

USDA-FOREST SERVICE

FS-2500-8 (6/06)

Initial Request

Date of Report: August 19, 2020

**BURNED-AREA REPORT**  
(Reference FSH 2509.13)



**PART I - TYPE OF REQUEST**

**A. Type of Report**

- ☒ 1. Funding request for estimated emergency stabilization funds
- ☐ 2. Accomplishment Report
- ☐ 3. No Treatment Recommendation

**B. Type of Action**

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

- ☐ 2. Interim Report # \_\_\_\_\_
- ☐ Updating the initial funding request based on more accurate site data or design analysis
- ☐ Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

## **PART II - BURNED-AREA DESCRIPTION**

- A. Fire Name: Rowher Fire
- B. Fire Number: CA-ANF-2440
- C. State: CA
- D. County: Los Angeles
- E. Region: 05
- F. Forest: Angeles National Forest
- G. District: 53
- H. Fire Incident Job Code: P5M77X20
- I. Date Fire Started: July 01, 2020
- J. Date Fire Contained: July 9, 2020
- K. Suppression Cost: \$
- L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred 4.5 miles Hand Line, 7.5 miles of dozer line
  2. Fireline seeded (miles): None
  3. Other (identify): 0 miles Road repairs. Chunking of dozer lines adjacent to Sierra Pelona, PCT and 'extra' nonsystem roads was done to prevent erosion issues and as a deterrent to unauthorized OHV access.
- M. Watershed Number: HUC 12: 180701020106 Mint Canyon and 180701020201 Upper Bouquet Canyon
- N. Total Acres Burned: 701 acres  
NFS Acres (701)    Local Government (0)    Private (0)
- O. Vegetation Types: Light Grass to medium brush. Lower montane mixed chaparral (coastal sage scrub), chamise chaparral, mixed chamise with buckwheat, scrub oak mixed chaparral, coast live oak with Canyon Live Oak, and Riparian Mixed Hardwood along sections of creek.
- P. Dominant Soils: Alluvial gravel and sands mostly granitic debris. Fluvial sedimentary deposits and sand mostly Pelona Schist detritus and weathered metamorphic sedimentary rock.
- Lodo-Modesto families complex, 30 to 70 percent slopes (695 acres) - shallow gravelly loam, strong, fine and medium structure soils formed from weathered metamorphic, granitic and sedimentary rock.
- Typic Haploxeralfs, 3 to 50 percent slopes (6 acres) - located on alluvial fans, terraces and dissected terrace side slopes. These soils are 15 to 50 inches deep, well drained, underlain by partly consolidated sediments.
- Q. Geologic Types: The burned area is located in the southern flank of the Sierra Pelona Dibblee. The Sierra Pelona is an east-west range adjacent to the Pelona Fault and the Vincent Thrust, south of the San Andreas fault. Primary rock types are Pelona Schist from the historic Holocene

and Landslide deposits of unconsolidated metamorphic jumbled debree from the Holcene to Late Pleistocene. Material within drainages and directly below the Landslide deposit are younger alluvium composed of sands and gravels contributing to rock failure and associated with washes.

## **PART V - SUMMARY OF ANALYSIS**

### **Background**

The Rowher Fire began on Wednesday July 01, 2020 in the southern flank of Spade Spring Canyon south of Sierra Pelona. The fire spread through light and medium brush to heavy fuel loads due to local wind conditions. (The fuel loads were assessed for 2018 as part of the High Value Risk Assessment contract for the Angeles National Forest.) The Rohwer Fire is located in the Soledad Front Country Place, entirely on Federal land. Resources were used for approximately 8 days until the fire was 100% contained. The Land Use Zone for the entire Rohwer Fire is Back Country, defined as public and authorized uses allowed within all roads. Off-Highway vehicles are allowed on designated roads and trails. Mountain bikes are allowed on all backcountry roads and trails, except for the Pacific Crest Trail (PCT). The only authorized use for the PCT is equestrian and hikers. (Land Management Plan, Part 2).

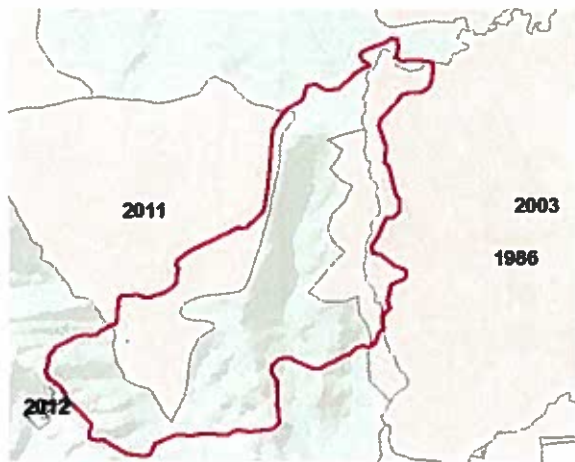


Figure 1, Fire History

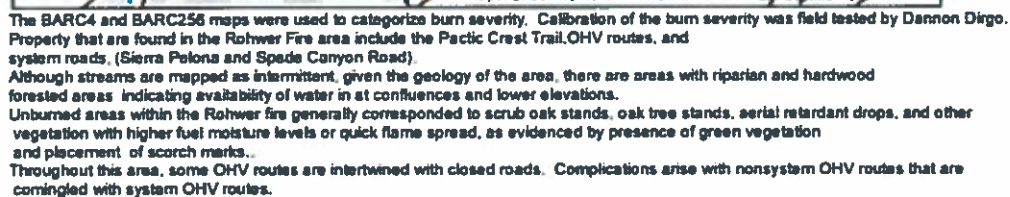
The fire history within and adjacent to the Rohwer fire perimeter shows that three previous fires had burned in the area, during the years of 1986 and 2003 on the eastern flanks, and 2011 on the west flank.

For the 2020 Rohwer Fire, the BARC 4 and BARC256 were used to determine soil burn severity and field validated by READ, Dannon Dirgo, hydro specialist. Of the 701 acres within the perimeter, approximately 23% was a low soil burn severity, nearly 69% of the burned area was moderate and 0.2% burned at high severity (see soil burn severity map below). The remaining 7.8% was either very low or unburned. It is important to understand the difference between *fire intensity* and *burn severity* as

discussed by fire behavior, fuels, or vegetation specialists, and *soil burn severity* as defined for watershed condition evaluation in BAER analyses. Fire intensity or burn severity as defined by fire, fuels, or vegetation specialists may consider such parameters as flame height, rate of spread, fuel loading, thermal potential, canopy consumption, tree mortality, etc. for BAER analysis, we are not mapping vegetation mortality or above-ground effects of the fire, instead our analysis is focused on the soil burn severity. Soil burn severity considers additional surface and below-ground factors that relate to soil hydrologic function, runoff, erosion potential, and vegetative recovery.

