RESOLUTION - ACTION REQUESTED 2019-372

MEETING:  June 25, 2019

TO:  The Board of Supervisors

FROM:  Mike Healy, Public Works Director

RE:  Authorize Public Works to Solicit Proposals for Fire Damaged Tree Work

RECOMMENDATION AND JUSTIFICATION:
Authorize the Public Works Director to Advertise, Solicit Proposals and Negotiate Agreement(S) Associated with Operations Management Services to Remove Hazardous Trees from Both the Detwiler and Ferguson Fires.

CalOES Recently authorized Funding in the Amount of $3,486,945.00 for the Detwiler Fire and an additional $620,800.00 for the Ferguson Fire.

This action seeks approval to take necessary public procurement steps in order to retain Contracted Field Operation Services associated with these Post-Fire Tree Removal Projects.

BACKGROUND AND HISTORY OF BOARD ACTIONS:
The Board just as with the Tree Mortality Project has authorized similar contracted services when in-house technical expertise is not available.

ALTERNATIVES AND CONSEQUENCES OF NEGATIVE ACTION:
Should this not be approves contracted services will not be available and given that this expertise is not available in house the work may not be able to complete within the time frames dictated by the funding agency and the funding opportunity may be lost.

ATTACHMENTS:
DSR Tree Removal Detwiler Fire (PDF)
DSR Tree Removal Ferguson Fire (PDF)

RESULT:  ADOPTED [UNANIMOUS]
MOVER:  Merlin Jones, District II Supervisor
SECONDER:  Marshall Long, District III Supervisor
AYES:  Smallcombe, Jones, Long, Cann, Menetrey

Page 1

REF ID# 9520
STATE DISASTER NUMBER: 2017-04  FEDERAL DISASTER #: N/A
STATE APPLICANT ID NUMBER: 043-00000  FEDERAL FA ID #: N/A
STATE INCIDENT PERIOD: 07/16/17 to 08/01/17

TYPE OF DISASTER: ☐ Governor's Proclamation or ☐ Director's Concurrence
☐ Earthquake or ☐ Flood/Winter Storm or ☐ Fire
☐ Other (Please Specify Type):

TYPE OF CAAA DSR: ☐ Emergency Work or ☐ Permanent Work
CATEGORY: A DEBRIS REMOVAL
SUPPLEMENT TO CAAA DSR #: 3581

SUBGRANTEE NAME: Mariposa County

FACILITY/SITE ADDRESS OR DIRECTIONS (Include City, County of Site):
Mariposa County
4639 Ben Hur Road
Mariposa, CA 95338
Mariposa County GPS is Location of Public Works Office

LATITUDE: 37.2742° N 119.5648° W
LONGITUDE: 119° 56.48' W
COUNTY: Mariposa

DESCRIBE DISASTER RELATED DAMAGE TO THE FACILITY/SITE:
On July 17 and July 18, 2017, a Fire Management Assistance Grant (FMAG) and Governor’s Proclamation authorizing the California Disaster Assistance Act (CDAA), respectively were issued to secure funding to help Mariposa County respond to and recover from the Detwiler Fire that burned in excess of 81,826 acres of land; caused the evacuation of thousands of residents; damaged power, water, and communication infrastructure; and forced the closure of major highways and local roads. Detwiler Fire destroyed 63 lives, 67 minor structures and 1 commercial structure. The fire also damaged 13 residences and 8 minor structures. This DSR covers the Subgrantee’s estimated cost for removal of Hazard Trees located throughout the Detwiler Fire Area. Some of the Hazard Trees are located on Private Land and the rest on County Land, but all the trees fall onto the Subgrantee’s easement along County Roads. This DSR is a Supplement to DSR # 3581 which funded the Tree Assessment and is attached for further details. This Supplemental DSR and the Original DSR addresses Number Six (6) on their 2nd "Amended List of Projects.

SCOPE OF WORK TO BE COMPLETED:
The Detwiler Fire Damage Tree Operations Manager (Contractor) may be an individual or organization capable of performing the required duties necessary to remove hazard trees with damage caused by the Detwiler Fire adjacent to County Infrastructure. Under Contract the Manager will perform management duties related to the mitigation of tree mortality hazards directly attributable to the Detwiler Fire. Including the coordination of resources, collaboration with partner agencies, strategic identification and prioritization of tasks, recommendation of sub-contractors to perform work on behalf of the County, and ensuring completed work is done in accordance with established criteria, and public relations education. Specifically, the Manager will be expected to perform the following tasks:
- Understand and ensure compliance with all applicable guidelines and regulations including the California Disaster Assistance Act (CDAA), California Environmental Quality Act (CEQA), and federal, state and local laws.
- Develop collaborative relationships with partner agencies including Pacific Gas & Electric (PG&E), Cal Trans, Cal Fire, Mariposa Fire Safe Council, the U.S. Forest Service, County staff and other relevant agencies; and leverage those relationships to maximize cooperation and benefit to the County’s completion of this Fire Damaged Tree Project.

(See Scope of Work Continuation Sheet)

Is this Facility Eligible for Federal Funds? ☐ YES ☐ NO ☐ N/A
Federal Program: ☐ FEMA ☐ HEC ☐ HWA ☐ Others ☐ N/A
Federal DSR/PW Number: N/A
Federal DSR/PW $ Amount: N/A

Is this an Historic Structure? ☐ YES ☐ NO ☐ N/A
On National Register? ☐ ☐ 50+ Years Old? ☐

Significant Effect on Environment? ☐ YES ☐ NO ☐ N/A
Is Project Cat-X or Stat-X? ☐ YES ☐ NO ☐ N/A

Insurance Recovery: ☐ $0 ☐ Ins. Deductible ☐ $0

Work done by Force Account Labor? ☐ YES ☐ NO ☐ N/A
Percentage of Work Completed at Inspection: 0%

Total Eligible Labor, Equipment, Materials and Contract costs from Cost Worksheet: $3,486,945.00

TOTAL COSTS: $3,486,945.00

OES Name
Michael "Mac" McIntosh
Name of Local Representative
Michael Healey
Name of Reviewer
Carney Briggs
Public Assistance Officer
David Gillings

Date of Site Inspection: 11/06/18
Date of DSR Submission to Briggs: 11/09/18
Concur with Scope of Work? ☐ YES ☐ NO
Contact Telephone Number 209 966-5356

Date Reviewed: 

Recommend Eligible? ☐ YES ☐ NO
Amount $: $3,486,945.00
• Identify and recommend quality contractors to perform related work including, but not limited to, Registered Professional Foresters (RPFs), Certified Arborists and Licensed Timber Operators (LTOs).

• Work with an RPF or Certified Arborist, CAL FIRE and County Fire to identify and prioritize areas of highest risk within established High Hazard Zones to Public Infrastructure and record and provide input to County GIS on work as it is completed.

• Obtain rights of entry for properties where work is to be completed in accordance with established CDAA guidelines.

• Authorize work for LTOs to ensure highest priority tasks completed first.

• Identify and leverage operational efficiencies to maximize total benefit.

• Work with The Department of Public Works to get spending authorization and report expenses.

• Identify records required for reimbursement and audit purposes and ensure proper retention.
  - Not Eligible (costs for this activity are covered under the Administrative Allowance in accordance with Title 19 2910 (g))

• Supervise plan implementation and execution and provide regular reports to the County Department of Public Works.

