Burned Area Emergency Response Plan

El Portal Fire

Yosemite National Park, California

Submitted by: _____ Date: 10/30/14

Don Neubacher, Superintendent

OCTOBER 2014

Fire Summary Information

Fire Name	El Portal
Ignition Date/Cause	July 28, 2014/Under Investigation
Date Contained	August 6, 2014
Jurisdiction/Acres	National Park Service= 1,133 United States Forest Service= 3,576 Private= 20
Total Acres	4,729

Unit Summary Information

Unit Name	Yosemite National Park
Unit Identifier	CA-YNP
Order Number	CA-YNP-000083
Fire Code	H9MF
State	California
NPS Region	Pacific West

Emergency Stabilization Account Number, FY14

Fund	14XP112585
Cost Center	PPPWYOSEF0
Functional Area	PF220ES85.RM0000
WBS	PF.FEH9MF014.00.1

Emergency Stabilization Account Number, FY15

Fund	15XP112585
Cost Center	PPPWYOSEF0
Functional Area	PF220ES85.RM0000
WBS	PF.FEH9MF015.00.1

EL PORTAL FIRE
Burned Area Emergency Response Plan

Executive Summary

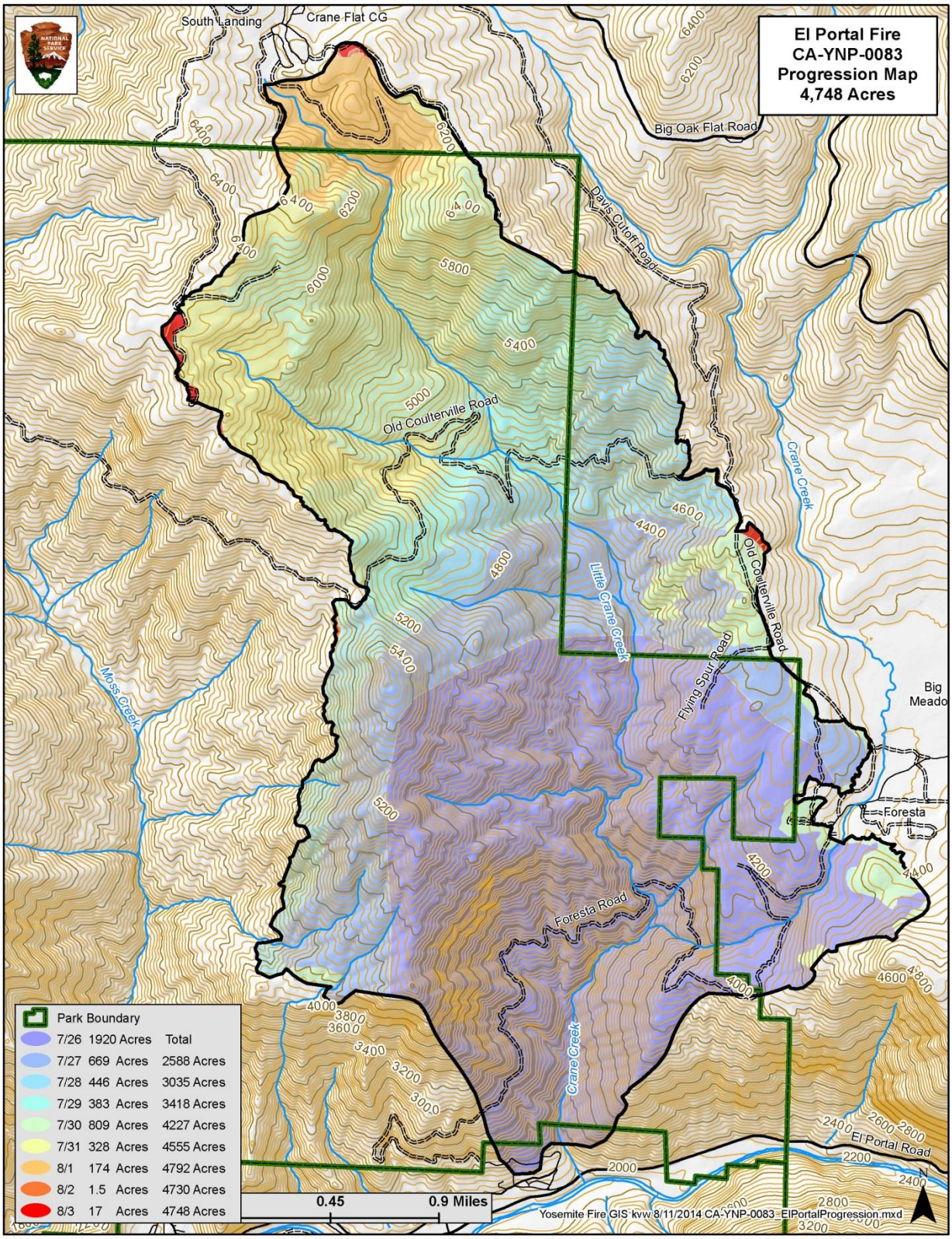
Introduction

This Burned Area Emergency Response (BAER) Plan has been developed in accordance with Department of the Interior and National Park Service Policy, including *DM 620 Part 3: Burned Area Emergency Stabilization and Rehabilitation* and the *Interagency Burned Area Emergency Response Guidebook* (Version 4.0), and *Director's Order 18* and *Reference Manual 18* (Wildland Fire Management). The primary objectives of the BAER (also known as Emergency Stabilization [ES]) program are to assess the need for, prescribe and implement rapid, cost effective, post-fire stabilization measures necessary to protect human life, property, and critical natural and cultural resources in accordance with approved land management plans and policies, and all relevant federal, state and local laws and regulations.

The BAER planning and assessment procedure for the El Portal Fire (Map 1) was a collaborative effort between Yosemite National Park (YOSE) and the adjacent Stanislaus National Forest (USDA, Forest Service). A watershed approach was utilized, meaning that values at risk and hazards were evaluated at a watershed scale rather than conforming to agency boundaries. The Stanislaus National Forest, whose lands encompass the majority of the acreage burned during the incident, produced a Burned-Area Report (Form FS-2500-8) in accordance with USDA, Forest Service policy (Forest Service Manual 2500—Watershed and Air Management, Chapter 2520—Watershed Protection and Management, Interim Directive No. 2520-2013-1). The Burned-Area Report (and associated Specialist Reports) provides background information for the El Portal Fire, an assessment of values at risk, and recommended response actions for both National Park Service (NPS) and USDA, Forest Service lands.

This BAER plan follows a format more traditionally employed in the National Park Service, Pacific West Region. It includes very brief summaries of findings and recommendations for YOSE presented in the Burned-Area Report and Specialist Reports (which are attached as an appendix). It also contains additional assessments and recommendations for YOSE-specific issues, building off of those identified in the Burned-Area Report and Specialist Reports.

In addition to BAER, YOSE is also performing repair of fire suppression damages. This effort is being coordinated through the El Portal Fire Incident Commander(s) and guided by



Map 1. El Portal Fire progression map and fire perimeter.

specifications provided by the Park. Financing for suppression damage repairs is provided through the El Portal Fire suppression account.

Finally, YOSE submitted a request for Burned Area Rehabilitation (BAR) funds for the El Portal Fire. The BAR program is restricted to the Bureaus of the Department of the Interior, and provides funding to repair or improve lands damaged directly by wildland fire (see *DM 620 Part 3: Burned Area Emergency Stabilization and Rehabilitation* and the *Interagency Burned Area Rehabilitation Guidebook* [Version 1.3]). Allowable actions under BAR include eradication of invasive species through direct means or habitat alterations, and the replacement or repair of minor, non-safety related infrastructure impacted by wildland fire. BAR is financed from a non-emergency funding source, and the urgency of BAR treatments is less than that of BAER. YOSE proposes to perform invasive species detection and eradication on the El Portal Fire in FY15-FY17.

Issues and Specifications

Human Safety and Property

El Portal Residences:

- Two residences in El Portal (one on Foresta Road and one on Buckeye Road) are at moderate to very high risk of structural damage or total structure loss from debris flows, flooding and mudflows. The implications for occupants could be injury or death.

  Because protection of human life has precedence over property under BAER, the recommended specifications address safety first, and structure protection where feasible. Specifications for the high-risk Foresta Road residence include:
  - *Clean-out existing debris basin in the drainage above the home*. Treatment was completed in October, 2014 and will be monitored and maintained under BAER through August, 2017.
  - *Improve the deflection barrier above the home*. The NPS provided sandbags to the homeowner in October, 2014. The treatment will be monitored and maintained under BAER through August, 2017.
  - *Develop an early warning system*. The NPS and Mariposa County coordinated with the National Oceanic and Atmospheric Administration (NOAA) to develop a forecast-based notification system to alert El Portal residents of dangerous weather conditions. Residents will be informed of the system through mailings, public information and community meetings.

  Specifications for the high-risk Buckeye Road residence include:
  - *Improve Drainage on Foresta Road*. The drainage above the residence (and

below Foresta Road) was mulched with wood straw in October, 2014. This treatment is intended to reduce surface erosion, but will offer little to no protection against debris flows, flooding and mudflows.

- *Develop an early warning system*. NPS and Mariposa County coordinated with the National Oceanic and Atmospheric Administration (NOAA) to develop a forecast-based notification system to alert El Portal residents of dangerous weather conditions. Residents will be informed of the system through mailings, posted public information and community meetings. BAER will finance costs associated with this system through August, 2017.

Several geotechnical engineering firms were consulted regarding treatment designs to better protect structures from potential post-fire hazards. All but one either refused to assess or would only design for low-magnitude post-fire events due to constraints imposed by the BAER program. A lone firm agreed to design for the full spectrum of threats, recommending a combination of the treatments above, along with—for the Foresta residence—rockfall fences and hillslope treatments, and—for the Buckeye residence—a debris basin, deflection barrier and rockfall fences. Subject matter experts at YOSE (Hydrologists, Geologist) cited several reasons why these treatments are not viable for structure protection under BAER, and none will be implemented.

The only assurance for human safety in the high-risk Foresta and Buckeye Road residences is vacancy during hazardous conditions. The NPS will continue to work with the homeowners to identify long-term solutions.

- Several residences on Buckeye Road are at risk of nuisance flooding and sedimentation. Two specifications were proposed for these homes:
  - *Buckeye Road home flood protection*. Place sand bags at strategic locations along Buckeye Road and adjacent homes to minimize flooding and sedimentation. The treatment was completed in October, 2014 and will be monitored and maintained through BAER until August, 2017.
  - *Improve drainage on Foresta Road*. Install several rolling dips, remove an outboard berm and mulch the slope below the road to promote dispersed rather than concentrated runoff. The treatment was completed in October, 2014 and will be monitored and maintained through BAER until August, 2017.

Roads:

- Local residents utilize Foresta Road between Foresta and El Portal for recreational purposes, and desire it to be passable by vehicle in case of emergencies. Further, visitors frequently attempt to access Yosemite and El Portal by this route. This section is

at potentially high risk from debris flows and rockfall, threatening human life and property. It is also currently impassible by vehicle due to a burned bridge and rockfall. Foresta Road will remain closed to motorized vehicles for the duration of the winter rainy season in 2014-2015. Bridge repair and long-term maintenance issues on Foresta Road are not the responsibility of BAER; the NPS, Stanislaus National Forest and Mariposa County will meet to discuss long-term road management.

Local residents use Old Coulterville Road to access Stanislaus National Forest and, along with Davis Cutoff, for recreational activities. Hazard trees along these roads, Foresta Road and on First Street in Foresta pose a hazard to human life and property. Old Coulterville/Davis Cutoff Roads will also be temporarily closed to motorized vehicles for the duration of the winter rainy season in 2014-2015 (Old Coulterville Road [Forest Road 2S84] is also closed on Stanislaus National Forest). These roads will likely re-open once hazard trees have been mitigated. Hazard tree mitigation will be funded by BAER as necessary through August, 2017.

The following treatments are proposed to support the temporary Foresta and Old Coulterville/Davis Cutoff Road closures:

- *Install gates*. On Foresta Road, close the existing gate at the NPS/Stanislaus National Forest boundary, install a new gate south of Foresta, and replace the burned gate at the entrance to McCauley Ranch. Install a gate just north of the Fly Spur Ranch access road on Old Coulterville Road. This treatment will be completed in October-November 2014.
- *Install warning signs*. Install burned area warning signs and replace fire-damaged signs at the northern and southern ends of the Foresta Road closure. This was completed in September, 2014. In addition, interpretive type warning signs will be designed and installed in November, 2014 to warn of Foresta and Old Coulterville/Davis Cutoff Road hazards.
- *Increased Agency Presence*. Increased NPS law enforcement patrols in and around the El Portal Fire burned area will support road closures, and the hazards of recreating on roads can be conveyed during public contacts.
- *Early Warning System*. The NPS and Mariposa County coordinated with the National Oceanic and Atmospheric Administration (NOAA) to develop a forecast-based notification system to alert El Portal residents of dangerous weather conditions. Residents will be informed of the system through mailings, posted public information and community meetings. BAER will finance costs associated with this system through August, 2017.

- There are drainage issues on Foresta Road within El Portal. One treatment is proposed to address this issue.

- *Improve drainage on Foresta Road*. Install several rolling dips, remove an outboard berm and mulch the slope below the road to promote dispersed rather than concentrated runoff. The treatment was completed in October, 2014 and will be monitored and maintained through BAER until August, 2017.

Crane Creek Recreation:

- Local residents utilize Crane Creek within and above El Portal for recreational activities (swimming, hiking). There are moderate safety hazards related to debris flows and flash flooding. Two proposed treatment s address this issue:
  - *Install warning signs*. Interpretive type warning signs will be designed and installed in November, 2014 to warn of the hazards of recreating along Crane Creek.
  - *Early Warning System*. The NPS and Mariposa County coordinated with the National Oceanic and Atmospheric Administration (NOAA) to develop a forecast-based notification system to alert El Portal residents of dangerous weather conditions. Residents will be informed of the system through mailings, posted public information and community meetings. BAER will finance costs associated with this system through August, 2017.

Cultural Resources

A diversity of cultural resources is found within the El Portal Fire burned area, including archeological sites, historic buildings, cultural landscapes, and Traditional Cultural Properties (TCPs). Field reconnaissance and computer modeling indicated that 16 archeological sites, two proposed Archeological Districts, three historic roads, and one Traditional Property are at-risk of post-fire threats, the principle concern of which is looting. Two specifications are proposed to address these threats:

- *Increased Agency Presence*. NPS Law Enforcement Rangers will patrol sensitive sites and YOSE Archeologists will document the most vulnerable resources.
- *Cultural Resource Consultation*. Consultation with the California State Historic Preservation Officer, Tribal Historic Preservation Officers, and American Indian tribes and groups will identify values to be protected.

In addition, cultural resource protection will be enhanced through road closures.

Botany

There are no emergency threats to botanical resources on NPS lands. However, invasive plant species will need to be detected and treated to allow for ecosystem recovery. Funding has been sought to address this issue through the BAR program.

BAER specification costs are summarized in the table below.

El Portal Fire BAER Specifications, FY14-FY17

Specification	FY14 Request	FY15 Request	FY16 Request	FY17 Request	Total Request
ES-1: BAER Plan Preparation	$24,700	--	--	--	**$24,700**
ES-2: El Portal Debris Basin Clean-Out	--	$5,500	TBD	TBD	**$5,500**
ES-3: Improve Road Drainage in El Portal	$9,200	$18,000	TBD	TBD	**$27,200**
ES-4: Install Gates	$3,300	$6,400	TBD	TBD	**$9,700**
ES-5: Install Warning Signs	$6,475	$2,840	TBD	TBD	**$9,315**
ES-6: Increased Agency Presence	--	$51,200	--	--	**$51,200**
ES-7: Buckeye Road Home Flood Protection	--	$19,350	TBD	TBD	**$19,350**
ES-8: Geotechnical Engineering Assessment	$4,135	--	--	--	**$4,135**
ES-9: Hazard Tree Removal	--	$18,900	TBD	TBD	**$18,900**
ES-10: Cultural Resource Consultation	--	$2,540	--	--	**$2,540**
ES-11: BAER Implementation Leaders	--	$51,940	TBD	TBD	**$51,940**
ES-12: NOAA Early Warning System	--	$5,156	TBD	TBD	**$5,156**
FY Request Total	**$47,810**	**$181,826**	**TBD**	**TBD**	**$229,636**

TBD: To Be Determined (treatment monitoring and maintenance)

Issues Not Given Further Consideration

The following issues are not further addressed due to lack of impacts and/or post-fire threats resulting from the El Portal Fire and, as a consequence, require no BAER specifications. In most cases, these were adequately analyzed as part of the El Portal Fire BAER assessment performed by the USFS BAER team.

Threatened and Endangered Species
Soil productivity
Water Quality
Aquatic habitat
Wildlife

Plan Organization

This BAER plan includes in-depth assessments of emergency issues, itemized specifications, and appendices.

EL PORTAL FIRE
Burned Area Emergency Response Plan

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Burned Area Assessments

HUMAN SAFETY AND PROPERTY

Issues

- El Portal Residences
    - Two residences in El Portal (one on Foresta Road and one on Buckeye Road) are at moderate to very high risk of structural damage or total structure loss from debris flows, flooding and mudflows. The implication for occupants could be injury or death.
    - Several residences in El Portal (on Foresta and Buckeye Roads) are at risk from nuisance sedimentation and flooding.
- Roads
    - Local residents utilize Foresta Road for recreation (hiking and biking). Portions of Foresta Road (Forest Road 2S84) within the burned area are at very high risk from debris flows and rockfall.
    - Foresta Road between El Portal and Foresta is currently impassable by vehicle due to rockfall and fire damage to one bridge. Many residents of El Portal and Foresta regard Foresta Road as an important alternative route of egress in the event of emergencies, and desire to have it passable by vehicle.
    - Foresta Road has the potential to capture runoff from an ephemeral drainage in El Portal, presenting moderate risk to downstream values (e.g., nuisance sedimentation and flooding in residences, damage to El Portal water system).
    - Two safety-related road signs on Foresta Road within NPS jurisdiction burned.
    - Hazard trees on Foresta and Old Coulterville/Davis Cutoff roads and within Foresta present a threat to human safety and property. Old Coulterville Road is used by local residents to access Stanislaus National Forest by vehicle and, along with Davis Cutoff, for recreational activities.
- People engaging in recreational activities (e.g., swimming, hiking) along Crane Creek in and near El Portal are at moderate risk from debris flows and flooding.

El Portal Residences

Potential post-fire threats to El Portal residences on Foresta and Buckeye Roads are described in Appendix A (Geologic Hazard Assessment Report, Hydrology Resource Report, Soils

Assessment Report). Recommended treatments are also presented in those documents.

Context

Department of the Interior and NPS BAER policy mirrors federal wildland fire policy regarding protection priorities: human safety is first, and property and critical natural and cultural resources are ranked based on the relative values to be protected, commensurate with emergency stabilization costs.

Watershed treatments are allowable in cases where threats to life, property and critical and natural resources emanate from post-fire conditions on federal (i.e., Department of the Interior and USDA, Forest Service) lands. The threats can be manifest on lands of those same jurisdictions or other entities (e.g., other federal agencies, Tribes, states, local government, non-profit and private—under the Wyden Amendment [United States Code Title 16, Section 1011]). Four treatment strategies are available (and financed) through BAER to address post-fire watershed threats:

1. *Prevention strategy* involves treatments to source areas of flooding and erosion as a means of preventing or reducing runoff and/or material movement. Common examples include materials applied to hillslopes to prevent erosion and encourage infiltration.
2. *Protection strategy* encompasses treatments employed when prevention treatments cannot adequately prevent or reduce flooding and erosion from source areas. The focus of prevention treatments include drainages (e.g., slow or delay flood flows, capture or redistribute material loads) and downstream targets (e.g., armor against flooding and erosion).
3. *Removal strategy* entails permanently or temporarily removing downstream values at risk in cases where those values cannot be effectively protected with prevention or protection treatments and/or the cost—economic, environmental or social—of effective prevention or protection treatments is not commensurate with the values being protected.
4. *Closure strategy* consists of measures taken to permanently or temporarily restrict access to targeted values at risk as a means of protecting other values from post-fire watershed threats (e.g., human life, critical natural resources).

It is important to emphasize that BAER only addresses imminent watershed threats to human life, property and critical resources resulting from the *effects of wildland fire*. The implications for the El Portal Fire are as follows:

1. Only values located within or downstream of watersheds burned during the El Portal Fire are considered by BAER.

2. Assuming historically "normal" climatic conditions, watershed response in the El Portal Fire footprint is expected to return to pre-fire levels within five to seven years.
3. BAER only models for and treats watershed hazards that are most likely to occur within the projected window of amplified watershed response (i.e., five to seven years on the on the El Portal Fire); threats resulting from lower probability, higher intensity storm events are not addressed under BAER.
4. BAER is not responsible for addressing variables that inherently exacerbate the threats of amplified post-fire watershed response. For example, two El Portal residences are at significantly increased risk from debris flows and flooding/mudflows because both are located *directly in the active channels* of fire-affected watersheds.

Once the threats to human safety have been mitigated, the net effect of these constraints is that treatments allowably funded through BAER to protect Foresta Road and Buckeye Road residences are less than those that might otherwise be prescribed to address the full spectrum of hazards.

Recommendations

Treatment recommendations for the El Portal residences are described in the Geologic Hazard Assessment, Hydrology Resource and Soils Assessment reports (Appendix A). Three specifications—Debris Basin Cleanout ($12,000), Hillslope Mulching and Road Treatments ($8,000) and House Protection per Geotech ($38,000)—were identified (El Portal Fire Burned-Area Report, p. 15, Appendix A). The estimate for the third specification was, by admission of the preparers, very rough and potentially low. In addition, $250 was initially proposed for issuing a permit to the United States Geological Survey to establish stream and/or precipitation gauges on Stanislaus National Forest as part of an early alert system (El Portal Fire Burned-Area Report, p. 13, Appendix A). This request was denied by the USDA, Forest Service because of concerns over equipment maintenance responsibilities (Brad Rust, personal communication).

The NPS should adopt these recommendations, with appropriate modifications, as summarized in the table below. This is followed by a more detailed description of accomplishments for pertinent specifications. NPS specification forms are provided later in this plan.

Management Action	USFS BAER Plan	NPS BAER Plan	Accomplishments/Comments
Geotechnical engineer assessment and design	Design debris flow/water deflection barriers for Foresta Road and Buckeye Road residences.	Perform as prescribed (*ES-8: Geotechnical Engineering Assessment*).	Activity was completed in September, 2014.

Management Action	USFS BAER Plan	NPS BAER Plan	Accomplishments/Comments
Clean-out debris basin behind gabion above El Portal residence	Remove sediment from existing debris basin above Foresta Road residence.	Perform as prescribed (*ES-2: El Portal Debris Basin Clean-Out*).	Treatment was completed in October, 2014.
Construct debris basin and/or deflection barrier above El Portal residence	Construct debris basin (e.g., gabion) or deflection barrier (e.g., k-rails) above Buckeye Road residence.	Do not perform treatment.	Treatment not performed per recommendations of YOSE technical specialists.
Improve deflection barrier at El Portal residence	Improve existing deflection barrier at Foresta Road residence	Perform as prescribed (*ES-7: Buckeye Road Home Flood Protection*).	Treatment completed in September and October, 2014.
Monitor/maintain debris basins/deflection barriers	Monitor and maintain debris basins and/or deflection barriers following storm events	Perform as prescribed (Multiple specifications).	N/A
Mulch hillslope above El Portal residence and below Foresta Road	Mulch hillslope above Buckeye Road residence and below Foresta Road with weed-free straw or wood straw.	Perform as prescribed (*ES-3: Improve Road Drainage in El Portal*).	Treatment completed in September and October, 2014.
Early Warning System	Install precipitation and/or stream gauges; NOAA early warning dispatch process; certified letters to residents.	Perform as prescribed, with modifications (*ES-12: NOAA Early Warning System*).	Treatment initiated in September, 2014.

Accomplishments

ES-2: El Portal Debris Basin Clean-Out: The debris basin above the Foresta Road residence has been restored to full capacity. It will be regularly monitored and cleaned as needed.

ES-7: Buckeye Road Home Flood Protection: Sandbags were placed at strategic points along Buckeye Road and adjacent homes to minimize nuisance sedimentation and flooding. Sandbags were also provided to the owner of the high-risk Foresta Road residence to armor a deflection barrier above the home. These may provide additional protection for the property in the event of flooding and mudflows.

ES-8: Geotechnical Engineering Assessment: Four geotechnical engineering firms were

contacted regarding an assessment of engineered treatment options for minimizing hazards to life and property related to debris flows, flooding and mudflows at the two high-risk Foresta Road and Buckeye Road residences. Two firms agreed to do so.

For the Foresta Road residence, one firm recommended clean-out of the existing debris basin and constructing a more substantial deflection barrier above the home. It noted, however, that while these treatments *might* be adequate for low magnitude debris flows, flooding and mudflows triggered by higher probability precipitation events (e.g., 2-year storms), the potential hazards caused by larger, lower probability storms (10- and 50-year) could only be mitigated with engineered solutions far exceeding the parameters of BAER. As such, the firm declined to design. The other firm recommended clean-out of the existing debris basin, hillslope treatments and rockfall fences in the drainage above the home. It agreed to design the hillslope treatments and rock fences.

As noted, the debris basin clean-out above the Foresta Road residence was completed and will be performed as needed. NPS subject-matter experts (Geologists, Hydrologists) were consulted regarding hillslope treatments and rockfall fences. The proposed hillslope treatment method—straw wattles—has been minimally effective similar landscapes (very steep and rocky slopes), and alternative methods (e.g., mulches) do not fare much better (Napper, 2006). This was also noted in the El Portal Fire Soils Assessment Report (p. 5, Appendix A). The rock fencing treatment recommendation was rejected on the basis of several considerations:

- To mitigate large debris flows, the most effective locations to place fences would be above the gabion dam. This area offers no ready vehicular access, and material transport and fence construction would result in a high risk working environment.
- That portion of the watershed below the gabion dam is unlikely to produce debris flows of a magnitude that would warrant the installation of rockfall fences.
- Rockfall fences, especially those engineered for substantial debris flows, are expensive. Despite this expense, however, such fences are not guaranteed to prevent structural damage or total structure loss.
- The preexisting risk associated with the Foresta Road residence being located directly in the active channel of the fire-affected watershed.

At the Buckeye Road residence, one of the firms recommended a gabion dam and deflection barrier above the structure to account for low magnitude debris flows, flooding and mudflows. As with the Foresta Road residence, this firm felt that the Buckeye Road home could not be adequately protected from higher magnitude events with the limitations imposed by BAER. The other firm also recommended a gabion dam and deflection barrier, as well as piped drainage network for runoff, hillslope mulching, and rockfall fencing. It agreed to design these

treatments.

NPS subject-matter experts (Geologists, Hydrologists) were consulted regarding these recommendations; hillslope mulching was encouraged for the drainage above the residence (*ES-3: Improve Road Drainage in El Portal*). This was performed using wood straw applied at a rate to achieve 60% coverage. The gabion dam, deflection barrier and runoff piping were rejected on the basis that the topography is too steep to install an effective debris basin, a deflection barrier would only increase the effects on downstream properties, and a piped drainage network would require engineering design (and costs) beyond the responsibilities of BAER.

The NPS will continue to work with the owners of the high-risk El Portal homes to ensure human safety and—to the extent possible—property, are protected.

ES-12: NOAA Early Warning System: To help protect the residents of El Portal, the NPS and Mariposa County coordinated with the National Oceanic and Atmospheric Administration (NOAA) to develop an early warning system for weather events over the burned area that could trigger debris flows, flooding and mudflows. The protocol is found in Appendix B. It will be provided to affected El Portal residents via certified mail. Incorporating stream flow and precipitation gauge readings into the system was deemed impractical due to the small size of the affected watersheds.

Roads

Impacts and post-fire threats to Foresta and Old Coulterville/Davis Cutoff roads are described in Appendix A (Geologic Hazard Assessment Report, Hydrology Resource Report and Road Assessment Report). Recommended treatments are also discussed in those documents.

Context

Interagency BAER policy states that closure is the preferred treatment for roads impacted by wildland fire or threatened by post-fire conditions. Further, the responsibility for road repair and maintenance does not change following wildfire; thus, though impacts or post-fire threats to roads may have or will emanate from federal lands, those agencies are not responsible for repair or maintenance if another entity had that mandate prior to the fire. Federal agencies are encouraged to work closely with partners on issues of short and long-term road maintenance issues, however.

BAER can fund “stabilization” in cases where a road provides access to emergency services (e.g., law enforcement, fire, medical), critical infrastructure (e.g., communication systems, water, sewer), or is needed to perform essential management activities (e.g., other BAER treatments).

Stabilization entails treatments to make or keep a road *passable* (by agency standards), but not to pre-fire condition mandatorily. For example, in-kind reconstruction or replacement of fire-damaged roads or bridges would rarely be considered stabilization.

Those portions of the Foresta Road affected and threatened by post-fire conditions can be divided into three segments: El Portal Administrative site, Stanislaus National Forest, and YOSE near Foresta. The Stanislaus National Forest segment is by far the longest of the three. Many residents of El Portal and Foresta regard Foresta Road as an important alternative route of egress in the event of emergencies, and desire to have it passable by vehicle. It is also a popular recreational feature for locals (hiking and biking).

Old Coulterville Road is used by local residents to access Stanislaus National Forest by vehicle and, along with Davis Cutoff, for recreational purposes (hiking and biking).

Recommendations

Treatment recommendations for Foresta and Old Coulterville/Davis Cutoff roads are described in the Geologic Hazard Assessment, Hydrology Resource and Road Assessment reports (Appendix A). Two specifications were proposed for Foresta Road on NPS lands— (1) Hillslope Mulching and Road Treatments—for $8,000 (El Portal Fire Burned-Area Report, p. 15, Appendix A) and (2) a temporary closure of Foresta Road within Stanislaus National Forest—YNP Gates ($4,000)—that entails shutting two existing swing gates at the Stanislaus National Forest and NPS boundary, and installing burned area warning signs (El Portal Fire Burned-Area Report, p. 15, Appendix A). No specifications were proposed for hazard tree treatments along roads on NPS lands. The NPS adopted these recommendations, with appropriate modifications, as summarized in the table below, and developed a specification for hazard trees. In addition, the YOSE BAER assessment team recognized other hazards that were not initially identified for NPS lands; appropriate treatments are also provided below. NPS specification forms are presented later in this plan.

Management Action	USFS BAER Plan	NPS BAER Plan	Accomplishments/Comments
Improve drainage on Foresta Road in El Portal	On Foresta Road, above Buckeye Road, install rock-armored dip at drainage crossing, breach outside road berm to enhance drainage, install rock dissipaters and straw bales at berm breaches, and mulch slope below road.	Perform as prescribed, with noted modifications (*ES-3: Improve Road Drainage in El Portal*).	Completed in September and October, 2014.

Management Action	USFS BAER Plan	NPS BAER Plan	Accomplishments/Comments
Foresta Road temporary closure	Lock gates at Stanislaus National Forest/NPS Boundary.	Close existing gate at Stanislaus NF/NPS boundary in El Portal; Construct and install new gate near Foresta (*ES-4: Install Gates*); install/replace road warning signs (*ES-5: Install Warning Signs*); increased agency presence (*ES-6: Increased Agency Presence*).	Existing gate is closed; gate treatment was initiated in September, 2014; warning sign treatment was initiated in September, 2014; increased agency presence was initiated in October, 2014.
Road signs	None	Replace two fire-damaged signs in-kind (*ES-5: Install Warning Signs*).	Treatment completed in September, 2014.
Early warning system	Install precipitation and/or stream gauges; NOAA early warning dispatch process; certified letters to residents.	Perform as prescribed, with modifications (*ES-12: NOAA Early Warning System*).	Treatment initiated in September, 2014.
Old Coulterville/Davis Cutoff Road temporary closure	None	Install gate north of Flying Spur Ranch access road (*ES-4: Install Gates*); install warning signs (*ES-5: Install Warning Signs*); increased agency presence (*ES-6: Increased Agency Presence*).	Warning signs were installed in September, 2014; gate materials were purchased in September, 2014; increased agency presence initiated October, 2014.
Hazard tree mitigation	Close hazardous areas; drop and/or remove hazard trees as needed.	Temporary closures for Foresta and Old Coulterville/Davis Cutoff roads (*ES-4: Install Gates*); increase agency presence (*ES-6: Increased Agency Presence*); mitigate hazard trees along roads and in developed area (*ES-9: Hazard Tree Removal*).	Temporary closures for Foresta and Old Coulterville/Davis Cutoff roads initiated in August, 2014; increased agency presence initiated in October, 2014; hazard trees will be mitigated as needed.

Accomplishments

ES-3: Improve Road Drainage in El Portal: A rock-armored rolling dip was installed on Foresta Road and approximately 400 feet of outboard berm was removed in El Portal. Because the berm was removed rather than breached, no rock dissipaters or straw bales were used. Approximately two acres of slope below Foresta Road were mulched with wood straw at a rate to achieve 60% coverage. Two rolling dips were installed on the dirt access to the upper water

tank. These treatments will be monitored and maintained as needed under BAER through FY17.

ES-4: Install Gates: Existing gates on Foresta Road at the Stanislaus National Forest/NPS boundary in El Portal, and Davis Cutoff near Crane Flat are closed and locked. Materials for three new gates were purchased in September, 2014. Manufacture and installation is expected to occur in October-November, 2014. New gates will be installed on Foresta Road just south of Foresta, Old Coulterville Road just north of the Flying Spur Ranch access road, and at the entrance to McCauley Ranch (replaces a fire-damaged gate).

Foresta and Old Coulterville/Davis Cutoff roads will remain closed to motorized vehicle traffic for the duration of the winter rainy season in 2014-2015. Old Coulterville/Davis Cutoff will likely reopen once hazard trees have been mitigated (Old Coulterville Road [Forest Road 2S84] is also temporarily closed to motorized vehicle traffic on Stanislaus National Forest). Foresta Road will remain impassable to vehicles until the burned bridge is repaired and debris flow and rockfall threats subside. Foresta Road bridge repair and larger road maintenance issues are not the responsibility of BAER; the NPS, Stanislaus National Forest and Mariposa County will meet to discuss long-term road management.

Despite the vehicle closure, Foresta Road continues to be used for recreational activities. The nature of post-fire hazards—debris flows and rockfall—could threaten the safety of participants. The NPS will continue to provide information to that effect through a variety of channels (signs, interpretive materials, public meetings, direct contacts).

ES-5: Install Warning Signs: Two fire-damaged road signs were replaced in-kind, and eight new signs warning of post-fire hazards were installed on Foresta and Old Coulterville roads. Interpretive-type warning signs will be developed and posted at key points around El Portal and Foresta (e.g., bulletin boards, trailheads, gates).

ES-6: Increased Agency Presence: NPS law enforcement rangers have increased patrol time in and around the El Portal Fire burned area. Road closures will be enforced, and the hazards of recreating on roads conveyed during public contacts.

ES-12: NOAA Early Warning System: The early warning system protocol is provided in Appendix B.

Crane Creek Recreation

Local residents utilize Crane Creek within and above the El Portal Administrative Site for recreational activities (e.g., swimming, hiking). There are moderate safety concerns related to debris flows and flash flooding (Hydrology Resource and Geologic Hazard Assessment reports,

Appendix A), as trigger precipitation events higher up in the watershed could be shielded from users.

Recommendations

General public safety treatment recommendations for debris flows are described in the Geologic Hazard Assessment report (Appendix A). These same treatments will also be effective for flooding. Applicable treatments are summarized in the table below, and NPS specification forms are presented later in this plan.

Management Action	USFS BAER Plan	NPS BAER Plan	Accomplishments/Comments
Warning signs	Install warning signs	Install interpretive-type warning signs in El Portal (*ES-5: Install Warning Signs*)	Treatment will be initiated in October-November 2014
Early warning system	Install precipitation and/or stream gauges; NOAA early warning dispatch process; certified letters to residents.	Perform as prescribed, with modifications (*ES-12: NOAA Early Warning System*).	Early warning system treatment was initiated in September, 2014.

