Date of Report: 08/29/2019

10/15/2019

Corta Fire- Humboldt Toiyabe National Forest

BURNED-AREA REPORT

PART I - TYPE OF REQUEST

A. Type of Report

☒ 1. Funding request for estimated emergency stabilization funds

☐ 2. No Treatment Recommendation

B. Type of Action

☐ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

☒ 2. Interim Request #1

☒ Updating the initial funding request based on more accurate site data or design analysis

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Corta Fire

B. Fire Number: 10190

C. State: Nevada

D. County: Elko

A. Fire Name: Corta Fire

B. Fire Number: 10190

E. Region: 04 - Intermountain

F. Forest: 17 – Humboldt-Toiyabe National Forest

G. District: Ruby Mountain-Mountain City-Jarbidge

H. Fire Incident Job Code: PDMKJ7

I. Date Fire Started: 08/04/2019

J. Date Fire Contained: 08/19/2019

K. Suppression Cost: 3.6million +

L. Fire Suppression Damages Repaired with Suppression Funds (estimates):

1. **Fireline repaired (miles): 7 miles of dozerline**
2. **Other (identify): cut fences repaired. fire line seed and herbicide application to dozer lines has been approved but not completed (s# are approved)**

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
160401030401	Corral Creek	33,126	14,156	43
160401030502	Pearl Creek	20,273	2341	12
160401030503	Frost Creek-Huntington Creek	27,785	28	.1

N. Total Acres Burned: 16,526 gis acres

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	15833
BLM	133
STATE	0
PRIVATE	560.5
TOTAL	16526.5

O. Vegetation Types: sage steppe, willow dominated riparian, mountain brush including PJ and aspen

P. Dominant Soils:

Map Unit Symbol	Map Unit Name	Rating	Acres in Fire	Percent of Fire
303	Akler-Cleavage-McIvey association	Very cobbly loam	9.3	0.1%
440	Devilsgait-Woofus-Devilsgait, gravelly substratum association	Silt loam	15.2	0.1%
459	Stampede-Betra-Netti association	Gravelly loam	450.8	2.7%
486	Hunnton-Chiara-Wieland association	Ashy silt loam	52.2	0.3%
690	Chug-Welch association	Ashy loam	61.6	0.4%
100	Pookaloo-Cavehill-Rock outcrop association	Very gravelly loam	645.1	3.9%
303	Akler-Cleavage-McIvey association	Very cobbly loam	5,244.7	31.7%
385	Amelar-Hackwood-Zarark association	Gravelly silt loam	1,874.3	11.3%

390	Rozara-Bullump-Denihler association	Slightly decomposed plant material	102.1	0.6%
397	Coffepot-Daphsue-Cleavage association	Gravelly sandy loam	3,260.3	19.7%
459	Stampede-Betra-Netti association	Gravelly loam	2,973.2	18.0%
690	Chug-Welch association	Ashy loam	66.8	0.4%
844	Hackwood-Bendastik-Bullump complex	Slightly decomposed plant material	107.1	0.6%
1370	Wardbay-Haunchee-Lorgana association	Very gravelly loam	533.7	3.2%
1731	McIvey-Chen-Donna association	Gravelly loam	1,137.1	6.9%

All but one of the major soil associations have a runoff class of high or very high.

Q. Geologic Types: Limestone and other carbonate rocks, quartzite, monzonite, granodiorite

R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERRENIAL	24.5
INTERMITTENT	24.9
EPHEMERAL	
OTHER (DEFINE)	

S. Transportation System:
Trails: *National Forest (miles): 58 miles of authorized motorized Other (miles):*
Roads: *National Forest (miles): 29 miles wholy within; 39 that could be potentially impacted*
Other (miles): 2

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 4: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (BLM)	State	Private	Total	% within the Fire Perimeter
Unburned	382	2.8	0	22	406.8	2.4
Low	13800	130	0	531	14,461	87.5
Moderate	1648	0	0	6	1,654	10
High	1.3	0	0	0	1.3	.007
Total	15,831	132.8	0	553	16,523	

B. Water-Repellent Soil (acres): 2500

C. Soil Erosion Hazard Rating: mostly moderate with about a quarter of the fire area low and the riparian areas severe

D. Erosion Potential: 7-12.5 tons/acre Sediment Potential: 5-8 tons per acre depending on burn severity

F. Estimated Vegetative Recovery Period (years): 5-10 years for the brush. Grass and forbs 2-3yrs

G. Estimated Hydrologic Response (brief description): due to the weak monsoon this year the biggest risk to the fire area is rain on snow events in the winter and spring followed by spring runoff and depending on the recovery of the fire area monsoons next summer. In the event of convective storms

over the area the fire area has been reacting hydrologically more towards the moderate soil burn severity range with an increase in overland flow in the zero order channels observed where a localized storm occurred.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Corta Fire burned 16,526 acres of the Ruby Mountians. The burn severity is low to moderate but the hydrologic responses from the small storms that have been over the fire since containment are responding more in the moderate range. This is likely due to all but one of the soils being catagorized as having high and very high run off classes, all the organic matter being removed and limited ash remaining after the winds that are common in the area. Pearl Creek, the southern of the three impacted drainages, is occupied Lahontan Cutthroat Trout (LCT) Habitat that is used as brood stock for reintroducing the fish into other streams in the recovery plan. Green Mountian Creek is also occupied critical habitat but is not a brood stock stream. This is a heavily recreated area on the district second only to Lamoille canyon as it is the other end of the Ruby Crest Trail. This area is also highly valueable for sage grouse habitat and mule deer habitat supporting the largest herd of deer in the state and the most heavily visited lek in the range. There is a large motorized trail network in the area that includes historic mining roads that access both secured and unscured AML sites. One site in particular was brought to the BAER team's attention by multiple suppression personel as being of concern and easy to find on one of the routes. The roads and trails in the area provide range management access as well as hunting and recreation opportunities. The fire area is on the windward side of the range and recieves orographicly driven precipitation. The events of record are rain on snow events and spring runoff type events followed by monsoon events when they creep north from their usual path about 50 miles to the south.

