

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: Marek Fire B. Fire Number: CA-ANF-003833
C. State: CA D. County: Los Angeles
E. Region: 05 F. Forest: Angeles National Forest
G. District: 51 H. Fire Incident Job Code: P5EM4W
I. Date Fire Started: October 12, 2008 J. Date Fire Contained: October 16, 2008
K. Suppression Cost: \$6.5 million
L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 18 miles of hand line, 20 miles of dozer
2. Fireline seeded (miles): None
3. Other (identify): None
M. Watershed Number: 5th Field HUC# 1807010502 (Big Tujunga Canyon), HUC# 1807010501 (Upper Los Angeles River)
N. Total Acres Burned: 4,572
NFS Acres(1850) Other Federal (N/A) State (1179) Private (1543)

O. Vegetation Types: Agriculture, Annual Grass/Forb, Coastal Sage Scrub, Chamise Chaparral, Mixed Chaparral, Big cone Douglas Fir Forest, Sycamore/Cottonwood/Willow Riparian Forest, Canyon Live Oak Woodland

P. Dominant Soils: Modesto, Trigo, San Andreas, Chilao.

Q. Geologic Types: The Marek fire is located in the Transverse Province. The San Gabriel Mountains consist of Precambrian to Cretaceous age gneisses and granitics, which produce toppling rockfall failures. The basement rocks are unconformably overlain by early Pleistocene Saugus Formation consisting of loosely consolidated sands, gravels, and conglomerates. This formation is highly erodible. Orographic uplift may produce torrential rains. Flooding, hyper-flooding, debris flows, debris torrents may occur.

R. Miles of Stream Channels by Order or Class: : Perennial = 0 miles, Intermittant = 34 miles, Ephemeral=11 miles

S. Transportation System

Trails: 0 miles Roads: 15.2 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres):
696 (15%) (Unburned), 1941 (43%) (low), 1926 (42%) (moderate), 7(<1%) (high)

B. Water-Repellent Soil (acres): 3875

C. Soil Erosion Hazard Rating (acres):
 (low) 556 (moderate) 1230 (high) 5245 (very high)

D. Erosion Potential: 11.5 tons/acre

E. Sediment Potential: **57,830** cubic yards / square mile/1st year

PART IV - HYDROLOGIC DESIGN FACTORS

| | |
|---|-----|
| A. Estimated Vegetative Recovery Period, (years): | 5 |
| B. Design Chance of Success, (percent): | 80 |
| C. Equivalent Design Recurrence Interval, (years): | 25 |
| D. Design Storm Duration, (hours): | 24 |
| E. Design Storm Magnitude, (inches): | 6 |
| F. Design Flow, (cubic feet / second/ square mile): | 150 |
| G. Estimated Reduction in Infiltration, (percent): | 102 |

H. Adjusted Design Flow, (cfs per square mile): 303*

(*Using Rowe, et. al, method: see Hydrology Specialist Report for peak flow data.)

PART V - SUMMARY OF ANALYSIS

Background

The Marek Fire began at 1:58 a.m. on Sunday, October 12, 2008, on the Los Angeles River Ranger District, Angeles National Forest. Driven by strong Santa Ana (offshore) winds and low relative humidity, the fire spread quickly, burning into both Los Angeles County and later Los Angeles City jurisdictions. The fire ignited during a Red Flag Fire Weather Warning issued by the National Weather Service (Oxnard).

The incident was managed under unified command among the U.S. Forest Service, Los Angeles County Fire Department and Los Angeles City Fire Department, with the Angeles N.F. taking primary responsibility. At its height, nearly 1,500 firefighters and support personnel were assigned to the fire, with a very steep ramp up and demobilization of resources. On Friday, October 17, the Angeles National Forest announced the cause of the Marek Fire was vehicle-related, with the investigation on-going.

Forty nine residences were either damaged or destroyed. About 50% of the watershed of the Kagel Canyon drainage burned as did most of the watersheds of the Marek, Lopez, Lovell, and Limekiln drainages. There is now a high risk of post-fire erosion, flash flooding, and debris flows on both public and private lands, posing threat to homes, businesses and roads located within and downstream of these drainages.

A. Describe Critical Values/Resources and Threats:

Threats to Life and Property

Kagel Canyon Residences/Polo Club at Little Tujunga Road: In the Kagel Canyon drainage many homes, businesses, streets and private roads are at risk of flooding and sedimentation beginning near the Kagel Canyon/Dexter Park area then south to the bridge at Little Tujunga Canyon Road.

Lopez Canyon Residences/Businesses/Oak Hill School/Hope Garden Family Home: In the Lopez Canyon drainage the proximity of much of the channel to the Lopez Canyon Road and Bayley Road puts these roads and the users at risk from elevated post-fire flows. The Hope Family Center located next to Lopez Canyon Road is at risk of being land locked from flooding and sediment deposited on the road both above and below this facility. Bayley Road is used to access private land, including several homes, city sanitation facilities, and a private gun club and shooting range. In addition there may be a risk of hazardous material being washed downstream from businesses and facilities, such as sanitation and construction equipment and a boat repair facility, located along the lower Lopez Canyon Road.

Middle Ranch: Two small tributaries to Little Tujunga Creek cross Little Tujunga Road in culverts. Excess sedimentation at the culverts may cause plugging and flood water and

sediment could overtop onto the road prism. The road below the culverts follows a downward grade and would likely transport floodwater. An equestrian facility south of the road is in line with road guided flood water and is at risk.

