



As part of the weaving analysis for the I-4 eastbound from I-275 entrance to Selmon Expressway, the Build Alternative improves the weave segment by relocating the eastbound I-4 exit ramp from the 21st/22nd Street to 14th/15th Street compared to the No-Build Alternative. This reduces the weave density from 40 vpmpl to 38 vpmpl and increases the speed from 44 mph to 51 mph for the 2045 PM peak hour. For the I-4 westbound between Selmon Expressway and I-275 northbound, the Build Alternative reduces the weave density from 131 vpmpl to 108 vpmpl and increases the speed from 10 mph to 17 mph for 2045 AM peak hour. For the 2045 PM peak hour, speeds for the segment increases from 13 mph to 24 mph even with similar densities.

The following freeway MOEs were compared for the 2045 Build Alternative and 2045 No-Build Alternative at the end of peak hours:

- Total vehicle miles traveled (miles)
- Average speed (mph)
- Travel delay per vehicle-mile (mins/veh-mi)
- Travel time per vehicle-miles (mins/veh-mile)

Table 7-4 and **Table 7-5** provide the summary of the Design Year (2045) peak hour MOE's for the No-Build and Build Alternative. **Figure 7-19** and **Figure 7-20** provide the peak hour and peak period vehicle-miles traveled, average speed, and travel delay per vehicle-mile for the No-Build and Build Alternative, respectively. **Figure 7-19** and **Figure 7-20** also provide the percentage improvement of build Alternative compared to No-Build Alternative. The results of the CORSIM simulation analysis showed improvements to the overall system MOEs during AM and PM peak hours due to the Build Alternative compared to the No-Build.

Table 7-4 – Design Year (2045) Peak Hour MOE Summary

MOEs	Time Period (Peak Hour)	No-Build	Build
Vehicle Miles Traveled (VMT)	AM	123,605	153,049
	PM	118,940	148,247
Average Speed (MPH)	AM	17.7	19.2
	PM	19.1	21.5
Delay per Vehicle-Mile (mins/veh-mi)	AM	2.22	1.96
	PM	1.97	1.63
Travel Time per Vehicle-Mile (mins/veh-mi)	AM	3.38	3.13
	PM	3.15	2.80



Table 7-5 –Design Year (2045) Peak Period MOE Summary

MOEs	Time Period (Peak Period)	No-Build	Build
Vehicle Miles Traveled (VMT)	AM	480,035	593,587
	PM	479,057	591,484
Average Speed (MPH)	AM	19.8	21.8
	PM	19.2	21.6
Delay per Vehicle-Mile (mins/veh-mi)	AM	1.86	1.59
	PM	1.95	1.61
Travel Time per Vehicle-Mile (mins/veh-mi)	AM	3.02	2.75
	PM	3.13	2.77

In addition to the overall system MOEs during the AM and PM peak hour and peak period, the latent demand at the end of the peak period simulation along the freeway facility entering the study area from I-275 northbound, I-275 southbound, I-4 westbound and Selmon Expressway was also analyzed for evaluating the performance of the Build Alternative compared to the No-Build Alternative. **Table 7-6** shows the latent demand and the percentage change of the Build Alternative compared to the No-Build Alternative. The results show a 30% decrease in latent demand for the Build Alternative compared to No-Build Alternative for I-275 for both the time periods.

Table 7-6 – Design Year (2045) Latent Demand Summary along Freeway Facility

Alternative		I-275 Northbound		I-275 Southbound		I-4 Westbound		NB Selmon Expressway Ramp to WB I-4	
		Latent Demand	Percent Latent Demand	Latent Demand	Percent Latent Demand	Latent Demand	Percent Latent Demand	Latent Demand	Percent Latent Demand
2045 No-Build	AM	8,271	18%	33,143	66%	28,161	57%	4,016	41%
	PM	26,669	51%	8,602	21%	36,793	79%	5,195	42%
2045 Build	AM	5,343	12%	22,514	44%	26,830	50%	1,858	22%
	PM	18,548	36%	5,926	15%	25,095	50%	5,884	45%
Percent Change	AM	35%		33%		13%		47%	
	PM	31%		31%		37%		-8%	

In summary, the analysis results for both I-275 and I-4 freeway facilities for the Build Alternative reduces the amount of unmet demand when compared to the No-Build Alternative. Most of the segments experience improved traffic conditions during AM and PM peak hours when compared to No-Build conditions.