• Provide a high degree of customer service and coordinate with partner agencies to develop and deliver public outreach and education.
### CalOES
#### DSR 3895 - COST WORKSHEET

<table>
<thead>
<tr>
<th>STATE DISASTER NO.</th>
<th>FEDERAL DISASTER NO.</th>
<th>DSR.</th>
<th>State Applicant ID #</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-04</td>
<td>N/A</td>
<td>3895</td>
<td>043-00000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPLICANT</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mariposa County</td>
<td>Mariposa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Quantity</th>
<th>Unit of Measur</th>
<th>Unit Price</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor Information</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Estimate to be put out to Bid</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
</tbody>
</table>

**Contract Estimate**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit of Measur</th>
<th>Unit Price</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate to Remove Hazard Trees in Mariposa</td>
<td>1.0</td>
<td>LS</td>
<td>$3,486,945.00</td>
<td>$3,486,945.00</td>
</tr>
<tr>
<td>County because of Detwiler Fire</td>
<td></td>
<td></td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

**Other Comments:**

Subtotal: $3,486,945.00
Deduction of Insurance Proceeds: $-

**TOTAL COST:** $3,486,945.00

INITIALS: OES MM | Local Representative: Local Representative MH | OES Reviewer: CB
<table>
<thead>
<tr>
<th>STATE DISASTER NUMBER:</th>
<th>FEDERAL DISASTER #:</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATE APPLICANT ID NUMBER:</td>
<td>FEDERAL PA ID #:</td>
</tr>
<tr>
<td>STATE INCIDENT PERIOD: (from)</td>
<td>(to)</td>
</tr>
<tr>
<td>TYPE OF DISASTER:</td>
<td>Governor's Proclamation or Director's Concurrence</td>
</tr>
<tr>
<td></td>
<td>Earthquake or Flood/Winter Storm or Fire or Other (Please Specify Type):</td>
</tr>
<tr>
<td>TYPE OF NDAA DSR:</td>
<td>Emergency Work or Permanent Work</td>
</tr>
<tr>
<td>SUPPLEMENT TO NDAA DSR #:</td>
<td></td>
</tr>
</tbody>
</table>

**SUBGRANTEE NAME:**

**FACILITY/SITE ADDRESS OR DIRECTIONS (Include City, County of Site):**

**GPS Coordinates:**

**DESCRIPTION OF DISASTER RELATED DAMAGE TO THE FACILITY/SITE:**

**SCOPE OF WORK TO BE COMPLETED:**

| Is this Facility Eligible for Federal Funds? | Yes [ ] No [ ] Unkn [ ] |
| Is this an Historic Structure? | Yes [ ] No [ ] Unkn [ ] |
| Is there Insurance for Damages? | Yes [ ] No [ ] Unkn [ ] |
| Work done by Force Account Labor? | Yes [ ] No [ ] Unkn [ ] |

Federal DSR Number: Federal DSR Amount: $ __________

| Federal Program: | FEMA [ ] NRCS [ ] FHWA [ ] USACE [ ] OTHER [ ] |
| National Register? | [ ] 50+ Years Old? [ ] |
| Is Project Cat-X or Stat-X? | Yes [ ] No [ ] Unkn [ ] |
| Insurance Recovery: | $ __________ |
| Ins. Deductible: | $ __________ |

Percentage of Work Completed at Inspection: __________%

**TOTAL COSTS:**

<table>
<thead>
<tr>
<th>OES Applicant Services Rep. Name</th>
<th>OES ASR Signature</th>
<th>Date of Site Inspection:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Local Representative</td>
<td>Representative's Signature</td>
<td>Date of DSR Submission to AC:</td>
</tr>
<tr>
<td>Name of Reviewer/Area Coordinator</td>
<td>Reviewer/AC Signature</td>
<td>Recommend Eligible? [ ] Yes [ ] No [ ]</td>
</tr>
<tr>
<td>Public Assistance Officer</td>
<td>PAO Signature</td>
<td>Date Reviewed:</td>
</tr>
</tbody>
</table>

[ ] See attachment

explaining changes or denial.

Approved? [ ] Yes [ ] No [ ]

Amount $ __________
Assessment of Tree Damage from Detwiler Fire

Based on our initial Project Tree Count done in 2017, we estimated that 13,581 trees had been damaged along county-maintained roads due to the fire and would pose a threat to public safety. This was counting any tree that had been touched by fire in any way within county easement and private property.

That count gave us an overall cost estimate of $7,954,890 for the entire process start to finish.

We recently reevaluated several roads to learn how the trees had recovered over the past year and a half.

30-50% of the original count still show damage, and in our opinion are a risk to public safety. We are suggesting planning for 50% as a safe margin if additional trees are deemed to be damaged moving forward.

This would bring the overall estimated cost to $3,486,945.
Version 2 Assessment of Tree Damage from Detwiler Fire

Blue Ridge Services
Mariposa, CA

Feb 13, 2018
Version 2 Assessment of Tree Damage from Detwiler Fire

Introduction
On July 16, 2017, a fire started at Detwiler Rd and Hunters Valley Rd, 2 miles east of Lake McClure. This fire came to be known as the Detwiler Fire. By the time this fire was contained it had burned 81,826 acres (128 miles²). The fire destroyed and damaged a significant number of buildings including the following:

- Buildings Destroyed
  - 63 Residences
  - 67 minor structures
  - 1 commercial structure
- Buildings Damaged
  - 13 residences
  - 8 minor structures

Beyond the damage to private property, Mariposa County's infrastructure is also at risk due to dead or injured trees that could fall and impact County roads. Mariposa County Public Works hired Blue Ridge Services (BRS) to count and mark all impacted trees, regardless of the level of damage.

Background Information
BRS worked with the County to identify a preliminary list of approximately 20 roads, spanning 65 linear miles. The initial list of main roads included:

- Agua Fria Rd.
- Bear Valley Rd.
- Cotton Creek Rd.
- Detwiler Rd.
- Hornitos Rd.
- Hunters Valley Rd.
- Mary Harrison Mine
- Mt. Bullion Cutoff Rd.
- Mt. Ophir Rd.
- Old Highway South
- Old Toll Rd.
- Pendola Garden Rd.
- Princeton Way.
- Rd. 72A
- Rd. 72B
- Schilling Rd.
- School Ln.
- Texas Hill Rd.
- Wilburs Way.
- Yaqui Gulch Rd.
- Trower Rd

Based on this preliminary list of main roads, BRS conducted a rough pre-count. So, prior even to submitting a proposal and cost estimate, we sent out 2-man teams (1 driver and 1 counter) to perform a rough count. This information was necessary in order to accurately determine the timeline and cost of doing the actual geotagging. This initial drive through came up with approximately impacted trees.
Based on these preliminary tree counts, we were able to prepare a responsive proposal to the County ...and subsequently proceed with a more accurate and comprehensive tree count – in line with the overall project goals established by the County.

On the following three pages, we show the area impacted by the Detwiler fire (County-wide). Then scaled-up map of the North County impact zone ...and the South County impact zone.
Project Goals

The goals of this project – as identified by the County’s direction – were to accurately count every tree that was impacted (in any way) by the fire – and could thus pose a risk to a County road. These criteria were not limited to trees that were obviously dead, but also included those that were perhaps only slightly damaged and so could – at some point – drop a limb onto the road.

Specifically, the goals of this stage of the project were to provide critical information on tree numbers and location. This information can then be used for subsequent tasks that include:

1. To identify private properties where impacted trees are located;
2. Then to obtain Right-of-Entry permission forms so an arborist and tree assessment team can get access to any and all impacted trees;
3. To closely assess the condition of individual trees, based on some matrix of key criteria that will be defined by;
   a. The degree of damage to the tree
   b. The specific age, condition and specie – and it’s environmental, historical and social importance;
   c. The potential risk the tree poses to County residents, based on traffic counts on individual roads, tree density, etc.;
4. Size and location of individual trees – i.e., will a small limb fall, or a large tree;
5. Development of a tree removal plan that will safely remove trees with minimal (collateral) damage to private property and county roads;
6. Preparation of an estimated cost and timeline for removing / trimming the selected trees;
7. Selecting one or more contractors to actually do the work;
8. Coordinating the overall project to ensure the work is done correctly, that CalOES reimbursements are fulfilled, and that the impact on County resources is minimized;
Approach

The first thing that BRS did as part of the project was to have its GIS Manager develop a base map of the area impacted by the Detwiler fire. That base map was broken down into smaller, manageable maps and loaded onto several GPS-enabled iPads. Then, our ground crew—working with our certified arborist, Dan Machado—drove and walked the affected roads, counted and geotagged the impacted trees.

