

Date of Report: 11/6/2017

**WILDOMAR FIRE****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:** Wildomar**B. Fire Number:** CA- CNF 003839**C. State:** California**D. County:** Riverside**E. Region:** 5**F. Forest:** Cleveland**G. District:** Trabuco**H. Fire Incident Job Code:** P5LGH2**I. Date Fire Started:** October 26, 2017**J. Date Fire Contained:** October 30, 2017**K. Suppression Cost:** 3,600,000**L. Fire Suppression Damages Repaired with Suppression Funds**

1. Fireline waterbarred (miles): 5.5 miles dozer line, 3.5 miles handline
2. Fireline seeded (miles): 0
3. Other (identify):

**M. Watershed Numbers:**

- Lower San Jacinto (#180702020308): 64 acres burned (out of 5346 NFS acres within a 24804 acre watershed)
- Murrieta Creek (#180703020402): 33 acres burned (out of 194 NFS acres within a 34215 acre watershed)
- Upper San Mateo Creek (#180703010201): 768 acres burned (out of 13052 NFS acres within a 21769 acre watershed)

N. Total Acres Burned: 866

NFS Acres( 800) Other Federal ( ) State ( ) Private ( 66 )

O. Vegetation Types: mixed chaparral, oak woodland

P. Dominant Soils:

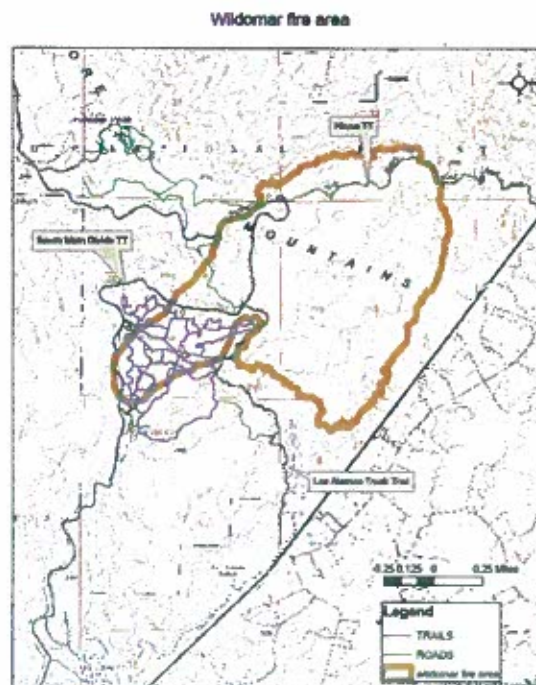
**Major soils in the Wildomar Fire area according to NRCS WSS**

Map Unit Symbol	Map Unit Name	Percent of Approx fire boundary	Erosion Hazard off-trail	Erosion hazard of roads, trails	Depth to bedrock (inches)
143	Cienega-Blasingame-Rock outcrop complex, 9 to 30 percent slopes	3.4%	Moderate	Severe	7 to 20
144	Cienega-Rock outcrop complex, 9 to 30 percent slopes	12.4%	Moderate	Severe	4 to 20
145	Cienega-Rock outcrop complex, 30 to 75 percent slopes	71.2%	Very Severe	Severe	7 to 20
186	Ramona fine sandy loam, 2 to 9 percent slopes	4.0%	Slight	Moderate	>80 inches
213	Vista course sandy loam, 9 to 15 percent slopes	6.2%	Slight	Moderate	20 to 40
214	Vista coarse sandy loam, 15 to 30 percent slopes, MLRA 20	2.8%	Moderate	Severe	20 to 40

Q. Geologic Types: The Santa Ana Mountains block, in the Murrieta quadrangle, is underlain by undifferentiated, thick-layered, granular, impure quartzite and well-layered, fissile, phyllitic metamorphic rock of low metamorphic grade. Both quartzite and phyllitic rocks are Mesozoic. West of the quadrangle a variable thickness sedimentary rock, physically resembling Paleogene rocks, occurs between the basalt and metamorphic rock. Where not protected by the basalt, the weathered rock has been removed by erosion.

