USDA-FORESTSERVICE
FS-2500-8 (6/06)

July 19, 2013:

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 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: Chariot

B. Fire Number: MVU- 014084

C. State: California

D. County: San Diego

E. Region: 5

F. Forest: Cleveland

G. District: Descanso

H. Fire Incident Job Code: PNHN9A

I. Date Fire Started: 7/6/2013

J. Date Fire Contained: 7/15/2013

K. Suppression Cost: 11,000,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): approx 5
2. Fireline seeded (miles): none
3. Other (identify):

M. Watershed Numbers- NFS lands:
Upper San Felipe Ck - HUC 5 1810020011; 1850 acres burned (approx).
Pine Valley Creek - HUC 5 1807030502 ; 668 acres burned

N. Total Acres Burned: 7055
NFS Acres(2541) Other Federal- BLM (3063) State (989) Private (462)

O. Vegetation Types: **Montane Chaparral, Jeffrey Pine/Black Oak Woodland, Montane Meadow**

P. Dominant Soils - Tollhouse, La Posta, Sheepshead, Bancas, Crouch

Q. Geologic Types: granitic

R. Miles of Stream Channels by Order or Class: Intermittent 2.89 Perennial 0.057

S. Transportation System (NFS lands only)

Trails: 9.25 miles Roads: 1.28 miles (excludes Sunrise Hwy, a county road)

PART III - WATERSHED CONDITION

A. Burn Severity – NFS lands only (acres): 1069 (unburned/low) 1280 (moderate) 172 (high)

B. Water-Repellent Soil (acres): approx 700 acres

C. Soil Erosion Hazard Rating (acres): n/a not rated
___ (low) ___ (moderate) ___ (high)

D. Erosion Potential: n/a tons/acre

E. Sediment Potential: n/a cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5

B. Design Chance of Success, (percent): 95

C. Equivalent Design Recurrence Interval, (years): not modeled

D. Design Storm Duration, (hours): n/a

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile): n/a

G. Estimated Reduction in Infiltration, (percent): n/a

H. Adjusted Design Flow, (cfs per square mile): n/a

PART V - SUMMARY OF ANALYSIS

A. Critical Values/Resources and Threats

The following table summarizes values at risk and emergency determinations identified by the BAER Assessment team. The Specialist Reports, available in the project file, provide detailed descriptions of threats and emergency conditions for values at risk in the burned area.

Summary of Values at Risk and Emergency Determinations.

Values at Risk	Threat	Determination/Comments
Life and Public Safety		
Sunrise Highway S-1	Hazard due to potential road collapse, retaining wall burned at Storm Canyon pullout	**Emergency exists.**
Pacific Crest and Garnet Trails	Hazard due to loss of directional signs, potential for visitors to become lost	**Emergency exists.**
Shrine Camp	Potential for air-borne hazardous waste associated with 140 burned structures	**Emergency exists.**
Property		
Mount Laguna Water System	Potential for damage to system. No damage noted.	No Emergency
Pacific Crest Trail, Garnet Trail	Potential for damage to trail structure due to increased water flows and erosion from high severity burn areas.	**Emergency exists**
Natural and Cultural Resources		
Soil Productivity	Loss of soil productivity as a result of increased erosion.	No emergency
Water Quality - Shrine Camp	Potential for water transport of hazardous waste from site with 140 burned structures.	**Emergency exists.**
Laguna Mountains Skipper Critical Habitat	Damage to habitat will occur due to OHV activity where the protective split rail fence has been burned at Laguna Campground and Shrine Camp.	**Emergency exists. Habitat threatened by OHV activity**

Values at Risk	Threat	Determination/Comments
Peninsular Bighorn Sheep habitat and water source	Contamination of the outflow of Oasis Springs by hazardous materials flowing down from burned structures at Shrine Camp.	**Emergency exists due to potential for water contamination**
Native Vegetative Recovery and Sensitive Plants	Unauthorized OHV access into burn area and will negatively impact native plant recovery and reduce habitat quality for wildlife, due to damage to existing barbed-wire fence and barriers along Sunrise Highway	**Emergency exists.**
Sensitive Animals	Habitat alteration due to increased sediment delivery, increased flows, introduction of noxious weeds	No Emergency .
Archaeological Sites	Loss or damage to site from increased erosion	**Emergency exists for erosion of site**

