



1.2 Purpose and Need for Project

The main purpose of this IOAR is to document the safety, operational and engineering acceptability of widening the I-10 EB off-ramp to Avalon Boulevard and signaling the I-10 WB at Avalon Boulevard ramp terminal intersection. With the proposed improvements, it is anticipated that the widening of the I-10 EB Off-Ramp from one to two lanes will provide congestion relief and improve safety conditions at the diverge segment. These improvements at the ramp terminals will improve operations and enhance safety along Avalon Boulevard.

As part of this study, the I-10 EB and WB ramp terminal intersections were studied for operational and safety improvements. The existing analysis revealed that the left-turn movement from the I-10 WB off-ramp operates at LOS F in the AM and PM peak hours. By signaling the I-10 WB ramp terminal intersection, the WB traffic volume will be metered, which will mitigate the simultaneous release of traffic volume onto Avalon Boulevard by creating a platooning effect through the ramp terminal signal control. Signaling the I-10 WB ramp terminal intersection also requires additional lanes on the southbound (SB), northbound (NB) and WB movements to accommodate the future traffic. The future traffic may produce NB queues along Avalon Boulevard that may affect traffic flow at the upstream I-10 EB ramp terminal intersection.

In addition, the existing operational analysis for the diverge segment at I-10 EB to Avalon Boulevard operates at LOS F in the PM peak period. As a means of increasing the capacity at the diverge segment, converting the single-lane off-ramp to two lanes will provide congestion relief and improve safety conditions on this segment.

The need for this project derives from the PTAR. As part of this study, the existing and future traffic volumes along Avalon Boulevard were studied and utilized in the analysis of existing and future traffic conditions. Recent traffic projections completed in the region identified increased traffic congestion and potential deficiencies in the vicinity of the interchange. Currently, the daily traffic volume on Avalon Boulevard ranges between 10,200 and 27,200 vehicles per day, with 7.9 percent daily truck traffic in the vicinity of the interchange. By the year 2045, the daily traffic volume is expected to increase to a range between 13,200 to 35,300 vehicles per day. With this increase in traffic along Avalon Boulevard, the operating conditions at the intersections are expected to deteriorate.

INTERCHANGE OPERATIONAL ANALYSIS REPORT (IOAR)

I-10 at S.R. 281 (Avalon Boulevard)
FPID: 413062-4-22-01 and 413062-5-22-01



A review of the crash data provided in **Section 3** shows a total of 68 crashes for the five-year period (2014-2018), of which 23 were injury crashes and 2 fatal crashes. The actual crash rate at the I-10 EB ramp terminal intersection is 1.728 crashes per million entering vehicles, which is lower than the average statewide crash rate for similar facilities. Analysis of the crash data revealed the following notable characteristics.

- Rear-End crash (40 %) was the predominant crash type, followed by Angle crash (35%).
- Rear-End crashes were most concentrated at the I-10 EB ramp terminal intersection.
- A combination of high traffic volumes along Avalon Boulevard, speed differentials and drivers' failure to yield to vehicles exiting I-10 appear to be contributing to Rear-End and Angle crashes at the ramp terminal intersections.

If no improvements are made at the ramp terminal intersections and at the I-10 EB diverge segment, traffic operations within the study area will continue to deteriorate as traffic continues to grow.

1.3 Project Location

The I-10 at Avalon Boulevard interchange is located in Santa Rosa County at Milepost 5.152, Section number 58002000. I-10 at Avalon Boulevard is located between the I-10 at U.S. 90/S.R. 10 interchange to the west and the I-10 at Garcon Point Road interchange to the east. Avalon Boulevard is approximately 2.35 miles east of U.S. 90/S.R. 10 and 4.23 miles west of Garcon Point Road. The project location and the study area are shown in **Figure 1-1**.