The Rowher fire burned on steep slopes that have inherently high soil erosion hazards. The fire effects are expected to increase the high erosion hazard due to loss of vegetation canopy, effective ground cover, and formation of water repellent soil layers at varying depths. The burned, steep drainages have the ability to generate sudden releases of storm runoff at high velocities and carry landslide deposits held in drainage channels. The ensuing runoff from storm events can also erode and mobilize sediments, debris and landslide deposits stored at the base of the slopes and in drainage channel bottoms, leading to deposition of material along the lower

## Rohwer Fire Property and Burn Severity



*Figure 2 The moderate and high severity fire areas were field verified. The very low- or unburned areas were sites where the fire left patches of alternating burned and unburned patches, generally corresponding to aspect and vegetation at higher fuel moistures. Stands of scrub oak and coast live oak remained intact.*



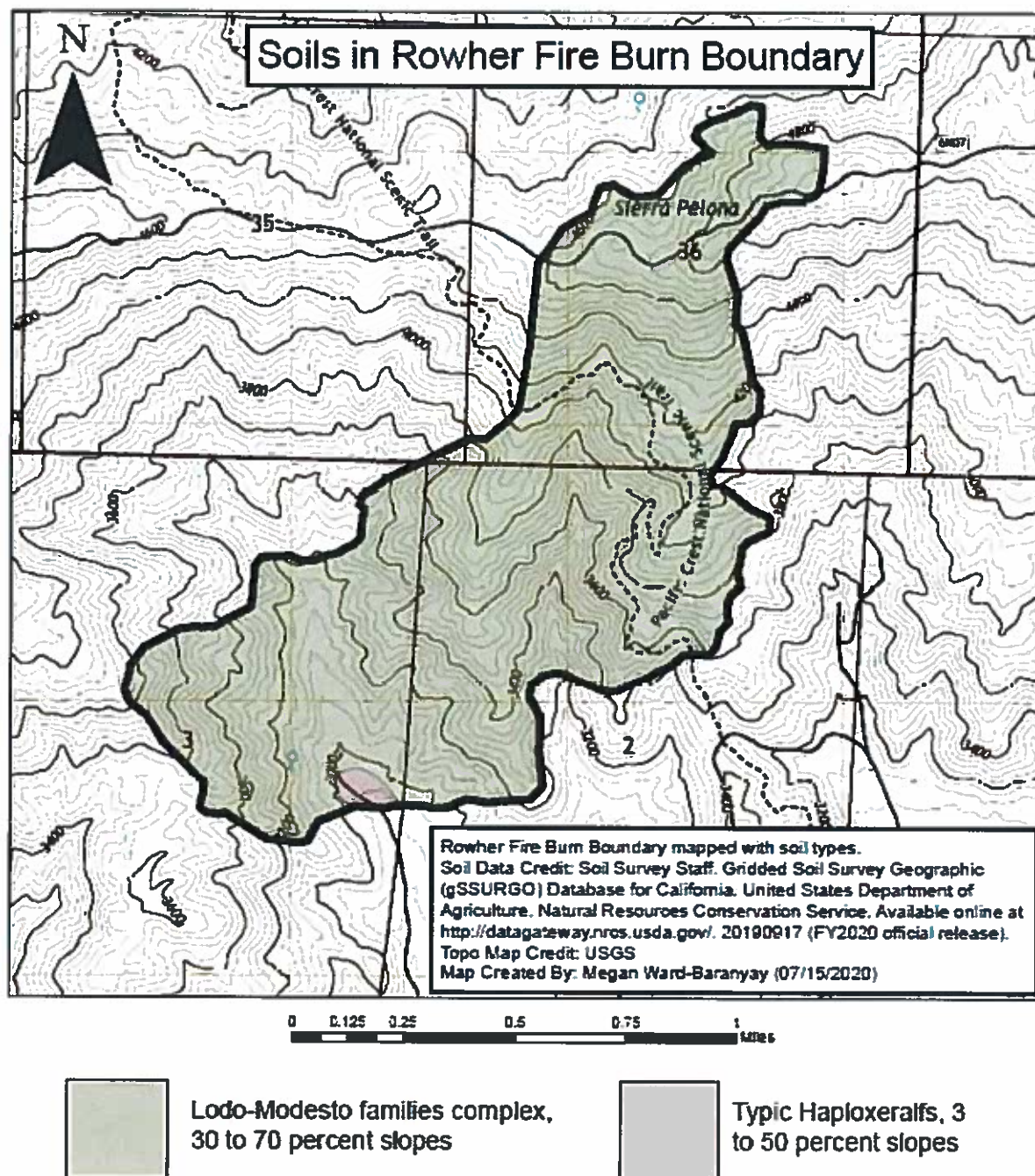


Figure 3, Rowher Fire soils

**A. Describe BAER Critical Values and Threats:**

The risk matrix below, Exhibit 2 of FSM Directive No. 2500-2020-1 (FSM 2523, 2020), was used to evaluate the Risk Level for each value identified during the Assessment:

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

**BAER Critical Values and Risk Matrix Table<sup>1</sup>**

Critical Value Category	Critical Value	Potential Threats	Ownership	Probability of Damage	Magnitude of Consequences	Risk	Forest Service Treatment Method
Human Life and Safety	Pacific Crest Trail	Rock Fall, failure of trail prism due to slope failure	ANF	Possible	Major	High	Signage/ Drainage improvement/ Storm patrol
Human Life and Safety	FS Rd. 5N12	Rock fall, unauthorized access	ANF	Possible	Major	High	Signage, gate lock modifications
Property	Pacific Crest Trail	Rock fall, erosion, debris flow, flooding, unauthorized access on and off of route	ANF	Likely	Moderate	High	Signage, natural material barriers, drainage improvement
Property	FS Rd. 5N12	Increased erosion, unauthorized access on route	ANF	Possible	Moderate	Intermediate	Addressed by life & safety and cultural value treatments
Natural Resources	Vegetation Recovery	Invasive plants	ANF	Very Likely	Major	Very High	Early Detection and Rapid Response
Natural Resources	Native ecosystem recovery	Unauthorized OHV access, erosion and introduction of weeds	ANF	Likely	Moderate	High	OHV barriers, signage, FPO patrols
Natural Resources	T&E Species: CA Condor	Ingestion of Micro Trash/ Potential Lead	ANF	Possible	Major	High	Mulch Covering
Natural Resources	Soil Productivity	FS Rd. 6N07 lead-offs: impacts to soil productivity from road-	ANF	Likely	Minor	Low	Partially addressed by other value & treatment

		generated runoff onto now burned-bare slopes					
Natural Resources	Water Quality	Debris and sediment	ANF	Possible	Minor	Low	No treatment
Cultural Resources	FS Rd. 5N12, Cultural Resources (1 site)	Looting, unauthorized access on route	ANF	Likely	Moderate	High	Lock Gate/ No dig Barriers at stream crossing of 5N12 (spur Rd @ Apiary) to protect cultural resources
Cultural Resources	Prehistoric Artifacts (2 sites)	Spalling	ANF	Possible	Moderate	Intermediate	No treatment

**Note:** Only values at risk greater than intermediate will be addressed below. County and State property requires interagency coordination.