Preparers

Jun Kinoshita, Fire Archeologist, Yosemite National Park
Nelson Siefkin, BAER Coordinator, National Park Service, Pacific West Region
Gus Smith, Fire Ecologist, Yosemite National Park

Consultations

Brendan Bonner, Law Enforcement Ranger, Yosemite National Park
Colter Chisum, Engineer, Yosemite National Park
Garrett Chun, Engineer, Yosemite National Park
Tim Kuhn, Hydrologist, Yosemite National Park
Sean McCabe, Lands Specialist, Yosemite National Park
Jim Roche, Hydrologist, Yosemite National Park
Brad Rust, El Portal Fire BAER Team Leader, Shasta-Trinity National Forest
Matt Stark, Law Enforcement Ranger, Yosemite National Park
Greg Stock, Geologist, Yosemite National Park

References

Napper, Carolyn. 2006. Burned Area Emergency Response Treatments Catalog. Online at http://www.fs.fed.us/eng/pubs/pdf/BAERCAT/lo_res/lo_res.shtml.

CULTURAL RESOURCES

Objectives

- Assess potential threats to cultural resources on NPS lands for the purpose of recommending treatments to stabilize archeological sites, traditional cultural properties, and historic structures and landscapes from potential adverse effects of post-fire conditions, and prescribe and implement treatments as necessary.
- Assess potential for adverse effects to cultural resources from other emergency stabilization and rehabilitation actions.
- Consult with the California State Historic Preservation Officer (SHPO), American Indian tribes and groups traditionally associated with YOSE lands and resources, and two Tribal Historic Preservation Officers (THPOs) to meet NPS statutory & regulatory requirements, agency policies, and agreements.

Issues

- Effects from post-fire flooding, debris flows, tree fall, or other severe erosion at significant cultural resources.
- An elevated risk of unauthorized artifact collection due to denuded surfaces that increase artifact exposure.
- Potential effects to cultural resources from implementation of proposed Emergency Stabilization treatments prescribed to address other values at risk.

Introduction

This section addresses cultural resources on NPS lands (YOSE and El Portal Administrative Site). The USDA, Forest Service BAER team evaluated cultural resources only on Stanislaus National Forest. The specialist report for that effort is provided in Appendix A.

Interagency and NPS BAER policy for cultural resources includes the following constraints,

1. Only previously documented resources or those incidentally encountered during the assessment phase are eligible for management intervention under BAER.
2. Cultural resource surveys of the burned area are prohibited except in cases where emergency stabilization treatments are proposed that could adversely affect cultural resources.

3. Emergency stabilization treatments for cultural resources are focused on mitigating or minimizing fire-caused post-fire threats, not merely documenting impacts that occurred as a result of the fire.

Allowable cultural resource treatments under BAER include assessing resources for post-fire threats, stabilizing fire-impacted cultural resources to prevent further degredation, stabilizing or otherwise protecting cultural resources threatened by post-fire conditions, and compliance in advance of other Emergency Stabilization treatments.

Cultural Background

A high diversity of cultural resources lie within the footprint of the El Portal Fire. Many of these were burned over by the fire itself, and have the potential to be damaged by both the post-fire effects and the treatments designed to protect park infrastructure and other resources. These cultural resources include prehistoric and historic archeological sites, historic roads and trails, historic buildings, cultural landscapes, and Traditional Cultural Properties (TCPs).

General background information on the prehistory, history and cultural resources of the El Portal Fire can be found in BAER plans for the Big Meadow (2009) and Rim (2013) Fires, on file with Yosemite National Park and online at: http://www.nps.gov/yose/parkmgmt/upload/RIM_BAER_PLAN2013.pdf.

Reconnaissance Methods

A NPS Resource Advisor (READ) was assigned to the El Portal incident on July 27th, 2014 and immediately enlisted support from both NPS and USDA, Forest Service Cultural Resource Specialists. A total of five Cultural Resource Specialists was assigned to the fireline through the duration of the incident, working with fire suppression personnel to minimize impacts to cultural resources.

The NPS Tribal Liaison worked with the El Portal Fire Incident Management Team to initiate consultation with interested tribal partners. A notification e-mail was sent on July 27th. The NPS also provided initial notification of the incident to the California SHPO on July 29th, pursuant to the "Natural Disasters" stipulation in the 1999 YOSE Programmatic Agreement between the National Park Service, California SHPO, and the Advisory Council on Historic Preservation for compliance with Section 106 of the National Historic Preservation Act to address Planning, Construction, Operations, and Maintenance.

The BAER assessment employed cultural resources data on file at YOSE. Cultural resource information for the El Portal Fire area is not complete, however much information does exist. Standing historic structures are found at Big Meadow, and most have been assessed for

eligibility for listing in the National Register of Historic Places. Some cultural landscape resources have been identified, primarily in the Foresta-Big Meadow area. Archeological survey coverage for the burn area is complete for road corridors and developed areas. One potential TCP (McCauley Meadow) exists within the burn area.

The BAER cultural resource assessment was initiated on July 27th by cataloging recorded cultural resources within the fire perimeter. On August 8th, recorded cultural resources were overlaid on the Burned Area Reflectance Classification (BARC) of the fire map to assess potential impacts and post-fire threats. Risk assessments were developed based the co-occurrence of cultural resources with areas of increased potential for erosion, flooding, stream crossing failure, structural collapse, treefall and illegal collection (due to fire-related exposure and/or improved access). Field assessments were conducted throughout the incident as Cultural Resource Specialists were able to safely access areas.

Findings

Of the 65 known cultural resources considered during the incident, 16 archaeological sites, two historic buildings, three historic roads, and one potential TCP were determined to be potentially vulnerable to post-fire threats. Discussion of these threats is organized by resource type below:

<u>Archeological Sites</u>

The 16 archeological sites presumed to be at risk are located throughout the El Portal Fire burned area, and include the proposed Foresta-Big Meadow Archeological District. The majority of these sites occur along perennial and intermittent streams, trails, or park roads. Site types include prehistoric village sites and lithic scatters, two homestead sites, one large logging camp, and the ruins of a large railroad logging complex. No human remains are known within the burned area. The quality and reliability of site documentation for these resources is generally good, and all of the sites have been or are expected to be relocated and assessable.

Concerns for these resources include erosion, flooding, collapse (in the case of the railroad logging site), treefall, looting, and ground disturbance associated with other post-fire Emergency Stabilization treatments. Preliminary field assessments at five of these sites, especially those along lower Crane Creek, indicated potential for intensive surface erosion, increased stream bank erosion, or treefall. However, when archeological site locations were overlaid on the hydrologic model produced by the El Portal Fire BAER team (Hydrology Resource Report, Appendix A), the presumed high potential for impacts was significantly reduced. For example, the Crane Creek undercrossing at Highway 140 was determined adequate to handle projected post-fire peak flows, and three archeological sites of concern located upstream of the undercrossing were, therefore, also deemed to be at low risk from

erosion and flooding.

At least four archeological sites—both prehistoric and historic—in the Foresta area were identified to be at elevated risk for looting due to artifact exposure and better accessibility resulting from loss of on-site vegetation. At these sites Cultural Resource Specialists observed artifacts or noted improved access from inhabited areas, roads or trails. Closing access to the burn area within the community of Foresta is not practical. However, increased agency presence in the form of law enforcement rangers and archeologists will deter access to vulnerable archeological sites until on-site vegetation recovery begins and public interest in the burned area subsides.

Historic Buildings

Two historic buildings at risk from post-fire threats are the Big Meadow barns. These were constructed in sometime after 1873 when development of the Big Meadow area began. In 1883, James McCauley assumed control of the enterprise and homesteaded 160 acres southwest of Big Meadow.

The barns are judged to be at low risk from increased stream flow/debris flow from a steep, intermittent drainage immediately east of the buildings, but unauthorized artifact collection is possible. Increased agency presence will help to reduce this threat.

Historic Roads

The three historic roads on NPS lands affected by the El Portal Fire include the Old Coulterville Road, Davis Cut-off Road, and Foresta Road. The Old Coulterville Road was the first all-wagon route into Yosemite Valley. Completed in 1874, it opened access to the developments at Big Meadow, which served travelers and sold produce to hotels and other businesses in Yosemite Valley. The Davis Cut-off Road was built in 1914 to promote interest in Foresta as a summer resort. The Foresta Road was constructed to link travelers disembarking the trains in El Portal with the businesses of Foresta and access to Yosemite Valley.

Post-fire road issues include tree/stump burnout and attendant destabilization, increased sheet erosion, increased rill erosion undermining the road prism, debris flows and flooding at stream crossings. The Old Coulterville Road, the Davis Cut-off Road and Foresta Road were assessed through field visits, and analyses of the BARC map and post-fire watershed models. No post-fire threats to historic roads were identified on NPS lands. However, portions of Foresta Road on Stanislaus National Forest are at high to moderate risk of debris flows, rockfall and flooding (Geologic Hazard Assessment, Hydrology Resource and Road Assessment reports, Appendix A).

Traditional Cultural Properties

One potential TCP has been identified on NPS land within the perimeter of the fire at McCauley Meadow. Post-fire threats to this TCP are unknown, but will be determined in consultation with traditionally-associated tribes and groups. Ongoing tribal consultation will also be necessary to determine potential for threats to cultural and religious values of other historic properties within the burned area.

Recommendations

Specification-Related

ES-6: Increased Agency Presence: Increased agency presence in the form of law enforcement patrols and archeological documentation/monitoring will deter unauthorized access and document intrusions. Law enforcement rangers will communicate number of contacts and citations or observed intrusions with YOSE Cultural Resource Managers. The YOSE Fire Archeologist will aid law enforcement in investigating and documenting impacts.

ES-10: Cultural Resource Consultation: YOSE cultural resource managers will consult with the California SHPO, THPOs and Tribal groups regarding compliance for proposed emergency stabilization treatments and mitigating post-fire threats to cultural resources.

Non-Specification Related

None recommended.

Preparers

Jun Kinoshita, Fire Archeologist, Yosemite National Park

Consultations

Jennifer Hardin, Cultural Anthropologist, YOSE
Matt Stark, Law Enforcement Ranger, YOSE

BOTANY

Non-native invasive plants and special status plants (plants designated as rare by either the land agency or the state) and were the primary issues identified in the El Portal Fire Botany BAER Report (Appendix A). That document focused primarily on the Stanislaus National Forest, with the understanding that YOSE would request Burn Area Rehabilitation (BAR) funds for the El Portal Fire in FY15 to repair or improve lands unlikely to recover naturally from severe wildfire damage. This plan was submitted to the Pacific West Regional Office prior to the close of FY14.

The Yosemite BAR treatments will entail mapping, monitoring, and removing invasive plants to encourage natural recovery by native plants. Treatments will focus on all areas impacted by fire management operations and/or areas where well-established invasive plant populations could hinder natural recovery. While the El Portal Fire Botany BAER Report (Appendix A) focuses primarily on disturbance by bulldozers, on NPS lands, any human caused disturbance will be considered both a potential vector, and potential habitat for invasive plants. For example, a hundred firefighters cutting handline through an infestation of invasive plants can spread seeds as far or farther than a bulldozer. Additionally, fire and firefighters passed through many known infestations in El Portal, Foresta and at the Drew Meadow Incident Command Post. As such, treatments areas should extend beyond bulldozer lines and include hand lines, staging areas, safety zones, and other human-impacted sites. Specific details for surveys and invasive plant treatments are detailed in the El Portal Fire BAR plan.

None of the special status plants within the El Portal Fire footprint are federally listed, though several are state listed rare. Their populations are not likely to be negatively affected by the fire and specific treatments were not pursued under BAER or BAR. Further, as described in the El Portal Fire BAR plan, proposed invasive plant treatments will provide special status rare plants with direct and indirect benefits.

Specifications

El Portal Fire BAER Specifications, FY14-FY17

Specification	FY14 Request	FY15 Request	FY16 Request	FY17 Request	Total Request
ES-1: BAER Plan Preparation	$24,700	--	--	--	**$24,700**
ES-2: El Portal Debris Basin Clean-Out	--	$5,500	TBD	TBD	**$5,500**
ES-3: Improve Road Drainage in El Portal	$9,200	$18,000	TBD	TBD	**$27,200**
ES-4: Install Gates	$3,300	$6,400	TBD	TBD	**$9,700**
ES-5: Install Warning Signs	$6,475	$2,840	TBD	TBD	**$9,315**
ES-6: Increased Agency Presence	--	$51,200	--	--	**$51,200**
ES-7: Buckeye Road Home Flood Protection	--	$19,350	TBD	TBD	**$19,350**
ES-8: Geotechnical Engineering Assessment	$4,135	--	--	--	**$4,135**
ES-9: Hazard Tree Removal	--	$18,900	TBD	TBD	**$18,900**
ES-10: Cultural Resource Consultation	--	$2,540	--	--	**$2,540**
ES-11: BAER Implementation Leaders	--	$51,940	TBD	TBD	**$51,940**
ES-12: NOAA Early Warning System	--	$5,156	TBD	TBD	**$5,156**
FY Request Total	**$47,810**	**$181,826**	**TBD**	**TBD**	**$229,636**

TBD: To Be Determined (treatment monitoring and maintenance)

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	BAER Plan Preparation	**PART E BIA Spec-#**	ES-1
NFPORS TREATMENT CATEGORY*	Planning	**FISCAL YEAR(S) (list each year):**	2014
NFPORS TREATMENT TYPE *	ES/BAER Plan	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal, Foresta	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:
Preparation of the BAER plan for the El Portal Fire in Yosemite National Park and the El Portal Administrative Site.

B. Location (Suitable) Sites:
The perimeter of the El Portal Fire and downstream areas within Yosemite National Park and the El Portal Administrative Site.

C. Design/Construction Specifications:
N/A

D. Purpose of Treatment Specifications (relate to damage/change caused by fire:
This BAER plan was prepared and submitted as dictated by Department of the Interior (620 DM Part 3: Burned Area Emergency Stabilization and Rehabilitation) and National Park Service (Reference Manual 18: Wildland Fire Management) policy.

F. Treatment Effectiveness Monitoring Proposed:
N/A

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Siefkin (GS-11/08)	$23,500
TOTAL PERSONNEL SERVICE COST	**$23,500**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL MATERIALS AND SUPPLY COST	**$0**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
Siefkin Travel	$1,200
TOTAL TRAVEL COST	**$1,200**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY14	08/15/2014	09/30/2014	F	N/A	N/A	N/A	$24,700
						TOTAL	**$24,700**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	El Portal Debris Basin Clean-Out	**PART E BIA Spec-#**	ES-2
NFPORS TREATMENT CATEGORY*	Erosion/Sedimentation	**FISCAL YEAR(S) (list each year):**	2015/2016/2017
NFPORS TREATMENT TYPE *	Catchment Basin Cleanout	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

A gabion dam was constructed in a small watershed above the community of El Portal following the Arch Rock Fire in 1990. An occupied residence lies in the drainage below the gabion. The debris basin behind the gabion has accumulated approximately 80 cubic yards of sediment since 1991. The storage capacity of the debris basin should be fully restored to allow for amplified watershed response following the El Portal Fire. This work should be completed by October 15, 2014. This specification includes an additional cleaning as needed based on monitoring.

B. Location (Suitable) Sites:

See Attached Map

C. Design/Construction Specifications:

Accumulated sediment will be extracted with an excavator and removed from the site with a dump truck. Spoil dirt will be deposited in a landfill in the San Joaquin Valley due to concerns over noxious invasive weeds (e.g., yellow star thistle).

D. Purpose of Treatment Specifications (relate to damage/change caused by fire):

Modelled watershed response indicates that the post-fire sedimentation rates could exceed the remaining storage capacity of the debris basin. Failure to clean out the basin could result in diminished functionality and potential failure of the rock gabion, threatening life and property values downstream.

E. Treatment Effectiveness Monitoring Proposed:

The debris basin and gabion will be monitored after precipitation events and maintained as needed under BAER through August, 2017.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
WG-9 Heavy Equipment Operators ($40/hr. x 100 hrs.)	$4,000
TOTAL PERSONNEL SERVICE COST	**$4,000**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Fuel	$1,500
TOTAL MATERIALS AND SUPPLY COST	**$1,500**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL TRAVEL COST	**$0**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY15	10/01/2014	9/30/2015	F	Basin	$2,750	2	$5,500
FY16	10/01/2015	9/30/2016	F	Basin	TBD	TBD	TBD
FY17	10/01/2016	6/06/2017	F	Basin	TBD	TBD	TBD
						TOTAL	**$5,500**

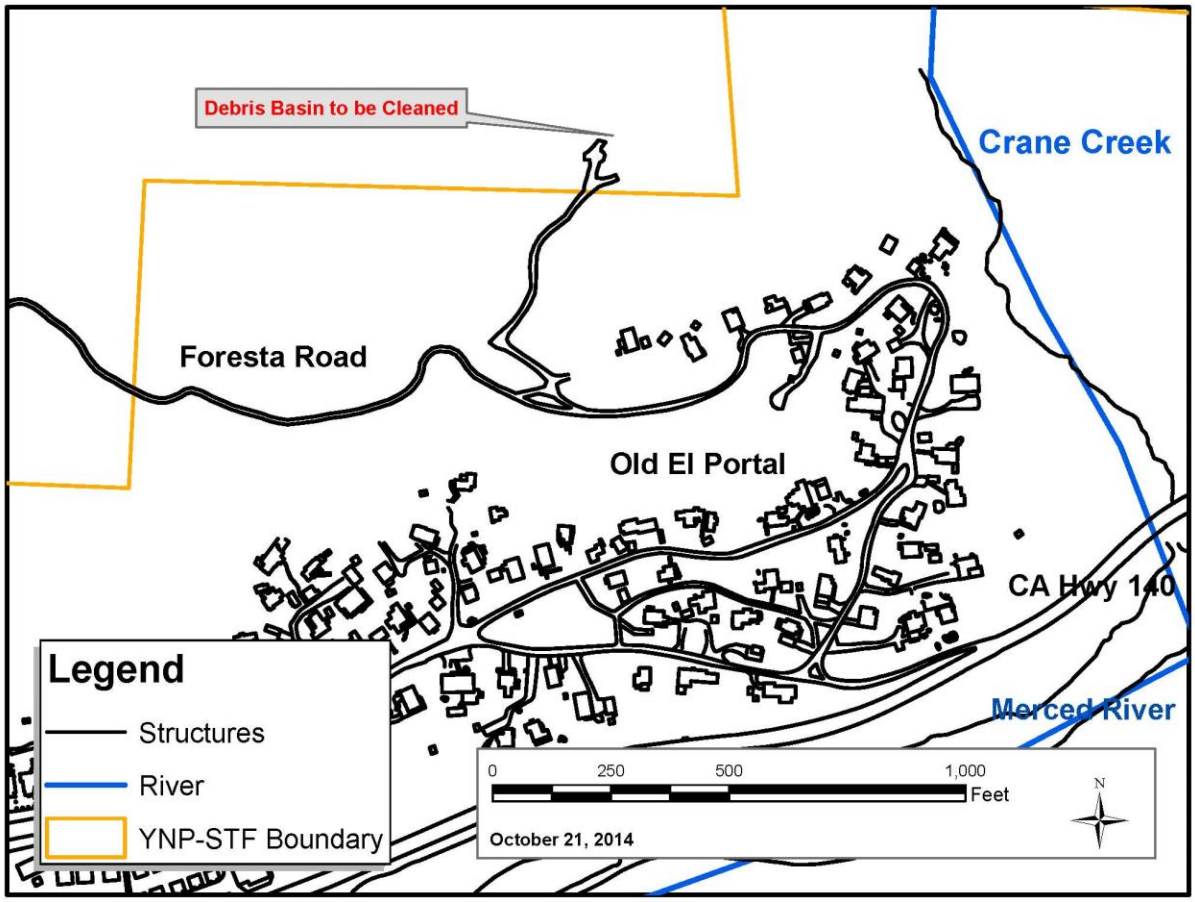
Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer; **TBD:** To Be Determined

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:



Map ES-2. El Portal Debris Basin Clean-out

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Improve Road Drainage in El Portal	**PART E Spec-#**	ES-3
NFPORS TREATMENT CATEGORY*	Roads	**FISCAL YEAR(S) (list each year):**	2014/2015/2016/2017
NFPORS TREATMENT TYPE *	Prism	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

Improve, re-direct and disperse drainage on various roads in the community of El Portal to minimize probability of damage to homes, roads and other infrastructure. Models suggest a significant increase in post-fire runoff in the drainages above El Portal. Likewise, nuisance flooding was documented in the community after the 1990 Arch Rock Fire.

B. Location (Suitable) Sites:

(1) Along and below Foresta Road above Old El Portal, between the water tank and a drainage approximately 100 yards west of the end of the pavement;
(2) On the dirt access road to the upper water tank;
(3) Approximately 2 acres of hillslope below Foresta Road (SEE ATTACHED MAP).

C. Design/Construction Specifications:

(1) Construct an armored dip on an ephemeral drainage that crosses Foresta Road. Regrade road to pass all upslope channel flow across the road rather than down the inboard ditch along the road. This will require excavating 6-12 inches in line with the natural drainage and building a high spot immediately downstream. The dip should be lined with 3-inch size rock. Downstream of the dip, there should be a rock flow diffusion apron (or gabion) extending downhill approximately 25-50 feet (6 to 12-inch size rock).

(2) Remove approximately 400 linear feet of outboard berm (~20 yards of material) along Foresta Road to allow water to flow off the uphill side of the road in a diffuse manner rather than as a concentrated flow near the lower water tank. The extracted material will be removed from the site. In locations where oak trees are growing in the berm, it will be left intact.

(3) Place wood straw on slope below the Foresta Road berm removal to encourage runoff infiltration and discourage rill and sheet erosion. Wood straw will be delivered to the top of the slope after berm removal. It will be distributed downslope with hand rakes to approximately 60% coverage. Locally available woody material will be distributed at the top of the slope to help protect the wood straw.

(4) Construct two rolling dips on the dirt access road to the upper water tank to prevent runoff from burned slopes from concentrating on the roadway and draining onto burned slopes above houses.

F. Treatment Effectiveness Monitoring Proposed:

The treatments will be inspected by a BAER Implementation Leader after each rain event. Treatment monitoring and maintenance will be financed through BAER and performed as needed through August, 2017.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
WG-9 Heavy Equipment Operators ($40/hr. x 100 hours) [FY15]	$4,000
YNP Fire Module 1 ($2500/8-hr day OT x 5 days) [FY15]	$12,500
TOTAL PERSONNEL SERVICE COST	**$16,500**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Fuel (excavator, road grader, dump truck) [FY15]	$1,500
Rock (6 to 12-inch, 10 yards; 3-inch, 5 yards; including delivery) [FY14]	$900
Wood straw (26 tons [50 lb. bales], including delivery) [FY14]	$8,300
TOTAL MATERIALS AND SUPPLY COST	**$10,700**

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL TRAVEL COST	**$0**

CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

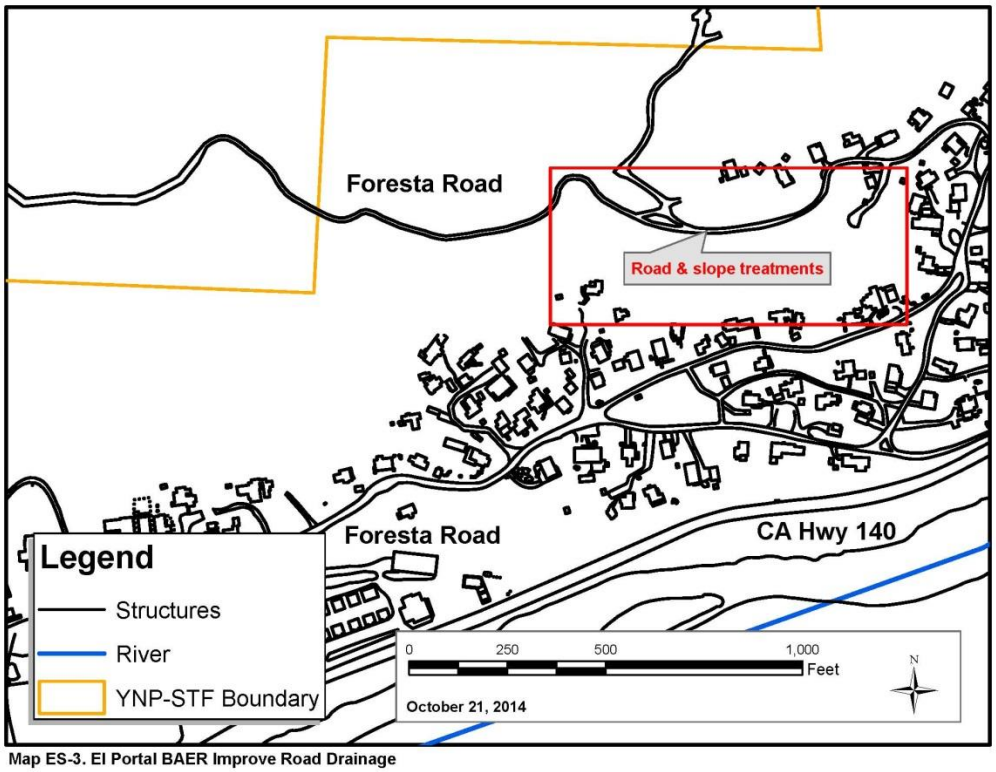
FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY14	9/20/2014	9/30/2014	F	Acres	$4,600	2	$9,200
FY15	10/1/2014	9/30/2015	F	Acres	$9,000	2	$18,000
FY16	10/01/2015	9/30/2016	F	Acres	TBD	TBD	TBD
FY17	10/01/2016	8/06/2017	F	Acres	TBD	TBD	TBD
						TOTAL	**$27,200**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer; **TBD:** To Be Determined

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P, M
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression



Map ES-3. El Portal BAER Improve Road Drainage

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Install Gates	**PART E Spec-#**	ES-4
NFPORS TREATMENT CATEGORY*	Roads	**FISCAL YEAR(S) (list each year):**	2014/2015/2016/2017
NFPORS TREATMENT TYPE *	Road Closure	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal, Foresta	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

Post-fire threats to human safety include debris flows, rockfall, flooding and hazard trees. Foresta and Old Coulterville Roads will be temporarily closed to minimize human exposure. Two gates will be installed on these roads (as well as another on spur road). Gates may be removed when post-fire threats abate.

B. Location (Suitable) Sites: [See Attached Map]

Install three gates:

(1) Foresta Road—south of the community of Foresta.
(2) Old Coulterville Road—just north of Fly Spur access road.
(3) McCauley Ranch Access Road—replaces gate damaged by fire.

C. Design/Construction Specifications:

Gates will be the standard metal swing-type used at YOSE. Boulders will be added as needed to the margins of gates to prevent vehicle circumvention. Gate locations will be cleared by an archeologist.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire):

Foresta and Old Coulterville Roads are used by local residents for vehicular travel and recreation. Some older maps and Global Positioning Systems (GPS) imply that Foresta Road is a viable access road into and out of Yosemite National Park, and members of the public sometimes attempt to use this route. Closing existing gates and installing new gates on roads will restrict access to unsafe post-fire conditions, including debris flows, rockfall, flooding and hazard trees. In addition to these threats, one of the bridges on Foresta Road burned during the fire and is impassable by vehicle.

E. Treatment Effectiveness Monitoring Proposed:

YOSE Law Enforcement patrols in and around the burned area will determine whether public use of the burned area is altered by the presence of gates. Gate maintenance and removal may be funded by BAER through August, 2017.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
WG-9 (gate construction) @ $40/hr. x 80 hours [FY15]	$3,200
WG-9 (gate installation) @ $40/hr. X 40 hours [FY15]	$1,600
GS-9/7 Archeologist @ $40/hr. x 20 hrs. [FY15]	$800
TOTAL PERSONNEL SERVICE COST	**$5,600**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Steel [FY14]	$3300
Concrete [FY15]	$500
TOTAL MATERIALS AND SUPPLY COST	**$3,800**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
GSA vehicle@ $600/mo x 0.5 mo [FY15]	$300
TOTAL TRAVEL COST	**$300**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY14	08/30/2014	9/30/2014	F	Gates	$1,100	3	$3,300
FY15	10/01/2014	9/30/2015	F	Gates	$2,134	3	$6,400
FY16	10/01/2015	9/30/2016	F	Gates	TBD	TBD	TBD
FY17	10/01/2016	8/06/2017	F	Gates	TBD	TBD	TBD
						TOTAL	**$9,700**

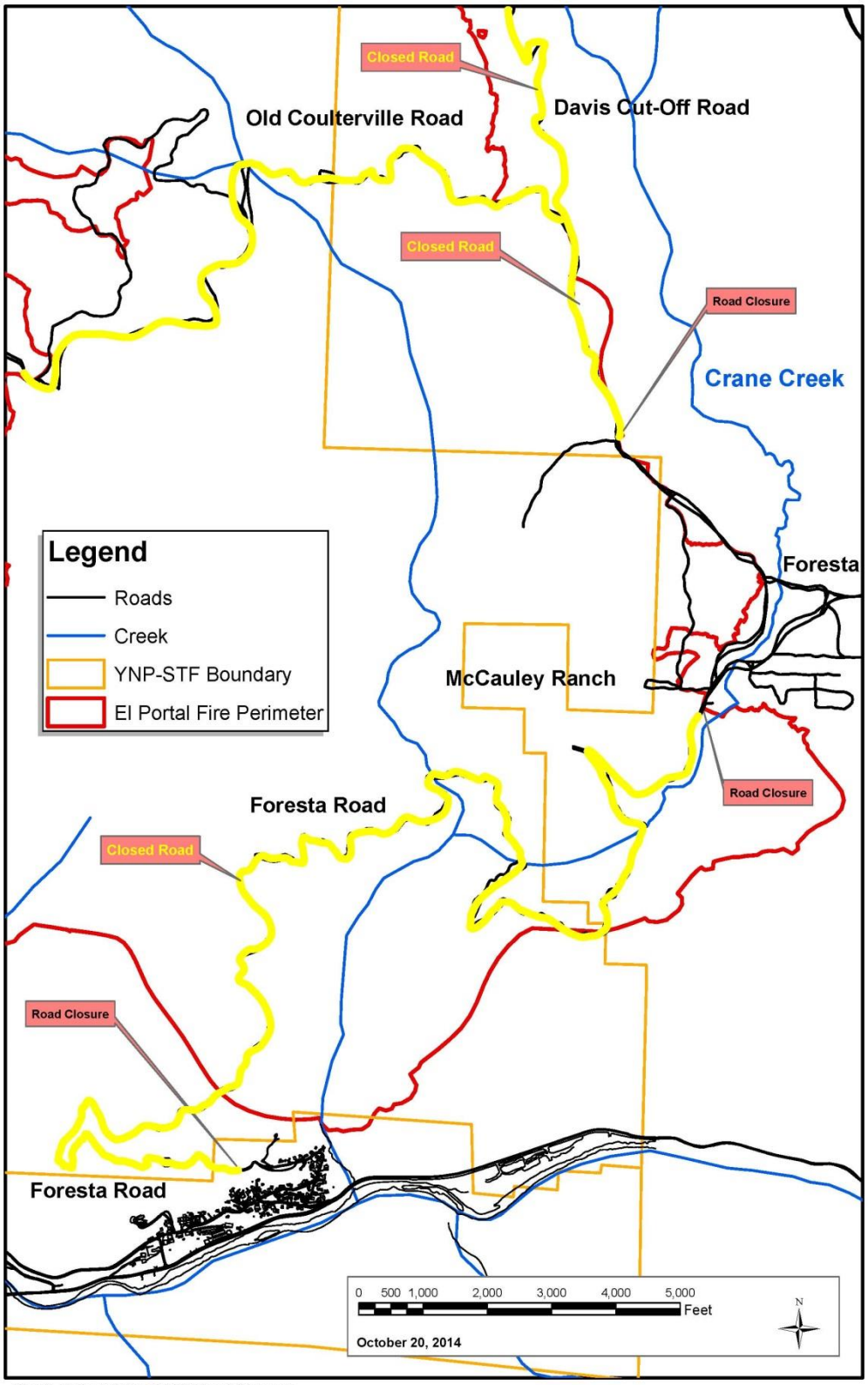
Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer; **TBD:** To Be Determined

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P, M
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:



Map1. El Portal Fire BAER Road Closures

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Install Warning Signs	**PART E Spec-#**	ES-5
NFPORS TREATMENT CATEGORY*	Protection and Warning	**FISCAL YEAR(S) (list each year):**	2014/2015/2016/2017
NFPORS TREATMENT TYPE *	Warning Signs	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal, Foresta	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

Post-fire threats to human safety include debris flows, rockfall, flooding and hazard trees. Foresta, Davis Cut-off and Old Coulterville Roads will be temporarily closed to vehicle traffic to minimize human exposure. Two existing road safety signs damaged by the fire will be replaced, and eight burned area road warning signs will be constructed and installed. In addition, interpretative-style warning signs will be designed, constructed and installed in the community of El Portal. Road signs will be installed in FY14, and the interpretive-style warning signs in FY15. Some or all signs may be removed when post-fire threats abate.

B. Location (Suitable) Sites: [See Attached Map]

Repair/replace two fire-damaged road signs:

(1) "No Access to/from Yosemite"—Foresta Road in El Portal
(2) "No Access to/from Yosemite"—Foresta Road south of Foresta

Install five "Road Closed" signs:

(1) Foresta Road near El Portal Fire Station
(2) Foresta Road near road to upper water tank in El Portal
(3) Foresta Road at entrance to community of Foresta
(4) Foresta Road north of proposed gate
(5) Old Coulterville Road south of proposed gate

Install three "Entering Burned Area" signs:

(1) El Portal
(2) Junction of Foresta and Big Oak Flat Roads
(3) Entrance to community of Foresta

Interpretive Warning Signs:

(1) Locations to be determined: near social trail entrance to Crane Creek from Hwy 140.

C. Design/Construction Specifications:

Road signs will conform to NPS and Federal Department of Transportation standards and address road closures and threats from rock fall, debris flows, hazard trees and localized flooding. Signs will be constructed and installed by the YOSE Sign Shop.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire):

Foresta, Davis Cut-off and Old Coulterville Roads are used by local residents for vehicular travel and recreation. Some older maps and Global Positioning Systems (GPS) imply that Foresta Road is a viable access road into and out of Yosemite National Park, and members of the public sometimes attempt to use this route. Foresta and Old Coulterville/Davis Cutoff Roads will be closed for at least the winter of 2014-2015. Proposed road warning signs will notify travelers of the threats before and after the roads are re-opened. Interpretive-style signs will warn El Portal residents and other users of local post-fire threats (e.g., debris flows, flooding along Crane Creek).

