

### 1. Project Overview

#### 1.1 Introduction

This Interchange Operational Analysis Report (IOAR) has been prepared to evaluate the impacts of signalizing the I-95 northbound off ramp to eastbound SR 706 (Indiantown Road), as well as determining when Level of Service “F” operations occur along eastbound SR 706, and when widening SR 706 from three lanes to four lanes is required. The Florida Department of Transportation (FDOT), District 4 is the Applicant seeking approval of this IOAR that presents the necessary documentation for such improvements.

The IOAR proposes signalization of the I-95 northbound off ramp at SR 706. The proposed improvement is intended to address queues backing up to the I-95 mainline that occur in the AM and PM peak periods on the I-95 northbound off ramp and I-95 southbound off ramp at SR 706.

In 2003 the state of Florida established the Strategic Intermodal System (SIS), which consists of high priority transportation facilities and services of statewide and interregional significance. These SIS facilities are critical to the movement of people and goods in Florida, and their function is considered to be vital to Florida’s economic competitiveness.

I-95, which is a designated SIS facility, is a north-south roadway that links northern and southern limits of Florida. It is vital thorough fare that links multi-modal hubs to facilitate the safe and efficient movement of goods and people. The interchange of I-95 at SR 706 (Indiantown Road) is a heavily traveled location.

As new developments continue to be constructed along SR 706 corridor in Palm Beach County, and traffic volumes in the area continue to increase, the I-95 and SR 706 interchange requires operational improvements to allow it to operate as efficiently as possible in the near term, and to maximize the capacity of the existing interchange configuration. FDOT District 4 evaluated traffic operations at the I-95 interchange at SR 706 and assessed short-term alternatives for improving traffic operations.

Field reviews were conducted in September 2015 to observe traffic operations at the interchange and the intersections immediately east and west of the site. Extensive eastbound queues were observed during both the AM and PM peak hour from the adjacent intersection east of the interchange at Island Way backing up to the northbound exit ramp. These queues spillback into the I-95 interchange and impede the northbound-to-eastbound exit ramp maneuver, particularly during the AM peak hour.

In addition, excessive vehicular delay was noticed for the eastbound through movements along the SR 706 corridor between I-95 and Island Way, and including further eastward to Central

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Boulevard. This was coupled with a heavy eastbound left-turn volume where drivers are destined towards I-95 via the northbound entrance ramp.

The purpose of this IOAR is to document the need for and feasibility of short term improvements. Preliminary engineering plans were developed to address operational deficiencies within existing right-of-way to minimize impacts and costs. Conceptual design plans for the improvements are provided in this report for the project, along with a cost estimate and documentation of the benefits of the project. The following short-term improvements were identified.

- 1) **Signalize the I-95 NB Off-Ramp to EB SR 706 (Indiantown Road).** By urbanizing and signalizing the I-95 northbound off-ramp termini at SR 706, the discharge of eastbound traffic volume towards Island Way will be metered. This would mitigate the simultaneous release of eastbound traffic volume into Island Way by creating a platooning effect through the ramp termini's signal control.

Signalizing the I-95 northbound off-ramp termini intersection also requires improvements to eastbound SR 706 through the interchange to accommodate a more urban flow of traffic (i.e. require the need for a continuous third eastbound through lane between the Turnpike and the I-95 northbound off-ramp termini intersection.) It may also produce eastbound queues at the I-95 northbound off-ramp termini intersection that may affect traffic flow at the upstream I-95 southbound off-ramp/loop ramp. Signalizing any intersection increases delay at that location for the major street. However, signalization improvements coupled with improvements to eastbound Indiantown Road between I-95 and Island Way will reduce eastbound queues formed at the Island Way intersection. Eastbound queues will be managed during peak hours such that they will not affect traffic operations at the I-95 interchange or the I-95 mainline.

- 2) **Convert the EB right-turn lane from west of Island Way to Central Boulevard to a shared through-right lane.** As a means of increasing eastbound throughput on SR 706, converting the eastbound right-turn lane at Island Way to a shared through-right lane and extending it to Central Boulevard would reduce eastbound queues on SR 706 at Island Way. Such an improvement could connect to the 2-lane I-95 northbound off-ramp to eliminate the merge maneuver now necessary. Since receiving pavement exists on eastbound SR 706 downstream of Island Way almost to Central Boulevard, only a minimal amount of new construction would be required.

Since traffic volume indicate that the eastbound through volume beyond Central Boulevard is less than the eastbound through volume approaching Central Boulevard, the logical intersection to drop the proposed shared through-right lane is at Central Boulevard (according to a traffic operations viewpoint).

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This lane conversion would eliminate the continuous right-turn lane serving the driveways on the south side of SR 706. The improvement also does not address the root cause of the eastbound queues arriving at Island Way, and would only serve as a temporary solution. If more development and additional traffic are realized in this area, the benefit associated with the lane conversion would inevitably be negated by the additional traffic volume until the queues and delays are equal to or worse than what is present today.

### 1.2 Project Location

I-95, which is a designated SIS facility, is a north-south roadway that links northern and southern limits of Florida, and is a critical link in the state's transportation network. SR 706 is an east-west principal arterial through Palm Beach County. Immediately east of the interchange along SR 706 is a signalized four way intersection at Island way which provides access to residential communities on the north and south side of SR 706. West of I-95 is the Florida Turnpike that has a four way intersection on SR 706.

Palm Beach County has zoned the land north and south of SR 706 west of the Island way Intersection as light industrial. At the Island Way intersection continuing east to the Central Boulevard intersection the land north and south of SR 706 is zoned as high density residential and general commercial. **Figure 1** shows the location and study area map for the project.