



STAFF REPORT

Meeting Date: October 20, 2015
To: Honorable Mayor & City Council
From: Aaron Kunz, Deputy Director of Transportation
Subject: Olympic/Beverly/Beverwil Intersection
Attachment: 1. Executive Summary and Implementation Plan

INTRODUCTION

Fehr & Peers, the City's on-call traffic engineering firm has prepared an assessment of potential improvements for the Olympic Boulevard/Beverly Drive/Beverwil Drive intersection. This report outlines staff's recommendations for next steps related to improvements for this intersection.

BACKGROUND

In response to concerns raised to the City Council/Traffic & Parking Commission Liaison Committee regarding the Olympic Boulevard/Beverly Drive/Beverwil Drive intersection, staff commissioned *Fehr & Peers* to prepare an assessment of improvement options.

Olympic Boulevard/Beverly Drive/Beverwil Drive intersection carries about 74,000 vehicles per day. With Beverly Drive splitting into two streets (Beverly Drive and Beverwil Drive) just north of Olympic Boulevard, two streets cross Olympic Boulevard very close to each other resulting in a relatively complex intersection.

Based on review of accident data, the average collision rate is equal to the state-wide average for comparable intersections. No geometric and signal timing deficiency of the intersection was the cause for any of the collisions. The design of the intersection continues to appear reasonable and consistent with best engineering practices. In recent years, the City has replaced all signage within the intersection, made adjustments to the signal timing and added lane markings. The City Council has recently approved red light photo enforcement for the intersection.

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A project to redesign and simplify the Olympic Boulevard/Beverly Drive/Beverwil Drive intersection is planned for FY 2017-2018 in the *FY 2015-16 5-year Capital Improvement Program*.

DISCUSSION

The *Fehr & Peers Executive Summary and Implementation Plan* describes four scenarios to improve the intersection as outlined below:

- Scenario A: Eliminate left-turn movement from northbound Beverly Drive to westbound Olympic Boulevard
- Scenario B: Prohibit left-turn movement from westbound Olympic Boulevard to southbound Beverwil Drive
- Scenario C: Upgrade traffic signal controllers along Olympic Boulevard and implement additional left-turn phases (e.g., arrows)
- Scenario D: Implement scenarios A, B, and C and close northbound Beverwil Drive through movements. This includes median reconstruction and removal of the traffic signal at Beverly Drive and Beverwil Drive.

Staff recommends implementing scenarios A and B as a pilot. With City Council concurrence, the item would be placed on a Traffic & Parking Commission agenda in order to receive public comment. After Traffic & Parking Commission review and preparation of the environmental assessment, staff would return to City Council for approval to proceed. Estimated implementation is 4 to 6 months after City Council approval. After implementation, staff recommends evaluating the scenarios for one year before proceeding with the next phase.

The advantages/pros of this approach include:

- Eliminates unprotected turn movement that involves approximately 15% of collisions
- Reduces congestion at center of intersection
- Scenario B will offset some of the increased traffic on Beverwil resulting from Scenario A
- Provides drivers a gradual adjustment of changes in traffic patterns
- Lower cost and shorter implementation time than larger projects

Disadvantages include:

- Increased traffic on Beverwil pending implementation of Scenario D
- Drivers would need to adjust to changes in traffic patterns twice
- Longer-term timeframe for implementation of entire improvement scenarios

If the City Council wants to implement additional improvements beyond scenarios A and B, staff would recommend Scenario D which includes all the improvements outlined in the *Fehr & Peers* report. Although Scenario C, upgrade of traffic signal controllers, could be implemented with Scenarios A and B or independently, a single contract for all scenarios is more efficient and likely more cost effective. As with staff's recommendation listed above, with City Council concurrence, the item would be placed on a Traffic & Parking Commission agenda to receive public comment, an environmental assessment would be prepared, and the item would be returned to City Council for direction to proceed. To complete Scenario D, staff recommends implementation in FY 2017-18 to

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minimize overlap with the Santa Monica Boulevard Reconstruction project and decking of the La Cienega subway station.

