

439484-1; I-295 Interchange at Collins Road

Table 4-3 Design Year 2030 Proposed Build Alternative 95th Queuing Analysis Results

Intersection	Time Period	Eastbound			Westbound			Northbound			Southbound		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Collins Road at I-295 SB Off-Ramp/Paramore Road	AM Peak		#856		m8	10		8		0	#161	16	#191
	PM Peak		438		#149	401		#71		#75	171	55	#322
	Build Storage (ft)				335					250			
Collins Road at I-295 NB On-Ramp	AM Peak		32			#510	#1167						
	PM Peak		0			#302	#343						
	Build Storage (ft)						1175						
Collins Road at I-295 NB Off-Ramp	AM Peak		30			m4		204		74			
	PM Peak		#342			234		#448		86			
	Build Storage (ft)							350					
Collins Road at Plantation Bay Drive	AM Peak	m56	217		16	253			95			78	132
	PM Peak	#165	#278		27	#354			34			31	41
	Build Storage (ft)	250			150								

5.0 Safety

5.1 Safety Analysis Methodology and Data Collection

A safety analysis was performed on the collected data using methodology outlined in the FDOT Highway Safety Manual. Crash Modification Factors (CMF) from the Federal Highway Administration's online clearinghouse were reviewed, but due to the unique configuration of the Proposed Build Alternative, there were no applicable CMFs in the clearinghouse available for this concept. The previously Approved Build Alternative safety analysis used FDOT specific Crash Reduction Factors (CRF) from the Crash Reduction Analysis System Hub (CRASH) maintained by the FDOT Safety Office.

The following CRFs were previously used to perform a safety analysis of the Approved Build Alternative:

- Add turn lane(s) and pavement resurfacing – 35%
- Modify Intersection at signalized intersection – 6%

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Historical crash data for the project study area was obtained for a five-year crash period, 2012 through 2016, along the Collins Road mainline at I-295 study C-D system interchange ramps and also at the intersections of Plantation Bay Drive, Rampart Road, Parramore Road, and Star Rush Road/Collins Crossing. The data obtained included crash volume, type, location severity and property damage along with driver information and incident descriptions as recorded by emergency responders. Traffic data from Florida traffic online and the previously Approved Build Alternative IOAR was also used in this analysis. A detailed safety analysis for the Proposed Build Alternative can be found in **Appendix D**.

5.2 Summary of Safety Analysis Results

The crash reduction analysis performed for the Proposed Build Alternative yielded an expected Annual Reduction in Crashes of 12.4. There are additional safety benefits expected to be realized with the Proposed Build Alternative which cannot be quantified given the limitations of CRFs and CMFs. Specifically, for the Collins Road at I-295 Northbound Ramps intersections, the Proposed Build Alternative at the Northbound ramps will extend the storage available for the Collins Road Eastbound to I-295 Northbound movement which should reduce rear-end crashes in the queue and some angle crashes at the adjacent intersections. The Proposed Build Alternative will also help to eliminate the weave along Collins Road in the westbound direction which should reduce the number of sideswipe crashes. A detailed safety analysis for the Proposed Build can be found in **Appendix D**.

6.0 Project Funding and Schedule

This project has a production date of 11/08/2019, with a letting date of 04/22/2020. It has federal funding under the Federal Project Number D217-133-B.

7.0 Summary and Recommendation

The purpose of this Re-evaluation is to analyze the operational improvements between the Approved Build Alternative and the Proposed Build Alternative at the I-295 at Collins Road interchange. The Re-evaluation proposes to change the approved “Jug Handle” concept into a median U-turn for the Collins Road eastbound to I-295 northbound movement. While both movements operate similarly, the Proposed Build Alternative significantly improves the AM peak operations on the Collins Road eastbound movement to I-295 northbound (The median U-turn). While there is a decrease in operations during the PM peak, it is outweighed when compared to the AM peak improvement, which improves the failing Collins Road at I-295 northbound On-Ramp intersection from a LOS ‘E’ to a LOS ‘C’. Due to the nature and location of the “Jug Handle”, there is limited storage for the Collins Road westbound movement. The Proposed Build Alternative improves upon this by allowing a free flow U-turn movement, instead of a signalized left turn for the Collins Road eastbound to I-295 northbound movement, giving additional storage space for the Collins Road westbound movement. A table showing the comparison between the Approved Build Alternative and Proposed Build Alternative is shown in **Table 7-1**.