

**CITY OF MANHATTAN BEACH
DEPARTMENT OF COMMUNITY DEVELOPMENT**

TO: Parking and Public Improvements Commission

FROM: Richard Thompson, Director of Community Development
Esteban Danna, Assistant Planner

BY: Erik Zandvliet, Traffic Engineer

DATE: July 23, 2009

SUBJECT: Consider Installation of Stop Signs
Laurel Avenue at 17th Street
Laurel Avenue at 19th Street

RECOMMENDATION:

That the Commission pass a motion to approve stop signs in all directions at the intersection of Laurel Avenue and 17th Street and at the intersection of Laurel Avenue and 19th Street.

BACKGROUND:

On July 24, 2008, the Parking and Public Improvements Commission reviewed a comprehensive school area traffic safety study for American Martyrs School. After hearing safety concerns from residents near the school, the Commission recommended an evaluation to determine if stop signs are justified in all directions at the intersections of Laurel Avenue at 17th Street and Laurel Avenue at 19th Street. On September 16, 2008, the City Council approved all of the initial school area measures, including the stop sign evaluations. This report is a summary of the City Traffic Engineer's analysis of the stop sign warrants for both intersections.

DISCUSSION:

Laurel Avenue is a local north-south street between Manhattan Beach Boulevard and Ardmore Avenue that carries between 540 vehicles per day near 19th Street and 1,500 vehicles per day near 17th Street. The adjacent land use is single family residential and American Martyrs Catholic Elementary School. Laurel Avenue is stopped at Manhattan Beach Boulevard, 14th, 15th, 18th, 23rd and Ardmore Avenue. Laurel Avenue has a vertical curve that rises in the northbound direction to the north of 19th Street. Laurel Avenue is 32 to 36 feet wide with parking allowed on both sides. Most street segments provide one 16' wide travel lane when cars are parked on both sides. The speed limit on Laurel Avenue is 25 MPH. There are street sweeping parking restrictions on both sides of Laurel Avenue near 17th Street.

17th Street is a local east-west street between Laurel Avenue and Sepulveda Boulevard that carries approximately 800 vehicles per day. 17th Street intersects Laurel Avenue at a "tee" intersection controlled with a single stop sign. 17th Street is 28 feet wide with parking on both sides, which provides a 12' wide travel lane when cars are parked on both sides. The speed limit

on 17th Street is 25 MPH. There are street sweeping parking restrictions on both sides of 17^h Street.

19th Street is a local east-west street between Ardmore Avenue and Sepulveda Boulevard that carries approximately 800 vehicles per day. 19th Street intersects Laurel Avenue at a four-way intersection controlled by stop signs on 19th Street. 19th Street is 30 feet wide with parking on both sides and a flat gutter that allows vehicles to park partly in the parkway area. The speed limit on 17th Street is 25 MPH.

The intersection of Laurel Avenue and 17th Street is located in a residential area directly adjacent to American Martyrs School. Both streets are improved with curbs, gutters and some sidewalks. There is a stop sign and cross gutter on the east leg of 17th Street at Laurel Avenue. There are marked school crosswalks on the south and east legs.

The intersection of Laurel Avenue and 19th Street is located in a residential area directly adjacent to American Martyrs School. Both streets are improved with gutters and some curbs, but no sidewalks. There are stop signs on the east and west legs of 19th Street. There are cross gutters on the north and south legs of Laurel Avenue that tend to slow approaching traffic.

The traffic collision history between January 1, 2005 and September 31, 2008 was analyzed for the intersection. According to City records, there have been no collisions reported near the intersection during this 3 ¾ year period.

Field Observations

Field observations were made at and near the intersections during peak periods. Field observations confirm the traffic count and physical characteristics noted earlier. Pedestrian activity is heavier than other streets in the surrounding residential neighborhood due to the proximity of the private school. The streets are narrow and provide only one travel lane if vehicles are parked on both sides of the street. Recurrent speeding was not observed on any of the approaching street segments.

The intersection of Laurel Avenue and 17th Street has adequate sight distance for motorists stopped on 17th Street looking northward or southward, however, any vehicles parked on Laurel Avenue near the intersection can significantly block the view of approaching traffic and pedestrians. In addition, both Laurel Avenue and 17th Street are used heavily as a primary access route by both residents and school parents, so there is a higher percentage of turning movements at this intersection. These conditions, combined with heavy school pedestrian volumes, help justify the need for installation of stop signs to properly assign right-of-way for all users and improve school area safety. A new marked crosswalk on the north leg would also be installed if stops are approved at this intersection.