R. Miles of Stream Channels by Order or Class: 7.6 miles intermittent streams

S. Transportation System: Trails: 4.2 miles Roads: 3.4 miles



### PART III - WATERSHED CONDITION

- A. Burn Severity (acres): 83 (low) 598 (moderate) 0 (high) 184 (combination of unburned rock outcroppings with mixed moderate SBS)
- B. Water-Repellent Soil (acres): 300
- C. Soil Erosion Hazard Rating (acres):  
0 (low) 142 (moderate) 723 (high)
- D. Erosion Potential: 20 tons/acre
- E. Sediment Potential: 124 cubic yards / square mile

### PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period, (years): 5
- B. Design Chance of Success, (percent): 90
- C. Equivalent Design Recurrence Interval, (years): 2
- D. Design Storm Duration, (hours): 6
- E. Design Storm Magnitude, (inches): 1.65
- F. Design Flow, (cubic feet / second/ square mile): see below
- G. Estimated Reduction in Infiltration, (percent): 50
- H. Adjusted Design Flow, (cfs per square mile): see below



Overview of Wildomar fire during suppression phase

**Rowe, Countryman, and Storey (1949) method**

Peak discharge (cfs/sq.mi.) increases to the localized watersheds for the 2-year (Q2), 5-year (Q5), 10-year (Q10), and 25-year (Q25) storm events for the year following the Wildomar Fire - on an average annual basis (Note: The modeled peak flow values should only be used as an indicator of the relative increase in peak flows after the fire.)

	Normal watershed peak discharge per storm type (cfs/sq.mi.)				1-year post burn peak discharge per storm type (cfs/sq.mi.) with approximate equivalent recurring storm rank			
Watershed	Q2	Q5	Q10	Q25	Q2	Q5	Q10	Q25
Overall Fire	0.39	0.73	1.03	1.51	0.97 (Q9)	1.43 (Q20)	1.84 (Q45)	2.44 (Q80)
Northern drainage (CLL Ladera)	0.13	0.24	0.34	0.49	0.29 (Q7)	0.43 (Q20)	0.56 (Q37)	0.75 (Q70)
Southern drainage (south of Corte Palo Viejo)	0.22	0.42	0.59	0.87	0.56 (Q10)	0.82 (Q22)	1.06 (Q50)	1.40 (Q80)
Wildomar campground	0.10	0.18	0.25	0.37	0.20 (Q6)	0.31 (Q18)	0.40 (Q32)	0.54 (Q65)

**FS WEPP Peak Flow calculator method using Curve Numbers**

**Table 6. Peak discharge (cfs/sq.mi.) increases to the watersheds for the 2-year (Q2), 5-year (Q5), 10-year (Q10), and 25-year (Q25) storm events for the year following the Wildomar Fire using CN of 64 for unburned/normal, 70 low SBS, and 90 for moderate burn with water-repellant soils [averaged CN listed in table]**

	Normal watershed peak discharge per storm type (cfs/sq.mi.)				1-year post burn peak discharge per storm type (cfs/sq.mi.) with approximate equivalent recurring storm rank			
Watershed (average post-fire CN)	Q2	Q5	Q10	Q25	Q2	Q5	Q10	Q25
Northern drainage (CLL Ladera) – [CN = 80.5]	81.9 [CN=73]*	83 [CN=66]*	395	1128	371 (Q9)	665 (Q16)	926 (Q21)	1313 (Q35)
Southern drainage (south of Corte Palo Viejo) – [CN = 82]	10.8 [CN=70]*	76	344	856	296 (Q9)	537 (Q16)	745 (Q22)	1062 (Q42)

\* - For small watersheds and low rainfall amounts, the model does not produce significant flow at unburned curve number values, indicating little flow leaves the watershed in an unburned condition for a 2-year return interval storm.