Life and Safety - Sunrise Highway at Storm Canyon: The wood retaining wall supporting the Sunrise Highway pullout at Storm Canyon burned in the fire. With the removal of the primary support system or retaining wall for this built up pad, there is a high chance of failure of the outer edge of the paved parking area. The heavy loads from a vehicle that would come to rest near the outer edge of the parking area or near the retaining wall could easily cause a sloughing condition and subsequent failure and collapse of this unsupported wall. The timbers that burned were treated with creosote and therefore burned intensely which likely has affected the soil behind the wall to where it has diminished adhesive properties and therefore a weakened ability to support itself.

Risk Assessment – Sunrise Highway.

Probability of Damage or Loss: Very Likely. The existing condition of the unstabilized vertical earthen wall at the outer edge of the Storm Canyon parking area presents a likely failure of the outer pad at Storm Canyon. The soil should be secured in some manner to prevent this condition such that public parking may continue in this area and motorists will have the opportunity to pull off the highway in the event of an emergency.

Magnitude of Consequence: Major. This road received high levels of use by the public and forest visitors.

Risk Level: Very High.

Life and Safety - Trails: Risks include potential for visitors to become lost to to many trail signs being destroyed by the fire.

Risk Assessment – Trails

Probability of Damage or Loss: Very Likely. Most of the Pacific Crest and Garnet trail signs were burned in the fire. These trails are now criss-crossed by rehabbed dozer lines and hand

lines which create confusion, increasing the chance of visitors becoming lost.

Magnitude of Consequence: Major. Visitors likely to become lost.

Risk Level: Very High.

Life and Safety – Air Quality- Potential impacts on air quality due to mobilization of contaminated ash or other materials from Shrine Camp. The condition and state of the burn ash debris on the Shrine camp presents a high risk for residents who desire to return to their cabins with regard to inhalation hazards. There is a potential for human exposure to airborne arsenic and asbestos fibers while winds are blowing or when ash is further disturbed when wind directions are changing. In addition, the general air quality in the vicinity of ash-strewn areas is also a concern to adjacent public campgrounds due to the types of materials that were burned within the Shrine compound.

The California Integrated Waste Management Board (CIWMB) has stated that ash and debris from residential structures consumed by wildfires may contain concentrated amounts of heavy metals, such as arsenic, barium, beryllium, copper, chromium, cadmium, lead and zinc (CIWMB, 2007). Further, according to the CIWMB, the occurrence of these metals in burned residential debris has been demonstrated in the "Assessment of Burned Debris Report for the Cedar and Paradise Fires, San Diego County, CA" dated December 2003.

Risk Assessment – Air Quality

Probability of Damage or Loss – Likely. The high concentrations of hazardous material at Shrine Camp include ash and other lightweight material that may be mobilized by wind.

Magnitude of Consequence – Major. Following the intense wildfire burn event of the Chariot fire on July 8, 2013 at the Al Bahr Shrine Camp and the subsequent complete burn of approximately 140 structures, vehicles and other items, there is a high risk of continued release of airborne contaminants in the immediate and adjacent vicinity to the compound. These airborne contaminants include but are not limited to asbestos and arsenic. Asbestos is a known carcinogen and a very high exposure to inorganic arsenic can cause infertility and miscarriages with women, skin disturbances, damage DNA, declined resistance to infections, heart disruptions and brain damage with both men and women. An air monitoring program should be established in the area to ensure officials that the public is not exposed to these contaminants due to the presence of unprotected burn ash and debris that may contain these contaminants.

Risk level – Very high.

Property and Safety - Water System: The Forest Service water system had potential to be damaged by the fire

Risk Assessment – Water System

Probability of Damage or Loss: Low. No damage noted. .

Magnitude of Consequence. Minor.

Risk Level: Very Low.