The advantages/pros of this approach include:

- All scenarios completed at one time
- Single public outreach/environmental assessment process
- Cost effectiveness and efficiency by hiring a single contractor

Disadvantages include:

- Longer timeframe for complete implementation
- Less gradual adjustment for drivers

FISCAL IMPACT

Funding is available in the FY 2015-16 Capital Improvement Budget (CIP) # 367, *Install Traffic Signals and Intersection Improvements*. Estimated construction of Scenario A and B is \$20,000. Estimated construction cost of Scenario D is \$385,000.

RECOMMENDATION

Staff recommends proceeding with implementing scenarios A & B improvement options for the Olympic/Beverly/Beverwil intersection.

Susan Healy Keene
Community Development Director

Approved By



ATTACHMENT 1

MEMORANDUM

Date: October 13, 2015

To: Aaron Kunz, City of Beverly Hills

From: Jaimee Bourgeois

Subject: *Executive Summary and Implementation Plan for Improvements at Olympic Boulevard / Beverly Drive / Beverwil Drive*

Ref: LA15-2772

BACKGROUND

Fehr & Peers completed an assessment of safety and operations and identified a range of potential improvements for the Olympic Boulevard / Beverly Drive / Beverwil Drive intersection. The Liaison Committee considered the findings in December 2014 and directed staff to conduct detailed analyses for various options. Following the December meeting, City staff implemented changes that did not require further analysis; specifically, additional all-red clearance time, a new "Left-Turn Yield on Green" sign, and lane line extensions through the intersection. Furthermore, earlier in 2014, City staff lengthened the pedestrian phase across Olympic Boulevard. The intersection has also undergone signage upgrades and signal timing modifications in prior years. Concurrent with this study, City staff is also proceeding with implementation of red light violation camera enforcement.

Detailed analyses were conducted for various improvement options and documented in a memorandum entitled *Detailed Assessment of Improvement Options for Olympic Boulevard / Beverly Drive / Beverwil Drive Intersection* (October 13, 2015). This document serves as the executive summary of that report and provides an implementation plan for completing several phases of improvements.

EXECUTIVE SUMMARY OF DETAILED ASSESSMENT

The Olympic Boulevard / Beverly Drive / Beverwil Drive intersection is a compound intersection that operates on one traffic signal controller and accommodates about 74,000 vehicles per day. A review of collision records revealed an average collision rate equal to the state-wide average for comparable intersections. The location that experienced the majority of collisions during the study period was the intersection of Olympic Boulevard and Beverly Drive at 66% of the total. The most frequent collision factor was not yielding the proper right-of-way (39% of total), followed by unsafe lane changing (28%).

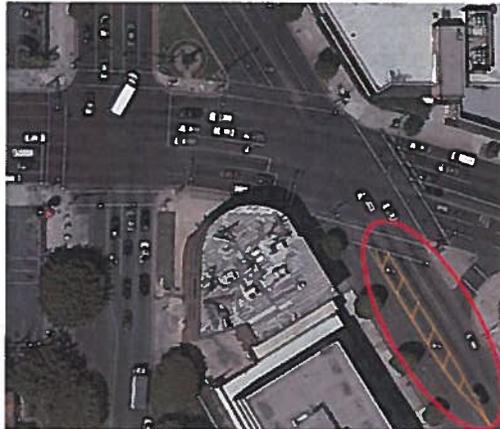
Resulting changes to traffic operations, transit service, and pedestrian and bicycle circulation were identified for four improvement scenarios (A through D). To better understand existing vehicular traffic patterns and to gain insight into how traffic patterns would likely change under each scenario, "Big Data" analytics were used. Through this process, it was identified that additional intersections, specifically Pico Boulevard / Beverwil Drive and Pico Boulevard / Beverly Drive located within the City of Los Angeles, would likely be affected by the redistribution of traffic and were therefore included in the study.



Scenario A

Prohibit the left-turn movement from northbound Beverly Drive to westbound Olympic Boulevard by modifying existing roadway striping and signage, as illustrated in Figure 1. Approximately 1,500 vehicles per day (133 during the morning peak hour and 120 during the evening peak hour) would be shifted to another route.

