

Executive Summary

The Florida's Turnpike Enterprise (FTE) is conducting a Project Development & Environment (PD&E) study (FPID: 441224-1) to evaluate widening of the Florida's Turnpike (S.R. 91) mainline from Milepost (MP) 238.5 to MP 242 in Osceola County. The PD&E study also includes interchange modifications at Kissimmee Park Road (C.R. 525) at MP 240 and Kissimmee – St. Cloud South (U.S. 192) at MP 242.

The Kissimmee Park Road interchange with the Florida's Turnpike provides access to and from the north only under existing conditions. The current PD&E study (FPID: 441224-1) is evaluating concepts for the ultimate configuration of the interchange, including access to and from the south. Capacity improvements at the adjacent Old Canoe Creek intersection are also being considered. The U.S. 192 South interchange serves the northbound off-ramp only. The on-going Florida's Turnpike mainline design and widening project from MP 242 to MP 249 (FPID: 436194-1) will add ramps to and from the north. The current PD&E study (FPID: 441224-1) is evaluating the addition of a southbound on-ramp. This Systems Interchange Modification Report (SIMR) documents traffic operations analysis and safety evaluations for the proposed reconfiguration/modification of the Kissimmee Park Road and U.S. 192 South interchanges along the Florida's Turnpike.

Reconfiguration of the Kissimmee Park Road interchange and capacity improvements are being proposed to address existing and future traffic congestion and related safety issues. Traffic at the Florida's Turnpike southbound off-ramp terminal intersection currently experiences long delays and queues during the evening commute. Queues extend along the full length of the ramp and onto the freeway mainline. This is mainly due to the heavy southbound off-ramp left-turn traffic demand which exceeds the capacity of the existing single left turn lane. Also, eastbound right-turn queues at the adjacent and closely spaced Old Canoe Creek Road intersection extend upstream to the interchange ramp terminals, compounding the backups along the southbound off-ramp and mainline. This intersection experiences severe traffic congestion during the morning and evening commute. As traffic demand increases in the future, traffic operations are expected to deteriorate within the interchange and along the freeway mainline.

There is also a need to complete the Kissimmee Park Road partial interchange by adding access ramps to and from the south, and the U.S. 192 South interchange by adding a southbound on-ramp. Travel demand on the Florida's Turnpike through much of Orange and Osceola County has increased significantly. The Florida's Turnpike system has continued to grow as a "commuter" facility serving trips between urban centers it passes through. Addition of ramps to and from the south will provide more efficient access points to better serve trips originating or ending in St. Cloud, east of the Florida's Turnpike. For instance, trips heading south currently must travel along U.S. 192 to access the Florida's Turnpike at the Kissimmee -St. Cloud North interchange at MP 244.

Crash data for the most recent five years from the state's CARS database showed that the number of crashes doubled from 2012 to 2016 within the study area. All the crashes resulted in injury and property damage only. The Florida's Turnpike mainline crashes were mostly off road but crashes along the ramps were mainly rear end. Majority of the crashes at the intersections were of rear end and angle type. Queue backups on the freeway mainline contribute to crashes. The intersection of Kissimmee Park Road and Old Canoe Creek Road is a high crash location.

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The PD&E study evaluated various Build alternatives for the Kissimmee Park Road interchange. The selected Preferred Build interchange configuration increased the spacing between the ramp terminal intersections and Old Canoe Creek Road, enhanced network connectivity, had less residential and environmental impacts and offered a lower cost compared to the other alternatives. In addition, this alternative was highly supported by the public. The Build alternative relocated the Kissimmee Park Road interchange by approximately half of a mile north, to an extension of Nolte Road. The proposed configuration featured a DDI, serving all movements. The existing ramps at the Kissimmee Park Road interchange would be removed; however, the overpass would be maintained for local access. Additional ramps to and from the north would be added to provide direct access between the Florida's Turnpike and Old Canoe Creek Road, at approximately half of a mile south of Kissimmee Park Road. This alternative also included a proposed southbound on-ramp at U.S. 192 South, to complete the interchange and provide access to all movements. The Build alternative also assumed widening of the Florida's Turnpike mainline to eight lanes from MP 238.5 to MP 240.

Future lane requirement analysis for the freeway mainline and ramps showed that additional capacity will be required for both No Build and Build alternatives. The mainline will require three lanes per direction south of Kissimmee Park Road or Nolte Road in year 2039 and 2032, for the No Build and Build conditions, respectively. No additional capacity will be required through the 2045 design year south of Kissimmee Park Road. Three lanes will be required between Kissimmee Park Road or Nolte Road and U.S. 192 South by the 2025 opening year, for both No Build and Build conditions. The traffic demand in this segment will be very close to the four-lane volume target by the 2045 design year. Each of the ramps to and from the north at the Kissimmee Park Road or Nolte Road interchange will require two lanes by the opening year. All other ramps will require a single lane each through the 2045 design year.

It is anticipated that the Kissimmee Park Road and Florida's Turnpike southbound off-ramp and the intersections along Old Canoe Creek Road within the AOI will be over capacity, from opening to design year under the No Build conditions. Key deficiencies of the No Build include lack of capacity at the southbound off-ramp to Kissimmee Park Road, close proximity of the Old Canoe Creek Road intersection and lack of capacity along Old Canoe Creek Road. Transportation Systems Management and Operations (TSM&O) strategies such as signal retiming have been implemented to mitigate the existing issues but were not successful. This SIMR evaluated a TSM&O alternative that included restriping of the Kissimmee Park Road southbound off-ramp to add dual left turn lanes and two receiving lanes. This TSM&O alternative is expected to provide a small reduction in delay, at this intersection only, and will not address existing or future capacity needs. The additional capacity provided in the Build alternative is expected to restore operations to acceptable levels along the freeway mainline and ramps. It is estimated that the Build alternative will reduce network travel time and delay by approximately 50 to 90 percent compared to No Build, during 2045 peak periods within the study area. However, additional capacity will be required along Old Canoe Creek Road, the analysis showed a need for six lanes by the 2025 opening year south of Kissimmee Park Road and by

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year 2036 to the north, under No Build conditions. Enhanced pedestrian and bicycle treatments are included such as sidewalks, crosswalks, lighting and signalization of right turns to improve safety.

User benefit for a 20-year life span of the proposed interchange modifications and improvements was estimated using network travel time and safety. Fuel consumption and emissions were not included. Based on 2018 dollars and a discount rate of five percent, the estimated user benefit was \$1,209 Million and \$8.6 Million based on travel time and safety, respectively, from year 2025 to 2045. The safety benefit would have been higher if the safety analysis tools could consider queuing impacts in estimating potential crashes. The design follows FDOT standards to provide features that mitigate potential crashes such as long acceleration and deceleration lanes, adequate sight distances, gentle cross-slopes, super elevation, wide curve radii, wide shoulders, signing, among others. The analysis showed that the proposed modifications meet the requirements for the Federal Highway Administration's (FHWA) two policy points. First, the operational and safety analysis conducted for this SIMR confirmed that the proposed improvements under the Build alternative do not have an adverse impact on the operations and safety of the Florida's Turnpike or local street network, and improves traffic operations through the design year. Second, the proposed accesses connect to public roads only and will provide for all traffic movements.