

6.5 Safety Comparison

Table 10 summarizes the expected crashes for the study alternatives. **Appendix E** contains the safety performance analysis worksheets and crash data utilized for this study.

Due to the geometric configuration of the No-Build and Build alternatives, and as noted in **Table 10**, the application of HSM methodologies is limited in that there is not a distinct difference in the estimated crash frequencies per year between the two (2) alternatives. Based on the safety analysis, there is a slight increase in expected number of crashes in the Build alternative compared to the No Build alternative for the ramp segments. However, there is a slight reduction in expected number of crashes in the Build alternative compared to the No Build alternative for the freeway segment. Based on estimated average crash frequency during the study period (2018-2038) for the No Build and Build alternatives, the Build alternative is expected to have slightly more crashes per year (0.19) compared to the No Build alternative.

Table 10: Expected Number of Crashes for Years 2018 through 2038

Crash Segment Type	Crash Segment	No Build	Build	Difference (Build minus No Build)
Ramp	NB On-Ramp & SB Off-Ramp at I-75/SR 884 NB Off-Ramp at I-75/SR 82	36.81	46.43	9.62
Freeway	I-75 between SR 884 and SR 82	321.28	315.68	-5.60
Estimated Number of Crashes during Study Period		358.09	362.11	4.02
Estimated Average Crash Frequency during Study Period (crashes/year)		17.05	17.24	0.19

Even though the expected number of crashes and expected crash frequencies resulting from the HSM analysis are similar between the two alternatives, the proposed improvements from the Build Alternative provide for a safer operation because of the following:

- Under the No Build alternative, a merge condition is present on the I-75 NB on-ramp before the freeway-ramp gore point, whereas the Build alternative will provide an additional 1,650 feet distance for the outside ramp lane to merge with the inside lane. The enhanced merge condition under the Build alternative is anticipated to provide safer operations with more distance and smooth merging.
- The lane balance provided under the Build alternative because of choice lane at the I-75 exit ramps (NB off-ramp to SR 82 and SB off-ramp to SR 884) will provide safer operations as evidenced by the freeway operational results. The freeway operational results show that the demand on I-75

segment between SR 884 and SR 82 will exceed capacity resulting in LOS F under the No Build alternative, which may contribute to a higher number of crashes compared to the Build alternative.

- The Build condition does not need a lane change from the freeway to ramp and this condition is anticipated to reduce the sideswipe crashes.