0
6:30-7:30pm	1	0	1
Total	16	3	9

It should be noted that the study was conducted during spring break for Manhattan Beach Unified School District, but school was in session for American Martyrs School, located to the south of the intersection. The pedestrian study shows that the existing pedestrian volumes are low, and would not meet standard State guidelines for the installation of pedestrian traffic control devices. However, as part of the City's Mobility Plan Update, certain pedestrian enhancements could be considered, as discussed in detail below.

Collision History

The traffic collision history between January 1, 2005 and December 31, 2011 was analyzed for both intersections. According to City records, there have been no collisions reported near the intersection during this seven (7) year period.

Multi-way Stop Signs

The State of California has established guidelines for the installation of stop signs. These criteria have been widely accepted and are used by the City of Manhattan Beach. Multi-way or all-way stop controls are generally recommended when one or more of the State criteria are satisfied and indicate the existing traffic control devices are not sufficient to assign proper right-of-way or cannot be remedied through other means.

A stop sign warrant checklist was completed that indicates that multi-way stop signs are NOT warranted at this intersection (Exhibit 4). This intersection has sufficient right-of-way controls, does not meet minimum traffic volumes and has no collision history. Moreover, the sight distance is sufficient for both drivers and pedestrians to determine when to enter or cross the street. A stop sign at an intersection with low side street traffic volumes often causes unnecessary delay and noise, increased rear-end collision potential and disregard for stop signs on other streets at locations where there is no apparent reason to stop. An unwarranted stop sign would likely be ignored by many drivers, which would actually decrease pedestrian safety. Corner sight visibility is sufficient, so stop signs would not be necessary for visibility reasons.

A stop sign would not be expected to reduce vehicle speeds on Ardmore Avenue. In fact, additional stop signs would significantly increase delay to motorists along Ardmore Avenue, causing some drivers to accelerate faster between stops to make up for lost time. A stop sign on Ardmore Avenue would also be expected to slightly increase traffic volume on Flournoy Road because the stops would make turning movements easier.

Marked Crosswalks

The California Vehicle Code Section 275 defines a crosswalk as:

1. That portion of a roadway included within the prolongation or connection of the boundary lines of sidewalks at (an) intersection where the intersecting roadways meet at approximately right angles, except the prolongation of such lines from an alley across a street.
2. Any portion of a roadway distinctly indicated for pedestrian crossing by lines or other markings on the surface.

Notwithstanding the foregoing provisions of this section, there shall not be a crosswalk where local authorities have placed signs indicating no crossing.

The primary purpose of a painted crosswalk is to encourage pedestrians to cross at the optimum location by providing positive guidance and control and/or where a recommended crossing may not be obvious to the pedestrian.

Pedestrians are generally encouraged to enter and exit Veterans Parkway at designated street crossings wherever possible since drivers are more aware of pedestrians at those locations, and there are connecting sidewalks. While it is legal to cross Ardmore Avenue near Flournoy Road pursuant to the Vehicle Code, the optimum crossing is at Pacific Avenue to the east or 19th Street to the west. As a general rule, the number of crosswalks along Ardmore Avenue should be limited in order to direct pedestrians to key crossing points where drivers have a higher expectation of pedestrians. It is also important to place crosswalks along the safest pedestrian paths. For example, there are no uncontrolled marked crosswalks on Valley Drive or Ardmore Avenue between Sepulveda Boulevard and 15th Street except at 17th Street across from Joslyn Center, where sight distance is constrained due to the road curvature and pedestrian volumes are much higher.

Numerous crosswalk studies have found that painted crosswalks are less safe than unmarked crosswalks at uncontrolled locations. This is because pedestrians tend to be bolder and less cautious when crossing between two crosswalk lines, while the driver's perspective of those same lines is very faint. Pedestrians use more caution and are more alert when entering a street at an unmarked crosswalk. Therefore, painted crosswalks across Ardmore Avenue at Flournoy Road would not be safer than allowing pedestrians to cross the street without markings.

Pedestrian Crossing Treatments

The Draft Mobility Plan update includes a pedestrian enhancement toolbox and policy to help determine appropriate measures at crossings throughout the City (Exhibit 5). The Traffic Engineer evaluated this location against the draft policy for uncontrolled crossing locations as follows:

A. Is the location
    a. Near a pedestrian generator? **YES**
    b. Or have 20+ pedestrians crossing in 1 hour? **NO**
    c. Or have 60+ pedestrians crossing in 4 hours? **NO**
B. Is the location greater than 300 feet from the nearest crosswalk? **YES**
C. Are pedestrians visible from 250 feet away? **NO**

Since the pedestrians are not visible from 250 feet away in either direction, the draft guidelines do NOT recommend marked crosswalks, and pedestrians should be redirected to the closest marked crossing, because drivers might not have sufficient sight distance to see crossing pedestrians. However, if the sight distance was increased by removing vegetation along the north side of Ardmore Avenue and prohibiting parking on the south side near the intersection, additional crossing treatments could be considered.

The Traffic Engineer reviewed the potential crossing treatments in the toolbox, and believes the most appropriate measures would be a combination of walking path widening, high-visibility

crosswalk with signs, advanced warning signs, and a curb extension on the south side of Ardmore Avenue. The curb extension would meet the guideline at this location based on the existing speed limit of 35 mph and would act as a traffic calming feature. A conceptual sketch is attached to this report (Exhibit 6). Signalization or flashing beacons would not be justified due to the low existing pedestrian volumes.

Any recommended crossing treatments should be constructed in accordance with the goals and policies of the Mobility Plan, which have not yet been adopted. Also, such improvements should be consistent with future crossing treatments at other planned crossing locations along Ardmore Avenue and Valley Drive. This location should be prioritized in conjunction with other citywide pedestrian projects in order to maximize the benefit of limited funding in achieving the City's active transportation goals. This means that other locations may have a higher priority for funding and/or implementation than proposed crossing treatments at Ardmore Avenue and Flournoy Avenue.

Traffic Calming Measures

Ardmore Avenue between 19th Street and Pacific Avenue is currently posted with a 35 mph speed limit. The latest speed survey was conducted on January 31, 2013. A summary is provided below:

Daily Traffic Volume	4,318 vehicles per day
50th Percentile Speed	35 miles per hour
85th Percentile Speed	40 miles per hour
10-MPH Pace Speed	31-40 miles per hour

The prevailing speed on Ardmore Avenue is consistent with its classification as a residential collector street, but is higher than expected for a street with fronting residential homes. This speed is partly due to the limited number of intersections and downhill slopes in this street segment. By contrast, the adjacent street segments south of 19th Street and east of Pacific Avenue are posted at 30 mph. Based on these conditions, traffic calming measures would be appropriate on Ardmore Avenue. The Traffic Engineer believes the most appropriate traffic calming measure would be the installation of a temporary or permanent speed awareness sign in the eastbound and/or westbound direction.

CONCLUSION:

Based on minimum State guidelines and engineering judgment, multi-way stop signs are not justified in all directions at the intersection of Ardmore Avenue and Flournoy Road at this time. However, it is recommended that the Commission pass a motion to recommend the following:

1. Installation of an electronic speed awareness sign in the eastbound and/or westbound direction on Ardmore Avenue near Flournoy Road, and
2. Installation of pedestrian crossing enhancements on the east leg of Ardmore Avenue at Flournoy Road subject to the final adopted Mobility Plan Update and prioritization of other active transportation projects.

Exhibits:
1. Ms. Brantly Request
2. Site Photos
3. Aerial Photo and Location Map
4. Stop Sign Warrant Checklist
5. Draft Mobility Plan Pedestrian Crossing Enhancements Policy
6. Pedestrian Crossing Conceptual Sketch

EHZ
T:\PPIC\PPIC-ardmore at flournoy 4-24-2014.doc

EXHIBIT 1
PPIC Mtg 4/24/14

PARKING AND PUBLIC IMPROVEMENTS APPEAL APPLICATION

City Hall | 1400 Highland Avenue | Manhattan Beach, CA 90266-4795
Telephone (310) 802-5000 | FAX (310) 802-5501 | TDD (310) 546-3501

ENTIRE "BLOCKED" AREA MUST BE FILLED OUT

Resident/Applicant: Amy Brantly   Date: 1/31/2014

MAILING Address: 2212 N. Ardmore Ave.   Phone No. (310) 621-6962

City: Manhattan Beach   State: CA   ZIP Code: 90266

Appeal Request: ☐ Red Curb ☐ Parking ☒ Traffic Signs/Marks ☐ Right of Way

☐ Other: ____________________

Address/Intersection: Flournoy /Ardmore

Description: ____________________

Petition: ____________________

Signature: Amy Brantly

Cashier $ 500 ________ Date 1/31/14 Initials ________

TRAN Code #4502 Amount Rec'd. Receipt #

Fee Schedule Permit Appeal $500.00

Legal Description ____________________

Map Book __________ Page __________ APN __________

Comments/Notes ____________________

Approved/Denied ____________________ Date __________

Community Development Department

PAID
01-01332-02
01-31-2014
02/07/14 NM

City of Manhattan Beach
Parking and Public Improvements Commission
Petition Form

We, the undersigned residents, do hereby petition the Parking and Public Improvements Commission for a crosswalk and stop sign at Flournoy and Ardmore Ave. A crosswalk is needed so that pedestrians can safely cross Ardmore to the Greenbelt. A stop sign is needed to control traffic speed and to ensure cars stop for pedestrians.

We attest that each undersigned person is 18 years or older and is a responsible owner or resident affected by the petition.

The designated contact person(s) are:

CONTACT PERSON: Amy Brantly DAYTIME PHONE NO: 310-1021-6962

ALTERNATE CONTACT: Emmee Sarmiento DAYTIME PHONE NO: 310-701-3566

NOTE: Only one responsible signature per residence is required.

	SIGNATURE	PRINT NAME	PRINT STREET ADDRESS	PRINT DATE
1.		Michael O'Connell	2104 Flournoy Rd.	1/25/14
2.		Kelley Meidroth	2000 Flournoy Rd	1/25/14
3.		Jonathan Longley	1906 Flournoy	1/25/14
4.		Anthony Tesoriello	1907 Agnes Rd	1/25/14
5.		Laurie Byrnes	2001 Agnes Rd	1/25/14
6.		DUNCAN KIMBELL	2205 AGNES	1/25/14
7.		Amy Brantly	2212 N. Ardmore	1/25/14
8.		Jan Wendlandt	2326 N Ardmore	1/25/14
9.		Tim Burke	2136 N Ardmore	1/25/14
10.		David Brantly	2212 N Ardmore	1/26/14

I declare under penalty of perjury, pursuant to the laws of the State of California, that the foregoing is true and correct.

Amy Brantly (Signed by Contact) Executed on 1/31/14 (Date) in Manhattan Beach, California.

NOTE: Only one responsible signature per residence is required.

	SIGNATURE	PRINT NAME	PRINT STREET ADDRESS	PRINT DATE
11.		Emmee Sarmiento	2216 N. Ardmore Ave	1/27/14
12.		Lisa Kunesh	1825 Flournoy Rd.	1/27/14
13.		DAVE NICHOLS	1817 FLOURNOY RD	1/27/14
14.		Robert Nicholson	685 18th Street	1/27/14
15.		Shannon Nicholson	685 18th Street	1/27/14
16.		Jane Stavropoulos	680 18th Street	1/27/14
17.		William Stavropoulos	680 18th Street	1/27/14
18.		Whitney Sargent	645 18th Street	1/27/14
19.		Monica Lucero	2107 Flournoy Rd.	1/27/14
20.		Tracey Dale	2418 N. Ardmore Ave.	1/27/14
21.		[illegible]	2418 N. Ardmore	1/27/14
22.		Finley Taylor	2204 N. Ardmore	1/28/14
23.		Leah Nichols	1817 Flournoy Rd.	1/28/14
24.		Kim Petrie	1814 Flournoy Rd.	1/28/14
25.		Debra Frank	1817 Agnes Rd.	1/28/14
26.		Michele Gilman	2216 N. Ardmore	1/28/14
27.		BEN FERGUSON	2216 N. ARDMORE	1/28/14
28.		SYMPHANIE ROSARIO	2216 N. ARDMORE	1/31/14
29.				
30.				
31.				
32.				
33.				
34.				
35.				

I declare under penalty of perjury, pursuant to the laws of the State of California, that the foregoing is true and correct.

Amy Brantley — Executed on 1/31/14 in Manhattan Beach, California.

Signed by contact — Date

February 19, 2014

APPEAL OF CLOSED REQUEST FOR STOP SIGNS AND CROSSWALK AT FLOURNOY RD/ARDMORE AVE.

