

**EXECUTIVE SUMMARY**

The purpose of the study is to complete an Interchange Modification Report (IMR) to determine what improvements can be programmed to improve traffic operations and safety at the I-75 at SR 121/331 interchange. The IMR will identify and evaluate improvements to the interstate mainline, ramps, ramp termini intersections and cross street at the interchange of I-75 and SR 121/331. The primary purpose of the project is to alleviate existing and future traffic congestion at the interchange. Recent studies completed in the region such as the I-75 Master Plan and I-75 North Sketch Interstate Plan identified operational deficiencies at ramps and the terminal intersections and the need for improvements.

A Methodology Letter of Understanding (MLOU) was prepared to document the methodology for the analysis and evaluation of this IMR. The MLOU was approved by the Florida Department of Transportation (FDOT) District 2 Interchange Review Coordinator (IRC) and FDOT Central Office in April 2021. The primary basis for traffic projections in this IMR are existing field traffic counts and the latest version of the Alachua County/Gainesville MTPO model (Gainesville model) with base year 2015 and horizon year 2045. The analysis years for this study include Existing Year 2020, Opening Year 2025, and Design Year 2045. The operational analysis for this study was performed using Highway Capacity Manual (HCM) procedures.

Two alternatives are evaluated in this IMR: The No Build Alternative and the Build Alternative. The following describes the improvements proposed with the Build Alternative:

**Build Alternative**

- Develop three lanes of capacity on eastbound and westbound SR 121/331 between I-75 southbound exit ramp intersection and SW 34<sup>th</sup> Street.
- Add a directional exit ramp located in the southeast quadrant to serve the northbound I-75 to eastbound SR 121 movement.
- The southbound off ramp terminal is modified to remove the southern leg of the intersection from the signalized intersection.
- The eastbound inside through lane on SR121/331 will drop and become an exclusive left-turn lane to access I-75 northbound.
- Additional southbound right turn at the SW 34<sup>th</sup> Street and SR 121/331 intersection will be added as well as a westbound through lane.

The Build Alternative should improve traffic operations with no negative impacts to operations or the environment in the study area.

Additionally, the Build Alternative will improve safety within the vicinity of the interchange by reducing crashes caused by congestion along SR 121/331.

In conclusion, the Build Alternative is recommended as the preferred alternative for this project. The Build Alternative is the best performing alternative and provides long term operational and safety benefits. Additionally, the northbound (NB) deceleration auxiliary lane off ramp for the Build Alternative can be extended along I-75 without the need to widen the existing bridge over SR 121, providing additional peak event (holidays, gameday) vehicle storage, reducing the potential for backups on mainline I-75.

This IMR has been developed in accordance with the FDOT Policy No. 000-525-015 (Approval of New or Modified Access to Limited Access Highways on the State Highway System (SHS), FDOT Procedure No. 525-030-160 (New or Modified Interchanges and Procedure No. 525-030-120 (Project Traffic Forecasting).

## **E.1. Compliance with FHWA General Requirements**

The following requirements serve as the primary decision criteria used in approval of interchange modification projects. Responses to each of the FHWA two policy points are provided to show that the proposed modification for the I-75 at SR 121 interchange is viable based on the conceptual analysis performed to date. These two policy points and the responses are as follows:

### **E.1.1. Proposal does not adversely impact operational safety of the existing freeway**

*An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).*

An operational and safety analysis performed for the Preferred Build Alternative demonstrated improved traffic operations that decrease delays and improve level of service (LOS). The safety analysis performed for this IMR showed that there are safety concerns within the study area. The crash rates along I-75 at SR 121/331 within the area of influence are higher than the statewide averages for similar facilities. Along SR 121/331 rear end crashes are the predominant crash types in the study area and account for approximately 47 percent of the total crashes. The proposed interchange modifications in this IMR aim to improve traffic flow at intersections and along the local streets. This will reduce congestion related crashes such as rear end collisions and provide safer travel conditions. Crashes are expected to increase slightly by 0.7 crashes/year along the I-75 ramps and 0.4 crashes/year along the mainline but decrease at the ramp terminals by 14.2 crashes/year due to the Build Alternative modifications. Crashes are expected to increase slightly by 0.7 crashes/year along the I-75 ramps and 0.4 crashes/year along the mainline but decrease at the ramp terminals by 14.2 crashes/year due to the Build Alternative modifications.

The Preferred Build Alternative will improve traffic operations that decrease delays throughout the study area compared to the No-Build Alternative through the Design Year 2045.

**E.1.2. A full interchange with all traffic movements at a public road is provided**

*The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access, such as managed lanes (e.g., transit or high occupancy vehicle and high occupancy toll lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design*

The proposed improvements to the I-75 at SR 121/331 interchange will provide full access and caters to all traffic movements from SR 121/3131 to and from I-75. The proposed modifications are designed to meet current standards for federal-aid projects on the interstate system and conform to AASHTO design standards.