11.   DESIGN YEAR (2034) VISSIM COMPARATIVE SUMMARY

The Design Year (2034) VISSIM microsimulation results for the No-Build and Build scenarios are summarized and directly compared in this section. The comparisons include intersection node, travel time, and network wide performance.

11.1. **Intersection Node Comparison**

Table 63 shows an increase in the number of vehicles processed through each intersection in the Build scenario as compared to the No-Build scenario. The Build scenario is expected to process between 17% and 53% more traffic through the study signalized intersections when compared to the No-Build scenario.

Table 63: Node Throughput Results (2034 No-Build vs 2034 Build)

Peak Hour	Intersection	No-Build	Build	Difference (Build vs. No-Build)
AM	CR 484 at SW 20th Ave Rd	2,614	3,217	**23%**
	CR 484 at I-75 SB Ramps	3,191	3,820	**20%**
	CR 484 at I-75 NB Ramps	3,214	3,873	**21%**
	CR 484 at CR 475A	2,896	3,396	**17%**
PM	CR 484 at SW 20th Ave Rd	2,214	3,336	**51%**
	CR 484 at I-75 SB Ramps	2,719	4,097	**51%**
	CR 484 at I-75 NB Ramps	2,575	3,927	**53%**
	CR 484 at CR 475A	2,200	3,331	**51%**

A comparison of the maximum queues observed in the microsimulation analyses along the I-75 ramps is shown in **Table 64**. As noted in the table, the No-Build maximum queues at both ramp terminal intersections are expected to spillback onto the I-75 mainline lanes in 2034 PM peak hour. The Build improvements are expected to mitigate the queue spillback and reduce max queues along the ramps by up to approximately 4,500 feet.

Table 64: Ramp Max Queue Comparison (2034 No-Build vs 2034 Build)

Peak Hour	Intersection	Movement	No-Build Queue (ft)	Build Queue (ft)	Difference in feet (Build vs. No-Build)
AM	CR 484 at I-75 SB Ramps	Left	358	317	**-41**
		Right	163	133	**-30**
	CR 484 at I-75 NB Ramps	Left	455	192	**-263**
		Right	86	90	**4**
PM	CR 484 at I-75 SB Ramps	Left	4,708*	430	**-4,278**
		Right	4,788*	272	**-4,516**
	CR 484 at I-75 NB Ramps	Left	4,342*	377	**-3,965**
		Right	2,165*	197	**-1,968**

*Queue spills back onto the I-75 mainline

11.2. Travel Time Comparison

Table 65 shows the travel time improvements in the Build scenario. The improvements in the Build scenario reduce the travel times in both peak hours by at least 32% and at most 80% based on the simulation analysis conducted.

Table 65: Travel Time Results (2034 No-Build vs 2034 Build)

Time Period	Travel Time Run	Travel Time No-Build (min)	Travel Time Build (min)	Difference (Build vs No-Build)
AM	1: CR 484 EB	10.8	7.3	**-32%**
	2: CR 484 WB	9.4	3.8	**-59%**
	3: CR 484 EB to I-75 SB ramp	9.8	6.0	**-39%**
	4: CR 484 EB to I-75 NB ramp	12.4	7.2	**-42%**
	5: CR 484 WB to I-75 NB ramp	8.7	2.7	**-69%**
	6: CR 484 WB to I-75 SB ramp	9.3	4.1	**-56%**
PM	1: CR 484 EB	12.1	3.1	**-74%**
	2: CR 484 WB	9.7	5.5	**-43%**
	3: CR 484 EB to I-75 SB ramp	10.5	2.1	**-80%**
	4: CR 484 EB to I-75 NB ramp	12.4	3.7	**-70%**
	5: CR 484 WB to I-75 NB ramp	8.6	4.1	**-52%**
	6: CR 484 WB to I-75 SB ramp	9.0	5.3	**-41%**

11.3. **Network Performance Comparison**

Table 66 shows the differences in the network wide statistics. The comparison shows that the improvements are expected in each performance measure category for the Build scenario when compared to the No-Build scenario in both peak hours. These improvements are noted in bold in the summary table.

Table 66: Network Wide Statistics (2034 No-Build vs Build)

Time Period	Scenario	Average Delay (seconds)	Average Speed (mph)	Total Delay (hr)	Latent Delay (sec)	Latent Demand (veh)	Vehicles arrived
AM	No Build	210	31	901	788,292	804	13,111
	Build	**184**	**33**	**807**	**246,220**	**472**	**13,585**
PM	No Build	227	31	919	839,306	1,325	12,217
	Build	**101**	**44**	**451**	**71,689**	**75**	**14,390**