The residents surrounding the intersection of Flournoy Road and North Ardmore Avenue overwhelmingly support installing stop signs in that intersection as well as a crosswalk leading to the staircase to the Greenbelt. Installation of stop signs and a crosswalk are necessary as safety measures to protect pedestrians using the staircase access to the Greenbelt. This section of Ardmore Avenue has become a speedway. Cars speed down this stretch at 40 – 45 mph. We believe that installing stop signs will serve as an important safety measure and ensure that our children, elderly and adults can cross the street safely on their way to American Martyrs School, Live Oak Park, the Dog Park, the baseball fields and Downtown.

As I am sure most of the Council knows, Ardmore is a two lane residential street across from the Greenbelt. Stop signs currently exist at 19th Street/North Ardmore and at Pacific Avenue/North Ardmore. *See* Exhibit A (Map showing location of current stop signs). In between those two stop signs is a stretch of Ardmore that is .40 miles long. *See* Exhibit B (Engineering and Traffic Survey for the City of Manhattan Beach, dated April 2013 at Appendix A). In the middle of that stretch of North Ardmore is Flournoy Road and the staircase giving access to the Greenbelt (referred to herein as "the crossing"). *See* Exhibit C (Map showing proposed location of new stop signs). This is a quiet residential neighborhood in the tree section. Whether vehicles are coming from the west or east toward the crossing, they travel at a downhill grade allowing the vehicles to pick up speed. *See* Exhibits E & F (Pictures of street from East and West). While the City Traffic Engineer focused on visibility in denying the application for stop signs, he did not address the speeding that occurs on this road. *See* Exhibit D (Denial of Request #37254).

February 19, 2014

SPEED AND SAFETY

The speed limit on Ardmore was recently raised from 30 mph to 35 mph.[1] This was a shock to the residents as speeding is a rampant problem. This is apparently a result of the City Traffic Engineer's report showing that 85% of vehicles travel down this stretch of Ardmore at speeds of 40 mph. Exhibit B at p. 8 & Appendix A. The report also shows that approximately 4,318 cars travel down this stretch of Ardmore on a daily basis. Exhibit B at Appendix A. The City's report unambiguously proves that speeding is a real problem on this stretch of road and that a great number of vehicles speed down this road on a daily basis.

Ardmore is a wide street measuring 32 feet wide. Exhibit B at Appendix A & Exhibit E (Picture of street width). In order to cross the street, pedestrians must use extreme caution and often have to sprint across the road. Indeed, one resident who signed the petition said that she cannot use the crossing, which is close to her residence, because she worries that her small dog, cannot get across the street fast enough to avoid them being hit by a vehicle. So, she walks up to the Pacific intersection where there is a stop sign and a crosswalk. It is also unnerving for parents with small children, who often trip in the street or walk slowly, to make sure that their children have enough time to safely cross the road without being hit.

This is not a new concern for residents. Indeed, in 2005, similar concerns were brought to the attention of the City Council resulting in the posting of warning signs to pedestrians to "yield to traffic." *See* Exhibits H (Prior request for crosswalk and complaints re speeding and safety) and Exhibit G (Picture of sign). In 2005, Ms. Fran Lauson brought a petition to City

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[1] It is worth noting that 35 mph is the speed limit on several 4-lane streets, including Sepulveda, stretches of Marine Avenue and Rosecrans. Those areas of Manhattan Beach are much busier and are very different from Ardmore.

Council for a crosswalk at this intersection because she "walks her children to school daily and uses the stairway as it affords a direct route; however, the lack of a crosswalk at this location makes for a frightening and dangerous situation. Vehicles speed along this stretch of road and pedestrians have to wave at drivers to make their presence known." Exhibit H at p. 2. Mr. Warren Mori also commented that "more people would use the stairway if a crosswalk was marked." *Id.* Ms. Pogreda "shared that she was almost hit many times." *Id.*

The downhill grade of the road increases the speed with which the vehicles drive. *See* Exhibits E & F (Pictures of street from both East and West). While the City Council and City Traffic Engineer voiced concerns over installing a crosswalk alone, installing a crosswalk **and** stop signs would control the speed of vehicles and restrict vehicles from reaching 40-45 mph. Installing stop signs would assist in enforcing the speed limit, something that is sorely lacking (as evidenced by the report showing that 80% of the drivers break the law when driving down this stretch). Exhibit B at p. 8 & Appendix A.

Additionally, there is room for a stop sign between the existing stop signs. Exhibit A. (Picture of Map). The crossing is the only access to the Greenbelt between the existing stop signs and crosswalks. Most other access points already have stop signs and or crosswalks.

CONCLUSION

Appellants respectfully request that the City Council approve installation of stop signs at North Ardmore Avenue and Flournoy Road and a crosswalk to the Greenbelt. We are all very fortunate that nobody has been killed or severely injured at this intersection, but it is only a matter of time before a tragic accident occurs. City Council has the power to prevent a tragedy, protect its citizens and stop cars from reaching speeds of 40 – 45 mph in a residential area.

EXHIBIT A

Image 2: Nearest Stop Signs

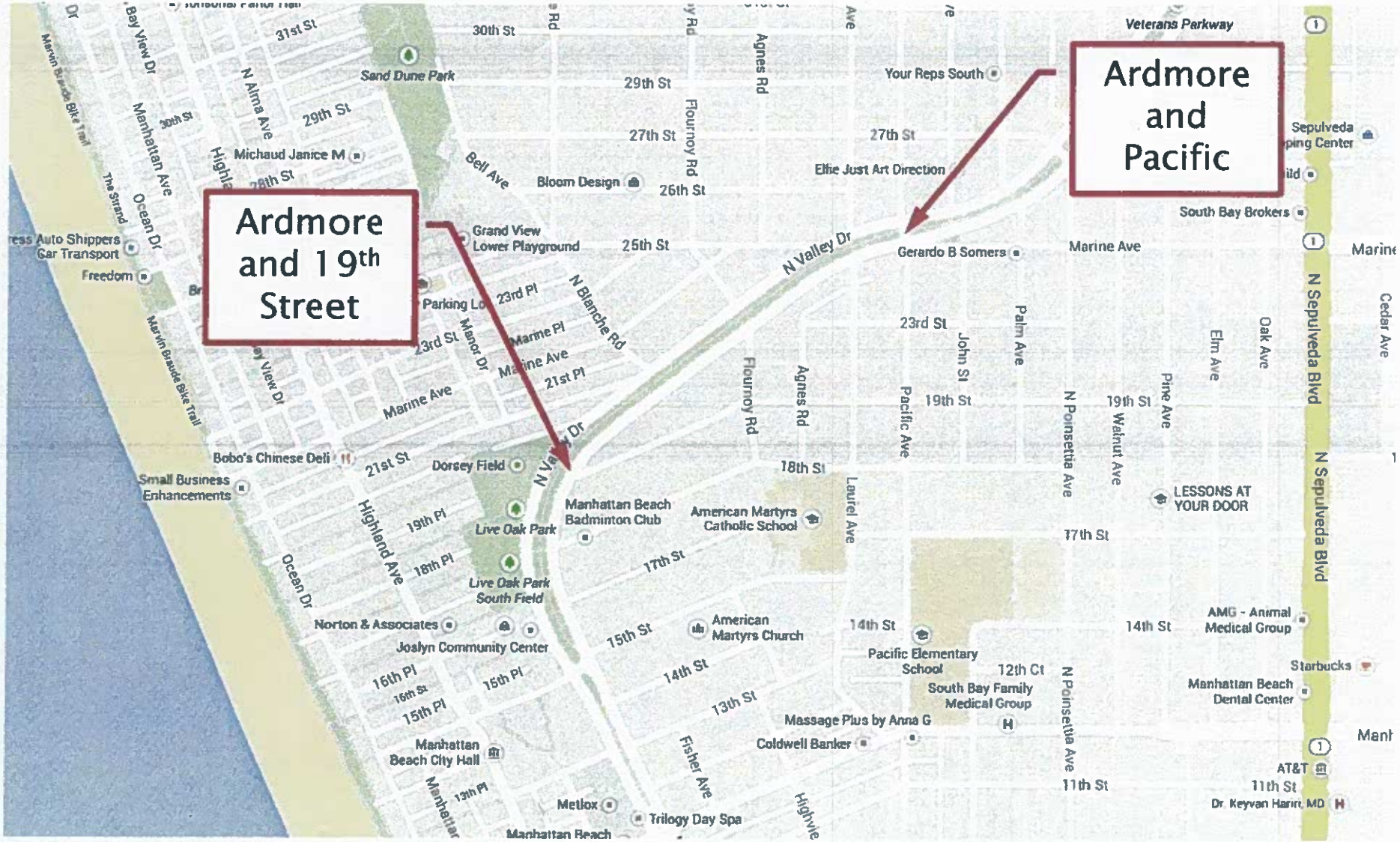

EXHIBIT B

ENGINEERING AND TRAFFIC SURVEY
FOR THE
CITY OF MANHATTAN BEACH

APRIL 2013

WILLDAN Engineering | extending your reach

April 1, 2013

Mr. Richard Thompson.
Director of Community Development
City of Manhattan Beach
1400 Highland Avenue
Manhattan Beach, CA 90266

Subject: 2012 Engineering and Traffic Survey

Dear Mr. Thompson:

As requested, Willdan has completed an Engineering and Traffic Survey to justify and update the posted speed limits along 7 street segments in the City of Manhattan Beach. These segments were last surveyed in 2006, and require an update to comply with the 7-year limitation set forth in the California Vehicle Code (CVC).

We are pleased to submit the enclosed Report that describes the E&T survey procedures and contains recommendations for posted speed limits on the City's arterial and collector street system. A summary of these recommendations is included in the Analysis. Supporting documentation for each speed zone recommendation is provided in the Appendices.

The Report was conducted in accordance with applicable provisions of the CVC, following procedures outlined in the California Manual on Uniform Traffic Control Devices (California MUTCD) dated January 2012, and as required by Section 627 of the California Vehicle Code. The Report is intended to satisfy the requirements of Section 40802 of the CVC to enable the continued use of radar for traffic speed enforcement.

We appreciate the opportunity to serve the City of Manhattan Beach and the assistance and cooperation afforded to us during the course of this study.

Very truly yours,

WILLDAN

Erik Zandvliet, T.E.
City Traffic Engineer

Enclosure

Table 2
Summary of Recommendations

No.	Street	From	To	Posted Speed Limit	Critical Speed	Recommended Speed Limit	Comments
1	Ardmore Ave.	19th Street	Pacific Ave.	30	40	35	Option 2 - 5 mph Below
2	Highland Ave.	Homer St.	9th Street	25	30	25	Option 2 - 5 mph Below
3	Marine Ave.	Ardmore Ave.	Sepulveda Blvd.	25	30	25	Option 2 - 5 mph Below
4	Marine Ave.	Sepulveda Blvd.	Magnolia Ave.	25	40	35	Option 2 - 5 mph Below
5	Pacific Ave.	Manhattan Beach Bl.	17th St.	25	29	25	Option 2 - 5 mph Below
6	Pacific Ave.	17th St.	Marine Ave.	25	32	25	*School Peds, Heavy Parking, Bike Route, Adjacent Speed
7	2nd Street	Sepulveda Blvd.	Peck Ave.	25	33	25	*School Peds, Heavy Parking, Blind Driveways, Adjacent Speed

* See "Segments with Special Conditions" Section for Comments
** = 25 mph when children are present

APPENDIX A
Street Segment Data

CITY OF MANHATTAN BEACH

2013 ENGINEERING AND TRAFFIC SURVEY

STREET ARDMORE AVENUE **SEGMENT NO.** 1
FROM 19TH STREET **TO** PACIFIC AVENUE

1 - ROADWAY CONDITIONS	
Roadway Factors	
Segment Length	0.40 miles
Roadway Width	32 feet
Number of Lanes	2
Center Median Type	Centerline stripe
Traffic Control	Stop at Pacific Ave., 19th St., signal at 15th
Horizontal Alignment	Curve between 17th St. and 19th St. straight-19th St. to Pacific Ave.
Vertical Alignment	Mostly flat
Visibility	Good, except at intersections in curve at 18 and 19th
Lighting	Yes, South Side
Crosswalks?	15th St., 7th St., 16th St., 19th St., Pacific Ave.
Shoulder/Roadside Factors	
Adjacent Land Use	Residential
On-Street Parking	South side only
Bike Lanes?	Bike Route, edgeline marking along SB side
Driveways?	South side only
Sidewalks?	South side only

2 - TRAFFIC VOLUMES	
Average Daily Traffic	4,318 vehicles per day
Traffic Volume Count Date	2/12/2013
Pedestrian Traffic	Moderate
Truck Traffic	None

3 - COLLISION HISTORY	
Number of Years Considered	4.00 years
Expected Annual Collision Rate	2.80 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

4 - SPEED ZONING ANALYSIS	
Speed Survey Day / Date / Time	Thurs 1/31/2013 11:42 AM
Number of Survey Samples	109 vehicles
50th Percentile Speed	35 mph
85th Percentile Speed	40 mph
10-mph Pace	31-40 mph
% of Vehicles In Pace	82%
% of Vehicles Over/Under Pace	18%
Posted Speed Limit	30 mph
Speed Limit Justification	5 mph rounded down per CVC 21400(b) - Option 2
Recommended Speed Limit	35 mph

CERTIFICATION:

I, Erik Zandvliet, do hereby certify that this Engineering and Traffic Survey for the City of Manhattan Beach was performed under my supervision. I certify that I am both experienced in performing surveys of this type and am duly registered in the State of California as a professional engineer. The survey has been conducted in strict compliance with guidelines contained in the most current versions of the California Vehicle Code (CVC) and the California Department of Transportation Manual on Uniform Traffic Control Devices (MUTCD). Data contained in this report represents a true and accurate description of traffic conditions existing on Manhattan Beach streets.

