

1.3 Project Purpose

The purpose of this project is to analyze alternatives to improve traffic operations and safety through the I-75 and Pine Ridge Road interchange and along Pine Ridge Road in the immediate vicinity of I-75. The goal of the proposed improvements of the interchange will better accommodate future population increases, improve mobility, and support economic growth. The focus of these improvements will be on existing issues. Future issues associated with the on-going I-75 SW Connect Master Plan effort currently being conducted by FDOT District 1 will be resolved through that effort. The projections of future population and employment in the region indicate that travel demand will continue to increase significantly in the future. Previous analysis conducted by Collier County showed that the approaches to both the northbound and southbound ramps experienced failing conditions under 2040 conditions. The ability to accommodate the new travel patterns resulting from growth must be provided to sustain the region's economy. With the improvements, congested conditions are expected to reduce in both morning and evening peak periods.

1.4 Study Methodology

This IOAR has been prepared in accordance with the MLOU provided in **Appendix A**. The analysis years for this study are as follows:

- Existing Year: 2019
- Opening Year: 2025
- Design Year: 2040

The area of influence (AOI) for the I-75 and Pine Ridge Road interchange is shown in **Figure 1.2**. The study area along I-75 extends just north and south of the on and off-ramps to Pine Ridge Road, including the ramp merge and diverge areas. The improvements are focused along Pine Ridge Road and do not include any modifications to the I-75 mainline. Therefore, adjacent interchanges are not included in the AOI. The area of influence along Pine Ridge Road extends from Livingston Road to Vineyards Boulevard. The VISSIM model will focus on the Pine Ridge Road corridor and on- and off-ramps. HCS will be used to analyze the I-75 merge and diverge junctions.

The AOI includes the following segments and intersections:

Along the Mainline:

- I-75 Mainline Segment north of Pine Ridge Road
- I-75 Mainline Segment south of Pine Ridge Road
- Northbound I-75 Off-Ramp (Diverge)
- Northbound I-75 On-Ramp (Merge)
- Southbound I-75 Off-Ramp (Diverge)
- Southbound I-75 On-Ramp (Merge)

Along the Arterial:

- Pine Ridge Road (CR 896) at Livingston Road (Signalized)
- Pine Ridge Road (CR 896) at Whippoorwill Lane (Signalized)
- Pine Ridge Road (CR 896) at the I-75 Southbound Ramps (Signalized)
- Pine Ridge Road (CR 896) at the I-75 Northbound Ramps (Signalized)
- Pine Ridge Road (CR 896) at Napa Boulevard (Signalized)
- Pine Ridge Road (CR 896) at Vineyards Boulevard (Signalized)