One of our first steps was to create some simple criteria for determining which trees were clearly within the County road right-of-way, and which ones were on private property.

1. For the purpose of this project, we assumed that County trees included:
   a. Trees within — but not touching — the right and left fence line;
   b. Where there was no fence, trees that were generally within the cut/fill slope of the road;

2. We assumed that private landowner trees included:
   a. Trees touching the right of left fence line or;
   b. Trees beyond the fence line or;
   c. Where there was no fence, trees beyond the cut/fill slope of the road;

Trees that were clearly within in the County right of way were individually painted and then geo-tagged (with a GPS-enabled iPad). Each individually-tagged tree was then labelled with descriptors concerning the species and diameter at breast height (DBH).

A large percentage of the trees in the area affected directly by the Detwiler fire are Live Oaks. An overwhelming percentage of these live oaks have multiple (2-10) equally sized trunks diverging from a single base, just above the ground. Although, the trunks would be technically considered a single tree, BRS deemed that it would provide an inaccurate picture of how many trees are affected. To remedy this, BRS counted trunks — and measured (or estimated for polygons) each in terms of DBH.

The trees that were determined to be on private land were not painted. These trees were (group) geo-tagged with polygons. Each polygon was also provided with descriptive labels, concerning the species present in the polygon, and
the number of trunks of each DBH within the polygon. Of course, our team did not step onto private land, so the DBH was estimated from the roadway.

We then integrated (and counted) all trees — including those that were individually geotagged and those that were included in a polygon — into a GIS layer format that would be compatible with the County's GIS format.

Finally, in this report, we are provided this information to the County so that it could be presented to CalOES as documentation of the number and location trees impacted by the Detwiler Fire.

All tree assessment work was done under the direction of Dan Machado, our staff arborist (Certified Arborist No. #WE-3078A).

In order to obtain an accurate tree count, without going to the initial expense of obtaining Right-of-Entry permission forms, the trees were counted in the manner explained above.

Tree-marking Methods

All trees that were affected (in any way) by the Detwiler Fire — and which could impact a County road — were geo-tagged either individually or in a group (using a GPS polygon).

Individually geo-tagged trees (i.e., those within the County road right-of-way) were also painted with blue paint. Our tree-number system was that basic, with numbering on each road beginning with 1 ...and advancing sequentially.
The number of trees varied dramatically from one road to another. Some roads had several hundred impacted trees, while others had none. This map shows where the tree damage was concentrated. Overall, we estimate that 205 individual private properties were impacted – and would require Right-of-Entry permission forms.
Accuracy of Tree Assessment Counting

In order to provide the most accurate tree count, we developed a standard procedure for our arborist and tree assessment team. We initially traveled the impacted roads, and marked (with paint) all impacted trees within the County road right-of-way. Our team then followed up, numbering and geotagging the individual and grouped trees that were both inside and outside the right-of-way. We found that this method allowed us to maximize our production rate, while still providing good (counting) accuracy.

As a cross-check to determine the confidence of our tree count, we also conducted random sampling. By determining the accuracy of small tree count samples throughout affected areas, we are able to verify the degree of accuracy of the entire affected tree count. Based on the data obtained and the results of the random sampling, we are 95% confident that the true number of affected trees is between 13,241 and 13,921.

It should be noted that this variation is not necessarily due to our team not being able to count accurately, but more a result of subjective variability – for trees that are on the edge of impacting the roadway. For example, one person may judge that a specific tree might barely hit the road ...so it will be counted. In our cross-check – where we used a different team to check each other's trees – someone else might judge that same tree might barely miss the roadway ...so it will not be counted.

This very slight error is also due to the high percentage of live oak trees, most with multiple trunks originating from a single base. These "individual trunks" often grow outward in multiple directions, requiring the "counter" to determine which of those individual trunks could fall toward the road.

Between both the individual and group (polygon) system, we identified 13,581 trees that were in some way impacted by the Detwiler Fire. This table shows the number of trees marked on each road.

<table>
<thead>
<tr>
<th>Project Road Name</th>
<th>Tree Count</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public Land</td>
<td>Private Land</td>
<td></td>
</tr>
<tr>
<td>Agua Fria Road</td>
<td>160</td>
<td>2,682</td>
<td></td>
</tr>
<tr>
<td>Bear Valley Road</td>
<td>66</td>
<td>646</td>
<td></td>
</tr>
<tr>
<td>Cotton Creek Road</td>
<td>307</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>Detwiler Road</td>
<td>146</td>
<td>684</td>
<td></td>
</tr>
<tr>
<td>Hornitos Road</td>
<td>35</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>Hunters Valley Road</td>
<td>76</td>
<td>1,880</td>
<td></td>
</tr>
<tr>
<td>Mt Bullion Cutoff Road</td>
<td>44</td>
<td>1,175</td>
<td></td>
</tr>
<tr>
<td>Mt Ophir Road</td>
<td>0</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Old Highway Road</td>
<td>8</td>
<td>511</td>
<td></td>
</tr>
<tr>
<td>Old Toll Road</td>
<td>422</td>
<td>843</td>
<td></td>
</tr>
<tr>
<td>Pendola Garden Road</td>
<td>82</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>Princeton Way</td>
<td>13</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Schilling Road</td>
<td>158</td>
<td>1,855</td>
<td></td>
</tr>
<tr>
<td>Wilbers Way</td>
<td>1</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Yaqui Gulch Road</td>
<td>182</td>
<td>343</td>
<td></td>
</tr>
</tbody>
</table>

**Total:** 13,581

In order to move to the next phase of the project – that is to closely observe and mark impacted trees on private property – approximately 205 Right-of-Entry permission forms will be required. Based on our experience with Mariposa County’s Pine Beetle Tree Mortality project, we estimate it may take approximately 90 days to request and receive a response (positive or negative) from the majority of private landowners where the 11,881 (polygon-marked) trees are located.
Recommended Next Steps

Right of Entry Permission Forms

In order to expedite the Right-of-Entry process we recommend the County generally follow the procedures developed by BRS for the Pine Beetle Tree Mortality project. It recommends that the County follow contracts BRS to begin the right of entry process immediately. It takes a significant amount of time to effectively contact each land owner in the affected area; communicate with them the nature and necessity of the Right of Entry forms; allow them reasonable time to decide; and then respond.

Project Priority Matrix

We also recommend that a priority matrix be created to rank all work areas based on potential public risk. Because all trees cannot be removed simultaneously, some mechanism is needed to prioritize the effort. We believe the matrix our team developed for the Tree Mortality project was reasonable, fair and justifiable - all which are important factors when public safety and potential County liability are at stake. The matrix should focus the effort on removing the highest risk trees first, based on several key factors, including:

- County facilities used for public gathering;
- Roads that offered only one way in/one way out;
- Traffic counts - that measured overall traffic density on all roads;
- Actual tree counts that allowed us to quantify tree density on all roads;

While developing this matrix (which is a numerical weighting algorithm), the primary goal should be to preserve public safety, by clearing the highest risk areas first.

A priority matrix is an extremely important tool, especially when working on a very limited budget. It provides guidance on where to start - and where to go next. It also provides consistent information regarding priority projects and timelines that can be shared with the community.