Erik Zandvliet — TE #1775 State Registration No. — 4/16/2013 Date

EXHIBIT C

Image 1: Proposed location

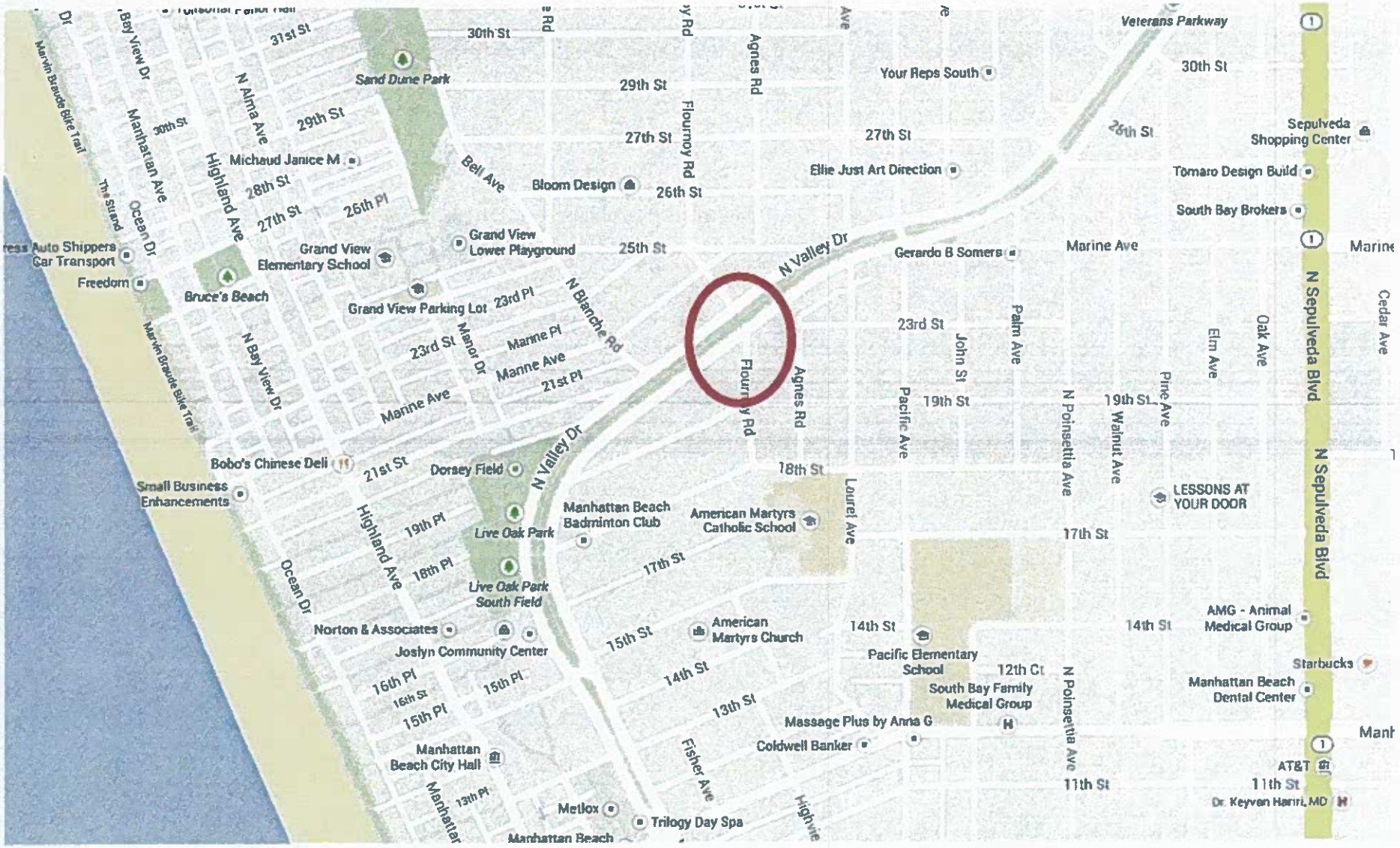

EXHIBIT D

Amy Brantly

From: City of Manhattan Beach <manhattan@user.govoutreach.com>
Sent: Wednesday, January 15, 2014 10:07 AM
To: brantly@glwllp.com
Subject: Manhattan Beach: Closed Request # 37254 [3133336237386634]

---If replying by email, enter your reply above this line--- (Please allow up to 15 minutes to update your request record when replying by email)

Dear Amy,

Request # 37254 has been resolved with the resolution:
Good Morning Ms. Brantly,

Thank you for contacting the City with your traffic concerns. The Traffic Engineer has completed his review of your request for a Stop sign and/or crosswalks on Ardmore Avenue at Flournoy Road and this is in response to requests #37254 and #37255. The Traffic Engineer found that the intersection does not meet the minimum warrants for stop signs in all directions. Proper right-of-way control is provided by the existing stop sign on Flournoy Road in the northbound directions. There is no collision history and volume is too low on Flournoy Road to justify stopping both streets. Drivers on Ardmore Avenue would soon realize there are not enough cars on Flournoy Road to stop and will begin to run through the stop sign. There is adequate sight distance for drivers waiting at the stops to see approaching traffic and pedestrians and find sufficient gaps to enter Ardmore Avenue.

With regard to a crosswalk at the same location crossing Ardmore Avenue, studies have also shown that painting an uncontrolled crosswalk will NOT reduce the potential for collisions. It is better for pedestrians to be extra cautious in crossing the street without a crosswalk than to assume drivers will stop, when compliance at marked crosswalks is very low. There are existing pedestrian warning signs on Ardmore Avenue in both directions to help raise driver's awareness of possible pedestrians. The Traffic Engineer does not recommend any changes at this time.

This location and other crossing points along the Veteran's Parkway will be reviewed pursuant to the Mobility Plan and related Pedestrian Enhancements Policy for appropriate crossing treatments.

Thank you,
Nhung Madrid

This is in reference to the Service on Traffic Control Measures submitted on 12/19/2013 10:38 AM
Location: 2212 N Ardmore Ave
Description: I'm writing to request that a stop sign be installed at around Flournoy and Ardmore Avenues (leading to the stairs to the greenbelt). A crosswalk is needed because at that intersection there are stairs leading to the greenbelt but there is no crosswalk or stop sign. Cars travel down this road going 40 - 45 mph and it is extremely dangerous to cross there. Many children live on Ardmore, including my three children, and they should have safe access to the Greenbelt to walk the dog or walk to Live Oak Park. Also, at the base of the stairs leading to the Greenbelt, there is virtually no shoulder and the cars come flying down the street with little visibility (if you are walking down the stairs to cross Ardmore). You have to lean over the curb to look for cars and if you take one or two feet off the curb and a car speeds by, someone could get killed. This is a residential area and the trail is widely used by the neighborhood. Many children

live in the area as well as many elderly people. Compounding the danger, the city just raised the speed limit in this stretch to 35 mph. People already speed down this thoroughfare with no regard for the residents who live on the street. Indeed, I have been flipped off and honked at for having the nerve to slow down to pull into my driveway. I implore the city to investigate this problem and protect its citizens.

We are committed to providing you the best service possible. Please take a moment to fill out an online survey on how this request was handled. Fill out the online survey by going to:
<http://user.GovOutreach.com/manhattan/survey.php?cid=1568342&access=3133336237386634>

Reply to this email to send a response or you can view this request online at:
<http://user.GovOutreach.com/manhattan/case.php?id=1568342&access=3133336237386634>

Thank you,
Webmaster
P: (310)802-5000
E: webmaster@citymb.info
City of Manhattan Beach, CA

EXHIBIT E

Image 4: Crossing (Facing West)

EXHIBIT F

Image 5: Crossing (Facing East)

EXHIBIT G

Image 7: Crossing (From Trail)

EXHIBIT H

Agenda Item #:_____

Staff Report
City of Manhattan Beach

TO: Honorable Mayor Fahey and Members of the City Council

THROUGH: Geoff Dolan, City Manager

FROM: Richard Thompson, Director of Community Development
Rob Osborne, Management Analyst

DATE: October 18, 2005

SUBJECT: Uphold the Parking and Public Improvements Commission Recommendation to Implement Various Pedestrian Safety Measures at the Flournoy Road/Ardmore Avenue and Flournoy Road/Valley Drive Intersections

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RECOMMENDATION:
It is recommended that the Council pass a motion to approve the Parking and Public Improvements Commission recommendation to:

- Install pedestrian warning signs on the Parkway side of Ardmore Avenue and Valley Drive at Flournoy Road
- Remove or trim back all view-impacting landscaping
- Modify the stairway access landings to increase safety as necessary
- Install pedestrian caution signs at the stairway access points

FISCAL IMPLICATION:
Installation of the recommended measures would cost approximately $1,000 and could be accomplished through existing Public Works programs and budgets.

BACKGROUND:
The City recently received a petition requesting installation of pedestrian warning signs and/or painted crosswalks at the Flournoy Road/Ardmore Avenue/Valley Drive intersection. The petitioners expressed concern about safety for pedestrians crossing the Veterans Parkway at this location. The request was reviewed by the Parking and Public Improvements Commission at a public meeting on September 22, 2005.

DISCUSSION:
As described in the attached staff report, the Traffic Engineer does not support installing crosswalks at this location. He feels the presence of painted crosswalks might tend to give pedestrians a false sense of security in crossing Valley and Ardmore. He recommended the following to enhance

pedestrian safety in the area:

- Installation of pedestrian warning signs on the Parkway side of Valley and Ardmore in both directions
- Removal of an existing oleander bush and yucca plant east of the Parkway access point on Ardmore to improve visibility of pedestrians

At the Commission meeting public testimony was provided by four residents, three of which felt crosswalks should be installed. The fourth stated a general concern for safety in the area.

The Commission agreed with the Traffic Engineer's findings. They feel painted crosswalks would not necessarily enhance pedestrian safety. They voted (4-1, Osterhout against) to recommend the following:

- Pedestrian warning signs be installed on Valley and Ardmore
- All view-impacting landscaping in the area be trimmed back or removed
- Both stairway access landings be modified to increase safety
- Caution signs be installed at the access points to alert pedestrians

The Traffic Engineer subsequently inspected the entrance landings and does not feel that any significant modifications are necessary.

Meeting notices were sent to the petitioners and to all properties within 300 feet of the subject intersection.

ALTERNATIVES:

1. **APPROVE** the recommendation of the Parking and Public Improvements Commission.
2. **REMOVE** this item from the Consent Calendar and provide staff with direction.

Attachments:
- A. Area map
- B. Excerpt from PPIC minutes of 9/22/05
- C. PPIC report dated 9/22/05, with attachments
- D. Additional letters from residents (not available electronically)
- E. Meeting notice, 10/5/05

Flournoy Road at Valley/Ardmore

~ PPIC Recommended Measures ~

CITY OF MANHATTAN BEACH
PARKING AND PUBLIC IMPROVEMENTS COMMISSION
MINUTES OF REGULAR MEETING
SEPTEMBER 22, 2005

1. Ardmore Avenue/Valley Drive at Flournoy Road - Request for Pedestrian Warning Signs and/or Markings

Traffic Engineer Erik Zandvliet presented the staff report, explaining that the City received a petition requesting new pedestrian warning signs and/or crosswalk markings at the Veteran's Parkway access path on Ardmore Avenue and Valley Drive near Flournoy Road. The petition stated that signs and markings will improve safety.