A. Describe Critical Values/Resources and Threats (narrative):

Table 5: Critical Value Matrix

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	**Very High**	**Very High**	**Low**
Likely	**Very High**	**High**	**Low**
Possible	**High**	**Intermediate**	**Low**
Unlikely	**Intermediate**	**Low**	**Very Low**

Probability of Damage or Loss: The following descriptions provide a framework to estimate the relative probability that damage or loss would occur within 1 to 3 years (depending on the resource):
• Very likely. Nearly certain occurrence (90% - 100%))
• Likely. Likely occurrence (50% - 89%)
• Possible. Possible occurrence (10% - 49%)
• Unlikely. Unlikely occurrence (0% - 9%)

Magnitude of Consequences:
• Major. Loss of life or injury to humans; substantial property damage; irreversible damage to critical natural or cultural resources.
• Moderate. Injury or illness to humans; moderate property damage; damage to critical natural or cultural resources resulting in considerable or long term effects.
• Minor. Property damage is limited in economic value and/or to few investments; damage to critical natural or cultural resources resulting in minimal, recoverable or localized effects.

Several critical values were identified as being at risk. They include occupied Lahontan Cutthroat Habitat (LCT), a road and motorized trail network and the native plant community. The threats to these resources are discussed below in the table. Only those threats that have a high or very high risk level associated with them were brought forward for treatment proposals.

Based on the Risk assessment exihibit 2 in FSM 2500-2017-1 (copied above) the following value at risk table was developed.

Color Scheme Legend	
	Risk Level
	Very High
	High
	Intermediate (Where Treatments Are Recommended)

Value At Risk	Value Life (HLS), Property, (P), Resources (NR), Cultural and Heritage Resources (CHR)	Probability of Damage or Loss	Magnitude of Consequences	Risk	Discussion
Vertical shaft (AML)	HLS	Possible	Major	High	The pre-existing fence was burned leaving the shaft at the end of a suppression used road easily encountered by the public. Multiple fire suppression personnel brought it to the BAER team's attention due to its ease of access and lack of access back out of the shaft if one were to fall in.
Fire Area Visitors	HLS	Likely	Moderate to Major	High to Very High	Changed conditions in the fire area including rolling rocks, hazard trees and changed hydrology present risks to the recreating public. Hazard trees in the vicinity of dispersed campgrounds were treated by suppression crews but they were not treated outside of these long duration concentrated use areas.
Roads and motorized trails	P	Very Likely	Moderate	Very High	The concern with the motorized use routes is two fold: sediment reaching occupied LCT habitat and further damage to the network itself due to increased fire area runoff coupled with end of season drainage features in the designated routes (MVUM) that are in need of sweetening and repair.

Native plant community where invasive species or noxious weeds are absent or present in only minor amounts Corral Creek CU Carville C&H Harrison C&H Toyn C&H	NR	Very Likely	Moderate	Very High	*These allotments had small pre-existing populations of Medusahead, Canada thistle, scotch thistle, spotted knapweed, diffuse knapweed, whitetop, cheatgrass, and bull thistle within the fire perimeter. The majority of the fire exhibited low soil burn severities (Appendix A of the weed report), leaving the bulk of these noxious weed species and their seed banks intact resulting in a high propagule pressure from nonnative plants in the fire scar. *Abundant vectors exist within each of these allotments within the fire perimeter. These include large numbers of roads through each area that experience high traffic each fall during hunting season. Vectors also include mule deer for whom this area represents part of their migration route. The abundance of vectors through which noxious weed seeds can be dispersed throughout the fire area result in high current vulnerability of noxious weed expansion in the fire scar. Pre-fire the risks of abundant vectors were limited do to the competition of the established native plant community. In year one post fire, this competition will be greatly decreased. *Approximately 16 miles of dozer line were constructed during suppression activities. One of these dozer lines was created through an existing infestation of Medusahead and continued on for four miles into unifested portions of the Forest and fire scar. This event is very likely to have spread Medusahead seed throughout large portions of the fire scar which in turn creates high potential for this invasive annual grass to expand its range. *High traffic on all roads throughout the fire area

					during suppression activities are very likely to have spread noxious weed seeds throughout the fire scar due to small unburned infestations of Medusahead, candada, scotch, and bull thistle along the roadsides. This dispersal of seed increases the risk of noxious weed expansion post fire. *No mitigation measures were implemented during fire suppression to decrease the spread of noxious weeds. A weed wash station was used only as part of demobilization.
Critical habitat or suitable occupied habitat for federally listed threatened or endangered terrestrial, aquatic animal, or plant species on NFS land. Corral Creek CU Carville C&H	NR	Possible	Major	High	*There were approximately 160 and 190 acres of Canada and scotch thistle infestations respectively in the area pre-fire. The majority of the infestations are located along creeks in the area, with the largest infestations actually located along Pearl Creek (Appendix B of weed report). There are also recorded thistle infestations along Green Mountain Creek. Thistles have abundant and flammable above ground biomass that can lead to increased frequencies of fires (FEIS). Thistle expansion in the fire scar along these LCT occupied creeks could lead to increased fire frequencies within the riparian area reducing the habitat quality of the critical designated habitat.
Native plant community where invasive species or noxious weeds are absent or present in only minor amounts North Huntington C&H	NR	Likely	Moderate	High	*No weed infestations documented pre-fire; prevention a high priority. *There are some roads through the area that will receive high traffic during hunting season. Mule deer migrate through the area. These represent vectors through which noxious weed seed dispersal may occur. *No mitigation measures were implemented during fire suppression to decrease the spread of noxious weeds. A weed wash station was used only as part of demobilization. This puts the allotment at increased risk of weed expansion.