Project Management

For managing the Detwiler trees, we suggest the County take an approach similar to the Tree Mortality project - where the Detwiler Tree Operations Management firm donate an adequate percentage of their work to approximately offset the County's contribution toward CalOES' matching contribution.

Tree Removal

We recommend that once criteria for removal of the Detwiler Fire trees have been defined (i.e., which trees to remove, trim or leave), that the project should be done in a single pass, starting with the highest priority roads first.

In the process of completing the initial phase of this project, we have identified some options for approaching the actual tree removal. We believe this work can be done quickly, economically and safely. We further believe that the right approach will minimize collateral damage to County roads -
by limiting heavy truck traffic – and can provide a significant amount of badly-needed erosion control for the bare, fire-stripped slopes.
SUBGRANTEE NAME: Mariposa County Dept. Public Works

FACILITY/SITE ADDRESS OR DIRECTIONS (Include City, County of Site):
Mariposa County Department of Public Works
46 Ben Hur Road
Mariposa, CA 95338

LATITUDE | LONGITUDE
37 27'42" N | 119 56' 50" W
COUNTY: Mariposa

DESCRIBE DISASTER RELATED DAMAGE TO THE FACILITY/SITE:

On July 17 and July 18, 2017, a Fire Management Assistance Grant (FMAG) and Governor's Proclamation authorizing the California Disaster Assistance Act (CDA), respectively were issued to secure funding to help Mariposa County respond to and recover from the Detwiler Fire that burned in excess of 81,826 acres of land; caused the evacuation of thousands of residents; damaged power, water, and communication infrastructure; and forced the closure of major highways and local roads. Detwiler Fire destroyed 63 residences, 67 minor structures and 1 commercial structure. The fire also damaged 13 residences and 8 minor structures. This DSR covers the Subgrantee's cost for a "Damage Assessment of Hazard Trees" located throughout the Detwiler Fire Area. Blue Ridge Services (BRS) worked with Mariposa County to identify a preliminary list of 20 roads spanning 65 linear miles. (See attached Study for List of Roads). Then BRS sent out 2-man teams (1 driver and 1 counter) to perform a rough count which was necessary in order to accurately determine the timeline and cost of doing the actual geotagging. (See Damage Description Cont. Sheet)

Work Completed

The first thing that Blue Ridge Services (BRS) did as part of this "Damage Tree Assessment" was to have its GIS Manager (Mapping Expert) develop a base map of the area impacted by the Detwiler fire. This base map was broken down into smaller, manageable maps and loaded onto several GPS-enabled iPads. Then BRS ground crews working with their certified Arborist, drove and walked the affected roads, counted and geotagged the impacted trees. Some of the trees that were clearly within the County's right of way were individually painted and all were geo-tagged with a GPS-enabled iPad. Each individually-tagged tree was then labelled with descriptors concerning the species and the diameter at breast height (DBH).

The trees that were on private land (that could fall into the Subgrantee's easement) were group geo-tagged with polygons. Each polygon was also provided with descriptive label, concerning the species present in the polygon, and the number of trunks of each DBH within the polygon. The team did not step onto private land, so the DBH was estimated from the roadway.

The BRS integrated (and counted) all trees - including those that were individually geotagged and those that were included in a polygon, into a GIS layer format that would be compatible with the County's GIS format.

All tree assessment work was done under the direction of their staff Arborist (No. #WE-3078A).

Contract, Pictures (One Per Road With GPS) and "Version 2 Assessment of Tree Damage from Detwiler Fire" included in backup documentation.

Is this Facility Eligible for Federal Funds? YES NO UNK Federal DSR/PW Number: N/A
Federal Program: FEMA NRECS PHYS USA OTHER
Is this an Historic Structure? YES NO UNK On National Register? YES NO UNK 50+ Years Old?
Significant Effect on Environment? YES NO UNK Is Project Cat-X or Stat-X? YES NO UNK
Is there Insurance for Damages? YES NO UNK Insurance Recovery: $0 Ins. Deductible $0
Work done by Force Account Labor? YES NO UNK Percentage of Work Completed at Inspection: 100%
Total Eligible Labor, Equipment, Materials and Contract costs from Cost Worksheet: TOTAL COSTS: $57,244.00

PAC Name Michael McIntosh
Concur
PAC Signature
Recommended Eligible? YES NO
Name of Local Representative Representative's Signature
Concur by Phone
Concur with Scope of Work? YES NO
Mike Healy, Director
Contact Telephone Number 209 966-5356
Recommended Eligible? YES NO
Name of Reviewer Reviewer
Date Reviewed: 3-9-18
Recommended Eligible? YES NO
Robert Larsen
Contact Telephone Number 209 966-5356
Recommended Eligible? YES NO
Public Assistance Officer PAO Signature
See attachment explaining changes or denial
Approved? YES NO
David Gillings
Amount $: 57,244.00

CDAA Form 2 (Revised 4/98) OES 90

In accordance for reference only
After inspection from this CalOES inspector the list of roads with damaged trees was revised to fifteen (15) roads. This investigative study counted 13,581 impacted trees.

These roads are as follows:
- Agua Fria Road - Picture #1 - GPS (37 27' 3" N 119 57' 15" W)
- Bear Valley Road - Picture #2 - GPS (37 33' 40" N 120 10' 11" W)
- Cotton Creek Road - Picture #3 (Start of road) - GPS (not assessable because of mud)
- Detwiler Road - Picture #4 - GPS (37 36' 53" N 120 13' 49" W)
- Hornitos Road - Picture #5 - GPS (37 28' 40" N 120 6' 44" W)
- Hunters Valley Road - Picture #6 - GPS (37 35' 28" N 120 11' 1" W)
- Mt Bullion Cutoff Road - Picture #7 - GPS (37 29' 40" N 120 2' 25" W)
- Mt Ophir Road - Picture #8 - GPS (37 59' 41" N 120 19' 34" W)
- Old Highway Road - Picture #9 - GPS (37 28' 9" N 119 57' 15" W)
- Old Toll Road - Picture #10 - GPS (37 30' 9" N 120 4' 9" W)
- Pendola Garden Road - Picture #11 - GPS (37 31' 9" N 120 6' 34" W)
- Princeton Way - Picture #12 - GPS (37 31' 54" N 120 4' 37" W)
- Schilling Road - Picture #13 - GPS (37 40' 15" N 120 7' 41" W)
- Wilber Way - Picture #14 - GPS (37 59' 47" N 120 19' 12" W)
- Yaqi Gulch Road - Picture #15 - GPS (37 28' 24" N 120 1' 20" W)

(See Page #10 in attached "Version 2 Assessment of Tree Damage from Detwiler Fire" for List of Roads/Tree Count).

Note: The Subgrantee suggested to Sean Smith (CalOES) that Blue Ridge Services had been working on the Tree Mortality Disaster (CDAA 2015-05) and had all of the mapping availability as well as a staff of Arborists in town (Mariposa). Given that Blue Ridge had already been working in the County they would also have a very short learning curve what it comes to County Roads, critical infrastructure locations and the like. Blue Ridge gained their Tree Mortality Assessment Contract through a publically advertised solicitation for these specialized services. Upon the Subgrantee's suggesting this, Sean Smith and Mike Healy (Local Representative) had a phone conversation with David Gillings (CalOES) who also agreed that awarding this study to Blue Ridge Services, Inc. It also made sense especially given their knowledge of the County and that the contract under which they were working was publically solicited. Subgrantee asked Blue Ridge for a Proposal given the Scope of Work determined in consultation with CalOES which is the scope of Services that is included in this DSR.

The Applicant is legally responsible for the removal of these Hazard Trees.