Mountain Glen Terrace #1(Limekiln area): Several structures and roads in the Limekiln Canyon drainage are at risk of flooding and sedimentation.

U.S.F.S. Los Angeles River Ranger District Office: In the Marek Canyon drainage, the Los Angeles River District Office is at risk of flooding and sedimentation to its facilities, including two above ground storage tanks (fuel).

Shalom Cemetery: A drainage diversion (48" corrugated metal pipe with riser) located adjacent to the Cemetery and Kagel Canyon Road may be at risk if over-topping occurs during a storm event and potentially could flood the road and cemetery.

Pacoima Dam Road: Limekiln Canyon drainages have a high potential of depositing large amounts of sediment and flood water where drainages cross the road, this could result in temporary loss of access to and from the Pacoima Canyon dam.

Camp Karl Holton: The camp is located below a highly erosive and burned watershed that could deposit large amounts of sediment within the camp perimeter.

Angeles Gun Club/Indian Canyon Corporate Gun Club/Lopez Canyon Gun Club: Shooting berms at the ranges contain large amounts of Lead (Pb) that could migrate downstream if berms are eroded by flood flows from drainages that flow into the shooting areas.

Apiary along Little Tujunga Road: A small tributary drainage to Little Tujunga Creek has a potential to overtop its banks above the apiary and flood beehives.

Lopez Canyon, Kagel Canyon, Bayley, Little Tujunga Roads and other side roads and drainage crossings: The burned over watersheds are at risk to accelerated storm flow events. Woody debris, large rocks or other material, may clog and plug drainages and bridges on roads resulting in storm water flooding a road or washing out culverts, bridges, and other structures downstream. The Kagel and Lopez Canyon roads provide the only access to residents living in the area of the burn. It is also the only access to the Glen Haven Cemetery, Dexter Park, the Hope Family Center and the Indian Canyon gun club and shooting range. Public safety and user education will be very important issues to address. The County Emergency Services Department is currently working with other government and non-government agencies to designate evacuation routes and institute an early warning notification system to communicate with the public in the event of a probable or actual flash flood event.

Marek Truck Trail (3N40): This road is not listed in the Forest Transportation Inventory System. This road leaves Little Tujunga Road and originally provided alternate access to the Angeles Gun Club from behind the shooting area. The first 0.1 mile of road off Little Tujunga Road traverses private land. A gate (now knocked down) approximately one mile up the road was intended to prevent public access. The road beyond the gate is washed out in several areas. During this incident, the road was used as a fire break. Increased drainage due to the fire now threatens the integrity of this road, especially the section of road on private land, which is built almost entirely in the bottom of the drainage channel. This section has a high potential of being washed out in the case of a significant rainfall event. The road has not been maintained for years and has little significant value.

Lower Marek Road (3N45): This road leaves the Los Angeles River Ranger District office facility to the north and connects to County-maintained Kagel Canyon Road at Dexter Park. This road is critical since it provides the only escape route from the District office in the case that Little Tujunga Road is not passable. This road received extensive maintenance a year prior to the fire. During this incident, the road was used as a fire break and was extensively damaged by suppression activities (bulldozing). The road was completely burned over during the fire.

Sugarloaf Road (3N45.1): This road connects Lopez Canyon Road to Kagel Canyon Road via Indian Canyon. Another section of this road connects to the northern section of Lopez Canyon Road. During this incident, the road was completely burned over. There are two critical locations on this road where the ability of existing drains to handle a significant increase in runoff is not adequate.

Threats to Water Quality

Hazmat: There are at least 20 sites affected by the Marek wildfire, six of which are found on ANF lands; a complete list can be found in the Hazardous Materials Specialist report. The County of Los Angeles Fire Department, Health Haz-Mat inspected the sites and concurred that the midnight dumps and site contamination requires cleanup and disposal. Surface water occurs as ephemeral streams near many of the waste dumping areas. Since the dumps and spills have not been cleaned up, it is likely that there will be pollution released to surface water. EPA and California State environmental laws require further cleanup action by the Forest Hazardous Materials program at the waste dump sites. The basis for the cleanup action plan is provided in the ANF "Oil and Hazardous Substance Pollution Contingency Plan." Shooting berms located at the Angeles and Indian Canyon Gun clubs contain large amounts of Lead (Pb) that could migrate into downstream channels if flooded, potentially contaminating groundwater sources such as wells. Streams in the fire area will have short term episodes of high turbidity and ash concentration during the first few major storms after the fire that will lead to short term water quality impairment.

Threats to Threatened, Endangered and Sensitive Species

Nevin's barberry: An emergency situation for the continued existence of Nevin's barberry exists on Forest lands. This population of Nevin's barberry is the only known, naturally occurring population found on the ANF. The population was burned at a moderate burn intensity. While it has been known to re-sprout following wildfire, there is a possibility that the Nevin's barberry population could have been destroyed, or greatly impaired by the fire. In addition to the possible burn intensity related impacts, there are two threats to Nevin's barberry due to the Marek Fire: ground disturbance from illegal OHV access and illegal dumping. This population was protected prior to the fire by thick chaparral vegetation. The fire burned all vegetation surrounding the plants and denuded illegal access points. As a result, the population is now vulnerable because it lacks all barriers that previously kept it protected.