E. Treatment Effectiveness Monitoring Proposed:

YOSE law enforcement patrols in and around the burned area will determine whether public use of the burned area is altered by the presence of signs. Signs can be maintained and removed by BAER through August, 2017.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
WG-9 Sign Maker @ $40/hr x 100 hrs [FY14]	$4,000
WG-5 (3) Laborers (traffic control, sign placement) @ $25/hr x 40 hrs [FY14]	$1,000
WG-9 Sign Maker @ $40/hr x 40 hrs [FY15]	$1,600
WG-5 (3) Laborers (traffic control, sign placement) @ $25/hr x 40 hrs [FY15]	$1,000
TOTAL PERSONNEL SERVICE COST	**$6,160**

EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Vinyl (50 yds.) [FY14]	$400
Posts (25) [FY14]	$1,000
Vinyl (25 yds.) [FY15]	$200
TOTAL MATERIALS AND SUPPLY COST	**$1,600**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
GSA Vehicle 100 miles [FY14]	$75
GSA Vehicle 50 miles [FY15]	$40
TOTAL TRAVEL COST	**$115**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY14	08/30/2014	9/30/2014	F	Signs	$648	10	$6,475
FY15	10/01/2014	9/30/2015	F	Signs	$1,420	2	$2,840
FY16	10/01/2015	9/30/2016	F	Signs	TBD	TBD	TBD
FY17	10/01/2016	8/06/2017	F	Signs	TBD	TBD	TBD
						TOTAL	**$9,315**

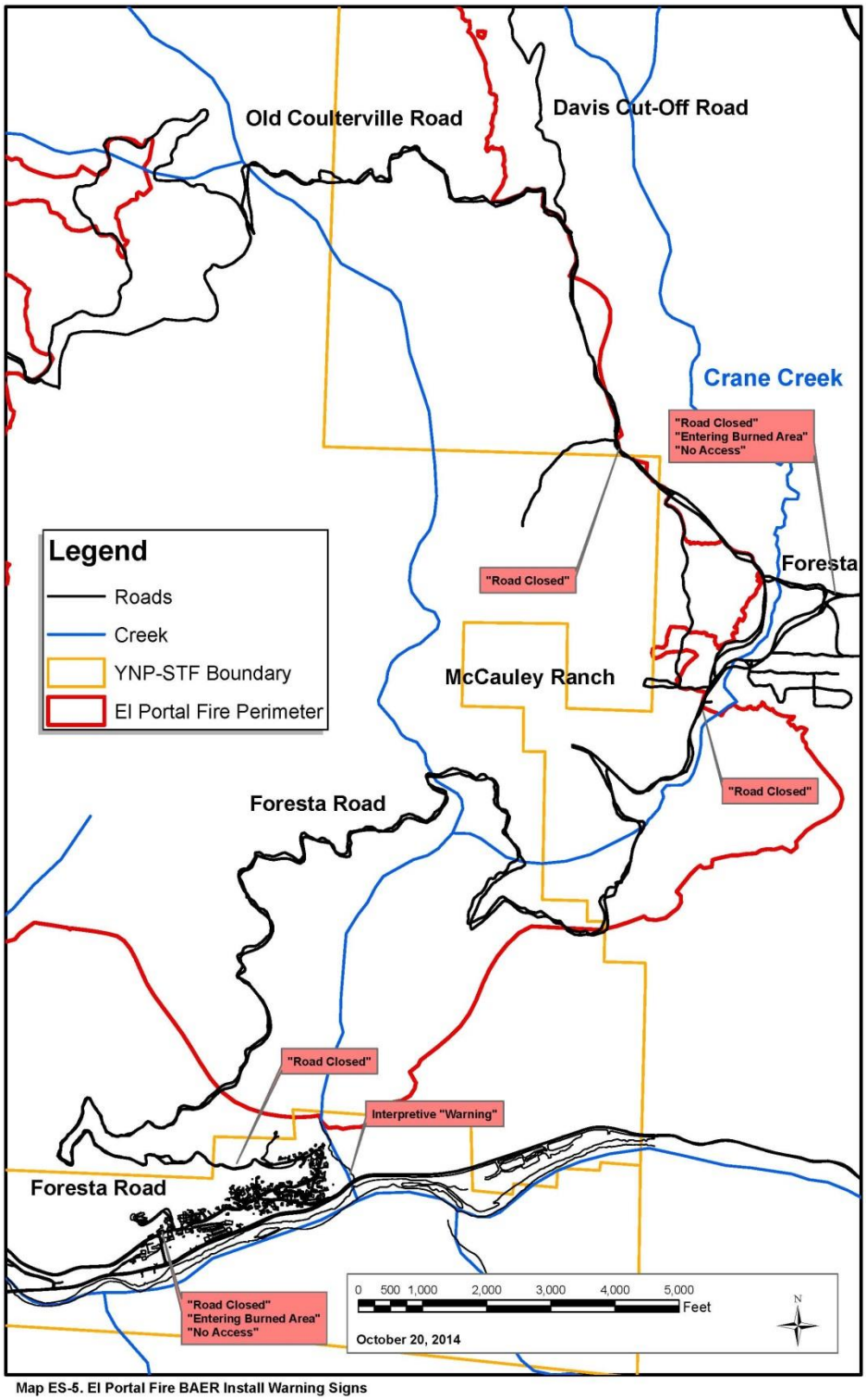
Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer; **TBD:** To Be Determined

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P, M
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:



Map ES-5. El Portal Fire BAER Install Warning Signs

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Increased Agency Presence	**PART E BIA Spec-#**	ES-6
NFPORS TREATMENT CATEGORY*	Assessment	**FISCAL YEAR(S) (list each year):**	2015
NFPORS TREATMENT TYPE *	Risk Assessment	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal, Foresta	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

This specification addresses cultural resources at risk from the impacts of unauthorized collection as a result of post-fire conditions. These resources are located in and adjacent to the WUI areas of El Portal and Foresta. Components include:

1) Increased agency presence in the form of law enforcement patrols and archeological monitoring will deter unauthorized access and document intrusions. A collateral benefit of increased agency presence will be monitoring the presence of the public into unsafe burned areas closed following the fire.
2) YOSE Archeologists will addresses threats to five archeological sites at risk of unauthorized collection as a result of post-fire conditions by documenting exposed resources in and around sites that have a history of looting. Updating exposed resources will help Law Enforcement Rangers and Archeologists identify unauthorized collection.

B. Location (Suitable) Sites:

Roads in and around Foresta and specified cultural resources.

C. Design/Construction Specifications:

Law Enforcement Rangers will increase existing patrols in the Foresta area to monitor activity and deter unauthorized collection. In addition to documentation within the five specified archeological sites, Archeologists will spot check other at-risk resources and document any intrusions or impacts.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire:

Risk of unauthorized collection is reduced by closure of burn area. The NPS is unable to close access to community of Foresta. Increased agency presence will deter unauthorized collection and enforce closure of the burned area from access points on NPS lands.

E. Treatment Effectiveness Monitoring Proposed:

Law Enforcement Rangers will communicate number of contacts and citations or observed intrusions with Cultural Resource Managers. YOSE Archeologists will aid law enforcement in investigating and documenting impacts.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
GS-7/5 Seasonal Law Enforcement Ranger (6 pp x $2156)	$13,000
GS-9/7 Permanent Archeologist (6 pp x $3152)	$19,000
GS-7/4 Term Archeologist (6 pp x $2557)	$16,000
TOTAL PERSONNEL SERVICE COST	**$48,000**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Miscellaneous Supplies	$1,000
TOTAL MATERIALS AND SUPPLY COST	**$1,000**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
GSA vehicle ($600/month x 2 months)	$1,200
GSA vehicle ($500/month x 2 months)	$1,000
TOTAL TRAVEL COST	**$2,200**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
15	10/01/2014	08/06/2015	F	N/A	N/A	N/A	$51,200
						TOTAL	**$51,200**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P, M
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Buckeye Road Home Flood Protection	**PART E BIA Spec-#**	ES-7
NFPORS TREATMENT CATEGORY*	Erosion/Sedimentation	**FISCAL YEAR(S) (list each year):**	2015/2016/2017
NFPORS TREATMENT TYPE *	Erosion Control	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:
Alignments of sandbags will be strategically placed along Buckeye Road to channel runoff away from homes.

B. Location (Suitable) Sites:
Buckeye Road, El Portal, California [SEE ATTATCHED MAP]

C. Design/Construction Specifications:
Due to time and labor constraints, filled sandbags will be purchased in a quantity of 1,500. Sandbags will be placed three-high in a 50% overlap pattern along approximately 244 linear feet (approx. 750 sandbags) of Buckeye Road (as mapped). Bags will be painted with white latex house paint to extend life. Approximately 300 more sandbags will be provided to the owner of the home at 5674 Foresta Road to augment flood and debris flow structures. The balance will be staged for contingencies.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire:
Nuisance flooding occurred in residences lining Buckeye Road following the 1990 Arch Rock Fire. Modeled watershed response suggests that similar conditions are likely to occur following the El Portal Fire.

E. Treatment Effectiveness Monitoring Proposed:
The Buckeye Road area will be monitored for flooding during and after rain events. Adjustments to the sandbag alignments will be made as needed. Treatment monitoring and maintenance will be conducted under BAER through August, 2017.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
YNP Fire Module 1 (5 days X $2500)	$12,500
TOTAL PERSONNEL SERVICE COST	**$12,500**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
1500 Sandbags ($4.50 per bag delivered)	$6,200
Latex Paint ($200/5-gallon x 3)	$600
Paint Brushes ($5/brush x 10)	$50
TOTAL MATERIALS AND SUPPLY COST	**$6,850**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL TRAVEL COST	**$0**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY15	10/01/2014	9/30/2015	F	Acres	$9,675	2	$19,350
FY16	10/01/2015	9/30/2016	F	Acres	TBD	TBD	TBD
FY17	10/01/2016	8/06/2017	F	Acres	TBD	TBD	TBD
						TOTAL	**$19,350**

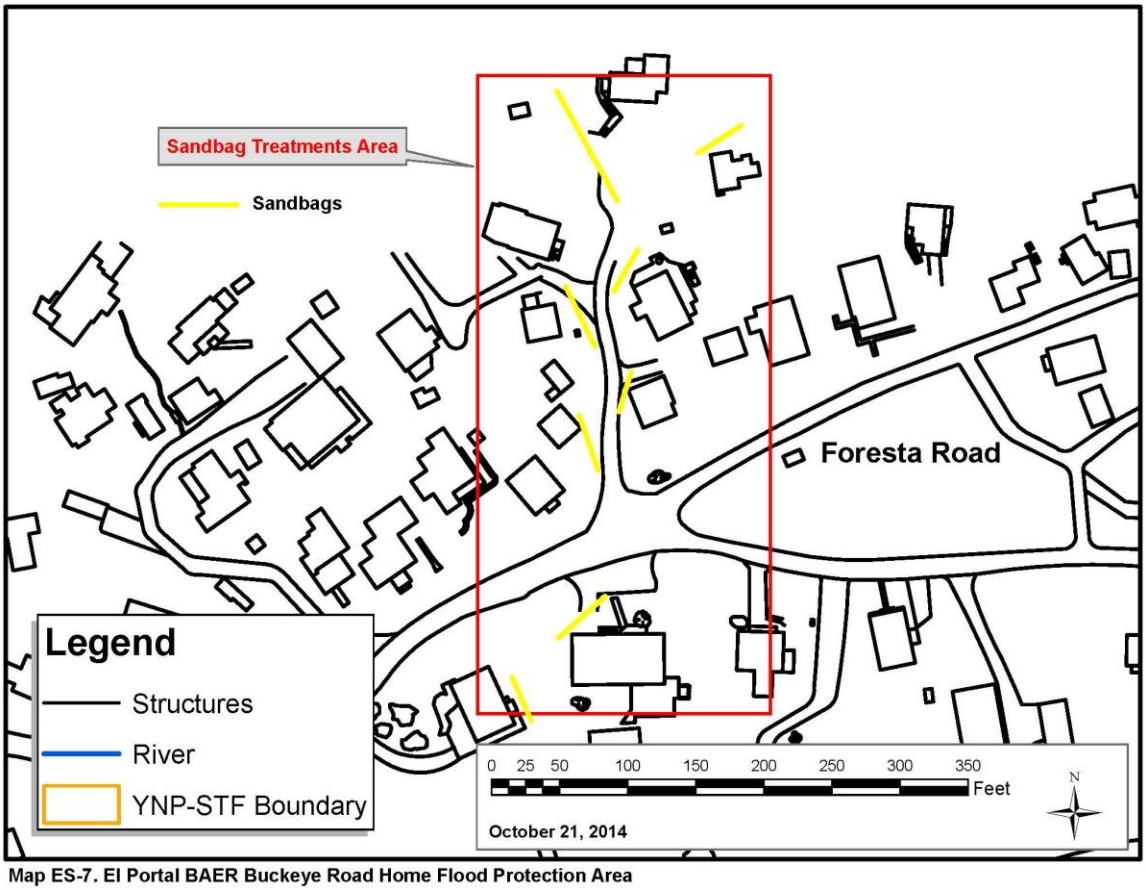
Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer; **TBD:** To Be Determined

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:



Map ES-7. El Portal BAER Buckeye Road Home Flood Protection Area

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Geotechnical Engineering Assessment	**PART E BIA Spec-#**	ES-8
NFPORS TREATMENT CATEGORY*	Assessment	**FISCAL YEAR(S) (list each year):**	2014
NFPORS TREATMENT TYPE *	Risk Assessment	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:
Geotechnical engineers will assess potential treatment options for two homes in El Portal at risk from flooding, erosion and debris flows following the El Portal Fire.

B. Location (Suitable) Sites:
Buckeye Road and Foresta Road, El Portal, California. [SEE ATTACHED MAP]

C. Design/Construction Specifications:
Geotechnical engineers will assess the feasibility and efficacy of potential treatments for both homes to protect against post-fire threats. If deemed necessary and practical based on the assessment, specifications for the design and construction of potential treatments will be developed.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire:
The two homes are at risk from flooding, erosion and debris flows following the El Portal Fire. Both were impacted by storms after the 1990 Arch Rock Fire. The USFS El Portal BAER plan recommended an assessment of potential protection measures by a geotechnical engineer.

E. Treatment Effectiveness Monitoring Proposed:
N/A

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
N/A	$0
TOTAL PERSONNEL SERVICE COST	**$0**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL MATERIALS AND SUPPLY COST	**$0**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL TRAVEL COST	**$0**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
Yamabe and Horn	$1,800
Condor Earth	$2,335
TOTAL CONTRACT COST	**$4,135**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY 14	08/15/2014	09/15/2014	C	N/A	N/A	N/A	$4,135
						TOTAL	**$4,135**

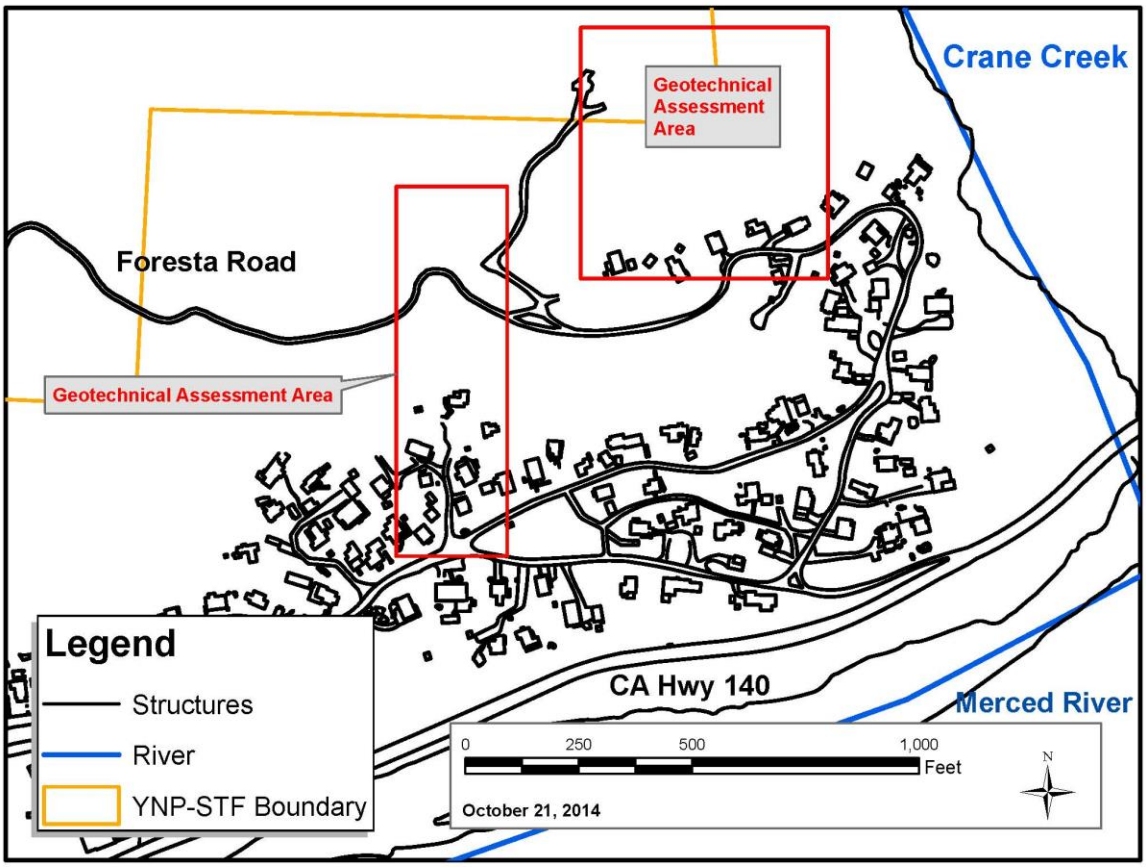
Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	C
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:



Map ES-8. El Portal BAER Geotechnical Engineering Assessment Areas

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Hazard Tree Removal	**PART E BIA Spec-#**	ES-9
NFPORS TREATMENT CATEGORY*	Road	**FISCAL YEAR(S) (list each year):**	2015
NFPORS TREATMENT TYPE *	Hazard Removal	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal, Foresta	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:
Remove hazard trees created by the El Portal Fire from the Foresta community and along Foresta, Davis Cut-off and Old Coulterville Roads.

B. Location (Suitable) Sites:
First street in Foresta and along Foresta, Davis Cut-off and Old Coulterville Roads within YOSE and the El Portal Administrative Site.

C. Design/Construction Specifications:
Hazard trees in proximity to roads or structures will be dropped by a C-Faller. Hazard tree determinations will be made using the YOSE assessment system. In cases where the resultant logs and slash present a future fire risk, the materials will be removed or piled for burning.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire:
Protect public and employee safety and infrastructure from hazard trees created by the El Portal Fire.

F. Treatment Effectiveness Monitoring Proposed:
The potentially affected areas will be periodically surveyed for hazard trees, particularly before and following storm events. Treatment monitoring and maintenance may continue as needed through August, 2017.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Forestry Worker (C-Faller) @(WG10, $3,130 /PP x 3 each x 0.5 PP)	$4,700
YNP Fire Module 1 ($2500/8-hr day OT x 5 days)	$12,500
TOTAL PERSONNEL SERVICE COST	**$17,200**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	**$0**
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Saw parts, fuel, bar oil	$500
TOTAL MATERIALS AND SUPPLY COST	**$500**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
GSA vehicle ($600/month x 2 months)	$1,200
TOTAL TRAVEL COST	**$1,200**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY15	10/01/2014	9/30/2015	F	Miles	$4,725	4	$18,900
FY16	10/01/2015	9/30/2016	F	Miles	TBD	4	TBD
FY17	10/01/2016	8/06/2017	F	Miles	TBD	4	TBD
						TOTAL	**$18,900**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer; **TBD:** To Be Determined

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P, M
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	Cultural Resource Consultation	**PART E BIA Spec-#**	ES-10
NFPORS TREATMENT CATEGORY*	Planning	**FISCAL YEAR(S) (list each year):**	2015
NFPORS TREATMENT TYPE *	Consultation	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	N/A	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

This specification addresses cultural resources at risk from impacts from post-fire related effects such as erosion, destabilization, and unauthorized collection. These resources are located in and adjacent to the WUI areas of El Portal and Foresta. YOSE Cultural Resource Managers will consult with the California State Historic Preservation Officer, Tribal Historic Preservation Officers, and American Indian tribes and groups prior to prescribing treatments to minimize or mitigate post-fire related effects to cultural resources.

B. Location (Suitable) Sites:

16 archaeological sites
1 potential Traditional Cultural Property
2 proposed archeological districts
3 historic roads

C. Design/Construction Specifications:

Consult with tribal partners to determine values at risk and develop treatments.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire:

There are potential Traditional Cultural Properties in the El Portal burned area along with other properties of importance to park-associated tribes. Consulting with the tribes will identify needs and develop treatments.

F. Treatment Effectiveness Monitoring Proposed:

N/A

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
GS-7/5 Term Cultural Anthropologist ($26/hr. x 54 hrs.)	$1,360
GS-9/5 Permanent Cultural Anthropologist ($48/hr. x 8 hrs. OT)	$390
GS-9/7 Permanent Archeologist ($39/hr. x 20 hrs.)	$790
TOTAL PERSONNEL SERVICE COST	**$2540**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL MATERIALS AND SUPPLY COST	**$0**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL TRAVEL COST	**$0**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY 15	10/01/2014	09/30/2015	F	N/A	N/A	N/A	$2540
						TOTAL	**$2540**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	BAER Implementation Leader	**PART E BIA Spec-#**	ES-11
NFPORS TREATMENT CATEGORY*	Monitoring	**FISCAL YEAR(S) (list each year):**	2015
NFPORS TREATMENT TYPE *	Treatment Effectiveness Monitoring	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal; Foresta	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

This specification will fund salary, travel and miscellaneous expenses for personnel responsible for overseeing implementation of proposed BAER treatments and activities associated with the El Portal Fire. Funding will also be provided for administrative support.

B. Location (Suitable) Sites:

BAER treatments and activities associated with the El Portal Fire on Yosemite National Park and the El Portal Administrative Site.

C. Design/Construction Specifications:

BAER Implementation Leaders:

(1) Develop and amend specifications
(2) Develop scopes of work
(3) Contract technical representation
(4) Interagency coordination
(5) Implementation monitoring
(6) Budget tracking
(7) Communication and education
(8) Accomplishment reporting

Administrative:

(1) Timekeeping
(2) Contracting
(3) Purchasing

D. Purpose of Treatment Specifications (relate to damage/change caused by fire):

The El Portal Fire created a number of complex post-fire issues on NPS lands. Multiple specifications are proposed to address these issues, most of which are time-consuming and/or require specialized expertise. Much of the implementation work will be performed with YOSE staff and equipment on lieu days. Dedicated overhead implementation and administrative personnel are required to ensure specifications are completed correctly and in a timely manner, and minimize interruptions to YOSE daily operations.

E. Treatment Effectiveness Monitoring Proposed:

N/A

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
Kinoshita (GS-9/7 @ $51/hr x 0 hrs 160 hrs in FY15)	$8160
Roche (GS-11/7 @ $57/hr x 80 hrs in FY15)	$4560
Kuhn (GS-11/4 @ $52/hr x 80hrs in FY15)	$4160
Chun (GS-11/7 @ $57/hr x 80 hrs in FY15)	$4560
Stock (GS-11/7 @ $57/hr x 80 hrs in FY15)	$4560
Hamlett (GS-9/1 @ $40/hr x 80 hrs in FY15)	$3200
van Wagtendonk (GS-11/7 @ $57/hr x 80 hrs in FY15)	$4560
Siefkin (GS-11/8 @ $59/hr x FY14: $23,500 + 80 hrs in FY15)	$4720
Smith (GS-11/6 @ $56 /hr x 160 hrs in FY15)	$8960
TOTAL PERSONNEL SERVICE COST	**$47,440**

EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0

MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
GSA Vehicle @ $500/ month x 4 mo	$2000
Miscellaneous Office Supplies	$1500
TOTAL MATERIALS AND SUPPLY COST	**$3500**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
Siefkin	$1,000
TOTAL TRAVEL COST	**$1000**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY 15	10/01/2014	09/30/2015	F	N/A	N/A	N/A	$51,940
						TOTAL	**$51,940**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

PART F - INDIVIDUAL TREATMENT SPECIFICATION

TREATMENT/ACTIVITY NAME	NOAA Early Warning System	**PART E BIA Spec-#**	ES-12
NFPORS TREATMENT CATEGORY*	Human Life and Safety	**FISCAL YEAR(S) (list each year):**	2015/2016/2017
NFPORS TREATMENT TYPE *	Flood Warning Systems	**WUI? Y / N**	Y
IMPACTED COMMUNITIES AT RISK	El Portal, Foresta	**IMPACTED T&E SPECIES**	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

A. General Description:

This specification will fund salary, travel and materials to support the development and implementation of an early warning system based on National Oceanic and Atmospheric Administration (NOAA) weather forecasts that will be made available to the community of El Portal. BAER will finance implementation of the early warning system, as needed, through August, 2017.

B. Location (Suitable) Sites:

Areas within and downstream of the El Portal Fire perimeter.

C. Design/Construction Specifications:

BAER team members will coordinate with NOAA, NPS, Mariposa County and community members to develop and implement an early warning system based on NOAA weather forecasts. This system will identify thresholds for automatic and manual phone, electronic and physical notifications prior to significant weather events. Community outreach in the form of letters, brochures and signage will provide community members the opportunity to enroll in the early warning system. Should the system be activated and identified thresholds met, law enforcement personnel may be called out and dispatched to alert residents.

D. Purpose of Treatment Specifications (relate to damage/change caused by fire):

The El Portal Fire created a number of complex post-fire issues on NPS lands which this BAER plan addresses through a tiered approach. BAER addresses life-safety threats by attempting to remove the threatened public from the area. Where life-safety concerns are identified in El Portal, the early warning system will attempt to provide community members time to vacate threatened homes and areas.

E. Treatment Effectiveness Monitoring Proposed:

N/A

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
GS-7/5 Seasonal Law Enforcement Ranger -2-hour minimum call-out (1 pp x $2156) [FY15]	$2,156
TOTAL PERSONNEL SERVICE COST	**$2,156**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
N/A	$0
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	$0
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
GSA Vehicle @ $500/ month x 1 mo.	$500
Miscellaneous office supplies and mailing	$1,500
TOTAL MATERIALS AND SUPPLY COST	**$2,000**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
Travel (Meetings with agency representatives and community members)	$1,000
TOTAL TRAVEL COST	**$1,000**
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	
N/A	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISH MENTS	PLANNED COST
FY15	10/01/2014	9/30/2015	F	Each	$5,156	1	$5,156
FY16	10/01/2015	9/30/2016	F	Each	TBD	1	TBD
FY17	10/01/2016	8/06/2017	F	Each	TBD	1	TBD
						TOTAL	**$5,156**

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer; **TBD:** To Be Determined

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

Appendices

APPENDIX A: El Portal Fire Burned-Area Report (Form FS-2500-8) and Specialist Reports

APPENDIX B: NOAA Early Warning System Protocol

APPENDIX C: Environmental Compliance

APPENDIX A

El Portal Fire

Burned Area Report (Form FS-2500-8)

&

Specialist Reports

USDA-FOREST SERVICE FS-2500-8
Date of Report: **August 18, *2014***

BURNED-AREA REPORT
(Reference FSH 2509.13)

(El Portal Fire, looking down Merced River)

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: El Portal Fire

B. Fire Number: CA-YNP-0083

C. State: CA

D. County: Mariposa County

E. Region: 5

F. Forest: Stanislaus National Forest

G. District: Groveland District

H. Fire Incident Job Code: PPH9MF

I. Date Fire Started: Saturday July 26th, 2014

J. Date Fire Contained: August 6, 2014

K. Suppression Cost: Approximately $10 million as of August 8, 2014

L. Fire Suppression Damages Repaired with Suppression Funds

- Fireline waterbarred: 12.3 miles of Forest Service Dozerline
- Fireline seeded (miles): None
- Other (identify): None

M. Watershed Number: HUC 6 Watersheds: 180400080306 Crane Creek-Merced River; 180400080305 Indian Creek-Merced River; 180400080307 Moss Creek-Merced River

N. Total Acres Burned: Total 4,729 NFS Acres (3,575) Other Federal – YNP (1133) State (0) Private (20)

O. Vegetation Types: Interior Live Oak woodland in the drainages, Chamise and Mixed Chaparral on the upper slopes, and Mixed Conifer on the upper slopes.

P. Dominant Soils:

Table 1: The following soil map units comprise approximately 90% of the burned area in the El Portal Fire.

Soil Map Unit	Soil Name	Acres	Soil Texture	Rock Content	Vegetation Type	Hydrologic Soil Group
170	Lithic Xerumbrepts - Fiddletown, 35-70% Slope	1330.1	Loamy sand	40	Chaparral & Oak	B
174	Lithic Xerumbrepts - Rock outcrop, 35-70% Slope	746.6	Loamy sand	40	Chaparral & Oak	D
298	Tuolumne, 30-65% Slope	688.0	Sandy loam	15	Forest	B
128	Holland - Fiddletown, 10-35% Slope	642.5	Loam	15	Forest	B
290	Humic Dystroxerepts	373.1	Loamy sand	30	Chaparral & Oak	B
296	Ultic Palexeralfs	333.1	Loam	15	Forest	B
328	Clarkslodge, 15-45% Slope	320.4	Sandy loam	15	Forest	B

Q. Geologic Types: The geology of the fire area includes igneous intrusive and metamorphic rocks. These rocks include the Granite of El Capitan, Bass Lake Tonalite, Pilot Ridge Quartzite, and Pilot Ridge Quartzite and Schist

R. Miles of Stream Channels by Order or Class:

Perrennial 6.9 miles Intermittent 5.2 miles Ephemeral 76.7 miles

S. Transportation System

Trails: 0 miles
Roads: 14 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres) by ownership_Table 2:

Soil Burn Severity	PRIVATE	STANISLAUS NF	YOSEMITE NP	Total
High	0.5	579	78	657
Moderate	14	1767	618	2399
Low	5	835	331	1171
Unburned	0.5	396	106	502
Grand Total	20	3577	1133	4729

PART III - WATERSHED CONDITION

B. Hydrophobic Soils: 1,500 acres.

Hydrophobic soil conditions were common within moderate and high burn severity areas and rare in low burn severity areas. Hydrophobic strength was often moderate in the top 2 inches, and rarely stronger. Hydrophobic conditions (strong enough to affect infiltration and runoff) are expected to exist in approximately 30% of the fire area, or ~1,500 acres.

C. Soil Erosion Hazard Rating:

In order to assess the potential risk of sheet and rill erosion on a given soil, an erosion hazard rating (EHR) system was used to assess soils on the El Portal fire (R-5 FSH 2505.22). The EHR system predicts erosion hazard based on soil texture, depth, infiltration, amount of rock fragments, surface cover (vegetative and surface rocks), slope gradient, and climate. Risk ratings vary from low to very high. These ratings can change in the post-fire setting as a result of changes in amounts of vegetation cover, infiltration, and soil stability after the fire.

Table 3: Change in Erosion Hazard Rating as a result of the fire.

.Erosion Hazard Rating	Pre Fire		Post Fire	
	Acres	Percent %	Acres	Percent %
Low	2147.5	45%	292.6	6%
Moderate	2535.1	54%	737.5	16%
High	44.7	1%	1835.9	39%
Very High	0.0	0%	1861.3	39%

D. Erosion Potential: Erosion and Sediment Potential is assumed to be similar in burned landscapes dominated by steep slopes and is discussed below in Section E.

E. Sediment Potential:

The Erosion Risk Management Tool or ERMiT (Robichaud et.al., 2006; Robichaud, 2007), was used to model both pre and post fire sedimentation. In areas with moderate and high burn severity, erosion potential was generally increased above natural conditions. Sedimentation was modeled with 2, 5, and 10 year runoff events.

Table 4: Sediment Potential

		Pre Fire	**Two Year Event**		**5 Year Event**		**10 Year Event**	
Watershed Name	**Area Burned (Acres)**	Tons/Acre	Tons/Ac	X Increase	Tons/Ac	X Increase	Tons/Ac	X Increase
Crane Creek @ Hwy 140	4260	0.6	8.6	13.5	27.8	43.6	47.1	73.9
Little Crane Creek Bridge	3003	0.7	8.3	12.6	25.8	39.4	45.8	70.0
Crane Trib @ Foresta Rd	128	0.1	8.5	74.8	31.9	281.4	49.3	434.0
Water Tank Drainage	33	0.4	8.8	23.5	32.4	86.9	54.8	146.9
Buckeye Rd Drainage	16	0.3	7.8	22.8	30.0	88.0	50.2	147.0
Whole Fire	**4729**	**0.6**	**8.7**	**18.9**	**28.0**	**61.9**	**47.3**	**102.0**

F. Debris Flow Potential: Debris flow potential has been exacerbated as a result of the fire.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): **5 – 7**

B. Design Chance of Success, (percent): **80**

C. Equivalent Design Recurrence Interval, (years): **2**

D. Design Storm Duration, (hours): **6**

E. Design Storm Magnitude, (inches): **1.74**

F. Design Flow, (cubic feet / second/ square mile): **16**

G. Estimated Reduction in Infiltration, (percent): **25**

H. Adjusted Design Flow, (cfs per square mile): **45**

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The El Portal Fire started July 26, 2014 at approximately 2:30 pm above the town of El Portal along Hwy 140, along the Merced River. The fire quickly spread from a burning El Portal home to adjacent hillside on the Stanislaus National Forest. It quickly spread up Crane Creek growing to a size of 4,729 acres.

- This fire is located primarily in Little Crane Creek watershed, much of which is very steep, rugged terrain making access difficult. Rock outcrop formations are common on steep terrain above El Portal. Soils are fairly well-structured to loose granitic, and have associated bedrock and large boulder component. The climate is semiarid overall and precipitation in the fire area is moderate, averaging 38 inches per year at El Portal. Rainfall occurs mostly during the winter months with the exception of summer convective storms when the potential for intense and localized rainfall can occur. Vegetation consists of Chamise, Manzanita, and Scrub Oak on south-facing slopes to Black Oak and Manzanita with mixed conifer at higher elevations.

The fire burn severity was mostly low to moderate overall with some large patches of high severity (14% high, 51% moderate, 25% low). Appendix A shows a map of *Soil Burn Severity.*

Forested areas in the upper watershed burned in the Arch Rock Fire in 1990 and re-burned with mixed severity in the El Portal Fire. Areas that were lower elevations that were a mix of chaparral and Interior Live Oak burned hotter with complete mortality that burned hot leaving a bleak ashen landscape (see pics below). It is important to note that threats to life, property, and natural resources from flooding and debris flows exist.

Low intensity burn mixed conifer forest

Crane Creek burned landscape behind El Portal

Watershed Response

Hydrologic Response: The El Portal Fire has been analyzed by watersheds or pour points at five different locations in or downstream of the fire area. Watersheds are various sizes and shapes and are dependent on the analysis of the desired outlet or pour point above a value at risk or area of concern. All of these watersheds are expected to have significant increases in post fire water or sediment yield. This is due to the fact that most of the El Portal Fire had moderate burn severity. As a result, values at risk are expected to be at an increased risk from post fire flooding or sedimentation.

Modeling estimates of post-fire peak flow increases ranged from 60% (Crane Creek at Highway 140) to 230% at the house in the drainage near the water tank. The water and sediment yield modeling assumes an average or design storm event. Larger rain events do have the potential to increase the risk of flooding and sedimentation. Table 5 models a 2 year average event.

Table 5: Modeled pre- and post-fire peak flows for pour-point watersheds

Watershed	Watershed Acres	% of Watershed Burned	Pre-Fire Peak-flow (cfs)	Post-Fire Peakflow (cfs)	Peakflow Increase (percent)	Peakflow Increase (times)
Water Tank Drainage	33	100	2	6	230	3.3
Buckeye Road Drainage	18	91	1	3	181	2.8
Crane Creek at Hwy 140	11296	38	265	423	60	1.6
Little Crane Creek at Foresta Rd Bridge	3245	93	85	216	155	2.5
Crane Ck Tributary at Foresta Road	128	100	5	17	275	3.8

Erosion Response: Due to low soil cover and steep slopes, the initial erosion and sedimentation hazard is high or very high on 78% of the fire area (Table 3). However, in this fire-adapted ecosystem some post-fire erosion is expected, and hillslope treatments are largely impractical or ineffective where average slopes are >50%.

Sediment levels are *most pronounced for the 5 and 10-year storm events* as shown in Table 4, raising concerns for Foresta Road, and structures in El Portal.

Geologic Response:

The fire resulted in high and moderate burn severity on some of the steepest slopes in the fire area above old El Portal. Some of slopes and drainages are prone to debris flows and rock fall. Appendix B shows hazard areas that are identified with the aid of USGS Debris Flow Modeling. Areas shown as having moderate or high potential for debris flows with houses or infrastructure below are of concern. Two houses in the community of El Portal could be threatened by debris flows set off by a significant storm.