### 1. Human Life and Safety (HLS):

There are nearly 2 miles of the Pacific Crest Trail (PCT), one system road, OHV trails, and administrative use roads located within the fire perimeter that now pose a threat to life and safety as a result of increased post-fire watershed response.

**PCT:** Over 2 miles of the Pacific Crest Trail is within the northeastern portion of the fire perimeter south of Sierra Pelona Road and west of FS Rd. 5N11. This section of trail has steep side-slopes, several switchbacks and ephemeral water crossings (figure 3). The fire burned with moderate soil burn severity on the upslope and downslope sides of the trail (figure 2) exposing user-created trails and pre-attack lines upslope of the PCT that will likely channelize overland flow from precipitation, increasing the potential of scour, trail-diversion of drainage, and potential prism failure. Due to changes in post-fire watershed response and the location of this segment of the PCT, individuals on the trail are at risk of rockfall and falling debris, or water-crossing failure or diversion affecting segments of the trail prism. Users attempting to circumvent compromised trail segments could be at risk of severe injury.

**Sierra Pelona Ridge Road:** Forest System Road 6N07 travels on an east-west axis and is only 3 miles away from Rowher OHV system. The road previously assisted as an initial barrier, preventing access to Spade Spring Canyon. However, the fire sloped over this road and dozer lines from the ridge have now made the burn area accessible to OHV incursion. During the incident, it was heavily used to access upper reaches of the fire divisions. Subsequent attempts of suppression repair have occurred, with measures taken to discourage OHV use. However, dozer lines may still be accessible to riders thus putting them at risk of injury. To be clear: the 6N07 providing access to unauthorized OHV use on intersecting dozer lines is the life and safety issue, recognizing that suppression repair issues are not to be supplemented through BAER for the objective of improving repair actions. Regardless, the life and safety risk on NFS lands is a BAER critical value.

**Spring Canyon Rd.:** Forest System Road 5N12 travels northeast from Sierra Highway. Primary use of this road is for administrative use to access two permitted apiary sites. Additionally, the



road is used by recreational hikers/ horseback riders and occasionally utilized for vehicle access to one wildlife guzzler. The road is below the west flank of the fire perimeter and due to the change in the watershed response individuals on the up-watershed portion of the road are at risk of injury from falling debris, rocks, and/or flash flooding from precipitation events.

**Probability of Damage or Loss:** Possible. There is a significant but less than 50% probability that increased post-fire watershed response would be of such severity as to seriously impact the PCT or 5N12 prism (property), which would in-turn create a threat to life and safety. The probability of rockfall in either location is again less than 50%, because users would generally be in transit and not stationary for long periods of time (i.e. a "moving target"). The encroachment of unauthorized off-highway vehicle use within the burn perimeter on areas not engineered for such use inherently places riders at risk, even if they are not allowed to be there in the first place.

**Magnitude of Consequence:** Major. The consequence of loss of life or injury to humans, if and when it were to occur, is always considered a major consequence (FSM 2523).

**Risk Level:** High. A risk mitigation response is warranted.

## 2. Property (P):

**PCT:** Nearly 2 miles of the Pacific Crest Trail follows along the contour (mid-slope) within the northeastern portion of the fire perimeter south of Sierra Pelona Road. Due to the loss of upslope vegetation and moderate soil burn severity with significant soil water repellency, increased surface runoff is expected which threatens trail drainage structure capacity, erosion of the trail tread, and compromised function of water crossings which could fail or divert drainage down the trail in specific locations. Additionally, the fire exposed user-created trails and pre-attack lines upslope of the PCT that will likely channelize overland flow, increasing the potential of scour and/or head cutting from the trail bench.

**Sierra Pelona Ridge Road:** Forest System Road 6N07 travels on an east-west axis and is only 3 miles away from Rowher OHV system. The fire has removed vegetation that normally contains motorized vehicles to the road corridor; the post-fire conditions allow OHVs to exit the road prism as they like, creating threats to life and safety and natural resources values. As a property value, this is a ridge-top road without sufficient upslope watershed area to create runoff or erosion concerns to the road itself, and there are no water crossings along this segment of road. Risk level to this road as a property value is Low.

**Spring Canyon Rd.:** The integrity of FS 5N12 is now at risk of increased hydrologic erosion resulting from the loss of upslope vegetation. The concentrated overland flow is anticipated to create/increase riling and gullies within the upslope toe matrix/road prism and head cutting from water shedding off the road. Additionally, mobilized sediment can be transported into the downslope stream channel, impacting water quality.

**Probability of Damage or Loss:** PCT – Likely. There is significant watershed area above the trail that is steep, all burned at moderate soil burn severity with significant water repellency, so increased watershed response is deemed more than 50% likely to create significant damage to the trail. 5N12 – Possible. The location of FS 5N12 and changes in watershed response indicate it is at risk of increased damage to the prism, but the likelihood of significant damage is less than 50% in a normal precipitation year.



**Magnitude of Consequence:** Moderate. The length in miles of road and trail values involved in this burned area is minor; while significant damage to them could occur in several locations, it would not require a major investment to repair damages to a few segments of road and trail infrastructure.

**Risk Level:** PCT – High. A risk mitigation response is warranted. 5N12 – Intermediate. A risk mitigation response is NOT warranted for a property critical value, but note that this road also has associated life and safety and cultural critical values.

### 3. Natural Resources (NR):

#### *Threats to Ecosystem Stability/Soil Productivity*

Water from the fire will flow southwest into Mint Canyon, which is on the California 303(d) list of impaired waters for Nitrates, and north into Bouquet Canyon, which flows into Bouquet Reservoir. Bouquet Canyon Creek below the reservoir is on the California 303(d) list of impaired waters for water temperature. The combined factors of moderately burned watersheds, stored sediment in channels and on the steep slopes, water repellency, indicate a likely resources impact to water quality. However, all streams within both HUC 6 watersheds are intermittent and the portion that burned represents 0.3% of Bouquet Canyon and 3.4% of Mint Canyon. The burn area is located at the headwaters of both watersheds. Drainages within the fire are 3.5 miles and 4.5 miles from impaired water reaches in Bouquet and Mint canyons respectively. Impacts to water quality are expected to be minor during and after storm events until vegetation regrows.

