

Road Assessment Summary of Values at Risk

A. FINDINGS ON THE GROUND SURVEYED

The field survey was conducted over September 29 – October 4 (6 days) by the roads engineering team along with field coordination with team Hydrologist, Geologist, and Archeologist. Dominate Forest Service roads within the fire perimeter are;

12S01 Davis Road: Provides access to the Kings River from State Highway 180, private property, grazing allotments, several dispersed camping along the road and OHV opportunities.

12S19 Delilah: Provides access to Delilah Lookout, private property, grazing allotments, several dispersed camping along the road, and OHV opportunities.

13S03 Chicago Stump: Provides access to monumental Chicago Stump and dispersed camping along the road.

13S09 Tenmile: Provides access to Hume Lake dam, government facilities, private property (Christian Camp), campgrounds, dispersed camping, day use areas, and recreation trails.

13S05 Camp 7 and 13S58 Abbott: Provides access to dispersed camping along the road and access to recreation trails.

13S70 Mill Flat Creek, 13S78 Mill, and 13S92 Mill Flat: Provides access to dispersed camping along the road and grazing allotments, and OHV opportunities.

Other secondary roads were also surveyed in the high to moderate burn severity for the purposes of this report; these roads are in the high to moderate burn severity. Approximately 90.44 miles of Forest Service roads are proposed for treatments.

B. CONSEQUENCES OF THE FIRE ON VALUES AT RISK

- **Life and Safety (12S01)**; As a result of the burned watersheds, it has been determined through the BAER risk assessment process, that the risk to road users along the Davis Road 12S01 is considered very high due to the high and moderate burned slopes above the road creating the potential for rock fall, debris flows, and washouts during the first winter season or until the post burn watershed stabilizes. Major consequence along these road segments is considered likely due to rock fall, debris flows, and washouts.
- **Life and Safety (ML 2 Roads)**; As a result of the burned watersheds, it was determined through the BAER risk assessment process, that the risk to road users on Forest Service

Maintenance Level 2 roads is considered very high due to the high and moderate burned slopes above the road creating the potential for rock fall, debris flows, and washouts, the first winter season or until the post burn watershed stabilizes. Major consequence along these road segments is considered very high due to rock fall, debris flows, and washouts.

- **Property (12S01)**; As a result of the burned watersheds, it was determined through the BAER risk assessment process, that the risk to Davis Road 12S01 is considered very likely with major consequences. Damage to the invested road improvements, loss of road functions, and inability of private property owners, permittees, and forest users' access.
- **Property (ML 2 Roads)**; As a result of the burned watersheds, it was determined through the BAER risk assessment process, that the risk to Maintenance Level 2 roads are considered very likely with major consequences. Damage to the invested road improvements, loss of road functions, and denial of access to road users, grazing allotments, and private property owners.

C. EMERGENCY DETERMINATION

This assessment determines an emergency and very high risk related to life, safety and property related to the Forests developed road system.

- **Life and safety (12S01)** - Risk to road users is determined to be very high with major consequences along Davis Road 12S01. Potential for rock fall, debris flows, and washouts are considered to be very likely the first winter due to the burned watershed on steep slopes above the road. Based on Travel Management, Davis Road 12S01 is open year round for wheel traffic and over snow vehicles. Although the first winter has the highest potential, it is recommended to maintain an effective and consistent closure on Davis Road 12S01 for the first winter or until the post burned watershed stabilizes. Closure applies to wheel traffic and over snow vehicles.
- **Life and safety (ML 2 Roads)** - Risk to road users is determined to be very high with major consequences on the remaining Maintenance Level 2 roads. Potential for rock fall, debris flows, and washouts are considered to be very likely the first winter due to the burned watershed on steep slopes above the roads. Based on Travel Management, these ML-2 roads are closed to wheel traffic during the winter, but open to over snow vehicles. Although the first winter has the highest potential, it is recommended to maintain an effective and consistent closure on these roads for the first winter or until the post burned watershed stabilizes. Closure applies to wheel traffic and over snow vehicles.
- **Property (12S01)** - Risk to road improvements and loss of road functions is considered to be very likely with major consequences on road segments along Davis Road 12S01. Diversion of uncontrolled water from road drainage courses on to the road surface, results in degradation and unacceptable erosion, gullies, and loss of road functions and denial of access to road users, grazing allotments, and private property owners.
- **Property (ML 2 Roads)** - Risk to road improvements and loss of road function is considered very likely with major consequences on road segments along ML-2 roads. Diversion of uncontrolled water from road drainage courses on to the road surface, results in

degradation and unacceptable erosion, gullies, and loss of road functions and inability of private property owners, permittees, and forest users' access.

