

## 8.0 SUMMARY AND CONCLUSIONS

This IOAR documents the VISSIM traffic operational analysis and safety evaluations performed to evaluate the improvements proposed with the Build Alternative. Details of the improvements proposed are provided in **Section 4** and a conceptual layout and signing and marking plans of the Build Alternative are provided in **Appendix F**. The LRE construction cost estimate for the Build Alternative is approximately \$20.8 million.

Traffic analyses shows that the Build Alternative provides significant reduction in vehicle delays, improves vehicular speeds and decreases the latent demand within the study area when compared with the No-Build Alternative. The Build Alternative improves traffic operations and safety during Opening Year (2025) and Design Year (2045) for both AM and PM peak periods.

The VISSIM analysis demonstrates that all the MOEs improve with the Build Alternative, providing the much-needed benefits to traffic operations within the study area.

**Table 8-1** provides a side-by-side comparison of the six-hour peak period simulations of No-Build and Build Alternatives' operational analyses summary for Opening Year (2025) and Design Year (2045) AM and PM peak periods.

**Table 8-1: Traffic Operational Analysis Comparison**

Network wide MOEs	Opening Year (2025)					
	AM Peak			PM Peak		
	No-Build	Build	Percentage Improvement	No-Build	Build	Percentage Improvement
Average Speeds (mph) across 6-hours	24	34	42%	21	35	67%
Average Delay (sec/veh) across 6-hours	160	54	66%	213	53	75%
Latent Demand at End of 6-hours (Vehicles)	0	0	0%	0	0	0%
Network wide MOEs	Design Year (2045)					
	AM Peak			PM Peak		
	No-Build	Build	Percentage Improvement	No-Build	Build	Percentage Improvement
Average Speeds (mph) across 6-hours	17	22	29%	12	22	83%
Average Delay (sec/veh) across 6-hours	305	189	38%	504	196	61%
Latent Demand at End of 6-hours (Vehicles)	8,148	1,493	82%	8,114	1,429	82%

Apart from system level evaluation presented above, **Table 5-6** provides an overview of the VISSIM intersection level operational performance of the No-Build and Build Alternatives. A summary of this analysis results is presented below:

AM Peak Hour:

- During Opening Year (2025), the average delay across the entire corridor between No-Build Alternative and Build Alternative differ by nearly 23.2 seconds per vehicle. The Build Alternative show a 58 percent reduction of the overall intersections average delay. All study area intersections operate at acceptable LOS values (LOS D or better) with the Build Alternative. Heavy traffic along the SR 15 causes the following movements to operate with LOS F: eastbound through, and all the westbound movements at Collins Road and SR 15 intersection.
- During Design Year (2045), all intersections with the Build Alternative operate better than intersections with the No-Build Alternative except for Collins Road and SR 15 intersection, and Wells Road and Eldridge Avenue intersection which has an approximately 5.1 seconds per vehicle and 54.8 seconds per vehicle increase in

## I-295 at SR 15 (US 17) to South of Wells Road – Build Improvements

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delay per vehicle when compared to No-Build Alternative, respectively. These are adjacent intersections and improvements at these intersections will be considered with other planned projects to help mitigate future delays.

- Overall, both Opening Year (2025) and Design Year (2045) had a significant reduction in average delay per vehicle with the Build Alternative when compared with the No-Build Alternative indicating better traffic operations.

### PM Peak Hour:

- During Opening Year (2025), the average delay across the entire corridor between the No-Build Alternative and the Build Alternative differ by nearly 27.1 seconds per vehicle. The Build Alternative show a 63 percent reduction of overall intersections average delay when compared to the No-Build Alternative. All study area intersections operate at acceptable LOS values (LOS D or better) with the Build Alternative. Heavy traffic along the SR 15 causes the following movements to operate with LOS F: westbound through and left, and northbound left movements at Wells and SR 15 intersection; eastbound left and right at Eldridge Avenue and SR 15; and westbound through and left movements at Collins Road and SR 15 intersection.
- During Design Year (2045), all intersections with the Build Alternative operate better than intersections with the No-Build Alternative except for Wells Road and Eldridge Avenue intersection which has an approximately 76.0 seconds per vehicle increase in delay when compared to No-Build Alternative. This is attributed by re-routing the eastbound left movement at Wells Road and SR 15 intersection to eastbound left movement at Wells Road and Eldridge Avenue intersection to access SR 15 northbound. Improvements at this intersection will be considered with other planned projects to help mitigate future delays.
- Overall, both Opening Year (2025) and Design Year (2045) had a significant reduction in average delay per vehicle with Build Alternative when compared with the No-Build Alternative indicating better traffic operations..

The results from the VISSIM system-wide and intersection level operational analysis indicate that the Build Alternative outperforms No-Build Alternative in all MOE categories evaluated. Therefore, the project will improve traffic operations within the I-295 at SR 15 interchange area and along SR 15 from south of Wells Road to Collins Road.

The project also provides an increased safety benefits by reducing the overall crash cost by approximately **38.3 million dollars** over the entire life of the project when compared to the No-Build Alternative as shown in **Table 6-3**.

Therefore, this project improves both traffic operations and safety within the I-295 and SR 15 to the south of Wells Road study limits and is the recommended alternative.