The Foresta Road (2S84) is located within a watershed with steep slopes and several channel crossings. The channel crossings have the potential to pass debris flows and there are several sections along the road with high and moderate rock fall hazard.

Values at Risk Protocol

The BAER team looked at critical BAER values, i.e., human life, property and natural resources:

- ***Human life and safety*** on or in close proximity to burned NFS lands.
- Buildings, water systems, utility systems, road and trail prisms, dams, wells or other significant ***investments*** on or in close proximity to the burned NFS lands.
- ***Water*** used for municipal, domestic, hydropower, or agricultural supply or waters with special state or federal designations on or in close proximity to the burned NFS lands.
- ***Soil productivity and hydrologic function*** on burned NFS lands.
- Critical habitat or suitable occupied habitat for ***federally listed threatened or endangered terrestrial, aquatic animal or plant species*** on or in close proximity to the burned NFS lands.

- Native or naturalized communities on NFS lands where ***invasive species*** are absent or present in only minor amounts.
- ***Cultural*** resources on NFS lands which are listed on or potentially eligible for the National Register of Historic Places.

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 Assessment. Treatments are generally recommended where the risks are high or very high.

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**

Appendix F summarizes the level of risk and possible treatments for sites that were field reviewed. The *likely party responsible for treatment* is also given. See narrative description below for why areas were rated as high risk.

A. Threats to Critical Values

Life and Safety:

1. Two houses in old El Portal were identified as being at risk because they are located directly within ephemeral stream drainages. One house is in the drainage near the water tank and the other house is in the drainage above Buckeye Road. Both houses experienced flooding, mud and debris flows during a storm in March 1991 after the Arch Rock Fire burned the watershed in August 1990 (DeGraff 1991). Mud and debris were deposited against the houses in depths up to 1 foot but no serious damage to either house was reported. Based on field investigations and modeling of expected post-fire peak flows, there is a high risk to human life and property for the two houses in the drainages in El Portal, and, therefore, an emergency exists.

Several other houses in old El Portal at the base of a burned hillslope were identified as being at risk of nuisance sedimentation that could result from erosion on the hillslope.

2. Yosemite National Park expressed concern over the possibility of the Highway 140 bridge at Crane Creek being impacted by increased post-fire floods. Modeling and field evaluation indicated that the Highway 140 bridge at Crane Creek may be at low risk of impacts (from a 2 year storm event) due to the modest increase in estimated post-fire flows and the adequate hydraulic capacity of the bridge. However, Cal Trans has responsibility for this bridge and will therefore determine if an emergency exists related to post-fire runoff.

3. Life and safety of Forest visitors and personnel entering certain areas of the burn are likely and pose a moderate to major risk, due to hazard trees and rock fall along roads. Rock fall and debris flow hazards are indeed elevated on the Foresta Road.

Property:

1. Roads: There is a likelihood that post burn conditions will increase runoff and the movement of sediment into drainage features, such as culvert inlets, overside drains, roadway dips and run outs, this occurrence causes drainage function to fail and uncontrolled water to divert, resulting in a moderate risk of damage to the invested road improvements, loss of road function and the denial of access.

Road 1S12 located at the northern edge of the fire traverse for about two miles through a moderate to high severity burned watershed. Routine maintenance of drainage features along this road segment have been deferred creating a likely risk of some road drainage function failing due to the increased flow of water and sediment moving into culvert inlets, ditch lines, roadway dips and run-outs.

2. Cultural Resource: Some 30 (16 NPS, 14 USFS) were identified for focused BAER assessments.

Archeologists observed potential destabilization to two sites from stump holes that had burned out and large trees that had been killed by the fire and might fall, disturbing features. Three archeological sites in and around the Old El Portal community were identified as potentially vulnerable (low debris flow hazard). In addition, many archaeological sites, both historic and prehistoric, throughout the fire perimeter are now more vulnerable to unauthorized collection (less likely with proposal for closure and law enforcement patrol). Three historic roads (structures) were assessed. No historic features were identified as vulnerable.

One potential Traditional Cultural Property, near Eagle Peak was within the fire perimeter. Consultation with tribal partners will identify any impacts and needed treatments. Two sites have been identified as having values at risk from hazard trees and the potential of deflation from stump holes.

Natural Resources:
1. Soil Resource: Soil loss will likely be above background levels for 3 years or more. Erosion rates as modeled by the 2 year event are unlikely to result in loss of soil productivity.

2. Water Quality and Water Use: El Portal water for local domestic and fire use is supplied by wells. The community of Mariposa relies on a water intake on the Merced River approximately 10 miles downstream from the fire. Post-fire sediment is expected to largely disperse or deposit within six to ten miles from the fire.

The most noticeable effects of post fire effects on water quality would be increased sediment and ash from the burned area into drainages and water bodies in and downstream of the fire area. During storm events this will increase turbidity and contribute to some pool filling.

Due to the moderate burn severity overall, water quality and quantity are expected to be moderately affected as a result of the El Portal Fire (see Hydrology Specialist Report, BAER Assessment Project File). Merced River is a municipal water source for downriver water users and turbidity will be increased for short periods. Lake McClure is 60-70 miles away and size of burn in relation to whole source area for reservoir is small.

3. Botany: There are no known federally listed threatened and endangered plant species in the burn area. See botany report for discussion of sensitive plants.

4. Invasive Weeds - Ecosystem Health and Integrity: There is an emergency for ecosystem health and integrity due to the likely introduction and expansion of noxious weeds within and adjacent to the fire area. Heavy equipment was not cleaned prior to coming to the National Forests during suppression activities until seven days into the suppression effort. Additionally, dozers operated within or through areas known to contain yellow star-thistle and tocalote. Ecosystem integrity is at a high risk of being diminished as a result of new weed introductions and weed spread through rapid colonization and competition with native species.

5. Aquatics and Wildlife: Three federally listed species (Sierra Nevada yellow-legged frog, valley elderberry longhorn beetle, Pacific fisher), seven R5 sensitive species (bald eagle, willow flycatcher, northern goshawk, California spotted owl, American marten, great gray owl, western pond turtle), and a high public interest species (resident trout) were considered during this analysis. Values at risk were considered low and minor for all species and no treatments are proposed beyond those already considered under hydrology, soils, roads, and noxious weeds treatment proposals.

B. Emergency Treatment Objectives

As noted above, threats to life, property, and natural resources from increased rockfall potential, debris flows, flooding, establishment of invasive weeds, and compromising heritage sites exist as a result of the El Portal Fire. For these reasons the primary treatment objectives are to minimize loss of life and risk to human safety, property, and minimize continued degradation of heritage sites.

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

Land **90** % Channel **na** % Roads/Trails **90** % Protection/Safety **80** %

D. Probability of Treatment Success

	1	3	5
Land	90%	60%	40%
Channel	n/a	n/a	n/a
Roads	90%	90%	90%
Protection/Safety	80%	70%	60%

E. Cost of No-Action (Including Loss): See Appendix G: Summary of cost-risk analysis.

F. Cost of Selected Alternative (Including Loss): See Appendix G: Summary of cost-risk analysis.

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology [X] Soils [X] Geology [ ] Range [ ] Public Information
[X] Forestry [X] Wildlife [ ] Fire Mgmt. [X] Engineering [ ] Inter-agency coordinator
[ ] Contracting [ ] Ecology [X] Botany [X] Archaeology [ ] NRCS
[X] Fisheries [ ] Research [ ] Landscape Arch [X] GIS

Team Leader: Brad Rust
Email: brust@fs.fed.us Phone: 530-226-2427 FAX: 530-226-2485

Forest BAER Coordinator: Alex Janicki
Email: ajanicki@fs.fed.us Phone: 209-532-3671 FAX: 209-532-3223

Core Team Members:

Allan Gallegos – Geologist
Greg Stock – NPS Geologist
Curtis Kvamme – Soil Scientist
Alex Janicki – Soil Scientist
Jim Roche – NPS Hydrologist
Zach Croyle – Hydrologist
Kent VanWagtenook – NPS GIS
Quinn Young – Botany
Melinda Benton – Wildlife
Rusty LeBlanc – Roads Engineer
Jun Kinoshita – NPS Heritage
Amber Mitchum - Heritage
Tom Fuller – Heritage
Brain Mattos – NPS Forestry
Nelson Siefkin – NPS BAER Coordinator

H. Treatment Narrative

Based on the significant watershed response, the BAER Assessment team determined that residences below the fire area were at increased risk as a result of the El Portal Fire and treatments are recommended although not finalized. Forest roads within the fire area are subject to washouts and will be storm-proofed to protect

road bed and associated infrastructure. A fire area closure on FS lands is considered to protect various resources including human life. Any closure treatment will be in cooperation with YNP, Forest Service and Mariposa County. .

Appendix C is the treatment map showing the type and location of proposed treatments. The proposed treatments on National Forest System lands can help to reduce the impacts of the fire, but treatments will not completely mitigate the effects of the fire

Treatments to Mitigate the Emergency

Protection and SafetyTreatments The following potential treatments are proposed by the El Portal BAER team to mitigate risk to critical values within YNP lands. The estimate of cost for the following treatment items 1 through 5 below is **$58,000** (may be low depending on geotechnical design work):

1 .Temporary Closure of Foresta Road inside fire area (County Road 121 / 2S84 on map)

- This should be a seasonal closure. Close the two existing gates (recommendation to Mariposa County road department) and install 2 signs on FS lands advising of temporary closure and warning of rock fall and debris flow hazards when road is opened. **Re-evaluate need for closure after winter season.**
- Treatment objective is to limit exposure of people to the hazards along the Foresta Road.
- Treatment cost is $2,000 for sign install by FS.

2. Warn and notify residents of hazard in two houses in El Portal. YNP takes lead in writing a letter of warning to inform home owners of potential flooding and debris flow hazard. The following structural treatments are recommended as possible site protection measures, all of which would be implemented on YNP land. Forest Service BAER typically would not fund treatment on private or other Federal lands.

House in drainage near water tank on Foresta Road

- The existing gabion dam debris basin adjacent to the upper water tank should be initially cleaned out and then subsequently monitored and cleaned out after storms as needed.
- Sand bags or other type of barrier should be used to raise the height of the existing retaining wall/levee to better protect the house from flooding and debris. The structure would be designed in consultation with a geotechnical engineer.

House in drainage on Buckeye Road:

- A debris basin and/or deflection barrier may be possible to install at the mouth of the drainage behind the house on Buckeye Road. The structure should be designed to slow the momentum of debris or mud flow before it reaches the house, have the capacity to provide some storage of fine sediment/larger debris, and redirect flows around the house. The structure could consist of a gabion dam, k-rails, or some other type of temporary or permanent structure. The structure should be designed in consultation with a geotechnical engineer.
- The burned hillslopes in the drainage adjacent to the house should be mulched with weed free straw or wood straw (preferred in windy conditions) to provide soil ground cover in order to reduce sheet and rill erosion.

3. An Early Alert Warning System consisting of a warning from the National Weather Service (NWS) of pending storms, the National Park Service (NPS) and the residents in the two houses. National Weather Service takes the lead on the early alert system. The standard stream gages instrumentation and feedback loop is expensive (approximately $24,000 for installation and $10,000 for maintenance of the equipment). **Suggest a meeting of YPS, Forest Service, NWS and NRCS to see where this goes?**

- *Road drainage improvement on lower Foresta Road in Old El Portal*

  Where Foresta Road crosses the drainage flowing down to the house on Buckeye Road, there is potential for flows to divert onto Foresta Road and continue all the way to the lower water tank. The paved section of Foresta Road from the upper water tank access road down to the lower water tank should have sections of the outside berm removed to allow runoff to disperse onto the hillslope in the event of stream diversion. Rock dissipators and straw bales should be installed where runoff leaves the road at berm breaches to dissipate runoff on the hillslope. In addition, a rock armored dip should be installed where the drainage crosses the road to reduce the potential for stream diversion (Buckeye drainage).
- *Hillslope mulching*

  The burned hillslope at origin of fire above houses in old El Portal (hairpin turn of Foresta Road) should be mulched with weed free straw or wood straw (preferred in windy conditions) to provide soil ground cover in order to reduce sheet and rill erosion.

Land Treatments

Botany and Cultural resources are determined to be at high risk and have proposed treatments.

The soil, aquatic and wildlife resources are determined to be at low or intermediate risk and no treatment is prescribed (natural recovery).

Natural Recovery: Vegetation in the chaparral and oak woodland will respond quickly and restore substantial cover in the first year. Grass and forbs are expected to provide significant cover in oak woodland in the first year. The oaks and chamise will respond to fire by re-sprouting from the base. The Mariposa Manzanita is non-sprouting, but fire stimulates Mariposa Manzanita seeds stored in the soil to germinate. In the ponderosa pine forest at the top of the watershed, bear clover was a significant component in the understory, and will begin regrowth almost immediately.

Forest Road Treatments : See Table 6 for treatment prescription and costs. Treatments are restoring drainage function and storm patrol; 2 gates to replace those in poor condition; and appropriate signing for hazards or closure. Treatment map in Appendix C shows location of gates and signing. Note 2 new gates are proposed on YNP lands. No new gates are proposed on Forest Service lands.

Botany Invasive Weeds Treatment: Treatment consists of weed detection and hand eradication on 12.3 miles of Forest Service dozer line @ $800 per mile, and on 6.7 miles of handline @ $150 per mile. Request rounded is $11,000.

- Conduct two detection surveys along dozer lines, some hand line segments and dozed roadsides in 2015: once in early May to detect tocalote (which is identifiable one month before yellow star-thistle) and other early season noxious weeds, and again in mid-June to detect yellow star-thistle and later season noxious weeds. Hand pull or dig all noxious weeds found. Bag and properly dispose of seed heads. Map and document survey findings.

Treatment also consists of treating approximately 25 acres of Drew Meadow used for the ICP (included in request above).

- Conduct two detection surveys in ICP area of Drew Meadow in 2015: once in early May to detect tocalote (which is identifiable one month before yellow star-thistle) and other early season noxious weeds, and again in mid-June to detect yellow star-thistle and later season noxious weeds. Hand pull

or dig all noxious weeds found. Bag and properly dispose of seed heads. Map and document survey findings.

Interagency Coordination/Implementation Lead: Interagency coordination with YNP, CalTrans, PG&E, Mariposa County Public Works, and NRCS is recommended to facilitate discussions to help coordinate and insure treatments are intergrated, appropiate, and conducted in a timely manner to get treatments on the ground, including. When to re-open roads such as the Foresta Road could take some field time for proper assessment, so there is a monitoring component. The facilitation may include: phone calls, meetings, and field trips to the affected areas. Funding is requested for 12 days of GS11 @ $350 per day or $4,200.

Table 6: Treatment Summary with Costs

El Portal BAER Treatments

Value at Risk	VAR Rating	Treatment	Units	Treatment Prescription	Cost Estimate
Yosemite NPS					
Protection & Safety Pvt houses on NPS - El Portal	very high	debris basins and point protection	2 ea	$12,000 for clean out of NPS debris basin with storm patrol (6 ea cleanouts after storms using NPS equipment). $38,000 for deflection barrier construction via. per design by engineering geotech specialist for houses at Buckeye and water tank drainages.	$50,000
Protection & Safety Pvt houses on NPS - El Portal	high	hillslope mulching and road drainage	8 ea	Handmulch slopes @ origin of fire (using YNPS El Portal firecrew) @2tons/ac and breach road berm at regular intervals with rocked outlets and strawbale dispitators.	$8,000
Botany NPS	high	invasive weed detection & treatment	7.2 Miles	Weed detection on dozer lines in the spring to see if invasive weeds have been brought into the site by unwashed dozers used for supression @ $1,200/mile	$5,760
				Yosemite NPS Costs	**$63,760**
Stanislaus NF					
Protection & Safety Community of El Portal	very high	NOAA early warning announcement	2 ea	NOAA warning announcement on pending storm potential for debris flows with possible evacuations for homes at risk and installation by USGS of 2 ppt gages systems in the Crane Creek watershed via. permit from the FS.	$250
Protection & Safety County Foresta Road (on FS lands)	very high	Temporary road closure for public safety	2 ea	Swing gates closed (2ea) at each end of forest service boundary and install burned area warning signs.	$2,000
Protection & Safety Forest Closure on FS lands	high	closure order with signs at gate locations	6ea	At appropiate gate locations 4 large signs with plastic sawhorses, and forest closure order. 2 replacement gates @2000 per gate	$6,000
Forest Roads	high	culvert and ditch cleanouts and reestablish rolling-dips	2 miles	Culvert and ditch cleanout with rolling-dips to allow water to pass roads without eroding road and road prism. Hazard tree adbatement for operators along with storm patrol to protect roads during winter months	$8,000
Cultural FS	high	Fill stump holes and fell snags and fill stump hole on edge of structure platform feature	1 ea	Removal of hazard trees to prevent damage archaeological site AND Hand repair by heritage personal to damage using local materials.Hand repair by heritage personal to damage using local materials.	$1,000
Wildlife	low	none	N/A	none	$0
Aquatics	low	natural recovery	N/A	none	$0
Soils	intermediate	natural recovery	1 ea	Natural recovery since treatment ground per watershed is too steep to make a difference in sediment reduction	$0
Botany FS	high	invasive weed detection & Treatment	19 Miles	Weed detection and rapid response on 12.3 miles of FS dozer lines and 6.7 miles of handline. Drew Meadow site used as ICP is indluded	$10,845
Implementation Team Leader or Coordinator	other	to lead the effort in implementing all proposed treastments	1	Insures that cooperative agreements are in place for all work and all FS treaments are completed and appropiate.	$4,200
				Stanislaus NF - Costs	**$32,295**
				Cost so far……	**$96,055**

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.)

This report is an initial funding request based on a rapid assessment. If additonal treatment needs are identified through more site specific on the ground investigation in cooperation with interested agencies, and noxious weed detection surveys, interim requests for additional funding will be filed. These funding requests will identify the purpose for each treatment, and specific treatment specifications, locations, and number of each treatment.

Part VI – Emergency Stabilization Treatments and Source of Funds

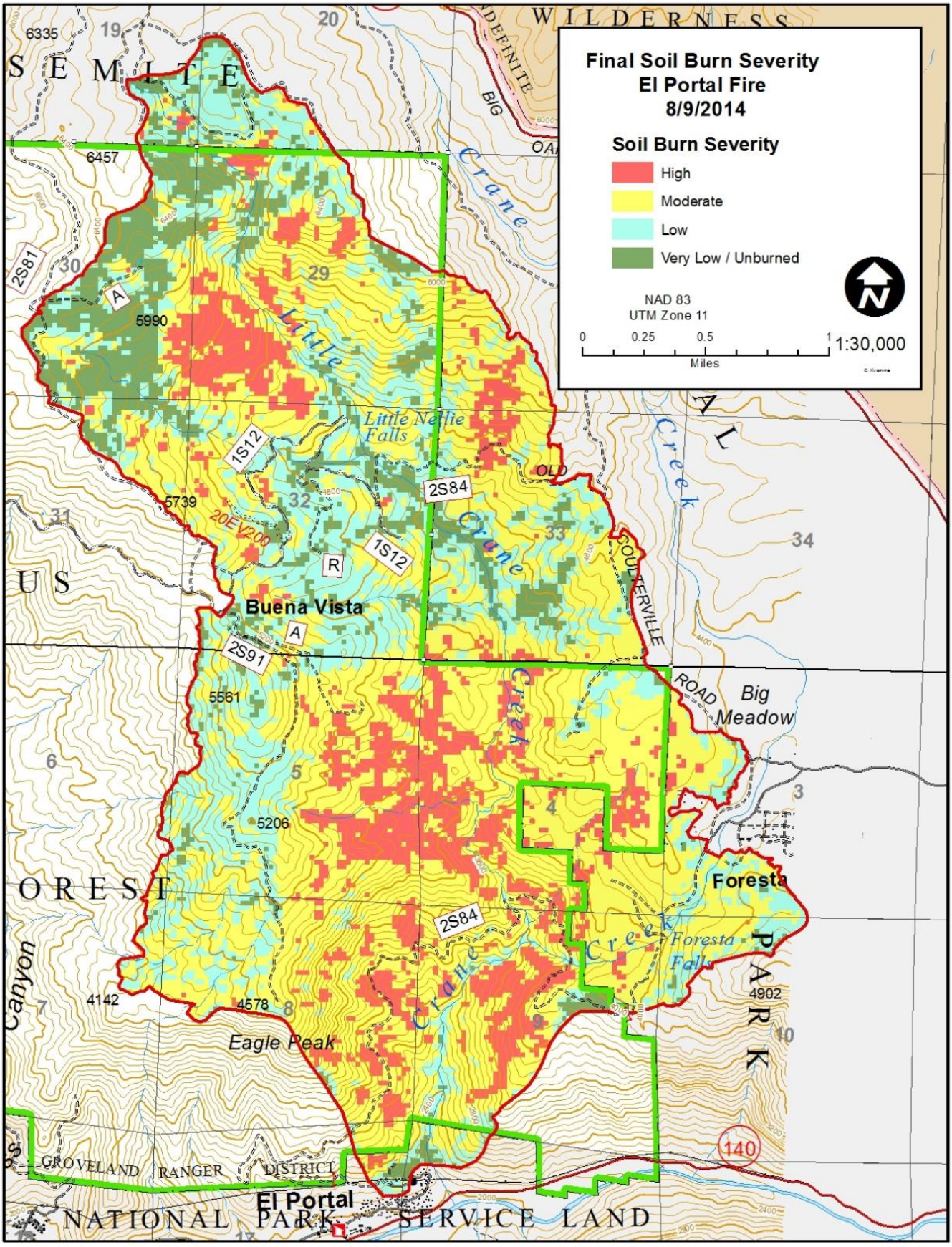
			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Invasive weeds, dozer & Drew mdw	mi	800	12.3	$9,840	$0	7.2	$5,760		$0	$15,600
Stabilize cultural site	ea	1000	1	$1,000	$0		$0		$0	$1,000
Invasive, handline	mi	150	6.7	$1,005	$0		$0		$0	$1,005
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$11,845	$0		$5,760		$0	$17,605
B. Channel Treatments										
Debrisbasin cleanout YNP	ea	2000		$0	$0	6	$12,000		$0	$12,000
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$12,000		$0	$12,000
C. Road and Trails										
Closure/infor signs	ea	1000	6	$6,000	$0		$0		$0	$6,000
Storm patrol	mi	750	2	$1,500	$0		$0		$0	$1,500
Restore drainage & remove tree hazards	mi	4000	2	$8,000			$0		$0	$8,000
Replacement gates FS	ea	2000	2	$4,000						
YNP gates	ea	2000				2	$4,000			$4,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$19,500	$0		$4,000		$0	$19,500
D. Protection/Safety										
House protection per geotech	project	38000		$0	$0	1	$38,000		$0	$38,000
Hillslope mulching & road treatments YNP	project	8000		$0	$0	1	$8,000		$0	$8,000
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$46,000		$0	$46,000
E. BAER Evaluation										
Salary and travel	project	38,245	1	$38,245			$0		$0	$0
Coordination Lead	days	350	12	$4,200						$4,200
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation					$0		$0		$0	$4,200
F. Monitoring										
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$31,345	$0		**$67,760**		**$0**	**$99,305**
Previously approved										
Total for this request				**$31,345**						

PART VII - APPROVALS

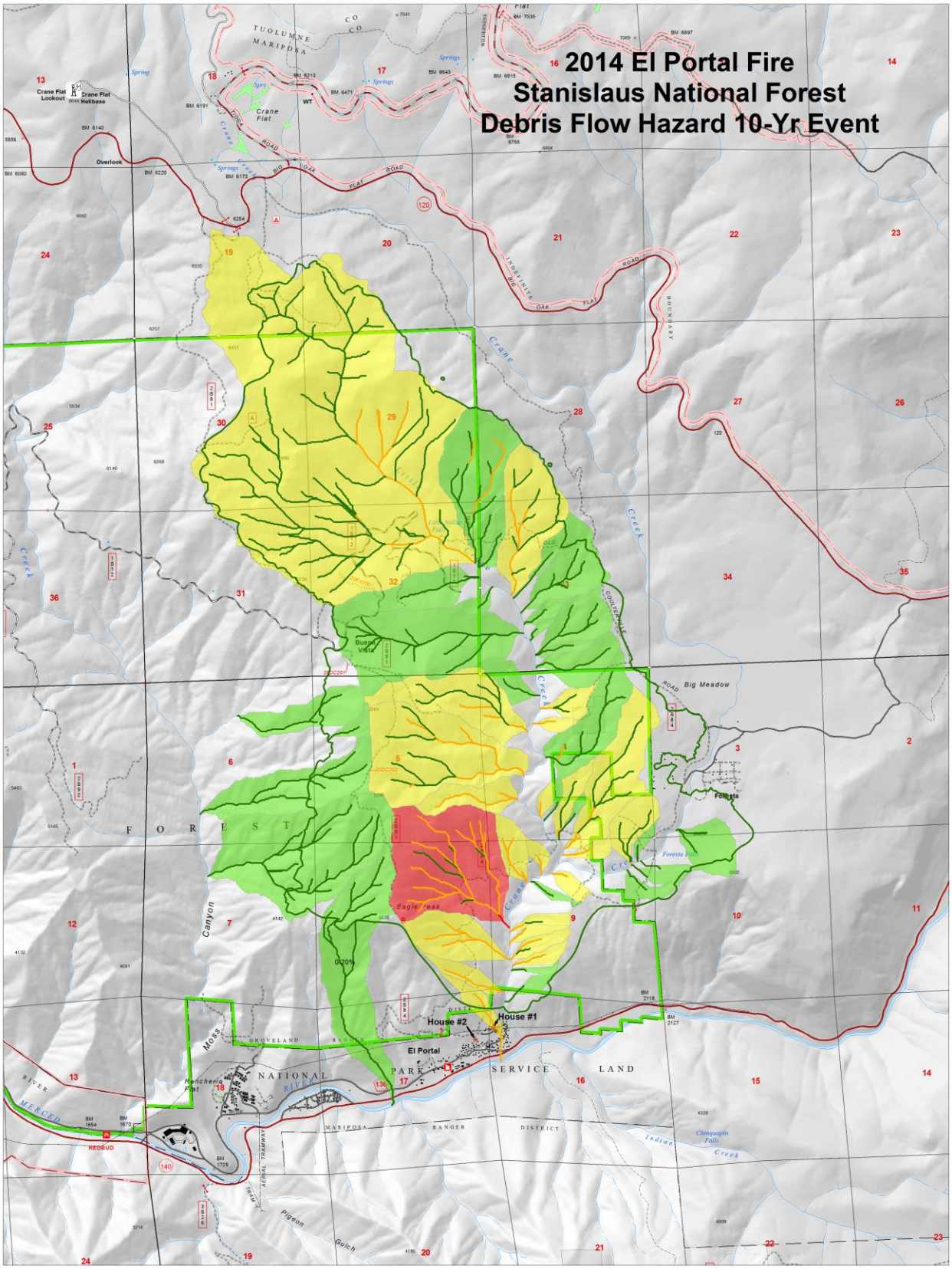
1. _____ _____
Stanislaus NF Forest Supervisor (signature) Date

3. _ _____ _____
Regional Forester (signature) Date

Appendix A: Soil Burn Severity Map:

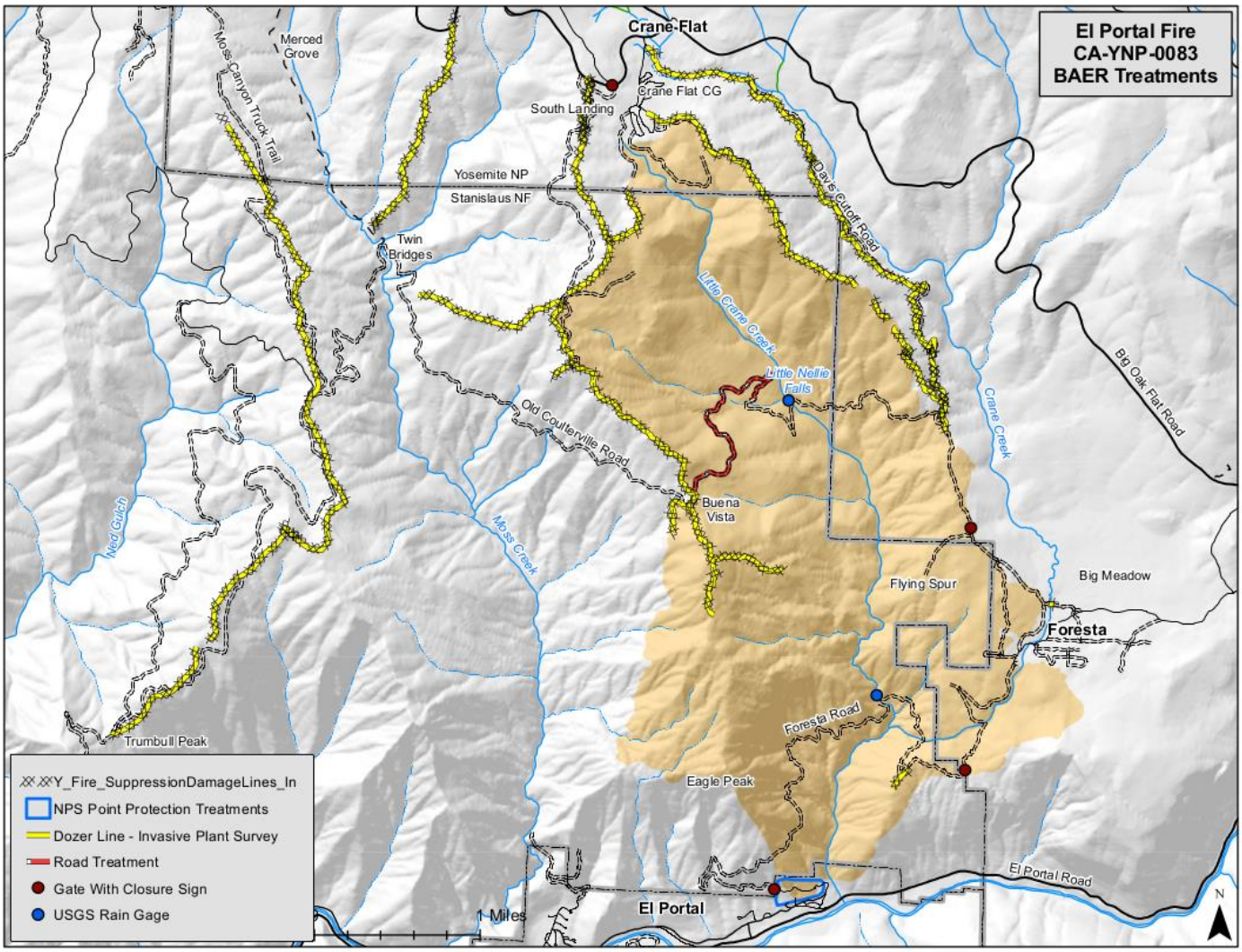


Appendix B: Debris Flow Hazard Map



Debris Flow Hazard Map showing houses #1 and #2 downslope of moderate debris flow hazard areas. Note red shaded area, where Foresta Road is located. This area is a high debris flow hazard area.

Appendix C: Treatment Map (proposed)



Appendix D: Coordination

El Portal Fire Interagency Coordination:

NRCS
Mariposa County – Robin Smith D.C.
209-742-7508

CalTrans - Hwy 140:
Mariposa County – Eric Jakab
209-966-3885

County of Mariposa – Foresta Road:
Public works – Randy McAnderson
209-966-5356

PG&E –???? Hwy 140 Powerline:
Yosemite Division - Bob Scholler
530-613-0752

USFS Groveland RD
District Ranger – Jim Junette
209-7825x524

National Weather Service (NWS)
Warning Coordination Meteorologist – Michelle Mead
916) 979-3041 x223
michelle.mead@noaa.gov

Appendix E: Erosion and Sedimentation Models Used

Modeling Methods and Assumptions

- The ERMiT (Emergency Risk Management Tool) model was used to develop watershed sediment delivery rates for the burned area. The climate data was based on Yosemite Valley, CA (Yosemite National Park) weather. RockClime Rock Mountain Research Station Climate Generator2 was used to modify the climate for the burn area.

- Textures assigned to ERMit were based on data retrieved from the Natural Resources Conservation Service's Soil Data Mart and on field sampling.

- Slopes were derived from a slope analysis of Digital Elevation Models. An average slope for each map unit was used for ERMit modeling.

- ERMiT models sediment delivery rates based on "Probability that sediment yield will be exceeded". For this report, I chose to report the sediment yield at a value of 50 percent probability sediment yield will be exceeded. In other words, there is a 50 percent chance when looking at all the storm events for the area that the sediment yield reported will be exceeded. This can loosely be thought of as the average sediment yield during an average storm.