Spread of weeds and invasive species from adjacent private, BLM, and state owned lands	NR	Likely	Moderate	High	*Meetings were held with each of the affected grazing permittees who also own the land adjacent to the fire perimeter. They expressed that scotch and Canada thistle as well as cheatgrass have moved onto their land from the Forest. In the portions of the private land that burned the potential for weed expansion is high do to existing propagule pressure and increased vulnerability of native vegetation due to the fire.
Flood Risk	HLS	Unlikely	Moderate	Low	There is a water diversion in Corral creek that can be shut during the winter to prevent storms of record (rain on snow events) from sending as much sediment into the irrigation reservoir. The two ranches are well down stream of the confined reaches of the stream and have not reported damage from high spring flows. NRCS was contacted and asked to go out and assess the risk on private property. As if this writing they have not gotten back to the baer team with their findings.
LCT	NR	Unlikely	Minor	Very Low	NDOW was concerned about ash causing water quality changes- there is insufficient ash on the site to cause major concerns. The majority of ash has been redistributed by winds during the fire.
		Possible	Moderate	Intermediate	Sediment from hill slopes and roads with drainage issues are the largest risk to the occupied stream reaches. The motorized routes present the highest risk of the two.

B. Emergency Treatment Objectives:

- AML site: mitigate the risk by filling the shaft with onsite material

- Fire Area Visitors: advise them of changed conditions and that caution is needed while in the fire area.
- Authorized Motorized Routes: ensure proper drainage function on the roads and trails to ensure that they are storm stable thereby preventing unacceptable sediment discharge and loss of the property that is the roads or trails.
- Native Plant Community: treat new infestations and expanding areas of infestations to prevent the loss of the highly valued native plant community.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land 90 **Channel** n/a
Roads/Trails 90 **Protection/Safety** 90

D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	*3 years after treatment*	*5 years after treatment*
Land	90	80	80
Channel	n/a	n/a	n/a
Roads/Trails	85	75	70
Protection/Safety	100	100	100

E. Cost of No-Action (Including Loss):

Loss	**Estimated Value**
Native and desired naturalised plant community	$500,000+ to herbicide and reseed if whole fire area lost to invasives. Incluses loss of game and non-game wildlife habitat as well as range forage value for cattle.
Authorized Motorized Routes	Loss varies from several thousand dollars to recover a vehicle ($1,500 dollar base response fee plus hourly rates apply to off road wrecker) to repair of roads and trails that vary from $2,000 per rolling dip that needs replaced to 10,000+ per gullied out section to repair due to lack of onsite materials and the haul in costs for gravel. Conservatively the cost of loss is twice the amount requested. This remains true under the interim.
AML rescue	Loss varies from several thousand dollars to recover a trapped person to the potential loss of life.
Fire area visitors	Tow bill is the most likely cost but there is a small potential for loss of life.

It is difficult to place monitary value on the loss of 16,526 acres of crucial, high value Lahontan cutthroat trout, mule deer, and sage grouse habitat, in addition to valuable rangelands. If the proposed BAER treatment is not funded, it is expected that non-native invasive annual grasses and noxious weeds will spread throughout the burned area. The expected consequences include: diminishing the quality of a listed Endangered Species Act (ESA) species habitat, decreasing the crucial wildlife habitat for mule dear and sage grouse, and decreasing the value of forage production.

A conservative prediction would be that if the fire scar is left to recover naturally with no chemical treatment intervention that the amount of new acres infested would triple. This would consequently triple the cost in subsequent years to treat the new infestations if small pilot populations are not controlled in year one. In Mesa Verde National Park researchers tracked the response of noxious weeds following six different wildfires and found that if weeds went untreated they persisted in the

plant communities for at least 13 years (Floyd et al.) Furthermore, on one fire only six years after the burn Canada thistle and cheatgrass had expanded their area by 260 percent (Floyd et. Al, 1993). Failure to address the potential spread of noxious weeds found within the Corta Fire perimeter could lead to a tripling of these populations within six years.

Unmeasurable items: loss of soil productivity, and decrease in forage production due to lost soil productivity for wildlife and livestock.

F. Cost of Selected Alternative (Including Loss): $300,000

G. Skills Represented on Burned-Area Survey Team:

☒ Soils ☒ Hydrology ☒ Engineering ☒ GIS ☒ Archaeology
☒ Weeds ☐ Recreation ☒ Fisheries ☒ Wildlife
☒ Other:
Range

Team Leader: Robin Wignall
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Forest BAER Coordinator: John McCann
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Team Members: *Table 7: BAER Team Members by Skill*

Skill	Team Member Name
Team Lead(s)	Robin Wignall
Soils	Robin Wignall
Hydrology	Robin Wignall, John McCann
Engineering	George Butler, Anita Lusty, Doug Nesbit
GIS	Allison Bruner
Archaeology	Chimalis Kuehn
Weeds	Cecily Fitch
Recreation	
Other	Cecily Fitch

H. Treatment Narrative:

Land Treatments:

Proposed Action: To treat 1,126 acres of noxious weeds that are predicted, based on current population sizes, to expand within the fire scar. This alternative was selected because early treatment of smaller acreages prove to be more economically efficient than trying to rehabilitate the landscape once these populations have expanded.

A) Noxious Weed Herbicide Treatment (Early Detection and Rapid Response): BAER

A fall and a spring treatment are proposed in order to target expanding populations of Canada thistle, scotch thistle, medusahead, whitetop, diffuse knapweed, spotted knapweed, and cheatgrass. Two treatments are necessary at a minimum because “repeated treatments over the course of many years are required to eradicate weed populations,” (“Noxious Weed Treatment Project” USDA). In addition, biological control agents are proposed to better target new Canada thistle populations post fire. The cost estimates for the proposed treatments are found in the table below. Cost per acre for a contractor was estimated by calling several local vendors and getting an average cost. These costs were in align with bids received for an herbicide contract for the South Sugarloaf Fire (2018) scar. Herbicide cost estimates were determined through calling a local herbicide distributor and getting quotes on the

appropriate quantities and kinds of herbicides. Treatments will be centered in downwind and downstream areas from existing infestations because of the higher seed dispersal potential. These recommended species treatments and estimates were put together by Brett Glover, former Forest Service H-T Weed Management Specialist who worked on the District managing noxious weeds for over 15 years.

