

7.5 Network Operational Analysis

The network performance of each alternative was collected from multi-run CORSIM simulation outputs. CORSIM models were simulated 90 minutes for the AM peak period (AM1: 7:15–8:15 and AM2: 8:15–8:45 AM) and two hours for the PM peak (PM1: 4:00–5:00 PM and PM2: 5:00–6:00 PM). **Table 7-21**, below, presents the average performance of ten runs for each scenario for 2038.

In 2038, the hybrid diamond alternative will have shorter delays (vehicle-hours) than the No-Build alternative and diamond alternative. The speeds will be very close among all the alternatives. It should be noted that the difference is minimal among alternatives; therefore, comprehensive comparisons that consider additional MOEs are required before reaching the final conclusion. Section 7.8 goes into greater detail regarding the alternatives comparisons.

Table 7-21: 2038 Average Network Parameters*

Alternative	Peak Hour	Total Vehicle-Miles	Duration (Vehicle - Hours)			Average Speed (Mph)	Move/Total	Time (Min/Mile)	
			Move	Delay	Total			Delay	Total
No Build Alternative	AM 1	151502.28	2315.73	498.41	2814.14	53.85	0.82	0.20	1.11
	AM 2	230308.11	3514.38	745.26	4259.63	54.08	0.83	0.20	1.11
	PM 1	152464.97	2351.37	503.74	2855.11	53.40	0.82	0.20	1.12
	PM 2	312996.41	4834.13	1184.64	6018.76	52.00	0.80	0.23	1.15
Diamond Alternative	AM 1	149804.93	2302.38	515.55	2817.93	53.16	0.82	0.21	1.13
	AM 2	227742.55	3493.65	787.74	4281.39	53.20	0.82	0.21	1.13
	PM 1	150642.31	2318.03	582.76	2900.79	51.93	0.80	0.23	1.15
	PM 2	308702.74	4755.79	1416.07	6171.86	50.02	0.77	0.27	1.20
Alternative Hybrid Diamond Alternative	AM 1	151295.53	2325.54	481.06	2806.60	53.91	0.83	0.19	1.11
	AM 2	230015.84	3529.05	727.54	4256.59	54.04	0.83	0.19	1.11
	PM 1	152123.21	2350.10	495.14	2845.23	53.47	0.83	0.19	1.12
	PM 2	312610.78	4838.65	1172.36	6011.01	52.01	0.81	0.23	1.15

* **Note: All the results above were from CORSIM 6.2.**

7.6 Environmental Impacts

The I-75 IMR study area is currently in compliance with the federal (Environmental Protection Agency) air quality standards for carbon monoxide, ozone and particulate matter. The current proposed design and potential associated design changes may require a re-evaluation of project compliance with air quality requirements, but it is not expected to have a negative impact on air quality.

The PD&E Study identified substantial wetland impacts estimated at approximately 26.6 acres of wetlands (within PD&E Segments 1–4). Design alternatives are being reviewed to avoid and minimize these wetland impacts to the greatest extent practicable. Updated design-phase estimates suggest that approximately 9.5 acres of unavoidable wetland impacts will result from the I-75/SR 70 interchange improvements project. Final mitigation needs will be determined by performing a detailed UMAM assessment of unavoidable wetland impacts. The FDOT will coordinate further with the necessary environmental and other agencies (such as the Southwest Florida Water Management District, U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service) during project design to develop compensatory mitigation for

proposed wetland and wetland-dependent species habitat impacts. Based on mitigation, no net loss of wetlands is anticipated from this project.

For threatened and endangered species, evaluation cited within the I-75 PD&E studies finds that the project is expected to have a moderate involvement/impact. The U.S. Fish and Wildlife Service has determined that this project “*may affect, but is not likely to adversely affect*” the Gulf sturgeon, eastern indigo snake, wood stork, and West Indian manatee. There are also project commitments specific to conducting design-phase resurveys for gopher tortoise and Florida sandhill crane. Based upon evaluation cited in the I-75 PD&E studies, ongoing agency coordination, and with the implementation of commitments and standard protection measures (i.e., for the eastern indigo snake and West Indian manatee), the proposed project is not likely to adversely affect the existence of any threatened or endangered species, even though they are known or expected to occur within or adjacent to the project limits.

There will be no impacts to community focal points such as schools and church buildings under the Build alternatives and minimal impacts to any archaeological or historical sites are anticipated. There are no navigable waterways within the study area, from south of SR 681 to north of University Parkway.

7.7 Safety

In order to obtain a better understanding of the safety concerns in the study area, an analysis of crash data was conducted. Within the study boundary, there were 667 crash records from January 1, 2007 to December 31, 2011, including 274 crashes (55 crashes/yr) on SR 70 and 393 crashes (79 crashes/yr) on I-75.

The accident data analyzed in Section 3.3.2 determined there were no high crash locations within the area of influence. The recommended alternative from this study will not have a negative impact on safety.

7.8 Alternatives Comparison

A comparison of the No-Build and Build alternatives is provided in this section.

7.8.1 Planning and Environmental Comparison

The need for capacity improvements along I-75 was established in the I-75 PD&E study for Manatee County. Both Build alternatives provide improved mobility within the area of influence when compared to the No-Build option.

The diamond interchange was the preferred alternative from the PD&E study. The hybrid diamond option provides the same access as the diamond and is, therefore, in conformance with the Sarasota/Manatee MPO LRTP and the PD&E study. The No-Build alternative does not conform to either of these plans.

The No-Build alternative will have no environmental impacts. For the diamond interchange (I-75 PD&E preferred alternative), careful consideration was taken to develop the improvements. These improvements were chosen to minimize or avoid environmental impacts to the greatest extent possible. The hybrid diamond interchange falls within the same ROW as the diamond interchange and, therefore, no additional impacts are expected.

The PD&E study indicated that there will be no impacts to schools or churches, navigation or air quality. There could be wetland impacts that will require mitigation for both Build alternatives.