Appendix F: Risk Matrix showing evaluation of hazards and possible treatments

El Portal BAER Risk Matrix		Magnitude of Consequences		Risk		Treatment		Responsibility
	Probability	Life	Property	Life	Property	Life	Property	
Infastructure								
Crane Creek Bridge on Hwy 140	Unlikely	Major	Moderate	Intermediate	Low	none	none	CalTrans
Pvt homes on NPS land (2 ea high risk)	Likely	Major	Major	Very High	Very High	NOAA warning	point protection and mulch	YNPS
Pvt homes on NPS land (5-10 low risk)	Likely	None	Moderate	N/A	High	NOAA warning	road treatment and mulch	YNPS
Foresta Road below Foresta to El Portal	Likely	Major	Major	Very High	Very High	closure	none	FS
Public Safety-haz trees, rockfall, and debris flow	Likely	Major	None	Very High	N/A	closure, noaa, signs, gates	gates	FS & YNPS
Microwave Tower	Unlikely	None	Minor	N/A	Very Low	none	none	AT&T
Fish/Aquatics								
T&E Fish Species	Unlikely	None	Minor	None	Very Low	none	none	FS & YNPS
Sensitive Fish Species	Unlikely	None	Minor	None	Very Low	none	none	FS & YNPS
T&E Amphibians Species	Unlikely	None	Minor	None	Very Low	none	none	FS & YNPS
Sensitive Amphibians Species	Unlikely	None	Minor	None	Very Low	none	none	FS & YNPS
Water Quality								
Pvt Residences (El Portal and Foresta on wells)	Unlikely	Moderate	Minor	Low	Low	none	none	YNPS
Water Quality below Crane Creek into Merced River	Possible	Moderate	Minor	Intermediate	Low	none	none	shared
Merced River intake for Mariposa	Unlikely	Moderate	Minor	Low	Very low	none	none	City of Mariposa
FS Roads								
Road 1S12	Likely	None	Moderate	N/A	High	none	Restore Drainage Function	FS
Little Nellie Falls low water crossing failure	Unlikely	None	Minor	N/A	Very Low	none	none	FS
Old Coulterville Road	Possible	None	Moderate	N/A	Intermediate	none	closure signs	YNPS & FS
Old Coulterville Road 2S84	Likely	Major	Minor	High	Low	BAER Closure Signs	none	FS
Road Signs (2S84 & 1S12)	Likely	None	Moderate	N/A	High	none	closure signs	YNPS & FS
Cultural								
Historic Arch Sites (2 ea high risk)	Likely	None	High	N/A	High	none	cover protection (fill stump holes and cut snags)	FS
Prehistoric Arch Sites (erosion)	Possible	None	Minor	N/A	Low	none	none	FS
Me-Wuk Sacred Site at Eagle Point	Possible	Moderate	Moderate	Intermediate	Intermediate	none	none	FS
Wildlife								
Habitat	Likely	None	Minor	N/A	Low	none	none	YNPS & FS
T&E Wildlife Species	Unlikely	None	Minor	N/A	Low	none	none	YNPS & FS
Sensitive Wildlife Species	Unlikely	None	Minor	N/A	Low	none	none	YNPS & FS
Soil Productivity								
Loss of Soil Productivity	Possible	None	Moderate	N/A	Intermediate	none	natural recovery	GOD
Geology (still to be seen)								
Debris Flow Potential	Possible	Major	Major	High	High	NOAA early warning	debris basins (2 ea), mulching	YNPS & FS
Rockfall Potential	Likely	Major	Moderate	Very High	High	NOAA early warning	closures and rock fences	YNPS & FS
Botany								
T&E Botany Species	Unlikely	None	Minor	N/A	Very Low	none	none	YNPS & FS
Sensitive Plants	Unlikely	None	Minor	N/A	Very Low	none	none	YNPS & FS
Invasive Weeds	Likely	None	Moderate	N/A	High	none	invasive weed detection survey	YNPS & FS

Appendix G: Economic Analysis (based on VAR Calculation Tool)

El Portal Fire Benefit/Cost Analysis:

Total benefits of resource:

Resource	Value $
roads	$100,000
ecosystem stability (water quality and soils productivity)	$200,000
public safety	$1,000,000
cultural	$400,000

Proability of loss without and with treatments:

Resource	Proability loss no treatments:	Proability loss w/ treatments:	Reduction in proability of loss
roads	50%	15%	35%
ecosystem stability (water quality and soil productivity)	30%	10%	20%
public safety	75%	15%	60%
cultural	50%	20%	30%

El Portal BAER Costs	NFS Lands					Other Lands				Money Left
Line Items	Units	Unit Cost	# of Units	BAER $	Spent $	Units	Fed $	Units	Non Fed $	Total $
A. Land Treatments										
NX Weed Det. Surv.	mi	$1,200	19.0	$22,800	$0	7	$8,640		$0	$0
Subtotal Land Treatments				$22,800	$0		$8,640		$0	$0
B. Channel Treatments - none										
				$0	$0		$0		$0	$0
Subtotal Channel Treatments				$0	$0		$0		$0	$0
C. Road and Trails										
Road Stormproofing	project	$11,750	1	$11,750	$0		$0		$0	$0
Subtotal Road & Trails				$11,750	$0		$0		$0	$0
D. Protection/Safety										
El Portal NPS Pvt House	project	$50,000		$0	$0	1	$50,000		$0	$0
Cultural Site Protection	ea	$250	2	$500	$0		$0		$0	$0
Foresta Hard Closure La	ea	$1,000	2	$2,000	$0		$0		$0	$0
Warning Signs	ea	$300	4	$1,200	$0		$0		$0	$0
Closure Signs	ea	$1,000	2	$2,000	$0		$0		$0	$0
Forest Closure Order	ea	$500	1	$500	$0		$0		$0	$0
USGS Perceip. Install Pe	ea	$250	1	$250	$0		$0		$0	$0
Interagency Coordinator	ea	$6,000	1	$6,000	$0		$0		$0	$0
Subtotal Protection				$9,950	$0		**$67,280**		$0	$0
E. BAER Evaluation										
Assessment Team	0520	H5BAER	---	---	$38,285	---	$0	---	$0	$0
	---	---	---	---	$0	---	$0	---	$0	$0
Subtotal Evaluation				---	$38,285	---	$0	---	$0	$0
F. Monitoring										
Road Treatment Monitori	ea	$1,000	1	$1,000	$0		$0		$0	$0
Subtotal Monitoring				$1,000	$0		$0		$0	$0
G. Totals				**$45,500**	**$0**		**$0**		**$0**	**$0**
Previously approved						Comments:				
Total for this request				**$45,500**						

Benefit of treatments:

Resource	Value $	Reduction in proability of loss
roads	$100,000	35%
ecosystem stability (water quality & soils)	$200,000	20%
public safety	$1,000,000	60%
cultural	$400,000	30%

Benefit/cost ratio:

Resource	Benefit of treatment	Treatment Cost	B/C ratio	Justified
roads	$35,000	$11,750	3.0	yes
ecosystem stability (invasive plants)	$40,000	$22,800	1.8	yes
public safety	$600,000	$9,950	60.3	yes
cultural	$120,000	$3,000	40.0	yes

2014 El Portal Fire
Geologic Hazard Assessment Report
Stanislaus National Forest

Resource Specialty: Geology
Fire Name: El Portal Fire
Month and Year: August, 2014
Author(s) Name and Home unit Name: Alan J. Gallegos, Sierra National Forest

Report

I. Potential Values at Risk (identified prior to the on-the-ground survey)

Two houses located in El Portal at 5674 Foresta Road and 9722 Buckeye Road are located within moderate debris flow hazard areas. Forest Road (FR 2S84) is at risk from both debris flows and rock fall hazards.

II. Resource Condition Assessment

A. Resource Setting – The El Portal Fire is located in Little Crane Creek between Moss Creek and Crane Creek. The southern end of the fire is located on steep canyon slopes of the Merced River. The steep canyon slopes are dominated by mass wasting processes including rock slides, rock falls and debris flows. Several debris basins are located within the fire area. Moderate and high soil burn severity occurs in these steep canyon slopes. The geology of the fire area includes igneous intrusive and metamorphic rocks. These rocks include the Granite of El Capitan, Bass Lake Tonalite, Pilot Ridge Quartzite, and Pilot Ridge Quartzite and Schist (see Figure 1). The Arch Fire occurred in 1990 and the Motor Fire occurred in 2011. Debris flows occurred in the following winter after these two fires. Damage occurred to several houses in El Portal after the Arch Rock Fire in 1991 (see DeGraff, 1991) and several houses had flood damage and California State Highway 140 had debris flow damage during the winter after the 2011 Motor Fire (DeGraff and Others, 2012).

B. Findings of the On-The-Ground Survey

1. Resource condition resulting from the fire: The fire resulted in high and moderate burn severity on some of the steepest slopes in the fire area. These steep slopes have several houses in the community of El Portal that are threatened by debris flows (see Photos 1 and 2). The Foresta Road (FR 2S84) is located within a watershed with steep slopes and several channel crossings. The channel crossings have the potential to pass debris flows and there are several sections along the road with high and moderate rock fall hazard (see Photos 3 and 4).

2. Consequences of the fire on values at risk
    a. Risk Assessment – The United States Geologic Survey conducted a debris flow assessment of the fire area that shows debris flow hazard classes and probability

of debris flows occurring for multiple precipitation events including the 2 year, 5 year, 10 year, 25 year and 50 year storm events. The 10 year event was used to evaluate debris flow potential for the fire area (see Figure 2). The two houses are located downstream from Moderate Debris Flow Hazard Areas with a 20-40% probability of 1000 – 10,000 yds^3 debris flows to move down the channel. One of those houses is constructed within the flood plain of the channel with very little cross-sectional area for water to pass much less a debris flow. It is highly likely that if a debris flow flows down this channel that it will destroy the corner of the house and could potentially take the life of someone occupying the room near the channel.

A risk assessment for the two houses and the Foresta Road (FR 2S84) was conducted resulting in a very high risk (see Table 1).

Table 1 – Risk Assessment of Values at Risk

Value–at-Risk	Probability of Damage or Loss	Magnitude of Consequences	Risk
House #1	Very Likely	Major	Very High
House #2	Likely	Major	Very High
Foresta Road FR 2S84	Very Likely	Major	Very High

III. Emergency Determination – An emergency exists at the two houses in El Portal. There is a threat to life and property from debris flows that have a Moderate Debris Flow Hazard, 20-40% probability of occurring, with a potential for debris flow volumes from 1000 – 10,000 yds^3. House # 1 is located at 5674 Foresta Road and House #2 is located at 9722 Buckeye Road. An emergency exists for the Foresta Road (FR 2S84). There is a section of Foresta Road located in a High Debris Flow Hazard watershed, 60-80% probability of debris flows occurring, with a potential for debris flow volumes from 10,000 – 100,000 yds^3. The Foresta Road crosses 11 channels, all with a Moderate Debris Flow Hazard.

IV. Treatments to Mitigate the Emergency

Foresta Road (FR 2S84)

1. Treatment Type (including monitoring if applicable): Close Forest Road 2S84. Close the two existing gates and 2 road closure signs and install rock fall and debris flow warning signs when road is opened.
2. Treatment Objective: to limit exposure of people to the hazards along the Foresta Road.
3. Treatment Description: Implement hard road closure with two existing gates on both ends of the fire and rock fall and debris flow warning signs when the road is reopened.
4. Treatment Cost: $2,000
5. Probability of Completing Treatment Prior to Damaging Storm or Event:
   Land (slope) __ % Channel ___ % Roads_**100**_**%** Trails___%

Two Houses in El Portal

1. Treatment Type (including monitoring if applicable): Warn and Notify Residents of Hazard In two houses in El Portal. Warning should consist of a letter of warning to the owners of the two houses. The letters should describe the debris flow potential and what could happen to their house and anybody in the house if a debris flow occurs. An Early Alert Warning System consisting of a warning from the National Weather Service (NWS) of pending storms, the National Park Service (NPS) and the residents in the two houses.
2. Treatment Objective: Notification of the potential of debris flows to occur and potential storms that could result in debris flows that could damage the houses and pose a threat to life in the houses.
3. Treatment Description: Letter to home owners mailed to address of record and personal delivery of copy of letter to home. Rain gages or stream discharge gages.
4. Treatment Cost: 1 day salary to compose letter by GS-11 - $350.00. Early warning system consisting of two rain gages and one stream gage. The estimated cost of this equipment is approximately $24,000. There will be an additional cost to maintain equipment which could be at least $10,000.
5. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land (slope) __ % Channel __ % Roads_75_% Trails___%

6. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails			
Protection/Safety	75%	50%	25%

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

Potential loss of life at one or both of the houses in the community of El Portal and along the Foresta Road if it is not closed.

8. Cost of Selected Alternative (Including Loss): **$37,000**

V. Discussion/Summary/Recommendations –

Debris flows and rock falls are eminent in the El Portal Fire Area. Debris flow hazard areas have been identified with the aid of USGS Debris Flow Modeling. The debris flow modeling data was used to identify values at risk that have some potential of threats from debris flows. Rock fall hazard areas have been identified along the Foresta Road and reviewed in the field. Treatments for debris flow and rock fall hazards include notification of the owners/residents of the two

houses in El Portal and the public of these hazards through letters, warning signs and early alert systems and road closures.

VI. References

Bateman, Paul C., Krauskopf, Konrad B., 1998. Geologic map of the El Portal quadrangle, west-central Sierra Nevada, California. Miscellaneous Field Studies Map MF-1998. U.S. Geological Survey. Scale 1:62,500.

DeGraff, Jerome V., 1991. Response Of Arch Rock Burn Rehabilitation Measures In Merced Canyon To The March 1-4, 1991 Storm Event. Forest Service Open File Report. 16 pages.

Degraff, Jerome V., Takenaka, Kellen, and Gallegos, Alan J. First Year Debris Flow and Related Storm Impacts Within the Motor Fire Area, Merced Canyon, Stanislaus and Sierra National Forests. Forest Service Open File Report. 25 pages.

Appendices

Photo 1- House #1 at 5674 Forest Road. House is located in flood plain of channel and has constricted the cross-sectional area of the channel. This house has slopes above with moderate debris flow hazard and the potential for 1000-10,000 yds^3 of debris flow material to pass through this narrow channel. There is a very high risk to life and property at this site.

Photo 2 - House #2 at 9722 Buckeye Road. House is located below channel with slopes that have a with moderate debris flow hazard and the potential for 1000-10,000 yds3 of debris flow material to pass through this narrow channel. There is a very high risk to life and property at this site.

Photo 3 - Foresta Road (FR2S84) This road has high and moderate debris flow and rock fall hazard. People driving this road could get trapped behind rock fall and are at risk from getting hit by a rock.

Photo 4 - Foresta Road (FR2S84) This section of road has a moderate rock fall hazard. People driving this road could get trapped behind rock fall and are at risk from getting hit by a rock.

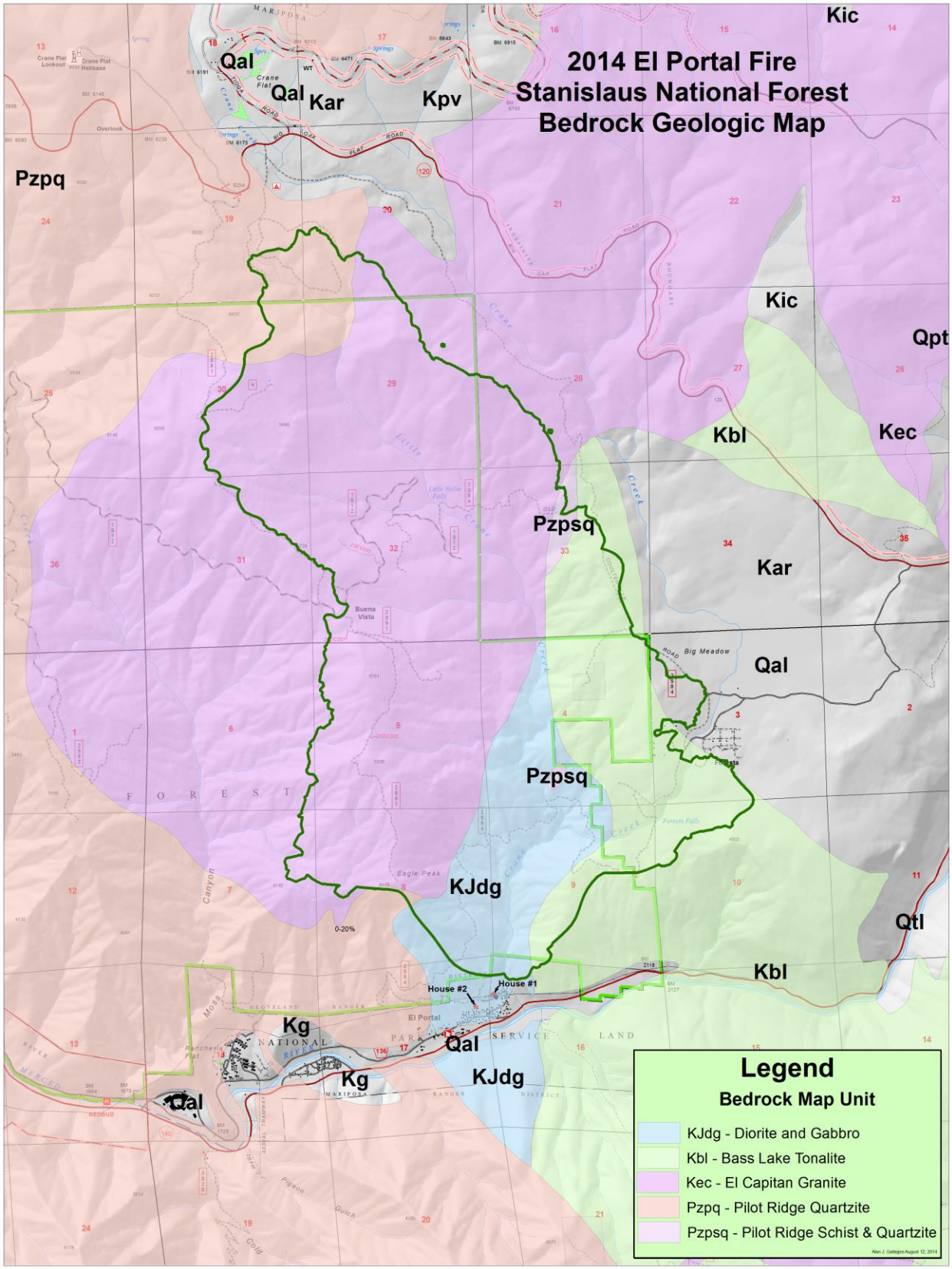


Figure 1 - Geologic Map of the El Portal Fire Area. Most of the area is underlain with igneous intrusive rocks from the El Capitan Granite and Bass Lake Tonalite.

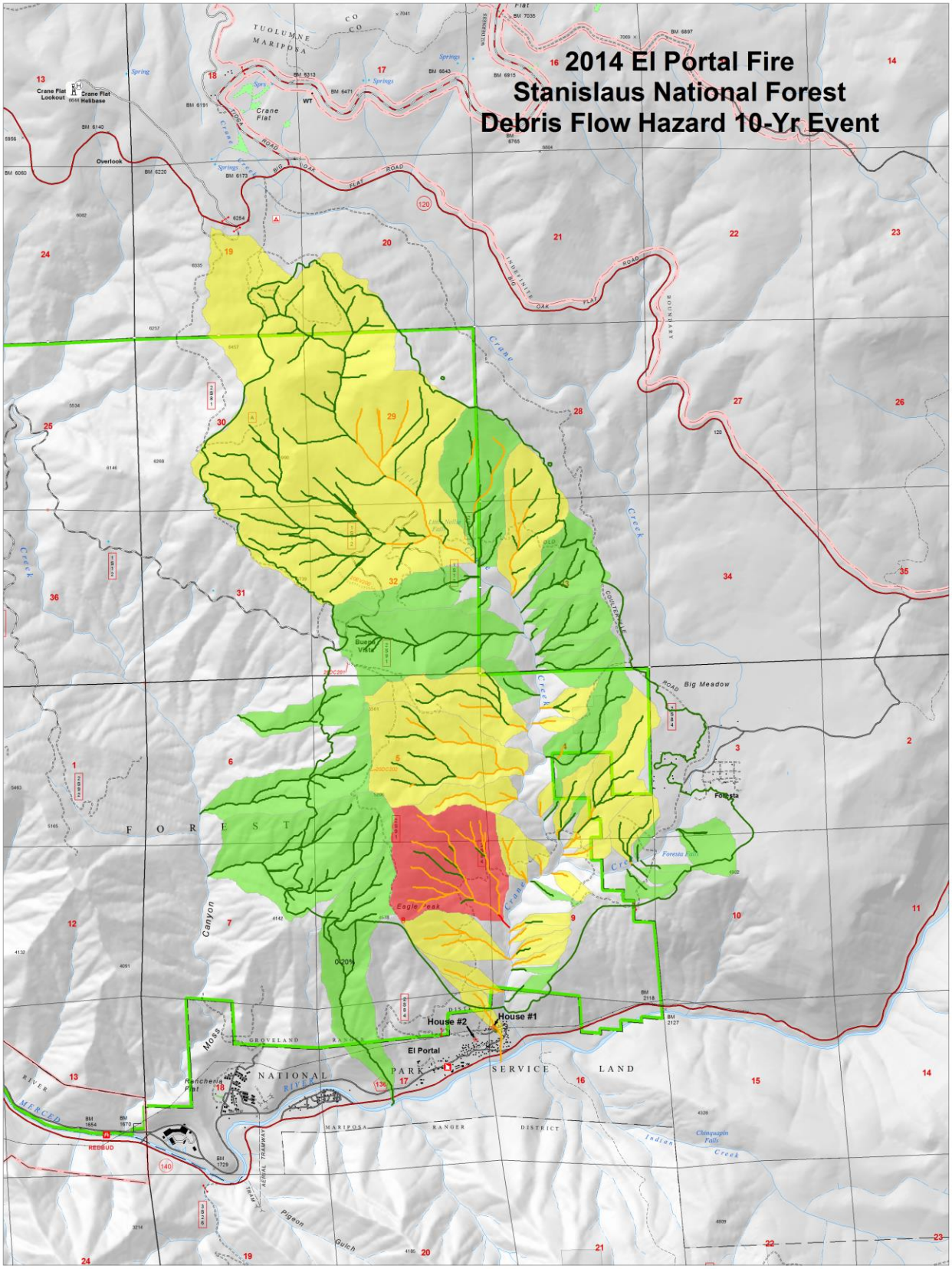


Figure 2 – Debris Flow Hazard Map showing houses #1 and #2 downslope of moderate debris flow hazard areas. Note red shaded area, where Foresta Road is located. This area is a high debris flow hazard area.

Hydrology Resource Report
El Portal Fire BAER Assessment
Stanislaus National Forest
(Groveland RD) and Yosemite National Park
August 12, 2014

Zachary Croyle, BAER Team Hydrologist, Stanislaus National Forest

I. Potential Critical Values at Risk (VARs)

A. Human Life and Safety, Property and Infrastructure

- Houses located along the base of hillslopes in the community of old El Portal could be at risk of nuisance erosion and flooding
- Houses located within ephemeral stream drainages in the community of old El Portal could be at risk of more serious flooding and mud or debris flows
- People using forest roads within the burn area (in particular Foresta Road) could be at risk due to rock fall, flooding, and debris flows
- The Highway 140 bridge at Crane Creek could be damaged due to increased post-fire flood flows and cause temporary loss of highway access
- Forest roads could be at risk of damage due to plugged culverts washing out and loss of road surface and fill

B. Beneficial Uses of Water: Water Quality/Aquatic Habitat

- Floatable debris (ash, burned wood) and increased fine sediment from accelerated hillslope erosion delivered to streams can cause elevated nutrients, suspended sediment, turbidity, and accumulation of fines in pool habitat
- Accelerated surface and fill erosion on forest roads would result in delivery of fine sediment to stream channels

II. Resource Condition Assessment

A. Resource Setting

The El Portal Fire burned approximately 4,729 acres mostly within the Crane Creek watershed, a tributary to the Merced River within the Stanislaus National Forest and Yosemite National Park. Soil burn severity was mixed and consisted of *very low/unburned* (504 acres/11%), *low* (1171 acres/25%), *moderate* (2399 acres/51%), and *high* (657 acres/14%) (Table 1).

Elevations within the fire perimeter range from 2,200 feet in El Portal near the Merced River to 6,400 feet along the upper ridges near Crane Flat. Mean annual precipitation is approximately 39 inches per year and occurs as mostly rain with transient snow at higher areas. The terrain in the Crane Creek ranges from very steep canyon at the lower end of the watershed to more moderate slopes around the community of Foresta. The El Portal Fire area has a very active fire history and burned within the 1990 Arch Fire perimeter as well as other older fires and also a small portion of the 2009 Big Meadow Fire.

The El Portal Fire burned 26% of the Crane Creek-Merced River HUC 6 watershed as well as small portions of the Indian Creek-Merced River and Moss Creek-Merced River watersheds. Designated beneficial uses of water in the Merced River basin and its tributaries (source to McClure Lake) include: Municipal, domestic, and agricultural water use, hydroelectric power generation, contact and non-contact water recreation including canoeing and rafting, warm and cold freshwater habitat, and wildlife habitat (CRWQCB 2011). Streams in the fire area are mostly ephemeral (77 miles), followed by perennial (7miles) and intermittent (5 miles).

Table 1. HUC 6 watershed acreages and percentages by soil burn severity class

HUC 6 Watershed	HUC ID	Total Acres	Very Low/Unburned	Low	Moderate	High	Outside Fire Area
Crane Creek-Merced River	180400080306	16788	466 (2.8%)	979 (5.8%)	2263 (13%)	653 (4%)	12427 (74%)
Indian Creek-Merced River	180400080305	15536	11 (0.1%)	10 (0.1%)	15 (0.1%)	4 (0%)	15496 (99.7%)
Moss Creek-Merced River	180400080307	13356	26 (0.2%)	182 (1.4%)	121 (0.9%)	0	13027 (98%)

B. Field Investigations

Potential VARs were initially identified through burn severity mapping analysis, review of previous local post-fire monitoring reports, and discussions with Yosemite National Park (YNP) staff. Field visits were then made to the identified sites; additional VARs were identified during field visits. The following VAR sites were the focus of field investigations (Figure 1):

Houses in old El Portal

House in drainage near water tank- There is a house located directly within the mouth of a 33 acre ephemeral drainage (Figures 1 and 2). The drainage is narrow, steep (average slope-63%), and very rocky with rock outcrops at its head. The entire watershed was burned, with soil burn severity dominated by *Moderate* (Table 2). This house previously experienced flooding and fine sediment deposition during a storm event in March 1991that occurred after the watershed was burned during the August 1990 Arch Rock Fire (DeGraff 1991). A rock gabion dam debris basin with an approximately 200 cubic yard capacity was constructed in the channel upstream from the house near the upper water tank after the Arch Rock Fire to provide protection from debris flows; the March 1991 event filled the structure about half full with fine sediment and ash (DeGraff 1991).

The current homeowner (who resided at the house during the 1991 storm event) was contacted and provided information. Sometime after the March 1991 storm the homeowner created a hardened flood channel and small retaining wall/levee out of rock and concrete to direct runoff away from the house. The homeowner stated that runoff occurs (under unburned conditions) only in wet years after prolonged rainfall and last occurred four years ago. According to the homeowner, under unburned conditions, runoff typically is does not cause flooding and sediment deposition; the house was originally built in 1927. The drainage becomes indistinct past the house and runoff flows around a large water tank and through another yard where it reaches the street; no other homes appear to be at risk.

House in drainage on Buckeye Road- This house is located directly within the mouth of an 18 acre ephemeral drainage and was identified during field reconnaissance (Figures 1 and 3). This drainage is also narrow, steep (average slope- 55%), and rocky with rock outcrops at its head. Nearly all the watershed (91%) was burned, mostly at a *Moderate* soil burn severity (Table 2). The drainage becomes indistinct at the house and it appears no other homes are at risk. The house experienced a small debris flow during the March 1991 storm event which deposited 1 foot of debris against the back of the house (DeGraff 1991). Several unsuccessful attempts were made to contact the homeowner. Where Foresta Road crosses the drainage upstream from the house, there is potential for runoff to divert onto the road and flow down to water tank.

Houses at base of burned hillslope- Several houses located along the base of a burned hillslope are at risk of experiencing minor nuisance runoff and sedimentation that could result from accelerated post-fire hillslope erosion.

Highway 140 bridge at Crane Creek

Staff at Yosemite National Park (YNP) expressed concern that increased post-fire peak flows could damage the bridge on Highway 140 at Crane Creek and cause temporary loss of highway access. The bridge is constructed of concrete with a natural channel bottom and has an inlet width of around 30 feet and outlet width of around 32 feet and height between 13 and 15 feet from the low flow water surface elevation. It was estimated that at bankfull peak flow (approximate recurrence interval of 1.5 years) there is about 8 feet of freeboard remaining at the inlet. Bankfull width 150 feet upstream of the bridge was estimated at 26 feet. This information indicates the bridge has adequate hydraulic capacity to pass expected high flows.

Foresta Road

Staff at YNP expressed concern that access on Foresta Road, between Foresta and El Portal, could be lost due to post-fire storm damage. There are three bridges on Foresta Road within the fire perimeter, two on Crane Creek and

one on Little Crane Creek. One bridge on Crane Creek had the railing burn but is otherwise passable; the other bridge had the wood decking burn and is impassable. Both bridges on Crane Creek do not appear to be at risk of post-fire storm damage due to the low proportion of burned area in the upstream watershed. The bridge on Little Crane Creek was not visited but appeared from a distance to be similar to the lower bridge on Crane Creek and is probably adequately sized and constructed to handle high flows. There is an intermittent stream crossing between Little Crane and Crane Creek but it was not visited and the type (e.g., culvert, bridge) and condition of the crossing is unknown. Numerous other ephemeral stream crossings were noted on Foresta Road, most of which do not have any culverts or other structures and will be vulnerable to erosion and road loss by increased post-fire flows.

Table 2: Analysis watershed acres by soil burn severity class and percentage

Watershed	Total Acres	Very Low/ Unburned	Low	Moderate	High	Outside Fire Area
El Portal Fire Area	***4728***	***504 (11%)***	***1171 (25%)***	***2399 (51%)***	***657 (14%)***	-
Water Tank Drainage	33	1 (4%)	2 (5%)	25 (76%)	5 (14%)	0
Buckeye Road Drainage	18	1 (4%)	4 (20%)	10 (55%)	2 (11%)	2 (9%)
Crane Creek at Hwy 140	11296	462 (4%)	945 (8%)	2202 (19%)	649 (6%)	7038 (62%)
Little Crane Creek at Foresta Rd Bridge	3245	434 (13%)	777 (24%)	1354 (42%)	437 (13%)	243 (7%)
Crane Ck Tributary at Foresta Road	128	0	1 (1%)	94 (73%)	34 (26%)	0

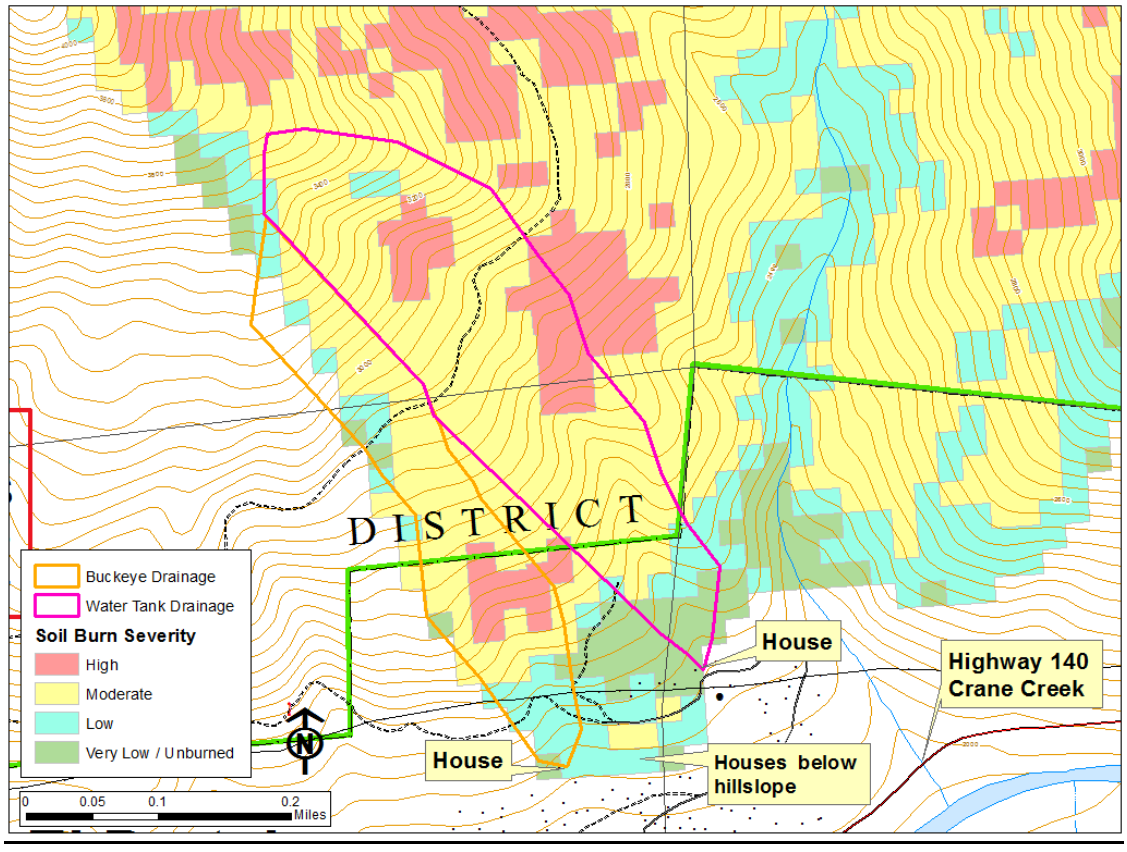


Figure 1: Map of fire area showing the houses in drainages and Crane Creek bridge at Highway 140

Figure 2: Looking down into water tank drainage from Foresta Road

Figure 3: Looking down into Buckeye Road drainage from Foresta Road

C. Hydrologic Modeling

Stream peak flows are expected to increase during the coming winter due to reductions in soil ground cover and infiltration and decreased evapotranspiration from loss of vegetation. Peak flows will be bulked by ash, burned wood and other floatable debris, and sediment eroded from hillslopes and channels. Under these post-fire conditions, debris-laden floods could pose threats to critical values.

In order to estimate the magnitude of potential increases in stream peak flows, hydrologic modeling was conducted on the five pour-point watersheds within the fire area containing potential VARs (Figure 1). Flows were modeled for the two small drainages with houses in them in old El Portal (Water Tank Drainage, Buckeye Road Drainage), Crane Creek Bridge at Highway 140, Little Crane Creek Bridge on Foresta Road, and an intermittent tributary to Crane Creek with an unknown type of stream crossing on Foresta Road (Table 2). A detailed description of the modeling methodology used can be found in Appendix A.

A 2-year recurrence interval peak flow was used as a conservative estimate of a peak flow magnitude that could be potentially damaging to VARs and has a high likelihood of occurrence within the next 1 - 4 years, when the watersheds are most susceptible to elevated peak flows and erosion. A 2-year peak flow event has a 50% probability of occurrence in any given year and a 94% probability of occurring at least once over the next 4 consecutive years. Modeling pre- and post fire peak flow involves a high degree of uncertainty; modeled flows should be considered estimates of the relative expected change in post-fire hydrologic response which are used to help identify VARs and prioritize treatment.

Table 2: Modeled pre- and post-fire peak flows for pour-point watersheds

Watershed	Watershed Acres	% of Watershed Burned	Pre-Fire Peak flow (cfs)	Post-Fire Peak flow (cfs)	Peak flow Increase (percent)	Peak flow Increase (times)
Water Tank Drainage	33	100	2	6	230	3.3
Buckeye Road Drainage	18	91	1	3	181	2.8
Crane Creek at Hwy 140	11296	38	265	423	60	1.6
Little Crane Creek at Foresta Rd Bridge	3245	93	85	216	155	2.5
Crane Ck Tributary at Foresta Road	128	100	5	17	275	3.8

Table 3 presents results of modeled year-1 maximum erosion rates within the analysis watersheds and equivalent sediment volumes delivered to each watershed pour point for a 2-year recurrence interval storm, similar to the magnitude of storm expected to generate the modeled post-fire peak flows (see the *BAER Soil Resources Report* for details of modeled erosion rates and sediment production).

Table 3: Modeled pre- and post-fire erosion and sediment production for 2-year storm event

Watershed	Pre-Fire Erosion			Year 1 Post-Fire Erosion: 2-yr storm		
	Erosion Rate (tons/ac)	Total Sediment (tons)	Total Sediment (cu yds)	Erosion Rate (tons/ac)	Total Sediment (tons)	Total Sediment (cu yds)
Water Tank Drainage	0.4	12	9	8.8	290	203
Buckeye Road Drainage	0.3	6	4	7.8	127	89
Crane Creek at Hwy 140	0.6	2718	1903	8.6	36770	25739
Little Crane Creek at Foresta Rd Bridge	0.7	1966	1376	8.3	24849	17394
Crane Ck Tributary at Foresta Road	0.1	15	10	8.5	1089	763

Results and Discussion

Modeled post-fire peak flow increases for the 2-year flow range from 60% for Crane Creek at Highway 140 to 275% for the Crane Creek tributary. Post-fire 2-year flows for the water tank drainage (6 cfs) and the Buckeye Road drainage (3 cfs) may not appear very impressive at first but considering that the houses are located squarely in the drainages and the volume of sediment predicted to be delivered by a 2-year event (203 cu yds to water tank, 89 cu yds to Buckeye), both houses are at high risk due to flooding, mud and possibly debris flows (for visualization purposes, 6 cfs can fill a 20,000 gallon swimming pool in 7.5 minutes). Past history of flooding and debris flows at the homes during the March 1991 storm after the Arch Rock fire provides probably the best indicator of post-fire risk. The storm event that caused the March 1991 mud and debris flows is estimated to have been a 2-year/4-day recurrence interval event, one that has a good likelihood of occurrence in any given year. Similarly, small debris flows in the nearby 2011 Motor Fire area were triggered by 2 inches of rain over a 14 hour period (DeGraff et al. 2012). That rain event has an approximate recurrence interval of 1-year/12 hour.

Post-fire 2-year flows on Crane Creek at Highway 140 are estimated to increase to 423 cfs, a relatively modest increase that the bridge should be able to easily pass without damage. The stream crossing on the intermittent Crane Creek tributary may be at risk of failure due to increased flows and debris; however, the hydraulic capacity of the crossing is unknown and it is, therefore, not possible to make that determination presently.