FIGURE 1
SCENARIO A – Eliminate Northbound Left-turn Movement



Highlights

- Reduces the total number of collisions; eliminates an unprotected turn movement that is involved in approximately 15% of the collisions
- Improved operational performance at the Olympic Boulevard / Beverly Drive / Beverwil Drive intersection with some increase in delay at the Pico Boulevard intersections.
- Vehicles less likely to block the Olympic Boulevard / Beverly Drive intersection.
- Some motorists may choose to use Pico Boulevard instead of Olympic Boulevard thus reducing traffic levels on Beverly Hills streets.
- While this scenario would result in additional traffic on Beverwil Drive initially, volumes could be reduced if combined with Scenarios D or E (presented below).
- To accommodate a shift in traffic to northbound Beverwil Drive, striping modifications should be implemented to lengthen the left-turn pocket and additional green time should be provided for this movement.
- No changes to the bicycle or pedestrian network.
- Santa Monica Big Blue Bus Route 5 would need to be revised, as it currently utilizes this left-turn movement for weekday and weekend service; however, rerouting the bus could further improve safety at the intersection as it is often observed blocking the intersection due to the limited queuing space between Beverwil Drive and Beverly Drive.

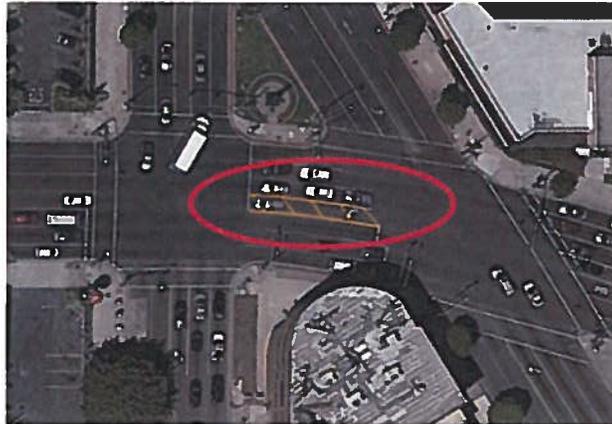
Construction Cost: The construction is estimated to be approximately \$10,000.



Scenario B

Prohibit the left-turn movement from westbound Olympic Boulevard to southbound Beverwil Drive by modifying existing roadway striping and signage (see Figure 2). Approximately 500 vehicles per day would be rerouted (26 during the morning peak hour and 57 during the evening peak hour).

FIGURE 2
SCENARIO B – Eliminate Westbound Left-turn Movement



Highlights

- Reduces the vehicle demand within the short space of Olympic Boulevard between Beverwil Drive and Beverly Drive and reduces the likelihood of vehicles spilling into and blocking the Olympic Boulevard / Beverly Drive intersection.
- Does not significantly change the delay at the Pico Boulevard intersections and results in slightly decreased delay at the Olympic Boulevard / Beverly Drive / Beverwil Drive intersection since the total volume would be reduced.
- Eliminates the conflict point between unprotected left turning vehicles and a very high volume of oncoming eastbound through traffic, a condition which often results in motorists choosing shorter than desired gaps in oncoming traffic to complete a turn.
- Reduces the volume on Beverwil Drive thus improving the residential character of the roadway.
- No changes to the bicycle, pedestrian or transit networks.

Construction Cost: The construction is estimated to be approximately \$10,000.

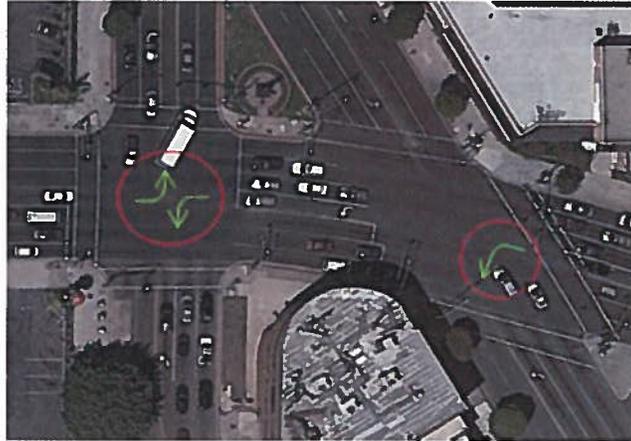


Scenario C

Upgrade traffic signal controllers along the Olympic Boulevard corridor to Type 2070 and implement protected left-turn phases for eastbound Olympic Boulevard to northbound Beverwil Drive and westbound Olympic Boulevard to southbound Beverly Drive and southbound Beverwil Drive (as shown in Figure 3). No vehicles would be rerouted.