Burn intensity within the Rowher fire perimeter is as follows, 58 acres (8%) is Unburned, 159 acres (23%) Low, 483 (69%) Moderate and 1 (0.2%) High. Post-fire field surveys indicate charring and consumption of litter, ground fuels and some vegetation cover within burn intensities of moderate and 90% or more of ground cover vegetation in high intensity. On low burn severity, much of the vegetation was light fuels (grasses and shrubs) or in vegetation with higher fuel moisture so that some vegetative matter remained intact.

On average, there is less than 50 percent effective soil cover consisting of surficial gravel, large rock fragments and charred litter. There is high potential of increased surface erosion resulting from the fire. Materials on nearby slopes are expected to experience rock falls, falling debris and increased overland flow due to the post fire watershed response. Increased erosion on slopes will occur due to the lack of vegetation and/or soil cover likely until the second growing season. Much of the soil is predicted to erode and load first and second order stream channels with deposits of surface soil. Once mobilized from the slopes this soil is quickly available for transport during critical precipitation events.

Water repellency is strong in riparian areas and where available water supported thick vegetation. Repellency is moderate in the southeast facing slopes of Spade Spring Canyon, southwestern slopes near the PCT and weaker in the slope over north of Sierra Pelona. There is surviving hardwood riparian vegetation within some unnamed drainages in the western portion of the east facing slope aspect of Spade Spring Canyon. Additionally, there are dense stands of riparian vegetation at the confluence/downstream of the 1<sup>st</sup> and 2<sup>nd</sup> order streams. The combination of vegetation and topography below the fire perimeter will help slow flows and capture sediment.

In the upper northeastern reaches of Spade Spring Canyon almost all riparian vegetation near the headwaters burned. However, herbaceous and desirable topographic features within the pour point of the drainage exist and will help to reduce increased flow and sequester sediment. Although water repellency is natural, the combination of soil cover removal, drought, and fire effects increases peak flows and subsequently the risk of damaging floods and debris flows.

Loss of cover near the Pacific Crest Trail has created a concern for expanding unauthorized OHV access to the site. Previously unauthorized OHV access within the burn has been limited by vegetation. Easier access due to vegetation loss combined with increased vulnerability of soil structure created by the fire could result in additional damage and destabilization of soils in the burned area.

**Probability of Damage or Loss:** Likely. Changes in post-fire watershed response has a more than 50% likelihood of causing increased overland flow and attendant soil erosion. Unauthorized OHV access also has the potential to channelize overland flow and cause mechanical surface erosion, further damaging soil productivity and ecosystem stability.

**Magnitude of Consequence:** Minor. The magnitude of anticipated soil erosion and the small acreage involved in this fire indicate that post-fire impacts to soil productivity and ecosystem stability would be "recoverable or localized effects" and not "considerable or long term effects" (FSM 2523). Furthermore, lesser levels of post-fire soil erosion are a natural geomorphic process.

**Risk Level:** Low. An emergency risk mitigation response is NOT warranted for threats of post-fire surface erosion to ecosystem stability and soil productivity.

#### *Threats to Native Vegetation Recovery from Invasive Weeds*

Native vegetative recovery is at risk from the threat of post-fire noxious weed introduction and spread. A wash station was not onsite during initial attack. There was no way to know if deployed equipment was clean, where it came from, or what weed seeds were carried in. The unknowing introduction and dispersal of invasive weeds into areas disturbed by fire suppression and rehabilitation has the potential to establish large and persistent weed populations. In addition, it is highly likely that existent small weed infestations along fuelbreaks will expand into the burn area due to their accelerated growth and reproduction and a release from competition with natives. These weed populations could affect the structure and habitat function of native plant communities within the burn area. It is expected that most native vegetation will recover if weed invasions are minimized. Approximately 8 miles of dozer line was constructed or re-opened outside and within the burn perimeter. In addition to causing an increase in weed invasion, the disturbances caused by dozer lines are expected to create accelerated erosion and soil compaction that may also inhibit the recovery of native plant populations.

**Probability of Damage or Loss:** Very Likely. There is a more than 90% probability that invasive weeds were introduced by suppression efforts and capable of rapid spread. There is also a greater than 90% probability that small existing weed populations may now rapidly expand across bare soils in burned watersheds. The usual expected weeds are aggressive colonizers and can outcompete the native chaparral, oaks, and riparian plant species, thereby hindering or preventing the recovery of the vegetation types existing pre-fire. There is also a potential for unauthorized OHV use within the burn area and dozer lines that will encourage more noxious weed invasion.

**Magnitude of Consequence:** Major. This determination is due to the high potential for vegetation type conversion to non-native annual grasses and forbs (e.g. Russian thistle) across the burn area, most especially along dozer lines.

**Risk Level:** Very High. An emergency risk mitigation response is warranted.

*Threats to Federally Listed Threatened and Endangered Species:*

California Condors are at risk of ingesting micro-trash, which is a common post-fire issue causing mortality within the condor's range. An unauthorized shooting range was exposed by the Rowher fire. The range is adjacent to known and newly discovered pre-historic heritage sites and near the end of FS 5N12. There is an abundance of broken glass, brass casings, shotgun shells and potential for newly exposed lead. Condors are attracted by shiny objects and this area is in an updraft area as noted by observing the flight patterns of a crow murder. Condor flight patterns show tracks over this fire area, (US FWS, pers comm), and is close to sites visited by condors while foraging to feed nestlings. If the Condors utilize this canyon during a flight and for foraging grounds, they are at risk for ingestion of toxic materials or other harmful non-food sources that can result in death and have negative impacts for the species.

**Probability of Damage or Loss:** Possible. While micro-trash ingestion is a known threat to condors, there is a less than 50% probability that individual condors would ingest enough micro-trash to actually cause individual mortality, given the small fire area and a single problem site.

**Magnitude of Consequence:** Major. Mortality of individuals in critically low population levels within this T&E species' range is a major impact to population sustainability and viability.

**Risk Level:** High. A risk mitigation response is warranted.

**4. Cultural and Heritage Resources:**

Loss of vegetation and denuded watersheds within cultural resource boundaries and the surrounding areas have made sites visible to the public and vulnerable to looting, as well as vulnerable to surface erosion and possibly debris flows that may damage buried (unknown) cultural deposits. Accessibility to sites by OHV incursion also increases the potential for mechanical destruction and additional surface erosion impacts. Innate and anthropogenic impacts may destroy historic, archaeological resources or alter the context of surface and subsurface remains pertinent to future scientific analysis and interpretation.