The intersection of Laurel Avenue and 19th Street has limited sight distance for motorists stopped on 19th Street looking northward or southward due to small curb radii, dense residential build-out and landscaping. Moderate curb parking demand on Laurel Avenue, particularly during school arrival and dismissal also significantly blocks the view of approaching traffic and pedestrians. In addition, Laurel Avenue is used heavily as a primary access route by both residents and school parents. These conditions, combined with a large number of school pedestrians walking in the

street without sidewalks, help justify the need for installation of stop signs to properly assign right-of-way for all users and improve school area safety.

Curb parking demand is moderate to high along Laurel Avenue due to overflow staff and parent parking related to the school as well as limited off-street residential parking. As such, vehicles are often parked close to the intersection, which restricts sight distance. To prevent parking within these intersections, the Commission and City Council already approved painting red curb markings in the curb returns of these intersections in the vicinity of the school. Due to limited off-street parking and existing parking demand, the removal of additional parking along Laurel Avenue to further improve sight distance would not be practical and would introduce new parking issues.

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 that indicate the existing traffic control devices are not sufficient to assign proper right-of-way.

A stop sign warrant checklist was completed that indicates that multi-way stop signs are warranted at both intersections. While both intersections have low traffic volumes that would not normally justify stopping drivers in all directions, it is expected that all-way stop signs would improve the safety to both motorists and pedestrians due to restricted sight distance, narrow streets, high pedestrian volumes, and need for proper right-of-way control. The narrow streets and low speeds would minimize any potential for increased collision potential, noise or delay that is normally associated with unwarranted stop signs.

It should be noted that the addition of stop signs would not be expected to reduce vehicle speeds along Laurel Avenue, since prevailing speeds are below normal for residential streets. Additional stop signs along Laurel Avenue may cause some drivers to accelerate faster to make up for lost time. A stop sign on Laurel Avenue could also slightly increase traffic volume on 17 and 19th Streets because it would encourage more turning movements.

Public Notice

Residents in the vicinity of the intersection were notified of the proposed stop sign request and were invited to give input to the Commission.

CONCLUSION:

1. Based on the proximity to a private elementary school, high pedestrian volumes, narrow streets, limited sight distance and need for proper right-of-way control, all-way stop controls are recommended at the intersection of Laurel Avenue and 17th Street and at the intersection of Laurel Avenue and 19th Street.

Attachments:

- A – Location Photos
- B – Aerial Photos
- C – Stop Sign Worksheets
- D – Public Notice



Laurel Avenue at 17th Street Looking North (From East Leg)



Laurel Avenue at 17th Street Looking South (From East Leg)



Laurel Avenue at 19th Street Looking South (From West Leg)



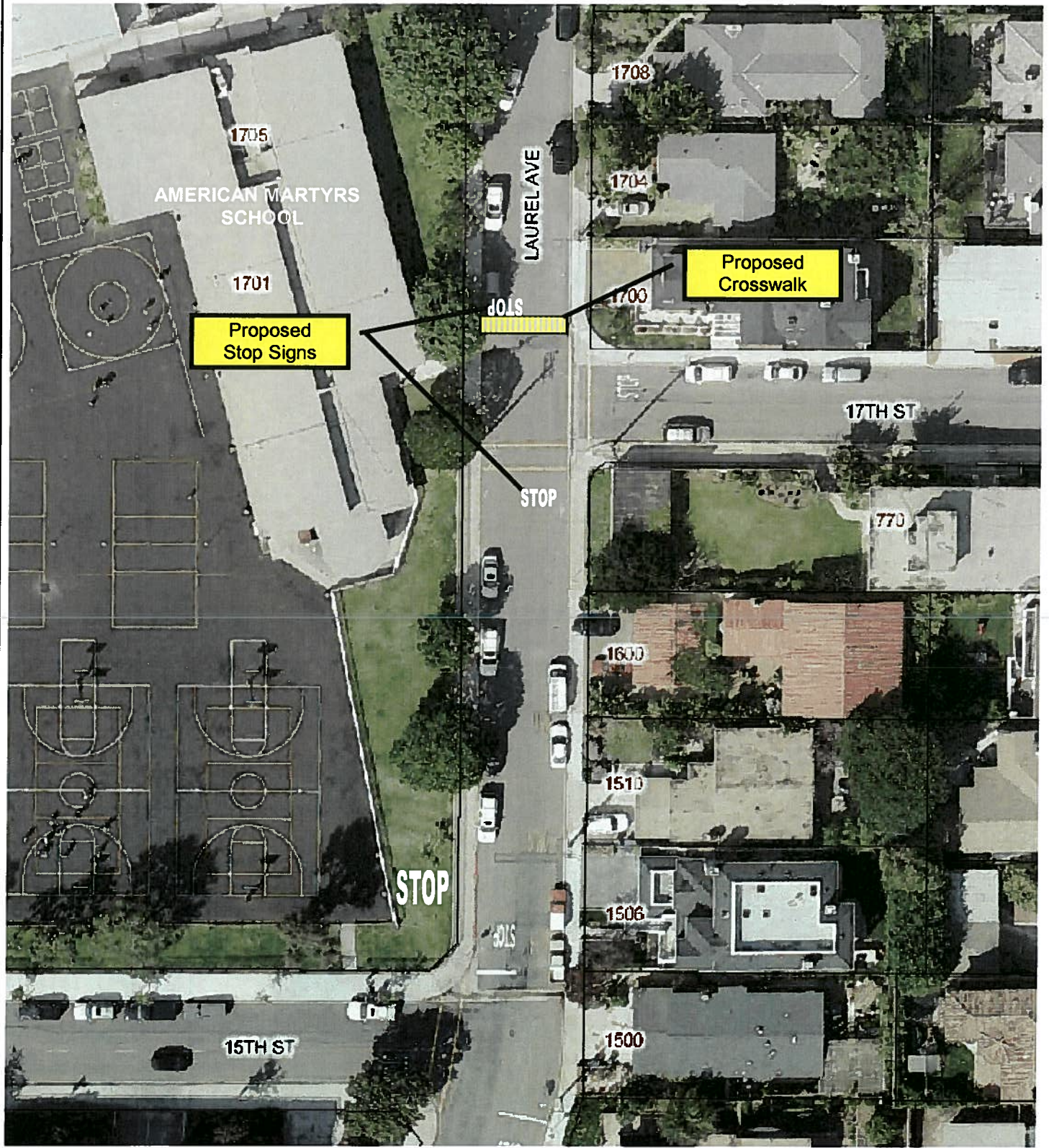
Laurel Avenue at 19th Street Looking North (From West Leg)