This DSR addresses number six (6) on 2nd "Amended List of Projects".
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Quantity</th>
<th>Unit of Measure</th>
<th>Unit Price</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABOR - Force Account</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>EQUIPMENT - Force Account</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>CONTRACT</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Blue Ridge Services</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Invoice #1578 - Dated 10/31/2017</td>
<td>1.0</td>
<td>LS</td>
<td>$22,419.25</td>
<td>$22,419.25</td>
</tr>
<tr>
<td>Invoice #1591 - Dated 11/30/2017</td>
<td>1.0</td>
<td>LS</td>
<td>$29,771.84</td>
<td>$29,771.84</td>
</tr>
<tr>
<td>Invoice #1620 - Dated 12-31-17</td>
<td>1.0</td>
<td>LS</td>
<td>$5,053.26</td>
<td>$5,053.26</td>
</tr>
<tr>
<td>Other Comments:</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$57,244.35</td>
<td></td>
<td></td>
<td>$57,244.35</td>
</tr>
<tr>
<td>Deduction of Insurance Proceeds</td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>TOTAL COST</td>
<td>$57,244.35</td>
<td></td>
<td></td>
<td>$57,244.35</td>
</tr>
</tbody>
</table>

INITIALS | Local Representative | OES Reviewer
--------- | ------------------ | ---------
MM       | MH                | RL        

Refer only by
2/21
STATE DISASTER NUMBER: 2018-05  FEDERAL DISASTER #: N/A
STATE APPLICANT ID NUMBER: 043-00000  FEDERAL PA ID #: N/A
STATE INCIDENT PERIOD: 07/13/18 to 08/19/18
TYPE OF DISASTER: [ ] Governor's Proclamation or [ ] Director's Concurrence
[ ] Earthquake or [ ] Flood/Winter Storm or [ ] Fire
[ ] Other (Please Specify Type):
TYPE OF CDAA DSR: [x] Emergency Work or [ ] Permanent Work
CATEGORY A DEBRIS REMOVAL
SUPPLEMENT TO CDAA DSR #: 3899

SUBGRANTEE NAME: Mariposa County
FACILITY/SITE ADDRESS OR DIRECTIONS (Include City, County of Site):
Mariposa County
4639 Ben Hur Road
Mariposa, CA 95338
Mariposa County - GPS is Location of Public Works Office

DESCRIBE DISASTER RELATED DAMAGE TO THE FACILITY/SITE:
On July 13, 2018, a Governor's State of Emergency was issued to secure funding to help Mariposa County (County) respond to and recover from the Ferguson Fire that burned in excess of 96,900 acres of land, threatened homes and critical infrastructure and caused power outages requiring the evacuation of residents.
This DSR covers the Subgrantee's estimated cost for removal of hazardous trees located throughout the Ferguson Fire Area. All the trees fell onto the County's easement along County roads and nine private properties were impacted and will need Right-of-Entry permission to process the trees. This DSR is supplemental to DSR # 3899 which funded the Tree Assessment and is attached for further details. This DSR addresses Item Number eight (8) on their "Amended List of Projects".

SCOPE OF WORK TO BE COMPLETED:
The scope of the DSR is for County of Mariposa to hire a Contractor, or various contractors to remove 2,056 hazardous trees damaged by the Ferguson Fire as well as any threats to the infrastructure and public safety. Under contract, the Manager will perform management duties related to the removal of tree hazards directly attributable to the Ferguson Fire including the coordination of resources, collaboration with partner agencies, strategic identification and prioritization of tasks, recommendation of sub-contractors to perform work in conjunction with the County, and ensuring completed work is done in accordance with established criteria, and public relations and education. Specifically, the Manager will be expected to perform the following tasks:

• Understand and ensure compliance with all applicable guidelines and regulations including the California Disaster Assistance Act (CDAA), California Environmental Quality Act (CEQA), and federal, state and local laws.

• Develop collaborative relationships with partner agencies including Pacific Gas & Electric (PG&E), Cal Trans, Cal Fire, Mariposa Fire Safe Council, the U.S. Forest Service, County staff and other relevant agencies; and leverage those relationships to maximize cooperation and benefit to the County's completion of this Fire Damaged Tree Project.

(See Scope of Work Continuation Sheet)

Is this Facility Eligible for Federal Funds?  [ ] YES  [ ] NO  [ ] LINKED Federal DSR/PW Number: N/A
Federal Program: [ ] PEMA [ ] NRCS [ ] FEMA [ ] Other

Is this an Historic Structure?  [ ] YES  [ ] NO  [ ] LINKED
On National Register?  [ ] YES  [ ] NO  [ ] LINKED
50+ Years Old?  [ ] YES  [ ] NO  [ ] LINKED

Significant Effect on Environment?  [ ] YES  [ ] NO  [ ] LINKED
Is Project Cat-X or Stat-X?  [ ] YES  [ ] NO  [ ] LINKED

Is there Insurance for Damages?  [ ] YES  [ ] NO  [ ] LINKED
Insurance Recovery: $0 Ins. Deductible $0

Work done by Force Account Labor?  [ ] YES  [ ] NO  [ ] LINKED
Percentage of Work Completed at Inspection: 0%

Total Eligible Labor, Equipment, Materials and Contract costs from Cost Worksheet: $620,800.00

TOTAL COSTS: $620,800.00

OES Name Simon Pissi
Simon Pissi

Oes Signature

Date of Site Inspection: 11/06/18
Date of DSR Submission to Larson: 06/04/19
Recommem Eligible? [ ] YES [ ] NO

Name of Local Representative
Representative's Signature

Concur with Scope of Work? [ ] YES [ ] NO
Contact Telephone Number 209 966-5356

Name of Reviewer
Reviewer

Date Reviewed:

Robert Larsen
Public Assistance Officer

Recommended Eligible? [ ] YES [ ] NO
See attachment explaining changes or denial
Approved? [ ] YES [ ] NO
Amount $ 620,800.00
<table>
<thead>
<tr>
<th>STATE DISASTER NO.</th>
<th>FEDERAL DISASTER NO.</th>
<th>Federal PA ID No.</th>
<th>STATE APPLICANT ID No.</th>
<th>CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-05</td>
<td>N/A</td>
<td>N/A</td>
<td>043-00000</td>
<td>A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPLICANT</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mariposa County</td>
<td>Mariposa</td>
</tr>
</tbody>
</table>

- Work with county staff to identify and recommend contractors to perform related work including, but not limited to, Registered Professional Foresters (RPFs), Certified Arborists and Licensed Timber Operators (LTOs).

- Work with an RPF or Certified Arborist, CAL FIRE and County Fire to identify and prioritize areas of highest risk within established High Hazard Zones to Public Infrastructure and record and provide input to County GIS on work as it is completed.

- Work with county staff to obtain rights of entry for properties where work is to be completed in accordance with established CDAA guidelines.

- Work with county staff to authorize work for LTOs to ensure highest priority tasks completed first.

- Work with county staff to identify and leverage operational efficiencies to maximize total benefit.

- Work with The Department of Public Works to get spending authorizations/Right-of-Entries and report expenses.

- Supervise plan implementation and execution and provide regular reports to the County Department of Public Works.

- Provide coordination with partner agencies to develop and deliver public outreach and education.