The decision to request funding for contracted herbicide treatments on the Forest are based on the lack of capacity to complete these treatments through Forest personnel. Due to local hiring and retention issues, it is not recommended that local crews be relied upon to complete treatments. Putting EDRR funds into a contract for treatments will better ensure that the emergency stabilization work is completed on the Corta Fire in order to protect the values at risk.

Fall 2019 and Spring 2020

Contract Price	**Acres to be Treated**	**Season of Treatment**	**Treatment Method**	**Unit Cost**	**Total**
$60/acre	206	Fall	truck	$60/acre	$12,360
$100/acre	423	Fall	atv/utv	$100/acre	$42,300
$150/acre	67	Fall	backpack	$150/acre	$10,050
$60/acre	80	Spring	truck	$60/acre	$4,800
$100/acre	265	Spring	atv/utv	$100/acre	$26,500
$150/acre	85	Spring	backpack	$150/acre	$12,750
Herbicide Price	**Acres to be Treated**	**Season of Treatment**	**Treatment Method**	**Unit Cost**	**Total**
*Multiple herbicides	1,126	Fall/Spring	truck/atv/utv/backpack	$26,872	$26,872
Bio Control Agent	**Acres to be Treated**	**Season of Treatment**	**Treatment Method**	**Unit Cost**	**Total**
C. Litura	200	Spring	release bio control	$4,000	$4,000
U. Cardui	200	Spring	release bio control	$4,000	$4,000
				Total Cost (weed treatment)	$143,632

Line Item	**Unit Cost**	**Total**
COTR	$410 per day x 10 days	$4,100
Inspectors	(2) $241.85 & (1) $364.32 X 5	$4,240
Vehicle mileage*	$0.60 per mile x 1,650 miles	$990
Implementation team leader	$410 per day x 1 day	$410
	Grand Total:	**$153,372**

*45 miles out to site, 90 miles round trip. 20 miles around sites totals 110 miles total per day. 15 days (5 for each inspector) totals 1,650 miles travelled for inspections.

B) Noxious Weed Herbicide Treatment (Early Detection and Rapid Response): SUPPRESSION

A request has been submitted for an S number to fund an herbicide treatment of all roadsides and dozer lines within the Corta fire perimeter. A follow up treatment request is found below to treat up to one fourth of the area that will be treated in the fall of 2019. This treatment would consist of patrolling and monitoring the fall treatment for success and potentially treating up to an additional 300 acres as detected. The cost estimate per acre for this treatment was taken based off of bids received for an herbicide contract to chemically treat roadsides on the South Sugarloaf Fire.

Spring 2020

Line Item	**Unit Cost**	**Total**
Herbicide Contract	Labor + Herbicide: $130/acre @ 300 acres	$39,000

COTR	$410 per day x 4 days	$1,640
Inspectors	(2) $241.85 & (1) $364.32 X 2	$1,696
Vehicle mileage*	$0.60 per mile x 660 miles	$396
Implementation team leader	$410 per day x 1 day	$410
		Total: **$43,142**

How we got to the proposal: Individual meetings were held with each grazing permittee during the BAER assessment period; each permittee was asked what their biggest concern was post-fire and each one answered that they were most concerned about the spread of the weeds, primarily the medusahead and thistles. A meeting was also held with NDOW personnel who expressed the same major concern: the spread of invasive annual grasses and noxious weeds from existing populations into the fire scar. This would result in a degradation to the lands value as both critical wildlife habitat and rangelands.

In post fire areas invasive plants and noxious weeds have reduced competition from native plants which are both more severely affected by being burned and re-establish and grow more slowly. This reduced competition in the early stages of regrowth post fire allows a window in which non-native plants will be able to expand their existing populations more quickly than in pre-fire conditions (FEIS). Furthermore, the only high risk factor pre-fire, which was mitigated by an established native plant community, was abundant vectors (recreational and mule deer migration) for spread; however the post fire risk analysis revealed multiple high risk factors. The native plant community and ESA listed species occupied habitat in the Corta Fire are at very high and high risks to non-native plant expansion based on the factors surrounding the area (see the discussion in the BAER Risk Assessment Matrix above).

Predicting the spread of invasive plants and noxious weeds in the west in post-fire scenarios is difficult and is affected by a myriad of variables. A review of all the available literature on post-fire weed expansion conducted by the Rocky Mountain Research Station in collaboration with Montana State University showed that climatic, plant characteristic, and site-specific variables all work to determine to what extent invasive plants will expand and persist post fire. They continued to explain that one of the surest methods for predicting post-fire weed behavior is pulling from any available examples of similar ecosystems that burned and their response to the fire. Field observations from recent fires on the Ruby Mountain, Mountain City, Jarbidge Ranger District, where the Corta Fire occurred, have shown that each fire scar exhibits an increase in pre-existing weed populations as well as the establishment of new infestations. One example is the 2018 South Sugarloaf Fire, which has experienced a large expansion of its leafy spurge, Canada thistle, cheatgrass, and ventenata populations. Similar results occurred on the Smith Ranch Fire (NDOW) and other past fires on the District. From local examples, the conclusion can be drawn that it is very likely for noxious weed and invasive plant species to expand their areas within the Corta Fire scar.

According to the Fire Effects Information System: “In general, early detection and treatment is critical for preventing establishment of large populations of invasive plants.” This reasoning was echoed by Rew and Johnson in their study on the role of wildfire on the spread of invasive plant species in the west. They stated: “Many managers consider rapid detection and control of new, nonnative plant populations after wildfire one of the most effective management activities… particularly if the nonnative propagule pressure is high and the anthropogenic disturbances are frequent.” Due to the pre-existing noxious weed populations, the low fire severity, and high recreational use in the area it was determined that substantial efforts to detect and treat any expansion of invasive plants early will be necessary to protect the values at risk. For this reason, emergency responses to mitigate threats to the above stated values at risk will be focused on chemical treatments to new populations of invasive plants and noxious weeds in the fall and spring following the fire. These efforts will work to contain the existing populations of weeds in the fire scar.

