

1 Introduction

Florida Department of Transportation (FDOT) District 4 is seeking to enhance the traffic operation and safety at the interchange of I-95 and Hallandale Beach Boulevard. The interchange is located in the City of Hallandale Beach to the east and the Town of Pembroke Park to the west, both of which are in Broward County. An assessment of the interchange was initiated by the Department in 2014 via an Interchange Concept Development Report (ICDR) regarding its operations. A concurrent safety evaluation at the ramp termini intersections was performed by the District's Traffic Operations Office in 2013. Both evaluations identified deficiencies, and in an effort to address these concerns, FDOT initiated this Interchange Operational Analysis Report (IOAR) to assess alternatives for improving traffic operations and safety. The IOAR was prepared to document the need, cost and benefits to support the implementation of safety and operational improvements at this interchange under FM No. 436111-1.

Overall, these IOAR improvements are intended to provide short-term relief for the interchange. Long term improvements will be identified as part of FDOT's Project Development and Environment (PD&E) Study planned for I-95 between Hallandale Beach Boulevard and Hollywood Boulevard. This PD&E Study is funded for fiscal year 2017.

1.1 Project Need

Currently, motorists at the I-95 northbound off-ramp termini experience excessive delays and queuing during the morning and afternoon peak hours of operation. During peak hours, the maximum queue from the signalized northbound ramp termini intersection extends beyond the storage area allocated for the right-turn movement. Enhancements to the northbound exit ramp termini are intended to add capacity and vehicular storage for the northbound right-turn movement, as well as improve safety.

The District's Traffic Operations Office identified the I-95 southbound ramp termini intersection as a candidate to improve safety. Crash analysis revealed a high potential for crash reduction associated with the southbound right-turn movement, which currently operates under yield control. The proposed signalization of the southbound right-turn movement and lengthening of the right-turn lane storage area are intended to improve traffic safety at the I-95 southbound off-ramp.

Based on turn lane and signalization improvements to the northbound and southbound exit ramp termini intersections, FDOT determined that an IOAR was required to evaluate the proposed improvements. This document is consistent with the requirements outlined in the FDOT Interchange Access Request User's Guide. The purpose of this IOAR is to provide the necessary documentation to obtain approval for the various proposed improvements at the interchange's northbound and southbound ramp termini intersections. These improvements were evaluated assuming an opening year of 2020 with a design year of 2040. Preliminary engineering plans were developed to address safety and operational deficiencies within existing right-of-way to minimize impacts and costs. Conceptual design plans prepared by the District's Traffic Operations Office for the proposed improvements are provided in Appendix A of this report.

Proposed improvements are noted below.

- a) Add a second right-turn lane at the I-95 northbound exit ramp termini intersection with Hallandale Beach Boulevard, lengthen the storage area to approximately 525 feet, and signalize the northbound right-turn movement. The two right-turn lanes would operate under signal control at the ramp termini intersection, and vehicular storage on the northbound exit ramp would be increased.
- b) Signalize the right-turn lane at the I-95 southbound exit ramp termini intersection and lengthen the right-turn lane to approximately 700 feet. In addition to adding vehicular storage on the southbound exit ramp, signalizing the right-turn movement is intended to mitigate rear end crashes that occur at the ramp termini intersection that are correctable by a traffic signal.

2 Project Location

Hallandale Beach Boulevard/SR 858 is an east-west arterial within Broward County. An interchange is provided at I-95 that provides access to the north-south interstate facility. The interchange's area of influence includes the signalized intersections at SW 31st Avenue, which is west of the interchange, and SW 10th Terrace, which is located east of the interchange. The area of influence for the interchange is depicted in Figure 1.

The City of Hallandale Beach has zoned the land northeast of the interchange as Business General (B-G), Business Industrial (B-1), and Light Industrial and Manufacturing (I-L). The southeast quadrant of the interchange is zoned for Business General (B-G) and Residential Multi-Family Medium Density (RM-18).

The Town of Pembroke Park designated the northwest portion of the interchange with zoning that permits Business Industrial (B-1), Industrial (M-1), and Trail Park (T-1). The land in the southwest quadrant of the interchange is zoned for General Industrial (I) development, while land in the northwest quadrant is zoned for Business Industrial (B-1), Business Adult Entertainment Establishment Overlay (B-1A), Industrial (M-1), and Trailer Park (T-1).