NOTE: The County expressed that an estimated 200 hours of Force Account Labor for administrative duties (DAC) will be required, and requested the cost be included in the scope of work. However, these costs are not eligible or reimbursable as the activities are covered under the Administrative Allowance in accordance with Title 19 2910 (g).
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Quantity</th>
<th>Unit of Measure</th>
<th>Unit Price</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force Account</td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contract Estimate</th>
<th>Quantity</th>
<th>Unit of Measure</th>
<th>Unit Price</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracts</td>
<td>1.0</td>
<td>LS</td>
<td>$620,800.00</td>
<td>$620,800.00</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

| Equipment         |          |                 | $          | $     |
| Other             |          |                 | $          | $     |

| Other Comments:   | Subtotal | Deduction of Insurance Proceeds | TOTAL COST  |
|                  | $620,800.00 | $                      | $620,800.00 |

INITIALS
OES SP
Local Representative MH
OES Reviewer RL

California Disaster Assistance Act

State Disaster No.
2018-05

Federal Disaster No.
N/A

DSR 3946 - COST WORKSHEET
<table>
<thead>
<tr>
<th>STATE DISASTER NO.</th>
<th>FEDERAL DISASTER NO.</th>
<th>STATE APPLICANT ID #</th>
<th>CATEGORY</th>
<th>APPLICANT</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-05</td>
<td>N/A</td>
<td>043-00000</td>
<td>A</td>
<td>Mariposa Country</td>
<td>Mariposa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACILITY</th>
<th>ADDRESS</th>
<th>GPS NORTH</th>
<th>GPS WEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Yosemite West Well Access Rd</td>
<td>Yosemite West Well Access Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Scott Road</td>
<td>Scott Road</td>
<td>.37.341859</td>
<td>119.511865</td>
</tr>
<tr>
<td>3 Jerseydale Road</td>
<td>Jerseydale Road</td>
<td>37.325947</td>
<td>199.503406</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CDAA 2018-05
MARIPOSA COUNTY
DOCUMENTATION
Assessment of Tree Damage from Ferguson Fire

Blue Ridge Services
Mariposa, CA
Assessment of Tree Damage from Ferguson Fire

Introduction
The Ferguson Fire started on Friday night, July 13 at 9:36 PM in the South Fork Merced River drainage on Sierra National Forest. This fire came to be known as the Ferguson Fire. By the time this fire was contained it had burned 96,901 acres (151.4 miles²). The fire destroyed and damaged a significant number of buildings and injured a number of people including the following:

- Buildings Destroyed
  - 10 Structures
- Injured People
  - 2 Fatalities
  - 19 Injuries

The Ferguson fire caused at least $171.2 million (2018 USD) in damages, with a suppression cost of $118.5 million and economic losses measuring $52.7 million.

Beyond the immediate damage sustained, Mariposa County’s infrastructure remains at risk due to dead or injured trees that could fall and impact County roads. Mariposa County Public Works hired Blue Ridge Services (BRS) to count and mark all impacted trees, regardless of the level of damage.

Background Information
Initially, BRS worked with the County to identify a preliminary list of a list of approximately 7 roads, spanning 17.4 linear miles. The initial list of main roads included:

| Jerseydale Rd | Old Coulterville Rd/Yosemite Rd | Yosemite Park Way Yosemite West Well Access Rd |
| Scott Rd     | Chowchilla Mt Rd               |                                               |
| Foresta Rd   |                               |                                               |

Based on this preliminary list of main roads, BRS conducted a rough pre-count. So, prior even to submitting a proposal and cost estimate, we sent out 2-man teams (1 driver and 1 counter) to perform a rough count. This information was necessary in order to accurately determine the timeline and cost of doing the actual geotagging. This initial drive through came up with approximately impacted 2,600 trees.

Based on these preliminary tree counts, we were able to prepare a responsive proposal to the County ...and subsequently proceed with a more accurate and comprehensive tree count – in line with the overall project goals established by the County.

On the following three pages, we show the area impacted by the Ferguson fire (County-wide).
Project Goals
The goals of this project – as identified by the County's direction – were to accurately count every tree that was impacted (in any way) by the fire – and could thus pose a risk to a County road. These criteria were not limited to trees that were obviously dead, but also included those that were perhaps only slightly damaged and so could – at some point – drop a limb onto the road.

Specifically, the goals of this stage of the project were to provide critical information on tree numbers and location. This information can then be used for subsequent tasks that include:

1. To identify private properties where impacted trees are located;
2. Then to obtain Right-of-Entry permission forms so an arborist and tree assessment team can get access to any and all impacted trees;
3. To closely assess the condition of individual trees, based on some a matrix of key criteria that will be defined by;
   a. The degree of damage to the tree
   b. The specific age, condition and species – and it's environmental, historical and social importance;
   c. The potential risk the tree poses to County residents, based on traffic counts on individual roads, tree density, etc.;
4. Size and location of individual trees – i.e., will a small limb fall, or a large tree;
5. Development of a tree removal plan that will safely remove trees with minimal (collateral) damage to private property and county roads;
6. Preparation of an estimated cost and timeline for removing / trimming the selected trees;
7. Selecting one or more contractors to actually do the work;
8. Coordinating the overall project to ensure the work is done correctly, that CalOES reimbursements are fulfilled, and that the impact on County resources is minimized;

Approach
The first thing that BRS did as part of the project was to have its GIS Manager develop a base map of the area impacted by the Ferguson fire. That base map was broken down into smaller, manageable maps and loaded onto several GPS-enabled iPads. Then, our ground crew – working with our certified arborist, Dan Machado – drove and walked the affected roads, counted and geotagged the impacted trees.

One of our first steps was to create some simple criteria for determining which trees were clearly within the County road right-of-way, and which ones were on private property.

1. For the purpose of this project, we assumed that County trees included:
   a. Trees within – but not touching – the right and left fence line;
   b. Where there was no fence, trees that were generally within the cut/fill slope of the road;
2. We assumed that private landowner trees included:
   a. Trees touching the right of left fence line or;
   b. Trees beyond the fence line or;
   c. Where there was no fence, trees beyond the cut/fill slope of the road;

All trees were (group) geo-tagged with polygons. Each polygon was also provided with descriptive
labels, concerning the species present in the polygon, and the number of trunks of each DBH within the polygon. Of course, our team did not step onto private land, so the DBH was estimated from the roadway.

We then integrated (and counted) all trees – geotagged in a polygons from on different roads – into a single GIS layer format that would be compatible with the County’s GIS format.

Finally, in this report, we are provided this information to the County so that it could be presented to CalOES as documentation of the number and location trees impacted by the Ferguson Fire.

All tree selection criteria was created under the advisement of Dan Machado, our staff arborist (Certified Arborist No. #WE-3078A).

In order to obtain an accurate tree count, without going to the initial expense of obtaining Right-of-Entry permission forms, the trees were counted in the manner explained above.

Tree-marking Methods
All trees that were affected (in any way) by the Ferguson Fire – and which could impact a County road – were geo-tagged in a group (using a GPS polygon).

The number of trees varied dramatically from one road to another. Some roads had several hundred impacted trees, while others had none. This map shows where the tree damage was concentrated. Overall, we estimate that 9 individual private properties were impacted – and would require Right-of-Entry permission forms.

Accuracy of Tree Assessment Counting
In order to provide the most accurate tree count, we developed a standard procedure for our arborist and tree assessment team. Our tree marking teams geo-tagged the groups trees that were both inside and outside the right-of-way using polygons on ARCGIS. Each polygon had an associated number of trees logged in Blue Ridge Services’ database. We found that this method allowed us to maximize our production rate, while still providing good (counting) accuracy.

As a cross-check to determine the confidence of our tree count, we also conducted random sampling. By determining the accuracy of small tree count samples throughout affected areas, we are able to verify the degree of accuracy of the entire affected tree count. Based on the data obtained and the results of the random sampling, we are 95% confident that the true number of affected trees is between 1,934 and 2,138.
It should be noted that this variation is not necessarily due to our team not being able to count accurately, but more a result of subjective variability – for trees that are on the edge of impacting the roadway. For example, one person may judge that a specific tree might barely hit the road...so it will be counted. In our cross-check – where we used a different team to check each other’s trees – someone else might judge that same tree might barely miss the roadway...so it will not be counted.

In total, we identified 2,056 trees that were in some way impacted by the Ferguson Fire. This table shows the number of trees marked on each road.