Property and Safety - Trails: Risks include expected damage to the Pacific Crest and Garnet Trails during rain events due to increased water flow and erosion from high severity fire areas. A section of the Pacific Crest Trail (PCT) travels through the Chariot Fire burn area on Forest Service lands. The PCT section is partially located in areas of high and moderate burn severity on slopes. Watershed response is expected to be increased within these areas and the trail sections will experience increased run-on of water and sediment during heavy precipitation events. The PCT is a popular trail and is frequented by hikers not only completing the full length of the trail from Mexico to Canada but with local recreation visitors as well. The Garnet Peak trail is a system trail that leads 1 ½ miles from the Sunrise highway to the summit and is also a popular destination with local visitors. The last mile of the trail traverses upwards across the west face of the peak where a large area of moderate burn severity occurred and has the ability to capture runoff from the burned slopes.

Risk Assessment – Trails

Probability of Damage or Loss: Likely. Most of the Pacific Crest and Garnet trails were in areas of moderate and high fire severity, and the probability of increased water flow, erosion and damage to these trails is increased.

Magnitude of Consequence: Major. These trails high levels of use and are likely to be damaged in subsequent rainstorms.

Risk Level: Very High.

Natural Resource - Soil Productivity and Hydrologic Conditions: There is no emergency to soil productivity due to the fire-adapted ecosystem.. It is expected the burned area will not contribute to unusually heavy and excessive runoff and sediment to the drainages as compared to pre-burn conditions. Because other than the smaller watershed areas of the upper elevations of the drainages where mostly moderate and to a lesser amount high burn severity occurred, the drainages have mostly low to moderate burn severity with large areas of unburned vegetation and rock within the fire perimeter. As a result, normal watershed response will not be altered to any severe degree by the fire. The extended reaches of braided flood channels and washes on the alluvial fans beyond the fire area will likely dissipate flood energy and disperse sediment. It appears there is no threat to property or human life, unless people are within the drainages during floods. This threat exists even without burned conditions upstream. Flash flooding potential exists in these drainages without the influences of post- fire watershed conditions.

Risk Assessment – Soil Productivity

Probability of Damage or Loss: Unlikely. This determination is due to the minimal expected change in watershed response.

Magnitude of Consequence: Minor. This determination is due to the minimal change in watershed response.

Risk Level: Very Low.

Natural Resources - Water Quality: The Shrine Camp, which was almost completely burned in the fire, has resulted in a high concentration of hazardous material in the area where 149 structures and their contents burned.

On July 8, 2013 an uncontrolled Wildland (Chariot) fire progressed up Storm Canyon from Bureau of Land Management property up towards Mt. Laguna, California on the Cleveland National Forest. Steep desert slopes of up to 100% precipitated a concentrated fire energy that was spotting up to ½ mile ahead of itself to a mountain setting that was densely populated with wood and other flammable structures, mixed conifer and chaparral vegetation that proved to be a perfect combination of fuel and topography for extreme fire behavior according to witnesses. At the top of this steep escarpment stood a permitted 20 acre (Al Bahr) Shrine Camp compound consisting of 141 structures including a wood framed lodge, caretaker cabin, two dormitories, five rental cabins, a dining hall, 128 trailers, a playground and more. Approximately 130 of these structures were completely destroyed by the fire. The adjacent Shrine Camp Recreation Residence tract consisted of seventeen cabins and outbuildings. Ten of these cabins and associated outbuildings were destroyed in the fire.

The Shrine camp compound is a rolling hill site with an ephemeral stream running generally in the north- south direction through the middle of the site. It is enclosed by a paved County road, Sunrise Highway, on the eastern and northern boundaries and slightly steeper slopes on the western boundary and a meadow and public campgrounds on the southern boundary.
Specifically, identifiable man-made structures, vehicles and other improvements destroyed in the fire include the following: buildings from the 1920's era and beyond, trailers of various mobility and configurations, fully equipped cabins and large framed structures, propane tanks and cylinders, automobile (lead-acid) batteries, numerous golf carts, cars, horse trailers, shade structures, treated wood, out buildings, garages, a backhoe, heavy machinery, commercial and residential appliances, light posts, power poles, telephone boxes, water risers, plumbing systems and various canisters and aerosol cans that appeared to hold paint, building and roofing materials, automobile fluids, solvents and other chemicals. Given the categories of materials that were completely consumed by the fire and the genesis date on many of the structures, it is likely that the following hazardous materials were released during the fire to the air and to the ground: polycyclic aromatic hydrocarbons (PAHs), chlorinated polycyclic aromatic hydrocarbons, asbestos, lead based paint, heavy metals including lead, arsenic, cadmium, antimony, barium, aluminum, copper, zinc, mercury, and other toxic chemicals including PCBs, CFCs, antifreeze, fuel, motor oil, acid, propane, organophosphates including fertilizers, herbicides, pesticides and other unknown materials.