D. TREATMENTS TO MITIGATE THE EMERGENCY

- **Life and Safety(12S01)** - Proposed BAER road treatments to mitigate the emergency for Davis Road 12S01 are; Install BAER warning signs (entering burned watershed beyond this point) at main entry points of road, install gates, install information sign, install rock barriers adjacent to existing gates to discourage OHV usage, inspect road after damaging storms for rock fall, debris flows and washouts, identify problem areas and respond as needed with personnel and equipment as needed when road opens and safe to access.
- **Life and Safety (ML 2 Roads)** - Proposed BAER road treatments to mitigate the emergency for ML-2 roads are; Install BAER warning signs (entering burned watershed beyond this point) at main entry points of roads, install gate (13S68), install information signs, install rock barriers adjacent to existing gates to discourage OHV usage, inspect road after damaging storms for rock fall, debris flows and washouts, identify problem areas and respond as needed with personnel and equipment as needed when road opens during Spring time and safe to access.
- **Property (12S01)** - Proposed BAER road treatments to mitigate the emergency to invested road improvements, road functions, and assure access to road users in segments of high burned severity along the David Road 12S01 are; Installing drainage armor (riprap), critical dips, armored dips, over side drains w/flume to protect fill slopes, armor low water crossings, culvert inlet modifications (metal end sections), culvert removal and upsize on selected locations, and restore drainage functions on some segments.
- **Property (ML 2 Roads)** - Proposed BAER road treatments to mitigate the emergency to road improvements, road functions, and assure access to road users in segments of high burned severity on ML-2 roads are; Installing drainage armor (riprap), critical dips, armor dips, over size drains w/flume to protect fill slopes, armor low water crossings, culvert inlet modifications (metal end sections and risers), culvert removal on selected locations, and restore drainage functions on some segments.
- **Cultural Resources:** It has been determined that the road related emergency and consequences described above, could have potential impacts on cultural resources on some of the roads/road segments. Therefore, coordination with the district archeologist is recommended for mitigations. See Archeology report for further details.
- ❖ It is recognized that BAER is NOT intended to correct past maintenance deficiencies. The changed conditions due to fire activity has created an urgency for correction and storm proofing of some of these drainage features on segments along the road, in the high and moderate burned severity on steep slopes above the road.

E. Proposed Baer Road Treatments

- Install Road Closure and Information signs.
- Install Standard Traffic Gates (12S01 & 13S68).
- Install BAER Warning Signs.
- Boulder Barriers.
- Install Drainage Armor (class 2 & 3).
- Install Critical Dips
- Install Armor Dips (class 2).
- Install Over Size Drains
- Install Low Water Crossing w/ Drainage Armor (class 2 & 3).
- Install Culvert Inlet Modifications (metal end sections & risers).
- Remove and Dispose of Existing Culvert (selected locations).
- Restore Drainage Functions (culvert inlets and outlets, roadway ditch lines rolling dips and water bars w/ run-off-ditch, maintain cross slopes of roads in-slope & out-slope).
- Damage Response & Cleanup (spring).

The probability of these accepted and economically proposed road treatments is considered to be at the 80 to 90 percent success rate, dependent on the 2015 /16 winter storm cycles and implementation schedule.

F. ROAD TREATMENTS COST ESTIMATE

Miles Treated & Cost per Road		
Road #	Miles	BAER Cost
12S01	13.47	
12S19	2.69	
13S03	7.89	
13S03A	0.96	
13S04*	2.20	
13S05	5.68	
13S05A	1.25	
13S06	1.65	
13S07	1.79	
13S16	1.20	
13S26*	6.64	
13S50	0.85	
13S55*	2.82	
13S58	6.13	
13S66	4.20	
13S68*	2.20	
13S70	4.14	
13S70B	1.75	
13S70C	1.36	
13S73	1.38	
13S78	2.41	
13S86	1.33	
13S88*	1.27	
13S92	6.25	
13S97*	1.43	
14S01*	3.50	
14S02*	4.00	
TOTAL	90.44	
Estimate Includes Mobilization & Overhead (contract prep, administration, implementation) *Road is being treated by installing BAER warning signs or gate.		

Cost per Mile	
Miles	Cost
90.44	\$

Cost Benefit Matrix

Road #	Name	Miles Treated	Treatment Cost	Cost/Mile	Road Value/Mile
12S01	DAVIS	13.47			
12S19	DELILAH	2.69			
13S03	CHICAGO STUMP	7.89			
13S03A	CHICAGO STUMP	0.96			
13S04	BUCK ROCK	2.20			
13S05	CAMP 7	5.68			
13S05A	CAMP 7	1.25			
13S06	SANDY COVE	1.65			
13S07	CONVERSE	1.79			
13S16	TORNADO CREEK	1.20			
13S26	TORNADO MDW	6.64			
13S50	CONVERSE CUTOFF	0.85			
13S55	CONVERSE MTN	2.82			
13S58	ABBOTT	6.13			
13S66	HOIST RIDGE	4.20			
13S68	MILLWOOD ROAD	2.20			
13S70	MILL FLAT CR.	4.14			
13S70B	MILL FLAT CR.	1.75			
13S70C	MILL FLAT CR.	1.36			
13S73	MILL FLAT EAST	1.38			
13S78	MILL	2.41			
13S86	CLOVER MEADOW	1.33			
13S88	SAMPSON VIEW	1.27			
13S92	MILL FLAT	6.25			
13S97	MILL WOOD	1.43			
14S01	NORTH BIG MDW.	3.50			
14S02	BURTON	4.00			