In order to move to the next phase of the project – that is to closely observe and mark impacted trees on private property – approximately 9 Right-of-Entry permission forms will be required. Based on our experience with Mariposa County’s Pine Beetle Tree Mortality project, we estimate it may take approximately 90 days to request and receive a response (positive or negative) from the majority of private landowners where the 2,056 (polygon-marked) trees are located.

### Recommended Next Steps

**Right of Entry Permission Forms**

In order to expedite the Right-of-Entry process we recommend the County generally follow the procedures developed by BRS for the Pine Beetle Tree Mortality project. recommends that the County follow contracts BRS to begin the right of entry process immediately. It takes a significant amount of time to effectively contact each land owner in the affected area; communicate with them the nature and necessity of the Right of Entry forms; allow them reasonable time to decide; and then respond.

### Project Management

For managing the Ferguson trees, we suggest the County take an approach similar to the Tree Mortality project – where the Ferguson Tree Operations Management firm donate an adequate percentage of their work to approximately offset the County’s contribution toward CalOES’ matching contribution.

### Tree Removal

We recommend that the project should be done in a single pass, starting with the highest priority roads first, namely Scott Rd and Jerseydale Rd.

The price estimate for treating these 2,056 trees based upon the current prices and season, would be approximately $620,800. This price will vary based upon current contractor availability and general area demand including seasonal factors.

The treatment of the trees in this scenario would include the full removal of the 20 trees located at Scott Rd and Jerseydale Rd. It would also include the felling, cutting to contour and lop and scattering of the 2036 trees designated to be left located along the Yosemite West Well Access Rd.
Assessment Proposal

Ferguson Fire Tree Management

Blue Ridge Services / Terra-Track
5065 Highway 140,
Suite C,
P.O. Box 2398
Mariposa, CA 95338

For:
The Mariposa County
Dept. of Public Works

ATTN: Mike Healy
5100 Bullion Street, 2nd Floor
P.O. Box 784
Mariposa, CA 95338

November 9, 2018
STATE DISASTER NUMBER: 2018-05
STATE APPLICANT ID NUMBER: 043-00000
STATE INCIDENT PERIOD: 07/13/18 to 08/19/18

TYPE OF DISASTER: Governor's Proclamation or Director's Concurrence
Earthquake or Flood/Winter Storm or Fire
Other (Please Specify Type):

TYPE OF CDAA DSR: Emergency Work or Permanent Work
CATEGORY A DEBRIS REMOVAL

SUBGRANTEE NAME: Mariposa County

FACILITY/SITE ADDRESS OR DIRECTIONS (Include City, County of Site):
Mariposa County
4639 Ben Hur Road
Mariposa, CA 95338
GPS is Location of County Auditor Office

DESCRIBE DISASTER RELATED DAMAGE TO THE FACILITY/SITE:
On July 13, 2018, a Governor's State of Emergency was issued to secure funding to help Mariposa County respond to and recover from the Ferguson Fire that; burned in excess of 96,900 acres of land; threatened homes and critical infrastructure; and caused power outages and the evacuation of residents. This DSR is to fund their "Hazard Tree Assessment Proposal" to identify damaged trees from the Ferguson Fire that fall under the responsibility of Mariposa County. The County contracted with Blue Ridge Services, Inc. to complete the Hazard Tree Assessment Proposal at a cost of $60,000. The estimated cost is $49,252.00.

This DSR addresses Number seven (7) on their "Amended List of Projects" dated 11/8/18.

SCOPE OF WORK TO BE COMPLETED:
Identify and mark all Ferguson fire-damaged trees that could damage the County’s infrastructure. Blue Ridge Services, Inc. have identified 2,600 trees that have been damaged by the Ferguson fire and pose a risk to the County’s roads and infrastructure. This doesn’t mean that 2,600 trees need to be removed. It means 2,600 trees need to be thoroughly examined by an arborist/specialist who can make an educated assessment as to whether the tree can make a recovery or if it should be removed.

1. Arborist will mark all trees within the county's easement.
2. GPS points of each tree within the easement will be gathered, as well as areas defined on field maps with approximate tree counts outside of easement.
3. GPS points, including areas outside of easements, will then be overlaid on to maps to show proposed projects and highest risk zones.
4. All tree survey data (points and areas) will be stored in an online database as a feature layer via ArcGIS Online that will be accessible to the county for use in their GIS department.

Is this Facility Eligible for Federal Funds? YES NO UNK Federal DSR/PW Number: N/A
Federal Program: FEMA HHS HRA USA OTHER Federal DSR/PW 5 Amount: N/A
Is this an Historic Structure? YES NO UNK On National Register? 50+ Years Old? YES NO UNK
Significant Effect on Environment? YES NO UNK Is Project Cat-X or Stat-X? YES NO UNK
Is there Insurance for Damages? YES NO UNK Insurance Recovery: $0 Ins. Deductible: $0
Work done by Force Account Labor? YES NO UNK Percentage of Work Completed at Inspection: 0%

Total Eligible Labor, Equipment, Materials and Contract costs from Cost Worksheet:

TOTAL COSTS: $49,252.00

OES Name: Michael "Mac" McIntosh
OES Signature: [Signature]
Date of Site Inspection: 11/6 - 7/18
Date of DSR Submission to Briggs: 11/27/18
Recommend Eligible? YES NO
Name of Least Representative: Michael Healy
Representative's Signature: [Signature]
Concur with Scope of Work? YES NO
Contact Telephone Number: 209 966-5356
Name of Reviewer: Carney Briggs
Reviewer: [Signature]
Date Reviewed:
Recommend Eligible? YES NO
Public Assistance Officer: David Gillings
PAO Signature: [Signature]
Amount: $49,252.00

CDAA Form 2 (Revised 4/06) OES 90

[Signature]
[Note: Document is used for reference only]
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Quantity</th>
<th>Unit of Measure</th>
<th>Unit Price</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue ridge Services, Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5065 Highway 140</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suite C, P.O. Box 2398</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mariposa, CA 95338</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(209) 742-2398</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated Cost Estimate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management/Administration</td>
<td>1.0</td>
<td>LS</td>
<td>$3,900.00</td>
<td>$3,900.00</td>
</tr>
<tr>
<td>Project Coordinator</td>
<td>1.0</td>
<td>LS</td>
<td>$2,700.00</td>
<td>$2,700.00</td>
</tr>
<tr>
<td>Project Oversight</td>
<td>1.0</td>
<td>LS</td>
<td>$3,375.00</td>
<td>$3,375.00</td>
</tr>
<tr>
<td>Tree Markers (3)</td>
<td>1.0</td>
<td>LS</td>
<td>$27,000.00</td>
<td>$27,000.00</td>
</tr>
<tr>
<td>Arborist Certification</td>
<td>1.0</td>
<td>LS</td>
<td>$6,300.00</td>
<td>$6,300.00</td>
</tr>
<tr>
<td>GIS</td>
<td>1.0</td>
<td>LS</td>
<td>$5,250.00</td>
<td>$5,250.00</td>
</tr>
<tr>
<td>Mileage</td>
<td>1.0</td>
<td>LS</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
</tr>
</tbody>
</table>

Other Comments:
See Attached Page 4 for breakdown of hours/days/weeks and dollars amounts per hour

Subtotal: $49,525.00
Deduction of Insurance Proceeds: $-
TOTAL COST: $49,525.00

INITIALS OES Local Representative OES Reviewer
MM MH CB

Reference
STATE DISASTER NUMBER: ___________ FEDERAL DISASTER #: ___________
STATE APPLICANT ID NUMBER: ___________ FEDERAL PA ID #: ___________
STATE INCIDENT PERIOD: (from) ___________ (to) ___________