California condor: An emergency exists for California condor as a result of post-fire effects of the Marek Fire. The emergency condition is a direct result of burned-off vegetation, which exposes areas where microtrash and lead-containing ammunition debris is now easily accessible by foraging condors. The concern is that condors may locate these sites and consume the microtrash present. The treatment objective is to reduce the potential for condors to consume microtrash and ammunition related debris. The primary treatment for removal of

microtrash and ammunition hazards is manual clean-up of the site. Where manual clean-up may not be effective, microtrash and ammunition hazards can be minimized by placement of mulch or clean fill material.

Threats to Ecosystem Stability/Soil Productivity

Accelerated slope instability (both NFS, State, and Private lands): Nearly 85 percent of the area within the fire perimeter burned with either light or moderate soil burn severity (as mapped with BARC). Post-fire field surveys indicate that over 95 percent of vegetation cover was consumed during the fire regardless of burn intensity. On average, there is only 20-30 percent effective soil cover consisting of surficial gravel cover. There is high potential of increased mass-wasting, slope failure and surface erosion. Localized erosion rates could more than triple with average rainfall events. All soils have varying degrees of surface water-repellency (hydrophobicity) regardless of burn severity. The hydrophobicity is naturally occurring and is exacerbated with fire. Hydrophobicity strongly impairs the ability of soil to infiltrate water thereby increasing runoff potential and erosive energy. Except for mechanically disturbed areas, such as those created by bulldozers, unauthorized OHVs, and horses, a biological surface crust caps the soils and mitigates the effects of wind erosion from major Santa Ana wind events, which without the crust, could possibly be a greater threat to soil productivity than water erosion.

With the combustion of the shrub overstory, there is little impediment to expanded Off-Highway Vehicle (OHV) and equestrian use. The crusts discussed above disintegrate under these disturbances and lose all protective properties; gully initiation and propagation through the disturbed soil surface can be expected.

There is an ample seed bank in the surface horizon of the soils and live roots are abundant. Rapid vegetative growth is expected after the first soil wetting rains. However, most of the green-up will be non-native grasses. Although these grasses offer short term erosion protection, they outcompete establishing native shrubs, have less soil cover value than native shrubs, and are typically decadent by the time the first storms arrive. Therefore, if non-native grasses establish and displace the native shrub communities, long-term soil productivity is threatened with increased long-term erosion risk.

Threats to Vegetation Recovery

Increase in Noxious Weed Populations: An emergency exists with respect to vegetative recovery as a result of the threat of post-fire weed introduction and spread. 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 weed infestations will increase in 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 would recover if weed invasions are minimized.

There are numerous unauthorized horse trails and OHV roads within the burn perimeter. The Marek Fire removed the vegetative barriers that previously limited the amount of cross country travel occurring in the area. Continued or increased use of this area by horseback riders and unauthorized vehicles may facilitate the spread of invasive weeds. Additionally, the erosion and soil compaction caused by horses and vehicles may also inhibit the recovery of native plant populations. As a result, horseback and vehicle trespass may contribute to increased density

and distribution of invasive weeds. An increase in invasive weeds can contribute to type conversion and overall reduction in the density and distribution of native plants.

Threats to Cultural Resources

Historic and Prehistoric Sites: Four historic and two prehistoric cultural resources were affected by the fire. All sites sustained a complete loss of vegetation cover making them susceptible to minor slope wash and vandalism. Only one site is found to be at risk from stream scouring extensive enough that it could be destructive to the cultural deposit. This site will be treated with a gabion basket to deflect the stream flow. The remaining five sites will be not be treated because they are at low risk of watershed impacts and would not benefit from common prescriptive treatments. No treatment will allow natural re-growth of vegetation to stabilize and shield the deposits from damage.

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. Re-evaluate the burned area before lifting the closures. Cleanup or stabilize hazardous material sites to prevent water and soil contamination.
- **Limit Damage to Property**- The District Office facility, private residences/businesses, other structures, water systems, and county roads and private driveways within and downstream of the burn area are at greater risk from flash flooding and sedimentation after the fire. Clearing channel obstructions and increasing the road cross-drainage capacity will help mitigate the effects of accelerated storm flows and sedimentation impacts to adjacent properties. The treatment objectives are to increase the awareness of the property owners, Natural Resource Conservation Service (NRCS), Los Angeles County Flood Control and Fire, and other agencies of the potentially hazardous conditions resulting from the Marek fire.
- **Noxious Weeds** - Reduce the potential for impaired vegetative recovery and introduction/spread of noxious weeds.
- **Road and Trail Treatments** – Objective is to improve road drainage to protect the road system. Reduce erosion from the road surface and sediment delivery to stream channels. Reduce the threat to life and safety for road users. Stabilize unauthorized access areas to minimize future erosion.
- **Limit loss of soil productivity** – Post fire erosion rates have increased due to the burn itself, and to accelerated rates of runoff water impacting unauthorized OHV and equestrian trails, potentially resulting in additional erosion and sedimentation. Existing unauthorized OHV trails should be waterbarred and reshaped to conform with the natural drainage characteristics to reduce erosion thereby limiting loss of soil productivity.
- **Cultural Resource Sites** – Objectives are to increase soil stability and reduce the potential for erosion to protect cultural sites. Reduce or prevent vehicular access to cultural resource 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% | N/A | N/A |
| Channel | 90% | N/A | N/A |
| Roads/Trails | 90% | N/A | N/A |
| Protection/Safety | 90% | N/A | N/A |