He reviewed staff's analysis and findings on this request, and stated that based on low pedestrian volumes and potential for pedestrians to use less caution, staff is not recommending painted crosswalks on Valley Drive at Flournoy Road or Ardmore Avenue at Flournoy Road at this time. However, due to reduced sight visibility, staff is recommending removal of the oleander and yucca bushes just east of the access path on Ardmore Avenue near Flournoy Road. A pair of pedestrian warning signs facing opposite directions should also be installed on the Parkway side of Valley Drive and Ardmore Avenue at Flournoy Road near the access stairs.

Traffic Engineer Zandvliet clarified that the pedestrian warning signs will be the yellow diamond shaped signs with the green pedestrian makings and can be installed on the existing pole or near the side of the tree on the east side to alert both west and eastbound traffic.

Commissioner Lang questioned the rational in placing a crosswalk at 18th Street on Ardmore Avenue and not at this location. Traffic Engineer Zandvliet responded that the 18th Street location has a high volume of pedestrian traffic generated from Live Oak Park and the Joslyn Center.

Noting that the placement of the stairway encourages pedestrians to cross, Commissioner Seville-Jones questioned if the City has considered its removal. Traffic Engineer Zandvliet explained that the City Council is against removing the stairway.

Talking of the area's high pedestrian volume, Commissioner Seville-Jones shared that other cities have designated similar areas as pedestrian safety zones. The designation is used as a tool to increase driver awareness that the area carries a high amount of pedestrian activity.

Traffic Engineer Zandvliet acknowledged the idea could be pursued, suggesting sign wording that included "high pedestrian crossing ahead".

Audience Participation

Noting that her husband brought forth this petition, **Fran Lauson, 600 Block of 23rd Street,** voiced her support of crosswalk markings at the Veteran's Parkway access path. She walks her children to school daily and uses the stairway as it affords a direct route; however, the lack of a crosswalk at this location makes for a frightening and dangerous situation. Vehicles speed along this stretch of road and pedestrians have to wave at drivers to make their presence known. Referring to her submitted pictures to the Commission, she also pointed out the small, narrow landing of the stairway which contributes to the dangerous situation, as children run down the steps and are deposited right at the street frontage. Ms. Lauson stated that the City put in the stairway which encourages its use but didn't mark the crosswalk to reach the stairway. She talked of the inconsistencies in crosswalk marking throughout the City, stating that if staff's opposition is based on the potential for pedestrians to use less caution, then all the crosswalks should be removed.

Bob Lauson, 600 Block of 23rd Street, reiterated his wife's comments on the dangerous situation this stairway poses without a crosswalk and asked that the Commission consider their request.

Warren Mori, North Valley Drive, stated that there isn't much pedestrian traffic at this location because there isn't a crosswalk, and that more people would use the stairway if a crosswalk was marked. He questioned staff's position that crosswalks may actually increase pedestrian risk, stating that a recently marked crosswalk on Highland Avenue seems safer, adding that pedestrians have to be cautious regardless.

Judy Pogreda, 900 block of Manhattan Beach Boulevard, shared that she used to frequent this area often as a child and can attest to the dangerous situation it poses for pedestrians as she was almost hit many times.

Discussion

Commissioner Powell spoke of past City Council discussions regarding crosswalks and the false sense of security they may provide to pedestrians. He thought contrary to this belief, but has since seen numerous occasions where drivers disregard a crosswalk and pedestrians enter a crosswalk with the assumption that the driver will automatically stop. Pedestrians tend to be more cautious when there is not a crosswalk. Commissioner Powell stated that he will support the pedestrian warning signs and removal of the bushes and plants, but at this point has mixed feelings on the crosswalk.

Referring to comments made regarding the inconsistencies in crosswalks throughout the City, Commissioner Saunders pointed out that the PPIC can be, and he believes has been, uniform in their decisions regarding crosswalks, and that destination point is a factor in the decision. However, the City Council makes the final decision, which in some cases is not what the Commission recommended. He agrees with the argument that crosswalks can actually make crossing more dangerous, stating he has seen many near misses at the

crosswalk on Highland Avenue at Local Yolk. Commissioner Saunders stated he will support staff's recommendation as they represent a good first step, which can be then be reviewed for effectiveness.

Commissioner Lang relayed that the fundamental issue is speeding and the submitted pictures depict how dangerous this situation is. The City has not been consistent with crosswalks and he would like to see a comprehensive approach and study performed on this issue. He is very concerned that pedestrians will think the crosswalk gives them the right of way and actually make the area more dangerous. Commissioner Lang stated that he is leaning toward moving forward with staff's recommendations, agreeing with Commissioner Saunders that they represent a good first step that can be reviewed.

Commissioner Seville-Jones stated her general agreement with staff's recommendations and asked that the narrow landing of the stairway also be addressed as it deposits pedestrians right at the street. She suggested some type of caution sign at the bottom of the stairway to make the pedestrian more aware. Commissioner Seville-Jones further stated that this area along Valley Drive and Ardmore Avenue has heavy pedestrian traffic and speeding concerns. She would like to discuss the possibility of making this area a designated safety zone whereby traffic fines could be doubled, and education programs promoted to make drivers and pedestrians more aware.

Chairman Osterhout relayed that although he understands the concerns with false sense of security and crosswalks, he believes a crosswalk is warranted at this location. He suggested that some type of cross barrier, post or gate system be installed at the stairway landing to make pedestrians more aware of oncoming traffic. He talked of his trip to the UK where these measures are used as a practical method to direct people. Chairman Osterhout stated his support of cutting back the foliage, but indicated he is not in favor of more signage.

Commissioner Saunders inquired if it would be appropriate to include in the recommendation that all foliage affecting visibilities, including trees, be cut back to maximize visibility.

Management Analyst Osborne responded that any recommendation affecting a tree or trees should be done separately.

Commissioners Lang and Powell noted that they would not support the removal of trees in the recommendation.

Chairman Osterhout stated that he could not support a motion that doesn't include the crosswalk.

Commissioner Seville-Jones talked again on the possibility of a designated safety area, clarifying it is not her intent to have the area's access reconfigured, but to focus on the

speeding and safety issues and how to educate and sensitize the public on being good neighbors.

Commissioner Saunders said that he supports the idea, but questions who would lead such an effort.

Commissioner Lang clarified that his request for a comprehensive study on crosswalks was not to add or take out crosswalks but to gather information on why that are or aren't in certain locations.

Traffic Engineer Zandvliet stated that these more "global" issues should be brought forth for discussion at the City Council's Work Plan and at the Commission's joint meeting with City Council.

Action

A motion was MADE and SECONDED (Saunders/Lang) to approve staff's recommendations to install pedestrian warning signs at the pedestrian access path on the Parkway side of Ardmore Avenue and Valley Drive near Flournoy Road facing both directions, remove the existing oleander bush and yucca plant just east of the Parkway access point on Ardmore Avenue near Flournoy Road. Staff is further directed to include all foliage that needs cuttings back or removal to improve visibility; redesign the stairway landing to make it more safe and place caution signs for pedestrians at both access points.

AYES:	Lang, Powell, Saunders, Seville-Jones
NOES:	Osterhout
ABSENT:	None
ABSTAIN:	None

CITY OF MANHATTAN BEACH
DEPARTMENT OF COMMUNITY DEVELOPMENT

TO: Parking and Public Improvements Commission

FROM: Richard Thompson, Director of Community Development
Robert D. Osborne, Management Analyst

BY: Erik Zandvliet, Traffic Engineer

DATE: September 22, 2005

SUBJECT: **Ardmore Avenue/Valley Drive at Flournoy Road**
Request for Pedestrian Warning Signs and Markings

RECOMMENDATION:

That the Commission pass a motion to approve staff's recommendation to:

1. Install pedestrian warning signs at the pedestrian access path on the Parkway side of Ardmore Avenue and Valley Drive near Flournoy Road facing both directions.
2. Remove the existing oleander bush and yucca plant just east of the Parkway access point on Ardmore Avenue near Flournoy Road.

BACKGROUND:

In June 2005, Mr. Bob Lauson, 628 23rd Street, submitted a petition signed by local residents requesting new pedestrian warning signs and/or crosswalk markings at the Veterans Parkway access path on Ardmore Avenue and Valley Drive near Flournoy Road. The petition states that signs and markings will improve safety.

On May 22, 2003, the Parking and Public Improvements Commission reviewed a similar resident petition to install stop signs or other measures to reduce speeding on Valley Drive near Flournoy Road. The Commission recommended against the stop signs but supported the installation of pedestrian warning signs, red curb on the north side of Valley Drive at Flournoy Road and trimming the existing banana tree leaves on the northwest corner to improve driver visibility. On June 17, 2003, the City Council approved the PPIC's recommendation, with the exception of any pedestrian signs or markings.

On January 4, 2005, the City Council adopted Ordinance No. 2070 to reduce the speed limit on Ardmore Avenue between Manhattan Beach Boulevard and Pacific Avenue from 35 MPH to 30 MPH on the basis of updated speed surveys and roadway conditions that may not be apparent to drivers. The reduced speed limit was posted in February 2005.

DISCUSSION:

Valley Drive is a two-lane collector street that carries approximately 7,500 vehicles per day and is stopped at Blanche Road to the west and Pacific Avenue to the east. Valley Drive is divided with a double yellow centerline that provides a 12 feet wide eastbound lane and a 22 feet wide westbound lane with curb parking. The speed limit on Valley Drive is 30 MPH.

Ardmore Avenue is a two-lane collector street that carries approximately 4,650 vehicles per day and is stopped at 9th Street to the west and Pacific Avenue to the east. Ardmore Avenue is divided with a double yellow centerline that provides a 12 feet wide westbound lane and a 22 feet wide eastbound lane with curb parking. The speed limit on Ardmore Avenue was recently lowered from 35 MPH to 30 MPH in February 2005.

Flournoy Road is a local residential street that "tees" into Valley Drive and Ardmore Avenue with stop signs on Flournoy Road only. Flournoy Road is 20 feet wide north of Valley Drive and 30 feet wide south of Ardmore Avenue. The intersections of Valley Drive/Flournoy Road and Ardmore Avenue/Flournoy Road are located in a residential area along Veterans Parkway. Pedestrian access stairs are provided from Valley Drive to the Parkway and from Ardmore Avenue to the Parkway at Flournoy Road. There are sidewalks on the north side of Valley Drive and the south side of Ardmore only. There are no pedestrian signs or markings at the pedestrian access to the walk path. Curb parking is not permitted on the Parkway side of Valley Drive and Ardmore Avenue.

The traffic collision history between January 1, 2001 and September 30, 2004 was analyzed for the intersection. According to City records, there were no traffic collisions reported on Ardmore Avenue near Flournoy Road during this three and three-quarter year period. There was one traffic collision reported on Valley Drive near Flournoy Road during this three and three-quarter year period. On May 31, 2004, a southbound vehicle backed into another parked vehicle.

Field observations were made at the Parkway access points during peak travel and pedestrian periods. Field observations confirmed the traffic count data and moderate pedestrian activity in the morning and early evening. The pedestrian access path is not easily identifiable to passing motorists at either location, but these locations are similar to many other pedestrian access points along the Veterans Parkway. Conversely, approaching vehicles are very visible to pedestrians waiting to cross either street at the two access paths with the exception of a partial sight obstruction on Ardmore Avenue just east of Flournoy Road caused by an oleander plant and yucca plant. (See photos.)

Whenever possible, pedestrians should always cross at controlled crossings, especially on busy streets. Drivers have sufficient time at controlled locations to react to pedestrians and pedestrians can cross with some degree of protection. Numerous crosswalk studies have found that painted crosswalks are less safe than unmarked crosswalks at uncontrolled locations. This is because pedestrians tend to be bolder and less cautious when crossing between two crosswalk lines, while the driver's perspective of those same lines is very faint. Pedestrians use more caution and are more alert when entering a street at an unmarked crosswalk. Therefore, painted crosswalks across Valley Drive or Ardmore Avenue at Flournoy Road would not be safer than

allowing pedestrians to cross the street without markings. However, since the access path might not be obvious to motorists due to the existing landscaping on the Parkway side of Valley Drive and Ardmore Avenue, high visibility pedestrian warning signs would help alert motorists to the presence of the access path.