Thirteen known cultural resources are located within the Rowher Fire perimeter. Seven of the 13 are newly discovered sites identified during surveys in support of suppression and suppression repair activities. The sites consist of Native American habitation, food processing and rock art sites. None of the 13 sites have been formally evaluated for the National Register and are currently managed as *assumed* eligible to the National Register of Historic Places (NRHP) under the Region 5 Programmatic Agreement. These sites are all "potentially eligible" per BAER policy terminology (FSM 2523.1 – Exhibit 01).

Implementation of all BAER treatments are subject to Section 106 of the National Historic Preservation Act (NHPA) and 36CFR 800. Field surveys to identify cultural resources may be necessary for treatments that could potentially cause effects to either known resources, or those yet to be identified. If cultural resources are present within the area of potential effect of any



proposed BAER related activities, protective measures, testing, formal evaluation, and possibly SHPO and Tribal consultation may be necessary before proposed treatments are implemented.

**Probability of Damage or Loss:** 1 site Likely, 12 sites Possible. 1 site is adjacent to a road where the threat of looting is elevated to >50% probability. For all other sites, the erosion threat is minor, as these are prehistoric sites that have persisted through centuries of fire and post-fire erosion processes. The looting threat is more probable, but spalling rock fragments are not a common artifact type vulnerable to looting. The OHV threat is possible but less than 50% probable to incidentally intersect with an arch site, especially since unauthorized OHV trespass is to be actively discouraged.

**Magnitude of Consequence:** 3 sites Moderate, 10 sites Minor. If threats were to materialize, the magnitude of consequences for 3 of the known sites is moderate – considerable or long term effects locally, but there are many other similar sites in the vicinity with similar scientific value. For the other 10 sites, consequences would be minor – minor damage or localized effects and there are many other similar sites in the vicinity with similar scientific value.

**Risk Level:** 1 site High (Likely, Moderate), 2 sites Intermediate (Possible, Moderate), 10 sites Low (Possible, Minor). A risk mitigation response action is warranted for the 1 site with High Risk (only). A risk mitigation response action is NOT warranted for the other 12 sites.

## **B. Emergency Treatment Objectives:**

- **Provide for Public Safety:** Objective is to reduce the threat to life and safety for road users by installing hazard signage at entrances into the burned area on Forest Service Property, ensuring communication of potential post fire hazards has occurred. Reduce threat to life and safety by creating barriers at locations at risk to unauthorized access due to removal of vegetation. Further reduce threat to life and safety by installing and maintaining protection and safety signage in hazardous areas and roads until watershed recovery has reduced threats and hazards and/or the threats and hazards have been removed.
- **Limit Damage to Property:** The Pacific Crest Trail travels through the fire area and is at risk of increased erosion, sedimentation, deposition of fire debris and colluvium after the fire. The treatment objective is to increase the awareness of the public, LA County, and other agencies of the potentially hazardous conditions resulting from the fire.
- **Noxious Weeds:** Reduce the potential for impaired native vegetative recovery and introduction and spread of noxious weeds by conducting early detection and rapid response (EDRR) surveys and preventing to the extent possible OHV trespass.
- **Natural Resources:** Limiting unauthorized access to the burn area from established roads through use of barriers at Sierra Pelona Ridge and barriers near the PCT will reduce threats to natural and cultural resources and safety of [unauthorized] motorized users.
- **Cultural and Heritage Resources:** Reduce potential for irreversible damage to cultural resources, including looting or vandalism, by ensuring gates are functional and serviceable, performing modifications to gates as needed, and obscuring sites with native-material mulch or debris, and barriers to prevent unauthorized OHV access to cultural sites.

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

Land 90 % Channel 90 % Roads/Trails 90 % Protection/Safety 90 %

## D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90%	80%	70%
Channel	90%	80%	70%
Roads/Trails	90%	75%	70%
Protection/Safety	90%	80%	75%

E. Cost of No-Action (Including Loss): Not calculated, as there are mostly non-market values involved in this fire. PCT damage would be more costly to repair than prevent. Impacts to native vegetation would very likely be cost-prohibitive or impossible to return to pre-fire state if invasive weeds are allowed to flourish. Select cultural sites could possibly sustain irrecoverable damage, economic cost is not relevant.

F. Cost of Selected Alternative (Including Loss): \$24,426

## G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Dannon Dirgo-T,  
Email: dannon.dirgo@usda.gov

Phone(s): (661) 941-0566

Forest BAER Coordinator: Dannon Dirgo-T  
Email: dannon.dirgo@usda.gov, kelsha.anderson@usda.gov  
Phone(s): (661) 941-0566, (626) 632-1709

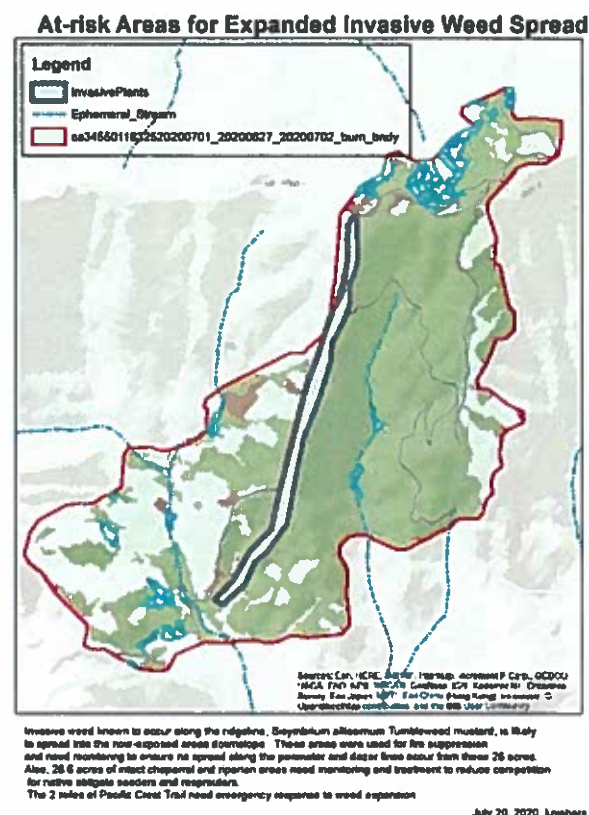
Skill	Team Member Name
<i>Team Lead(s)</i>	Dannon Dirgo-T, Julie Uyehara-T
<i>Soils</i>	Dannon Dirgo
<i>Hydrology</i>	Dannon Dirgo
<i>Engineering</i>	
<i>GIS</i>	Julie Uyehara-T, Dannon Dirgo-T
<i>Archaeology</i>	Joanna Huckabee
<i>Weeds</i>	Julie Uyehara-T
<i>Recreation</i>	Ray Kidd
<i>Other</i>	TES – Julie Uyehara

## H. Treatment Narrative

### Land Treatments:

#### *L1 Noxious Weed Early Detection and Rapid Response (EDRR)*

Weed detection surveys and rapid response eradication treatments are to determine whether 1) ground disturbing activities related to fire suppression have resulted in new weed populations, or 2) existing small noxious weed infestations are now expanding within burned watersheds (traditional BAER).