E. Cost of No-Action (Including Loss): \$5,150,000

F. Cost of Selected Alternative (Including Loss): \$2,923,00

G. Skills Represented on Burned-Area Survey Team:

☒ Hydrology ☒ Soils ☒ Geology ☐ Range ☒ Recreation
☐ Forestry ☒ Wildlife ☐ Fire Mgmt. ☒ Engineering ☒ Lands
☐ Contracting ☐ Ecology ☒ Botany ☒ Archaeology ☒ Hazmat
☐ Fisheries ☐ Research ☐ Landscape Arch ☒ GIS

Team Leader: Ken Luckow (AD, R3), Katie VinZant (trainee, R5 ANF)

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Core Team

Eric Nicita (Soil Scientist)
Casey Shannon (Hydrologist)
Paul Gregory (Hydrologist)
Leslie Welch (Wildlife Biologist)
Dave Collins (GIS)
Janet Nickerman (Botanist)
Eric Martindale (Engineering)

Ken Luckow (Soil Scientist)
Joe Gonzales (Hazmat)
Kelli Brasket (Archaeologist)
Katie VinZant (Botanist)
Cliff Johnson (Lands)
Ray Kidd (Recreation)

H. **Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate

funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Implementation Team

To provide for logistics and tracking of treatment implementation.

Estimated Cost:

| | |
|--|-----------------|
| Implementation Team Leader (\$330/day x 21 days) | \$6,930 |
| Hydrologist/Soil Scientist (\$330/day x 7 days) | \$2,310 |
| Per diem/Lodging | \$5,400 |
| Vehicle mileage(1400 miles @0.55/mile) | \$ 770 |
| TOTAL | \$15,410 |

Land Treatments:

Noxious Weed Detection Surveys

Surveys will begin in 2009 during the flowering periods of weed species. Because of differences in flowering times for all potential species, two visits may be required during the growing season. Completion of surveys in riparian areas, dozerlines, and known invasive and sensitive plant populations would be the first priority. The second survey priorities would be along roads, handlines, and staging areas. Surveys of the general habitats in the burned area would be the lowest priority. Detailed weed detection survey guidelines are attached in Appendix A.

Weed detection surveys to determine whether ground disturbing activities related to the Marek Incident and the fire itself have resulted in the expansion of noxious weeds is requested for the first year. Estimated costs are based on the assumption that two visits would be necessary because of the differences in flowering times. If timing is such that all the target species are detectable in one visit, the actual costs would be lower than displayed below.

Estimated Cost:

| | |
|--|--------------------|
| GS-11 botanist (\$360/day x 12 days) | \$ 4,320.00 |
| Vehicle mileage (700 miles @0.55/mile) | \$ 385.00 |
| TOTAL | \$ 4,705.00 |

LARRD District Office Heritage Site Protection:

One locus of the Little Tujunga Plantation site at the LARRD District Office, is set on an alluvial creek terrace next to a stream channel. The site undoubtedly gets some deposition from flooding, however the increased flow and sedimentation, due to the loss of vegetation in the burn area, is likely to scour through a portion of the site. In consultation with the BAER hydrologist, it is determined that to prevent affects to the site, a gabion basket along that portion of the channel that receives the greatest flow should be an effective treatment measure to deflect flow from the deposit. The site will be monitored after the first rain event to determine if the treatment measure if effective. If the treatment measure fails and damage occurs to the site, then other treatment methods will be devised to protect the cultural deposit.

Estimated Cost:

Personnel:

| | |
|---|----------|
| Archaeologist (\$255/day x 5) | \$1,275 |
| Hydrologist (\$ 375 / day x 3) | \$1,125 |
| Botanist (\$375//day x 1) | \$375 |
| Engineer (\$375/day x 1) | \$375 |
| Implementation Crew (5 GS-5's at \$170 / day x 6) | \$5,100 |
| Crew supervisor (255/day x6) | \$1,530 |
| Crew engineers (2 persons @ 320/day x2 days) | \$ 640 |
| Total Personnel: | \$10,420 |

Materials:

| | |
|--|---------|
| Hogwire (2) 6' rolls (2 x \$500) | 1000 |
| 22 cubic yards of rock cobble | 1800 |
| 10 yard dump truck (250/day x 2) | 500 |
| Tools and miscellaneous equipment | 500 |
| Vehicle Mileage (300 miles @0.55/mile) | 165 |
| Total Materials: | \$3,911 |

TOTAL COST: \$14,385

Unauthorized OHV Trail Stabilization:

There are an estimated 20 miles of unauthorized horse trails and OHV roads within the burn perimeter. Approximately 9 miles have a high potential for accelerated rates of erosion as there will be no adjacent vegetation to stabilize soils and mitigate the impacts of runoff. The concern is that erosion can lead to loss of soil productivity, increased sediment in waterways, reduced habitat values, and potential damages to natural or cultural resources that may be permanent or longlasting. Treatments will be designed to stabilize unauthorized roads and trails and prevent or reduce effects of fire-related erosion. Patrol funding is requested to monitor the effectiveness of stabilization treatments and prevent continued unauthorized OHV access to stabilized areas.

