

## **Section B**

# **SURFACE AND POINT SOURCE EROSION (ROADS/SKID TRAILS)**

### **INTRODUCTION**

The surface and point source erosion module examines the past and present soil erosion from roads and skid trails of the Mendocino Redwood Company (MRC) ownership in the Elk Creek watershed, the Elk Creek watershed analysis unit (WAU). This module also provides a hazard assessment of the potential for future surface and point source erosion from roads in the Elk Creek WAU. The potential erosion assessment is to assist in development of mitigation measures and actions to minimize future soil erosion from the road network. The road data that is the basis for most of this analysis was collected by MRC during a road inventory of the Elk Creek WAU. The erosion estimates utilize a combination of field observations and the use of the surface erosion model presented in the Standard Methodology for Conducting Watershed Analysis (Version 4.0, Washington Forest Practices).

Surface erosion is defined as the removal of soil particles from the surface of the soil. Processes such as rill erosion, sheetwash, biogenic transport (animal burrows, treefall, etc.) and ravel are considered surface erosion. Gullies, road crossing wash-outs, and large erosion features created by erosion from overland flow of water are considered point source erosion. In contrast, the largest discrete erosion events, landslides, are considered mass wasting.

This report examines road and skid trail associated surface and point source erosion delivering sediment into watercourses. Excessive levels of fine sediments from surface and point source erosion can get trapped in porous streambed gravels; and can increase water turbidity and suspended sediment concentrations. Excessive coarse sediments from point source erosion can adversely affect stream channel morphology. These can reduce the survival of salmonids in their redds or affect habitat needs and physiological characteristics of rearing salmonids. Excessive surface and point source erosion when delivered to a watercourse can also affect other downstream uses such as water supplies, agricultural diversions and recreation users. It is important that best management practices be utilized in forest management operations to minimize the impacts of surface and point source erosion.

### **SURFACE AND POINT SOURCE EROSION FROM ROADS**

#### **Methods**

##### ***Road Inventory***

A road inventory of the roads with the Elk Creek WAU was conducted in 2006. The road inventory consisted of traveling all roads with a Global Positioning System (GPS) unit and identifying, mapping and inventorying all major features of the road network. Some of the features that are inventoried include watercourse-crossings and crossing structures (culverts,

bridges, etc.), landings, erosion features and controllable erosion amounts (as defined below). Information relating to erosion and sediment delivery from the road inventory is analyzed in this report. Dimensions of the road network such as length, width and sediment contributing road lengths are also summarized. The road inventory collects information on the entire road infrastructure. This road infrastructure information allows for better management and tracking of the road network.

All road features (watercourse crossings, landings, road fill, etc.), during the road inventory, have the past deliverable point source erosion volume estimated for that feature. Deliverable point source erosion from a road is defined as major rills or gully erosion which is observed in close proximity to a watercourse or which showed evidence of eroding directly into a watercourse. These measurements were used to calculate the volume of point source erosion delivered from the road. The volume of erosion was converted to a weight (in tons) assuming a soil bulk density of 100 lbs/cubic foot. All observed sediment delivery from point source erosion is assumed to have occurred within the past 10 years, unless there is information otherwise.

### ***Estimating controllable erosion***

Future or potential point source erosion (gully or road fill wash-outs, not sheetwash) observations were also collected during the road inventory. This potential future erosion is called controllable erosion<sup>a</sup>, a term developed by the North Coast Regional Water Quality Control Board for Total Maximum Daily Load (TMDL) purposes. Typically, controllable erosion is a measure of the fill material from a road that could erode if a road feature is left un-maintained or fails in the next 40 years. The controllable erosion amount is the volume of soil that can be controlled with high design standards for a road feature (i.e. watercourse crossing, side-cast fill, etc.).

The controllable erosion sites are further designated by the potential for sediment delivery and the immediacy of treatment for the site. Both the sediment delivery potential and the treatment immediacy are ranked low, moderate, or high. The ranking of each controllable erosion site by these variables provides a hazard or risk assessment of the controllable erosion. This allows prioritization of road improvements and erosion control work based on potential point source erosion hazard.

Another important variable of potential future point source erosion from a road is the likelihood of diversion of water down the road prism. This diversion potential, as it is called, was evaluated for every watercourse crossing of every road in the Elk Creek WAU. A site has a diversion potential if when the watercourse crossing plugged, dammed or failed water could be diverted out of the “natural” watercourse channel and down the road prism. Water diverted out of its “natural” channel would erode the road prism creating potentially high sediment delivery. Sites with a diversion potential can be engineered such that the diversion of water down a road prism does not occur if the watercourse crossing plugged, dammed, or failed.

A prioritization of potential point source erosion sites for the Elk Creek WAU is presented (Appendix B). This prioritization is based on amount of controllable erosion of the site, the treatment immediacy, and a high diversion potential.

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<sup>a</sup> Three important points qualify the definition of controllable erosion:

- Human action created the condition.
- Human action can reasonably control the condition.
- Estimated potential for sediment delivery, within 40 years, is greater than 10 yd<sup>3</sup>.

***Culvert size analysis***

Proper culvert sizing is another important characteristic for consideration of road erosion potential. Culverts that do not have the capacity to pass debris, water and sediment in high flow events can plug creating road prism failures with high sediment inputs. MRC currently designs all new culvert installations to pass the 100 year flood to ensure enough capacity in the pipe to pass water, debris and sediment in high flows. To determine if culvert sizing is appropriate for existing culverts the area behind each culvert inventoried was determined from topography data in the MRC Geographic Information System (GIS). The regression equation for the North Coast region (Waananen and Crippen, 1977) is used to predict the 50 and 100 year peak flow. A culvert sizing nomograph is used to determine the appropriate size for 50 and 100 year peak flow magnitudes and the predicted size are compared to the existing culvert sizing to determine if the culvert is large enough.

The culvert sizing analysis must be interpreted carefully as it was often difficult to tell what area of watershed drained to a culvert from a map based analysis. This culvert sizing analysis is only meant to be “first cut” at determining if a culvert is properly sized. From this analysis a field visit to the site will determine if indeed the appropriate watershed drainage area was used and the culvert is indeed under-sized. The results from the culvert sizing analysis are presented in Appendix B.

***Road surface erosion modeling***

Surface erosion (sheetwash and minor rills) from roads was not directly estimated in the field. The contributing length or extent of road that delivers erosion to a watercourse is measured in the field then used for surface erosion calculations. The contributing length of a road is the length of road prism that drains water and associated eroded soil into a watercourse. Thus it defines the length of surface erosion of any particular site on the road. The model used to calculate surface erosion from roads is from the Standard Methodology for Conducting Watershed Analysis (Version 4.0, Washington Forest Practices Board) and is described below.

Surface erosion from the road surface is influenced by the amount of road traffic (high use mainline, moderate use, active secondary, etc.), the type of road surface material, precipitation, width and size of road (the more surface area to erode, the more erosion), proximity to the watercourse, and vegetative cover (Reid, 1981). The Standard Methodology for Conducting Watershed Analysis (Version 4.0, Washington Forest Practices Board) provides relationships based on these factors to estimate the amount of surface erosion from different road types and conditions.

Field observations from the road inventory determined the length of the road delivering sediment to a watercourse (contributing length) from individual features of the road (culverts and crossings), the road width, the road surface material and the type of road (seasonal or temporary) to aid in the surface erosion calculations.

The road inventory lacked contributing road length for road segments adjacent to a watercourse but not associated with a culvert or crossing. Using an analysis from GIS, the amount of road within 50 feet, 50-100 feet and 100-200 feet of a watercourse was determined for all road segments not associated with a culvert or crossing. It was assumed that within 50 feet, 100 percent of erosion from the road delivers sediment to a watercourse. At 50-100 feet 35 percent and at 100-200 feet 10 percent of erosion from the road was assumed to deliver sediment to a

watercourse. These assumptions were based on sediment delivery ratios used in a road erosion model called SEDMOD.

The following model parameters were used to calculate surface erosion from roads in the Elk Creek WAU. All of the observed roads were assumed to be older than two years and a base erosion rate of 60 tons/acre/year was applied. This initial value was altered (multiplied) by the factors of traffic on the road, cut- and fill-slope vegetation cover, road surface type, annual precipitation, and road type in an attempt to model the actual sediment volume contributed by a given road segment. The road tread width was determined in the field during the road inventory and is assumed to be 40% of the road prism. The cut- and fill-slopes are assumed to encompass 60% of the road prism; their dimensions for the surface erosion model were determined by multiplying the tread width by 1.5.

Road cut- and fill-slopes usually had approximately 50% vegetative cover, giving a cover factor of 0.37. The majority of hauling on roads occurs during drier times of the year (i.e. late spring, summer and early fall). Therefore the lowest annual precipitation category is used (<47 in. precipitation annually). In this annual precipitation category a road with at least a 6 inch rock surface is given a factor of 0.2, while a native surface road has a factor of 1.

There were 3 traffic factors used in surface erosion modeling:

- 1) *Mainline roads with moderate traffic* have a factor of 2; these roads are used for log haul traffic 2-3 times each decade.
- 2) *Seasonal roads* have a traffic factor of 1.2; these are tributary roads which receive moderate log haul traffic 1-2 years each decade and light traffic the remainder of the time.
- 3) *Temporary roads* receive a traffic factor of 0.61; these roads receive moderate log haul traffic 1-2 times per every 1-2 decades with little to no use in between.

The result of the surface erosion modeling (including the near stream surface erosion) is added to the total past point source erosion observed during the road inventory from a given road and presented as tons/year of sediment delivery (see Appendix B for erosion estimates of each road in the Elk Creek WAU). For relative sediment contributions from each planning watershed for road-associated sediment input evaluation, the tons/year calculations for all roads was totaled by planning watershed and normalized by dividing by the MRC ownership, in square miles, for the planning watershed. The result is a tons/square mile of MRC ownership/year estimate of road surface and point source erosion.

### ***Erosion Hazard Rating***

Finally, with this information each road in the Elk Creek WAU is assigned an erosion hazard class. The erosion hazard class is used to classify the roads in the Elk Creek WAU by their current and potential erosion hazard. The erosion hazard class was determined by the amount of erosion a road produced and the likelihood for that erosion to be delivered to a watercourse. High levels of traffic, road surface, proximity to the stream, high past point source erosion, and high modeled surface erosion all were considered when ranking roads for their erosion hazard. The roads with the highest risk of sediment delivery and soil erosion were given a high erosion hazard classification. The roads with medium risk of sediment delivery and soil erosion were given a moderate erosion hazard classification. The roads with the lowest risk of sediment delivery and soil erosion were given a low erosion hazard classification. A description of what each erosion hazard classification means can be found in the results and discussion sub-section of this report.

## Results and Discussion – Roads

### *Erosion Hazard Rating*

The road erosion hazard rating for each road in the Elk Creek WAU is presented on Map B-1 and for each individual road in Appendix B of this report. The categorizing of roads into hazard classes is intended to identify current problem areas, consider reconstruction and prioritize maintenance. The following are the definitions for each road erosion hazard class.

High Road Erosion Hazard Class - These roads have the highest amount of recent deliverable surface erosion to watercourses and a high potential for future deliverable erosion. These roads can be active, abandoned or closed. Often roads in this class are close to watercourses creating a high sediment delivery potential. Erosion is typically due to long contributing road lengths or road with native surfaces near watercourses: a result of too few waterbars and/or rolling dips or lack of rock surface. Erosion may also be a product of problem areas such as watercourse crossing wash-outs, poor road drainage, plugged road watercourse crossings, water diverted down the road surface, culverts not fitted with downspouts, etc. Active roads in this class should get the highest priority for maintenance or improvements. Closed roads in this class will need improvements before opening again. Opening abandoned roads in this class should be avoided.

Moderate Road Erosion Hazard Class - These roads have moderate amounts of recent deliverable surface erosion to watercourses and potential for future deliverable erosion. These roads can be active, abandoned or closed. Erosion problems on roads in this class can usually be handled with good road maintenance. Erosion is typically from problem areas such as poor road drainage, water diverted down the road surface, culverts not fitted with downspouts, and an occasional plugged culvert or watercourse crossing wash-out. Active roads in this class should be a priority for maintenance. Closed or abandoned roads in this class will need some improvements before opening again.

Low Road Erosion Hazard Class - These roads have low amounts of recent deliverable surface erosion to watercourses and low potential for future deliverable erosion. These roads can be active, abandoned or closed. Active roads in this class do not need to be a priority for maintenance. Closed or abandoned roads in this class will need only some improvements before opening again.

### *Road features from the road inventory*

The mapped roads and road features (culverts, crossings, and landings) are presented in map B-2 for the Elk Creek WAU. The associated treatment immediacy of the road feature is also shown on these maps. Potential controllable (point source) erosion sites were identified and prioritized in the Elk Creek WAU. In the Elk Creek WAU 39 controllable erosion sites have high treatment immediacy and 11 controllable erosion sites have moderate treatment immediacy. In addition to these controllable erosion sites 117 culverts or crossings in the Elk Creek WAU have a diversion potential. These diversion potential sites need to be considered a high priority for road improvement as they can represent a significant potential point source erosion hazard. The site identification, treatment immediacy and amount of controllable erosion estimated are found in Appendix B of this report.

### *Culvert size analysis*

The culvert size analysis has determined that, out of a total of 144 watercourse culverts, approximately 35% are potentially too small to pass the 50 year flood and the 100-year flood. The analysis of culvert sizing is only an estimate based on culvert location from the MRC road

inventory and area draining to the culvert based on MRC GIS topographic data. A field review will be required at each site to validate the culvert size analysis results and determine if the culvert is indeed under-sized. However, the identification of these culverts as under-sized is a good hypothesis to work from and provides information to address potential road problems in Elk Creek WAU. These culverts identified as potentially too small need to be a high priority for upgrade if after field review the culverts are determined to be under-sized. The culvert sizing results are found in Appendix B of this report.

### ***Road density***

It was determined that there are 131 miles of truck roads in the Elk Creek WAU (skid trails not included). This represented an average road density of 7 miles of road per square mile of property owned by MRC. Table B-1 breaks shows the road lengths and densities for the Elk Creek WAU.

**Table B-1.** Road Lengths and Density by Planning Watershed for the Elk Creek WAU.

<b>Planning Watershed</b>	<b>Watershed area (mi<sup>2</sup>)</b>	<b>Road Length (miles)</b>	<b>Contributing Road Length (miles)</b> *	<b>Road Density (mi/mi<sup>2</sup>)</b> **
Lower Elk Creek	7.6	78	6.7	10.3
Upper Elk Creek	14.4	53	8	3.7

\*Contributing road length is defined as the amount of road potentially draining to a watercourse that could lead to a deliverable amount of surface erosion. It is determined during the road inventory.

