SITE INFORMATION

ITALICIZED DATA CATEGORIES REQUIRED FOR CALCULATED SCORES

Management Area				**Date**
Hazard Type	**Rockfall** Planar | Wedge | Topple Ravelling | Rock Avalanche | Indeterminate Rock Failures | Differential Erosion		**Landslide** Above, Below, or Across Route Translational | Rotational | Debris Flow Shallow slump | Erosional Failure	
Road/Trail No.	◯ Trail ◯ Road	**Road/Trail Class**		**Rater**
Beginning Mile Marker		**Ending Marker**	**Side**	**Weather**
Begin Coord. Lat. Long.	**End Coord.** Lat. Long.		**Datum**	***AADT***
Length of Affected Road/Trail (ft)		***Slope Height (rock) /Axial Length (slide) (ft)***		**Slope Angle (°)**
Sight Distance (ft)		***Roadway/Trail Width (ft)***		***Speed Limit (mph)***
Ditch Width (ft) RANGE ROCKFALL	**Ditch Depth (ft)** RANGE ROCKFALL	**Ditch Slope (H:V)** RANGE ROCKFALL		***Blk Size (ft)/Volume (cy)*** ROCKFALL
Annual Rainfall (in) RANGE	**Sole Access Route** □ Yes □ No	**Fixes Present** □ Yes □ No		**Photo # Range**

Comments

PRELIMINARY RATING

Category Rating	3	9	27	81	Score
A. Landslide – Roadway Width Affected	0-5 Percent	6-25 Percent	26-50 Percent	51-100 Percent	
B. Landslide – Slide/Erosion Effects	Visible crack or slight deposit of material / minor erosion	1 inch offset, or 6-inch deposit of material / major erosion will affect travel in < 5 yrs	2-inch offset or 12-inch deposit/ mod. erosion impacting travel annually	4-inch offset or 24-inch deposit/ severe erosion impacting travel consistently	
C. Landslide – Roadway Length Affected	25 ft	100 ft	225 ft	400 ft	CALC
D. Rockfall – Ditch Effectiveness (consider launch features)	Good	Moderate	Limited	No Catchment	
E. Rockfall – Rockfall History	Few Falls	Occasional Falls	Many Falls	Constant Falls	
F. Rockfall – Block Size or Volume per Event	1 ft or 3 yd^3	2 ft or 6 yd^3	3 ft or 9 yd^3	4 ft or 12 yd^3	CALC
G. All - Impact on Use	Full use continues with minor delay	Partial use remains Use modification required, short (3 mi/30 min.) detour available	Use is blocked – long (>30 min) detour available or less than 1 day closure	Use is blocked – no detour available or closure longer than 1 week	
H. All - AADT / Usage / Economic or Recreational Importance (highest rating applies)	50 Rarely Used Insignificant economic / rec. importance	200 Occasionally used Minor economic / rec. importance	450 Frequently used Moderate economic / rec. importance	800 Constantly used Significant economic / rec. importance	CALC FOR AADT ONLY
				LANDSLIDES TOTAL (A+B+C+G+H)	CALC
				ROCKFALL TOTAL (D+E+F+G+H)	CALC

Preliminary Rating Good (15-21 pts) | Fair (22-161 pts)| Poor (>161 pts)
Sites rated as **Fair** or **Poor** receive detailed evaluation (complete back page)