Risk Assessment – Water Quality

Probability of Damage or Loss: Very Likely. There is a high probability that this hazardous material will move downstream into a stream channel that has hydrologic connectivity to a perennial spring stream with the first large runoff producing storm, if no action is taken to contain the burned refuse on site and protect the stream channel drainage at the Shrine Camp.

Magnitude of Consequence: Major. This determination is due to the potential for serious contamination of a water source.

Risk Level: Very High. Transport of material from Shrine Camp is expected to occur if 1-2" of rain is received.

Natural Resources – Laguna Mt Skipper and Peninsular Bighorn Sheep- Threatened and Endangered Species: The wildlife concerns for the Chariot Fire are: Loss or damage to split-rail fence that protects critical habitat for Laguna Mts Skipper; and contamination of a water source for Peninsular Bighorn Sheep and other wildlife.

An emergency exists for the Laguna Mts Skipper and its designated critical habitat as result of the Chariot Fire. Fencing that protects this habitat from OHV activity has been burned or damaged by the fire. In addition, the perennial water source in Storm Canyon, which is used by the endangered Peninsular Bighorn Sheep, is at risk of contamination by hazardous materials that may wash down from the Shrine Camp. This is an emergency for the sheep and other wildlife that use this water source.

Risk Assessment – Laguna Mt Skipper and Peninsular Bighorn Sheep

Probability of Damage or Loss: Very Likely. Designated critical habitat for Laguna Mts Skipper is present in and adjacent to the Shrine Camp and Laguna Campground. Portions of the split rail fence that protects this habitat from OHV activity were burned or damaged by the fire. In addition, the endangered Peninsular Bighorn Sheep is expected to occur downstream in Storm Canyon and is expected to use the perennial water at and below Oasis Spring. This water source is likely to be contaminated by toxic materials that will migrate out of the Shrine Camp area when significant rain arrives.

Magnitude of Consequence: Major. Both Laguna Mts Skipper and Peninsular Bighorn are extremely endangered with very small population sizes and home ranges.

Risk Level: Very High.

Natural Resources- Sensitive Wildlife: The potential values at risk for sensitive species are the stability and viability of populations. There are several animals known to occur within the Chariot Fire area, including Coastal Rosy Boa, San Diego Mountain Kingsnake, and San Diego Horned Lizard. All of these species are resilient to fire. None of these species are expected to experience an emergency as a result of the Chariot Fire.

Risk Assessment – Sensitive Wildlife

Probability of Damage or Loss: Unlikely. These species are resilient to fire.

Magnitude of Consequence: Minor. Species are resilient to fire and will repopulate the area by reseeding or resprouting.

Risk Level: Very Low.

Natural Resources - Native Vegetation Recovery and Sensitive Plants: Chaparral and forested habitat affected by the fire are expected to recover. This area has burned in several previous fires over the last 20 years and recovery has generally been good, although conifer regeneration is generally poor. Vegetation recovery is potentially at risk to due to OHV activity that may occur off Sunrise Highway, as fences that line the highway were damaged by the fire. In addition, 5 Regional Forester's Sensitive Plant Species occur in areas that need protection with this barbed wire fence. The recovery of these species - Parish's Meadowfoam, Velvety False Lupine, Cuyamaca Delphinium, San Felipe Monardella, and Laguna Linanthus – will be much more likely if they can be protected from OHV activity.

Risk Assessment – Native Vegetation Recovery

Probability of Damage or Loss: Very Likely; portions of the barbed wire fence and barriers along the highway were burned in the fire. The probability of unauthorized OHV activity is high.

Magnitude of Consequence: Major, unauthorized vehicle activity will damage soils and vegetation and may be a source of additional fire starts.

