

## **2.2. Purpose and Need Statement**

The purpose of this project is to improve safety and traffic operations at the I-4 and SR 528 interchange. Improvements to the operation and safety of the I-4 and SR 528 interchange area will improve mobility and support economic growth.

The purpose of this interchange access request (IAR) is to document the potential safety and operational impacts of the interchange modifications being proposed as part of the I-4 and SR 528 interchange improvement project.

The need for the project has been documented in previous analyses of the interchange (as described in the Introduction) which showed failing operations of the westbound I-4 off-ramp to SR 528. The need for the project is also shown by the projections of future population and employment growth in the region indicating that travel demand will continue to increase well into the future. Without the improvements, congestion is expected to occur on the westbound I-4 off-ramp resulting in failing conditions which will impact the operations of I-4. The volume to capacity (v/c) ratio along the study ramp is expected to exceed 1.0 (overcapacity) based on the 2026 AM and PM traffic projections prepared by Florida's Turnpike Enterprise (2,330 and 2,150 vehicles in the 2026 AM and PM peak hours, respectively) and the capacity of a single lane ramp (assuming approximately 1,800 vehicles per hour). The v/c ratio is expected to increase/worsen as traffic demands increase. Queue spillback onto the mainline I-4 is expected to occur in the future without widening the ramp to two lanes, resulting in a significant safety risk along the westbound I-4 mainline lanes.

## **2.3. Analysis Years**

Traffic operations are analyzed and reported in this IOAR for the existing year (2022) as well as the following future years:

- Opening year – 2026
- Design year – 2036

2022 field collected data was used for the existing year analyses documented in this IOAR.