With a total of 13 miles of dozer line and handline, a known source of invasive weed, *Sisymbrium altissimum* on a ridgetop (26 acres), and administratively open roads within the fire, it is expected that new and expanding weed infestations will proliferate in and along these vectors if left unchecked, eventually leading to vegetation-type conversion. NEPA coverage for the forest allows for the rapid response and eradication for priority noxious weeds using herbicides if necessary.

EDRR treatments will begin in fall 2020, depending on the optimal detection time for different weed species. Different flowering times for potential species will require 2 visits of 2-3 days each during the growing season. If timing is such that all the target species are detectable and treatable in one visit, actual costs would be less than estimated below.

Another 28.6 acres of intact chaparral and riparian vegetation will also need EDRR surveys. Completion of surveys in riparian areas and 2 miles of PCT, would likely take a small team 1 day in Fall for riparian, 1-2 days in winter depending on rainfall pattern, and 1-2 days in spring, 2021. Data reporting will be via Collector and put on AGOL online database. Depending on their results, additional treatment funding may be requested, recognizing that all EDRR treatments must be completed by July 9, 2021 (one year from containment).



## EDRR – Suppression Related

Item	Unit	Unit Cost	# of Units	Cost
Contract Elements (combined below)			1	
Invasive Weed Crew of 2	Days	\$550	5	\$2,750
Senior Staff – for report, scheduling	Days	\$330	1	\$330
Supplies – herbicide, supplies	Each	\$300	1	\$300
Travel-hotel, meals for two	Days	\$395	4	\$1,580
Sub Total				\$4,960

## EDRR – Traditional BAER Related

Item	Unit	Unit Cost	# of Units	Cost
Contract Elements (combined below)			1	
Invasive Weed Crew	Days	\$550	4	\$2,200
Senior Staff – for report, scheduling	Days	\$330	1	\$330
Supplies – herbicide, supplies	Each	\$300	1	\$300
Travel-hotel, meals for two	Days	\$395	4	\$1,580
Sub Total				\$4,410
Contract Elements	Unit	Unit Cost	# of Units	Cost
Contract Administration – COR (Javier Diaz or Steve Bear)	Days	\$445	1	\$445
Botanist, GS-11, Statement of work and monitor, update database, concur with final report	Days	\$495	1	\$495
			Subtotal	\$ 940
TOTAL				\$10,310

**Road and Trail Treatments:***T-1 PCT Trail*

Existing trail drainage features do not all have capacity for predicted increased post-fire flows. Drainage improvement treatments should be performed prior to the first damaging storm events to ensure the drainage features along the PCT are functioning to protect the trail infrastructure. Storm patrol should be conducted within 96 hours after the first significant storm event to ensure BAER treatments are functioning as intended to protect trail integrity. Funding for 4 additional storm patrols is requested pending more major storms in the following year. Storm patrols should be performed by a local GS-07 to ensure knowledge of trail systems, drainage needs, structural integrity thresholds, and coordination with appropriate POC's. At the same time, assistance with trespass monitoring and gate checks can also be done. Trail work implementation can be done in collaboration with the PCTA.

**Trail Treatment Costs**

Item	Unit	Unit Cost	# of Units	Cost
GS-07 PCT storm patrol	Days	\$262	2	\$524
PCTA agreement for drainage features and partner storm patrol work on PCT	1	\$7,204	0.5	\$3,602
<b>Total Cost</b>				<b>\$4,126</b>

**Protection and Safety Treatments:***P-1 Human Life and Safety (and Resource) Protection – Closure and Hazard Warning Signage*

To ensure safety for Forest visitors and protection to Forest resources during the natural recovery period, area closure and hazard warning signs will be placed at trailheads and road locations adjacent to and within the fire perimeter to warn visitors of potential hazards. Given the typical amount of vandalism on the ANF, it is likely signs will need to be checked and replaced periodically within the first year; the cost estimate includes extra signs and personnel time for sign replacement.

**Closure and Hazard Warning Signage**

Item	Unit	Unit Cost	# of Units	Cost
GS-11 Recreation Officer	Day	\$425	1	\$425
Labor - GS-7 Recreation Technicians	Days	\$250	5	\$1,250
Trails closure signs (12"x 18") Hi density plastic.	Each	\$12	6	\$72
Area closure signs (14" x 20")	Each	\$40	4	\$160
Warning signs and posts for burned area, 12"x18"	Each	\$22	4	\$88
Posts and hardware	Each	\$25	14	\$350
Vehicle mileage	Miles	\$.55	500	\$275
<b>Total Cost</b>				<b>\$2,620</b>

*P-2 Threatened & Endangered Species (Condor) Protection Treatments*

The fire exposed an unauthorized target shooting range which has an accumulation of brass casings, broken glass, and shotgun shells indicating the likely presence of lead shot. Small amounts of lead is fatal to condors and bright/reflective objects attract condors and may be consumed then fed to nestlings, potentially causing injury and/or death. This area is also a heritage site, 05015300436. Given that this is a flat landform area, the BAER team recommends covering the area with a combination of large bark mulch, seeding (from storage), to keep the artifacts and trash in place.

Item	Unit	Unit Cost	# of Units	Cost
GS-11 Rec Officer or District Resource Officer COR	Day	\$425	1	\$425
1 GS-07 Recreation Tech	Day	\$250	1	\$250
3 Dump Truck loads of large mulch	Cu. Yard	\$60	20	\$1,200
Delivery Fee	Each	\$240	2	\$480
Area closure signs (14" x 20")	Each	\$40	2	\$ 80
Posts and hardware	Each	\$25	4	\$100
Vehicle mileage	Miles	\$0.55	500	\$275
<b>Total Cost</b>				<b>\$3,035</b>

### *P3 Cultural Treatments*

Ten of the thirteen cultural resources were found to be at low risk to suffer consequences of the fire; therefore no treatments were recommended. Two additional sites with spalling impacts from the fire were found to be at intermediate risk, resulting with no viable treatments and treatments not warranted for risk (i.e. "acceptable risk"). However, while no treatments for this type of effect has been identified, capturing and formally recording the information and data before it's irrevocably lost by these adverse conditions is recommended. Spalling of the rock art features will ultimately change the character and integrity of these features, and alter their interpretation and meaning. By formally recording these features, the information will be available for future study and interpretation in their original and intact state or condition. This recommendation is a Forest programmatic responsibility, not BAER.