FIGURE 3

SCENARIO C – Provide Protected Left-turn Signal Phasing



Highlights

- A controller upgrade is needed to implement protected left-turn phasing (i.e., left arrow indications). The same upgrade would be advised for all controllers along the Olympic Boulevard corridor within Beverly Hills because they operate in coordination.
- Reduce the number of collisions associated with right-of-way violations; collisions involving these turn movements account for almost 25% of all collisions at the intersection.
- Results in modest delay increases at the study intersection due to the inherent inefficiencies associated with protected left-turn phasing.
- No changes to the bicycle or transit networks.
- All existing crosswalks would remain, but pedestrians would incur delay because they would no longer be able to cross concurrent with the left-turn movement. This would, however, reduce the number of conflict points between vehicles and pedestrians and consequently improve safety for pedestrians.

Construction Cost: The construction is estimated to be approximately \$150,000.

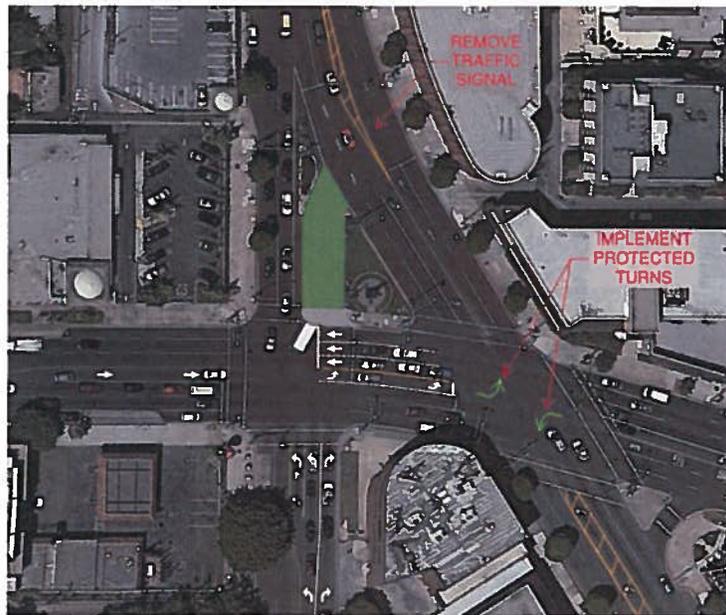


Scenario D

Implement Scenarios A, B and C, and close the northbound segment of Beverwil Drive between Beverly Drive and Olympic Boulevard (see Figure 4). Approximately 11,000 vehicles per day would be rerouted. Specifically for the northbound Beverwil Drive through movement across Olympic Boulevard, a total of 445 and 239 vehicles would be rerouted during the AM and PM peak hours, respectively.

FIGURE 4

SCENARIO D - Eliminate Northbound Left-turn Movement & Westbound Left-turn Movement, Implement Protected Left-Turn Phases and Close Northbound Beverwil Drive between Beverly Dr. and Olympic Blvd.



Highlights

- This scenario would result in the same changes as stated above under Scenarios A, B and C.
- Motorists seeking to travel north are anticipated to divert to Beverly Drive, Camden Drive, or other smaller residential streets to reach their destinations. Additionally, the eastbound left-turn movement would primarily be shifted from Beverwil Drive to Beverly Drive.
- The northbound through movement on Beverwil Drive across Olympic Boulevard would be converted into a left-turn lane, resulting in two left-turn lanes for vehicles traveling from Beverwil Drive to westbound Olympic Boulevard.
- Traffic signal control could be completely removed at Beverwil Drive / Beverly Drive and the number of turn movements at Olympic Boulevard / Beverwil Drive would be reduced, thereby reducing the complexity and potential number of conflict points at the intersection.
- Results in significant decreases in delay and queuing at the Olympic Boulevard / Beverly Drive / Beverwil Drive intersection but with the implication of increased delay along Pico Boulevard.
- The Santa Monica Big Blue Bus Route 5 would need to be revised (as described under Scenario A). No changes to the bicycle and pedestrian networks under this scenario.

Construction Cost: The construction is estimated to be about \$385,000.



It should be noted that an additional scenario similar to Scenario D but without controller and protected left-turn upgrades was studied in the detailed report. The scenario was ultimately excluded since staff felt that the protected left-turn phasing should be implemented if the intersection geometrics are simplified as described under Scenario D. The protected left-turn phasing is expected to reduce the number of traffic collisions and geometric simplifications would more than offset the expected increase in average vehicle delay associated with protected left-turn phasing.