Risk Level: Very high.

Cultural Resources: The 11 archaeological sites in the LMRA do not appear to be at potential risk for erosion or vandalism associated with increased visibility or access, with the exception of one archaeological site. Prehistoric archaeological site FS-05-02-54-256 (CA-SDI-8578) is located along an intermittent stream within the boundary of the Manzanita portion of the El Prado group campground. The site has been previously documented as a habitation site and exhibits a large amount and variety of cultural material on the site surface, including ceramics, lithic debitage including small amounts of exotic obsidian, lithic tools, and faunal material including burned shell and animal bone. This site is at an elevated risk for erosion and vandalism due to its location along an active streambed on sloping terrain within a heavily utilized campground. Slopewash erosion and minor vandalism have been documented at the site in the past and would be likely to continue at an accelerated pace due to the effects of the Chariot Fire.

Risk Assessment – Cultural Resources

Probability of Damage or Loss: Very Likely, risk of erosion of site.

Magnitude of Consequence: Moderate.

Risk Level: High.

B. Emergency Treatment Objectives:

- Land Treatments –
    - Reduce threat of erosion at archaeological site.
- Channel Treatments –

- Reduce threat of hazardous materials from Shrine Camp entering waterways.

- Road and Trail Treatments –
  - Reduce threat of losing road at Storm Cyn pullout
  - Reduce threat of damage/loss of trail tread for Pacific Crest Trail and Garnet Trail
  - Reduce threat of visitors becoming lost on Pacific Crest and Garnet trails
- Protection and Safety Treatments –
  - Reduce threat of unauthorized OHV activity originating from Sunrise Highway which would impair vegetation recovery.
  - Reduce potential for damage to designated critical habitat for Laguna Mt Skipper
  - Reduce threat of airborne hazardous materials harming health of forest visitors

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

Land **95** % Channel ___ % Roads/Trails **95** % Protection/Safety **95** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	95	95	95
Channel	90	90	90
Roads/Trails	95	95	95
Protection/Safety	95	95	95

E. Cost of No-Action (Including Loss): **8,000,000**

F. Cost of Selected Alternative (Including Loss): **$173,000**

G. Skills Represented on Burned-Area Survey Team:

[x] Hydrology	[ ] Soils	[ ] Geology	[x] Range	[x] Recreation
[x] Forestry	[x] Wildlife	[ ] Fire Mgmt.	[x] Engineering	[x] Haz Mat
[ ] Contracting	[ ] Ecology	[x] Botany	[x] Archaeology	[ ]
[ ] Fisheries	[ ] Research	[ ] Landscape Arch	[x] GIS	

Team Leader: Kirsten Winter, Forest Biologist

Email: kwinter@fs.fed.us Phone: 858 674 2956 FAX: 858 673 6192

Team members:
Nancy Hoogerland – Forestry/Vegetation recovery
Russ Lajoie – Vegetation recovery
Kirsten Winter – Botany, Wildlife, and Vegetation
Lance Criley – GIS, Range
Casey Shannon- Hydrology, Soils, Trails
Will Brennan- Trails
Daniel Walsh – Water System/Rec Facilities
Noelle Graham – Environmental Engineer, Roads, Hazmat
Susan Roder – Archaeology
Steve Harvey- Archaeology

H. **Treatment Narrative:**

The following sections summarize the treatments recommended to address the emergency situations for values at risk

Land Treatments:

Hill-slope Stabilization Treatments- Archaeological Site

Placement of erosion control material around the upslope portion of archaeological site FS-05-02-54-256 (CA-SDI-8578) is recommended in order to reduce erosion and the associated exposure of cultural material that is at high risk of being collected by individuals utilizing the group campground. The cost of implementing erosion control measures such as wattles around the upslope portion of the site boundary would involve no more than approximately 100' of barrier and would not exceed $250.00 in cost for materials plus $500 for installation and $500 for oversight by Forest Archaeologist.