III. Emergency Determination

A. Threats to Critical VARs

Based on field investigations, modeling of expected post-fire peak flows, and past history of post-fire impacts, there is a high risk to critical values (human life and property) to the two houses in the drainages in El Portal and to people travelling on Foresta Road between Foresta and El Portal, and, therefore, an emergency exists. Foresta Road is at high risk of rock fall and road washouts. Several other houses in old El Portal at the base of a burned hillslope were identified as being at risk of only minor nuisance sedimentation that could result from erosion on the hillslope. Modeling and field evaluation indicate that the Highway 140 bridge at Crane Creek is at low risk of impacts due to the modest increase in estimated post-fire flows and the adequate hydraulic capacity of the bridge.

Based on field investigations and modeling of expected post-fire peak flows and sediment yield, there is a low risk to water quality and aquatic habitat and, therefore, an emergency does not exist. The magnitude of peak flow increases and sediment yield estimated by the models does not appear likely to pose a significant risk to water quality and aquatic habitat. The Merced River is a large stream that has adequate flow and transport capacity to dilute and move downstream increased debris and fine sediment loads transmitted from the fire area. Reach-scale water quality and aquatic habitat in the Merced River could be affected by increased nutrients, suspended sediment and debris, increased turbidity, and increased fine sediment in pools; however, these effects are expected to be minor and short-term in duration and occur during storms or snow melt in the first 1 - 2 years after the fire.

IV. Treatments to Mitigate Risk to Critical Values (Figure 4)

A. House in drainage near water tank on Foresta Road

- The existing gabion dam debris basin adjacent to the upper water tank should be initially cleaned out and then subsequently monitored and cleaned out after storms as needed.
- Sand bags or other type of barrier should be used to raise the height of the existing retaining wall/ levee to better protect the house from flooding and debris. This structure would be designed in consultation with a geotechnical engineer.

B. House in drainage on Buckeye Road

- A debris basin and/or deflection barrier should be installed at the mouth of the drainage behind the house on Buckeye Road. The structure should be designed to slow the momentum of a debris or mud flow before it reaches the house, have the capacity to provide some storage of fine sediment/larger

debris, and redirect flows around the house. The structure could consist of a gabion dam, k-rails, or some other type of temporary or permanent structure. The structure should be designed in consultation with a geotechnical engineer.

- The burned hillslopes in the drainage adjacent to the house should be mulched with weed free straw or wood straw to provide soil ground cover in order to reduce sheet and rill erosion. Straw should be applied at a rate of around 2 tons per acre.

C. Road drainage improvement on Foresta Road in Old El Portal

- Where Foresta Road crosses the drainage flowing down to the house on Buckeye Road, there is potential for flows to divert onto Foresta Road and continue all the way to the lower water tank. The paved section of Foresta Road from the upper water tank access road down to the lower water tank should have sections of the outside berm removed to allow runoff to disperse onto the hillslope in the event of stream diversion. Rock dissipators and straw bales should be installed where runoff leaves the road at berm breaches to dissipate runoff on the hillslope. In addition, a rock armored dip should be installed where the drainage crosses the road to reduce the potential for stream diversion.

D. Hillslope mulching

- The burned hillslope behind the houses on Foresta Road in old El Portal should be mulched with weed free straw or wood straw to provide soil ground cover in order to reduce sheet and rill erosion. Straw should be applied at a rate of around 2 tons per acre.

E. Installation of precipitation stations for NOAA warning system

- Two precipitation stations should be installed in the Crane Creek watershed for NOAA to be able to provide early warnings of impending storms with high potential for flooding, mud and debris flows. Residents of homes at risk can be alerted in advance when evacuation may be advisable.

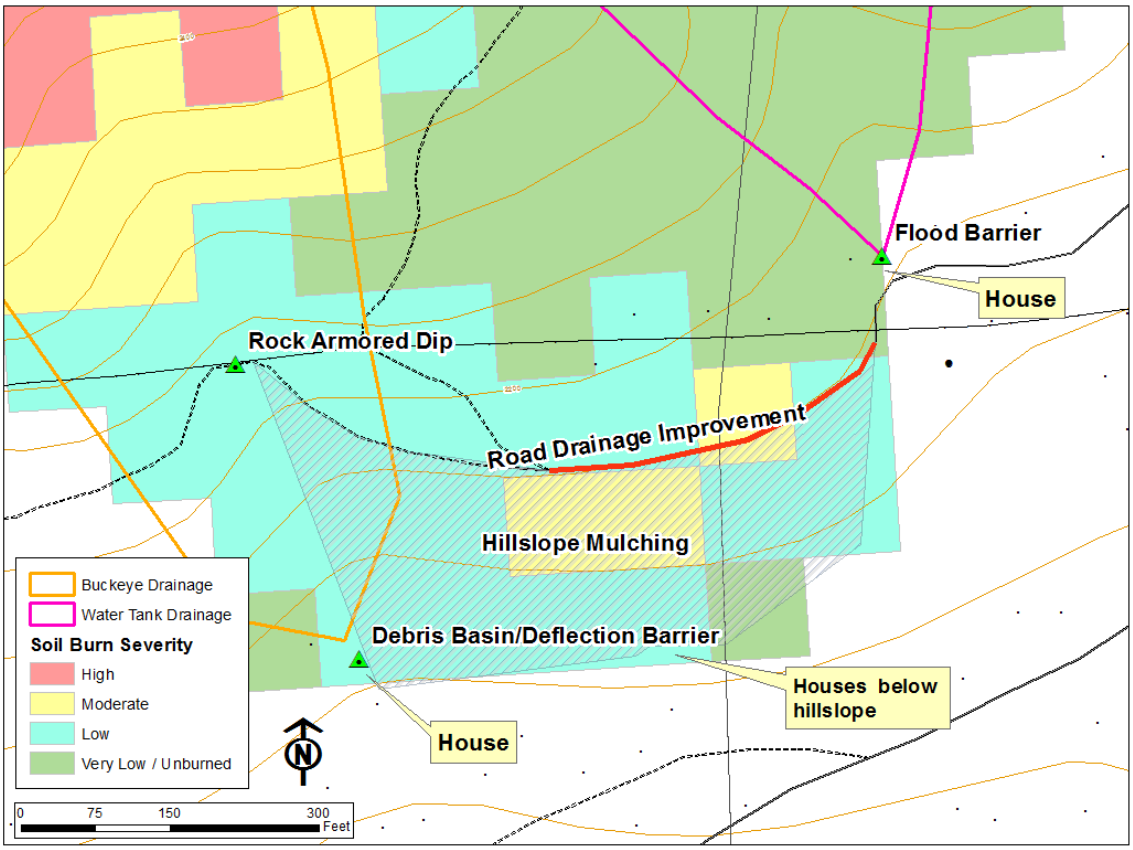


Figure 4: Location and types of proposed treatments

Appendix A: Pre- and Post-Fire Peak Flow Modeling Methodology

Pre-Fire Peak Flows

Regional flood frequency equations for the Sierra Nevada hydrologic region were used to obtain estimates of pre-fire peak flows for the analysis watersheds, as described in Gotvald et al. (2012). The 2-year recurrence interval (RI) peak flow (50% annual exceedance probability) was used as a conservative estimate of a pre-fire peak flow magnitude that could be potentially damaging and has a reasonable likelihood of occurrence within the next 1 - 4 years, when the watersheds are most susceptible to elevated peak flows and erosion. The following equation was used to obtain the 2-year RI pre-fire peak flow estimate:

2-year RI $2.43(DRNAREA)^{0.924}(ELEV)^{-0.646}(PRECIP)^{2.06}$

where *DRNAREA* is the watershed drainage area (mi^2), *ELEV* is the mean basin elevation (ft), and *PRECIP* is mean annual precipitation (inches) (Gotvald et al. 2012). Drainage area for pour-point watersheds was obtained using GIS; mean basin elevation and mean annual precipitation were obtained using StreamStats (USGS 2013). Table 1 gives model parameters used for pre-fire peak flows and results.

Table 1: Pre-fire peak flow model inputs and results

Watershed	DRNAREA (mi2)	ELEV (ft)	PRECIP (in)	Pre-fire 2 year RI Peak (cfs)	Pre-fire 2 year RI Peak (cfs/mi2)	Post-fire 2 year RI Peak (cfs)	Post-fire 2 year RI Peak (cfs/mi2)
Water Tank Drainage	0.05	2843	38.1	2	32	6	107
Buckeye Road Drainage	0.03	2704	38.1	1	35	3	98
Crane Creek at Hwy 140	17.6	5307	39.6	265	15	423	24
Little Crane Creek at Foresta Rd Bridge	5.1	5152	39.5	85	17	216	43
Crane Ck Tributary at Foresta Road	0.2	4313	38.5	5	23	17	85

Post-Fire Peak Flows

Post-fire peak flows were estimated by adjusting pre-fire peak flows based on the proportion of soil burn severity classes (*Low, Moderate, High, Very Low/Unburned*) within each pour-point watershed, which are obtained from the Burned Area Reflectance Classification (BARC) soil burn severity map. To estimate changes in post-fire peak flows, the following assumptions were made: areas of *Low* soil burn severity would have a peak flow response that is a 30% increase in the 2-year RI peak flow; *Moderate* severity would respond as a 5-year RI (20% annual exceedance probability) peak flow; *High* severity would respond as a 10-year RI (10% annual exceedance probability) peak flow; *Very Low*/*Unburned* would respond as a 2-year RI (50% annual exceedance probability) peak flow. The proportion of burn severity classes within each watershed was obtained using GIS; these proportions within different burn severity classes were then multiplied by the 2-year, 5-year, and 10-year RI peak flows and summed to obtain the post-fire peak flow estimate for each watershed. The 2-year RI peak flow was calculated as explained in the pre-fire peak flow section. The 5-year and 10-year peak flows were calculated using the following equations, also from Gotvald et al. (2012), using the same input parameters given in Table 1:

5-year RI $11.6(DRNAREA)^{0.907}(ELEV)^{-0.566}(PRECIP)^{1.70}$

10-year RI $17.2(DRNAREA)^{0.896}(ELEV)^{-0.486}(PRECIP)^{1.54}$

The post-fire modeled flows were then multiplied by a bulking factor of 1.25 that accounts for sediment entrained in the flows and represents a maximum sediment concentration of 20% for a water flow (Elliot et al. 2005).

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BAER Assessment Soils Report – El Portal Fire

Stanislaus National Forest (R5-STF)

August 12, 2014

Community of El Portal with Foresta Road cutting across lower slope

Prepared by Alex Janicki and Curtis Kvamme

BAER Soil Scientists

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The El Portal Fire started on Saturday, July 26, 2014, just north of the community of El Portal, California and four miles west of the Yosemite National Park entrance along highway 140. The fire burned 4,729 acres of which 65% burned at high and moderate soil burn severity (see soil burn severity map below). The rest of the fire was either low or very low soil burn severity. It is very important to understand the difference between *fire intensity* or *burn severity* as discussed by fire behavior, fuels, or vegetation specialists, and *soil burn severity* as defined for watershed condition evaluation in BAER analyses. Fire intensity or burn severity as defined by fire, fuels, or vegetation specialists may consider such parameters as flame height, rate of spread, fuel loading, thermal potential, canopy consumption, tree mortality, etc. For BAER analysis, we are not mapping simply vegetation mortality or above-ground effects of the fire. Soil burn severity considers additional surface and below-ground factors that relate to soil hydrologic function, runoff and erosion potential, and vegetative recovery.

Water repellency was typically moderate throughout the surface two inches of soil on moderate and high soil burn severity areas. This condition was common across vegetation types, aspects and soil types. Strongly hydrophobic soil conditions were rare. The depth of char and soil organic matter destruction was commonly one half inch in areas described as moderate and one inch in high soil burn severity acres.

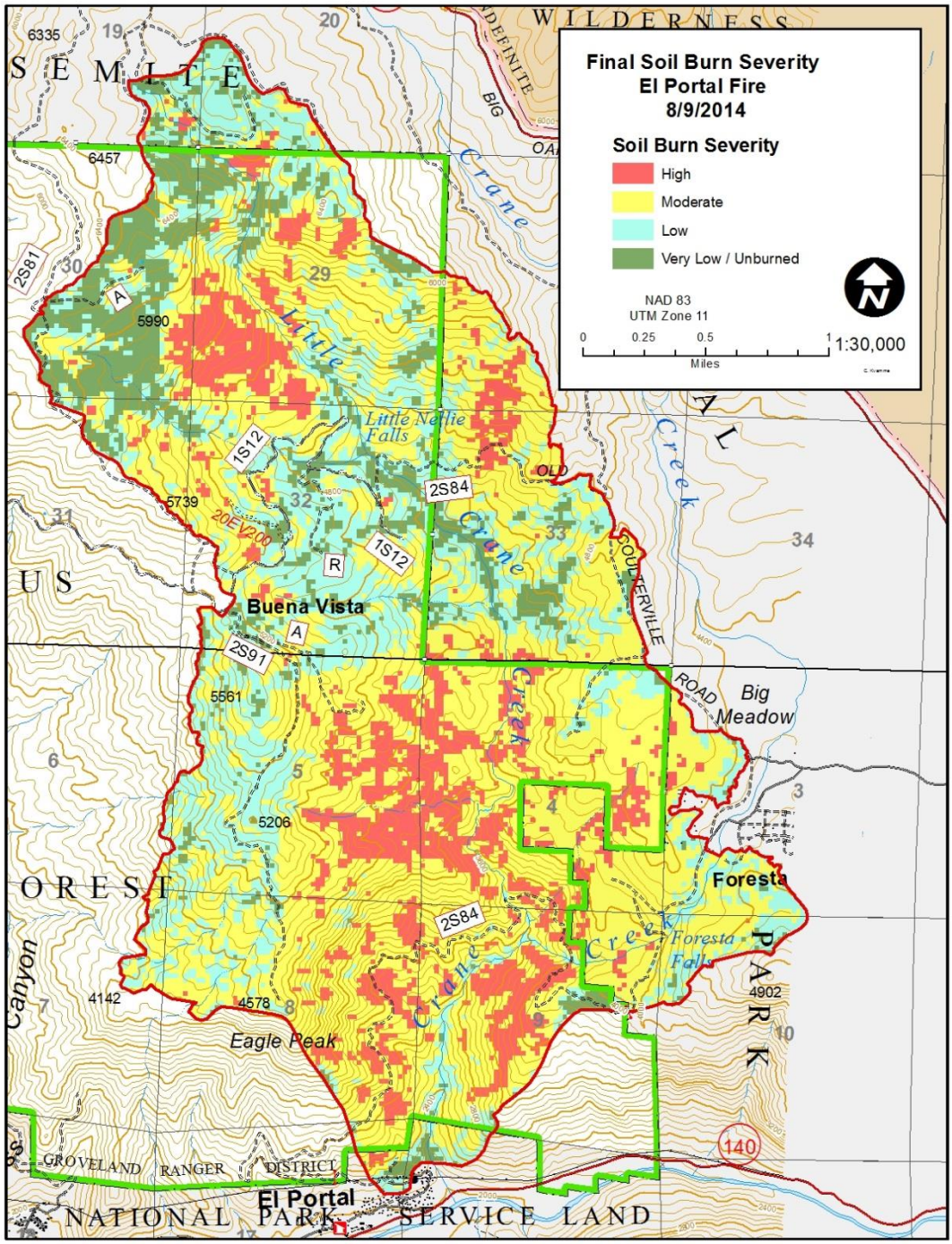
Dominant soils are various cobbly loamy sands in the steep canyon sides of Crane Creek, and moderately deep or deep loamy and clay-loam soils in the forested areas. Specific dominant soils include Lithic Xerumbrepts, Fiddletown, Holland, and Tuolumne soils.

Table1 - Soil Map Units and acreage in the El Portal fire area.

Soil Map Unit	Soil Name	Acres	Soil Texture	Rock Content	Vegetation Type	Hydrologic Soil Group
170	**Lithic Xerumbrepts - Fiddletown, 35-70% Slope**	**1330.1**	**Loamy sand**	**40**	**Chaparral & Oak**	**B**
174	**Lithic Xerumbrepts - Rock outcrop, 35-70% Slope**	**746.6**	**Loamy sand**	**40**	**Chaparral & Oak**	**D**
298	**Tuolumne, 30-65% Slope**	**688.0**	**Sandy loam**	**15**	**Forest**	**B**
128	**Holland - Fiddletown, 10-35% Slope**	**642.5**	**Loam**	**15**	**Forest**	**B**
290	**Humic Dystroxerepts**	**373.1**	**Loamy sand**	**30**	**Chaparral & Oak**	**B**
296	**Ultic Palexeralfs**	**333.1**	**Loam**	**15**	**Forest**	**B**
328	**Clarkslodge, 15-45% Slope**	**320.4**	**Sandy loam**	**15**	**Forest**	**B**

Looking at the soil burn severity map below (Figure 1) shows multiple areas that have the majority of moderate and high soil burn severity. The main areas are the steep slopes of Crane Creek above El Portal, and a forested portion above Little Nellie Falls on Little Crane Creek. The burned slopes above El Portal, specifically in two sub watersheds (Water Tank Drainage, and Buckeye Rd. Drainage) are at high risk of flooding and sedimentation affecting private residents below.

Figure1 - Soil Burn Severity Map with Land Ownership.



Soil burn severity was assessed following principles described in Parsons et al., 2010. Burned Area Reflectance Classification (BARC) imagery from the Remote Sensing Applications Center (RSAC) in Salt Lake City, UT was utilized by the soil scientist, and modified to better reflect actual soil burn severity as observed in the field. Subsequent watershed response modeling efforts use the soil burn severity map as a key input. SBS is summarized in table 2.

Table 2. Soil Burn Severity acreage, summarized by ownership.

	Ownership				
Soil Burn Severity	Private	Stanislaus NF	Yosemite NP	**Total Acres**	% Area
High	0.5	579	78	657.1	14%
Moderate	14	1767	618	2398.7	51%
Low	5	835	331	1170.5	25%
Very Low / Unburned	0.5	396	106	502.5	11%
Total	20	3576	1133	**4729**	

Table 3. Erosion Hazard Ratings, by Soil Burn Severity class.

Erosion Hazard Rating	**Pre Fire**		**Post Fire**	
	Acres	Percent %	Acres	Percent %
Low	2147.5	45%	292.6	6%
Moderate	2535.1	54%	737.5	16%
High	44.7	1%	1835.9	39%
Very High	0.0	0%	1861.3	39%

Quantitative erosion and sedimentation modeling utilized the FS-WEPP ERMiT model (batch ERMiT module), which is fundamentally based on single hillslopes and single storm runoff events (not annual estimates). Particulars and documentation may be found at http://forest.moscowfsl.wsu.edu/fswepp/. A custom climate was generated for the fire area using the PRISM module integrated in ERMiT, and the model was run for a range of storm-runoff recurrence intervals. Stated model output accuracy is 75%; therefore, the absolute numbers are considered best estimates only. However, this model is particularly useful in that it can be easily tailored to particular areas (sub-watersheds) to assess potential sediment source areas on a relative basis, and help prioritize areas for potential hillslope treatments if that is determined necessary later in the assessment. ERMiT also models the probable success of potential treatments in terms of reduction in sediment production. 83 representative hillslopes were modeled for this fire, and results extrapolated in GIS and Excel for sub-watershed level analysis. ERMiT output is summarized in table 4 by watershed. Note that estimates are based upon watershed area within the fire perimeter only; unburned watershed area outside the fire perimeter was not modeled. There are unburned and very low acres within the fire perimeter, these areas were modeled as "low" burn severity with ERMiT because the model does not have a separate input for the very low burn condition. Additionally, ERMiT does not produce an output that directly represents the unburned, or pre-fire condition because it was not part of the original empirical research data that went into building the model. To produce the Pre-Fire estimates of erosion, the model was run with a 2-year storm input in the 5th year after a fire. The assumption with this approach is that erosion rates would return to pre-fire levels after 5 years, which is likely not the case for all areas within the fire; thus erosion is possibly over-estimated in some the pre-fire results. For rapid assessment purposes, this is considered adequate, and preferable to using unrelated models or anecdotal data about unburned condition and erosion rates. As an interpretive visual, tons/ac is roughly equivalent to that many sheets of paper stacked being removed from the soil surface (e.g. eroding 5 tons/acre is ~equal to the thickness of 5 sheets of paper), and 1000 tons of sediment would fill about 120 standard 10-yard dumptrucks.

Table 4. ERMiT-estimated sediment production, for a range of storm runoff events.

			Pre Fire		Two Year Event			5 Year Event			10 Year Event		
Watershed Name	**Water-shed (Acres)**	**Area Burned (Acres)**	Tons/ Acre	Cubic Yds	Tons/ Acre	Cubic Yds	x bgrd	Tons/ Acre	Cubic Yds	X bgrd	Tons/ Acre	Cubic Yds	X bgrd
Crane_Creek_Hwy_140	11296	4260	0.6	1903	8.6	25739	13.5	27.8	83018	43.6	47.1	140592	73.9
Little_Crane_Ck_Bridge	3245	3003	0.7	1376	8.3	17394	12.6	25.8	54268	39.4	45.8	96287	70.0
Crane_Trib_Foresta_Rd	128	128	0.1	10	8.5	763	74.8	31.9	2869	281.4	49.3	4426	434.0
Water_Tank_Drainage	33	33	0.4	9	8.8	203	23.5	32.4	749	86.9	54.8	1266	146.9
Buckeye_Rd_Drainage	18	16	0.3	4	7.8	89	22.8	30.0	345	88.0	50.2	576	147.0
Whole Fire		**4729**	**0.6**	**2831**	**8.7**	**53574**	**18.9**	**28.0**	**175263**	**61.9**	**47.3**	**288735**	**102.0**

Erosion Response Summary

Table 4 shows significant sediment inputs for all the pourpoints within the fire. Sediment levels are most pronounced for the 5 and 10-year storm events, raising concerns for Foresta Road, and structures in El Portal. Due to low soil cover and steep slopes, the initial erosion and sedimentation hazard is high or very high on 78% of the fire area. However, in this fire-adapted ecosystem some post-fire erosion is expected, and hillslope treatments are largely impractical or ineffective where average slopes are >50%.

Values at risk and Emergency Determination (Soils)

Threats to Soil Productivity

Probability of Damage or Loss: **Likely**
Magnitude of Consequences: **Minor**
Risk Level: **Low**

An elevated level of erosion can be expected in the aftermath of the fire based on modeling of erosion and sedimentation and erosion risk analysis. However, this is a fire-adapted ecosystem that has evolved in the presence of fire, and most of the slopes with the highest predicted erosion are too steep to effectively treat with mulch. In the most likely scenario (a two-year storm event), erosion rates are not elevated high enough to constitute an emergency situation to soil productivity. Thus, no treatments are proposed to protect soil productivity.

Threats to Human Life and Property

2 Houses in drainage basins

Probability of Damage or Loss: **Likely**
Magnitude of Consequences: **Major**
Risk Level: **Very High**

Two houses are identified for treatments to proetect human life and property. Increased sediment and peakflows are likely to cause damage to private property at one or both houses. Both houses are located within

stream channels that burned in the fire, and do not currently have sufficient protection to avoid damage to property or injury to the residents. At the house in the "water tank drainage," there is an existing debris basin that can be cleaned out to improve its function. A deflection barrier or other point protection next to the house is also proposed to protect the structure. At the "Buckeye Road drainage", construction of a new debris catchment basin and a point protection, diversion structure is proposed to protect human life and property.

Remaining houses below burned slope in El Portal

Probability of Damage or Loss: **Possible**
Magnitude of Consequences: **Moderate**
Risk Level: **Intermediate**

Several other houses below Foresta Road (near the fire origin) have a risk of nuisance sediment being deposited on their structures, and have the potential to cause moderate damage. Mulch treatments of weed-free rice straw or wood straw are proposed on the slope below Foresta Road and above houses to reduce sedimentation effects.

References

Parsons, A, PR Robichaud, SA Lewis, C Napper, JT Clark, 2010. Field Guide for Mapping Post-Fire Soil Burn Severity. USFS Rocky Mountain Research Station, General Technical Report RMRS-GTR-243.

APPENDIX A – MAPS

Map 1 – Soil Map Units (refer to table 1 for legend of dominant soils).

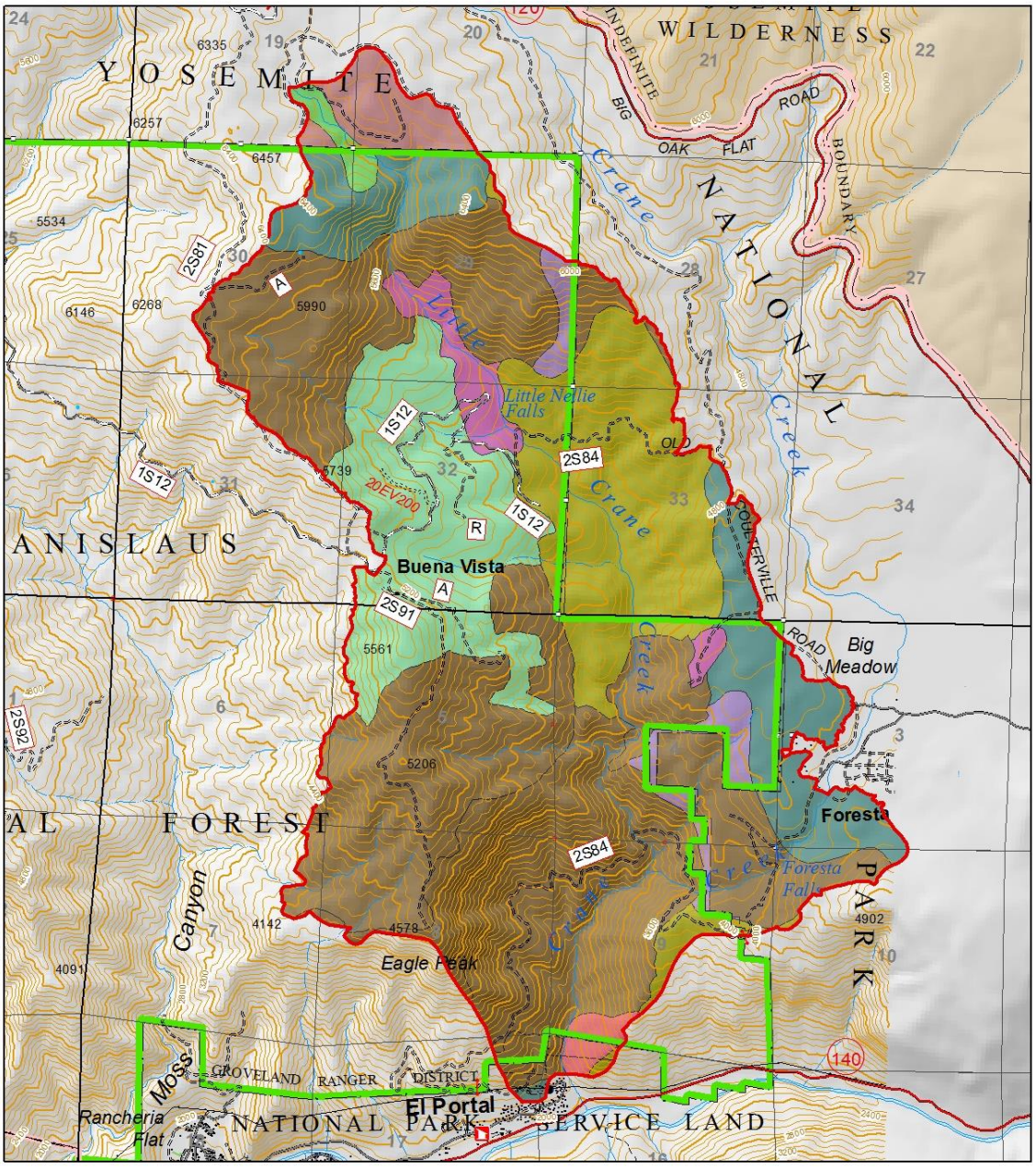
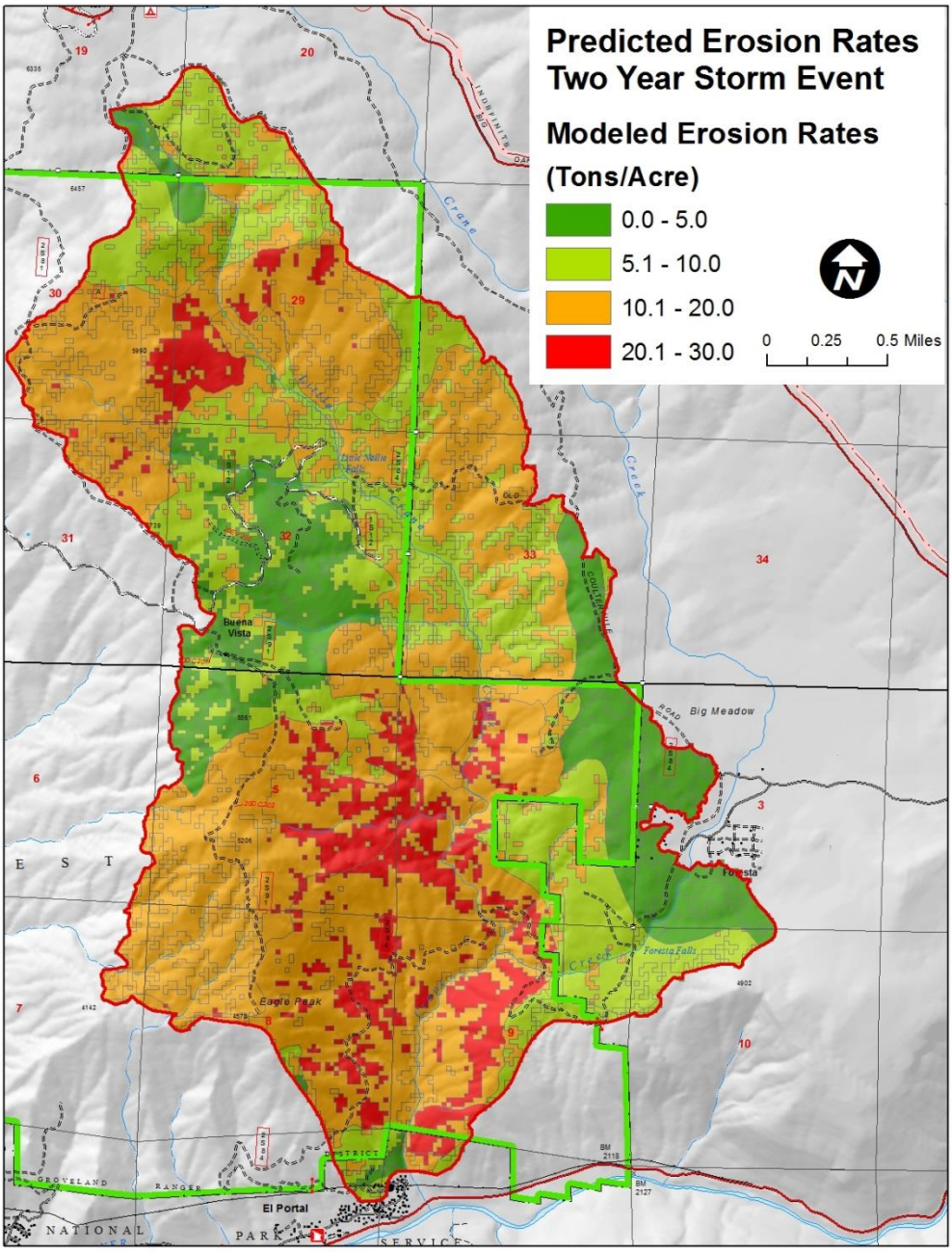


Figure2 – Modeled ERMiT Soil Erosion Rates – 2-year storm



El Portal Fire BAER: **Date: August 10, 2014**

Road Assessment Summary of Values at Risk:

Life and Safety: As a result of the severely burned watersheds risks to life and safety of Forest visitors and personnel entering certain areas of the burn are likely and pose a moderate to major risk, due to Hazard trees and rock fall along roads.
Property: there is a likelihood that post burn conditions will increase runoff and the movement of sediment into drainage features, such as culvert inlets, overside drains, roadway dips and run outs, this occurrence causes drainage function to fail and uncontrolled water to divert, resulting in a moderate risk of damage to the invested road improvements , loss of road function and the denial of access.
Resource Values / Water Quality: When roadway drainage function fails due to increase sediment and debris movement, uncontolled water is likely to move off site and pose a moderate risk to adjacent resources.

Treatments to Mitigate the Values at Risk:

Life and Safety : accepted and economical BAER treatments to mitigate the risk to life and safety posed by hazard trees and rock fall along roadways. At main entry points of roads accessing the fire area. Install BAER Closure and Information signs. Install 3'x 6' signs at the Forest boundary at the existing gate locations on each end of Foresta Road (2S84). Install 3'x 6' sign at the existing gate location near 4-corners in section 36 west on the 1S12 road. Install 3' x 6' sign at the existing gate close to the Forest boundary on the Old Coulterville Road (2S84).
Property: road 1S12 located at the northern edge of the fire traverse for about two miles through a moderate to high severity burned watershed. Routine maintenance of drainage features along this road segment have been deferred creating a likely risk of some road drainage function failing due to the increased flow of water and sediment moving into culvert inlets, ditch lines, roadway dips and runouts. Accepted BAER road treatments along this segment of road is to restore the drainage function to full capacity while storm proofing and winterizing.
Resource Values / Water Quality: Restoring drainage function along the two mile segment of road 1S12, as described above will help to mitigate the risk of uncontrolled water moving off site and impacting adjacent resources.

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Road Treatments Cost Estimate:

Treatment	Units	Unit Cost	# of Units	BAER Funds
1S12 & 2S84 Install BAER Closure and Information Signs.	each	1000	4	$4,000.00
1S12 Restore Drainage Function	mile	4000	2	$8,000.00

Total Estimate: $12,000.00

El Portal Fire - Botany BAER Report

Resource Specialty: Threatened, Endangered, Sensitive, and Rare Plants; Invasive Species
Fire Name: El Portal
Month and Year: August 2014
Author(s) Name and Home Unit Name: Quinn Young (BAES-T), Stanislaus National Forest (STF), Calaveras RD

I. Potential Values at Risk (identified prior to the on-the-ground survey)

A. Critical Values

Ecosystem health and integrity of the native and naturalized communities are identified as critical values at risk in the Rim Fire burned area. The removal of vegetation throughout the burned area by the fire and along the dozer lines and other disturbance areas by bulldozers and hand tools, has created habitat conditions which are now highly vulnerable to weed invasion. There are many known noxious weed and invasive, non-native plant sites within and adjacent to the burned area. In the absence of the native vegetation previously occupying the burned area, California state listed noxious weeds and other invasive plants will likely expand into areas not previously infested. The noxious weeds within the burned area are known to rapidly colonize disturbed areas, often forming monocultures which exclude native vegetation.

B. Resource Condition Assessment

(a) Resource Setting

The El Portal Fire burned 4,689 acres of Mariposa County, in the southeastern portion of the Groveland Ranger District, Stanislaus NF (STF) (3,597 acres burned) and western portion of Yosemite National Park (YNP) (1,092 acres burned). The El Portal Fire was discovered on July 26, 2014 and was fully contained on August 8, 2014. The El Portal Fire burned to the north of El Portal, CA, on the steep north side of the Merced River and affected vegetative communities including oak woodland, mixed conifer forest, and white fir forest near Crane Flat. Retardant drops occurred early in the fire along the western fire perimeter. Several previous fires have occurred in the vicinity of the El Portal, including Motor (2011), Rim (2013), and Big Meadow (2009). Therefore, existing dozer and contingency lines were re-opened with primarily two blade widths, although, a few fire lines were opened with one or up to three blade widths. A limited area of new dozer line was constructed. On Stanislaus National Forest (STF), minimal new dozer line construction and re-opened fire lines included approximately 19 miles of dozer line (12.3 miles) and hand line (6.7 miles) which is a total of 90 acres. The actual fire and suppression fire lines were in spatial conjunction with known invasive non-native plant communities (Figure 1), and the same was true at Drew Meadow ICP which is under private ownership and has been used as an ICP for previous fire operations. This report focuses on the risk that new infestations of these species pose to the ecological integrity of the plant communities within and adjacent to the El Portal burned area and within related fire suppression lines and areas, including Drew Meadow ICP.