“Ideal Design” and Roundabout Scenarios

The Liaison Committee asked staff to consider an ideal configuration of the intersection and/or the nearby roadway network. Beverly Drive and Beverwil Drive each carry roughly 13,000 vehicles per day. It would be ideal to shift traffic from Beverwil Drive to Beverly Drive to improve the residential character of Beverwil Drive. While Scenario D reduces northbound traffic on Beverwil Drive, additional access restrictions to reduce southbound traffic could include a partial (southbound) or full road closure on Beverwil Drive south of the commercial driveways on the south side of Olympic Boulevard with bicycle and pedestrian access maintained. It should be noted that the removal of through vehicular access in the southbound direction would require the rerouting of the Metro Local 14 bus.

In addition to reducing vehicles on Beverwil Drive, it would be ideal to further simplify the study intersection geometrics to address the complexity, close spacing and number of conflict points. One option could be to prohibit through movements along Beverwil Drive, allowing only left and right turns to/from Olympic Boulevard.

Finally, it would be ideal to provide enhancements for alternative modes of transportation. This could be achieved by reducing traffic volumes on Beverwil Drive, as stated above, and converting it to a bicycle boulevard or implementing a road diet and striping bike lanes. Bicycle access would be maintained through any partial or full road closures. While pedestrian facilities would not be affected, lower traffic volumes would improve the pedestrian experience along the residential street.

Also at the request of the Liaison Committee, staff considered the feasibility of a roundabout at this location. The daily volume of 74,000 vehicles was compared to the theoretical capacity of a two-lane roundabout at 47,000 vehicles per day (The National Cooperative Highway Research Program Report 672, *Roundabouts: An Information Guide, Second Edition*). In addition to insufficient capacity, a roundabout could not be designed with proper approach tapers without the City obtaining right-of-way from adjacent private property.

IMPLEMENTATION PLAN

It is recommended that the City proceed with Scenarios A and B; that is, prohibit the left-turn movement from northbound Beverly Drive to westbound Olympic Boulevard and prohibit the left-turn movement from westbound Olympic Boulevard to southbound Beverwil Drive by modifying existing roadway striping and signage. This would involve the following steps:

- a. Conduct public outreach by way of the Traffic and Parking Commission.
- b. Prepare environmental document for CEQA clearance.
- c. Report findings from Traffic and Parking Commission and CEQA clearance to City Council for final project approval.



- d. Implement Scenarios A and B.
- e. Wait one year and conduct an after study to evaluate the project.

The primary benefits of this implementation plan are that the intersection is simplified and would experience improved operations, the two unprotected left-turn movements involved in 15% of the intersection collisions are eliminated, and implementation is relatively low cost and could be done quickly. It is important to note, however, that Beverwil Drive could experience a small increase in traffic (no more than 8%) until such time in the future if and when Scenario D is implemented.

If the City wishes to proceed with additional improvements, then implementation of Scenario D is recommended, which includes Scenarios A and B as described above, Scenario C (controller upgrades with protected left-turn phasing) and closure of northbound Beverwil Drive north of Olympic Boulevard. Implementation would involve a similar process as above:

- a. Conduct public outreach by way of the Traffic and Parking Commission.
- b. Prepare environmental document for CEQA clearance.
- c. Report findings from Traffic and Parking Commission and CEQA clearance to City Council for final project approval.
- d. Implement Scenario D.

The primary benefits of this alternate implementation plan are that efficiencies would be gained by a single process for public outreach, environmental clearance and construction in comparison to a phased approach and the safety benefits associated with the full set of improvements would be realized sooner. The disadvantage is that completion of and realization of safety benefits associated with Scenarios A and B would be delayed.

Prior to implementation of any of the improvement scenarios contained in this report, environmental clearance is required, which includes the preparation of an appropriate environmental document that identifies environmental exemptions or impacts, if any, as required by the California Environmental Quality Act (CEQA). Through this process, the City of Los Angeles' volume-to-capacity LOS calculation methodology would be used and signal timing and/or roadway configuration changes would be considered cooperatively by both agencies as needed to alleviate impacts or to further improve the residential character of Beverwil Drive both within the City of Beverly Hills and the City of Los Angeles.