TYPE OF DISASTER: [ ] Governor’s Proclamation or [ ] Director’s Concurrence
[ ] Earthquake or [ ] Flood/Winter Storm or [ ] Fire or
[ ] Other (Please Specify Type): ___________________________

TYPE OF NDAA DSR: [ ] Emergency Work or [ ] Permanent Work

SUPPLEMENT TO NDAA DSR #: ___________________________

SUBGRANTEE NAME: ___________________________

FACILITY/SITE ADDRESS OR DIRECTIONS (Include City, County of Site): ___________________________
GPS Coordinates: ___________________________

DESCRIBE DISASTER RELATED DAMAGE TO THE FACILITY/SITE:

SCOPE OF WORK TO BE COMPLETED:

Is this Facility Eligible for Federal Funds? [ ] Yes [ ] No [ ] Unkn [ ] Federal DSR Number: _______________________
Federal Program: [ ] FEMA [ ] NRCS [ ] FHWA [ ] USACE [ ] OTHER [ ] Federal DSR Amount: _______________________
Is this an Historic Structure? [ ] Yes [ ] No [ ] Unkn [ ] On National Register? [ ] 50+ Years Old? [ ]
Significant Effect on Environment? [ ] Yes [ ] No [ ] Unkn [ ] Is Project Cost X or Stat? X? [ ] Yes [ ] No [ ] Unkn [ ]
Is there Insurance for Damages? [ ] Yes [ ] No [ ] Unkn [ ] Insurance Recovery: ___________________________
Is work done by Force Account Labor? [ ] Yes [ ] No [ ] Unkn [ ] Percentage of Work Completed at Inspection: __________________

Total Eligible Labor, Equipment, Materials and Contract costs from attached Cost Worksheet:

TOTAL COSTS: ___________________________

OES Applicant Services Rep. Name: ___________________________ OES ASR Signature: ___________________________
Date of Site Inspection: ___________________________ Date of DSR Submission to AC: ___________________________
Recommend Eligible? [ ] Yes [ ] No [ ]
Name of Local Representative: ___________________________ Concur with Scope of Work? [ ] Yes [ ] No [ ]
Representative’s Signature: ___________________________ Contact Telephone Number or Fax Number: ___________________________
Name of Reviewed/Area Coordinator: ___________________________ Reviewer/AC Signature: ___________________________
Date Reviewed: ___________________________ Recommend Eligible? [ ] Yes [ ] No [ ]
Public Assistance Officer: ___________________________ PAO Signature: ___________________________
[ ] See attachment explaining changes or denial. Approved? [ ] Yes [ ] No [ ]
D. A. Christian ___________________________ Amount $: ___________________________
Assessment Proposal

Ferguson Fire Tree Management

Blue Ridge Services / Terra-Track
5065 Highway 140, Suite C,
P.O. Box 2398
Mariposa, CA 95338

For:
The Mariposa County Dept. of Public Works

ATTN: Mike Healy
5100 Bullion Street, 2nd Floor
P.O. Box 784
Mariposa, CA 95338

November 9, 2018
November 9, 2018

Mariposa County Public Works
ATTN: Mike Healy
5100 Bullion Street, 2nd Floor.
P.O. Box 784
Mariposa, CA 95338

RE: Proposal for Assessing the Ferguson Fire Damaged Trees in Mariposa County

Dear Mr. Healy,

As requested, we have prepared the following proposal and cost estimate to manage the trees damaged by the recent fires which fall under the responsibility of Mariposa County.

We are approaching this project with the mutual goal of identifying the impacted infrastructure, conducting field surveys, and geotagging the affected trees. We will then utilize the data to create a GIS layer of tree damage within the county.

Please review this information and get back to me with any changes or comments. We look forward to working with you.

Respectfully,

[Signature]

Neal Bolton, P.E.
Project Introduction

Mariposa County recently requested a proposal to identify and mark trees damaged by the Ferguson fire. This is phase 1 of an overarching project, to remove the damaged trees.

As the current Tree Mortality Operations Management Team, Blue Ridge Services, Inc (BRS) is positioned to handle this problem with minimal time and cost.

To increase our knowledge of this specific task at hand, and prepare a responsive proposal, BRS Team:

1. Drove 4 county-maintained roads effected by the Ferguson fire, and
2. Rough counted 2,600 trees damaged by fire that could possibly damage the County’s infrastructure and roads

Project Approach

Our approach is simple: To identify and mark all Ferguson fire-damaged trees that could damage the County’s infrastructure. We have identified through time and effort 2,600 trees that have been damaged by the Ferguson fire and pose a risk to the County’s roads and infrastructure. However, this doesn’t mean that 2,600 trees need to be removed. It means 2,600 trees need to be thoroughly examined by an arborist/specialist who can make an educated assessment as to whether the tree can make a recovery or if it should be removed. This is an expensive process, but one that will save much more money than it costs by preventing the removal of trees that may not need removing, disposal of trees that wouldn’t have been removed, and significant soil erosion that wouldn’t have happened if the tree had remained.

The overall task is to manage resources as necessary to mitigate the risk of hazardous trees while preserving the natural resources of Mariposa County.

PHASE 1: Tree Marking Process

1. Our Arborist will mark all trees within the county’s easement.
2. GPS points of each tree within the easement will be gathered, as well as areas defined on field maps with approximate tree counts outside of easement.
3. GPS points, including areas outside of easements, will then be overlaid on to maps to show proposed projects and highest risk zones.
4. All tree survey data (points and areas) will be stored in an online database as a feature layer via ArcGIS Online that will be accessible to the county for use in their GIS department.
5. Projects will then be ready to move into ROE stage if requested by county at later date.
# PHASE 1: Cost Estimates

![Ferguson Fire Tree Markup – Cost Estimate](image)

<table>
<thead>
<tr>
<th>Staff</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management/Administration</td>
<td>2 hour/day @ $130/hour for 3 weeks</td>
<td>$3,900</td>
</tr>
<tr>
<td>Project Coordinator</td>
<td>2 hours/day @ $90/hour for 3 weeks</td>
<td>$2,700</td>
</tr>
<tr>
<td>Project Oversight</td>
<td>1 hour/day @ $255/hour for 3 weeks</td>
<td>$3,375</td>
</tr>
<tr>
<td>Tree Markers (3)</td>
<td>8 hours/day @ $75/hour for 3 weeks</td>
<td>$27,000</td>
</tr>
<tr>
<td>Arborist Certification</td>
<td>4 hours/day @ $105/hour for 3 weeks</td>
<td>$6,300</td>
</tr>
<tr>
<td>GIS</td>
<td>2 hours/day @ $175/hour for 3 weeks</td>
<td>$5,250</td>
</tr>
<tr>
<td>Mileage</td>
<td></td>
<td>$1,000</td>
</tr>
</tbody>
</table>

Total: $49,525*  

*Not to exceed $55,000

Proposed by:  
X __________________________  Date: September 5, 2017  
Neal Bolton

Accepted by:  
X __________________________  Date: September 5, 2017  
Mike Healy

[Signature]
5065 Highway 140, Suite C
P.O. Box 2398
Mariposa, CA 95338

Submitted by Blue Ridge Services / Terra-Track

Neal Bolton, P.E.
September 5, 2017
From: Cheryl Jay <cjay@mariposacounty.org>
Sent: Monday, November 26, 2018 10:22 AM
To: McIntosh, Michael@CalOES
Cc: Mike Healy
Subject: DSR

Mac,
Mike Healy and I have reviewed the DSR 3899 and concur with the DSR. Please let me know if you need anything else.
Thank you,

Cheryl Jay
Roads & Bridge Manager
Mariposa County Public Works
cjay@mariposacounty.org
4639 Ben Hur Road
Mariposa, CA 95338
(209)966-5356