Laurel Avenue at 19th Street Looking South (From East Leg)



Laurel Avenue at 19th Street Looking North (From East Leg)



City of Manhattan Beach
Department of Community Development

LAUREL AVENUE AT 17TH STREET
Consider All-Way Stop Signs

EXHIBIT
B



City of Manhattan Beach
Department of Community Development

LAUREL AVENUE AT 19TH STREET
Consider All-Way Stop Signs



STOP SIGN WARRANT CHECKLIST

MAJOR STREET: Laurel Avenue MINOR STREET: 17th St

REQUESTED BY: City of Manhattan Beach DATE: 7/13/2009

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.

EXHIBIT

C

MULTI-WAY STOP SIGN WORKSHEET

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

MINOR STREET: 17th Street DATE: 7/13/2009

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							
					7am	8am	11am	12pm	1pm	3pm	4pm	5pm
Major	300	210	240	121.1	68	144	97	95	76	205	149	135
Minor	200	140	160	35.3	41	27	30	16	30	68	47	23

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

Peak Average Delay	< 30 sec.
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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
-	-	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 |



STOP SIGN WARRANT CHECKLIST

MAJOR STREET: Laurel Avenue MINOR STREET: 19th Street

REQUESTED BY: City of Manhattan Beach DATE: 7/13/2009

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

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

MULTI-WAY STOP SIGN WORKSHEET

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

MINOR STREET: 19th Street DATE: 7/13/2009

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	11am	12pm	1pm	3pm	4pm	5pm
Major	300	210	240	48.1	72	34	32	37	28	92	37	53
Minor	200	140	160	74.9	87	59	66	50	68	108	93	68

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

Peak Average Delay	< 30 sec.
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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
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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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B. Need to control vehicle/pedestrian conflicts at high ped locations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C. Visibility obstruction after stopping on minor street approach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D. Two similar neighborhood collector streets that would improve operation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



City of Manhattan Beach

Community Development

Phone: (310) 802-5500

FAX: (310) 802-5501

TDD: (310) 546-3501

July 13, 2009

***** **PUBLIC MEETING NOTICE** *****

Consider Stop Signs at Laurel Avenue and 17th Street

Dear Property Owner:

As part of the City's recent School Area Traffic Safety Study, the City Council directed staff to initiate a study to determine whether stop signs are justified in all directions at the intersection of Laurel Avenue and 17th Street.

The Parking and Public Improvements Commission will review the study's findings at a public meeting on Thursday, July 23, 2009. The meeting will be held in the City Council Chamber, 1400 Highland Avenue, and will begin at 6:30 p.m. Interested parties are encouraged to attend the meeting and provide comments.

You are encouraged to forward any comments or questions you may have to me by mail at the address on this letter, via e-mail at edanna@citymb.info, or by phone at (310) 802-5514.

Sincerely,

Esteban Danna
Assistant Planner
Community Development Department

EXHIBIT

D



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July 13, 2009

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