Fire ecology and response characteristics for Canada thistle, scotch thistle, medusahead, cheatgrass, spotted knapweed, diffuse knapweed, and whitetop or hoary cress were each researched in the FEIS database. Each of these species exhibits fire resiliency for both the plant and seeds in low severity

fires, resulting in propagule pressure of these noxious weeds. The expansion of these species poses a threat to the native plant community because when given opportunities through disturbance, such as fire, they can rapidly expand and create monocultures. This degrades the quality of the native plant community and can preclude the re-establishment of desirable native plant species.

Canada thistle, scotch thistle, medusahead, and cheatgrass also threaten the natural fire regimes of western plant communities (FEIS). Due to the thistles abundant, flammable aboveground biomass and the annual grasses readily ignited litter and medusahead's thick thatch layer, these species have the potential to increase fire frequency in an area where native plants would otherwise remain fire resistant later into the season (FEIS). Increased frequencies of fires in the area due to expanded populations of these harmful non-native species along the creek banks would result in higher runoff and degradation of the riparian vegetation which is an integral part of the species critical habitat (Earl and Blinn, 2003). For example, decreased shading for fish habitat would be one result of burning of the riparian vegetation; the loss of shade leads to increased water temperatures which can lead to LCT mortalities which would constitute major consequences for the species (NDOW).

The assessment team considered several alternatives to the proposed action including:

- A reseeding alternative in the lower elevational areas of the Corral Creek C&H, North Huntington C&H, and Harrison Pass C&H totaling allotment totaling 2,500 acres was considered but ultimately eliminated. Do to the majority of the area exhibiting low soil burn severities (Appendix A) it was determined that the natural plant community should be able to recover naturally from the root crowns. The more prominent threat is competition from the expansion of noxious weeds which would be better addressed through chemcial treatments.

- Mulch on slopes along the creek channels was considered as a possibility to address the risks of increased runoff into the LCT inhabited creeks. However, it was not pursued due to a large increase in cost and a low potential increase in effectiveness; the fire burn severity is mostly low and thus should exhibit only small increases in runoff. The greater threat is increased fire frequency should the noxious weed population expand dramatically. This threat would be better addressed through chemcical treatment.

- A No Action alternative was considered for all of the allotments affected by the fire. It was determined that allotments in the *Critical Value Matrix Table* listed as risks "A", "B", and "C" have too high a potential risk of noxious weed and invasive annual grass invasion to be left to recover naturally.

- Aerial herbicide applications were considered as a component of the EDRR proposal, however there is not currently an EIS for this treatment on the Forest and consequently this alternative is not currently an option. An aerial herbicide application EIS would cost approximately $ 500,000 to prepare, and would take a minimum of 6 months.

Channel Treatments: none proposed

Roads and Trail Treatments:

How we got to the interim proposal: the implementation team reviewed the previously approved treatments and assessed whether they were correctly estimated. Several were found to be lacking or to have major safety concerns associated with them. The team evaluated if the treatment cost to safely access the approved points of work was justified by the approved treatments or if the approved treatments needed to be modified in order to not put the road crew in unsafe conditions or on roads that their heavier equipment could not handle from the slope or condition stand point. Where treatments could be modified within the approved budget they were,

however there were several treatments that the additional access treatments justified. Additionally a culvert that allows primary access into Corral Creek only called for a minor repair- it does not appear that the assessment engineer looked at the down stream side of the culvert and noted that the road was hollowed out into the middle of the road due to piping along the pipe and was not safe to have been used during the fire or for the implementation team to access the approved work. As the work above the culvert is justified and the cost to access the work from the top is more expensive than the proposed upgraded repair the implementation team brought the increased cost forward instead of closing the road and going around. In assessing the roads and full width motorized trails the implementation team determined that there were significant additional treatments needed in order to protect the roads from the observed increased flows occurring in the fire area and future flows until the vegetation has recovered. It appears that entire roads were dismissed by the initial engineer due to the roads being on ridgetops without looking at the travel direction of the road in relation to the fall line of the slope. In multiple instances it was found that despite the roads being on the ridge they would act as artificial flow paths down the fall line of the hill due to cross drainage structures needing to be refreshed along the length of the road.