Estimated Cost:

| | |
|---|-----------------|
| Miles of trail/road/waterbars/repair (5 miles at \$4300/mile) | \$ 21,500 |
| Reshaping and filling gullies (4 miles at \$4500/mile) | \$ 18,000 |
| Wood mulch (1,100 50-pound bales at \$5.65/bale + \$1,200 shipping) | \$ 7,415 |
| Native seed mix (\$590/acre x 4 acres) | \$ 2,360 |
| Hydrology Specialist, GS-11, 2 days at \$375 | \$ 750 |
| Soil Scientist, GS-11, 3 days at \$375 | \$ 1,125 |
| Archeology survey, GS-9, 6 days at \$250 | \$ 1,500 |
| Botanical Survey, GS-11, 5 days at \$375 | \$ 1,875 |
| Wildlife Surveys, GS-11, 5 days at \$375 | \$ 1,875 |
| 1-GS-9 Patrol, 45 days at \$255 | \$ 11,475 |
| Mileage, 80 days (50miles/day x .55/mile) | \$ 2,200 |
| Total Cost | \$70,075 |

Channel Treatments:

District Office Protection

Protection of the staff bungalow and AST's would involve placing large boulders (greater than 12" diameter) along the stream bank near the staff bungalow to increase the existing deflection structure for a distance of 60 to 80 feet. Filter cloth should be placed under the new rip rap addition to resist scour. 40 cubic yards of large boulders is needed to complete the reinforcement. 80 feet of K-rails is needed inside of the rock barrier to create a back up barrier.

Estimated Cost:

| | |
|--|-----------------|
| 80 linear feet k-rail @ \$25/LF | \$2,000 |
| Delivery | \$2,000 |
| Offload and setup | \$1,800 |
| Boulder (40 cu. yds.) | \$2500 |
| Watershed Specialist oversight/monitoring (4 days at \$ 325 day) | \$1300 |
| Archaeologist (\$255/day x 1) | \$255 |
| Heavy Equipment/Engineering/Admin/Mobilization | \$15,000 |
| Mileage, 10 days (50miles/day x .55/mile) | \$275 |
| TOTAL | \$25,130 |

Road Treatments:

Marek Truck Trail (3N40)/ Lower Marek Road (3N40)/Sugarloaf Road (3N45.1)

BAER treatments recommended include the installation of eight overside drains at critical locations that previously did not have a drain or where the existing drain is not adequate to handle the increased runoff; installation of a culvert where a significant drainage crosses the road; and installation of two road closure gates on forest land to prevent unauthorized access and prevent potential life-threatening situations to the public.

Estimated Cost:

| | |
|--|-----------------|
| 24" Overside Drain (10 drains at \$3,200.00/drain) | \$32,000 |
| 36" Culvert (30 feet at \$310.00/LF) | \$9,300 |
| Road Gates (2 at \$8,500.00 ea) | \$17,000 |
| Contractor Mobilization | \$5,830 |
| Contract Prep. & Admin. at 25% | \$16,032 |
| Archeology survey, GS-9, 2 days at \$250 | \$500 |
| Botanical Survey, GS-11, 2 days at \$375 | \$750 |
| TOTAL COST | \$81,412 |

Protection/Safety Treatments:

Interagency Coordination/Interim Reporting

Interagency coordination started during the fire and continued throughout the BAER Assessment. Continuing this coordination by providing the BAER Assessment Report, specialist reports and attending meetings is anticipated. This treatment will also provide funds for the completion of interim/accomplish reports.

Estimated Cost:

| | |
|--|----------------|
| Hydrologist (\$400/day for 4 days) | \$1,600 |
| Forest BAER Coordinator (\$330/day for 5 days) | \$1,650 |
| TOTAL | \$3,250 |

Hazmat Cleanup

There are six hazardous waste sites affected by the Marek wildfire on ANF lands; a complete list can be found in the Hazardous Materials Specialist report. The County of Los Angeles Fire Department, Health Haz-Mat inspected the sites and concurred that the midnight dumps and site contamination requires cleanup and disposal. Surface water occurs as ephemeral streams on either side of many of the waste dumping areas. Since the dumps and spills have not been cleaned up, it is likely that there will be pollution released to surface water. EPA and California State environmental law has determined that further cleanup action by the Forest Hazardous Materials program is warranted at the waste dump site, at this time. The basis for the cleanup action plan is provided in the ANF "Oil and Hazardous Substance Pollution Contingency Plan".

Estimated Cost:

| | |
|---|-----------------|
| GS 11 Hazmat Specialist (\$320/day x13) | \$4,160 |
| Mobilization | \$5,000 |
| Disposal | \$12,600 |
| Lab Tests | \$600 |
| Materials/Supplies | \$400 |
| Vehicles | \$350 |
| TOTAL | \$23,110 |

Condor Protection: Lead and Microtrash Removal

Sites with a concentration of microtrash and ammunition related debris pose a risk for condors. The fire has removed vegetation and exposed areas where microtrash and ammunition related debris are now easily accessible by foraging condors. The primary treatment for removal of microtrash and ammunition hazards is manual clean-up of the site. Where manual clean-up may not be effective, microtrash and ammunition hazards can be minimized by placement of hydromulch or clean fill material. The number of sites needing treatment has not yet been determined.

Estimated Cost:

| | |
|------------------------------------|-----------------|
| Type I Crew, 4 days at \$3,700/day | \$14,800 |
| GS-11 Biologist (\$375/dayx3 days) | \$1125 |
| Mileage, (500miles x \$1/mile) | \$500 |
| Misc. costs- supplies, etc.. | \$100 |
| TOTAL | \$16,525 |

Vegetative Screening for OHV Areas and around Nevin's Barberry

Guidance in FSM 2523 directs that plant materials, including shrubs or trees, are appropriate emergency stabilization measures "when needed to reduce unacceptable erosion, to stabilize critical or significant cultural resources, to prevent permanent impairment to critical habitat for Federal and state-listed proposed or candidate threatened or endangered species or to prevent detrimental invasion by non-native plants." Direction for all planted materials is to "use only planted materials that will be effective within two growing seasons."