## PART V - SUMMARY OF ANALYSIS

### A. Describe Critical Values/Resources and Threats:

The risk matrix below, Exhibit 2 of Interim Directive No.: 2520-2010-1, 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

**Values at Risk and Risk Matrix Table<sup>1</sup>**

Category	Value at Risk	Potential Threats/hazard type	Landowner	Probability of Damage	Magnitude of Consequences	Risk	Forest Service Treatment Method
Property/Life	FR 6S07 and 7S04 (South Main Divide Road)	Erosion on road, at overside drains, sloughing on road, rock fall	FS	Likely	Major	Very High	Signs to warn of fire area and risk of flooding and erosion, rock fall, and erosion on the road. Close roads after rain storms. Storm Patrols..
Property/Life	OHV area trails	OHV users are injured due to poor trail condition or driving off-trail	FS	Very Likely	Moderate	Very High	Signs to warn of fire area and risk of erosion, rock fall, on the road. Close OHV area for one or more years. Install additional gates and barriers for area closure. Fortify damaged culverts
Property/Life	private property downslope from fire	Erosion, Slumping, Rock Fall, Flooding	PVT	Likely	Moderate	High	Contact NRCS and La Cresta homeowners association to alert them of hazards
Natural Resource Values	Soil Productivity and Native Plant Recovery	Weed invasion	FS	Very likely	Major	Very High	Detection and eradication. Dozer lines along the road and drainages will need monitoring.
Natural Resource Values	Water Quality San Mateo Creek, Lake Elsinore	Ash, sediment, debris, large woody debris	FS, private, water district	Unlikely	Minor	Very Low	None
Natural Resource Values	TES wildlife and plants	Damage to or loss of habitat due to accelerated erosion	FS	Unlikely	Minor	Very low	None
Cultural resource values	Integrity of archaeological sites	Disturbance to archaeological sites	FS	Possible	Moderate	Intermediate	Monitor sites that are at risk

**Note:** Only values at risk of intermediate or greater will be addressed below. Private property requires interagency coordination.



## **Loss of Water Control**

The Wildomar Fire occurred within 3 6th level HUCs, though only the Upper San Mateo Creek watershed burned sufficiently to have potential problem areas downstream of the fire. Additional unofficial 7th field and 8th field HUCs were modeled to show fire effects to specific areas of concern, such as a private land, specific road culverts within the fire, and the Wildomar campground downstream of the fire. The use of these smaller local subwatersheds provides a more pronounced and indicative increase in water yields by watershed because there is less averaging across unburned areas.

Sediment and peak flow increases have the potential to cause a cumulative debris flow and localized flooding effect. These effects have varying potentials depending on the size of the burned subwatershed, the slopes involved, and the soil burn severity. This potential for flooding and debris flow has the added risk of causing erosion to Forest Service roads, erosion control structures, and buildings on private properties.

Peak discharge increases for the design storm (Q2) range from 2.5 to 3.0 times for subwatersheds above the various private parcels within the area of the fire. The variability in the modeling is due to the amount of area in the moderate soil burn severity classification relative to the size of the watershed modeled, the relative slope and time of concentration within the watershed.

The 2-year return interval storm (Q2), with a 50% chance to occur in any given year, and a statistical chance of 75% of occurring at least once in the first 2 years, is modeled to create peak flows on the order of the Q6 to Q10 storms.

The 5-year return interval storm (Q5), with a 20% chance to occur in any given year, and a statistical chance of 36% of occurring at least once in the first 2 years, is modeled to create peak flows on the order of the Q16 to Q22 storms.

Given the high likelihood of these levels of storms occurring in the years following the fire (Q2 75%, Q5 36%), there is between a Possible and Likely probability of Damage or Loss Occurring.

Sediment yield potential for the same subwatersheds resulted in modeled increases of 8 to 11 times for the first year following the fire. This level of sedimentation has the potential to decrease the capacity of storm drainage features.

## **Threats to Life and Property**

**South Main Divide Road, Hixon truck trail, and Los Alamos Truck trail:** Likely damage, Moderate consequences, High Risk.

These roads are Forest System Roads that are extensively used by Forest visitors and permittees. There is recreational use of the road from hikers, bikers, birders, and others. Users are at some risk from unstable rocks after the fire. Erosion and washouts are likely occur on the roads. The road and surrounding areas are vulnerable to unauthorized vehicular use due to areas exposed when the vegetation was burned off. The probability of damaging erosion on roads is Very Likely. Magnitude of consequences to the trail surface and surrounding areas from erosion, compaction, and new trail creation is estimated to be Moderate. Risk is assessed as High.

