

IV. MITIGATION MEASURES

A. Intersection Improvements

Based on the impact criteria in the City's *Traffic Impact Analysis Report Guidelines and Requirements* (Exhibit F), the project-related impact would be considered significant at the following intersections:

- #2 – Alder Avenue at SR-210 Westbound Ramps
- #4 – Locust Avenue at Vineyard Avenue
- #5 – Locust Avenue at Casmalia Street
- #7 – Ayala Drive at Casmalia Street

Note: Although Intersection #5 (Locust Avenue at Casmalia Street) would operate at LOS D, the project impact would be an increase of 9.3 seconds in the AM peak hour, and therefore, would be considered a significant impact based on the sliding scale shown on page 5.

Implementation of the following improvement would mitigate the project impact:

#2 – Alder Avenue at SR-210 Westbound Ramps: Add a second northbound left-turn lane. With this improvement, the intersection would operate at an acceptable Level of Service in both peak hours. The project will contribute on a fair-share basis to this improvement.

#4 – Locust Avenue at Vineyard Avenue:

A signal warrant analysis was conducted for the intersection of Locust Avenue at Vineyard Avenue. As mentioned earlier, since the east leg of Vineyard Avenue will end in a cul-de-sac at the project boundary, the only traffic on the westbound leg of Vineyard Avenue at Locust Avenue will be project traffic from this proposed project, and from the warehouse project immediately adjacent to the west (PPD2107-0068). The forecasted volumes for the westbound approach on Vineyard Avenue would be 12 vehicles (29 PCE) in the morning peak hour and 44 vehicles (117 PCE) in the evening peak hour.

The signal warrant analysis shows that the future PCE volumes at this intersection would satisfy only the One-Hour Signal Warrant, and only during the evening peak hour under Opening Year 2020 Cumulative Plus Project conditions. The intersection would not warrant a signal during the morning peak hour, and would not satisfy the Four-Hour or Eight-Hour Signal Warrants.

The California Manual on Uniform Traffic Control Devices (MUTCD) specifically states that, "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." The reference document goes on to state a number of other factors to take into account when considering a signal for a specific location, including whether or not a signal would improve the overall safety of the intersection, whether it would benefit or disrupt progressive traffic flow (in this case, on Locust Avenue), and consideration of site-specific characteristics such as queuing, signal spacing, and overall delay to the main street through movements.

The decision to install a traffic signal should be based on engineering judgment, and not solely upon satisfying a single peak hour warrant. It is recommended that the intersection be monitored once the project is completed to observe actual peak hour operation, and a decision about signalization should be made based on those observations as well as engineering judgment, based on the factors listed above.

#5 – Locust Avenue at Casmalia Street: Add a second eastbound left-turn lane. The intersection is forecasted to operate at an acceptable Level of Service under all scenarios. This improvement would be consistent with the ultimate lane configuration shown in the Renaissance Specific Plan Amendment, and would more than offset the project-related increase in delay. The project will contribute on a fair-share basis to this improvement.

#7 – Ayala Drive at Casmalia Street: Implement right-turn overlap for the eastbound approach. With this improvement, the intersection would operate at an acceptable Level of Service in both peak hours. The project will contribute on a fair-share basis to this improvement.

A summary of the intersection operation before and after implementation of these mitigation measures is provided on Table 17. The project fair share proportion of the improvements are shown on Table 18, and the estimated costs of the proposed improvements, as derived from the Citywide Development Impact Fee Program, and the Congestion Management Program (CMP) Appendix G, are shown on Table 19.

B. Roadway Improvements

The project would not have a significant impact on any of the study roadway segments.