This treatment consists of planting local native shrubs and grasses, and applying locally collected native plant seed at key locations along Lopez Canyon Road, which will remain open, within high and moderate intensity burn areas to block off-road vehicle access. The objective of this treatment is to protect occupied habitat of the endangered species Nevin's barberry (*Berberis nevinii*), and to promote vegetative recovery. This treatment will be paired with barriers listed in the treatment below.

To ensure effectiveness of vegetative screening and barrier treatments patrolling/monitoring funds are requested. Blockage areas will be monitored by Forest Service employees twice a week to check status of barriers and effectiveness in reducing off-highway vehicle travel onto burned National Forest Lands. The Barrier Effectiveness Monitoring Plan is attached as Appendix B.

Estimated Cost:

| | |
|---|-----------------|
| 2-GS-11 Botanist, 10 days x \$375/day | \$7,500 |
| Archeology survey, GS-9 for 1 day | \$255 |
| Type I Crew at \$3,700/day | \$3,700 |
| 2-GS-7's, 26 days at \$220/day | \$11,440 |
| Cost of native seed for one acre | \$590 |
| Cost of plants, 100 plants at \$7/plant | \$700 |
| Equipment, 500 gallon water tank, shovels, augers | \$1,000 |
| Mulch and seeding supplies | \$500 |
| 2-GS-7 Patrol, 50 days (for vegetation and barriers) at \$220/day | \$22,000 |
| Vehicle Mileage (7000 miles x .55/mile) | \$3,850 |
| TOTAL | \$51,535 |

Fences and Barriers for Unauthorized OHV Areas, Dumping Areas, and around Nevin's Barberry
Fences and rock barriers are needed in conjunction with vegetative screening to protect recovering areas from uses that will cause erosion or interfere with vegetative recovery and protection of the endangered species Nevin's barberry habitat and vegetation recovery in unauthorized OHV, dumping prone areas.

Estimated Cost:

| | |
|---|-----------------|
| 1-GS-11 Botanist (375/day x 5 days) | \$1,875 |
| Materials (One-mile three-strand, smooth wire): | \$4,000 |
| Boulders | Free |
| Trucking and loader costs \$400/hr 40 hours | \$16,000 |
| Type I Crew (3700/day x 2 days) | \$74,00 |
| Vehicle Mileage (500 miles x .55/mile) | \$275 |
| Total: | \$29,550 |

Hazard and Advisory Signs:

Fifteen wood signs and 200 carsonite signs will be placed in Little Tujunga, Lopez Canyon and Kagel Canyons. Signs will advise 'Closed to Motor Vehicles', 'During Rain Subject to Flash Flooding' and 'Warning during Rains, Subject to Flash Flood'. Signs should be placed on two wooden posts for durability. Because area is subject to vandalism, replacement signs are factored in at 20% of the cost.

| | |
|--|-----------------|
| Estimated Cost: | |
| 1 GS-05(\$170/day x 15 days) | \$2,550 |
| Archeology survey, GS-9 (\$250/day x 2 days) | \$500 |
| Botanical Survey, GS-11, 1 day at \$375 | \$375 |
| 15 Wooden trail signs at \$500 each: | \$7,500 |
| 200 Carsonite signs and labels: | \$3,100 |
| Vehicle Mileage (1000 miles x .55/mile) | \$550 |
| Total: | \$14,575 |

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Forest Road Stabilization Effectiveness Monitoring

To monitor the effectiveness of stabilization treatments along the Forest Roads 3N45, 3N45.1, and 3N40 monitoring funds are requested. The treatments are designed to upgrade and supplement existing erosion control structures on Forest Service Roads to facilitate proper water drainage off the road, preserve the road tread, and decrease watershed efficiency.

| | |
|--|----------------|
| 1-GS-9 Engineering Specialist (300/day x 4 days) | \$1200 |
| Mileage, 4 days (50 miles/day x .55/mile) | \$ 110 |
| TOTAL | \$1,300 |

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 | | | | | | | | | | |
| Implementation Team | ea | 15410 | 1 | \$15,410 | \$0 | | | | | \$15,410 |
| Noxious Weed detection | ea | 4705 | 1 | \$4,705 | \$0 | | \$0 | | \$0 | \$4,705 |
| Heritage Protection | ea | 14385 | 1 | \$14,385 | \$0 | | \$0 | | \$0 | \$14,385 |
| OHV trail stabilization | miles | 7786 | 9 | \$70,075 | \$0 | | \$0 | | \$0 | \$70,075 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 | \$0 |
| <i>Subtotal Land Treatments</i> | | | | \$104,575 | \$0 | | \$0 | | \$0 | \$104,575 |
| B. Channel Treatments | | | | | | | | | | |
| K-rail retaining wall | ea | 25130 | 1 | \$25,130 | \$0 | | \$0 | | \$0 | \$25,130 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 | \$0 |
| <i>Subtotal Channel Treat.</i> | | | | \$25,130 | \$0 | | \$0 | | \$0 | \$25,130 |
| C. Road and Trails | | | | | | | | | | |
| Culvert replacement | ea | 5674 | 11 | \$62,412 | \$0 | | \$0 | | \$0 | \$62,412 |
| Road closure gates | ea | 9500 | 2 | \$19,000 | \$0 | | \$0 | | \$0 | \$19,000 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 | \$0 |
| <i>Subtotal Road & Trails</i> | | | | \$81,412 | \$0 | | \$0 | | \$0 | \$81,412 |
| D. Protection/Safety | | | | | | | | | | |
| Interagency Coord | ea | 3250 | 1 | \$3,250 | | | | | | \$3,250 |
| HazMat cleanup | unit | 3851.6 | 6 | \$23,110 | | | | | | \$23,110 |
| CA Condor protection | ea | 16525 | 1 | \$16,525 | | | | | | \$16,525 |
| Vegetative Screening | ea | 51535 | 1 | \$51,535 | \$0 | | \$0 | | \$0 | \$51,535 |
| Install OHV barriers | ea | 29550 | 1 | \$29,550 | \$0 | | \$0 | | \$0 | \$29,550 |
| Hazard Signs | unit | 67.8 | 215 | \$14,575 | \$0 | | \$0 | | \$0 | \$14,575 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 | \$0 |
| <i>Subtotal Structures</i> | | | | \$138,545 | \$0 | | \$0 | | \$0 | \$138,545 |
| E. BAER Evaluation | | | | | | | | | | |
| Team Member Salaries | day | 5780 | 7 | \$40,460 | | | | | | \$40,460 |
| Perdiem/Mileage | unit | 8000 | 1 | \$8000 | | | | | | \$8000 |
| Helicopter Flight | 1 | 2,000 | 1 | \$2,000 | | | \$0 | | \$0 | \$2,000 |