These roads will be needed for administrative use, but are proposed for closure to the public for at least one year to minimize resource damage.

### **OHV area trails:**

Emergency conditions exist for specific sections of the Wildomar OHV Area within and/or below burned areas where post fire erosion, flooding and/or debris flows are likely to occur especially on the W-6, W-8 and W-27

Forest Trails and potentially the Wildomar OHV Staging Area. These emergency conditions are based on anticipated post wildfire impacts on roads, trails and forest visitors.

Threats to roads and trails and forest visitors, identified by an OHV, roads and soils scientists include:

- Excessive erosion of the trail/ road tread caused by interception and diversion of runoff from steep burned hill-slopes
- Scouring or deposition where road intersect with several numerous moderate drainages
- Illegal OHV use off of FS System Roads and trails
- Increased potential for falling rocks and debris

Values at Risk associated with the trails in the Wildomar Fire Burned Area are:

- Threat to **life and safety** of forest visitors using the OHV trail system in the Wildomar Campground and Day Use OHV Area and BAER Implementation Team Members working on proposed treatments. Trail washout, headcuts, debris flows and falling rocks.
- Threat to **property** from damage or loss of segments of the trail system. There are 4.5 miles of trail within the affected trail system with the following expected to incur the most damage:
  - FST W-27
  - FST W-8, from the intersections of FST W-2 to FST W-7
  - FST W-6

The probability that expansion of OHV impacts could impact recovery of native vegetation and long term soil productivity is **very likely** in selected areas along FSR 6S07, 6S07E (Wildomar Staging Area) and 6S07F (Wildomar Campground). Based on the degree and extent of post fire OHV trespass, impacts on soil productivity and water quality are **Very likely**. The magnitude of consequences is **moderate**. Therefore, the BAER risk is **very high**. BAER treatments are recommended.

The probability that increased illegal OHV use on Hixon Truck Trail and Los Alamos Road could occur is **very likely** in selected areas outside the OHV Staging area, and along several FS roads within the burned areas. The magnitude of consequences is **moderate**. Therefore, the BAER risk is **very high**. BAER treatments proposed for recovery of native vegetation and long term soil productivity serve to reduce this risk.

**Downslope Development:** Possible damage, Moderate to High Consequences, Intermediate to High Risk.

Part of the La Cresta community is east of the Wildomar Fire. The soils have a severe erosion hazard. With the removal of the vegetation, there is active wind erosion, dry ravel, and rock fall in the area. Watershed modeling indicates that there will be a loss of water control and the channel may be insufficient to contain the bulked flow. The modeled design storm (2-year return interval) will have a peak flow response on the order of the 7- to 10-year return interval storm with about 9-10 times the natural sediment. There are unburned buffers between the fire and the private property that may be sufficient to mitigate the flow and sediment of the design storm for the northern drainage outletting on Calle Ladera. Properties at the southern drainage have a smaller buffer and a home location that is more in line with the canyon outlet. This results in a risk of Intermediate to Very High. The treatment is interagency coordination to inform the HOA and NRCS of the potential.

**Threats to Ecosystem Stability/Soil Productivity:** Very Likely damage, Moderate to Major consequences, Very High Risk.

Within the fire perimeter, Moderate burn intensity covered 80 percent of the landscape. 10 percent of the area burned with Low soil burn intensity, 10 percent was very low or unburned. Post-fire field surveys indicate that almost all vegetation cover was consumed during the fire.

Watershed Condition Classification: Effects of the Wildomar Fire will negatively affect the Indicators of Water Quality, Soil Erosion, Riparian Vegetation, Road Maintenance, and Wildfire Effects. For the Upper San Mateo

Creek – (#180703010201) watershed these effects will reduce the watershed condition indicators. The watershed is currently listed as Functioning At-Risk (score 1.7). Since the overall score is unlikely to increase past 2.2, the watershed should remain as Functioning At-Risk.

A primary watershed effect of the Wildomar Fire is “Loss of water control” or “Increased Flood Potential.” The design storm (Q2) will cause the watersheds to react as if a Q6 through Q10 storm was occurring. Higher return interval storms, such as the Q5, will cause the watersheds to react as if a Q16 to Q22 storm was occurring. Increases in sediment potential will be 8 to 11 times normal.