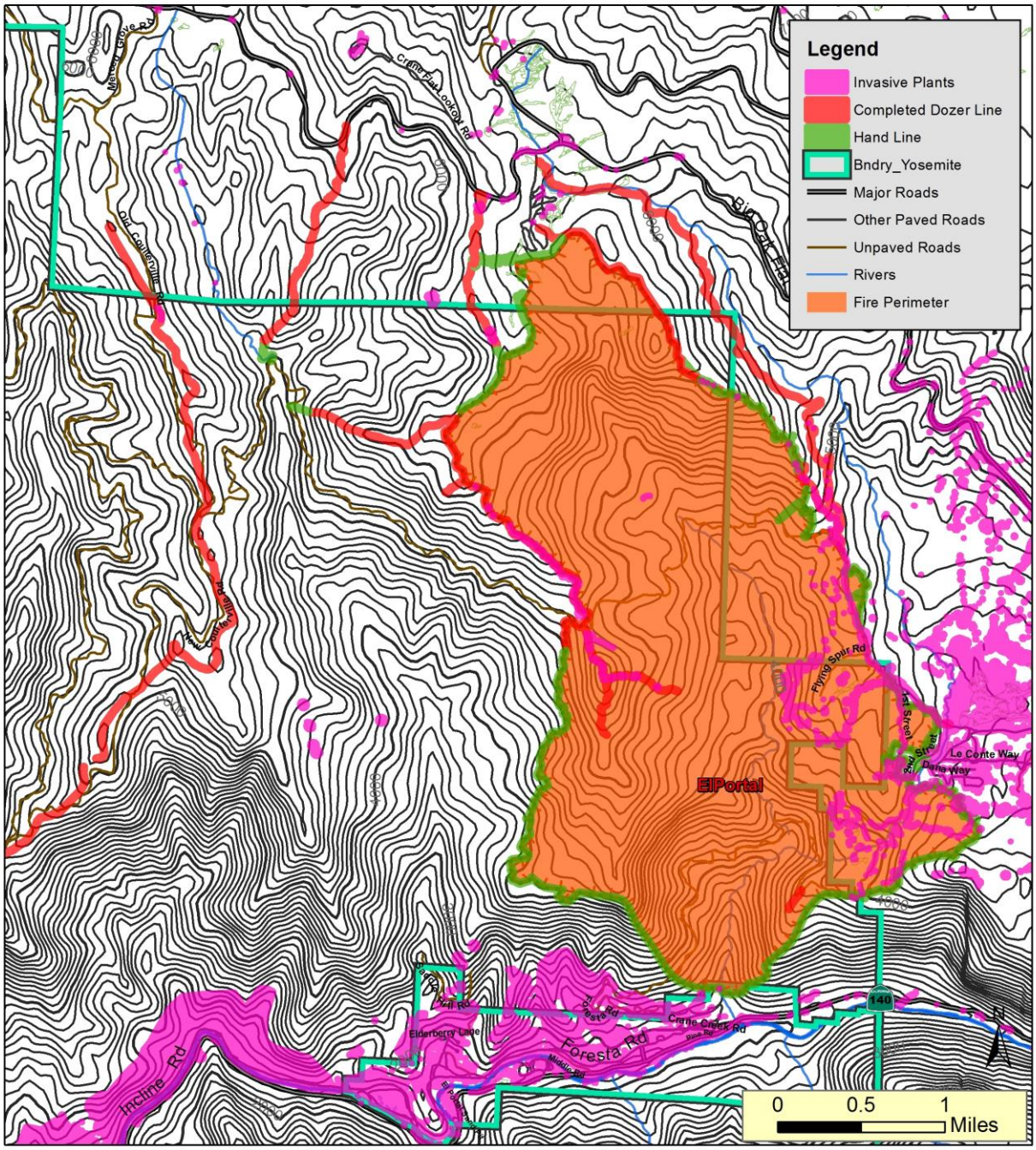

Figure1. El Portal Fire and Ecological health and integrity of native plant communities at risk from increased vulnerability of noxious weed invasion (Map created by Steve Delfavero, NPS-YNP)

Plant communities within the burned area include Westside Ponderosa Pine Forest, Chamise Chaparral, Open Gray Pine Woodland, Nonserpentine Gray Pine-Chaparral Woodland,

Interior Live Oak Woodland and Interior Live Oak Chaparral, and Oregon Ash Forest Alliance (Holland 1986, Sawyer, Keeler-Wolf and Evans 2009). The Open Gray Pine Woodland community has an understory dominated by annual grasses and herbs. It is typically vulnerable to weed invasion due to the openness and reduced competitive ability of the annual species compared to the noxious weeds considered in this burned area. As a result, this area and the more open areas of the Interior Live Oak Woodland had infestations of yellow star-thistle and tocalote in the past.

Threatened and Endangered Species: There are no known federally listed or candidate plant species on STF or YNP within the burned area or adjacent areas related to the El Portal fire (Appendix 1).

Noxious Weeds - Ecosystem Health and Integrity: There are species of California Department of Food and Agriculture (CDFA) noxious weeds known to be in the burned area on STF: yellow star-thistle (*Centaurea solstitialis*), tocalote (*Centaurea melitensis*), Italian thistle (*Carduus pycnocephalus*), Medusahead grass (*Taeniatherum caput-medusae*), and several others. In YNP, over 85 invasive plant species infestations are known in the burned area or related fireline area. Many of these known infestations are mapped outside the burned area but within close proximity to drainages, roads or other pathways (Figure 1). Some of these that are a concern include Himalayan blackberry (*Rubus armeniacus)* , English ivy (*Hedera helix)*, French broom (*Genista monspessulana)*, and spotted knapweed (*Centaurea stoebe* L. ssp. *micranthos)*. Drew Meadow Incident Command Post was a source for several invasive species including Medusa head (*Taeniatherum caput-medusae*) and Italian thistle (*Carduus pycnocephalus*).

Sensitive Plants: Known populations of Sensitive and/or Special Status plants in the area of the burn and related contingency lines and safety zones, were derived through office records from STF and YNP. On the STF, there are known occurrences of two Sensitive Plant species: *Clarkia australis* (Small's southern clarkia) and *Eriophyllum congdonii* (Congdon's woolly sunflower). Suitable habitat for *Eriophyllum congdonii* grows in shallow, rocky soils over-laying metasedimentary bedrock. *Clarkia australis* is not limited by soil type and tends to occur in dry sites. Since the entire fire area has not been included in past projects and much of the burned area is largely inaccessible or very difficult to access, the extent to which the suitable habitat is occupied by Sensitive Plants is not known on STF. YNP has eight Special Status Plant Species that occur in the burn area and related fire lines/areas: *Antirrhinum leptaleum* (spurred snapdragon), *Carex sartwelliana* (Yosemite sedge), *Carex tompkinsii*, *Ceanothus fresnensis* (Fresno mat), *Lewisia congdonii* (Congdon's bitterroot), *Piperia colemanii* (Coleman's piperia), *Pseudostellaria sierra* (Sierra starwort), and *Whitneya dealbata* [syn. *Arnica dealbata*] (mock leopardbane).

(b) Findings of the On-The-Ground Survey

A minimal on-the-ground survey was conducted. For the most part, the ground was too steep and largely inaccessible to venture far from the roads. Time limitations were an important factor in limiting the on-the-ground survey. Some of the findings were acquired from incident Resource Advisors (READs). A field trip to examine Little Crane Creek showed vulnerability of the slope and concern for spread downstream of invasives into the Merced River. Further, stream crossings at roads also pose a threat to new infestations.

No equipment cleaning took place for the initial seven days of the incident and three different ICPs were used. The initial ICP at the NPS building in El Portal did not have a weed wash station. The ICP at Badger Pass ski area could not host a weed wash station because of limited space and potential hazards to vehicle traffic. Finally, the ICP was relocated to Drew Meadow where no equipment cleaning took place for about one day at the ICP. Yellow star thistle was hand pulled and bagged at the Drew Meadow ICP. Medusahead was flagged adjacent to Drew Creek but otherwise was scattered throughout the ICP. Once the weed wash station was operational, most newly arriving equipment and equipment that was repositioned from other parts of the fire, received a weed wash. However, it was noted by the incident Resource Advisors that some vehicles were not compliant with the weed washing station. These efforts, while valuable, were too late in the incident to prevent possible weed vectoring. By the time the weed wash station was working, suppression equipment had traveled through areas of known invasive non-native plant communities. Equipment potentially could have carried and introduced several noxious weeds and invasive pests throughout the burn area.

Several invasive, non-native plant species were reported from the READs to be found on the STF and YNP. Drew Meadow was reported with infestations of Medusahead (*Taeniatherum caput-medusae*), cheat grass (*Bromus tectorum*), Italian thistle (*Carduus pycnocephalus*), yellow-star thistle (*Centaurea solstistialis*), and bur chervil (*Torilis arvensis*). Fire suppression activities (i.e., hand lines, dozer lines, staging areas) passed through several weed infestations including cheat grass (*Bromus tectorum*), Italian thistle (*Carduus pycnocephalus*), yellow-star thistle (*Centaurea solstistialis*), bur chervil (*Torilis arvensis*), tocalote (*Centaurea melitensis*), velvet grass (*Holcus lanatus*), oxeye daisy (*Leucanthemum vulgare*), St John's wort (*Hypericum perforatum*), and bull thistle (*Cirsium vulgare*). Seed bank of yellow starthistle, cheatgrass and other non-native grass scattered populations were likely spread by soil movement along hand and dozer lines and where safety zones and medivac locations were constructed within and adjacent to these populations.

Sensitive Plants: On STF, the occurrence of *Eriophyllum congdonii* on Trumbull Peak was not affected by re-opening of dozerline as it did not run all the way up to the lookout. Further, there was no land work from the lookout down. Soil disturbance was limited to areas below the occurrence of *E. congdonii*. Also, STF known occurrences of *Clarkia australis* did intersect with a new dozer line and the burned area. *Clarkia australis* is an annual species which would have been mostly or completely in seed at the time of the fire. Although fire may have destroyed the viability of some seed, C*larkia australis* is known to bank seed in the soil. The occurrences should arise from the seed bank during the next growing season. Therefore, no long-term adverse affects directly from the fire, are expected to impact these occurrences. The greatest threat to these sites now is from possible weed introduction. If the dozers which worked the Trumbull dozer line were contaminated with weed seed, it is possible that weed introduction and spread would adversely affect the *Clarkia australis* occurrences. In addition, rare plants were flagged at Badger Pass Ski Area (YNP) which apparently minimized trampling from foot traffic. It was noted by the incident READs that fire line did go through or adjacent to several populations (likely on YNP) of *Leucothoe davisiae*, *Piperia colanii*, *Cypripedium montanum*, and *Vaccinium parvifolium.*

(c) Consequences of the fire on values at risk

Photo: Curtis Kvamme, USFS

Fire consequences include threats of lost health and integrity of native plant communities and vulnerability to new weed introductions and threats of weed spread from existing weed infestations that could outcompete native vegetation resulting in nonfunctioning ecosystems. Also, dense non-native weeds make forage for wildlife unavailable. For these reasons, loss of ecosystem health and integrity of native plant communities, from weed invasion in the burned area is an emergency needing to be mitigated. Little Crane Creek received substantive burning and will be susceptible to weed invasion. Therefore, this drainage could suffer a type conversion without rapid weed detection and treatment. Further, this drainage ties into the Merced River Canyon, thus, will be a pathway to weed introduction into the Merced River system. Big Meadow has several infestations of weeds and is adjacent to the El Portal burned area.

Examples of concerns about some of the potential invasive species include:

Medusahead is an annual grass species that spreads quickly and creates thick ground cover in multiple habitat types. This species is not palatable for animals and this grass outcompetes native grass species and annual forbs. It can also increase fire potential and alter fire return intervals in certain vegetation types as it produces a very dense litter after it dries (Fredrikson and Von Bothmer 1986).

Photo: Curtis Kvamme, USFS

Yellow starthistle is an annual herbaceous plant that is capable of forming large monotypic stands in grasslands, roadsides, chaparral, oak

woodlands and ponderosa pine forest. An individual plant can produce up to 75,000 seeds at maturity and seeds can remain viable for up to 10 years in the soil (Maddox 1981; Callihan et. al 1993).

Cheatgrass is a non-native annual grass that is found scattered throughout the burned area. Cheatgrass has been found in many instances through the STF and YNP. Cheatgrass can invade into opened areas in almost all vegetation types and increase in density and extent in the post-fire environment.

Example of dozer line susceptible to weed invasion. Photo: Curtis Kvamme, USFS

II. Risk Assessment:

Summary:

There is an emergency for ecosystem health and integrity due to the likely introduction and expansion of noxious weeds. The fire created conditions conducive to the spread of the noxious weeds known to be within and adjacent to the fire area. Furthermore, suppression activities have likely vectored noxious weed seed into or through the burned area. Heavy equipment was not cleaned prior to coming to the National Forests during suppression activities until seven days into the suppression effort. The equipment came from around the State and had potential to bring in a variety of noxious weeds. Additionally, dozers operated within or through areas known to contain yellow star-thistle and tocalote. Ecosystem integrity is at a high risk of being diminished as a result of new weed introductions and weed spread.

Seed bank of invasive species such as yellow starthistle (*Centaurea solstitialis*), cheatgrass and other non-native grass scattered populations are likely to spread by soil movement along hand and dozer lines and where safety zones were constructed within and adjacent to these populations. Probability of damage to landscape ecological structure and function is likely as existing populations of invasive species within and in close proximity to the fire are anticipated to expand in the post-fire environment. New populations will likely colonize areas of ground disturbance and burned areas where reduced canopy cover and open ground will facilitate invasive species

establishment and proliferation within the next year. This potential for weed spread will have significant impacts on that critical value. Existing populations that experienced low to moderate burn severity will expand due to seedbank release and enhanced post-fire resource availability (e.g., light, nutrients). The magnitude of invasive plant species expansion and isolated population establishment will be moderate. Long-term negative effects to wildlife habitat quality, plant community heterogeneity, fire frequency, landscape ecological integrity and watershed health are anticipated to increase within the post-fire environment. The magnitude of invasive species effects will increase with each growing season and in areas impacted by fire suppression tactics and locations used to support fire suppression efforts, invasive plant species pose a high risk to landscape ecosystem integrity.

C. Emergency Determination –

Noxious Weeds - Ecosystem Health and Integrity. There is an emergency for ecosystem health and integrity due to the likely introduction and expansion of noxious weeds. The fire created conditions conducive to the spread of the noxious weeds known to be within and adjacent to the fire area. Furthermore, suppression activities have likely vectored noxious weed seed into or through the burned area and in the Drew Meadow ICP. Heavy equipment was not cleaned prior to coming to the National Forests during suppression activities until seven days into the suppression effort. The equipment came from around the State and had potential to bring in a variety of noxious weeds. Additionally, dozers operated within or through areas known to contain yellow star-thistle and tocalote. Ecosystem integrity is at a high risk of being diminished as a result of new weed introductions and weed spread. The El Portal Fire and Drew Meadow ICP native communities are at ***high risk*** of compromised landscape ecological integrity from invasive non-native plant population expansion and new population establishment. This BAER emergency can be mitigated by detecting and treating known populations to limit fire- and fire-activity related population growth. The probability of damage is ***likely*** **with** ***moderate*** **consequences** to the landscape in the first year after fire.

Sensitive Plants. There is no emergency for Sensitive Plants on STF, as a direct result of the fire. All of the species were either dormant or had completed their life cycle by the time of the fire. All of the species are adapted to the frequent fire regime. Weed introduction and spread into occurrences of Sensitive Plants as a result of fire suppression activities or fire effects could reduce the quality of the habitat from high quality to low quality. A dense infestation of a noxious weed such as yellow star-thistle could greatly reduce or eliminate occurrences of *Clarkia australis*, *Eriophyllum congdonii* or *Mimulus filicaulis*.

D. Treatments to Mitigate the Emergency

a. Treatment Type. Early detection and rapid response (EDRR) treatments for invasive non-native plant species will be completed in the vicinity of known populations and in the El Portal Fire and Drew Meadow ICP environment where suppression activities resulted in ground disturbance and/or where activities were concentrated. EDRR is a strategy developed to increase efficiency of weed work by combining surveying, mapping and immediate treatment of new weed populations as they are discovered. As such, treatment type will be to conduct weed detection surveys along dozer lines, hand line segments, dozed roadsides, and ICP area, specifically looking for new noxious weed infestations and weeds spreading from existing sites. Remove the

noxious weeds by hand if found. Effectiveness monitoring would occur the year following treatment to determine efficacy of treatment.

b. Treatment Objective. The objective of invasive non-native plant early detection surveys and rapid response treatment in the El Portal Fire and Drew Meadow ICP environment is to reduce the potential for existing population expansion and new population establishment. Therefore, detect new infestations while small enough to effectively eradicate them and prevent the long-term establishment of new infestations which would damage ecosystem health and integrity. Eradicate new infestations to prevent the spread of noxious weeds beyond new detection sites. Prevent road pathways for weeds and vectors associated with roads. Protect ecosystem integrity of natural plant communities within El Portal burned area and Drew Meadow ICP, including Sensitive Plants within and adjacent to the burned area, from the adverse effects of noxious weed infestations. Effectiveness monitoring will provide information as to whether the treatments were successful or if further treatment may be necessary.

c. Treatment Description.
1) Conduct two detection surveys along dozer lines, some hand line segments and dozed roadsides in 2015: once in early May to detect tocalote (which is identifiable one month before yellow star-thistle) and other early season noxious weeds, and again in mid-June to detect yellow star-thistle and later season noxious weeds. Hand pull or dig all noxious weeds found. Bag and properly dispose of seed heads. Map and document survey findings;

2) Conduct two detection surveys in ICP area of Drew Meadow in 2015: once in early May to detect tocalote (which is identifiable one month before yellow star-thistle) and other early season noxious weeds, and again in mid-June to detect yellow star-thistle and later season noxious weeds. Hand pull or dig all noxious weeds found. Bag and properly dispose of seed heads. Map and document survey findings. This is possible on private ownership of Drew Meadow using a Watershed Restoration and Enhancement (Wyden) Agreement [Wyden Amendment (Public Law 105-277, Section 323 as amended by Public Law 109-54, Section 434)];

3) Effectiveness Monitoring of Treatments: conduct two monitoring surveys along dozer lines, some hand lines and dozed roadsides in 2016 in El Portal Fire burned area and Drew Meadow ICP: once in early May to monitor early season noxious weeds and again in mid-June to monitor later season noxious weeds (Table 3).

d. Treatment Cost. 1) dozer line, hand line, and dozed roadside detection and possible hand pulling along 19 miles: $23,000 (Table 1); 2) detection and possible hand pulling at Drew Meadow ICP for approximately 20 acres: $3,100 (Table 2); 3) Effectiveness Monitoring of Treatments: $2400 (Table 3).

Table 1. Dozer Line Early Detection and Rapid Response

Expense	Estimated 2015 Cost per Day	# 8hr days	Total
Jennie Haas (coordination & planning)	$335	8	$2680
GS-7 Temporary (crew leader) (detection, treatment, data management)	$160	40	$6400
GS-5 Temporary (2 x 2 months)	$140	40	$11,200
Vehicle Mileage, Generic	$0.57		$2400

Supplies & Materials (trash bags, gloves, tools)			$200
Total Request:			**$22,880**
Request Rounded:			**$23,000**

Table 2. Drew Meadow ICP Early Detection and Rapid Response

Expense	Estimated 2015 Cost per Day	# 8hr days	Total
Jennie Haas (coordination & planning)	$335	4	$1340
GS-7 Temporary (crew leader)	$160	3	$480
GS-5 Temporary (2 x 3 days)	$140	3	$840
Vehicle Mileage, Generic	$0.57		$171
Supplies & Materials (trash bags, gloves)			$200
Total Request:			**$3,031**
Request Rounded:			**$3,100**

Table 3. Monitoring Treatment Effectiveness

Expense	Estimated 2016 Cost per Day	# 8hr days	Total
Jennie Haas	$335	3	$1005
GS-7 Temporary (crew leader)	$160	3	$480
GS-5 Temporary	$140	4	$560
Vehicle Mileage, Generic	$0.57		$300
Total Request:			**2,345**
Request Rounded:			**$2,400**

e. Probability of completing treatment in first year prior to damaging storms or events: N/A

f. Probability of treatment success:

Year 1	Year 3	Year 5
85-95%	50%	<20%

The quick drop-off in probability of success was determined by the observation that treatment funding only will be for one year with subsequent years being dependent on Forest and Regional funding. Given the inconsistent levels of funding for weed work over recent years, it cannot be assumed that other funding sources will be available to complete the treatment in an effective way.

III. Discussion/Summary/Recommendations

The "seek and destroy" method described above has had a very high level of success on the STF, Groveland Ranger District. Prompt, timely response the year after a fire has led to successful eradication of numerous weed sites caused by suppression activities in past wildfires, such as the 1999 Pilot Fire, the 2001 Creek Fire and the 2008 North Mountain and Telegraph Fires, and 2011 Motor Fire. It is a highly effective method for finding new infestations and has a high likelihood of success in eradicating any new infestations and suppressing weed spread from the El Portal Fire.

The benefit to ecosystem health and integrity from treating weeds in burned areas cannot be understated. Once an ecosystem becomes invaded by these noxious weed species, the habitat begins to degrade at a rapid rate. The rate of weed spread can be estimated at 10-20% per year depending on weed species and site conditions, and can be as high as 60% per year (Asher & Dewey 2005). The weeds displace native and less aggressive non-native species. The loss of native species reduces forage for wildlife and degrades private property values. Noxious weeds typically have long tap roots with few fibrous, soil holding roots. Soil erosion rates are at risk of increasing with the expansions of weeds.

Delaying or deferring treatment in the burned area would result in expansion of weeds at a high rate with future efforts to eradicate the weeds resulting in staggering costs. Budget realities would likely limit future treatments making it imperative to prevent the likely expansion of weeds through the burned area.

IV. References

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V. Appendices

Appendix 1: USFWS Species Lists by Quad

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

1. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

a) Document Number: 140809044552

(1) Current as of: August 9, 2014

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b) Quad Lists

c) EL CAPITAN (437B)

(1) Listed Species

(a) Fish

- Hypomesus transpacificus
  - delta smelt (T)
- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)

(2) Proposed Species

(a) Amphibians

- Anaxyrus canorus
  - Yosemite toad (PX)

(3) Candidate Species

(a) Amphibians

- Bufo canorus
  - Yosemite toad (C)
- Rana muscosa
  - mountain yellow-legged frog (C)

(b) Mammals

- Martes pennanti
  - fisher (C)

d) EL PORTAL (438A)

(1) Listed Species

(a) Fish

- Hypomesus transpacificus
  - delta smelt (T)
- Oncorhynchus mykiss

- Central Valley steelhead (T) (NMFS)

(b) Amphibians

- Rana draytonii
  - California red-legged frog (T)

(2) Candidate Species

(a) Amphibians

- Bufo canorus
  - Yosemite toad (C)

(b) Mammals

- Martes pennanti
  - fisher (C)

e) TAMARACK FLAT (455C)

(1) Listed Species

(a) Fish

- Hypomesus transpacificus
  - delta smelt (T)

- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)

(2) Proposed Species

(a) Amphibians

- Anaxyrus canorus
  - Yosemite toad (PX)

(3) Candidate Species

(a) Amphibians

- Bufo canorus
  - Yosemite toad (C)

- Rana muscosa
  - mountain yellow-legged frog (C)

(b) Mammals

- Martes pennanti
  - fisher (C)

f) ACKERSON MTN. (456D)

(1) Listed Species

(a) Fish

- Hypomesus transpacificus
  - delta smelt (T)

- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)

(b) Amphibians

- Rana draytonii
  - California red-legged frog (T)

(2) Candidate Species

(a) Amphibians

- Bufo canorus
  - Yosemite toad (C)

- Rana muscosa
  - mountain yellow-legged frog (C)

(b) Mammals

- Martes pennanti
  - fisher (C)

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g) County Lists

No county species lists requested.

h) Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

El Portal Fire Cultural Resource BAER Report (CRMR 05-16-4416)

Resource Specialty: Cultural Resources
Fire Name: El Portal Fire
Month and Year: August 2014
Author(s) Name and Home Unit Name: Amber Mitchum, Stanislaus National Forest

I. Potential Values at Risk (identified prior to the on-the-ground survey)

A. Critical Values

Research has shown that wildfires clearly have the potential to damage, or destroy heritage resources through: (1) direct effects of the fire; (2) ground disturbing suppression or rehabilitation activities; and/or (3) indirect effects caused by the fire and firefighting efforts, such as erosion, vandalism/looting, or recreational. These impacts may completely destroy historic and archaeological resources or alter the context of surface and subsurface cultural remains vital to any scientific analysis or interpretation. Also, wildfires may increase the accessibility and visibility of archaeological site locations making them more susceptible to vandalism/artifact looting and unauthorized recreational activity. The El Portal Fire Incident has the potential to directly or indirectly impact heritage resources located in the area.

B. Resource Condition Assessment

(a) Resource Setting

The geography of the El Portal Fire is diverse due to its change in elevation from the southern end of the fire near the town of El Portal to Hwy 120, in close proximity to the northern fire boundary. Many areas are characterized by steep, rocky, inaccessible terrain which necessitated a heavy reliance on indirect methods of firefighting (i.e., air drops of water and retardant). Other areas contain gentle accessible slopes that aided in the creation of a perimeter of dozer fuel breaks and hand-lines. Elevations in the fire zone range from 2,080 feet to 6,440 feet. Soils are derived from local bedrock and are generally very shallow along the slopes of the canyon walls, moderately deep along the ridgetops and river edges, and very deep in meadows. Vegetation cover includes a variety of habitat types depending upon the variables of exposure, slope, soil composition, moisture availability, and altitude. Principally, in this part of the forest overstory consists of ponderosa pine (Pinus ponderosa), Douglas fir (Pseudotsuga menziesii), incense-cedar (Calocedrus decurrens), California black oak (Quercus kelloggii), canyon live oak (Q. chrysolepis), Bigleaf maple (Acer macrophyllum), and bull pine (P. sabiniana). In the understory one may find dogwood (Cornus spp.), mountain alder (Alnus crispa), California nutmeg (Torreya californica), manzanita

(Arctostaphylos spp.), deerbrush (Ceanothus integerrimus), mountain mahogany (Cercocarpus montanus), poison oak (Toxicodendron diversilobum), and bear clover (Chamaebatia foliolosa), as well as forbs and grasses.

The preliminary archival research in response to the immediate need for heritage resource field work and analysis in association with fire suppression activities resulted in identifying both previous heritage resource surveys and heritage sites within the preliminary Area of Potential Effect (APE) (approximately 4,728 acres) of the El Portal Incident. This area is known through historical records and archaeological investigation to contain prehistoric and historical era cultural resources. Prehistoric resources include chipped-stone lithic scatters, Native American (Me-Wuk) settlements, and areas that are considered Sacred based on traditional Me-Wuk beliefs. Historic resources in the area include railroad grades, camps, and work areas associated with the Yosemite Sugar Pine Railway System.

A review of the Site Location Atlas indicated there are 29 previously recorded sites within the APE. Historic properties managed by federal land management agencies are ranked into three classes:

I. Sites evaluated as eligible for inclusion in the National Register of Historic Places
II. Sites recorded but not evaluated
III. Sites evaluated as not eligible for inclusion in the National Register

Of the initial 29 sites, no sites are formally **listed** on the National Register of Historic Places. Only one site has been previously determined **eligible** to the NRHP. All of the 29 sites are **unevaluated** and therefore must be afforded the same consideration and protection as Class I sites. None of these sites have been previously determined **not eligible** for inclusion in the NRHP. Included in these 29 sites is a single area that is considered **sacred** to the Tuolumne Band of Me-Wuk Tribe.

(b) Findings of the On-The-Ground Survey

1. Summary of findings: Selecting cultural resources to assess was a three step process. The first step was to choose sites that are eligible or potentially eligible for listing on the National Register of Historic Places based on criteria as described in 36 CFR 60.4. The second step was considering those sites that are inheritably at greater risk of destruction due to the characteristics they possess (e.g. artifact scatters, structures, and foundations). The third step was overlaying the known burn intensity, slope, and stream shed information in a GIS with the locations of the various cultural resources.

   A total of 29 heritage sites were considered at risk for impacts from the fire and/or fire-related suppression or rehabilitation measures. For this initial

report, 14 sites located in areas of light, moderate or high burn intensity were monitored by the BAER team archaeologists. In addition, 15 sites within the burn area were not visited due to safety concerns, a lack of potential BAER issues, or could not be relocated.

This assessment identified 13 sites to be monitored:

- 8 historic sites at risk from the fire itself because of their wooden components or erosion concerns. Nearly all the wood features associated with these sites were completely destroyed. **Two sites were identified needing emergency treatment.**
- 4 prehistoric sites and 1 multicomponent site with the potential for erosion, vandalism/looting, or damage from recreational activities. **None of these sites were identified needing emergency treatment.**

Sites not considered at risk for direct fire effects included those sites without flammable components (e.g., bedrock mortar sites, lithic scatter sites), those located in the no- to low- severity burn areas, or those involved in suppression activities.

2. Additional information: The Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region (2013; Regional PA) describes in Stipulation 7.11 that we are to follow 36CFR800.12 for Emergency Procedures. The El Portal Incident started on July 26, 2014. The Stanislaus National Forest (STF) did not declare an emergency therefore consultation with the State Historic Preservation Office (SHPO) was not initiated. In addition, the Tuolumne Band of Me-Wuk and Southern Sierra Miwok Nation were notified and keep up-to-date on all events.

(c) Consequences of the fire on values at risk

Soil burn severity for the 14 monitored sites was classified as light, moderate, and high severity.

Erosion from slopes above bedrock mortars, lithic scatters, and historic artifact scatters risk covering sites either partially or fully. Erosion next to stream beds risk moving artifacts into stream beds and away from the site. This type of erosion threatens these sites eligibility to the National Register of

Historic Places and their ability to contribute valuable information to the archaeological record. The magnitude of consequences is low.

Hazard trees have the potential to fall on already stressed bedrock mortars and crack or spall the rock. Hazard trees also have the potential to crush historic features, resulting in partial loss of the resource. The magnitude of consequences is major.

Stump holes have the potential to deflate causing irreparable damage to platform features and constructed walls of railroad grade features, resulting in the partial loss of the resource. The magnitude of consequences is major.

Probability of damage or loss is *possible* to *likely*, based on:

a. Since most wooden features within the El Portal Fire were lost, the only evidence left of these historic sites is their surface and subsurface deposits. Erosion, deflation of stump holes, and hazard trees pose a threat to these resources.
b. Bedrock mortar features in moderate to high burn areas have been heated and are stressed. Evidence from past fires such as the Ramsey, Darby, and Stanislaus Complex demonstrate that hazard trees have the ability to cause significant damage to bedrock mortar following a fire.
c. Lithic scatters and bedrock mortar features in moderate to high burn areas are likely to see erosion during winter storms if located on steeper slopes or in drainage areas. Erosion poses the threat of movement of lithic artifacts from their original location as well as the concealment of bedrock mortars from clear view.

II. Risk Assessment:

Summary: Two sites have been identified as having values at risk from hazard trees and the potential of deflation from stump holes. Potential Treatments include filling the stump holes with local material and felling hazard trees. Cost is estimated at $643.70

A. Emergency Determination

Due to the *probability of loss* determination and associated magnitude of consequences resulting in a very high to high risk for these sites, a BAER emergency pertaining to heritage resources exists in the El Portal Fire Incident Area.

B. Treatments to Mitigate the Emergency

1. 05-16-54-0331 (Segment 502-LM4)

a) Treatment type: Hazard tree removal, Heritage-site stabilization
b) Treatment Objective: To protect a feature of the site from being hit by falling trees, to stabilize feature wall from deflation of stump hole
c) Treatment Description: Removal of hazard trees from continuing to damage archaeological site. Hand repair by heritage personal to damage using local materials.
d) Treatment Cost: Sawyer: GS-9 ($325) - 1/2 day = $162.20. 1 GS-9 archaeologist ($315 a day) = $315. Grand Total $477.20
e) Probability of completing treatment in first year prior to damaging storms or events: highly likely
f) Probability of treatment success: highly likely

2. 05-16-54-1166
   a) Treatment Type: Heritage-site stabilization
   b) Treatment Objective: To protect a structure platform feature
   c) Treatment Description: Hand repair by heritage personal to damage using local materials.
   d) Treatment Cost: 1 GS-9 archaeologist ($315 per day) for 1/2 day = Grand total $157.50
   e) Probability of completing treatment in first year prior to damaging storms or events: highly likely
   f) Probability of treatment success: highly likely

III. Discussion/Summary/Recommendations

The effects described above have likely resulted in the loss of important information, and therefore, a loss of archaeological values that potentially could have contributed to the NRHP significance for many of these resources. Unmonitored resources may be eminently threatened by further degradation due to erosion, storm runoff, or debris flows. In addition, many other resources are at a heightened risk of looting and/or unauthorized recreational access. Therefore, STF Heritage Resource Management relays the following recommendations for the purposes of BAER assessment:

1) Continue assessment of critical sites located in high and moderate burn severity.

2) The following sites potentially had values at risk and monitoring is recommended:

Site Number	Site Type
FS 0516540331 Segment 502-LM1	Historic
FS 0516540331 Segment 502-LM9	Historic
FS 0516540331 Segment 502-LM10	Historic
FS 0516541158	Prehistoric
FS 0516541167	Historic

FS 0516541169	Prehistoric
FS 0516541170	Historic
FS 0516541172	Multicomponent
FS 0516541173	Prehistoric
FS 0516541179	Historic
FS 0516541184	Prehistoric

3) Locations where non-heritage related treatments are proposed will require review by STF Heritage Resource Management prior to implementation. Heritage survey and site protection measures may also be required for proposed BAER treatment areas prior to implementation. Compliance with Item No. 3 will ensure that any BAER treatments within or adjacent to the El Portal Fire Incident will have no effect on heritage resources.

IV. References: None used.
V. Appendices: Archaeological site list

/s/ Amber Mitchum

Amber Mitchum 8/11/2014
Archeological Technician
Stanislaus National Forest

Appendix: Archaeological Site Concern List

orange = sites with wood features
red = at risk to looting, erosion, impacts from recreation, etc.
blue = monitoring recommended to measure degree of change
black = too dangerous to visit, no BAER need evident, unable to relocate

Site Number	Site Type
FS 0516540327	Historic
FS 0516540328	Historic
FS 0516540330	Historic
FS 0516540331 Segment 502-LM1	Historic
FS 0516540331 Segment 502-LM2	Historic
FS 0516540331 Segment 502-LM3	Historic
FS 0516540331 Segment 502-LM4	Historic
FS 0516540331 Segment 502-LM9	Historic
FS 0516540331 Segment 502-LM10	Historic
FS 0516541158	Prehistoric
FS 0516541159	Multicomponent
FS 0516541160	Prehistoric
FS 0516541163	Prehistoric
FS 0516541166	Historic
FS 0516541167	Historic
FS 0516541169	Prehistoric
FS 0516541170	Historic
FS 0516541171	Prehistoric
FS 0516541172	Multicomponent
FS 0516541173	Prehistoric
FS 0516541174	Historic
FS 0516541175	Historic
FS 0516541178	Prehistoric
FS 0516541179	Historic
FS 0516541180	Historic
FS 0516541184	Prehistoric
FS 0516541227	Prehistoric
FS 0516541263	Historic
Eagle Peak	Sacred Site

Resource Specialty: Fish & Wildlife
Fire Name: El Portal. Incident #CA-YNP-0083
August 2014
Melinda S. Benton, Stanislaus National Forest

Burned Area Emergency Rehabilitation (BAER) Specialist Report

I. Potential Values at Risk.

We utilized source documents and contacts in Section V References to identify the species and habitat potentially at risk:

T&E	Potential value at risk?*
Valley elderberry longhorn beetle	Yes
Valley elderberry longhorn beetle critical habitat	No
California red-legged frog	No
California red-legged frog critical habitat	No
Central Valley steelhead	No
Delta smelt	No
Lahontan cutthroat trout	No
Sierra Nevada yellow-legged frog	Yes
Sierra Nevada yellow-legged frog proposed critical habitat	No
Yosemite Toad	No
Yosemite Toad proposed critical habitat	No
Pacific fisher	Yes
California wolverine	No
Bald eagle	Yes
R5 Sensitive	
Northern goshawk	Yes
Great gray owl	Yes
California spotted owl	Yes
Willow flycatcher	Yes
Fringed myotis (bat)	No
Towsend's big-eared bat	No
Pallid bat	No
Sierra Nevada red fox	No
American marten	Yes
Foothill yellow-legged frog	No
hardhead	No
Limestone salamander	No
Western pond turtle	Yes
Other	
Resident trout	Yes

*I considered species with potential values at risk as those for which the burned area and potential habitat for the species was within the geographic and elevation range for typical fire effects consideration. I considered species without potential values at risk as those for which the burned area and potential habitat for the species was outside the geographic and elevation range for typical fire effects consideration.