| | | | | | | | | | | |
|--|----|------|---|-----------|-----|--|-----|--|-----|-----------|
| <i>Insert new items above this line!</i> | | | | --- | \$0 | | \$0 | | \$0 | --- |
| <i>Subtotal Evaluation</i> | | | | \$50,460 | \$0 | | \$0 | | \$0 | \$50,460 |
| | | | | | | | | | | |
| F. Monitoring | | | | | | | | | | |
| Road stabilization eff | ea | 1300 | 1 | \$1,300 | \$0 | | \$0 | | \$0 | \$1,300 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 | \$0 |
| <i>Subtotal Monitoring</i> | | | | \$1,300 | \$0 | | \$0 | | \$0 | \$1,300 |
| | | | | | | | | | | |
| G. Totals | | | | \$401,422 | \$0 | | \$0 | | \$0 | \$401,422 |
| Previously approved | | | | \$0 | | | | | | \$0 |
| Total for this request | | | | \$401,422 | | | | | | \$401,422 |

PART VII - APPROVALS

1. /s/ Jody Noiron
Forest Supervisor (signature)

10/24/08
Date

2. /s/ Janice Gauthier (for)
Regional Forester (signature)

10/29/08
Date

Appendix A

NOXIOUS WEED DETECTION SURVEY PLAN

Fire Name: Marek Fire Month/Year: October 2008

Authors: Janet Nickerman and Katie VinZant

Authors Duty Station: Angeles National Forest

A. Background

Forest Service policy mandates the Forest to minimize the establishment of non-native invasive species to prevent unacceptable degradation of the burned area. It is necessary to conduct noxious weed detection surveys to evaluate the potential for spread from both existing populations and from the activities associated with fire suppression. Therefore, noxious and invasive weed detection surveys are proposed for the first year following the fires to verify the suspected infestations and determine the fires' potential impact on weed populations within the burned area. Tree of heaven (*Ailanthus altissima*), giant reed (*Arundo donax*), wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), cheatgrass (*Bromus tectorum*), tocalote (*Centaurea melitensis*), yellow star thistle (*Centaurea solstitialis*), pampas grass (*Cortaderia selloana*), eucalyptus (*Eucalyptus* spp.), shortpod mustard (*Hirschfeldia incana*), tree tobacco (*Nicotiana glauca*), fountain grass (*Pennisetum* spp.), castor bean (*Ricinus communis*), black locust (*Robinia pseudoacacia*), Russian thistle (*Salsola* spp.), Peruvian pepper tree (*Schinus molle*), Spanish broom (*Spartium junceum*), saltcedar (*Tamarix ramosissima*), and Mexican fan palm (*Washingtonia robusta*) are known to occur within the burn area and along access routes adjacent to the burn. Several plant vectors such as Forest roads, trails, high winds, and waterways occur within the fire area. Even though a weed washing station was utilized, seed could have been transported into the burn on suppression vehicles and equipment that arrived on the fire before the washing station was established. Fire is known to enhance the establishment of all weed species present. See the Botany Technical Specialist Report and Appendix A of this report for more information about specific weed population attributes and locations in the Marek Fire.

B. Management Concerns

Noxious weed invasions interfere with habitat recovery and ecosystem health within burned areas and fire suppression sites. In particular, noxious weeds hinder the recovery of habitat, especially in arid and riparian ecosystems, by aggressive colonization and reduction of water quality and quantity.

C. Objectives

To determine if the fire and associated ground disturbing activities have promoted the establishment and spread of noxious weeds to the extent that eradication efforts are necessary. Early detection dramatically increases the likelihood of successful treatment. If weeds are detected, a supplemental request for BAER funds will be made for eradication.

D. Parameters

Noxious weed presence, location, density, population size, and persistence.

E. Locations

In and along roads, trails, dozerlines, handlines, drop points, safety zones, riparian areas, and adjacent to known sensitive and invasive plant populations.

F. Weed Detection Survey Design and Methodology

Surveys will begin in 2009 during the flowering periods of weed species. Because of differences in flowering times for all potential species, two visits may be required during the growing season. Completion of surveys in roads, dozerlines, staging areas, safety zones, and known invasive and sensitive plant populations will be the first priority. The second survey priorities will be along riparian areas, hand lines, and drop points. Surveys of the general habitats in the burned area will be the lowest priority. All locations of weed species will be mapped, using the Angeles NF, "Invasive Weeds" list.

