



STAFF REPORT

AGENDA ITEM NO: 6.a

MEETING DATE: August 14, 2025

To: Traffic Safety and Parking Commission

Date: August 14, 2025

From: Andrew Wong, Transportation Engineer – (650) 558-7230

Subject: Oak Grove Avenue/Carolan Avenue Traffic Signal Project Update

RECOMMENDATION

Staff recommends that the TSPC receive an update on the project design and the revised traffic operations analysis for the proposed traffic signal at Oak Grove Avenue/Carolan Avenue. Additionally, the update will cover improvements to the traffic signal at Oak Grove Avenue/California Drive. Following the update, staff requests that the TSPC provide a motion of support for these traffic signal improvements.

BACKGROUND

The intersection of Oak Grove Avenue and Carolan Avenue (Oak Grove/Carolan) is situated just north of the Burlingame Avenue Downtown Area and adjacent to Burlingame High School. This intersection is approximately 230 feet from the intersection of Oak Grove Avenue and California Drive, with the Caltrain rail lines running parallel to Carolan Avenue and between both intersections.

During peak morning and evening commute hours, Caltrain operates up to five northbound and five southbound trains every hour through the Oak Grove Avenue rail crossing. With the recent completion of the electrification project, Caltrain anticipates faster performance and plans to increase the number of trains in the coming years.

The Oak Grove Avenue and Carolan Avenue intersection features stop signs for northbound, westbound, and southbound traffic, while eastbound traffic flows freely without a stop sign. This configuration is designed to allow eastbound vehicles to clear the Caltrain tracks for approaching trains. However, this often results in long queues of vehicles behind the stop bars on the east side of the railway tracks, particularly during peak periods such as high school drop-off, pick-up, and the evening commute.

Additionally, the current traffic control layout at Oak Grove/Carolan can cause confusion for drivers unfamiliar with the intersection. Staff observations indicate that eastbound drivers on Oak Grove sometimes pause despite having the right-of-way, while drivers from other directions may not yield, assuming the intersection controls are uniform for all approaches. This layout can also

lead to right-of-way conflicts between eastbound vehicular traffic and pedestrians using the crosswalks at Oak Grove/Carolan.

As part of the City’s plan to enhance multi-modal access, traffic safety and mobility, and circulation in the area, staff conducted a traffic operations study of the two intersections referenced above. Recommendations from the study include a new traffic signal at Oak Grove/Carolan to streamline operations and enhance safety. A traffic signal at Oak Grove/Carolan was also identified by Caltrain as part of their mitigation efforts related to the Peninsula Corridor Electrification Project (PCEP) that was completed last year.

In addition to the traffic signal and pedestrian enhancements at Oak Grove/Carolan, traffic signal enhancements will also be completed at Oak Grove Avenue and California Drive intersection. The improvements at both these intersections will further enhance access and safety for pedestrians, cyclists, and motorists.

This project was initiated in March 2020 but experienced delays due to the COVID Pandemic lockdown and then the development and construction of the California Drive Road Diet project. Once the California Drive project was completed, the traffic patterns were allowed to become established followed by an updated traffic operations study with new counts collected and the new lane geometry associated with the California Drive Road Diet project. During this period, staff continued coordination with both California Public Utilities Commission (CPUC) and Caltrain staff on the project. Part of the coordination with Caltrain included the negotiation and inclusion of construction related funds for the traffic signal at Oak Grove/Carolan.

DISCUSSION

The introduction of a traffic signal at Oak Grove Avenue/Carolan will significantly enhance pedestrian safety and reduce driver confusion. The traffic signal will standardize the operation at the intersection, while introducing pedestrian countdown timers, pedestrian push buttons, and new pedestrian ramps to further pedestrian safety. The trade-off of these improvements is that the signal at Oak Grove Avenue/California Drive may experience operational delay during morning and afternoon peak periods.

For this project update, two signalized alternatives were reviewed: “split-phased” operation, and “protected-left” operation. From design team discussions, a previous “flashing yellow arrow” (FYA) meant to improve traffic signal operations was not part of the revised alternatives due to introduction of a “less common” signal operation.

Table 1 shows the level of service during the A.M. and P.M. peak periods under Existing, Protected Left-Turns, and Split-Phasing conditions:

Intersection	Existing				Protected Left-Turns				Split Phasing			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Oak Grove/California Dr.	34.5	C	26.8	C	31.8	C	24.9	C	51.6	D	31.9	C
Oak Grove/Carolan Ave.	39.2	E*	15.7	C*	26.1	C	23	C	42	D	29.7	C
<i>Total Network Delay</i>	54.5	-	34.2	-	45.6	-	36.4	-	71.4	-	45.6	-

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

* = Oak Grove Ave/Carolan is unsignalized under existing conditions, so delay thresholds for Level of Service are different than for signalized intersections.

Throughout Burlingame, drivers have experience with both “Protected Left-Turns” and “Split-Phasing” traffic signal operations. However, Table 1 shows the operations of “protected left-turns” resulting with less delay and better signal operations than “split-phasing”. Based on the better signal operation with “protected left-turns” staff recommends this option in conjunction with the proposed traffic signal for enhancing safety and right-of-way assignment at Oak Grove/Carolan.

Based on the above, staff is seeking TSPC feedback and a motion of support for these traffic signal improvements.

ATTACHMENTS

Exhibit A: Presentation