The OHV area has a number of occurrences of pipe rail fence that were being used to keep riders on the trails and out of drainage channels or other openings off of the trails. These fences indicate that without them, there is a Very likely occurrence of OHV riders leaving the trails and damaging the area. With the removal of vegetation, these pipe rail fences are no longer protecting the non-trail locations from OHV incursions. The magnitude of consequences to vegetative recovery and protection of heritage resources is moderate to major if OHVs are not kept from accessing non-trail areas. The resulting risk is Very High.

- The treatment being proposed is an Area Closure.
- It should be noted, however, that should monitoring indicate that an area closure is not sufficient to protect the vegetative recovery and protect heritage resources, the BAER team recommends that an interim request be made in spring FY18 to acquire and install fencing to keep riders on the approved trails.

Probability of Damage or Loss: Very Likely. This determination is due to the change in watershed response causing sheet and rill erosion of topsoil. Much of the Wildomar OHV area was burned, and there is high potential for unauthorized off-highway vehicle use within the dozer lines leading to the burn that could be detrimental to vegetation recovery, encouraging noxious weed invasion.

Risk Level: Very High.

The BAER team recommends installation of OHV barriers if needed and signs explaining the area is a fire recovery site to encourage vegetation recovery, limit weed invasion and protect soil structure. The Wildomar OHV area and campground should be closed for at least one year to allow for vegetation recovery. Because of the steep slopes, and size of the fire, large rock content in the soil, and wind presence other treatments to reduce erosion risks are neither economically feasible nor effective. It determined that increased hydrophobicity and channel loading of sediment will increase the risk for other evaluated VARs downstream of the fire area including recreational uses accessing the fire area.

### **Threats to Natural Resources**

Most of the vegetation type in the burned area is mixed chaparral with a minor component of Coast Live Oak woodland.

#### Type Conversion of Native Vegetation:

Chaparral plant communities are adapted to *natural* fire regimes and can rapidly regenerate in the burned area by either re-sprouting from underground burls or establishing from seed unless repeated disturbance or high burn severity occurs. Fire typically kills seeds stored on the soil surface; however buried seed tends to remain insulated from extreme heat. Some chaparral species such as manzanita re-sprout from underground burls, and many are adapted to germinate from seed post-fire. Types of disturbance that have potential to threaten vegetation recovery within the burn on Forest Service land include short fire return intervals and invasive non-native plants. Short fire return intervals and high severity burns which wipe out native seed banks can favor rapidly colonizing, non-native species and can type-convert native vegetation to, for example, a community dominated by non-native annual grasses.

#### Threats to Native Vegetation Recovery from Increase in Noxious Weed Populations:



Invasive plant infestations have potential to increase following a fire due to an increase in available areas for germination, and increased nutrient availability. Heavy equipment used during fire suppression activities is a frequent vector for invasive species introduction. The high-treatment priority species yellow starthistle is known from one road where machinery visited during suppression activities. Other high-priority species could have been brought in from off-Forest on equipment that was not subject to weed-washing. If undetected and untreated, these species could rapidly invade the disturbed areas and inhibit the recovery of native vegetation. In order to reduce the probability of introduction and expansion of invasive weeds in the burn area, an invasive weed survey and rapid-response treatment of these areas are recommended for year one post-fire during the appropriate detection period for these species. Due to differences in flowering times for numerous potential species, two visits may be necessary during the growing season for effective identification and treatment. Invasive weed inventory/treatments will be focused in dozer lines, staging areas and suitable habitat for federally listed and Forest Service sensitive plant species. All locations of priority invasive plant species (following the Cleveland National Forest's Invasive Weed Management EA) will be mapped, evaluated, and hand-treated where feasible.

An emergency exists with respect to vegetative recovery as a result of the threat of post-fire weed introduction and spread. A weed wash station was not onsite at this the fire. Equipment was active when there was no way to know if it was clean, where it came from or what weeds seeds it was carrying. In addition, it is highly likely that existent non-native invasive species along fuel breaks will increase in the burn area due to their accelerated growth and reproduction relative to natives, increased nutrient availability, and a release from competition with natives, becoming an increasingly common component of the vegetation. The increase in non-native invasive species could affect the structure and habitat function of native plant communities within the burn area. It is expected that most native vegetation would recover if non-native species invasions are minimized.

