Administrative Report

N.1., **File #** 20-1194 **Meeting Date:** 8/4/2020

To: **MAYOR AND CITY COUNCIL**

From: TED SEMAAN, PUBLIC WORKS DIRECTOR

TITLE

DISCUSSION AND POSSIBLE ACTION REGARDING THE PROPOSED TRAFFIC CONTROL MODIFICATIONS AT TORRANCE BOULEVARD AND BROADWAY

EXECUTIVE SUMMARY

On November 19 2019, City Council made a referral to staff to reassess the existing traffic controls at the intersection of Torrance Boulevard and Broadway and reconsider alternate traffic controls. Staff performed additional evaluations and presented findings and possible actions to the Public Works Commission at the February 24, 2020 meeting. During that meeting, the Commission recommended that the City Council approve the establishment of right-turn only restrictions for northbound and southbound traffic on Broadway at Torrance Boulevard.

The administrative report and meeting minutes from the February 24, 2020 Public Works Commission meeting are included in Attachment 1.

BACKGROUND

In December 2015, City Council approved the Public Works Commission's recommendation to install several traffic control enhancements at the intersection of Torrance Boulevard and Broadway. These enhancements, which included pedestrian actuated flashing beacons for the crossings on Torrance Boulevard, were installed in early 2016.

Since the installation of the enhancements, there has been one crash involving a pedestrian crossing Torrance Boulevard, which occurred in August 2016, shortly after installation. There have been a number of vehicle vs. vehicle crashes between 2016 and 2019, primarily involving motorists violating the stop signs on Broadway. Of the 14 reported stop sign violation crashes, 10 involved northbound vehicles and four (4) involved southbound vehicles.

Torrance Boulevard and Broadway form a four-legged intersection with painted high visibility crosswalks on all approaches. The intersection is located between the intersections of Catalina Avenue at Torrance Boulevard, and Pacific Coast Highway at Torrance Boulevard. These adjacent intersections have traffic signal-controlled operations.

Broadway has a north-south alignment with one lane in each direction and angled head in parking available in both the northbound and southbound directions. It has a 25mph speed limit and is stop

controlled at Torrance Boulevard.

Torrance Boulevard has an east-west alignment with two lanes in each direction. It is uncontrolled at the intersection with Broadway, but has pedestrian actuated flashing beacons for the east and west legs. The posted speed limit is 30mph and on-street parking is available. Fronting development at the subject intersection includes multi-unit residential and retail land use. There are Metro bus stops located at the southwest and southeast corners. The west leg of Torrance Boulevard has an upward grade approaching Broadway from Catalina Avenue.

ANALYSIS

Field observations were conducted on December 11, 2019 between 9:00 a.m. and 11:00 a.m. to identify pedestrian crossing patterns at the intersection as well as general motorist behaviors. Key observations included the following:

- Motorists on Torrance Boulevard occasionally stopped at the crosswalks even when there were no pedestrians crossing. This was noticed for both eastbound and westbound vehicles.

- Several northbound motorists on Broadway attempting to cross Torrance Boulevard or turn left were observed failing to yield right-of-way to vehicles on Torrance Boulevard. These motorists complied with the stop sign, but then continued into the intersection to complete their movement and forced motorists on Torrance Boulevard to yield.

- A significant number of westbound left-turns were actually U-turns. These motorists appeared to exit the commercial driveway on the northwest corner of PCH and Torrance Boulevard. The U-turn maneuver at Broadway primarily allowed these motorists to enter the left turn lane at Torrance Blvd and PCH to travel northbound on PCH.

- Most pedestrians crossing Torrance Boulevard activated the flashing beacons; however, some were observed crossing without activating the beacons or crossing outside of the crosswalk.

- Motorists on both the north and south approaches of Broadway who were attempting to cross or turn left onto Torrance Boulevard unnecessarily delayed right-turning vehicles when the driver stops in the middle of the lane thereby preventing use of the entire northbound or southbound lanes.

