

I-75 at Royal Palm Boulevard Interchange Operational Analysis Report

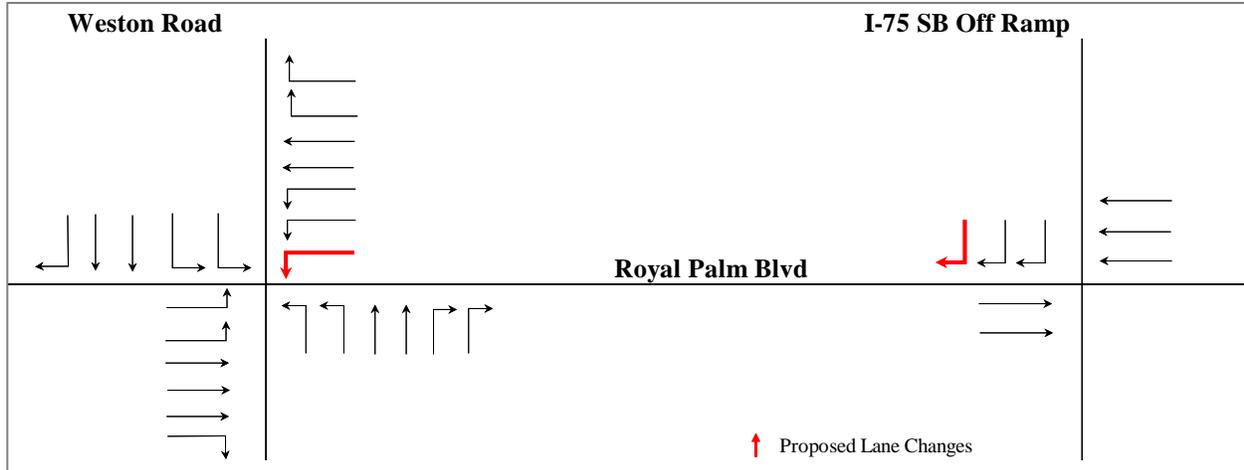


Figure 1 - Approved Improvements at I-75/Royal Palm Interchange

1.1 Purpose and Needs

The Express Bus services were developed in South Florida to enhance mobility and vehicle throughput in the region. As part of the agreement between FDOT with the Broward Metropolitan Planning Organization (BMPO), the Express Bus services will be provided as an alternative travel choice to Express Lanes. In its efforts to implement the agreement, FDOT District 4 has partnered with cities and municipalities in Broward County to provide Express Bus services to commuters travelling to region's major destinations such as Downtown Miami, Brickell Center, and the Miami Health District. With I-75 Express Lanes open to traffic in western Broward County and northwest Miami-Dade County, FDOT conducted a series of studies to identify potential riders and expand the Express Bus services to maximize the benefits of the Express Lanes. The studies determined that the area of I-75 and Royal Palm Boulevard would be a potential location to build a Park and Ride Lot for future Express Bus services serving Miami International Airport and its surrounding areas. A further study developed a conceptual plan that would place the Park and Ride Lot in the southwest quadrant of the I-75/Royal Palm Boulevard Interchange between the I-75 Southbound on-ramp and I-75 mainline. The Park and Ride Lot would contain 160 parking spaces including six (6) Americans with Disabilities Act (ADA) accessible spaces. The I-75 southbound off-ramp terminus would be modified to provide access to the Park and Ride Lot from both east and west side of Royal Palm Boulevard. A merge lane would be provided to connect the Park and Ride Lot to the I-75 Southbound on-ramp, so buses and other vehicles could enter I-75 southbound mainline and the Express Lanes. The conceptual plan was presented to the District Interchange Review

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Coordinator (DIRC) and received approval from FDOT District 4 Acting Secretary on January 11th, 2018. Additionally, based on the study, the proposed southbound Express Bus service connecting the Weston area and Miami International Airport (MIA) will operate from 4:00 AM to 7:00 AM with a peak hour headway of 30 minutes. The northbound Express Bus service is proposed to operate from 1:00 PM to 4:00 PM with the same peak hour headway of 30 minutes. Intersection improvements, including signal timing changes, at the I-75 and Royal Palm Boulevard interchange area will be included as the Build Alternative for the IOAR. The final design of the Park and Ride facility will be performed as an integral part of the Royal Palm Boulevard interchange improvements project (FPID 421548-1).

The IOAR will evaluate the impacts of the proposed Park and Ride Lot on the traffic operations at the I-75 and Royal Palm Boulevard ramp terminus and the Weston Road at Royal Palm Boulevard intersection. The IOAR will be conducted in coordination with: 1) FDOT's ongoing design project to improve Royal Palm Boulevard of I-75; and 2) the previously approved I-75 SIMR that included proposed improvements to the I-75 Royal Palm Boulevard interchange.

The purpose of preparing the Interchange Operational Analysis Report for the I-75 at Royal Palm Boulevard Interchange is to document the operational and safety impacts of the proposed Park and Ride Lot to be built in the southwest quadrant of the interchange and the adjacent intersections.

The I-75 southbound off-ramp terminus at the I-75/Royal Palm Boulevard interchange is currently operating at LOS D or better during both AM and PM peak hours, but the southbound right-turning movement is experiencing significant delays in the AM peak period with an average delay of more than 90 seconds and operating at LOS F.

The intersection of Weston Road and Royal Palm Boulevard is currently operating at LOS F in the AM peak period. The LOS for the eastbound, westbound, and southbound approaches is E or F during AM peak period. The westbound left-turning movement is experiencing delays of approximately 200 seconds in the AM peak period. During PM peak period, this intersection is operating at LOS E. All four approaches are operating at LOS E or F. These delays are expected to worsen in the future with the projected growth in traffic in the area.

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The improvements being implemented as mentioned above are expected to provide relief for traffic congestion in the area, but the impact of proposed Park and Ride Lot on the interchange is yet to be determined. The goal of this study is to conduct a comprehensive analysis of the impacts of these improvements and the proposed Park and Ride Lot when the Express Bus is operating, recommend additional improvements or alternatives if necessary, and seek approval of engineering and operational acceptability for implementation.

The need for this project relates to the following:

- Ensure that the proposed Park and Ride facility will not significantly impact the interchange operations,
- Ensure that the proposed access from/to the proposed Park and Ride facility will not cause any unsafe conditions in traffic operations and circulations.

The overall objectives of this project include the following elements:

- Maintain safety, mobility and circulation of the interchange
- Address potential operational, safety, and physical deficiencies of the interchange caused by the proposed Park and Ride facility.

1.2 Project Location

The interchange of I-75 at Royal Palm Boulevard is located on the border between the Town of Davie and City of Weston in western Broward County. **Figure 2** shows the project location of the study interchange and the surrounding area. The Royal Palm Boulevard (Roadway ID 86000430) Interchange is located at milepost 9.555 of I-75/SR 93 (Roadway ID 86075000). It is approximately 2.7 miles south of I-595/I-75 interchange and 1.8 miles north of I-75/Griffin Road (Roadway ID 86000001) Interchange. The I-75/Royal Palm Boulevard is currently a trumpet interchange with a loop ramp for eastbound entry traffic. The intersection of Weston Road and Royal Palm Boulevard immediately west of the interchange is the only signalized intersection within the half-mile interchange influence area.