Approximately 5 miles of dozer line were constructed within and outside the burn perimeter on USFS land and inholdings. Dozer line and mechanically cleared areas are the most likely areas for high priority non-native species invasion due to the high potential for introduction of propagules on machinery. In addition to causing an increase in invasive species, 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:** Likely. This determination is due to the high likelihood of introduction of high priority weeds from suppression activities and the high likelihood of the spread of existing non-native species due to a large increase in vulnerable areas. There is also a potential for unauthorized off-highway vehicle use within the burn area and dozer lines that will be highly detrimental to vegetation recovery and encourage noxious weed invasion.

**Magnitude of Consequence:** Major. This determination is due to the fact that, if a high-priority treatment species was introduced and not rapidly detected and treated, it could quickly become extremely expensive or unfeasible to treat. There is also a moderately high potential for vegetation type conversion to non-native annual grassland and forbs (ie, Russian thistle, tocalote, black mustard) across the burn area, especially along dozer lines.

**Risk Level:** Very High. The BAER team recommends early detection and rapid response weed surveys to locate and treat high priority infestations.

### **Threats to Cultural Resources**

**Cultural Resources:** The archaeological sites in the Wildomar fire may be at risk due to erosion or vandalism associated with increased visibility or access.

**Probability of Damage or Loss:** Possible

**Magnitude of Consequence:** Moderate

**Risk Level:** Intermediate. BAER Team recommends monitoring to see how sites are affected by major rainfall events.

B. Emergency Treatment Objectives:

- Provide for Public Safety– Ensure communication of potential post fire values at risk has occurred. Reduce threat to life and safety by closing hazardous areas and roads until watershed stabilization has occurred and/or the threats/hazards have been removed. Further reduce threat to life and safety by installing and maintaining educational/safety signing in hazardous areas and roads until watershed stabilization has occurred and/or the threats/hazards have been removed.
- Limit Damage to Property- Roads and trails within and downstream of the burn area are at greater risk from flash flooding and sedimentation after the fire. The treatment objective is to increase the awareness of the recreational users, Riverside County, and other agencies of the potentially hazardous conditions resulting from the fire.
- Invasive Plants and Soil Productivity - Reduce the potential for impaired vegetative recovery and introduction/spread of invasive non-native plants by conducting detection /rapid response surveys and preventing unauthorized OHV use.
- Road Treatments – Objective is to reduce the threat to life and safety for road and trail users by implementing closures and installing hazard signs and to complete storm patrols and emergency repairs and conducting storm patrols. Three new gates are needed to implement the closure.

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

Land \_\_\_ % Channel \_\_\_ % Roads/Trails \_\_\_ % Protection/Safety \_\_\_ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails			
Protection/Safety			

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

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Recreation	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering	<input type="checkbox"/>
<input checked="" type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input type="checkbox"/>
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

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## H. Treatment Narrative:

### Protection/Safety Treatments:

#### *Interagency Coordination*

Interagency coordination started during the fire and continued throughout the BAER Assessment and is a critical component to the BAER process. Continuing this coordination by providing the BAER Assessment Report, specialist reports and attending meetings is anticipated.

#### Interagency Team Cost

Item	Unit	Unit Cost	# of Units	Cost
BAER Coordinator/Hydrologist	Days	\$400	4	\$1600
Vehicle mileage	Miles	\$0.55	200	\$110
Total Cost				\$1710

#### *Gates and Barriers for Unauthorized Off Road Vehicle Use and Protection Monitoring- Roads*

Unauthorized access is a threat to the burned watershed due to the dozerlines created for the fire. The CNF is an urban Forest with high use levels. The challenge for the CNF 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. This type of unmanaged use can cause damage to natural resources. In order to manage OHV potential access onto dozerlines and the burned area, the BAER team requests funding to purchase and install pipe rail barriers, which have been proven to be effective barriers on the CNF in past fires.