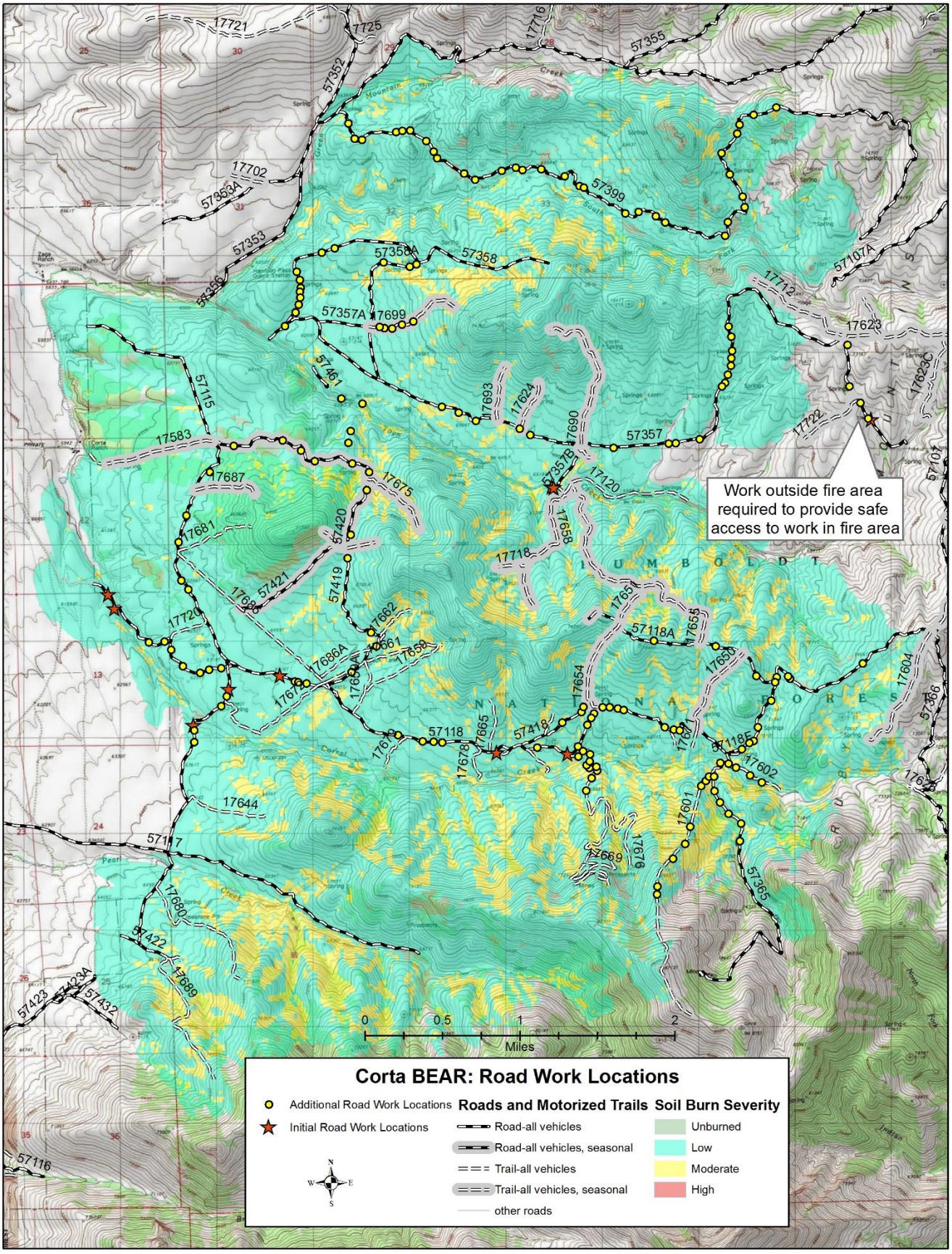
As part of the implementation preparation work Samuel Prentice, Soil Scientist for the neighboring Cherry Fire BAER was kind enough to double check the soil burn severity (SBS) ratings that the original assessment team made. Based on the metrics that the original team used to determine SBS the ratings stand. However, he noted that there was a complete removal of all ground cover and no recruitment potential. If ground cover had been assed as one of the rating factors, that a much larger portion of the fire could be classified as moderate, and that this explained the observed hydrologic responses that were not in keeping with what would be anticipated given the original sbs. In the interest of time a second SBS was not made but it is anticipated that it looked a lot more like the original BARC provided by RSAC.

Chart i1: for a more detailed description of treatments for each road please refer to the additional road report by Anita Lusty in the project record.