CONCLUSION:

Based on low pedestrian volumes and potential for pedestrians to use less caution, painted crosswalks are not recommended on Valley Drive at Flournoy Road or Ardmore Avenue at Flournoy Road at this time. However, due to reduced sight visibility, removal of the oleander and yucca bushes just east of the access path on Ardmore Avenue near Flournoy Road is recommended. A pair of pedestrian warning signs facing opposite directions should also be installed on the Parkway side of Valley Drive and Ardmore Avenue at Flournoy Road near the access stairs.

Meeting notices were sent to the petitioners and to all properties within 300 feet of the Valley/Flournoy and Ardmore/Flournoy intersections.

Attachments:

- Area map
- Site Photos
- Resident petition
- Resident Correspondence
- Meeting notice, 9/8/05

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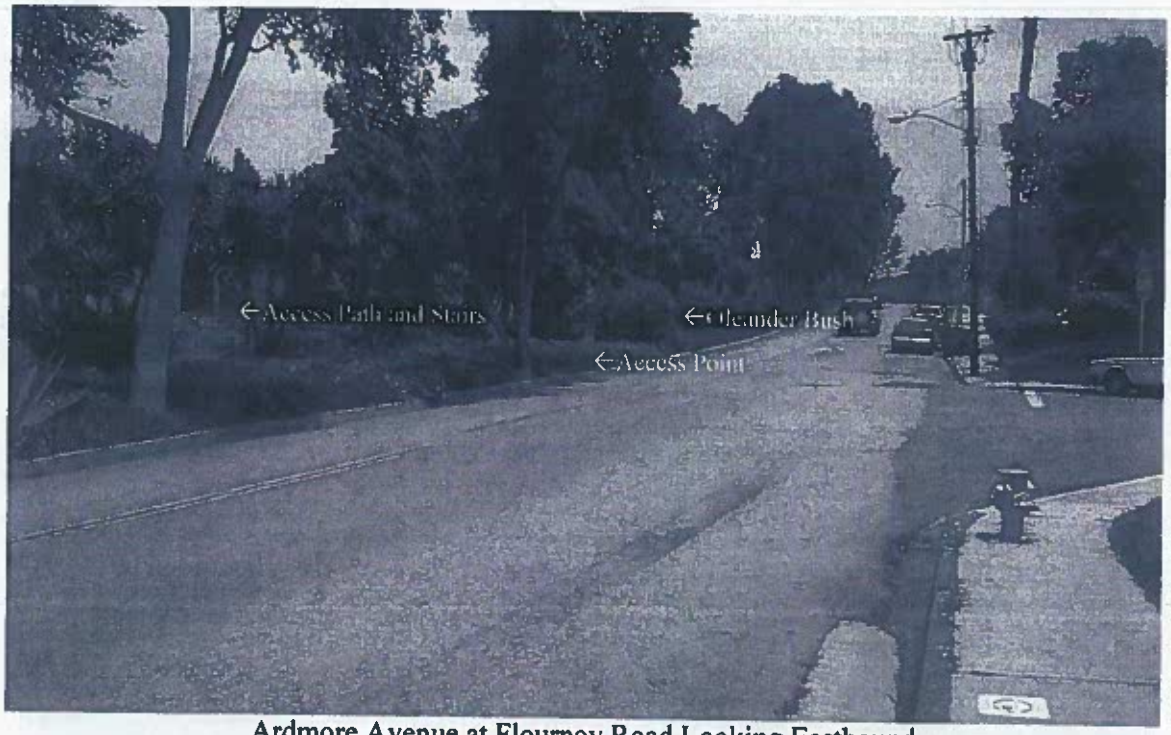
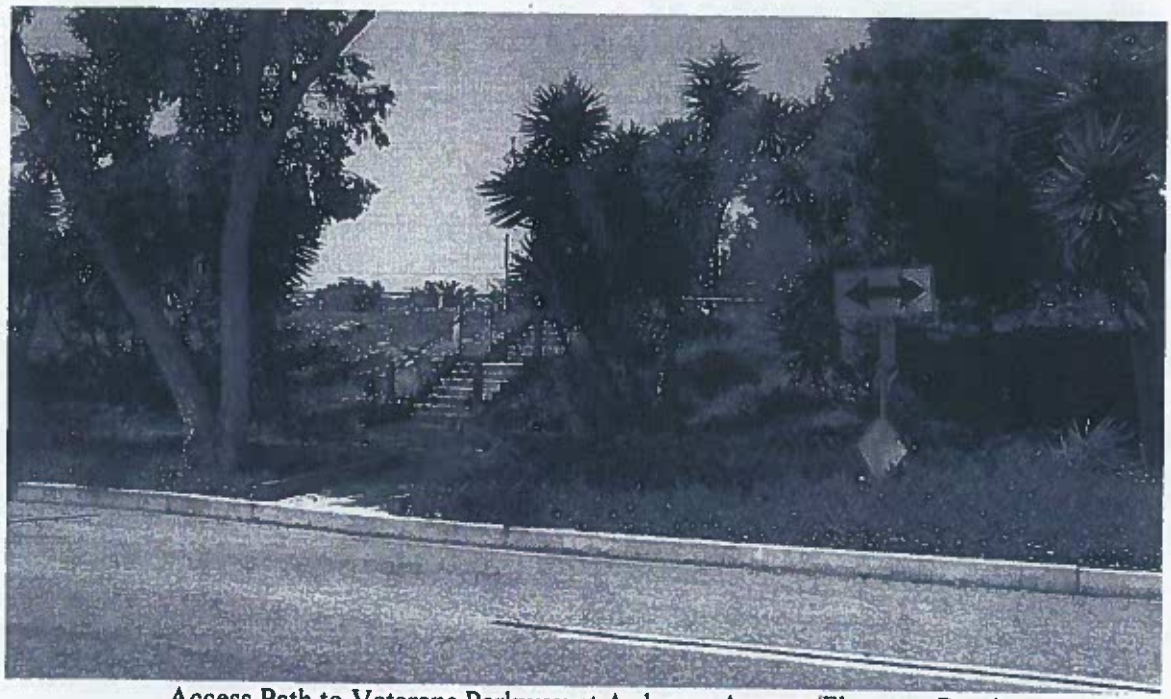
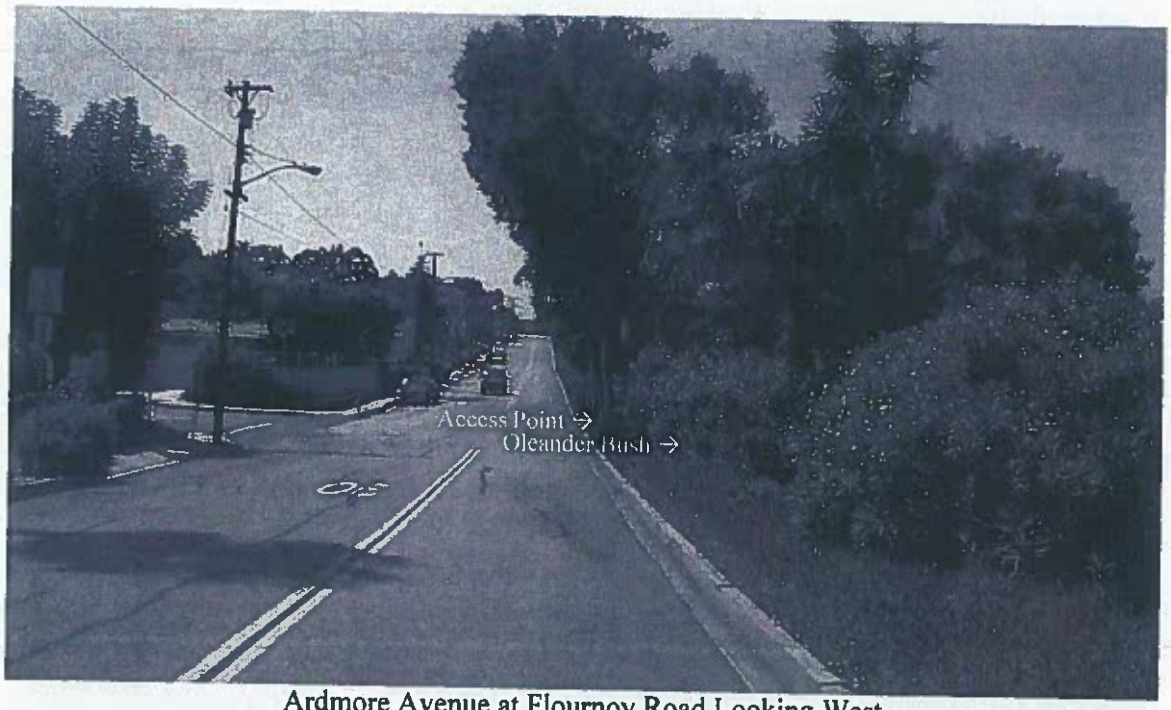


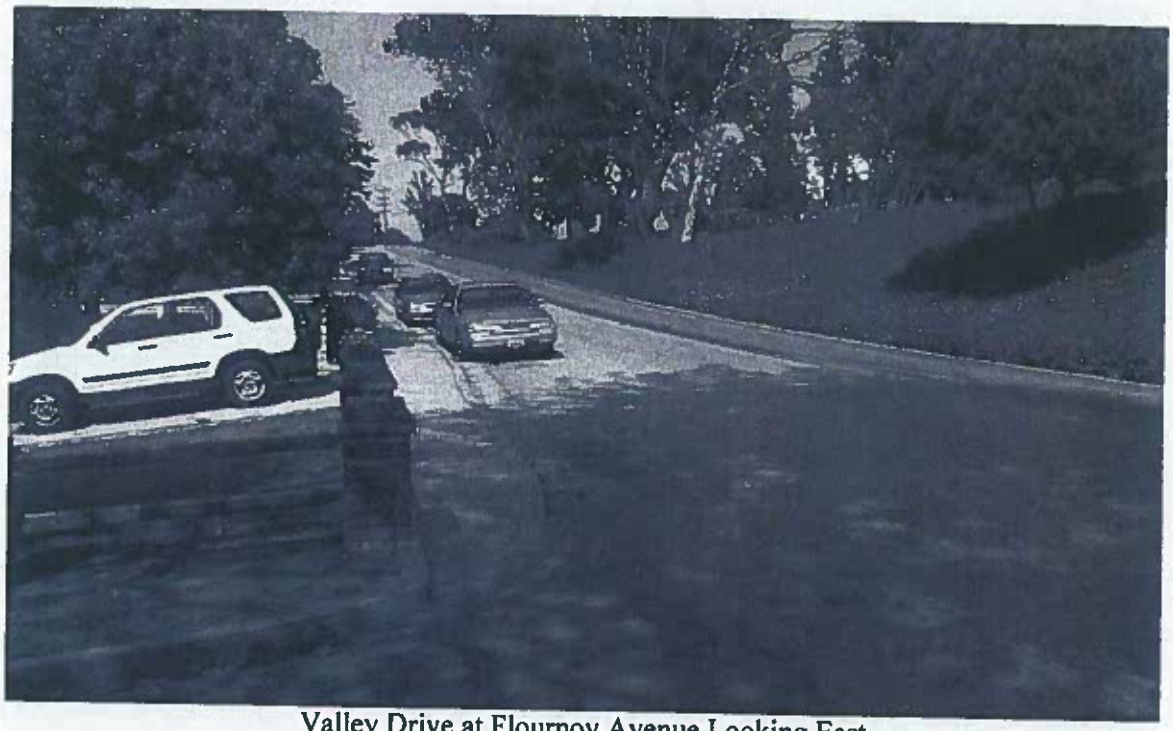
Ardmore Avenue at Flournoy Road Looking Eastbound