Surveying will include documentation and hand pulling new weed occurrences at the time of inspection. New weed occurrences will be pulled to root depth, placed in sealed plastic bags, and properly disposed.

Documentation of new infestations will include:

- Mapping perimeter of new infestations
- Filling out Weed Element Occurrence Form (Appendix B)
- Treatment method
- Dates of treatment
- Incorporating data into local GIS spatial database
- Entering data into National Resource Information System (NRIS) database
- Entering data into FACTS database
- Evaluating success of treatment in subsequent inspections

G. Reporting

A Weed Detection Survey Report will be submitted to the regional BAER coordinator and Los Angeles River District Ranger. If weed introduction and spread has occurred, an interim BAER report will be completed to request eradication funding. Reporting costs are included in figures below.

H. Costs: Weed Detection Surveys for One Year =\$4,580.00

Weed detection surveys to determine whether ground disturbing activities related to the Marek Fire have resulted in the expansion of noxious weeds is requested for the first year. Estimated costs are based on the assumption that two visits would be necessary because of the differences in flowering times. If timing is such that all the target species are detectable in one visit, the actual costs would be lower than displayed below.

For FS Employees for FY 2009

GS-11 botanist (\$360/day x 12 days)

Vehicle mileage (700 miles @0.37/mile) =\$ 260.00

TOTAL for weed detection surveys for FY09 =\$ 4,580.00

I. Follow-up Actions

Design and implement follow-up treatments as needed. Plan for integrated weed management and NEPA analysis using non-BAER funding.

Appendix B:
Marek Fire
OHV Barrier Effectiveness Patrols/Monitoring

The 2500-8 report requests funds to monitor the effectiveness of barriers. The fencing is to restrict OHV access and dumping in Nevin's barberry and California condor habitat that could be degraded from off highway vehicle travel and noxious weed invasive species, impacting native vegetative recovery.

1. Monitoring Questions
 - a. Are the barriers restricting vehicle access into the burned area?
 - b. Have the barriers been cut or tampered with since it was constructed or previously maintained?
 - c. Are there specific locations where the barriers are being tampered with?
 - d. Are there signs of cross country off highway vehicle travel? Are specific areas being targeted?
2. Measurable Indicators
 - a. Number of times barriers are repaired
 - b. Length of damage to soil and vegetation
 - c. Vehicle traffic signs
3. Data Collection Techniques
 - a. Photo documentation of site
 - b. Inspection Checklist (attached)
 - c. Cars parked in parking area
4. Analysis, evaluation, and reporting techniques

Due to the high resource values at risk the monitoring findings will be evaluated weekly. If the monitoring shows the treatment to be ineffective at restricting vehicle access and soil/vegetative damage, an interim report will be submitted. Emergency funding for enforcement protection or other appropriate treatment may be required based on the monitoring findings. (Physical detection monitors)

5. Monitoring report timeframes

The report will be evaluated weekly and if the treatment is effective, barrier inspection checklist findings will be compiled monthly and summarized by the following:

- a. Number of barrier tamperings
- b. Number of times vehicle entry
- c. Location of barrier tamperings
- d. Destination of vehicle access
- e. Vegetative damage characteristics
- f. Use of parking area

Barrier Inspection Checklist

Date: _____

Time: _____

Describe locations reviewed during inspection: _____

Was the barrier impacted? _____. If so at what location (GPS) _____

Were there additional barrier impacts? (GPS) _____

Were there signs of vehicle entry to the area? _____

Photo taken of vehicle tracks _____

Photo taken of barrier impacts _____

Native vegetation review findings: Signs of damage, vehicle traffic, or other disturbance within burn ____ Yes ____ No?

If so identify by GPS the location and note on sketch map.

Describe signs of soil/vegetative damage _____

Were there cars parked in or adjacent to the burn area.? _____

If yes, how many? _____

Photo taken of vehicles _____

Recommended repairs needed _____

Appendix C:
Marek Fire
Forest Road Stabilization Effectiveness Monitoring

The 2500-8 report requests funds to monitor the effectiveness of stabilization treatments along the Forest Roads 1N12 and 1S12 (Road to Morton Peak Lookout). The treatments are designed to upgrade and supplement existing erosion control structures on Forest Service Roads to facilitate proper water drainage off the road, preserve the road tread, and decrease watershed efficiency.

1. Monitoring Questions
 - a. Are the treatments effectively decreasing watershed efficiency within the burned area?
 - b. Have the treatments effectively preserved road bed within the fire area?
 - c. Are there specific locations where treatments have failed?
2. Measurable Indicators
 - a. Number of times structures are plugged, filled, or broken down.
 - b. Area of loss of road bed.
3. Data Collection Techniques
 - a. Photo documentation of site
 - b. Inspection Checklist (attached)
4. Analysis, evaluation, and reporting techniques

Monitoring will be conducted after storm events. If the monitoring shows the treatment to be ineffective at stabilizing road and there is extensive loss of road bed or infrastructure an interim report will be submitted.

Road Inspection Checklist

Date: _____
Time: _____

Describe locations reviewed during inspection: _____

Was there road damage? _____. If so at what location and what structure (GPS) _____

Describe damage and cost to repair? (GPS) _____

Were the warning signs in place?_____

Photo taken of road damage_____

Photo taken of sign damage_____

Recommended actions to repair:_____