\*\*Road density is calculated by dividing the road length by the amount of MRC-owned land within each planning watershed.

Road densities are something that should be managed for in the Elk Creek WAU. Not all roads can be abandoned, but by converting many of these roads to a temporary status or putting them to bed after use, the amount of road that can contribute erosion at any given time is reduced.

### ***Surface and point source erosion***

The surface and point source erosion estimates by planning watershed are presented in Table B-2. The breakdown of estimated erosion, road lengths and hazard rating by individual roads is in Appendix B of this report. Road segments within 50 feet of watercourses are assumed to deliver 100% of their estimated sediment yield. At 50-100 feet, segments are assumed to deliver 35% of their estimated sediment yield and 10% for segments within 100-200 feet of watercourses. No delivery was assumed for segments beyond 200 feet from a watercourse. Of the 131 total miles of road within the Elk Creek WAU, 6.7 miles within Lower Elk Creek and 8 miles within Upper Elk Creek were estimated to be deliverable sources of sediment to watercourses within the watershed. Roads in the MRC ownership in the Elk Creek WAU are estimated to generate, on average, 62 tons/mi<sup>2</sup>/yr of sediment from road-associated surface and point source erosion. This rate of erosion from roads within the Elk Creek WAU is relatively moderate in comparison with other typical erosion rates on MRC land.

Table B-2 Road Associated Surface and Point Source Erosion Estimates for the Elk Creek WAU.

<b>Planning Watershed</b>	<b>MRC Owned (sq mi)</b>	<b>Surface Erosion (tons/sq mi/yr)</b>	<b>Point Source Erosion (tons/sq mi/yr)</b>	<b>Total (surface + point source) (tons/sq mi/yr)</b>
Lower Elk Creek	7.6	24	58	81
Upper Elk Creek	14.4	12	40	52
<b>Elk Creek WAU</b>	<b>22</b>	<b>16<sup>+</sup></b>	<b>46<sup>+</sup></b>	<b>62<sup>+</sup></b>

<sup>+</sup>Area-weighted average

### ***Controllable erosion***

The future potential for point source erosion was evaluated in the Elk Creek WAU. This potential erosion or controllable erosion was identified during the road inventory during 2004. A total of 17,876 cubic yards of controllable erosion was identified in the Elk Creek WAU (Table B-3).

Table B-3. Controllable Erosion Volume Estimates by Road Feature and Treatment Immediacy for the Elk Creek WAU.

<b>Road Feature</b>	<b>Controllable Erosion by Treatment Immediacy (yd<sup>3</sup>)</b>			
	<b>High</b>	<b>Moderate</b>	<b>Low</b>	<b>None</b>
Culverts	2155	210	10245	0
Crossings	0	30	3009	2
Landings	0	590	1036	0
Erosion Sites	0	10	241	0
Road slides	80	50	218	0
<b>Total</b>	<b>2235</b>	<b>890</b>	<b>14749</b>	<b>2</b>

The majority of controllable erosion (by volume) is at culverts and crossings. There are a total of 1,131 controllable erosion sites within the Elk Creek WAU (Table B-4). Appendix B contains more details for each feature.

Table B-4. Number of features by Treatment Immediacy for the Elk Creek WAU.

<b>Road Feature</b>	<b>High</b>	<b>Moderate</b>	<b>Low</b>	<b>None</b>
Culverts	37	2	137	29
Crossings	0	2	127	215
Landings	0	5	16	491
Erosion Sites	0	1	29	3
Road slides	2	1	11	23
<b>Total</b>	<b>39</b>	<b>11</b>	<b>320</b>	<b>761</b>

### ***Fish passage barriers in the Elk Creek WAU***

There are no identified barriers to fish passage in the Elk Creek WAU.

### **Road Associated Erosion Control Measures for the Elk Creek WAU 1998-2008**

Since Mendocino Redwood Company's ownership in the Elk Creek WAU (starting in 1998), MRC has conducted erosion control and road upgrade work to address and improve road erosion sites. The initial road inventory survey of Elk was conducted in 2006. On-going erosion control work has improved sedimentation conditions in Elk since MRC has taken ownership of the property, but credit for treating controllable erosion sites cannot be taken since the road inventory was just completed. Map B-3 displays erosion control work completed since 2003 and Table B-5 lists recent road work completed.

Table B-5. Treated Erosion by Area for the Elk Creek WAU.

Year	THP or Project	Brief Work Description	Treated Erosion (yd <sup>3</sup> )
1998	Mayville	Culvert armoring, rocked fords & road outsloping	1,500
1998	L.W. Sulphur	Road rocking within WLPZ, road outsloping & culvert	500
1998	Section 27	Road outsloping	100
1999	Lower 3 Springs	Rocked fords, road outsloping & road abandonment	500
1999	Bypass	Road outsloping & slide armoring	120
1999	5.5 Mile	Road outsloping, rocked dips & culvert armoring	750
2000	Upper Elk	Rocked fords, road cutbank armoring & road outsloping	500
2000	North Elk	Road outsloping & rocked fords	750
2000	7 Mile	Road outsloping & rocked fords	750
2000	3.5 Mile	Road outsloping, rocked fords & road abandonment	1,000
2001	N.W. Sulphur	Road outsloping & rocked fords	50
2001	Up. 3 Springs	Road outsloping & rocked fords	200
2001	Upper Soda II	Road outsloping, rocked dips & slide stabilization	600
2001	Section 27 II	Road outsloping & rocked fords	300
2002	Upper Twin	Road outsloping	50
2002	South Elk II	Road outsloping	40
2002	South Elk 2000	Road outsloping	40
2003	Trout Unlimited	Rock 3 miles of road and treat 5 specific road points	15,255
2005	Upper Elk 2002	Road re-shaping	70
2005	Mayville II	Repaired crossings and installed rocked fords	230
2005	South Bypass	Road re-shaping and installed rocked fords	60
2005	Upper Bypass	Road re-shaping and installed rocked fords, culvert	290
2005	Convergence	Decommissioned portions of road 84-SF, new fords	130
2005	South Elk 05	Road re-shaping	70
2006	South Central	Decommission road SF-006-11; temporary crossings	660
2006	Mid South Elk	Temporary crossings, culvert upgrade and armoring	580
2006	Lower West	Armored culvert outlet and installed rocked dip	40
2006	Upper West	Installed rocked fords and armored culvert outlet	385
2006	South Bypass	Installed rocked ford	30
2006	Shortcut	Road upgrade	20
2006	Soda/Sulphur	Road upgrade	20
2006	NC Elk	Installed three culverts; installed dips and fords	360
2006	6 X 7	Decommissioned crossing, culvert upgrades, new fords	760
2006	4 X 5	Installed rocked ford	20



### Summary of Treated Erosion since 1998 in the Elk Creek WAU

*Treated Erosion Total for Elk Creek WAU 1998 = 2,100 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 1999 = 1,370 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2000 = 3,000 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2001 = 1,150 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2002 = 130 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2003 = 15,255 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2004 = 0 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2005 = 850 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2006 = 2,875 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2007 = 0 cubic yards*  
*Treated Erosion Total for Elk Creek WAU 2008 = 170 cubic yards*

**Treated Erosion Total for Elk Creek WAU 1998-2006 = 26,900 cubic yards**

## **SURFACE AND POINT SOURCE EROSION FROM SKID TRAILS**

### **Methods**

Sediment delivery from surface and point source erosion from skid trails was determined from aerial photograph interpretation and sediment delivery estimates developed in previous MRC watershed analyses (MRC, 1998 and MRC, 2000). Aerial photographs were analyzed from the 1952, 1964, 1967, 1978, 1987 and 2000 photo years. MRC owned photographs from 2004 (color, 1:12,000), 2000 (color, 1:12,000), 1987 (black-and-white, 1:12,000), 1978 (color, 1:15,840), and 1967 (black and white, 1:15,840) were used, as were 1964 (black-and-white, 1:20,000), and 1947 (black-and-white, 1:20,000) photos on file at the Mendocino County Museum in Willits. The aerial photographs were used to identify skid trail activity for each decade from 1940 to the end of the 1990s.

The aerial photograph interpretation for skid trail activity consisted of determining the area harvested with ground based yarding by skid trail density (high, moderate, low) for each photo year. High-density skid trail activity is defined as having greater than 100 watercourse crossings per square mile. Moderate-density skid trail activity is defined as having between 50-100 watercourse crossings per square mile. Light skid trail density has less than 50 watercourse crossings per square mile or trails with significant re-vegetation observed in the aerial photograph.

The amount of sediment delivery from the various densities of skid trail activity was estimated from sediment delivery rates during previous watershed analyses by MRC (MRC, 1998 and MRC, 2000). A combination of surface erosion modeling and field observations of point source erosion from skid trails, from previous watershed analysis, was used to develop the skid trail estimates. High skid trail density is estimated to contribute 600 tons/square mile/year of sediment. Moderate skid trail density is estimated to contribute 400 tons/square mile/year of sediment, while low skid trail density contributing 100 tons/square mile/year. Results from the South Fork Caspar Creek in the early 1970's suggested that high density tractor logging, with practices used at that time, generated approximately 600 tons/square mile/year (Rice et. al., 1979).

For each photo year the area in each skid trail density category was multiplied by the sediment delivery rate for that density. The estimate was then divided by the MRC ownership in each Calwater planning watershed to provide a sediment rate (tons/square mile/year) for each planning watershed. The estimated rate was then assumed to represent the decade previous to the photo year observed (i.e. 1978 photos represent activity in the 1960s).

### Results and Discussion - Skid Trail Erosion

The results by time period for the skid trail sediment delivery estimates are summarized in Table B-6. The estimates should be considered a minimum sediment delivery for skid trails constructed and used in the decade. Undoubtedly some, if not many, sediment delivering skid trails were vegetated enough to be overlooked during the inventory. In particular are those trails constructed or used greater than five years prior to aerial photograph reconnaissance.

Table B-6. Skid Trail Sediment Delivery Rates for Elk Creek WAU, 1940s-1990s.

Skid Trail Erosion (tons/mi <sup>2</sup> /yr)						
Planning Watershed	1940s	1950s	1960s	1970s	1980s	1990s
Lower Elk Creek	0	50	170	100	35	0
Upper Elk Creek	0	30	0	65	20	1

**LITERATURE CITED**

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**APPENDIX B**  
Surface and Point Source Erosion Module

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84EC0930000x6	84-EC-093	none	0	yes
crossing	84SF0061000x2	84-SF-006-10	none	0	no
crossing	84EC0931100x2	84-EC-093-11	none	0	yes
crossing	84SF0060800x1	84-SF-006-08	low	5	no
crossing	84EC0930000x9	84-EC-093	none	0	yes
crossing	84EC0930000x8	84-EC-093	none	0	yes
crossing	84CE0000000x44	84-CE	none	0	yes
crossing	84EC0930000x3	84-EC-093	none	0	yes
crossing	84EC0930500x1	84-EC-093-05	none	0	yes
crossing	84SF0060800x2	84-SF-006-08	none	0	yes
crossing	84EC0000000x88	84-EC	none	0	yes
crossing	84EC0840600x3	84-EC-084-06	none	0	yes
crossing	84EC0840000x5	84-EC-084	low	10	no
crossing	84EC0000000x87	84-EC	none	0	yes
crossing	84EC0930000x7	84-EC-093	low	5	no
crossing	84EC0690000x1	84-EC-069	none	0	yes
crossing	84EC0890000x1	84-EC-089	none	0	yes
crossing	84EC084060013	84-EC-084-06	low	20	no
crossing	84TS0000000x11	84-TS	none	0	yes
crossing	84EC0000000x93	84-EC	none	0	yes
crossing	84TS0132500x3	84-TS-013-25	low	10	no
crossing	84TS0132500x1	84-TS-013-25	low	8	no
crossing	84EC1151700x20	84-EC-115-17	low	20	no
crossing	84TS0132500x2	84-TS-013-25	low	15	no
crossing	84EC0931100x3	84-EC-093-11	low	60	no
crossing	84TS0000000x8	84-TS	none	0	yes
crossing	84SF0060000x7	84-SF-006	low	6	no
crossing	84TS0000000x7	84-TS	none	0	yes
crossing	84SF0060800x4	84-SF-006-08	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84SF0060800x3	84-SF-006-08	none	0	yes
crossing	84EC0840000x6	84-EC-084	low	5	no
crossing	84SF0100000x2	84-SF-010	none	0	yes
crossing	84EC1151700x21	84-EC-115-17	low	20	no
crossing	84EC0930000x1	84-EC-093	none	0	yes
crossing	84SF0060000x28	84-SF-006	none	0	yes
crossing	84EC0930500x2	84-EC-093-05	none	0	yes
crossing	84SF0060000x24	84-SF-006	none	0	yes
crossing	84SF0061500x4	84-SF-006-15	none	0	yes
crossing	84EC0790000x5	84-EC-079	none	0	yes
crossing	84SF0060000x25	84-SF-006	none	0	yes
crossing	84SF0060000x26	84-SF-006	none	0	yes
crossing	84SF0060000x22	84-SF-006	none	0	yes
crossing	84SF0370500x16	84-SF-037-05	low	15	no
crossing	84EC0790000x6	84-EC-079	none	0	yes
crossing	84EC0730200x1	84-EC-073-02	none	0	yes
crossing	84CW0030000x14	84-CW-003	none	0	yes
crossing	84CE0040000x1	84-CE-004	low	80	no
crossing	84CW0030000x13	84-CW-003	low	80	no
crossing	84CW0030000x12	84-CW-003	low	5	no
crossing	84MP0791300x1	84-MP-079-13	none	0	yes
crossing	84SF0060000x27	84-SF-006	none	0	yes
crossing	84TS0000000x1	84-TS	none	0	yes
crossing	84SF0060000x8	84-SF-006	low	2	no
crossing	84EC0840000x4	84-EC-084	none	0	yes
crossing	84SF0060000x9	84-SF-006	low	15	yes
crossing	84CE0000000x43	84-CE	low	60	no
crossing	84SF0061000x1	84-SF-006-10	none	0	yes
crossing	84SF0140000x1	84-SF-014	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84SF0060000x23	84-SF-006	none	0	yes
crossing	84EC0840600x5	84-EC-084-06	none	0	yes
crossing	84TS0120000x4	84-TS-012	none	0	yes
crossing	84SF0060000x19	84-SF-006	low	15	yes
crossing	84SF0060000x20	84-SF-006	none	0	yes
crossing	84EC0790000x8	84-EC-079	none	0	yes
crossing	84SF0370501x2	84-SF-037-05-01	none	0	yes
crossing	84SF0370500x19	84-SF-037-05	low	25	no
crossing	84EC0790000x7	84-EC-079	none	0	yes
crossing	84TS0000000x2	84-TS	none	0	yes
crossing	84EC1060000x3	84-EC-106	none	0	yes
crossing	84SF0060800x5	84-SF-006-08	none	0	yes
crossing	84TS0000000x23	84-TS	none	0	yes
crossing	84EC1151700x5	84-EC-115-17	none	0	yes
crossing	84EC1151700x6	84-EC-115-17	none	0	yes
crossing	84EC1151700x7	84-EC-115-17	none	0	yes
crossing	84EC1151700x8	84-EC-115-17	low	12	no
crossing	84SF0370500x8	84-SF-037-05	none	0	yes
crossing	84EC1151700x9	84-EC-115-17	low	20	no
crossing	84MP0791100x6	84-MP-079-11	low	50	no
crossing	84EC1060000x1	84-EC-106	none	0	no
crossing	84MP0530000x13	84-MP-053	low	20	no
crossing	84EC1151700x10	84-EC-115-17	none	0	no
crossing	84SF0010000x1	84-SF-001	low	10	no
crossing	84EC1060000x2	84-EC-106	none	0	yes
crossing	84MP0791100x7	84-MP-079-11	none	0	yes
crossing	84SC1060300x1	84-SC-106-03	none	0	yes
crossing	84EC1151700x1	84-EC-115-17	none	0	yes
crossing	84EC1060000x9	84-EC-106	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84EC1060000x8	84-EC-106	none	0	yes
crossing	84TS0000000x28	84-TS	none	0	yes
crossing	84TS0000000x27	84-TS	none	0	yes
crossing	84CE0620000x1	84-CE-062	none	0	yes
crossing	84EC1100000x1	84-EC-110	none	0	yes
crossing	84EC1151700x4	84-EC-115-17	none	0	yes
crossing	84TS0000000x26	84-TS	none	0	yes
crossing	84CE0000000x54	84-CE	low	45	no
crossing	84EC1151700x2	84-EC-115-17	none	0	yes
crossing	84TS0000000x25	84-TS	none	0	yes
crossing	84EC1151700x3	84-EC-115-17	none	0	yes
crossing	84EC1060000x5	84-EC-106	none	0	yes
crossing	84EC1060000x6	84-EC-106	none	0	yes
crossing	84EC1060000x4	84-EC-106	low	10	no
crossing	84CE0620000x3	84-CE-062	none	0	yes
crossing	84EC1151700x15	84-EC-115-17	low	8	no
crossing	84TS0132600x4	84-TS-013-26	low	8	yes
crossing	84TS0132600x3	84-TS-013-26	none	0	yes
crossing	84TS0132600x2	84-TS-013-26	none	0	yes
crossing	84EC1151700x17	84-EC-115-17	low	8	no
crossing	84EC1151700x18	84-EC-115-17	low	20	no
crossing	84TS0130000x29	84-TS-013	low	12	yes
crossing	84EC1060400x2	84-EC-106-04	low	3	no
crossing	84EC1151700x14	84-EC-115-17	low	0	no
crossing	84TS0000000x14	84-TS	none	0	yes
crossing	84TS0130000x17	84-TS-013	none	0	yes
crossing	84TS0130000x30	84-TS-013	none	0	yes
crossing	84TS0120000x2	84-TS-012	low	12	no
crossing	84TS0120000x3	84-TS-012	none	0	yes



## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84TS0120000x1	84-TS-012	low	20	no
crossing	84CW0030000x10	84-CW-003	low	10	no
crossing	84EC1151700x16	84-EC-115-17	none	0	yes
crossing	84TS0160000x1	84-TS-016	low	12	no
crossing	84TS0000000x10	84-TS	none	0	yes
crossing	84TS0000000x20	84-TS	none	0	yes
crossing	84CE0000000x53	84-CE	none	0	yes
crossing	84EC1060401x2	84-EC-106-04-01	none	0	yes
crossing	84EC1151700x11	84-EC-115-17	none	0	yes
crossing	84EC1060400x4	84-EC-106-04	low	20	no
crossing	84EC1151700x13	84-EC-115-17	low	20	no
crossing	84TS0000000x16	84-TS	low	25	no
crossing	84CE0500000x1	84-CE-050	low	10	no
crossing	84TS0130000x10	84-TS-013	none	0	yes
crossing	84TS0160000x2	84-TS-016	low	15	no
crossing	84TS0000000x17	84-TS	none	0	yes
crossing	84EC1060400x6	84-EC-106-04	low	0	yes
crossing	84TS0000000x18	84-TS	none	0	yes
crossing	84TS0000000x13	84-TS	none	0	yes
crossing	84TS0000000x21	84-TS	none	0	yes
crossing	84TS0000000x19	84-TS	none	0	yes
crossing	84EC0350000x15	84-EC-035	none	0	yes
crossing	84EC0340205x2	84-EC-034-02-05	low	20	no
crossing	84EC0350000x7	84-EC-035	none	0	yes
crossing	84EC0350000x3	84-EC-035	none	0	yes
crossing	84EC0350000x16	84-EC-035	none	0	yes
crossing	84EC0350000x1	84-EC-035	none	0	yes
crossing	84EC0350000x2	84-EC-035	none	0	yes
crossing	84EC0350000x5	84-EC-035	low	30	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84EC0350000x14	84-EC-035	none	0	yes
crossing	84EC0350000x4	84-EC-035	low	0	no
crossing	84EC0340201x3	84-EC-034-02-01	none	0	yes
crossing	84EC0351102x3	84-EC-035-11-02	none	0	yes
crossing	84EC0340201x4	84-EC-034-02-01	none	0	yes
crossing	84EC0351100x8	84-EC-035-11	none	0	no
crossing	84EC0340205x1	84-EC-034-02-05	none	0	yes
crossing	84CW0030000x11	84-CW-003	low	5	no
crossing	84EC0351100x1	84-EC-035-11	none	0	yes
crossing	84EC0340000x5	84-EC-034	none	0	yes
crossing	84EC0350000x23	84-EC-035	none	0	yes
crossing	84EC0341200x6	84-EC-034-12	none	0	yes
crossing	84EC0340000x8	84-EC-034	low	10	yes
crossing	84EC0350000x22	84-EC-035	none	0	yes
crossing	84EC0000000x45	84-EC	none	0	yes
crossing	84EC0341200x7	84-EC-034-12	none	0	yes
crossing	84EC0340203x2	84-EC-034-02-03	none	0	yes
crossing	84EC0340600x1	84-EC-034-06	none	0	yes
crossing	84EC0351100x12	84-EC-035-11	low	80	no
crossing	84EC0340600x2	84-EC-034-06	none	0	yes
crossing	84EC0490301x3	84-EC-049-03-01	low	3	no
crossing	84EC0490301x5	84-EC-049-03-01	low	15	no
crossing	84EC0490301x4	84-EC-049-03-01	low	200	no
crossing	84EC0350000x18	84-EC-035	none	0	yes
crossing	84EC0340201x1	84-EC-034-02-01	none	0	yes
crossing	84EC0350000x21	84-EC-035	none	0	yes
crossing	84TS0130000x25	84-TS-013	none	0	yes
crossing	84EC0351100x10	84-EC-035-11	none	0	no
crossing	84CE0180000x1	84-CE-018	low	10	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84CE0180000x2	84-CE-018	low	10	no
crossing	84EC0350000x6	84-EC-035	none	0	yes
crossing	84EC0350000x8	84-EC-035	none	0	yes
crossing	84EC0351900x1	84-EC-035-19	none	0	yes
crossing	84CE0660100x1	84-CE-066-01	none	0	yes
crossing	84TS0130000x26	84-TS-013	none	0	0
crossing	84TS0000000x22	84-TS	none	0	yes
crossing	84TS0130000x23	84-TS-013	none	0	yes
crossing	84TS0130000x22	84-TS-013	none	0	yes
crossing	84TS0130000x28	84-TS-013	none	0	yes
crossing	84TS0132600x1	84-TS-013-26	none	0	yes
crossing	84MP0790000x32	84-MP-079	low	20	no
crossing	84SF0370500x9	84-SF-037-05	none	0	yes
crossing	84TS0130000x27	84-TS-013	none	0	yes
crossing	84EC0170000x4	84-EC-017	none	0	yes
crossing	84EC0340205x3	84-EC-034-02-05	none	0	yes
crossing	84EC0340205x5	84-EC-034-02-05	none	0	yes
crossing	84EC0351100x14	84-EC-035-11	low	3	no
crossing	84EC0351100x13	84-EC-035-11	none	0	yes
crossing	84EC0340205x4	84-EC-034-02-05	none	0	yes
crossing	84EC0340205x6	84-EC-034-02-05	low	150	no
crossing	84EC1351900x1	84-EC-135-19	low	5	no
crossing	84EC0170000x5	84-EC-017	none	0	yes
crossing	84EC0000000x47	84-EC	low	10	no
crossing	84SC0000000x25	84-SC	low	50	no
crossing	84TS0130000x19	84-TS-013	low	150	no
crossing	84EC0000000x40	84-EC	low	20	no
crossing	84TS0130000x14	84-TS-013	none	0	yes
crossing	84TS0130000x20	84-TS-013	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84TS0130000x21	84-TS-013	none	0	yes
crossing	84EC0340205x7	84-EC-034-02-05	low	30	no
crossing	84EC0341301x5	84-EC-034-13-01	low	12	no
crossing	84EC0340000x9	84-EC-034	low	25	yes
crossing	84CW0030000x4	84-CW-003	none	0	no
crossing	84SF0320000x6	84-SF-032	none	0	no
crossing	84SF0320000x5	84-SF-032	none	0	no
crossing	84SF0320000x4	84-SF-032	none	0	no
crossing	84SF0370500x7	84-SF-037-05	none	0	yes
crossing	84CW0030000x6	84-CW-003	low	5	no
crossing	84SF0370500x6	84-SF-037-05	low	5	no
crossing	84EC0730000x9	84-EC-073	none	0	yes
crossing	84EC0610000x10	84-EC-061	none	0	yes
crossing	84EC0610000x4	84-EC-061	none	0	yes
crossing	84EC0341301x4	84-EC-034-13-01	low	8	no
crossing	84SF0320000x1	84-SF-032	none	0	no
crossing	84SF0370500x5	84-SF-037-05	none	0	yes
crossing	84SF0370500x4	84-SF-037-05	none	0	yes
crossing	84SF0320000x3	84-SF-032	none	0	yes
crossing	84EC0730000x7	84-EC-073	low	20	no
crossing	84CW0030000x9	84-CW-003	low	5	no
crossing	84EC0690000x3	84-EC-069	none	0	yes
crossing	84CW0030000x8	84-CW-003	none	0	yes
crossing	84EC0000000x66	84-EC	none	0	yes
crossing	84EC0730300x2	84-EC-073-03	none	2	yes
crossing	84EC0660000x1	84-EC-066	none	0	yes
crossing	84CW0030000x5	84-CW-003	none	0	yes
crossing	84EC0660000x2	84-EC-066	low	10	no
crossing	84EC0610000x6	84-EC-061	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84EC0690000x9	84-EC-069	low	8	no
crossing	84EC0690000x7	84-EC-069	none	0	yes
crossing	84EC0341301x10	84-EC-034-13-01	low	20	yes
crossing	84EC0341301x9	84-EC-034-13-01	none	0	yes
crossing	84EC0000000x64	84-EC	none	0	yes
crossing	84EC0730000x8	84-EC-073	low	0	yes
crossing	84EC0690000x5	84-EC-069	none	0	yes
crossing	84EC0490300x4	84-EC-049-03	none	0	yes
crossing	84EC0490000x4	84-EC-049	none	0	yes
crossing	84EC0341300x1	84-EC-034-13	low	15	no
crossing	84EC0490000x10	84-EC-049	none	0	yes
crossing	84EC0341200x3	84-EC-034-12	none	0	yes
crossing	84EC0341200x5	84-EC-034-12	none	0	yes
crossing	84EC0490000x11	84-EC-049	none	0	yes
crossing	84CW0030000x1	84-CW-003	low	5	no
crossing	84EC0350000x24	84-EC-035	none	0	yes
crossing	84EC0490000x6	84-EC-049	none	0	yes
crossing	84EC0340000x13	84-EC-034	low	100	no
crossing	84YY0000000x18	84-YY	none	0	yes
crossing	84EC0490300x2	84-EC-049-03	none	0	yes
crossing	84YY0000000x19	84-YY	none	0	yes
crossing	84YY0000000x20	84-YY	none	0	yes
crossing	84CE0000000x57	84-CE	low	20	no
crossing	84EC0341200x4	84-EC-034-12	low	30	no
crossing	84EC0610000x17	84-EC-061	low	10	no
crossing	84EC0340000x12	84-EC-034	none	0	yes
crossing	84EC0610000x7	84-EC-061	none	0	yes
crossing	84EC0610000x9	84-EC-061	none	0	yes
crossing	84EC0610300x2	84-EC-061-03	low	2	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84SF0360200x1	84-SF-036-02	none	0	yes
crossing	84SF0360200x2	84-SF-036-02	none	0	yes
crossing	84EC0490000x3	84-EC-049	none	0	yes
crossing	84EC0610000x16	84-EC-061	low	60	no
crossing	84EC0490000x5	84-EC-049	none	0	yes
crossing	84EC0610100x3	84-EC-061-01	none	0	yes
crossing	84EC0610000x18	84-EC-061	low	5	no
crossing	84EC0350000x30	84-EC-035	none	0	yes
crossing	84EC0350000x29	84-EC-035	low	80	no
crossing	84EC0490000x7	84-EC-049	none	0	yes
crossing	84SF0370500x1	84-SF-037-05	none	0	yes
crossing	84EC0610300x1	84-EC-061-03	none	0	yes
crossing	84EC0610000x8	84-EC-061	none	0	yes
crossing	84MP1070000x9	84-MP-107	low	2	no
crossing	84SI0401100x1	84-SI-040-11	low	40	no
crossing	84MP0790000x37	84-MP-079	none	0	yes
crossing	84MP0790000x36	84-MP-079	none	0	yes
crossing	84SI0401101x2	84-SI-040-11-01	low	20	no
crossing	84SI0400000x17	84-SI-040	low	20	no
crossing	84SI0400000x2	84-SI-040	low	40	no
crossing	84MP0790600x5	84-MP-079-06	none	0	yes
crossing	84SI0400000x16	84-SI-040	moderate	20	no
crossing	84MP1070000x2	84-MP-107	low	2	no
crossing	84MP1070000x10	84-MP-107	low	4	no
crossing	84SC0240000x5	84-SC-024	low	20	no
crossing	84MP0790000x34	84-MP-079	none	0	yes
crossing	84MP0790000x33	84-MP-079	none	0	yes
crossing	84EC0000000x128	84-EC	moderate	10	no
crossing	84SC0240000x3	84-SC-024	low	80	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84MP0790000x35	84-MP-079	none	0	yes
crossing	84MP1050000x7	84-MP-105	low	50	no
crossing	84EC1150000x16	84-EC-115	none	0	yes
crossing	84CE0000000x56	84-CE	none	0	yes
crossing	84EC0000000x144	84-EC	low	10	no
crossing	84EC0000000x143	84-EC	low	0	no
crossing	84EC1430000x1	84-EC-143	low	0	no
crossing	84EC1390000x140	84-EC-139	low	0	no
crossing	84SI0401100x2	84-SI-040-11	low	5	no
crossing	84SI0401102x1	84-SI-040-11-02	low	20	no
crossing	84EC0000000x136	84-EC	low	80	no
crossing	84SI0401100x7	84-SI-040-11	low	40	no
crossing	84SI0401102x2	84-SI-040-11-02	low	20	no
crossing	84SI0401100x3	84-SI-040-11	low	10	no
crossing	84SI0401100x4	84-SI-040-11	low	50	no
crossing	84SI0401100x5	84-SI-040-11	low	50	no
crossing	84SI0400000x10	84-SI-040	low	10	no
crossing	84SC0080000x1	84-SC-008	none	0	yes
crossing	84SC0030000x3	84-SC-003	low	15	no
crossing	84MP0790000x14	84-MP-079	low	10	no
crossing	84SC0230000x5	84-SC-023	low	12	no
crossing	84EC1150000x9	84-EC-115	none	0	yes
crossing	84SC0230000x8	84-SC-023	low	15	no
crossing	84SC0230000x7	84-SC-023	none	0	yes
crossing	84SC0230000x6	84-SC-023	none	0	yes
crossing	84SC0230000x9	84-SC-023	low	3	no
crossing	84EC1150000x7	84-EC-115	low	10	no
crossing	84SC0230000x10	84-SC-023	none	0	yes
crossing	84MP0790000x15	84-MP-079	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
crossing	84CE000000x61	84-CE	none	0	yes
crossing	84EC1150300x1	84-EC-115-03	low	10	no
crossing	84MP0790600x4	84-MP-079-06	none	0	yes
crossing	84SI0401100x6	84-SI-040-11	low	20	no
crossing	84EC1060000x10	84-EC-106	low	40	no
crossing	84EC1150000x15	84-EC-115	low	0	no
crossing	84MP0790000x17	84-MP-079	none	0	yes
crossing	84SC0000000x21	84-SC	none	0	yes
crossing	84SC0000000x18	84-SC	none	0	yes
crossing	84SC0240000x1	84-SC-024	low	18	no
crossing	84EC0000000x126	84-EC	low	20	no
crossing	84EC1060000x11	84-EC-106	low	25	no
crossing	84MP0790000x18	84-MP-079	none	0	yes
crossing	84MP0790600x	84-MP-079-06	none	0	yes
crossing	84SC0000000x26	84-SC	low	20	no
crossing	84SC0000000x27	84-SC	none	0	yes
crossing	84SC0000000x20	84-SC	none	0	yes
crossing	84EC1350000x16	84-EC-135	low	6	no
crossing	84MP0790000x21	84-MP-079	none	0	yes
crossing	84SC0230000x4	84-SC-023	low	60	no
crossing	84MP069000x10	84-MP-069	none	0	yes
crossing	84SC0230000x3	84-SC-023	low	30	no
crossing	84MP0790000x22	84-MP-079	none	0	yes
crossing	84MP069000x9	84-MP-069	none	0	yes
crossing	84SC0230000x2	84-SC-023	low	5	no
culvert	84EC135000c20	84-EC-135	low	0	no
culvert	84CE0660000c6	84-CE-066	low	10	no
culvert	84EC0000000c126	84-EC	<b>high</b>	50	no
culvert	84EC135000c19	84-EC-135	low	10	yes



## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
culvert	84EC000000c123	84-EC	low	70	no
culvert	84MP1070000c14	84-MP-107	low	150	no
culvert	84EC000000c122	84-EC	<b>high</b>	50	no
culvert	84MP0790000c20	84-MP-079	low	80	no
culvert	84EC000000c112	84-EC	<b>high</b>	130	no
culvert	84EC000000c125	84-EC	low	10	no
culvert	84EC135000c18	84-EC-135	low	40	no
culvert	84EC000000c127	84-EC	none	0	yes
culvert	84EC000000c128	84-EC	low	20	no
culvert	84MP0790000c25	84-MP-079	low	250	no
culvert	84MP0790000c26	84-MP-079	low	150	no
culvert	84EC000000c129	84-EC	low	10	no
culvert	84EC000000c131	84-EC	low	60	no
culvert	84MP1070000c13	84-MP-107	low	90	no
culvert	84EC000000c132	84-EC	low	10	no
culvert	84EC000000c121	84-EC	low	90	no
culvert	84EC000000c103	84-EC	<b>high</b>	60	no
culvert	84SI0401400c3	84-SI-040-14	moderate	150	no
culvert	84MP1070000c12	84-MP-107	low	30	no
culvert	84MP1070000c11	84-MP-107	low	30	no
culvert	84EC000000c130	84-EC	low	5	no
culvert	84EC0840000c18	84-EC-084	low	45	no
culvert	84TS0130000c14	84-TS-013	none	0	yes
culvert	84SC0080000c1	84-SC-008	low	20	no
culvert	84SI0400000c20	84-SI-040	<b>high</b>	210	no
culvert	84TS0130000c3	84-TS-013	none	0	yes
culvert	84TS0130000c2	84-TS-013	none	0	yes
culvert	84EC000000c98	84-EC	low	250	no
culvert	84TS0130000c1	84-TS-013	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
culvert	84TS0132600c2	84-TS-013-26	high	15	no
culvert	84EC0000000c99	84-EC	none	0	yes
culvert	84MP0791300c6	84-MP-079-13	low	10	no
culvert	84EC0840000c17	84-EC-084	low	0	no
culvert	84MP0530000c12	84-MP-053	low	10	no
culvert	84EC0000000c120	84-EC	low	100	no
culvert	84EC0000000c106	84-EC	low	200	no
culvert	84EC0000000c107	84-EC	low	30	no
culvert	84EC1060000c4	84-EC-106	low	120	no
culvert	84EC0000000c108	84-EC	high	10	no
culvert	84MP0530000c14	84-MP-053	low	100	no
culvert	84EC1060000c8	84-EC-106	low	15	no
culvert	84EC1060000c10	84-EC-106	low	50	no
culvert	84EC0000000c117	84-EC	high	30	no
culvert	84EC0000000c118	84-EC	low	30	no
culvert	84EC0000000c119	84-EC	low	30	no
culvert	84SF0020000c2	84-SF-002	low	15	no
culvert	84SC0000000c5	84-SC	low	220	no
culvert	84EC0000000c136	84-EC	low	20	no
culvert	84SI0400000c10	84-SI-040	low	100	no
culvert	84SI0400000c11	84-SI-040	low	200	no
culvert	84SI0400000c12	84-SI-040	high	200	no
culvert	84EC0000000c137	84-EC	low	30	no
culvert	84TS0130000c13	84-TS-013	low	90	no
culvert	84MP1050000c2	84-MP-105	low	10	no
culvert	84EC0840000c1	84-EC-084	low	60	no
culvert	84EC0000000c138	84-EC	low	20	no
culvert	84EC0000000c145	84-EC	low	50	no
culvert	84MP1050000c3	84-MP-105	low	10	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
culvert	84SI0401100c6	84-SI-040-11	high	220	no
culvert	84SI0400000c14	84-SI-040	high	95	no
culvert	84EC0000000c139	84-EC	low	10	no
culvert	84SC0000000c4	84-SC	low	5	no
culvert	84EC1390000c3	84-EC-139	low	40	no
culvert	84EC1390000c2	84-EC-139	low	50	no
culvert	84MP0000000c105	84-MP	low	10	yes
culvert	84SC0000000c3	84-SC	low	50	no
culvert	84EC0000000c140	84-EC	low	20	no
culvert	84SI0401100c8	84-SI-040-11	none	0	yes
culvert	84EC1390000c1	84-EC-139	low	40	no
culvert	84EC0000000c142	84-EC	low	40	no
culvert	84EC0000000c143	84-EC	low	20	no
culvert	84EC1390000c4	84-EC-139	low	30	no
culvert	84SI040110100c2	84-SI-040-11-01	none	0	yes
culvert	84SI0400000c19	84-SI-040	high	90	no
culvert	84SI0400000c18	84-SI-040	low	145	no
culvert	84SI0400000c117	84-SI-040	low	70	no
culvert	84MP1070000c9	84-MP-107	low	60	no
culvert	84SI0401400c1	84-SI-040-14	high	60	no
culvert	84MP1070000c8	84-MP-107	low	250	no
culvert	84SI0400000c2	84-SI-040	low	80	no
culvert	84EC135000c3	84-EC-135	low	100	no
culvert	84SI0400000c16	84-SI-040	low	120	no
culvert	84EC135000c2	84-EC-135	low	10	no
culvert	84SI0400000c3	84-SI-040	low	110	no
culvert	84SI0401100c3	84-SI-040-11	high	50	no
culvert	84SC0000000c10	84-SC	low	20	no
culvert	84SI0400000c13	84-SI-040	high	70	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
culvert	84SI040110100c1	84-SI-040-11-01	low	110	no
culvert	84MP1070000c7	84-MP-107	low	105	no
culvert	84MP1070000c6	84-MP-107	low	70	no
culvert	84SI0400000c8	84-SI-040	<b>high</b>	100	no
culvert	84MP1070000c5	84-MP-107	low	75	no
culvert	84SI0400000c15	84-SI-040	low	80	no
culvert	84SI0400000c9	84-SI-040	<b>high</b>	130	no
culvert	84SI0401100c1	84-SI-040-11	<b>high</b>	180	no
culvert	84MP1050000c4	84-MP-105	low	20	no
culvert	84SI0401100c2	84-SI-040-11	low	180	no
culvert	84SI0401400c2	84-SI-040-14	low	80	no
culvert	84SI040110100c3	84-SI-040-11-01	low	150	no
culvert	84EC0340201c3	84-EC-034-02-01	low	10	no
culvert	84EC0350000c5	84-EC	low	270	no
culvert	84EC0350000c12	84-EC-035	low	70	no
culvert	84EC0350000c15	84-EC-035	low	120	no
culvert	84EC0350000c1	84-EC-035	low	5	no
culvert	84EC0350000c7	84-EC-035	none	0	yes
culvert	84TS0130000c23	84-TS-013	<b>high</b>	0	no
culvert	84EC0350000c14	84-EC-035	<b>high</b>	25	no
culvert	84EC0350000c8	84-EC-035	<b>high</b>	0	no
culvert	84EC0000000c35	84-EC	low	15	no
culvert	84EC0000000c32	84-EC	low	10	no
culvert	84EC0000000c31	84-EC	low	5	no
culvert	84EC0351100c5	84-EC-035-11	low	25	no
culvert	84EC0000000c30	84-EC	low	5	no
culvert	84EC0000000c29	84-EC	<b>high</b>	5	no
culvert	84EC0000000c36	84-EC	low	0	no
culvert	84EC0340000c7	84-EC-034	<b>high</b>	15	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
culvert	84EC000000c53	84-EC	low	20	no
culvert	84EC000000c84	84-EC	low	10	no
culvert	84EC000000c47	84-EC	<b>high</b>	30	no
culvert	84EC034000c11	84-EC-034	low	15	no
culvert	84EC000000c46	84-EC	low	300	no
culvert	84EC0341200c6	84-EC-034-12	<b>high</b>	100	no
culvert	84EC035000c10	84-EC-035	low	180	no
culvert	84EC034000c8	84-EC-034	low	10	yes
culvert	84EC035000c4	84-EC	low	10	no
culvert	84EC034000c6	84-EC-034	low	100	no
culvert	84EC000000c41	84-EC	low	10	no
culvert	84EC000000c40	84-EC	low	5	no
culvert	84EC0351900c1	84-EC-035-19	low	80	no
culvert	84EC035000c9	84-EC-035	low	5	no
culvert	84EC000000c27	84-EC	<b>high</b>	5	no
culvert	84EC000000c45	84-EC	<b>high</b>	10	no
culvert	84EC0610100c1	84-EC-061-01	none	0	yes
culvert	84EC0340205c4	84-EC-034-02-05	low	15	no
culvert	84EC000000c3	84-EC	low	60	no
culvert	84EC000000c22	84-EC	low	100	no
culvert	84EC000000c33	84-EC	low	190	no
culvert	84EC000000c39	84-EC	none	0	yes
culvert	84EC000000c42	84-EC	low	90	no
culvert	84EC000000c102	84-EC	low	440	no
culvert	84EC000000c38	84-EC	low	20	no
culvert	84EC000000c109	84-EC	<b>high</b>	100	no
culvert	84EC035000c17	84-EC-035	none	0	yes
culvert	84EC035000c24	84-EC-035	none	0	yes
culvert	84EC035000c25	84-EC-035	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
culvert	84EC000000c59	84-EC	high	30	no
culvert	84MP0791300c1	84-MP-079-13	none	0	yes
culvert	84EC084000c19	84-EC-084	none	0	yes
culvert	84EC000000c71	84-EC	none	0	yes
culvert	84EC000000c17	84-EC	low	200	no
culvert	84EC000000c58	84-EC	low	300	no
culvert	84EC000000c26	84-EC	low	5	no
culvert	84EC000000c25	84-EC	low	100	no
culvert	84EC000000c20	84-EC	low	3	no
culvert	84EC000000c4	84-EC	low	2	no
culvert	84EC000000c24	84-EC	none	0	yes
culvert	84EC000000c37	84-EC	low	60	no
culvert	84EC000000c18	84-EC	low	200	no
culvert	84EC000000c28	84-EC	low	160	no
culvert	84EC000000c16	84-EC	low	25	no
culvert	84EC000000c12	84-EC	low	80	no
culvert	84EC000000c13	84-EC	high	10	no
culvert	84EC000000c15	84-EC	low	25	no
culvert	84EC000000c14	84-EC	low	10	no
culvert	84EC000000c4	84-EC	low	80	no
culvert	84EC000000c6	84-EC	low	10	no
culvert	84SF0060800c5	84-SF-006-08	low	170	no
culvert	84EC0840600c5	84-EC-084-06	none	0	yes
culvert	84SF0061000c3	84-SF-006-10	low	150	no
culvert	84EC000000c86	84-EC	high	5	no
culvert	84EC000000c87	84-EC	high	28	no
culvert	84EC000000c88	84-EC	none	0	yes
culvert	84EC084000c8	84-EC-084	low	10	no
culvert	84EC0840600c6	84-EC-084-06	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
culvert	84TS0130000c19	84-TS-013	none	0	yes
culvert	84EC0840000c5	84-EC-084	low	5	no
culvert	84TS0130000c21	84-TS-013	<b>high</b>	0	no
culvert	84TS0130000c22	84-TS-013	<b>high</b>	10	no
culvert	84TS0130000c26	84-TS-013	low	100	no
culvert	84EC0000000c57	84-EC	none	0	yes
culvert	84EC0000000c52	84-EC	none	0	yes
culvert	84TS0130000c25	84-TS-013	low	100	no
culvert	84TS0130000c20	84-TS-013	low	20	no
culvert	84EC0000000c60	84-EC	none	0	yes
culvert	84EC0000000c56	84-EC	<b>high</b>	20	no
culvert	84EC0840600c1	84-EC-084-06	low	80	no
culvert	84EC0610000c7	84-EC-061	none	0	yes
culvert	84EC0000000c83	84-EC	moderate	60	no
culvert	84EC0000000c63	84-EC	low	20	no
culvert	84EC0690000c7	84-EC-069	low	50	no
culvert	84EC0000000c65	84-EC	none	0	yes
culvert	84EC0000000c66	84-EC	low	20	no
culvert	84EC0000000c68	84-EC	none	0	yes
culvert	84EC0000000c80	84-EC	low	20	no
culvert	84EC0000000c72	84-EC	low	500	no
culvert	84EC0000000c81	84-EC	low	400	no
culvert	84EC0000000c79	84-EC	low	25	no
culvert	84EC0000000c76	84-EC	none	0	yes
culvert	84SF0060000c28	84-SF-006	<b>high</b>	0	yes
culvert	84EC0000000c69	84-EC	<b>high</b>	12	no
culvert	84EC0000000c82	84-EC	low	20	no
erosion_site	84EC0610100e3	84-EC-061-01	low	20	no
erosion_site	84EC0000000e19	84-EC	low	5	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
erosion_site	84EC0340000e7	84-EC-034	low	0	no
erosion_site	84SF0370500e2	84-SF-037-05	low	10	no
erosion_site	84SF0370000e3	84-SF-037	low	15	no
erosion_site	84SF0370000e4	84-SF-037	low	20	no
erosion_site	84EC0000000e49	84-EC	low	6	no
erosion_site	84SF0370000e6	84-SF-037	none	0	yes
erosion_site	84CW0170000e4	84-CW-017	none	0	yes
erosion_site	84EC0340500e1	84-EC-034-05	low	0	no
erosion_site	84SI0400000e11	84-SI-040	low	10	no
erosion_site	84EC0000000e26	84-EC	low	2	no
erosion_site	84EC0000000e16	84-EC	low	4	no
erosion_site	84EC1190000e2	84-EC-119	low	20	no
erosion_site	84SF0370000e2	84-SF-037	none	0	yes
erosion_site	84EC0340201e3	84-EC-034-02-01	low	25	no
erosion_site	84SF0060000e9	84-SF-006	low	10	no
erosion_site	84CE0560300e1	84-CE-056-03	moderate	10	no
erosion_site	84MP0791300e6	84-MP-079-13	low	5	no
erosion_site	84SF0060000e3	84-SF-006	low	2	no
erosion_site	84TS0000000e4	84-TS	low	0	no
erosion_site	84EC0930000e9	84-EC-093	low	0	no
erosion_site	84EC0000000e11	84-EC	low	5	no
erosion_site	84SF0060000e8	84-SF-006	low	2	no
erosion_site	84SF0370500e4	84-SF-037-05	low	10	no
erosion_site	84EC0840600e6	84-EC-084-06	low	3	no
erosion_site	84SF0060000e16	84-SF-006	low	5	no
erosion_site	84SF0060000e15	84-SF-006	low	0	no
erosion_site	84SF0060000e24	84-SF-006	low	5	no
erosion_site	84SF0370500e16	84-SF-037-05	low	20	no
erosion_site	84EC0341301e4	84-EC-034-13-01	low	25	no



## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
erosion_site	84SF0370500e5	84-SF-037-05	low	10	no
erosion_site	84SF0060000e7	84-SF-006	low	2	no
landing	84SI040110016	84-SI-040-11	none	0	yes
landing	84SF0060000124	84-SF-006	none	0	yes
landing	84SF020000012	84-SF-020	none	0	yes
landing	84SF006150013	84-SF-006-15	none	0	yes
landing	84SF0000000118	84-SF	none	0	yes
landing	84SF006110015	84-SF-006-11	none	0	yes
landing	84EC0000000179	84-EC	none	0	yes
landing	84SF006150015	84-SF-006-15	none	0	yes
landing	84MP043220111	84-MP-043-22-01	none	0	yes
landing	84EC0000000180	84-EC	none	0	yes
landing	84MP043220011	84-MP-043-22	none	0	yes
landing	84SF019000011	84-SF-019	none	0	yes
landing	84SF0370500117	84-SF-037-05	low	250	no
landing	84MP043220112	84-MP-043-22-01	none	0	yes
landing	84CE004000012	84-CE-004	moderate	60	no
landing	84SF0060000120	84-SF-006	none	0	yes
landing	84EC079000014	84-EC-079	none	0	yes
landing	84EC079090011	84-EC-079-09	none	0	yes
landing	84SF020030111	84-SF-020-03-01	none	0	yes
landing	84EC0000000117	84-EC	none	0	yes
landing	84SF0370500120	84-SF-037-05	none	0	yes
landing	84SF006150011	84-SF-006-15	none	0	yes
landing	84SF0060000113	84-SF-006	none	0	yes
landing	84SF0370500118	84-SF-037-05	none	0	yes
landing	84SF0060000112	84-SF-006	none	0	yes
landing	84SF0000000121	84-SF	none	0	yes
landing	84SF006150012	84-SF-006-15	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC079000016	84-EC-079	low	5	no
landing	84SF0060000121	84-SF-006	none	0	yes
landing	84SF0370500119	84-SF-037-05	none	0	yes
landing	84SF018000011	84-SF-018	none	0	yes
landing	84SF0060000122	84-SF-006	none	0	yes
landing	84SF0060000114	84-SF-006	none	0	yes
landing	84SF0060000132	84-SF-006	none	0	yes
landing	84SF020000011	84-SF-020	none	0	yes
landing	84SF0000000124	84-SF	none	0	yes
landing	84SF0000000125	84-SF	none	0	yes
landing	84EC073030011	84-EC-073-03	none	0	yes
landing	84SF0000000127	84-SF	none	0	yes
landing	84EC073040011	84-EC-073-04	none	0	yes
landing	84SF0000000126	84-SF	none	0	yes
landing	84MP0430000126	84-MP-043	none	0	yes
landing	84EC069000014	84-EC-069	none	0	yes
landing	84CW003080011	84-CW-003-08	none	0	yes
landing	84SF0370500112	84-SF-037-05	none	0	yes
landing	84EC0341301111	84-EC-034-13-01	none	0	yes
landing	84EC069000011	84-EC-069	none	0	yes
landing	84MP034090112	84-MP-043-09-01	none	0	yes
landing	84EC0000000168	84-EC	none	0	yes
landing	84EC073000011	84-EC-073	none	0	yes
landing	84SF020000013	84-SF-020	none	0	yes
landing	84CW0030000112	84-CW-003	none	0	yes
landing	84SF0000000122	84-SF	none	0	yes
landing	84MP0430000124	84-MP-043	none	0	yes
landing	84SF0060000128	84-SF-006	none	0	yes
landing	84MP0430000127	84-MP-043	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC073020011	84-EC-073-02	none	0	yes
landing	84EC084000011	84-EC-084	none	0	yes
landing	84SF0370500114	84-SF-037-05	none	0	yes
landing	84SF0000000123	84-SF	none	0	yes
landing	84EC073000012	84-EC-073	none	0	yes
landing	84SF0060000129	84-SF-006	none	0	yes
landing	84EC0000000173	84-EC	none	0	yes
landing	84CW0030000111	84-CW-003	none	0	yes
landing	84SF0060000126	84-SF-006	none	0	yes
landing	84EC093000018	84-EC-093	none	0	yes
landing	84MP043120012	84-MP-043-12	none	0	yes
landing	84EC1151700120	84-EC-115-17	moderate	60	no
landing	84MP109000011	84-MP-109	none	0	yes
landing	84EC093110012	84-EC-093-11	low	60	no
landing	84SF006100112	84-SF-006-10-01	none	0	yes
landing	84MP043120011	84-MP-043-12	none	0	yes
landing	84SF010000013	84-SF-010	none	0	yes
landing	84EC090000011	84-EC-090	none	0	yes
landing	84SF010040011	84-SF-010-04	none	0	yes
landing	84SF006100013	84-SF-006-10	none	0	yes
landing	84SF010000014	84-SF-010	none	0	yes
landing	84EC0000000187	84-EC	none	0	yes
landing	84SF006100012	84-SF-006-10	none	0	yes
landing	84EC079000018	84-EC-079	none	0	yes
landing	84SF006100111	84-SF-006-10-01	none	0	yes
landing	84SF006000015	84-SF-006	none	0	yes
landing	84SF006080015	84-SF-006-08	none	0	yes
landing	84EC084060011	84-EC-084-06	none	0	yes
landing	84SF010000011	84-SF-010	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84MP034080012	84-MP-043-08	none	0	yes
landing	84EC084060012	84-EC-084-06	none	0	yes
landing	84MP00000001122	84-MP	none	0	yes
landing	84EC084110012	84-EC-084-11	none	0	yes
landing	84EC093000016	84-EC-093	none	0	yes
landing	84SF006080013	84-SF-006-08	none	0	yes
landing	84SF006080012	84-SF-006-08	none	0	yes
landing	84CE00000001346	84-CE	low	0	yes
landing	84EC093090012	84-EC-093-09	none	0	yes
landing	84EC093090011	84-EC-093-09	none	0	yes
landing	84SF008000013	84-SF-008	none	0	yes
landing	84SF006080014	84-SF-006-08	none	0	yes
landing	84SF0060000110	84-SF-006	none	0	yes
landing	84EC089000012	84-EC-089	low	0	yes
landing	84SF0060000118	84-SF-006	none	0	yes
landing	84EC079100012	84-EC-079-10	none	0	yes
landing	84EC0790000111	84-EC-079	none	0	yes
landing	84EC079100011	84-EC-079-10	none	0	yes
landing	84SF0060000116	84-SF-006	none	0	yes
landing	84SF014020011	84-SF-014-02	none	0	yes
landing	84EC079100013	84-EC-079-10	none	0	yes
landing	84SF006110112	84-SF-006-11-01	none	0	yes
landing	84EC0790000112	84-EC-079	none	0	yes
landing	84SF014000013	84-SF-014	none	0	yes
landing	84SF006110111	84-SF-006-11-01	none	0	yes
landing	84EC0790000113	84-EC-079	none	0	yes
landing	84SF0060000115	84-SF-006	none	0	yes
landing	84SF016000011	84-SF-016	none	0	yes
landing	84SF006100014	84-SF-006-10	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC084000012	84-EC-084	none	0	yes
landing	84SF012000011	84-SF-012	none	0	yes
landing	84MP043130011	84-MP-043-13	none	0	yes
landing	84EC093050011	84-EC-093-05	none	0	yes
landing	84SF010000015	84-SF-010	none	0	yes
landing	84MP043120013	84-MP-043-12	none	0	yes
landing	84SF006000019	84-SF-006	none	0	yes
landing	84EC066000011	84-EC-066	none	0	yes
landing	84SF014000011	84-SF-014	none	0	yes
landing	84SF037050114	84-SF-037-05-01	low	150	no
landing	84EC084060016	84-EC-084-06	none	0	yes
landing	84SF015000011	84-SF-015	none	0	yes
landing	84EC079100014	84-EC-079-10	none	0	yes
landing	84MP0430000116	84-MP-043	none	0	yes
landing	84EC084060015	84-EC-084-06	none	0	yes
landing	84EC0000000134	84-EC	none	0	yes
landing	84EC035110019	84-EC-035-11	none	0	yes
landing	84EC035000019	84-EC-035	none	0	yes
landing	84EC0350000110	84-EC-035	none	0	yes
landing	84EC035000014	84-EC-035	none	0	yes
landing	84EC035000015	84-EC-035	none	0	yes
landing	84EC035000013	84-EC-035	none	0	yes
landing	84EC034000011	84-EC-034	none	0	yes
landing	84EC0000000138	84-EC	none	0	yes
landing	84EC0350000112	84-EC-035	none	0	yes
landing	84EC0350000113	84-EC-035	none	0	yes
landing	84EC035110013	84-EC-035-11	none	0	yes
landing	84EC034020015	84-EC-034-02	none	0	yes
landing	84EC034020016	84-EC-034-02	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC034050012	84-EC-034-05	none	0	yes
landing	84EC035110011	84-EC-035-11	none	0	yes
landing	84EC034000015	84-EC-034	none	0	yes
landing	84SF0000000128	84-SF	none	0	yes
landing	84EC034050011	84-EC-034-05	none	0	yes
landing	84EC034000017	84-EC-034	none	0	yes
landing	84EC040000011	84-EC-040	none	0	yes
landing	84EC049030115	84-EC-049-03-01	none	0	yes
landing	84EC0350000111	84-EC-035	none	0	yes
landing	84EC035190013	84-EC-035-19	none	0	yes
landing	84EC035110211	84-EC-035-11-02	none	0	yes
landing	84EC035190012	84-EC-035-19	none	0	yes
landing	84EC0350000118	84-EC-035	none	0	yes
landing	84EC049030116	84-EC-049-03-01	none	0	yes
landing	84EC039000011	84-EC-039	none	0	yes
landing	84EC0000000141	84-EC	none	0	yes
landing	84EC0000000139	84-EC	none	0	yes
landing	84EC034000016	84-EC-034	none	0	yes
landing	84EC139050012	84-EC-139-05	none	0	yes
landing	84EC035110017	84-EC-035-11	none	0	yes
landing	84EC069040011	84-EC-069-04	none	0	yes
landing	84EC035260011	84-EC-035-26	none	0	yes
landing	84EC035260012	84-EC-035-26	none	0	yes
landing	84TS013100111	84-ts-013-10-01	none	0	yes
landing	84EC017000013	84-EC-017	none	0	yes
landing	84CE036000012	84-CE-036	none	0	yes
landing	84EC0000000122	84-EC	none	0	yes
landing	84EC139050011	84-EC-139-05	none	0	yes
landing	84CE066010012	84-CE-066-01	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84CE028000011	84-CE-028	none	0	yes
landing	84CE018050011	84-CE-018-05	none	0	yes
landing	84CE018000016	84-CE-018	none	0	yes
landing	84CE018000017	84-CE-018	none	0	yes
landing	84TS020000011	84-TS-020	none	0	yes
landing	84EC028000011	84-EC-028	none	0	yes
landing	84EC0000000131	84-EC	none	0	yes
landing	84EC0351100112	84-EC-035-11	none	0	yes
landing	84EC034020116	84-EC-034-02-01	none	0	yes
landing	84EC034020514	84-EC-034-02-05	none	0	yes
landing	84EC034020117	84-EC-034-02-01	none	0	yes
landing	84EC069010111	84-EC-069-01-01	none	0	yes
landing	84EC028000012	84-EC-028	none	0	yes
landing	84EC042000011	84-EC-042	none	0	yes
landing	84EC028000013	84-EC-028	none	0	yes
landing	84EC034020516	84-EC-034-02-05	none	0	yes
landing	84EC034020515	84-EC-034-02-05	none	0	yes
landing	84EC0000000120	84-EC	none	0	yes
landing	84EC0000000121	84-EC	none	0	yes
landing	84EC0000000123	84-EC	none	0	yes
landing	84EC0000000127	84-EC	none	0	yes
landing	84EC061130011	84-EC-061-13	none	0	yes
landing	84EC061040012	84-EC-061-04	moderate	300	no
landing	84EC0000000162	84-EC	none	0	yes
landing	84SF032000016	84-SF-032	none	0	no
landing	84EC061020011	84-EC-061-02	none	0	yes
landing	84EC0610000112	84-EC-061	none	0	yes
landing	84SF037050019	84-SF-037-05	none	0	yes
landing	84EC034130117	84-EC-034-13-01	none	0	no