A review of the available SWITRS reported collision history between 2016 and 2019 revealed the following information:

- 18 total collisions (10 injury)
- 14 stop sign violation collisions
    - 8 Northbound vs. Westbound
    - 2 Northbound vs. Eastbound
    - 4 Southbound vs. Eastbound
- 2 pedestrian collisions (both in 2016)
- 2 bicycle collisions (both involved turning vehicles on Torrance Boulevard vs bicycles crossing

Broadway)
- 2019 - 4 collisions
- 2018 - 5 collisions
- 2017 - 2 collisions
- 2016 - 7 collisions

Traffic counts were ordered for the intersection, including morning and afternoon peak period turning movement, bicycle and pedestrian volume counts on January 28 and 29, 2020. The traffic counts were taken for the peak periods of 7-9 AM and 4-6 PM. On Broadway, the highest approach traffic volumes recorded were 75 southbound and 221 northbound vehicles in the AM peak hour, and 166 southbound and 106 northbound vehicles for the PM peak hour. On Torrance Boulevard, during the same peak hours, the highest AM peak hour volumes recorded were 408 westbound and 286 eastbound vehicles, and for the PM peak hour, 540 westbound and 429 eastbound vehicles. Highest pedestrian volumes crossing Torrance Boulevard were 36 and 68 pedestrians in the AM and PM peak hours, respectively. Bicycle activity was generally lower than either vehicle or pedestrian volumes during the data collection period.

Several alternatives to address traffic safety at the intersection of Torrance Boulevard and Broadway were evaluated and are discussed below.

Right-Turn Only Restrictions for Broadway

The vast majority of the reported collisions are broadside (14 out of 18), and 12 of these could be eliminated if motorists were prohibited from travelling through or turning left at the intersection. Two additional collisions involved northbound vs. eastbound vehicles, and these would also likely be eliminated. To accomplish this, northbound and southbound motorists on Broadway would be restricted to right-turn only at Torrance Boulevard. This alternative would maintain reasonable access routes for motorists travelling on Broadway, due to the existing grid pattern of traffic signals and all-way stop controls on surrounding intersections.

This alternative would retain the existing pedestrian actuated flashing beacons and other pedestrian related traffic controls.

Bulb-Out Installation on Torrance Boulevard

Broadside collisions are frequently a result of restricted visibility. Installing bulb-outs into the parking lanes on Torrance Boulevard would allow motorists on Broadway to move closer into the intersection (while still protected from approaching traffic) and thus increasing visibility. As an additional enhancement, this would reduce the pedestrian and bicycle crossing distance on Torrance Boulevard, reducing their exposure to vehicular conflict. As components of this alternative, the following actions should be included:

- The north and south approaches of Broadway should be restriped to provide separate right-turn and thru/left-turn lanes. This would eliminate delays to right-turning vehicles caused by through and left-turning vehicles waiting for gaps in Torrance Boulevard traffic;

- The existing “Cross Traffic Does Not Stop” signs on Broadway should be replaced with

oversized signs to emphasize the warning;

- Oversized 30 mph speed limit signs and "30" pavement marking should be utilized on Torrance Boulevard between PCH and Catalina Avenue; and,

- A permanent radar speed feedback sign should be placed for westbound traffic on Torrance Boulevard, west of PCH.

This alternative would not result in any changes to existing traffic patterns. However, it would still require motorists to use appropriate caution when entering the intersection and yield right-of-way to motorists on Torrance Boulevard. In addition, the transit stop location on the southwest corner should be relocated or shortened to allow bus access around the bulb-out.