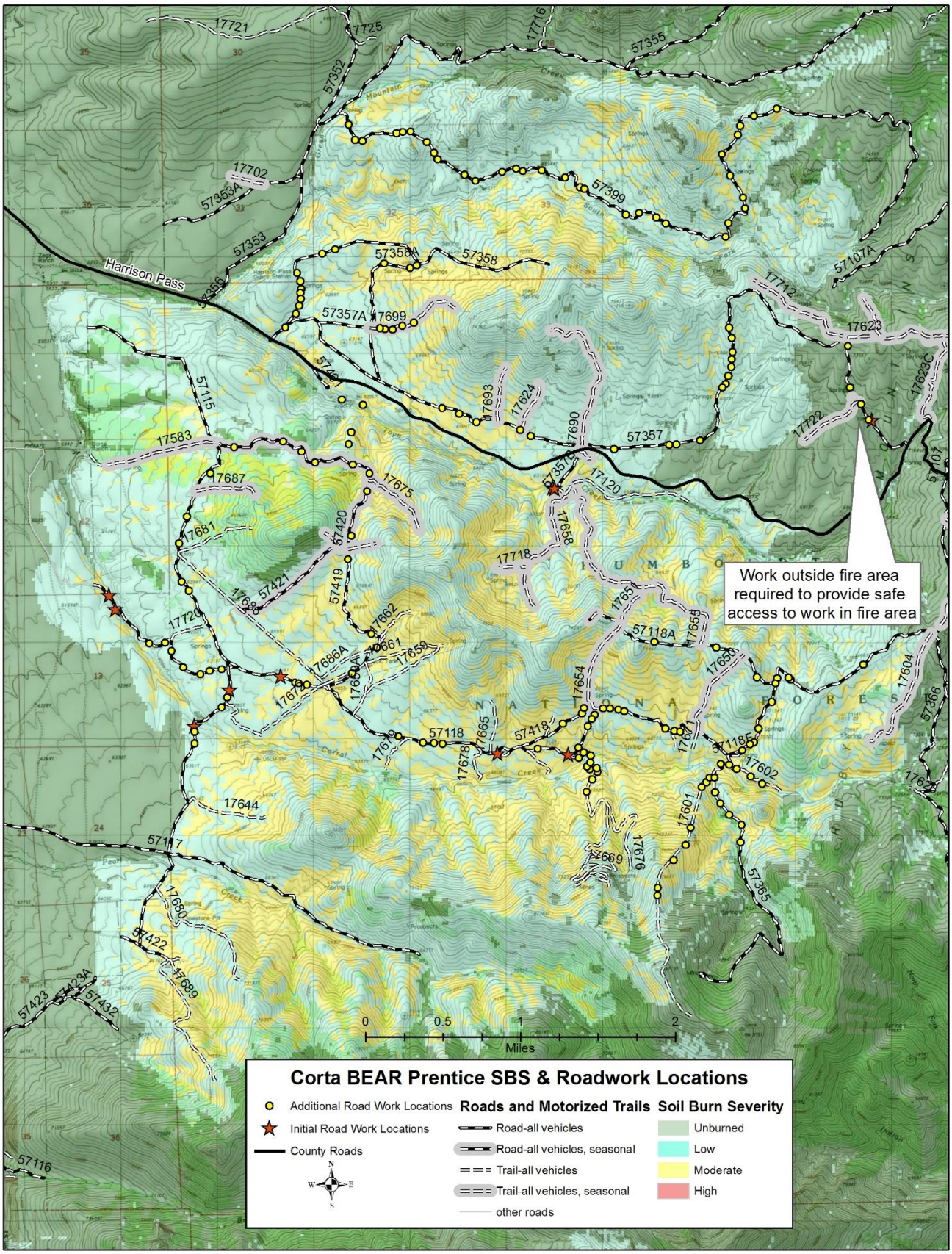
Corta Fire Emergency Road Treatments

	Outslope Road (mile)	Armored Dip	Water Diversion	Rolling Dip	Armored Overflow	Clean Culvert inlet Outlet	Remove Culvert	Waterbar	Lead Out Ditch (feet)	4 to 6 in rock (CY)	Excavation and Embankment (CY)	Restore Ditch (ft)	Add 18" Dia CMR (ft)	Add 24" squash (24" long dia) CMP	Add perf pipe and fabric	36" pipe and band	Clean Cattleguard	Implementation Total Needs	Original Estimate
	$2,800	$3,500	$1,000	$2,300	$4,100	$820	$1,200	$400	$38	$90	$400	$0.70	$40	$60	$40	$300	$2,000		
57115	1.3	0	0	3	0	0	0	0	30	0	13	0					0	$16,880	$17,540
57115			6															$6,000	
57118	0.1	0	0	4	1	0	4	0	0	0	11	0	0					$22,780	$26,045
57118			36	-4			-2			20	33	200	40	40	30	1	3	$51,040	
17676			10															$10,000	
57365			6															$6,000	
17602			3															$3,000	
57357B	0.4	1				1	1					5280						$10,336	$10,100
57357B		2				-1	-1			10				80			1	$12,680	
57418			3															$3,000	
57420			8															$8,000	
57419			4															$4,000	
17176			2															$2,000	
17120			2															$2,000	
57357			22							40	50							$45,600	$7,150
17699			5															$5,000	
57358			9															$9,000	
57358a			3															$3,000	
57399			32															$32,000	
																		$252,316	$60,835
													Design and Overhead 17%					$42,894	$12,167
													Total Estimate					$295,210	$73,002
													Additional Funding Needed					**$222,208**	

Map i1: interim request treatment locations compaired to original Soil Burn Severity.



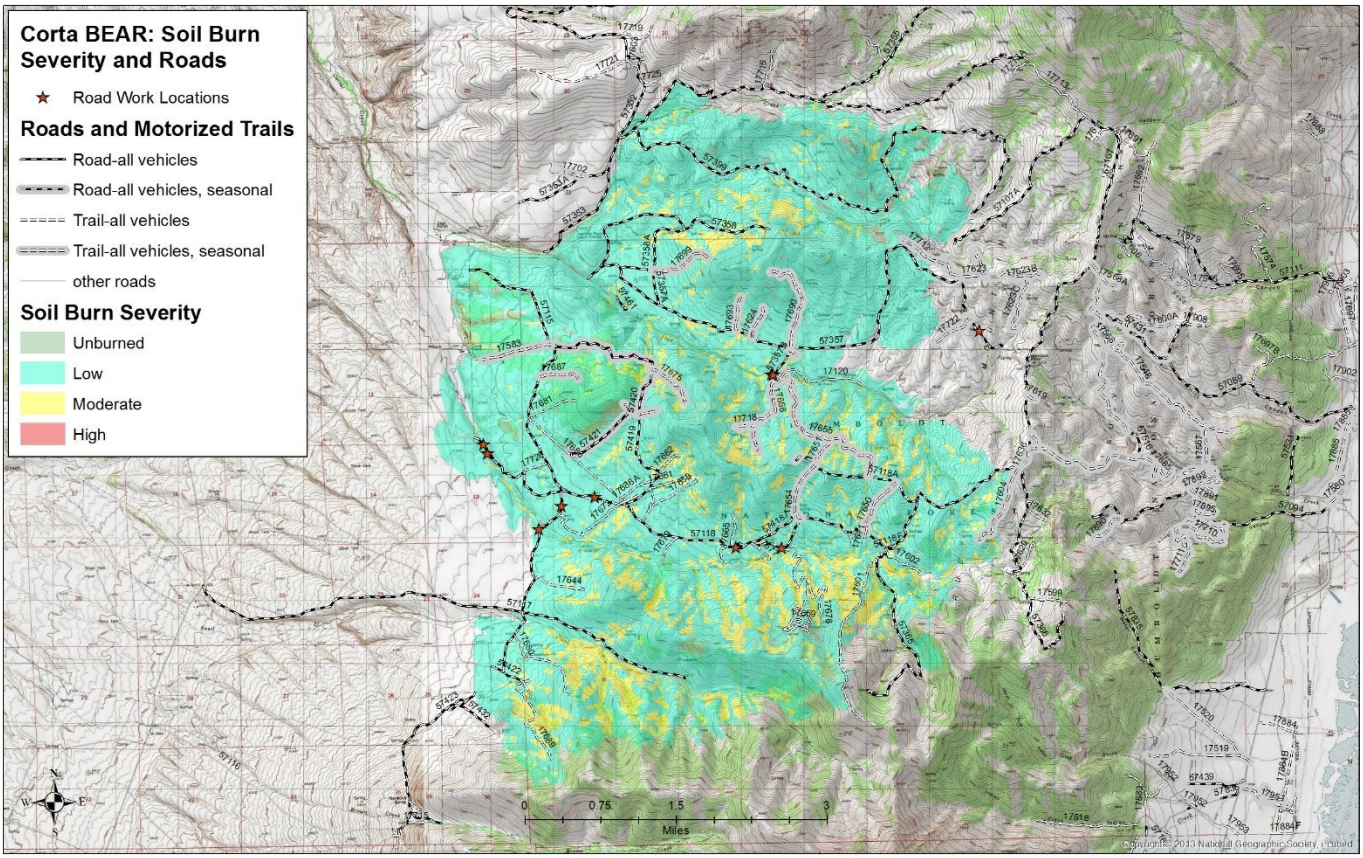
Map i2: the interim request treatment locations compaired to the original BARC to approximate the SBS that Prentice found.



Unfortunately one of the road crew service trucks was broken into in the parking lot and the power tools stolen. Police report 2019-22512 was filed to report the loss. The estimated replacement costs of the tools is $3000.

