5.3 Alternatives Comparison of Network MOEs

In the preceding sections, MOEs were summarized for the mainline basic segments, weaving sections, ramp merge and diverge areas; arterial roadway segments; and intersections at ramp terminals and cross-streets under both the No-Build and Build Alternatives for the opening year (2025) and design year (2045) traffic conditions. This section will provide a comparative basis for the alternatives to illustrate the operational benefits of the Build Alternative through comparison of CORSIM network wide MOEs, shown in **Table 5.25**. The benefits shown here are for the entire four-hour peak periods. Comparison of the No-Build and Build Alternatives presented in this IMR indicate that the Build Alternative shows benefits in opening year (2025) and in design year (2045).

During the opening year (2025) the average speed increases by 80.5 percent during the AM peak period and by 23.5 percent during the PM peak period. The vehicle miles traveled (under static demand volumes) increases by 21.9 percent during the AM peak period and 3.9 percent during the PM peak period. Latent demand will decrease by 91.4 percent during the AM peak period and by 95.3 percent during the PM peak period.

During the design year (2045), the average speed increases by 37.1 percent during the AM peak period and by 44.8 percent during the PM peak period. The benefits of vehicles serviced is significant with an increase in vehicle miles traveled (under static demand volumes) of 31.3 percent during the AM peak period and 23.8 percent during the PM peak period. Latent demand will decrease by 80.0 percent during the AM peak period and by 91.5 percent during the PM peak period.

Table 5.25: Comparison of Network-Wide CORSIM MOEs for Opening Year (2025) and Design Year (2045) during AM and PM Peak Hour Periods

Network-Wide MOE	Analysis Time Period	Opening Year (2025)			Design Year (2045)		
		No-Build Alternative	Build Alternative	% Difference	No-Build Alternative	Build Alternative	% Difference
Vehicle Miles Traveled (veh-miles)	AM	338,022	412,070	21.9%	411,013	539,661	31.3%
	PM	399,953	415,387	3.9%	429,142	531,071	23.8%
Travel Time Total (hours)	AM	9,643	6,500	-32.6%	9,774	9,340	-4.4%
	PM	9,665	8,130	-15.9%	12,961	11,085	-14.5%
Speed Average (mph)	AM	35.1	63.4	80.5%	42.1	57.8	37.1%
	PM	41.4	51.1	23.5%	33.1	47.9	44.8%
Total Travel Delay (hours)	AM	4,802	576	-88.0%	3,719	1,420	-61.8%
	PM	3,916	2,162	-44.8%	6,683	3,286	-50.8%
Latent Demand (veh)	AM	12,090	1,036	-91.4%	16,889	3,385	-80.0%
	PM	10,990	518	-95.3%	19,942	1,692	-91.5%

*Latent demand at some of entry nodes exceeds maximum value reported by CORSIM of 9,999. 9,999 is assumed for these nodes, however the latent demand exceeds this value.