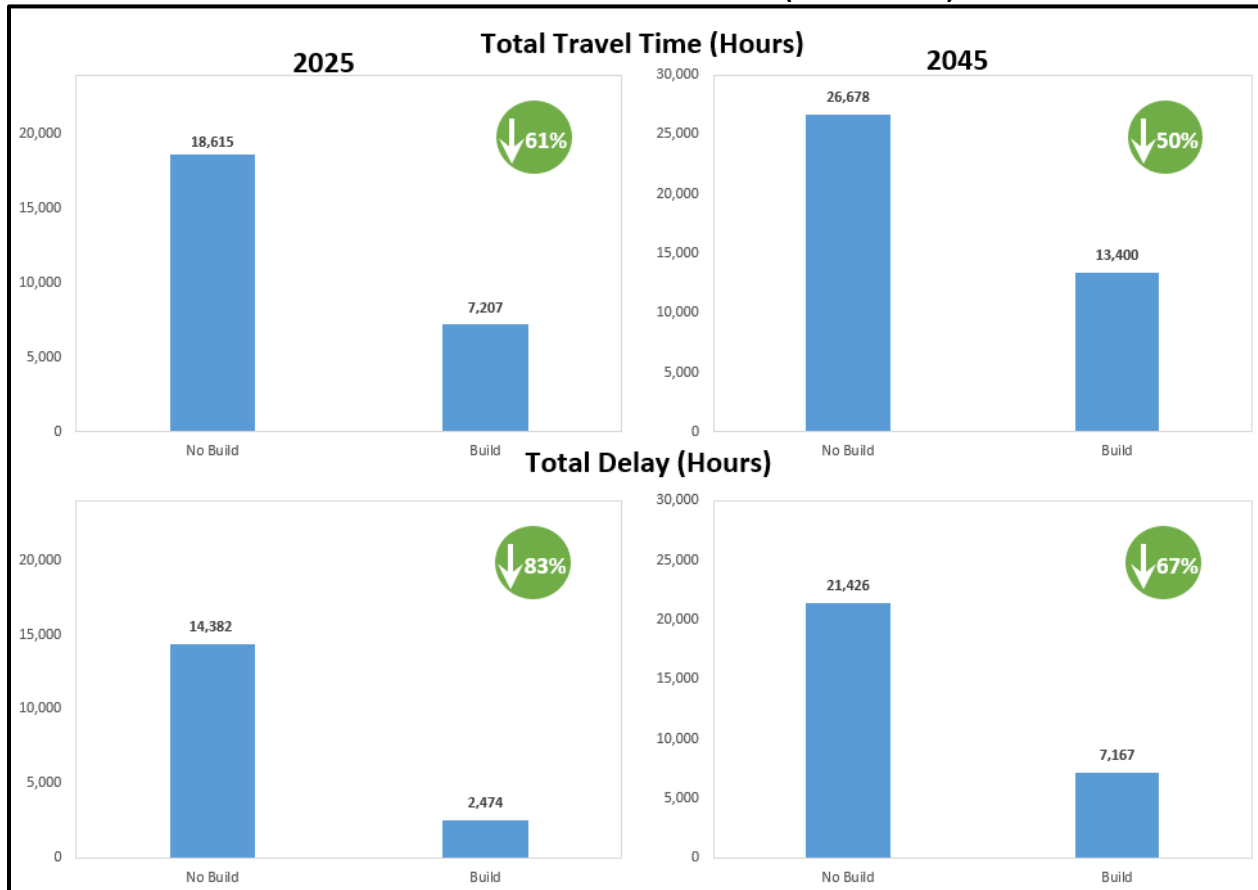


Figure 6.17
PM Peak Period Network Performance (4-Hour Total)



6.3 FUTURE SAFETY EVALUATION

A safety analysis was conducted to study the future impacts of the proposed interchange modifications and improvements within the project limits. The analysis focused on the Florida's Turnpike freeway mainline, ramp segments, arterials and study intersections within the AOI. The analysis was conducted using the predictive methods in Chapters 12 and 19 of the Highway Safety Manual (HSM), where available, and the Interchange Safety Analysis Tool (ISATe), which apply a combination of Safety Performance Functions (SPFs), crash modification factors (CMFs), and calibration factors to estimate frequency and cost of crashes for each segment and intersection.

The No Build and Build alternatives were evaluated and the predicted number of crashes and associated costs were compared for the 2025 to 2045 analysis period. The results of the safety analysis are summarized in **Table 6.43**. It is important to note that the safety analysis tools available to date are deterministic in nature and estimate future crashes mainly based on AADT and roadway characteristics. These tools do not account for vehicle interactions. The No Build is expected to have extensive congestion and queues which may potentially impact crashes. Predicted crashes for No Build would be higher than shown in **Table 6.43** if congestion and queuing impacts were considered.

SECTION SIX

Future Traffic Conditions

Consequently, cost savings would be higher than reported. Nevertheless, a summary of the crash estimates based on the available tools is presented.

Even though the Build has additional merge/diverge segments and new access points along the freeway when compared to the No Build, the crash prediction is lower since the analysis considered eight lanes in the Build conditions. The number of crashes predicted on ramp segments is slightly higher, due to the increase in number of ramps along the freeway. However, the Build will relieve congestion at the Florida's Turnpike, ramps and the arterial intersections, which is expected to result in a 10 percent reduction in the overall number of potential crashes. Intersection improvements within the AOI are also expected to reduce crashes. Based on these results, the Build alternative is predicted to have a 20-year crash cost savings of approximately \$8.6 Million compared to the No Build alternative, in 2018 present value. Detailed analysis tables are provided in **Appendix H**.

Table 6.43
Predicted Number of Crashes and Cost Savings from 2025 to 2045

Site	No Build		Build	
	N _{predicted} *	2018 Present Value	N _{predicted} *	2018 Present Value
Florida's Turnpike				
Freeway Segments	2191.3	\$91,017,793	1914.5	\$87,578,103
Ramp Segments	130.3	\$5,413,278	210.5	\$9,631,031
Intersections				
Kissimmee Park Road and Old Canoe Creek Road	509.3	\$50,852,163	405.4	\$40,734,757
Old Canoe Creek Road and Nolte Road	126.4	\$13,914,470	114.5	\$12,582,519
U.S. 192 Northbound Off-ramp terminal	139.1	\$5,777,454	141.0	\$6,451,089
U.S. 192 Northbound On-ramp terminal	148.1	\$6,152,988	122.1	\$5,585,358
U.S. 192 Southbound ramp terminal	107.1	\$4,640,864	97.7	\$4,468,287
Kissimmee Park Road and Southbound ramps	33.1	\$3,255,039	-	-
Kissimmee Park Road and Northbound ramps	12.0	\$1,176,571	-	-
Nolte Road and Southbound ramps	-	-	28.3	\$2,706,221
Nolte Road and Northbound ramps	-	-	4.7	\$465,021
Old Canoe Creek Road and Turnpike Ramps	-	-	30.7	\$3,404,415
TOTAL	3396.8	\$182,200,620	3069.5	\$173,606,800
CRASH COST SAVINGS				\$8,593,821

*Predicted Crashes

Note: ISATe output adjusted using the calibration factors provided in the output summary in the appendix.

Note: No Build crashes and cost savings would be higher if congestion and queuing impacts were considered.