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC073000018	84-EC-073	none	0	yes
landing	84EC061030011	84-EC-061-03	none	0	yes
landing	84SF034000011	84-SF-034	none	0	yes
landing	84EC034130115	84-EC-034-13-01	none	0	yes
landing	84EC0000000160	84-EC	none	0	yes
landing	84SF032000011	84-SF-032	none	0	yes
landing	84EC034120017	84-EC-034-12	none	0	yes
landing	84CW003000013	84-CW-003	none	0	yes
landing	84SF0370500110	84-SF-037-05	none	0	yes
landing	84EC073030013	84-EC-073-03	low	100	no
landing	84SF022000011	84-SF-002	none	0	yes
landing	84SF0000000129	84-SF	none	0	yes
landing	84EC0000000165	84-EC	none	0	yes
landing	84EC066000012	84-EC-066	none	0	yes
landing	84SF0000000135	84-SF	none	0	yes
landing	84EC0690000155	84-EC-069	none	0	yes
landing	84EC034130114	84-EC-034-13-01	none	0	yes
landing	84SF0000000131	84-SF	none	0	yes
landing	84EC069010011	84-EC-069-01	none	0	yes
landing	84SF0000000132	84-SF	none	0	yes
landing	84EC069010012	84-EC-069-01	none	0	yes
landing	84SF0000000133	84-SF	none	0	yes
landing	84SF0000000134	84-SF	none	0	yes
landing	84SF0000000130	84-SF	none	0	yes
landing	84EC0000000148	84-EC	none	0	yes
landing	84EC061130012	84-EC-061-13	none	0	yes
landing	84EC049030012	84-EC-049-03	none	0	yes
landing	84EC034120011	84-EC-034-12	none	0	yes
landing	84EC049030111	84-EC-049-03-01	none	0	yes



## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC049000011	84-EC-049	none	0	yes
landing	84SF037000017	84-SF-037	none	0	yes
landing	84EC049030013	84-EC-049-03	none	0	yes
landing	84EC0490000111	84-EC-049	none	0	yes
landing	84EC034090011	84-EC-034-09	none	0	yes
landing	84EC042000012	84-EC-042	none	0	yes
landing	84EC0340000114	84-EC-034	none	0	yes
landing	84EC034000018	84-EC-034	none	0	yes
landing	84EC034000019	84-EC-034	none	0	yes
landing	84EC034050211	84-EC-034-05-02	none	0	yes
landing	84EC049030011	84-EC-049-03	none	0	yes
landing	84EC0000000153	84-EC	none	0	yes
landing	84SF037000011	84-SF-037	none	0	yes
landing	84EC0000000155	84-EC	none	0	yes
landing	84EC061010011	84-EC-061-01	none	0	yes
landing	84EC061000017	84-EC-061	none	0	yes
landing	84EC061030013	84-EC-061-03	none	0	yes
landing	84EC034120014	84-EC-034-12	none	0	yes
landing	84EC049060012	84-EC-049-06	none	0	yes
landing	84SF006100015	84-SF-006-10	none	0	yes
landing	84EC049000016	84-EC-049	none	0	yes
landing	84EC0350000126	84-EC-035	none	0	yes
landing	84EC049000015	84-EC-049	none	0	yes
landing	84EC049030017	84-EC-049-03	none	0	yes
landing	84EC049030016	84-EC-049-03	none	0	yes
landing	84EC034130011	84-EC-034-13	none	0	yes
landing	84SF035000012	84-SF-035	none	0	yes
landing	84EC127000013	84-EC-127	none	0	yes
landing	84MP059000011	84-MP-059	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84MP077000016	84-MP-077	none	0	yes
landing	84SC019000012	84-SC-019	none	0	yes
landing	84SC023000011	84-SC-023	none	0	yes
landing	84MP079060011	84-MP-079-06	none	0	yes
landing	84SC0000000121	84-SC	none	0	yes
landing	84EC135150013	84-EC-135-15	none	0	yes
landing	84EC135150012	84-EC-135-15	none	0	yes
landing	84MP077050011	84-MP-077-05	none	0	yes
landing	84EC135150011	84-EC-135-15	none	0	yes
landing	84SC0000000127	84-SC	none	0	yes
landing	84EC00000001125	84-EC	none	0	yes
landing	84SC0000000124	84-SC	none	0	yes
landing	84CE066000013	84-CE-066	none	0	yes
landing	84SC015000011	84-SC-015	none	0	yes
landing	84MP079060015	84-MP-079-06	none	0	yes
landing	84SC024020011	84-SC-024-02	moderate	150	no
landing	84MP079040011	84-MP-079-04	none	0	yes
landing	84SC024000012	84-SC-024	none	0	yes
landing	84EC127050014	84-EC-127-05	none	0	yes
landing	84SC0000000117	84-SC	none	0	yes
landing	84MP077000012	84-MP-077	none	0	yes
landing	84MP079000014	84-MP-079	none	0	yes
landing	84MP079000013	84-MP-079	none	0	yes
landing	84EC127000014	84-EC-127	none	0	yes
landing	84SC017000012	84-SC-017	none	0	yes
landing	84CE0660000113	84-CE-066	none	0	yes
landing	84SC024000011	84-SC-024	none	0	yes
landing	84MP077040011	84-MP-077-04	none	0	yes
landing	84EC127000011	84-EC-127	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84MP053000011	84-MP-053	none	0	yes
landing	84EC135000017	84-EC-135	none	0	yes
landing	84MP079230011	84-MP-079-23	none	0	yes
landing	84MP0790000118	84-MP-079	none	0	yes
landing	84MP079070111	84-MP-079-07-01	none	0	yes
landing	84MP0770000110	84-MP-077	none	0	yes
landing	84MP0790000119	84-MP-079	none	0	yes
landing	84EC1350000120	84-EC-135	none	0	yes
landing	84MP077000018	84-MP-077	none	0	yes
landing	84MP079070211	84-MP-079-07-02	none	0	yes
landing	84MP0530000132	84-MP-053	none	0	yes
landing	84SC023000017	84-SC-023	none	0	yes
landing	84SC019000013	84-SC-019	none	0	yes
landing	84MP0790000117	84-MP-079	none	0	yes
landing	84EC115130012	84-EC-115-13	none	0	yes
landing	84EC115120011	84-EC-115-12	none	0	yes
landing	84EC115100112	84-EC-115-10-01	none	0	yes
landing	84EC127000016	84-EC-127	none	0	yes
landing	84MP079000016	84-MP-079	none	0	yes
landing	84MP113000011	84-MP-113	none	0	yes
landing	84EC145050011	84-EC-145-05	none	0	yes
landing	84EC00000001148	84-EC	none	0	yes
landing	84MP077000019	84-MP-077	none	0	yes
landing	84SC019000014	84-SC-019	none	0	yes
landing	84SC023000012	84-SC-023	low	6	yes
landing	84EC115100013	84-EC-115-10	none	0	yes
landing	84CE066030111	84-CE-066-03-01	none	0	yes
landing	84MP077000017	84-MP-077	none	0	yes
landing	84SF006080111	84-SF-006-08-01	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC115100111	84-EC-115-10-01	none	0	yes
landing	84EC084110011	84-EC-084-11	none	0	yes
landing	84MP0790000122	84-MP-079	none	0	yes
landing	84MP105000016	84-MP-105	none	0	yes
landing	84MP0790000137	84-MP-079	none	0	yes
landing	84MP109020011	84-MP-109-02	none	0	yes
landing	84SC006000013	84-SC-006	none	0	yes
landing	84EC139000013	84-EC-139	none	0	yes
landing	84SC003000011	84-SC-003	none	0	yes
landing	84EC139000019	84-EC-139	none	0	yes
landing	84MP109000012	84-MP-109	none	0	yes
landing	84SC001000011	84-SC-001	none	0	yes
landing	84EC139000016	84-EC-139	none	0	yes
landing	84MP107000012	84-MP-107	none	0	yes
landing	84SI040070013	84-SI-040-07	none	0	yes
landing	84SI040110013	84-SI-040-11	none	0	yes
landing	84MP105000014	84-MP-105	none	0	yes
landing	84SC024000013	84-SC-024	low	60	no
landing	84EC139040011	84-EC-139-04	none	0	yes
landing	84MP00000001114	84-MP	none	0	yes
landing	84MP00000001121	84-MP	none	0	yes
landing	84MP00000001120	84-MP	none	0	yes
landing	84EC145090011	84-EC-145-09	none	0	yes
landing	84MP00000001116	84-MP	none	0	yes
landing	84EC143000011	84-EC-143	none	0	yes
landing	84EC139000012	84-EC-139	low	0	yes
landing	84MP00000001115	84-MP	none	0	yes
landing	84SC000000017	84-SC	none	0	yes
landing	84MP089000011	84-MP-089	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC1390000110	84-EC-139	none	0	yes
landing	84EC1390000111	84-EC-139	none	0	yes
landing	84SI040110018	84-SI-040-11	none	0	yes
landing	84SC003000013	84-SC-003	none	0	yes
landing	84SI040110212	84-SI-040-11-02	none	0	yes
landing	84MP0000000197	84-MP	none	0	yes
landing	84SC024000014	84-SC-024	none	0	yes
landing	84SI040110011	84-SI-040-11	none	0	yes
landing	84SI040140013	84-SI-040-14	none	0	yes
landing	84MP107000019	84-MP-107	none	0	yes
landing	84EC1350000110	84-EC-135	none	0	yes
landing	84SC024000015	84-SC-024	none	0	yes
landing	84SI040070011	84-SI-040-07	none	0	yes
landing	84MP069020011	84-MP-069-02	none	0	yes
landing	84MP071000012	84-MP-071	none	0	yes
landing	84MP135090011	84-MP-135-09	none	0	yes
landing	84MP1070000110	84-MP-107	none	0	yes
landing	84MP079310011	84-MP-079-31	low	70	no
landing	84EC00000001129	84-EC	none	0	yes
landing	84MP1070000111	84-MP-107	none	0	yes
landing	84EC135190012	84-EC-135-19	none	0	yes
landing	84MP0790000133	84-MP-079	none	0	yes
landing	84MP107000017	84-MP-107	none	0	yes
landing	84SC024000018	84-SC-024	low	0	yes
landing	84MP0790000138	84-MP-079	none	0	yes
landing	84SI040110114	84-SI-040-11-01	none	0	yes
landing	84SI040110111	84-SI-040-11-01	none	0	yes
landing	84SI0400000118	84-SI-040	none	0	yes
landing	84EC135000016	84-EC-135	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84MP081000011	84-MP-081	none	0	yes
landing	84MP079020011	84-MP-079-02	none	0	yes
landing	84SC024000016	84-SC-024	none	0	yes
landing	84MP0790000136	84-MP-079	none	0	yes
landing	84SI0400000113	84-SI-040	none	0	yes
landing	84MP0000000186	84-MP	none	0	yes
landing	84MP0790000135	84-MP-079	none	0	yes
landing	84SI040140011	84-SI-040-14	none	0	yes
landing	84MP081000012	84-MP-081	none	0	yes
landing	84EC0840000114	84-EC-084	none	0	yes
landing	84SF006000011	84-SF-006	none	0	yes
landing	84EC0840000115	84-EC-084	none	0	yes
landing	84EC135190011	84-EC-135-19	none	0	yes
landing	84TS0130000110	84-TS-013	none	0	yes
landing	84TS016000011	84-TS-016	none	0	yes
landing	84TS0000000118	84-TS	none	0	yes
landing	84EC106040017	84-EC-106-04	none	0	yes
landing	84MP053110012	84-MP-053-11	none	0	yes
landing	84SF006020011	84-SF-006-02	none	0	yes
landing	84SF000000015	84-SF	none	0	yes
landing	84EC0000000198	84-EC	none	0	yes
landing	84SF006020012	84-SF-006-02	none	0	yes
landing	84EC084120011	84-EC-084-12	none	0	yes
landing	84MP053190011	84-MP-053-19	none	0	yes
landing	84MP053110013	84-MP-053-11	none	0	yes
landing	84EC0840000120	84-EC-084	none	0	yes
landing	84MP053000019	84-MP-053	none	0	yes
landing	84EC115170018	84-EC-115-17	none	0	yes
landing	84MP0530000117	84-MP-053	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84EC106040012	84-EC-106-04	none	0	yes
landing	84MP079130016	84-MP-079-13	none	0	yes
landing	84MP079070013	84-MP-079-07	none	0	yes
landing	84MP053170011	84-MP-053-17	none	0	no
landing	84SF000000016	84-SF	none	0	yes
landing	84MP079130017	84-MP-079-13	none	0	yes
landing	84EC106040014	84-EC-106-04	none	0	yes
landing	84SF002000014	84-SF-002	none	0	yes
landing	84MP053110011	84-MP-053-11	none	0	yes
landing	84EC1151700110	84-EC-115-17	none	0	yes
landing	84TS0000000116	84-TS	none	0	yes
landing	84EC106040013	84-EC-106-04	none	0	yes
landing	84SF006040011	84-SF-006-04	none	0	yes
landing	84SF006020013	84-SF-006-02	none	0	yes
landing	84MP034090111	84-MP-043-09-01	none	0	yes
landing	84TS0130000125	84-TS-013	none	0	yes
landing	84SF008000011	84-SF-008	none	0	yes
landing	84TS0130000126	84-TS-013	none	0	yes
landing	84SF006080017	84-SF-006-08	none	0	yes
landing	84SF006080018	84-SF-006-08	none	0	yes
landing	84EC0840000112	84-EC-084	none	0	yes
landing	84TS0130000120	84-TS-013	none	0	yes
landing	84EC0840000110	84-EC-084	none	0	yes
landing	84TS0130000119	84-TS-013	none	0	yes
landing	84SF006080016	84-SF-006-08	none	0	yes
landing	84EC093000011	84-EC-093	none	0	yes
landing	84EC084000017	84-EC-084	none	0	yes
landing	84EC092000011	84-EC-092	none	0	yes
landing	84TS012000011	84-TS-012	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84SF006020014	84-SF-006-02	none	0	yes
landing	84TS0130000116	84-TS-013	none	0	yes
landing	84SF000000018	84-SF	none	0	yes
landing	84SF000000017	84-SF	none	0	yes
landing	84TS013260011	84-TS-013-26	none	0	yes
landing	84EC0000000193	84-EC	none	0	yes
landing	84EC0000000196	84-EC	none	0	yes
landing	84SF000000014	84-SF	none	0	yes
landing	84TS012000013	84-TS-012	none	0	yes
landing	84TS0000000111	84-TS	none	0	yes
landing	84TS0130000127	84-TS-013	low	150	no
landing	84TS012000012	84-TS-012	none	0	yes
landing	84TS012000014	84-TS-012	none	0	yes
landing	84TS0130000129	84-TS-013	low	80	no
landing	84SF006020015	84-SF-006-02	none	0	yes
landing	84EC115030011	84-EC-115-03	moderate	20	no
landing	84MP053000014	84-MP-053	none	0	yes
landing	84MP053320012	84-MP-053-32	none	0	yes
landing	84SC023000014	84-SC-023	none	0	yes
landing	84CE064000011	84-CE-064	none	0	yes
landing	84EC115180112	84-EC-115-18-01	none	0	yes
landing	84CE0000000161	84-CE	none	0	yes
landing	84MP0790000112	84-MP-079	none	0	yes
landing	84EC099000011	84-EC-099	none	0	yes
landing	84CE0000000160	84-CE	none	0	yes
landing	84CE0000000138	84-CE	none	0	yes
landing	84CE062000014	84-CE-062	none	0	yes
landing	84EC115180111	84-EC-115-18-01	none	0	yes
landing	84CE056030014	84-CE-056-03	none	0	yes



## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84MP079070311	84-MP-079-07-03	none	0	yes
landing	84EC106000019	84-EC-106	none	0	yes
landing	84EC116000011	84-EC-116	none	0	yes
landing	84CE066020111	84-CE-066-02-01	none	0	yes
landing	84EC115130111	84-EC-115-13-01	none	0	yes
landing	84EC115140011	84-EC-115-14	none	0	yes
landing	84CE066020011	84-CE-066-02	none	0	yes
landing	84MP0000000157	84-MP	none	0	yes
landing	84TS0000000130	84-TS	none	0	yes
landing	84MP0790000115	84-MP-079	none	0	yes
landing	84TS0000000131	84-TS	none	0	yes
landing	84EC115000014	84-EC-115	none	0	yes
landing	84EC1060000112	84-EC-106	none	0	yes
landing	84MP0530000133	84-MP-053	none	0	yes
landing	84MP0000000156	84-MP	none	0	yes
landing	84EC0000000199	84-EC	none	0	yes
landing	84EC1060000111	84-EC-106	none	0	yes
landing	84EC115000015	84-EC-115	none	0	yes
landing	84SF002000012	84-SF-002	none	0	yes
landing	84MP047000013	84-MP-047	none	0	yes
landing	84EC115170012	84-EC-115-17	none	0	yes
landing	84MP079070019	84-MP-079-07	none	0	yes
landing	84SC106030012	84-SC-106-03	low	100	no
landing	84EC115170014	84-EC-115-17	none	0	yes
landing	84MP079130013	84-MP-079-13	none	0	yes
landing	84MP047000014	84-MP-047	none	0	yes
landing	84EC106000012	84-EC-106	none	0	yes
landing	84TS013100012	84-TS-013-10	none	0	yes
landing	84SF002000011	84-SF-002	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
landing	84SF002000013	84-SF-002	none	0	yes
landing	84MP079130015	84-MP-079-13	none	0	yes
landing	84MP047000016	84-MP-047	none	0	yes
landing	84TS0000000127	84-TS	none	0	yes
landing	84SC106030011	84-SC-106-03	none	0	yes
landing	84MP079130011	84-MP-079-13	none	0	yes
landing	84MP047000015	84-MP-047	none	0	yes
landing	84MP053220012	84-MP-053-22	none	0	yes
landing	84EC110000012	84-EC-110	none	0	yes
landing	84EC110000011	84-EC-110	none	0	yes
landing	84MP047000011	84-MP-047	none	0	yes
landing	84TS0000000126	84-TS	low	5	no
landing	84EC106000017	84-EC-106	none	0	yes
landing	84EC109000011	84-EC-109	none	0	yes
landing	84MP053000016	84-MP-053	none	0	yes
landing	84MP0530000121	84-MP-053	none	0	yes
landing	84EC106000014	84-EC-106	none	0	yes
landing	84EC115170011	84-EC-115-17	none	0	yes
landing	84MP079130012	84-MP-079-13	none	0	yes
landing	84EC115180013	84-EC-115-18	none	0	yes
landing	84MP079110411	84-MP-079-11-04	none	0	yes
road_slide	84EC0341301r7	84-EC-034-13-01	none	0	yes
road_slide	84EC0730200r1	84-EC-073-02	none	0	yes
road_slide	84SF0370500r14	84-SF-037-05	none	0	yes
road_slide	84SF0370500r12	84-SF-037-05	none	0	yes
road_slide	84EC0730000r7	84-EC-073	none	0	yes
road_slide	84EC0341301r10	84-EC-034-13-01	none	0	yes
road_slide	84EC0690000r10	84-EC-069	low	0	no
road_slide	84SF0370500r13	84-SF-037-05	none	0	yes

## Appendix B: Elk Road Features

Feature	Site ID	Road Number	Treatment Immediacy	Controllable Volume (yd3)	Controlled?
road_slide	84SF0370500r5	84-SF-037-05	none	0	yes
road_slide	84EC0610000r6	84-EC-061	none	0	yes
road_slide	84SF0370500r3	84-SF-037-05	none	0	yes
road_slide	84EC0350000r30	84-EC-035	none	0	yes
road_slide	84EC0341300r3	84-EC-034-13	moderate	50	no
road_slide	84EC0350000r29	84-EC-035	none	0	yes
road_slide	84EC0350000r20	84-EC-035	none	0	yes
road_slide	84EC0930500r1	84-EC-093-05	none	0	yes
road_slide	84SI0401100r2	84-SI-040-11	high	40	no
road_slide	84EC0341200r4	84-EC-034-12	none	0	yes
road_slide	84EC1060400r1	84-EC-106-04	none	0	yes
road_slide	84SI0401100r3	84-SI-040-11	high	40	no
road_slide	84MP1070000r7	84-MP-107	low	40	no
road_slide	84EC0340205r4	84-EC-034-02-05	none	0	yes
road_slide	84SI0400000r16	84-SI-040	low	50	no
road_slide	84EC1350000r16	84-EC-135	low	10	no
road_slide	84SC0230000r4	84-SC-023	low	0	no
road_slide	84SC0230000r5	84-SC-023	low	80	no
road_slide	84EC1350000r3	84-EC-135	low	0	no
road_slide	84EC1151700r7	84-EC-115-17	low	0	no
road_slide	84EC0840000r4	84-EC-084	low	8	no
road_slide	84TS0130000r3	84-TS-013	none	0	yes
road_slide	84TS0130000r30	84-TS-013	none	0	yes
road_slide	84SF0060800r5	84-SF-006-08	none	0	yes
road_slide	84EC1151700r18	84-EC-115-17	low	0	no
road_slide	84TS0130000r19	84-TS-013	none	0	yes
road_slide	84EC1151700r19	84-EC-115-17	none	0	yes
road_slide	84EC0840600r1	84-EC-084-06	none	0	yes
road_slide	84EC1151000r1	84-EC-115-10	low	30	no

**Elk Creek  
Watershed Analysis  
Unit**

**Map B-1(a)  
Erosion Hazard Rating  
Classifications**

This map presents an erosion hazard rating and road classification for MRC roads. High erosion hazard road segments have the highest amount of recent deliverable surface erosion to watercourses and a high potential for future deliverable erosion in comparison to moderate and low erosion hazard rated segments. This information is estimated using road inventory data and should be used to aid in prioritizing road segments for repairs such as road outslipping, increasing waterbreak spacing, or adding rolling dips. Roads currently classified as seasonal roads should be converted to temporary roads, where feasible, to increase the number of self-maintaining watercourse crossings within the watershed.




**Erosion Hazard Rating**

- Low
- Moderate
- High



**Road Classification**

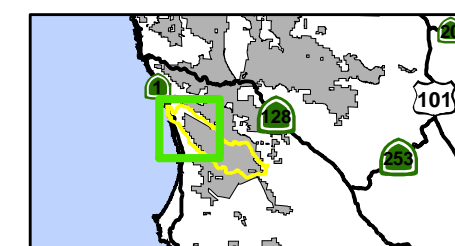
-  Permanent
-  Seasonal
-  Temporary
-  Undetermined
-  Decommissioned
-  Historic

**MRC Ownership**

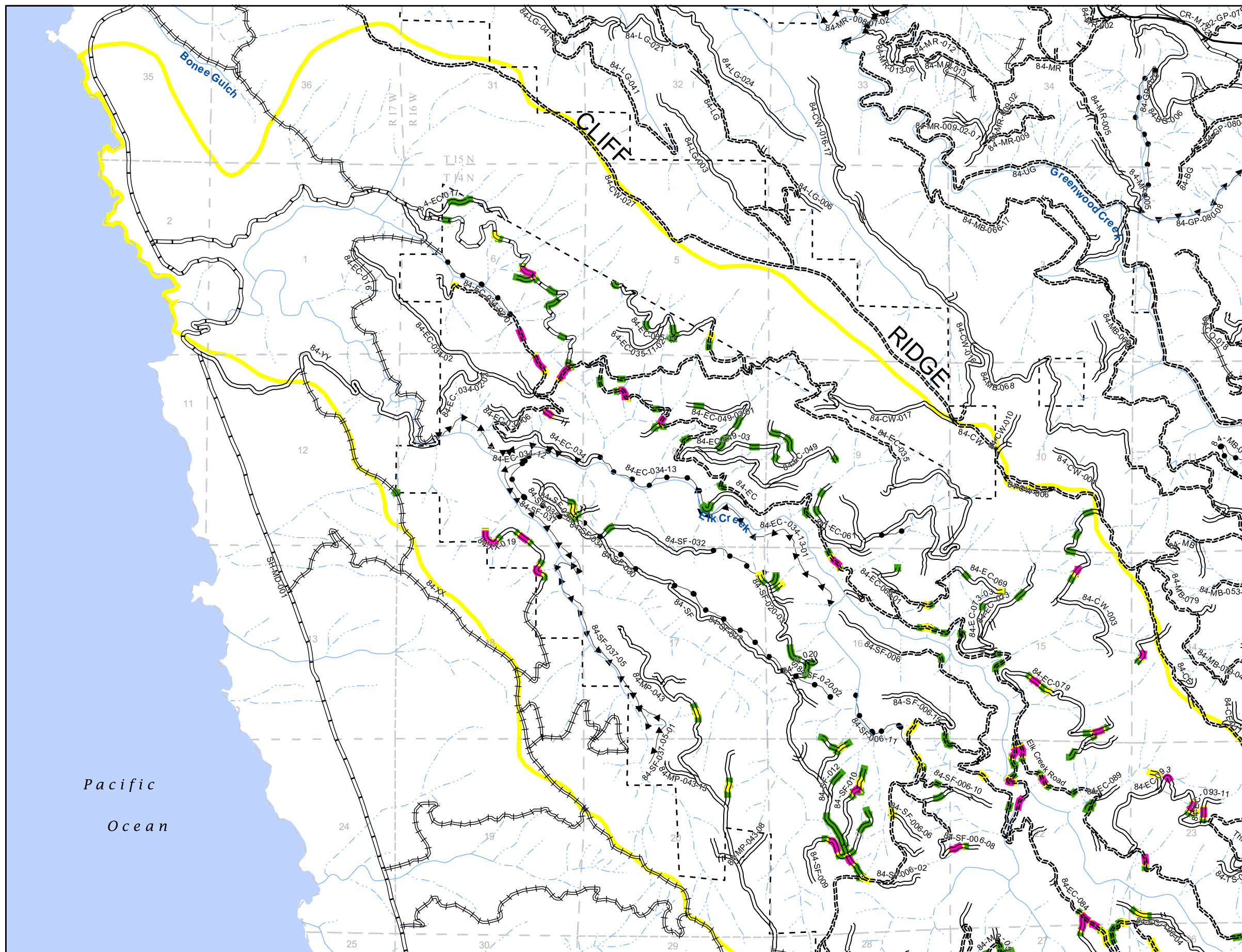
-  MRC Ownership
-  Planning Watershed Boundary
-  Elk Creek Watershed Analysis Unit Boundary

**Flow Class**

-  Class I
-  Class II
-  Class III



0 0.25 0.5 Miles



**Elk Creek  
Watershed Analysis  
Unit**

**Map B-1(b)  
Erosion Hazard Rating  
Classifications**

This map presents an erosion hazard rating and road classification for MRC roads. High erosion hazard road segments have the highest amount of recent deliverable surface erosion to watercourses and a high potential for future deliverable erosion in comparison to moderate and low erosion hazard rated segments. This information is estimated using road inventory data and should be used to aid in prioritizing road segments for repairs such as road outslipping, increasing waterbreak spacing, or adding rolling dips. Roads currently classified as seasonal roads should be converted to temporary roads, where feasible, to increase the number of self-maintaining watercourse crossings within the watershed.

