

INTRODUCTION

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) conducted an I-4 Interchange Needs Evaluation Study to evaluate current traffic operations and identify operational deficiencies at the interchanges along I-4 from east of I-75 to the western connection of SR 570 (Polk Parkway). The study's primary goal was to identify problems at the interchanges off-ramps that cause safety and operational issues on the I-4 mainline. Proposed recommendations focused on small-scale, cost-feasible projects that can be funded through current FDOT programs. The I-4 Interchange Needs Evaluation Study was conducted concurrently with the I-4 Project Development and Environment (PD&E) Study from east of 50th Street to the Polk Parkway (431746-1). This Interchange Operational Analysis Report (IOAR) focuses on the I-4 at Branch Forbes Road interchange. The I-4 Interchange Needs Evaluation Study is included in **Appendix A**.

I-4 is designated a SIS highway corridor as part of Florida's Strategic Intermodal System (SIS). *"The SIS represents a statewide network of high-priority transportation facilities, including Florida's largest and most significant airports, spaceports, deep-water seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways, highways, military access facilities, intermodal logistic centers, and fixed guideway transit corridors. These facilities represent the state's primary means for moving people and freight between Florida's diverse regions, as well as between Florida and other states and countries".*¹

I-4 at Branch Forbes Road is a diamond interchange located approximately three miles east of the I-4 at McIntosh Road interchange and approximately two miles west of the I-4 at Thonotosassa Road interchange. Branch Forbes Road connects US 92 to the south and Thonotosassa Road to the north. **Figure 1-1** shows the location map of the interchange.

1.1 Purpose and Need

The purpose of this IOAR is to document the Safety, Operational and Engineering (SO&E) acceptability of transportation improvements proposed for the I-4 and Branch Forbes Road interchange. The need for this project is to improve safety by alleviating excessive vehicle queue spillback at the I-4 at Branch Forbes Road eastbound and westbound off-ramps and improve the operations of the ramp terminal intersections.

During field observations conducted during the I-4 Interchange Needs Evaluation Study, queues from the off-ramps were observed impacting the I-4 mainline. Also, left turn queues from northbound and southbound left turn movements were observed to block the ramp terminal intersections. Based on the projected queues from the I-4 eastbound off-ramp and future traffic volumes, a need to install traffic signals at the ramp terminal intersections and extend the storage length of the northbound and southbound left turn lanes at the ramp terminal intersections were identified to minimize impacts to I-4 mainline operations and safety.

¹ *Strategic Intermodal System Handbook, Section 1: Strategic System Background, 2020*