

SR 160 – 159 to Mountain Spring - Safety Evaluation

Project No.:	IM-015-2(042)	Project Name:	SR 160 - 159 to Mnt Spring	District:	1
Project Location: (Length)	SR 160 MP11.04 – MP 22	County:	Clark	Design Stage:	Final Design
Type of Analysis:	Pred. - IHSDM	Type of Facility:	Highway	Analysis years:	2014-2034

SUMMARY

1.1 Project

A safety analysis was performed on rural two-lane SR 160 southwest of Las Vegas, Nevada in Clark County. This project entails widening this section of SR 160 to a rural multilane roadway. This project was implemented because of the traffic demand needs on the roadway, not because of safety concerns with respect to crashes. Only one intersection was included in the evaluation due to the lack of available minor road AADT values and observed crash data on additional intersection, however these additional intersections have low traffic volumes and crashes. This analysis will look at expected and predicted crash totals for the existing and proposed conditions on SR 160.

1.2 Alternative

The proposed roadway will be divided and consist of 4 total 12 foot lanes with portions having a 14' two-way left-turn lane.

Below is the summary of the geometric and data variations between the existing and proposed conditions. All other data is assumed to remain constant.

	Analysis Variables				
	Williams Ranch Road Existing	Existing Conditions West	Existing Conditions East	Future Conditions West	Future Conditions East
<i>Shoulder Width</i>	No	2-12'	8'	4'	4'
<i>Median</i>	No	Traversable	Traversable	Traversable	Non-Traversable
<i>Centerline Rumble Strip</i>	No	Yes	Yes	No	No
<i>Two-Way Left Turn Lane</i>	No	Yes	No	Yes	Yes
<i>Passing Lane</i>	No	Yes	No	Yes	No
<i>Site Specific Crash Data</i>	Yes	Yes	Yes	No	No
<i>Roadside Hazard Rating</i>	4	2-4	2-5	N/A	N/A
<i>Divided</i>	No	No	No	Yes	Yes
<i>Existing Crash Data</i>	Yes	Yes	Yes	No	No

1.3 Crash Prediction and Reduction

The exiting condition is considered a rural two-lane two-way road and the proposed condition is considered a rural multilane divided highway for the analysis. HSM Highway Segment chapters were used to predict crashes over a 20 year horizon period. Observed crashes were only used for the existing condition analysis. The expected and predicted number of crashes and crash reductions are shown below:

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	2014-2034 Expected/Predicted Total Number of Crashes			
	Existing Conditions West	Existing Conditions East	Proposed Conditions West	Proposed Conditions East
<i>Total</i>	484.3	284.2	176.9	209.0
<i>Reduction in Total Crashes over Existing Conditions</i>	N/A	N/A	307.4	75.2
<i>Crash Reduction Factor (CRF)</i>	N/A	N/A	63.5%	26.5%
<i>Crash Rate (crashes/mi/yr)</i>	4.2	2.4	1.4	1.8

1.4 Results

Widening SR 160 to a rural multilane roadway from MP 11.04 to MP 22 is predicted to reduce the number of crashes by 50% overall from 768.5 total crashes to 385.9 total crashes. The existing crash rate was reduced from 3.3 (crashes/mi/year) to 1.6 (crashes/mi/year). The total cost of the project is \$57,268,353 but no Benefit Cost Ratio was calculated since the improvements were primarily for capacity and it is difficult to isolate the cost associated with specific safety improvements.