A single cultural site in close proximity of road 5N12 is at high risk and BAER treatment is warranted. It is recommended to close and lock the existing gate that was installed 9 years earlier as a BAER treatment for the Mint Fire until vegetation has regrown in order to reduce the risks of vandalism and looting.

Servicing/ modification of the gate on 5N12 will protect the cultural sites therein from access by motorized recreation users. No dig barriers are recommended at locations on the spur road, in the event the gate is left open by the permittee or OHV goes around the gate. Covering the artifacts during the T&E treatment will have an added benefit of concealment and reduced potential of erosion impacting the site.

### **Cultural OHV Barrier Installation at Spur on FS 5N12**

Item	Unit	Unit Cost	# of Units	Cost
No-digs barriers	Each	\$40	6	\$240
Installation Supplies	Each	\$100	1	\$100
Labor (4 GS 5 Techs)	Days	\$800	1	\$800
Mileage	Miles	\$0.55	100	\$55
FS Locks	Each	\$40	2	\$80
¼" x 36" Flat Stock Steel	Each	\$10	1	\$10
<b>Total Cost</b>				<b>\$1,285</b>



***P-4 Unauthorized OHV Trespass Prevention – FPO Patrol***

Unauthorized OHV access is a threat to the burned watershed due to the dozerlines created for fire suppression. The ANF is the most urban Forest in the nation with one of the highest use levels. Due to the proximity to Rowher Flats OHV area, the challenge for the ANF is managing the high number of users who gain unauthorized access to the Forest by driving/riding/entering through or around a locked gate or closure sign. If left unmanaged, use can cause damage to natural resources, increase potential soil erosion, and damage compromising function of desirable drainage features.

To manage unauthorized access onto dozerlines and the burned area, ensuring unobstructed and functional drainage, the BAER team requests funding for FPO patrols along Sierra Pelona Ridge route 6N07 and Forest Road 5N12 to contact and educate OHV users, inspect closure of gates, and assess effectiveness of OHV "barriers" implemented with suppression repair ("chunking" or "dibbling" of soils on dozerline lead-offs from 6N07 to discourage OHV use). This suppression repair effort should be largely successful in preventing unauthorized trespass onto the dozer lines put in off of roads. Prevention patrols are recommended in lieu of adding additional miles of barrier that may not be effective alone. Prevention patrols are considered a lower cost treatment compared to miles of barrier installation.

From a long history of past BAER experience, the ANF has determined that signage, barriers and other hard closures that are installed to discourage soil disturbance and assist in allowing natural vegetative recovery are not effective by themselves. Therefore, patrolling within and adjacent to the burn area is required to enforce the closure and deter unauthorized access, vandalism, and damage to National Forest System lands. These patrols can also monitor effectiveness of the suppression repair "barriers", gate, and native-material mulching of exposed trails to ensure that travel is not occurring through the implemented protections measures. Should patrols find that initial protection measures are insufficient, the Forest may reassess and submit an interim request to install barriers at specific locations where unauthorized activity is observed.

**Trespass Prevention FS 5N12**

Item	Unit	Unit Cost	# of Units	Cost
2 GS-7 OHV Rec Technicians/ FPO	Days	\$500	5	\$2,500
Vehicle gas mileage	Miles	\$0.55	1000	\$550
<b>Total Cost</b>				<b>\$3,050</b>

**PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS**

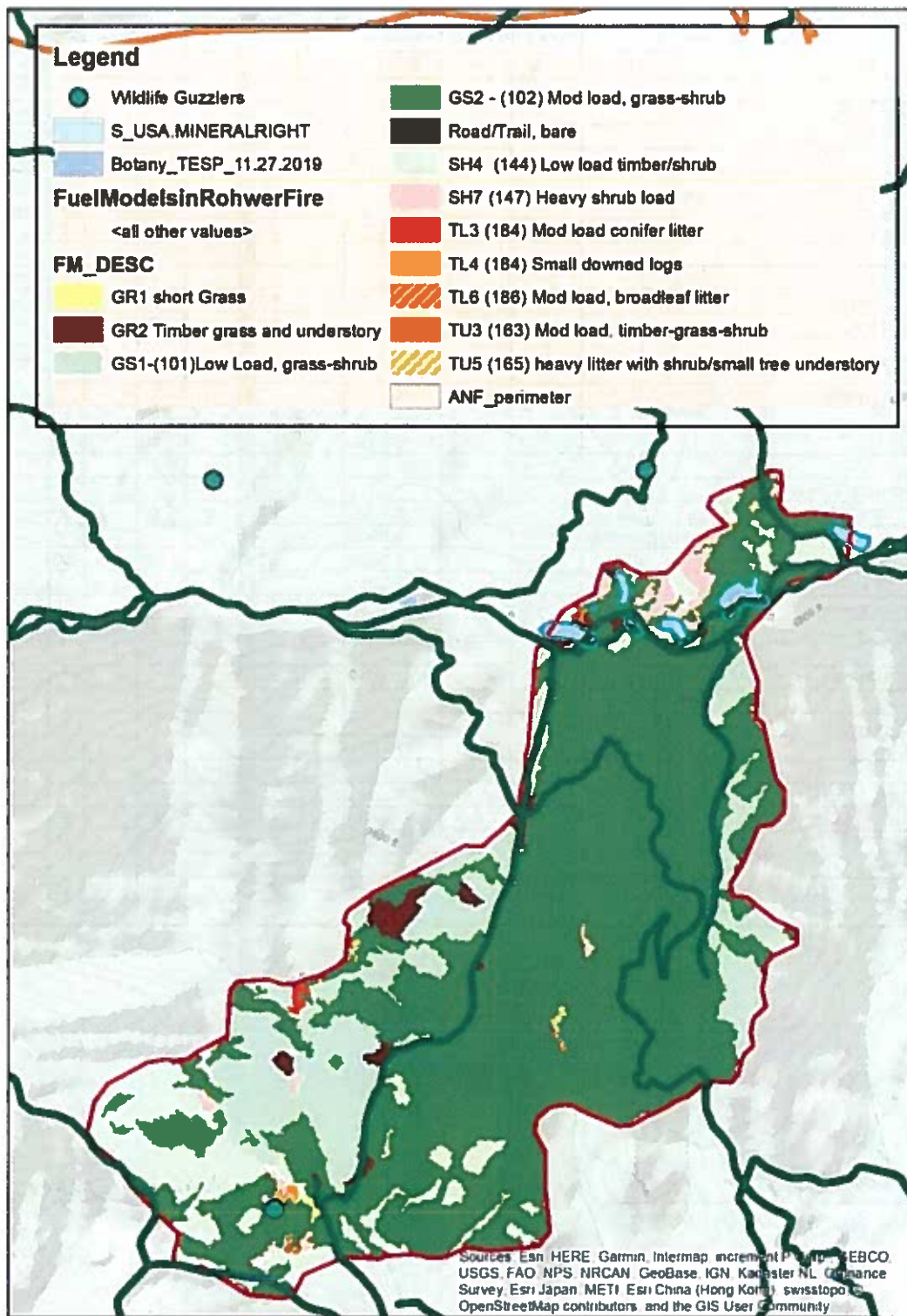
Line Items	Units	Unit Cost	NFS Lands			Other Lands				All Total
			# of Units	WFSU SULT \$	Spent \$	# of units	Fed \$	# of Units	on F \$	
<b>A. Land Treatments</b>										
EDRR - Suppression Related				\$4,960	\$0		\$0		\$0	\$4,960
EDRR - Traditional BAER				\$4,410	\$0		\$0		\$0	\$4,410
EDRR - Contract Administration				\$940						\$940
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Land Treatments</b>				<b>\$10,310</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$10,310</b>
<b>B. Channel Treatments</b>										
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Channel Treat.</b>				<b>\$0</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$0</b>
<b>C. Road and Trails</b>										
PCT-Drainage Treatments				\$4,126						4126
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Road &amp; Trails</b>				<b>\$4,126</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$4,126</b>
<b>D. Protection and Safety</b>										
Closure and Hazard Warning Signage				\$2,620	\$0		\$0		\$0	\$2,620
Mulch treatment for Cultural and Condor Protection				\$3,035						\$3,035
Cultural Protection with lock gates				\$1,285	\$0		\$0		\$0	\$1,285
OHV Trespass Prevention				\$3,050						\$3,050
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Protection and Safety</b>				<b>\$9,990</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$9,990</b>
<b>E. BAER Evaluation</b>				\$10,812						
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Evaluation</b>				<b>\$10,812</b>			<b>\$0</b>		<b>\$0</b>	<b>\$0</b>
<b>F. Monitoring</b>										
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Monitoring</b>				<b>\$0</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$0</b>
<b>G. Totals</b>				<b>\$24,426</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$24,426</b>

