

US 93 MP WP111 to MP EL70 Shoulder Widening - Safety Evaluation

Project No.:	Unknown	Project Name:	US93 N.of Lages	District:	3
Project Location: (Length)	MP WP111 to MP EL70, (77.7 miles)	County:	White Pine/Elko	Design Stage:	Various
Type of Analysis:	Pred. - IHSDM	Type of Facility:	Two Lane Rural Calibration =1.21	Analysis years:	2013-2033

SUMMARY

1.1 Project

US 93 from MP WP111 to MP EL70 is a rural two (2R) lane highway in White Pine (WP) and Elko (EL) Counties. The existing condition is 12 foot lanes and paved shoulder widths that vary from one foot to six feet. The project also includes milling and overlaying the existing roadway.

1.2 Alternative

Widen shoulder to six feet for the entire length including adding shoulder rumble strips. The cost shown below is approximate break out of the shoulder widening versus the pavement rehabilitation portion of the project with a total project cost of \$21M.

1.3 Crash Prediction, Reduction and Benefit Cost Ratio

The IHSDM was used to perform the analysis. A Nevada Calibration factor (1.21) was applied. An additional shoulder rumble strip CMF (0.84) was applied to the new shoulders.

	2013-2033 Expected Total Number of Crashes	
	Existing Conditions	Alt. 1
		Shoulder Widening
<i>Total</i>	759	593
<i>Reduction in Total Crashes over Existing Conditions</i>	N/A	166.3
<i>Crash Reduction Factor (CRF)</i>	N/A	21.9%
<i>Total Alternative Cost</i>	N/A	\$11,000,000
<i>Total Annual Benefit including 2% Growth per year</i>	N/A	\$943,673
<i>Total Annualized Cost</i>	N/A	\$766,568
<i>Benefit-Cost Ratio</i>	N/A	1.23
<i>Average Annual Net Return</i>	N/A	\$177,105

1.4 Results

There is a significant reduction expected for the widening of the shoulder with rumble strips along the project limits. The preliminary analysis takes into account only the cost of the shoulder widening.