Through past BAER experience, the CNF 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. Patrolling within and adjacent to the burn area is needed to enforce the closure and deter unauthorized access, vandalism, and damage to National Forest System lands. The following treatment is needed.

#### OHV Barrier Installation and Cost- Road protection

Item	Unit	Unit Cost	# of Units	Cost
three gates	each	5000	3	15000
Pipe rail barriers	Foot	\$50	1500	\$7500
GS 11 to write contract	Each	\$350	1	\$350
GS-7 OHV – FPO – closure monitoring	Day	\$300	60	\$18000
Mileage	Miles	\$0.55	2000	\$1100
Total Cost				\$41950

### Barriers, Fence- OHV area

The objective of these treatments is to reduce expansion of OHV impacts and associated impacts on critical BAER values at risk, as well as to make the closure of the OHV area effective. This is particularly with regard to areas where the trails adjoin the Los Alamos Road, where OHV trespass is very likely to occur. These impacts include increased risk for establishment of noxious weeds in the burned area and long-term soil disturbance. Additionally, post fire OHV disturbance is the primary concern for unauthorized impacts on resources within the affected burned area outside of the designated OHV area.

### Culvert Maintenance and Review

Item	Unit	Unit Cost	# of Units	Cost
GS-11 Road Manager	Days	\$389	2	\$800
GS-11 Wildlife monitor	Days	\$350	2	\$600
Vehicle Mileage	Miles	\$0.44	1000	\$440
<b>Total Cost</b>				<b>1,800</b>

*\*NOTE: Please review Photos of Culvert found on W-8 below.*

### Pipe Rail and Fence- OHV trail protection

Item	Unit	Unit Cost	# of Units	Cost
Pipe Rail (materials and installation)	16' sec.	50	11	\$550
Installation work crew	Days	\$2,000.00	12	24,000
2-strand smooth wire with T-post	Miles	\$3,000.00	1	3,000
GS-9 Trails	Days	\$310	3	\$1,100
GS-11 Wildlife monitor	Days	\$350	2	\$700
Vehicle Mileage	Miles	\$0.44	500	\$300
<b>Total Cost</b>				<b>\$29,650</b>

*\*Note that closure is being proposed as an alternative to one of the following two alternative treatments*

*Alternative A: Fencing the areas along burned roads and trails. Fencing to contain use was implemented at CNF Corral Canyon area after the Horse Fire of 2006. For that fire, approximately 7 miles of fence and barrier was installed at a cost of about \$600,000 in 2006 dollars. To implement a similar treatment at Wildomar we would need to fence a similar amount of miles (4.2 miles trails, 3.4 miles of road).*

*Alternative B: Pocking or chunking areas alongside trails to keep traffic on trails. Estimated cost of this treatment: \$50,000 for treating 5 miles of trail.*

### Land Treatments: Invasive Plant Detection and Rapid Response

Invasive non-native plant detection surveys and rapid response eradication treatments are to determine whether ground disturbing activities related to the Fire and the fire itself have resulted in new or the expansion of existing invasive plant infestations. With 5.5 miles of dozerline associated with the fire and adjacent to a main travel route, 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. Surveys and rapid response eradication treatments will begin in 2018 during the detection periods of suspected invasive species. Because of differences in flowering times for all potential species, two visits may be required during the growing season. If timing is such that all the target species are detectable/treatable in one visit, the actual costs would be lower than displayed below. Surveys in dozer lines, staging areas, and Threatened, Endangered or Sensitive species habitat would be prioritized.

### Invasive Plant Detection and Rapid Response Cost

Item	Unit	Unit Cost	# of Units	Cost
1 GS-11 botanist	Days	\$350	6	\$2100
Vehicle gas mileage	Miles	\$0.55	1500	\$825
Supplies			1	\$50
<b>Total Cost</b>				<b>\$2975</b>



### Land Treatments: Monitoring of archaeological sites

Archaeological monitoring to determine whether sites are being harmed by increased erosion. Surveys would occur in winter to look at storm effects. Also will need arch survey before placement of new gates and barriers