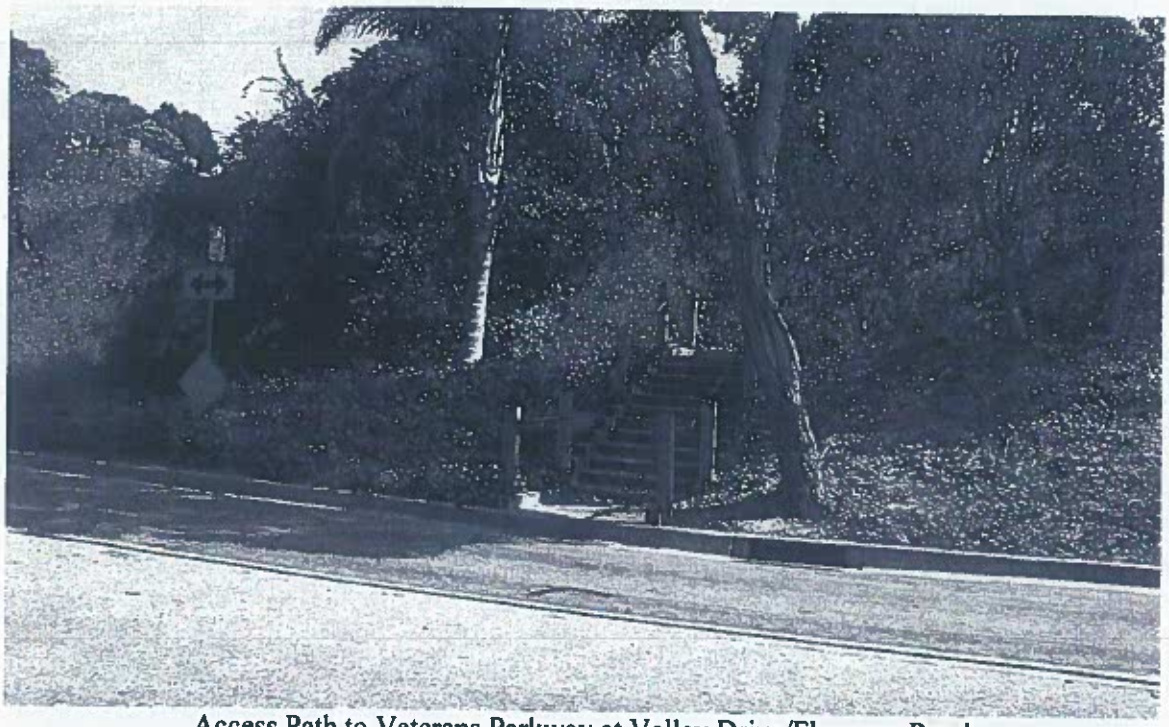
Access Path to Veterans Parkway at Ardmore Avenue/Flournoy Road



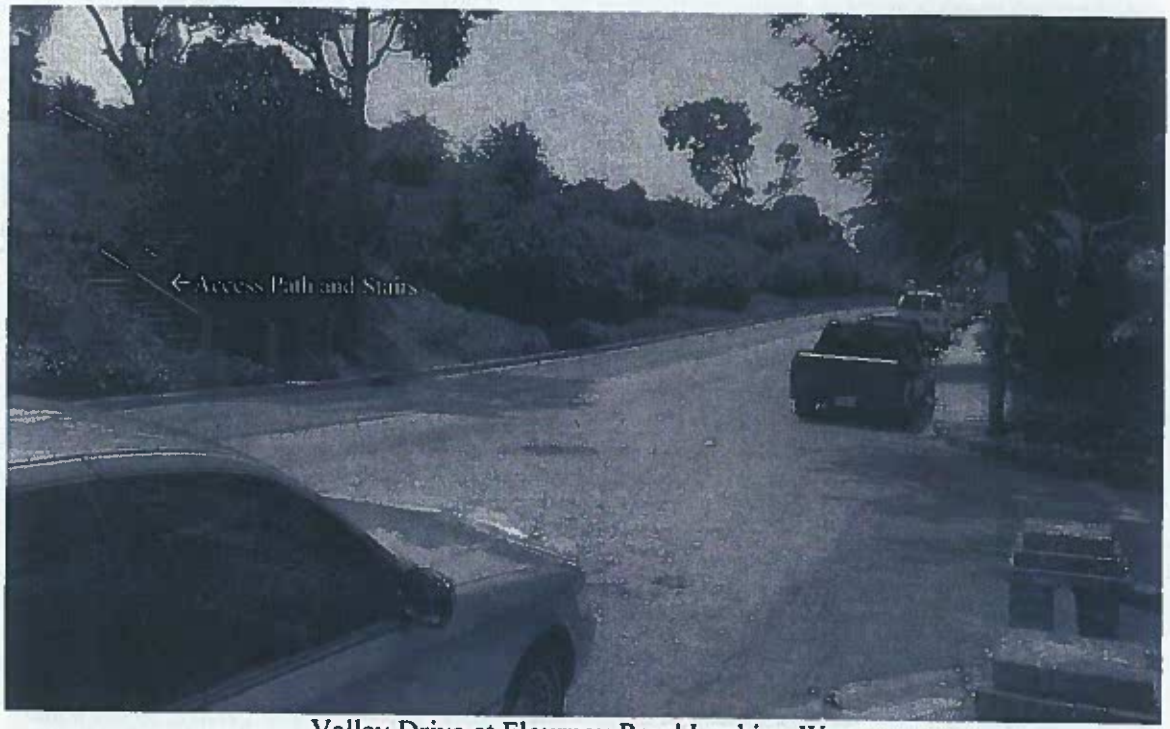
Ardmore Avenue at Flournoy Road Looking West



Valley Drive at Flournoy Avenue Looking East



Access Path to Veterans Parkway at Valley Drive/Flournoy Road



Valley Drive at Flournoy Road Looking West

EXHIBIT 2
SITE PHOTOS

Ardmore Avenue at Flournoy Road Looking West

Ardmore Avenue at Flournoy Road Looking East

North Side of Ardmore Avenue at Flournoy Road

Southwest Corner of Ardmore Avenue at Flournoy Road (Bushes Overhanging Sidewalk)

Ardmore Avenue West of Flournoy Road Looking East

Ardmore Avenue East of Flournoy Road Looking West

EXHIBIT 3

AERIAL PHOTO AND LOCATION MAP

Ardmore Avenue at Flournoy Road

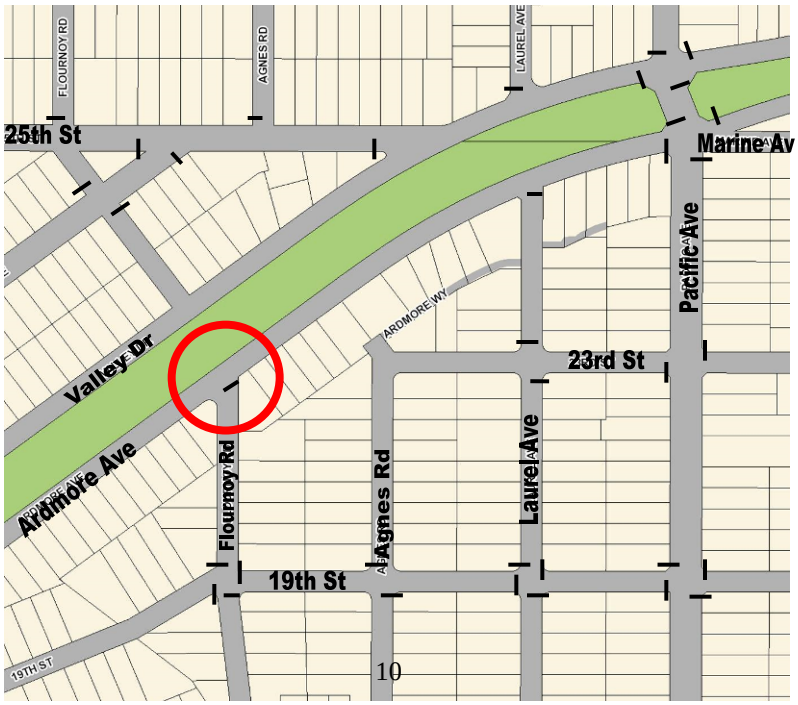


EXHIBIT 4

STOP SIGN WARRANT CHECKLIST

MAJOR STREET: Ardmore Avenue MINOR STREET: Flournoy Rd.

REQUESTED BY: Citizen DATE: 2/19/2014

REVIEWED BY: Erik Zandvliet

Warranted?

SINGLE STREET STOP SIGN WARRANTS

☒ On a less important road where the normal right-of-way rules would not be expected to provide reasonable compliance with the law.

☐ On a street entering a legally established through highway or street.

☐ At an unsignalized intersection in a signalized area.

☒ At other intersections where high speeds, restricted view, or crash record indicates a need for control by a stop sign.

MULTI-WAY STOP SIGN WARRANTS

☐ Where traffic signals are warranted, and stop signs are used as an interim measure to control traffic while the signal is installed.

☐ Where a crash problem exists, as indicated by five or more reported accidents within a 12 month period of a type correctable by a multi-way stop sign.

☐ Where the total vehicular volume entering from the major street approaches average at least 300 vehicles per hour for any 8 hours, and

the combined vehicular, bicycle and pedestrian volume from the minor street approaches average at least 200 units per hour for the same 8 hours, with an average delay to the minor street traffic is at least 30 seconds per vehicle during the highest hour, and

if the 85th percentile approach speed of the major street traffic exceeds 40 MPH, the minimum vehicular volume warrant is 70 percent of the above requirements.

☐ Where there four or more reported accidents within a 12 month period of a type correctable by a multi-way stop sign, and

the average major and minor street volumes are at least 80% of the minimum values.

☐ Other locations where multi-way stop signs are justified based on an engineering study.

MULTI-WAY STOP SIGN WORKSHEET

MAJOR STREET: Ardmore Avenue 85TH SPEED - < 40 MPH

MINOR STREET: Flournoy Road DATE: 2/19/2014

TRAFFIC VOLUMES **WARRANTED** **YES** **NO**

If the 85th percentile speed of the major street exceeds 40 MPH, use 70% volume.

Street	Min Volume	70%	80%	Ave.	Hour / Volume							
					8am	9am	10am	11am	1pm	2pm	3pm	5pm
Major	300	210	240	361	348	378	338	354	384	338	352	394
Minor	200	140	160	8	5	16	5	14	3	11	9	1

And, does the minor street have an average delay of at least 30 seconds in the peak hour?

Peak Average Delay	< 12 sec.

COLLISION RECORD **WARRANTED** **YES** **NO**

Are there five or more reported collisions within a 12 month period of a type correctable by a multi-way stop sign?

DATE	TIME	DIRECTION	TYPE	CAUSE
2011	-	None	-	-
2010	-	None	-	-
2009	-	None	-	-
2008	-	None	-	-
2007	-	None	-	-

80% COMBINATION **WARRANTED** **YES** **NO**

Are there four or more reported accidents within a 12 month period of a type correctable by a multi-way stop sign, and

Average major and minor street volumes are at least 80% of the minimum values?

OTHER MULTI-WAY STOP CONDITIONS	**WARRANTED**	**YES**	**NO**
A. Need to control left turn conflicts		YES	NO
B. Need to control vehicle/pedestrian conflicts at high ped locations		YES	NO
C. Visibility obstruction after stopping on minor street approach		YES	NO
D. Two similar neighborhood collector streets that would improve operation		YES	NO

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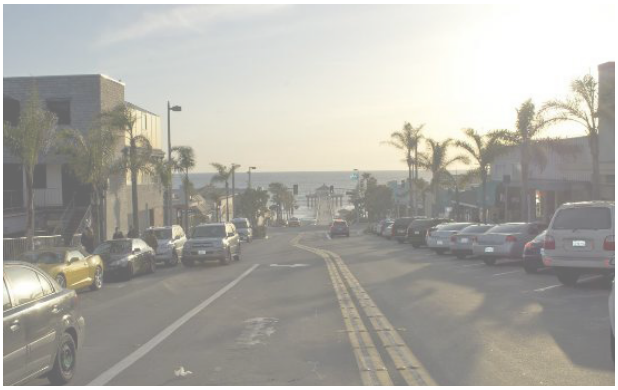
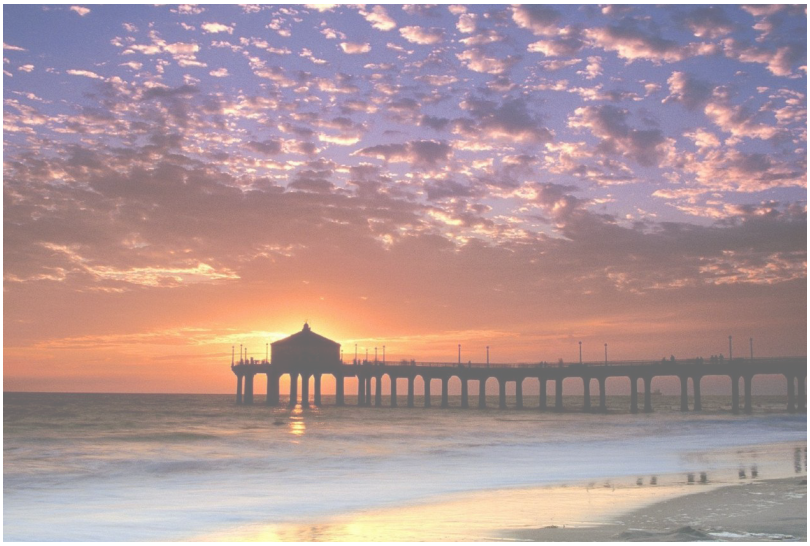
DRAFT

Manhattan Beach Mobility Plan
Pedestrian Crossing Enhancements Policy





Prepared by:

ITERIS Innovation for better mobility

FEHR PEERS

March 2014

Crossing Enhancements Policy

For Uncontrolled Locations (No Signal or Stop Sign)

MANHATTAN BEACH MOBILITY PLAN

START

City staff receives a request for a pedestrian enhancement at an **UNCONTROLLED** location

ASK:

[PARKS] [RETAIL] [SCHOOLS]

Is it located near a **PEDESTRIAN GENERATOR**?
OR
Do 20+ pedestrians cross in **1** hour?
OR
Do 60+ pedestrians cross in **4** hours?