SLOPE HAZARD RATING								
Category Rating				**3**	**9**	**27**	**81**	**Score**
I. All - Slope Drainage				Slope appears dry or well drained; surface runoff well controlled	Intermittent water on slope; mod. well drained; or surface runoff moderately controlled	Water usually on slope; poorly drained; or surface runoff poorly controlled	Water always on slope; very poorly drained; or surface water runoff control not present	
J. All - Annual Rainfall				0-10”	10-30”	30-60”	60”+	
K. All - Slope Height (rock)/ Axial length (landslide)				25 ft	50 ft	75 ft	100 ft	CALC
Select One Unstable Slope Type	**Landslides/ Erosion (add A, B, C)**	**L. Thaw Stability (Cold Climates)**		Unfrozen/Thaw Stable	Slightly Thaw Unstable	Moderately Thaw Unstable	Highly Thaw Unstable	
		M. Instability-Related Maint. Frequency		Every 10 years	Every 5 years	Every 2 years	Every year	
		N. Movement History		Minor movement or sporadic creep	Up to 1 inch annually or steady annual creep	Up to 3 inches per event, one event per year	>3” per event, >6” annually, more than 1 event per year (includes all debris flows)	
	Rockfalls (add D, E, F)	**O. Rockfall-Related Maint. Frequency**		Normal, scheduled maintenance	Patrols after every storm events	Routine seasonal patrols	Year-round patrols	
		Geologic Character	**Case 1** **P. Structural Condition**	Favorable	Random	Adverse Discontinuous	Adverse Continuous	
			Case 1 **Q. Rock Friction**	Rough/ Irregular	Undulating	Planar	Clay infilled/ Slickensided	
			Case 2 **R. Structural Condition**	Few differential erosion features	Occasional differential erosion features	Many differential erosion features	Major differential erosion features	
			Case 2 **S. Diff. in Erosion Rates**	Small difference	Moderate difference	Large difference	Extreme difference	
T. LANDSLIDE HAZARD TOTAL (A+B+C+I+J+K+L+M+N)								CALC
U. ROCKFALL HAZARD TOTAL (D+E+F+I+J+K+O+(greatest of P+Q or R+S))								CALC
RISK RATING								
V. Route Width or Trail Width				36 ft 14 ft	28 ft 10 ft	20 ft 6 ft	12 ft 2 ft	CALC
W. Human Exposure Factor				12.5% of the time	25% of the time	37.5% of the time	50% of the time	CALC if AADT avail
X. % of Decision Sight Distance (Judge avoidance ability on trails)				Adequate, 100% of low design value	Moderate, 80% of low design value	Limited, 60% of low design value	Very Limited, 40% of low design value	CALC for roads
Y. Right of Way (R/W) Impacts (If Left Unattended)				No R/W implications	Minor effects beyond R/W	Private property, no structures affected	Structures, roads, RR, utilities, or Parks affected	
Z. Environmental/Cultural Impacts if Left Unattended				None/No Potential to Cause Effects	Likely to Effect/No Hist. Prop. Affected	Likely to adversely Affect/Finding of No Adverse Effect	Current adverse effects/Adverse Effect	
AA. Maintenance Complexity				Routine Effort/In-House	In-house maint./ special project	Specialized equip./ contract	Complex/ dangerous effort /location/contract	
BB. Event Cost				$0-2k	$2-25k	$25-100k	>$100k	
CC. RISK TOTALS: (G+H+V+W+X+Y+Z+AA+BB)								CALC
TOTAL USMP SCORE: LANDSLIDES (T+CC) OR ROCKFALL (U+CC)								CALC

For the directly measurable categories, use the following formulas to calculate the exponent value (x) for the scoring formula $y = 3^x$. This will allow the calculation of a precise score for the category measurement and development of category scoring tables.

C. Length of roadway affected exponent:

$$x = \sqrt{\frac{length\ affected}{25}}$$

F. Block size or the volume exponent formula:

$$block\ size\ x = block\ size$$

$$volume\ x = \left(\frac{yds^3}{3}\right)$$

H. AADT exponent formula:

$$x = \sqrt{\frac{AADT}{50}}$$

K. Slope height/axial slide length exponent formula:

$$x = \frac{slope\ height}{25}$$

V. Width exponent formula:

$$x = \frac{44 - Road\ width\ (ft)}{8} \text{ for vehicles, } or\ x = \frac{18 - Trail\ width\ (ft)}{4} \text{ for trail traffic}$$

W. Human exposure factor exponent formula for roads and trails:

$$x = \frac{\left(\frac{\frac{AADT}{24} \times slope\ length\ (miles) \times 100}{speed\ limit\ or\ walking\ speed}\right)}{12.5}$$

X. Percent decision sight exponent formula:

$$x = \frac{120 - \left(\frac{measured\ sight\ distance}{AASHTO\ decision\ sight\ distance} \times 100\right)}{20}$$