Treatment Costs: Straw Wattles, one site

Unit	Unit Cost	# Units	Total
Straw Wattles	$2.50/lf	100 lf	$250
Crew Cost	$500/day	1 day	$500
*Archaeologist	$500/day	1 day	$500,00
Total			$1,250

Channel Treatments

Silt Fences

Best Management Practices (BMPs) must be implemented in order to capture any surface water runoff and transported ash and sediment in order to protect the water quality at the local drainage and the downstream resources. These BMP's should be located downhill of the burned structures to ensure that there is no contaminant transport to the drainage areas. BMP's should be monitored and maintained or repaired, as necessary, while the burned ash and debris remain on site. Estimated cost: $31,000. See Hazardous Materials Report and Treatment Maps.

Treatment Costs

Unit	Unit Cost (installed)	#Units	Total
Install BMP below burned structures closest to stream and on both sides of stream in Shrine Camp	$4.00/linear foot	6000	$24,0000
Overhead (vehicles, tools, materials)	$1000	1	$1000
Monitoring and Maintenance- GS-12, 12 visits	500/day	12	$6000
			$31,000

Protection Plan

Road and Trail Treatments

Stabilize Sunrise Highway. In order to stabilize the vertical surface of the parking pad, an eight inch wide continuous reinforced concrete wall should be poured at the outer edge of this pad. The wall will have a 12 inch deep footing and have a varied height depending on the location to meet the contours of the ground at the base of the wall. Where the wall is greater than three feet, duckbilled anchors should be embedded into the soil to tie the concrete to the soil face. All unburied and remaining timbers should be removed to allow a clean soil/concrete interface. At the deck support area, the upper portion of the deck support purlins may need to be removed to install the wall in this area. Further, the steel members and their associated welds of the steel deck support system should be inspected for damage at this time to ensure that its loading support capabilities are intact. Existing steel bollard posts can be reused to support the concrete forms. The new reinforced concrete retaining wall will support the vertical face of the soil to ensure that the parking area is not compromised by heavy traffic loads. See Engineering report for details.

Treatment Costs

Unit	Unit Cost (installed)	#Units	Total
Install reinforced concrete retaining wall around perimeter of parking area	$21,250	1	$21,250.00
Contract Prep and Admin- GS-9	$2,750	1	$2,750
total			$24,000

Trail Storm-Proofing

Trail stabilization for the sections of Pacific Crest and Garnet Trail within the fire area will provide drainage and stability to reduce trail damage and degradation to downstream values. Treatment will include maintaining all existing water control structures on trails, including water bars, rolling dips, off trail drains and swales for best effectiveness and install additional erosion controls on trails. Install grade stabilizing checks in areas vulnerable to further incision. Install additional rolling dips and over-side drains in trails sections where lacking. Increase out board drainage (berm removal) where possible. This will need to be done with an external crew as there are not sufficient FS staff to do this work in-house

Treatment Cost

Item	Unit	Unit Cost	# Units	Total
Storm proof Pacific Crest and Garnet Trail, install additional water control and grade stabilization structures -	Mile	$10000	3	$30000
Overhead – vehicles, tools, materials	ea	$1,000	1	$1000
Monitoring and Maintenance	day	240	10	$2400
Total				$33400

Trail Signs

Threats to life and public safety exist along system trails that are located within the fire area due to loss o of directional signs. Sign installation is required.

Treatment Cost

Item	Unit Cost	# Units	Total
Trail Signs	$50 ea.	20	$1000
Two Recreation Tech.	$240/day	1 days	$400
Total			$1400

Protection/Safety Treatments:

Fences (Protection of Life, Property, Resources)

Fences and are needed to protect recovering areas from uses that will cause erosion or interfere with vegetative recovery, sensitive plant species recovery, and protection of endangered species and their designated critical habitat. Four miles of barbed wire fence along Sunrise Highway was damaged by the fire, and needs repair to prevent OHV activity that would adversely affect sensitive plant species and interfere with vegetaton recovery. Repair of split rail fence is needed to protect critical habitat for Laguna Mountains Skipper at Laguna Campground and Shrine Camp. Some new split rail fence

is needed to preclude vehicles driving off-road between Laguna Campground and Shrine Camp; there have already been problems in this area. In addition, a new gate is needed to prevent access to contaminated areas of Shrine Camp. See Botany/Wildlife/Vegetation Report. One new gate is needed to allow effective closure of the Shrine Camp area which is now a concentrated hazardous materials site.