#### Archaeological site monitoring

Item	Unit	Unit Cost	# of Units	Cost
1 GS-7 archaeologist	Days	\$280	7	\$1960
Vehicle gas mileage	Miles	\$0.55	840	\$462
Supplies				
Total Cost				\$2422

### Road and Trail Treatments – Storm Patrol

Road: This treatment consists of patrolling 3.5 miles of affected road in the burn area including South Main Divide Road, Los Alamos Road, and Hixon Truck Trail and clearing rock and debris fall during and after each rainfall event to reduce the potential for injury to the public and Forest personnel traveling along the road. Patrols would check the road conditions when safe for travel, and if needed deploy a backhoe to assist in the removal of rock and debris. Although Forest roads will be closed to the public, these roads are the primary access routes for the southern part of the district and need to be kept open for Forest operations. If the culverts are not maintained and if they fail, portions of the road would be lost.

#### Road Treatment

Item	Unit	Unit Cost	# of Units	Cost
Storm Patrol – detect and correct problems	Day	\$2500	10	\$25,000
Heavy Equipment/Overhead – culvert upsizing	Day	\$1700	10	\$17,000
Total Cost				\$42000

### Human Life and Resource Protection (Fire Area and Trails Closure/Warning Signs)

To ensure safety for Forest visitors and protection to Forest resources during the recovery period, fire area closure and warning signs will be placed at trailheads and road locations adjacent and within the fire perimeter. It is likely signs will need to be checked and replaced periodically due to vandalism. The burned area will be closed for at least one year to allow for vegetation recovery and soil stabilization.

#### Closure and Hazard Signage (Trails, Roads, and Recreation Areas)

Item	Unit	Unit Cost	# of Units	Cost
GS-11 Recreation Officer	Day	\$360	1	\$360
2 GS-5 Recreation Technicians/ FPO	Days	\$440	6	\$2640
Trails warning signs (12"x 18")	Each	\$6	10	\$60
Area closure signs (14" x 20")	Each	\$100	4	\$400
Posts and hardware	Each	\$20	12	\$240
Vehicle mileage	Miles	\$.55	400	\$220
Vehicle FOR	Month	\$350	0.5	\$175
Total Cost				\$4195

**Part VI – Emergency Stabilization Treatments and Source of Funds**

Interim #

Line Items	Units	Cost	Units	BAER \$	\$	units	\$	Units	\$	\$
<b>A. Land Treatments</b>										
weed monitoring				\$2,975	\$0		\$0		\$0	\$2,975
arch site monitoring				\$2,422	\$0		\$0		\$0	\$2,422
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Land Treatments</b>				<b>\$5,397</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$5,397</b>
<b>B. Channel Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<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>										
closure and warning signs				\$4,195	\$0		\$0		\$0	\$4,195
storm patrols				\$25,000	\$0		\$0		\$0	\$25,000
culvert protection - roads				\$17,000	\$0		\$0		\$0	\$17,000
culvert protection - trails				\$1,800	\$0		\$0		\$0	\$1,800
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Road &amp; Trails</b>				<b>\$47,995</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$47,995</b>
<b>D. Protection/Safety</b>										
gates and barriers - roads				\$41,950	\$0		\$0		\$0	\$41,950
fence and barriers - trails				\$29,650	\$0		\$0		\$0	\$29,650
coordination				\$1,710	\$0		\$0		\$0	\$1,710
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Structures</b>				<b>\$73,310</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$73,310</b>
<b>E. BAER Evaluation</b>										
				—			\$0		\$0	\$0
<i>Insert new items above this line!</i>				—	\$15,000		\$0		\$0	\$15,000
<b>Subtotal Evaluation</b>				—	<b>\$15,000</b>		<b>\$0</b>		<b>\$0</b>	<b>\$15,000</b>
<b>F. Monitoring</b>										
				\$0	\$0		\$0		\$0	\$0
<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>\$126,702</b>	<b>\$15,000</b>		<b>\$0</b>		<b>\$0</b>	<b>\$141,702</b>
Previously approved										
Total for this request				<b>\$126,702</b>						

**PART VII - APPROVALS**

-   
 Forest Supervisor (signature)
-   
 Regional Forester (signature)

 11/6/17  
 Date

 11/14/2017  
 Date