All-Way Stop Control Installation

The installation of all-way stop control at the intersection would be expected to mitigate all of the reported collisions, if motorists comply with the stop signs. It would also be expected to enhance pedestrian safety by requiring all traffic on Torrance Boulevard to stop. The reported collision data satisfies the collision warrant and is sufficient to justify installation. As components of this alternative, the following actions should be included:

- The existing pedestrian actuated flashing beacons, crossing warning signs and advance yield lines on Torrance Boulevard would be removed;

- The north and south approaches of Broadway should be restriped to provide separate right-turn and thru/left-turn lanes. This would increase the capacity of the intersection by eliminating delays to right-turning vehicles; and,

- The existing "Cross Traffic Does Not Stop" signs on Broadway would be removed.

This alternative would not result in any changes to existing traffic patterns. However, it would require every vehicle to stop at the intersection, where previously, Torrance Boulevard traffic was only required to stop when there was pedestrian crossing activity. Due to the significant volume on Torrance Boulevard, it would potentially back up westbound traffic to (and possibly beyond) PCH during heavy volume periods.

Traffic Signal Installation

The installation of a traffic signal at the intersection would be expected to mitigate the broadside collisions. It would also enhance pedestrian safety by requiring all traffic on Torrance Boulevard to stop when a pedestrian crossing is requested. The reported collision data satisfies the collision warrant and is sufficient to justify installation. As components of this alternative, the following actions should be included:

- The existing pedestrian actuated flashing beacons, crossing warning signs and advance yield lines on Torrance Boulevard would be removed;

- The north and south approaches of Broadway should be restriped to provide separate right-turn and thru/left-turn lanes. This would increase the capacity of the intersection by eliminating delays to right-turning vehicles; and,

- The existing “Cross Traffic Does Not Stop” signs on Broadway would be removed.

This alternative, which is not shown in the exhibits, would not result in any changes to existing traffic patterns. However, it would create a new signalized intersection approximately 300 feet from the existing signals at PCH and at Catalina Avenue. This close spacing can degrade traffic flow in this area to the point of potentially creating gridlock conditions unless the signals are coordinated. Since the signal at PCH and Torrance Boulevard is under the jurisdiction of Caltrans, there may be logistical issues with creating a coordinated system on Torrance Boulevard.

Construct a Roundabout

A roundabout at this location would mitigate the broadside collisions and reduce the severity of future collisions by reducing the speed of vehicles travelling through the intersection. A roundabout would need to have two approach lanes in each direction on Torrance Boulevard to prevent traffic congestion and the collision potential from reducing two lanes into one as traffic approaches the intersection. This alternative was not determined to be feasible due to the right-of-way requirements as a significant amount of non-roadway right-of-way would be needed from all corners. In some cases up to 20 feet is required, encroaching onto private property. In addition, the close proximity to PCH may result in opposition from Caltrans as it could affect traffic flowing through the intersection of PCH and Torrance Boulevard. This option was determined to be infeasible without significant acquisition of private property.

Following discussion and deliberation, the Public Works Commission’s recommendation was to forward to the City Council a recommendation to establish right-turn only restrictions for northbound and southbound traffic on Broadway at Torrance Boulevard. The Commission voted (5-1, Commissioner Garcia opposed, Commissioner Fox absent).

COORDINATION

Notification for the City Council meeting were sent to residents and commercial/community properties within three blocks north and south and one block east and west of the intersection and they were invited to provide comments for the meeting. In addition, staff provided the same notification letter electronically to the Council for their distribution as appropriate. A copy of the notification letter and a map showing mailed locations can be found in Attachment 2.

FISCAL IMPACT

Detailed costs for the alternatives would be developed once approved as designs can vary significantly. A planning level breakdown of costs for the alternatives are shown below. Funding for the items is available through various budgets, depending on the alternative.

- Right-turn only restriction on Broadway - $2,000
- Bulb-out on Torrance Boulevard Pedestrian - $50,000
- All-Way Stop Control - $5,000

- Traffic Signal - $275,000

APPROVED BY:
Joe Hoefgen, City Manager

ATTACHMENTS

1. Public Works Commission Meeting 2-24-20 Administrative Report and Meeting Minutes
2. Notification Letter and Map
3. Presentation Slides