For this assessment species were grouped into guilds based on fundamental habitat needs as follows:

Valley elderberry longhorn beetle.

Bald eagle

Mature forest associates (marten, fisher, northern goshawk, spotted owl).

Meadow species (great gray owl, Sierra Nevada yellow-legged frog).

Willow flycatcher.

Aquatic species (western pond turtle, resident trout).

II. Resource Condition Assessment.

A. Resource setting.

Valley Elderberry Longhorn Beetle (VELB).
Elderberry is known to exist along the Merced River above and below El Portal outside of the burn perimeter. Elderberry plants (*Sambucus* spp.) are the host plant for VELB.

Bald Eagle.
The southern boundary of the fire is less than 0.25 mile from the Merced River which is sufficiently large to meet the definition for suitable foraging, and dispersal/migration habitat. The nearest known breeding location is approximately 9 miles north along the South Fork Tuolumne River and within foraging distance range.

Mature forest associates (marten, fisher, northern goshawk, spotted owl).
We defined suitable habitat as consisting of California Wildlife Habitat Relationships (CWHR) types 4M, 4D, 5M, 5D and 6 size and density classes in the following cover types: Sierra Mixed Conifer (SMC) and Mixed Conifer Hardwood (MHC), and Red Fire (RFR). Due to incompatibility issues with CWHR Version 8.2 and Windows 7, pre-fire vegetation acreage of suitable habitat for these species could not be calculated. In an effort to duplicate this process aerial photo vegetation was reviewed to assess these values as was fire history. Almost the entire El Portal fire area burned in the 1990 A-Rock Fire except for approximately 65 acres near Crane Flat Campground on the northern edge of the fire. Approximately 160 acres near the community of Foresta also burned in the Big Meadow Fire which occurred in 2009. Existing pre-fire vegetation consisted of approximately 683 acres of suitable habitat for these species, primarily in the north and northwest sections of the fire.

There is one spotted owl territory identified as wholly within the fire boundary on National Forest land, PAC MPA0007, 310.4 acres, of which approximately 297 qualified as suitable habitat as defined. There is no known nest tree in this

territory that was in the upper center of the fire along Little Crane Creek and a tributary. The fire perimeter and a dozer line along 2S81 are immediately adjacent to the western edge of this PAC. One other spotted owl PAC, MPA0024 consisting of 302 acres and also on National Forest land, is outside the fire perimeter but within 0.06 mile of a contingency dozer line that was re-opened during fire suppression activities. No fire or suppression impacts occurred within this PAC boundary. There are 5 known spotted owl nests/roosts along Crane Creek on National Park Service land (2005-2006, 2010-2012) (YNP unpublished data). The nearest nest/roost is 0.2 mile outside of the northeastern fire boundary and immediately adjacent to or within 0.2 mile of YNP Road 10647, which was also a contingency dozer line re-opened during fire suppression activities.

Goshawks are not known to occur in or adjacent to the fire area however suitable habitat is present. Martens are known to occur in suitable habitat adjacent to the fire, and probably occurred in the area affected by the fire. Fishers are not known to occur in the fire area however suitable habitat is present. Historical sightings of fishers are documented on National Park land in Big Meadow (1920) and along the Oak Flat Road corridor (1920, 1993-1994, 1996, 2003) (YNP unpublished data) within 0.2 to 1.0 mile of the fire perimeter.

<u>Meadow species (Great gray owl, Sierra Nevada yellow-legged frog).</u>
Great gray owl depends on dense conifer forests adjacent to large meadow and meadow complexes. Less than 2 acres of Crane Flat Meadow complex, considered great gray owl habitat, is within the northern edge of the fire perimeter on National Park land. The nearest known great gray owl nest is 0.15 miles outside of the fire perimeter in a more northern segment of this meadow complex. Big Meadow, 0.1 mile outside the eastern fire perimeter, is also considered suitable habitat for great gray owls, however this species is not known to occur in or adjacent to the fire boundary near this meadow (YNP unpublished data).

Sierra Nevada yellow-legged frogs are not known to occur in the Merced River (less than 0.25 mile from the southern boundary of the fire) although suitable habitat is present directly across from the mouth of Crane Creek and approximately2 miles downstream. Suitable habitat is also present in Crane Flat Meadow (approximately 2 acres within the northern fire perimeter) and Big Meadow (0.1 miles outside the fire perimeter) although this species is not known to occur in these locations. Habitat in McCauley Meadow is marginal possibly due to historical uses. This species is not known to occur in this dry meadow which was moderately to severely impacted during the fire.

<u>Willow flycatcher.</u>
This species requires perennial stream or wetland with dense willow *(Salix sp.)*, seep willow (*Baccaris* sp.), with medium sized trees. The southern boundary of the fire is less than 0.25 mile from the Merced River which has sufficient contiguous willow clumps to meet the definition of breeding and foraging habitat as defined.

Aquatic species (Western pond turtle, resident trout).
These species depend on perennial aquatic habitat. For resident trout sufficient perennial water is present within the fire perimeter in Crane Creek near the southeastern boundary of the fire and Little Crane Creek bisecting the center of the fire from north to south. Suitable habitat for resident trout is present in the Merced River, less than 0.25 miles from the southern fire perimeter. Stocked trout species (rainbow, brown) are known to occur in Crane Creek, Little Crane Creek, and the Merced River.

Western pond turtles occupy perennial streams, rivers, ponds, and wetlands. This species is not known to occur along the Merced River although suitable habitat is present.

B. Survey findings.

Fire effects to federally listed, Pacific Southwest Region, and Yosemite National Park sensitive wildlife resources were evaluated using the El Portal soil burn severity map, El Portal BARC map, and field observations of vegetative burn severity. Moderate and high soil burn severity was predominant in areas utilized by Mature Forest wildlife species, though some of this area experienced low vegetative burn severity. This trend was observed in areas of the fire dominated by early and mid-seral coniferous vegetation prior to the fire event because much of this area burned in 1990. In this report, observations of burn severity by on-the-ground surveys pertain to *vegetative* burn severity.

An on-the-ground survey was conducted by a Stanislaus National Forest district wildlife biologist of the burned area on August 10, 2014 after consulting with Yosemite National Park biologists.

Valley elderberry longhorn beetle

1. Resource condition resulting from the fire.

Elderberry plants are known to occur along the Merced River above and below El Portal outside the southern boundary of the fire on National Park land. Fire severity below 3,000 feet within the fire boundary was moderate to high severity. Any pre-existing elderberry shrubs within the burn area will likely re-sprout and benefit from openings created by the fire. Elderberry plants outside the burn area along the Merced River may be inundated by 10 year flood events or removed by a large debris flow event. The probability of either event is low (see Hydrology Report).

2. Consequences of the fire on values at risk / emergency determination.

It is my determination that the burned area conditions resulted in very low risk to the species and habitat. No emergency conditions exist for this species and no

treatments are recommended.

Bald Eagle

1. Resource condition resulting from the fire.

The value at risk identified for bald eagles was foraging habitat along the Merced River. See aquatics section below for discussion regarding post- fire conditions for fish and fish habitat.

2. Consequences of the fire on values at risk / emergency determination.

It is my determination that the burned area resulted in very low risk to the species and habitat. No emergency conditions exist for this species and no treatments are recommended.

Mature forest associates (marten, fisher, northern goshawk, spotted owl).

1. Resource condition resulting from the fire.

Vegetation burn severity in mature forest was mostly low, moderate and unburned, with patches of high severity resulting in a mosaic effect across the burned area. Some large downed wood remains and more will be recruited as burned trees fall (see appendix). In surveyed mature forest, approximately 80% of the understory and small woody debris were consumed by the El Portal Fire. The canopy cover appeared to no longer be intact. Habitat and habitat connectivity for mature forest species is no longer suitable post-fire. The following table displays fire severity and acreage across suitable habitat for mature forest associates.

In the moderate and high severity burn areas there is the potential for non-native plant communities to colonize the burn area, particularly in areas used by fire suppression and areas where the canopy has been opened in close proximity to these areas (see noxious weed report).

The following table displays vegetative burn severity and acreage across suitable habitat for mature forest associates.

Soil Burn Severity	Federal Lands (Ac)
High	60.4
Moderate	189.0
Low/Unburned	433.6
Total Acres	**683**

The following table displays vegetative burn severity and acreage across suitable habitat in the spotted owl territory within the fire perimeter. This territory is entirely on National Forest System lands.

Spotted Owl Territory	Burn Severity	Acres
MPA0007	**High**	11.6
	Moderate	113.7
	Low	103.2
	Unburned	81.9
		Total acres 310.4

2. Consequences of the fire on values at risk / emergency determination.

It is my determination that the burned area resulted in low risk to these species and habitat and that no emergency conditions exist for these species. Although it is possible that post-fire fuel loading and colonization of the area by non-native plant species may occur, the affects to natural resources would be minimal in the next one to three years. No emergency conditions exist for this species and no treatments are recommended beyond those already discussed in the noxious weeds report.

<u>Meadow species (great gray owl and Sierra Nevada yellow-legged frog).</u>

Great gray owl

1. Resource condition resulting from the fire.

The majority of Crane Flat wet meadow was unaffected by the fire, with just the edges receiving low burn severity. The interior of this small meadow (approximately 2 acres within the burn area) is largely intact. Habitat in Big Meadow and the more northern segments of Crane Flat meadow complex were not affected by the El Portal Fire.

2. Consequences of the fire on values at risk / emergency determination.

It is my determination that the burned area resulted in low risk to this species and habitat and that no emergency conditions exist for this species. No treatments are recommended beyond those already discussed in the noxious weeds report.

Sierra Nevada yellow-legged frog

1. Resource condition resulting from the fire.

The majority of Crane Flat wet meadow was unaffected by the fire, with just the edges receiving low burn severity. The interior of this small meadow (approximately 2 acres within the burn area) is largely intact. Habitat in Big Meadow and the more northern segments of Crane Flat meadow complex were not affected by the fire. Vegetation burn severity in McCauley Meadow was primarily moderate with patches of high severity. Habitat for aquatic species was marginal at best before the fire, and is no longer suitable post-fire within this meadow.

Habitat designated by USFWS along the Merced River immediately across from the confluence of Crane Flat and approximately 2 miles downstream has the potential to be impacted by events which are not outside the range of natural variability (see table below). The probability of a catastrophic debris flow is low (see Hydrology and Soil reports).

Sediment Delivery to the Merced River from Crane Creek

Pre-Fire	**2 Year Event**	**5 Year Event**	**10 year Event**	**Debris Flow**
0.36 acre-feet background delivery	4.83 acre-feet delivery	15.57 acre-feet delivery	26.37 acre-feet delivery	Catastrophic
Likelihood of occuring	50% in any given event	20% in any given year	10% in any given year	Unlikely (see Hydrology Report)

2. Consequences of the fire on values at risk / emergency determination.

It is my determination that the burned area resulted in low risk to this species and habitat and that no emergency conditions exist for this species. Although it is possible that there would be increased sedimentation and turbidity along the reach below the fire within the Merced River, the river has sufficient flow to flush sediments downstream in a timely manner, minimizing the effects to natural resources (see hydrology and soils reports for further discussion). No treatments are recommended beyond those already discussed in the noxious weeds report.

<u>Willow Flycatcher</u>

1. Resource condition resulting from the fire.

The value at risk identified for willow flycatchers was breeding and foraging habitat along the Merced River. Willow plants outside the burn area along the Merced River may be inundated by 10 year flood events or removed by a large debris flow event. The probability of either event is low (see Hydrology Report).

2. Consequences of the fire on values at risk / emergency determination.

It is my determination that the burned area resulted in very low risk to the species and habitat. No emergency conditions exist for this species and no treatments are recommended.

<u>Aquatic species (western pond turtle, resident trout).</u>

1. Resource condition resulting from the fire.

Although soil fire severity was primarily moderate with patches of high severity, low severity, and unburned, habitat for aquatic species remains suitable within

Little Crane Creek and the Merced River post-fire (see table below and Hydrology and Soil reports).

Soil_BS	Acres
High	657.1
Moderate	2398.7
Low	1170.5
Very Low / Unburned	503.5
Total	**4729.8**

2. Consequences of the fire on values at risk / emergency determination.

It is my determination that the burned area resulted in low risk to these species and habitat and that no emergency conditions exist for these species. Although it is possible that there would be increased sedimentation and turbidity along the reach below the fire within the Merced River, the river has sufficient flow to flush sediments downstream in a timely manner, minimizing the effects to natural resources (see hydrology and soils reports for further discussion). Fish populations and habitat quality are not expected to change post-fire, see hydrology and soils reports for further discussion. Foraging quality for bald eagles is also expected to remain suitable. No treatments are recommended.

III. Treatments to Mitigate the Emergency.

No mitigation treatments have been identified for wildlife resources because it was my determination there are no existing emergency conditions.

IV. Discussion/Summary/Recommendations

It is recommended that follow up surveys be conducted to track spotted owl occupancy in the territory affected by the fire, and unburned suitable habitat east and north of this territory, to determine occupancy and reproductive status.

V. References.

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VI. Appendix.

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 140809044552

Current as of: August 9, 2014

Quad Lists

EL CAPITAN (437B)

Listed Species

Fish

- Hypomesus transpacificus
  - delta smelt (T)
- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)

Proposed Species

Amphibians

- Anaxyrus canorus
  - Yosemite toad (PX)

Candidate Species

Amphibians

- Bufo canorus
  - Yosemite toad (C)
- Rana muscosa
  - mountain yellow-legged frog (C)

Mammals

- Martes pennanti
  - fisher (C)

EL PORTAL (438A)

Listed Species

Fish

- Hypomesus transpacificus
  - delta smelt (T)
- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)

Amphibians

- Rana draytonii
  - California red-legged frog (T)

Candidate Species

Amphibians

- Bufo canorus
  - Yosemite toad (C)

Mammals

- Martes pennanti
    - fisher (C)

TAMARACK FLAT (455C)

Listed Species

Fish

- Hypomesus transpacificus
    - delta smelt (T)
- Oncorhynchus mykiss
    - Central Valley steelhead (T) (NMFS)

Proposed Species

Amphibians

- Anaxyrus canorus
    - Yosemite toad (PX)

Candidate Species

Amphibians

- Bufo canorus
    - Yosemite toad (C)
- Rana muscosa
    - mountain yellow-legged frog (C)

Mammals

- Martes pennanti
    - fisher (C)

ACKERSON MTN. (456D)

Listed Species

Fish

- Hypomesus transpacificus
    - delta smelt (T)
- Oncorhynchus mykiss
    - Central Valley steelhead (T) (NMFS)

Amphibians

- Rana draytonii
    - California red-legged frog (T)

Candidate Species

Amphibians

- Bufo canorus
    - Yosemite toad (C)
- Rana muscosa
    - mountain yellow-legged frog (C)

Mammals

- Martes pennanti
    - fisher (C)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

VII. Appendix.

Moderate affects to aquatics habitat within Little Crane Flat Creek above 2S84.

Moderate effects to aquatics habitat in Little Crane Flat Creek below 2S84.

APPENDIX B

NOAA Early Warning System Protocol

BAER Response to 2014 El Portal Fire

Following the 2014 El Portal Fire, the National Park Service (NPS) enlisted the assistance from the USDA Forest Service to perform a Burned Area Emergency Response (BAER) assessment. The BAER program is responsible for identifying and addressing emergency threats to human safety, property, and critical natural and cultural resources that occur as a direct result of wildfire. BAER teams focus on hazards and storm events that are likely to occur in the first few years following a wildfire and not on pre-existing conditions and threats. In the case of the El Portal Fire, the watershed is expected to return to pre-fire conditions in 5–7 years; therefore, the BAER assessment focused on hazards most likely to be triggered by 2, 5 or 10-year storm events in that time period.

In Foresta and Old El Portal, the BAER team identified a number of post-fire hazards and treatments to mitigate threats to human safety and, where feasible, property. The primary hazards identified are hazard trees, falling rocks, debris flows, mudflows, and flooding. Treatments to mitigate these hazards are summarized below. A detailed report on the hazards and treatments will be posted on the park's web page at www.nps.gov/yose/parkmgmt/past-fire-activity.htm.

Early Warning System

The NPS is partnering with the National Oceanic Atmospheric Administration (NOAA) and Mariposa County to implement an early warning system for the El Portal Fire burned area. Residents must opt in to the system in order to receive notification when NOAA issues a warning for a 2 or 5-year storm event. A 2-year storm event has a 50% chance of occurring in any given 2-year period and a nearly 100% chance in any 4-year period. A 5-year storm event has a 20% chance of occurring in any given year and a nearly 100% statistical chance in any given five-year period. Residents may sign up for the service via http://www.nixle.com/ or by texting their zip code to 888-777.

Foresta

The BAER team identified high potential for hazard trees in Foresta and along upper Foresta and Old Coulterville Road. Sections of Foresta Road and the Old Coulterville/Davis Cutoff Road have been temporarily closed to motorized vehicle traffic to reduce risks. Hazard tree monitoring will continue through at least August 2017.

Foresta Road

The El Portal Fire damaged bridges along Foresta Road making the road unpassable to motorized vehicles. The loss of vegetation on the slope between Foresta and Old El Portal has increased the threat of falling rocks and debris flow on Foresta Road. The road is closed south of Foresta and north of El Portal. It will remain closed to all motorized vehicles through at least spring 2015, when Yosemite National Park and Stanislaus National Forest will re-evaluate conditions and consider a partial reopening. Reopening the road to vehicular traffic will require repairing damaged bridges as well as

addressing ongoing road maintenance that is outside the scope of the emergency response developed by the BAER program.

Old El Portal

The loss of vegetation on the slope above Old El Portal has increased the potential threat of debris flows, mudflows, and flooding to portions of the community. Intense storm events are the most likely triggers for debris flows, mudflows, and flooding. Based on field observations and modeled watershed response to post-El Portal Fire conditions, as well as impacts that occurred in the aftermath of the 1990 Arch Rock Fire, the BAER team recommended actions to address potential hazards. Two residences were judged to be at significant risk of structural damage or total structural loss. The NPS is working individually with the owners of these homes to protect human life and, to the extent possible, property. Several other residences were found to be at risk from nuisance flooding and mud. Sandbags have been placed along Buckeye Road to direct runoff away from homes that lie below road grade. Along Foresta Road several treatments have been implemented and are planned to promote runoff infiltration and protect downslope residences, including: installing a rolling dip in the road, removing a roadside berm, and application of wood straw mulch. These treatments will be monitored, modified, and maintained as needed by Yosemite National Park through August 2017.

While the 2014 El Portal Fire has temporarily elevated the risk of flooding in Old El Portal, the risk existed before the fire. The topography of the area and the location of Old El Portal put it at risk. Residents should be aware of flooding potential and have a safety plan.

More Information

The BAER report will be posted on the park's web page at www.nps.gov/yose/parkmgmt/past-fire-activity.htm.

BAER team members will answer questions for community members at the next El Portal Advisory Committee meeting on Tuesday, November 18, at 7:00 PM at the El Portal School.

For more information about the BAER program visit: www.nifc.gov/BAER/Page/NIFC_BAER.html

Office of the Sheriff-Coroner Public Administrator

Douglas A. Binnewies
Sheriff-Coroner-Public Administrator

Joel A. Bibby
Undersheriff

Press Release

July 15, 2014
Emergency Notification System - NIXLE

The Mariposa County Sheriff's Office has now initiated the final phase of our new Emergency Notification System NIXLE. This new system can incorporate voice home phones, cell phones, email and text messages. The Sheriff will use this system to notify you of emergency situations that can impact you and your family; such as fire evacuations, weather emergencies, missing children / adults and Law Enforcement activity in the area.

All reverse 911 information has been incorporated into the new system. If you have already registered with NIXLE we ask that you please log into your account or create an account at www.Nixle.com and verify your home address. With the ability to pinpoint emergency notifications based on location, accurate address information is crucial.

You can do this several ways:
1. Go to our website at www.mariposacounty.org/sheriff
2. You can visit www.nixle.com
3. You can pick up a registration form in our office located at 5099 old Hwy North, or any Mariposa County Government Office. -or-
4. Register over the phone, you can call our office at 209-966-3615 or 1-800-774-8314 and speak with Kristie Mitchell during office hours Monday - Friday 8am - 5pm.

For individuals that created their own account with the prior emergency notification system CodeRED; you will need to register with NIXLE if you wish to continue with your account settings as previously set up with the CodeRED system.

Please rest assured that we do not share your personal information, all information will be used for Law Enforcement Public Safety Emergencies only.

Mariposa County Sheriff's Office
NIXLE - Emergency Notification System Registration

Please fill out the information below to be notified by the Mariposa County Sheriff's Office emergency response team in the event of an emergency situation or official community alert.

Return this form to the Sheriff's Office or any Mariposa County Government Office. Your information will be used only by the Mariposa County Sheriff's Office for official Law Enforcment purposes.

First _____ Last _____

Physical Address (no PO Box) _____

City _____ Zip _____

Email Address _____

Home Phone _____ Cell Phone _____

Alernate Phone: Type: _____ Number _____

Would you like to receive text messages to your cell phone? *Standard Text Messaging rates will apply*. Yes _____ No_____

Would you like to receive voice notifications to your cell phone as well? Yes _____ No_____

Is the Primary phone a hearing impaired TDD/TTY device? Yes _____ No_____

Is this a vacation home? Yes _____ No_____

If yes: Is there a land line phone at the residence or a Care Taker Phone? Phone _____

Signature: _____

P.O. BOX 276 Mariposa, CA 95338 209/966-3615 FAX 209/742-5090

NOAA-based, Early Alert System Introduction:

The 2014 El Portal Fire resulted in potential threat of debris flow to portions, in particular two residences, of the community of El Portal in Mariposa County. As part of a tiered approach to reducing the threat to life, an Early Warning System based on National Oceanic and Atmospheric Administration (NOAA) weather forecasts has been put into place. That system depends on communication and action by several entities including community residents, Mariposa County Sheriff and Yosemite National Park. This document outlines roles and responsibilities of each.

NOAA-based, Early Alert System Summary:

- NOAA will e-mail alerts (Figure 1, example of an actual alert) based on forecasts to Mariposa County Sheriff, Yosemite Dispatch, and key Yosemite Personnel.
- Homeowners and residents of El Portal are provided registration information for Mariposa County sponsored Nixle alerts (formerly "Code Red" reverse-911).
- Mariposa County Sheriff will issue Nixle Alerts based on NOAA e-mail alerts (Figure 2, Run Card).
- Elevated risk will trigger phone calls to specific residents or homeowners by Mariposa County Sheriff or Yosemite National Park Dispatch.
- Residents or homeowners will evaluate risk and take appropriate action such as evacuation.

Description of Components:

NOAA has agreed to issue email weather alerts to Mariposa County Sheriff and Yosemite National Park personnel (including Yosemite Dispatch) based on forecasts that reach pre-established thresholds. Weather alerts are tiered to increasing likelihood of occurrence, from weather advisory, storm "watch", and finally to storm "warning". In addition, for any advisory, storm "watch", or storm "warning", NOAA will place telephone calls directly to Mariposa County Sheriff Dispatch (209.966.3614) and Yosemite Dispatch staff (209.379.1992).

A weather advisory will result from any forecast for the threat area with intensities equal to or greater than a *threshold* event of: 0.2 inches of rain in 15 minutes, 0.3 inches in 30 minutes, 0.5 inches in 60 minutes, 0.75 inches in 6 hours.

A storm "Watch" will result from potential forecasted storm intensities equal to or greater than a *threshold* event described above.

A storm "Warning" will result from a predicted storm equal to or greater than the threshold event described above.

If NOAA's early alert system is activated, participants should anticipate the following tiered approach:

- Alert email notifications sent by NOAA to Mariposa County, Yosemite Dispatch, and park personnel for any forecasted weather advisory event that exceeds the *thresholds*.
  - No action required; email provides informational awareness on potential conditions.
  - Homeowners, residents, and community visitors have been advised to remain aware of updated weather conditions and potential threats.

- Alert email notifications sent by NOAA to Mariposa County Sheriff, Yosemite Dispatch, and park personnel for any forecasted storm watch that exceeds the *thresholds*. NOAA will also call Mariposa County Sheriff and Yosemite Dispatch.
  - Mariposa County Sheriff to forward alerts to Nixle subscriber list.

- Homeowners, residents, and community visitors have been advised to remain aware of updated weather conditions and potential threats.

- Alert email notifications sent by NOAA to Mariposa County Sheriff, Yosemite Dispatch, and park personnel if a storm warning is issued for conditions that exceed the threshold events. NOAA will also call Mariposa County Sheriff and Yosemite Dispatch.
    - Mariposa County Dispatch issues Nixle notifications to subscriber list.
    - Home-owners, residents, and community visitors are advised to vacate the threat area.

Another threshold may require additional action.

- Alert email notifications sent with follow-up phone calls to Mariposa County and Yosemite Dispatch by NOAA, if a storm warning is issued for conditions greater than or equal to a 5-year event (i.e., 0.45 inches of rain in 15 minutes, 0.6 inches in 30 minutes, 0.79 inches in 60 minutes, or 2.16 inches in 6 hours) for the El Portal area.
    - NOAA notifies, via direct phone call, Mariposa County Sheriff and Yosemite Dispatch that 5-year thresholds are predicted.
    - In addition to the above actions, Mariposa County Sheriff Dispatch (or in coordination with Yosemite Dispatch) sends law enforcement officers to notify homeowners and residents at 5674 Foresta Road and 9722 Buckeye Road of conditions within the threat area.
    - Home-owners and residents and community visitors are advised to vacate the threat area.

Figure 1. Example of NOAA alert email notification. Yellow highlighted text indicates update from previous notifications for same forecasted event; Overview paragraph (within red circle) provides brief synopsis of anticipated conditions. Note values on map represent storm total, and do not reflect anticipated rainfall intensity.

NOAA – National Weather Service
San Joaquin Valley WFO – Hanford, CA
559.584.9051 *weather.gov/hanford*

Wet and Cooler Weather and Mountain Snow on Halloween and Saturday

Significant updates below, please read all info.

OVERVIEW

A wintry type storm will impact Central California Friday and Saturday. A Winter Storm Warning is in effect from Friday afternoon through Saturday morning for the Sierra north of Kings Canyon above 6000 feet. A Winter Weather Advisory is in effect for eastern Tulare County above 7000 feet from Friday evening through Saturday morning. This will be the first significant storm of the wet season and it will impact Halloween plans.

TIMING

Rain will move into the Los Banos area around 5 PM Friday then gradually move south through the evening, reaching Fresno near 8 PM and Bakersfield around 11 PM. Snow will begin in the Yosemite NP area during the early afternoon, expand across the rest of the Southern Sierra during the afternoon and early evening, and continue into Saturday morning.

WEATHER & RELATED IMPACTS

Snow -- This is the first significant snow for the winter season. The weather will transition from relatively warm and dry to cold and snowy very quickly Friday. Anyone with outdoor plans in the mountains should plan ahead for adverse weather conditions. This may include delaying or canceling travel plans. See attached graphic for snowfall amounts. ***Certainty: High***

Rain -- Brief but heavy downpours will be possible Friday afternoon and evening, which combined with oily road surfaces may lead to higher levels of traffic incidents. The rain will also create unfavorable conditions for outdoor Halloween activities. See attached graphic for rainfall amounts and timing. ***Certainty: High***

Winds -- Gusty winds across central and eastern Kern County through and below mountain passes will make driving more difficult, especially on north-south roads. Blowing dust along the west side of the San Joaquin Valley will be possible before the rainfall begins Friday afternoon. ***Certainty: Medium***

NWS will continue to provide email updates if the forecast changes.
Contact NWS Hanford at 559-584-9051 to talk to a Forecaster.
Monitor NWS Hanford website, Facebook and Twitter for further updates.

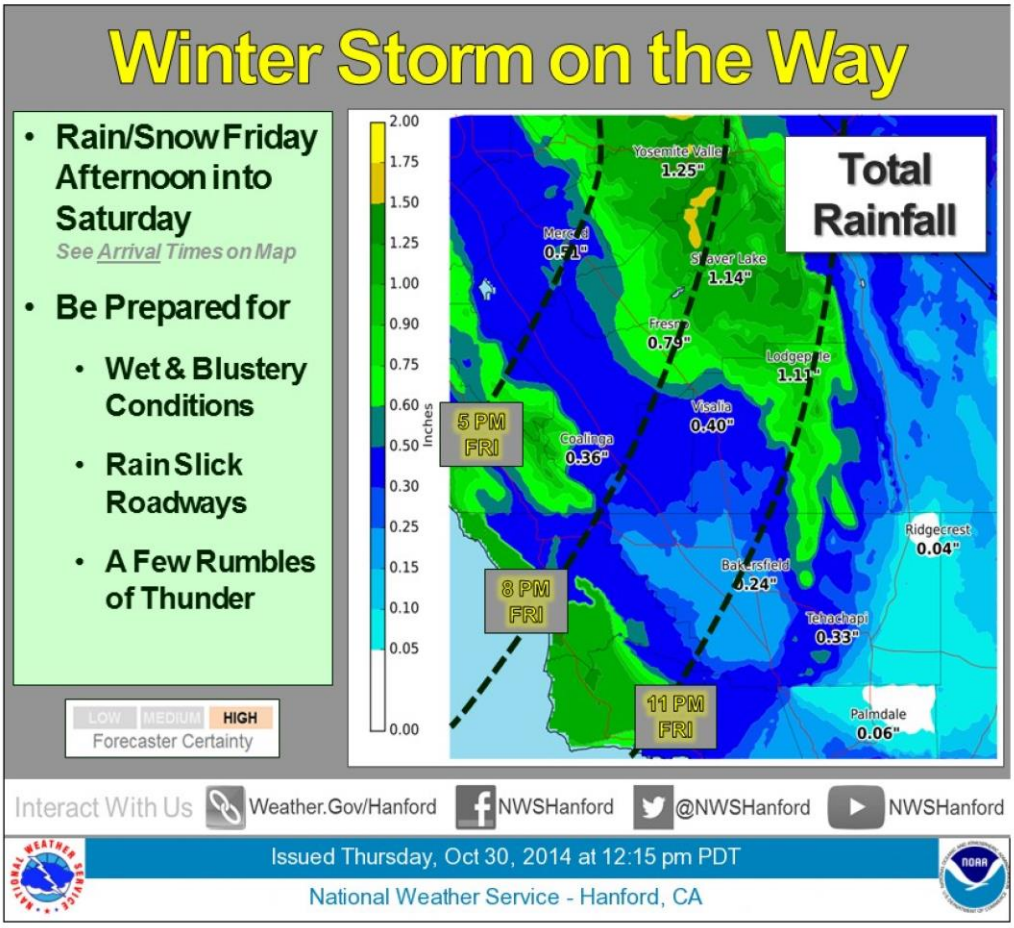
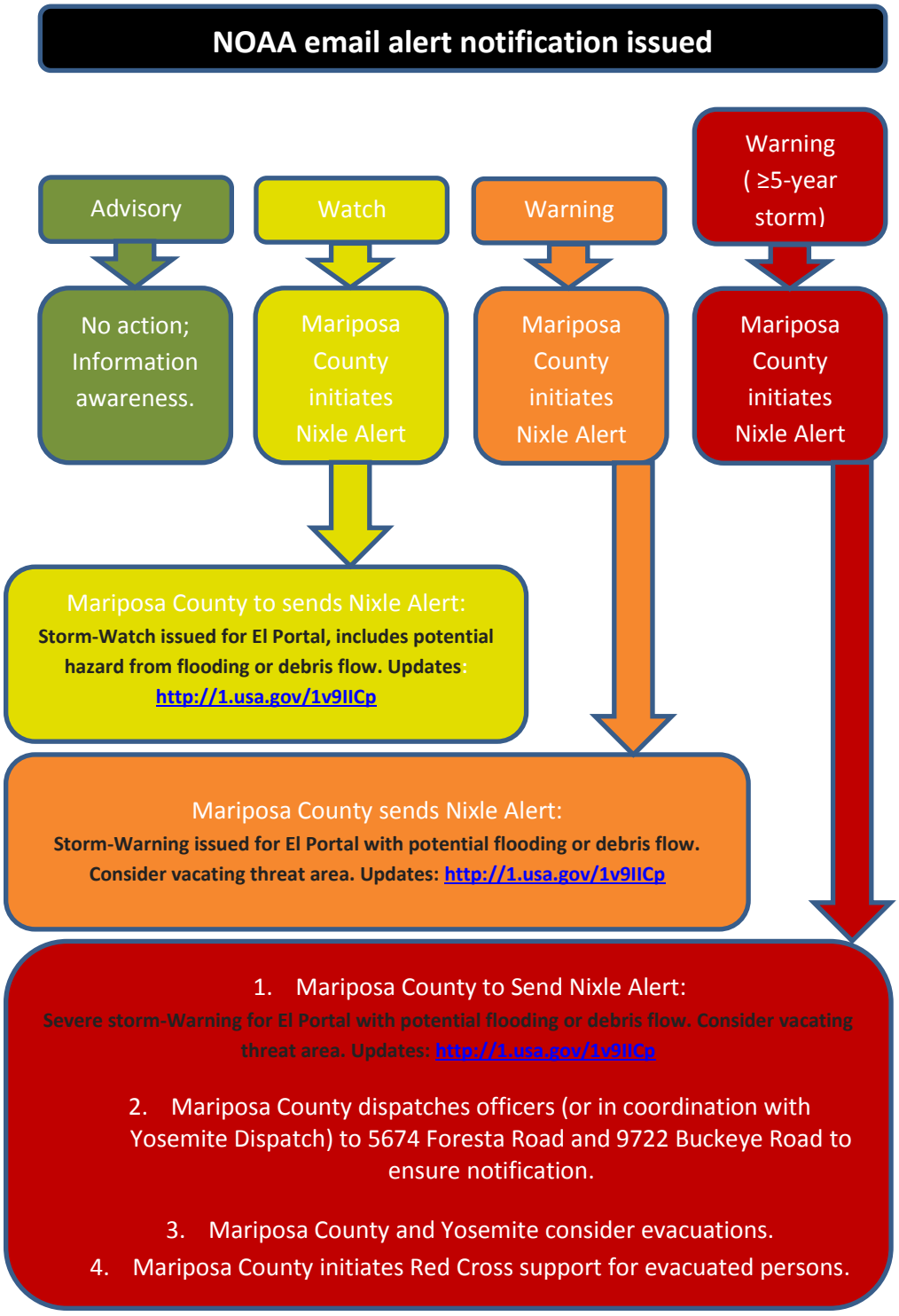


Figure 2. Action Run Card upon receipt of NOAA alert email notification for storm "advisory", "watch", "warning", and ≥ 5-year storm warning for El Portal burn scar. Actions to be implemented by Mariposa County Sheriff (or in coordination with Yosemite Dispatch)



APPENDIX C

El Portal Fire Environmental Compliance

[IN PREPARATION]