1.2 Purpose and Need for Project

The main purpose of this IOAR is to document the safety, operational and engineering acceptability of signalizing the I-10 EB at U.S. 90 and I-10 WB at U.S. 90 ramp terminal intersections. These improvements intend to address operational deficiencies within the I-10 at U.S. 90 interchange identified in the existing and future analysis reported in this IOAR.

The analysis of the project traffic conditions reported in this IOAR identify operational deficiencies in the vicinity of the study interchange. I-10 EB and WB ramp terminal intersections were studied for operational and safety improvements. The existing analysis results at the intersections revealed that the left-turn traffic from I-10 WB off-ramp at the ramp terminal would operate at LOS F in the AM and PM peak periods, with the delay of 198.3 seconds in the PM peak hour. The future traffic conditions identified the increase of congestion and operational deficiencies at both ramp terminals, by the design year 2045, the minor movements at the ramp terminals operate at LOS F in the AM and PM peak periods.

As part of this study, the existing and future traffic volumes along U.S. 90 were studied and utilized in the analysis of existing and future traffic conditions. Currently, daily traffic volume on U.S. 90 ranges between 18,100 and 19,500 vehicles per day. By the year 2045, the daily traffic volume is expected to increase by two percent, which is the growth rate estimate within the study area, as indicated in **Section 4** of this IOAR. With this increase in traffic along U.S. 90, the operating conditions at the intersections are expected to deteriorate.

A review of the crash data provided in **Section 3** shows a total of 35 crashes for the five-year period (2013-2017), of which three were fatal crashes and nine were injury crashes. The actual crash rate at the I-10 WB ramp terminal is 1.116 crashes per million entering vehicles, which is higher than the average statewide crash rate for similar facilities. Analysis of the crash data revealed the following notable characteristics.

- Other crashes (40%) was the predominant type followed by Rear-end crashes (31%) and by Angle crashes (20%)
- Careless driving and failure to comply with traffic laws attributed to other crashes Rear-end crashes were most concentrated at I-10 WB ramp terminal intersection

- A combination of high traffic volume along U.S. 90, speed differential and failure of yielding for vehicles exiting the freeway appear to be contributing to rear-end and angle crashes at the ramp terminals.
- All fatal crashes occurred at the I-10 WB ramp terminal intersection; two fatal crashes were attributed by drivers that failed to yield right of way.

If no improvements are made at the ramp terminal intersections, traffic operations within the study area will continue to deteriorate as traffic continues to grow.

1.3 Project Location

The subject interchange is located in Gadsden County, along I-10 at Milepost 31.80, Section number 50001000. Along I-10, the nearest interchange of S.R. 267 and S.R. 263 (Capital Circle NW) are 10.9 and 3.8 miles to the west and east, respectively. The project location and the study area are shown in **Figure 1-1**.