

6.3.2 Build Alternative Freeway Analysis

Operational analyses were conducted for the mainline freeway segments and ramp merge and diverge locations. These results are shown in Table 6.12 and Table 6.13. Overall, most freeway segments with Opening Year (2025) Build conditions experience LOS B and most freeway segments with Design Year (2045) Build conditions experience LOS C. The densities at these locations remain below 31 veh/mi/ln during the Opening Year (2025) and below 35 veh/mi/ln during Design Year (2045). The Build Alternative delay, densities, and LOS for Opening Year (2025) and Design Year (2045) is provided in Figure 6.15 and Figure 6.16.

Due to limitations with HCS 2010 Facilities, the modeled diverge at the SR 103/Lane Avenue off-ramp reported an inaccurate LOS E. HCS 2010 Facilities does not accurately replicate the proposed option-lane roadway geometry at this location and therefore, an individual HCS 2010 Ramp model has been prepared (provided in Appendix H). The results of this additional analysis provided the operations of LOS C and LOS B during Opening Year (2025) AM and PM peak hours, respectively and LOS D and LOS C during Design Year (2045) AM and PM peak hours, respectively for this diverging freeway segment.

6.3.3 Build Alternative Safety Analysis

As discussed in Section 3 of this IOAR, a large proportion of the crashes experienced within the study area were associated with congested traffic operational conditions. The improvements proposed for the SR 103/Lane Avenue at SR 8/I-10 interchange study area increase capacity along the mainline and at the interchange to enhance traffic flow and reduce congestion related crashes.

The Build Alternative will adequately address the predominant crash types observed within the study area and will reduce them significantly. Crash Reduction Analysis System Hub (CRASH) provided by the FDOT Safety Office summarizes anticipated Crash Reduction Factors (CRF) for specific roadway improvements based on the benefit-cost (B/C) analysis (provided in Appendix I). A summary of anticipated CRFs is provided in Table 6.14.