NO → **INSUFFICIENT JUSTIFICATION** for marked crosswalk

YES

Is it greater than **300** feet to the nearest crosswalk?

NO → **DIRECT PEDESTRIANS TO NEAREST MARKED CROSSWALK**

YES

Are pedestrians visible from **250** feet away?

NO → **MARKED CROSSWALK NOT RECOMMENDED**

YES

USE MANHATTAN BEACH PEDESTRIAN ENHANCEMENTS POLICY AND ENGINEERING JUDGMENT TO SELECT CROSSING TREATMENTS

Policy developed based on research from *NCHRP 562: Improving Pedestrian Safety at Uncontrolled Crossings*

TABLE A \\ UNCONTROLLED CROSSING TREATMENT TOOLBOX

POTENTIAL STRIPING ENHANCEMENTS

TREATMENT	IMPLEMENTATION GUIDANCE
HIGH-VISIBILITY MARKED CROSSWALK/TEXTURED CROSSWALK **[Striping]** High-visibility markings include a family of crosswalk striping styles such as the "ladder" and the "triple-four," as well as decorative or textured crosswalk markings. These marking provide greater crosswalk visibility to motorists.  	Implemented together as package of improvements at all locations that meet the flow chart test justifying a marked crossing. Additional enhancements to this package may be needed depending upon width of street, posted speed limit, sight distance and average daily traffic volumes. See guidance under which conditions additional enhancements are needed.
ADVANCE YIELD LIMIT LINE (MULTI-LANE ROADWAYS) **[Striping]** Yield limit lines (also referred to as "sharks' teeth") are placed in advance of marked, uncontrolled crosswalks to indicate to motorists where they should stop when a pedestrian is in a crosswalk.  *City of Pasadena*	
ADVANCE WARNING SIGNS/CROSSWALK SIGN ASSEMBLY **[Signage]** High-visibility fluorescent yellow green signs posted in advance of and at crossings increase the visibility of a pedestrian crossing. Requirements for the design and placement of these signs may be found in the California Manual on Uniform Traffic Control Devices (MUTCD). Additionally, in street pedestrian signs may be added.  *pedbikeimages.org* 	

TABLE A \\ UNCONTROLLED CROSSING TREATMENT TOOLBOX, CONT'D

POTENTIAL GEOMETRIC ENHANCEMENTS

TREATMENT	IMPLEMENTATION GUIDANCE		
	SPEED LIMIT		
	30MPH OR LOWER	35 MPH	40 MPH+
CURB EXTENSIONS **[Geometrics]** Also known as a pedestrian bulb-out, this traffic-calming measure is meant to slow traffic and increase driver awareness of pedestrians. It consists of an extension of the curb into the street, making the pedestrian space (sidewalk) wider and the crosswalk narrower. It improves driver visibility of pedestrians waiting to enter the crosswalk 	One geometric enhancement is recommended under the following conditions: • 3 lane street with ADT of 12,000+ • 4+ lane street (no raised median) with ADT of 9,000+ • 4+ lane street (with raised median) with ADT of 12,000+ Locations where pedestrian actuated signals are installed may not require these enhancements	One geometric enhancement is recommended under the following conditions: • 2 lane street with ADT of 15,000+ • 3 lane street with ADT of 9,000 • 4+ lane street (no raised median) with ADT of 9,000 or less • 4+ lane street (with raised median) with ADT of 12,000+ Locations where pedestrian actuated signals are installed may not require these enhancements	One geometric enhancement is recommended at all crossings with a speed limit of 40 mph or greater regardless of lane width and ADT. Locations where pedestrian actuated signals are installed may not require these additional enhancements
REFUGE ISLANDS **[Geometrics]** Raised islands are placed in the center of the roadway, separating opposing lanes of traffic with cutouts or ramps for accessibility along the pedestrian path. Median refuge islands are recommended where right-of-way allows and conditions warrant. Refuge medians can also be designed as a split pedestrian crossover where crosswalks in the roadway are staggered such that a pedestrian crosses half the street and then walks toward traffic to reach the second half of the crosswalk. This measure must be designed for accessibility to direct sight-impaired pedestrians along the path of travel.  tfhrc.gov			
RAISED CROSSWALK **[Geometrics]** This traffic calming measure provides a crosswalk with a surface elevated above the travel lanes (typically at curb height), attracting drivers' attention, encouraging lower speeds at the pedestrian crossing point, and improving the visibility of pedestrians in the crosswalk.  saferoutesinfo.org			

TABLE A \\ UNCONTROLLED CROSSING TREATMENT TOOLBOX, CONT'D

POTENTIAL SIGNAL ENHANCEMENTS

TREATMENT	IMPLEMENTATION GUIDANCE		
	SPEED LIMIT		
	30MPH OR LOWER	35 MPH	40 MPH+
OVERHEAD FLASHING BEACON **[Signal Treatment]** Flashing amber lights are installed on overhead signal arms in advance of the crosswalk or at the entrance to the crosswalk. Typically overhead beacons are pedestrian push button actuated and are most appropriate on multi-lane, signalized streets.  *tti.tamu.edu*	Instead of, or in addition to a geometric enhancement, install an overhead beacon or RRFB under the following conditions: • 3+ lane street with ADT of 12,000+	Instead of, or in addition to a geometric enhancement, install an overhead beacon or RRFB under the following conditions: • 2 lane street with ADT of 15,000+ • 3+ lane street with ADT of 9,000+	A geometric and/or an overhead beacon or RRFB is recommended at all crossings with a speed limit of 40 mph or greater regardless of lane width and ADT.
RECTANGULAR RAPID FLASHING BEACON (RRFB) **[Signal Treatment]** RRFB is a flashing beacon that is enhanced by replacing the traditional slow flashing incandescent lamps with rapid flashing LED lamps. The beacons may be push-button activated or activated with pedestrian detection. Research indicated the greatest response from RRFBs.  *mutcd.fhwa.dot.gov*	Beacons should not be installed at locations of pedestrian actuated signals.	Beacons should not be installed at locations of pedestrian actuated signals.	Beacons should not be installed at locations of pedestrian actuated signals.
PEDESTRIAN ACTUATED SIGNAL **[Signal Treatment]** This is a conventional traffic control device with warrants for use based on the MUTCD. Signal remains on green until a pedestrian push button activation. Signal operates with a flashing red until completion of pedestrian phase.  *City of Pasadena*	Recommended on 4+ lane streets with ADT of15,000+. If pedestrian actuated signal is installed, geometric enhancements may not be necessary.	Recommended on 3+ lane street with ADT of 15,000+ If pedestrian actuated signal is installed, geometric enhancements may not be necessary.	Recommend on 2 lane street with ADT of 15,000 + or 3+ lane street with ADT of 9,000+ If pedestrian actuated signal is installed, geometric enhancements may not be necessary.

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The following is a list of potential enhancements options for intersections in pedestrian priority areas (such as around schools, parks, Downtown, etc.):

TABLE B \\ STOP-CONTROLLED LOCATION TOOLBOX

City of Pasadena

REFUGE ISLAND

[Geometrics]

Raised islands are placed in the center of the roadway, separating opposing lanes of traffic with cutouts or ramps for accessibility along the pedestrian path.

CURB EXTENSION/BUS BULBS/SHORT RIGHT-TURN LANE ELIMINATION

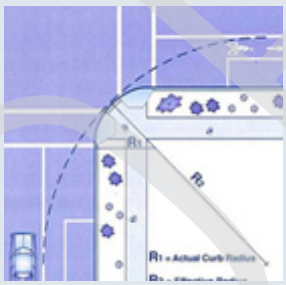
[Geometrics]

Also known as a pedestrian bulb-out, this traffic-calming measure is meant to slow traffic and increase driver awareness of pedestrians. It consists of an extension of the curb into the street, making the pedestrian space (sidewalk) wider.

IMPROVED RIGHT-TURN SLIP-LANE DESIGN/PORK CHOP REDESIGN

[Geometrics]

Right-turn slip lanes (aka channelized right-turn lanes) are separated from the rest of the travel lanes by a pork chop-shaped striped or raised median area. This measure separates right-turning traffic and streamlines right turning movements. Improved right-turn slip lanes provide pedestrian crossing islands within the intersection and are designed to optimize the right-turning motorist's view of the pedestrian and of vehicles to his or her left.



saferoutesinfo.org

REDUCED TURNING RADIUS AS DETERMINED BY DESIGN VEHICLE

[Geometrics]

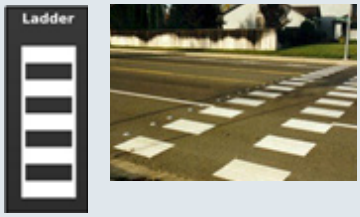
The size of the curb radius determines the speed at which approaching vehicles can navigate a turn. Reduced turn radii force approaching vehicles to slow down when turning, while still efficiently accommodating the largest vehicle commonly expected at the intersection.

www.ci.mil.wi.us

PEDESTRIAN-SCALE LIGHTING

[Streetscape]

Pedestrian-scale lighting improves motorist sight of pedestrians.



walkinginfo.org/pedsafe/

STANDARD CROSSWALK FOR STOP-CONTROLLED APPROACHES, LADDER OR TRIPLE FOUR AT UNCONTROLLED APPROACHES

[Striping]

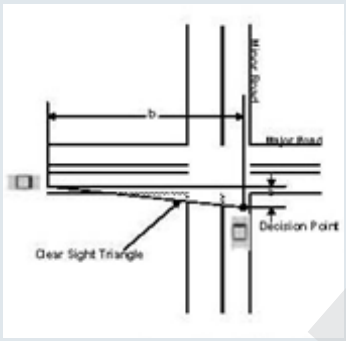
High-visibility markings include a family of crosswalk striping styles such as the "ladder" and the "triple-four." Stop bars should be striped in advance of the crosswalk on approaches controlled by a stop sign.

City of Pasadena

DIRECTIONAL CURB RAMP WITH TRUNCATED DOMES

[Geometrics/ADA Treatments]

Where right-of-way is available, directional curb ramps are installed at two per corner and guide pedestrians in to the crosswalk they would utilize to cross the street. Truncated domes provide a tactile signal to the visually impaired that they are leaving the sidewalk area. Exceptions for directional curb ramps may be allowed when physical considerations such as existing drainage or required turn radius deem infeasible. Selecting directional curb ramps as a preferred treatment does not call for retrofit of existing curb ramps, rather installation will be done oppurtunistically in scenarios such as grant funding, development review, new construction, and



Nazir Lalani

REMOVAL OF SIGHT DISTANCE OBSTRUCTIONS

[Geometrics]

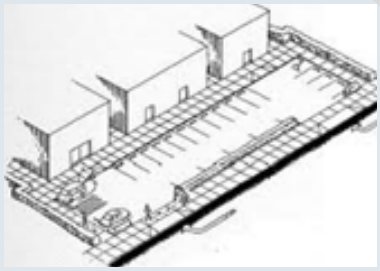
If objects impede sight distance, it may result in an unsafe condition when motorists and pedestrians are unable to see each other. Items such as parked cars, signage, landscaping, fencing, and street furniture should be placed in a location that will not obstruct sight distance.

danpink.com

LIMITED SIGNAGE/SIGN CLUTTER EVALUATION

[Signage]

Road signs and street signs at intersections may distract motorists from the road. Unnecessary signage should be removed and relocated to present motorists only with signage relevant to the operation of the intersection.



mrsc.org

DRIVEWAY ACCESS MANAGEMENT

[Geometrics]

Access management strategies can reduce the number of driveway crossings pedestrians encounter and result in a wider sidewalk through more efficient allocation of space.