M	Road	Mile	Probability of Loss	Consequenc	Observations/Recommendations	Risk Assessme
2	57115	4.68	Likely	Moderate	A north-south road in the western area of the fire. The only connector road between the Corral Creek and Pearl Creek drainages. Low to Moderate burn severity Side slopes up to 20%. The two major drainage crossings are at Corral and Pearl Creeks by well established fords. Recomend reshaping road template and reconstructing dips between 57118 and Pearl Creek. See Appendix B	High
2	57118	6.90	Likely	Moderate	Running east-west through the southern area of the fire. This road is a major recreational and permitee access route in the area and parallels Corral Creek with an average 1/4 mile separation. Numerous short motorized trails spur to both the north and south. Four old drainage culverts were identified. All but one are marginal or non-functional. The road crosses the creek over a 36" CMP about 1.1 miles west of 57115. This crossing, located just above a permitted diversion structure, is compromised due to inadequate past repairs. This crossing can be expected to fail with any significant increase in storm-water run off. There is obvious piping around the culvert that is eroding the road. Recomend the failing CMPs east of 57115 be removed and cross-drain dips be constructed. Recomend the 36" CMP be excavated and re-bedded to specification and an armored culvert relief dip be constructed. See Appendix B	High
2	57357	4.42	Likely	Moderate	Is north of, and generally parallel to, Co. Road 718. The eastern half climbs north the top of the ridge. Low to Moderate burn severity adjacent to road. Side slope from 10 to 30%. CMP in drainage near west end is undersized for the anticipated increase in storm water runoff. Recomend removal and construct an armored dip/crossing.	High
2	57357B	0.30	Likely	Moderate	A short spur that crossed Co. Road 718 and accesses heavily used recreational areas on Toyn Creek. Cross drain culverts near the creek are just adequate for existing runoff. Any significant increases in fire related storm water runoff can be expected to result in crossing failure and loss of access to the area. Recomend one CMP be removed and replaced with cross-drain dip. Clean-out second CMP. See Appendix B	High

			Out slope road (mile)	Armored Dip	Rolling Dip	Armored Overflow-Class 2 Riprap	Clean Culvert & Inlet	Remove Culvert	Repair Cattle Xing	Lead Out Ditch (feet)	Excavation-Embankment(CY)	Restore ditch function(/mile)	
		Unit Cost:	$2,800	$3,550	$2,300	$4,310	$1,150	$1,200	$3,055	$45	$400	$3,600	
ML	ROAD	Risk Level											Estimate
2	57115	High	1.3		3					40	13		$17,540
2	57118	High	0.1		4	1		4	1		11		$26,045
2	57357	High		1				1			6		$7,150
	57357B	High	0.4	1			1	1			5	0.3	$10,100
												Sub Total	$60,835
												Design & Overhead - 20%	$12,167.0
												Total Estimate	**$73,002.0**



Motorized Trails Package: will follow in an interim report in order to ensure that that package is appropriate to the risk and current trails conditions.

Protection/Safety Treatments:

Abandoned mine features, Harrison Pass area, NV

The Corta fire exposed an abandoned mine shaft just west of FS 366 road on an un-named road spur, near the crest of Harrison Pass, NV. This shaft is at the end of a two-track road and measures approximately 20 foot in diameter at the collar to a depth of 18 feet. The shaft was previously surround by an orange construction fence, but this was consumed by the recent blaze. This feature is located at the following UTMs:

625706E, 4462179N.

This proposal addresses the rationale and costs associated with mitigating these dangerous features.

This mine shaft is easily visible and located at the end of a two-track road accessed by OHV users. There are no physical barriers surrounding the opening, so the plan is to mobilize a backhoe and use the existing material in adjacent waste rock dumps to backfill the hole. A search of BLM mining records revealed an active mining claimant with claims containing this feature, so future mitigation efforts will have to be cleared with that entity. As this hole provides little geologic information, it is anticipated the claimant will have no issues with this approach.

Recommendation: The shaft proposed for closure (EL 420) will be backfilled with local materials. A backhoe, operator and abandoned mine specialist are required to complete this job.

Work will commence once funding and approvals are obtained and logistics can be scheduled.

AML Preferred alternative. See table below

Table 1. Preferred Alternative costs (backfill, labor and travel)

Item	Units	Cost per Unit	Cost Total
Personnel Time (2 personnel)	2	650	1,300
Backhoe and transport	2	500	500
Travel and Per diem	2	176	353
Total Cost			**2,153**

Fire area warning signs: purchase and instal 4 fire area warning signs at each portal to the fire area. Inclusive cost (labor, miles, and supplies): **$2500**

I. Monitoring Narrative:

No monitoring is proposed

PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

Line Items	Units	Unit Cost	# of Units	BAER $	Other $	# of units	Fed $	# of Units	Non Fed $	Total $
A. Land Treatments										
EDRR weed treatments	each	153,372	1	$153,372	$0		$0		$0	$153,372
suppression herbicide contra	each	43,142	1	$43,142	$0		$0		$0	$43,142
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$196,514	$0		$0		$0	$196,514
B. Channel Treatments										
none proposed				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treatments				$0	$0		$0		$0	$0
C. Road and Trails										
Initial Roads Package	each	73,002	1	$73,002	$0		$0		$0	$73,002
Interim roads package and tool replacement				$225,208	$0		$0		$0	$225,208
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road and Trails				$298,210	$0		$0		$0	$298,210
D. Protection/Safety										
Aml mitigation	each	2,153	1	$2,153	$0		$0		$0	$2,153
warning signs	each	2,500	1	$2,500	$0		$0		$0	$2,500
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Protection/Safety				$4,653	$0		$0		$0	$4,653
E. BAER Evaluation										
Initial Assessment	Report			---	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$0	$0		$0		$0	$0
F. Monitoring										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$499,377	$0		**$0**		**$0**	**$499,377**
Previously approved				$274,169						
Total for this request				**$225,208**						

PART VII - APPROVALS

1._____

Forest Supervisor Date