**PART VII - APPROVALS**

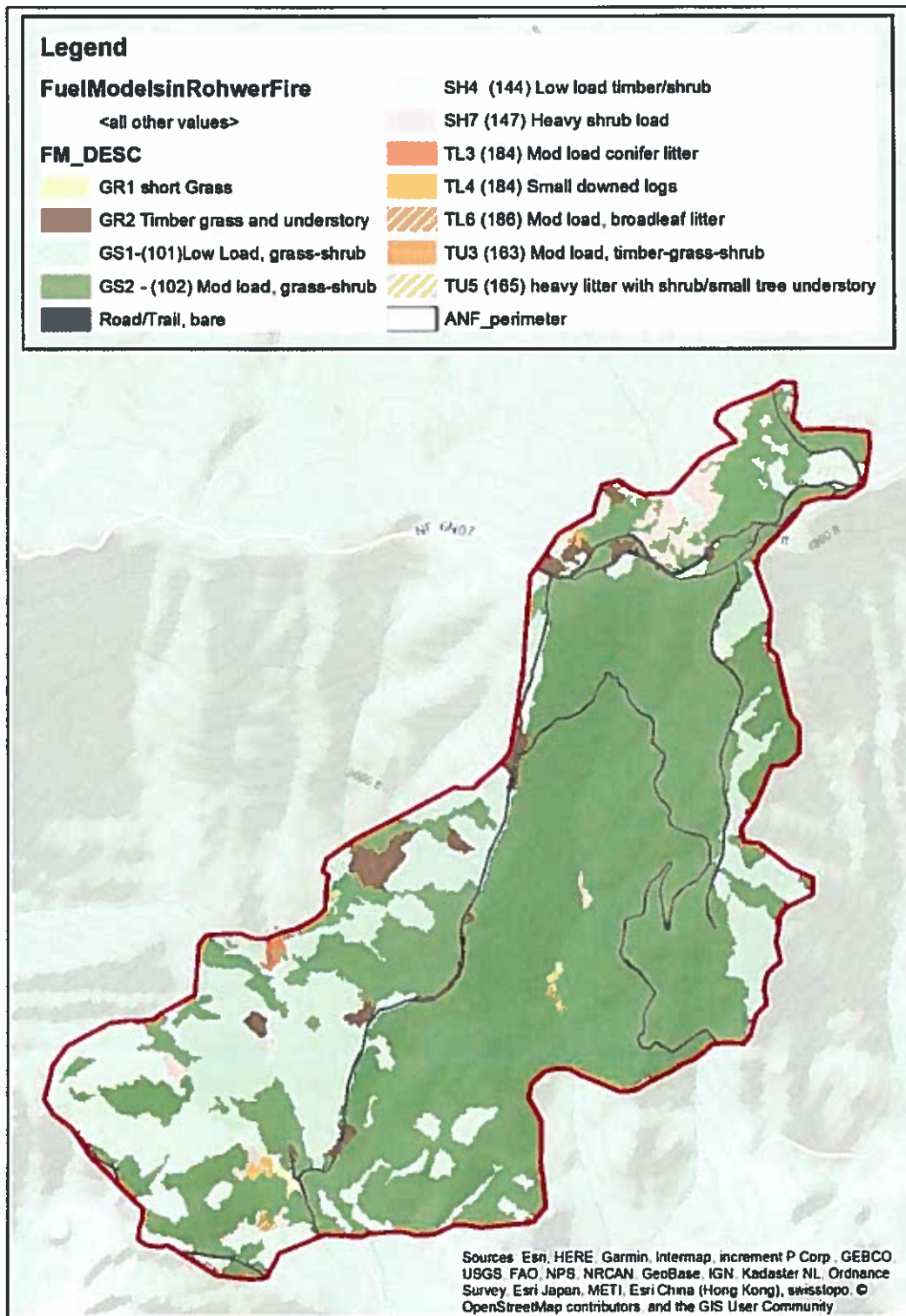
  
 Forest Supervisor (signature)

*October 21, 2020.*  
 Date

## Appendix A







## References

Appendix A. Fuel models in the Rohwer Fire area using remote sensing and LIDAR from 2016-2018, calibrated to 2018.

USDA Forest Service, Geospatial Technology and Applications Center, BAER Imagery Support Program. 2020. Burned Area Reflectance Classification (BARC) Data Bundle for the ROWHER Fire occurring on the None – 2020. Salt Lake City, Utah, USA USDA Forest Service  
Online Linkage: <https://fsapps.nwcg.gov/afm/baer/download.php?year=2020>

USDA Land Management Plan, Part 2, Angeles National Forest. 2005