**Erosion Hazard Rating**

- █ Low
- █ Moderate
- █ High

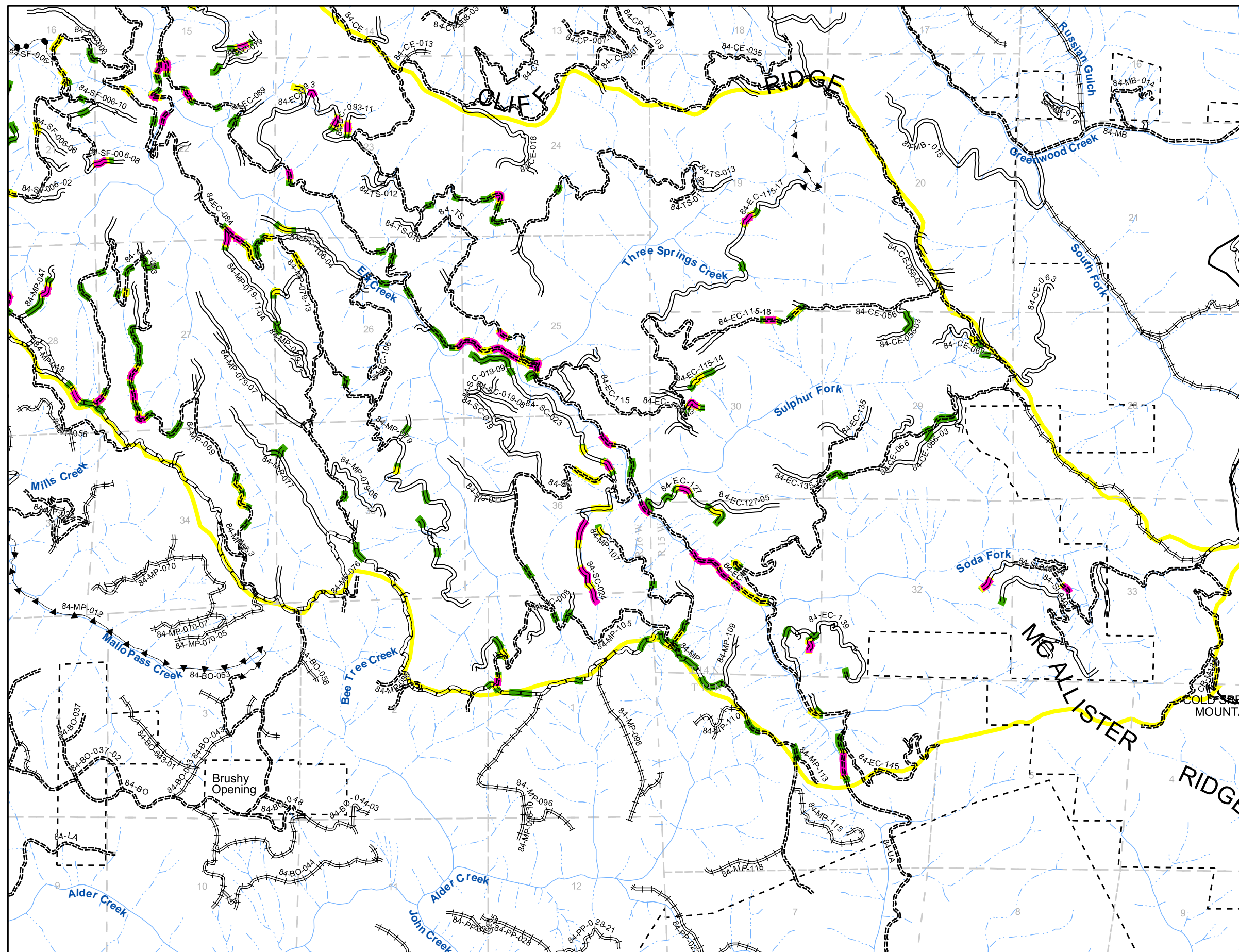
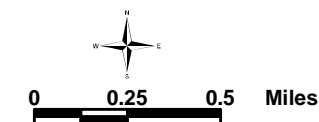
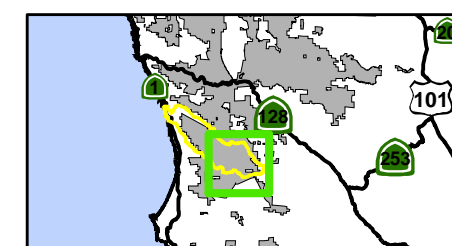
**Road Classification**

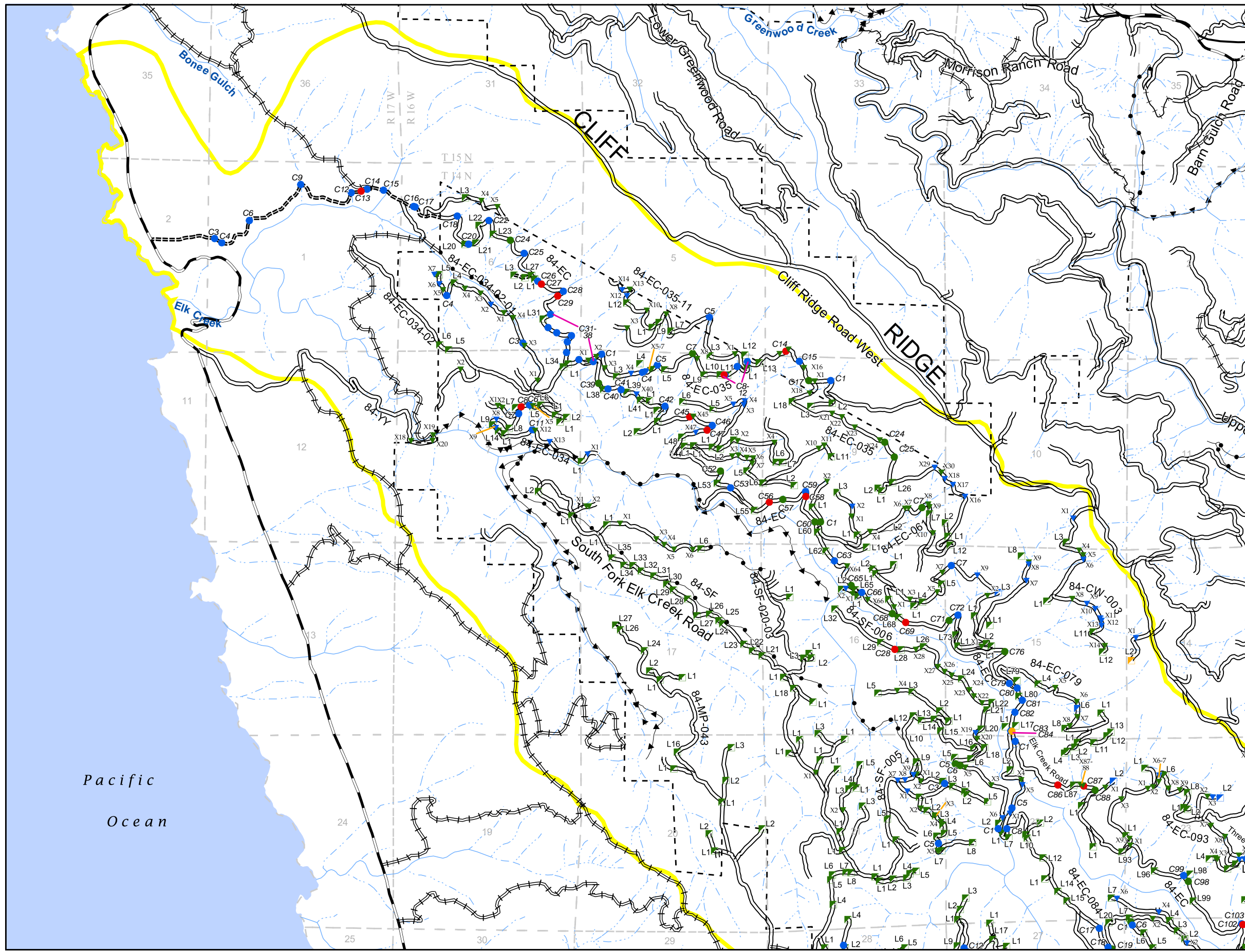
- Permanent
- Seasonal
- Temporary
- Undetermined
- Decommissioned
- Historic

- MRC Ownership
- Planning Watershed Boundary
- Elk Creek Watershed Analysis Unit Boundary

**Flow Class**

- Class I
- Class II
- Class III





**Elk Creek  
Watershed Analysis  
Unit**

**Map B-2(a)  
Road Feature  
Treatment Immediacy**

This map presents select results from MRC's road inventory. The entire road network and road features were mapped using geographic positioning system (GPS) from 2006. For each feature with the potential to create erosion (culverts, landings, crossings) the treatment immediacy for the feature was assigned. The treatment immediacy represents the level of concern for either upgrading or maintenance to the feature.

**Treatment Immediacy**

Culverts	Crossings	Landings
● high	▼ high	◻ high
● moderate	▼ moderate	◻ moderate
● low	▼ low	◻ low
● none	▼ none	◻ none

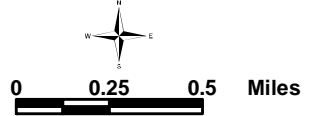
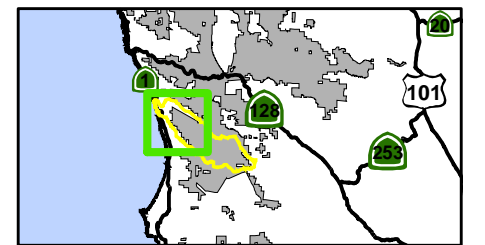
L = Landing; C = Culvert; X = Crossing

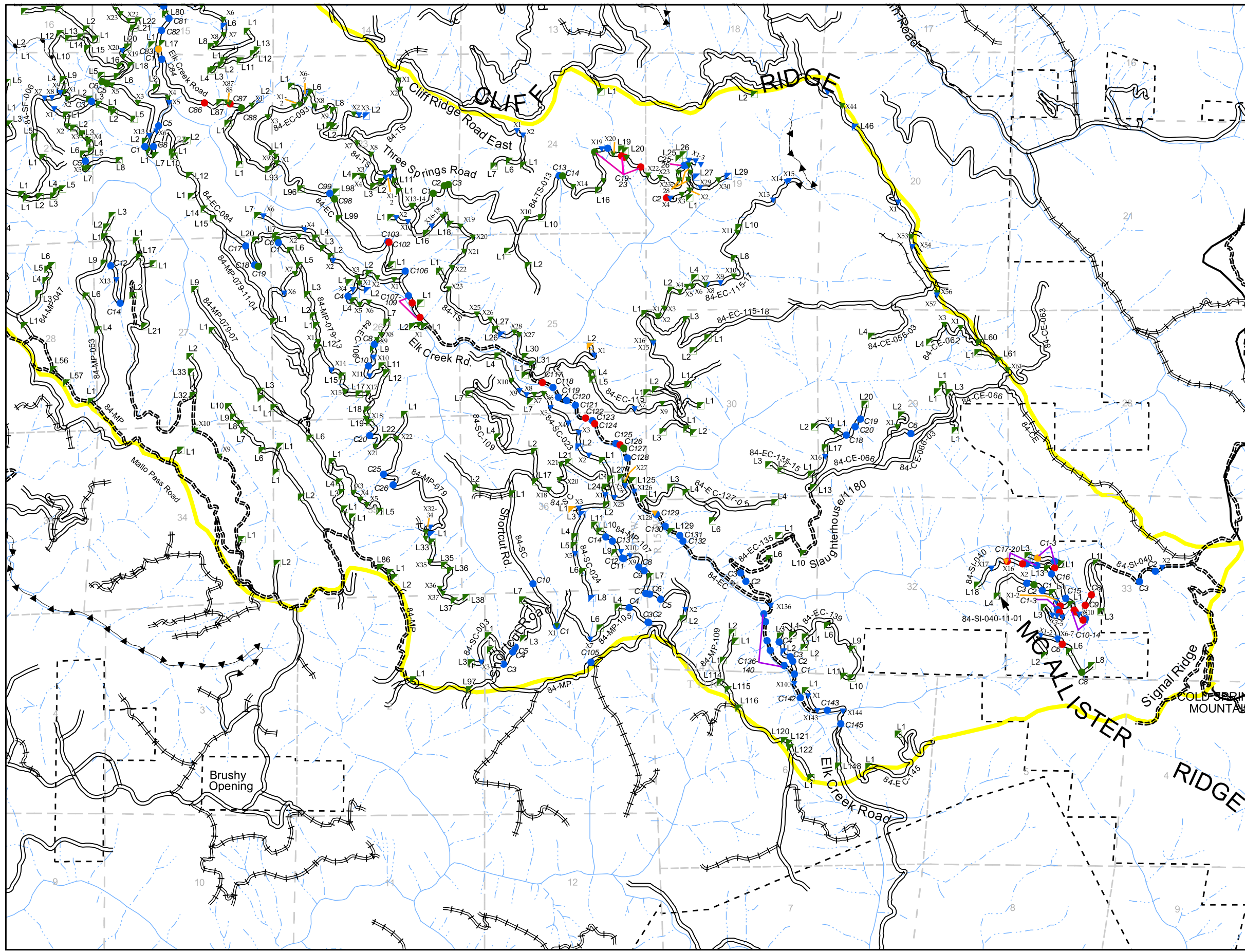
**Road Surface**

	Paved Road
	Rocked Road
	Native Road
	Jeep Trail
	Undetermined
	Decommissioned
	Historic
	MRC Ownership
	Planning Watershed Boundary
	Elk Creek Watershed Analysis Unit Boundary

**Flow Class**

	Class I
	Class II
	Class III





**Elk Creek  
Watershed Analysis  
Unit**

**Map B-2(b)  
Road Feature  
Treatment Immediacy**

This map presents select results from MRC's road inventory. The entire road network and road features were mapped using geographic positioning system (GPS) from 2006. For each feature with the potential to create erosion (culverts, landings, crossings) the treatment immediacy for the feature was assigned. The treatment immediacy represents the level of concern for either upgrading or maintenance to the feature.

**Treatment Immediacy**

Culverts	Crossings	Landings
● high	▼ high	◻ high
● moderate	▼ moderate	◻ moderate
● low	▼ low	◻ low
● none	▼ none	◻ none

L = Landing; C = Culvert; X = Crossing

**Road Surface**

	Paved Road
	Rocked Road
	Native Road
	Jeep Trail
	Undetermined
	Decommissioned
	Historic

	MRC Ownership
	Planning Watershed Boundary
	Elk Creek Watershed Analysis Unit Boundary

**Flow Class**

	Class I
	Class II
	Class III