The following is a list of potential enhancements options for intersections in pedestrian priority areas (such as around schools, parks, Downtown, etc.):

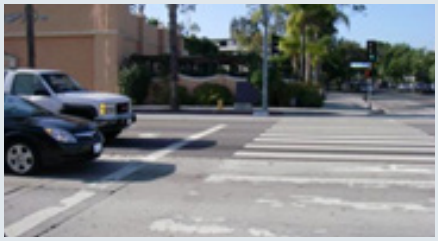
TABLE C \\ SIGNAL-CONTROLLED LOCATION TOOLBOX

walkinginfo.org/pedsafe/

MARKED CROSSWALK

[Striping]

Marked crosswalks should be installed to provide designated pedestrian crossings at signalized locations, on all feasible approaches. Exceptions for striping crosswalks on all four legs of a signalized intersection may be allowed due to operational and physical considerations



ADVANCE LIMIT LINE

[Striping]

Standard advance limit (white stop) lines are placed four feet in advance of marked crosswalks

www.saferoutesinfo.org

COUNTDOWN SIGNAL

[Signal Treatment]

Displays a "countdown" of the number of seconds remaining for the pedestrian crossing interval.

www.livablestreets.com

SLOWER WALKING SPEED

[Signal Treatment]

The California MUTCD requires that signal timings be changed to reflect 3.5 feet per second walk times rather than 4.0 feet per second. In locations adjacent to schools, senior centers, etc., a slower walk speed should be considered in signal timings.

www.saferoutesinfo.org

PEDESTRIAN RECALL IN HIGH ACTIVITY PEDESTRIAN AREAS

[Signal Treatment]

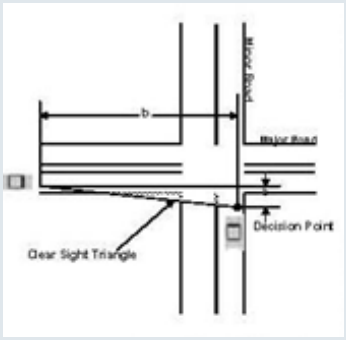
Pedestrian Recall provides a guaranteed walk phase for each crossing at the signal during periods of peak pedestrian activity regardless of whether the pedestrian push button has been activated. This ensures ample time is provided for pedestrian crossings when pedestrians are typically present (even if a pedestrian fails to push the button).

City of Pasadena

DIRECTIONAL CURB RAMP WITH TRUNCATED DOMES & SEPARATED PEDESTRIAN PUSH BUTTONS (PPB)

[Geometrics/ADA Treatments]

When right-of-way is available, directional curb ramps are installed two per corner and guide pedestrians into the crosswalk. Truncated domes provide a tactile signal to the visually impaired that they are leaving the sidewalk area. Separated push buttons are placed within five feet of each curb ramp, one per crosswalk. Exceptions for directional curb ramps may be allowed when physical considerations such as existing drainage or required turn radius deem infeasible.



Nazir Lalani

REMOVAL OF SIGHT DISTANCE OBSTRUCTIONS

[Geometrics]

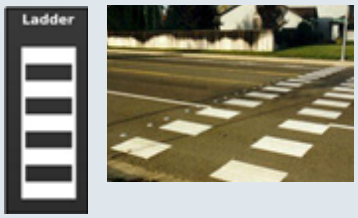
If objects impede sight distance, this may result in an unsafe condition where motorists and pedestrians are unable to see each other. Items such as parked cars, signage, landscaping, fencing, and street furniture should be placed in a location that will not obstruct sight distance.

www.ci.mil.wi.us

PEDESTRIAN-SCALE LIGHTING

[Streetscape]

Pedestrian-scale lighting improves motorists' visibility of pedestrians.



walkinginfo.org/pedsafe/

HIGH-VISIBILITY CROSSWALK

[Striping]

High-visibility markings include a family of crosswalk striping styles such as the "ladder" and the "continental." High-visibility striping should be provided for crosswalks with heavy pedestrian volumes, with frequent pedestrian-vehicle conflicts (such as with permissive left turns), or at skewed intersections. One style of high-visibility striping should be selected as the City's preferred style.

polara.com

ACCESSIBLE PEDESTRIAN SIGNALS

[ADA Treatments]

Accessible pedestrian signals communicate information about pedestrian crossings in non-visual format such as audible tones, verbal messages, and/or vibrating surfaces, providing access to the pedestrian signals for the visually impaired. Locations for accessible pedestrian signals are coordinated with the Accessibility Disability Commission.

freefoto.com

ALL RED CLEARANCE

[Signal Treatment]

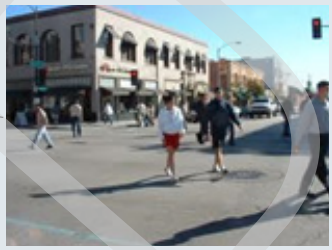
Provides a phase (1-2 seconds) where all vehicle indicators hold the red at an intersection.

walkinginfo.org

LEADING PEDESTRIAN INTERVAL (LPI)

[Signal Treatment]

Provides pedestrians with a walk indicator while all vehicle indicators hold the red ball. This allows pedestrians to get a head start crossing the street before vehicles get the green indication.



streetswiki.wikispaces.com

SCRAMBLE PHASE

[Signal Treatment]

Provides an all-red phase for vehicles while providing pedestrians with a walk indication. Pedestrians may cross the street orthogonally or diagonally.

safety.fhwa.dot.gov

PROTECTED LEFTS

[Signal Treatment]

Protected left turns give vehicles that are turning left an exclusive phase that does not coincide with the pedestrian walk phase. This eliminates the pedestrian-vehicle conflict between permissive lefts and pedestrians in a crosswalk.

lincoln.ne.gob

FULL-TIME RECALL/FIXED TIME PEDESTRIAN INTERVALS

[Signal Treatment]

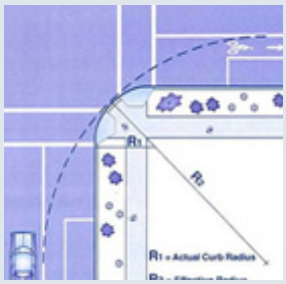
Pre-timed signals give pedestrians the walk signal without requiring push button actuation.

luni.net

PROHIBITED RIGHT TURN ON RED

[Signal Treatment]

Prohibits vehicles from turning right when the signal has a red indication.

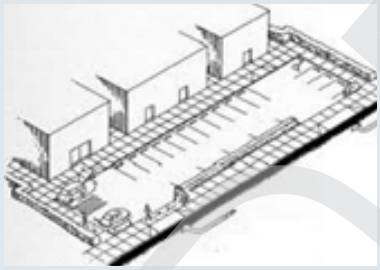


saferoutesinfo.org

REDUCED TURNING RADIUS AS DETERMINED BY DESIGN VEHICLE

[Geometries]

The size of the curb radius determines the speed at which approaching vehicles can navigate a turn. Reduced turn radii force approaching vehicles to slow down when turning, while still accommodating emergency vehicles and the largest vehicle expected to typically navigate the intersection (i.e., the design vehicle).



DRIVEWAY ACCESS MANAGEMENT

[Geometries]

Access management strategies can reduce the number of driveway crossings pedestrians encounter and result in a wider sidewalk through more efficient allocation of space.

City of Pasadena

REFUGE ISLAND

[Geometries]

Raised islands are placed in the center of the roadway, separating opposing lanes of traffic with cutouts or ramps for accessibility along the pedestrian path.

TABLE C \\ SIGNAL-CONTROLLED LOCATION TOOLBOX, CONT'D

CURB EXTENSION/BUS BULBS/SHORT RIGHT-TURN LANE ELIMINATION

[Geometrics]

Also known as a pedestrian bulb-out, this traffic-calming measure is meant to slow traffic and increase driver awareness of pedestrians. It consists of an extension of the curb into the street, making the pedestrian space (sidewalk) wider.

IMPROVED RIGHT-TURN SLIP-LANE DESIGN/PORK CHOP REDESIGN

[Geometrics]

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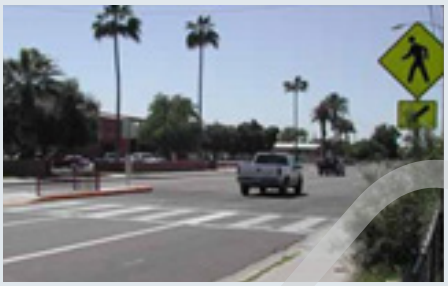
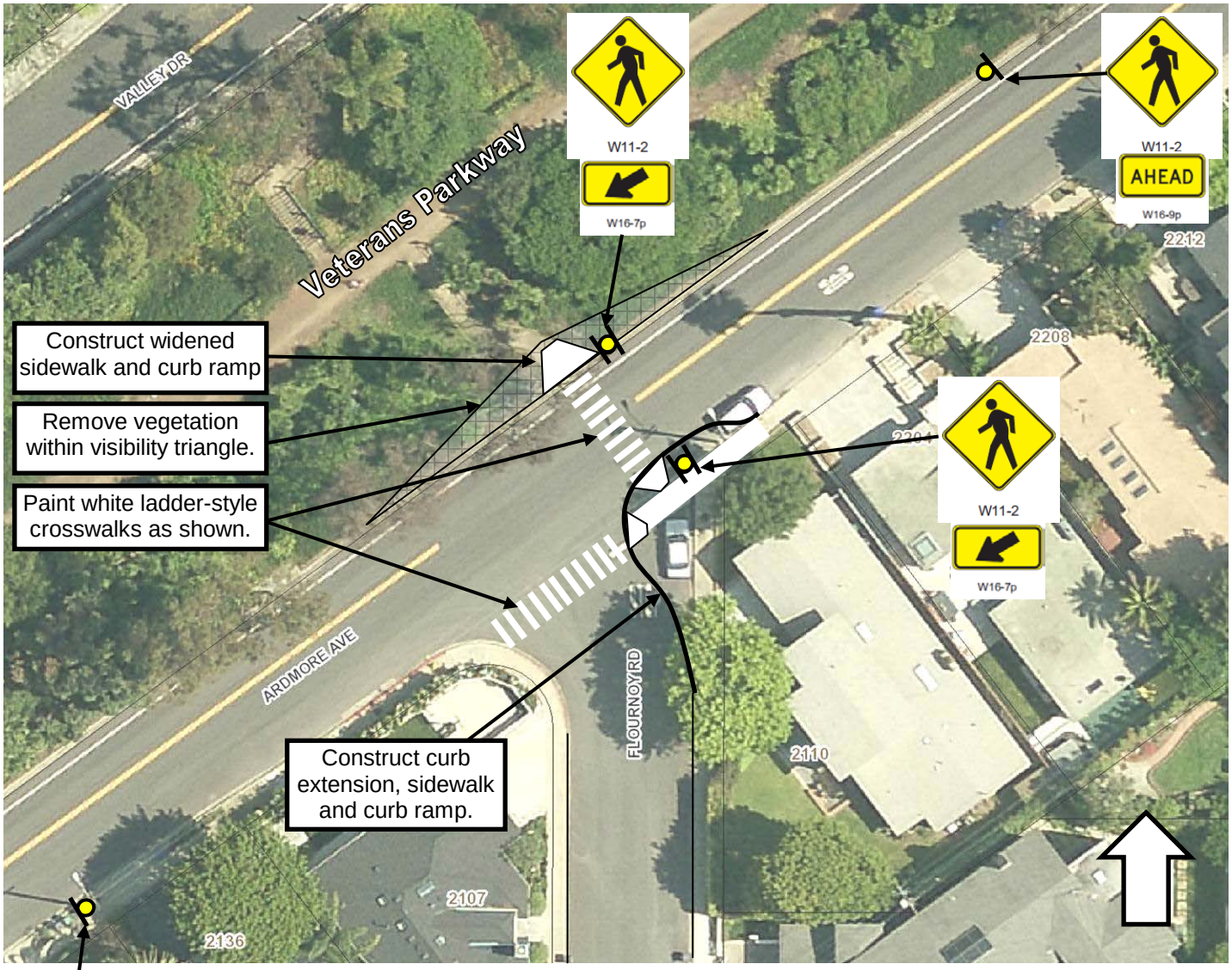


tfhrc.gov

TWO-STAGE CROSSING

[Geometrics]

This measure is similar to traditional median refuge islands except that the crosswalk is staggered such that a pedestrian crosses half the street and then must walk towards traffic to reach the second half of the crosswalk. This measure must be designed for accessibility by including rails and truncated domes to direct sight-impaired pedestrians along the path of travel.



City of Manhattan Beach
Community Development
Traffic Engineering Division

Exhibit 6
Curb Extension and Marked Crosswalk
Ardmore Avenue at Flournoy Road