Treatment Costs

	Item	Unit Cost	Units	Total
Air Quality	Sunrise Hwy Barbed Wire Fence Repair (materials and installation)	2500/mi	4 miles	$10,000
	Sunrise Hwy additional barriers- installled price	50/lf	55 feet	$2750
	Laguna/Shrine Split Rail fence repair – Materials and installation	14/lf	3000 feet	$42000
	New gate for Shrine Camp	3000/ea	1	$3000
	Contracting Officers Rep	400/day	8	$3200
	Total			$60950

I. **Monitoring Narrative:**

Monitoring will include checking air quality, monitoring status and stability of silt fences after storms, and monitoring archaeological sites for post storm damage. See Hazardous Materials and Archaeology reports for details.

Air Quality Monitoring: Following the intense wildfire burn event of the Chariot fire on July 8, 2013 at the Al Bahr Shrine Camp and the subsequent complete burn of approximately 140 structures, vehicles and other items, there is a high risk of continued release of airborne contaminants in the immediate and adjacent vicinity to the compound. These airborne contaminants include but are not limited to asbestos and arsenic. Asbestos is a known carcinogen and a very high exposure to inorganic arsenic can cause infertility and miscarriages with women, skin disturbances, damage DNA, declined resistance to infections, heart disruptions and brain damage with both men and women. An air monitoring program should be established in the area to ensure officials that the public is not exposed to these contaminants due to the presence of unprotected burn ash and debris that may contain these contaminants.

Cultural Site Monitoring: Monitoring of the 37 archaeological sites within the portion of the Chariot Fire perimeter that is within the CNF boundary is recommended in order to identify any future erosion that appears to have the potential to jeopardize the potential NRHP eligibility of any of the sites and provide an opportunity to take corrective measures before effects become significant. Monitoring will also allow for the identification of any vandalism or inadvertent damage to any of these sites and provide an opportunity to identify and accomplish applicable reporting and corrective measures, in accord with the Archaeological Resources Protection Act (ARPA) and/or other applicable federal regulations regarding cultural resource protection and preservation. Monitoring would consist of visual inspection of each of the site locations at least one time over the course of a 12 month period, preferably following the occurrence of any particularly significant precipitation event(s).

Monitoring Cost

Air Quality and Cultural Site Monitoring

Unit	Unit Cost	# Units	Total
Air Quality Monitoring			
Lab analysis	700	15	10,500
Hygienist (time and travel)	1500	1	1,500
Monitoring devices	1250	4	5000
Subtotal			17,000
Cultural Site Monitoring	400/day	10 days	$4,000
Total			$21,000

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

			NFS Lands				Other Lands				All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Archaelogical Site stab	ea	1250	1	$1,250	$0		$0		$0	$1,250
Sunrise highway stabil	ea	24000	1	$24,000	$0		$0		$0	$24,000
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$25,250	$0		$0		$0	$25,250
B. Channel Treatments										
Silt fence	ea	4	6000	$31,000	$0		$0		$0	$31,000
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$31,000	$0		$0		$0	$31,000
C. Road and Trails										
Trail Stabilization	ea	33400	1	$33,400	$0		$0		$0	$33,400
					$0					
Trail signs	ea	500	20	$1,400	$0		$0		$0	$1,400
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$34,800	$0		$0		$0	$34,800
D. Protection/Safety										
Fences and gate	ea	60950	1	$60,950	$0		$0		$0	$60,950
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$60,950	$0		$0		$0	$60,950
E. BAER Evaluation										
	1	22000	1	$25,000			$0		$0	$25,000
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$25,000	$0		$0		$0	$0
F. Monitoring										
Air quality monitorin	1	17000	1	$17,000						$17,000
Arch site monitoring	1	4000	1	$4,000	$0		$0		$0	$4,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$21,000	$0		$0		$0	$21,000
G. Totals				$173,000	$0		**$0**		**$0**	**$173,000**
Previously approved										

PART VII - APPROVALS

1. /s/William Metz
Forest Supervisor (signature)

7/19/13
Date

2. for Barnie T. Grant
Regional Forester (signature)

7/25/2013
Date