

SECTION ONE

Project Overview

1.2 PURPOSE AND NEED

The Martin Highway interchange modifications are being proposed to address existing and projected future traffic congestion and related capacity deficiencies caused by high traffic demand that cannot be accommodated by the existing trumpet interchange configuration. This interchange is the only access to and from the Turnpike, leading to more traffic demand than the existing available capacity. Due to the increased traffic demand expected in the future, the widening of the Turnpike mainline to eight lanes is currently being evaluated. The Becker Road interchange, 5 miles north of the Martin Highway interchange, does not provide a direct Turnpike connection to/from the beachside developments to the east through the St. Lucie River, as the Martin Highway interchange does. For this reason, the Martin Highway interchange becomes a natural choice for the Turnpike traffic destined for eastern Martin County.

The Turnpike interchange has a trumpet configuration with ramps that connect to SR 714 at a single intersection. A typical trumpet ramp terminal normally operates with a 3-phase signal timing operation. At the Martin Highway interchange, the ramp terminal intersection has a fourth (northern) leg connecting to Martin Downs Boulevard. The intersection traffic signal requires an inefficient 4-phase operation, causing frequent queues during peak periods. The ramp intersection currently operates at LOS D during both peak hours.

At the request of the Florida Department of Transportation (FDOT), and as part of Financial Project ID 423374-1, this study evaluates the ultimate improvements under the Florida's Turnpike Mainline Widening Project from north of Indiantown Road interchange (MP 116) through the Martin Highway interchange (MP 133) in Martin County. The traffic analysis includes the evaluation of the proposed additional mainline capacity and safety, operational, and engineering (SO&E) acceptability for the modifications to the Martin Highway interchange.

1.3 PLANNED AND PROGRAMMED TRANSPORTATION PROJECTS

Planned and programmed improvements within the study area have been considered in developing the traffic and interchange concepts and are included in the analysis. The key planned improvements include:

- Central Turnpike Widening from north of Jupiter / Indiantown Road at MP 116 to north of Fort Pierce / Okeechobee Road (SR 70) at MP 152, FTE Work Program (2018/2019 – 2022/2023) and Master Plan (2017 – 2045)
- The FDOT District 4 Five-Year Work Program and FDOT Florida Intrastate Highway System (FIHS)/Strategic Intermodal System (SIS) Plan
- The Treasure Coast 2045 Regional Long Range Transportation Plan (RLRTP), which includes the Indian River, Martin, and St. Lucie Counties Metropolitan Planning Organizations (MPOs)
- The FDOT I-95 Multimodal Master Plan [FPID: 436577-1-22-01] and City and County Access Management Plans